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Bezalel

An International Conference on Urbanism and Urbanization
The School of Architecture, Bezalel Academy of Arts and Design, Jerusalem
Jack, Joseph and Morton Mandel Bezalel Campus, 1 Zmora St., Jerusalem

Urbanism in the Expanded Field

אורבניזם בשדה המורחב

التمدن في المجال الموسع

May 8-10, 2023

Urbanism has long been considered a complex and time-consuming form of practice, challenged today more than ever by a global condition of an unsettling instability. We propose to consider this fleeting moment in time and space as a case study and platform for understanding larger trends around urbanism, densification, ecosystems, and the infrastructures that connect them. This conference proposes to expand the field of urbanism not only beyond the existing fields of expertise but also beyond the commonly accepted territory of the city. It brings forward different forms of "urbanism," found beyond the city's borders, sometimes temporary and different from familiar definitions of what is called “urban”, and not always following the rules or even dogmas of the accepted discourse of “good urbanity”. We invite researchers, policy-makers, practitioners, students and teachers to share their experiences and join us in an attempt at disrupting the common understanding of concepts such as "city,“ "settlement," "village," and "suburb", with innovative thinking. We seek an urbanism that is resilient, responsive, porous and permeable - one that can invert the late-capitalist tendencies of perpetual into an ever-expanding conception of the “urban” and its mechanisms of sustainable growth.

Shifting Densities

With intense population growth in many regions, new urban densities will need to be addressed. As Israel's population is set to double in the coming decades, there is a concerted effort to generate as many housing units as possible, almost at all costs - economic, environmental, political, and spatial. It is clear, however, that long-term solutions must address processes of densification and intensification beyond "population growth" alone. How do our land management mechanisms grow and evolve? How do we "densify" not only housing units but also infrastructure, open space, and land use? What are the different "forms" and typologies of density and are there optimal sizes? In this track we propose to leverage the opportunities and mitigate the threats of densification in new and innovative ways, including digital technologies, that engage with the relationship of urban form with governance, social structures, natural ecosystems, resources, energy and environmental concerns. This track will examine the socio-cultural dynamics of compactness on equity, segregation and inclusion.

The Global Infrastructure Crisis

Urbanization - on a global and local level - of cities and metropolitan regions, built of increasingly larger and more complex megastructures have put an enormous strain on infrastructures; transportation networks, supply chains, and waste disposal (human and otherwise). This has sent the already imbalanced relationship between the built and the un-built environment in a far more radical direction. The city increasingly consumes its surroundings across numerous verticals - waste containment, natural resources, and mobility. The existing way of planning infrastructure cannot meet the needs of the very densely populated urban agglomeration. Can cities and metropolitan areas transform themselves into self-containing and supplying organisms? Can their dependencies be ones that have a net positive impact on their surroundings? Which technologies and processes can enable such a transition? What are the appropriate scales for planning and intervention for planning infrastructural solutions?

Recalibrating Life on Earth

In the paradigm shift from Anthropocene towards a Post-Anthropocene, urbanism can be considered the most invasive and impactful human footprint which requires reconsidering when understanding its increasing portion in the overall terrestrial matter. Therefore, in designing our environment, rather than submitting to the negative effects of technological advancement we could rethink the way in which new ecologically aware methods of design and building can re-link culture to nature. Ultimately, the realization of a possible knowledge of nature through nature-based solutions and through technologically advanced versions of inhabitation, labor and leisure opens up new territories for exploration. In which way will the field of urbanism need to expand its fields of expertise to issues of recalibrating food production and distribution, health infrastructure, water management, energy networks? Can this provide equal opportunities and access for humans and other forms of life?. In this track, we propose to look at ways in which spatial sustainability, urban-rural linkages and blue.green.grey systems may provide for a more balanced approach.

Permanent Instabilities

The local conditions in which the built environment in Israel was designed and planned can be characterized by a permanent condition of instability. This lies in direct contrast with the practices of urbanism that attempt to stabilize and maintain systems of cohabitation. This tension is now amplified by a global condition of an unsettling uncertainty, manifested by processes of extreme climates, natural disasters, rapid population growth, political unrest, unstable governments, shifting demographies, pandemics, and more. A tradition in handling uncertainty gives the country a comparative advantage on the urban front. Its interventions in space provide a useful reference point for urbanists considering risk preparedness, the future of cities and the systems of governance through which they are created - social, economic, environmental, and spatial.

The Eclectic Urban Field

The contemporary mechanisms of erasure/construction/erasure, of both built and unbuilt environments have prevented social, economic, and natural forces from generating or enhancing local meaning. The resulting urban field is a patchwork of historic fabrics and carte-blanche socialist and post-modernist planning. It 'stretches' the significance both of urbanism as vertical and of landscape as horizontal and supports a condition of human environments as composed of a wide range of moments, pockets, patches, islands and clearings in a constantly shifting, interlocking and sometimes conflicting set of urban worlds. How can the historic fabric re-integrate itself with new identities?

Throughout the 20th century, great progress was made in creating structures and promulgating principles to guide urban and landscape conservation, but as the 21st century proceeds, society is challenged by new far-reaching changes at the regional scale such as shifting demographies, digital transformations and climate change. Confronted with such a fast-changing context, historic urban landscapes require new tools and methodologies to address the future of heritage and historic urban fabrics at the local, metropolitan and regional scale. In contexts where the territorial dynamics and socio-political contexts become fluid, multicultural, and multi-ethnic, in a world where classic 'integration' or 'assimilation' policies are no longer straightforward processes, we are challenged to rethink our ways of operating in urban histories in conflict.

Breakout 1A:
Shifting Densities

Moderator: Dr. Michal Braier

May 9, 2023 | 9:30 AM

The First Floor	**Gil Sharabi, Polina Chigrinski**
Ecology of Densification - Strategy for planning the interface between humans and the land, in the reality of density and climate crisis **(Lecture)**	**Jenia Gutman, Marianna Kimiagarov**
Could the Neighborhood scale be the Smart City of the Future?	**Bat El Yossef-Ravid**
European Middle-Class Mass-Housing atlas and data collection for redeveloping neighborhoods; Analysis result of 34 middle-class mass housing case studies based on a new typology analysis **(Lecture)**	**Idan Porat, Dalit Shach Pinsly, Inês Lima Rodrigues, Or Amir**
Public Buildings in the Densifying City: The Influence of Neoliberal Trends on the Architecture of Public Buildings in Israel	**Shachar Beer**
Challenging the Role of Incentives for Urban Development: The Case of Privately-Owned Public Space in NYC and Tel Aviv **(Lecture)**	**Liat Eisen**

THE FIRST FLOOR

BY POLINA CHIGRINSKI & GIL SHARABI

Bezalel
Academy of
Art and Design
Jerusalem

Project by : Gil Sharabi & Polina Chigrinski

Guided by: Arch. Michael Welma van der Molen & Lanscape Arch. Carmel Yaari

Floors

Vegetation

Neglection

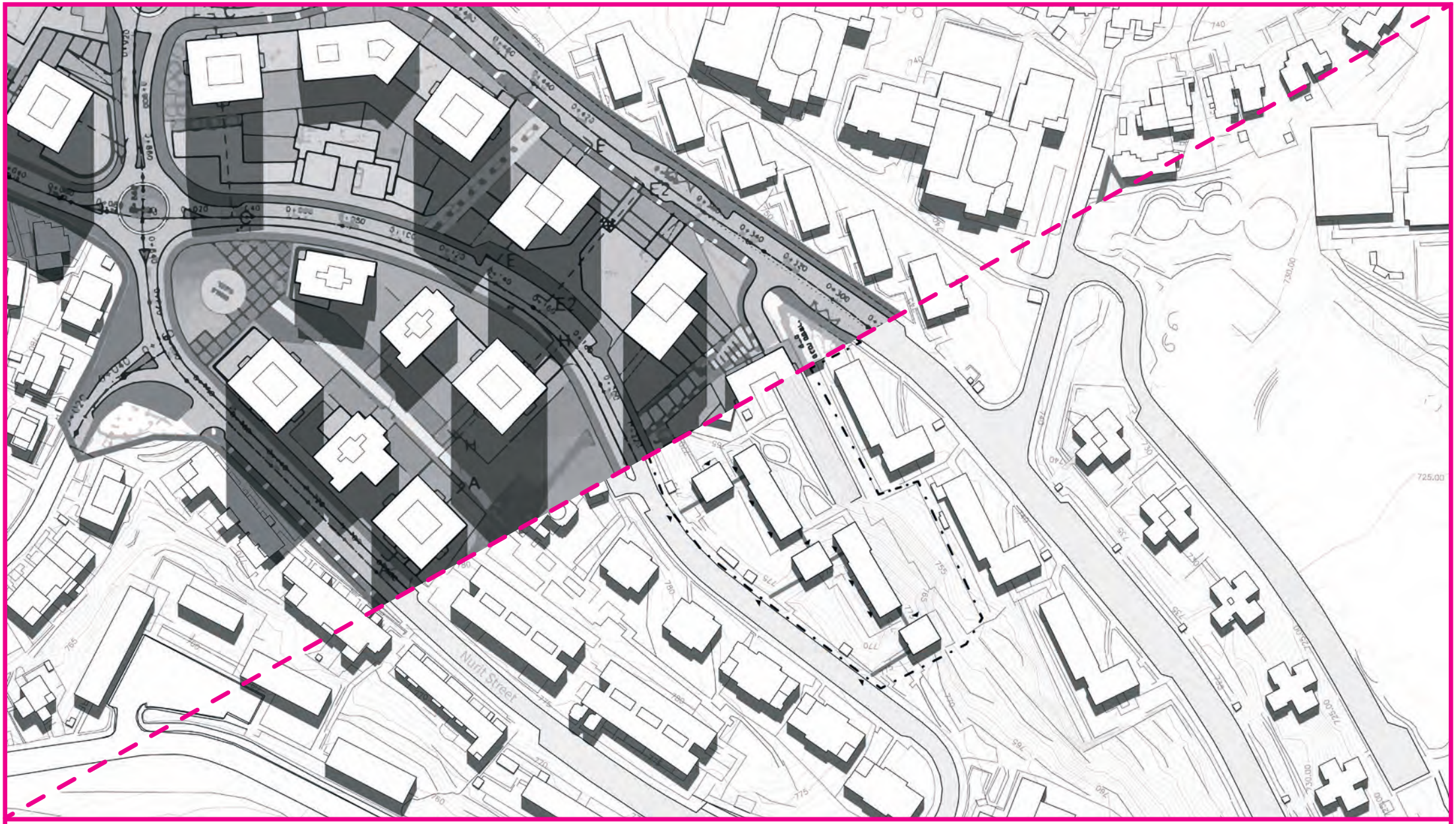
Wood

Stone

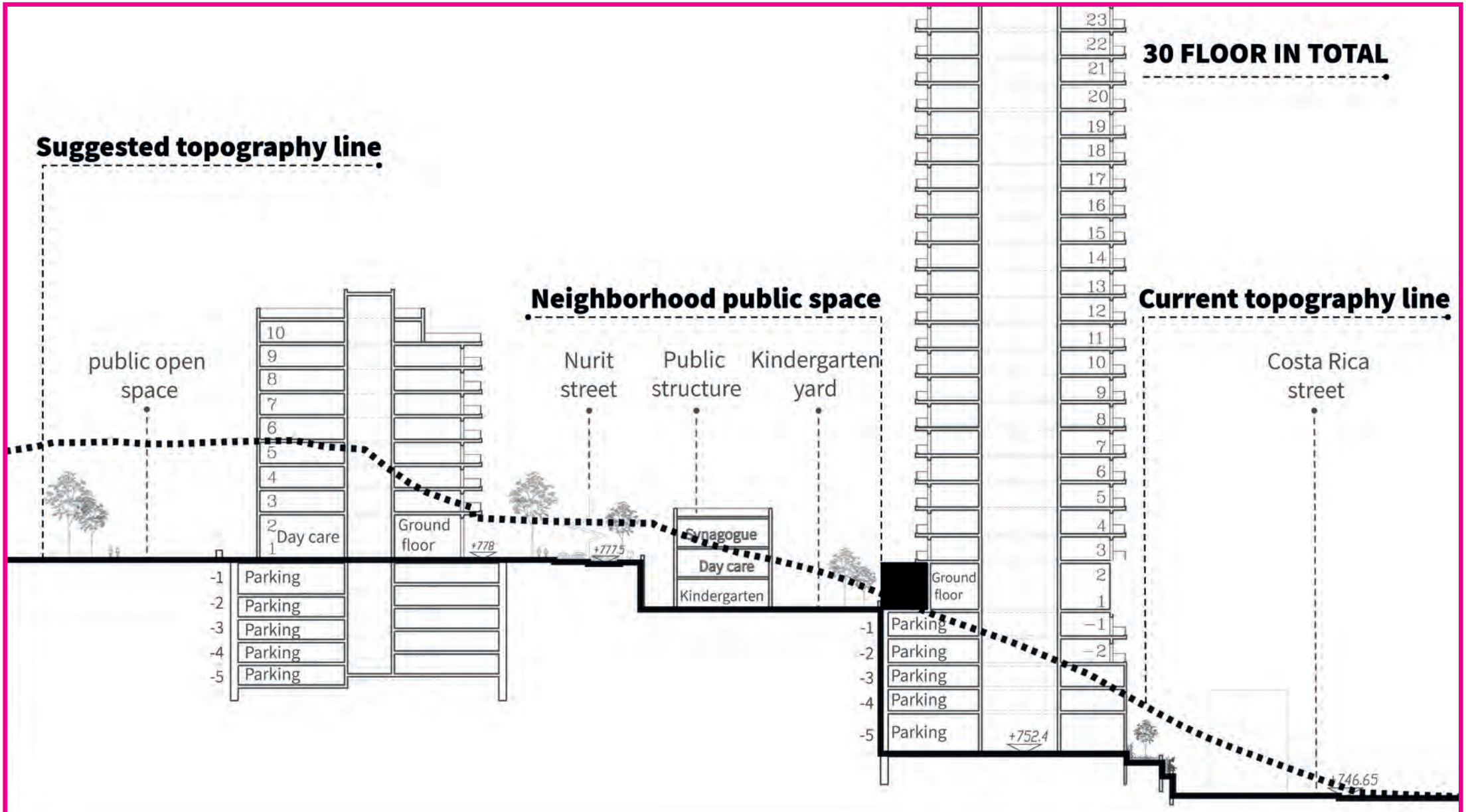
Walls

Our planning focuses on maintaining qualities and identities that exist in the neighborhood space while incorporating them into the future project for the neighborhood. We are raising the question: whether is it possible to preserve a local identity while planning for the future and taking into account the existing environment?

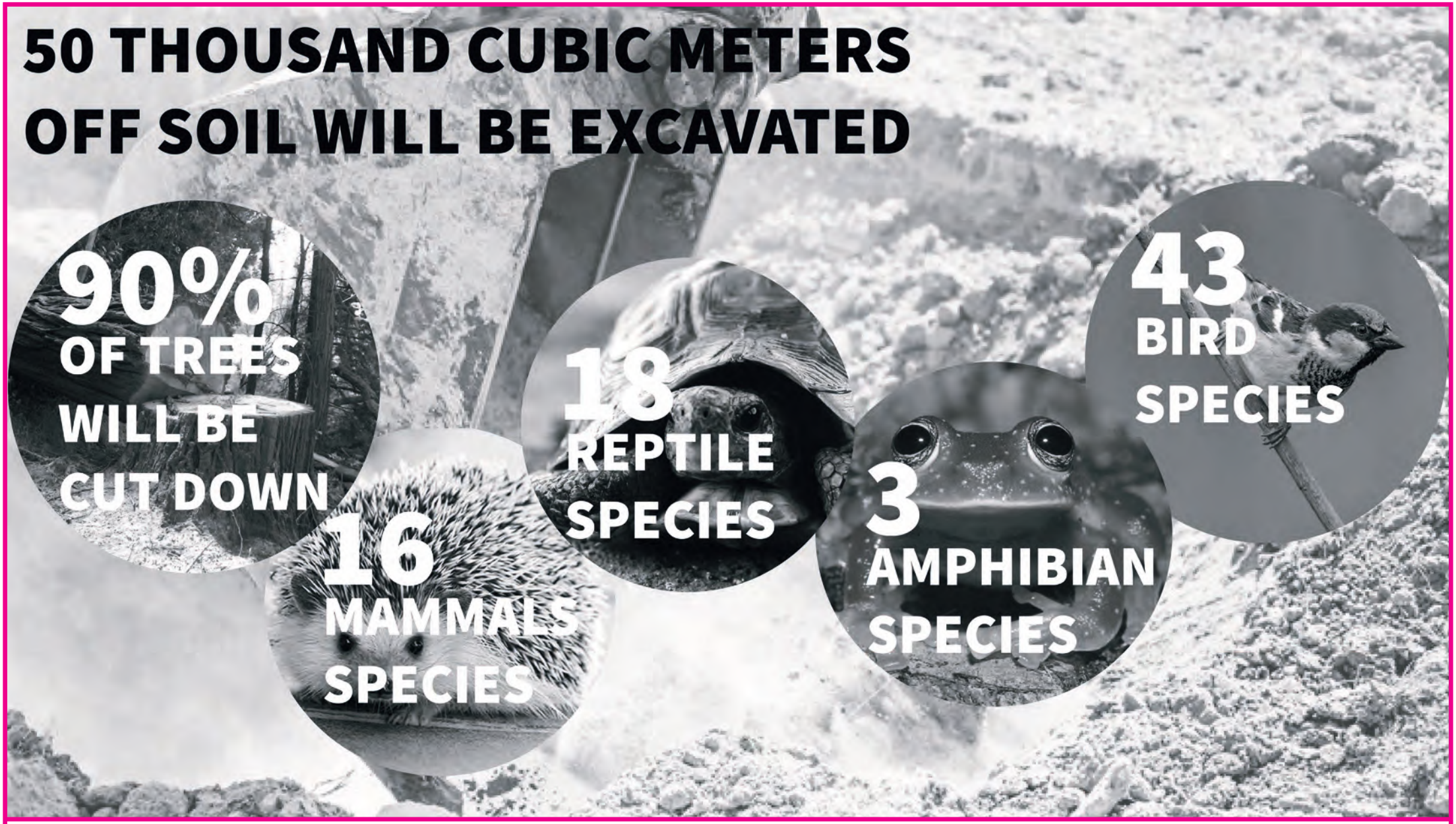
Our case study is the “Kiryat Menachem” neighborhood in Jerusalem. The main thing we identified in the neighborhood space is the coexistence: the relationship of the vegetation with the building and man; the growth of the flora on buildings whether on a large or a small scale. Therefore the residential apartments are small and crowded, the residents of the neighborhood spend most of their day in the public space between the buildings.



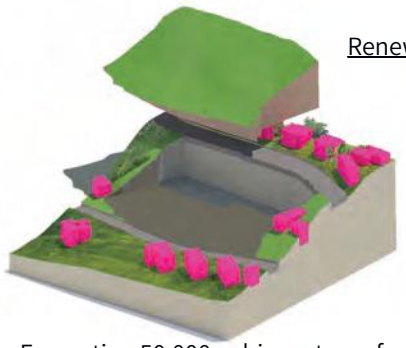
There is an approved construction evacuation project in the neighborhood. The future planning, in all ways, is going to flatten the entire complex and thus the neighborhood will lose its unique character.



The current state of the construction in Israel is: demolish - dig - build. The wide public areas, colorful vegetation, community spaces and community gardening will be replaced by flat lawns, endless paving and generic gardens and a five-story underground parking lot will be excavated and built.

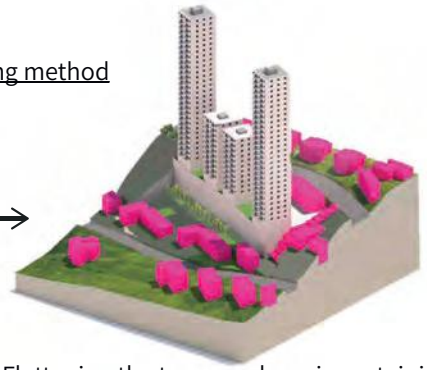


Due to this massive construction and excavation, all the habitats of the animals and vegetation in the neighborhood will be damaged.



Excavating 50,000 cubic meters of soil

Renewel project planning method



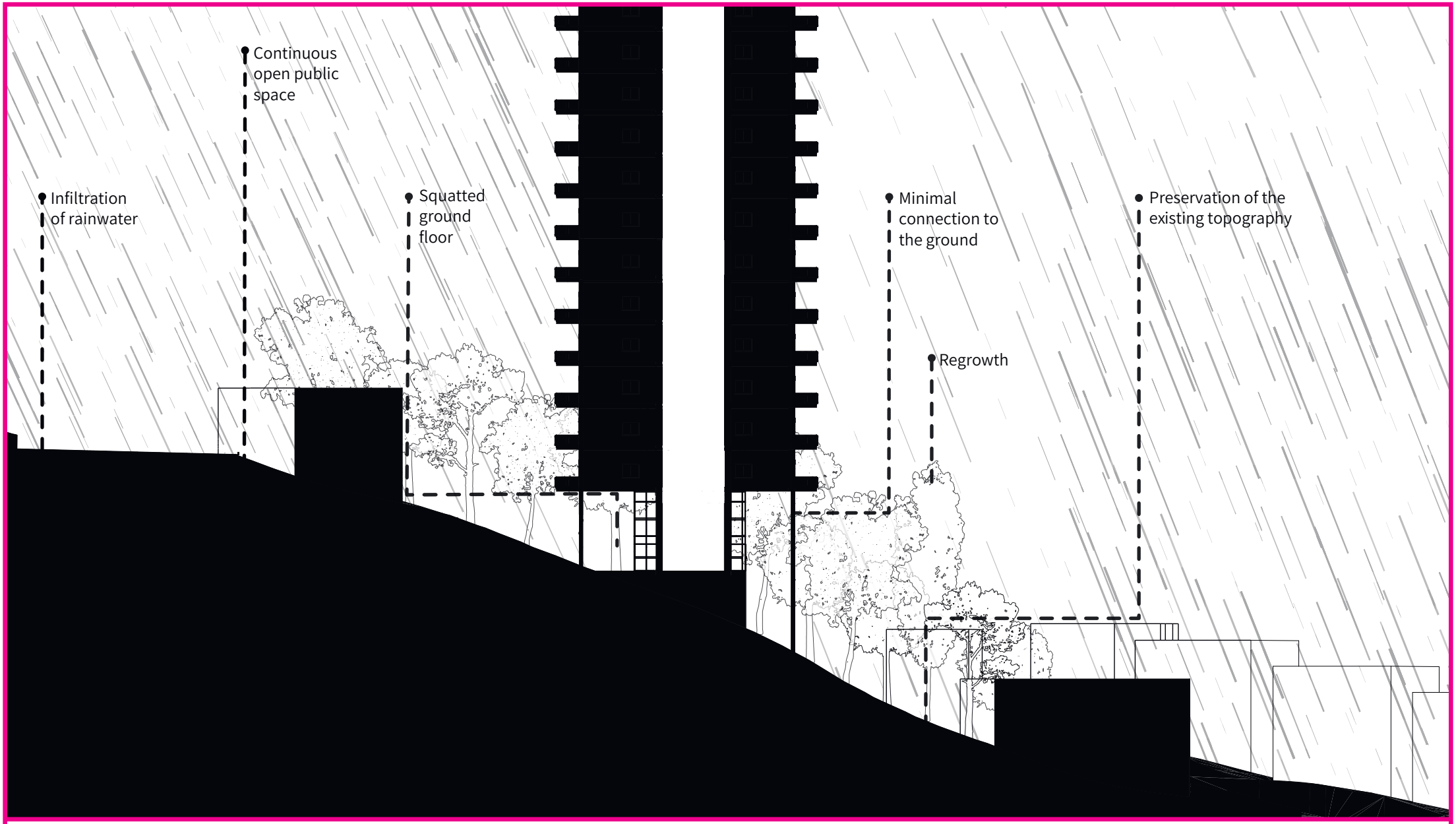
Flattening the topography using retaining walls

preserving the exsiting envirpment

Our planning method

Allowing the existing habitat to flourish
while coexist with humans

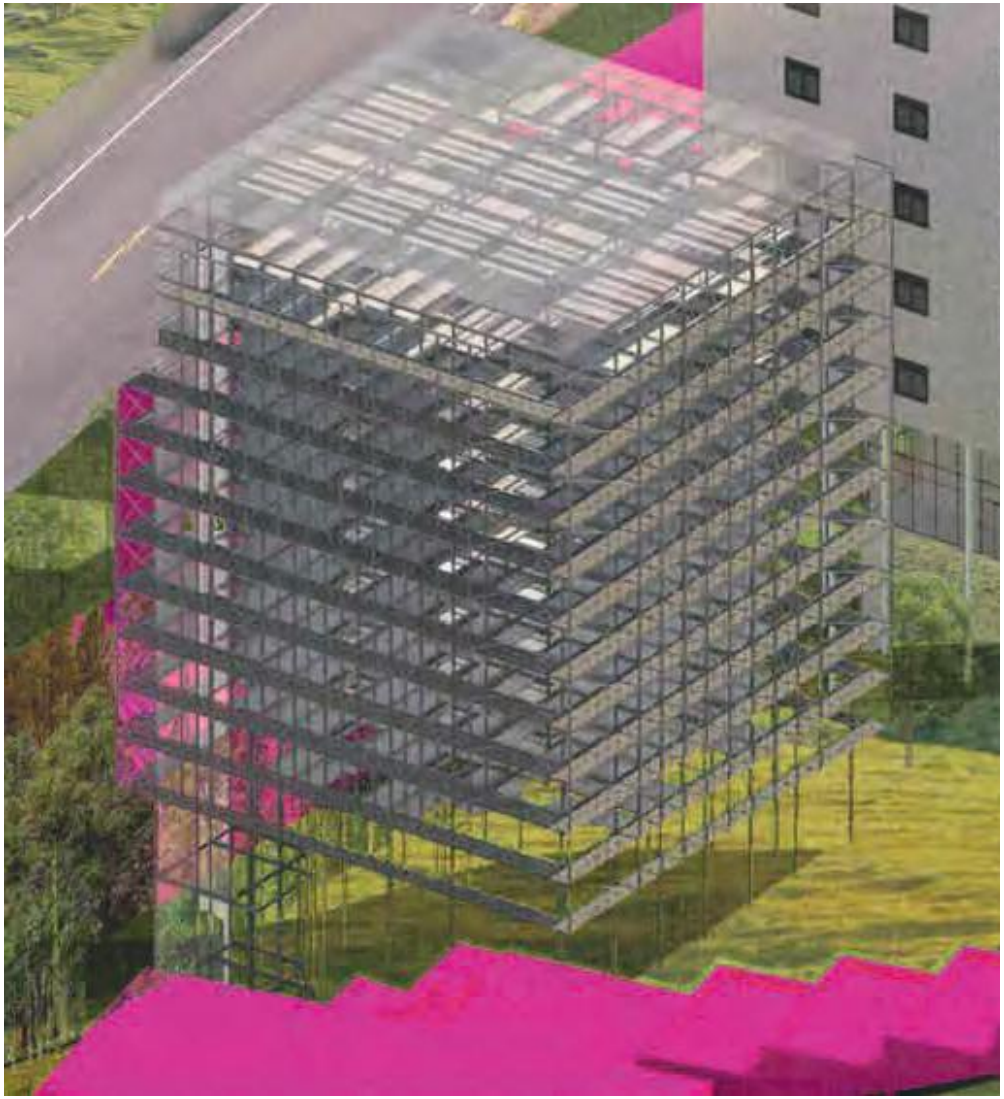
We believe that there is a need for future planning in the neighborhood due to the dilapidated and neglected condition of the residents' houses. The future planning should maintain values and qualities that already exist today in the neighborhood space, and take into account the natural and human texture there.



Our suggestion is to plan with a thought on how things will look in the future. We strive to preserve the existing while renewing the space; to allow the slope to exist and to create a continuum of quality open space.

Our plan does not change the design of the proposed buildings, except for their connection to the ground. In order to preserve the topography.

we want the buildings to create a connection as minimal as possible with the ground, thus creating a succession of flora and regeneration of habitats. All of this while preserving the back part of nature on the slope.



In order not to dig in the ground, we offer a vertical parking lot that will answer all the tenants in the buildings. This way instead of entering from a generic underground parking lot by an elevator, there is a human and nature encounters

In a time when cities are getting more and more crowded. This does not mean, that what exists must vanish, in order to produce the new.

Ecology of Densification - Strategy for planning the interface between humans and the land, in the reality of crowdedness and climate crisis

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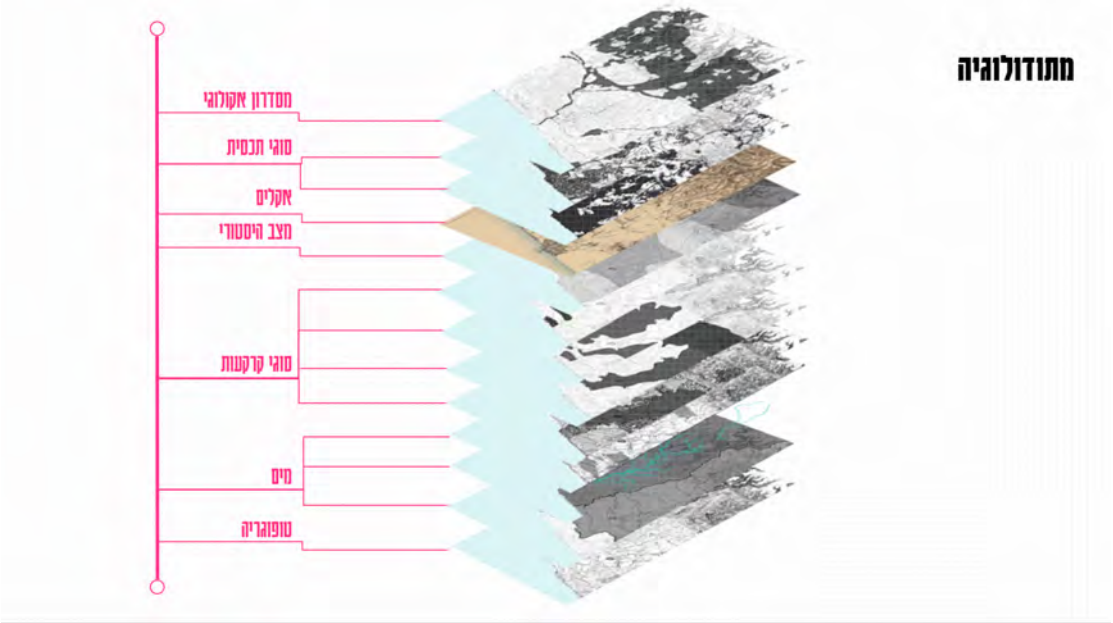
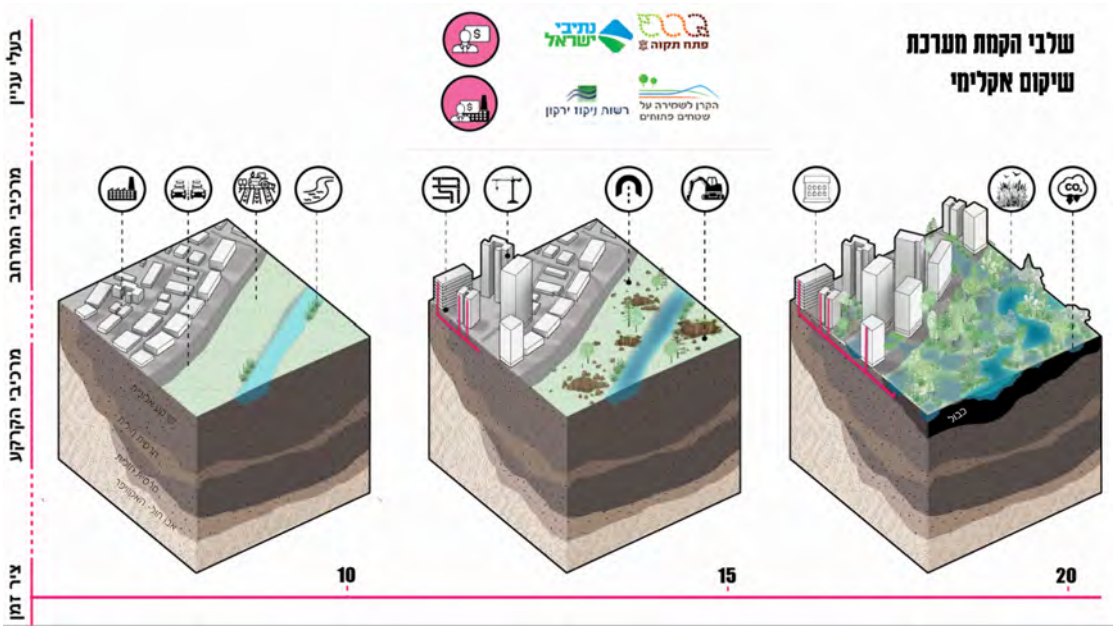
Project advisors: Prof. Els Verbakel, Prof. Zvi Efrat.

The 'carbon' footprint in a country that doubles its population every 30 years is a climate issue that requires a redefinition of the relationship between society and the environment in which it exists.

This project offers a strategy that can be implemented elsewhere and everywhere for planning the interface between humans and the land, in the reality of increasing population density and an ecological crisis. The project analyzes the catchment basins of the Ayalon and Yarkon rivers – by far the most densely populated catchments in Israel-by characterizing their hydrological and human infrastructure parameters. This parametric analysis offers various, soil and water specific solutions in favor of climate, waste management and restoration of the ecological corridor that existed in the area before human footfall. Three of such combinations are unfolded in the project – (1) Carbon sequestration by up-habilitated pits (2) Stream doubling as a tool for ecological corridor enhancement (3) Organic waste compostation for soil refinement and gas acquisition.

According to this new reading of the urban field offered by the project, the human and the natural resources (non human) will be of equal value, will feed each other and be based on each other in a "more than architectural" ways. In fact, this is a local and specific proposal and interpretation of the challenge posed by the 2021 Architecture Biennale "How do we live together?"

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שיקום אקלימי
פתח תקוה
נתיבי ישראל
רשות ניקוז ירקון
הקרן לשמירה על שטחים פתוחים
בעלי עניין
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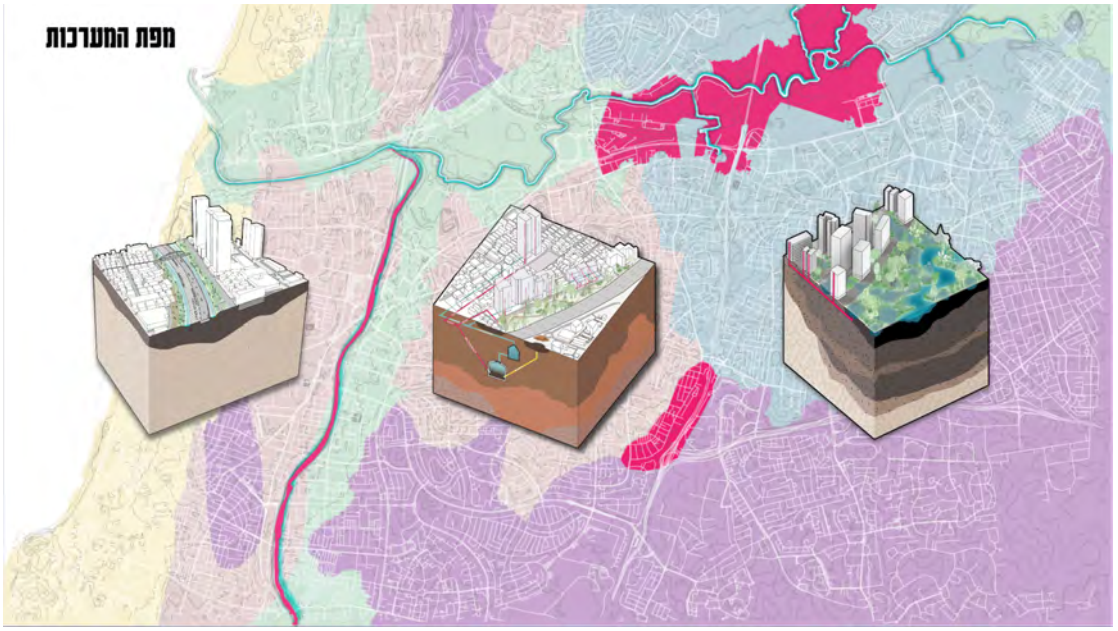
מפת המערכות

Smart neighborhood?

Decentralizing the Smart City Paradigm by shifting power from the city to the local neighborhood

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Supervisor: Dr. Meirav Aharon-Gutman
Smart. Social. Strategy Lab

Abstract

Many researchers have criticized the smart city paradigm for being overly technocratic, and thus lacking the ability to respond to complexities and to the social issues the city faces. Thus, the cry to perform the 'social turn' and rediscover the social imagination of the smart city. In this article, I seek to highlight the matter of scale in smart city operations. Here, I offer the neighborhood as the optimal theater for smart city operation, offering a chance to perform the required social reset of the smart city. The transition to the neighborhood scale symbolizes not only the geographic space of a small urban unit, but also, and primarily, bases the neighborhood as an intermediary social and political unit between the municipal government and the local residents. In this article I propose a theoretical approach alongside an applicational toolbox to promote this approach. The article generates a theoretical analysis which links concepts and approaches from the field of urban sociology and collaborative planning, seeking to examine them in relation to the smart city paradigm. In applicational terms, this article utilizes the research of the 3S Lab project, which worked in collaboration with municipal government and civil society within the geographic space of the Hadar Neighborhood in Haifa. In the final section of the article I will offer a thematic analysis linking the theory with the practice of the 3S Lab, and conclude by presenting the advantages and challenges associated with the implementation of the smart city paradigms with a neighborhood sized scale.

Keywords: Smart city, Urban government co-production, Citizen participation, Urban governance, Neighborhood scale, Democratic planning

First part- Research background

This article was written in a difficult and complex political epoch in the State of Israel. Over the past few months Israel's future as a democratic and liberal state has been placed under threat. The conditions during this time have significant impact on the writing of this article, which presents it with an inherent paradox. In this article I seek to generate a new conceptual theory which examines the potentiality of changing the operational space of the smart city, from municipal management to neighborhood management. Why "management"? because the smart city is first and foremost a managerial conception of control and power (Kitchin 2013; Batty 2020). The smart city utilizes technology, regardless of whether the technology is a "smart infrastructure of the physical infrastructure of the city" or "smart digital interfaces for the resident" (I will return to these technological conceptions later in the article). The goal in both cases is identical – the creation of a system of power which grants the mayor the ability to optimally control and manage the city(Sadowski and Bendor 2019). Whereas urban studies maintain a lively debate about the social balance of power between government, market and civil society, the percolation of this debate into the smart city paradigm has been quite limited. The innovation I offer here is in the linkage between smart city technologies and democratization of cities: my claim is that these technologies represent more than optimization of municipal management processes, but generate power in themselves.

The question that is raised is to whom that power is granted and how that power changes the urban balance of power. I respond to this challenge by linking data management, urban analysis and 3D urban models with the neighborhood scale. The transition to the neighborhood scale symbolizes not only the geographic space of a small urban unity, but also and primarily the function of the neighborhood as a social and political unit mediating between the municipal government and the local residents. The neighborhood is the space enabling the act of decentralization since it possesses a concrete presence in space, as well as localized municipal institutions such as the neighborhood council, schools and the like. These entities are the smallest, most basic analytical units on which democratic society is based.

Decentralization in the urban context

An example of urban decentralization is the Localism Act passed by the British Parliament in 2011. Its intent was to generate a process of decentralization of authorities from the central government to local communities. The localism act influenced many fields, such as education and health, and through the

encouragement of managerial freedom and flexibility for local communities, the British Government sought to base its rule on a system of democratic and liberal values. The process also led to a reform in the field of urban planning, with a formal legal requirement to include neighborhood planning. The neighborhood planning requirement generates a process of decentralizing urban planning power away from the municipal government into the neighborhood systems of power. The law enables the residents to plan and design their neighborhood democratically. Via this law the residents can decide what new construction they are interested in (residences, stores and offices), its design and fabric, and what urban infrastructure they desire to preserve or add. The final product of the process is the formation of policy and plans by the residents themselves, which following a long process of external and internal reviews becomes legally binding. In other words, the plan receives statutory validity which obligates the local authority to act according to it, enabling local residents to object to any plans which are not compatible with the values represented by the locally generated neighborhood plan.

The neighborhood scale

When the British Parliament considered how residents could be enabled to participate in urban planning processes in a more democratic manner, they did not select either the all-city scale or the borough scale. Rather they zeroed in on the neighborhood scale, viewing it as ideal to generate a process of democratic planning. The "neighborhood planning" process is aware of the complexity in the transition from a municipal to neighborhood scale, and hence the first action the residents must undertake to initiate the planning process is to define precisely what the neighborhood is. The legal neighborhood requirement sets two conditions for the definition of the neighborhood: the first is the marking of the geographic borders of the neighborhood plan. The second is the founding of a neighborhood forum which contains 21 members that represent the neighborhood's cultural and socio-economic diversity. If these two conditions are met, the residents of the neighborhood can approach the municipal government which has the power to confirm that the actions were undertaken in a democratic manner which truly represents the neighborhood with all of its complexities and layers.

The question therefore arises, when I seek to consider the idea of decentralizing the concept of the smart city to the neighborhood scale, what neighborhood do I refer to, and what the neighborhood scale can contribute to making the smart city conception into a more democratic decision-making space?

When I refer to the word neighborhood, I do not mean merely the delineation of a neighborhood a s a physical space with physical and geographic boundaries, but to the human components and the sense of belongingness which takes place within the neighborhood geographic space, emphasizing the leadership components occurring within the neighborhood. The sense of belongingness and shared fate cultivated by the geographic proximity between people offers the possibility of the developing the individual participation component within a neighborhood social network such as neighborhood committee or neighborhood NGO's.

Urban sociology refers to the neighborhood as the most simple and basic organizational form which is associated to the organizational method of the residents of the city (Park, 1925). Many sociologists attribute considerable importance to the shared fate of neighborhood residents. Thus, the idea of a neighborhood is often associated community and intimacy, and the connection between people living within the same geographic space. Often the geographic space is characterized by the physical, social and cultural characteristics which become the distinctive marker of the neighborhood. Neighborhoods can change in size from a small cluster of homes to an entire city or town. They can also differ in their socioeconomic and demographic properties and the heterogeneity thereof.

The interaction between the people living in close geographic proximity can be organized and reflected into many forms, beginning from informal gathering of neighbors who gather together for a joint community activity to formal institutionalization of such organizations as neighborhood committees or community corporations. The formal neighborhood organizations often get together to promote a specific aim such as crime reduction, the maintenance of public areas and so forth. These organizations have an important role in the municipal balance of power, and often fill a mediating position which links residents with the municipal authority (Hatuka et al, 2012) this mediating position is critically important for it actually creates the representative body of the local residents versus the municipal government institutions (Sampson et al, 2002). Thus, the term "neighborhood" in this article refers to the multidimensional network which incorporates the tension between the boundaries of the geographic space to the interpersonal interaction which enables the organization of the residents.

The smart city

The smart city is associated with progressive development conceptions which seek to promote innovation and technological developments as a means of improving the day-to-day municipal agenda. The Smart city is defined by two waves of development (Przeybilovicz et al. 2022): the first smart city wave approached the city as a physical space of infrastructure and systems. Thus, the smart city conception focused on making this infrastructure – parks, traffic lights and buildings – smarter. This was enabled via the deployment of sensors that were installed on the devices themselves and these were connected to the municipal systems, enabling the municipal government decision makers to achieve better control and management capabilities. The second smart city wave, which has gained strength over the past years, was triggered by criticism of the smart city as being overly technocratic, focusing overmuch on the physical infrastructure of the city at the expense of its residents. Technology companies therefore sought to generate a social reset via a citizen-centric approach, rather than one focused on the physical space (Cardullo and Kitchin 2019; Kitchin 2013). In this conception of the smart city, the urban municipal service systems are made accessible to the residents, enabling democratic decision-making processes in which each resident is afforded the ability to express his opinion over the municipal decision-making processes. In this manner, this approach transforms the voice and opinion of the people into a databank which helps the mayor during the municipal decision-making process.

Public participation and the smart city

In order to understand what public participation means, and to what extent the resident can take an active part in the decision-making process we returned to the periodical " A Ladder of Citizen Participation", published by Arnstein back in 1969. Despite the many years that have passed since, this periodical still shapes our understanding of the processes of democratic planning and the manner residents are involved in the context of negotiations between the citizens and municipal governance.

There are eight steps in the eponymous ladder: the lowest is non-cooperation, the higher step represent partial cooperation or the seeming of cooperation for the sake of appearances, and the highest step is citizen power. In order to understand the highest level in which the government can enable public participation in the planning process we return to the aforementioned example of the "neighborhood planning" process, initiated by the British Parliament as part of the Localism Act. This act granted neighborhood residents the right to exclusively lead urban plans for their neighborhood. In order to

understand Arnstein's participation scale in regard to the smart city, I will make use of the study of Cardullo and Kitchin (2019). This study generates a comparison between technological means that exist in the city of Dublin as part of the conception of the smart city in relation to the Arnstein participation scale (Figure 1). In their analysis they demonstrate how different initiatives of the smart city can enable resident participation on different levels of the decision making process. However, when delving in their analysis into the highest step of the ladder, citizen power, they found few smart city initiatives, and that most such examples were weak and insignificant.

From full citizen power to co-production

It may be that the reason the smart city finds it difficult to implement the conception of citizen power as described by Arnstein in the public participation ladder derives from the nature of the smart city. As currently constructed any action performed via the smart city approach is top-down, led by the municipal government either for the residents or, at best, in cooperation with them. According to Arnstein's ladder, citizen power refers to the municipal government entitling the residents with the option of self-governance, leaving room for initiatives for bottom-up activities. This situation is almost impossible in relation to the concept of the smart city, which requires extensive financial and human resources.

The smart city is not the only approach struggling with the idea of implementing a process of democratic planning at the highest level as Arnstein notes in her participation ladder. Planning processes also find it hard to implement the concept. Thus, while British Parliament passed a the "neighborhood planning" law promoting the idea of citizen power, implementation has lagged. Most neighborhoods in the UK have proven unable to implement the process, with those neighborhoods who have implemented the process being high socio-economic status neighborhoods with abundant human and financial capital (Yossef Ravid, 2018)

As a response to the failures in implementation of the ideal of citizen power, in which the citizens autonomously lead urban processes, the professional literature in the field of urban planning suggests transitioning from a conception of citizen power to one of co-production, a concept drawn from the field of public policy and administration (Watson 2014; Rosen and Painter 2019).

The idea of Urban government co-production began back in the 1970s and is identified with the political economist Elinor Ostrom, who coined the phrase in the context of public policy and administration. The

concept on which co-production is based is partnership of citizens in the planning and urban services supply process (Ostrom 1996; Nabatchi et al, 2017). The basis of this idea is associated with the neo-liberal urban governance ideas, in which the municipal government conceives of itself as a service provider, and joint action with the public can guarantee both efficiency and effectiveness. Unlike the process of citizen power as conceived by Arnstein, in which residents independently lead planning processes, or the top-down conception of the smart city, which focuses on developing centralized management tools by municipal decision-makers, the co-production conception seeks to generate a process of long-term partnership between municipal authorities and local residents in urban management and planning processes.

Second part- Research arena

The Smart Social Strategy (3S) Lab as a case-study of smart city co-production

The 3S Lab, held for the Hadar Neighborhood in Haifa between June 2020 and September 2023. The Lab is based on the Participatory Action Research (PAR) template (Kindon et al, 2007) . In which three entities are partnered: 1-the Technion, via 3S Lab researchers; 2-the Municipal Government of Haifa, particularly the social welfare and community department in the city; 3-civil society activists of the Hadar Neighborhood.

The framework of the partnership and its goals were supported and defined by the Israel National Insurance funds. Thus, the 3S Lab was active from the very first in the co-production framework of civil society and municipal government are equal partners in the process. In addition, the project was from the first exclusively focused on the geographic reach of the Hadar Neighborhood rather than the entire city of Haifa.

The geographic boundaries were predefined by all of the partners of the process, including the 14 statistical regions identified by the Israeli Bureau of Statistics as part of the Hadar Neighborhood. The physical location of the project, the 3S Lab, has also been pre-selected by all the participants. The Hadrion structure, located in the heart of the neighborhood and owned by the Technion, has been chosen to house the project.

Adding the layer of the neighborhood scale to the 3S Lab

The theoretical basis of this article is part of a general call to perform a social turn of the smart city concept (Sadowski and Bendor 2019; Cardullo and Kitchin 2019; Verrest and Pfeffer 2018). The call for a social reset is a call to recreate the socio-technical imagination of the smart city, which links technological developments with the ability to generate social change and new political arrangements. In the context of the smart city, the intention is to lead to social change and a new class order by utilizing the smart city technology. Currently, the smart city technology sells the "social" as platform claiming to place the resident in the center, or via processes in which the opinion of the residents concerning a particular municipal issue is polled. In this way the smart city generates mechanisms which contribute to the social, political and financial capital of their mayors. However, the essential social issues of the city, such as inequality, loneliness, aging populations and gentrification remained unaddressed by the smart city technologies.

The first time I sought to join this group of researchers was in the " The Social Digital Twin: The Social Turn in the Field of Smart Cities" article, which describes the "Social Digital Twin" tool as a means for generating this social reset. The social digital twin is a 3D urban model which is based on social data which links between the physical and social tissue of the city, thus forming an essential tool in the urban decision-maker toolbox. On the second occasion, I sought to contribute to the social reset by utilizing the social digital twin tool as a tool to support the process of collaborative urban decision making (Article- Under review[1]). Another tool I sought to use to generate the social reset was architectural design, via the design and establishment of the joint decision-making space for the municipal government and civil society[2] (figure 2). In this article, I wish to suggest another means of generating the smart city social reset – a change in the urban measurement unit, from the entire city to a single neighborhood. Below, I will present scenarios and resultant actions which actually occurred in the 3S Lab.

[1] (Under review) "Smarter Participation: Co-Governing Urban Aging with a Neighborhood Digital Twin". Co-author: Axel A, Yossef Ravid B, Aharon Gutman M. Journal: Urban Technology

[2] (Under review) "A room for their' s own: A physital space for urban government co-production". Co-author: Yossef Ravid B, Aharon Gutman M. Journal: Urban Design

Third part- the neighborhood scale of 3S

Power to civil society!

The Project "One hundred meters of responsibility" – the Hadar neighborhood is characterized by many areas of the public space and the private space between the buildings is neglected and unmaintained. Our project operated during the COVID-19 pandemic, a period characterized by social distancing and reduction of the ability to move in the public space. For several weeks the permitted range of movement of the citizens of the State of Israel was limited to a radius of 100 meters from their place of residence. Inspired by this limitation, the Hadar Neighborhood Committee chose to launch a neighborhood cleaning operation in which they encouraged the residents of the neighborhood to clean up the area around their residences. Since the Hadar Committee was familiar with the activity of the project and saw its potential, they asked us to assist them through the preparation of a digital poll data management dashboard (link to interface), as is common in smart city systems. The poll was made accessible by them to the residents of the neighborhood, who could participate in the operation either by leading the cleaning of their own building or volunteering to assist other buildings. The neighborhood Committee managed the cleaning project by using the project platforms. The neighborhood council thereby generated a neighborhood database of the building committees and community activists.

Civil control and management room during the "Guardian of the Walls" operation – In May 2021, violent riots broke out in the city of Haifa between the Arab and Jewish population, concurrently with the "Guardian of the Walls" Operation of the IDF vs Hamas in Gaza. The Hadar Neighborhood is a mixed Jewish-Arab neighborhood, suffered greatly during these riots. As part of the desire of the neighborhood residents to demonstrate solidarity, neighborhood activists decided to establish a civil control room in which citizens would assist citizens in need due to the riots. The neighborhood activists who were familiar with the activity of the 3S Lab, sought to use the tools and means offered by the project for this purpose. They were therefore provided with a digital interface which was advertised on social media. Its purpose was to create a database for people or businesses which required assistance, and another database for people prepared to volunteer help people from the neighborhood who required help (figure 3). The social activists "managed" the event via use of the digital platforms and generated connections between volunteers and citizens requiring assistance.

Insights – these examples illustrate the power of civil society and the mechanisms through which it can take action when it is provided with the tools and digital infrastructure associated with the smart city technology.

The blinds spots of the data

During the period the project was active, the question was raised by the partners in the process concerning the precision of the institutional database and the data gaps it contained. This question could only have emerged, as I see it, thanks to us being focused on the neighborhood scale. In other words, the discussion we held did not address the entirety of the city, but was solely concerned with the Hadar neighborhood. All of our partners in the project, both the municipal government and the civil society have been working in Hadar neighborhood for many years and hence could vouch for the veracity, or else question, the precision of the data. The Matter became more complex given the question of where and how elderly citizens live in Hadar Neighborhood.

When such a question is asked through a municipal lens, the local authority shall seek to understand the differentiation between the different parts of the neighborhood. Hence, a visual representation of the percentage of senior citizens in every statistical area (figure 4-1) can provide a satisfactory solution for the municipal government. However, when the discussion shifts from a discussion of a city matter by the municipal government to a neighborhood discussion in which people who know the neighborhood well are involved, the need also arises to change the scale in which data is presented. In our case, we chose to present the data in relation to the building scale, as can be seen in figure 4-2, representing the location of residence of the neighborhood's senior citizens. Figure 4-3 displays a spatial analysis linking the day-to-day routine of the senior citizens to various municipal infrastructure such as HMOs, public parks, public buildings and more.

Our neighborhood partners noticed that there were buildings in which senior citizens were living, but were not marked on our digital twin model. They noted to us several specific addresses, and even took us for a neighborhood tour and visits of these senior citizens. It emerged that the Hadar neighborhood has a phenomena of senior citizens that are not recorded in the formal databanks of the municipality of Haifa. The reason these citizens are not registered is that their problematic financial circumstances obligate them to secure inexpensive housing solutions which are often unapproved and unrecorded by

the municipal government. In one case we visited a senior citizen who lived in the ground floor of a residential building. However, archival research uncovered that he was living in the warehouse of a commercial store (figure 5). The second case is that of a senior citizen who lives in an apartment subdivided into 6 smaller housing units rented out at 1000 NIS, including utilities and taxes. In this case as well, archival research revealed that there was no record of a reparcelization of the apartment. Either way, the above cases represent a broader phenomenon in which lack of legal authorization for the residential unit leads to residents not being registered in the municipal fee records of the municipal government.

Insights – through these examples I illustrate that cross-referencing the municipal government database, the guiding light of the smart city paradigm, with the local knowledge of neighborhood civil society activists can help unveil such technological blind spots and highlight the weaknesses in relying exclusively on such municipal databases. In our case, the local knowledge of our partners about the neighborhood enabled unveiling the "undocumented" phenomena in the city. The presence of such undocumented individuals is very significant for the city and the municipal government, as they add to the burden on municipal infrastructure, which are often not adapted to contain so many residents, whereas the "unrecorded" do not receive the municipal assistance they require, such as welfare services, senior citizen centers and more.

Discussion

"*An F16 suddenly landed in the neighborhood, it is very significant and conveys an experience of boundless power. Now we just need to see what can be done with it*"

This quote by a social activist from the Hadar Neighborhood summarizes succinctly the 3S Lab project, as it illustrates the inherent tension between the technological innovation of the smart city paradigm and its assimilation within the neighborhood network of interpersonal relations and power. Here, I proposed that the neighborhood scale can serve as a milestone in generating the long called-for social reset in the smart city paradigm. On the basis of our experimental experience in this project, I offer a thematic analysis of the advantages and existing challenges in implementing the smart city perception in regard to the neighborhood municipal unit.

First, the issue of resources. Assimilating the smart city paradigm within the neighborhood setting requires both financial and human resources. For the most part, civil society organizations operate with very meager budgets, and without any resources. Assimilating these technological tools requires resources that this neighborhood organization usually lacks. Hence, there is a need to think how the funding and infrastructure for such action can be generated.

Second, although this article presents the social organizations active in the neighborhood in a positive light, these organizations frequently do not represent the opinions of all neighborhood residents and seek to promote political agendas that are no supported by them. Thus, when we work with these social organizations, we must first map out the existing networks of interests and power in the neighborhood.

Third, this article is presented from the perspective of an Academica which seeks to assume an active part in the social and public agenda of the city. Our study positively illuminates the triple collaboration between academia, civil society and municipal government, illustrating how each of these entities are benefitted by the process. However, it is important to note that academic projects have both a start and end point in their involvement in the neighborhood life – unlike the local residents for whom the neighborhood is the home where they live their daily life. This issue must be taken into account and presented clearly at the very beginning of the project.

This article represented the first foray into generating the social reset of the smart city via changing the point of reference of the smart city paradigm to the neighborhood. I hope that this study will encourage municipal government and academic institutions to support the establishment of neighborhood frameworks that connect civil society with municipal government via use of technologies and concepts associated with the smart city.

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References

Arnstein, Sherry R. 1969. “A Ladder Of Citizen Participation.” *Journal of the American Planning Association* 35 (4): 216–24. https://doi.org/10.1080/01944366908977225.

Batty, Michael. 2020. “Defining Complexity in Cities.” In , 13–26. Springer, Cham. https://doi.org/10.1007/978-3-030-36656-8_2.

Cardullo, Paolo, and Rob Kitchin. 2019a. “Being a ‘Citizen’ in the Smart City: Up and down the Scaffold of Smart Citizen Participation in Dublin, Ireland.” *GeoJournal* 84 (1). https://doi.org/10.1007/s10708-018-9845-8.

Hatuka, Tali, Roni Bar, Michael Jacobson, Hila Lothan, Merav Battat, and Jessica Fain. 2012. *Neighborhood-State*. Resling. Tel Aviv. https://lcud.tau.ac.il/essential_grid/neighborhood-state/.

Kindon, Sara, Rachel. Pain, and Mike Kesby. 2007. *Participatory Action Research Approaches and Methods : Connecting People, Participation and Place / Edited by Sara Kindon, Rachel Pain and Mike Kesby.* Routledge Studies in Human Geography 22. London: Routledge.

Kitchin, Rob. 2013. “The Real-Time City? Big Data and Smart Urbanism.” *SSRN Electronic Journal*, July. https://doi.org/10.2139/ssrn.2289141.

Nabatchi, Tina, Alessandro Sancino, and Mariafrancesca Sicilia. 2017. “Varieties of Participation in Public Services: The Who, When, and What of Coproduction.” *Public Administration Review* 77 (5): 766–76. https://doi.org/10.1111/puar.12765.

Ostrom, Elinor. 1996. “Crossing the Great Divide: Coproduction, Synergy, and Development.” *World Development* 24 (6): 1073–87. https://doi.org/10.1016/0305-750X(96)00023-X.

Park, Robert E. 1925. “The City: Suggestions for the Investigation of Human Behavior in the City Environment.” *American Journal of Sociology* 20 (5): 577. http://ezlibrary.technion.ac.il/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=edsjsr&AN=edsjsr.2763406&site=eds-live&scope=site.

Przeybilovicz, Erico, Maria Alexandra Cunha, Stan Geertman, Charles Leleux, Ank Michels, Zsuzsanna Tomor, C. William R. Webster, and Albert Meijer. 2022. “Citizen Participation in the Smart City: Findings from an International Comparative Study.” *Local Government Studies* 48 (1): 23–47. https://doi.org/10.1080/03003930.2020.1851204.

Rosen, Jovanna, and Gary Painter. 2019. “From Citizen Control to Co-Production: Moving Beyond a Linear Conception of Citizen Participation.” *Journal of the American Planning Association* 85 (3): 335–47. https://doi.org/10.1080/01944363.2019.1618727.

Sadowski, Jathan, and Roy Bendor. 2019. “Selling Smartness: Corporate Narratives and the Smart City as a Sociotechnical Imaginary.” *Science Technology and Human Values* 44 (3): 540–63. https://doi.org/10.1177/0162243918806061.

Sampson, Robert J, Jeffrey D Morenoff, and Thomas Gannon-Rowley. 2002. “Assessing ‘Neighborhood Effects’: Social Processes and New Directions in Research.” *Annual Review of Sociology* 28 (1): 443–78. https://doi.org/10.1146/annurev.soc.28.110601.141114.

Verrest, Hebe, and Karin Pfeffer. 2018. “Elaborating the Urbanism in Smart Urbanism: Distilling Relevant Dimensions for a Comprehensive Analysis of Smart City Approaches.” *Https://Doi.Org/10.1080/1369118X.2018.1424921* 22 (9): 1328–42. https://doi.org/10.1080/1369118X.2018.1424921.

Watson, Vanessa. 2014. “Co-Production and Collaboration in Planning - The Difference.” *Planning*

Theory and Practice 15 (1): 62–76. https://doi.org/10.1080/14649357.2013.866266.

Yossef Ravid, Batel. 2018. “Neighborhood Planning- Is It Democratization or Privatization of the Planning System? .” Master's thesis, Royal College of Art, London

Yossef Ravid, Batel, and Meirav Aharon-Gutman. 2022. “The Social Digital Twin:The Social Turn in the Field of Smart Cities.” *Environment and Planning B: Urban Analytics and City Science*, November, 239980832211370. https://doi.org/10.1177/23998083221137079.

European Middle-Class Mass-Housing atlas and data collection for redeveloping neighborhoods

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Abstract:

This paper presents outcomes from COST CA18137 that aims to create a transnational network that gathers European researchers carrying studies on Middle-Class Mass Housing built in Europe since the 1950s to develop new scientific approaches. In this framework, as a result, we developed a methodology for documenting diverse MCMH case studies from many EU countries and creating a comparative evaluation of urban and sustainable aspects that are part of the major MCMH ensembles in Europe.

WG1 of CA18137 developed a methodology that allowed around 100 assembles in 27 European partner countries to be mapped on MCMH to accomplish this goal. The scale of the case studies areas extended between 1 hectare to 550 hectares. As a result of the template, each set of characteristics of urban and housing could be arranged in dialogue with middle-class and mass-housing concepts. The data collection includes a short description of the case study, architect developer, photos, GIS location, period of construction, the position of the buildings, number of residential units, number of floors, urban ensemble, number of dwellings, housing policy, and more. The housing policies applied were referred to in an involving way, as well as the raising of intervention or rehabilitation strategies realised. As a result of the analysis, data can be inserted into mapping systems, such as GIS, paving the way for developing an Atlas digital platform. In addition, creating a comparative evaluation of MCMH policy development in different countries; analysing architectural characteristics, urban design patterns, and offering planning suggestions. The information gathered on the selected complexes has allowed launching specific thematic clues that seek to deconstruct the complexity of the MCMH topic into singular aspects, as explored through the networking tools as in the short-term scientific mission carried out throughout 2022.

In addition, the proposal "European Middle-Class Mass Housing - Cost Action: A tool to develop neighbourhood quality", was selected for online exhibition at the Neighbourhood Index in the Oslo Architecture Triennale's Mission Neighbourhood – (Re)forming Communities. In the scope of the Call for projects, as part of the Call for projects, practices, and perspectives that contribute to the creation of more diverse, generous, and sustainable neighbourhoods. The proposal on the initial steps of Documenting MCMH-EU has been selected to be featured on the Neighbourhood Index's website recognising the merit of the methodology defined to achieve progress in the Documentation of the MCMH.

The potential of the gathered material opened a unique opportunity to cross-reference different national and historical experiences, enhancing shared and collective knowledge that can be transferred between different European countries. It aims to inspire the renewal of urban and architectural practices, including environmental comfort, legal/characteristics of public policies and heritage enhancement contributing for a digital transformation of panning.

Keywords:

MCMH (Middle-Class-Mass-Housing), urban documentation, urban analysis, GIS.

Public Buildings in the Densifying City: The Influence of Neoliberal Trends on the Architecture of Public Buildings in Israel

Shachar Beer

Abstract

With the rise of neoliberal political-economic policy, privatization of built space has become commonplace, and as municipalities adopt models of "private-public partnerships" to further the financial growth of the city, more public institutions are built by private entrepreneurs. This shift has led to the emergence of a new architectural typology of public buildings in city centers – public institutions that are built as public duties in large mixed-use urban developments.

Though privatization of housing and urban planning has been thoroughly researched, the physical, spatial and performative nature of these new private-public spaces has yet to be investigated fully. This research, focusing on "daily" educational buildings such as schools and kindergartens, examines the change transpiring in built public space in the historic context of Israeli educational architecture. It explores the new architectural educational typology, opportunities and limitations it provides, and the "publicness" of these new institutions, designed within the neo-liberal architectural framework.

Using architectural documents, site observations, photographs and in-depth interviews, the study analyzed public buildings contained in LUDs built in central Tel Aviv in the last two decades. The prominent case studies; HaShuk HaSitona'i, Midtown Tel Aviv, Kanarit Di Vinci and BSR Sarona, present complex urban conditions and private-public interactions, through which the standing of public buildings in the contemporary city is investigated.

The study reveals that while these newly built public spaces meet all of the required planning standards, therefore not denying the public of necessary services, they are receding from the physical, visual and perceived urban scenery. Through the architectural analysis of the new typology, alongside the historic context, the article poses that the status of educational buildings is changing, along with shifting cultural and societal values, as commercial spaces replace public buildings as the new urban landmarks.

Introduction

With the rise neoliberal political-economic policy over the last few decades, there is a growing privatization of built space (Brenner and Theodore 2002), and it has become obvious that most of the construction of housing, industry, workplaces and even infrastructure is done by private entities (Tzfadia, 2015). Public buildings are at the "final frontier" of privatization, historically seen as "clean" of private and economic interests, built and funded by the city or state government. Even though most public buildings in Israel are still built by cities and the state, in the last decade there is a rise in public buildings, specifically educational buildings such as schools, kindergartens and sports facilities, that are being planned and built by public developers and then transferred to municipalities as part of planning deals. Though the privatization of housing in Israel (צפדיה ו יעקובי 2015), and the privatization of urban planning (מרגלית 2014, לוין 2019, מצא 2019) has been researched in-depth, the physical, spatial and performative nature of these new hybrid private-public spaces has yet to be investigated fully.

In the central district of Tel Aviv, planning authorities are challenged with how to provide adequate public services and institutes as density is rising and public land is at its severest shortage (עיריית תל אביב, מחלקת הנדסה 2014). There is a consensus that "public spaces will have to live with private"[i], meaning there is no way to provide the necessary public services without relying on highly mixed private-public spaces. Along with the continued rise of the planning deal (מרגלית 2013) and the evolution of public duties to include a variety of types of 'spatial returns' (such allocated floor space) (מועלם, סלינג'ר ו נויהאוז פוירשטיין 2019), many of the new public spaces opening in central Tel Aviv are built by private developers as part of large urban developments (LUDs), creating a new architectural typology for urban public buildings previously unseen.

Due to the length of planning and building processes, the built results of these deals sometimes can only be assessed years later, sometimes even up to a decade. Now that these public institutions have been populated for a few years, it is imperative to critically analyze this new architectural typology being produced and replicated across the country. By reviewing both historical and contemporary public institutional architecture, this study aims to both describe the shift currently occurring in the status and character of public institutions and to map the effects that neo-liberal processes have on the planning and design of public buildings.

Neoliberalism, Planning Deals and Private-Public Partnerships

Cities have served as a key arena for the implementation of neoliberal policies. Harvey contends that the city has always been the primary conduit for neoliberalism (Harvey 2007), while Keil examines the

historical and geographical development of urban neoliberalization and the connection between the spread of neoliberalism and urbanization (Keil 2016). Brenner and Theodore argue that cities have been particularly susceptible to the effects of "actually existing neoliberalism," a term they coined to describe the embeddedness of neoliberal policies into the frameworks and political structures of cities (Brenner and Theodore 2002). They illustrate how cities have become laboratories for neoliberal experimentation, such as place-marketing, economic development corporations, and public-private partnerships (PPPs), and point to the creation of new privatized spaces, large-scale megaprojects, and gated communities as evidence of the impact of actually existing neoliberalism in urban areas.

Harvey investigates the role of municipal governments in driving the shift towards neoliberalism, arguing that intra-locality competition has prompted city governments to encourage investment and development in the urban space (Harvey 1989). He asserts that public-private partnerships, which are central to urban entrepreneurship, are unequal partnerships in which the public sector bears most of the risks while the private sector reaps most of the rewards. Harvey advocates for a critical examination of successful PPP projects, contending that their benefits are limited to the ultra-local level and that they divert attention from larger social issues, leading to disparities within a "dual city of inner-city regeneration and a surrounding sea of impoverishment" (Harvey, 1989, p. 16).

Tel Aviv exemplifies the rise of the managerial city, which prioritizes private development. By tracing four major projects from 1965 to 1988, Margalit documents the emergence of the "Planning Deal" in the city, in which public concessions such as building on public land and extended building rights, are given in exchange for developing projects in lower-evaluated areas (מרגלית 2013). Margalit argues that such deals represent a devaluation of public interest and create a situation where municipalities depend on privatization for creating and maintaining urban public infrastructure (Margalit 2009).

Tsuberi and Alterman map the continuation of this practice in Tel Aviv from the 1980s, reviewing the rise of public duties in deals such as the appropriation of land for public use, financing and constructing public amenities, or historical buildings conservation. While some municipalities view these deals as potentially corrupt (צוברי ו אלתרמן 2008, 38), they have become standardized by General Zoning Plans, such as TA/5000 in Tel Aviv (עיריית תל אביב, מחלקת הנדסה 2014). Recently, there has been a rise in deals that incorporate "Built Floor Space" for public uses within residential, commercial, or mixed-use projects, which Mualem et al. extensively reviewed in their research (מועלם, סלינג'ר ו נויהאוז פוירשטיין 2019).

Large Mixed-Use Urban Developments in the Neoliberal City

Large Urban Developments (LUDs) have become the preferred urban policy and typology over the last few decades (Swyngedouw, Moulaert and Rodriguez 2002, Gualini and Majoor 2007) (Eizenberg 2019). and can be both read as spatial interpretations of planning priorities and as expressions of larger socio-economic forces. LUDs are closely linked to the neoliberal logic of development and competitiveness and are often used as "growth machines" that change the image of the city and connect urban and global economies (del Cerro Santamaria, 2013, 2019). Under the new entrepreneurial paradigm, municipalities use LUDs as a tool for city development (Harvey 1989). LUDs can be used by municipalities to make unattractive tracts of land attractive to developers (Majerowitz and Allweil 2019) to establish and reposition themselves within the larger metropolitan hierarchy (Weinberg, Cohen and Rotem-Mindali 2019). Although considered a win-win situation for municipalities (del Cerro Santamaria 2019), LUDs represent a challenge for urban planning and the management of the city's spatial transformation as they often operate outside the conventional planning measures and bypass statutory regulations, becoming fields for "exceptionality" (Swyngedouw, Moulaert and Rodriguez 2002). Eizenberg argues that LUDs embody the "domination of neoliberal market forces over urban development", generating new socio-spatial urban relations and changing urban power dynamics, and must be confronted by the planning community (Eizenberg 2019).

Even though they have been studied extensively as financial and urban development tools, the architectural representation of Large Urban Developments in the neoliberal city, and how neoliberalism affects the formalistic and visual manifestations, have gotten little academic focus. Majerowitz and Allweil establish the importance of the architectural 'dress' – the design of the building's envelope – as a tool through which the building is simplified for easier consumption (Majerowitz and Allweil 2019) and Eizenberg et al mapped typologies of high-rise housing complexes and the open spaces they produce (Eizenberg, Sasson and Shilon 2019).

Alongside the solidification of LUDs as the leading typology, Mixed-use has become a common axiom in planning policies (Grant 2002), promising social and economic gains. This paradigm has been adopted and co-opted by the neoliberal wave: mixed-use zoning is an example of flexible zoning, a neo-liberal planning policy (Alfasi 2006, Sager 2011). In Israel, the planning code allows for mixed-use by assigning a "pajama" land use that allows for multiple uses in complexes and also in individual buildings, citing the post-modern planning paradigm that this will promote "urban vitality" (Mualem, Salinger and Max 2019).

Educational Architecture as a Marker for Shifting Cultural Values

As commonplace buildings that are experienced by all of the public, schools and public buildings are used as a tool for communicating and promoting societal ideals and values of the current period. A review of educational architectural history in Israel maps the historic change in the status and role of educational buildings in Israel and how the public's and government's values manifested in the architecture of the buildings.

Preceding the formation of Israel in 1948, educational buildings were pivotal in the establishment of the Jewish Settlement in Palestine and acted as a nucleus for Zionistic public life in both rural and urban communities. The first planned neighborhood of Tel Aviv, Ahuzat Bayit, revolved around HaGymnasia Herzliya school which was visible from every direction of the neighborhood (Figures 1-2). The Gymnasia building's grand classical architecture and strategic location at the end of the main street demonstrated the significance that the planners of Tel Aviv placed on culture and education as founding principles of the city (קליין 2011). In his plan for the city's expansion, Patrick Geddes encouraged centralizing public, educational, and cultural institutions, proposing the creation of a cultural "acropolis" and strategically locating future schools (גדס 1925).

The new government post-1948 viewed education as a fundamental civic right[ii] (גורדון 2013) and a tool for the unification of the immigrant society, resulting in a national project to construct numerous schools across the country, establishing the new nation as a modern state (Allweil 2017). Deployed across the country irrespective of location or context, values of equality and unity governed the simple and rational architecture of these schools, based on prototypes from the 1930s and 1940s (Figures 3-6). The focus was on practicality rather than design, with schools being treated as technical problems to be optimized. In parallel, during those years large cultural and higher-education institutions were constructed, projecting the state's values of humble strength through formal, monumental yet restrained designs (אפרת 2004). Planned in this period, the Hebrew University Giva'at Ram Campus created a strong sense of grandeur using a central main axis, while the architecture of the buildings was rhythmical, repetitive and humble, avoiding stylistic flourishes.

In the economically prosperous 1960s and 1970s, the budgets and programs for schools increased, reflecting the Ministry of Education's emphasis on science, arts, technology and engineering. The best Israeli architects of the time were employed to plan large regional and comprehensive schools such as Liyada High School (Jerusalem, 1960) and Tsemach High School (Ashdod, 1979-1980) by Povzner Architects and Lady Davis High School by Ram and Ada Carmi (Tel Aviv, 1965-1973)(Figures 7-8). The architecture of the school followed Brutalist, surpassing the materialistic use of exposed concrete, presenting deeper manifestations of brutalism as a social ethic, emphasizing educational humanism and technological innovation.

After the implementation of neoliberal economic policies in the 1980s, school-building responsibilities shifted from the Department of Education to local government. Extreme time and budget constraints pushed municipalities to outsource the process to developers and contractors using design-bid contracts and replicable prefabricated school models that could be used all over Israel (Figure 9). Until the early 2000s, hundreds of schools, kindergartens, and sports facilities were built through these privatization mechanisms.

In the last two decades, as available land becomes scarce and expensive, assuring the supply of educational institutions is seen as a barrier to the densification of city centers. Removed further from the central government, building schools is no longer a national project but a problem inhibiting private development, which needs to be "solved". A popular solution to this challenge is planning deals that stipulate developers must construct public institutions as public duties in exchange for increased building rights. These deals' popularity also relies on the options to allocate mixed-use land uses (pajamas) and to provide built floor space inside a mixed-use building instead of a land parcel as a public allotment (מועלם, סלינג'ר ו נויהאוז פוירשטיין 2019). This, along with the rise of the LUD as the leading urban typology (Eizenberg 2019), has created a new typology of urban public buildings, which are embedded into Mixed-Used LUDs. HaShuk HaSitona'i complex is considered the first attempt to entrust developers with planning and constructing entire public buildings in a mixed-use LUD.

Research Methodology

The study examined the architecture and experience of public buildings in large private mixed-use LUDs in city centers through a case study methodology, focusing on public spaces for education, culture, and sports. The projects are in Tel Aviv's central district, an area overgoing comprehensive development and densification, serving as an Israeli urban laboratory for mixing different uses, typologies, and connectivity. To gain a comprehensive understanding of the case studies' spatial qualities within the development and in the larger urban context, multiple methods of gathering and analyzing information were used, including reviewing documents and protocols, interviews, observations, and photography.

Relying on theories of space legibility and cognition (Lynch 1960, Fisher-Gewirtzman and Wagner 2003), the article claims that architectural signs and cues projected into the public sphere shape users' perception of the public building and influence the building's symbolic standing and status in the city. The interface between the building and the public space, the zones between the interior and exterior, such as entrances, facades, sidewalks, and yards, were the most pertinent to the research. These spaces are experienced not only by the specific users of the public institutions, but also by the general public, and therefore have a larger influence on the perceived status of public buildings.

The research reviewed over ten projects, the main ones among them are HaShuk HaSitona'i, Midtown Tel Aviv, Kanari-Di Vinci and BSR Sharona. HaShuk HaSitona'i (1999-2010) is a dense complex consisting of 4 residential 40-story towers, 10 low-rise ten-story apartment buildings, a public park, and educational facilities, all built upon a joint underground parking lot and commercial pedestal. The planning was completed in stages by Ya'ar Architects, Yashar Architects, Yaski Mor Sivan Architects, and Eliakim Architects. In one of the first comprehensive urban mixed-use plans in Israel, the zoning plan stipulated that in exchange for additional building rights, the developer had to plan and construct public buildings within the complex including an elementary school, kindergarten classes, and a sports center.

Located in the "Northern Business District" between the Ayalon Highway and Begin Road, the Midtwon Tel Aviv Complex includes two office towers, two residential towers, and 14 smaller buildings with commercial spaces that share an underground parking lot. Planned by Moshe Tzur Architects, the complex features municipal kindergartens and office space on the second floors of residential and office towers, respectively, and a municipal sports center in a semi-commercial low-rise building, built by the two developers as a public duty.

The Kanarit-Di Vinci (Yashar Architects, in construction) is a project including residential, office, commercial and public programs currently being built on land previously part of a military base. The complex is comprised of a U-shaped 10-story office building that follows three of the four site's sides, out of which grow two 45-story residential towers. The public duty the developer had to provide was 1,500 m^2 dedicated to public spaces in the project, planned to house a cultural art center in the first two floors of the project. BSR Sarona complex (Moshe Tzur Architects, in construction), is a residential and commercial project in the historic Sarona neighborhood in central Tel Aviv, comprised of three 50-story towers. The project includes a public duty of 1,200 square meters dedicated to a kindergarten and daycare center comprised of 10 classes overall. The center is planned in the four-story pedestal of one of the towers, along with commercial and office programs.

Spatial Disappearance of Public Buildings

The analysis of the architecture of the case studies finds that the public buildings of the new typology are being serially hidden rather than put on display. The disappearance can be seen in several architectural phenomena that repeated between the range of case studies; (1) Public spaces are being incorporated and camouflaged into larger building masses, rendering them indistinct from the other programs; (2) Public buildings are being expelled from the ground floor and hence from the street level experience in the city; (3) The outdoor spaces of public institutions are hidden on upper floors or inside the building mass;

Incorporation and Camouflage into Buildings Masses

The preeminent architectural articulation that arose from the review of the case studies is that public buildings that are built as part of LUDs are not just administratively part of the development, but are being architecturally contained by the private building mass. This happens either by tectonically intertwining the public spaces in a "Tetris-like" manner with the private programs or by camouflaging the public spaces using the building envelope, and sometimes both. Along with a higher tolerance to the mixing of private and public in the same building, an enabling circumstance to this architectural phenomenon is a heightened inclination and openness to build vertical public buildings (נוסבאום, גורדון ו רביב 2007). Several of the case studies showed that this intertwining and incorporation into a larger development comes at the expense of the distinct visual articulation of the public buildings, resulting in a receding of their presence in the city.

HaShuk HaSitonai presents a dense three-dimensional mix of private and public programs, in which some of the public spaces are fully incorporated into the prominent private masses – the shopping mall pedestal and the residential buildings. The HaHashmonaim Sports Center is buried in the center of the commercial pedestal and has no interface with the exterior. Two of its three floors are located underground adjacent to the parking lot of the complex, and the top floor is sandwiched between mall shops and an opaque side service road (Figures 14-16). It has no façade of its own or any visual presence towards the city. The kindergarten and daycare classes, located on an elevated park level, are "buried" in a continuous mass of 10-story residential buildings, sandwiched in plan between the lobbies of the residential buildings and a linear protruding skylight for the mall with no interface with the street. The kindergarten is also architecturally camouflaged into the residential buildings' facades, which continue down and become the facade of the classes as well (Figure 17). There is no visual distinction between the first floor and the ones above it, neither in materiality nor in the rhythm of the architectural elements, such as the vertical columns clad in white stone, the horizontal plastered beams, or the fenestration. Additionally, the same fence is used for the kindergarten and the private residential yards adjacent.

The Midtown Tel Aviv complex features a continuation and "refinement" of the aforementioned phenomenon by fully concealing public spaces within the commercial and office building mass by wrapping them in a generic curtain wall façade. The incorporation of municipal kindergartens with rooftop yards into three of the commercial masses displays no architectural differentiation, except for operable windows, as the rhythm and materiality of the glass remain consistent (Figure 18). Despite occupying prominent positions in three buildings and having extensive "façade real estate", the kindergartens are nearly invisible to outside observers. Likewise, the HaShalom Sports Center is indistinguishable from other low-rise pavilions in the complex[iii]. The center's four-story building is

situated on the southeast corner, its facade seamlessly blending with the other pavilions, with the only visual indicator of the center being a large sticker above its entrance (Figure 19).

The act of camouflaging public spaces is also apparent in the planning of future and under-construction projects. In the Di Vinci-Kanarit office complex (Yashar Architects), the planned public building, the Di Vinci Cultural Center for the Art, is located on the portions of the ground and first floors (marked in the elevations in Figure 20) and is concealed by the curtain wall façade of the 10-story pedestal office building. According to the permit records and the current stage of construction, the public spaces will be indiscernible from the outside or from the street (the entrance is from the interior plaza). As of writing this, the building is nearing its opening, and to let the public know that a new cultural institution is being constructed, a large sign was hung on three floors of the office building. This sign was hung on the façade of the project facing the main street (Kaplan St.), even though the public building is located on the interior side of the project, adjacent to a neighboring building on Di Vinci Street.

Exclusion From the Street Experience

Reviewing the interface of the public buildings with the ground floor and the street, both in architectural documentation and through site observations, the study has found that public spaces are receding from the streetscape experience – their footprint on the ground is shrinking, their entrances are secondary, and they are often masked as commercial storefronts.

As public spaces are further integrated with private, commercial programs, the competition for floor space on the ground floor becomes fierce. The research shows that commercial spaces are prioritized over public spaces to maximize foot traffic for stores, and the public spaces are pushed out of the ground floor to the second and \ or third floors. The public buildings are allocated some space on the ground floor, to create a separate entrance lobby[iv], but these required spaces are often minimal and peripherally located compared to the commercial spaces.

At BSR Sarona complex, the access to the kindergarten and daycare center is from a small entrance on the ground floor, using two sets of elevators, as can be seen in a circulation diagram from the Architectural Design Plan (Figure 21). The Givo'n Elementary School at HaShuk HaSitona'a complex appears in section (Figure 14) to be standing on a thin base that is devoid of program. The five-story school concentrates most of its programs on the top three floors, and the ground floor includes only a small street entrance[v] with an elevator and access to stairs. The entrance, which constitutes the school's only connection to the street, is directly adjacent to a service road and utility niches and can be easily missed due to large bearing walls that encompass it (Figures 23-24).

Similar to the Givo'n School, HaShalom Sports Center's footprint on the ground floor at Midtown Tel Aviv is very small (approximately 100 m^2) and contains only the entrance; the remainder of the floor

is dedicated to stores (Figure 24). The entrance to the sports center faces the back side of the project, while the adjacent commercial spaces face the central pedestrian plaza. In the same project, the kindergarten classes have also been removed from the ground floor and are located on the third floor. Unlike the sports center, the kindergarten's entrance, shared with commercial spaces, does face the interior of the complex and the "public square". However, the entrance is tucked away between two "masses" of commercial spaces and is through a sunken, unpleasantly proportioned access space (4X10 meters and very tall), surrounded by opaque walls without any doors or windows into the nearby commercial spaces (Figure 25). The depth and the opaqueness create a feeling of a hidden, back entrance, that does not attract people to come to it, especially in comparison to the commercial spaces that surround the public plaza, which feature long translucent facades and entrances directly adjacent to the public seating area in the plaza.

As demonstrated in the previous example, there is a hierarchical difference between the entrances to the commercial and public spaces that is articulated through architectural elements: their dimensions, their materiality and their position in the public street space. The compilation of these elements is a signal to the users which is the "important" space.

This is especially apparent at the entrances to the mall, school and kindergartens in HaShuk HaSitona'i complex from the surrounding streets. The entrances to the mall are through prominent 9-meter-tall, 30-meter-long, curved glass walls in large open plazas, along which there are large, stylized canopies projecting into the plazas. Above the entrance doors themselves, there is another glass sun/rain awning and a 2-meter-tall sign for the mall. The sign, even though it is large, doesn't stand out and is almost unnecessary as there are so many architectural elements marking the entrance. In comparison, the entrances to the public buildings, which serve as the accessible elevators that lead directly to the school and kindergartens, are to the side of the entrance area and are sunken into a small opening in the glass façade. The entrance includes an elevator with a couple of small signs that inform the users that the elevator leads to the park level, where the kindergartens and daycare classes are located (Figure 26). In the absence of a clear, front-of-stage entrance and a direct connection to the street, the architects, developers, and operators of the public spaces must add another layer of explicit signage. The use and reliance on signage raise the questions of which programs need signs and which are apparent enough in the public space by themselves and their physical and spatial attributes.

When the entrance to the public building isn't hidden or tucked away, it is often masked as a commercial storefront, embedded into the endless commercial facades of planned or "spontaneous malls" (Crawford 1992, 9)[vi]. This was observed at HaHashmonai'im Sports Center, accessible through the TLV Fashion Mall[vii], HaShalom Sports Center at Midtown Tel Aviv and Florentin Community Center at Moan complex. The entrances obey the rhythm of the chain of stores, are made of the same materials as

storefronts – aluminum doors with glass panels - and have signage above the door designating the name of the 'store'. Aside from the text on the sign, they cannot be differentiated from a commercial space. They don't feature any specific architectural or visual cues that would signify that they are public, such as indoor-outdoor connections or large municipal logos (Figures 27-28)

Hidden Outdoor Spaces

Public buildings, and especially educational buildings, are historically planned with a dedicated yard or outdoor space. Additionally to the regulations of the Ministry of Education, which specify minimal areas of yards for schools and kindergartens, this is a requirement that arises from municipalities as in the Israeli climate, outdoor spaces can act as a direct extension of indoor spaces most months of the year.

In public buildings that are planned as part of a mixed-use LUD, designing an open, conventional yard on the ground level drastically reduces the available footprint for private development and following, the profitability of the project. These circumstances have pushed architects to implement nontraditional solutions to provide the required outdoor space, solutions that intentionally or not further remove public buildings from the public street experience. In the case studies two main strategies were identified: (1) utilizing rooftops of low-rise/pedestal portions of the project and (2) splicing and spreading the outdoor space over balconies on several floors, integrated into the building mass.

Almost all of the low-rise rooftops in the projects studied house yards and outdoor spaces for public buildings. In HaShuk HaSitona'i, the roof of the mall and sports center is used as the kindergarten's and school's yards, located on the "park" level 9 meters above street level. Giv'on School's yard spans 2300 m^2 and snakes around between the head house of the sports center's atrium and the underground parking's emergency smoke-release chimneys. The kindergartens' yards are located along the residential buildings, spread thinly between the building mass and the mall's skylights. At Midtown, the kindergarten's yards are located on the rooftops of two two-story commercial buildings and are connected to each other and to the classes, which are in a third building on the third floor, with bridges. The yards are approximately 220 m^2 each, and their dimensions and proportions are quite spacious and standard for such outdoor spaces, sized 15 m by 15 m / 13.7m by 16.7 m (Figures 29-31).

In other projects, the required outdoor spaces are divided into smaller segments and dispersed over a few floors, locating them on balconies or inside the contour of the building floor plan, using double-height spaces[viii]. The most prominent example of this is BSR Sharona, where each floor of the four-story kindergarten center has two or three classrooms located adjacent to the core of the building while the yards occupy the space between the classrooms and the building's contour (Figure 32). The yards are staggered between the floors inside a rectangular box in a combination of single and double-height spaces

(Figures 33,34). The entire mass of classes and yards is enclosed in a curtain wall façade that blends in with the façade of the commercial / office pedestals in the neighboring residential towers (Figure 35).

Internally, these new unconventional yards present both challenges and opportunities to users of the public buildings. Even though care was given in the planning to provide enough planting depth to allow for a planted area in each of the yards, these spaces will never be able to compete with conventional yards when it comes to tree growth and natural shade. Additionally, the yards are highly constrained by the building geometry: the effort to fit the outdoor spaces within the building plan or on the pedestal roof means that the architecture of the yards is determined more by the geometry of the overall building than by the programmatic needs of the schoolyards.

However, the yards' location on the higher floors provides an overlook to the complex, the neighborhood, and the city that can expose children to urban activity and create a new connection to the city. The staff of the Midtown kindergarten says that they use watching the urban scenery as an activity and distraction for the children. The elevated yards also allow for a new kind of privacy and security, attributes that have become a de-facto requirement of educational yards. The children can view the outdoors without the public being able to look into the yard, eliminating the need to close off the yards from the street with an opaque material, as happens so often in traditional class yards.

While allowing for a new way for children to interact with the city, both of these strategies inherently change the relationship of the exterior space to the urban experience, and thus between the public building and the city. The yards are removed from the street level and are rendered invisible to residents and passersby. Yards located on rooftops, even on the roof of a single commercial story usually 6-7 meters high, are too high up notice from the sidewalk. Smaller split yards incorporated into balconies, in addition to being located on higher floors, are also hidden architecturally by façade elements furthering the visual disappearance of the public spaces from the building façade.

After reviewing more case studies, another trend emerged regarding outdoor spaces in public buildings. In some cases, public institutions entirely forgo an outdoor space, neither on the ground floor, rooftop, balconies or otherwise, as evidenced by the HaShalom Sports Center in Midtown and the Di Vinci-Kanarit Complex art center. The public space is accessed from an open public space (usually privately owned) that is not intended to be used or appropriated by the public institution. This is apparent in the lack of interior programs on the ground floor, aside from the entrance and access to vertical circulation, as well as the landscape design, which does not include areas for the public institution (Figure 36).

Tel Aviv has a rich tradition of meaningful outdoor spaces attached to cultural and civic institutions, such as HaBima Square and Gan Yaakov, the Cinematheque Plaza, the plaza adjacent to Tel Aviv Museum and Beit Ariela Library, the balcony attached to City Hall and many more. These spaces are

venues for events, public gatherings and demonstrations, and connect the institutions to the city at the physical, cultural, civic, and political levels, becoming integral parts of citizens' lives. New public buildings, planned without outdoor spaces and minimal ground floor presence are starting at a deficit and are less likely to become significant public landmarks in the city.

Conclusions

The rise of the planning deal and public duties has promoted a new typology of educational and cultural institutions, radically different from the traditional schools and sports facilities surveyed in the historic progression, of spaces that are embedded into mixed-use large urban developments. These new public buildings are intricately woven into private spaces, such as housing, offices, and especially commercial spaces. This typology presents an opportunity for a new kind of educational experience for children, as was seen in Midtown. On the other hand, the findings show this typology tends to render the public building invisible, diminishing their presence in the public sphere and the experience of the city. The public buildings are being buried or camouflaged into the general building mass, their presence on the ground floor is diminishing, their outdoor spaces are out of sight and they have to rely on signage to promote their existence.

Alongside the physical articulation of the new typology, it changes the way that the general public experiences and perceives these new educational spaces. The findings show that the visual and spatial cues and signs the case studies project into the public sphere, which shape the users' understanding of the space, are constructing an image in which the cultural status of the public spaces is lower than that of the commercial spaces.

When Public-Private deals are addressed, the first assumption is that public buildings are deprived because of financial reasons – the developer looked to save money. The size and cost of finishes are contractually determined in the early stages of planning, so those are also not determining factors in the architectural product. With regards to LUDs, the architectural unity of mixed-use developments may initially be attributed to land austerity or a cost-saving strategy by private developers that prefer to build larger generic masses. However, this assumption should be critically examined in light of the analysis of studied projects. Moshe Tzur, the architect of Midtown, conceived the complex as a group of separate buildings that mimic a city center (מאירוביץ 2020), making it easy to differentiate public space as a distinct building or locate it prominently without compromising the overall concept or costing more money. Similarly, the public building in Di Vinci complex could have been a separate structure without altering the location of other programs.

In the context of the contemporary discourse that posits that the physical space of the city embodies the prevalent social and cultural values of the time (Lefebvre 1991), a larger understanding of the status of public spaces can be deducted from the recurring decision to hide the public buildings and lower their architectural status in complexes. Cost-benefit motives put aside, it can be inferred that the exclusion of public buildings from the surface of the façade and the experience of the street is communication that these spaces are less important in the city compared to the growth-driving commercial spaces. It expresses the diminishment of the "value" of public space in the relationship between private and public spaces.

The findings of the research point to a change in the attitude and policy regarding new educational buildings planned in Israel relative to their historic social and architectural place in Israeli cities. Once considered as central points of the city and neighborhood, they are now seen as a problem that needs to be solved to allow for urban development, partially by outsourcing it to private developments. The article presents a more nuanced understanding of the effects of privatization on the public sphere: while these newly built public spaces meet all of the required planning standards, therefore not denying the public of necessary services, their public nature and status are declining, as commercial spaces replace public buildings as the new urban landmarks.

Bibliography

Alfasi, Nurit. 2006. "Planning policy? Between long-term planning and zoning amendments in the Israeli planning system." Environment and Planning 553-568.

Allweil, Yael. 2017. Homeland : Zionism as Housing Regime, 1860–2011. London: Routledge.

Ben-Asher Gitler, Inbal. 2022. "What's in the Mix? Mixed-Use Architecture in the Post-World War II Years and Beyond." Urban Planning 280-295.

Brenner, Neil, and Nik Theodore. 2002. "Cities and the Geographies of "Actually Existing Neoliberalism"." Antipode 349-279.

Crawford, Margaret. 1992. "The World in a Shopping Mall." In Variations on a Theme Park: The New American City and the End of Public Space, by Michael Sorkin, 3-30. New York: Hill and Wang.

del Cerro Santamaria, Gerardo. 2013. Urban Megaprojects : A Worldwide View. New York: Emrald.

del Cerro Santamaria, Gerardo. 2019. "Megaprojects, Development and Competitiveness: Building the Infrastructure for Globalization and Neoliberalism." Athens Journal of Social Sciences 263-290.

Eizenberg, Efrat, Orly Sasson, and Mor Shilon. 2019. "Urban Morphology and Qualitative Topology: Open Green Spaces in High-Rise Residential Developments." Urban Planning 73-85.

Eizenberg, Efrat. 2019. "Large-Scale Urban Developments and the Future of Cities: Possible Checks and Balances." Urban Planning 1-3.

Fisher-Gewirtzman, Dafna, and Israel A Wagner. 2003. "Spatial openness as a practical metric for evaluating built-up environments." Environment and Planning B: Planning and Design 37-49.

Foord, Jo. 2010. "Mixed-Use Trade-Offs: How to Live and Work in a ‘Compact City’ Neighbourhood." Built Environment 47-62.
Grant, Jill. 2002. "Mixed Use in Theory and Practice: Canadian Experience with Implementing a Planning Priciple." Journal of the Americal Planning Association 71-84.
Gualini, Enrico, and Stan Majoor. 2007. "Innovative Practices in Large Urban Development Projects: Conflicting Frames in the Quest for “New Urbanity”." Planning Theory & Practice 297-318.
Harvey, David. 1989. "From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism ." Geografiska Annaler 3-17.
Harvey, David. 2007. "Neoliberalism and the City." Studies in Social Justice 2-13.
Jessop, Bob. 2002. "Liberalism, Neoliberalism, and Urban Governance: A State-Theoretical Perspective." Antipod 452-472.
Keil, Roger. 2016. "world, Urban Neoliberalism: Rolling with the changes in a globalizing." In Handbook of Neoliberalism, by Simon Springer, Kean Birch and Julie MacLeavy, 385-396. New York: Routledge.
Lau, S.S.Y., R. Giridharan, and S. Ganesan. 2005. "Multiple and intensive land use: case studies in Hong Kong." Habitat International 527-546.
Lefebvre, Henry. 1991. The Production of Space. Oxford: Wiley-Blackwell.
Lynch, Kevin. 1960. The Image of the City. Cambridge, MA: MIT Press.
Majerowitz, Marryan, and Yael Allweil. 2019. "Housing in the Neoliberal City: Large Urban Developments and the Role of Architecture." Urban Planning 43-61.
Margalit, Talia. 2009. "Public Assets vs. Public Interest: Fifty Years of High-rise Building in Tel Aviv-Jaffa." Geography Research Forum 48-82.
Mualem, Nir, Eyal Salinger, and David Max. 2019. "Increasing the urban mix through vertical allocations: Public floorspace in mixed use development." Cities 131-141.
Sager, Tore. 2011. "Neo-liberal urban planning policies: A literature survey 1990–2010." Progress in Planning 147-199.
Siemiatycki, Matti. 2015. "Mixing Public and Private Uses in the Same Building: Opportunities and Barriers." Journal of Urban Design 230-250.
Swyngedouw, Erik, Frank Moulaert, and Arantxa Rodriguez. 2002. "Neoliberal Urbanization in Europe: Large-Scale Urban Development Projects and the New Urban City." Antipode 542-577.
Weinberg, Eran, Nir Cohen, and Orit Rotem-Mindali. 2019. "LUD as an Instrument for (Sub)Metropolitanization: The 1000-District in Rishon-Lezion, Israel as a Case Study." Urban Planning 18-30.
אפרת, צבי. 2004. הפרוייקט הישראלי: בניה ואדריכלות, 1948<1973. תל אביב: מוזיאון תל אביב לאומנות.
גדס, פטריק. 1925. “דו"ח תכנון העיר יפו תל-אביב.” תל אביב.
גורדון, רעות. 2013. חינוך, אדריכלות, חברה - ההיסטוריה של בניית בתי ספר בישראל. תל אביב: אוניברסיטת תל אביב, בית הספר לחינוך.
לוין, דפנה. 2019. שברור התכנון כמבנה ההזדמנויות של המעמד הבינוני-נמוך: מבט ביקורתי על תהליכי התחדשות עירונית (חיבור תמציתי לקראת בחינת המועמדות לתואר שלישי). חיפה: טכניון, הפקולטה לאדריכלות ובינוי ערים.
מאירוביץ, מריאן. 2020. תפקיד האדריכלות במתחמי מגורים להמונים בעיר הניאו-ליברלית - ממגורים משוכפלים למגורים מתוכננים (חיבור על המחקר לשם מילוי חלקי של הדרישות לקבלת תואר מגיסטר למדעים בארכיטקטורה). חיפה: הטכניון מכון טכנולוגי לישראל.

מועלם, ניר, איל סלינג'ר, ו גל נויהאוז פוירשטיין. 2019. הקצאות ורטיקליות : הקצאת שטחי רצפות לצרכי ציבור במבנים מערבי שימושים - היבטים תכנוניים, משפטיים ושמאיים. חיפה: המרכז לחקר העיר והאזור הפקולטה לארכיטקטורה ובינוי ערים - הטכניון.

מצא, ליהי. 2019. תרבות התכנון בישראל בעידן הנאו-ליברלי: התחדשות אזורי תעשייה עירוניים כמקרה בוחן (חיבור על מחקר לשם מילוי חלקי של הדרישות לקבלת התואר מגיסטר). חיפה: טכניון, המחלקה לאדריכלות ובינוי ערים.

מרגלית, טליה. 2013. "עסקה תכנונית." ב- המתכננים: השיח התכנוני בישראל לאן?, מאת טלי חתוכה ו טובי פנסטר, 179- 196. תל אביב: רסלינג.

מרגלית, טליה. 2014. "תכנון ובנייה בערי ישראל." ב- השלטון המקומי- בין המדינה, הקהילה וכלכלת השוק, מאת יגיל לוי ו אתי שריג, 533-609. רעננה: האוניברסיטה הפתוחה.

נוסבאום, גבריאלה, רעות גורדון, ו עמירם רביב. 2007. בתי ספר אנכיים. ירושלים: משרד החינוך, המינהל לפיתוח מערכת החינוך.

עיריית תל אביב, מחלקת הנדסה. 2014. "תא/5000 הוראות התוכנית." תל אביב.

צוברי, אביבה, ו רחל אלתרמן. 2008. בין מטרות ציבוריות למטלות פרטיות: הסכמים בין יזמים לרשויות תכנון - הדוגמא של תל אביב. חיפה: המרכז לחקר העיר והאזור.

צפדיה, ארז, ו חיים יעקובי. 2015. "צמתים בהפרטת המרחב 1948-2008." ב- מדיניות ההפרטה בישראל: אחריות המדינה והגבולות בין הציבורי לפרטי, מאת יצחק גל נור, אמיר פז-פוקס ו נעמי ציון. ירושלים: מכון ון ליר.

קליין, יוסי. 2011. האמריקניזציה של תל אביב. ירושלים: כרמל.

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[i] From an interview with Larisa Koifman, Tel Aviv Planning Department, 13.10.2021

[ii] Also reflected in the Ministry of Education consolidating all of the educational systems under one official system in 1953's State Education Law (חוק חינוך ממלכתי).

[iii] From the vantage point of a car driving down the Ayalon Highway, the Sport Center is discernable due to its smaller height and the material articulation on the southern and eastern façades, clad in white aluminum panels in a shape that recalls the section of a viewing gallery. These façades are not visibly present from the interior of the complex. However, recently, both these facades have been co-opted for a commercial use – they have been transformed into a 15-meter-tall LED billboard for commercials.

[iv] This is usually a requirement written into the land use plans or the Architectual Design Plans and cannot be circumvented.

[v] Originally, the school has two planned entrances, one from the street level and one from the park level. As of today, the entrance from HaHashmona'im St. is not operational. According to the school's principle, this is because each entrance must have a guard at it, and the Ministry of Education only funds one guard.

[vi] At many of the projects, the ground floor is dominated by commercial uses, not just in terms of the percentage of the area dedicated to this use, but also the percentage of the street frontage (in length). Some of the projects, such as Midtown Tel Aviv and HaShuk HaSitona'ai create extra "streets" to create even longer commercial facades.

[vii] User questionnaires conducted showed that many users did not know of the existence of the sports center, and many who knew were surprised to find out that the sports center is a municipal one and not a private one. To deal with this issue, there is a large sign on HaHashmona'im St., on a structural wall that encloses the (defunct) entrance to Givon School, advertising the school and the sports center, along with the municipal logo.

[viii] Kindergartens especially lend themselves to this practice because each classroom can operate independently and has its own dedicated outdoor space.

Abstract by Liat Eisen

Challenging the Role of Incentives for Urban Development:

The Case of Privately Owned Public Space in NYC and Tel Aviv

The use of incentives by the public sector has become a catalyst for urban development in neoliberal cities in the past three decades. Planning institutions apply incentive-based development policies and other regulatory tools to promote a range of municipal initiatives, justifying it as economically efficient method and claiming it is in the public benefit. Although developers have responded positively to municipal incentives, resulting in increased private investment in public assets, questions remain about their impact on the public good.

One such manifestation of these incentives is privately owned public space, which has sparked a broad debate among sociologists, political scientists, economists and policymakers about the notion and consequences of commodification of urban public space. To address these concerns, this study draws on existing literature and empirical data to examine the process that New York City has undergone since the launch of 1961 incentive zoning to today, and how urban design that shaped public policy can be applied to the problems arising from proliferation of privately owned public spaces in Tel Aviv.

This study questions the use of such incentives as a tool to align private interests with public interests and aims to understand the consequences of privately owned public spaces on the public's right in democratic spaces influenced by capitalism and private investment. Through this analysis, the study sheds light on the implications of these incentives and their effects on urban development, social justice, and equitable access to public space.

Breakout 1B:
The Global Infrastructure Crisis

Moderator: Dr. Lawrence Barth

May 9, 2023 | 9:30 AM

Infrastructures of Care	**Eran Assouline, Shir Yaakov**
City-River revitalization, Ga'aton, Nahariya	**Liat Arbel**
The Third Nature - An Epitaph of the Decommissioned Dams	**Jin Gao**
A River Runs Through It: From Athens to Beirut	**Io Carydi, Andreas Panagiotou**
Sustainability in Tira from a 95cm perspective **(Lecture)**	**Yasmin Yotam**

Urbanism in the Expanded Field International Conference on Urbanism and Urbanization
May 8-10, 2023, Bezalel Academy of Art and Design

Infrastructures of Care

The project examines the cultural and ecological effects of policies, infrastructure, and displacement on the Bedouin community of Gan Hekal in Ramla, Israel. This community, once known as Al-Rabat, was displaced from the Negev region in 1957 as part of the government's efforts to reorganize the country (image 4,5). Since then, the community has been neglected and faces numerous urban disturbances that negatively impact their quality of life, including air pollution from a nearby cement plant, contaminated sewerage, soil pollution, and noise from a nearby highway (image 2).

Gan Hekal stands out in the urban landscape as a form of residential island in a sea of industries, and residents have adapted to their environment by creating makeshift solutions, such as temporary structures and barriers, to improve their quality of life. The project aims to improve the community's living conditions by combining local knowledge with architectural expertise to create practical and affordable interventions. We decided to engage with this community; With a few visits, interviews, and data collection, we found that as a result to these boundaries, residents use the resources available to them to engage in transient and ephemeral actions; The residents have created makeshift structures, including a wooden raft square (image 9), for use in special events. The residents have created makeshift structures, including a wooden raft square that provide a strategy control point (image 9). They use temporary tents for specials events (image 10), employing acid to clean solar panels dirty from cement and using garbage barriers separate the neighborhood from the polluted stream (image 7). We realized that Gan Hakal's independent operations had an architectural quality, detached from the now neo-liberal top-down constraints, and decided to operate in a combined effort; coupling our expertise and their knowledge to create a pocket of sustained resistance that will help the residents in their daily lives.

The planning offers small-scale, practical and affordable interventions that not only neutralize the disturbances, but turns them into resources. Thus, maintaining the identity and power of the neighborhood as an autonomous area (image 16). We aim to clean the stream and wastewater (images 18-21), repair the stream with clean water and create a garbage dune for residents' waste (image 15). A light-weight observation tower and a wooden raft-built pier will provide views over the surrounding area (images 23-26). A module for the gathering plaza can be adapted to meet residents' needs (images 12-14), and a plant-growing component can block out noise from the main road (image 17). Combined into one ecological system they perform as an architectural bottom-up model that uses local knowledge and architectural expertise to create an independent better everyday life for a community trying to live in the shadow of the neo-liberal life.

Eran Assouline & Shir Yaakov
Advisors: Arch Sagit Yakutiel & Arch Lealla Solomon

City-River revitalization, Ga'aton

Full description

We are facing **climate change** in every city across Israel. One of the main phenomena caused by these changes is an increase in extreme rain events. In addition, the increase in **population growth** creates conflicts between a growing demand for essential natural spaces and the need for construction and development. The COVID-19 virus has proven that nearby quality urban nature spaces are essential for the physical and mental health of residents. These challenges require creative, innovative, and multidisciplinary thinking, and multisectoral partnerships adapted to our current challenges.

The Ga'aton stream crosses the city of Nahariya, through the Central business district (Ga'aton boulevard) and all the way to the Mediterranean Sea.

Back in the 1950s, the Ga'aton flowed naturally through the heart of Nahariya. The stream was alive and so was the urban life around it. Nahariya was an attractive local tourism site, nicknamed "The Bicycle City".

As the city grew, the stream underwent an aggressive domestication process. The stream water was channeled underground through a concrete tunnel. Moreover, most of the water was diverted for agriculture, so most of the year the tunnel was dry, and the remaining water was contaminated by debris along the channel.

In recent times, growing risks associated with climate change have led to extreme rain events followed by floods. The winter of 2020 will be remembered as the deadliest, a resident of Nahariya drowned near the entry point of the stream to the underground pipe (Sprinzak Canal).

As a result, the Ministry of Housing allocated a budget for architectural competition along the Ga'aton Blvd.

Haira, an urban sustainability program operating in Nahariya since 2020, together with Agma, a watershed and river center, saw an opportunity for a multisectoral partnership to promote a nature-based solution. By taking a holistic approach – considering the stream as a whole – this solution will be able to elevate the importance of the stream and enable a sustainable urban renewal in Nahariya, outside statutory municipal boundaries.

Together, we initiated the **'City River Revitalization'** Interdisciplinary Competition for Urban Planning in Nahariya. This competition is the first of its kind in Israel. The competition is a result of a multi-sectoral partnership including the Nahariya municipality, the Ministry of Housing, the Ministry of Agriculture, the Western Galilee Drainage Authority, the Beracha Foundation, and the Yad Hanadiv Foundation, Agma and Haira, as well as trade unions – the association of architects and the association of landscape architects. A million NIS was raised for the competition.

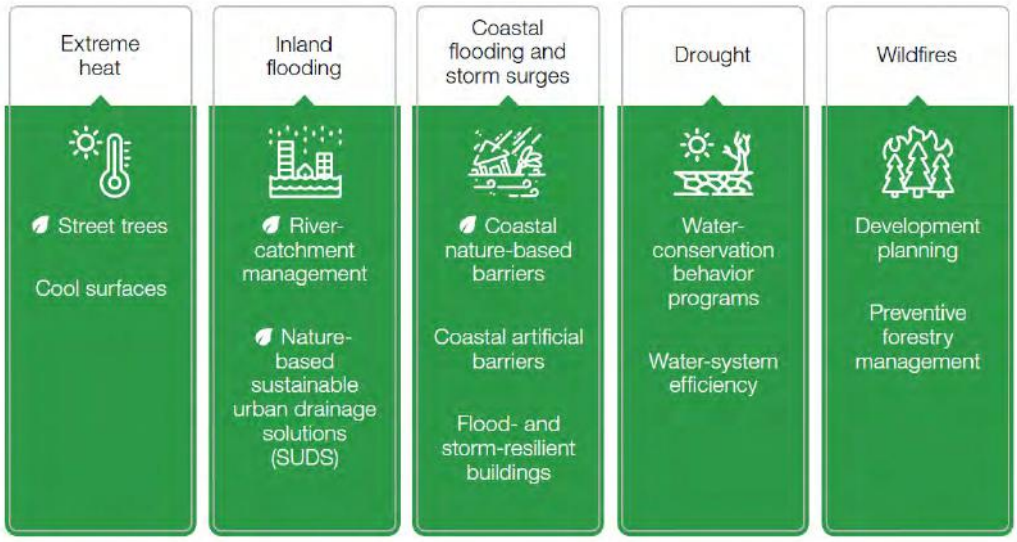
Together, all the partners successfully created a common language and broad consensus to create the following competition guidelines:

- A focus on Nature-based solutions.

A holistic view – from upstream to downstream, outside statutory municipal boundaries. The competition represents a holistic view of the stream, which starts near Ma'alot Tarshiha and flows for 30 km, winding along the countryside and through the city until finally reaching the sea.

- Training processes as the basis for planning.
- Multidisciplinary teams that include at least one of the following professionals: an architect, a landscape architect, and a drainage consultant/hydrologist.
- A first-class multidisciplinary judging panel.

The guidelines were based on a strategic approach to climate adaptation in cities published in July 2021 by C40 and McKinsey sustainability:



The competition's partners believe that through integrated planning, the stream can be channeled to flow safely through the heart of the city and be a significant part of

its ongoing urban renewal. The restored stream could serve as a recreational area as well as a natural, healthy public space. Restoring the Ga'aton stream will strengthen urban resilience, improving the stream and its surroundings' ecological while minimizing flooding risks.

We assembled a first-class multidisciplinary committee of judges for a broad perspective.

We took the following actions to make sure our vision is easily accessible and widely understood:

1. All participating teams and the judging panel went on a full tour along the Ga'aton stream, to familiarize themselves with the stream as a whole – from upstream to the shore.
2. We built a designated website with podcasts and background materials for the competitors.
3. We organized an online seminar to publicize the partners' vision.

The competition had extensive PR in the local and national media, both television and press.

About five hundred professionals participated in or listened to the podcasts and webinars and came to the tours.

We received a total of nineteen submissions. Five of them advanced to the finals. We ranked them on a scale of 1-3 and awarded three winners.

To include the residents of Nahariya in the process, we arranged a VR event for the public displaying the winning proposal so they can visualize the future. In addition, an exhibition displaying all the proposals was set up in the local museum.

The head of the committee explains:

> "The winning offer has a holistic and sustainable approach of city>community>water>nature and presents a methodology based on a series of interventions in every aspect. Together, this forms a well-balanced program and manifests the goals of the competition at the highest level. The landscape development, along with the ecological and hydrological aspects, creates a changing space for the stream according to the seasons and enables fluctuation between high tide and low tide. Along the stream, there are communal activities that turn the stream into the beating heart of the city and its residents."

The winning team started a planning process for the city center section.

The holistic approach and nature-based solutions reflected in the offers will inspire both the residents of Nahariya and the Israeli public regarding the overall social value of sustainable public spaces, as well as their importance for tackling climate change in cities.

The official video: https://www.youtube.com/watch?v=82WtgGOqHYg

The Third Nature - An Epitaph of the Disappearing Dams

Jin Gao

Abstract:
Hydrology, the key element throughout the long journey of human civilization, has evolved in multiple forms. The dam is one of the most significant elements. Once hailed as the key element of clean energy, dams have been questioned today. A reconsideration of their legitimacy and their future has become one of the key debates of the world infrastructure system. While the establishment of larger and larger-scale dams and reservoirs still takes place, decommissioning old and small ones has become a rational choice for many countries' decision-makers.

This research focuses on the process of "decommissioning," with a special concern on mainland China, the largest country in terms of installed hydropower capacity and generation capacity since 2014. Here, "decommissioning" is defined as a government-led, planned process of removing the physical existence of such infrastructure or disabling or limiting its functionality, especially for obsolete or small-sized dams (installed capacity of fewer than 50,000 kilowatts).

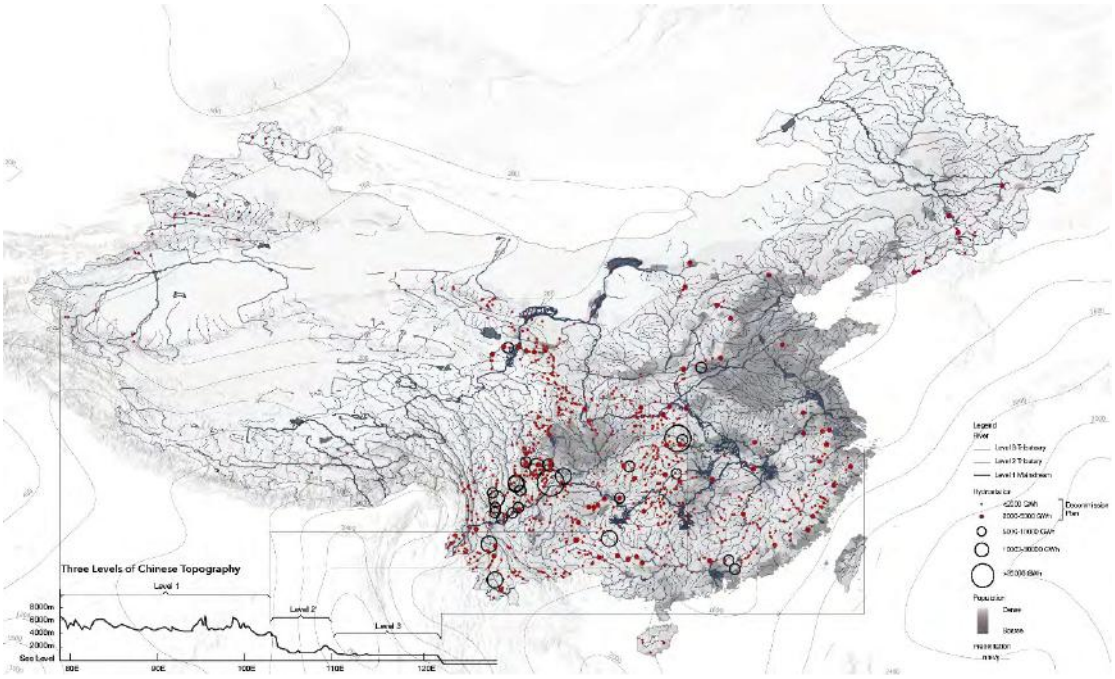
While respecting the dams' historical tributes, the research stress on their contemporary concerns with climate change and ecological impacts in a comparative approach, using mapping, diagramming, and analysis of historical data and key events. The article categorized the urbanism process by the role of human engagement in alternating the natures: the virgin land as the 'first nature,' the constructed infrastructure as the 'second nature', and the regulated landscape resulting from dam decommission as the "third nature", to provide a theorized perspective of the urbanized landscape with infrastructural effects. Then, the research extends beyond the current picture with a proposed vision, showing a more diversified future with various typologies of the nation's dams' decommissioned life.

The research provides insight into understanding the evolving role of infrastructural removal and modification in the context of contemporary concerns around climate change and ecological impacts.

1. The Context of Modern Hydropower in China

Since Emperor Yu tames the flood (2000 BC) described by the legend, hydro projects have always been considered the major social achievement in China. After the formation of the People's Republic of China in 1949, the country moved fast in hydro construction to "catch up" with the developed countries, and the electricity demand grew fast. After "the reform and opening up" from 1978, industries flourished, making the need for electricity go one step further. Hydropower was propagandized widely as "clean and renewable" energy and became one of the best choices to feed this fast-growing country. Now, according to the Ministry of water resources, the Chinese reservoirs combine with an installed capacity of over 200 million kW hydropower, accounting for 22% of the national total. Till 2019, there were around 980,000 reservoirs, 90% were built around the 50s-70s and 95.2% were small-scale reservoirs.[1]

[1] Ministry of Water Resources of the People's Republic of China. SL/T 791-2019 Guidelines for Reservoir Demotion and Retirement Evaluation, 2019.



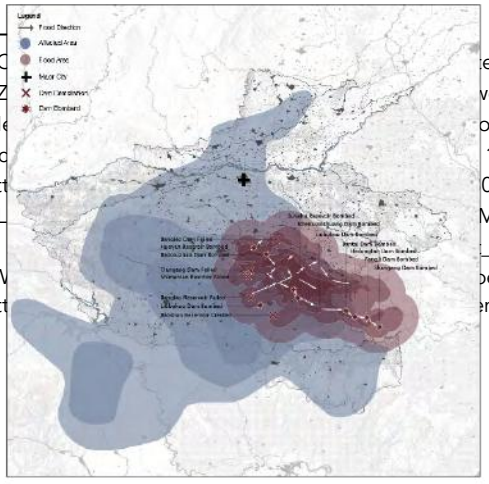
Chinese Dams
This drawing provides a comprehensive mapping of the location and size of dams, showing their relationship with the national hydro system, population, and precipitation. The sizes and patterns of points are based on their capacities.

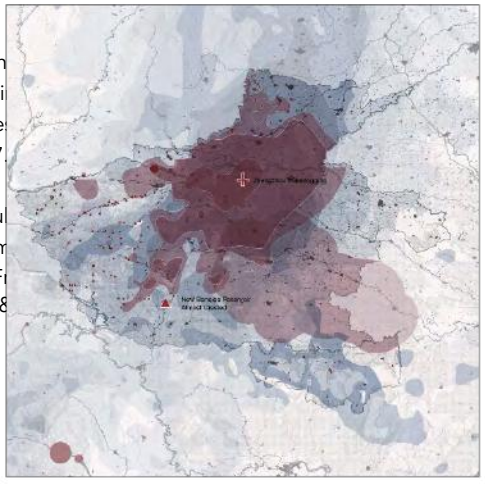
2. Dam of Damage?

What makes a once-good hydropower station no longer perfect?

Trigger 1: Climate Change

Climate change has led to increased uncertainty in Asia, with China experiencing a higher ground average temperature increase than the global rate.[2] The warming and drying climate and increased human water use have led to increased hydrological drought and more frequent extreme weather, such as concentrated precipitation and drying up.[3]Continuous heavy rainfall or drought is more likely to happen during strong El Nino years. Under such circumstances, extreme weather exceeded the design capacity, rendering it inoperable and causing urban waterlogging. For example, Zhengzhou, a city in the heart of North China Plain, suffered two severe waterlogging disasters in 46 years, even after dramatic development. In 1975, intense precipitation caused by typhoon Nina triggered 18 dams to fail successively. With limited communication methods in extreme weather, the government had to bomb most of them to save big cities, causing hundreds of buried villages. More than 26,000 people died without being alarmed.[4] In July 2021, a similar amount of participation caused the rebuilt dams to discharge the water to prevent failure, which is related to severe waterlogging. More than 300 people died, even with the latest communication technologies and highly developed infrastructures.[5] Both events show the vulnerability of dams in extreme weather.





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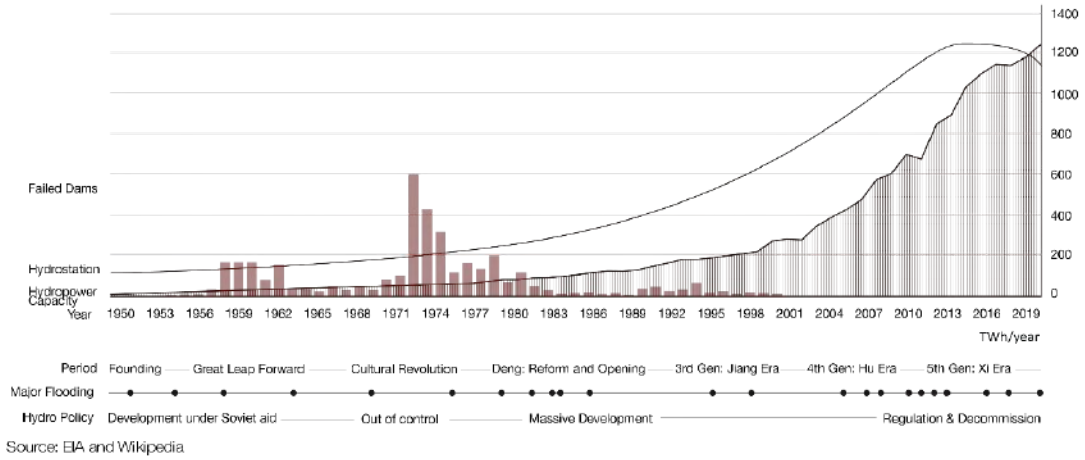
One Site, Two Floods
Left: mapping of "75·8" Banqiao Dam Failure, 1975/08/05- 08/30
Right: mapping of "21·7" Heavy Rainfall and Flood, 2021/07/21-07/31

Trigger 2: Infrastructure Boom

The first dam construction boom happened from the Great Leap Forward to the Cultural Revolution (the 1950s-1970s). Though many dams failed due to a lack of design experience or were deliberately decommissioned, more than 94,000 small-scale dams from that period remain today. The second wave is the 1980s economic boom by the Reform and Opening movement. The substantial increase in energy demand significantly contributed to the problem of overbuilt dams.

During the rapid increase of water conservancy facilities, many small-scale hydropower stations have not been officially registered and included in official statistics because of their small scale and remote geographical location**.** In addition, to obtain economic benefits, many private developers illegally developed small hydropower facilities widely distributed in Sichuan, Yunnan, Hubei, and other water-rich provinces. Currently, there are more than 45,000 small hydropower stations registered. While they played an essential role in solving the problem of rural power supply, it resulted in an increasingly severe problem of overexploitation of hydropower resources.



Dam Construction Statistics
This drawing provides detailed statistics of the Yellow River - one of the two major rivers in China and related to the site. The rapid building speed and the large amount of failing dams provide a supplement to the current problem of overbuilt dams.

Trigger 3: Technical limitations and aging

Although the construction of large-scale reservoirs has always been controversial domestically and abroad, the design and construction of large hydropower stations in China are relatively rational and under control. On the contrary, smaller-scale hydraulic facilities in the early days developed disorderly, and many of the constructions lacked the necessary environmental assessment and planning in the long term. They may bring ecological and environmental issues, such as ecosystem fragmentation, reservoir sedimentation, and coastal erosion.[6] In addition to changing the natural landscape, it may induce earthquakes, silt up silt, change water quality, block fish passages, and affect the ecology. The marginal benefits of building new dams are getting smaller and smaller.

Trigger 4: Economic Problems Caused by Regulatory Systems

[6] Wikipedia contributors, "Environmental impact of reservoirs," Wikipedia, The Free Encyclopedia, https://en.wikipedia.org/w/index.php?title=Environmental_impact_of_reservoirs&oldid=1048104211 (accessed April 16, 2023).

The national power grid company is the only buyer and seller of electricity generated by small hydropower. They regard small hydropower as "inferior electricity" and "dispensable, basically negligible," which affects the price of electricity and their right to speak. [7] Such a regulatory system leaves small hydropower plant owners at the margins of the electricity market and reduces maintenance.

3 Clear Waters and the Green Mountains: A great decommission plan for 40,000 Dams

The trend of demolishing dams and reconstructing nature is increasing and happening worldwide. America has removed around 1000 dams from 1915, most of which occurred recently(2006-2014), containing 548 dams, more than the previous years combined. Europe removed 101 dams in 2020 and more than a thousand dams historically.[8]

The "The Clear Waters and green mountains("绿水青山就是金山银山")" refers to a political slogan on environmental policy formulated by Chinese Communist Party general secretary Xi Jinping. [9] Under such a vision, the Chinese government initiated a grand plan to demolish more than 40000 dams by 2060[10]. This plan focuses on the middle to small-scale dams, primarily built decades ago without proper supervision and public acknowledgment, making them hard to manage and risky to disasters.

As can be seen from the map, most of the dams are middle to small-scale construction (marked with red dots) and distributed with high density along the tributaries. The main hydropower dams (>30000 GWh), marked with black circles, are relatively small in number and controllable since most of them are government-built under strict assessment and design. At COP26, China brings this commitment to the stage of the world. Instead of underlining expanding hydropower capacities, protecting and restoring water bodies becomes the nation's main commitment. This change from pursuing a short-term interest to long-term sustainability marks the nation's changing attitude.

Take the Yangtze River Economic Belt as a representative example. This area includes Jiangsu, Zhejiang, Hubei, Sichuan, and 11 other provinces and cities, with a population and GDP exceeding 40% of the country's total and building more than 25,000 small and medium-sized hydropower stations. In 2018, China's Ministry of Water Resources, Ministry of Ecology and Environment, National Energy Administration, and other departments opened the prelude to the largest scale of small hydropower regulation in the Yangtze River Economic Belt in history. A total of 3,993 water conservancy facilities need to be decommissioned, and more than 21,000 need rectification.[11]

The result of such a movement is very effective as of the end of 2020. Taking Sichuan Province in the upper reaches of the Yangtze River as an example, 1384 out of 5131 small hydropower stations were decommissioned, along with 3508 rectifications. In Jiangxi province downstream, 3,090 hydraulic facilities have been decommissioned, and another 440 with limited time withdrawal have completed ahead of schedule.[12]

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[7] He, Fang. "小水电困局 Small Hydro Power Dilemma." China Enterprise News, no. 0415 (2011). http://epaper.zqcn.com.cn/content/2011-04/15/content_24469.htm.

[8] Dam Removal Europe. "Home," November 4, 2021. https://damremoval.eu/.

[9] Wikipedia contributors, "Clear waters and green mountains," Wikipedia, The Free Encyclopedia, https://en.wikipedia.org/w/index.php?title=Clear_waters_and_green_mountains&oldid=1034314003 (accessed April 16, 2023).

[10] Bloomberg News. "China Has Thousands of Hydropower Projects It Doesn't Want." Bloomberg, August 14, 2021. https://www.bloomberg.com/news/features/2021-08-14/china-wants-to-shut-down-thousands-of-dams

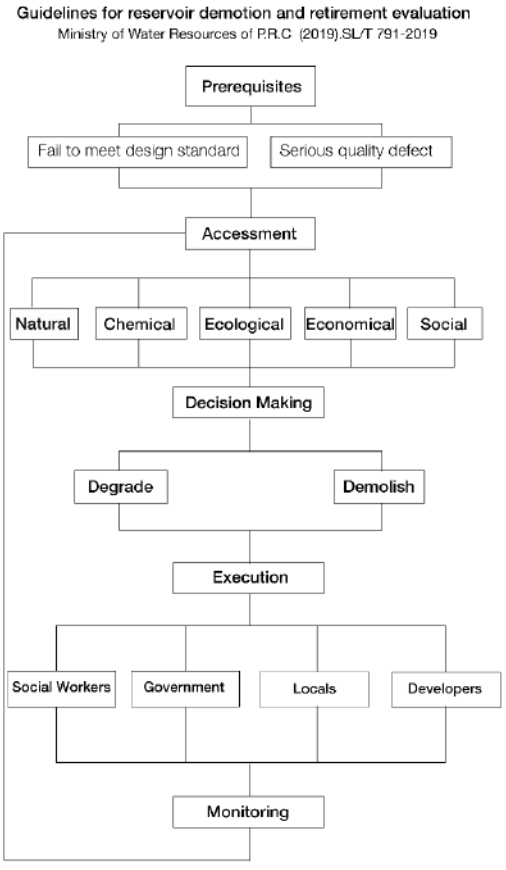
[11] Liu, Shiping. "Playing a Small Hydropower Rectification Hardware - the Clean-up and Rectification of Small Hydropower Stations in the Yangtze River Economic Belt." Xinhua Net, April 19, 2021. http://www.xinhuanet.com/fortune/2021-04/19/c_1127348517.htm.

[12] National Energy Administration. "Sichuan Has Basically Completed the Classification and Rectification of Small Hydropower," March 21, 2022. http://www.nea.gov.cn/2022-03/21/c_1310523063.htm.

4.1 Progressing Domestic Legal Framework of Dam Decommissioning

The Chinese government was aware of the ecological influence of hydropower extraction from the 90s and therefore established a series of regulations and guidelines. This includes The Water Law (1988), the Environmental Law (1989), the Technological Guidelines for Environmental Impact Assessment (1993), the Fisheries Law (1986) with groundwater usage regulations, Evaluation Procedures for Reservoir Dams (2003), and The Law of Flood Control (1998). These regulations serve as the progressive legal framework concerning the construction related to hydropower usage on paper. But in actual projects, disputes exist in the project establishment, design, and construction process. They are often suppressed and ignored as the projects are regarded as achievements of local officials.

As a temporary measure, the government established Guidelines Governing Quickly Solving the Remaining Problems from Existing Dams Directly under the Central Government (2001). Only two years later, the central government launched the trial version of Guidelines for Reservoir Demotion and Retirement Evaluation[1] in 2003**.** It was until March 2020 that this guideline finally became the technical standard and was officially executed. It marks the transformation of the government's attitude from encouraging new construction to a more conservative approach, controlling the number of new projects and giving the order to decommission the dams regarded as "not environmentally friendly" or "dilapidated." [13] The decommissioning of dams will inevitably become the trend of the next era.



Decommission Procedures Framework

This diagram shows the key regulations of dam construction through extensive research of established legal documents.

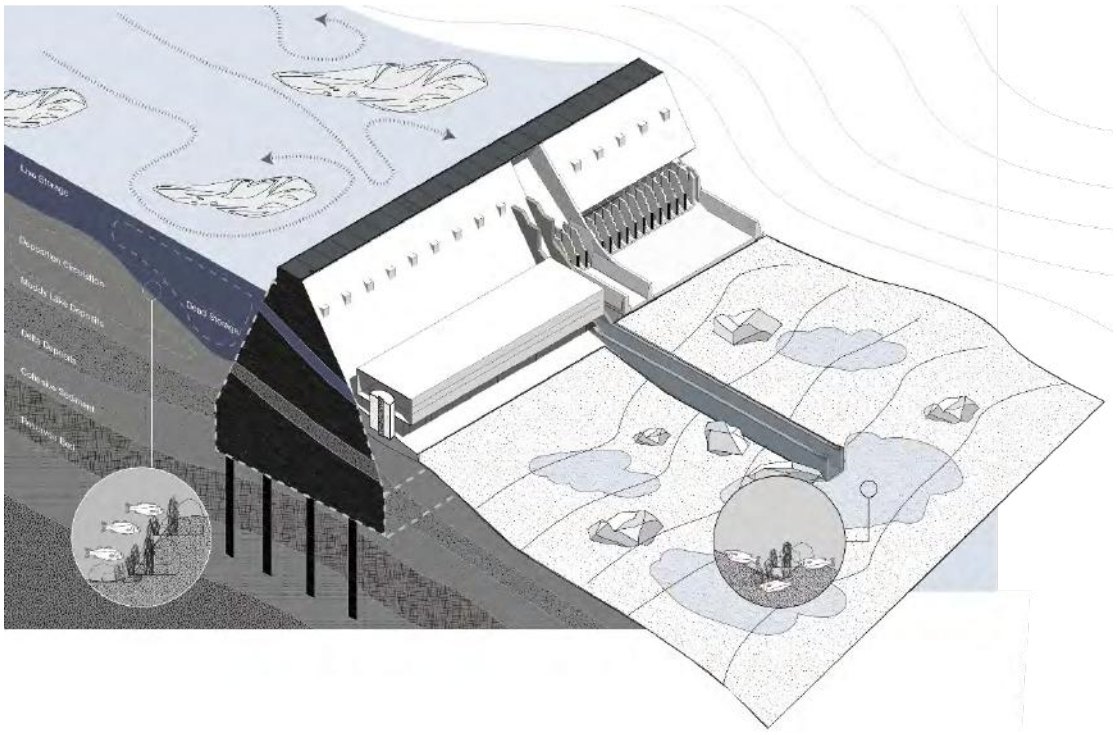
[13] Miao, Chiyuan, Borthwick, Alistair G., Liu, Honghu, and Jigen Liu. "China's Policy on Dams at the Crossroads: Removal or Further Construction?" Water 7, no. 5 (2015): 2349-2357. Accessed April 16, 2023. https://doi.org/10.3390/w7052349.

4.2 The internal resistance and reflection of demolishing the dam

Since the decommission policy's establishment, dam deconstruction movements have happened across China. However, excessive decommission within a short amount of time has caused more problems. For example, shutting down the electric generator without decommissioning the dams will cause the potential energy to be unable to consume, damaging the downstream facilities.[14] The execution process of policies is often carried out in the form of movement in a short period, causing unexpected outcomes. Official articles criticized such measures after massive deconstructions in Hebei and Sichuan provinces (major hydropower provinces).

Governors are also concerned that after decommissioning, urban planning that has been implemented will also lose support. For example, some sightseeing programs would have to be ended.

The debate between construction and decommissioning is still going forward. As a compromise, the central government proposed a new regulation called "develop small green hydropower according to local conditions" from July 22, 2021[15]. A facility meeting four criteria: environmental protection, social development, economic reward, and safety, will be considered "green hydropower" and can operate and regulate normally.



The Ecology around dams

This drawing provides an overview of a typical middle to large-scale dam construction, following a chronological narrative montage to show the lifecycle and the related objects including sediments, pollution, and blocked water flow.

5.1 The lifecycle of the dam

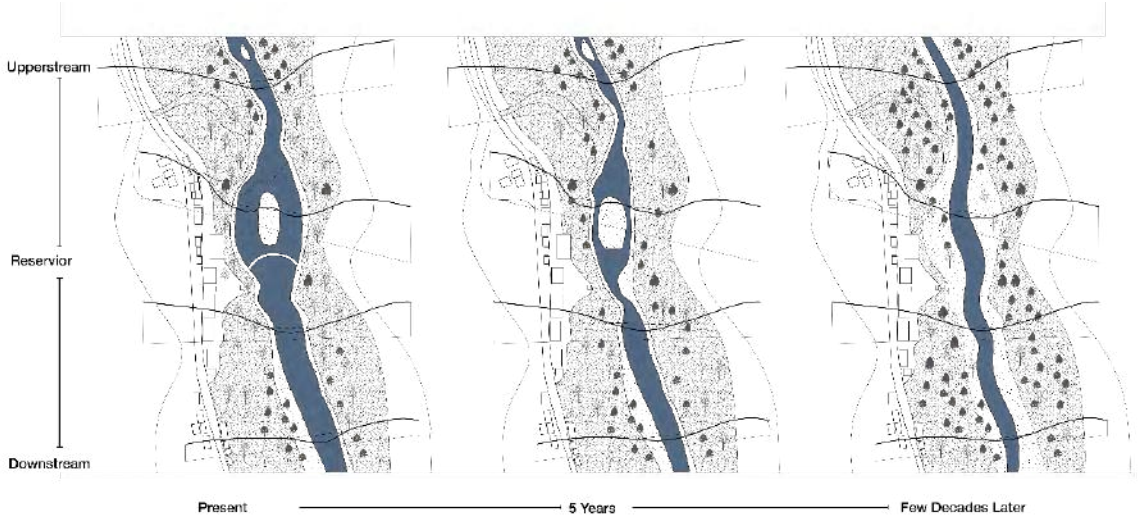
Reported in September 2021, Changzheng Hydropower Station is one of the few cases publicly reported. After decommissioning, the habitat range of rare and unique species has been expanded, and the quality of the habitat has been improved. After 3 years of continuous

[14] Wang, Yinan. "Attention Should Be Paid to the Major Safety Hazards of Blindly Dismantling Small Hydropower Stations." Sina Finance, April 2, 2021. https://finance.sina.com.cn/review/jcgc/2021-04-02/doc-ikmyaawa4553452.shtml.

[15] Wang, Yinan. "Dismantling Small Hydropower, Why 'One Size Fits All.'" Guangming Daily 9, no. August 21 (2020). https://epaper.gmw.cn/gmrb/html/2021-08/21/nw.D110000gmrb_20210821_1-09.htm.

effort, 71 out of 132 small-scale dams along the region have been decommissioned[16]. All the dams are planned to be removed by 2025.

What will happen after decommissioning? What is critical is the process, and it should be a "designed" transition. Compared to more than fifty years of adaptation, the "sudden" removal



of a giant obstacle in the stream would cause an instant change in the local ecosystem. What humans could do is constantly monitor the evolvement and be actively involved in helping reduce the impacts. Eventually, goals in environmental and macroeconomic aspects would be achieved.

Environmental Progression after Decommissioning
This drawing shows a series of sections along with the environmental progression in each phase after dam decommission. It provides a progressive illustration of ecological and biodiversity improvements.

5.2 Typologies: the dams' diverted destiny after decommissioning

From the most significant to the least, four types of dam decommissioning are listed below.

Type 1: Completely demolition

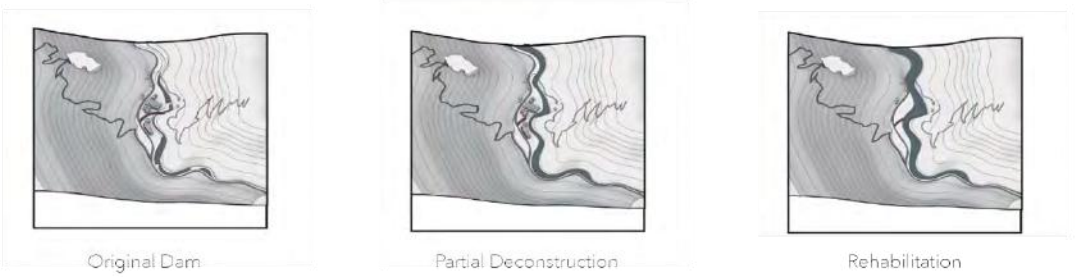
This approach often happens on small-scale dams, for it doesn't deposit a large amount of water and is relatively simple in structure. But rapid and massive demolition will still cause accumulated negative effects. Changzheng Hydropower Station is one of the 132 small dams along the Chishui River. Within a few weeks, this single-arch dam was completely removed. The long-term environmental effects are still under observation.

[16] Scst.org.cn. 2021. 71 of the 132 barrages in the Sichuan section of the Chishui River Basin have been demolished. [online] Available at: <http://www.scst.org.cn/shengtai/8544.html> [Accessed 14 December 2021].

Changzheng Hydropower Station, Sichuan Province 1981.12-2021.09

Type 2: Partial demolition

This kind of decommission deconstructs the hydropower station and its related facilities and keeps the dam and reservoir. It is the most dangerous type compared to the others since the hydropower stations are designed to consume the energy accumulated in the reservoir. The dams, especially the downstream ones, will suffer from excessive impacts, eventually triggering potential damages.



Houzibao Hydropower Station, Guizhou Province, 1981 - 2019

Type 3: Renovation by Substitution

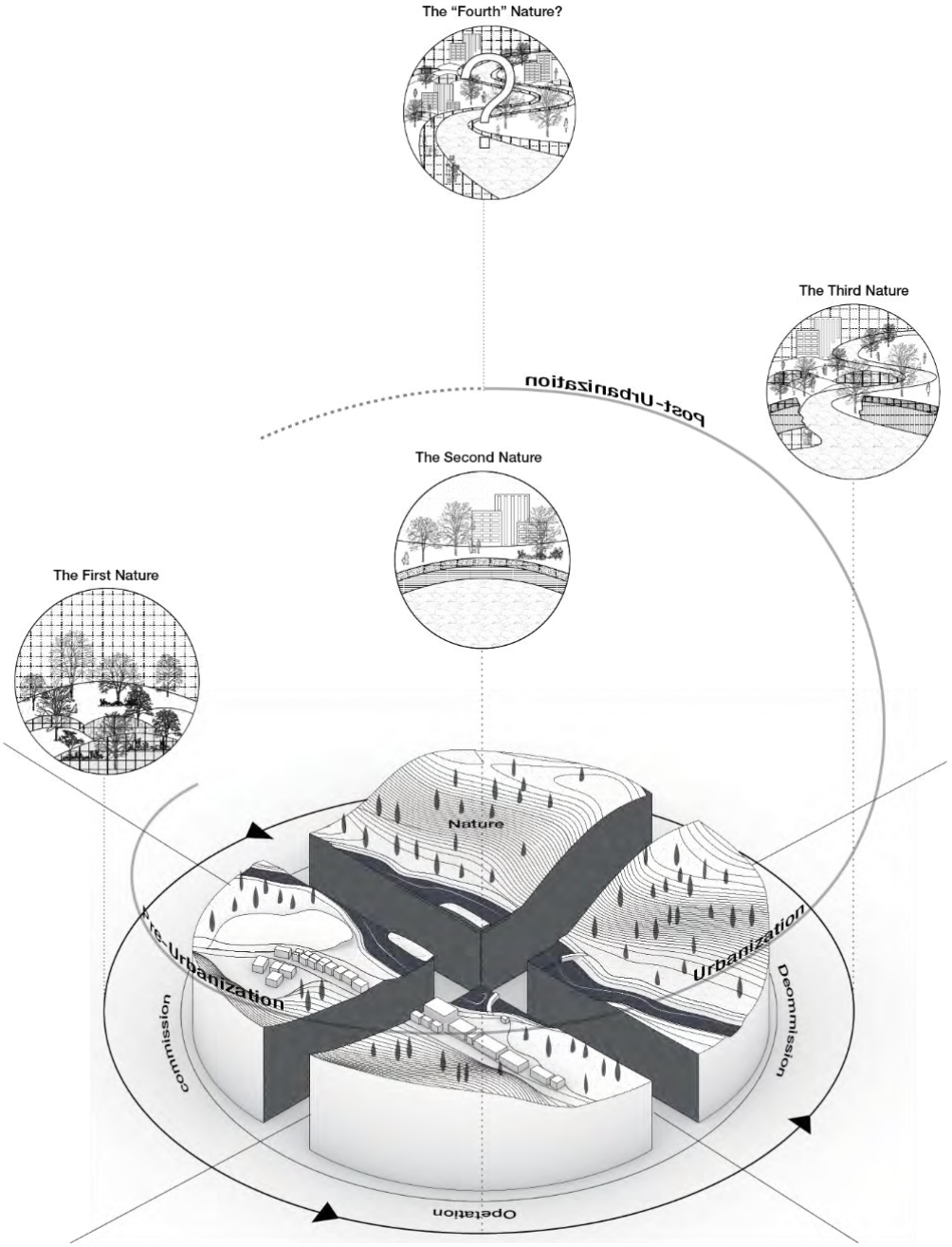
When the existing dam is too old to operate, a new dam equipped with the latest technologies and more eco-friendly is built next to it. Then the existing dams are demolished to let water pass through. Built in 1937 by Japanese occupiers, the old Fengman dam successfully retired. A new dam with fish lifters and tunnels partially connects the upstream and downstream ecosystems. As a pioneer project for the abolition of a large hydropower station, this project provides a replicable model for replacing retired hydropower stations.

Fengman Dam, Liaoning Province 1937-2019.11

Type 4: Program Transformation

This kind of renovation transforms the dam for other uses. Proper design can transform an abandoned dam into a scenic service facility. For example, Meishan Reservoir transforms the hydropower factories into tourist attractions. The remaining reservoir was kept, and a special sightseeing route was set up for visitors. In this way, the facility is still profitable.

6 Discussion: The Third Nature



The lifecycle of dam

This drawing illustrates the cycle of dam construction, from the first nature to the third nature, as a cycle in 4 quadrants. In the end, the drawing raises a question: what will happen after the third nature?

In Maria Kaika's "Hydropower"[17], she sees nature as two stages defined by the process of human activities: techno-nature and retro-nature. Techno-nature defines the status when human intervention reshapes nature and extracts from it through techno-operation. However,

[17] Kaika, Maria. "Landscapes of Energy: Hydropower from Techno-Natures to Retro-Natures." Harvard New Geographies 2 (2009): 103–110.
https://epaper.gmw.cn/gmrb/html/2021-08/21/nw.D110000gmrb_20210821_1-09.htm.

the "retro-nature" is not returning to the status of virgin land and overlooks the dam's enduring impact on sediments, organisms, and nonremovable leftovers.

"The third nature" defines a special status of "urban" when natural forces take over human control but are still under human beings' supervision. It is a designed nature without design: the decommissioning process is carefully planned, and the subsequent natural substitution is predicted and evaluated. But unlike parks and urban greenspaces, humans don't design the resulting landscape itself. They create a more suitable state to adapt to macroeconomic and ecological benefits through decommissioning.

Unlike those representative developed countries such as the Netherlands, where every inch of territory is well-documented and planned, China is still a developing country with numerous unplanned territories, especially the area along the rivers without permanent residents. In the planning documents, these areas are defined as the combination of "woodland" and "territorial waters" and flat coated with two unified colors - the organism diversity and textures are ignored. Transforming from the first to the third nature promotes the evolution from virgin land to documented landscapes - a significant step in planning regulation.

In this research, I'm trying to redefine the concept of "urban" that could help us define the "first," "second," the "third" nature. In my case, what separates non-urban and urban is the implementation of "control." Further, although the dams are decommissioned, the "control" continues through surveillance and legal registration. No matter how brutal nature surpasses human intervention, it is still "urban."

In the case of the relationship between urban and dams, there are direct and indirect relationships. Some new towns have emerged with the construction of dams and rely on the resources: power and money generated from the dams to develop. On the other hand, dams shape urban life remotely. The resource extracted and the environment affected by the dam, whether positive or negative, become one of the urban parameters.

China is a big country, and dismantling dams is not a short-term goal that can be achieved overnight. This process is bound to be accompanied by various difficulties and challenges. Through research, I found that China's goal is not to demolish most dams with a radical idea of regress to the natural status but to obtain a compromise solution through different methods adapted to local conditions and careful consideration of economic and environmental factors. Some of these practices are more traditional, and some are more innovative. They all set a good model for the future development of water resources in China and worldwide.

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A River Runs Through It: From Athens to Beirut.

1. Introduction

This paper primarily addresses the following question: ***How can resilient urban hydrology and stream flood management inform tangible urban design strategies for the cities of the Mediterranean South?*** Despite the recent westernized paradigm shift towards *Integrated Water Management Design*, and the rising concept of *Green Infrastructures* in processes of urbanization in the European North, customized approaches to flood risk management in cities of the Mediterranean South like Athens and Beirut remain traditionally monopolized by the sector of civil engineering and applied hard infrastructure hydraulics, keeping rivers disassociated from processes of peri-urban development.

In less than a century, watershed regions in the urban periphery of Athens and Beirut have evolved from "*flood-dependent agrarian regimes to flood vulnerable landscapes"* (D'Souza, 2002). Areas like Elaionas in Athens, the fertile floodplain of river Kifissos and the dilapidated peri-urban edge between Beirut and Mount Lebanon Governorates split by Nahr Bayrūt (*Arabic for "River Beirut"*), became contested with *one-type-fits-all* infrastructures of the hard infrastructural ideal destined to collect, remove, and discharge as quickly as possible rain- water runoff. In recent years, and through the post –war era, engineered control of water became a legacy of "crypto-colonial" ruling (Greenberg and Hamilakis, 2022; Herzfeld 2002) in the name of sanitary progress and development. Despite their different socioeconomic and cultural contexts, the Athens Kifissos River and the Beirut River share similarities as both became contested grounds for specific techno-scientific ideals of channelization plans and land use management. In the case of the former, River Kifissos was "Re-invented" as a trajectory under dictatorship rule, while later statutory top-down land-use planning of its floodplain further demised the properties and the natural morphology of the site. In the case of the latter, technocratic elites and private lobbies persuade a gentrified re-development area encompassing the once riparian river turned into a concrete canal and into an infrastructural conduit of sewage and transport (Frem, 2009). Even in recent years, governmental responses in both cities have interpreted rainwater and floodplains as "threats" cultivating and empowering the ideal of a kind of infrastructural development that is defensive to water.

2. Water as a material category for urbanization

Our paper calls into question this tactic and challenges design alternatives within the specific historic-geographical context of each riverine trajectory and adjacent territory, bringing the issue of water to a "material" category for Urban Design (McGuire, 2019). Design research for the case studies of Kifissos River of Athens, and Beirut River, becomes central in this problematic. We place emphasis on water relationships stitched together through land, infrastructure and human communities. The paper explores how both riverine bodies form delicate floodplain systems of open, semi-natural stretches that have been confronted with processes of expropriation within contexts of rapid and dense urbanization of the periphery. The paper draws insights from architectural research developed in NTUA (Carydi, 2015; 2013) and UCY (Panayiotou, 2019;2017), to discuss alternative approaches to the role of rivers in sustainable development of the urban periphery. Freshwater is conceptualized in our research through the categories of connective lines, spatial and social bodies, and watersheds, and ultimately as a catalyst for the land-water relationship, a symbiotic relationship rather than a binary with stakes for human welfare. In the case of Kifissos River and the territory of Elaionas, design research explores how soft infrastructures can metabolize artificial and natural processes rendering them adaptable and fit to current social, economic, and ecological determinants as well as to urban change within a fragmented ground shaped by highways, dumped rivers, pulp mill industries and heterogeneous forms of recycling economies. In the case of Beirut River, a matrix of strategies and potential hybrid uses is employed to deal with the contested urbanity surrounding the river. Through ecological, financial, and sociopolitical spatial design methods and tactics, a range of socioeconomic and religious sects claiming the area, as well as a number of local groups, are associated to change the ground into a more sustainable, flexible, and equitable environment.

Both case studies bare similarities in the interventions presented in relation to the specific conditions of the Mediterranean South: Firstly, the analysis and juxtaposition of the floodplains morphological characteristics with social and economic aspects of both sites brings forward interdependencies between spatial configurations

and patterns of multi-ethnic minorities, clandestine workers and immigrants, forms of informal economy, historically contested grounds, low-tech economies of the agro-food sector, and the rising trend for restructuring and expropriation of the last tracts of unmanaged bare land by a few private bodies without negotiation processes. Secondly, all the possible interventions discussed, involve the development of networked solutions that prioritize operations within the associated flood prone areas, not being limited to the conception of a linear watercourse re-design.

3. The case of Kifissos River and the Elaionas region of Athens

Elaionas is situated in the heart of the hydrological floodplain of the Kifissos River and comprises the historic fertile ground that nourished Athens and Piraeus since ancient times. In the 20th century, industrial invasion and parcellization of land in private domains ripped the city of its bio periphery, turning it to a fragmented ground contested with highways, dumped streams, pulp-mill industries, logistics companies, intercity bus stations and barren agricultural land remnants. Engineering works transferred and practically "re-invented" the river's trajectory westward, on a higher topographical relief, resulting in a channelized viaduct with supportive highway lanes as its embankments, a defensive structure that permanently blocked natural runoff processes further accelerating flooding incidents in Elaionas. The statutory plan of Elaionas obtained in 1995, interpreted river Kifissos and its original deep cut trace (*Prophitis Daniil* [Prophet Daniel] stream) as highways. The plan largely demised flooding issues and its relation to the topographical situation of Elaionas within a riverine floodplain. It mainly incorporated a Land Use scheme that aimed to grid-out urban lots and segregate uses, besides highly fragmenting the continuous fertile agricultural greenfields, now interpreted as green parcels for the enhancement of new "urbanity" to come. But this action failed to address the actual socio-economic and environmental processes of the area. A thriving informal economy emerged during the 2010s in Elaionas associated mainly with the collection of paper, aluminum, copper and iron scrap, creating a logistic/service ground for conventional accumulation forms. The environmental impact of the informal recycling system involves pollution of soil, air and water, and the lack of control and coordination for the collection and disposal of solid- and liquid- waste or sewage has made it home to clandestine economic activities, besides the continued presence of many crafts and low-tech workshops in the area (Diagrams 1 and 2, Images 1 and 2).

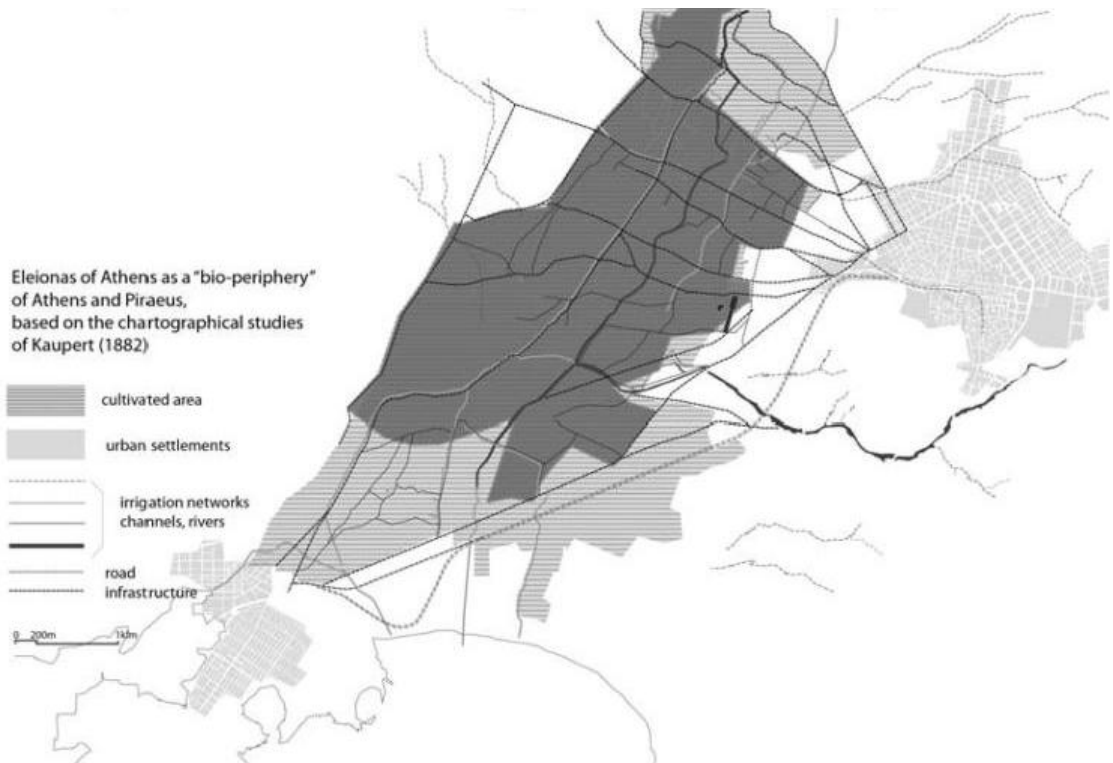
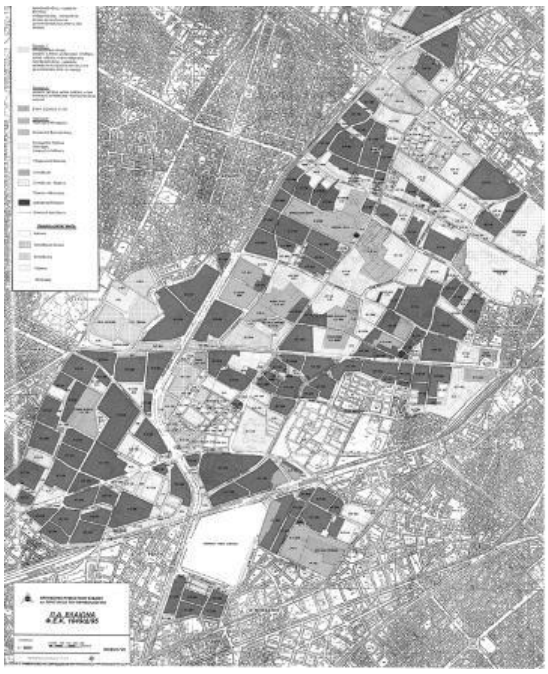


Diagram 1 *Elaionas as a bio-periphery of Athens and Piraeus. The mapping juxtaposes the extents of the site after Kauperts 19th cent. map (with light grey) and its current extents (dark grey). Diagram drawn by I.Carydi*



Images 1& 2 *Left: The Statutory Land Use plan of Elaionas, Source: Athens Regulatory Design Organization, Government Gazette Sheet (ΦΕΚ1049/Δ/1995). Right: The Channelization and modification of the trajectory of river Kifissos in the area of Elaionas (source: Google)*

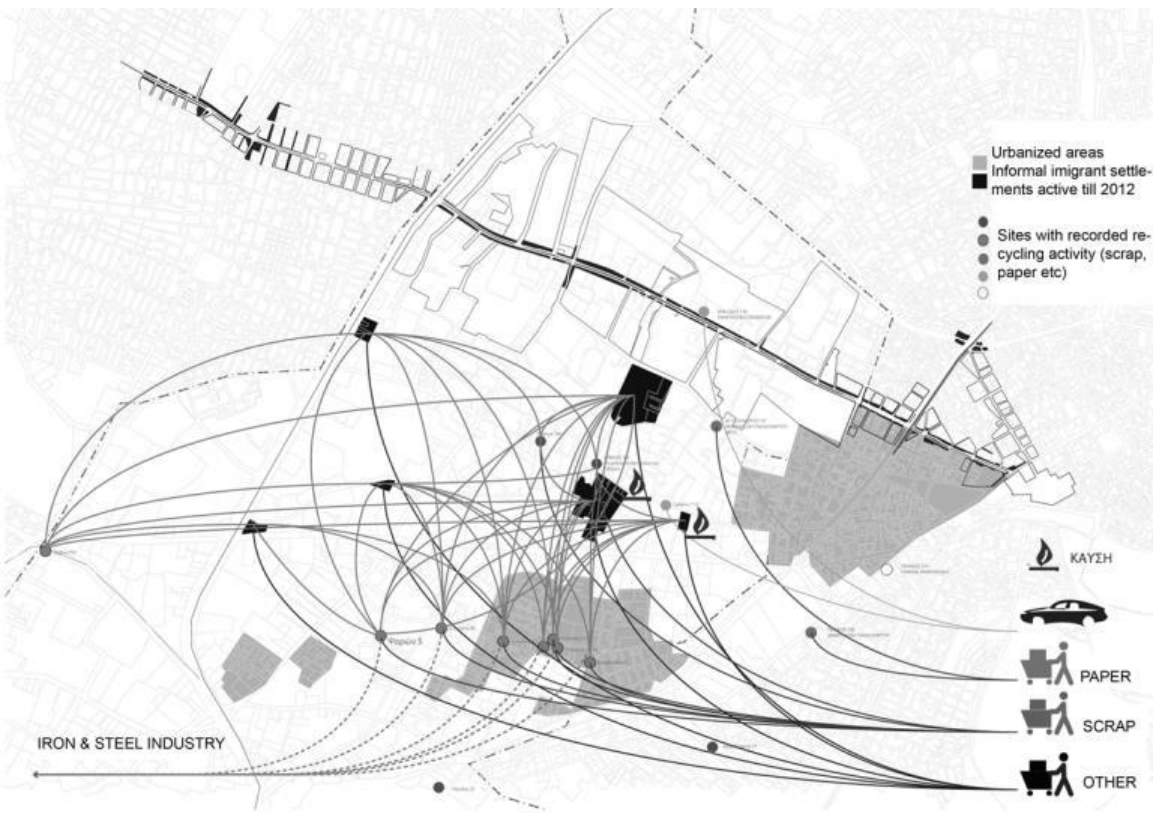
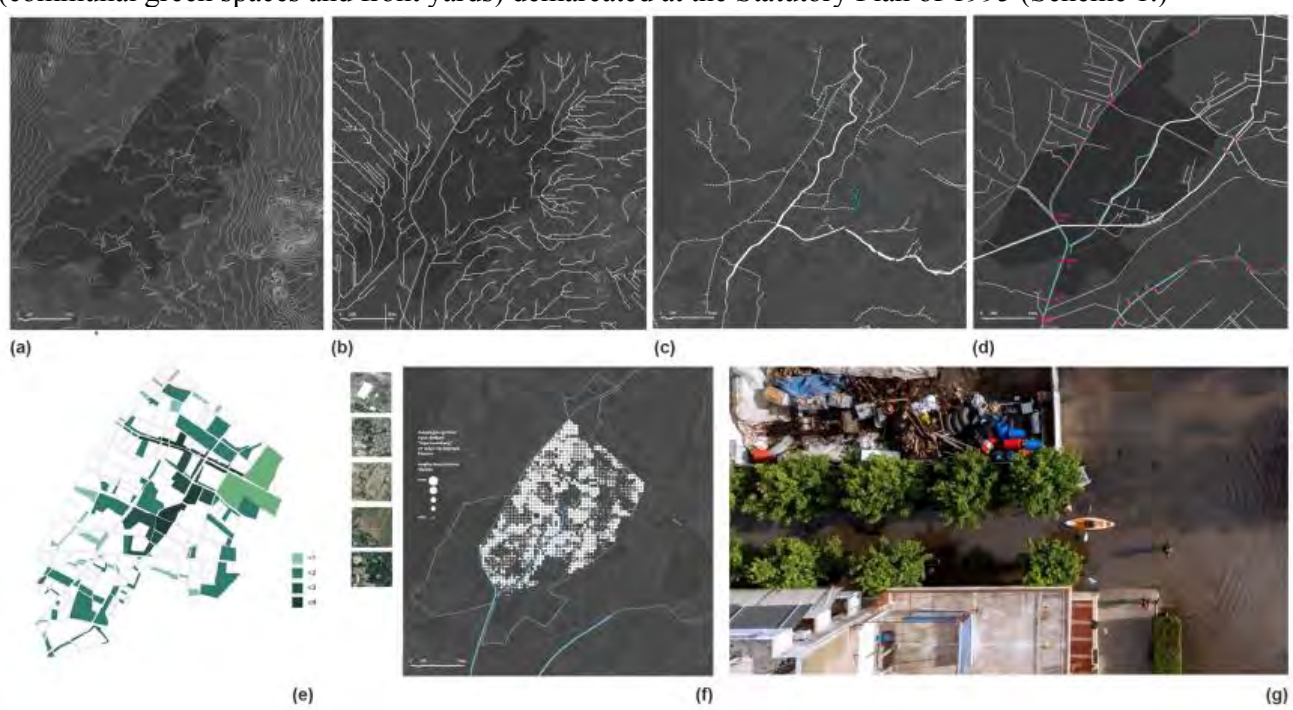


Diagram 2. *Informal economy networks of scrap recycling in Elaionas, Diagram drawn by I.Carydi*

The design thinking applied through the research undertaken aimed to develop a response to the disparities generated by the Land Use plan. What mostly fitted the dynamic situation of flux and change in Elaionas was a networked reading that compliments the zoning plan through the development of three interrelated networks. The juxtaposition and contrast of these systems involved three interrelated parameters: environmental, social and economic. The developed mappings focused on selective aspects of the territory and

its properties that relate to the recovery of urban ground and its metabolic transformation. Priority was given to open spaces and interstitial grounds, aiming at the redefinition of the urban milieu through the organization of new armatures, new spatial patterns such as corridors, patches, and mosaics used to determine new land use. That complimentary design created a terrain of stitches and fields as armatures for new alliances and interactions between people, water and redundant land. This developed a layered socio-cultural network related materially with a green and blue network. The networking of possible alliances between recycling scrap yard areas, urban allotments, food markets, and stakeholders involved in recycling economies and institutions with a common interest in plants and water involves the Agricultural University of Athens situated in Elaionas and redundant paper mill factories dispersed in the area. The build armatures aimed at the creation of *landscapes of consumption* with adjacent natural resources, barren lands and water infrastructures incorporating their dependencies for *landscapes of production*. The spatial redefinition of "green" and "blue" systems was developed according to the topographical regime of Kifissos River and its tributaries. The geometrical definition of the blue network derived from the indexical mapping of a branched network based on data: (a) on surface and runoff flows, (b) needs to define a sustainable urban drainage network through bio-swales, cisterns and retention basins, (c) limitations of existing topography, (d) existing network of sewage, (e) existing riverine environment and status of managed or unmanaged rivers. The organization logic behind the green network focuses on: (a) maximizing ecological connectivity of the already defined "green plots" and (b) minimizing fragmentation of existing dispersed green patches (communal green spaces and front yards) demarcated at the Statutory Plan of 1995 (Scheme 1.)



Scheme 1. (a) Topographic relief of Elaionas, (b) Juxtaposed topography with run off of Kifissos floodplain, (c) The riverine regime and its social reproduction through cisterns, wells and canals during 19th, early 20th cent. (d) The current engineered invention of Kifissos River, (e)evaluation of connectivity of Demarcated open public and green spaces according to PD1995, (f) paved areas exceed 60% of the floodplain of Kifissos, (g) Crossing the flooded street of Elaionas in Canoe. Diagrams (a-f) drawn by I Carydi, photograph (g): cnn.gr, INTIME / Halkiopoulos

The network logic: (a) expands the study area to a broad spatial context and to multiple scales of analysis providing an organizational logic and for the provision of built hierarchies of connections resulting out of processes, (b) integrates the natural patterns and biological attributes in the process of land use decision making with a resilient perspective open and dynamic to change, (c) focuses on structure, function and change of the dynamic natural systems of the landscape and less to the internal characteristics and shapes. In contrast, the land use planning which is based on predetermined standards and top down decisions has exhausted its turn as a means to explain and react towards the whole complexity of the urban phenomenon. Even if the study and arrangement of densities and types of land use offers important resources for the economy and the society, when this is run as a separate field study ignoring the biological and physical components of the site it proves unfeasible to cater for environmental changes, sustainable management of natural resources and special

landscape characteristics. By supporting a complex framework of networked infrastructures that merge natural dynamic processes with techno-managerial systems responding to necessary needs and decisions, landscape infrastructures result in a twofold management that from the one hand allows and ensures the circulation of flows of energy and matter while from the other hand prioritizes synergies and innovation practices that emerge on the crossroads of the merging of these systems.

Diagram 3. The networked paradigm of the Athenian Elaionas comprised by the "blue/green" systems

The Stitches and fields presented (Diagram 3) include green-ways, communal gardens, experimental gardens, farmers markets, sustainable urban drainage systems and water recycling systems, free water allowance consumption for paper-mill factories. The proposed interconnections in urbanization are open-ended and flexible, with performativity, sustainable use of natural resources and locational specificity as guidelines. Infrastructures such as flood mitigation, rain gardens and retention ponds, infiltration ponds, biological treatment and bio-swale systems, reformulation of the ground to collect and absorb water, regeneration and development of further vegetated enclaves and green corridors contribute to an integrated strategy that understands the floodplain of Elaionas as an instrumental design property.

Investors and users that can be associated to this scheme benefit from the performance of resource economy and production made possible by environmental technologies, and the potential to manage riparian grounds as live bio-technology and bio-culture workshops in partnership with universities. On the part of the investor the systems of landscape infrastructures can be estimated not to surpass 1/3 of the cost of relevant hardscape public works, as in the case of extension to the water-supply network or of constructing new - comprehensive anti-flooding works. On the part of the users /consumers, the making of new attractive space for green- or innovative manufacturing and for services seeking low-cost water supply is made possible in immediate vicinity to the city center, where the management of the riparian grounds of Kifissos tributaries for bio-technology and bio-culture workshops in partnership with universities seems a possible field for interaction. The networked systems presented in the Cased of Elaionas, aim to organize and manage change by mobilizing potential and current actions and processes looking for potential partnerships and synergies that can be applied through planning. This form of planning is an open organization helping to understand and manage change in terms of the geographical scale with emphasis on the local social and environmental characteristics of the place (Diagram 4).

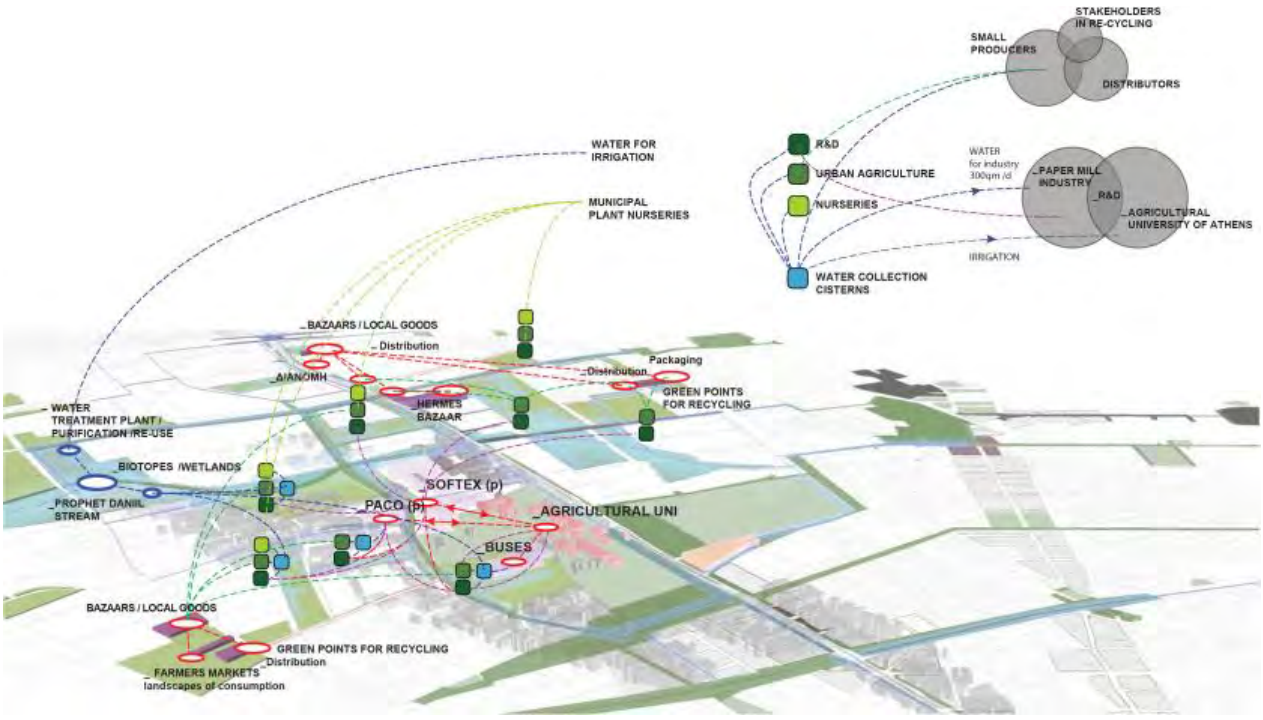


Diagram 4. The Athenian Elaionas networked paradigm is made up of associations and synergies between landscape resources and local stakeholders/activities.

4. The case of Beirut river

Peri-urban Beirut's river status as a municipal boundary located between two Governorates and two districts led to its neglect and its understanding as a "cityscape of residues", characterized by uncontrolled land use and a landscape of juxtaposed fragments with lack of value and collective identity (Trovato, Farajalla, & Truglio, 2016). The river, being a seasonal river fed by snowmelt, now a fragmented landscape of infrastructure (Littlefield, 2015) used to play a significant role in the city's everyday life of the surrounding areas during the early and mid-twentieth century. Its 1968 canalization turned it into an element of division, fragmentation and segregation (Diagram 5). The canalized infrastructure helped 'control' the flows of migrants fleeing the wars of neighboring countries and settling at the area, which was neglected, later formalizing their settlements. This is expressed in the morphologies of the urban tissue, buildings and uses (Diagram 6). This partition produced a psychological boundary that ended communities' cultural rituals taking place at the riverbanks and the cultivated land around it (Frem, 2009).

Diagram 5. *(left)* The Beirut river in 1942 *(source: www.oldbeirut.com), (right)* The Beirut River in 2018.

The absence of social, cultural and commercial facilities along the stream led to the decrease of interaction among people, community, as well as the local authorities. Besides its social effects, Beirut River has suffered

many environmental problems, as the riparian river was converted into an infrastructural duct of transport and sewage. The stream's velocity increased rapidly and turned into a channel that both the quality of water stays unprocessed, and the water is uncontrolled, especially during its torrential phase with extreme rainfalls and the snow melt between February and March and essentially increasing the flood risks as its capacity could reach a capacity of 143%, statistically every 100 years, causing extreme flood waves of 7.4 m in height (Frem, 2009). The area's natural ecosystem has been eradicated by erasing the fluvial braided system, the destruction of the riparian habitat and the elimination of any hydrological exchanges between the stream and its adjacent water tables, which after years of extensive agricultural use of the water and domestic wells caused seawater intrusion in the aquifer below. Those problems were enhanced by the selection of the stream area for the accommodation of industries due to the sufficient undeveloped space and its easy access to the highways system followed the canalization, as well as the placement of the port at the west edge of the stream's estuary because of its convenience (Diagram 7). Unfortunately, the abandonment of the stream was followed by those industries directly discharging their effluents on the coast.

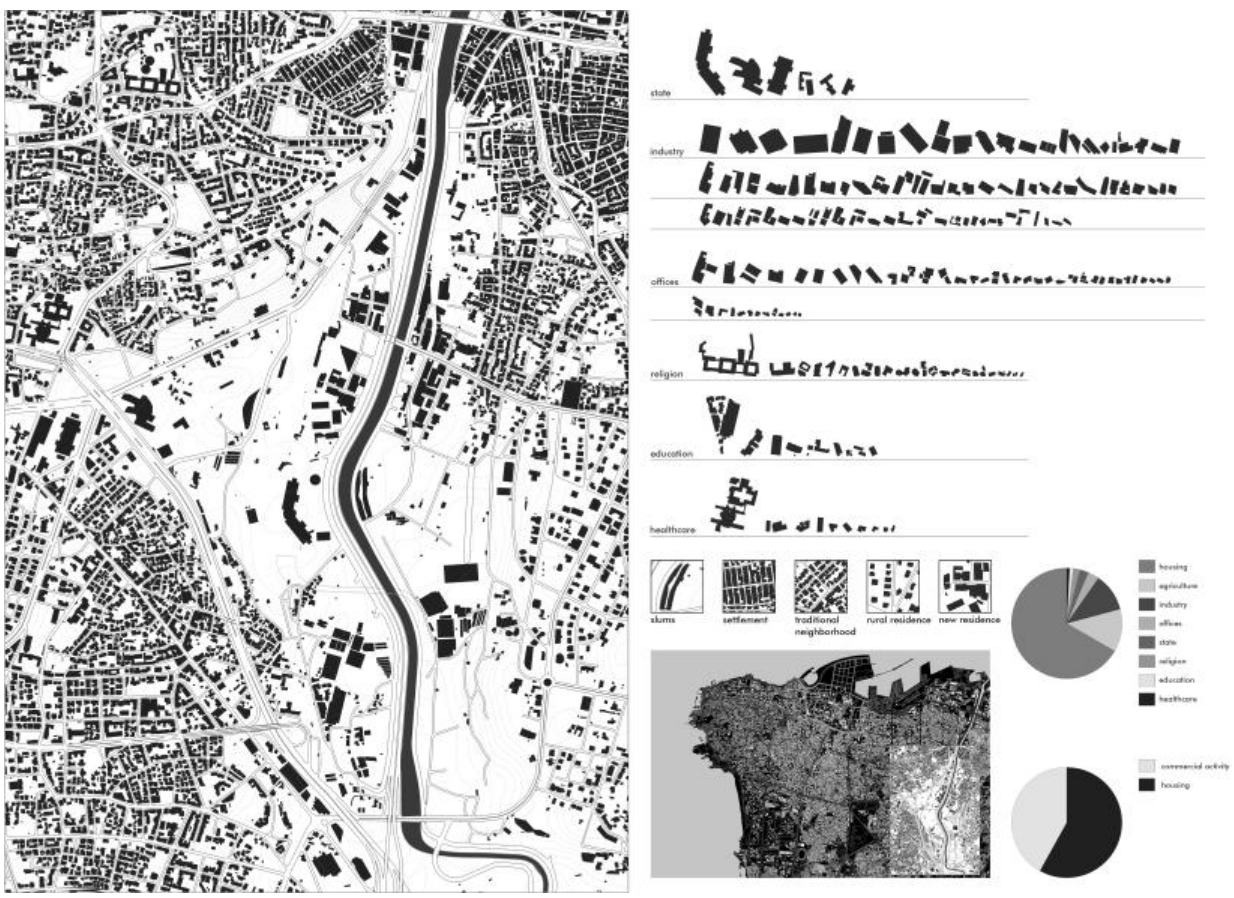


Diagram 6. Figure-ground analysis of the site area with clearly identifiable patterns. Denser parts seen at the right-upper corner are formalized migrant settlements, the dense areas on the left side are the traditional Beirut's neighborhoods, lighter and sprawled areas on the right lower side are rural areas and the bigger buildings are either industrial areas or state facilities drawn by A. Panayiotou.

This project aims to work on three levels. Firstly, it seeks to fill the social gap through an alternative approach, allowing people to integrate while maintaining the city's character and increasing the porosity of the area and its openness to new social groups. Secondly, its environmental goals are to restore and regenerate the river's ecosystem, better control the flooding, and promote agriculture in a controlled way by increasing its green open areas while remediating any pollutants and creating a green network that connects the neighborhoods and

river sides leading to increased social interaction between the area's urban actors. Thirdly, by giving more financial incentives, it balances and justifies the costly river restoration, increasing the land areas attached to the park satisfying the real estate agents, creating entrepreneurship for the residents by creating technical professions opportunities and bringing more tourists on site, contributing to the state's goals. The three layers mentioned above a) economy, b) ecology, c) cultural métissage, are briefly understood as a) the right to work and the creation of new attraction poles, b) the right to public space and nature and c) the right to the public sphere. For that reason, methods and research from other disciplines is used to inform the design and the proposal for the development of this fragmented peri-urban area. The juxtaposition of the three layers through an interdisciplinary point of view allows the landscape to become literally and figuratively the ground on which change takes place. Through its resources it provides incentives for the redevelopment of the area and through its public sphere it allows urban regeneration and adaptability of the existing social casts and structures. A new armature is designed connecting the rivers edges, while re-naturalizing the river itself by allowing its overflow inside the site. For the better control of flooding two new wetland areas are designed using soft landscape engineering. Harder engineering is used inside the meanders inner bank to avoid the erosion of nearby buildings' foundations. A new system of roads, pathways and bicycle lanes, alongside a 'las ramblas' approach to connect the two river sides is undertaken, while agriculture is promoted to the attached sites of the rivers, acting as an overflooding mechanism during flood periods. For the protection of the water's quality specific plantation encourages processes of phytoremediation while controlling pollutants from agriculture to enter the river.

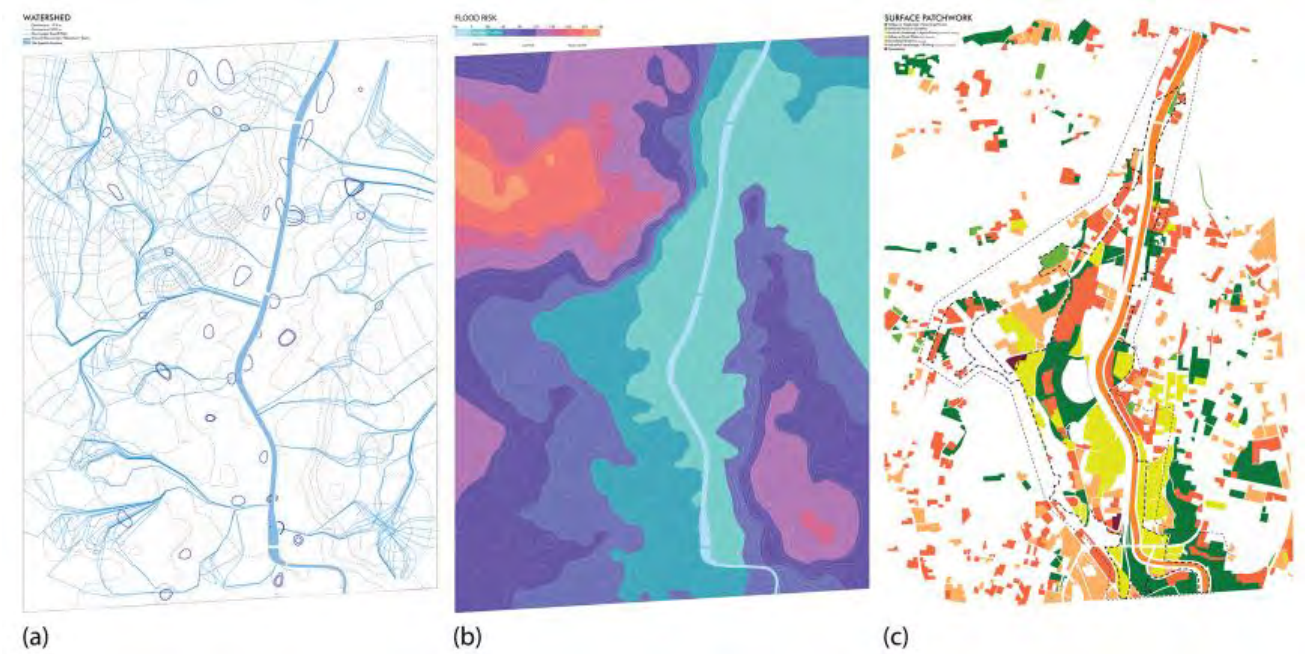


Diagram 7. (a) Juxtaposed topography with watershed survey of the are under study, (b) Flood risk analysis, (c) Surface infiltration of paved vs open areas of the floodplain of the area drawn by A. Panayiotou.

Regarding socioeconomic inequality and injustice in the area, the design focuses on outdoor activities that increase the interaction between the social groups that may reverse the disparity caused by the segregation and division of the city during Lebanese Civil War. By creating a series of modules (Diagram 8) that are adaptable not just to an area, but to their forms creating hybrid forms of themselves when placed together, can fit the sites and residents needs the most. Strategies used stimulate a process that generates urban character and identity on its effort of accumulating, as a way of catalyzing change. A series of actions that pique the interest of project investors, while gradually introduces changes into the habits of actors, a multiphase strategy (Stratis, 2014) named radical increment. Other strategies cover up intentions of the project, maintaining a very different façade even innocent towards many urban agents, or actors. Intentions as to increase places for the

public sphere through public green spaces, can be a covered-up effort of increasing land value for the real estate, and vice versa are deemed to be Trojan Horse strategies. Mighty unfolding strategies, act as a precursor of the future result of the proposals, operating in this state of transition within the implementation of a project. It, seemingly, neutralize the vast effects of its end-state (Stratis, 2014), while preparing the ground for both institutionalized (politics) and actors to accept and embrace the change. Furthermore, it allows a degree of improvisation and change in the initial plan. Finally, implying a malleable ecology strategy, as a reforming policy of maintaining and supporting the futures of a proposal. This strategy strives to invite actors and agents on the maintenance of the proposal (Stratis, 2014). In Beirut, the commons within social groups or sects (e.g. young groups, religious sects (YMCA, YOUTH WORK ISLAM, skateboarder groups, BMX groups, graffiti artists, lobbyists etc.) can play that role. Actors aim to play a great role among the future of the area and the proposal and it is obvious that actors are creating their own inner cognitive map of their action_scape based on their personal background, experiences and memories, that are shaped by the new space.

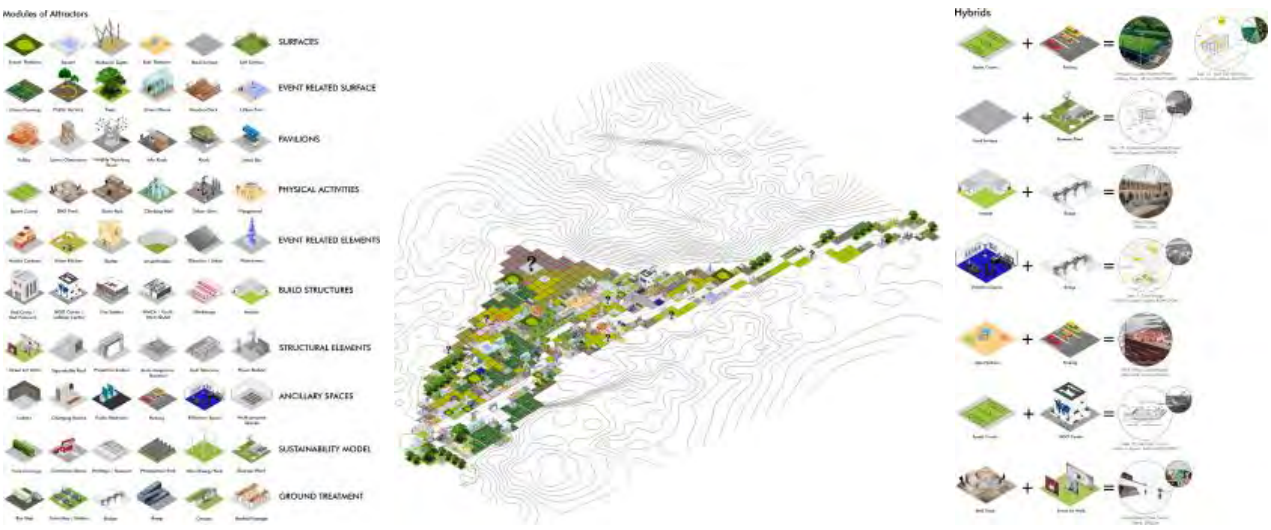


Diagram 8. The developed models of land use, or land treatment and their subsequent hybrid spatial form placed on a cognitive map developed by a team of Beirutis when asked to re-imagine the area through them drawn by A. Panayiotou.

Subsequently, the project proposes a series of amenities network interwind with a new open green and blue network that provides a new financial activity to take place, allowing the residents to re-shape and adapt the space based on their needs and through time (Diagram 9). This social approach of design through nature and the water ecosystem encourages urban actors to interact with each other despite their differences invoking the fundamental human need for interaction with nature. A scenario developed through 33 years to make the study financially feasible and viable, creates with minor moves of "planting seeds of change" by stitching the river's sides through a new armature's network, highlighting important social landmarks. The agricultural layouts of the market gardens and orchards are in this case very closely tied to the course of the river and fundamental to the organization of the space. An element of enormous importance in shaping this whole side of the city-as important as the definition of the agricultural plots and the basin of the river itself (Solá Morales, 2008, p. 354) by relocating their Wednesday market into a more permanent and iconic facility and by allowing hydraulics to reform the river's meander with a little help of soft engineering, and escalating to more designed and strategic creations regenerating an urban area resilient to high-end real estate pressures and the state's preferential treatment of specific areas over others. The proposal relies on bottom-up configuration of design that happens in the long-term. Working on a series of micro-areas defined as sub_enclaves, those urban pieces can maintain a strong enough identity to be traceable, but small enough to be porous and open to interact with outer actors and create hybrid spaces in-between them (Diagram 10). The result is city's increments clearly separated but at the same time, open and rapidly accessible to one another, for a person being able to move easily and settle in the increment that feels to suit them better. At the same time increments are mutually accessible and porous. When it comes to their spatial expression the residents of those increments shall owe their own spatial territory and being separated from others, not with strict limits and borders, rather with porous boundaries, creating in that way sub_enclaves. Neighborhoods are effectively configuring a territory that is to a certain extent linked to the central city but at the same time, by virtue of its far more autonomous and diversified structure. In that

way it establishes the conditions for detachment from it (Solá Morales, 2008, p. 346). Thus, forming an anarchy through order that we might need in reforming the future structure as a bottom-up proposal.

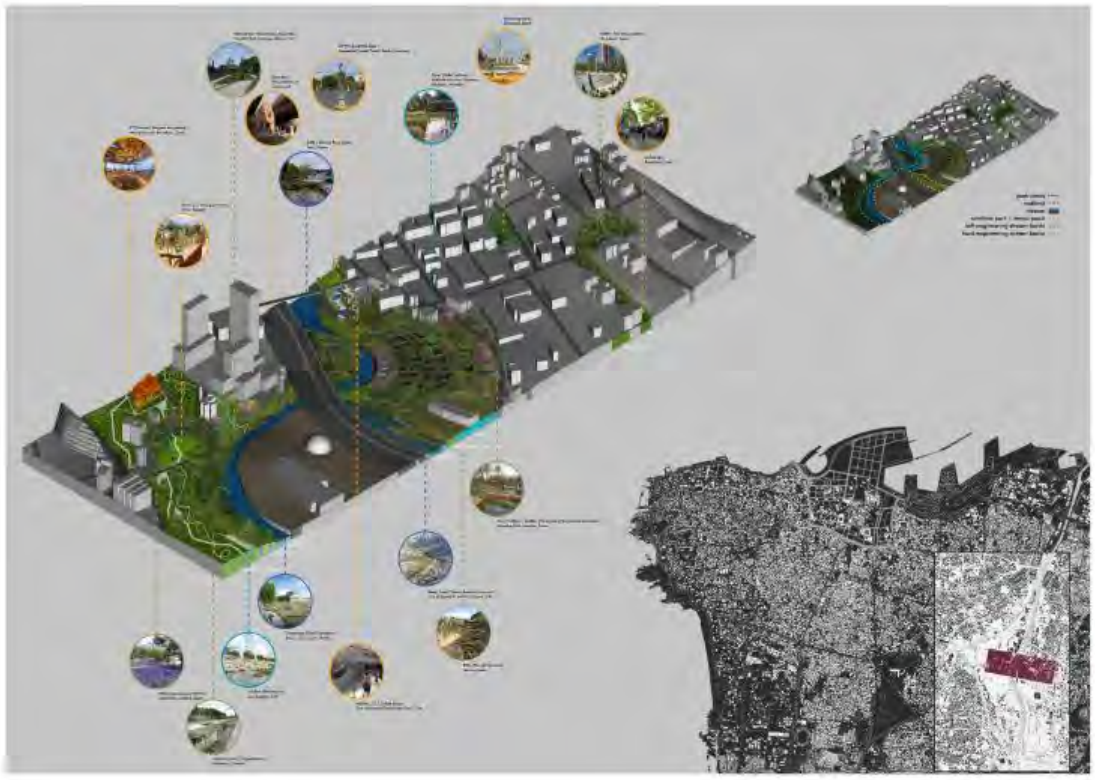


Diagram 9. A slice of the potential future scenario proposal on the area, showing the restoration of the meander and one of the designed wetlands, alongside with the market and ad-hoc and real estate development.

Diagram 10. Chaining development of sub_enclaves proposed on site vs its original sub_enclaving intention analysis.

5. Conclusions

The design methodologies employed in the context of these two river-plains align with the emergence of planning practices oriented to self-sustaining forms of investment composition and economy with the participation of environmental management and understanding of in-situ local specificities and local social dynamics. Environmental Engineering techniques, soft remediation and recovery strategies alongside a re-evaluation of the concept of the "environmental risk" as a benefit and not a threat for capturing, treating and recirculation of water in the socio-economic context of urbanization become enmeshed strategies in foresighted opportunities for new types of partnerships and synergies amongst local stakeholders, residents and industries. The new, re-oriented architectural, landscape and urban design approach to planning enters in the shaping of metabolic conditions, e.g., forms accruing to the functions set to motion by the composite ground, a flexible "support in process" of re-folding, condensing, stratifying multiple actions and processes in urban space through time.

We conclude that rivers of the Mediterranean South can inform an interdisciplinary discourse in sustainable development goals gradually transforming traditional conceptions of cross-sectoral mechanisms in river management. Site-specific conditions and valuable landscape characteristics in relation to urban strategies can shape potential economic and social synergies. Water recycling practices, flood mitigations, sustainable drainage systems and peri-urban agrifood industries merge with heavily contested historical contexts, cultural territories, open street markets and archaeological sites, providing a thickened ground of interlinked uses that can re-introduce an operational bio-periphery for the city suggesting new grounds of partnerships and interaction between different actors.

Bibliographic References:

Carydi, I. (2013*),* *Integrated development strategies through the constitution of Landscape Infrastructures,* [in Greek], In: Investigating Strategies for The Networking of Urban Interventions in the Metropolitan Center of Athens, Research Program, NTUA, School of Architecture, Scientific Coordinator*:* G. Parmenidis professor, Phase A, pp.274-279

Carydi, I. (2015), *Landscape Infrastructure as a mediating tool for Planning. The Case of Elaionas: from dump site to urban bio-periphery,* International Conference "Changing Cities II: *Spatial, Design, Landscape & socio-economic dimensions"*, Porto Heli, Greece

D'Souza, R. (2002), *Colonialism, Capitalism and Nature: Debating the Origins of Mahanadi Delta's Hydraulic Crisis (1803-1928),* Economic and Political Weekly, 37(13), pp. 1261-1272

Frem, S. (2009) *Nahr Beirut: projections on an infrastructural landscape,* MSc in Architecture Studies Thesis, MIT. Thesis Supervisor: J. Beinart professor. [online] MIT Libraries. Available at: https://dspace.mit.edu/handle/1721.1/49720 (MIT Libraries), 2019.

Greenberg, R. and Hamilakis, Y. (2022) *Archaeologoy, Nation, And Race,* Cambridge University Press, United Kingdom

Herzfeld, M. (2002) *The Absent Presence: Discourses of Crypto-Colonialism*, South Atlantic Quarterly, 101(4), pp.899-926

Littlefield, L. (2015) *Confronting the Present: Towards a Civic Realm on Beirut's Urban Fringe*. ASLA Thesis, UofT. Faculty Advisor: Farhat, G. professor. American Society of Landscape Architects. [online] Available at: https://www.asla.org/2015studentawards/101964.html.

Mc Guire. (2019) *Points Lines and Planes.* In: Mc Guire, M.P. and Henson J. M. (Eds), Design Research for Inland water territories, Applied Research Design Publishing, pp. 91 – 103

Panayiotou, A. (2019) *Chaining Design within Beirut's Human Ecologies,* (IMArch) Diploma Thesis, UCY, Department of Architecture. Lead Thesis Supervisor: A. Savvides professor, Available at: Department of Architecture Archive (UCY), 2019.

Solà-Morales, I. de. (2008) *Ten lessons on Barcelona : urbanistic episodes that have made the modern city = Diez lecciones sobre Barcelona : los episodios urbanísticos que han hecho la ciudad moderna.* Barcelona: Colegio De Arquitectos De Cataluña.

Stratis, S. (2014) Architecture-as-urbanism for uncertain conditions. In: *Europan 12 Results: Adaptable City*, Paris, Europan Editions, pp.28-35, 2014.

Trovato, M.G., Farajalla, N. and Truglio, O. (2016) Gentrification Versus Territorialisation: The Peri-Urban Agriculture Area in Beirut*,* In: *Balanced Urban Development: Options and Strategies for Liveable Cities*. Springer Nature. pp.481-498.

Urban95 – Sustainability in Tira from a 95cm perspective

If you could experience the city from 95cm – the height of a healthy 3-year-old – what would you change?

Urban95 is a global initiative created by the Bernard van Leer Foundation that works with various stakeholders and communities to support the healthy development of young children and the well-being of caregivers in cities. Israel's National Urban95 program is currently operating in Tira, Beit Shemesh, and Ashdod, and will expand to 6 more cities in mid-2023.

Cities can be wonderful places to grow up, but they can also pose serious challenges for the health and well-being of babies and caregivers from a lack of nature and safe spaces to play, to air pollution and traffic congestion, to social isolation.

We would like to focus on our work in the city of Tira which has 30,000 inhabitants, about 10% of them are children aged 0-4. Most residents are middle class, with a high number of working mothers. Yet, the city is underdeveloped in terms of infrastructure and public facilities.

The development of public spaces in Tira is strengthening the local community, enriching the emotional life of children and parents, and increasing the sense of parental well-being, especially in low-income populations, which is translated into environmental and social impact on the public spaces and the residents of Tira.

The Urban95 principles along with the data we collected led us to define as a priority the themes of mobility and walkability, restoration and development of public spaces, and the creation of content activities for children and their caregivers to provide equal opportunities in public spaces.

In our presentation, we will showcase several public spaces we created and revived along with the community and different partners from academia, NGOs, and the private sector, Jews and Arabs together.

Breakout 1C:
Recalibrating Life on Earth

Moderator: Dr. Rachel Gottesman

May 9, 2023 | 9:30 AM

Urban Rewilding, Urban Mining **(Lecture)**	**Saeed Hleihel, Adi Shoresh, Adi Levi and Gitit Linker**
Landscape Integrations **(Lecture)**	**Matanya Sack, Uri Reicher**
"Ecopolis" as a spatial model towards the ecological transition	**Sandra Fabbro, Claudia Faraone**
Garden City / Green Metropolis? The role of historic urban landscapes in the transition from garden city to ecological metropolis	**Adva Matar**
Mapping Power: Landscape Transformation in the Jordan Valley	**Ben Gitai**

Equitable Landscape Interfaces - From Local to Land : Israel 100 Landscape Integrations

Arch. and Landscape Arch. Matanya Sack, Sack-Reicher _ shelter_expanse,
Assistant Professor, Faculty of Architecture and Town Planning - Technion IIT, Haifa.

Israel 100 - Landscape Integrations initiative is based on eight years of work by the **LandBasics** unit in the Landscape Programme at the Technion, Haifa. The research and education in the unit are based on two simple principles: first, dealing with the "land" before the "scape" - which promotes a wide multi-disciplinary approach, and second, delineating issues rather than sites, which broadens the view beyond existing boundaries and towards multiple scales, from policies to physical implementations. Applied to Israel 100, these principles suggest a new approach to urbanism and territorial landscape:

1. A critical mapping platform, reading the territory in new ways - crossing boundaries, hierarchies and scales, from which the emergence of new spatial phenomena can be identified and derived into scenarios and projects. It can simultaneously work between the immediate and the visionary, between the interior of the settlement and the landscape external.
2. The open spaces revolution will not only be a byproduct of its reduction by population growth, urban sprawl, and climate change, but internally - by formulating multi-functional landscapes responding to drastic transformations such as in agricultural technologies and renewable energy, re-wilding and forestry, daily public uses (due to COVID, social networks), ever-returning myths and on-going political and economic crises.
3. Landscape as the main urban infrastructure, flowing through regions and territories, with its own functions (commuting, micro-climate, rainwater management, ecological corridors) and with other integrated infrastructures - nature based solutions and built - such as sewage treatment.
4. Landscape-Urban Renewal - A new tool we propose to advance an urbanism of densification, based on existing landscape rehabilitation.
5. Access to a continuous external landscape - from equal, local, distributed network of green spaces and growth, to a shared cross-regional open space connecting the entire land and beyond. Its critical sites are exactly the diffused interfaces, the intermediary landscapes, between the built and the open.

These principles and others will be discussed through mappings and local implementations of pilot projects and case studies within Israel 100 Landscape Integrations, as well as students' research-by-design projects at LandBasics. We hope to propose a new pivotal role for interdisciplinary landscape practice within Urbanism in the Expanded Field.

International Conference on Urbanism and Urbanization
Urbanism in the Expanded Field
May 8-10, 2023 | Bezalel Academy of Arts and Design, Jerusalem

Track: Recalibrating Life on Earth

"Ecopolis" as a spatial model towards the ecological transition

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1 . Introduction

No ecological transition can take place without a territorial government that also makes use of an appropriate spatial vision. This vision, according to the authors, must, first and foremost, distance itself from the over-sized and omnipotent magnetism of the city/metropolis.
The Ecopolis model explored in this contribution was not born today but rather constitutes a very fertile and tenacious line of thought and action that has lasted for more than a century. Historically it could be framed in the context of the so-called 'Ecotopias' (de Geus 2002), but, unlike the classical ecological utopias that propose "the best possible world" forgetting that there are no absolute truths and, therefore, no perfect worlds either, Ecopolis is, rather, a tool to steer society in a better (not the best) direction than the present one. But it is also a tool for monitoring, analysing and diagnosing the present with a perspective of substantial changes of a structural nature (de Geus 2002). It has recently been given new impetus by a study on future scenarios of the European territory (ESPON 2012), which proposed three scenarios for the future of Europe: Ecopolis - Europe of regions; Metropolis - Europe of Cities and Metapolis - Europe of Flows. As the study is a research on spatial development to support politicians and policy makers, it does not formulate a choice between the three scenarios. However, we can say that history has taken on the unpleasant burden of deciding. The current general global crisis, in fact, seems to give the Ecopolis scenario the task of tracing the path for the future, as Metropolis and Metapolis can be included among the causes of the current crisis and do not seem to be able to offer viable spatial solutions to the profound climate changes taking place. Ecopolis, therefore, unexpectedly emerges not only as the most desirable scenario, but perhaps also as the only feasible one in light of the challenges of the ecological and energy transition.
Following, we will explore the genealogy of Ecopolis from the point of view of its structure and planning, starting with the analysis of what we can call Ecopolis's historical progenitors through to the study of its more recent evolution. The exploration, generically chronological, does not follow a systematic method of historical-disciplinary analysis. Aspects of political and economic theory and practice intersect with more specific theories of spatial planning and design, but without claiming to make rigid demarcations between the different issues and concepts considered. The intention, if anything, is to analyse and understand, in the perspective of the so-called "ecological transition" and sustainable development (Passet 1979; Boulding 1988; Bennett 2016), the contradictory dynamics of modern thought around the more general conflict between the metropolitan and regionalist option.
In the conclusions, an attempt will also be made to outline a perspective of implementation of the "ecopolitan model" starting from some suggestions offered by the Italian case.

2. Ecopolis and its progenitors: Garden city, Regional city and Bioregion

Ecopolis is not a recent invention, an *impromptu*; on the contrary, its conception and definition rests on the 'shoulders of giants', that is, of urban visions and models that, over the last century and a half or so, have tried to hold together the construction of new living spaces with issues of the environment and economy, culture and landscape, community and politics. Imagining to go along a timeline capable of giving us a genealogy of visions and forms that precede Ecopolis, - although it is not the aim of this contribution to go into the details of historical models - the first one that should certainly be mentioned is the Garden City model. Conceived by Ebenezer Howard in 1898, its main objective is the re-balancing of the city-countryside relationship through the industrial city's polycentric distribution in the surrounding agricultural territory, thus also breaking the unitary and dualistic centre-periphery nexus. The vision of the Garden City represents, with its essentially diagrammatic form, a system of satellite cities located radially around a main city and separated by large agricultural territories strongly equipped with not only productive but also cultural, educational and health services. The main characteristic of this polycentric city is, therefore, to be surrounded by a vast, strongly man-made countryside. The 'basic' scheme of the Garden City insists on 6,000 acres (24.28 square kilometres), of which approximately 17% is designated as urban (1,000 acres, thus 4.05 square kilometres) and the remaining as agricultural (5,000 acres, thus 20.23 square kilometres). The total population envisaged is 32,000 inhabitants, and the population density of both areas (urban and agricultural) is set at 7,400 abb/sq km in the city and 100 abb/sq km in the countryside (Howard 1965). Well-known applications of this model are those of Welwyn and Letchworth in Great Britain. Between 1923 and 1933, inspired by the Garden City, the American urban planner Clarence Stein, together with the members of the Regional Planning Association of America (RPAA), declined its original (essentially European) features, adapting them to the American context (Parsons 1998). However, the metric scale, as well as the distributive model, are different from the size and geometric perfection of Howard's scheme: the distributional design of Stein's 1954 Regional City [figure no.1] is freer and more informal and does not envisage a single, hierarchically superior centre; on the contrary, it encourages the formation of cities of varying size and function, dispersed across a vast non-urban territory (natural, agricultural and recreational). The Regional City [figure no.1] is schematised with a square portion of territory of 1,000 square miles (258,999 ha, i.e. 2,590 sq. km), of which 160 (414.4 sq. km) are urban and 840 (2,175.6 sq. km) non-urban, and hosts one million inhabitants in about forty cities of various sizes (from 25,000 to 100,000 inhabitants each). The cities in turn consist of 'neighbourhood units' of one square mile (259 ha or 2.59 sq. km), with 5,000 to 7,000 inhabitants each. Compared to the Garden City model, in the Regional City the physical dimension of the model remains similar in proportion, while the expected number of inhabitants changes. In terms of area, the entire Garden City hexagonal aggregation model corresponds to one ninth of the area of the Regional City, while the settled population is twice as large. In both proposals, however, the ratio of urbanised area per total land area is around 16-17%. The difference in population density leads us to assume that Howard's proposal aimed, first and foremost, at the decongestion of the industrial city, while the Regional City aimed, above all, at addressing the city in a regional context that is capable of measuring itself against the ecological and systemic dimension of the territory in which the urban settlement is inserted.

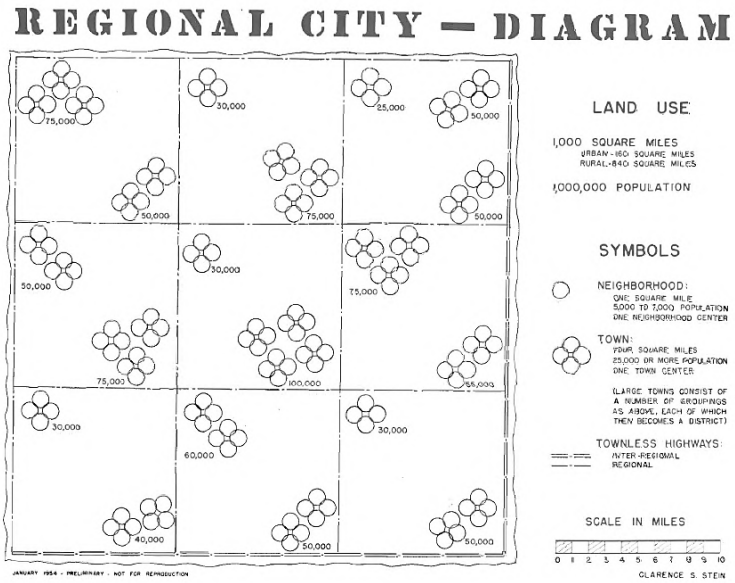

Figure 1- Diagram of the layout of Stein's Regional City (1954)

Finally, as a progenitor of Ecopolis can also be considered the Bioregion, which refers to "both to a geographical terrain and a terrain of consciousness —to a place and the ideas that have developed about how to live in that place. Within a bioregion, the conditions that influence life are similar and these in turn have influenced human occupancy. A bioregion can be determined initially by use of climatology, physiography, animal and plant geography, natural history and other descriptive natural sciences. The final boundaries of a bioregion are best described by the people who have lived within it, through human recognition of the realities of living-in-place" (Aberley 1999). The interpretative category of Bioregion therefore starts from the assumption that the region is, at the same time, a biological and historical-anthropic phenomenon with its own internal logic of development and therefore impossible to render in standard dimensions and modelling. With respect to this definition, it has no a priori limits other than those given by the natural element that shapes it and the living beings that inhabit it. In some cases even these boundaries are considered to be blurred, in fact "bioregional boundaries are constrained by the "reality" of the physical world that constantly changes in time, space and function. This view is hardly an ecologically deterministic one. Bioregions are constructs of a culture and community rather than biogeographical certainty. Bioregionalism grows out of the various perspectives and values held by the inhabitants of particular places (McGinnis 1999).

The bioregion is an interpretative category of the anthropic space, which emphasises ecosystems and local communities but imagines a governance capable of taking into account the interaction between inhabitants and their wider life ecosystem. The bioregion therefore, containing both the physical and cultural, ontological and processual spheres, has a very complex multidimensionality: "The bioregion - a territory revealed by similarities of biophysical and cultural phenomenon- offers a scale of decentralization best able to support the achievement of cultural and ecological sustainability". Hence, one aspect that does not go unnoticed is a certain syncretism of bioregionalism that can give rise to multiple conflicts of principle: "Bioregionalism offers an alternative paradigm based upon principles including the division of the earth into nested scales of "natural regions", the development of localized and self-sufficient economies, the adoption of a decentralized structure of governance that promotes autonomy, subsidiarity and diversity and the integration of urban, rural and wild environments. Bioregionalism is connected to anarchist, utopian socialist and regional planning traditions" (Kirkpatrick in Aberley 1999). In this last point, furthermore, bioregionalism openly recognises itself as an evolution of regional planning theory while, in its description, it refers to figures and schemes proposed by Regional City. Some of its principles can certainly also be found in Ecopolis. The difference between Bioregion and Ecopolis is, however, one of epistemological and disciplinary content. Bioregion is based on such a holistic and comprehensive approach that it almost refers to a

metaphysics of anthropised space, while Ecopolis also tries to take on the contrasts and conflicts between reality and human desires. Ecopolis planning, therefore, is nothing harmonious and peaceful and, as such, is called upon to confront issues of power (Hroch 2010) and the social metavisions that underlie it. The two visions are, therefore, on different levels -of knowledge and action- not necessarily in conflict with each other (they also belong to the same matrix) but certainly distant from each other, at least in the understanding of socio-spatial reality and its planning.
In conclusion, if we want to consider Ecopolis neither as an ideal city nor as a new town but, rather, as the evolution of an existing network of (small and medium-sized) centres that are organically embedded in an agro-ecological context, then, from the point of view of spatial organisation, it is much closer to the Regional City model, with its rich infrastructure of urban services and environmental networks, than the Garden City. The Bioregion, however, in its systemic functioning (and, therefore, strongly characterised in terms of flows among its internal parts and with other territorial systems) recalls the need for Ecopolis planning to confront not only with a model of spatial stocks but also with a model of ecosystem flows (of energy, matter, water, biodiversity, biomass, etc.). As such, Ecopolis could be placed between the Regional City and the Bioregion, because, with the former, it shares aspects of size and spatial distribution of stocks, while, with the latter, a systemic (rather than holistic) approach to the functioning of human settlement.
Finally, Ecopolis makes explicit reference to the future arrangement of territorial systems that have a non-metropolitan path dependency and, with respect to these, proposes a political and urban planning project that aims at a stable and structural alliance between the dimension of ecosystem services and urban settings. As such, it is certainly not an anti-urban vision, although it does not conceal a decided aversion (of RPAA derivation) to any 'megalopolitan' vision.

3. The most recent evolution of ecological thinking in urban planning

The debate among 'bioregionalists' has accelerated in the years at the turn of the 20th and 21st centuries, as a result of the increasingly pressing warnings from the international scientific community -of the life and earth sciences in particular- and the debates promoted at the level of global governance by the United Nations and other transnational associations (i.e. the United Nations Framework Convention on Climate Change - UNFCCC, the Conference of Partners - CoP and the Intergovernmental Panel on Climate Change - IPCC, IPPC, among others). A large group of scientists and researchers on a global scale, with a substantial and unequivocal output of multidisciplinary research, has long been questioning the ecological and environmental dimensions of human-inhabited territories and the connections between urbanism and the territory and between local government and the region - starting with the milestone work on ecology by the Odum brothers (Odum and Odum 1953), up to the famous report 'The Limits to growth' (Club of Rome et al. 1972).
The aim of this section is to retrace the various main strands of thought that have, directly or indirectly, explored issues related to Ecopolis theory and practice. We begin with "ecopolitan" studies and experiences developed in particular in Australia; we then go backwards to the more general meta-theories that underlie ecological research in urbanism such as the one on the "noosphere" (at the basis of the Soviet-founded Ecopolis of the 1970s) and the foundations of ecology of the Odum brothers (1950s). Subsequently, after tracing the experiences and developments of these meta-theories in the work of Ian McHarg and in the landscape/ecological urbanism practice (1960s-2000s) of his successors, we return to recent proposals of Ecopolis developed in Europe, in the 2000s, both in the field of architectural and urban design and as a meta-scenario for European spatial policies.

3.1. 'Ecopolitan' studies and experiences in Australia

Among the various approaches to urban development that respond to the demands urged by the environment and the sustainability perspective, there have been some utopian ones that have been realised over the years thanks to scholars, activists and professionals in urban planning and related fields. This is the ecocities proposal that initially developed thanks to the environmentalist movements of the 1960s and 1970s and that currently describes a broad spectrum of urban projects, even going so

far as to indicate large-scale, comprehensive foundation cities with very high technological content and a high degree of standardisation (Rapoport 2014).
The Australian Ecopolitan experiences described in this paragraph, therefore, belong to the first phase, which we could define bottom-up, through small-scale interventions called, indeed, Ecocities. More specifically, Downton (2008) represents, in the Australian context, the prolific promoter of an idea of Ecopolis that shares, with the Ecopolis proposed in this text, some basic assumptions such as those whereby humanity now lives predominantly in urban areas; climate change is highly due to the role of cities; a response to the decay of ecological balances can only begin with a reconceptualisation and remodelling of the city.
Downton tries to gather and construct a theoretical and operational frame that lies somewhere among architecture, urban design, town planning and spatial planning and that starts from the individual building and the individual urban plot. Downton's research consists in transforming cities into "agents of ecological rehabilitation" and in setting the city as a place where this transformation can occur according to a design perspective in which the neighbourhood represents the starting point and the ideal microcosm. The project takes the perspective of addressing the fracture of the human-nature nexus through compact, high-density urban settlements, while supporting healthy and socially just economies and cultures (Cooper and Baer 2019). This extensive discussion provides a theoretical and meaningful framework for the author's professional practice, which over the years has led to the realisation of some interesting neighbourhoods in Australia[1]. These realisations were imagined, according to a fractal logic, as minimal elements (which he calls ecocities) of a regional ecopolis embedded in the broader Australian geographical context. Follow-up research (Cooper and Baer 2019) verified the results of Downton's proposals through a detailed ethnographic study describing the transformation of these urban areas as a paradoxical process of 'ruralisation of the city', which simultaneously challenges both the assumptions of rural and urban ontologies and the way these physical and social realms interact with each other.
The two models, Downton's and the one proposed in this text, differ from each other in their approach to strategic planning: while Downton elaborates an intervention scheme that starts from the operational scale of the neighbourhood, the 'ecopolitan' perspective proposed here, instead, while not excluding an operational and transcalar approach that stems from below, has predominantly the characteristics of an 'ecopolitical' radical vision (Morin 2020) to be implemented, first and foremost, through policies and processes on a territorial and regional scale.

3.2. Meta-theories underpinning ecological research in urban planning

Ignatieva's contribution on Ecopolis (Ignatieva 2002) provides us with an account of the programme developed in the Soviet Union towards the end of the 1970s -and called, precisely, Ecopolis-, which resulted in a number of new towns[2] built with a holistic and interdisciplinary approach that aimed, as a basic idea, at promoting the new town through the polarising concentration of scientific research activities and institutions and public administration functions, overcoming the logic of industrial-based urban activities and therefore also avoiding the provision of spaces for industrial production. This Ecopolis concept was centred on the idea of a coherent and integrated evolution of the dynamics of the biosphere and mankind, referring to the principle of 'constructive ecology', which aims at ecosystem management towards a coherent evolution between nature and society (the so-called 'noosphere' of Teilhard de Chardin and Vernadsky referred to in Fuchs-Kittowski and Krüger, 1997). This theory, in the declination of the geochemist and mineralogist Vernadsky, argues, indeed, that the biosphere transforms itself into the state of the noosphere, due to the action of human intellect and labour, as man constitutes himself into a powerful 'geological force'. In this meta-theory, we can also

[1] "Halifax EcoCity Project", "Whyalla EcoCity Development" e "ChristieWalk"

[2] The first to be realised was the city of Pouschino, 120 km from Moscow, later the idea of Ecopolis emerged as a reference for other small, medium and large cities such as Kosino, Korolev, Vologda, Uliyanovsk and others.

recognise similarities with more recent theorisations on the Anthropocene [3] and the 'great acceleration' (McNeill and Engelke 2016)[4].
The interest in ecology, in urban planning theory and practice, has developed and branched out since the theories and studies conducted in the 1950s by the Odum brothers, who focus on the system of relationships between communities of living beings and their environments and the difference between natural ecosystems powered by the sun and man-made ecosystems powered by fossil fuel. By means of a well-known comparison between a lake and a modern city of the same scale, they demonstrate the huge dissipation generated by the city due to the enormous quantities of fossil energy used to make it function and the large quantities of harmful emissions that are produced by it through water and air pollution, the production of unrecycled waste, heat loss, etc. They also make apparent the territorial footprint of the water, food and energy supply of a modern city without, however, going so far as to conceive a territorialisation of circular economies as some scholars and urban planners have, more recently, tried to do through the concept of urban and territorial metabolism (Rapoport 2011; Grulois, Tosi, and Crosas Armengol 2018).

3.3. From 'Design with Nature' through 'Landscape urbanism' towards 'Landscape ecological urbanism'

Returning to the field of spatial sciences and the design of urban space, a special focus deserves to be made on Landscape urbanism, which does not propose any Ecopolis but rather intervenes operationally in processes of territorial transformation. The interest in this 'new' disciplinary field is linked in particular to the paradigm shift brought about by the elaboration of new concepts and approaches for the design of the territory.
The theoretical-practical proposals of landscape urbanism were developed, starting in the 1980s, by a group of landscape architecture scholars from North America, who gravitated around the same university departments, seminars and conferences and condensed a dialogue between different disciplines that had already been developing for a few decades prior starting with the work of Ian McHarg (McHarg 1969). He developed a transdisciplinary planning and design method in which he actively involved botanists and ecologists with workshops dedicated to urban design and planning, to bring together the evolutionist and regionalist thinking of Patrick Geddes and the emerging science of ecosystem ecology. In the 1980s, his workshop and approach were inherited by James Corner who tried to reformulate the question of ecology and landscape design by orienting McHarg's positivist planning method towards greater subjectivity and creativity (Corner 2014)[5] and arguing that multiple functions and activities can hybridise together while simultaneously affecting the same territory (Steiner 2011).
Although landscape urbanism did not initially refer to ecological flows and cycles of urban metabolism, today it clearly appears to also address the issue of material and energy flows in urban and territorial systems. In this sense, landscape urbanism has recently been reformulated as Ecological urbanism by one of its founders Mohsen Mostafavi of the Harvard Graduate School of Design. This author combines the more environmentally-oriented agendas of contemporary planning and design in such a way as to "incorporate the inherent conflicting conditions between ecology and urbanism" (Mostafavi and Doherty 2010) although the impression is that Mostafavi and his colleagues draw heavily on landscape urbanism but pay little attention to advances in urban ecology. If these ecological advances were incorporated, one could indeed imagine a new synthesis towards a kind of Landscape ecological urbanism (Steiner 2011) whose goal could be to design and plan cities by aiming to increase, rather than limit (as is still the case today), the ecosystem services of an area. This perspective opens up new

[3] A term used in the early 1980s by the biologist E. Stoemer, and popularized in 2000 by Nobel Prize winner for chemistry P. Crutzen, to define the geological phase following the Holocene, which presumably began as early as the 18th century with the industrial revolution and was characterised by substantial and permanent ecosystem and geological changes produced by anthropogenic factors, the incidence of which configures Homo sapiens as a geological force capable of irreversibly interfering in the ecosystem dynamics of the planet, pushing it beyond its natural limits. From the Treccani encyclopaedia https://www.treccani.it/enciclopedia/antropocene

[4] Thus, in the aftermath of World War II, the Anthropocene has entered a new era, in which humanity increasingly conditions global ecology: the most anomalous period in the history of man's relationship with the biosphere.

[5] For a concise historical account of the disciplinary development of landscape urbanism and a bibliography of it, see (Bortolotti, Grulois, and Ranzato 2018).

and interesting areas of research in the field of spatial planning, for example in ways of measuring ecosystem performance and evaluating projects in terms of ecosystem effectiveness. Broadening the focus, it relies on an approach aimed at a. resilience - taking into account the new environmental challenges brought about, in particular, by climate change and extreme weather events such as floods and droughts, b. the health and well-being of settlements and c. biodiversity and the green economy.

3.5. Ecopolis in Europe in the 2000s

Similarly to what occurred in Australia, in Europe, around the decade of the 2000s, some scholars returned to reflecting, at the scale of the urban project and starting from concrete realisations and experiments, on the dimension of the sustainable neighbourhood. Oriented towards sustainable architectural design are, for example, the contributions of Babalis (2007) and Charlesworth and Adams (2013), who aim to conceptualise and define the principles of sustainable design and planning with an approach that looks at the morphology of buildings and built space, in the context of the neighbourhood scale, as of an urban system that can reach as far as the metropolitan area. Also Maretto (2012) places the issue of sustainability at the scale of the urban project, through a reflection that looks, on the one hand, at the great challenges and instances posed by climate and environmental changes to the built urban space (that it defines as the fourth wave, the sustainable revolution, as the "great shift" and paradigm of the 21st century). On the other hand, looking at case studies and practical examples to demonstrate how the morphology of materials and urban fabrics is declined and point to design paths in eleven European cases of ecocities and eco-neighbourhoods between 1991 and 2012.
Other experiments and applied research have tried to focus on the relationship between city and countryside - from a perspective that looks more at the countryside - by investigating the issues from the perspective of agroecological transitions and the transformation of the food system and food production. The 'agroecological urbanism' (Tornaghi and Dehaene 2020), for instance, looks at agroecological transitions as a paradigm shift in biopolitical spatial relations, economic values and planning, and assumes a transformative agenda that jointly considers urban nutrients, peri-urban land use, community food education and infrastructure for farmers.
Shifting from scientific research and disciplinary innovation to the field of spatial policy-making, the study of ESPON (2012) on three future spatial development scenarios, looks at the European territory with a multidimensional and syncretic approach - capable of bringing together society, environment, economy and politics – and outlining -more than a hundred years after Howard and Mumford's radical ideas -, an 'ecopolitan scenario', named Ecopolis, alternative to the gigantism and magnetism of the city/metropolis. The Ecopolis scenario, that can also be considered anticipatory of the vision explored in this contribution, is, in fact, one of the three ESPON proposed scenarios. It corresponds to a "Europe of Regions / Promotion of small and medium-sized cities" and is explicitly inspired by political and economic theorists, urban planners and regionalists, some of whom are also mentioned earlier in this contribution, who have long fuelled the debate on an urban regionalism as an alternative to the metropolis. The study does not make an option between the three proposed scenarios Ecopolis, Metropolis and Metapolis, but the planetary events that, at the turn of the century and after 2012, shook the world (financial crisis, pandemic, war on the European continent, crisis in international relations, etc.), gave their unequivocal historical answer. Metapolis and metropolis, centred on the metropolitan territories of a single global industrial and logistical platform, are inevitably blamed because they are responsible for that economic-only globalisation and planetary urbanisation (Brenner and Schmidt 2014) that are at the origin not only of the current crises but also of the great climate crisis (Morin 2020). As a result, they are clearly much less desirable than Ecopolis. Today, in other words, we cannot merely appreciate the fact that a clear alternative scenario was already anticipated ten years ago, but we must also seriously reconsider and implement it in policy agendas and operational actions at the various scales.

4. Conclusions

The intent of the paper was that of attempting to analyze, from the perspective of the so-called 'ecological transition', the contradictory dynamics of modern thinking around the more general conflict between the metropolitan perspective and the regional perspective. In these conclusions, an attempt will be made to outline a perspective on the implementation of the 'ecopolitan model', starting from some suggestions offered by the reconstruction of the ecopolitan thread of thought.

Ecopolis represents a tenacious and permanent idea that runs through and influences urban planning theory even after the great 'progenitors' of the 20th century. In the early 2000s we have, in Australia and Europe, cases of conception and design of Ecopolises based on a fractal logic that starts from the design of ecological neighbourhoods (the ecocities). Studies of these realisations speak of Ecopolis as cases of the 'ruralisation of the city' that question not only urban ontologies but also rural ones. Previously, in the 1970s, the name Ecopolis was given to Soviet new towns. Their modelling started from the theories of the 'noosphere', according to which the biosphere evolves into the noosphere as a result of the action of human intellect and labour upon them. Scientific research activities and institutions are therefore seen as the driving force behind these Ecopolis. The nascent ecological theories of the 1950s and 1960s first generated Ian McHarg's ecological approach to design and its subsequent evolution into landscape and then ecological urbanism. A synthesis is potentially underway in the more recent approach of landscape ecological urbanism. But these are disciplinary approaches that work in the direction of redevelopment and restructuring of the built and natural environment without, however, questioning the existing spatial order and, therefore, the political and power models that operate at the root of the organisation of space (de Geus 2002). In the elaboration of strategic scenarios for the European territory, ESPON - a research agency in charge of providing cognitive frameworks for European policy-making -, proposed, in 2012, the Ecopolis scenario as an integrated and alternative model to the dominant metropolitan models. The summary and conclusion of this exploration (albeit not systematic and ongoing) is that the concept and vision of Ecopolis refers to an urban planning model that is alternative to the urban/metropolitan one, which has 'worked' under the surface throughout the last century and has unexpectedly re-emerged right on the threshold of the current general crisis. It is a mixed and composite model (with the structural-spatial characteristics of the Regional City, the systemic characteristics of the bioregion, and mediated by the operational approach of landscape ecological urbanism) that seeks a structural alliance between natural - or more often semi-natural - ecosystems and urban settlements - suitably resized and restructured - and, as such, may represent the most valid, if not the only, spatial model for the planet's ecological transition.

An initial, indicative application of this model to the Italian territorial context (Fabbro and Faraone 2022) has made it possible to verify that it is potentially feasible to extend the application -structural and governance- of this model to a wide Italian territory, included, from the point of view of governance institutions, within numerous Italian Regions and Provinces.

For the authors of this paper, therefore, "Ecopolis" proves to be the desirable urban model because it appears to be the only one capable of tackling - through a paradigm shift in territorial policies on a European and planetary scale - the great challenge of climate change and ecological transition, starting from the recognition and valorisation of existing structures towards a different model of territorial planning and development. A further step could therefore be, on the one hand, to better identify the indicators (both of structural-spatial stocks and of systemic flows typical of the bioregion) characterising the 'ecopolitan areas', on the other hand, to verify the possible extension of the theoretical model also to the territories of other countries and, on the other hand, to deepen the issue of territorial government which, in an ecopolitan perspective, cannot be limited to a mere extension of town planning to regional space. We do not exclude, therefore, but rather hypothesise that a radical change in the reference model also presupposes, in the perspective of ecological transition, an approach to 'territorial government' not as a mere extension of urban planning to a broader territory, but as a reconsideration of its own basic disciplinary statute.

Riferimenti bibliografici

Aberley, Doug. 1999. 'Interpreting Bioregionalism: A Story from Many Voices'. In *Bioregionalism*. London; New York: Routledge.

Babalis, Dimitra. 2007. *Ecopolis: Revealing and enhanging sustainable design*. Alinea.

Bennett, John W. 2016. *The Ecological Transition: Cultural Anthropology and Human Adaptation*. Elsevier.

Bortolotti, Andrea, Geoffrey Grulois, and Marco Ranzato. 2018. 'From Ecology to Urbanism. Urban Metabolism Genealogies and Perspectives in Urbanism Theory and Practice'. In *Designing Territorial Metabolism: Barcelona, Brussels, and Venice*. Berlin: Jovis.

Boulding, Kenneth Ewart. 1988. *The Meaning of the 20th Century: The Great Transition*. University Press of America.

Brenner, Neil, and Christian Schmidt. 2014. 'Planetary Urbanization'. In *Implosions/Explosions Towards a Study of Planetary Urbanization*. Berlin: Jovis.

Charlesworth, Esther, and Rob Adams. 2013. *The EcoEdge: Urgent Design Challenges in Building Sustainable Cities*. Routledge.

Club of Rome, Donella H. Meadows, Dennis L. Meadows, Jørgen Randers, and William W. III Behrens, eds. 1972. *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind*. New York: Universe Books.

Cooper, Liam, and Hans A. Baer. 2019. *Urban Eco-Communities in Australia. Real Utopian Responses to the Ecological Crisis or Niche Markets?* Singapore: Springer Singapore. https://doi.org/10.1007/978-981-13-1168-0.

Corner, James. 2014. *The Landscape Imagination: Collected Essays of James Corner 1990-2010*. Princeton Architectural Press.

Downton, Paul F. 2008. *Ecopolis: Architecture and Cities for a Changing Climate*. Springer Science & Business Media.

ESPON. 2012. 'ET2050 Territorial Scenarios and Visions for Europe. Project 2013/1/19. Interim Report 31/05/2012. Revision | 12/10/2012'.

Fabbro, Sandro, and Claudia Faraone. 2022. 'Verso La "Transizione Ecologica": Ecopoli Come Visione e Modello per Il Governo Del Territorio'. *Urbanistica Informazioni* 306 Special Issue "Oltre il futuro: emergenze, rischi, sfide, transizioni, opportunità. Atti della XIII Giornata Internazionale di studi Inu" (November): 713–16.

Fuchs-Kittowski, K., and P. Krüger. 1997. 'The Noosphere Vision of Pierre Teilhard de Chardin and Vladimir I. Vernadsky in the Perspective of Information and of World-wide Communication'. *World Futures* 50 (1–4): 757–84. https://doi.org/10.1080/02604027.1997.9972669.

Geus, Marius de. 2002. 'Ecotopia, Sustainability, and Vision'. *Organization & Environment* 15 (2): 187–201. https://doi.org/10.1177/10826602015002006.

Grulois, Geoffrey, Maria Chiara Tosi, and Carles Crosas Armengol, eds. 2018. *Designing Territorial Metabolism: Barcelona, Brussels, and Venice*. Berlin: Jovis.

Howard, Ebenezer. 1965. *Garden Cities of To-Morrow*. MIT Press.

Hroch, Peter. 2010. 'Encountering the "Ecopolis": Foucault's Epimeleia Heautou and Environmental Relations'. *ETopia*, March. https://doi.org/10.25071/1718-4657.36563.

Ignatieva, Maria. 2002. 'Ecopolis – Search for Sustainable Cities in Russia'. In *The Sustainable City II: Urban Regeneration and Sustainability*, 1034. International Series on Advances in Architecture. Southampton, UK ; Boston: WIT Press.

Maretto, Marco. 2012. *Ecocities. Il progetto urbano tra morfologia e sostenibilità*. 1A edizione. Franco Angeli.

McGinnis, Michael Vincent. 1999. 'Boundary Creatures and Bounded Spaces'. In *Bioregionalism*. London; New York: Routeledge.

McHarg, Ian L. 1969. *Design with Nature*. Wiley.

McNeill, J. R., and Peter Engelke. 2016. *The Great Acceleration: An Environmental History of the Anthropocene since 1945*. Cambridge, MA: Belknap Press.

Morin, Edgar. 2020. *Cambiamo Strada. Le 15 Lezioni Del Coronavirus [French Edition: Changeons de Voie : Les Leçons Du Coronavirus (in Collaboration with Sabah Abouessalam), Paris, Éditions Denoël]*. Milano: Raffaello Cortina Editore.

Mostafavi, M., and G. Doherty. 2010. *Ecological Urbanism*. Basel (Switzerland): Lars Müller Publishers.
Odum, Eugene P., and Howard T. Odum. 1953. *Fundamentals of Ecology*.
Parsons, Kermit C. 1998. 'Clarence Stein's Variations on the Garden City Theme by Ebenezer Howard'. *Journal of the American Planning Association* 64 (2): 129–30. https://doi.org/10.1080/01944369808975969.
Passet, René. 1979. *L'économique et le vivant*. Payot.
Rapoport, Elizabeth. 2011. 'Interdisciplinary Perspectives on Urban Metabolism'. UCL Environmental Institute Working Paper, Development Planning Unit, UCL.
———. 2014. 'Utopian Visions and Real Estate Dreams: The Eco-City Past, Present and Future'. *Geography Compass* 8 (2): 137–49. https://doi.org/10.1111/gec3.12113.
Steiner, Frederick. 2011. 'Landscape Ecological Urbanism: Origins and Trajectories'. *Landscape and Urban Planning*, Landscape and Urban Planning at 100, 100 (4): 333–37. https://doi.org/10.1016/j.landurbplan.2011.01.020.
Tornaghi, Chiara, and Michiel Dehaene. 2020. 'The Prefigurative Power of Urban Political Agroecology: Rethinking the Urbanisms of Agroecological Transitions for Food System Transformation'. *Agroecology and Sustainable Food Systems* 44 (5): 594–610. https://doi.org/10.1080/21683565.2019.1680593.

Garden City / Green Metropolis? The role of heritage planning in the transition from garden city to ecological metropolis

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Abstract: Considering the global agenda towards sustainable development, cities and metropoles today are challenged to develop and perform more sustainably. The United Nations' Sustainable Development Goals and especially Goal 11 ("Sustainable Cities and Communities"), the UN Habitat's New Urban Agenda and the UNESCO Recommendation on the Historic Urban Landscape provide altogether a global framework for addressing the sustainable challenges of complex environments and urbanisms, while positioning heritage and the metropolis in the center of the agenda. Metropoles are becoming the predominant form of urbanization and urban living of the 21st century. They present new scales of opportunities, challenges, and risks towards sustainable living. In parallel, the developments of the last decade in heritage theory and practice present a potential for harnessing heritage to urban planning, managing climate crisis and rapid change. Heritage planning is assumed to be vital in providing for sustainability, but there is a gap in knowledge and in practice about the relationship between metropolization processes and urban heritage, and in what ways they can support sustainable development of contemporary urbanisms.

In the Israeli context of the Tel Aviv-Yafo metropolis, urban renewal projects, mass-transit infrastructural projects, climate changes and densification processes have major influence on the built and unbuilt environments, resulting in an eclectic metropolitan field. The original design planning of Tel Aviv-Yafo as a garden city (the White City of Tel Aviv-Yafo) was based on a balanced relationship between built-up and green, open spaces. Nevertheless, as the former garden city plan for Tel Aviv-Yafo is now encapsulated in the changing dynamics of the metropolis, the garden city values and attributes might have been neglected and forgotten over time due to the expansion and densification beyond the original urban plan.

This paper suggests a starting point for research on examining the transformation of the horizontal metropolis, one of changing density of built and open, using Tel Aviv-Yafo metropolis as a case-study. This paper will present the proposed methodology for spatial analysis, towards identifying the historic urban landscapes of the major metropolis in the Israeli urban field, and the current condition of its built and open relations at the local, metropolitan, and regional scale.

Keywords: Horizontal metropolis, urban-rural, heritage planning, sustainability, spatial analysis

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1 Introduction

This research is a starting point for PhD research, which aims to explore the horizontal metropolis which connects urban and rural, built, and open territories, as the potential space to argue the generative role of heritage for the sustainable metropolis. Heritage, and heritage planning, as the bridge between future and past, can perform in the context of the metropolis as a novel arena to discuss environmental, social, and cultural sustainability and recalibrate its sustainable performance.

This research is interested in the ways heritage planning plays a role in the evolution of former urban-rural areas into ecological urbanisms and metropolises. More specifically, it is looking into the values and attributes of the garden city planning, and how they have changed since the original planning, into the metropolis they are encapsulated in nowadays. This would serve to identify whether those attributes and values can play a role in the sustainability of the contemporary metropolis, and whether their heritage can help to develop a culturally based layer for planning the sustainable development of the contemporary metropolis. In the following I will share the context and methodology of this research, which uses the case study of Tel Aviv-Yafo metropolis, also known as the Dan metropolis, as the arena of investigation.

2 The Sustainable Challenges of the Metropolis and Heritage

Metropoles are becoming the main form of urbanization and urban living of the 21st century. It is widely discussed that current urbanization will apparently result in 75% of the world population residing in urban areas (UN-Habitat, 2016). With a new metropolis arising every two-weeks over the next fifteen years (UNHabitat, 2020), it is becoming the predominant form of urbanization and urban living of the 21st century, with metropolis containing more than 50% of the urban population globally (UNDESA, 2018). The increase of metropolitan areas indicates on not only demographic growth but also on urban, social, economic, and environmental transformations of the urban field. It means urbanization faces new scales of size, opportunities, challenges, and risks towards sustainable living and the achievement of the Sustainable Development Goals (United Nations, 2016). It is therefore important to consider the emerging metropolitan formations, and what they bear for local and global scales towards sustainability.

The global agenda towards sustainable development includes UN Habitat's New Urban Agenda from 2016; The Sustainable Development Goals from 2015, including Goal 11 - "Sustainable Cities and Communities") and target 11.4 – "strengthen efforts to protect and safeguard the world's cultural and natural heritage"; and the UNESCO Recommendation on the Historic Urban Landscape from 2011. This framework position both the metropolis and heritage in the center of the global agenda. The developments of the last decade in heritage theory and practice

present a potential for harnessing heritage to urban planning, managing climate crisis and rapid change (Erkan, 2018). The Historic Urban Landscape approach is broad and can be understood in different ways, and the research on it is varied accordingly. Although the academic discussion deals a lot with the need to integrate management, conservation, development, and planning disciplines, it does not elaborate much on how to move from theory to practice, especially at the metropolitan scale. Such application would serve to respond to the current orientation of the heritage discipline towards an integrated approach that ensures urban, and also metropolitan, sustainability (Ginzarly et al., 2018).

As mentioned, cities and metropoles today are challenged to develop and perform more sustainably. The lack of open and green spaces, ecological corridors and urban nature in cities has been proven to cause congestion and pollution, disruption of ecosystems and loss of biodiversity, greater exposure to environmental hazards and risk to public health and well-being (Folberth et al., 2015; Goronczy, 2021; Michalina et al., 2021; Vasenev et al., 2018). Instead, the presence of adequate open, green and ecological spaces and infrastructures contributes to the well-being by moderating climate, improving air quality, mitigating urban heat island effects, and providing recreation and social interaction (Du C, Jia W, Chen M, Yan L, 2022; Pukowiec-Kurda, 2022; Vasenev et al., 2018). However, some metropoles may have a head start as they were initially planned as garden cities, such as the Jardims of Sao Paolo, Hellerau district of Dresden or The White City of Tel Aviv - Yafo, which were planned based on a balance between built and open spaces, among other key attributes (Laura Veronese, 2018; Waldheim, 2018). These garden city attributes might have been neglected and forgotten over time with urban expansion and densification beyond the original urban plan, which challenge their sustainable development. There is a gap in knowledge and in practice about the relationship between metropolitan growth, urban heritage planning and garden city planning, and whether all three can support sustainable development of contemporary metropoles. The infrastructure of the garden city is now part of a metropolis; the question is, can it be reintegrated in the metropolitan field and contribute to its future sustainable performance?

3 Harnessing Heritage to Sustainability

Heritage has begun to be officially associated with sustainable development in the past two decades (Labadi, 2017), especially with the appearance of the Historic Urban Landscape approach, which integrates territorial values with local values, historic layers and attributes with the present cultural and natural environment (Erkan, 2018). Current research on the role of heritage in urban design and planning focus on specific heritage listings. There is little research addressing the role of heritage as a whole, as a landscape of tangible, intangible, natural, cultural, movable, immovable (when existent) elements, nor discussing their role in the evolution from garden cities to green metropoles. Research on the role of heritage in supporting sustainable development mainly focus on tangible heritage as a driver for economic and social development (Amado & Rodrigues, 2019), and lack the aspects on the impact heritage, as a mechanism, has for supporting a landscape approach which integrates physical and intangible dimension (Van Oers, 2014). There is some consensus in the related research fields on the transformative role culture and heritage play in the economic, social and environmental dimensions of development, but it is not truly tangible in broader sustainability discourses (Petti et al., 2020).

Heritage planning deals with heritage listings, their values and attributes in all categories: tangible, intangible, natural, cultural, movable, and immovable. Heritage planning is assumed to be vital in preserving attributes and values: the main role of heritage listings has been defined to integrate the protection of heritage into comprehensive planning processes (Article 5a of the World Heritage Convention) (UNESCO, 1972), and protect the cultural and natural heritage in order to support the goal of making cities safe, inclusive, resilient and sustainable (United Nations, 2015). Therefore, heritage planning is viewed for this research not as a mechanism that is situated in the heritage field only, but rather as the potential tool for shaping and designing the future of a site, playing a role in processes of development with sustainable, wholistic integrity. This is to reflect the broad scale of urban heritage, but also points out that instead of one single definition of the HUL concept and approach, there are rather different

focuses which address different aspects of the recommendation (Rey-Pérez & Pereira Roders, 2020).

So, how can heritage support sustainable developments of contemporary urbanisms? Heritage planning contains both temporalities of future (planning/development/ horizontal metropolis), and past (heritage/urban heritage). I am looking at the use of heritage planning – as means and as a mechanism – for enabling and supporting well-being for sustainability, in the light of the metropolis' current and future development. In this case, the metropolis of Tel Aviv – Yafo, and its unique heritage of the white city and its garden city planning, are reviewed. The curiosity underlying this is - In what ways does heritage planning of the garden city attributes and values affect the relations between open and built areas? Moreover, how have they transformed over the years since they have become encapsulated in the growing metropolis?

4 The Case-Study: The Tel Aviv-Yafo Metropolis and the White City

The Tel Aviv-Yafo metropolis, also known as the Dan metropolis, is the central metropolis in Israel, also the biggest one. It has more than 4 million inhabitants and is spreading over more than 1500 square kilometers, including not only cities, but also towns, smaller settlements and open and natural territories – an intriguing form exemplifying of the Israeli horizontality (Verbakel, 2018; Viganò et al., 2018). The metropolis hosts many important financial, cultural, governmental, social, and infrastructural centers of the country. With the highest real-estate values, living costs and density, the metropolis is already facing many challenges for sustainability, urban planning, and development. As Israel is expected to double its population by 2040, the major challenges, as well as development and densification processes are expected to be seen in the Dan metropolis. Urban renewal projects undergo, together with the national metro and light rail project - the biggest infrastructural project in the country – are already shaping the form and performance of the metropolis already.

Tel Aviv-Yafo, the main city of the metropolis, has maintained its importance and dominance in the Israeli urban field through the years since its establishment in the 1909. As the first city

of the Zionist movement, it was an ideal case for implementing ideological ideas and utopian city planning. The preparation of a plan for the development of Tel Aviv - Yafo was commissioned to Sir Patrick Geddes (1930's), the famous botanist, sociologist urban planner, who brought his own take on Modernism and the Garden City Movement into the plan. Geddes' plan and report for Tel Aviv-Yafo from 1925 proposed an architectural and urban alternative for the challenges of humanity in the 20th century (Geddes, 1925). There he details not just the ways the city roads and blocks should be laid out, but also how its citizens would live, work, consume and work in the garden city. It was based on built and open relations in various scales: block, street, city and beyond the city scales. In this sense, his report serves not exactly as a planning document, but rather as an agenda, a manifesto, for Tel Avivian urbanism suited to the local context and climate, according to his understanding. His proposal for Tel Aviv-Yafo represented an experiment in reform of the built environment for pressing social questions between form and reform (Van Zee, 2012).

Geddes proposed various attributes of the desired open areas and features in various levels and scales. To mention some of them: in the block level - green lanes, front gardens and inner playgrounds are to be allocated and planned, together with east-west positioning of the buildings to let the sea breeze in, and also to provide shade most of the day. Fruit trees and vegetables are to be grown in communal gardens for shared consumption. At the street level, specific distance between the buildings, and between the road to the building facades, have been suggested for a recommended street section and "correct" proportions. Boulevards and adjacent gardens in walking distance from the blocks were supposed to provide for recreation, communal and educational agriculture and support the health of the citizens. In the city scale, wadis (riverbanks) were identified as potential natural boundaries between neighborhoods, and between the city and the rural areas around it. Parkways and hiking trails using the riverbanks in and beyond the city boundaries were proposed as well. A natural reserve was planned both as a viewpoint towards the city and the shoreline, and as marking the limit to the growth of the city.

Almost a century has passed since the Geddes plan to Tel Aviv-Yafo. The area, which was planned and realized according to Geddes' report, also includes many examples of architecture of the international style, has been named The White City. The UNESCO inscription of the area as world heritage in 2003 has relied, besides on the architecture of the international style, on the unique and exemplary manifestation of the Geddes approach and design. The city has grown and expanded, and while many of these attributes and open features within the built fabric have indeed been conserved and preserved, they are not yet anchored as an equal component in the heritage layer of the city, nor in the metropolis in general. In the face of major densification, infrastructural and development transformations the metropolis is going through and will undergo in the future, those built-open relations are not secured under any urban or metropolitan mechanism, along with their probable potential role in providing for the well-being and sustainability in the metropolis.

5 Research Methodology for Spatial Analysis of the Historic Urban Landscape of the Tel Aviv-Yafo Metropolis

Following these understandings, the general goal of the research is to examine the garden city concept, through the case of Tel Aviv – Yafo, identifying it as part of the historic urban landscape of the metropolis which is consisted of built and open in various scales as the underlying design code of the core, assumingly also that of the metropolitan field as a whole. The research methodology is therefore consisted of content & policy analysis, as well as spatial analysis mapping methods.

In the first stage, the methodology use literature to define the attributes and values of the garden city of Tel Aviv-Yafo. Systematic content analysis is conducted both on the Geddes' original report for Tel Aviv-Yafo, as well as on the UNESCO World Heritage Inscription for the White City, to distill the heritage attributes and values of the garden city. Both analyzed texts provide the two points in the timeline which are important for the case-study: first, the origin point of the garden city planning, and the moment it was anchored by heritage for specific preservation and consideration regarding future planning. This is done according to methodological

framework for identifying and coding the attributes and values based on the taxonomy of Tarrafa Silva & Pereira Roders from 2012 of values, and the Veldpaus taxonomy from 2015 of tangible attributes (Veldpaus, 2015). This stage is expected to result in the comprehensive identification of the attributes and values of the garden city of Tel Aviv – Yafo and will provide the basis for their analysis later on.

The following stage focuses on mapping, as means to identify how have the Tel Aviv – Yafo garden city attributes and values changed over time. The interest of this stage are the specific forms of relations between open and built. After selecting a set of key attributes from the previous stage, they will be mapped using spatial analysis methods in metropolitan scale. This may shed light on various forms of built-open relations in metropolitan, such as on the typologies of boundaries between open and built in the core area of the garden city, typologies of urban fringe around the inscription area, form and centrality of metropolitan open and green areas, etc.

The following stage looks for identifying the changing patterns of built and open in the local scale – in and around the inscription area, where heritage planning as a mechanism of directing development is in action. In this stage, heritage sites and heritage planning documents are compared with the actual transformation of built and open in the heritage protected areas of the White City, in order to identify whether heritage played a role in the transformation between the open and the built. Analyzing the urbanization patterns and changing relations between built and open spaces both in metropolitan and local levels might reveal whether there is a correlation between the White City development and the metropolitan landscape evolution.

The concluding stage will focus on a comparative analysis on the transformations of the built and open – the attributes, meeting the development of heritage listings, in the transforming metropolis. The findings from the previous stages will be integrated into a discussion on whether the heritage of the garden city played a role in the growth of the metropolis regarding, and whether it maintained in securing the relations between built and open in processes of development. Have heritage, as a tool for preserving the attributes and values of a place, indeed

shaped the balance between built and open spaces in the metropolis, and therefore, can it the future of such sustainable relations in the future metropolis?

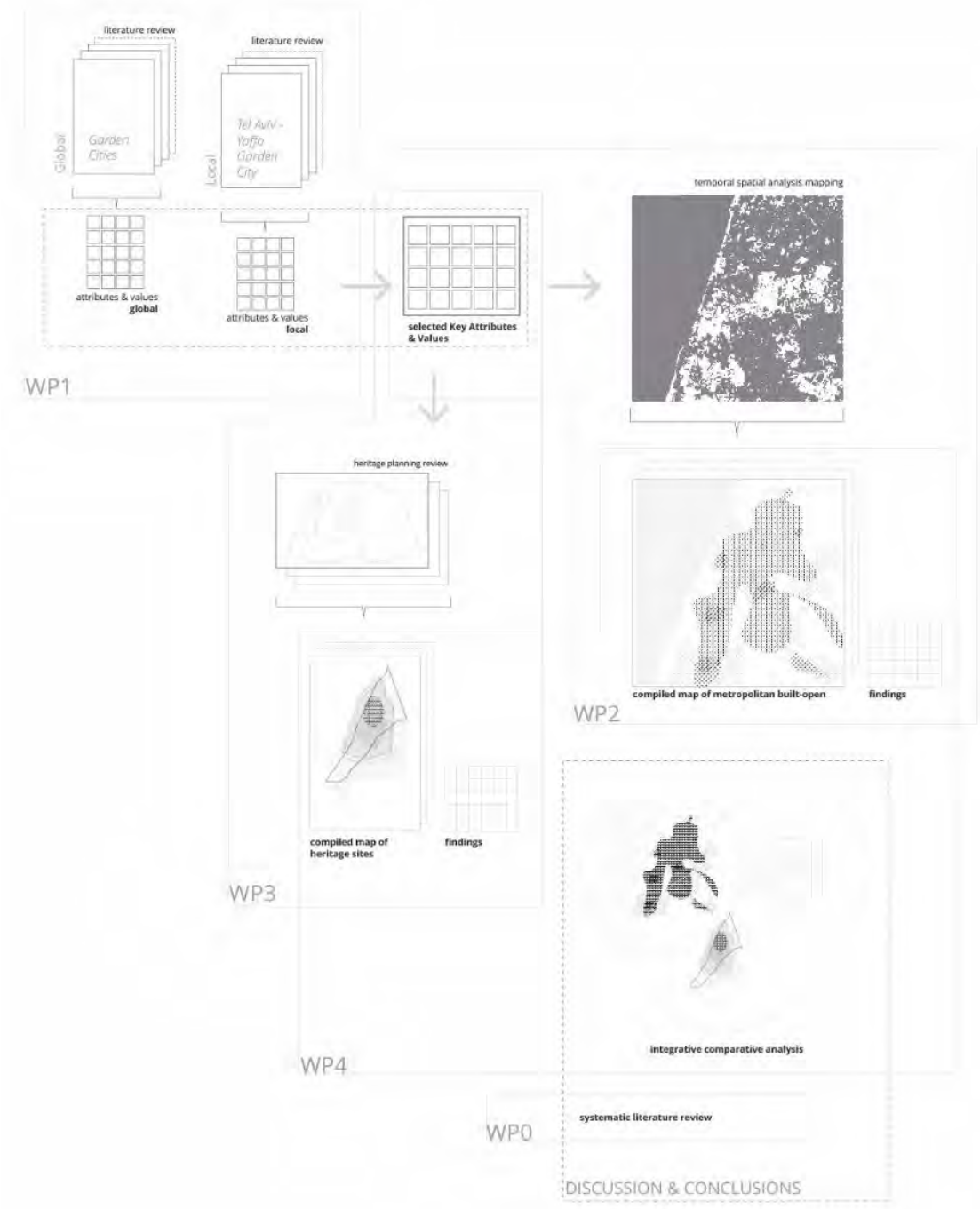

Figure 1. The proposed research methodology

4 Conclusion

With the growing rate of emerging metropoles, this research's results may help to situate heritage planning as a tool in balancing open and built in the metropolis, and therefore might provide for new ecologically aware methods of design and building, re-linking culture to nature. In addition, it may provide us another look at ways in which spatial sustainability, urban-rural linkages and blue-green-grey systems may provide for a more balanced approach towards urbanism.

This work and its proposed methodology look to provide knowledge for practice and research towards addressing the role of heritage planning in the changing scale beyond the city into the metropolis, and for the redefinition of the metropolis as a landscape of both open and built, urban and rural, culture and nature, tangible and intangible heritage, thus adding another dimension for the implementation of UNESCO's Recommendation on The Historic Urban Landscape and the New Urban Agenda.

The results may be able to contribute to further related studies on metropoles who share similar geo-cultural features with Tel Aviv – Yafo, for better understanding the role of heritage planning in these metropoles and facilitate informed and sustainable planning and decision making regarding open and green areas in them. This can allow for a better chance to promote the Sustainable Development Goals, and achieve more sustainable, resilient, inclusive, and safe metropolises through their natural and cultural heritage, in our era.

References

Amado, M., & Rodrigues, E. (2019). A heritage-based method to urban regeneration in developing countries: The case study of Luanda. *Sustainability (Switzerland)*, *11*(15). https://doi.org/10.3390/su11154105

Du C, Jia W, Chen M, Yan L, W. K. (2022). How can urban parks be planned to maximize cooling effect in hot extremes? Linking maximum and accumulative perspectives. *Journal of Environmental Management*, *317*. https://www-scopus-com.tudelft.idm.oclc.org/record/display.uri?eid=2-s2.0-85131117956&origin=resultslist&sort=plf-f&src=s&st1=green+metropolis&sid=e31837347f007bb436593bf18c653b18&sot=b&sdt=b&sl=31&s=TITLE-ABS-KEY%28green+metropolis%29&relpos=15&citeCnt=0

Erkan, Y. (2018). The Way Forward with Historic Urban Landscape Approach Towards Sustainable Urban Development. *Built Heritage*, *2*(4), 82–89. https://doi.org/10.1186/bf03545686

Folberth, G. A., Butler, T. M., Collins, W. J., & Rumbold, S. T. (2015). Megacities and climate change - A brief overview. *Environmental Pollution*, *203*, 235–242. https://doi.org/10.1016/j.envpol.2014.09.004

Geddes, P. (1925). *Town Planning Report - Jaffa and Tel Aviv*.

Ginzarly, M., Houbart, C., & Teller, J. (2018). The Historic Urban Landscape approach to urban management: a systematic review. *Https://Doi.Org/10.1080/13527258.2018.1552615*, *25*(10), 999–1019. https://doi.org/10.1080/13527258.2018.1552615

Goronczy, E. E. (2021). Light Pollution in Metropolises. In *Light Pollution in Metropolises*. https://doi.org/10.1007/978-3-658-29723-7

Labadi, S. (2017). UNESCO, World Heritage, and Sustainable Development: International Discourses and Local Impacts. *Collision or Collaboration*, 45–60. https://doi.org/10.1007/978-3-319-44515-1_4

Laura Veronese. (2018). Berlin Dispersed: A Genealogy of Ideas. In *The Horizontal Metropolis Between Urbanism and Urbanization* (pp. 79–92).

Michalina, D., Mederly, P., Diefenbacher, H., & Held, B. (2021). *Sustainable Urban Development : A Review of Urban Sustainability Indicator Frameworks*. 1–20.

Petti, L., Trillo, C., & Makore, B. N. (2020). Cultural heritage and sustainable development targets: A possible harmonisation? Insights from the European perspective. *Sustainability (Switzerland)*, *12*(3). https://doi.org/10.3390/su12030926

Pukowiec-Kurda, K. (2022). Scopus - Document details - The urban ecosystem services index as a new indicator for sustainable urban planning and human well-being in cities. *Ecological Indicators*, *144*. https://doi.org/10.1016/j.ecolind.2022.109532

Rey-Pérez, J., & Pereira Roders, A. (2020). Historic urban landscape: A systematic review, eight years after the adoption of the HUL approach. *Journal of Cultural*

Heritage Management and Sustainable Development, *10*(3), 233–258. https://doi.org/10.1108/JCHMSD-05-2018-0036

UN-Habitat. (2016). *MONITORING FRAMEWORK, SDG Goal 11: A GUIDE TO ASSIST NATIONAL AND LOCAL GOVERNMENTS TO MONITOR AND REPORT ON SDG GOAL 11*. 56. https://unhabitat.org/wp-content/uploads/2016/02/SDG-Goal 11 Monitoring Framework 25-02-16.pdf

UNDESA. (2018). The World's Cities in 2018. *World Urbanization Prospects: The 2018 Revision*, 34. https://www.flickr.com/photos/thisisin%0Ahttps://www.un.org/en/events/citiesday/assets/pdf/the_worlds_cities_in_2018_data_booklet.pdf

UNESCO. (1972). *UNESCO World Heritage Centre - Convention Concerning the Protection of the World Cultural and Natural Heritage*. https://whc.unesco.org/en/conventiontext/

UNHabitat. (2020). *GSM_GlobalDatabaseOfMetropolises2020_15052020*.

United Nations. (2015). *Goal 11: Sustainable cities and communities - The Global Goals*. https://www.globalgoals.org/goals/11-sustainable-cities-and-communities/

United Nations. (2016). *TRANSFORMING OUR WORLD: THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT*. https://doi.org/10.1201/b20466-7

Van Oers, R. (2014). Conclusion: The Way Forward: An Agenda for Reconnecting the City. *Reconnecting the City: The Historic Urban Landscape Approach and the Future of Urban Heritage*, *9781118383*(2005), 317–332. https://doi.org/10.1002/9781118383940.oth

Van Zee, M. R. (2012). Form and Reform: The Garden City of Hellerau-bei-Dresden, Germany, between Company Town and Model Town. *Company Towns*, 41–67. https://doi.org/10.1057/9781137024671_2

Vasenev, V. I., Castaldi, S., Vizirskaya, M. M., Ananyeva, N. D., Shchepeleva, A. S., Mazirov, I. M., Ivashchenko, K. V., Valentini, R., & Vasenev, I. I. (2018). Megacities 2050: Environmental Consequences of Urbanization. In *Springer Geography*. https://doi.org/10.1007/978-3-319-70557-6_4

Veldpaus, L. (2015). *Historic urban landscapes: framing the integration of urban and heritage planning in multilevel governance* (Issue September). https://pure.tue.nl/ws/files/3914913/798291.pdf

Verbakel, E. (2018). Vanishing Points: Thoughts on the Horizontality of Israeli Urbanism. In *The Horizontal Metropolis Between Urbanism and Urbanization* (pp. 247–258).

Viganò, P., Cavalieri, C., & Barcelloni Corte, M. (2018). *The Horizontal Metropolis Between Urbanism and Urbanization*. Springer International Publishing.

Waldheim, C. (2018). Industrial Economy and Agrarian Urbanism. In *The Horizontal Metropolis Between Urbanism and Urbanization* (pp. 47–54).

Mapping Power

Hydrological regimes surrendered to anthropogenic forces

A river was here
It had two banks
A heavenly mother nourished it with droplets from the clouds
A small river moving slowly
Descending from the mountain peaks
Passing by villages and tents like a charming cheerful guest
Bringing oleander trees and date palms to the valley
And laughing to nocturnal revellers on its banks:
"Drink the milk of the clouds,
water the horses
and flow to Jerusalem and Damascus!"
Sometimes it sang heroically
Sometimes passionately
It was a river with two banks
And a heavenly mother who nourished it with droplets from the clouds
But they took its mother hostage
And the small river ran short of water
And died, slowly, of thirst

—Mahmoud Darwish, *A River Dies of Thirst*

العطش من يموت نهر
كان نهرٌ هنا,
وله ضفّتان
وأُمٌّ سماويَّةٌ أرضَعَتْهُ السحابَ المُقَطَّرَ
نهرٌ صغيرٌ يسير على مهله
نازلاً من أعالي الجبال
يزور القرى والخيام كضيف لطيف خفيف
ويحمل للغَوْر أشجارَ دفلى ونخل
ويضحك للساهرين على ضفتيه:
))اشربوا لَبَنَ الغيم
واسقوا الخيول
وطيروا إلى القدس والشام((
كان يغني فروسيةً مرةً
وهوى مرةً ...
كان نهرًا له ضفتان
وأُمٌّ سماويّةٌ أرضعته السحاب المُقَطَّر
لكنهم خطفوا أُمَّه,
فأصيب بسكتة ماء
ومات , على مهله , عطشًا!

ـــمحمود درويش نهر يموت عطشا

Ben Gitai, Dr. sc. ETH Zurich,
Landscape habitat research center, EPFL,Switzerland

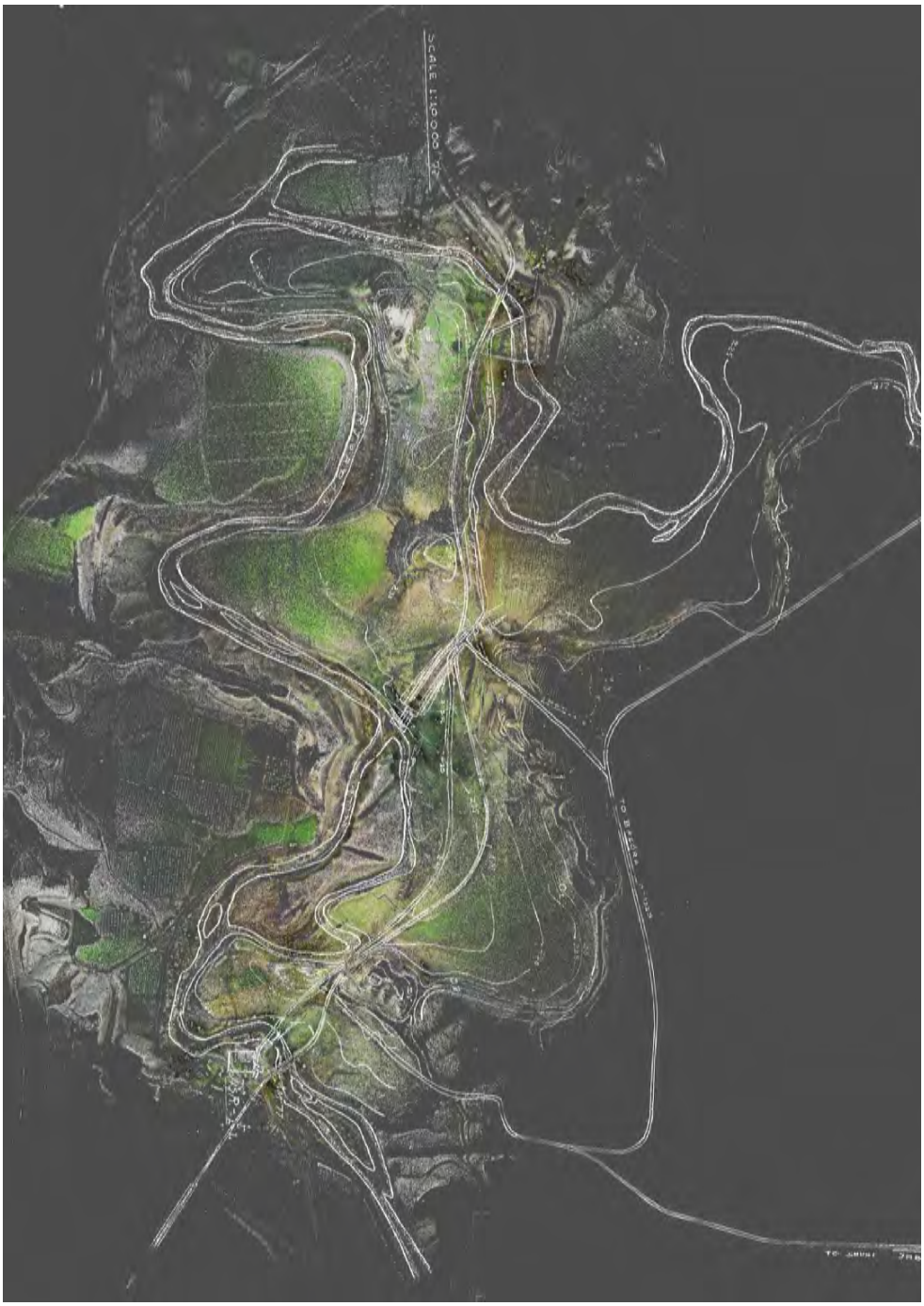

Fig. 1 Analog drawing superimposed over a point-cloud model showing a bird's-eye view of the Jisr el Majami/ Naharayim/ Baqura site situated between Jordan and Israel in the Jordan Valley. Source: 2017, ETH Landscape Visualisation and Modelling Lab by the Chair of Landscape Architecture, Professor Christophe Girot.

Some Thoughts on the Jordan River

"Seen from the sky, the Jordan Valley is a pathway – a pathway for migratory birds.
Humans are not birds, yet our intelligence allows us to transcend horizons …" (H. Schygulla, 2018, 12-15)

In his research "History and Social Sciences," Fernand Braudel considers the Mediterranean Sea and the Mediterranean world as a long-term frame for examining phenomena of human development. He categorises the phenomena into two main structures. One is static—geographical and climatic. The second is human—demographic, economic, political and cultural. The process of defining the Mediterranean social system begins with defining the large geographic and climatic structures. The Mediterranean region is classified by geographical data, but at the same time it is defined by human development on the natural landscape (Braudel 1958, 725–753). More recently, Stuart Elden has drawn attention to the emergence of a territory as a political technology concurrently with the introduction of privatisation (Elden, 2010, 806). While concepts of territory existed beforehand, at the beginning of the twentieth century they became explicitly political, the result of a series of governmental acts of control over territory in the form of administrative division, land laws, land registry and water utilisation policies.

The title of this article draws from the final collection of writings by Palestinian poet Mahmoud Darwish (1941–2008). In one of his last poems, A *River Dies of Thirst*, Darwish personifies the Jordan River, foregrounding the attachment to the land in the wake of the effects of hydro-politics. He uses the natural landscape and geographical details to preserve the river's memory, which has lost its rural and urban culture to the water's politicization (Boast 2016, 277–278). In what follows, I present three cases of the drying up of rivers in the Middle East. The first two cases are contemporary phenomenon in the 21st century. The third case, an example of long-term processes of various human interventions in the geographical and climatic structures over different historical periods, could serve as an indication of the range of socio-political physical changes that could yet be an outcome of the first two cases.

Mapping the nature of space by continuous observation of the natural landscape as it changes through the seasons and over time can foster environmental awareness about a space's natural dynamics. It also shows how a plurality and intertwining of ways of observing and thinking about territory are developed in concrete and historical frameworks (Harley 1987, 9). The physical transformation processes of an environment are deeply connected to political processes and transformations. Yet, while political traces fade over time as they are replaced by the new, what was created as a result of them become part of nature and seem like an inevitable reality in which the possibility of effecting change seems beyond human reach.

Since the mid 1970s in the Middle East, the direct impact from rivers drying up is reduced water for both agricultural use and for domestic consumption for a growing population. Certainly, climate changes as a result of global warming play a huge part. The subtropical desert climate has seen a decrease in the amount of annual rainfall causing rivers to dry up (Soffer and Berkovsky 2017, 4). However, the lack of water is also a result of water management policy motived by political considerations that prevent the water's optimal utilization.

Among the prominent countries affected by these conditions are Egypt and Iraq. In Egypt, the Nile River's complex drainage and flow regime is compromised because the river's sources are found in a climate zone that is losing large amounts of water through evaporation in the thousands of kilometres of desert where it passes on its way to the Mediterranean Sea. In response to the situation, Ethiopia has recently built a series of dams along the Blue Nile that has led to a significant decrease in water amounts and the cessation of the development of factories, as well as poor quality water for irrigation and drinking. The resulting situation is an existential threat to Egypt, a country with a large population, and has led to conflicts around the buildings of the dams in Ethiopia (Abdelaleem, Halai 2015, 462–463; Soffer, Berkovsky 2016, 168).

Another regional example affected by climate change is Iraq, whose water supply is directly affected by Turkey, which systematically closes the Euphrates tributaries in its territory while diverting considerable amounts of water from Syria and Iraq. Turkey is building dams to meet its growing needs, thus increasing the distress surrounding water shortages in Iraq, whose needs have also grown. Turkey's dam-building changed the flow method of the Euphrates River resulting in a one-sided over-pumping of water, for example, halving the amount that entered in the past. The effect is a lack of water for agriculture, which caused the mass abandonment of land in Syria and led to migration from the villages to the Syrian cities, and in Iraq accelerated processes for the drying up of the Euphrates River. This lack of water is a reason for conflicts and high tensions between the countries, similar to the condition straining relations between Egypt and Ethiopia (Sofer, Berkovsky 2016, 168).

The direct impact from rivers drying up and reducing the amount of water in them harms agriculture, fishing, causes the salinisation of groundwater, damage to ecological systems, the extinction of animal species, and aggravation of pollution problems. However, the lack of water is not only the result of environmental factors and population growth. Poor water management motivated by political considerations also prevent optimal utilization of the water. We see the socio-economic cost of not addressing these issues in the strife between Egypt and Ethiopia and Turkey and its neighbours.

Now let's consider the historical case of Naharayim (see Fig. 1), located in the Jordan River Valley, on the border of Israel and Jordan and the river which Darwish invokes in his poem but does not name. The Jordan River Valley is located in the upper Great Rift Valley, the meeting point of three continental plates. Hence, the site's central role throughout history as a gateway and crossroads between Europe, Africa, and Asia. In Hebrew, the word Naharayim means "two rivers" (Naor 2003, 103–104). It is here that the two rivers, the Jordan River and the Yarmouk River, join at the heart of a manmade landscape. These two mighty rivers were tamed for the creation of the first modern power plant in Palestine, which was built during the British Mandate. As we will see, this act shattered the natural equilibrium of the site, causing all subsequent roads, paths, and waterways to become parallel rather than perpendicular to the Jordan River.

In March 1921, the British government began demarcating the Mandatory borders on the eastern side of the Jordan Valley. For the first time in this region, the Mandate government created two independent administrative entities, Transjordan and Palestine, with the middle point of the Jordan River serving as the borderline (Friedman, 2005, 125–126). Palestine remained under Mandatory power, whereas Transjordan was founded as an Arab state to be ruled by Emir Abdullah bin-Hussein (Biger 2005, 41–46) (Har Gil 1979, 48-49). The line's passing through the centre of the river was due to it being a dynamic natural system affected by floods (Toye 1989, 795–805; Srebro 2017, 18).

The British introduced new governance techniques to control the Jordan Valley. These were expressed in a series of international agreements, such as the Jordan Concession and the Constitution of Mandatory Palestine, as well as through the creation of special political committees by Herbert Plumer, the Head Commissioner of Palestine (Shaltiel 2007, 163). The agreements and committees were designed to enable the British to exert control over the waters of the Jordan River, including the Naharayim site (Naor 2003, 121–123).

The British territorial concept was not the only concept pursued in the region. During the Mandate period, Zionists were also increasing their presence and influence in the area. According to Zvi Efrat, the territorial Zionist concept of an "open-ended process" was closely related to the Zionist principle of the boundless fluidity of a peripheral frontier, to the extent that "the whole country was perceived as frontier" (Efrat 2018, 18). While relations between the British and Zionists eventually disintegrated concerning the Jordan Valley, the British and Zionist territorial conceptions dovetailed when it came to gaining control over water resources. The British territorial vision can be defined as pacifying territory by imposing rules and governance structures (Broich 2013, 259, 277–278). The Zionist territorial vision was characterised by an attempt to reclaim land (Rouyer 1996, 37, 39–40). In some respects, the British were the political overlords, granting concessions and permits for the Zionists to implement hydrological projects, such as diverting water courses, building dams and constructing modern infrastructure. The interaction of these two territorial visions gave rise to a captive landscape.

The Naharayim Power Plant was shut down on 14 May 1948, when it was attacked by Iraqi forces (Morris 2010, 272). It would never resume operation. The war for Israeli independence ended on 3 April 1949 with the signing of the Armistice Agreements, which provided the first official contours of the new State of Israel. The disputed territories were divided between Israel, Palestine and Jordan (Biger 2018, 130). Water played a territorial role in relations between Israel and Jordan after the war of 1948. This era of hydro-politics can be divided into two historical periods. The first period, approximately 1948 to1967, was characterised by conflict and unilateral action (Kliot 1994, 6; Porat 2019, 18). Relations during this period were primarily antagonistic and seen through the lens of land and water security, although Israel and Jordan had both agreed to the Armistice Agreements and the Johnston Plan (Haddadin 2002, 46–48). The second period, roughly 1967 to 1994, can be characterised as one of "quiet coordination".

As Israel took its first steps as a new state, one guiding socio-political concept was "making the desert bloom" (Heler 1985, 104; Porat 1993, 122–125). To achieve this, copious amounts of water would have to be supplied to the barren Negev Desert in southern Israel. In his article "To the South," published in 1956, the new state's first Prime Minister David Ben-Gurion wrote of turning the desert wilderness green by channelling water into it, and settling pioneering youth and immigrants in these previously uninhabited areas (Ben-Gurion 1978, 222). In his vision, a new and advanced technological infrastructure would be the foundation of a modern society.

Fig. 2 Photography: 25.01.2016 Field research, the abandon Power station of at Naharayim - El Burakka site. Source: Ben Gitai.

At the same time, Jordan was also pursuing water infrastructure projects with similar aims. However, the underlying motivations of each country's desert development policy differed. Whereas Israel's policy was rooted in the reclamation of the desert for the establishment of a homeland, Jordan's policy was most influenced by a need to accommodate Arab refugees from the War of 1948 (Matson 1984, 34; Lowi 1993, 53–54; Naff, Sosland 2007, 25). Additionally, Jordan had to contend with even greater aridity and water scarcity than Israel. Hydraulic development was thus of utmost geopolitical importance to Jordan as well (Ababsa 2013, 60–63). The emergence of new hydro-political territorial concepts was a major factor in the transformation of the landscape at Naharayim during the statehood period. In specific terms, both Jordan and Israel began pursuing and implementing their own visions for hydrological development of the same water resource, resulting in changes to the water regime at Naharayim (Wolf 1995, 50; Srebro 2019, 9).

The physical transformation process of the drying up of the Jordan River began with subjugation of the natural water sources and streams, starting with the construction of the power plant in Naharayim in the 1930s (Fig. 2), followed by the National Water Carrier of Israel and the Abdallah Canal in Jordan in the 1950s and 60s, respectively (Dees 1959, 357-362; Blass 1973, 184-185; Lowi 1993, 53; Soffer 2006, 157-158).

These projects further accelerated the diversion of water from the Yarmouk and Jordan Rivers into domestic water supplies and agricultural development (Kliot 1994, 208). The introduction of modern pumps and pipelines allowing for the subterranean transport of water from the Jordan and Yarmouk Rivers ultimately lead to the vanishing of surface water and burial of the landscape.

The human act of damming the Yarmouk and its tributaries by the Jordanians and Syrians starting in the 1970s, brought about a significant change in the flow regime in the Jordan River and the streams that flow to it, which became polluted due to the discharge of sewage and fertilizers. The changes that the Jordan River has undergone in recent decades are mainly due to artificial operations, the damming of the channel upstream, and the drop in the level of the Dead Sea downstream (Klein 1987, 84; Dante 2020). The resulting environment changes affect the location of important sites, for example the baptism site of Jesus located on the southern part of Jordan river.

The natural landscape changes and water scarcity are reflected in two intertwined components: the agriculture in most areas of the Jordan Valley and the construction of the water dams along the river. The latter fundamentally changed the hydrological dynamics of the streams that feed the Jordan River and in consequence, of the Kingdom of Jordan itself (Hassan, Klein 2001, 23; Kool 2016, 16-17). The partial disconnection of the southern Jordan River from its main sources, the Sea of Galilee and the Yarmouk River, also significantly changed the sources of the drift and its output along the river.

Since the damming of the Yarmouk, there has been a significant reduction in the period of drift that includes changes in the hydrological parameters. Water utilization from sources feeding the Jordan River caused a considerable decrease in the hydrological dynamics along its length (Interview Klein, February 2021). The existing ecological system in the area was damaged as a result of over-pumping springs and the overflow of underground water. Over the past few years, the water level has dropped to a level that is causing salt water to seep into the aquifer (Klein 1990, 78; Adiv, Perlberg 2012, 31). As a consequence, there is damage to sea life and vegetation, specifically, the disappearance of the natural vegetation in the Mediterranean area. This reality has led to political conflicts over water at and around the Naharayim site. Ultimately, the interaction of water development projects and military defence strategies of the two states led to the burial of the river and the landscape itself.

The Peace Treaty between Jordan and Israel signed in October 1994, signalled another phase in the transformation of the water resources and natural landscape due to the division of water between the two countries along the Yarmouk and the Jordan (Soffer, Gazit 2002, 55). The diversion of water significantly reduced the flow of the Jordan River which has had a substantial impact on the natural landscape and ecology (Srebro 2019, 9; National Master Plan of the Jordan Valley 2015, 13–15).

Regardless of this commitment of the water management and provision, neither government has taken action to return any fresh water to the river (Soffer, Gazit 2002, 91–93). According to Kay and Mitchell (1995): “Growing population, rising standards of living, expansion demands in all sectors and the peace arrangements all required more water.” The Jordan River is gradually undergoing a massive drying-up process, due to a three-year arid cycle as well as the transfer of more than 50m3 of water per year to the Kingdom of Jordan from the Jordan Basin (Fischendler 2008, 100).

The rise of the dual statehood territorial regime changed each country’s strategic view of the area. Whereas this area had once been viewed as a space with productive potential for both sides of the Jordan River, it now became viewed as a space to be secured and defended in the name of national interests and sovereignty (Lowi 1993, 37–38). As a result of this territorial shift, the waters of the Jordan and Yarmouk Rivers were syphoned off by two separate and unilateral water development strategies. Eventually, this reality led to political conflicts over water at and around the Naharayim site. Ultimately, the interaction between the water development projects and military defence strategies of the two states in the context of a dual statehood territorial regime led to the burial of the river, and of the landscape itself.

In conclusion, it can be said that the climate changes and the change in the flow regime of rivers contribute to a desertification process that is manifested in the loss of soil fertility and the reduction of precipitation. A fact that will add to the process of migration from villages to cities and from cities to other countries. Without a regional water policy involving all the countries of the Mediterranean Basin, the environmental crisis brought on by climate change, population growth, and large-scale migration will be the factors that will shape the region. Subsequently, waterscape and rivers play a crucial role in figuring out how to live and coexist with a natural environment affected by war and conflicts. These natural ecological systems set the stage for a dialogue over shared water resources that is vital to prevent degradation of natural landscapes, particularly in the area of water quality and mitigating the effects of climate change.

Selected bibliography

Ababasa, 2013. “Mineral Resources.” In *Atlas of Jordan: History, Territories and Society*. Pp. 60–63.

Beirut: Institute Français de Proche Orient.

Abdelaleem Fahmy, S., Helai Esam Y., 2015. “Impact of Grand Ethiopian Renaissance Dam on Different Water Usage in Upper Egypt.” *British Journal of Applied Science Technology* 8, no. 5: 461–483.

Almog, R., “Geomorphological Review and Hydrological Systems.” In *The Jordan River and Its Surroundings – From Naharayim to Nahal Bezek, An Ecological Survey*. Edited by A. Gal and A. Perlberg, 25–42. Deshe Institute, Final Report Prepared for the Southern Jordan Drainage Authority. (Hebrew)

Ben-Gurion, David, 1978. “Daroma” (South). *Skirah hodshit*, 3–10, 222.

Berkovsky, Anton, Soffer, Arnon, 2016. “Is There Really No Fighting over Water.” *Horizons in Geography* 88: 161–175. (Hebrew)

Benvenisti, Meron, 1997. “Hamapa ha’ivrit” (The Hebrew Map). *Teo'ria ubikoret* 11:9–10.

Biger, 2018. “Kavei shvitat haneshek shel medinat yisrael” (The Armistice Line of the State of Israel). *Ale zayit vaḥerev* 18: 130.

Blass, Simcha, 1973. *Mei meriva uma’as* (Water in Strife and Action). Ramat Gan: Masada.

Broich, J , 2013. “British Water Policy in Mandate Palestine: Environmental Orientalism and Social Transformation.” *Environment and History* 19: 259, 277–18.

Braudel, Fernand, 1958. “La Longue Durée Histoire et Science Sociales.” *Annales Economics, Sociétés, Civilisations* 13, no. 4: 725–753.

Dees, Joseph L., 1959. “Jordan East Ghor Canal Project.” *Middle East Journal* 13, no. 4: 357–381.

Efrat, Zvi, 2018. The *Object of Zionism: The Architecture of Israel*. Leipzig: Spector Books.

Elden, S., 2010. “Land, Terrain, Territory.” *Progress in Human Geography* 34, no. 6: 799–817.

Fischhendler, Itay, 2008. “Ambiguity in Transboundary Environmental Dispute Resolution: The Israeli Jordanian Water Agreement.” *Journal of Peace Research* 45, no. 1: 91–109.

Y. Friedman, 2005. “Keitsad nikra ever hayarden me’al habayit haleumi be’eretz yisrael” (How the Cisjordan was Torn from the National House in Eretz Israel). *‘Iyunim betkumat yisrael* 15:125-126.

Gazit, Noga, Soffer, Arnon, 2005. *Se’if, hamaim beheskem hashalom bein yisrael umamlekhet yarden, reka', nisuah, umimush 1994–2000* (The Water Clause in the Peace Agreement between Israel and the Kingdom of Jordan: Background Wording and Implementation 1994–2000). Haifa: University of Haifa.

Schygulla, H., 2018. “Some Thoughts on the Jordan River.” In *Rift. 7.5 Views on the Jordan Valley*. Edited by Christophe Girot, Ben Gitai, David Iselin, Laura Mehling a.o. Pp. 12–15.

Hasan, Marwan A., Klein, Micha, 2002. “Fluvial Adjustment of the Lower Jordan River to a Drop to the Dead Sea Level.” *Geomorphology* 45, nos. 1–2: 21–33.

Harley, John Brian, Woodward, David, 1987. *The History of Cartography*. Chicago: University of Chicago Press.

Kay, Paul A., Mitchell, Bruce, 1995. “Water Security for the Jordan River States. Performance, Criteria and Uncertainty.” In *Water in the Middle East. A Geography of Peace*, edited by Hussein A. Amery and Aaron T. Wolf. Austin: The University of Texas Press.

Kark, R., Gerber, H., 1982. “Mapot rishum karka’ot be’eretz yisrael batekufa ha’otmanit” (Land Registry Maps in Palestine during the Ottoman Period). *Cathedra* 22: 113–118.

Klein, Micha, 1990. “Nahar kema’arehet beshivui mishkal dinami” (River as a System of Dynamic Equilibrium), *Mada* 34, no. 2: 76–80. (Hebrew)

Klein, Micha. 2021. “The Course Changes in the Jordan River.” Interview, August.

Kliot, Nurit, 1994. *Water Resources and Conflict in the Middle East*. London: Routledge.

Kool, Jeroen, 2016. *Sustainable Development in the Jordan Valley: Final Report of the Regional NGO Master Plan*. Cham: Springer International.

Khouri, R.G., 1981. *The Jordan Valley: Life and Society below Sea Level*. London: Longman.

Kushner, D., 1987. “The Ottoman Governors of Palestine 1864–1914.” *Middle East Studies* 23, no. 3: 274–290.

Longeran, S. C., Kavanagh, B, 1991. “Climate Changes Water Resources and Security in the Middle East,” *Global Environment Change* 1, no. 4: 272–280.

Lowi, Miriam, 1993. *Water and Power: The Politics of Scarce Resource in the Jordan River Basin*. Cambridge: Cambridge University Press.

Morris, B., 2000. *1948: Toldot hamilḥama ha’aravit-hayisraelite harishona* (1948: A History of the First Arab-Israeli War). Tel Aviv: Am Oved.

Naor, Mordechai, 2003. *Birkat hahashmal* (The Gift of Electricity). Jerusalem: Yad Izhak Ben-Zvi.

Rouyer, A.R., 1996. “Zionism and Water: Influences on Israel’s Future Water Policy during the Pre-State Period.” *Arab Studies Quarterly* 18:37, 39–40.

Soffer, Arnon, 2006. *Hama’avak 'al hamayim bamizrah hatichon* (The Conflict over Water in the Middle East). Tel Aviv: Am Oved.

Solomonovich, N., Kark, R., 2015. “Land Privatization in Nineteenth-Century Ottoman Palestine.” *Islamic Law and Society* 22: 221–252.

Srebro, Haim, 2017. “Historical Cartographic Materials as a Source for International and Cadastral Boundary Management in Rivers.” *Proceedings of the International Cartographic Association* 1: 2–18 (Online).

Srebro, Haim, 2019. “The Influence of Changes in the Jordan and Yarmouk Rivers on the International and Cadastral Boundaries.” *Proceedings of the International Cartographic Association*, 1, Helsinki, Finland, May 29 – June 2.

Toye, Patricia, 1989. *Palestine Boundaries 1833–1947*, Slough: Archive Editions.

Warriner, D., 1969. *Land Reform in Principle and Practice*. Oxford: Clarendon Press.

Wolf, A., 1995. *Hydropolitics along the Jordan River: Scarce Water and Its Impact on the Arab-Israeli Conflict*. Tokyo: United Nations University Press.

Breakout 1D:
Permanent Instabilities

Moderator: Dr. Fatina Abreek-Zubeidat

May 9, 2023 | 9:30 AM

Of Ghosts and Orphans	**Adi Bamberger Chen**
Frankenstein Urbanism: Lessons in fragility and resilience of the city-body (after the earthquake in Turkey)	**Merve Mercy Akdogan, Selin Sahin**
Caring for Living Milieus **(Lecture)**	**Socrates Stratis**
Ecologies of Settlement: Migration and the Right to the City and the Rural	**Ron Gross, Iain Low**
A Tale Of Two Cities: Identity Creation And 'Postcolonial' Urbanism In Singapore And Gibraltar	**Isabella Traeger**
Terra Ex Machina	**Hagit Keysar, Ariel Caine, Barak Brinker**

OF GHOSTS AND ORPHANS

Traces of Local Architects in the New City of Jerusalem in the Early Modern Era & The Challenges of Architectural Historiography on the Fringe of the Empire

Adi Bamberger Chen

A B S T R A C T

This study, inspired by postcolonial and post-structural theories, attempts to highlight the difficulty of conducting architectural research in early-modern Jerusalem, a setting in which there are gaps in the historical record.

One particular gap – the practice of local architects – is portrayed through two characterisations: *Orphans* - existing buildings which are historiographically detached from their genealogy – and *Ghosts* - individuals assumed to have practiced architecture, yet their existence appears only in traces. The study wishes to explore why local architects disappeared from the historiography of Late-Ottoman Jerusalem.

The methodologies include a narration of the fragments which were found during a literature review, archival research, site visits, interviews and correspondence with scholars and archivists.

The study suggests that local architects were overlooked due to orientalist perceptions, disappearance of evidence and inaccessibility or illegibility of documents. Therefore, it recommends institutional collaborations and methods which acknowledge the historian's subjectivity in future research.

P R E F A C E

"The Italian Archaeologist Ermete Pierotti, a poet, a historian, an architect, and an orphan, wrote in his book *Ancient Tombs in North Jerusalem* that one night, in February 1865, an eastern wind from the desert arrived and covered Jerusalem in a light mixture of salt and sand. Panic spread. Both the city elders and its dead did not remember such an awkward storm" (Shalev ,1991, translated. The Hebrew word 'Ruach' relates both to wind and to the spirit of the dead).

In these lines the author conjures up foreign gazes, professions before their modern specialization, architectures, histories, and stories all blended; orphans, ghosts, and oriental storms that occasionally envelop the city and bury stories.

This paper attempts to touch on these experiences of late nineteenth century Jerusalem and to highlight the difficulty of conducting research in a setting in which such storms have left gaps in the historical record. One particular gap – the practice of local architects – is portrayed in detail through a guiding question: why did local architects disappear from the historiography of early-modern Jerusalem?

The study opens with the chapter *Orphans*, defining the term *orphan* in relation to Jerusalem's architectural historiography. The chapter *Libraries* attempts to observe how the historical literature produced the *orphan* condition. In *Archives*, the challenge of tracing local architects in archives will be presented. The last chapter, *Ghosts,* will discuss the implications of the partial evidence.

Figure 1 (Top left): Bezalel Compound, front view of the southern building, nowadays the Jerusalem Artists House Gallery. (Authors collection)

*Figure 2 (*Bottom left): Bezalel Compound, interior view of the northern building, nowadays housing the architecture department of Bezalel Academy of Art and Design. (Authors collection)

Figure 3 (Right): Jaffa gate, the Old City of Jerusalem, exterior view. (Authors collection)

Figure 4 (Top): Ticho House, interior view. On the back wall exhibited the belongings of the Ticho couple. (Authors collection)

Figure 5 (Bottom): Ticho House, interior view. (Authors collection)

O R P H A N S

THE STORY OF THE BUILDINGS

Twin buildings in the city centre of Jerusalem were once a solitary orphanage, far from the walled city (Kroyanker, 1985). It was in the nineteenth century, before Jerusalem broke out beyond its walls and a modern city began to emerge. In 1908, the Jewish National Fund (Also known as KKL) bought these buildings from Efendi Abu-Shacker and transformed them into Bezalel School of Arts and Crafts (Ofrat Friedlander, in: Shilo-Cohen 1982). Today one of the buildings is home to the Architecture Department of Bezalel Academy of Arts and Design. The second building hosts an art gallery.

As a formative art institution, the Academy has kept its documents in official archives. However, the story of the building's inception was left vague in these sources. Consequently, Bezalel's architecture school was left without its architect and the *orphanage* has in its own right become an *orphan*.

Another nineteenth century *orphan* is the *Ticho House*, today an art gallery, and, in the past, the house of painter Anna Ticho (Kroyanker, 1985). A former resident of the house, the author Miriam Harry, named the house *Haga Rashid Castle*. However, the identity of Haga Rashid who presumably commissioned the building is not clear. Whether it was the Arab landowner Haj Rashid Nashashibi or the Russian citizen Michael Sheikhashiri/Michael Askir, is uncertain (Freundlich, 2014).

More obscure than the commissioner is its architect. It may be possible that the Persian contractor *Yazdi*, who probably participated in the construction of the nearby Russian Compound, designed the building (Shalmon, 1991). But it is just as possible not to have been him.

Of the Jerusalem Houses *Pharaohn, Francis and Kazazya* - no books were published, no well-known artists left their traces, and no recognized cultural institutions were housed to safeguard its documentation. Perhaps their entitled names - survived by word of mouth and through British tax registers - seem to be the only commemoration of their inhabitants (Kroyanker 1985).

However, the physical appearance of the houses embodies hints of their past. Architectural historian David Kroyanker argues that their gable-ended roof originated "either in Turkey and the Balkan, or in German rural houses". (Kroyanker, 1985, translated) Kroyanker implies that these houses were planned by the same architect, an architect familiar with Turkish and Balkan designs. What other spectacular houses did he build in the Ottoman Empire?

THE STORY BEHIND THE STORY

These buildings located outside the historic walls of old Jerusalem are estimated to have been built in the second half of the nineteenth century, or, at most, in the early-twentieth century. In this period, as the result of political, social, and cultural changes (Meir-Meril, 2010), Jerusalem's landscape was transformed as the city expanded beyond its historic boundary – introducing new typologies and new technologies (Fouchs, 1998).

In this vortex of exchanges, vividly described in the historical literature of Jerusalem, the story of the construction of the presented buildings remained vague. Even though some stories about later periods have been told - who originally planned them and how they were constructed, remains a mystery Together with hundreds of buildings they have become what Kroyanker called "anonymous dwelling architecture" (Kroyanker, 1998, translated), but what this research calls **orphans: existing buildings which serve as a living testimony of the city's architectural development, yet detached from their genealogy – from the story of those who designed them, and from other buildings in their author's**

oeuvre. This detachment leaves the architectural history of Jerusalem, incomplete, obscure and often incoherent.

The analogy from the semantic world of kinship emphasizes the bond between the architect and their creation, and the severity in breaking this bond. It also suggests that any appreciation of their architectural configuration is very much influenced by their separation from a genealogy, both in terms of their related architects and their related buildings and architectural styles. This type of appreciation is demonstrated in the Tree of Architecture by Banister Fletcher, which was one of the first attempts to construct a narrative of the origins of the architectural profession (Fletcher, 1954). It was also evident in attempts of the movement of 'National Architecture Renaissance' in the late-nineteenth century to "codify Ottoman architecture as a rational aesthetic discipline" (Bozdoğan, 2001).

Figure 6 (Top left): Paraohn House, exterior view, flipped horizontally) (Authors collection)

Figure 7 (Top right): Francis House, exterior view (Authors collection)

Figure 8 (Bottom): Kazazya House, exterior view (Authors collection)

L I B R A R I E S

LOCAL

Not all Ottoman buildings in Jerusalem are orphans. The literature reveals much about architects who worked in Jerusalem during that period and the buildings they planned, but it also preferences the legacies of architects from European countries such as Germany, France, Italy, Britain and Russia (Kroyanker,1987). For example, Meir-Meril states: "Not the Ottoman authorities in Kushta (Istanbul) were the designers of the architectural image of the city in the 19th century, but the European force" (Meir-Merial,20101), while Kroyanker writes: "The majority of the architectural styles in Jerusalem were influenced, in one way or another, by foreign styles, and very little was a product of local creation" (Kroyanker, 1983). In contrast to the abundance of foreign architects, local architects rarely appear in contemporaneous literature.

Although personal and collective identities are always more complex and fluid then any attempt to categorise absolutely, the term *local* in this study refers to a plurality of identities on the geographic scale from the city of Jerusalem, through Palestine and the Levant, to the Ottoman Empire. This categorisation of *local* and *foreign*, inspired by postcolonial theories, is used to suggest that there might be some connection between the two constructed gaps: the disappearance of the architects of the *orphans*, and the absence of *local* architects.

It is also used to avoid the traditional ethno-religious classification of architecture in Jerusalem. This is especially relevant since examples of orphan buildings are provided in literature covering architecture labelled as either Muslim, Christian or Jewish. Ethno-religious division has been criticized by the historian Vincent Lemeire, who claimed it "artificially constructed" and inaccurate in relation to the collective identities in Jerusalem of the nineteenth century. (Lemire, 2013).

Some figures may serve as exceptions, and do appear in the pages of canonical histories. The first is the architect *Esad Effendi* who was sent to Jerusalem to plan the religious site Ḥaram al-Šarīf (Cassuto, 2009). The second is the architect *Alexei Farangia* who was born in Nazareth and was educated in the former Russian Empire (Kroyanker, 1987). The third is the architect *Eliezer Yellin* who was born in Jerusalem and was trained as an architect in Darmstadt (Kroyanker, 2006).

EVIDENCE

How have these local architects disappeared, leaving their progeny orphaned? Let us return to the literature and its elusive evidence. What are the documents that helped build the foundations of Jerusalem's architectural history, and especially of its orphans? By studying what is known, we can better understand what is unknown.

A significant portion of Jerusalem's history books were written in the decades after the 1967 war, inspired by the unification/occupation of Jerusalem (Natsheh, 2000). Geography and history researchers wrote seminal texts based mainly on European and American travel literature, memoires, tourist guides, reports, newspapers, and surveys of various European societies. Graphic evidence was found in the diverse European cartographies, images, paintings, and in aerial photographs taken by western military forces during WW1. These sources were accused more recently of being "Western sources" in contrast to "endogenous sources". Relying on them is claimed to originate in "orientalist tradition" and in an Israeli aspiration to portray "land without people for people without land" (Lemire, 2013; Natsheh, 2000). Perhaps, these orientalist perceptions in the nineteenth century and onwards were responsible for the collective amnesia towards local architects.

Despite these accusations of orientalism, parts of which are without doubt painfully true, it has to be noted that these Israeli scholars did use evidence, that can be described as local, such as the buildings themselves, the orphans, that were examined through empirical research, memories of the descendants of the inhabitants of these houses, and Ottoman censuses.

However, when architectural historians did come to focus on the *orphan* buildings, they invariably relied on these constitutive historical texts, adding layers of architectural analysis using contemporary surveys and illustrations. This methodology was embraced also by the comparatively recent practice of architectural conservation, which has grown rapidly since the 1990s and had a marked impact on the production of history.

A common thread to all these attempts to relate to orphans is that they are not based on original architectural documents. These documents are absent in the same manner that their original architects are absent. This absence leads us to rely on unconventional methods of narrating a building's story, opening up larger spaces for interpretation. This space is then filled, inevitably, by the researcher's subjective perception, including orientalist perceptions.

ARCHITECTURE WITHOUT ARCHITECTS? (Rudofsky, 1965)

The double absence raises essential questions about the very existence of these architects. Perhaps those who build and planned the orphans were not architects? Perhaps these buildings were built without the conventional plans and drawings associated with the professional architect? Perhaps the production of architectural knowledge was different from what one could expect to find today, more traditional, more sporadic, less documented? Perhaps no architectural documents were actually produced?

The late-Ottoman period was indeed a transition between traditional and modern forms of the architectural profession all over the Empire. In the territory of present-day Turkey, new concepts of historical self-consciousness and nationalism were given shape through architectural styles and new education institutions were established (Bozdoğan, 2001). In Cairo, a modern school of architecture was established (Asfour, 1993).

However, Jerusalem was claimed to be on the fringes of the Empire (Meir-Meril, 2010. It has to be noted that the marginal role of Jerusalem is also claimed to be controversial. For example, refer to Lemire, 2013). No modern architecture schools were opened, and "architects and builders, in this period, did not publish articles in professional journalism" (Kroyanker, 1983, translated). Its architecture is characterised in the literature as with "absolute absence of planning" (Kroyanker, 1985, translated), with "only rough and inaccurate drawing" (Cana'an ,1932 In: Kark, 1981, translated) It might be possible, therefore, to assume that the local construction industry maintained a traditional form of vernacular, and perhaps no proper architectural documents were produced by these non-architects.

A R C H I V E S

FRAGMENTATION

Even if documents had been produced, reaching them now presents a challenge since archives of late-Ottoman Jerusalem are spread around the world (Countries as diverse as Israel, Turkey, Britain, Germany, Jordan, Australia, France, USA, Russia, to name just a few). It may be possible to assume this diaspora of archives caused some loss of material, especially during changes in administration, which were always accompanied by conflict.

Kroyanker, for example, claimed that "As a result of an error, the licensing files of the (British) Mandatory (Muslim) buildings were burned in the municipality storage in 1948" (Kroyanker, 1985, translated). Perhaps this fire burned, as well, evidence of Ottoman local architects. However, it would be plausible to assume that their records would be dispersed, not confined only to the Jerusalem municipality. One can only ponder the fate of the archives of the architects and that of those that commissioned and constructed the buildings. Might there be traces in commercial of professional publications, or the authorities in Istanbul?

This research sought to follow traces of local architects by undertaking investigations in a sample of the archives, including The National Archives (London), The Ottoman State Archives (Istanbul), The Israel's Archives, The Zionist Central Archives, Jerusalem Municipality Archives and the CMJ Heritage Centre (Jerusalem).

ACCESS

Archival research was often hampered by issues of access. For example, my official identity as a Jewish Israeli citizen was an impediment to accessing Palestine Archives (such as the Archives of the Ministry of the Waqf in Abu Dis Is'af al-Nashashibi Library, or The Khalidi Library).

Palestine family archives and memories have in previous publications cast an important light on Jerusalem's *orphans*. In the book Memoirs Engraved in Stone: Palestine Urban Mansions, the author wrote regarding *Husseini House* (known in other publications as the Orient House) that "the Husseinis suggest it was *Kamal Bek*, a Turkish architect, who designed this house" (Khasawneh, 2006). This architect is absent from the conservation file of this house (Shapira Architects, n.d.). Perhaps it is because no other details are known about him.

In all the sampled archives, conventional keywords did not reveal relevant documents. However, attempts to deviate to indirect browsing were occasionally useful.

General browsing in the National Archives in London for architects in Jerusalem, fortuitously revealed the signature of an architect named *Ibrahim Moussa*. It was found on a copy of a plan of Mr. Finn, the British Consul's property, one of the first houses outside the walls. This document is dated January 1902 and signed in English: *Ibrahim Moussa, Architect Jerusalem Municipality* (archival item n.1).

Moussa signed in English and defined himself as an architect. This definition concurs with the discovery of Vincent Lemire mentioning that "in November 1900, the British consul notes that the municipality had an *Architect* and a *Chief inspector*" (Lemire, 2013). But where was Ibrahim Moussa trained? What was his role in the municipality? This document raises more questions than answers.

Some archives require even higher degrees of creativity in browsing methods. In the Jerusalem Municipality archives, presumably, the natural place to store documents of the municipality that remained from the Ottoman period, the computerized search engine is accessible only to the archivists and no formal document extracts its full content. Therefore, no relevant documents were found during this research.

In the CMJ (Church's Ministry Among Jewish People) Heritage Centre in Jerusalem, the difficulty of locating documents is even more apparent. There is no computerised search engine, and no manual index. Amongst its collections are maps, architectural drawings and photographic plates from the nineteenth century. It also contains annual reports that portray the changes in the city. These might contain information regarding local architects, but due to the absence of any index, lots of resources have to been expended on locating the relevant documents.

LANGUAGE

A further impediment to the search is language. Two archives were identified to contain material on local architects, but could not be examined, or were examined only partially, because of my inability to read their documents.

One of these is the Sijills of Jerusalem, the archives of the Muslim religious court, written in Arabic. The historian Yusuf Natsheh succeeded in extricating information from the Sijills regarding "the activities of the master builders, both local and non-local, Muslim and Christian" in the sixteenth and seventeenth centuries. He followed "the fortunes of a local family of masters" and discovered names of master builders that were invited from other cities in the Empire (Natsheh, 2000). It is possible to assume that the Sijills also contain information that has not yet been discovered regarding Jerusalem's architects in the late-nineteenth and early-twentieth centuries.

The second archive is the Ottoman State Archives. Two honour certificates, one of mühendis (engineer in Turkish) *Ibrahim*, and the second of mühendis *Ibrahim Musa*, were found in the archive (archival item n.2). Since both documents relate to a figure who worked in the Jerusalem Municipality, it is reasonable to assume that both refer to the same person. It is also likely to be the same local architect, *Ibrahim Moussa,* whose signature was found in the National Archives in London.

Several building permit request files containing architectural drawings were also found in the archives (for example: archival item n.3), corroborating the observations of David Yellin from 1898: "Every new building project, small or large, has to first pass before the baladiyya (municipality), and without that no building can legally be built" (Yellin, 1898 In: Lemire, 2013). However, analysing them was inapplicable since they were written in old Ottoman Turkish.

Even if a researcher is familiar with several languages, spelling variations can still result in information being lost in translation. Hoffman describes this difficulty in her research when she assumes that the names Koris-Sapiro G., Spiros Houris and *Spyro. G. Houris*, found in different documents, all relate to the same architect who practiced in Jerusalem in the early decades of the twentieth century. Furthermore, she relates to the Greek affiliation of the surname Houris, which is different from the Palestine equivalent, Khouri (Hoffman, 2016. Spyro. G. Houris is assumed to be an architect who practiced in Jerusalem in the early decades of the twentieth century).

Examining the traces of the architect *Ibrahim Moussa*, we find that when it was Moussa himself who translated his name to English and to Latin letters, he signed as *Ibrahim Moussa* and as an *architect*. However, when the archivists of the Ottoman State archives translated his name from Ottoman, they spelled it as *Musa* and described him in Turkish as *mühendis* - engineer.

Such Minor changes in the translation of a name thwart search engines and can even redefine the architect. The profession that Turkish archivists call *mühendis* was regarded by Ibrahim Moussa as an *architect*.

Similar complications follow *Kamal Bek*, the Turkish architect of the *Husseini House*. No other evidence of Kamal Bek was found during this research. However, forty documents of an architect named *Kemal Bey* were found in the Ottoman State Archives. Perhaps, then, the Turkish architect which was described by Palestinian figures as Kamal Bek is, in fact, the same Turkish Kemal Bey?

THE ORDER OF KNOWLEDGE

The described archival challenges of Jerusalem reflect some of the very essences of the concept of the archive, and of its inherent ethics. In the archival production, according to Derrida, the records are put in order, categorized and catalogued. And this is crucial for the historical narrative because "what is no longer archived in the same way is no longer lived in the same way" (Derrida, 1995).

If architectural documents were produced by any kind of local architects, the archival production has not included these documents in the same order of the European architects. Each time history was written, or cited, without any mention of local architects, their absence gained more validity.

G H O S T S

INCOMPLETENESS

Despite the elusive definition of local architects, this study did reveal some ghostly traces. Among them are *Yazdi*, the allegedly Persian contractor who may have planned the Ticho House, *Esad Effendi,* and *Kamal Bek/Kemal Bey* who arrived from Turkey, *Alexei Farangia* and *Eliezer Yellin* who were educated in foreign institutions and thus challenge the definition of local, *Spyro G. Houris* who was perhaps Greek and perhaps Arab, *Ibrahim Moussa* who was an architect in the Jerusalem municipality.

This list is not intended to be finite, but to show that information pertaining to local architects is always partial. Consequently, these local architects have become what this study calls **ghosts: individuals assumed to be practicing architecture in Jerusalem in the early modern era, that left only traces – scattered pieces of information that do not extradite much about their practice**. Such traces can be a signature engraved on a façade, a signature on a plan, an award document, or a name reverberating in oral history.

Currently their traces offer only a glimpse at their reflection, casting doubts around each one. Their incomplete story, relies on assumptions and speculations, using the "essential modality of perhaps" (Derrida, 1995), that leaves space for future discoveries. Perhaps it can be said that Jerusalem's orphans will forever be haunted by these *ghosts*, who gave them life, but have since receded into the historical shadows.

OUT OF ORDER

With the scarce evidence of local architects, one can almost ponder whether or not these figures ever existed, and whether it is liable to rely on ghosts in establishing history. Let us, if, so, return to Derrida, who claims that although the "traditional norms of scientificity" may categorize ghosts as fruits of the imagination, "the most fictive, is certainly not the least true". Derrida suggests that the spectre is a condition of partial truth, a "historical truth", which is not less real than the "material truth". If the material truth can be proved by the conventional tangible evidence, the appearance of a ghost is a moment when "the very order of knowledge, at least the classical knowledge, is suspended." The historical truth is "repressed and suppressed. But it resists and returns, as the spectral truth of delusion or of hauntedness". (Derrida, 1995).

From this philosophical perspective, the *ghosts* of the local architects can be read as historical truth, that was repressed through the history of Jerusalem. Their traces, that were found during this research are their very resistance to be annihilated. Therefore, the story that they tell may be as true as the other histories

which were told through “the norms of the classical scientific discourse”. In any case, as long as they remain in their *ghostly* condition, they remain a mystery (Derrida, 1995).

E P I L O G U E

Why did local architects disappear from the historiography of early modern Jerusalem?

Perhaps it is the definition of local, that does not fit accurately to describe the collective identities in Jerusalem, and the architects of the orphans.

Perhaps because there were no local architects. The local architecture in Jerusalem was vernacular, architecture without architects.

Perhaps there was no organised system to archive the documents of the local architects and to guard them for future generation.

Perhaps there was an organised system, yet it was interrupted during the changed in administration and some material was lost.

Perhaps the material was not permanently lost, but rather it was hidden in a ghostly condition in archives, waiting for architectural historians to discover it.

Perhaps it is the archival challenges of fragmentation, access and language that prevent architectural historians from revealing the story of local architects.

Perhaps it is oriental perceptions that lead historians and archivists, to forget the possibility of the existence of local architects.

Perhaps it is the repetition mechanism of history that buried the traces of local architects in the violent process of the production of singular narrative.

This study wishes to accept the partial truth in each of the assumptions presented along the work and suggests that together, they all portray the disappearance of the local architects.

The architectural field in early modern Jerusalem, probably, was in a transitional period from traditional to modern, and some of the local architects were in fact master-builders, trained in guilds. However, it does not mean necessarily that they did not produce architectural documents and that it is not important to study and appreciate their work. Various architects probably did travel and practice throughout the Empire and in Jerusalem. Nonetheless, they were not necessarily the architects of the *orphans*, nor did they necessarily define themselves as locals. The term local does help to reveal the orientalist perceptions that were involved in repressing local architects. Yet, these perceptions were not the only cause of the absence of local architects in history. The nature of postcolonial archives, and of archives generally, presents challenges which keep relevant evidence hidden from architectural historians. Without accessible architectural documents, it is difficult to attract architectural historians to delve into this field. Thus, the local architects will remain, meanwhile, as *ghosts*.

Future research including institutional collaborations and methods which enhance the voice of the architectural historian in interpreting the evidence must be done to expand our knowledge about this phase in history, and to slightly dissolve the “light mixture of salt and sand” (Shalev 1991), and give way to a new remembrance of the forgotten stories.

This article is based on the thesis work conducted in September 2019 by supervision of Prof. Edward Denison with the MA Architectural History at the Bartlett School of Architecture in London.

B I B L I O G R A P H Y

Asfour K., 1993. The domestication of knowledge: Cairo at the turn of the century. *Muqarnas*, vol. 10, Essays in honour of Oleg Grabar, pp.125-137.

Ben-Aryeh J., 1979. *City in the period of time: new Jerusalem at its beginning*. Jerusalem: Yad Itzhak Ben-Zvi.
בן אריה י., 1979. עיר בראי תקופה: ירושלים החדשה בראשיתה. ירושלים: יד יצחק בן צבי.

Fletcher B., 1954. *A history of architecture on comparative method for the student craftsman*. 16th ed. London: B.T Basford Ltd

Bozdoğan S., 2001. *Modernism and nation building: Turkish architectural culture in the early republic.* Washington D.C: University of Washington Press.

Cassuto D., 2009. Had it not been the Ha'Hurva (ruin): the plans to rebuild the Hurvat (ruin of) rabbi Yehuda Hassid since the six days war and up until these days. In: R. Gafni, A. Morgenstern and D. Cassuto, eds, 2009. *Ha'Hurva: six hundred years of Jewish settlement in Jerusalem*. Pp. 190-222.
קאסוטו ד., 2009. אלמלא החורבה: התכניות לבנייתה מחדש ש חורבת ר' יהודה חסיד ממלחמת ששת הימים ועד ימינו. בתוך: ר. גפני, ר. מורגנשטרן וד. קאסוטו, עורכים,2009. *החורבה: שש מאות שנים של התיישבות יהודית בירושלים*. עמ' 190-222.

Derrida J., 1995. *Archive Fever: a Freudian impression*. Translated by E. Prenowitz. Chicago: the university of Chicago Press.

Fouchs R., 1998. The Ezetz-Israeli Arab house: New study, part B: The exchanges in the residential culture in the nineteenth century. *Catedra*, vol 30, pp.53-86.
פוקס ר., תשנ"ט (1998). הבית הערבי הארץ-ישראלי: עיון מחודש, חלק ב: התמורות בתרבות המגורים במאה התשע עשרה. *קתדרה*, 89, תשרי תשנ"ט, עמ' 86-53.

Freundlich A. Architect, 2014.*Ticho House: full conservation document*. Jerusalem: A. Freundlich Architect.
פרוינדליך א. אדריכל, 2014. *בית טיכו: תיק תיעוד מלא*. ירושלים: א. פרוינדליך אדריכל.

Hoffman A., 2016. *Till we have built Jerusalem: Architecture of the new city*. New York: Farrar, Straus and Giroux.

Kark R. and Landman S., 1981. The Muslim departure from the walls of Jerusalem in late Ottoman Period. In: E. Shealtiel, ed., 1981. *Jerusalem in the modern period: Yaacob Herzog memorial volume*. Jerusalem: Yad Itzhak Ben-Zvi; Israeli Ministry of Defence. Pp.174-211.
קרק ר. ולנדמן ש., 1981. היציאה המוסלמית מחוץ לחומות ירושלים בשלהי התקופה העות'מאנית. בתוך: א. שאלתיאל, עורך, 1981. פרקים בתולדות ירושלים בזמן החדש: ספר זיכרון ליעקב הרצוג. ירושלים: יד בן צבי; משרד הביטחון. עמי 211-174.

Khasaeneh, D. 2001. *Memoirs engraved in stone: Palestinian urban mansions*. Ramallah: Riwaq - centre for architectural studies, Jerusalem: Institute of Jerusalem Studies.

Kroyanker D. and Wahrman D., 1983. *Jerusalem architecture periods and styles: Jewish neighbourhoods and public buildings outside the old city walls 1860-1914*. Jerusalem: Domino Press Ltd; Jerusalem Institute for Israel Studies.
קרויאנקר ד. וורמן ד., 1983. אדריכלות בירושלים תקופות וסגנונות: שכונות ובנייני ציבור יהודיים מחוץ לחומות 1860-1914. ירושלים: בית הוצאה דומינו, מכון ירושלים לחקר ישראל.

Kroyanker D., 1985. *Jerusalem architecture periods and styles: Arab buildings outside the old city walls*. Jerusalem: Keter Publication House; Jerusalem Institute for Israel Studies.
קרויאנקר ד., 1985. אדריכלות בירושלים: הבנייה הערבית מחוץ לחומות ירושלים. ירושלים: בית הוצאה כתר, מכון ירושלים לחקר ישראל.

Kroyanker D., 1987. *Jerusalem architecture periods and styles: European-Christian buildings outside the old city walls*. Jerusalem: Keter Publication House; Jerusalem Institute for Israel Studies.
קרויאנקר ד., 1985. אדריכלות בירושלים: הבנייה האירופית-נוצרית מחוץ לחומות 1855-1918. ירושלים: בית הוצאה כתר, מכון ירושלים לחקר ישראל.

Kroyanker D., 2006. *Architecture of the state in the making of Heckr-Yellin.* Jerusalem: Keter Publication House
קרויאנקר ד., 2006. אדריכלות המדינה שבדרך בראי יצירתם של הקר וילין. ירושלים: בית הוצאה כתר.

Lemire V., 2013. *Jerusalem 1900*. Translated by C. Tihanyi and L.A Weiss., 2017. Lonadon; Chicago: The university of Chicago press.

Meir-Meril A., 2010. The architecture in Jerusalem. In: I. Bartal and H. Goren, eds, 2010. *Jerusalem book: in the late Ottoman period 1800-1917.* Jerusalem: Yad Itzhak Ben-Zvi. pp.181-196.
מאיר-מריל ע., 2010. האדריכלות בירושלים. בתוך : י. ברטל. וח. גורן, 2010. *ספר ירושלים: בשלהי התקופה העות'מאנית 1800-1917*. ירושלים: יד יצחק בן צבי. עמ' 181-196.

Natsheh Y., 2000. The architecture of Ottoman Jerusalem. In: S. Alud and R. Hillenbrand., eds, 2000. *Ottoman Jerusalem, the living city: 1517-1917.* London: Altajir World of Islam Trust. Chapter 36, pp.583-634.

Rudofsky R., 1964. *Architecture without architects: a short introduction to non-pedigreed architecture*. New York: Doubleday & Company.

Shalev M., 1991. *Esau*. Tel Aviv: Am Oved.
שלו מ., 1991. *עשו*. תל אביב: עם עובד.

Shalmon I.,1994. *Ticho House: a signpost in the landscape of Jerusalem*. Jerusalem: Israel Museum.
שלמון ע., 1994. *בית טיכו: תמרור בנוף ירושלים*. ירושלים: מוזיאון ישראל.

Shapira Architects, n.d. *The Orient House: full conservation document*. Jerusalem: Shapira Architects.
שפירא אדריכלים, ללא תאריך. *אוריינט האוס: תיק תיעוד מלא*. ירושלים: שפירא אדריכלים.

Shilo-Cohen N., ed., 1982. *"Bezalel" of Schatz: 1906-1929*. Jerusalem: Israel Museum.
שילה-כהן נ., עורכת., חורף תשמ"ג (1982)."בצלאל של שץ: *1906-1929*. ירושלים: מוזיאון ישראל.

LIST OF ARCHIVAL ITEMS

Item N.1 - *'Mr. Finn property', Jerusalem. Copy of a plan by Ibrahim Moussa, architect, Jerusalem, 28 January 1902. Plan of a property known as Abraham's Vineyard, showing a right of way disputed by a colony of Jews under Russian Protection.* (ink on paper, 32cm x 98cm) Public Record Office: Maps and plans extracted to flat storage from various series of records of the Foreign Office. MPK 1/435. London: The British National Archives

Item N.2 - *Document reporting a grant of 3rd rank distinction to the head clerk of the ministry of property of Thessaloniki, Süleyman Şükrü, and the engineer of Jerusalem Municipality, Ibrahim Musa Efendi. 14/09/1897* i..TAL.119-86. Istanbul: The Ottoman State Archives

Item N.3 - *Document reporting the promotion of the head clerk of Jerusalem Municipality and the clerk of the commission of Hedjaz Railway Ilyas Efendi. The document also reports a grant of 5th rank 'Mecidi Nişanı' (honour distinction) to the municipality Engineers İbrahim and Nasri, and to the inspector Mehmet Nuri Efendi. 09/04/1908.* i..TAL.119-86. Istanbul: The Ottoman State Archives

Item N.4 - *Request for a permit for the Circassian immigrants Ahmed Aga İbn-i Şerif and his brothers Osman and Nesim to construct a building on the land they own in 'Maliha' a village nearby Jerusalem. 05/04/1896.* I..DEF.4-59. Istanbul: The Ottoman State Archives

Frankenstein Urbanism:
Lessons in fragility and resilience of the city-body
(after the earthquake in Turkey)

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On February 6th, 2023, Turkey was struck by two deadly earthquakes with reported magnitudes of 7.5 and 7.8. In the aftermath of the tremors that seemed to dissolve the very fabric of reality, thousands of buildings were flattened, and entire cities were wiped out, leaving millions homeless and many thousands dead. The earthquake revealed a fragile infrastructure that had become common throughout decades of blunt political maneuvers, corruption, negligence, rapid population growth due to a refugee crisis, and a tradition of forgetfulness.

As national and international authorities and NGOs began their search and rescue operations, in the absence of sufficient resources and poor coordination, alternative solidarity and support structures were spontaneously formed and scaled through online platforms. Resources were gathered and managed through a distributed network of actors at varying degrees of de/centralization. While some of the nodes within this emergent network relied on existing localized social bonds, others had been previously catalyzed by other large-scale disasters in the country, such as the 2021 summer wildfires in the south, and are being re-activated to respond to a new crisis. What again became apparent was the importance of 'weak bonds' to increase connectivity between different nodes to expand access to more resources.

As the dust settled into the rubble, a new patchwork began to emerge from the remains of the city: voids, a new periphery dotted with tents, containers, and other temporary structures became places. This method of piecemeal assemblage might be viewed as an example of "Frankenstein Urbanism (F.U.)," where informal place-making practices lead to an ephemeral agreement. In this paper, we define "Frankenstein Urbanism" to explain (1) the urban conditions and practices that went into the making of the disaster, (2) the formation of decentralized networks of individuals in response to immediate needs in the aftermath, and (3) the birth of a temporal city from rubbles.

In Mary Shelley's story of Frankenstein, the monster is created by stitching together body parts from different sources, resulting in a grotesque and dysfunctional being, yet alive, despite the impossibility. This ad-hoc crisis response and alternative place-making questions authority and highlights the existing system's shortcomings. This point is further evidenced by the way in which the system actively works to suppress these alternative practices, much like an organism fighting to dominate and occupy its environment. To rebuild the city resiliently requires addressing corruption and inequality while supporting grassroots initiatives. Dissecting the events around the quake, we ask the following questions:

How can F.U. help us think more critically about existing urbanism practices?
Can F.U. distribute resources more efficiently and in a just manner?
Can F.U. transform into novel modes of urbanism practices for a resilient society?

Keywords*: Ad-hoc crisis response, alternative urbanism practices, decentralized networks, Frankenstein Urbanism (F.U.), fragility, infrastructure, resilience, Turkey Earthquake*

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*"**How can I describe my emotions at this catastrophe**, or how delineate the wretch whom with such infinite pains and care I had endeavored to form? His limbs were in proportion, and I had selected his features as beautiful. Beautiful!—Great God! His yellow skin scarcely covered the work of muscles and arteries beneath; his hair was of a lustrous black, and flowing; his teeth of a pearly whiteness; but these luxuriances only formed a more horrid contrast with his watery eyes, that seemed almost of the same colour as the dun white sockets in which they were set, his shriveled complexion, and straight black lips." [1]*

—*Frankenstein; or, the Modern Prometheus,* by Mary Shelley

Contents

Introduction

On February 6th, 2023, Turkey was struck by two deadly earthquakes with reported magnitudes of 7.5 and 7.8. In the aftermath of the tremors that seemed to dissolve the very fabric of reality, thousands of buildings were flattened, and entire cities were wiped out, leaving millions homeless and many thousands dead. The earthquake revealed a fragile infrastructure that had become common throughout decades of blunt political maneuvers, corruption, negligence, rapid population growth due to refugee crises which exacerbated infrastructural deficiencies, and a tradition of forgetfulness.

The discussions surrounding the catastrophe have been largely focused on events, facts, and numbers. The scholarly debate focused on geology and building materiality has been very active. However, there have been no attempts, that we are aware of, at understanding this disaster within a conceptual framework, especially within one that sees the urban condition as a complex assemblage of things[2]. Agreeing with deTar, we hold that practice is not sufficient, and we need theory to have solid grounds for social change[3]; to disrupt and generate new social reperformances[4] beyond binaries such as intact/destroyed and hegemonic tendencies that overlook or simplify other narratives. Referring to Mary Shelley's book, we propose Frankenstein Urbanism to trouble these flat narratives.

In his essay *Love Your Monsters*, Bruno Latour highlights that Dr. Frankenstein's crime was not that he invented a creature through some combination of hubris and high technology, but rather that he abandoned it.[5] With its socio-political tools and built artifacts, urban space is a technologically produced and evolving being. Hence, Latour's argument is also true of the urban condition that led to the disaster: There seem to be innumerable points of neglect or thoughtlessness, as Arendt may argue[6], at various steps of decisions in practices related to different scales—a story that is not so linear, often corrupted and folding in on itself. In the context of the environmental question, Ghosn and El Hadi advocate for a political ecology that takes responsibility for urbanism's modern technological creations while continuing to speculate on alternative strategies.[7] In our case, these can be thought of as alternate policies or new forms of governance, new zoning rules and strategies, and resilient architectural practices for disasters.

Frankenstein's creature is stitched together from parts of different bodies, yet alive, despite the impossibility. Victor selects 'beautiful' features for his creature, and yet once it is animated, he is repulsed —not due to its aesthetic qualities but because of its strangeness. Similarly, the sort of patchwork urbanity that appeared after the earthquake, should not hast be judged as bad or something to be restored to its previous condition. Here the patchwork mainly refers to the habitable spaces that remained and the communities of people that persist. Here, we must clarify that we are using the term patchwork differently from David Harvey—although the resulting patchworks were greatly influenced by neo-liberal processes of capital exchange and accumulation, the resulting places in the aftermath of the earthquake are not necessarily islands of relative affluence or gated fractions.[8] We prefer to think of them as patchworks of resilience, which we submit, have the inherent potential to solve current and future urban issues that should be carefully addressed. They can be flowering areas for alternative, diverse, inclusive, and participatory practices of place-making that can offer other visions to regular urban planning practices in Turkey, which clearly have failed, especially along the fault lines, with the faulty parties far too many to blame.

The patchwork city is likened to Frankenstein's creature, from which our term city-body emerges. Each limb, lump, and chunk has a history and becomes part of the living archive. Similarly to how Victor edited the body parts for his creature, the living archive is shaped by power structures and media influences. While some narratives are polished and brought to the forefront, *Others* fade into the background or are actively suppressed and erased. As representation affects power relations and the distribution of resources, it is essential to connect this awareness with urbanism practices that strive to answer to the needs and desires of various communities[9].

We believe theorizing what happened and is happening is essential to encode events more strongly into the realm of thinking that will hopefully transform into practices creating environments that embody thought and care—not unlike Bogost's conceptualization in *Carpentry: Constructing Artifacts That Do Philosophy*[10]. We believe through this kind of reflective practice; society can start to heal while not forgetting the tragedies that happened and can be better equipped to create resilient, natural stress-ready environments.

1. The Making of a Disaster:

In Frankenstein Urbanism (F.U.), each piece holds a distinct tale, embodied histories with the capacity to influence the whole. We investigate the making of this tragedy by examining the soup of conditions that were present.

On the architectural scale, there were serious deficiencies regarding the quality of the existing building stock. Housing demand and difficult economic conditions made poor construction quality commonplace. Construction amnesties motivated by political gain only made matters worse. For example, although the unsuitability of certain building types for earthquakes was known and reported, no action was taken to address these issues. The challenges associated with determining who is accountable for regulating and strengthening earthquake-unprepared buildings and the responsibility for related financial obligations have remained unaddressed for years.

At an urban scale, many gathering places and emergency gathering locations were lost to recurrent construction amnesties, which permitted the building of shopping malls and other commercial developments over parks and open spaces. Large development areas like airports were constructed on fault lines and bird migration routes, posing serious safety risks and causing damage to local ecosystems. In addition to the building industry challenges, bureaucratic and institutional corruption contributed to systemic failures. Academicians were silenced because of their ideas. Taxes were misused.

After the earthquake, communication networks were severely damaged, leaving people with limited mobile data to inform their families and friends basically to tell them if they were alive. Before the earthquake, telecommunication providers were assured that their infrastructure was powerful enough for emergency situations and promised that their network would work well with the help of mobile drone networks. However, all the promises failed. Because of a lack of appropriate equipment and organization despite international support from a lot of countries (listening devices, thermal cameras, cranes vice versa), aid and rescue operations failed, leaving people under the rubble despite the fact

that they were still alive. When people were alive, equipment was not present; when the equipment arrived, people were no longer alive.

Our fieldwork was conducted in Hatay, where the intensity of the post-quake devastation was exceptionally high due to the circumstances in the region. The influx of refugees and the massive migration to the city had created a volatile environment where the cost of rent had risen sharply, affecting the social fabric. The increase in demand, coupled with the shortage of resources, caused the creation of paralyzing competition, uncertainty, and a disorganized settlement.

As the dust settled into the rubble, a new patchwork began to emerge from the remains of the city: voids, a new periphery dotted with tents, containers, and other temporary structures became places. The authorities' delayed response resulted in the loss of thousands of additional lives and left many more in need of basic necessities such as food and water, even after a month after. The collection and disposal of rubble also emerged as a significant issue, given that the construction materials contained hazardous substances such as asbestos, which poses a significant threat to human health and the environment. Despite this, the government's rescue team, AFAD, decided to dispose of these rubbles near people's homes, prompting many communities to protest. Overall, documenting the protests of the community is essential, given the ongoing challenges and uncertainties in the aftermath. In our fieldwork, we were able to get a glimpse of the persistence of institutional neglect and its repercussions.

2. Collective Stitching

"With an anxiety that almost amounted to agony, I collected the instruments of life around me, that I might infuse a spark of being into the lifeless thing." [11]

In the aftermath of the Turkey earthquake, the importance of stitching social networks for mending and healing practices becomes apparent. In this chapter, we examine social relations, networks that have been driven to disintegrate, and how they may actually be resewn together collectively. We extend a need-based approach into an empowering desire-based framework[12]. Social network and structuration theories inform our thinking.

2.1 Dissecting the Network: The Power of Weak Bonds

In unraveling the sociocultural construction of technological disasters, Button notes that in the aftermath of a catastrophic event, there is an increased need to order and negotiate meanings[13]. In essence, the very process of meaning-making results in bargaining perceptions of reality and determines the distribution of resources. This is heightened in conditions of scarcity. Hence, technologically facilitated grassroots initiatives become important nodes for solidarity networks that participate in practices of place-making. This enables a stronger position in negotiations of meaning-making and serves as an act of resilience and resistance.

Social network analysis provides a conceptual approach to understanding opportunities and constraints provided by relationships. The importance of weak ties in shaping these networks is often highlighted. In decentralized networks, weak ties are often key to enhancing connectivity. As argued by Granovetter in his seminal paper[14], weak ties are often more valuable than strong ties because they

provide access to diverse information and resources outside the immediate pool of trauma and scarcity. It is important to understand how these networks operate in order to harness their full potential. In F.U., electrical sparks travel through the axons at super speed; weak ties connect, bridge, and imbue the network with an increased action potential.

The scale of the devastation and the lack of realistic crisis response strategies, combined with long-ongoing institutional decay, created a scenario where official authorities are deeply insufficient in taking care of citizens. In the aftermath of the earthquake, individuals were forced to take matters into their own hands. Individual and collective grassroots initiatives rose to try and fill the void where authorities had failed. These efforts were frequently developed and managed through online platforms such as Instagram and Twitter, as well as more private chat platforms like Signal or WhatsApp. People shared information and resources and coordinated rescue attempts. Volunteers served as bridges between rescue personnel and individuals buried beneath the rubble, saving lives and offering urgent relief to those affected by the disaster.

Throughout this process, weak ties - connections between individuals who were not necessarily the most directly affected by the disaster - were online and in action, attempting to bridge the gap between rescue teams, operators, volunteers, and indicators through social media outlets. They operated this process in the shadows, hidden from the public as one of the most important parts of the relief infrastructure.

2.2. (Un)Folding Narratives

Following a disaster, unfolding the truth amidst a flood of misleading information and distorted perceptions can be difficult. Hence, the mainstream media outlets step in to construe a unified narrative to limit and manage to splinter. However, this unified portrayal can obscure the diversity of relative experiences, needs, and desires, turning into an oppressive force. Furthermore, this imposed uniformity at the hand of hegemonic powers can facilitate the creation of a flattened, distorted reality. By unifying narratives and imposing them on the masses, the state creates a perception of a uniform reality that seems beyond criticism and silencing localized alternative voices. As an example, right in the aftermath of the quake, when phones wouldn't connect, governmental acts limited internet platforms, trying to portray themselves as all-powerful, solving all problems and claiming that their operations were timely and effective. The shutdown of digital communication networks had a negative impact on crisis relief efforts. In this way, the disaster serves as a reminder of the importance of diverse networks and untold narratives and the need to maintain open lines of communication.

2.3. The City-Body as Living Archive

Archives have traditionally served as repositories of information, but they also play a role in producing and shaping narratives. However, their history is marked by a power dynamic in which those in positions of authority control access to information. This raises important questions about who holds power over the archive and how they use it. Understanding this power dynamic is crucial for grasping how historical narratives are constructed and how they can be manipulated. According to Derrida, the archive is never complete, as there is always more information to be collected and multiple interpretations to be made. This perpetual incompleteness and openness of the archive can be

a source of anxiety, but it also offers new possibilities. Frankenstein's creature embodies pieces of the past; its body is reanimated from stitched-together parts. This idea of F.U. as a living archive allows us to preserve untold stories and keep them alive. Derrida also notes that “there is no archive fever without the threat of this death drive.”

The death drive of the archive highlights the autonomy of communities and their creation of living archives, which have been interpreted by authorities as anarchical acts. Such operational actions of communities are often viewed as a destructive force, yet they may be a good instrument for societal progress, leading to attempts by authorities to silence, limit, or stop them.

For instance, during our fieldwork in Hatay, volunteers from outside the city attempted to provide tents to people who had been unable to find shelter for weeks after a disaster. However, it has been reported that the government aid organization AFAD stopped the cars carrying the tents at the city's entrance and seized them. Despite these oppressive actions, the affected communities resisted the imposed systems and created their own forms of anarchy.

As Hakim Bey offers a taste of anarchy in the form of the temporary autonomous zone (T.A.Z.) for resisting oppressive regimes via community building, hope, creation, and regeneration[15]. Hakim Bey’s concept of anarchy introduces individuals who can create temporary spaces of autonomy and freedom independent of the state. These zones can exist in physical or digital spaces and can be created through a variety of means, including protests and intentional communities. He also argues that these zones can serve as a challenge to dominant social and political order and provide a space for experimentation and alternative modes of living.

T.A.Z. practiced using tags on the walls such as "We will come back, we were never gone," or "We will listen to Fairouz on these streets again." These are powerful tools for the community to create and sustain in the aftermath of the earthquake. Instagram stories and tags functioned in the same way as these graffiti. Some graffiti asked for rescue and provided phone numbers for people who were volunteering to pass the information or for authorities to take action on the situation. Social media tags, wall writings, graffiti, and banners served multiple purposes: (1) fulfilling immediate needs for rescue and basic human necessities, (2) providing hope and regenerative power among nodes, and (3) signaling life in a city under rubble.

Structuration theory, developed by Anthony Giddens, posits that social structures and individual agency are mutually constitutive. In other words, structures are not simply external forces that constrain individuals but rather are produced and reproduced through individual actions and interactions[16]. In F.U., we explore that through acts of place-making using a combination of T.A.Z. strategies could be a good instrument for social change.

3. Fieldwork – Samandag and Serinyol

Between 25 and 30 March 2023, as part of a larger project, we conducted preliminary fieldwork in the Hatay region of Turkey, focused on two main areas: (1) Samandag—a culturally and ethnographically separated community in the foothills of the mountain, with strong ties to each other. (2) Serinyol: a small neighborhood, home to a community with great strength and resilience. During the trip, we established strong relationships with various NGOs and visited local people from various

communities. We conducted interviews and documented and mapped various forms of temporary settlements in the city.

3.1 Exploring the Current: NGOs and Volunteer Organizations

During our first visit to the settlements full of NGOs and volunteer organizations, we met with people from Gecci, a community-based social enterprise of Sarikecili people who live in the Taurus Mountains by raising animals, Support to Life Platform, a humanitarian aid organization, Maya Foundation, that provides psychosocial support services to children and youth between the ages of 5-24 who have been exposed to trauma due to natural disasters, migration, loss of family, violence and vice versa. They settled down in a small area where they distribute support to the people in need, providing public kitchens, making workshops for the children and women in the area, making research on sustainable construction methods, and many more.

With the founder of Gecci we conducted an interview to talk about tent and container settlements and how they function; He stated that there is a general disorganization amongst NGOs and governmental organizations. While tents and container cities are being built, there are no criteria observed —there is no sense of urban planning on a larger scale. On a smaller scale, individuals simply ask for help, and settlements are established haphazardly. He said:

> “Oh, don't ask me about the organization; there is none; not even international teams or municipalities have a chance of building organized settlements; everything is disorganized; when needs arise, they simply decide on some areas and build them with Ministry approval.”

Some people live in tent or container settlements depending on the condition of their homes, far away from their traditions and habits. They are filled with anxiety and a sense of displacement.

Some people in rural areas who work in agriculture and live in rural locations do not want to leave their homes or possessions, so they pitch up tents close to their houses or in their gardens —they simply ask for tents from Instagram, Twitter, WhatsApp or Signal chat platforms from the people who are volunteering, and volunteers are forwarding the requests to NGOs or international organizations after verifying the information.

During the interview, he provided an example of a situation where 6,000 containers had already arrived, and an additional 108,000 containers were expected. His main concern was how to effectively manage and organize these containers, given the current disorganized approach. They suggested the need for a strategy that involves repurposing containers, perhaps by transforming them into community centers or implementing other reuse strategies, since in the longer term, the temporal nature of these structures will be a problem.

Upon conducting site visits, we found that while the settlements appeared to be functional, their distribution on an urban scale was inefficient. A prime example of this was the "Hatay EXPO" site, now repurposed as a location for tent and container settlements. During our visit, we observed the uprooting of olive trees to make way for these settlements, with prefabricated houses and containers being installed in their place.

In addition, we observed that the majority of decentralized settlements were situated alongside highways, likely due to the quick removal of rubble and a shortage of public space. This unplanned decentralized network resulted in suboptimal living conditions for those affected, as settlements were not strategically located to meet needs.

3.2. From Rubble to Resilience: Emergent Solidarities

During our observations and interactions in the Samandag area, we had the opportunity to meet with a family who generously allowed us to stay with them. Although their house was undamaged, they lived in a tent out of fear. The family shared with us that there is an ongoing conflict regarding the disposition of asbestos-containing rubble in close proximity to residential areas.

During our visit, since the supplies were still missing for some families due to the decentralization of suppliers, we started to distribute supplies, hygiene products, water, children and adult clothes, and medicine to the people who reached out to us through Instagram. During our visits, residents of Serinyol and Samandag expressed their uncertainty about the future following the earthquake.

There are community-based initiatives that are not widely reported by the media or on social media platforms. People are coming together to discuss and mobilize to address challenges, often through protests against authorities. While organizations like Greenpeace, actively support these initiatives, the people face police and military violence.

During our conversations, we learned that many who opposed the lack of proper living conditions have been subjected to physical violence and even imprisoned for up to 24 hours. According to one individual involved in these protests:

> “Now that people have left the city, brutality is more than ever. Because our numbers have dwindled, they can easily silence us. Let's say our number in the neighborhood was 1000, and now it's 200. But I won't be able to go anywhere else. This is the only city I've ever lived in. My life is here, and everything I own is here I will never leave this city and will devote my entire life to my community.”

As reported on social media, following the reopening of the airport and the resumption of public transportation, many people left the city to live with friends and family members living outside of Hatay. In the aftermath of the earthquake, people may have been able to leverage their weak ties to find support and resources outside of the affected area.

Some homes had been marked for demolition by AFAD, the government agency responsible for disaster management, based on assessments of the damage. However, many residents did not trust the agency's decision-making process and felt vulnerable and mistrustful of the authorities. While this response could be seen as a trauma response, it also highlighted the fragility of the relationship between the government and the people.

To better understand the situation, we visited the affected homes and spoke with residents about their concerns regarding the demolition of their homes. The majority of them expressed anxiety and frustration, stating that they had taken legal action to protect their homes and did not believe that the

damage was severe enough to warrant demolition. The government's strategy appeared to be to demolish most of the affected buildings without offering any alternative solutions or compensation to the affected residents.

4. Regeneration of the City-Body

Despite the challenges faced following the earthquake, affected areas have seen remarkable efforts to reinvent and rebuild. Despite the loss of life and infrastructure, some businesses have reopened, and customers are returning. Community-based initiatives have emerged, bringing people together and offering hope for regeneration during these transformative periods of time.

Gecci’s founder said:

> “We saved today, now it's time to save tomorrow.”

With the urgent needs of the communities being met through tireless work by volunteers and emerging initiatives in the area, the focus has shifted to providing sustainable options for daily activities and habits. These initiatives are crucial for communities to regain a sense of normalcy and stability after the devastation.

An interesting possibility for regeneration arises from the fact that the city center was completely destroyed, leading many people to move to rural areas. The restoration of infrastructure for basic necessities, such as electricity and water, is being addressed more quickly in these areas than in the destroyed city center. This results in a non-traditional pattern of urban development, where the periphery is centralized. Through the conditions that arise from such non-standard approaches, traditional governance and planning mechanisms may start to incorporate more sustainable practices with the help of grassroots and community-based initiatives.

As a continuation of our work in the field, we are researching and developing a variety of collaboration methodologies with local communities, that support alternative place-making approaches such as bazaars, community centers, and local production spaces, particularly in rural areas such as Samandag and Serinyol. In addition to articulating events on a theoretical level, fieldwork, participatory and co-making approaches, and embodied practices form the basis of our work.

References

[1] Shelley, Mary, David H. Guston, Ed Finn, and Jason Scott Robert, eds. 2017. “Vol. 1.” In *Frankenstein: Annotated for Scientists, Engineers, and Creators of All Kinds*, 41-42. The MIT Press.2

[2] Bruno Latour, Peter Weibel. “From Realpolitik to Dingpolitik – An Introduction to Making Things Public “
Making Things Public-Atmospheres of Democracy catalogue of the show at ZKM, MIT Press, 2005

[3] Detar, Charlie. "On Selling Out: How the Conditions of Technological Design Perpetuate the Status Quo." Medium, May 1, 2022,

[4] A. Giddens. Central problems in social theory. Macmillan, 1979.

[5] “Love Your Monsters.” n.d. The Breakthrough Institute. Accessed March 12, 2023. https://thebreakthrough.org/journal/issue-2/love-your-monsters.

[6] Hardiman, Michael. 2022. “The Banality of Evil.” In *The Path to Mass Evil*. Routledge.

[7] Ghosn, Rania, and El Hadi Jazairy. Geostories : Another Architecture for the Environment, p.16. New York: Actar, 2018.

[8] Harvey, David. Spaces of Hope. 152. Edinburgh :: Edinburgh University Press, 2000.

[9] Tuck, Eve. “Suspending Damage: A Letter to Communities.” Harvard educational review. 79, no. 3 (2009): 409–428.

[10] Bogost, Ian. The Carpentry of Things: Essays on Technology and Culture. University of Minnesota Press, 2018.

[11] Shelley, Mary, David H. Guston, Ed Finn, and Jason Scott Robert, eds. 2017. “Vol. 1.” In *Frankenstein: Annotated for Scientists, Engineers, and Creators of All Kinds*, 41. The MIT Press.

[12] Tuck, Eve. “Suspending Damage: A Letter to Communities.” Harvard educational review. 79, no. 3 (2009): 409–428.

[13] Hoffman, Anthony, ed. Button, V. Gregory. “The Negotiation of a Disaster: The Media Response to Oil Spills in Great Britain”. The Angry Earth: Disaster in Anthropological Perspective. Routledge, 1993.

[14] Granovetter, M. S. (1973). The strength of weak ties. American Journal of Sociology, 78(6), 1360-1380.

[15] Hakim Bey, T.A.Z.: The Temporary Autonomous Zone, Ontological Anarchy, Poetic Terrorism, 2nd ed. (Brooklyn, NY: Autonomedia, 2003)

[16] Giddens, Anthony. The Constitution of Society: Outline of the Theory of Structuration. Berkeley: University of California Press, 1984.

URBANISM IN THE EXPANDED FIELD – #1 SHIFTING DENSITIES
ECOLOGIES OF SETTLEMENT: MIGRATION AND THE RIGHT TO THE CITY AND THE RURAL

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'If you would ask me now what the first step of planning a town. I would say "First plant a forest" (Oswald, 2015)

ABSTRACT

This paper continues a 3 year project of fieldwork with communities along the Great Rift Valley based on a comparative method working with African, Palestinian & Israeli communities, in order to better understand the ecologies of settlement and the future of the city.

Disparities between people, within communities, cities, regions, states and continents have contributed in un-settling previously constructed settlement patterns across the globe. Socio-economic, political and environmental challenges have served to escalate conflicts between people of difference. Migrancy has emerged as a primary response to this phenomenon.

At a time when the country of Israel is fighting for it's young democratic heritage, the question of the role of the design of cities has added urgency to engage with radical uncertainty. The architect must engage with transformational typologies in confronting these competing rationalities within the urbanizing world.

The Janus face of human/climate crises is evident in the growing tendency for human settlement to form homogenous enclaves as gated communities, excluding people of difference. Historically dispossessed and marginalized people and communities are imagined as a client body whom we seek to incorporate in cities. For architecture, design agency is considered as the means, and spatial transformation as the medium.

The work on this project commenced through surfacing pre-existent knowledge sets from historic settlement conditions to uncover established principles of organisation. These provided useful knowledge for comparison across the spatio-temporal life of the settlements studied .

The paper will attempt to unpack and defend the position of secondary cities as a viable means through which to explore contemporary migrant densification within the rift valley section. In particular we examine the issue of new cities through incrementality across Palestinian and Israeli rural cooperatives in Israel and in the new city of Buranest in Ethiopia. As secondary cities these venture on new forms of living through typologies which confront deforestation, over grazing, soil depletion and erosion. By mediating urban migration this establishes new forms and diversification of crop production in terms of cycles and types, through local cooperation.

The populations of both Israel and Ethiopia are expected to double by 2050. Where migration in Africa (Ethiopia, 77% rural) is toward overloaded financial capitals, the need for the secondary city has become urgent; in Israel (92% urban) the necessity for urban dilution lays in the potential of rural historic settlements to become a new form of city, in both Palestine and Israel.

The paper will conclude with a comparative analysis to realise the potential of new cities that afford alternative forms of densification. whilst building transformative rural urban typology – so as to realise cities that support open communities which share the freedoms of living and working together.

INTRODUCTION

Contemporary society is characterised by a radical increase in human conflict and contestation and conflict. Disparities between people, within communities, cities, regions, states and continents have contributed in un-settling previously constructed dwelling patterns across the globe. Socio-economic, political and environmental challenges have served to escalate conflicts between people of difference. Simultaneously, carbon modernity has impacted on our planets ability to withstand the effects of climate change and environmental injustice. Multiple forms of migrancy have emerged as a primary response to this phenomenon with significant implications for the city and its urban dynamic.

At a time when the country of Israel is fighting for it's young democratic heritage, the question of the role of the design of cities has added urgency to confronting radical uncertainty. The architect must engage with transformational typologies in confronting these competing rationalities within the urbanizing world.

The Janus face of the human-climate crises is evident in the growing tendency for human settlement to form homogenous enclaves as gated communities, excluding others who are different. Historically dispossessed and marginalized people and their communities are imagined as a client body whom we seek to incorporate in cities. The challenge is to effect social and climate justice by speculation on alternative forms of settlement. For architecture, design agency is considered as the means, and spatial transformation the medium, with new resilient communities the outcome.

Employing a mixed method case study approach this paper interrogates approaches to secondary city making in Israel and Ethiopia. Interrogating these phenomenon through published texts and archival documents, interviews and site visits, and engaging through the studio format, to culminate in a comparative analysis where we surface the potential of new secondary cities to afford alternative forms of densification. The production of a transformative rural urban typology – with the intention of realising cities that support open communities which share the freedoms and opportunity of living and working together.

RELATION TO CONFERENCE THEME - Urbanism in the expanded field/shifting densities

Urbanisation is a phenomenon that has come to encompass the broad field of human settlement on our planet. Driven by the rapid rise of population growth, this trend has been exacerbated by human and natural crises and concomitant pace of migration. Current city models appear to lack resilience in accommodating the demands of both the need and scale of growth. Intensive and 'uncontrollable' densification has emerged as a common response and is widely reflected in the current emergence of megacities (Ding et al, 2015).

The populations of both Israel and Ethiopia are expected to double by 2050. Where migration in Africa (Ethiopia, 77% rural) is toward the few already overburdened financial and political capitals, the need for the secondary city has become urgent; in Israel (92% urban) the necessity for urban dilution lays in the potential of historic rural settlements to become a new form of city. The respective National Development Plans do not however reflect on this need.

In the absence of proactive planning, the modern city has developed the informal outskirt. -We have begun to witness a clear effort to reimagine the modern Neighborhood unit. However, despite that it may have served well the first generation of migration into the city, it appears to only fail for second and third generations, with aging communities finding themselves segregated from the opportunities of choice and renewal in the city. It therefore becomes necessary to consider possible alternatives in laying out structures for future urban development by addressing density and patterns for the co-existence of often competing ecologies of settlement.

SPECIFICITY OF THE PROJECT - Ecologies of Settlement

"When we contemplate a field of wheat or maize, we are well aware that the furrows, the pattern of sowing, and the boundaries, be they hedges or wire fences, designate relations of production and property." Henri Lefebvre, The Production of Space

One of the intentions is to explain how education in architecture today must engage this moment in time where the powers invested in design can be developed to make room for transformation, allowing for the flexibility of change that consistently keeps challenging imbalances in our competing Ecologies of Settlements.

Any attempt to define the scope of an expanded field of urbanism needs to take consideration of the issues raised in Lefebvre's seminal proclamation regarding' The Right to the City' (Lefebvre, 1989). Migrants, as the constituency most frequently excluded, generally find themselves confined to conditions of partial inclusion. The design of new urban form must foresee the radical inclusion of all on an equal basis. Any future social contract must reflect through the design formation of alternative spatial configurations.

The modern city was configured by extreme classifications of land use through and use zoning and the attachment title deeds to ownership. This predetermination of the public and private functions of the city has led to hierarchized stratification of societies, often with the exclusion of the poor and 'non-elites'. Today this definition has been justifiably extended to recognize particular rights for the un-settled, as in the homeless and informal sector, migrants and refugees, disabled, women and children, and all marginalized constituencies.

Furthermore, within the context of contemporary climate emergency, the issue of the rights necessary for protective maintenance of the natural environment with its associated life giving systems has gained increasing and urgent justification. Today Environmental rights stand with Human rights. Socio-spatial equity and Environmental justice are fundamental for settlement resilience and planetary sustainability.

The Ecologies of Settlement afford equal importance to the life needs of geologic, hydrologic, botanic and other systems, comprehending them each as essential to the maintenance of human existence, through a conscious [re]presencing of natural systems within human settlement design planning.

Collectively, these issues challenge conventions in confronting urbanisation and densification for settlement planning. This demands that we expand the scope of design by recognizing its unique agency to critically consider more that only human centred need, comfort and profiteering. This should lead to a reconfiguring of the world through all of its complexity and contradiction for an order that genuinely supports co-existence.

Our work across the Great Rift Valley has also revealed extreme examples of failure. Notably this is evident here the twin phenomenon of human and environmental ecologies have resisted engagement and become increasingly irreconcilable. It then becomes impossible to sustain human existence and forced migrancy becomes a necessary default thereby placing increased pressure on existing urban centres.

However, different forms of crisis driven rapid densification continue to occur, often simultaneously, and require responsive intervention to manage accelerating and mismanaged forms of urbanization;

1. **conventional densification** – in existing primary urban centres
   Addis Ababa / Tel Aviv [economic capitals]
   massive population growth – rural to urban / problems w infrastructure, mobility, 'condo's, speed, sprawl, autonomy/anonymity of human & rise of the MegaCity (Lagos – 100mil by 2100)

2. **extention of existing** (addressing the divide) – expansion of secondary cities
   Bahir Dar, Hawasa / Afula - building both city supporting the rural with
   Financial governance, 'industrial' production centres and/or inclusivity of 'informal' with formal

3. **'new secondary city'** – rural urban (decentred) hybridising intermediary settlements
   Buranest [Nestown] / Nahalal [Moshav]
   A new [co-operagtive] social contract, long term incremental growth, agri-settlement, 'sustainable'.

4. **'urban dilutional transfer'** – primary centres / to regional rural/secondary
   Addis Ababa / Tel Aviv
   transformation of old kibbutzim/moshavim and industrial financialisation of secondary cities

Recognising this, Design has the agency to reflect and leave space for doubt, in times of plurality and its concomitant uncertainty. We learn to make form through cultures of practice and post occupancy evaluations, to build co-existence within the tense balanced order of powers between early established communities and young migrant communities. The power of proactive Design, building equal opportunity and freedom of choice, empowering mobility and rights not to participate, that make difference seen, in the open - expressed in our cities in our institutions of agreement, addressed and valued, and, failing which, the challenges ahead will destabilize all agreement and purpose.

The outcome of our research work has identified the potential of [new] secondary cities as more capable of productively contributing toward comprehensive integrative redress, whilst supporting a sustainable agenda. The experimental cities of Bahir Dar / BuraNest and Afula / Nahalal, are primary projects, and identified for comparative analysis. The forms of migrancy which promote rural secondary city development, provoke the reshaping of settlement conception within land [nature] and settlement [human] conceived of as continuous terrain, in contrast with the convention of fragmented binary urban/rural divide.

AN APPROACH TO THE INQUIRY - The Design Research Studio project

Expanding the disciplinary bandwidth

Design thinking within the learning environment is lacking in interdisciplinary forms of teaching and learning. The curriculum and pedagogy could break out of disciplinary silos and teaching hierarchies to facilitate more horizontal relationalities and integration of the design thinking/making processes. Design thinking between related professionals can advance collaborative skills by embodied engagement with other disciplines restructuring of the pedagogy. This is a sensibility fostered in the HVD GSD publication 'Ecological Urbanism' (Mostafahvi, 2010) which extended the earlier trope of 'Landscape Urbanism' as proposed by James Corner. (U. Penn. 1992).

The work on our project is focused on secondary cities developed within the rural countryside. These are recognised as sites of experimental opportunity for confronting the sustainable agri-settlement and plurality in counter response to centralised urban densification. The project is organised through a series of case studies to surface historical knowledge sets from settlement conditions to understand principles of organisation. This has been effected through archival and textual research and complemented by interviews and in situ visits to provide useful knowledge for comparison across the spatio-temporal life of settlements studied.

'Image/Text' and Film were introduced as a means of facilitating a studio research practice whilst simultaneously enabling individual students tom evolve a personal research trajectory. Subsequently the evolved knowledge sets were applied through Film, introduced as a narrative method through which to surface collective commons across a range of different sites and cultural contexts (Heisel, 2015). The combination of Ethiopian, Palestinian and Israeli students enabled a constuctive forms of coproduction - thereby surfacing culturally specific responses to the public dimensions of respective differences; the gebbi, ghosh and kibbutz, as specific reflections of social practice, with Agriculture Cooperative forms of co-production and settlement being present in both countries, found in both the Urban and Rural.

Consequently, as secondary settlements, these secondary cities necessarily venture on new structures and forms of socio-economic organization. Design thinking presents a basis to propose new typologies for rural living, alternative forms of implementation and construction, and productive means of engaging with environmental ecologies and the concomitant issues of deforestation, over grazing, soil depletion and erosion, flooding and water shortage, to name some. Social and environmental justice have become universally recognised as key in achieving the necessary just transition across the planet.

A comparative analysis is undertaken to surface (different) design principles in two sets of [new] secondary cities which propose alternative forms of densification, through the design of transformative rural/urban urban typologies – with a primanry intention of realising cities that support open communities which share the freedoms and opportunity of living and working together, whilst building new communities whilst maximizing sustainablity.

The task of the Design Research Studio.

The studio questions the contemporary tendency for urban design to 'commodify' the built environment as opposed to imagine how People, Land and the Environmental ecologies might co-exist?

Today the question of 'how we might live - together?' (Sarkis, 2012) must also be considered within the framework of a comprehensive reading of The Right to the City. This implies both equal access and opportunity, on the one hand, for all regardless of Race, Class, Gender or Religion and on the Other, for the Environmental ecologies and the life forms of their respective systems to be respected and maintained. Land, Mountain, River, Ocean, Flora and Fauna all require equivalent recognition in a horizon of interconnectivity which ultimately supports the survival of the planet.

For the built environment project where site, enclosure and materials imply major destructive contribution toward carbon modernity. The interrelationship between labour, capital and material cultural production reveals much about a project's relationship to the integration between ecologies – notably with decisions regarding respective modes of production..

The contemporary challenge for design lays in interpreting the expanded field within the specificity of each particular project. For architecture and urban design this implies the co-existence between the material and social with the environmental. From our studio perspective we have recognized the critical reconsideration of a new social contract might for the 21st century?' in the Agri-Cooperative – configuring new settlement patterns capable of bringing people and families together, reconciling [cultural] differences and protecting the environment, whilst collectively fostering economic opportunity.

MIGRATION AND THE RIGHT TO THE CITY AND THE RURAL
CASE STUDY - COMPARISON BETWEEN ETHIOPIA & ISRAEL

Migration – on a course of arrival to become citizens in a New City, in a New Land, with the freedoms and responsibilities (towards the New City), with great hope for refuge, and a better future - The Right to the City becoming.

"What are the moral implications of abandoning a place, or becoming an immigrant? Is the best answer to always stay where you are? Yes and No. For some, ties to their ancestral lands, culture, family, tradition, and roots supersede all. For others that are chased out, threatened out, or where home already lacks resources or safety, staying rooted might not be an option...consequences, presence itself creates a kind of harm. Morality, safety, and survival are all murky, as is where we can go do the most good. Sometimes, doing the most good is fighting; sometimes it's shining a light toward a new set of possibilities; sometimes it's getting out of the way"

Considering Climate Migration, Ksenya Samarskaya

At a time when large numbers of immigrants seek refuge, challenges on the city rise. We built a program to help develop new understandings through comparative method along the Great Rift Valley to try and address a design enquiry: the challenge of integration - not as a threat, but a for building a common and better future; The New City, better known as the secondary city, built through transformation of the rural settlement to become the alternative of our time, Ecologies of settlement our lesson; a program to help develop new understandings through comparative method along the Great Rift Valley. To develop a discourse between cultures that have past and present shared challenges, through the lesson in our discipline of Architecture We return to the 'power of design' to re visit the design of the basic unit, Dwelling – and the Idea of a City (Rykwert,1976), one the foundation of the other and its ongoing measure;

- a measure of time, for a multi generation or for a short-term solution?

  - with the prospect to build a future for the extended/flexible families or just a temporary gateway to community at the arrival city.

  - The City as a home for a generation to come, common ground for the communities yet to be, or a short-term solution as a transition generation, as a transitional camp.

We chose to study two situations to the challenge of mass migration, two in Ethiopia, between 2007-2022, Buranest and Bahir Dar, and two in Israel, Nahalal (1921), and Afula (1925). Although all are focused on rural urban agri-cooperative development, they differ radically in their design interpretation, resulting in fundamentally different forms of socio-economic relations within the respective cooperatives.

Developing the comparison based on the idea of settling migrants, a post occupancy reading in Ethiopia and Israel (F. Oswald vs. A. Sharon) (L. Kahn vs. S. Angel), and in building a better future between the base-unit and the city to come.

The Israel Emergency Housing plan

In May 1949, the first year of statehood, a group of Housing specialists feom the USA are invited by the Jewish Agency to help solve the local Housing Crises. While mass migration of 120,000 are arriving every year, there is a need for 60,000 units to be built every year (Kaufman, 1949)

The role of Kahn in Israel, is twofold, as a humanist, with a deep concern for human rights and for the Jewish migrant and taking part in the very early stage of building a home in the state of Israel:

“my generation is looking forward to it’s duty and benefit to build for the masses with its problems of housing and health” 1944 Kahn, following the great effort of designing housing for the new deal 1930, and the war housing 1940. “Israel’s housing crises, however, offered an opportunity for an architect to alleviate human suffering and provide support for the emergence of a new utopian society. News of the staggering number of refugees coming to Israel must have been overwhelming…”

The response was The Emergency Housing plan designed by the Estonia migrant to Phildalpohia, Louis Kahn. 60,000 units single base units of 40 sqm on ½ dunam [500sqm] properties within existing or new cities, self-owned and diversify incomes through different types of labour.

With the formation of new prefabrication plants and a recommendation to make Israel the fabrication center to the Near East, the invention of an “Emergency Housing into a Major Industry” created its own company towns “operational centers”, reflecting on his understanding of previous experience to rapid implemention as ‘wartime’ needs.

The Unit proposed was made from a vacuumed-formed concrete method, poured in place concrete, on a 40sqm base structure, a building ready for its tenants in 7 days - as a base for future additions as needed and budget allowed in the future. Knowing the cost of temporary structures required in the ‘transition camps’ quoted saying “there is nothing as permanent as a temporary building”, to build a home, would be the best future for the settler and the country, - it’s designing a home for a future for a place in this new society, not only for the short run.

The builders would be the new migrants themselves and would learn the craft and have a direct role in building the country and their role/place in emerging young economy and pioneering society.”Having been an Immigrant himself in America, Kahn intuitively grasped the importance of privacy, stability, and root for the *olim (*immigrant*s)* to Israel”. (Kaufman L, 1949)

“…It is easy to describe the effect of this Settlement effort on the immigrants who live in camps today with almost no chance of housing or work. The hope of reaching their own homes in the short time may bring a fundamental turn in the course of the winds. If every day 200 families leave the camps to settle in their homes and there will be a mental awakening that will release important creative forces, … but every immigrant will certainly dedicate himself with all his strength to the establishment of his home, if he knows that this is his home and the home of his children and grandchildren and that he is also creating foundations for his existence. Much has been written recently to criticize the human nature of the immigrants, but all the negative phenomena may disappear if the masses of immigrants are given an opportunity and possibility to build their lives on new foundations.” (Kaufman L, 1949)

The Jersey Homestead, developed for the Workmen’s Circle, a Yiddish socialist, non-religious cultural society, as part of the 1930’s New Deal - F.D. Roosevelt - to help the poor in a time of the Great depression, Stonorov and Kahn built a community of single detached houses each on a parcel of land, large enough to grow their own at times of need. The Emergency Housing typology proposed a similar

set up only, its location is as part, and to support, existing communities on the edge of cities, Rural and Urban, and not as a standalone settlement.

Afula is one of the new cities Kahn lists for 200 units. The City development at 49 overall plan by R Kaufman identifies such potential Homesteads in the city plan. In fact Kahn proposes Afula as one of the future centers for a cement plant.

Kahn imagined the home in the city with both an awareness to the livelihood of the residents and its support of communities around. Facing both, not identifying a focus community for the new migrants, but rather allowing full integration through a gradual seaming the Socio spatial and economic as a gradual process, with new society needs to endure the challenges and roots, i.e. stability.

The alternative presented by A. Sharon was the Public Housing settlement, based on shared state-owned land, organized as a Neighborhood unit (Wilkof, 2022). The buildings and the accommodation were seen as temporary and not owned by the newcomer. Afula was one of the key cities that were divided, not to continue their full process around a common urban center for the region as planned by Kauffman in 1925. The New City of Afula Ilit (Afula Heights) was to be built as Neighborhood units for the Migrants, dividing the city in to two distinct communities, the established separate from the new migrant community. This conscious division might have been a critical decision in a post occupancy reading, a decision to empower the early pioneers and in effect not to empower the newcomers. Could that divide in the city be understood in the political, social economic divide in contemporary Israel, as we address the New Cities today?

The Ethiopian Urban Expansion Plan

Bahir Dar lies in the North West of Ethiopia, on the south eastern coast of Lake Tana, better known as the source of the Blue Nile that runs North to South through the city. Today as the capital of the Amhara region in Ethiopia, it was chosen as one of 4 secondary cities for a pilot city in a collaboration between the state of Ethiopia and the NYU Marron Institute led by prof. Shlomo Angel.

Addressing the contemporary challenges of mass migration to cities in Ethiopia, the program attempts to teach local planning departments a simple and immediate program to help in the needed rapid expansion of the city and help inform its future growth by introducing a new infrastructure grid. Their new 'Making Room for Urban Expansion' plan consists of a simple four-point program:

1. The preparation of realistic maps based on forecasts of urban growth for the next 30yrs.
   The expansion of city boundaries so that land necessary for that growth is under the control of one planning authority.

2. Securing land for 1km x 1km grid of 30m wide arterial roads.

3. The selective protection of a hierarchy of public open spaces in the expansion zone.

The plan is grounded in the knowledge that poor communities are often well equipped to provide their own housing, as long as they are given time and the legal protections and support to engage in incremental development. (i.e. Emergency Housing)

The plans of the orderly grid of roads and open spaces…"will ensure that even Informal development are part of the frame work in that will eventually be normalized and serviced (Angel, 2012; Baross and van der Linden, 1990)

The revival of this planning tradition has to do with empowerment of local planners to deal with "… poverty, inequality, informality, rapid urbanization, and spatial fragmentation (Watson, 2009). These linkages shorten travel time for goods and people, creating economic connections and helping integrate informal areas and residents.

Though there is a scarcity in the formal sector Ethiopian government has made an effort to regularize informal settlements within 3yrs of there construction, "In Hawassa, for example 17,920 illegal settlers have been regularised in 2017."

According to projected forecasts by NYU, the city of Bahir Dar will four-fold their population of 2010 by 2040. From 322,901 at 2015 (today 600,000) to 2,182,760 by 2040. (Marron Institute, NYU). This urban expansion planning approach, pioneered by Professor Angel Shlomo and his team at the NYU has been applied in 18 different cities with the support of Cities Alliance. It is now being extended to nine cities in Ethiopia, Somalia, and Uganda within the context of rural-urban migration.

*"For cities to thrive in the long term, they must find a way to include migrants in the urban economy and society to achieve greater social cohesion at the city level. This requires governments to plan for urban expansion and link the places where new residents are likely to settle with the existing city" (*Gerritse and Arribas-Bel, 2018).

The Buranest Cooperative Rural New Town Amhara, Ethiopia

"*Does the megacity have to inevitably represent the urban future? Could the seemingly onward march of rapid and large-scale urbanisation in fact be interceded by 2050 with the development of more, smaller local towns*?" Professor Franz Oswald - ETH Zurich

In the fertile plains North of Bahir Dar, as part of the extensive drainage system the irrigates the fertile agricultural fields, Ethiopia today is roughly 80% rural. With a tropical savannah climate, with intense dry and wet seasons, the wet season months of July August.

Bura Ethiopian Sustainable Town, Buranest, 72 km north of Bahir Dar, was implemented in 2010 as part of the Rural to Urban Transformation project . It complements a plan to develop 8,000 New Towns in rural areas, as the development of rural locations since 2006 is an integral part of the national government initiative to 'decentralize development by slowing rural depopulation and resulting urban growth (see Gardner; T "Addis has run out of space' Ethiopia's radical redesign" - The Guardian, 4.12.17) Some studies have shown that rural to urban migration in Ethiopia is partially driven by erratic climate variations.' (Hunnes, 2012) 'and plans to develop new urban centers in rural areas to stem the flow of migration to the city of Addis and Bahir Dar.'

'This real-life experiment is a cooperative new town – named Buranest – built for farmers, by farmers, with input from farmers – all without external investors… to face head on the staggering urban population growth projections, environmental destruction concerns, degrading social cohesion and simply keep strong adolescents, capable of working the beautiful land, in the countryside, instead of them migrating to larger cities.' (Oswald, 2015)

In 2007 a collaboration between prof Frantz Oswald, ETH Zurich and Fasil Ghiorgis, EIABC, University of Addis Ababa, and Helawi Yosef, Ethiopia's ambassador to Israel joined this effort; 'Yosef was instrumental in securing the Bura site for the project (interview with Helawi Yosef and Fasil Ghiorgis) in 2010 BuraNest was inaugurated. A tree nursery was planted. Zegeye Cherenet joined the design team. BuraNest is based on an ideological Roadmap: (Oswald, 2015)

The Buranest Charter A Roadmap for a New Town

The town governs autonomously and acts with solidarity

The town is an enterprising corporation that produces income and resources from its own initiatives, competences, diversity and density of inhabitants. It follows the principles of autonomy and self-reliance. Participation and the balancing of resources and yields are openly discussed and equitably governed through interaction between individuals and community.

The town sustains itself by self-defined urban quality and self-sufficiency

The town controls its metabolism and offers all basic urban activities

Food production, work, housing, transport, communication and cleaning are jointly operated within the urban metabolism. They are sources of income. The town adjusts the flow of goods and material, including capital and information technology, to maintain equilibrium. It develops its cooperative urban identity from continually balancing new enterprises and resources.

The town lives from renewable resources and generates its own energy

The town develops free exchange internally and externally

The town educates as practice and laboratory

The town has open institutions and gardens

The town, cooperatively built by the inhabitants, grows from the town core with a centre square and four nuclei based around ecology, energy, exchange and education. Growth is approved within time periods to allow later discussion and adjustment. Local resources, tools and the abilities of the inhabitants are used. The town form expresses the ownership of the inhabitants, creating comforting beauty. (Oswald, 2015)

‘Agriculture is the heart of Buranest. Each household has a parcel of land, and shares the rainwater that is collected from roofs and stored in wells, with neighbours. Cooperative production and storage give the inhabitants a secure source of food and water. Thoughtfully designed infrastructure with measured construction upon the land ensures both steady employment and protection against the elements. ‘We’ve moved away from exploiting the landscape…We do everything purposefully, including planting millions of seedlings from local tree nurseries. Now water flows all year in the river basins.’ As a result, despite the increased population, groundwater quality, water supply and agricultural yield have improved. People have even accepted the necessity of relocating their livestock.’ Mastewal Tesfaye, (a farmer’s son from Bura and former Buranest Town Core Coordinator)

The urban plan went through a series of intermediate stages in its development, and this is only the beginning, what has been developed today is the Pinwheel, extending to connect existing communities to the open fields and towards the main road to Bahir Dar. In the center of the pinwheel is the largest common gathering place, and the converging of the different routes that will gradually expand, densify, and evolve over time. Education, Energy, Exchange and Ecology are the principles of organization, and are provided with programmatic function.

There is enough hydroelectric, solar and wind energy that electric power made in Ethiopia drives domestic use and export. Tesfaye is clearly proud: ‘For us, self-sufficiency – from nutrition to mobility and self-empowerment, from healthcare to education – remains embedded in both our history and landscape.’

Peace is the ultimate by-product of the Buranest experiment for Tesfaye: ‘After epochs of killing and devastation, my generation was the first that had a chance to live out its years of study and travel in times of peace. My stints in Somalia and South Sudan have taught me how fragile such times are. That is why I made this commitment to new cooperative towns. They are an enduring attempt to build peace together, to share and give our young hope for a better future.’ Mastewal Tesfaye

TOWARD THE NEW CITY -

PRINCIPLES OF DESIGN THINKING OF RURAL TRANSFORMATIONS

- The Right to the City, the Right to the Rural, (Lefebvre, 1989) - building the dual relation between the Ecologies of both as we understand better empowering and making room, for the communities of the great migration to the city 1949 – 2023.

- Building the Divide in the new state secondary cities, A. Sharon, - The challenge of rapid migration, on the historic city vs. the support farmer & urban resident, Kaufman and Kahn vs. A. Sharon, Emergency housing considered the incremental integration of the migrant in to the city, building a house as a pioneer, working and living in Afula supporting the rural seasonal agriculture and the urban work in between, while understanding the need to decentralize the networks of the rural settlements in a way for the city would receive role of a new industrial center in the region; for example by building a local cement plant to support, among others, the Housing crises by developing the pre fab industry.

- The role of Design and Settlement in building the grounds for a democratic system of governance today, how then can we learn not to repeat the mistakes of the Divide and segregation of the Migrant in the past and allow for difference to share equal rites land "to visions that may be different...and the rite not to participate" (Shapiro, 1995?)

- Emergency housing 1949, building for the new Pioneer that is not a farmer (Kaufman, 1949). The Urban expansion initiative negotiating the informal sector into the formal city.

Principles of Design

- Equality and freedom of choice / opportunity + Environmental justice, in the basic house unit (Pennypack double orientation as in Buranest and Aranya)

- Nahalal, concentric design to limit future growth to allow other new settlements to evolve, and yet no settlement can live on such short term imagination and needs open historic foundation understanding see

Kauffman's early proposal gardens of Nahalal and school open to the world. leaving room for reflective collective doubt?. (i.e. 2020 plan to grow)

- Iksal similar to Buranest is a transformation in progress of the rural villages as a possible alternative (hybrid) to the nearest cities, by creating the new urban center and the (armature) the edge of the village, between villages.

- Doxiadis New City Pinwheel vs. A. Sharon Neighborhood unit... transformation and enabling structure for a future yet unknown of ecologies of settlement. +The 'migrant' Kahn, building home and city in Afula (industrial role in the region) (Doxiadis, 1963; Keeton, 2019; Wilkof, 2022).

- Bahir Dar extension and Buranest New town represent seemingly successful Urbanism in the Extended Field but time will tell,

Until then we hope to promote these collaborations with partners to teach design activism through design in the Great Rift Valley

IMAGES / DIAGRAMS BURANEST model—phases of town development

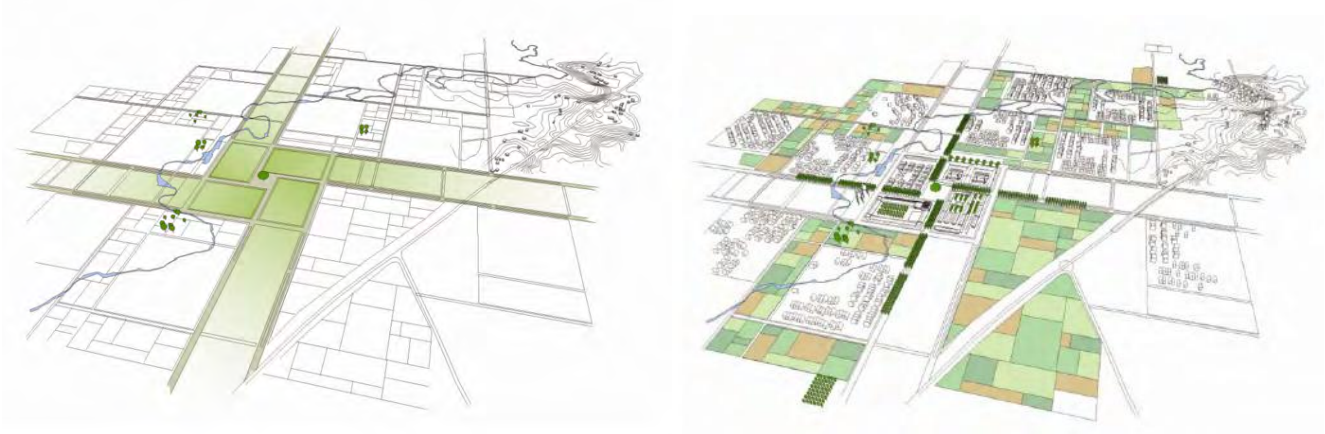


Figure 1 BURANEST model - Phases of town development

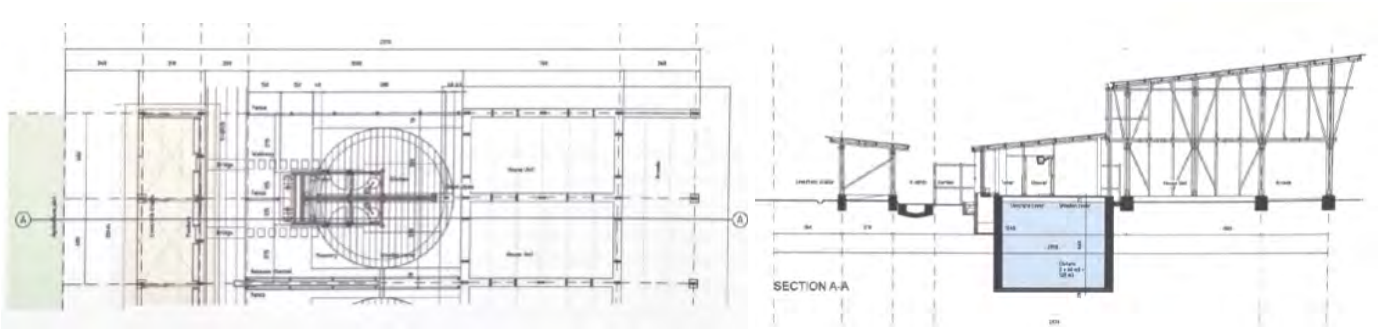


Figure 2 Buranest typical house unit backyard Rainwater cistern

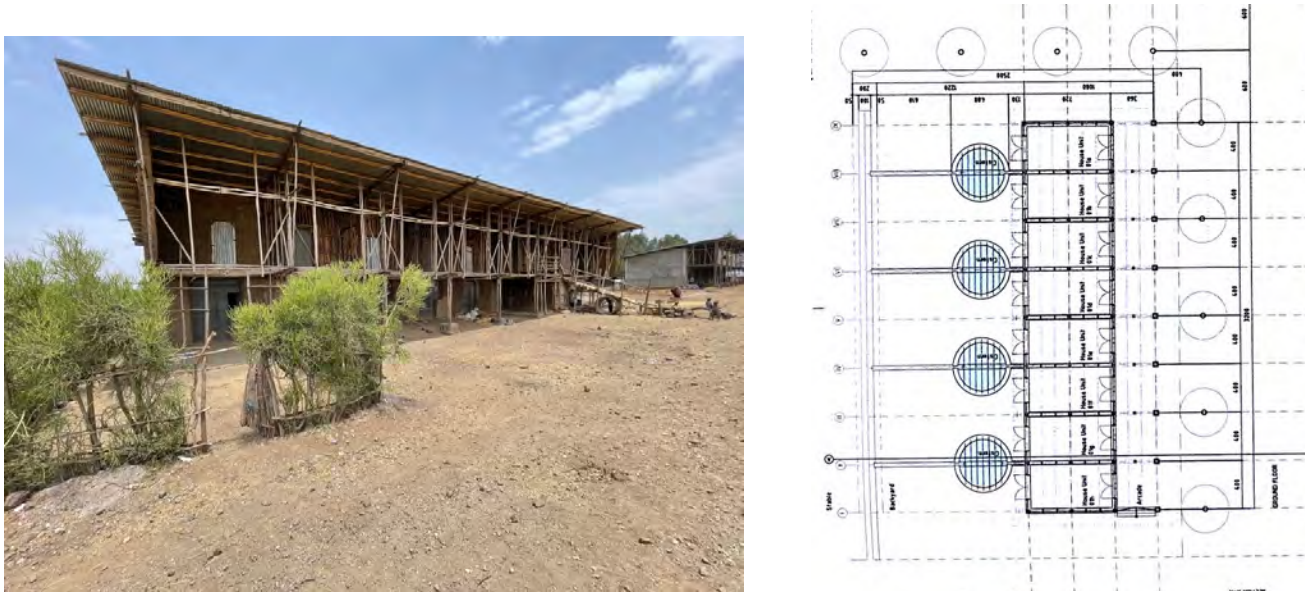


Figure 3 Rainwater unit made of 8 housing units 90sqm each

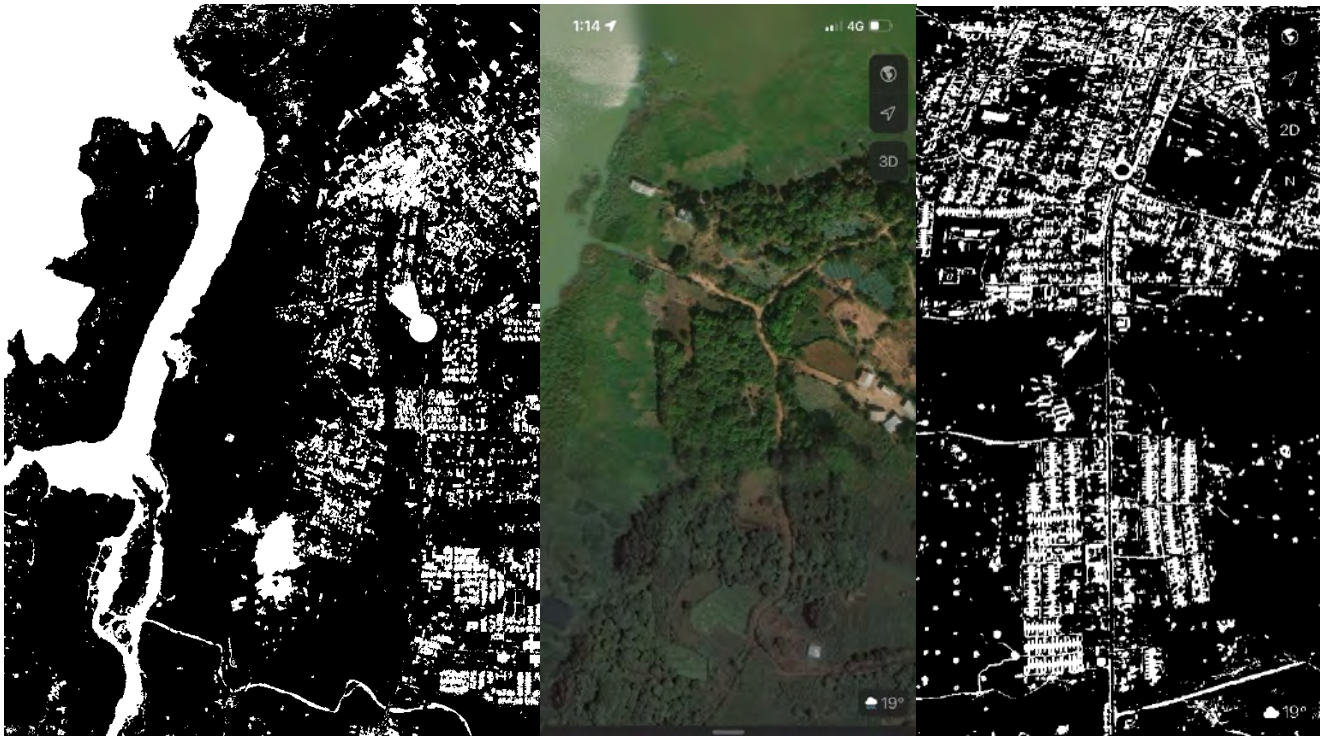


Figure 4 Bahir Dar - Blue Nile Informal and New development- Urban Expansion Plan

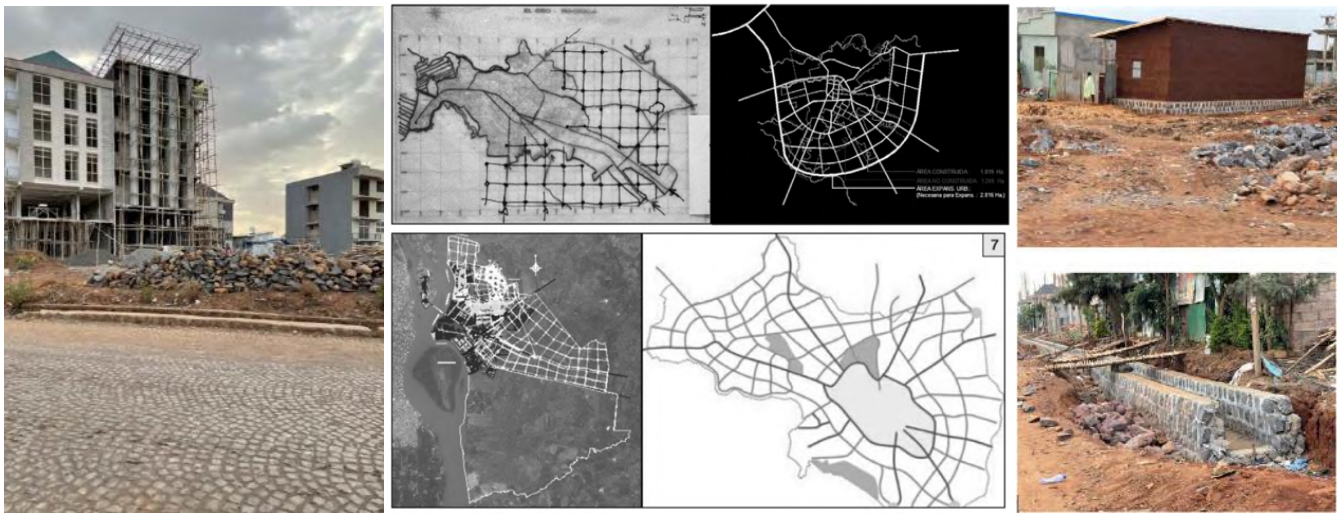


Figure 5 Urban Expansion plan - Road Grid, House & Infrastructure

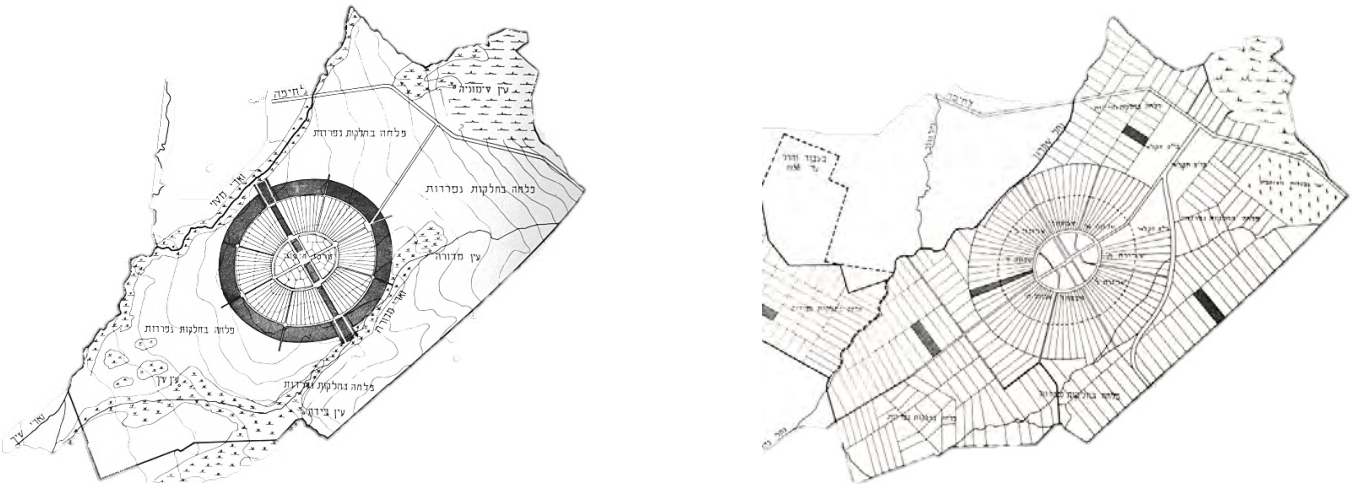


Figure 6 Nahalal 1924-1947 25 dunam by the house + Fields. Fig 7 Nahalal 1921-10 dunam + Public Park Center & Perimeter

Figure 1 Workers quatres near agricultural settlements 57sqm A. Sharon 1940

Figure 2 Sketch of Industrial road-the Modernist City By R. Kauffman 1925

Figure 3 Great Afula 1925 plan by R Kauffman by 'American communities'

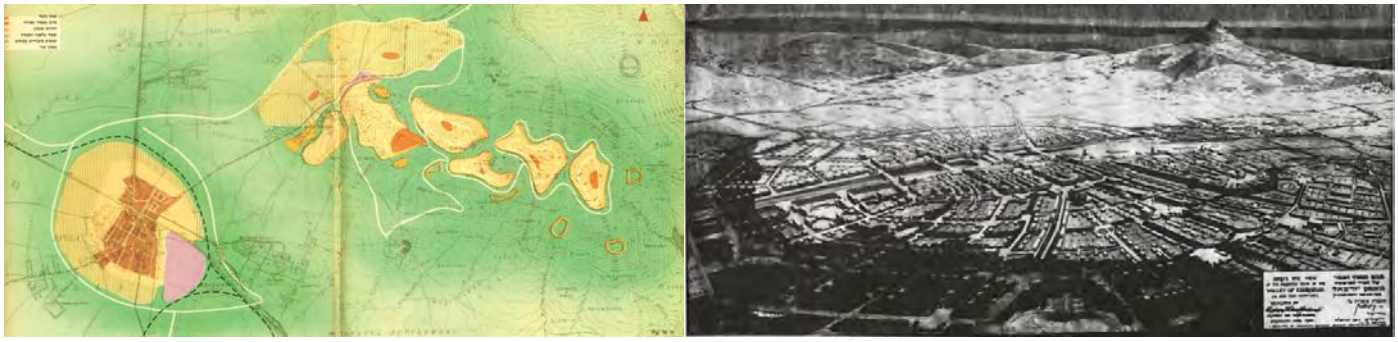


Figure 4 Plan of the New Afula 1951 - Dividing between Cities & People (new migration)

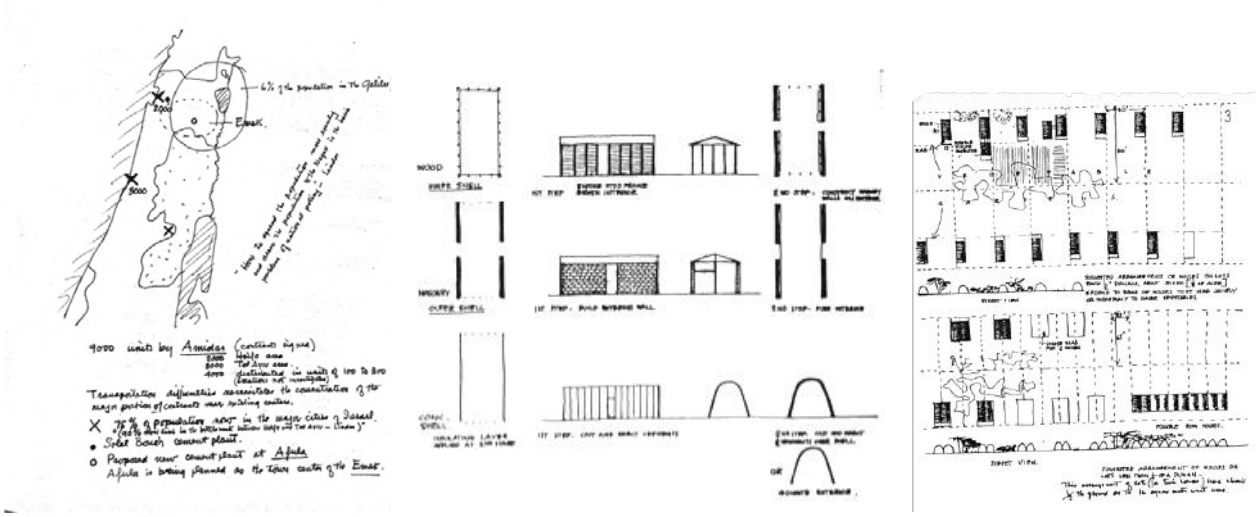


Figure 5 Emergency Housing, Louis Kahn 1949, building for the new Pioneer that is not a farmer (Leo Kauffman 1949)

A CONCLUSION

The topic of this paper 'Ecologies of Settlement: Migration and the Right to the City and the Rural' has focused in contemporary change dynamics within the field of urbanism. The research program has been conducted within the context of an architectural design studio offered in collaboration between EiABC [Addis Ababa] and Bezalel Academy [Jerusalem]. The focus has been on comprehending a new construct for the production of secondary cities - as in rural-urban contexts - where population growth and migration have become entangled with the change dynamics driven by climate change.

Framed within the ‘Shifting Densities’ theme of the conference on ‘Urbanism in the Expanded Field’ – the project has come to appreciate the necessity for disciplinary expansion to constructively consider the ecologies of the social and the environmental as being equivalent to those of that of material form. In respect for all living systems we have come to appreciate the necessity for moving from hierarchized relations to horizons of interconnectivity.

This infers the ability to perhaps decentre humans in the spectrum of ecologies that cooperate to manage settlement. – Raiding the proposition of whether the environment or the social become privileged above the forms of material? How/Could a forest or a river ever become considered as ‘clients’?

Recognising the conflict and complexity that the question of *‘How might we live – together?’* brings to the urban – particularly under the conditions of extreme uncertainty that migration and climate crisis contributes – under extreme scrutiny, raising the challenge to reimagine new ways of dwelling in comfort - wherein co-existence drives relationalities.
How might design thinking surface the species of speculative imagination that is capable of provoking viable alternative typo-morphologies?

* * *

In the comparison between the agri-cooperative settlements both revealed similar design intents to establish open systems capable of change and adaptation in and through time. The freedoms in the older Nahalal (Moshav, 1921) relate to a green passage through the centre connecting across to a green belt surrounding the entire settlement. The younger Buranest (NESTown, 2012) enjoys perhaps a third option with not only similar but possibly more entrenched freedoms which operate as settlement and unit level. The pin wheel armature is capable of connectivity between two existing adjacent settlement, whilst also accommodating internal and external expansion beyond. The attached structuring of the individual units with their overhead cantilever affords a common connected space on the ‘city’

urban side, and similarly a collective infrastructure and an Ethiopian gebbi-like shared commons on the domestic space. There is however no guarantee that a fate similar to Nahalal may befall Buranest too. The imperative for coproduction and the parallel building of new community bonds therefore becomes an imperative intangible dimension within the Ecology of Settlement - failing which competition between individuals will come to triumph over cooperation.

* * *

What this studio has revealed thus far is a need to recognize the space of doubt as opposed to assuming a design approach that pre-supposes certainties, - by being open to looking and learning from the Other.

We will be required to consistently work in new ways that embrace coproduction between conditions and communities of difference as an assemblage of common grounds for the New City – be they disciplinary, socio-cultural, informal, temporal, environmental or ideological.

We should learn fundamentals from projects that have already successfully succeeded or failed, by working together within the expanded urban field, and systematically applying the approach of the praxis we have observed.

- user participation is a tool for building self reliance, citizenship & community
- incrementality and adaptability [vs completion] is a means to support becoming
- sensitive engagement and enhancement of local indigenous ecologies builds

Perhaps, La Biennale di Venezia's promise of learning from the Laboratory of the Future already exists in Africa from where everything has always commenced. In our work together, we learn that mistakes are inevitable, often a matter of time, and both Home and City need to incorporate room for change, capacity to adjust, the lesson of difference at a time of such great uncertainty. The teaching of architecture today in partnership helped us engage these challenges better together. And this is only the beginning.

"...Is the architect's ideal situation one in which he decides everything at all time? Where does that power come from - aside from his ego and desire, and what of the rights of others? Does an architect have a monopoly on design of everything within a given area . . . . what about others with rights to land, to property, to visions that may be different to the right not to participate?"

Shimon Shapiro, (City Planner of ICSAL) March 1999

Figure 6 Nahalal 20's - Buranest 2022 - Making Home for 2nd Generation migrants.

Figure 7 'If you would ask me now what the first step of planning a town , I would say "First plant a forest" (Oswald, 2015)

References

AMO - Koolhaas, Rem, Bathla, Nitin eds. 2020. Countryside – A Report. Taschen – Cologne

Angel, Shlomo, Lamson-Hall Patrick et al 2021 Densify and Expand: A Global Analysis of Recent Urban Growth in Sustainability 2021-#13 – 3835

Angel, Shlomo, et al 2021 Anatomy of density: measurable factors that constitute urban density in Buildings and Cities 2(1) 245-282

Appadurai, Arjun, 1996; Modernity at Large - The Cultural Dimensions of Globalization University of Minnesota – Minneapolis.

Doxiadis, Constantinos, 1963; Architecture in Transition. Hutchinson – London

Ethiopia Population (LIVE).123,240,491. **https://www.worldometers.info/world-population/ethiopia-population/** 2023 03 26

Ding, Wowo, Graafland, Arie, & Lu, Andong eds, 2015; Citiies in Transition – power / environment / society; nai010, Rotterdam

Hajer, Martin & Reijndorp, Arnold, 2001; In Search of New Public Domain – Analysis and Strategy; NAi – Rotterdam.

Heisel, Felix & Kifle, Bisrat, 2015; From cinematic documentaries to implementation strategies. In _Spaces Movie Series. 80-87. [ResearchGate]

Hunnes, D. E. 2012; 'Understanding Rural to Urban Migration in Ethiopia' in Journal of Global Health Perspectives #1.8.12)

Kallus, Rachel & Law Yone, Hubert; 2002; Public Housing and the Shape of National Space in Israel; in European Planning Studies #10-6 765-779

Kaufman, Leo 1949. Immigrant and Veteran Housing – an immediate and comprehensive solution proposal ; Davar Newspaper - 13 May 1949, Jerusalem

Keeton, Rachel & Provoost, Michelle [eds] 2019; To Build a City in Africa – A History and a Manual nai010 Rotterdam

Keeton, Rachel & Provoost, Michelle [eds] 2019; Case Study - 1960 | Tema, Ghana in To Build a City in Africa – A History and a Manual nai010 Rotterdam 198-237

Keeton, Rachel & Provoost, Michelle [eds] 2019; Case Study - 2010 | Buranest, Ethiopia. in To Build a City in Africa – A History and a Manual nai010 Rotterdam 362-395

Koolhaas, Rem et al 2000; Mutations – Harvard Project on the City Actar – Barcelona

Lamson-Hall, Patrick & Angel, Shlomo. et al 2015; A new plan for African Cities: The Ethiopia Urban Expansion Initiative

Lamson-Hall, Patrick, & Angel, Shlomo, et al 2019; A new plan for African cities: The Ethiopia Urban Expansion Initiative in Urban Studies #6-6 1234-1249. Sage

Lefebvre, Henri, 1989; The Production of Space; Blackwell - Oxford

Levin, Michael, 1980; The Garden City as the inspiration for the plan of Nahalal in Cathedra - For the History of Eretz Israel and Its Yishuv #14 113-119 Yad Izhak Ben Zvi – Jerusalem

MacDonald, William L 1986; The Architecture of the Roman Empire II – An urban appraisal. Yale University Press – New Haven

Mostafahvi, Mohsen & Doherty, Gareth, 2010; Ecological Urbanism Lars Müller – Baden

Oswald, Frantz & Schenker, Peter 2010; NESTown: New Ethiopian Sustainable Towns – A real life experiment in ATDF Journal #7–1–2. 31-39. http://www.nestown.org/

Oswald, Frantz, 2015; Looking back on a Radical idea - The Buranest Cooperative Rural New Town, Amhara, Ethiopia in Architectural Design #85-4 114 -119

Oswald Frantz, Cherenet, Zegeye, Ghiorgis, Fasil, 2012; Real Life Experiment: Amhara Model Town - Buranest Laboratory Concept & Experiences in Building Ethiopia II – Innovations in the Built Environment; ed. Sewnet, Helawi; 40-60; EiABC – Addis Ababa

Rykwert, Joseph, 1976; The idea of a town : the anthropology of urban form in Rome, Italy and the ancient world Faber and Faber, - London.

Sarkis, Hashim & Tanner, Ala, 2012; Co-Habits – How do we live together? . . . La Biennale di Venezia – Venice

Schwake, Gabriel, 2020. Settlr and Rile: The Evolution of the Israelu National Project; Archotrcture and Cilture Routledge

Shane, David Grahame, 2005; Recombinant Urbanism – Conceptual Modeling in Architecture, Urban Design and City Theory. Wiley – Chichester

Shaporo, Shimon, 1995? Bezalel Academy of Arts - Design Studio Notes

Simone, AbdouMaliq; 2004; For the City Yet To Come – Changing Life in Four African Cities. Duke University Press - Durham

Sofer, Michael & Appelbaum, Levia 2004; Changing land-use patterns of Moshav Nahalal: 1921-1996 in Horizons in Geography #59¨- The Transformation of the Moshav 2004; University of Haifa - Haifa

Tesfaye, Anteneh, 2012; Places of Transition – The Entries to Addis Ababa in Building Ethiopia I - Sustainablitiy and Innovation in Architecture and Design; eds. Cherenet, Zegeye and Sewnet, Helawi; 138-141; EiABC – Addis Ababa

Venturi, Robert, 1966; Complexity and Contradiction in Architecture; MoMA, NYC

Watson, Vanessa 2002; Change and Continuity in spatial planning – Metropolitan planning in Cape Town under political transition. Routledge, London.

Wilkof, Shira, 2022; The Sharon Plan reconsidered: How Eliezer Brutzkus' pre-1948 separatism shaped Israel's New Towns. In Planning Perspectives. #June 2022

World Charter for the Right to the City, 2004-5 https://www.uclg-cisdp.org/sites/default/files/documents/files/2021-06/WorldCharterRighttoCity.pdf (2023 04 21)

Figure 8 Traditional sacred space, Church Grove - North of Bahir Dar

A TALE OF TWO CITIES: IDENTITY CREATION AND 'POST-COLONIAL' URBANISM IN SINGAPORE AND GIBRALTAR

Introduction

"If globalised metropolises have been the favourite playground of the twentieth century, borders are the laboratory of the political, social, and economic phenomena of the twenty-first century" (Ayoub *et all*. 2021).

Border spaces are intrinsically defined by their dual nature as limit and frontier: markers of identity and socio-spatial differentiation on the one hand, spaces of hybridization and interface on the other. As such, border spaces – especially metropolitan ones – offer privileged lenses to study some of the most pressing challenges faced by contemporary urbanism, including the interactions, contamination and resilience of the built fabric to phenomena of urban and social globalization, hybridization and renewal.

This article aims to investigate this vast question by focusing on the interactions between built fabric and (top-down) contemporary identity-formation in Gibraltar, a 6,8 km^2 British Overseas Territory located on the Strait of Gibraltar.

The article takes as starting point Koolhaas' *Singapore Songlines Portrait of a Potemkin Metropolis […] or Thirty Years of Tabula Rasa* (1995) and proposes to apply a similar lens to Gibraltar. As condensers of intense global flows in an extremely limited (and hence easily observable) territory, both territories may be described as "a kind of semantic laboratory where perplexing issues that define our age, such as racial coexistence, were tested before they became huge impasses or crises in our continent." (Koolhaas 2010).

I/ A tale of two cities: identity creation and 'post-colonial' urbanism in Singapore and Gibraltar

1. Singapore Songlines revisited

In *Singapore songlines Portrait of a Potemkin Metropolis […] or Thirty Years of Tabula Rasa* (1995), a part historical, part photographic, part urbanism essay, Rem Koolhaas examines how the ideological construction of a post-independence Singaporean identity and its impressive rise to First World power heavily relied on a complete reimagination of its built fabric and territory. In the thirty years following its independence in 1965, the newly formed city-state witnessed a staggering conversion to a hyper-modern, heavily urbanised and industrialised territory. This case is quite unique inasmuch as the transformation was entirely imagined and enacted by the ruling party – the People's Action Party – and orchestrated by its public institutions, notably the Housing and Development Board, and the Urban Renewal Department (later Urban Redevelopment Agency). Modernisation was enacted through a ruthless approach, based on an almost indiscriminate urban *tabula rasa*, mass expatriations and population displacement. Most of the existing built fabric was bulldozed and replaced by Modernist slabs. This *tabula rasa* mentality was applied to the territory itself: topography was flattened, land was reclaimed from the swamps and the sea, nature was replaced by man-made,

artificial greenery. As argued by Koolhaas, the whole territory was used as manifesto reflecting the Promethean achievement of creating practically *ex nihilo* a modern, global nation (1995, 1021).

This massive urban transformation was both the physical concretisation and the vector through which a Singaporean nation-state was affirmed, distinct from (and in opposition with) both Malaysia and the United Kingdom (from which Singapore had separated respectively in 1963 and in 1965). The modern nation was built on a neat cesure (if not complete repudiation) of the past, reflected by the destruction of the near entirety of its built fabric. As reported by Frost (2020, 54), one of the slogans of young supporters of the independence was "SINGAPORE HAS NO HISTORY. SINGAPORE'S HISTORY BEGINS NOW". British identity was not the only one scarified to the foundational myth of the new nation: internally, ethnic minorities and their traditions were disregarded and homogenised. Sacred sites where demolished or displaces, foot processions were banned (Frost 2020, 55). As phrased by Koolhaas, "each identity is a vessel carefully emptied through the efficiency of earlier cultural uprooting" (1995, 1039). Ironically, what was left of these historic roots (notably the colonial historic centre and some ethnic pockets, such as China Town or Little India) later became the first built heritage to be formally protected under the 1986 Conservation Master Plan, aimed notably at fostering tourism (Shu-Yeng Chung and Douglass 2020, 14).

Though a more sensitive approach towards environmental, historical, and cultural preservation has since developed, what Koolhaas coined in 1995 as "the curse of the tabula rasa" (1075) is still relevant today. The complete saturation of the territory forces a perpetual urban and territorial redevelopment, a "*perpetuum mobile*" in which everything is transient. This prevents the creation of any decisive and recognizable local identity. A phenomenon which the State has meagrely tried to counter-balance through the employment of star-architects and the development of a striking skyline. Culturally, the years of ban on any tradition except for the National Parade have left their scars, despite a governmental U-turn on allowing and even encouraging distinct traditions and celebrations (Frost 2020, 54).

Koolhaas perfectly synthetises the main conclusion of his *Songlines*, the consequence of such a rapid and hegemonic uprooting of a complex and layered urban, social, and ideologic fabric: "the new has become too big to be animated by [the old], [yet] it has not developed its own vitality" (1995, 1075).

2. Gibraltar, narratives from the border front

Like Singapore, Gibraltar is a very small territory mostly bordered by sea (merely 6,8 km^2), whose main territorial asset lies in its strategic geopolitical position on a strait which condenses regional and global maritime flows: the Strait of Gibraltar. Due to this strategic position, Gibraltar was historically a highly coveted territory, first between Christian and Muslim powers throughout the Middle Ages, then between British and Spanish following the 1713 British conquest, an ongoing dispute which reached its peak during the border closure with Spain from 1969 to 1982. While Singapore defined its contemporary identity as an independent nation, Gibraltar remained inside the British sphere of influence, as a self-governing British Overseas Territory.

Contemporary Gibraltarian identity was shaped by two major watershed periods: the closure (in 1969) and the re-opening (in the early 80s) of its border with Spain. The first phase is comparable to the Singaporean case in terms of a rapid, mostly top-down identity construction heavily based on *othering* and survivalist narratives. The second phase is comparable in terms of the territory's rapid economic, urban, and territorial transformation in a hub in global flows during what can be loosely dubbed its 'post-colonial' period.

2.1. Importing "Birtishness"

Noteworthily, the definition of a British Gibraltarian identity does not coincide with the British conquest in the early 18th century, but was instead forged much later, in the aftermath of WWII. Until then, Gibraltar was treated as a colony, with a clear hierarchical distinction between British and Gibraltarians; whereas there was little cultural, linguistic, or ethnic difference between Gibraltarians and Spanish (Orsini, Canessa, and Martínez Del Campo 2018; Gold 2010). This started to change during WWII, when the territory was transformed in an Allied base and its civilian population was evacuated to the UK and to other Common Wealth countries. This experience, coupled with the successive campaign to be repatriated, constituted a decisive step in forging a *British* Gibraltarian identity, and set in motion the revendication for self-governance. Yet, the main catalyser in local identity formation was a top-down process. As Franco's claims over Gibraltar intensified, the British government realised it had to quickly instil British patriotism among Gibraltarians if it didn't want to lose their allegiance. As early as 1942, a special committee was created to oversee the 'Britishness' campaign, which embraced the educational, linguistic and ideational dimensions. The identity-making narrative relied on a deteriorating *othering* of neighbouring Spain (Orsini, Canessa, and Martínez Del Campo 2018, 108-111; Gold 2005, 373). Franco's unilateral decision to close the border in 1969 (which was to last more than a decade) proved to be the ideal scenario for the entrenchment of this *othering* and survivalist narrative.

2.2. Gibraltar's ascension to financial hub

The second watershed moment in Gibraltar's development corresponds to the phase following the re-opening of the border with Spain, from 1982 onwards. The normalisation of relations with Spain, together with the end of the Cold War, prompted a demilitarisation phase, which constituted a drastic cesure with the territory's History. Indeed, until then, the territory's economy and urban development had been almost single-handedly dictated by its nature as British military outpost. Most of the territory was owned by the British Ministry of Defence, and military constituted a sizeable portion of the population. Demilitarisation ushered Gibraltar in what can *de facto* be considered its post-colonial phase, confronting it with the notable challenge of re-inventing a geopolitical role and identity.

Gibraltar based its development on the only territorial asset it possesses, namely its essence as pawn in global flows, extending it to financial flows. Following Hong Kong's model (also an ex British colony), Gibraltar strived to create a brand-new image of itself as a modern financial hub benefitting from relaxed fiscal regulations (Gold 2005, 147-150). Though its extremely limited size implied that Gibraltar could never aspire to the status of its Asian cousins, it has nevertheless achieved to carve its own place in European and international financial flows. Today, financial services and remote gambling account for ca. 40% of its GDP (Savills World Research, 2016, p.4).

Like in Singapore, this new global identity and image was achieved by heavily modifying the built fabric and the territory, quickly saturating all the territory's the buildable surface. Tellingly, the flagship project which launched this new phase was the reclamation of a 1 km^2 area on the north-west coast (Gold 2005, 150). The territory's three main vectors of growth have been, in order of importance: the construction of entire new portions of the city, in large part on reclaimed land (in the past 40 years, Gibraltar has reclaimed ca. 22% of its current territory); the demolitions and reconstruction of parts of the urban fabric; and the reconversion of smaller, more architecturally meaningful parts. Though the many historic landmarks were thankfully preserved, historical preservation *per se* was not a priority until the 90s (Gold 2005, 177-178). On the opposite, this first rapid wave of (re)urbanisation was characterised by a *genericity* completely disconnected from its context. Whereas in Singapore, urban renewal employed a recognizable style (Modernism) though

devoid of its founding ideology (Koolhaas 1995, 1041); Gibraltar's urban renewal seemed to be dictated solely by real estate logics. Due to the very high degree of autonomy given to private developers, modern additions were designed as 'bubbles' or islands, dialoguing neither with local pre-existences, nor with other city parts (historic or new). This urban growth model, aptly named by Munenzon "opportunistic" (2015, 125), is largely based on foreign real estate investment, and privileges high-end private development, too often neglecting sustainability and social equity concerns.

2.3. 'Opportunistic' development in Gibraltar: interrupted dialogues

In Aldo Rossi's seminal book *L'Architettura della Città* (1966), the author structures his analysis of the city around the concept of *locus*, which can be loosely summarized as the network of projected meaning, historical events, urban and topographic pre-existence which tie a city to its specific location. By drawing from this concept, the article briefly describes the Gibraltarian 'genericness' by analysing the lack of dialogue it established with its natural and historical pre-existences, and with the site's History and collective memory.

Natural pre-existences

Gibraltarian identity, and indeed its projection in the world, is strongly tied to the iconic 425m-high promontory which occupies most of the territory, known as the Rock. The Rock is one of the two Pillars of Hercules, which signals the end of the Mediterranean basin. As a peninsula, the other main pre-existence is naturally the sea. Yet it is striking to note how most parts of the city fail to instore an urban or visual dialogue with these two powerful landscape elements. Walking in between the 1990s high-rise buildings in the reclaimed westside neighbourhood, it is impressive to note how both the Rock and the sea can only be glimpsed at, as if by accident; a recurrent phenomenon throughout the peninsula. It is only by climbing onto the Rock that the panorama can be experienced. This impression is worsened by the lack of accessibility of the waterfront, which except for the beaches, is heavily built and privatised, in large part occupied by the port infrastructure. This inaccessibility denotes a large issue: the lack of public space. A lack once again in part imputable to the absence of a strong and long-term planning vision.

Historical pre-existences

The term 'historical pre-existences' is borrowed from Aldo Rossi (1966), who refers to the deeply rooted elements which define and structure the urban fabric, notably monuments, and the historical layout of main roads and defence walls. Having witnessed an astonishing total of twelve sieges (Gold 2005), Gibraltar's urban morphology is primarily dictated by its defensive system, in particular its protective walls. As opposed to most European cities, Gibraltar remained confined within their perimeter of its historical walls until the late 19th century (Lane *et al*. 2014; Fa and Finlayson 2006). Notwithstanding this longevity, the territory's exponential urban growth from the mid-80s onwards jeopardises their meaning and visual presence. Indeed, the main system of walls ran along the western perimeter of the territory. Yet, the successive land reclamations on the western coast have considerably pushed back the coastline. The walls and bastions were widely englobed in new constructions, and today their main urban function is to act as retaining wall marking the ca. 4m difference between the original coastline and reclaimed land. It is only recently, notably under the lobby of the Gibraltar Heritage Trust, that extensive urban and architectural renovation works are being undertaken (Fa and Finlayson 2006, 54-59).

History and memory

As seen previously, the creation of a British Gibraltarian identity was accelerated by top-down processes of importing 'Britishness', which relied notably on *othering* and survivalist narratives. How does this translate in the treatment of Gibraltar's built fabric? First, through monuments, which Aldo Rossi (1966) aptly defined as the concretization of collective will and memory. Gibraltarian monuments consolidate a narrative strongly rooted in the (British) military defence of the territory. To quote only some: Rook memorial (capture of Gibraltar), General Eliott Monument (Battle of Trafalgar), British War Memorial (WWI), Gibraltar Defence Force (WWII) (visitgibraltar 2023).

The other side of the medal of the affirmation of British heritage is the invisibilisation of the territory's Spanish and (to a lesser extent) Moorish heritages, absent from both monuments and local toponymy. The relationship to the territory's Moorish heritage is more complex and has evolved in the past decades, not the least because of the important Muslim minority. Today, the built part of Moorish heritage is valorised (eg. Moorish castle complex, Moorish baths).

Today, 'Britishness' is used as trading asset to promote Gibraltar as touristic destination. By underlining and exacerbating its Britishness, the territory appeals both to British looking for a familiar environment but with sunshine and beaches; and to Spanish day-trippers looking for an exotic experience. In Gibraltar, as throughout the Mediterranean basin, intensive tourism has been linked with a standardization and homogenisation of the touristic offer and infrastructure, aimed at meeting the expectations of a wide public. This notably implies the simplification of local identity to create a more 'palatable' experience for tourists (Staniscia 2011, 74). This effect is well recognisable in the profusion of Union Jacks, fish and chips shops, and of the iconic red telephone and post booths, which create a postcard-like, stereotype effect.

III/ Future projections of the Singaporean and Gibraltarian urban cases

Both Singapore and Gibraltar have built their role in the global scene by considerably outstepping their actual resources (human, territorial, environmental). So far, both have managed to compensate for this disproportion by extensively exploiting their territory and hinterlands, with elevated environmental costs. Today, what primarily differentiates the two urban 'models', is that whereas Singapore has thoroughly rationalised and planned on the long term the use of its territory, Gibraltar has not, growing by hiccups rather than through a clear master plan. Singapore has heavily invested in both political and financial terms in developing and constantly updating a strong urban planning vision, able to govern and absorb fast-paced changes and (foreign) real estate developments. Singapore has contemporarily a 50-years master plan, and a 15-years one, updated every five years, and an underground development masterplan; all developed with public participation inputs (Urban Redevelopment Authority 2023). This cannot be said of Gibraltar, where the lack of a strong overarching vision has been the underlining condition in the past 40 years. On the opposite, main decisions (especially concerning large (reclamation) projects) have been influenced by the agendas of successive Chief Ministers (Gold 2005). This tendency well exemplifies what Granovetter names the 'weaknesses of strong ties', namely that a small milieu favours decisions being taken selectively and opaquely (Hesse 2016, 623). As of today, Gibraltar's last Development Plan dates from 2009 (Gibraltar Development Plan, 2009), which considering the pace of local development and the numerous new land-reclamation projects, is completely out-of-date.

If Gibraltar doesn't want to lose the attractivity on which much of its economy is based, it must learn to implement an extremely thorough, innovative, and long-term urban planning which upholds high standards of living. Part of this attractivity is constituted by the capacity to uphold a recognizable, distinct identity which withstands the homogenisation inherent to globalisation phenomena; yet which welcomes alterity and change.

Conclusion: built fabric, identity, and alterity

To conclude, it is interesting to open the reflection on the counter-hegemonic power of the built heritage in identity-defining narratives. Equally valorisation historical pre-existences and avoiding phenomena of invisibilisation contributes to a narration and sedimentation of an identity which acknowledges diversity and hybridity. By doing so, it challenges the construction of a monolithic and univocal identity. Even if in small and indirect ways, this, by extension, contributes to a more open attitude towards contemporary otherness and alterity. This echoes one of the founding concepts of borderscaping, namely that the way identity is enacted socially and spatially heavily depends on the way identity is narrated, perceived, and imagined (Brambilla 2015; Amilhat Szary 2020).

BIBLIOGRAPHY

Amilhat Szary, Anne Lare. 2020. *Géopolitique des frontières - Découper la terre, imposer une vision du monde*. Paris: Le Cavalier Bleu.

Brambilla, Chiara. 2015. "Exploring the Critical Potential of the Borderscapes Concept". *Geopolitics* 20, no.1: 14-34.

Fa, Darren, and Clive Finlayson. 2013. *The Fortifications of Gibraltar 1068-1945*. Oxford: Osprey Publishing.

Frost, Mark. 2020. "Singapore Songlines Revisited: The World Class Complex and the Multiple Deaths of Context". In *The Hard State, Soft City of Singapore*, edited by Simone Shu-Yeng Chung and Mike Douglass, 37-68. Amsterdam: Amsterdam University Press.

Gold, Peter. 2005. *Gibraltar: British or Spanish?* Oxford: Routeledge.

Gold, Peter. 2010. "Identity formation in Gibraltar: Geopolitical, historical and cultural factors." *Geopolitics* 15, no. 2: 367-384.

Grydehøj, Adam. 2015. Making Ground, Losing Space: Land Reclamation and Urban Public Space in Island Cities. *Urban Island Studies* 1: 96-117.

Koolhaas, Rem. 1995. "Singapore Songlines: Portrait of a Potemnkin Metropolis […] or Thirty years of Tabula Rasa". In *S M L XL,* edited by Rem Koolhaas, 1008-1089. Cologne: Taschen.

Lane, Kevin, Clay Finlayson, Uwe Vagelpohl, Francisco José Giles Guzman, and Francisco Giles Pacheco. 2014. “Myths, Moors and Holy War: Reassessing the History and Archaeology of Gibraltar and the Straits, AD 711–1462”. *Medieval Archaeology* 58, no. 1: 136-161.

Munenzon, Dalia. 2016. *Continental Islands: Ceuta and Gibraltar A typological research into transactional and partially autonomous territories*. Master Thesis. Massachusetts Institute of Technology, Cambridge (Massachusetts).

Orsini, Giacomo, Andrew Canessa and Luis Gonzaga Martinez del Campo. 2018. “Small Territories/Big Borders: Gibraltar, Lampedusa, and Melilla”. In *Barrier and Bridge: Spanish and Gibraltarian Perspectives on Their Border*, edited by Andrew Canessa, 22-41. Sussex: Sussex Academic Press.

Rossi, Aldo. 1966. *L’Architettura della Città.* Padova: Marsilio.

Savills. 2016. “Spotlight Gibraltar Residential Market” Accessed April 14, 2023. https://pdf.euro.savills.co.uk/global-research/spotlight-gibraltar-residential-market-2016.pdf.

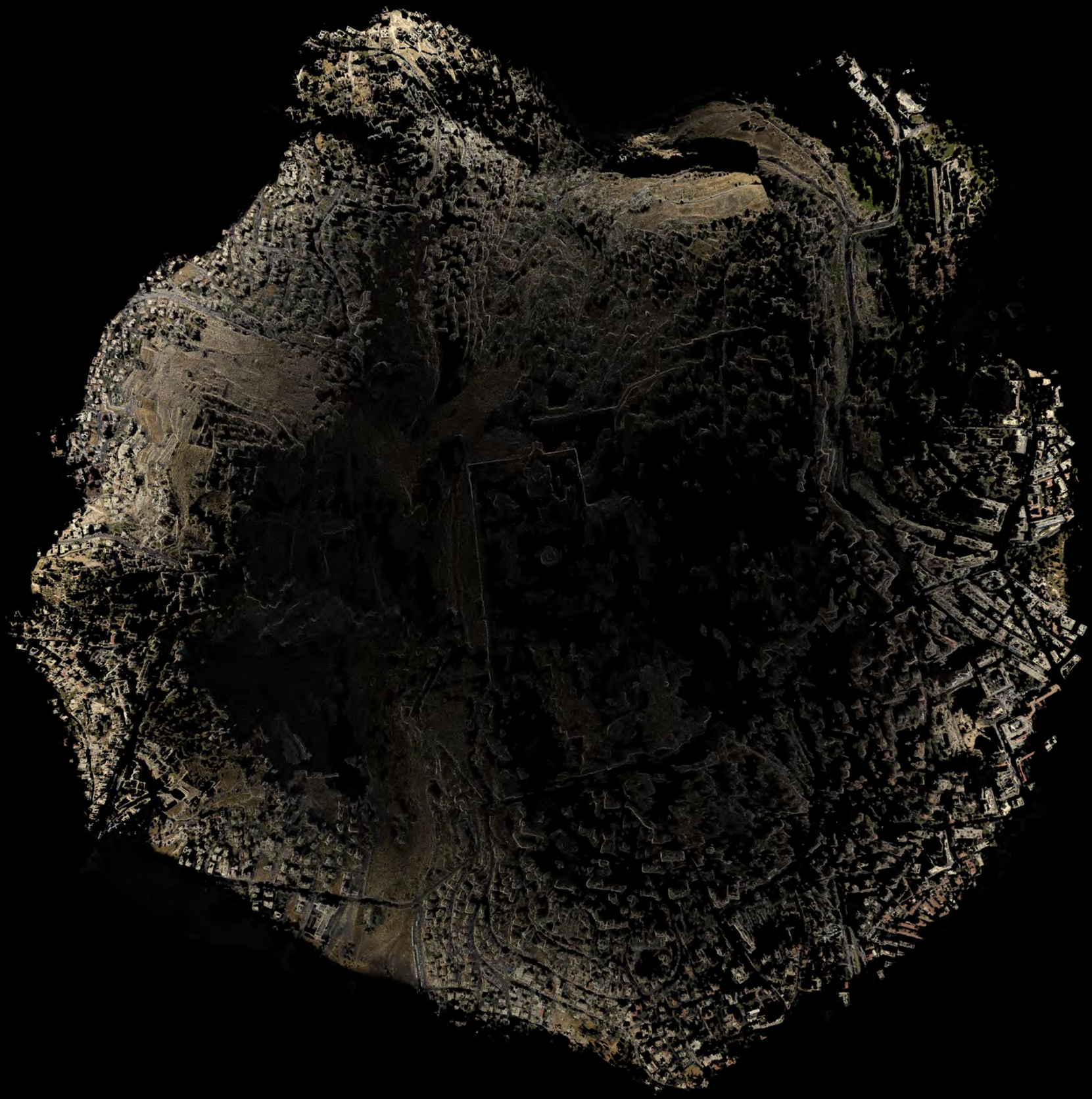
Shu-Yeng Chung, Simonae and Mike Douglass. 2020. " The Master Narrative and the Lived City – Half a Century of Imagining Singapore". In *The Hard State, Soft City of Singapore*, edited by Simone Shu-Yeng Chung and Mike Douglass, 11-36. Amsterdam: Amsterdam University Press.

Staniscia, Stefania. 2012. *Islands: Hot Spots of Change*. London: List.

Town Planning Division. 2009. *Gibraltar Development Plan, 2009*. Gibraltar: Government of Gibraltar.

Urban Redevelopment Authority, 2023. “Masterplan” Accessed April 14, 2023. https://www.ura.gov.sg/Corporate/Planning/Master-Plan.

Visit Gibraltar, 2023. “Heritage and Culture” Accessed April 14, 2023. https://www.visitgibraltar.gi/see-and-do/heritage-culture.



Terra Ex Machina

Hagit Keysar, Ariel Caine, Barak Brinker

Intro

Jerusalem is a city famous for its walls. The walls of the old city and the infamous separation wall are well-known examples. Yet less known is an invisible wall that encircles the old city and its surroundings. Centred on the Haram al-sharif and spanning approximately 3km in diameter, this wall is what is known as a "GeoFence", a cylindrical digital barrier from the ground and up into the skies, set to prevent drone flights into or take-offs within the area (image 2). The area of this technologically restricted zone follows the geographic coordinates of an already present regulatory No-Fly Zone (NFZ) that has been enforced by the Israeli security apparatus for more than two decades.

The geofence is a recent technological layer added to the already dense infrastructural sensor stratigraphy of the city. This infrastructure spans wide-ranging volumetric technologies, from underground seismic and waterflow sensors; through heat, sound and optical street-level surveillance and monitoring systems; to an assemblage of remote-sensing satellite-based mechanisms. However, unlike other layers of surveillance and control operated locally by state or state-backed actors, the geofence was commissioned by Israel but exclusively controlled and managed remotely by the Chinese drone manufacturer DJI. It is proprietary technology, originally developed in 2015 to help states monitor, regulate and control the movement of small-scale commercial drones in their sovereign air-space.

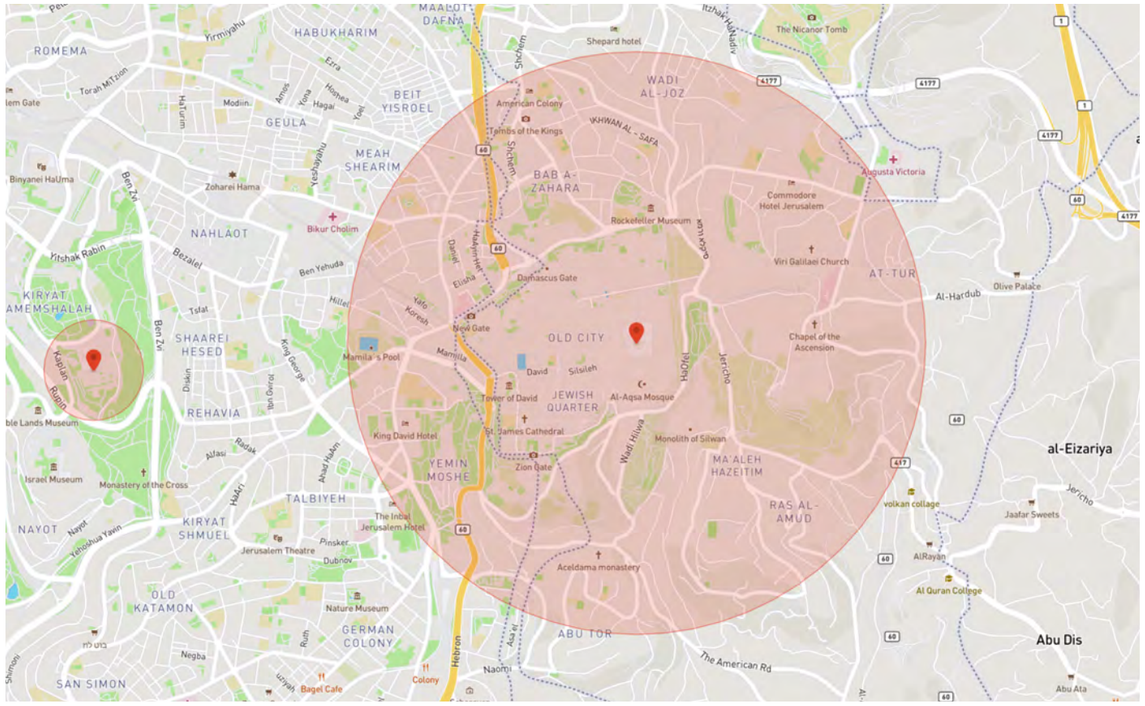
In Jerusalem, sovereignty is a highly contested issue, particularly in the holy sites at the heart of this NFZ[1]. As if taken from ancient Greek theatre, this invisible barrier is an attempt to use technology as "deus ex machina". A miraculous solution to the unsolvable problem of aerial sovereignty in the age of the drone[2]. In the particular context of Jerusalem, it also advances a definitive answer to the question of sovereignty in East Jerusalem and the holy sites. Its technical invisibility and remote neutrality allow it to sink below consciousness. However, as a navigational technology it has real-world effects. It reconstructs space in a machine-readable format, creating territory altered by machines for machines. Terra ex machina.

The geofence, developed by DJI and commissioned by the state, is an example of a state-corporate technology which is turning into a defining phenomenon of our times[3]. Governments increasingly rely on global private companies to develop, install, and run and maintain digital services and infrastructures, advancing unprecedented forms of privatization and new regimes of surveillance in urban space and life. Particularly in urban context, data infrastructures are becoming increasingly dominant in managing the various layers of everyday life and rapidly shaping technopolitical futures. It can be argued that one of the biggest challenges we face in regard to the digitization and datafication of cities is the fact that algorithmic infrastructures are opaque, invisible and illegible to most of us, therefore very hard to audit and critique. Should we understand these rapid and powerful changes as historical rupture in our understanding of urbanism? Is there space and time for intervention, refusal, and resistance - for "slow urbanism" within the overwhelming acceptance of data-driven smart cities?

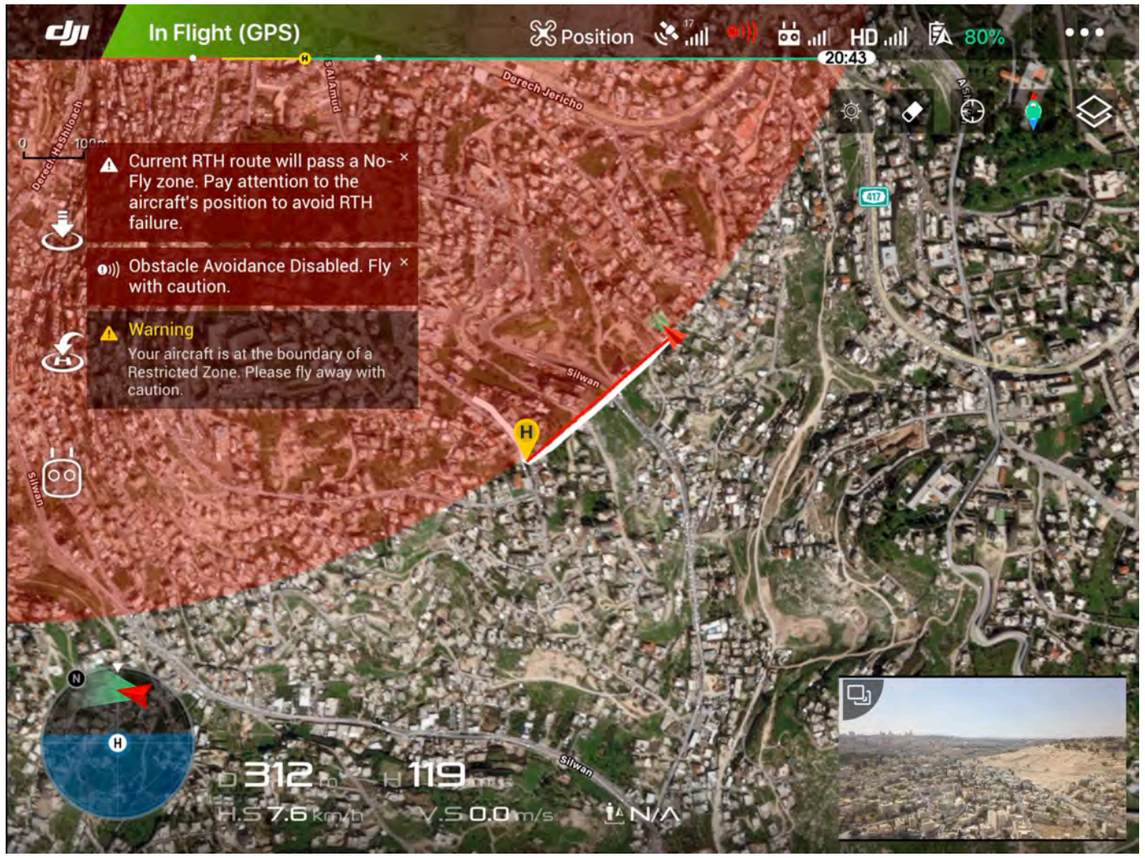
1 Israeli Sovereignty over occupied east Jerusalem and the west bank was self-declared and instated unilaterally following the 1967 war. Jerusalem's municipal borders were expanded beyond the pre-1967 lines incorporating the entire 'holy basin' and extending well into the west bank while sustaining ongoing violations of international human rights and humanitarian law. The post-war status quo determined that the holy compound will be managed by the Islamic Waqf under Israeli supervision. Nonetheless, in recent decades Israeli politicians and right-wing activists have been working toward weakening the status quo by strengthening Israeli presence and control in the holy compound.

2 Kaplan, C., 2020. Atmospheric politics: Protest drones and the ambiguity of airspace. ***Digital war***, 1, pp.50-57; Parks, L. and Kaplan, C., 2017. *Life in the age of drone warfare*. Durham.

3 Keysar, H., 2020. Who owns the sky? Aerial resistance and the state/corporate no-fly zone. Visual Studies, 35(5), pp.465-477.

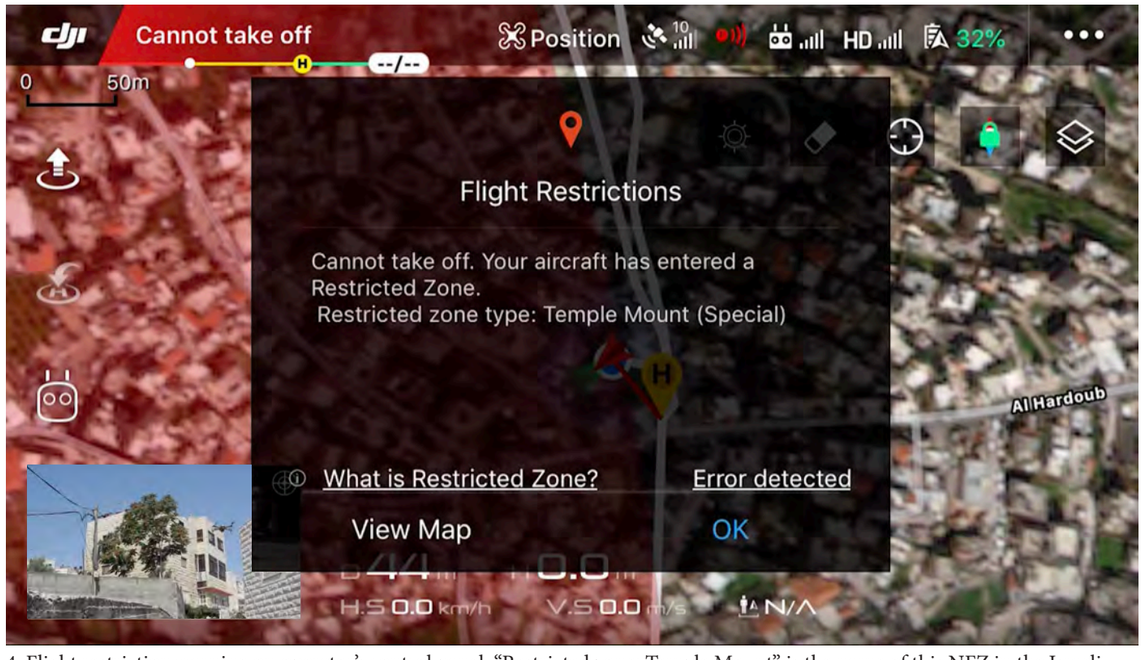


2: The restricted flying zone as seen on DJI's website, to its west the resricted zone above the "Knesset" the Israeli Paliament.

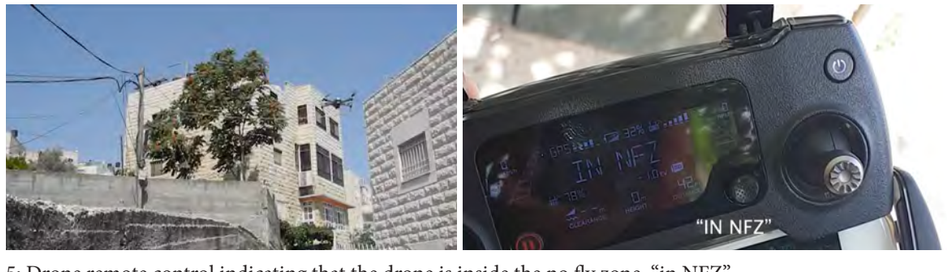


3: Our drone traversing the perimeter of the geofence as seen on the flight's control panel. H signifies "Home" flight starting point, white line is the drone's route, the red triangle is the drone's location, red line is distance from "Home" .

Terra Ex Machina is a prototype and a critique that addresses these questions. This work makes the geofence a case study for critically examining these new digital forms of power. The opening visualization (image 1) reflects our experimental endeavor to materialize and conceptualize this invisible barrier. It began with an intuitive question, a curiosity to see how the geofence works in real-time and space. It currently continues with developing the 3D model presented here, which suggests a way of seeing that makes this machine-readable digital barrier public. The model turns the geofence into a thing in the world, visible and legible for humans to ask questions, audit and even intervene in its design logics and material effects. In its current iteration we are contrasting the geofence's top-down technology and the way it prescribes the conditions of visibility by adding layers of balloon and kite aerial photography, that subvert its technological and epistemological standing.



4: Flight restriction warning on operator's control panel. "Restricted zone: Temple Mount" is the name of this NFZ in the Israeli civil aviation regulations as well as with the DJI corporation.



5: Drone remote control indicating that the drone is inside the no fly zone, "in NFZ".

6: Street-level "crashing" into the invisible barrier. These screenshots were taken from a video piece that was created based on three points of view: street-level documentary footage, control panel screenshots and drone video.

Working with the geofence as an instrument of seeing

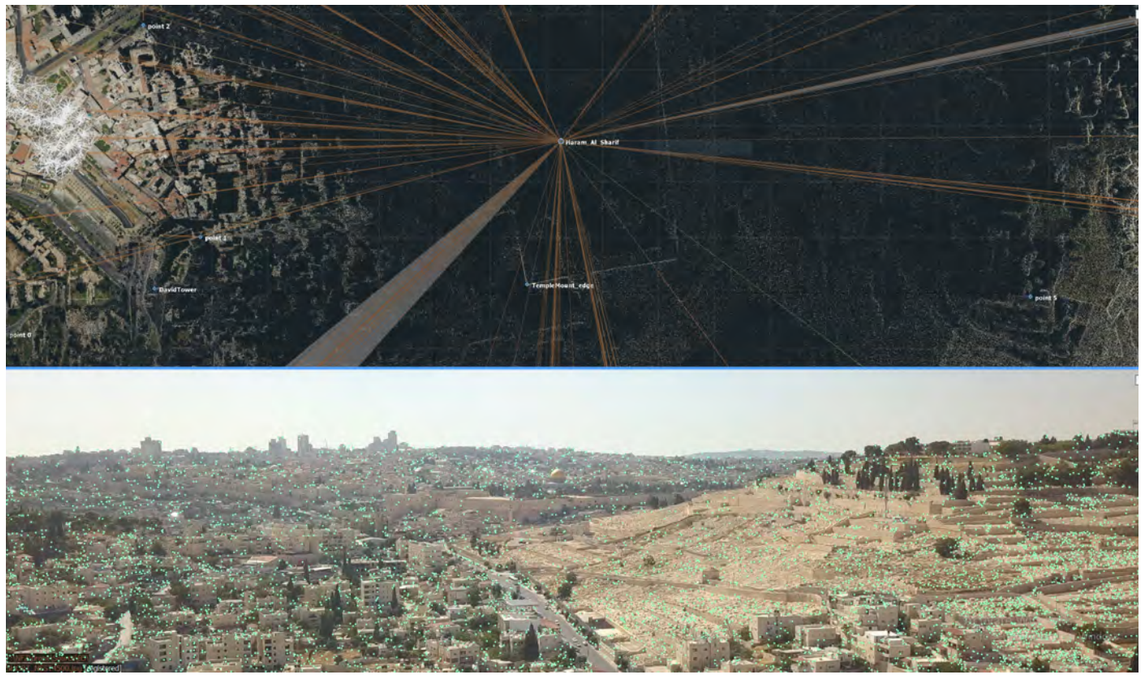
The first stage of our work was to fly a drone toward the geofence and witness the operation of this digital barrier as it suspends the drone in mid-air. After "crashing" against its perimeter, our drone traversed the threshold of the geofence (marked in red, image 2), its camera lens constantly directed to the epicentre of the restricted zone, the golden dome of al-Aqsa mosque. The three-dimensional point cloud model, was computed by processing more than 10,000 images, taken sequentially along the course of the drone's flight. Using the computational process of structure from motion, the myriad of viewpoints were transcoded to nodal points, triangulated then plotted within virtual three dimensional space. After weeks of processing thousands of drone images, the invisible data infrastructure of the geofence was composed into a visual and spatial model. Observing it from above, as an orthphoto, we could clearly see a circular outer rim of dense visibility, fading gradually towards a sparse, voided center.
Because of the geofence's extraordinary size (its perimeter is almost 10km), in order to circumnavigate it we had to take off from seven different points along the perimeter. While the drone was in the air (at a hight of about 100m) we lost sight of it. We could witness it "crash" into the invisible barrier only through the visualization of its movement on the control panel and through the constant voice and text messages warning us from advancing towards a restricted zone (image 4-5). At a certain point we tested the invisible barrier at street level, only to find the drone hovers in mid-air, disabled (image 6).

By using photogrammetry software, the landscape captured from the drone's line-of-sight is transcoded into discrete spatial coordinate measurement data, positioned within virtual three-dimensional space to create a "point cloud"[4]. In point cloud form, this optical model visually manifests the range of visibility density within the volume of the geofenced territory. It shows the geofence's optical consequences in action, losing accuracy and density of vision towards its centre (the Haram al-sharif).

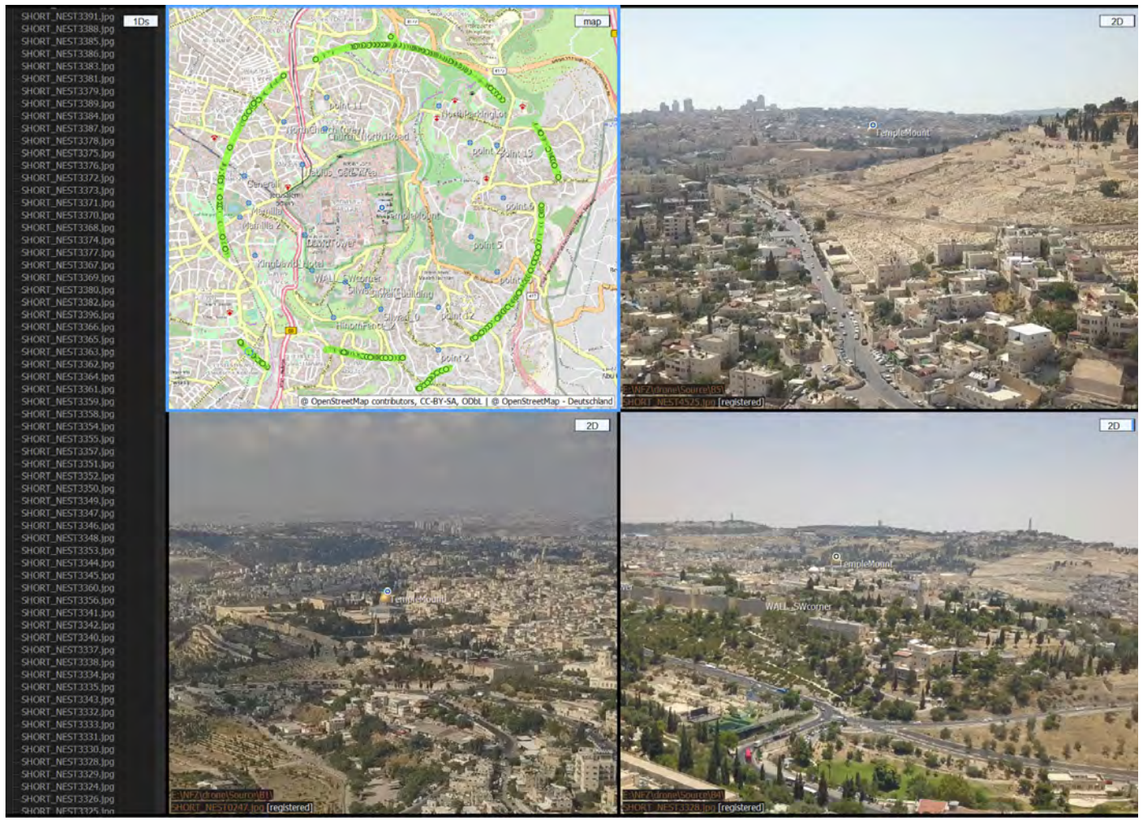
When viewing the model from the viewpoint of the drone's lens, it seems complete (images 8-10), showing very little gaps in vision, only a decrease in clarity at the distance. However, once we shift from this

4 Photogrammetry is the science of computing spatial and three-dimensional measurements of an object or scene from sets of two-dimensional perspectival photographs recording it from multiple viewpoints. This process results in a "Point Cloud" – a set of discrete data points arranged by geographic coordinates which creates a 3D space.

8-10: Views along the perimeter and towards the center of the geofence, as seen from our 3D model.



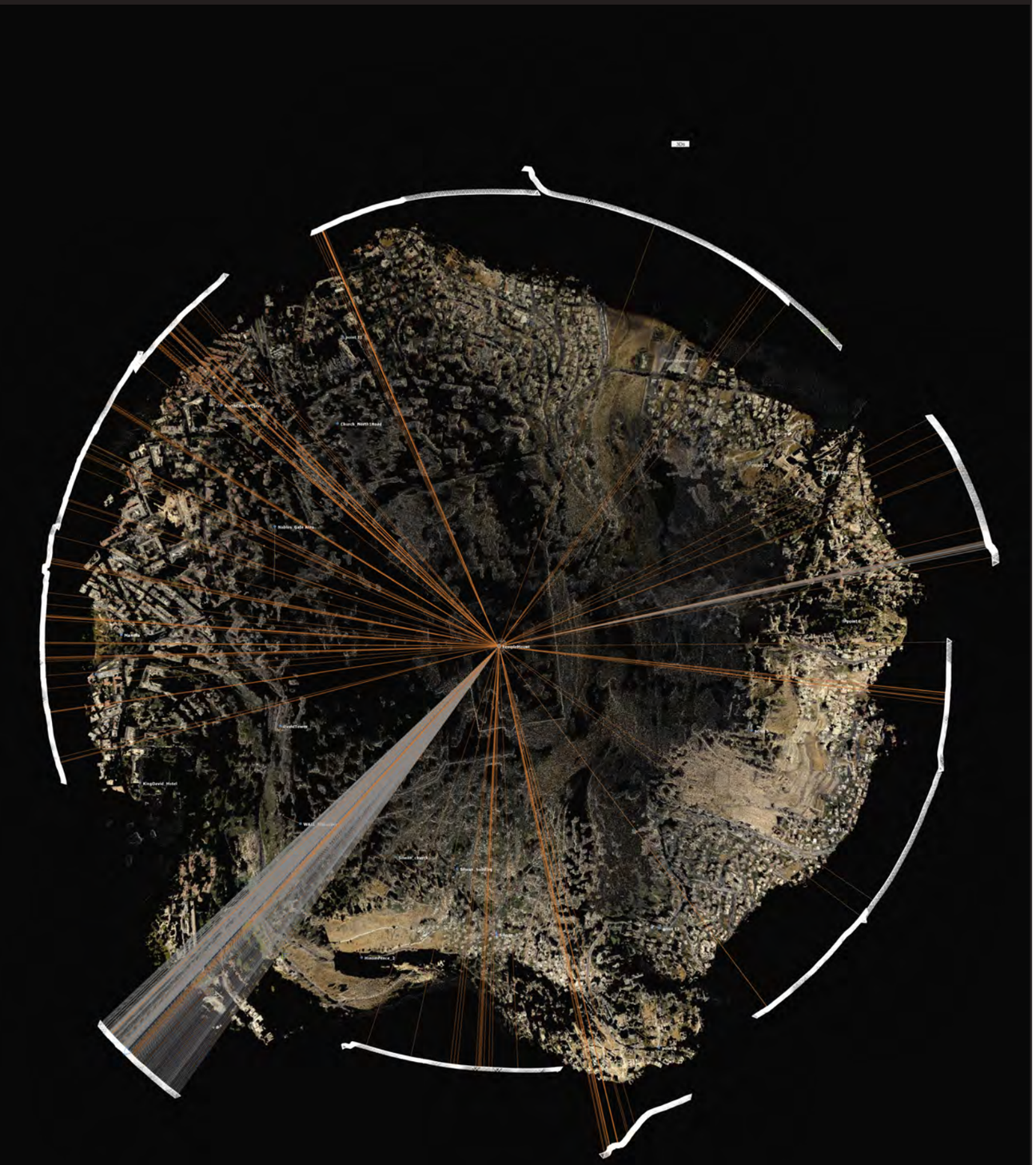
11-12: Above, the area of the Haram al-Sharif, the NFZ's central point, as vertically seen in the 3D model – a collection of sparse points. Below, a closeup on al-Aqsa's golden dome, within the Haram al-Sharif compound, as seen in a single image captured by the drone. The green dots signify the software's score of high-density feature points which are then linked as tie points in other images to make up a 3D space.



13: A screenshot from the photogrammetry software. It shows the list of images (on the left) with three viewpoints, images, of al-Aqsa along the perimeter of the geofence, and a map of the flight – the route and points along it are marked in light green.

prescribed perspective and freely navigate the model space, we begin to see the voids, gaps and dissipation of data within this seemingly cohesive optical space. These voids are caused by obstructions to the drones' field of view such as information behind buildings, areas hidden behind hilltops or within valleys. But also, as a direct result of the distance forced by the geofence itself, amplifying the effect of reduced sharpness, atmospheric haze and parallax between the drone's images.

In the first stage of computation, each image within the dataset is scoured by the software in search of high-contrast feature points. Thousands of these feature points are collected per image and are then compared to form a database of shared features between the images. By computing the parallax between these shared features, the photogrammetry software computes the skeletal 'sparse cloud', a sparse set of tie-points (green dots in image 12) preserving the basic relations between the original image-set and the 3D environment.
It can clearly be seen that the cluster of tie-points which is situated closer to the drone's camera (front of the image) are denser, while those in the so-called background of the image (further away from the drone's camera) are sparser, therefore decreasing in accuracy and density towards the horizon. Located at the center of the restricted zone (image 11), Haram al-Sharif is also the farthest point from the drone's camera, and therefore, in the point cloud it is visualized nearly as a black hole of sparse data.
An image's level of detail is usually determined through parameters of sharpness and resolution. By contrast, point clouds are assessed by their density. Their accuracy is measured by the amount of noise and outliers; the percentage of points which have been erroneously assigned x,y,z position during capture; and their point density. Differing form pixel-based imagery, point density is not a constant parameter, it rather changes throughout the cloud. It is determined by the number of source-images from which computation of the point



14: A vertical view of the model which shows all the camera viewpoints that are manually linked and verified to the Haram al-Sharif's ground control point (marked in white) calculated along the route of the drone.

is derived. The clouds could be likened to a heat-map tracing the intensity of viewpoints as they move and scan the environment. The more the camera moves around an area, examining it from diverse points of view, distances, and heights, the denser and sharper the point cloud will be. The fewer the viewpoints, the sparser and noisier the cloud will be.

The process of aligning images taken over mulitple drone flights is rarely succesful and accurate when done in a fully automated process. We therefor placed control points, manually identifying and marking features as they appear in different images, adding a guided linkage between the images that form the photogrammetry model. by providing these manual links the software can re-estimate the spatial and scalar transformations and refine the models accuracy. in our model of the NFZ we currently have 35 manual control points each of which linking tens of images within the dataset. some are tie points, linking images in the model and some

15: Jeffrey Warren, developer of the technique, and children from Silwan creating aerial images using a kite. July 2011. Photo: Shai Efrati.

16: Silwan kite flying, July 2011

17: Images taken over Bab a-Zahra, Sheikh Jarah, by a camera tethered to a balloon during a demonstration.

are ground control points, anchor points within the model to which geolocation information is assigned and through which the entire models geographic positioning could be refined. (image 14).

The geofence both prescribes and enforces an aerial blackout, as it is embedded within the drone's flying systems[5]. As such, it is minimizing the multitude of (orchestrated or un-orchestrated) viewpoints that may emerge within this area of protracted conflict at any given time. While the model is based on an abstract mathematical triangulation of data recorded while flying under the restrictions of the geofence, it nonetheless allows to visualize the real-world effect of an aerial blackout over this part of the city.

18-19: Aerial images taken by a camera tethered to red balloon during a flight from the rooftop of "Jaffa 23" Gallery, Bezalel. May 2014

5 DJI's geofence does not affect drones that are not manufactured by DJI, however, the company controls more than 70% of the global drone market and is the main company sold in Israel.

Disrupting the Geofence, reclaiming the data gaze

The geofence system which is programmed into the drone's GPS system can be hacked in various ways for circumventing the barrier. It can also be decoded by DJI. Having said that, even if the ban is decoded, flying a drone in Jerusalem is highly restricted and can be risky[6]. Nonetheless, there is no algorithm (yet) that can ban the flight of a camera tethered to a kite or helium balloon.

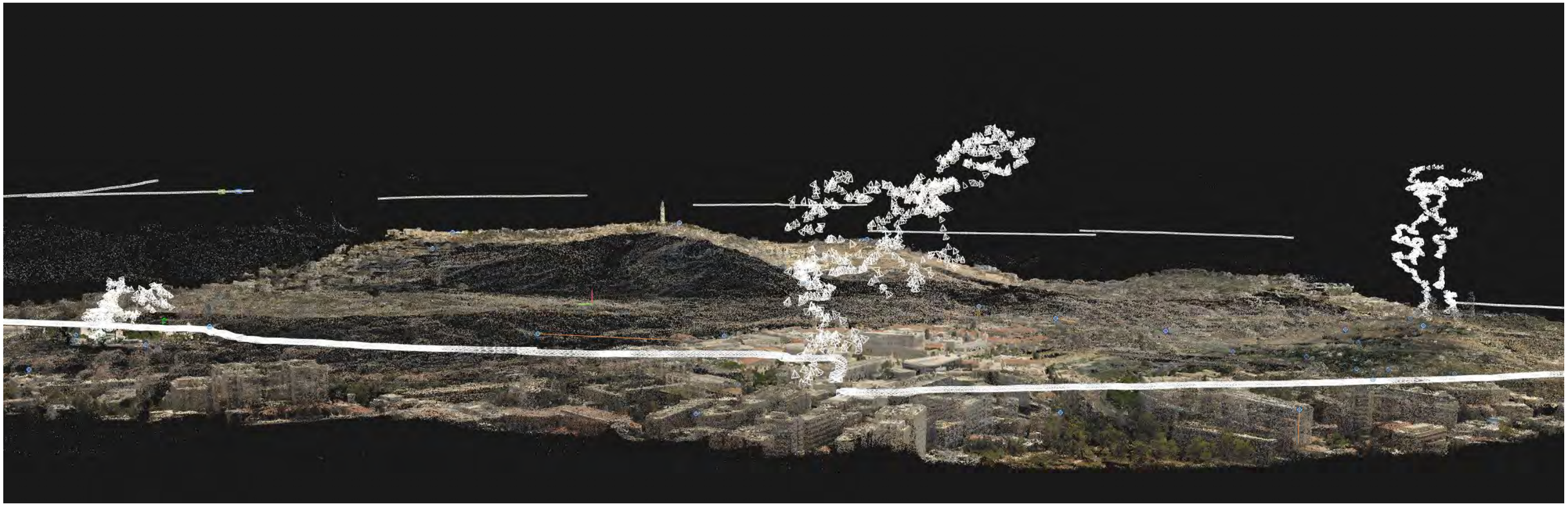
20-21: The 3D models created based on images captures during the DIY aerial photography workshops in Sheikh Jarrah (left), Jaffa 23 (middle), Silwan (right).

Between 2011 and 2016 co-author Hagit Keysar has created do-it-yourself aerial photographs with residents, activists, and researchers in Israel/Palestine, using balloons and kites. Each photographic map embeds situated knowledges and techniques that resist what Donna Haraway describes as the "gaze from nowhere" - a myth of a technological, disembodied gaze that is free from human bias, providing scientific objectivity.

We were using open hardware based on a pocket camera that is aerially held by a kite and an open software to stitch these images together into photographic maps. This age-old technique which was re-invented in the 2010's as a tool for civic and community science by the open-source community "Public Lab", calls for unlearning some of the invisible barriers that inform and construct our ways of seeing, knowing, and living in the world[7]. Namely, our understanding of expertise, authority and truth, as well as our relations with technological instruments and images. In each kite or balloon flight, hundreds of images are create but only a dozen or so are chosen for stitching a geo-rectified orthophoto. Here, we are reusing images from three cases where aerials were created within the area of the geofence.

We used all the images taken during these flights to parse them into data infrastructures and create three separate point clouds (images 19-20) that could be embedded within the 3D model of the NFZ. The exact route our drone took in circumnavigating the geofence can be seen in the model through the white markers of triangulated images (image 21). The breaks in the route signify the various flights we had to conduct to traverse the entire stretch of geofence. In contrast to the relative regularity of the drone flights, the white markers above the embedded point clouds show the chaotic routes taken by the balloon or kite. These routes were determined by the preconditions of built environment, topography, winds, and people – standing or walking on the ground holding the string of the kite or balloon.

22: The 3D model of the NFZ from a panoramic point of view, showing the route of the drone (white markers) as well as the routes of the kites/balloons in the areas where point clouds of DIY aerial photography were embedded.



6 One example that demonstrates resistance against this form of spatial control in the old city is a drone flight by an operator who managed to bypass the ban and fly a Palestinian flag tethered to a drone in protest of the violent Flags March on May 30th 2022, "Jerusalem Day", by religious nationalist Israelis. The drone was shot by the Israeli authorities and according to some reports the operator was arrested. Link to video: https://bit.ly/3T9LZ23

7 The balloon and kite photography technique was developed by Jeff Warren and the Public Lab's community, see more here: https://publiclab.org/tag/balloon-mapping

Prototyping past the geofence: future-making

Our efforts to make seen an inherently invisible data infrastructure that can only be seen and experienced by a drone system, have opened unexpected opportunities for audit, critique, and intervention. The drone itself turns into an indispensable research device, without which the virtual turnstile of the geofence cannot be detected. It wasn't until we reconstructed the restricted space through photogrammetry that we were able to make this technopolitical restriction an actual thing, a discrete object rather than distributed and dissociated effects in the world. The point cloud of the no-fly zone exposes a dense visualization of urban space at its rims and sparse, blackened areas of missing data towards its center. The 3D model is therefore a visualization of the material and epistemic effects of the geofence – it visualizes the geofence as a real-world data infrastructure that is altered by machines for machines, while translating it to human vision. We suggest that models – as both 3D virtual objects and experimental environments – can serve as augmented sites, for making sense of opaque data infrastructures that increasingly restructure urban space. As a prototype, the model is an experimental data infrastructure in itself – it can function as ground for reimagining and speculating on the potential future meanings of urban data infrastructures.

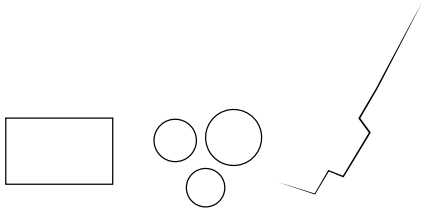
The concluding image shows the black hole of missing data as it "blushes" with highly dense spatial and visual data retrieved from cameras tethered to balloons and kites, and tightly connected to people on the ground in different places and times. Drawing on Ursula Le Guin's beautiful metaphor of the "carrier bag" for antiheroic stories, we take terra ex machina as a "carrier bag" that has the capacity to gather and collect, bring together many things that cannot be reduced into one dominant story. The carrier bag collects, preserves, and maintains the multiplicity of life and experience, its contradictions and frictions. We see this 3D data infrastructure as a carrier bag, an opportunity to collect and gather, rather than restrict and unify. Diversifying the data that constructs this virtual terra-ex-machina with multiple and subversive ways of seeing is an attempt to turn the data-gaze on its head by reaffirming the irreducible and recalcitrant nature of human agency. Terra ex machina is a storyteller, an interpretive space for resistance, speculation and worldmaking.

Breakout 1E:
The Eclectic Urban Field

Moderator: Oz Fishman

May 9, 2023 | 9:30 AM

A City Whose Fields Form Its Wall	**Sarah Koch**
Desert Veil	**Balthazar Auguste-Dormeuil, Georgia Hablutzel, Dor Schindler**
Beyond Naivety: Critical Examining of the Azrieli Centres' Iconic Imagery	**Or Haklai**
Shaping The Form: The Role Of Morphology In The Evolution Of Historic Cities, The Case Of Milan	**Adriana Granato**
"Maybe there will be a City Here Twenty Years from Now": The Making of a Rural Petite Bourgeoisie in Kiryat Shmona	**Uri Schuster**
Decolonial Architecture and Urbanism: Symbolic Formation of Regions in Post-Soviet Russia	**Gavriil Malyshev**



"A city whose fields form its wall"

Sarah Koch
4th Year Student at Bezalel, Department of Architecture,
The Haredi Branch.
7th Studio Project, Led by Arch. Dalia Nachman Farchi
and Arch. Yael Valinsky.

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Summary

"A city whose fields form its wal "

The Mishnah, Jewish Book of Law, includes among other issues, a comprehensive halachic laws concerning city demarcation. the Mishna presents diverse typologies that stand as different examples of urban settlement. Each typology is addressed differentl . A common structural element to different types of settlement is the wall. The Mishnah Arkhin (9:6) describes a city where the buildings themselves serve as its wall. The proximity of the buildings to each other creates one common external wall, this typology is described as "A city whose roofs form its wall".

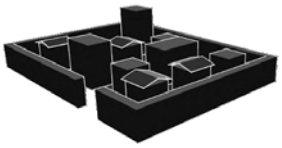
The study focuses on the ancient city of Usha, located in the Lower Galilee. The city was established during the fourth century BC and conforming to archeological findings, was built according to the typology "a city whose roofs form its wall". A deeper investigation of the city's space led me to the contemporary Kibbutz of Usha, located two kilometers west of the ancient city. Kibbutz Usha and the two neighboring Kibbutzim, Ramat Yochanan and Kfar Maccabi, are strongly arguing with the city of Kiryat Ata, which seeks to expand its urban boundaries into the agricultural areas of these three Kibbutzim.

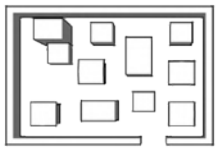
The study examines the buffer zone that separates the city from the Kibbutzim and its agricultural fields. The planning approach is driven by the typology of the Mishnah "a city whose roofs form its wall". The idea of combining these two vocations in one space formed the basis for the planning which perceive the buffer zone as a space with additional uses other than separation.

The plan opposes the conversion of the agricultural areas to daily use function. Instead, it seeks to emphasize the importance of agriculture as a general resource from which both residents can enjoy. The plan proposes the establishment of an agricultural educational campus within an uncultivated strip that crosses the buffer zone. The campus promotes values of new sustainable agricultural development and gives an additional role to this area while respecting its qualities.

01 | Conceptual development

a. Introduction





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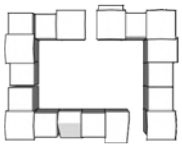

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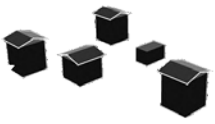
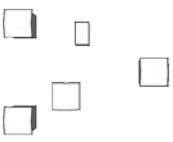




03

In the Mishnah Arkhin (9:6), the law discusses the question of land redemption in the year of Jubilee. The Mishnah differentiates between cities' land and other settlements to have a clear set of rules regarding different cases. A decisive factor for the ruling of the Halacha is the wall in the various cities. Is there a wall and if so, in what period was it built and how did it look? For illustrating and conceptualizing the idea, the project examines three settlement typologies. the law regarding each typology is different The first typology describes the conventional urban settlement, which is: a "walled city" (figure 1) a city surrounded by a wall. The second typology describes an opposite situation called: "courtyard houses" (figure 3) This typology is not distinguished as a city but as a temporary settlement in which the buildings were built to serve and cultivate the field on which they sit. The third typology describes a unique situation: " a city whose roofs form its wall "(figure 2). In this case, the Mishnah describes a city where the buildings themselves serve as its wall. The proximity of the buildings to each other creates one common external wall.

Source | Mishnah Arkhin (9:6)

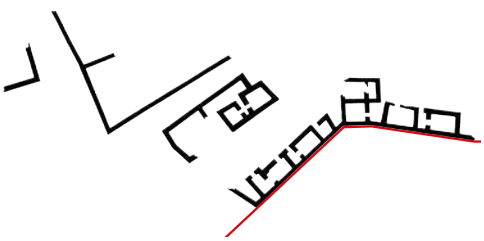
01 | Conceptual development

b. Medium-sized cities

04 'Ain mallaha

05 Chorazin

06 Usha



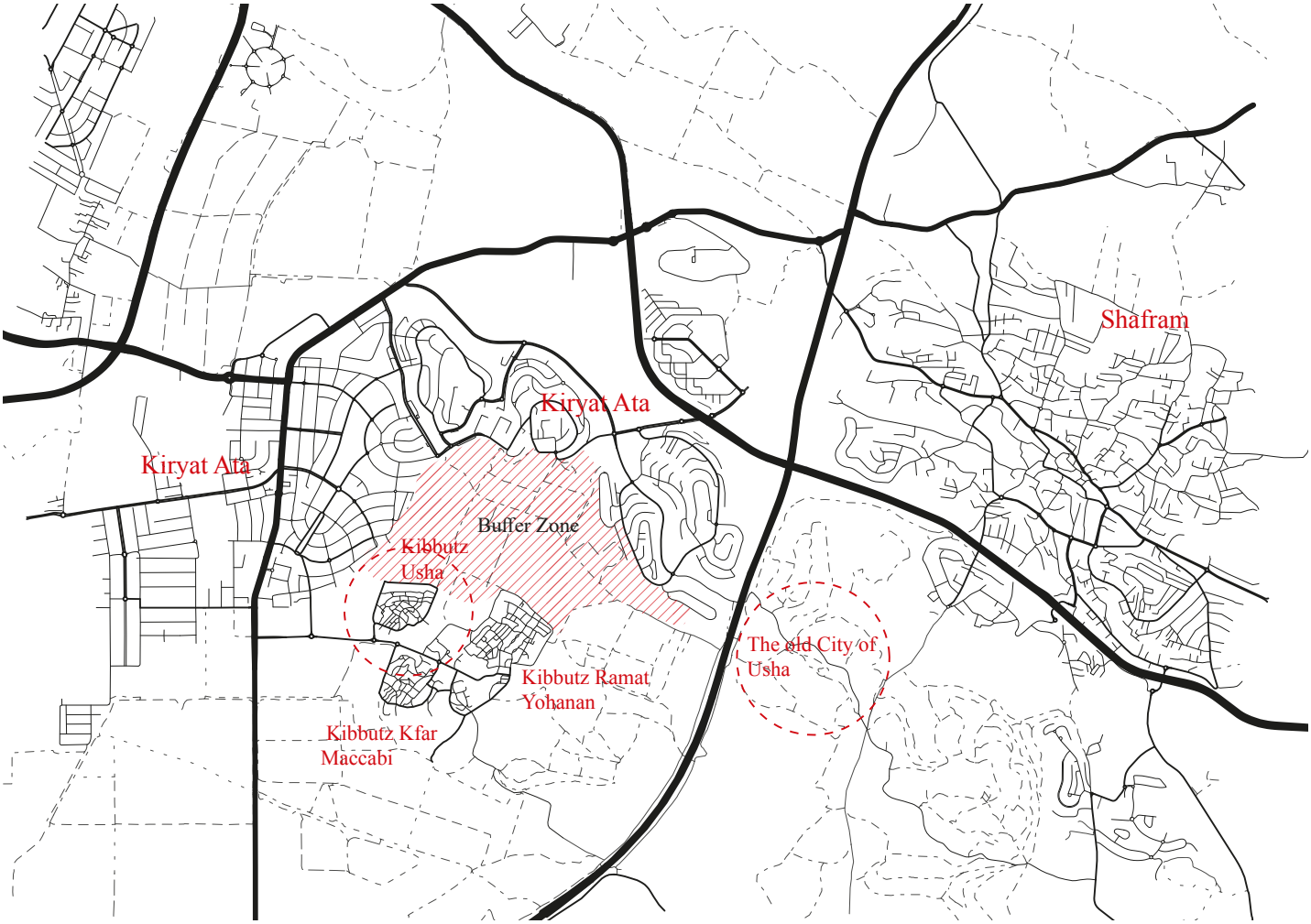
07 Descriptive detail

The third typology: "a city whose roofs form its wall" is mentioned several times in the search by archaeologist Zeev Yavin. In his work, " Medium-sized City" Yavin examined the ruins in Israel which survived the Mishnah and Talmudic times. A medium-sized city was a form of settlement that was founded in the period following the Bar Kochba revolt. The distinctiv character of these cities is reflected in their size, placement, and in the way they were built. The medium-sized city was establish d by and at the initiative of the local population. Since these cities were relatively small compared to walled cities, in most cases, the city wall was created in a way that the buildings were adjacent to each other, And the external walls served as a protective wall of the city (Figure 7). One of the examples that Yavin evokes in his research is the ruins of "Usha" (Figure 6). Usha was constructed during the journey of the Sanhedrin (a group of jurists who promulgate laws at that time), at their permanent headquarters in Tzipori. According to these facts Usha was built as a temporary settlement, which explains the use of the third typology in which the wall was made out of the settlement's buildings.

Source | "Medium-Sized City" Z. Yeivin

01 | Conceptual development
c. Usha

The old city of Usha is situated in Lower Galilee, between the city of Kiryat Ata and the city of Shafaram. Over the generations, battles and wars have led to a shift in the composition of colonies in Lower Galilee, today this place is known as the Zebulun Valley.



02 | Location stud

a. Historical revie

Fourth Century - 8th Century B.C:

The old Usha was built by the Sanhedrin as a temporary colony on their way to Tzipori. they emigrated and moved out when it was destroyed in the 8th century as a result of an earthquake.

1880:

The Arab Mogheribs arrive on the hill and build the village of Usha near the ruins of the old town. The village was destroyed when the "Battle of Ramat Yochanan" took place in 1948.

1925-1937:

As part of Israel's growth, much effort was put into developing the Zebulun Valley, located west of the former Usha. In the northern valley, south of the city of Kiryat Ata three kibbutzim were built nearby: Ramat Yochanan, Kfar Maccabi, and Usha.

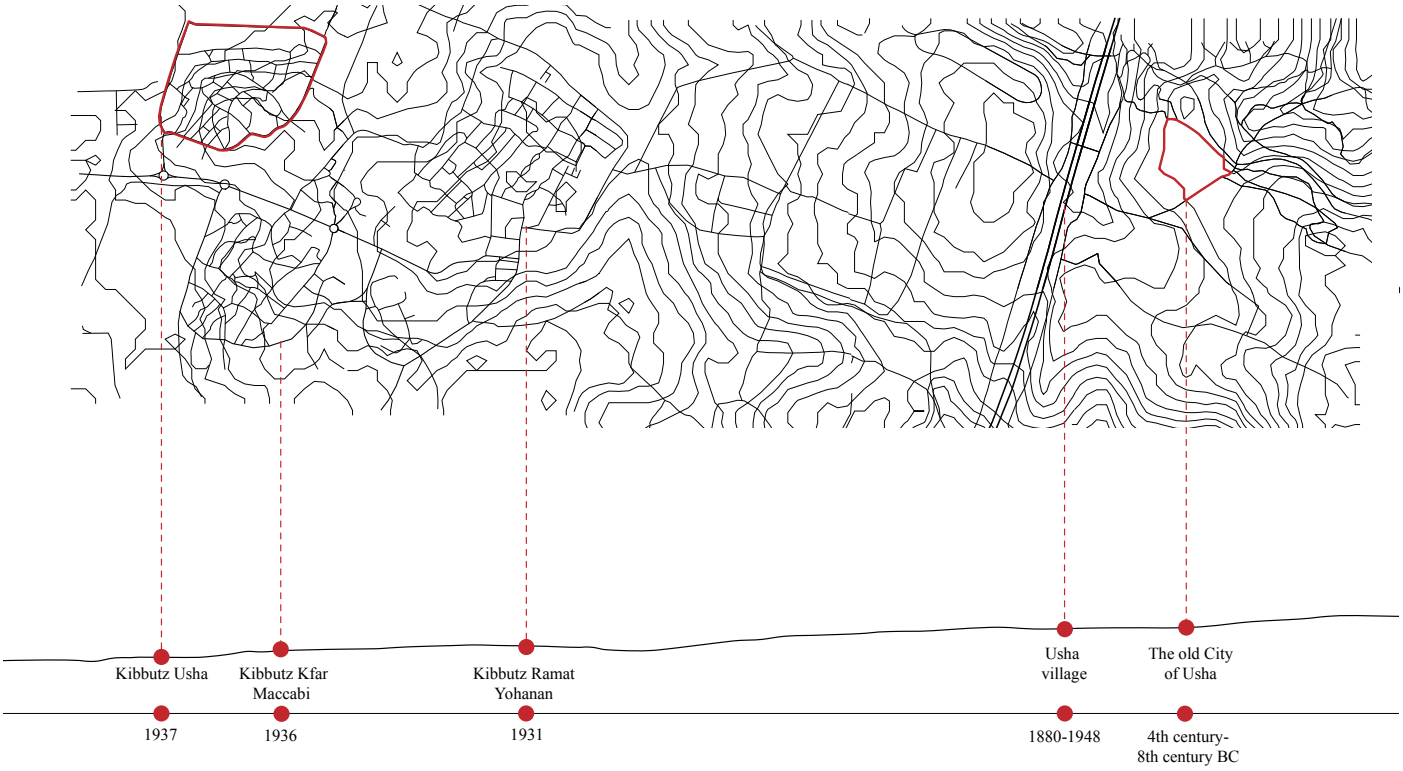
Today:

the ancient Usha is an archeological site situated in the forest of Kiryat Ata. The Arabic village has no record except for the remains of the surviving buildings, and the name Usha was given to the contemporary kibbutz in the Zebulun Valley.

Source | GOVMAP

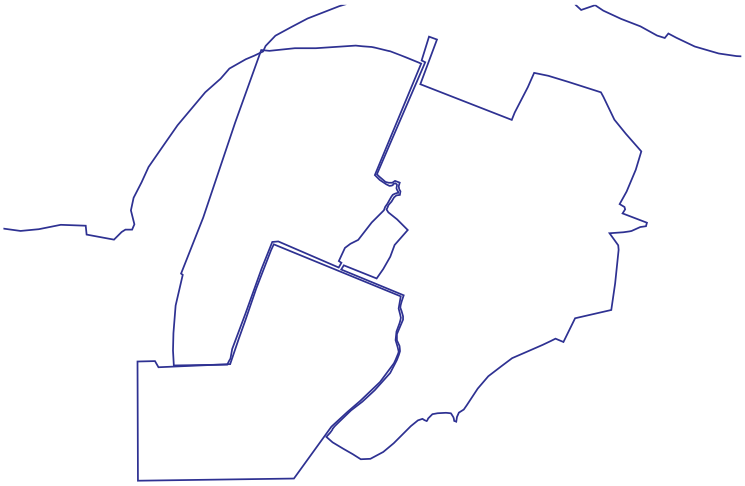
02 | Location stud

a. Historical revie

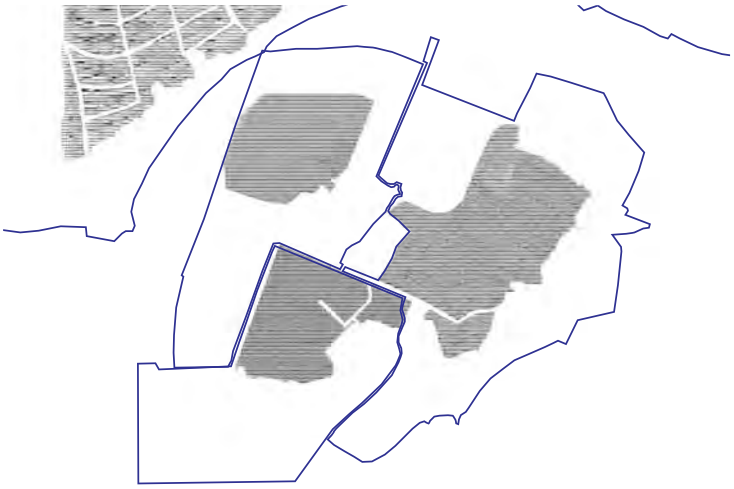


02 | Location stud

b. Boundaries across the three kibbutzim

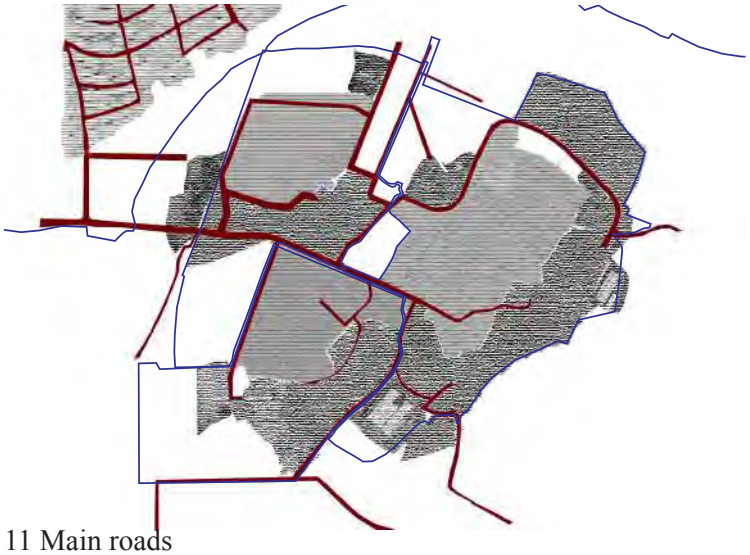


08 Master plan boundarie



09 Residential areas

10 Farm and Industr

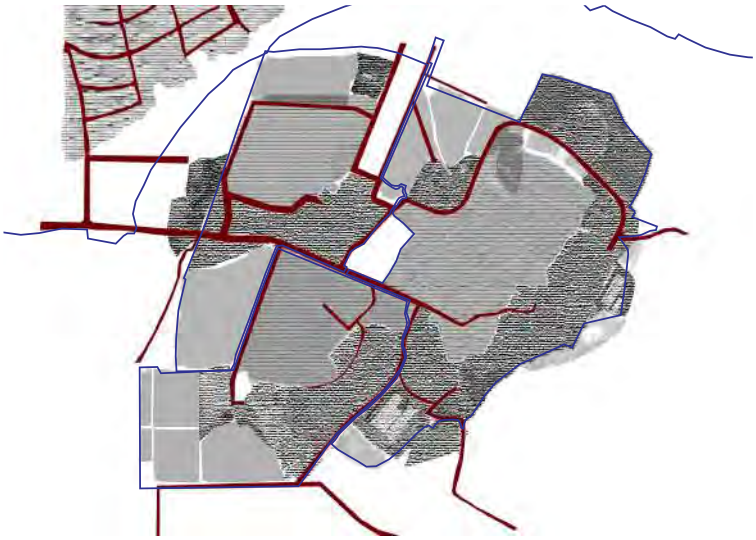


11 Main roads

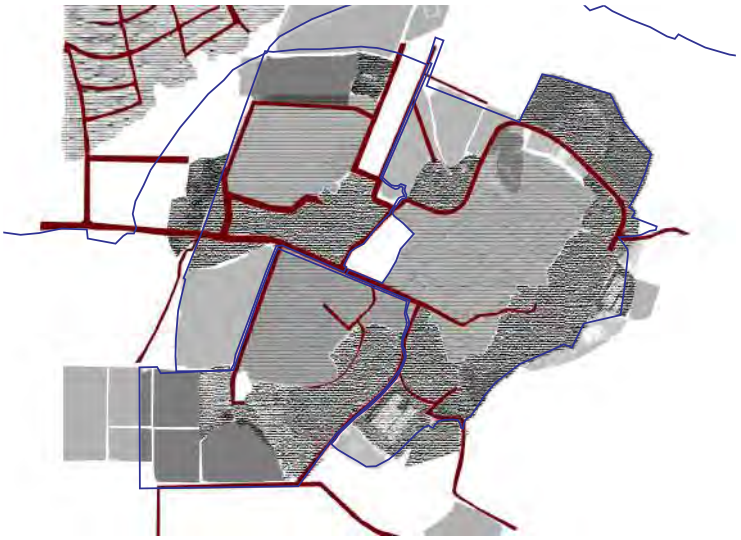
Thinking of the wall as a boundary in ancient cities examined through the work of Zeev Yavin led to a new perspective on contemporary space - the area of the three kibbutzim on its various boundaries. In this case, it is not a real physical wall, but an intricate system of networks and borders, some are physical and others have been agreed upon and fixed by contracts or costs over time

02 | Location stud

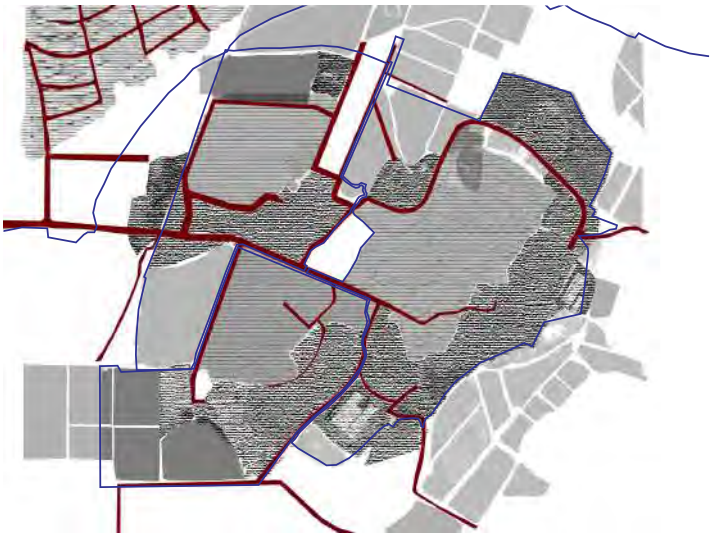
b. Boundaries across the three kibbutzim



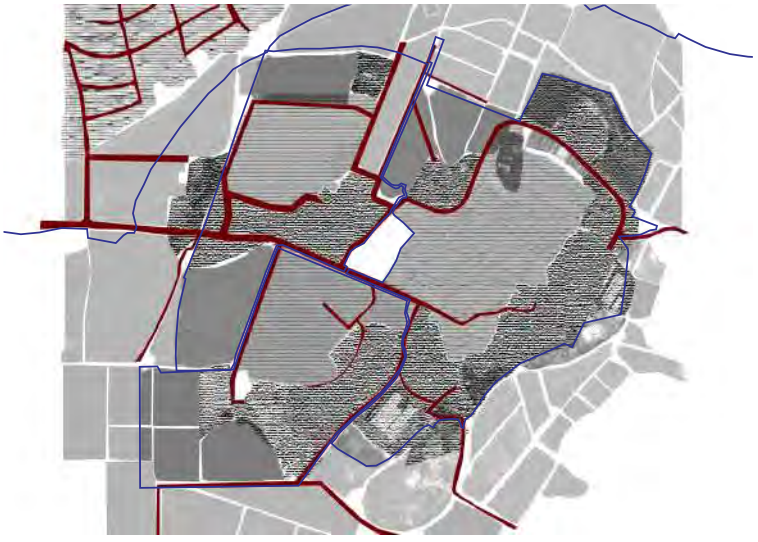
12 Fields inside boundaries



13 Uncultivated Fields outside boundaries



14 Cultivated Fields outside boundaries



15 All Fields

The first measure is the cartography of borders within the existing space. One of the objectives of the kibbutz and the typology in which it was built is the principle of area separation, a sort of smaller-scale zoning. The various zones of the kibbutz include the economic zone, the residential zone, the public zone, and the field zone

02 | Location stud

c. Agricultural fields in the Zebulun Valley

The history of the kibbutz is rich and has many subjects, however, this work focuses on a historical event that occurred after the kibbutz crisis in the 1980s. As part of the reconstruction and reinforcement of the Kibbutz movement, rental agreements have been established between the Kibbutzim and the Israeli Land Authority. This agreement led, among other things, to interesting but complex cases, where the fields of the kibbutz were more extensive and went beyond the boundaries of the kibbutz. As an illustration, you can see how this phenomenon manifests itself with the three kibbutzim in the Zebulon Valley: Ramat Yochanan, Kfar Maccabi, and Usha.

Source | GIS Agricultural plots

02 | Location stud

c. Agricultural fields in the Zebulun Valley

Usha

- Field crops
- 25 Plots
- 2,400 Dunams
- 96% Shared processing
- Wheat

- Plantations
- 45 Plots
- 705 Dunams
- 93% Shared processing
- Avocado

Kfar Maccabi

- Field crops
- 26 Plots
- 2,700 Dunams
- 85% Shared processing
- Wheat

- Plantations
- 22 Plots
- 567 Dunams
- 91% Shared processing
- Avocado

Ramat Yochanan

- Field crops
- 33 Plots
- 3,500 Dunams
- 100% Shared processing
- Wheat

- Plantations
- 35 Plots
- 888 Dunams
- 97% Shared processing
- Avocado

- Citrus fruits
- 21 Plots
- 309 Dunams
- 43% Shared processing
- Grapefruit

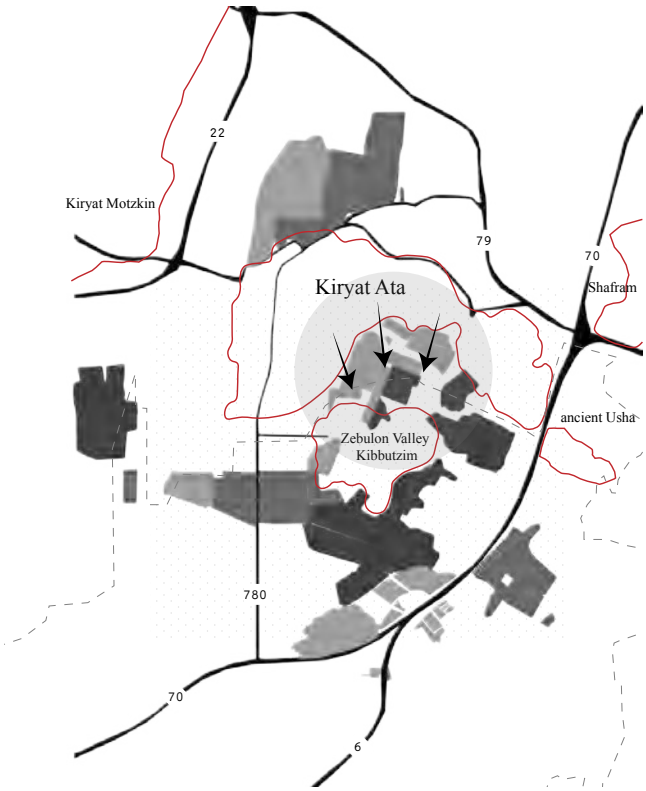
Source | GIS Agricultural plots

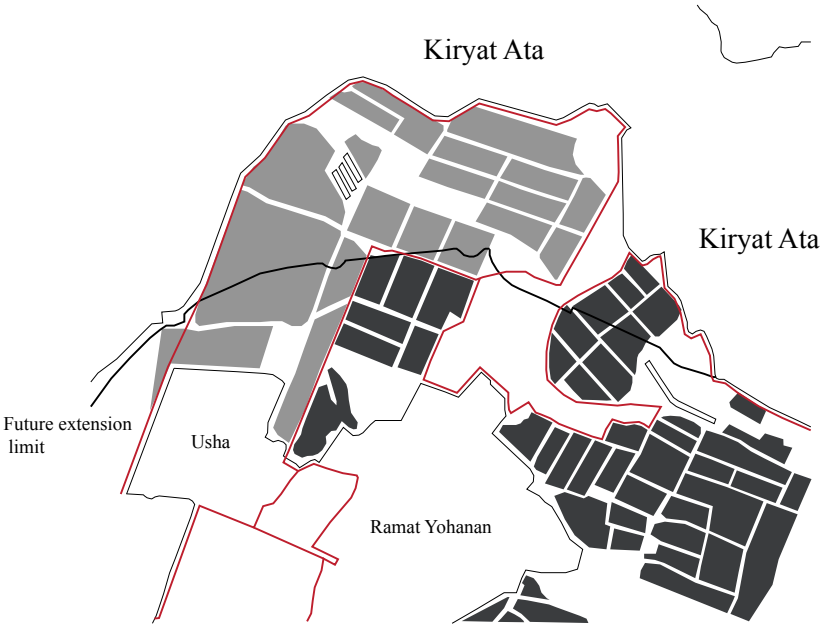
02 | Location stud

A problem situation arising from this phenomenon is linked to the city of Kiryat Ata.
On the north side of the kibbutzim, there is a strip of 1k-wide fields that separate the kibbutzim and the city. The current struggle is taking place between Kiryat Ata and the Council of Zebulon Valley, both are in negotiations with the Israeli Land Authority, to which the fields originally belong. the city of Kiryat Ata wants to extend its border and move crops from the fields to a different location, Unlike the Zebulon Valley Council, which wants to keep the fields as they are due to ecological and economic values.

The project seeks to intervene at this sensitive point, where there is a battle of ownership over agricultural areas. The idea that is posed in the Mishnah in the typology "a city whose roofs form its wall" sheds new light on the reference to the wall. It is no longer a two-dimensional object that separates one space from the other, but a three-dimensional space in which additional functions can operate. With this approach, the project aims to operate in the buffer zone between the city and the kibbutzim. Future planning seeks to examine the values of the strip itself, Deal with uses that may arise in the place from the qualities that the site raises. The project seeks to stop considering this band as the outskirts of the city and as another potential area for its expansion.

A careful investigation of the border area brings up many qualities, a stream route, farms, many crops, and a challenging topography.

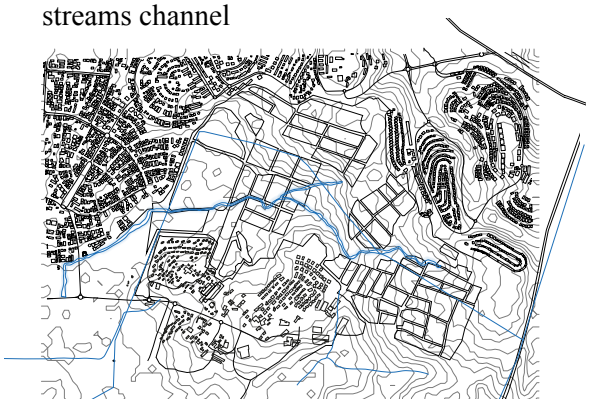




02 | Location stud

e. Buffer zone analysi

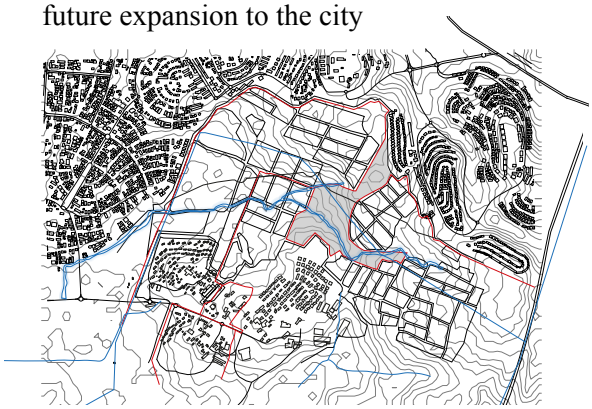
streams channel



cultivated field

ownership of field

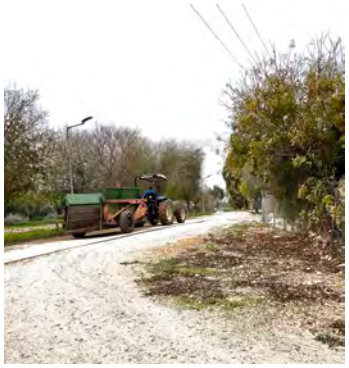
future expansion to the city



uncultivated space

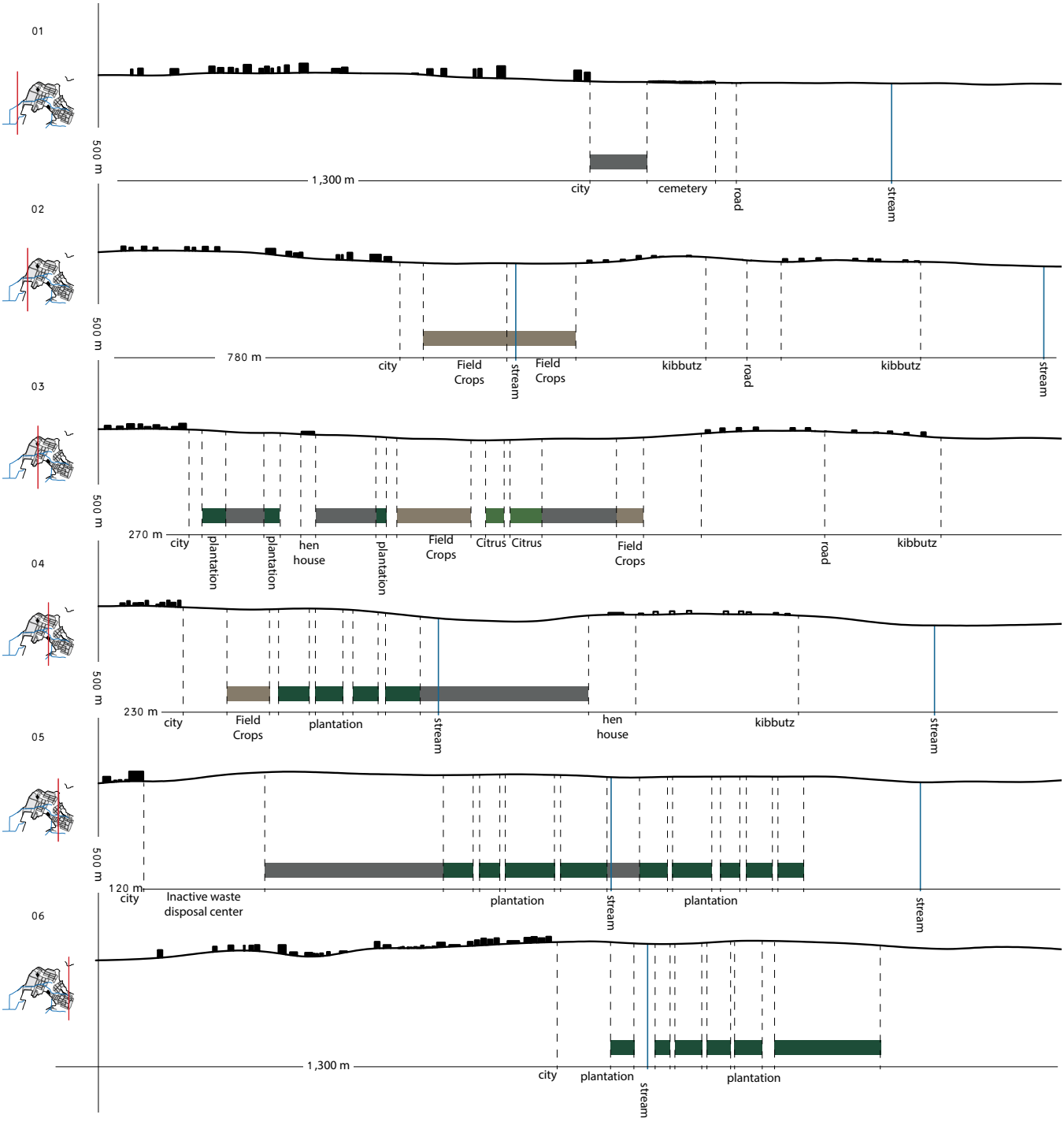
02 | Location stud

f. Photographic documentation



02 | Location stud

g. Buffer zone sectio
Types of crops

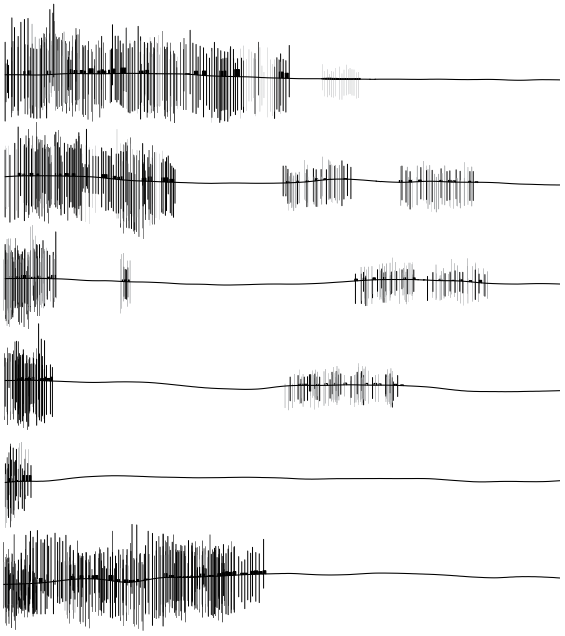


The purpose of the project is to intervene in an uncultivated plot in the buffer zone. A boot shape that crosses the strip from north to south, connecting the city and the kibbutzim. The planning **does not** offer an alternative to the existing expansion plan for daily human uses. instead, it offers a new purpose, a sort of educational project based on sustainable agriculture. in its narrative, the project criticizes modern agriculture and suggests examining agricultural areas and their potential for sharing

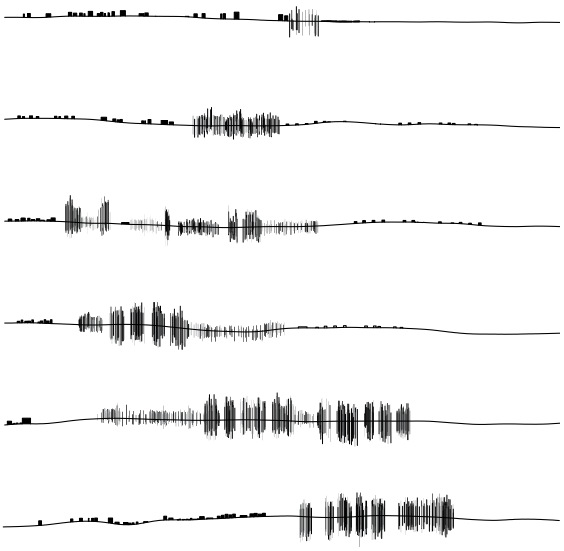
02 | Location stud

g. Buffer zone sectio

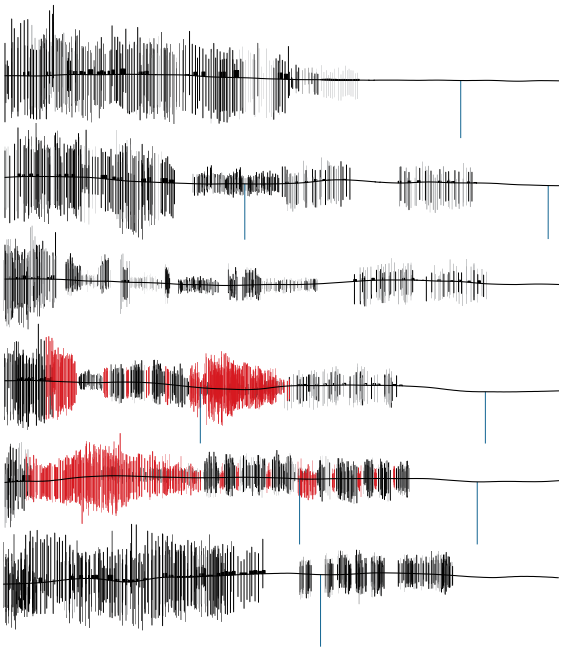
Density cross sections in the buffer zon



Residential density



Fields density



Suggested densit

03 | Intervention

a. Uncultivated plot

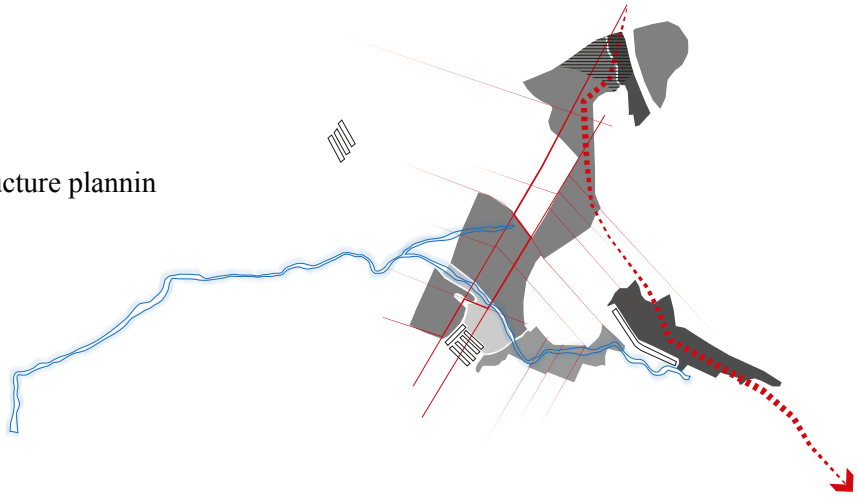
Uncultivated plot in the buffer zone

The infrastructure of the uncultivated zone follows the natural pattern dictated by the topography and the artificial pattern dictated by the agricultural fields. The combination of these two systems with other organic components creates a new infrastructure for the use of the uncultivated area. the purpose of the intervention is to highlight the importance of agriculture as a general resource from which city residents and kibbutz residents' benefit

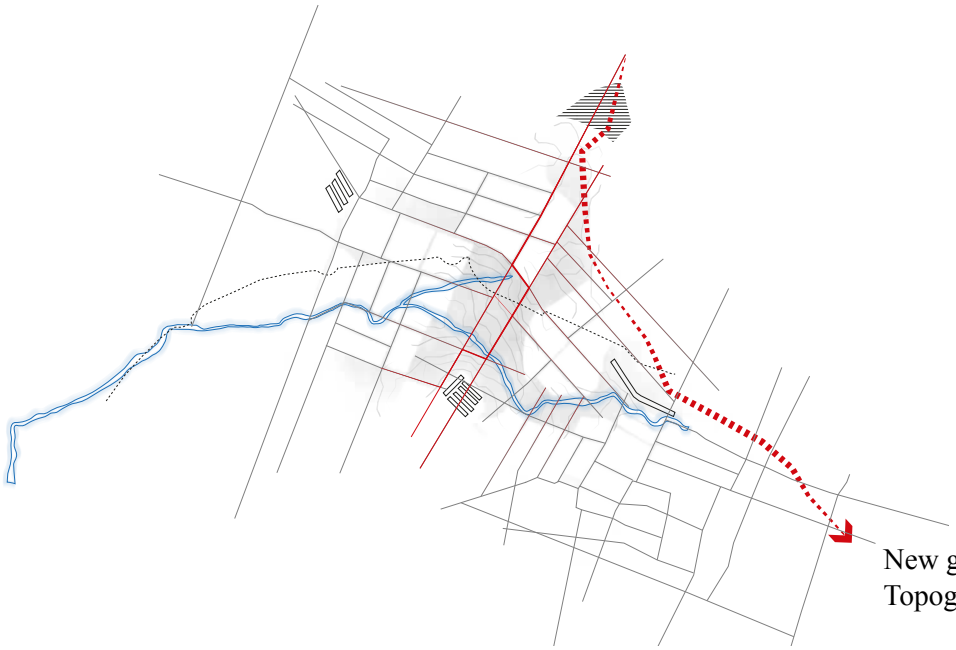
Source | Openstreetma

03 | Intervention

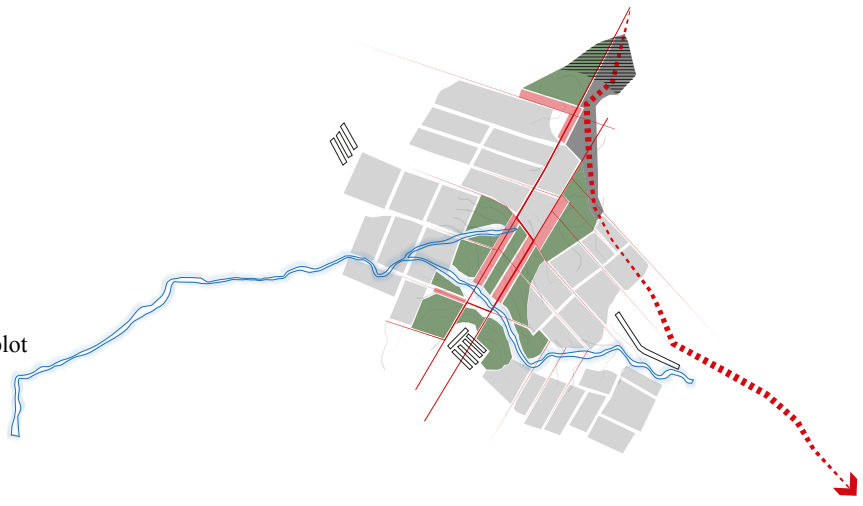
b. New infrastructure plannin



Terrain qualities



New grid -
Topography and field



Planning and Program

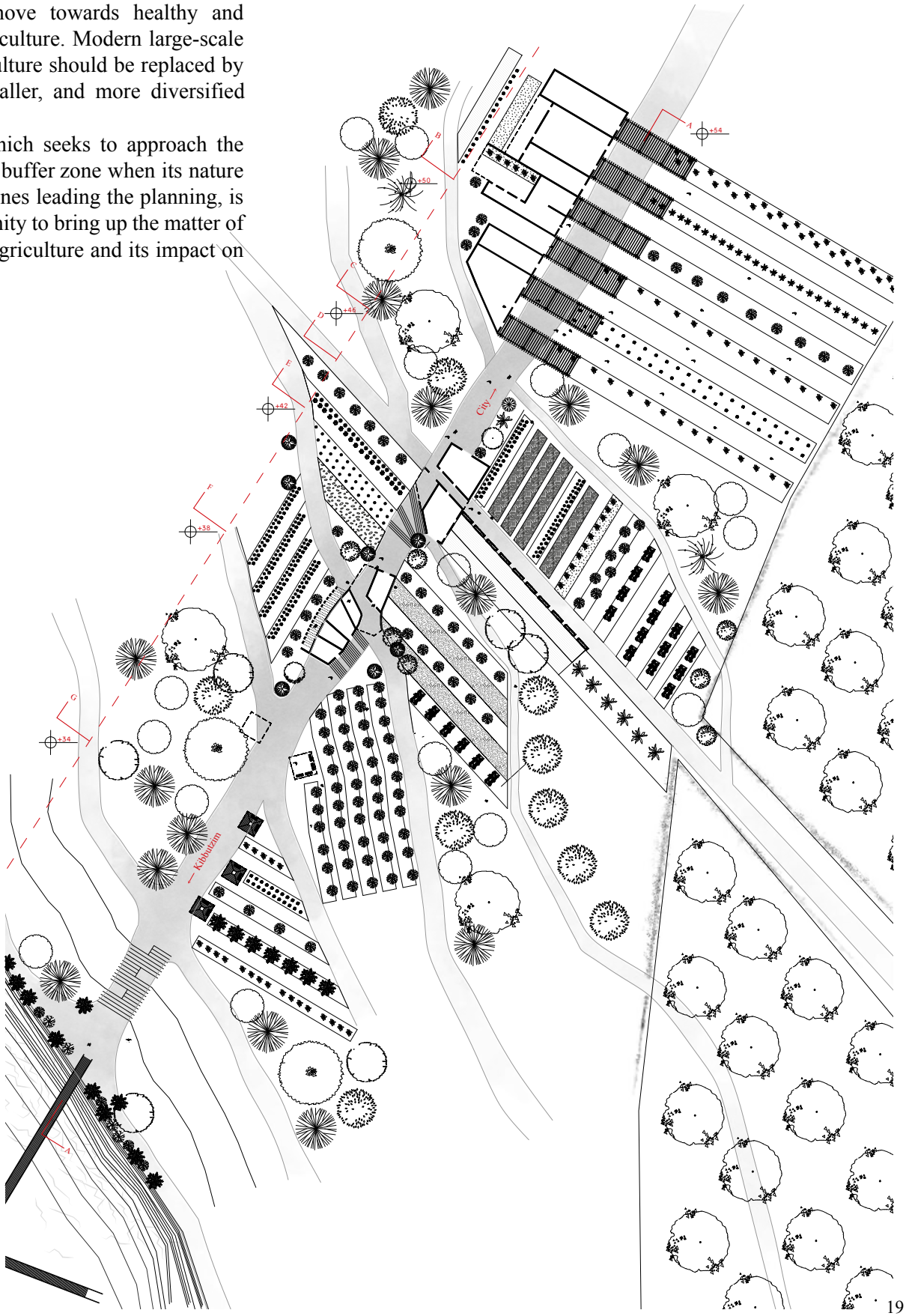
- Low scenic value
- Medium scenic value
- High scenic value
- Existing agricultural plot
- proposed constructio
- proposed Agriculture
- No intervention zone
- Proposed ecological corridor
- ecological corridor
- Inactive waste disposal cente
- proposed new grid

03 | Intervention

c. Educatinal campus plan

The agricultural campus is designed to raise awareness about the importance and the need to move towards healthy and sustainable agriculture. Modern large-scale Polluting agriculture should be replaced by sustainable, smaller, and more diversified agriculture.

The project, which seeks to approach the planning of the buffer zone when its nature values are the ones leading the planning, is a great opportunity to bring up the matter of contemporary agriculture and its impact on social life.

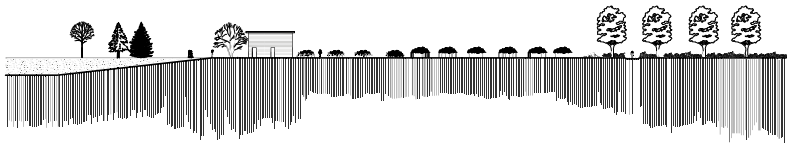


03 | Intervention

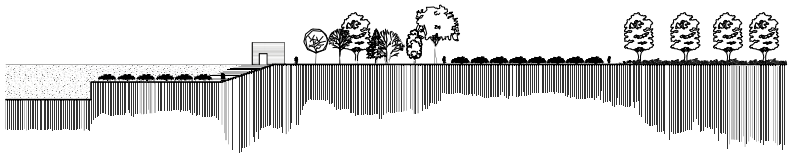
d. Educatinal campus Section

B-B

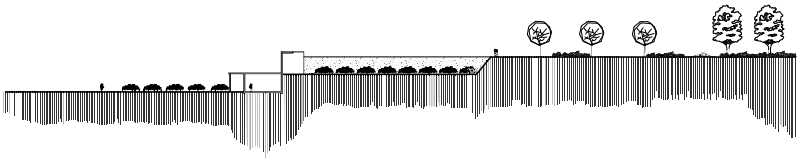
C-C



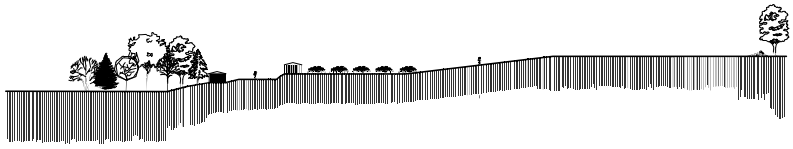
D-D



E-E

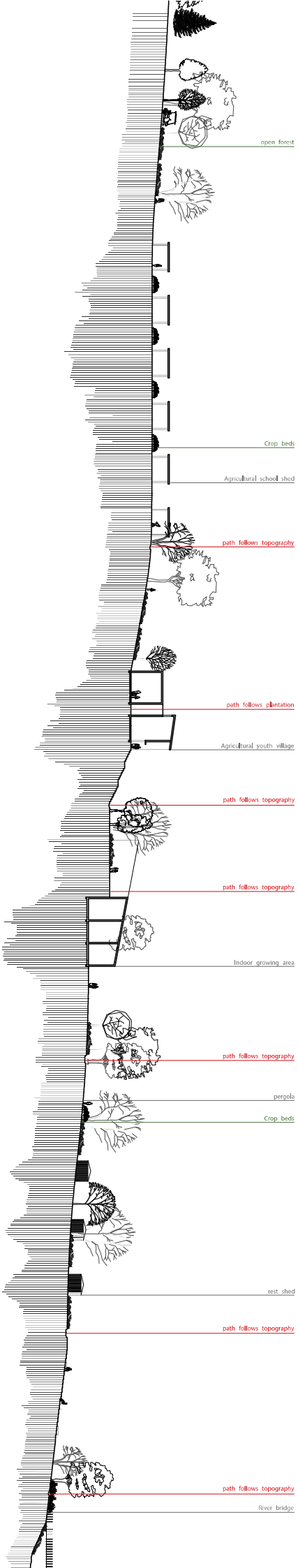


F-F



G-G

H-H



A-A

Desert Veil

Tracing the permanent instability between air and land in the Negev-Naqab

Balthazar Auguste-Dormeuil, Georgia Hablützel, Dor Schindler

Introduction

The territory of the Negev-Naqab is covered by a veil. While its land has been predominantly contested around issues of ownership and settlement, the Israeli state has been able to exercise unchallenged sovereignty over its airspace, legitimized by the need for security. This condition has turned the sky of the Negev-Naqab into the largest military training area in the country, as well as one of the most cluttered airspaces in the world (Sheikh and Weizman 2014, 16). From the British practice of aerial colonization in Palestine to its definition in the Zionist project, airspace has been a significant planning component of the Negev-Naqab, consecutively forcing the urbanization of the desert (Schmueli and Khamaisi 2015).

Paradoxically, this process of urbanization confronts itself with the *regime of emptiness* of the desert (Henni 2022): firstly, through the western lens of *terra nullius*,[1] disregarding non sedentary indigenous patterns of use, as land ownership is historically and culturally perceived through labor (McKee 2022, 71); and secondly through the intangibility of airspace infrastructure. Today, the Negev-Naqab accommodates a unique urban condition, where settlement, infrastructure and aerial routes inhabit a condensed corridor. This results with constant collision of scales, marrying aerial activity to everyday experience of the urban.

The paper seeks to investigate a series of key moments in the twentieth century in order to propose an alternative reading of the modern urban history of the Negev-Naqab, thus calling into question the ubiquitous *modern-traditional* and *urban-rural* dichotomy that emerges from non-occidental practices. Diverting from the canon of visual studies explored by scholars such as Steyerl (2011) and Kurgan (2013), we will define the notion of *Desert Veil*, as a lens through which the airspace of the Negev-Naqab can be discussed as both a recording and an urban project in itself.

[1] Regarding the notion of terra nullius, or the "dead Negev doctrine", see Yiftachel, O., Kedar, S. And Amara, A. 2012. "Challenging a Legal Doctrine: Rethinking the Dead Negev Ruling, Law and Government." *Mishpat U-Mimshal,* 20.1: 7-147 (in Hebrew).

1. Airspace

One of the first legal cases involving airspace, recorded in 16th century England, detailed the trespassing of a neighbouring parcel not on the ground, but rather through the overhang of eaves (Barnes 2003). Preceding by centuries the realm of aerial law, it can be seen as a precursor to the entanglement between the space above us and the concepts of property and sovereignty.

For half a millennia, the Roman maxim "He who owns the soil owns up the sky"[2] (Blackstone 1766 as cited in Barnes 2003) rendered land "not just a two-dimensional surface" (16). Yet, with the introduction of the airplane, a debate about the legal implications between private landowners, aircraft and the state was set in motion. Although ideas were as elementary as limiting the route of aircraft only to the air above public infrastructure, "these theoretical contentions about the nature of airspace and sovereignty had been swept aside by practical concerns of national defence" (Barnes 2003, 265). By the end of the First World War, most European states were exercising national sovereignty over their airspace, in fear of enemy air operations. Although both the notions of private air rights and air sovereignty surfaced with the invention of aircraft, the state was the one that was able to monopolize air control and operation (Barnes 2003, 293). Today, the legal definition of airspace is customary: bounded by property air rights and the Karman Line,[3] it is dependent on the technical ability to exercise aerial sovereignty.

An acknowledgment of the "long technological history of installing eyes in the sky for spying and mapping" (Anani 2020, 12) allows us to further discuss the introduction of aerial practices not only as a tool of recording, but rather the transition of aerial warfare towards counterinsurgency. The shift towards seeing the sky as part of the battlefield was developed and championed through the last period of the British Empire. As a significant component of Mandatory Palestine, the British Royal Air Force had installed a vast aerial mission in the region. What started as a reconnaissance effort of "aerial objectifications and abstractions proved to have more radical usages" (Abusaada 2020, 26) in the form of bombing, escort, intercommunication and transport. These experiments in exerting aerial power in the Middle East promoted air control as a superior strategy to ground action (Satia 2006).

The first aerial ordering of Palestine was the assignment of four squadrons to four zones (fig.1). Through aerial partitioning, the British forces defined a system of air-ground communications, as a way to coordinate ground and air counterinsurgency operations (Abusaada 2020). *Combined-Action* was praised by British officials insomuch as" there can be few operations on record in which co-operation between aircraft and small military detachments were clearer and more effective than they were in Palestine" (Abusaada 2020, 29). Ostensively, the initial division of the air of Palestine into control zones could be seen as the first statutory decision to arrange the air according to issues on ground. What started as four lines would develop "into a complex stratigraphy of layers, air boxes, loops, and corridors" (Weizmann 2020, 36), although rendered invisible.

[2] In Latin: "*Cujus est solum jus est usque ad coleum*".

[3] The Karman Line, located at around a hundred kilometers, is the approximate line where there is not enough air to lift an airplane, and stands as a proposed conventional boundary between airspace and outer space.

2. Desertspace

To the British, the Negev-Naqab became familiar through looking; new subjectivities were produced by the "mobilisation of landscape both materially and symbolically" (Wylie 2006, 11). This lineage of interpreting land as empty is fundamental to modern planning. Understanding the act's potential**,** the British used the Jews as a vehicle to transmit their extractive agenda disguised theologically through the second coming of Christ. In English eyes, the Zionist project "was to play the middleman between biblical interpretation and colonial reimagining of the landscape" (Talbot, Caldwell and Emmott 2020, 70). Perfected through centuries of colonial practice, sovereignty was achieved through the imagination of wasteland into fungible commodity. Consecutively, the Zionist vision of the desert, driven by the occidental idea of production, was accustomed to the British gaze, as a "medium of exchange, a site of visual appropriation and a focus for the formation of identity" (Mitchell 1994, 2).

The continuous imagination of the Negev-Naqab desert as empty provided the framework to reimagine, plan and, contrary to popular belief, empty the territory. Fuelled by the Arab revolt in 1937, the Peel Commission was established to coordinate future land arrangements. The commission demarcated three zones, where the Negev-Naqab, due to its vast Bedouin population, was included as part of the Arab segment. Amongst the commission's conclusions, was to "[forbid] the selling of [Negev-Naqab] land to the Jews" (Kark 1981, 349). This shift braced the desert to became a frontier of the Zionist agenda, rendering "the choice of areas for Jewish settlement no longer an agricultural question, but rather a political issue" (346). Due to a collective worry to lose property title under the Peel Commission, substantial amounts of Jewish privately owned land in the Negev-Naqab was consolidated under the Jewish National Fund. Thus, the initial division line by Peel othered the Negev-Naqab from the collective imaginary of the Zionist project.

Less than a decade after the establishment of the Israeli State, David Ben Gurion proclaimed that "the State of Israel cannot tolerate the reality of a desert in its midst: "if the State does not destroy the desert – the desert is likely to destroy the state" (as cited in Frosh 2008). Ben Gurion intentionally referred to the desert, rather than who it was occupied by, foreshadowing active emptying. This sentiment manufactured a collective way of seeing the Desert as threatening; a frontier to be coordinated and controlled. His speech legitimised the intensification of bounding, bordering and rezoning of the Negev-Naqab to accommodate an increasing presence of the Israeli Defence Force.

Published formally between 1966 and 1976, policy to evict and transfer indigenous Bedouin population into townships was incorporated into regional planning schemes (Falah 1989, 83). During this period, the Bedouin communities of the Negev-Naqab were mostly sedentary. Despite this, the Israeli State abused their nomadic heritage as a way to displace them yet again (72). The establishment of townships congested the Bedouin population into small designated areas, ultimately freeing large amounts of land in the south of the Negev-Naqab (fig, 2). The Israeli Authorities were able to designate vast Negev-Naqab land to state property, a process that can be seen as a collapse of property ownership into state sovereignty.

After the 1967 Six-Day War, Gen. Ariel Sharon led an effort to delineate physical boundaries between Negev-Naqab Bedouins and West Bank Palestinians, through 'buffer zones', formally designated as military fire ranges. A transcript from 1979 revealed that these zones were "intended to provide an opportunity for Jewish settlement in the area" (Sharon, 23), disrupting Arab continuity through alleged military necessity, creating a void to be filled later.

3. Desert Airspace

As part of Israel's withdrawal from Sinai in 1979, the Israeli Air Force had to relocate multiple airbases and training grounds from the Egyptian Peninsula. The Negev-Naqab was perceived by Israeli authorities as a similar territory to Sinai; a desert, of little private ownership, buffering between neighbouring states and the center of the country (Schubert 1992, 113). This marked the transformation of the Negev-Naqab into the largest operation and training space of the Israeli Air Force.

Coinciding with the Americanisation of the Israeli State, the desert turned into an urban territory. As a precondition to the withdrawal, the United States built the Ramon and Ovda bases, and reopened the Nevatim base.[4] The new bases imposed not only substantial infrastructural work (Claiborne 1981), but also the relocation of thousands of military personnel, alongside their families (Claiborne 1980). The Negev-Naqab landscape was severely modified,[5] thousands of acres were fenced off, and many Bedouin settlements were displaced (Weizmann and Sheikh 2014, 33).

Alongside a geopolitical turn in the region, the withdrawal from Sinai was the last substantial border change of the Israeli territory, redefining the civilian and military spatial relationship in the Negev-Naqab (Oren 2007, 153). The Israeli Air Force had to move its operation into a territory just a fifth of the size of Sinai. Thus, with the majority of the land being state-owned, the military squeezed itself into the territory, delimiting the features of the airspace according to existing infrastructure and settlements. Today, shared flight paths, almost exclusively used for military activity, follow existing roads, reporting points are located above existing towns and restricted military airspace is outlined by the same urban and infrastructural features (fig. 3). In that way, the military took over the complete sovereignty of the airspace, while leaving a narrow piece of land for civilian activity.

This shift, planned and executed in less than three years, was enabled solely by the state's monopoly over both property and sovereignty: while commonly operating independently from on-ground conditions, the correlation between the land and the air is a unique condition of the Negev-Naqab. This intricate entanglement of the airspace and the built environment has not solely generated a specific urban condition as much as a vertical theatre of military presence, where a fourth wall separates the land and the air. Unlike the static physicality of army bases or the exclusivity of firing areas, the intangible infrastructure of the airspace can be read as "not the declared content but rather the content manager dictating the rules of the game in the urban milieu" (Easterling 2014, 14), revealing the ability of infrastructure to *do* rather than *form*. The infrastructure therefore encodes complex routines and schedules, where the omnipresent and diffuse performance of aerial transport and counterinsurgency activities overlays with everyday-life.

[4] *Special International Security Assistance Act of 1979*, 96th U.S. Congress, Public Law 96-35 (1979).

[5] During the construction of the Ramon base, an entire hill was flattened to ensure a clear landing strip, while in Ovda a canal was dug to prevent flash floods (Schubert 1992, 129).

4. Desert Veil

The territory of the Negev-Naqab is covered by a veil, formalized through a series of paradigmatic shifts that remain disregarded in the realm of urban studies. Through the implications of technological innovation, the construct of imagination, and geopolitical agreements, the veil introduces the collapse of private ownership into the air, and the transformation of the desert to an urban territory where state sovereignty remains unchallenged.

Through its particular connection with the ground, the airspace of the Negev-Naqab can be understood as a meta-structure. Throughout the twentieth century, this particular airspace has operated in close connection to the ground, and can be understood as another part of the history of modern planning. Technological development has elevated the air to inarguably become the most dominant warfare (DeLanda 1991). In the Negev-Naqab, its omnipresence has embedded itself within the shared experience of the city. Wether in the form of bomb room legislation or designated locations for anti-air batteries such as the Iron Dome, it is exactly the moment when a military transport aircraft descends along Road 40 that the air of the Negev-Naqab projects into its collective imagination yet again (fig. 4).

Reference List entries (in Alphabetical order)

Abusaada, Nadi. 2020. “Combined Action: Aerial Imagery and the Urban Landscape in Interwar Palestine, 1918-40.” *Palestine from above: Surveillance, Cartography, Control*: 20-36. Jerusalem: Institute of Jerusalem Studies.

Anani, Yazid. 2020. “Introduction: Accounts of Palestine from Above.” *Palestine from above: Surveillance, Cartography, Control*: 8-20. Jerusalem: Institute of Jerusalem Studies.

Barnes, Peter. 2003. *Who Owns the Sky?* Washington, D.C.: Island.

DeLanda, Manuel. 1991. *War in the Age of Intelligent Machines*. New York: Verso Books.

Claiborne, William. 1980. “U.S. Pushes Work on 2 Negev Air Bases”. *Washington Post*, February 9, 1980. https://www.washingtonpost.com/archive/politics/1980/02/09/us-pushes-work-on-2-negev-air-bases/ecc7bdcf-bc3c-49d0-ab8e-a5483d258714/.

Claiborne, William. 1981. “Israel Set to Move Sinai Bases to Negev”. *Washington Post*, November 3, 1981. https://www.washingtonpost.com/archive/politics/1981/11/03/israel-set-to-move-sinai-bases-to-negev/efd95fb3-b27b-4191-a332-50a813e73e4b/.

Easterling, Keller. 2014. *Extrastatecraft: The Power of Infrastructure Space*. New York: Verso.

Falah, Ghazi. 1989.“ Israeli State Policy toward Bedouin Sedentarization in the Negev.” *Journal of Palestine Studies* 18, no. 2: 71–91. https://doi.org/10.1525/jps.1989.18.2.00p00773.

Frosh, Tahel. 2008.“ Making the Desert Profit.” *Haaretz*, February 19, 2008. https://www.haaretz.com/israel-news/travel/2008-02-20/ty-article/making-the-desert-profit/0000017f-dbe0-db5a-a57f-dbea4d830000.

Henni, Samia. 2022. *Deserts Are Not Empty*. New York: Columbia University.

Kark, Ruth. 1981. “Jewish Frontier Settlement in the Negev, 1880–1948: Perception and Realization.” *Middle Eastern Studies* 17, no. 3: 334–56. https://doi.org/10.1080/00263208108700476.

Kurgan, L. 2013. *Close Up at a Distance: Mapping, Technology, and Politics*. London: Verso Books.

Marx, Emmanuel and Avinaam. 2005. “Towns and Planning: The Negev Bedouin and the State of Israel.” *Geography Research Forum*, Vol. 25 : 43-61.

McKee, Emily. 2016. *Dwelling in Conflict: Land, Belonging and Exclusion in the Negev*. Stanford, CA: Stanford University Press.

Oren, Atrium. 2007. “The Use of Land Resources for Security Needs in Israel”. *Israel Studies*, Spring, 2007, Vol. 12, No. 1, "An Army That Has a State?": 149-170. Bloomington: Indiana University Press.

Satia, Priya. 2006. “The Defense of Inhumanity: Air Control and the British Idea of Arabia”. The American Historical Review, Volume 111, Issue 1, 16-51.

Shmueli, Deborah and Rassem Khamaisi. 2015. *Israel’s Invisible Negev Bedouin: Issues of Land and Spatial Planning.* Switzerland: Springer International Publishing.

Schubert, Frank. 1992. *Building Air Bases in the Negev: The U.S. Army Corps of Engineers in Israel, 1979-1982.* Washington D.C.: United States Army.

Sharon, Ariel. 1979. “Minutes of the meeting of the Ministerial Committee on Settlement Affairs shared with the government and the World Zionist Organization.” *Israeli State Archives, Committee of Ministers for Settlement Affairs*. https://www.archives.gov.il/archives/Archive/0b0717068649ce86/File 0b0717068751e066/Item/090717068754901e.

Sheikh, Fazal, and Eyal Weizman. 2014. *The Conflict Shoreline*. Göttingen: Steidl Verlag.

Steyerl, Hito. 2011. “In Free Fall: A Thought Experiment on Vertical Perspective”. e-*flux Journal*, no. 24, April 2011. https://www.e-flux.com/journal/24/67860/in-free-fall-a-thought-experiment-on-vertical-perspective/.

Talbot, Michael, Anne Caldwell, and Chloe Emmott. 2020.“ Perceiving Palestine: British Visions of the Holy Land .” *Palestine from above: Surveillance, Cartography, Control:* 50–76. Jerusalem: Institute of Jerusalem Studies.

Mitchell, W. J. T.. 2009. *Landscape and Power*. Chicago, Ill: Univ. of Chicago Press.

Weizman, Eyal. 2020. "Ground Truth: Reading Aerial Images of the Naqab from the Ground Up.” *Palestine from above: Surveillance, Cartography, Control*: 37-51. Jerusalem: Institute of Jerusalem Studies.

Wylie, John. 2018. *Landscape*. Routledge.

Urbanism in the Expanded Field

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Abstract

Since the early 1990s, Tel Aviv has carefully established itself as a world city. The construction of the Azrieli towers was a pivotal step towards integrating the city into the neoliberal framework that currently defines it. The present short paper is derived from my M.A. research thesis, which examines the emergence of a novel 'world city monument,' namely the Azrieli Towers, and its corresponding representational and spatial implications. The article explores the significant shift that occurred in the new millennium, whereby a physical structure with three dimensions was converted into a two-dimensional icon. The icon's sensory impact is limited to the visual domain, as it belongs to the category of visual representations. Simultaneously, it possesses the ability to travel across different contexts with ease, providing seemingly limitless interpretations as depicted in various forms of media and popular culture, including but not limited to brochures, city maps, and souvenirs. The transformation of the structure into a representation serves multiple functions that ultimately enhance its iconic status. This paper aims to critically examine the naive vision of the early Azrieli towers' urban promise in light of the contemporary influence of urban icons.

Beyond Naivety: Critical Examining of the Azrieli Centres' Iconic Imagery

World cities and their architecture

The prevailing spirit of the 1990s shaped the current paradigm of the World City. The concept with a relatively favourable approach to globalization, garnered significance within both academic and market-economy spheres. Sociologist Saskia Sassen, one of the concept pioneers, argued that the uniqueness of global cities derives from the unprecedented nature of globalization. She sought the global reach of large transnational corporations has created a new type of city that operates as a node structural to a network of dislocated, ever-expanding centres of global financial power (Sassen 1994, 3-5). The emerging new urban paradigm was advocated at the national and municipal levels. Indeed, "in the early 1990s, everyone wanted to imitate the West" (Thompson 1999, 145); as a result, city leaders worldwide strengthened their links to the global urban network with new policies and city plans while recruiting transnational corporations and specialized firms (Abrahamson 2004, 25). Within this context, Tel Aviv aimed to position itself as a world city and to develop a flagship urban project that would serve as the core of the new business district. As Sharon Rotbard noted, "Membership of the existing exclusive club of cultural and economical capitals - made up of the likes of Berlin, London, Paris, New York and Tokyo - necessarily demanded two things… a corporate hub and an historic centre" (Roṭbard 2015, 24). To this end, in 1988, Tel Aviv municipality issued an international tender for developers, namely 'Tel Aviv Shalom Centre - Israel's largest commercial and office complex', that led to the selection of the proposal drafted by entrepreneur David Azrieli with architect Ali Attia’s design.

The chosen architectural design is composed of three skyscrapers rising to different heights. Their volumetric structure follows three base geometrical forms: a circle, a square, and an equilateral triangle, cladded by a grided texture of azure glass framed by white profiles, with a large commercial center, spreads between the buildings. The architectural proposal presents not only a meticulously crafted design but also a striking and grandiose edifice that employs clear

monumental rhetoric[1]. This is evident from the submission's first drawing, placed on the cover of the booklet, illustrating the whole project from the northeast direction (fig 2). The structure is colored with a bright white and ribbons of blue glass windows, creating a gridded texture. The sky circles the towers with a radial gradient, starting in deep blue and turning brighter toward the center; thus, the towers rise from an aura of light in a pyramidal composition. In my view, the Tel Avivian and Israeli national color palettes, and their reduction to modernist architectural elements, succeed in achieving a striking international look of the skyscraper within the local context. Ultimately, this opening image shows the fundamental factor influencing the proposal's selection, linking the project's global aspect with local characteristics. The design ensured the city its flag project vision of a Western-American business center. As stated by Ford, "nothing says 'American city' more than a skyline of symbolic yet functional towers" (L. R. Ford 2008, 19).

The center's architectural design is a par excellence expression of the merge between the Postmodern Tel Avivian architecture of the 80s and 90s with the corporate architecture of the 2000'. However, in light of contemporary skyscraper designs, the Azrieli Center appears relatively naive. While masterly designed as an urban monument in the age of world cities, its imagery metamorphosis occurred only after its construction at the dawn of the 21st century. In this paper I will critically discuss the Azrieli's imagery and Iconic character, deconstruct its visual presence, and examine the cultural practices that led to its current reality.

World city Iconicity

The triangular tower and the center's retail area were opened to the public in March 1998. However, the tower's first iconic appearance happened on New Year's Eve in the 2000s, when the countdown to the new millennium was projected on the center façade in huge numbers (fig 2). The event announced, in a bold visual expression, the entrance of the Azrieli Center into

[1] The architectural submission of the Shalom Centre found in the Tel Aviv Municipal Archive, number 14-390, tank 8039(3).
I argued elsewhere on the Azrieli centre ass a monument of the Tel Aviv's 'World City' (Chinellato and Haklai 2022)

Israel's cultural memory. After all, the projection was not oriented to the city habitats; it was oriented to the national television broadcast, aiming to be projected further in the media.

The iconic presence of the Azrieli Center is embedded in the accelerated visually mediated society. The Icon, according to the dictionary definition by Collins English Dictionary[2], speaks the symbolic language of the image; "If you describe something or someone as an icon, you mean that they are important as a symbol of a particular thing". Hence, an Icon carries immense importance as a representation of symbolic value. However, it is a complex term discussed by numerous thinkers throughout history, which unfolds various definitions in multiple fields. This text adheres to the term definition by Sklair in the book 'The Icon Project' (Sklair 2017), due to its relation to architecture, urbanism, and sociology. Accordingly, The Icon has two defining characteristics; fame and symbolic/ aesthetic significance (Sklair 2017, 16). Furthermore, Iconicity is a noun that conveys "a relationship of resemblance or similarity between the two aspects of a sign: its form and its meaning" (Meir and Tkachman 2018). As positioned between the signified and the signifier, the icon is inherent in the properties of the sign and plays a leading role in the field of semiotics. Nevertheless, it is a form of visual representation; the Icon is a member of the Imagery family. As a two-dimensional flat object, its sensual effect is solely visual, while it can easily travel, crossing cities, people, and even religions.

Projected Architecture

Millennium eve in channel two news, Israel most popular commercial TV channel of the time, celebrated the special event in a festive broadcast, with the skyscrapers center as the star of the evening[3] (fig 3). According to Roland Barthes, a myth is a type of speech; It forms a mode of signification that does not exist within the architectural object itself (Barthes 2013, 108). The way in which the reporters, Miki Heimovich and Ya'akov Eilon, covered the transition to the

[2] Icon definition from the Collins English Dictionary [Internet]. [accessed 2023 Feb 26]. Available from: https://www.collinsdictionary.com/us/dictionary/english/icon

[3] Millennium Eve broadcast in channel two news [Internet]. [accessed 2023 April 14]. Available from: https://www.youtube.com/watch?v=lxSyOzwVFbE

'third millennium' not only tells the tale of the new year but also of the Azrieli center myth. The importance of the broadcast is evidenced by the amount of public exposure concentrated celebrating 'the arrival of the future', with the recurring image of the towers in the center of the screen. The representation of the towers as a projected image and as a site of projection manifests the transformation of the building spatial quality into an image.

The new millennium Y2K bug prompted widespread anxiety, driving countries and governments worldwide, including Israel, to prepare intensely for the unknown technological catastrophe (Schaefer 2004). The Y2K, with the intense public discourse, has its own mythology, characterized by doomsday rhetoric and crisis language, at the globalization zeitgeist of the 1990s. In line with this overwhelming scenario, placing the Azrieli Towers at the heart of the event was no coincidence. The broadcast projected the Azrieli Towers image to represent Tel Aviv while visually announcing, ‘This is a world city’ and served as prove that Israel is a stable, developed Western country ready for the future. Indeed, in Barthes words, "we are no longer dealing here with a theoretical mode of representation: we are dealing with *this* particular image, which is given for *this* particular signification" (Barthes 2013, 109). The broadcast moved between Israel's important sites, repeatedly returning to the Azrieli Towers (fig 4). The state of putting images together, side by side, or one after the other, inevitably creates an analogy; the mythical signification "is never arbitrary; it is always in part motivated" (Barthes 2013, 110). Furthermore, the image's endless travel possibilities mirror the perpetual location of the building, as the geography of iconicity and icons is never fixed (Payne 2011, 84; Sklair 2017, 40). The broadcast presented Jerusalem and Tel Aviv through their monuments, where during the midnight transition, the 'climax' moment, both cities' monuments were situated together on the screen (fig 5). The famous Dome of the Rock, expressing durability, power, and glory, shared the space with a secular, modern monument, the skyscraper. A well-known instrumental piece colored this new territory, Atom Heart Mother by Pink Floyd, emphasizes the analogy to a religious monument through its epic orchestral

sounds. Then, all eyes are on the towers; the clock moves, and fireworks fire from the tower's roof; this is a sacred moment.

Visual Architecture

Throughout history, visual images have played a significant role in shaping human life. With the rise of mass media, images have become a dominant form of communication that shapes our perceptions, desires, and values (Berger 1973). In this newly visually mediated society, WJT Mitchell asserts, "images have a power in our world undreamed of by the ancient idolaters," a fact that was evident even before the digital revolution burst (Mitchell 1986, 8). The boosted visual culture impacted architecture profoundly, affecting not only the way architecture is experienced but also how it is produced. Pallasmaa famously argued at the beginning of the 90s that "ocular bias has never been more apparent in the art of architecture" (Pallasmaa 2005, 31). His argument mirrors the prominent high-rise topology where this "type of architecture, aimed at a striking and memorable visual image, has predominated" (Pallasmaa 2005, 31). Indeed, the purpose of designing a skyscraper is to be exceptional, and further, a skyscraper is valued by its exceptionality. Its verticality is the primary factor determining its total visibility, while the facade's virtuosity defines the structure's prestige (Graham 2016, 141-142). Ultimately, the skyscraper typology embodies the so-called spectacular architecture; **it is built in order to be seen**.

The representational effect of a building is primarily embedded in its spatial reality, which determines its visual presence. This is particularly relevant for the skyscraper, as both looking at and looking from the tower contribute to its impact (Barthes 1985, 238). A visual analysis of the Azrieli Center shows that the towers possess two notable attributes: the blue and white gridded facade and the distinctive vertical shape (fig 6). The recognizable façade pattern and the tower's geometry always point to the Azrieli Center. The spectacle is positioned outside the urban pedestrian experience, allowing highway travelers to admire the distinct facade pattern from a distance, signaling "a city had arrived" (L. Ford 1973, 50). However, in Barthes's words, "The tower is an object who sees" (Barthes 1985, 238), implying that the skyscraper's verticality

generates a unique 'watchtower' perspective, a reverse image. The privilege of experiencing the view from above is limited to those who inhabit the floors and offices and to the tourists on the top floor panoramic lookout. Even David Azrieli himself placed his office on the 48th floor of the circular tower, just one floor below the tourist lookout (Tirosh 2012, 231). The thrilling satisfaction of looking from above derives from the exclusive readability of the city's complex text (de Certeau 2011, 92). This bird's-eye view correlates to the spatial reading of the map; therefore, it **creates a type of visual representation**.

Projected Image

The filter of the Icon offers several departure points to an investigation of architecture in the economy of the image. Charles Jencks, who first theorized the term 'iconic architecture,' argues that this key element of postmodern architecture is designed to be instantly recognizable and visually striking (Jencks 2011). This character pleasingly conforms to urban branding practices, which utilize urban symbolic embodiments in creating associations and expectations toward the place (Lucarelli and Olof Berg 2011, 21). Further, while a building itself may not have an iconic presence, its image can certainly be iconic, as a composed photo presented in media articles and movies, along with brochures, city maps, and souvenirs as a graphic symbol (Sklair 2017, 18). Similarly, the Azrieli towers continued to perform in news broadcasting, appeared in city maps and souvenirs, and in the cinema. A known example is found in the seminal Israeli film, 'Zero Motivation' (אפס ביחסי אנוש) (Lavie 2014), where the towers are placed in the center of the movie's official poster (fig 7). Indeed, the iconic presence of the towers unfolds in the multiple forms of the imagery phenomena, a wide spectrum of effects that are not spatial or architectural (Mitchell 1986, 9).

Furthermore, Millennium Eve opened a decade of projection on the tower’s façade. Later that year, on Independence Day, the Israel flag was projected on the towers oriented for the media covering and the rout running car, a parade of white and blue colors shaped in vertical columns (fig 8). This event repeated several times, celebrating national events and turning the towers

into an iconic signification of the state. Then in 2004 and 2009, the results of the Israeli elections were projected live on the towers (fig 9). The towers now also signified a democratic and transparent nation. Tel Aviv mythologies always framed the city out of the Israeli whole; bourgeois, urban, secular, plural, etc. (Azaryahu 2020). The events attempted to counter this narrative; however, I argue that the city, now represented by the blue and white skyscraper, turned into the representative Israeli dream.

Digital Icons

The digital revolution puts an even greater premium on iconic architecture; images, photographs, and rendered illustrations circulate the media in a global competition regarding height, forms, and virtuosi. Furthermore, where the image's reproduction allows the distribution of one unique image, nowadays, countless unique digital images circulate instantly; every individual, company, or institution can create and share them on the net. The vast impact of social and digital media on identity construction, as noted by Kellner (Kellner 2020), is manifested in the second decade of the Azrieli Center's facade. In May 2017, the Israeli actress Gal Gadot, who played the leading role in the Hollywood movie 'Superwoman' (2017), posted on her Instagram account an image of the Azrieli façade scripted projection, "Proud of you Gal Gadot our superwoman," and wrote, "When my mom and dad sent it to me I was sure it was done on the computer, and then I got another picture from my cousin, a friend, and a colleague, I realized it was real, wow! No words…" (my translation) (fig 10). The image, indeed, was fabricated, although many still believe otherwise. Ultimately, it is a self-created image that was never realized in the tower's physical reality yet fulfilled in its iconic presence. After this sequel event came numerous fabricated projections on the building façade, some derived from pop culture, others carrying religious, political, and branding messages (fig 12). All of them rely on the iconicity of the towers to convey different connotations to the image creator's choice.

The broad dissemination of images enables iconic architecture to gain global recognition. Meanwhile, the building image can be sent anywhere instantaneously, as a leading marketing

strategy, while "under the conditions of capitalist globalization and the demands of consumerism, the social relations of production of icons tend to… eventual scale of their iconicity" (Sklair 2017, 21, 27). Many scholars have already argued that the skyscraper is an object to show to other cities and nations; it "mediates the meaning of the nation to the gazes of the world" (Elsheshtawy 2009, 136). Furthermore, Aihwa Ong interprets iconicity as a generator of "promissory values about the geopolitical significance of the city and the country" (Ong 2011, 209). To this view, The Icon jumps over the city dwellers; it is built to represent the city worldwide.

Back to the Place

The momentous and decisive transformation of a building into an Icon reflects the premises of the digital culture along with the globalized capitalism of the 21st century. However, the most recent projection script on the Azrieli façade in giant letters - We are all one nation (כולנו עם אחד) - still hangs on the square-shaped tower (fig 12). It was set up at the start of the current protest (January 2023), in response to the Israeli government's planned law promoting a coup in the judiciary system. As already discussed, the Azrieli Centre, as a projection site, is oriented towards the Media coverage, in its various forms. However, the physical area underneath the tower, known as the Shalom junction, is heavily involved in the current wave of protests, with a large demonstration taking place every Saturday evening for the past three months. Hundreds of thousands of people arrive at the Azrieli junction, reacting to the projection mediative gesture with their bodies and feet. This large-scale civil organization chose this location for two main reasons: its powerful centrality in the Israeli context and, of course, its striking **iconicity**. There is more to learn from the present reality of the Azrieli Iconicity, the question of centre 'centrality', its urban square practices and so on. However, the ongoing protest primarily advocates for liberal ideology in the pursuit of promoting liberal democracy in Israel. The Icon, Azrieli Towers are the ultimate Israeli signifier of globalization. Therefore, their iconic status plays a crucial role in communicating together with branding the protest globally (fig 13).

Bibliography

Abrahamson, Mark. 2004. *Global Cities*. 1st ed. New York: Oxford University Press.

Azaryahu, Maoz. 2020. *Tel Aviv: Mythography of a City (Space, Place and Society)*. Syracuse University Press.

Barthes, Roland. 1985. *BARTHES READER*. Illustrated. Hill and Wang.

———. 2013. *Mythologies: The Complete Edition, in a New Translation*. Second. Hill and Wang.

Berger, John. 1973. *Ways of Seeing*. 1st ed. New York: Viking Adult.

Chinellato, Enrico, and Or Haklai. 2022. "Double Feature: Counter-Practices of World City Monumentality in the Age of the Anthropocene." *European Journal of Creative Practices in Cities and Landscapes* 5 (1): 132–149.

de Certeau, Michel. 2011. *The Practice of Everyday Life*. Third. University of California Press.

Elsheshtawy, Yasser. 2009. *Dubai: Behind an Urban Spectacle (Planning, History and Environment Series)*. 1st ed. New York: Routledge.

Ford, Larry. 1973. "The diffusion of the skyscraper as an urban symbol." *Yearbook of the Association of Pacific Coast Geographers* 35 (1): 49–60. https://doi.org/10.1353/pcg.1973.0010.

Ford, Larry R. 2008. "World cities and global change: observations on monumentality in urban design." *Eurasian Geography and Economics* 49 (3): 237–262. https://doi.org/10.2747/1539-7216.49.3.237.

Graham, Stephen. 2016. *Vertical: The City from Satellites to Bunkers*. Illustrated. London: Verso.

Jencks, Charles. 2011. *The Story of Post-Modernism: Five Decades of the Ironic, Iconic and Critical in Architecture*. 1st ed. Wiley.

Kellner, Douglas. 2020. *Media Culture*. 2nd ed. London: Routledge.

Lavie, Talya. 2014. *Zero Motivation*. Israel: July August Productions.

Lucarelli, Andrea, and Per Olof Berg. 2011. "City branding: a state-of-the-art review of the research domain." *Journal of Place Management and Development* 4 (1): 9–27. https://doi.org/10.1108/17538331111117133.

Meir, Irit, and Oksana Tkachman. 2018. "Iconicity." In *Oxford research encyclopedia of linguistics*. Oxford University Press. https://doi.org/10.1093/acrefore/9780199384655.013.343.

Mitchell, William J. 1986. *Iconology: Image, Text, Ideology*. N Second printing. Chicago: Univ of Chicago Pr.

Ong, Aihwa. 2011. “Hyperbuilding: spectacle, speculation, and the hyperspace of sovereignty.” In *Worlding Cities: Asian Experiments and the Art of being Global*, edited by Ananya Roy and Aihwa Ong, 205–226. Oxford, UK: Wiley-Blackwell. https://doi.org/10.1002/9781444346800.ch8.

Pallasmaa, Juhani. 2005. *The Eyes of the Skin: Architecture and the Senses*. 2nd ed. Chichester: Academy Press.

Payne, Alina. 2011. “Architecture: image, icon or kunst der zerstreuung?” In *Das auge der architektur: zur frage der bildlichkeit in der baukunst*, edited by Andreas Beyer, Johannes Grave, and Matteo Burioni, 55–91. Brill | Fink. https://doi.org/10.30965/9783846750810_004.

Roṭbard, Sharon. 2015. *White city, black city : architecture and war in Tel Aviv and Jaffa*. Cambridge, MA : Mit Press.

Sassen, Saskia. 1994. *Cities in a World Economy (Sociology for a New Century)*. Thousand Oaks, Calif: Pine Forge Pr.

Schaefer, Nancy A. 2004. “Y2K as an Endtime Sign: Apocalypticism in America at the fin-de-millennium.” *The Journal of Popular Culture* 38 (1): 82–105. https://doi.org/10.1111/j.0022-3840.2004.00101.x.

Sklair, Leslie. 2017. *The Icon Project: Architecture, Cities, and Capitalist Globalization*. Illustrated. Oxford University Press.

Thompson, Grahame. 1999. “Introduction: situating globalization.” *International social science journal* 51 (160): 139–152. https://doi.org/10.1111/1468-2451.00184.

Tirosh, Bone. 2012. *Azrieli Center - the story of an icon*. Azrieli Center - the story of an icon. Tel Aviv: Azrieli Center.

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Shaping the form: the role of morphology in the evolution of historic cities, the case of Milan

We forgot the form

In the current era, urban planning is confronted with bringing order to phenomena of a very different nature that take place simultaneously in the territory of the city, including the stratification of real and virtual layers, territorial marketing, global economic flows, image strategy. All these layers coexist in the formation of the urban environment, making the physical structure of cities increasingly irrelevant, at least at first sight.

Confronted with this complexity of mechanisms, action on urban space tends to be compelled by drivers of a socio-economic nature, to the extent that the instruments which order the physical construction of the city - such as urban plans and building regulations - increasingly end up responding to a purely consequential regulatory logic. However, social and economic assessments are by their very nature contingent, concerning the specificity of a society at a given moment in time. The city, on the other hand, is made of matter, and its change has a much longer time horizon. Architecture survives the societies that generate it, and for this reason it formulates a link with the past. It created the roots of a place's identity and, by reflection, that of a people.

In the case of historic cities, one of the natural effects of an approach to town planning focused on the nature of socio-economic phenomena is a tendency towards their 'musealisation'. This is because the concept of the 'historic' in the last century has acquired a consolidated value which - through the mechanism of commodification of the built environment - has been transformed from a cultural value to a real estate value, which can be monetised. Its preservation is therefore not only aimed at the maintenance of a collective memory, but also the prerequisite for the permanence of the market value itself. Any change to the historic built fabric constitutes a threat to this system. While on the one hand this mechanism helps to save urban centres from decay, on the other it creates the preconditions for a fossilisation of the built environment where the image of the historic city prevails over the need to update its features to make it suitable for the current and future times. Brought to its extreme, this phenomenon would lead to a 'postcard urbanism'. In the European context this process takes place almost unconsciously, hidden by the insecurity of acting on past stratifications with contemporary tools, and by the market's interest in this process of "petrification". In some cases, this fear is backed up by the possible consequences in terms of territorial marketing. This is well illustrated by the case of the German city of Dresden, which obtained UNESCO heritage status in 2004 thanks to the philological reconstruction of its vast historic centre, destroyed by an Allied air raid on the night of 13th February 1945. The reconstruction, initiated after the German reunification, focused on recreating the destroyed built fabric as exactly as possible. Though this was the case in many German cities, Dresden stands out in its unique research into the reuse of rubble, the study of the building system and the colour scheme. This meticulous research earned it the World Heritage status. However, in 2009, the UN body removed the city from the protected sites list, due to the construction of a driveway and footbridge over the river Elbe. This episode raises a question that is worth reflecting on. The reconstruction of the city has indeed brought to light an important cultural heritage, yet it is very difficult to define it as an authentic urban environment, which in any case represents a contemporary interpretation of a past that has been erased by historical events. Can a contemporary building among other contemporary buildings - even if they copy historical ones - be such a destructive element from an urban landscape point of view, that it structurally downgrades a city and robs it of its historical and cultural value? Does an infrastructure that is useful for the functioning of an urban centre have reason to exist, or is it

necessary to evaluate the functional abandonment of historic centres to maintain their documentary character? These questions obviously do not have unambiguous answers. What emerges is that critical observation is necessary to restructure the urbanist approach to historic centres, and identify guiding principles that can effectively constitute a starting point for balancing the need to conserve with the need to bring urban centres to life. To this end, a valid starting point is to rediscover the 'absolute value' of historical centres; that is, to start again from what the city is concretely made of: its form.

In Italy, the study of 'urban morphology' has constituted an important focus of the architectural debate since the 1960s. A discussion driven precisely by the desire to give a theoretic foundation to contemporary urban interventions on historic built fabric. Through the two key terms of 'typology' and 'morphology', this new approach to urbanism aimed to refound the discipline taking as starting point the contextual matrices that generate it. The main protagonists of this debate are Aldo Rossi, Giorgio Grassi, Carlo Aymonino, and Saverio Muratori[1]. Through their writings, these authors and architects built the premises for a morpho-typological reading of the urban environment. Even if the latter can be considered historicised, some of its constituent principles can still be useful for 'restarting from the city': analysis as an operational tool, the identification of contextual invariants, the definition of the historical dynamics that have aggregated the urban fabric, the project as a political intention. It is interesting to note that many of the interpreters of this debate have studied at the Politecnico di Milano during the city's fertile years of formation, which gave rise to the city known today as the Italian capital of modernity.

The type of urban development witnessed by the city of Milan since post WWII period was the result of an extremely peculiar social context that united an ambitious ruling class, attentive to technological experimentation, and a group of architects who were the interpreters of an urban transformation that wanted to be the emblem of a social rebirth. Rossi, Grassi and Aymonino nurtured a strong idiosyncrasy towards the type of architectural professionalism that responded to bourgeois logics. Political ideology led them to reject everything that was part of that consolidated system. The construction of a theoretical apparatus was the first revolutionary act of a generation of architects whose thoughts derived from action, and not vice versa. At the time, Rossi, Grassi and Aymonino were pupils, assistants, and collaborators of one of the most prominent personalities of the Italian architectural scene: Ernesto Nathan Rogers. A founding member of the BBPR architecture office, Rogers promulgated a theoretical approach based on the absorption of contemporaneity in the architectural language and urban practice, while maintaining a historical continuity with the 1920s and 30s period. It is no coincidence that when he became director of the magazine 'Casabella' he changed its name to 'Casabella-Continuità'.

The theoretical apparatus of the 'movement' (later named 'Tendenza') that coagulated primarily around Rossi counterintuitively reflects more the work of the architects who built the city from 1945 onwards, than to the work of its protagonists. As noted by Angelo Lunati in his book *Ideas of Ambiente, History and Bourgeois Ethics in the Construction of Modern Milan 1881-1969*[2], it is indeed surprising that the implementation of what could be defined as a methodology of morpho-typological action on the city actually contributed to the disintegration of the very cultural 'environment' that had created the modern city. This is also due to the changed political conditions, which lead to a strong ideologization of architecture. This phenomenon constitutes the beginning of the decline of the convergence between different social parties in the construction of the city; and the founding act in the definition of the 'architect-leader' figure (in analogy with political party

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[1] Fon an in-depth analysis of the debate in tipologic and morphologic themes, conf. Michele Caja, Martina Landsberger, Silvia Malcovati, *Tipologia architettonica e morfologia urbana, il dibattito italiano / antologia 1960-1980* (Milan: Libraccio Editore, 2012).

[2] Angelo Lunati, *Ideas of Ambiente, History and Bourgeois Ethics in the Construction of Modern Milan 1881-1969* (Zurich: Park Books, 2020).

leader), the precursor of the star-architect figure that will come to characterise the global architecture system a few decades later.

As will become evident in the chapter hereunder, the urbanist morpho-typological theories elaborated by Rossi and Grassi are indebted to the bourgeois culture in which they were immersed, to the extent that the architects' principles are better reflected by this culture than by their own architectural production. Accordingly, the roots of this debate precede its theorisation in the Milan of the 1950s and 60s, a Milan that is today considered as a paradigmatic example of integration between architecture and city.

Milan, the building of an idea

The post-WWII period represents for Milan, more than for other contexts, a decisive phase in the construction of its identity, since "the irregular nature of the destruction, which followed in the wake of the demolitions of the 1930s, gave post-war Milanese architects the opportunity to conceive of a new idea of modernity - one that was no longer based on a *tabula rasa* condition but on a cultural and physical confrontation with a complex environmental condition, where the modern city would be grafted onto the compact historic centre of Milan"[3]. Figures such as the Latis brothers, Asnago and Vender, Magistretti, Gardella, Albini, Caccia Dominioni and many others, intervened on the city, deriving the characteristics of their architecture from the fragmented fabric that the war had left behind. An idea of architecture was formed with a certain spontaneity, combining continuity with the historical urban apparatus with the sense of modesty and understatement that has always characterised Milanese life. Some of the interventions developed in that period are emblematic examples of the sensitive introduction of a modern architectural language within a historic context. A careful analysis allows us to trace a methodology that is still of interest today when working in historic urban contexts. One of the most debated cases was the construction of a building on a completely bombed-out block in the centre of Milan, whose design was entrusted to the BBPR office: the 'Torre Velasca'. Starting with the choice of its name (‘tower’ rather than ‘skyscraper’), the building is a symbol of the overcoming of the Modern Movement’s reinterpretation of a "timeless historicity". It is the built manifesto of Ernesto Nathan Rogers’ thought. The latter’s keywords - pre-existence, context, continuity - are expressed through an eclectic intervention whose aim is to "set" architecture in its context. The building has an ordering and orienting effect on its surroundings, inserting a new sign in the pre-established urban apparatus. Rogers’ formal aesthetic conception was met with strong criticism since the very beginning of his design career, both in Italy and abroad. This is born witness by the British critic Reyner Banham’s article on the Torre Velasca published in the *Architectural Review*, entitled "*Neoliberty. The Italian retreat from modern architecture*". Banham heavily criticises the project, denouncing what he considers a historicist approach. Although the project’s aesthetics differed substantially from the international rationalist taste at the time, the tower's characteristics are undoubtedly ‘modern’: its height (106 metres, just below the limit marked by the Madonnina statue, placed on the Dome of Milan’s highest pinnacle), its use of materials, the treatment of the interiors, its distribution scheme. None of these are backward-thinking or rhetorical. Instead, its aesthetics are designed to consciously evoke a remote past that becomes the device through which to symbolically link the building to the city's history, in a more broadly 'Italian' idea of architecture. This is the intention underpinning its aerial buttresses or the structural ramifications of its façade. Despite a rather dense critical history, the tower has now largely become a monumental permanence in the city centre, powerfully dialoguing and orienting its surroundings. This kind of ordering function is also assumed by a series of buildings that are constructed in that period to replace urban voids or urban parks. It is the case of the kindergarten in Via Santa Croce, and the Solari indoor swimming pool in Parco Solari, both designed by Arrigo Arrighetti; or the Padiglione di Soggiorno in Parco Sempione, by Ico Parisi, Silvio Longhi and Luigi Antonietti. It is no coincidence that these buildings share a curved volumetry; the absence of buildings in the

[3] Cit., pag 175.

immediate vicinity allows for an adirectional composition, facilitating different viewpoints and urban flows. These are buildings which aim to give a strong new character to the site in which they are built.

On the other hand, a different design approach characterises a series of urban reconstruction interventions that bring together the fragmented fabric that survived the bombings. This is the case with some of the projects designed by the architects Mario Asnago and Claudio Vender, such as the office building in Piazza Velasca, or the residential building in Piazza Sant'Ambrogio. Both are interventions that could be described as 'silent' in their relationship with the city. The first is characterised by a repetitive and simple façade composition, smaller windows in the lower part and larger ones in the upper part, few materials, and expressive signs. The second also adopts a rigorous façade design, and aligns itself with the neighbouring intervention by Caccia Dominioni by emptying the upper floor. In their purity, these buildings make explicit their total adherence to their urban role: that of materially delineating the edge of the building curtain through a façade so balanced as to be almost anonymous. This type of re-stitching - in which the volumes of the new buildings ideally reconstruct the destroyed ones - was more common, and in some ways might even appear more 'banal'. Yet, in the appropriateness of the urban gesture, they succeed in asserting a solid and autonomous modern identity through architectural language.

Another type of reconstructive intervention consisted in amalgamating neighbouring bombed-out plots, which had previously housed several buildings. This is the case of the building designed by the Latis brothers near the Castello Sforzesco, which took up a rather large area that had previously housed several buildings. The design chooses to erect a single building that echoes in height and volume both the buildings destroyed and those in the neighbouring blocks. The long façades - the largest one measures more than 50 metres - are resolved by means of a technological apparatus that re-commeasure the horizontality of the volumetry with a pattern of facades resembling metal curtains.

The underpinning logic of urban re-stitching interventions was also applied in cases of greater tension. Let us consider for example the building constructed between 1958 and 1969 for the Chase Manhattan Bank by the BBPR office. Located on a very central square, the intervention aims at recomposing the block through a technological apparatus made of steel and glass that stretches between the two pre-existing fronts, opening like a "philharmonic" in a curved succession of metal grooves. It is an extremely fitting intervention despite its substantial expressive freedom. The form does not echo that of the pre-existing buildings, remaining compositionally independent from the surrounding aesthetic discourse. Yet it achieves to stitch together two disconnected strips of the urban fabric, and to construct a "soft" front that facilitates circulation under the porticoes – a further element of continuity with the pre-existing buildings.

Another case is constituted by a series of interventions that deliberately interact with the context by modifying pre-existing urban relations. A fitting example is Angelo Mangiarotti and Bruno Morassutti's project in Via Quadronno, a radical approach to a particularly incoherent lot, accentuating its fragmentary nature by breaking up the built volume. The building breaks up into a series of facets characterised by an almost industrial aesthetic made up of glass and wood modules, which inserts a "disruption" into the context, modifying its perception. The "disruptive" action on the pre-existing layout is similar to the one used by Luigi Moretti in his residential and office building in Corso Italia. The street axis is "challenged" by the cusp of the residential volume which rests on a lower building aligned with the urban axis. The entire building complex revolves around the idea of reconstructing the matrix of the urban fabric by rethinking the balance between urban axes, playing on a reversal that ultimately accentuates the strength of the compositional gesture.

What emerges from this analysis is that the particularity of the formal discourse conceived by the architects of the so-called post-war Milanese 'cultured professionalism' was the result of a peculiar historical convergence. Yet, on closer inspection, the criteria that guided their action can be applied to very different contexts. From

the examples listed hereabove, it is indeed possible to trace a series of guiding principles underpinning the actions on the historical urban fabric. The first principle applies to mechanisms of urban injection, an addition that structurally modifies a context's urban functioning, acting as a new ordering element. This is often the case with the introduction of tall buildings in contexts characterised by small urban sections, which - if attentive to the relationship with the urban space - have the role of adding a level of orientation to the city. It is furthermore the case of buildings isolated from the urban fabric that are characterised by free forms, very often strongly distinctive and easily identifiable, which also constitute important orienting elements in the urban structure. The second principle corresponds to "urban re-stitching" or infill. In this case, the historical layouts and sites represent a sinopia to be moulded through successive interventions, which progressively create their own autonomous architectural language. The third principle describes the insertion of new signs or layouts, which act as magnets with respect to the force fields generated by the existing space and its use, a principle which can be named "stratification". It can occur in the substantial absence of pre-existing layouts, but is mainly guided by the desire to reprogram portions of the city through new elements that adopt the site's characteristics in terms of measure and type.

The alternation of these three principles creates the variety of urban actions necessary to operate with the appropriate complexity on historic fabrics. The common denominator remains the formal logic arising from a careful reading of the context's morphology. The Milan case study also demonstrates the importance of continuity with the cultural-historical soul of the place, its *genius loci* (in the Milanese case, a continuity with its logical-rational-oeconomicus spirit), which can nonetheless adapt to the specific needs of a society. It is interesting to underline that the majority of the architects who worked during Milan's post-war reconstruction were not theorists: a group that did not act according to the principles of a written and declared doctrine, but nevertheless found themselves chorally supporting a common idea of the city. The architectural language of the buildings analysed is never vernacularist: contextualism is expressed precisely in the ability to create urbanity by dialoguing with the pre-existence. One could say that the theoretical apparatus can be deduced *a posteriori* through the analysis of their work, tracing their correspondence with the successive theories of the 'Tendeza' architects. Unlike the latter, the post-war period architects had a certain ideological freedom and built an upper-class Milan that absorbed traditional elements of Milanese culture, such as the simplicity of Lombard neoclassicism, the respect for the historic city without subjugation, a precise knowledge of craft and industrial means of production, and a certain confidence in progress and prosperity. In essence, they demonstrate that ability to come to terms with the past through the means of the present which Rossi, Grassi, and Aymonino researched and theorised successively.

Modern Milan has attracted the interest of European and international scholars and architects precisely because of its measure, appropriateness, and active, non-subordinate relationship to tradition. It is an example of architecture that is contemporarily traditional and modern, capable of dialoguing with its historical context while avoiding historicism or stylism. Architecture of and for the city – the only one still possible today for any city that wants to remain anchored to its roots – without any nostalgic attitude. The relationship between architecture and the city is biunivocal, each building is interpreter of an urbanity seen as adherence to the rules of being together, rules that - in the case of the city - are written in its very fabric. A crucial element in this choral work, is the architects' "self-diminution": a process that directs design towards a structural anonymity essential to the affirmation of the whole over its parts. Cino Zucchi (a Milanese architect by origin and tradition) encapsulates this in a memorable Facebook post: «In many languages, the word "urbanity" is synonymous with "good manners", with the capability to be part of a bigger ensemble, to dialogue with others, to recognize their differences, to restrain from an excess of affirmation of the self. […]. Maybe buildings in a city should behave like musicians in a jam session, being able to pick up rhythms and melodic lines from other players, to variate and multiply their possibilities and to introduce unexpected variations […]. Maybe songs and buildings should be just the loved backdrops of our daily lives, silently amplifying the perception of the environment surrounding us rather than "sending us a message". We have enough messages from the media.

Sometimes we don't need people or songs or buildings to tell us their "vision" or their "mission"; we just need the silent hugs and kisses (and apple pies) of our big mama city welcoming us in her warm embrace».

Storia operante and the form of the city

The most important legacy of post-war urban planning and architectural culture in Milan is therefore the idea of a proud adherence to the concept of urbanity, identified as a permanent historical-cultural whole (albeit in continuous evolution), combined with the rejection of nostalgic historicism and expressive mannerism. This approach echoes Benevolo's and Brandi's theories on critical restoration, which were codified in the 1964 "Venice Charter". Namely, to preserve as much as possible the historical heritage in its authenticity, which includes not only the architectural scale, but also the urban and landscape ones, with the aim to preserve what is defined as the "*condizione ambientale*" (structural socio-environmental condition) as a whole. This is only possible through an in-depth knowledge of the specific cultural value of the built heritage, hence through its analysis. To prepare design action, however, analysis must not be understood as the mere acquisition of historical and contextual data, but as the absolute re-appropriation of the urban form. Rossi himself noted «the clear cultural limit of the positions that make design a direct consequence of the analysis, by hypothesising the final behaviour of the city and the territory. Indeed, the position of the mechanists presumes having knowledge of all the facts pertaining to a place. This knowledge is difficult to sustain; facts can only be made explicit through design»[4]. Therefore, the project is the stage where the *crasis* between history and action takes place. Rooting contemporary intervention in its historical environment implies first and foremost the return to an urban morphological principle which elevates what Rossi called 'historical permanencies' – namely forms, layouts, signs – to the role of invariants that guide the project. If it is possible *a posteriori* to identify a spirit of the city in these elements, then it is possible *a priori* to conduct design choices that manifest a contemporary interpretation of cultural-historical invariants, linking the new to the old in a dynamic *concordia discors*. If the link between people and the built environment is implemented on the architectural scale – since the behaviour of a building lies in its individual characteristics – on the other hand, one cannot disregard the absolute reading of the urban form to implement a reasoning on the relationship between private and public, on the links between parts of the city and their role in the construction of the character of the city as an extension of a built territory in which each fragment collaborates with the next.

Though a contemporary reading of the city cannot bypass its essence as the main centre of global demographic flows, and of cultural and environmental conflicts, the reasoning on the specific urban form can and must maintain a rootedness in the territorial and cultural context, which also embraces the local effects of globalisation. In this sense, it is useful to revisit Muratori's concept of "*storia operante*" (operative history). It can be summarized as the identification of archetypes or *a priori* types that guide the formation of new buildings, which in their aggregation form the urban space in a process of 'individuation' (in the Jungian sense of the term); that is, the integration of the components of a city's character.

The idea of historical heritage must be updated through the ability to imagine a very dilated temporality of cities, the possibility of their necessary re-functionalisation and modification: instability is the city's truly stable condition, a condition that can be manoeuvred according to the means proper to our discipline through a strengthening of the project's projective capacity. The future can be recognised in certain details of the present and the past: urban planning practice, together with architectural practice, is an interpreter of the real if it is capable of not assuming it as limiting, but rather restoring space to the imaginative-utopian plane. Only thus can one regain possession of the capacity for action on the plane of the concrete, even in the awareness of the substantial limitation of the specific ideological-cultural point of view of one epoch with respect to others. The

[4] Aldo Rossi, *Questioni Tipologiche*, 1966.

possibility to establish a real “rooting process” lies precisely in the capacity that the design interpretation of each epoch has of composing itself with all the others that have preceded.

Aldo Rossi, *L’architettura della città,* (Venezia: Marsilio, 1966)

Michele Caja, Martina Landsberger, Silvia Malcovati, *Tipologia architettonica e morfologia urbana, il dibattito italiano / antologia 1960-1980* (Milano: Libraccio Editore, 2012).

Pier Vittorio Aureli, *The city as a Project*, (Berlin: Ruby Press, 2013).

Pier Vittorio Aureli, *Il progetto dell’autonomia*, (Macerata: Quodlibet, 2016).

Salvatore Settis, *Architettura e democrazia: paesaggio, città, diritti civili,* (Torino: Einaudi, 2017).

Lorenzo Ciccarelli, *Il mito dell’equilibrio: il dibattito anglo-italiano per il governo del territorio negli anni del dopoguerra*, (Milano: Franco Angeli, 2019).

Angelo Lunati, *Ideas of Ambiente, History and Bourgeois Ethics in the Construction of Modern Milan 1881-1969* (Zurich: Park Books, 2020).

Marco Biraghi, Adriana Granato, *L’architettura di Milano*, (Milano: Hoepli, 2021).

"Maybe there will be a City Here Twenty Years from Now":[1] The Making of a Rural Petite Bourgeoisie in Kiryat Shmona[2]

Abstract

The article wishes to theorize the formation of a petite-bourgeoisie in Kiryat Shmona, an exemplary development town in Israel's northern frontier, during its formative years. The main question that it poses is how an urban class could form in a not-yet-urban setting. In order to do so, it describes the production of space in Kiryat Shmona as a developing peripheral economic site. It identifies three contesting spatial logics that materialized in the village, the camp, and the civic center - each contributed to the town's modernization and stratification. Finally, it proposes that the temporal and psychic aspects of the process may lead us to a better understanding of modernity and development in Israel.

Introduction

This article is written as a theoretical point of departure for my research, aimed at understanding the emergence of a petite bourgeoise in Kiryat Shomna during its formative years. This class was rarely addressed in the historiography of the Israeli Bourgeoisies (Ben-Porat 1999) and the development towns, commonly understood as domains of proletarianization (Shohat 2017). It involves several developing research topics – the emergence of a global bourgeoise outside of

[1] An anonymous interviewee quoted in Pedatzur 1950.

[2] The author wishes to thank Meirav Aharon Gutman for the inspiring supervision; Eilat Maoz, for the fruitful instructions; Amir Goldstein, for the beneficial advice and archive materials; Boaz Garfinkel, for the discussions and sources provided by him; Raz Weiner, for the helpful comments on the draft; the Archives of Kiryat Shmona and Historical Cartography Research Institute in the Tel-Hai college, The Pinhas Lavon Institute for Labour Movement Research, Israel's Archives, the Zionist archives and The National Library of Israel, that without their generosity the research could not be done.

Europe (Drayton 2020); the long history of Mizrahim (Moreno and Gerber 2021); the rise of a Mizrahi middle class in Israel (Cohen and Leon 2008).

My primary source of inspiration is Lefebvre's analysis of space production involving material, representative, and experiential social components (Lefebvre 1991). Following Thompson (1963), I see class as a historical process, and wish to understand the dialectics between class formation and space production. With it, I wish to employ world-systems theory (Wallerstein 2004) and its predecessors (such as Braudel 1984), describing the periphery as underdeveloped and financially dependent on the core. This combination is vital to understand the routes of exchange, immigration, and class formation as multi-situated.

The main question is how an urban class could form in a not-yet-urban setting. Marx and Engels (2010, 63–72) understood the urban as a primary site of capitalization, consisting of the division of labor, exchange, parting of production and commerce, and, consequently, the separation between mental and physical activities. As we shall see, these conditions have developed gradually in Kiryat Shmona, but the petite bourgeoise preceded them. I wish to describe a distinct rapid modernization process, examining three contesting spatial logics and practices, materializing in (1) the village, (2) the camp, and (3) the urban center. Even if some preceded others, they are not periodically limited or bound to a specific site, and they also have temporal and psychic dimensions.

The Village

The village represents the first Zionist attempt to settle the site, that is, the national development process. Kiryat Shmona was one of several development towns established in a depopulated Arab village to absorb immigration, distant from the rooted economic centers and their resources and lacking sufficient urban systems, thus conflicting with the modernist Zionist vision (Golan 2002). Using Zvi Efrat's (2005, 809) words, "*the new Israeli town was planned as a big Kibbutz[,]*" idealizing the pastoral community and lacking private initiatives. The

garden city movement influenced many of them, promoting low-density and agricultural activities (E. Efrat 2009, 42). This vision clashed with the actual setting of the place, and both contradicted the industrialization necessary to form both a nation (according to Gellner 1983) and a modern bourgeoisie.

Kiryat Shmona was established in 1949 in a rural setting. It was meant to integrate within it as an urban center for administration, services, and processing of agricultural materials, and to provide a pool of workers for the growing regional economies (Goldstein 2017). Its neighboring settlements reflect different generations of Zionist immigration to Israel. However, the fourth and fifth waves, considered the bourgeois ones, were not represented in the area in a particular residential form.[3] The town's residents had to fill their place and perhaps even inherit the material and ideological tensions between them and other groups.

Another inheritance to deal with was that the place was formed on the lands of the Arab village Al-Khalisa, which was depopulated during the civil war of 1948 (Furberg Moe 2012, 35–36). It continued to haunt Kiryat Shmona in its built remnants and rural ways of life – the first Yemenite families inhibiting it were given a limited number of auxiliary farms and some animals (Zakai 1950), and even afterward, the residents worked mainly in agricultural, manual and public works, in the town and the surrounding settlements (Darin 1956, 76–77). This may have been the first seed of contradiction between the space and the population – Henry Rosenfeld that conducted anthropological research in Kiryat Shmona in 1956, was right to claim that "*this is a rural life at a large extent, whereas the formerly-rural becomes proletarian*" (Rosenfeld 1958, 89).

This was also a process of identarian differentiation. The hegemonic Zionist labor movement promoted agricultural work as crucial to forming the new nation and productivize the immigrants, but many resisted such work (Kemp 2002). The Yemenites in the village considered their way of life there "Arab," claiming that they had not immigrated to Israel to

[3] For a more nuanced analysis of the immigrations and their residential patterns, see Ben-Porat 1999.

live such a life (Sofreno Bi'Tveriah 1949). Since the Jews in Yemen (and other Arab countries) were mainly artisans and traders (Eraqi Klorman 2002), their way of life has likely been differentiated from what they considered an "Arab" way of life even before immigration.

The rurality differentiated both the space and the population. While some demanded mainly industrialization, others demanded help with their agricultural affairs. The Sharon program for the comprehensive planning of Israel (1951, 36–37) decided to urbanize the site. However, it maintained that 7% of the population would work in agriculture (43% of them as salaried workers) and offered to allocate about 310 acres for this purpose (24% of the town's space). In 1955 there were about 300 auxiliary farms in the town (Darin 1956, 76), but many of the people that sought this kind of work had already left the town and established rural settlements of their own (Goldstein 2019, 597–601), some claiming that they did not want to live in a city (Welmout 1953). Other ways of life had already proliferated there at this time.

The Camp

We can see the camp as a state of exception (Z. Efrat 2005, 515–22) that catalyzed the formation of urban society. In 1950, the necessity to absorb mass immigration led to the erection of transit camps in Kiryat Shmona and elsewhere (Allweil 2017, 178). It was a crucial policy change because of three factors:

a. The Zionist institutions started to provide housing as their dominant settling strategy instead of allocating lands (Ibid, 183).[4] The lack of land limited the town's ability to expand (Goldstein 2017, 99), harming its development and compelling it to invest in more intensive economic routes. More importantly, it served to form a landless population at the site, and thus the industrial class structure could have materialized instead of the rural society.

[4] The land regime in Israel is a complex and controversial issue. See Hananel and Alterman 2015 for a comprehensive overview.

b. The field of reproduction has been partially privatized – the residents in the camp had to pay for their means of life (Rozin 2011, 142). This change pushed people to seek livelihood and cleared the path for the rise of commerce simultaneously.
c. The two aforementioned factors contributed to the change of traditional authority structures in the family and the community, without the ability of the former figures to allocate resources or govern the spheres of reproduction as before. They also forced people from several ethnicities and backgrounds to be in constant friction with one another, eroding the traditional societal boundaries even more (Rosenfeld 1958).

The transit camp was a site where urban praxis occurred in a non-urban environment, significantly in emerging public and private commerce. The growing bureaucracy had a firm hold on developing and standardizing trade since each business owner had to acquire a license from the municipalities. Sometimes, it was also used as a disciplinary measure. Other factors that we should consider are the ability to raise the money to open a business and meet the requirements, and the ability to contact the institutions to gain their permission. It quickly led to ethnic disparities. In 1956, there were already 81 licenses given, but 48 of them were given to Eastern-European Jews, meaning that 15% of the population was given almost 60% of the licenses. Many people found themselves disadvantaged and even discriminated against; worse, they could not support themselves how they desired (Rosenfeld 1958, 103).

As the town began to urbanize and stabilize, the transit camp quickly began to seem like a threat. Its disestablishment had been lengthy and gradual, partially because of the continued immigration, and the authorities struggled to do so and force the business owners to leave the camp.[5] As Orit Rozin (2011, 139–61) shows, the burdened attitude to the camps and their residents as a public threat was a common problem, often involving the fear of transgression and defective daily living practices.

[5] See, for example, the protocols in ISA-comptroller-LocalAuthorities-000t7yu, Israel's Archives, Jerusalem, Israel.

In the modern planning and economy in the West, there was a growing tendency to separate production and commerce from the domestic space, producing a new sense of individuality on the one hand and a public sphere on the other.[6] The commerce at the camp has not recognized said distinctions, and, unlike the worker and the farmer, the merchant does not have to be pinned to one controllable place and must even cross boundaries seeking exchange routes.[7] Such practices challenge the stabilization of coherent space.

Finally, the authorities began actively fighting the merchants in the camp despite their protests, and commerce began to be concentrated in a few defined sites.[8]

The Civic Center

The civic center represents the town's formation as a modern and 'organized' place. It was evident to the planners that commerce would take a central role in its development. The Sharon plan (Sharon 1951, 36–37) placed a center for civic services and trade in the middle of the emerging town and dedicated other spots for trade scattered amidst the living areas and the auxiliary farms. Overall, it allocated about 51 acres for trade (3.9% of the town's lands), and 49 acres for personal services (3.8% of the town's lands), intending that 13% of the breadwinners will work in trade and 9% of them in services. The industrial zone was located at the south end of the town, containing various industries and crafts, intending that 8% of the breadwinners would work in small crafts for local purposes.

Albeit some deviations in the implementation and later plans, two main traits were kept – the central locations of trade and its entwining with industrial development. National and municipal institutions, specifically the Company for the Development of Kiryat Shmona, built the civic

[6] See Prost's (1991) analysis of this process in France.
[7] Deleuze and Guattari (2005, 409–10) described the flows of merchants and artisans captured and territorialized in the capitalist towns.
[8] See, for example, the correspondence in ISA-MOIN-InteriorLocalgov-000fi3b, Israel's Archives, Jerusalem, Israel.

center with the declared aim to privatize its stores, trying to attract local and foreign investors. They hoped the town would develop a sufficient economic basis and reduce unemployment. Still, a new kind of dependence emerged – a whole system of loans and debts, mostly from public sources, that the traders needed in order to raise the initial capital and lend the stores.[9]

Both proletarianization and embourgeoisement were integral to urbanization – the town was conceived of as a capitalist market. However, while industry was limited to the end of the town, commerce gained its reputation as the center of the civic identity,[10] of which the traders may have been key mediators.[11] The wealthier people concentrated next to the civic center (Soen, Tamir, and Barabash 1969, 76–78), linking luxury and proximity to the market, and spatializing the emerging stratification.

The town finally stabilized to a degree and developed a public sphere. Such a haven of public life is crucial for communities to evolve, overcome precarity, and develop a sense of citizenship (Arendt 1998; Lorey 2015). At least during the daytime, it became mainly the place of those not industrial and agricultural workers – the petite-bourgeoisie, the administrative stratum, and the unemployed (many of them women who had to buy beverages and handle bureaucracies). During the evening, it became the stage for a leisure culture in the café and the cinema (Rosenfeld 1958, 90–91).

Following Walter Benjamin (2002), we can see commerce as a dream that was experienced and repressed at different times and finally materialized at the civic center's architecture, gradually taking over the residents around. Even frustrating experiences, like the occasional standing in line, became an opportunity for mixing, raising claims and becoming a part of the community.[12] It was not enough – people kept leaving the town all the time, many of them of European

[9] See, for example, the programmatic materials archived in IV-333-2-767, The Pinhas Lavon Institute for Labour Movement Research, Tel-Aviv, Israel.
[10] See Aharon and Cohen 2015 for a critical discussion about the notion of citizenship in a development town.
[11] See Drayton 2020 for an analysis of the mediation and civil personification of bourgeois classes.
[12] This social mixture was described by Rosenfeld 1958, Levenberg 1966, and many other witnesses.

descent, contributing to the orientalization of the place (Soen, Tamir, and Barabash 1969, 18–19). Those who stayed became involved in the place or may have been trapped. A survey conducted in 1968 found that 53.2% of the residents were willing to leave, most of them to a bigger city than this (Ibid, 64-65).

The Modern \ Conclusions

The formation of the petite-bourgeoisie in Kiryat Shmona preceded and accompanied its urbanization. It was born from the intersection of three spatial logics and practices expressed in the village in which the national clashed with the rural, the camp in which the emergency urged urbanization, and the civic center in which the town acquired its modern form.

Influenced by Benjamin (2003), I observe an entanglement of temporalities and psychic stances: the traditions of trade taking place in the communities of origin and the melancholy of abandoning them; the successive disruptions and traumas of immigration, ruralization, and proletarianization; the state of exception prevailing in the camp and the repression of its praxis; the lingering time of anticipation and social mixture; and, finally, the dreamtime of trade, corresponding with trade as a primal phantasy.

With it, I can identify a thread of continuance and stabilization in which this class was formed, a thread that we may call "modernization." To understand it, we must return to inquire about the corresponding modernization of Israeli society and Mizrahim[13] and place the development towns as significant sites in this system, not just subjugated ones. These towns are occasionally brought as an example of the peculiarities of utopian thinking (Achouch and Morvan 2012), but the notion of dreaming can serve to reconsider them. We may also reconcile the social

[13] It was one of the main motivations of Eisenstadt (2019) and other Israeli sociologists. They have been criticized for justified reasons (Ha'Forum Le'Limude Hevrah Ve'Tarbut, Machon Van Leer Be'Yerushala'Im 2002), but this criticism has not led to a better understanding of modernization. Later attempts like that of Tzfadia and Yacobi (2011, 20-34) tend to focus on cultural pockets of "alternative" modernities and neglect the comprehensive and material aspects of modernity.

history and the petite-bourgeoisie, a class often identified as reactionary but capable of inhibiting and advancing a place through its dreams.

Bibliography

Achouch, Yuval, and Yoann Morvan. 2012. “The Kibbutz and ’ ’ Development Towns ’ ’ in Israel: Zionist Utopias: Ideals Ensnared in a Tormented History.” *Justice Spatiale - Spatial Justice* 5. https://doi.org/halshs-01518735.

Aharon, Meirav, and Nir Cohen. 2015. “’Avodat Ha’Ezrahut: Ha’Ma’avak ’Al ’Avoda Be’Vitah Pri Galil [The Citizenship Work: The Struggle for Work in Vita Pri-Galil].” *Tichnun [Planning]* 12 (1): 210–24.

Allweil, Yael. 2017. *Homeland: Zionism as Housing Regime, 1860-2011*. First published. Planning, History and Environment Series. London New York: Routledge, Taylor & Francis Group.

Arendt, Hannah. 1998. *The Human Condition*. 2nd ed. Chicago: University of Chicago Press.

Benjamin, Walter. 2002. *Arcades Project*. USA: Belknap Press.

———. 2003. “On the Concept of History.” In *Selected Writings*, 4:389–400. USA: Harvard Univesirty Press.

Ben-Porat, Amir. 1999. *Heichan Hem Ha’Burganim Ha’Hem? Toldot Haburganut Ha’Isra’elit [Where are those Bourgeois? History of the Israeli Bourgeoisie]*. Jerusalem, Israel: Magnes.

Braudel, Fernand. 1984. *Civilization and Capitalism: 15.-18. Century*. London, UK: University of California Press.

Cohen, Uri, and Nissim Leon. 2008. “The New Mizrahi Middle Class: Ethnic Mobility and Class Integration in Israel.” *Journal of Israeli History* 27 (1): 51–64. https://doi.org/10.1080/13531040801902823.

Darin, Haim. 1956. *Shikun U’Klita Be’Isra’el [Housing and Absorption in Israel]*. Tel-Aviv, Israel: Gadish.

Deleuze, Gilles, and Felix Guattari. 2005. *A Thousand Plateaus: Capitalism and Schizophrenia*. Minneapolis, USA and London, UK: University of Minnesota Press.

Drayton, Richard. 2020. “Race, Culture, and Class: European Hegemony and Global Class Formation, Circa 1800-1950.” In *The Global Bourgeoisie: The Rise of the Middle Classes in the Age of Empire*, edited by Christof Dejung, David Motadel, and Jürgen Osterhammel, 339–58. New Jersey, USA: Princeton University Press.

Efrat, Elisha. 2009. “’Ayarot Ha’Pitu’ach Be’Isra’el [The Development Towns in Israel].” In *’Ayarot Ha’Pitu’ach [The Development Towns]*, edited by Zvi Tsameret, Aviva Halamish, and Esther Meir-Glitzenstein, 37–70. Jerusalem, Israel: Yad Ben Zvi.

Efrat, Zvi. 2005. *Ha’Proyekt Ha’Israe’li: Bni’ah Ve’Adrichalut, 1948-1973 [’The Israeli Project: Building and Architecture, 1948-1973’]*. Tel-Aviv, Israel: Tel Aviv Museum of Art.

Eisenstadt, S. N. 2019. *The Transformation of Israeli Society: An Essay in Interpretation*. 1st ed. London, UK and New York, USA: Routledge. https://doi.org/10.4324/9780429315411.

Eraqi Klorman, Bat-Zion. 2002. "Ha'Yehudim Be'Kalkalat Ha'Arets [The Jews in the Country's Economy]." In *Teman [Yemen]*, edited by Haim Saadoun, 43–49. Kehilot Isra'el Ba'Mizrah Ba'Me'ot Ha'Tsha Esre Ve'Ha'Esrim [Jewish Communities in the East in the 19th and 20th Centuries]. Israel: Ben-Zvi Institute.

Furberg Moe, Marie Cathrine. 2012. "Peripheral Nationhood: Being Israeli in Kiryat Shemona." London, UK: The London School of Economics and Political Science.

Gellner, Ernest. 1983. *Nations and Nationalism*. New York, USA: Cornell University Press.

Golan, Arnon. 2002. "Jewish Settlement of Former Arab Towns and Their Incorporation into the Israeli Urban System (1948-50)." *Israel Affairs* 9 (1–2): 149–64. https://doi.org/10.1080/714003467.

Goldstein, Amir. 2017. "The Kibbutz and the Development Town: The Economic Dimension of Their Reciprocal Relations—The Case of the Hula Valley." *Israel Studies* 22 (2): 96. https://doi.org/10.2979/israelstudies.22.2.05.

———. 2019. "On Collective Assertiveness and Activism during the Immigration Process: A Case Study of Yemenite Immigrants Who Founded Kiryat Shmona – 1949–1953." *Middle Eastern Studies* 55 (4): 590–604. https://doi.org/10.1080/00263206.2019.1577238.

Ha'Forum Le'Limude Hevrah Ve'Tarbut, Machon Van Leer Be'Yerushala'Im. 2002. "Epistemologyah Shel Mizrahi'yut Be'Isra'el [Epistemology of Mizrahi Being in Israel]." In *Mizrahim Be'Isra'el: Iyun Bikorti Mehudash [Mizrahim in Israel: A new Critical Study]*, edited by Hannan Hever, Yehouda Shenhav, and Pnina Motzafi-Haller, 15–27. Tel-Aviv, Israel: The Van Leer Jerusalem Institute and Ha'Kibuts Ha'Me'uhad Press.

Hananel, Ravit, and Rachelle Alterman. 2015. *Neture Karka': Ha'Arachim Ve'Ha'Shikulim Me'Ahore Ha'Mediniyut Ha'Karka'it Be'Isra'el [National Land Ownership and Policy in Israel - The Values and Considerations Guiding Israel's National Land Policy]*. Israel: Ha'Kibuts Ha'Mehuhad.

Kemp, Adriana. 2002. "'Nedidat He'Amim' O 'Ha'Be'erah Ha'Gdolah': Shlitah Medinatit Ve'Hitnagdut Basfar Ha'Isra'eli ['The Migration Period' or 'The Great Burning': State Control and Resistance in the Israeli Frontier]." In *Mizrahim Be'Isra'el: Iyun Bikorti Mehudash [Mizrahim in Israel: A new Critical Study]*, edited by Hannan Hever, Yehouda Shenhav, and Pnina Motzafi-Haller, 36–67. Tel-Aviv, Israel: The Van Leer Jerusalem Institute and Ha'Kibuts Ha'Me'uhad Press.

Lefebvre, Henri. 1991. *The Production of Space*. Oxford, OX, UK ; Cambridge, Mass., USA: Blackwell.

Levenberg, Aliza. 1966. *Pirke Kiryat Shmonah [Chapter of Kiryat Shmona]*. Israel: Schocken.

Lorey, Isabell. 2015. *State of Insecurity: Government of the Precarious*. London, UK and New York, USA: Verso.

Marx, Karl, and Friedrich Engels. 2010. "The German Ideology." In *Collected Works*, Electric Book, 5:19–540. Lawrence & Wishart.

Moreno, Aviad, and Noah Gerber. 2021. “Heker Yehude Artsot Ha’Islam Be’Isra’el - Hitpathuyot Ve’Pitsulim [The Study of the Jews of Islamic Lands in Israel - Developments and Splits].” In *Ha’Historia Ha’Aruka Shel Ha’Mizrahim - Kivunim Hadashim Be’Heker Yehude Artsot Ha’Islam [The Long History of Mizrahim - New Directions in the Study of the Jews of Islamic Lands]*, edited by Aviad Moreno, Noah Gerber, Esther Meir-Glitzenstein, and Ofer Shiff, 7–39. Sdeh Boker, Israel: Ben Gurion Institute.

Pedatzur, David. 1950. “Halsa ’Ada’in Lo Hafchah Le’Kiryat Yosef... [Halsa Still Haven’t Became Kiryat Yosef].” *Ma’ariv*, February 16, 1950.

Prost, Antoine. 1991. “Public and Private Spheres in France.” In *History of Private Life: Riddles of Identity*, edited by Antoine Prost and Gérard Vincent, 5:1–143. Cambridge, USA and London, UK: Belknap Press.

Rosenfeld, Henry. 1958. “Ir Ha’Olim Kiryat Shmona [The Immigration Town Kiryat Shmona].” *Mibifnim [From Within]* 2: 87–116.

Rozin, Orit. 2011. *The Rise of the Individual in 1950s Israel: A Challenge to Collectivism / Orit Rozin ; Translated by Haim Watzman*. Waltham, Mass: Brandeis University Ppress.

Sharon, Arieh. 1951. *Tichnun Fizi Be’Isra’el [Physical Planning in Israel]*. Israel: The Israeli Government Press.

Shohat, Ella. 2017. “Sephardim in Israel: Zionism from the Standpoint of Its Jewish Victims.” In *On the Arab-Jew, Palestine, and Other Displacements: Selected Writings of Ella Shohat*, 37–76. UK and USA: Pluto Press.

Soen, Dan, Michal Tamir, and Gavriella Barabash. 1969. *Kiryat Shmonah: Seker Hevrati [Kiryat Shmona: Social Survey]*. Tel Aviv, Israel: Institute for Planning and Development.

Sofreno Bi’Tveriah. 1949. “‘Kiryat Yosef’ - Merkaz Ha’Hulah [’Kiryat Yosef’ - The Hula’s Center].” *Davar Ha’Yom*, September 16, 1949.

Thompson, Edward Palmer. 1963. *The Making of the English Working Class*. New York, USA: Vintage Books.

Tzfadia, Erez, and Haim Yacobi. 2011. *Rethinking Israeli Space: Periphery and Identity*. 0 ed. USA and Canada: Routledge. https://doi.org/10.4324/9780203816998.

Wallerstein, Immanuel. 2004. *World-Systems Analysis - an Introduction*. Durham and London: Duke University Press.

Welmout, Tzvi. 1953. “‘Sha’ar Ephraim’ - Be’Sha’are Tul-Karem [’Sha’ar Ephraim’ - At the Gates of Tulkarm].” *Ha’Boker*, September 9, 1953.

Zakai, Nahum. 1950. “Temanim Be’Darke Ha’Galil [Yemenites on the Galilee’s Roads].” *’Al Ha’Mishmar*, October 5, 1950.

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DECOLONIAL ARCHITECTURE AND URBANISM: SYMBOLIC FORMATION OF REGIONS IN POST-SOVIET RUSSIA

Abstract

My research examines post-Soviet architecture in Russia through a post-colonial lens, focusing on decentralization processes from 1990 to 2010. I analyze the role of architecture in the construction of regional and ethnic identities, using classic post- and de-colonial theories and concepts on identity and regionalism. In this paper I identify and describe decolonial architectural practices in regions of Russia and their relationship with decentralization and regional autonomous subjectivity. I claim that post-Soviet architecture was a tool in regional symbolic politics that was used by local elites to establish regions as unique and rightful territorial social groups or to challenge the established order. I show the hybridity of such regional architectural practices, which were both empowering and suppressive, de-colonial and orientalist. Finally, I propose the new perspective to describe the architecture in regions as "Symbolic regimes", linking the local political, economic and cultural disposition with the architectural practice.

Table of context

Introduction

Post-Soviet architecture and urbanism in Russia are increasingly becoming the subject of academic research. The main focus today are the implications of the transition to neoliberal market[1], however the processes that occurred within various regions and their relationships with the center still remain on the periphery of architectural researchers' attention.

The aim of my research is to examine post-Soviet architectural practice through a post-colonial lens and to describe the role of architecture in decolonial transformations in Russia's center-regions relations. Accordingly, the object of the research is post-Soviet decolonial processes in Russia from 1990 to 2010, and the subject is architectural and urban planning practices in regions that were part of these transformations. What is decolonial architecture in the regions of Russia? I answer this research question in my work.

The construction of regional and ethnic identities is one of the main themes of postcolonial theorists. Defining this process as a contested social categorization within power relations, researchers have focused on analyzing the production and assertion of boundaries within the new division of the world. Symbolic power plays a significant role in this process: the monopoly on creating images and signs of internal similarity and external differences of the controlled group compels people to recognize, see, and believe in the produced boundaries. The significance of architecture in this struggle is immense: no other cultural sphere allows for the "fixing" of produced differences and similarities in such a *concrete* and durable way. The study of architecture enables observation of the process of identity construction as well as finding of the actors involved in this process, and description of the struggle among them for monopoly over power in this procsess.

As a conceptual basis for the research, I will rely on the classics of post- and de-colonial theory: Edward Said with his "Orientalism"[2] and Homi Bhabha with his "Location of Culture"[3]. Together with Alexander Etkind's theory of "Internal Colonization"[4] and Sergei Abashin's reflections[5], these works will allow me to define decoloniality in the post-Soviet Russian context as processes of decentralization and the formation of regional autonomous agency. The papers on identity and regionalism by Bourdieu[6] and Paasi[7], together with Vladimir Gel'man's description of post-Soviet regions[8], will help me understand the formation of regions in Russia and evaluate the role of symbols and architecture in these processes. Finally, the works of urban studies specialists Diner and Hagen[9], applied to the transformation of post-socialist cities, and reflections on regionalist[10] and post-colonial[11] architecture in other parts of the world, will enable me to identify and describe decolonial architectural practices in Russia.

Chapter 1. Production of Regions as Russian Decoloniality

The dissolution of empires into independent states is the primary process of external decolonization. However, for Russia, which was more characterized by internal colonization[4], internal decolonization entails decentralization and regionalism in the sense of redistributing power from the center to the regions. Though the transformations in Russian society associated with the dissolution of the USSR and the establishment of the Russian Federation have been immense and various, I aim to focus primarily on the dynamics of regional policy, which can be described as decolonial and its architectural interdependencies and implications.

It is important to distinguish between postcoloniality as *a condition of context* in decolonizing regions and decoloniality as *practices* of liberation from colonial forms of oppression. In this sense, decentralization and federalization, which are popular *postcolonial* policies in countries-previous colonies with a complex ethnic and confessional composition, such as the USA, Argentina, Australia, Canada in the 19th century, and India, Ethiopia in the 20th century[12]. In Russia as country of internal colonization, on the contrast, these policies are *decolonial*. Although early Soviet regional policies also shared some characteristics of decentralization[13], the common assessment today is that the USSR was an empire that continued colonial policies under anti-colonial slogans[14]. Therefore, only the processes associated with the collapse of the USSR, the "parade of sovereignties," and the formation of autonomous regions and states can be considered decolonial. Consequently, a postcolonial research perspective becomes applicable to post-Soviet Russia, especially regarding internal colonization. Considering the significant scale of the country's actual federalization and diversification of regional political regimes in the 1990s[8], as well as the academic debate about the limitations of postcolonial theory in the post-Soviet context[15], I will describe at least the first two decades of Russian politics (1990-2010) as a postcolonial period. Institutional, political, and cultural processes aimed at decentralizing power and resources, increasing the autonomy of regions and municipalities, in other words, processes of producing regions as subjects, — I will consider as decolonial.

Stages of the production of Regions

Thus, I consider the production of regions as autonomous and rightful entities to be the main decolonial process in Russia. By "region" here, following Bourdieu[6], I understand not only an administrative unit of self-government, but a social construct that is the product of contested power relations and possesses its own collective identity. In this sense, regions are cross-scale: they can be a local municipality, a city, a subject of the Russian Federation, or any other collective territorial identity. To assess the success of decolonial transformations in Russia, I will rely on the regional production stages conception proposed by Paasi[7].

1. *Territorial Formation.* The establishment of a region's boundaries as a spatial differentiation from other territories. The boundary can be either "hard" administrative or "soft" perceived. It can be established either ad hoc or based on the historical form of the region. The criterion for the success of the territorial stage is broad recognition of the legitimacy of the boundaries by both external and internal actors.
2. *Institutional Formation*. The subjectivity of the region as the formation of agents within it who have power, resources, and legitimacy to make decisions on its behalf. For this stage, the presence of local

authorities with recognized administrative status is essential, managing the territory within the given boundaries. This phase also includes the work of regional formal and informal institutions as a local way of "doing things." The criteria for the success of this stage are external and internal recognition of the legitimacy of local institutions and their real autonomy in decision-making.

3. *Symbolic Formation.* This stage is crucial in terms of producing legitimacy for territorial boundaries and regional institutions. Through symbolic power, regional political and cultural elites produce symbolic internal similarities and external differences of the region, imposing the legitimacy of the produced division of the world, trying to make people recognize and see the region, and believe in it. At this stage, the identity of the region is produced as a set of distinctive properties of a group with a connection to a specific place. The criterion for the success of the symbolic production of the region may be the acceptance of identity at the individual level, the appropriation of group properties and symbols designated as characteristic of the region[16].

It is important to note that these stages are not sequential, but occur simultaneously or in various different orders. For example, symbolic formation may precede institutional formation, in which case symbolic differentiation serves as a means of group mobilization, giving birth to a collective subject for the struggle towards institutionalization (self-governance) and recognition of regional boundaries. Moreover, these stages can never be considered as completed; rather, they are an ongoing and mutable process that responds to various power relations within and outside the region.

Territorial and institutional formation of Regions

The symbolic start of decentralization in Russia occurred on August 6, 1990, when Boris Yeltsin, the head of the still Soviet Russia, addressed regional leaders in Kazan with his famous phrase "take as much sovereignty as you can swallow"[17]. The boundaries of regions within the Russian Federation largely inherited the administrative division adopted during Soviet times, but the same territorial units obtained radically new powers as subjects of the Russian Federation by signing the federal agreement in 1992. Despite the new constitution's declared equality of federation subjects, newly-formed republics, territories, regions, and districts, had different statuses, which is why federalism in Russia is considered asymmetrical[18]. Thus, ethnic autonomies (ASSR) established themselves as *national republics*: sovereign states with their own constitution, capital, and official language. The status of predominantly Russian regions established as *oblast'* (district) was not only less by this official name framing, but also in some formal powers, which caused criticism among regional elites[19]. Nevertheless, the level of institutional autonomy and decentralization of all regions compared to the Soviet vertical was enormous[8].

The rigid hierarchical system that was centralized in Moscow was dismantled both at the regional and local levels with the adoption of the 1993 Constitution of Russia, which declared the independence of local municipal authorities[20]. By the end of the 1990s, the Russian Federation had institutionally become a hub of diverse regional and local regimes. While city and regional leaders and local parliaments, as well as municipal councils were elected through universal suffrage, not all elections were competitive: regional authoritarianism

and democracies both coexisted[21]. The diversity of regional statuses, institutional powers, and political regimes confirms the horizontal nature of regional policy during the early stages of post-Soviet Russia's existence. This observation allows us to assert the decolonial character of the country's institutional reformation.

By the end of the 1990s, regardless of the regime type or status, regions and municipalities had officially recognized boundaries and legal management institutions, which resulted in the emergence of regional political elites[22]. Therefore, we can speak of the completion of the territorial stage of regional formation and the ongoing institutional stage that involves the systematic production of regional subjectivity. However, it remains uncertain whether the residents themselves recognized their region and considered the established boundaries and institutions legitimate. In other words, did they develop a regional or local identity? Without definitive answers to these questions, it is difficult to speak of the successful establishment of regions as subjects of social reality. It's where the symbolic stage matters.

Symbolic formation of Regions and the post-Soviet identity crisis

Postcolonial societies, including post-Soviet Russia, often struggle with identity crises[23]. The Soviet Union failed to establish a macro-political identity of "Soviet nation", and the all-Russian civic identity was absent at the time of the formation of the Russian Federation, leaving citizens with a fragmented sense of self[24]. In the absence of a macro-political identity, there has been a surge in ethnic, local, and regional self-awareness[25]. This phenomenon is most active in national republics, where demographic and migration processes have led to an increase in the proportion of the "titular ethnic group," causing ethnic-Russians to become a minority[26]. Nevertheless, the institutional framing of the region as an ethnic republic leads to a perception of discrimination among representatives of national minorities, and regional and ethnic identities come into conflict in such cases[27]. In regions and territories that do not hold the status of a national republic and have a predominantly Russian or mixed ethnic composition, regional identity is expressed less vigorously, giving way to local identity centered around major cities and regional capitals[28]. Moreover, regional identities are emerging that do not align with administrative boundaries, such as Uralians, Cossacks, Pomors, Siberians, Caucasians, and so forth[30], including those with republican aspirations aimed at institutionalizing these regions[32].

Consequently, it is premature to claim that the majority of regions and municipalities have stable territorial identities. Regional political elites have endeavored to stabilize, manage, and attach these identities to administrative boundaries since the beginning of the territorial and institutional stages of regional formation. As demonstrated above, there was also a contest of the visions of region from other regional groups, such as ethnic and cultural elites. These efforts can be described as battles for identity or the symbolic stage of regional formation[29]. It is where architecture plays a decisive role.

Chapter 2. Decolonial architecture in Russia

Considering decoloniality in Russia as a process of producing regions as legitimate territories possessing institutionalized subjectivity and identity, criteria can be formulated to define architectural processes as decolonial.

Firstly, decolonial architectural practice supports the institutional formation of a region as its' subjectivity. This means that it exists in the regional institutional field and is an expression of the will of the region as a collective subject. It is not important whether the regional political elite or any other group or individual within the region speaks on behalf of it; what matters is that this will is not imposed from outside* .

Secondly, decolonial architectural practice supports the symbolic formation of a region, as it participates in the production of its identity, strengthening internal symbolic similarities and external differences, thus making both the region's inhabitants and external observers believe and acknowledge its existence as a separate, autonomous territorial and collective entity with certain characteristic features (symbols).

Based on this definition, it becomes clear that important institutional transformations had to occur in architectural law and market for the emergence of decolonial architecture. Let's call it decolonization of architecture.

Decolonizing architecture

Architecture is not an autonomous sphere; rather, it is an institution directly depending on economic and political forces. Therefore, the post-Soviet institutional formation of regions as subjects of the federation could not but have a profound impact on architectural practice. Thus, in order to study decolonial architecture in regions, it is necessary to first examine the institutional context: to what extent have regions become subject to architectural activity after the collapse of the USSR? It is the institutions, such as legal norms regulating architectural activity, that endow regional clients with the right to (re)shape the space. It is the institutions, such as formalized standards, which determine the degree of freedom for regional actors in choosing the location, function, and appearance of the object built. It is these institutions that create a regional subject of symbolic politics. How did the decolonization of architecture as an institution and sphere of activity occur?

By decolonization of architecture, I mean the institutional redistribution of architectural (and therefore symbolic) power from the center to the regions. Indicators of success in this process include:

- The existence of a regional economy and regional government bodies with the right to independently allocate regional budgets
- The presence of private developers within the region
- The existence of a construction industry in the region

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* It should be noted, however, that the subjectivity of the region is not always the subjectivity of its inhabitants. In the case of regional authoritarianism, the political elite speaks on behalf of the region, which may make decisions, for example, in the interests of maintaining its own power, aiming to legitimize its regime rather than being guided by the interests of the region's residents. Nevertheless, the democratization of regional power is not a necessary criterion for decoloniality. Issues of intra-regional hierarchies and systems of oppression are secondary in post-colonial optics to overcoming the exploitative dependence of the region on the metropolis.

• The presence of architectural and urban planning competencies (bureaus) within the region, with the ability to design for local clients

• The existence of institutions for architectural and urban planning education within the region

• The existence of regional instruments for legal regulation of architectural and urban planning activities and spatial planning.

Under these institutional conditions, regional actors can fully realize their will in the symbolic formation of the region through architecture. Although the processes of institutional formation varied in each region of the Russian Federation, and the volume of resources was different, such institutional conditions for the emergence of decolonial architecture began to emerge from the late 1980s.

In 1987, at the dawn of the Perestroika era, the Central Committee of the Communist Party of the Soviet Union and the Council of Ministers of the USSR issued Decree No. 1058 "On the Further Development of Soviet Architecture and Urban Planning". It officially recognized the harmful effects of excessive centralization in industrial housing design, highlighted the problem of uniformity in urban planning in various regions, and condemned the disregard for "national and regional" peculiarities and natural-climatic conditions of construction areas[30]. For the first time at the state level, the fallacy of the centralization practices of Soviet modernism was acknowledged, and a course towards decolonizing the architectural and urban planning sphere was officially set.

In 1988, the USSR Law No. 8998-XI "On Cooperation" authorized private architectural practice. Private architectural bureaus emerged in the format of cooperatives based on design institutes, which had previously been subject to a rigid vertical hierarchy. This included private architectural bureaus in various regions[31]. The creative freedom of architects at the local level, who had been previously bound not only by standardization norms but also by the vertical hierarchy of the design system, was now limited only by market relations.

The emergence of regional architectural schools was the result of the colonial modernization of the USSR as an " affirmative action empire"[32]. Prior to the revolution, architectural education could only be obtained in the capitals, but during the Soviet era, architectural departments were established in dozens of cities, largely in response to the acute need for personnel during the post-war construction boom[33]. Decree No. 1058 from 1988 established independent architectural institutes based on the architectural faculties in the regions, and then entire universities[34]. Despite the strict centralization of the design process in the late USSR, it was in the architectural universities throughout the Russian Soviet Federative Socialist Republic where the first regionalist concepts, visions of symbolic identity of cities and regions, and authorial architectural projects were born, which would later become a reality in the 90s[35].

The privatization of construction factories, which began in 1991, resulted in significant autonomy of regional construction markets and the formation of regional construction industries[36]. The decentralization of the Russian economy, the transition from a command-administrative system to a market-oriented system, and the elimination of Gosplan as the main distributive and control center all led to the emergence of regional and municipal budgets in the 1990s, albeit with varying degrees of autonomy from federal subsidies and often

relying on informal mechanisms of redistribution[37]. Nonetheless, these conditions made it possible for regional construction clients and resources to emerge.

With the collapse of the Soviet Union, the transformation of norms in the field of architectural design and urban planning began. The rigid regulation of architectural activity by the system of all-union SNiP (construction norms and rules) was based on the needs of a centralized planned economy[38]. Standards and norms adopted in Moscow institutions did not allow for significant regional variability and were imposed hierarchically, representing a colonial mode of governance[38]. In 1994, SNiP 10-01-94 decentralized the system by introducing the normative documents of Russian Federation subjects into the legal field: TSN (territorial building norms), whose task was precisely to "take into account the social, natural-climatic features, national traditions, and economic capabilities of the regions of Russia"[39]. Although the inertia of Soviet institutional heritage persists to this day, the reduction of control from Moscow and the introduction of regional norms laid the foundation for the concentration of symbolic power in the hands of regional elites.

Thus, the institutional conditions created in the 1990s favored the emergence of local architecture in the regions, which could be called decolonial as it existed within the regional normative field and was a product of regional architectural demand and production. The institutional stage of regional formation created opportunities for the beginning of the symbolic stage. The decolonization of the architectural market gave rise to decolonial architecture.

Decolonial architecture as a tool for symbolic politics

Architecture and urban planning have always been important weapons in symbolic battles for power, used to define, shape, and control social groups through the production of their identities. The post-Soviet space is yet another arena for such battles and symbolic politics. The manifestation of cultural-political, regionalist, or ethnic narratives in urban spaces across the former socialist bloc has varied from simple renaming of streets and demolition of monuments to complete restructuring of cities or even construction of new capital cities. In Russia, similar processes have served the symbolic formation of regional identities, both local and ethnic.

The production of a region as a collective unity is possible both by distinguishing territorial group from the "Others" and through uniting it around a common idea. Therefore, the symbolic work of decolonial architecture in Russia is twofold. Firstly, it brings to the attention of the region's residents and external observers the fact of the region's existence as a collective subject through the production of visual internal similarities and external differences (*Differentiation*) [40]. Thus, architecture makes one region distinct from another, which was particularly important for the formation of identity after decades of Soviet unification. Secondly, it manifests the region's belonging to an external supraregional identity, demonstrating to the region's residents and external observers a vision of the future through the production of visual similarities with "ideologically close" external regions (*Integration*) [40]. Thus, through architecture, a region can insert itself into new global alliances. In addition, integrative practices allow for challenging existing boundaries of the region, representing itself as part of the "Other."

It is important to note the hybrid nature of decolonial architectural practices. In pursuit of the symbolic production of their region, local actors often used self-exoticization, adopting a superficial orientalist perspective on themselves "from the outside". This allowed them to highlight their own difference as the Other, the Separate, or conversely, to become part of the external Other. In this sense, architecture is akin to the language practices studied by decolonial linguists. Just as *mimicry*, as described by Homi Bhabha, helped colonized peoples avoid assimilation through the symbolic differences imposed by colonizers[41], decolonial architecture employs subversive orientalist techniques. Using case studies from various regions of Russia, I will examine diverse architectural practices of *Differentiation* and *Integration*.

Chapter 3. Decolonial architectural practices in Regions of Russia

Architecture of Differentiation

The main idea behind symbolic differentiation is to create or emphasize certain unique shared properties within a region that distinguish it from others. As in the case of the production of ethnic identity in post-colonial countries, agents of regional production pay special attention to its pre-colonial or pre-Soviet history. Most decolonial architectural practices of differentiation can be grouped into five categories:

1. Contextualism: establishing a connection with the past

Soviet modernism was heavily criticized for ignoring local context even before the collapse of the USSR, which was reflected in "perestroika" decree No. 1058. The environmental approach, as a practice of adapting modernism to locality, became increasingly popular among Soviet architects as a protest against total standardization and uniformity, as well as in line with Western trends of postmodernism and critical regionalism. The concept was popular among young Moscow architects and researchers, such as Glazychev[42], Gutnov, Ass, and Vysokovsky[43], and was also implemented in practice. Contextualism and the environmental approach formed the basis of the projects to restore Tashkent after the earthquake by the Moscow architect Kosinsky in the 1970s and 1980s[44]. However, being a product within the colonial institutional field of the Soviet hierarchy, such projects remained colonial in nature, serving as a stylistic replacement of uniformity with orientalism in the context of Western postmodernism. Only in the 1990s, as a result of political and institutional decolonization of institutions regulating regional policy and architectural activity, contextualism flourished as a decolonial "grassroots movement" - becoming a popular tool for the manifestation of the region's difference not from Moscow, but from the perspective of regional elites, both political and architectural[45].

One notable example of *contextualism* is the Nizhny Novgorod architectural school[46]. Alexander Kharitonov, who became the chief architect of the city in 1993, concentrated symbolic power in his hands while continuing his design and educational activities. He united the leading architects of the region, such as Pestov, Popov, Nikishin, among others, around the principles of reproducing the scale of pre-revolutionary buildings in new construction, and using the stylistics of merchant eclecticism, Art Nouveau, and pseudo-Russian style, which are characteristic of pre-revolutionary Nizhny Novgorod. The works of Nizhny Novgorod

architects in the 1990s served as symbolic support and expression of the positioning of the region as a "market flagship" and "bastion of free private property" - ideological slogans of the regional governor Boris Nemtsov[47]. By mobilizing the pre-revolutionary merchant tradition, the regional elites symbolically legitimized the formation of modern Nizhny Novgorod region as an independent region distinguished by its "spirit of entrepreneurship".

2. Commemoration: selectively perpetuating heritage

Creating monuments as a symbolic redefinition of identity is a typical feature of post-colonial and post-socialist societies. In the late Soviet era, the concept of *retro-development*, proposed by architect Yeromin, gained traction in urban planning as a compromise between new construction, commemoration, and the recreation of historical environments[48] in the context of Soviet decolonization. Rebuilding demolished historical buildings, reconstructing ruins, setting up new monuments to national heroes, and designating pre-revolutionary architecture as official heritage statue with subsequent restoration — all these processes became popular commemorative practices and effective tools of identity politics for regional elites in Russia in the post-Soviet years[49]. Monuments are powerful transmitters of unifying ideas and markers of differentiation that were actively used for symbolically distinguishing between regions.

An illustrative example of commemorative differentiation is the *Old Tatar Sloboda* settlement in Kazan. The predominantly wooden pre-revolutionary buildings in this area were systematically demolished for high-rise residential construction during both Soviet and post-Soviet times. However, during the post-colonial rise of national self-awareness, the Old Tatar Sloboda received the status of an architectural and historical reserve in 1992, becoming a symbol of the revival of ethnic identity[50]. In preparation for the grand celebration of the Millennium of Kazan, the Sloboda was reconstructed. It is noteworthy that at the start of the reconstruction, the wooden houses in the Old Tatar Sloboda did not have any significant visual differences from other areas of the city built during the same period. Therefore, the task of the reconstruction was not only the restoration and repair of individual buildings but also the "re-creation of the holistic atmosphere of Tatar everyday life and traditional culture," in order to produce "Tatar identity" in this particular area. The color palette and decoration techniques used in the reconstruction of the Sloboda were not related to these specific buildings, but rather were the result of a search and creation of a collective image of Tatar ways of decorating residential homes[51]. Thus, through the declarative preservation of historical heritage, symbolic ethnic distinctions of the region were produced.

Against this backdrop, the destruction of the old barracks *Arsk Casarma* is a telling example of commemorative selectiveness. The typical red brick military barracks, which was built to accommodate soldiers throughout the Russian Empire, was doomed because its symbolic role did not correspond to the official vision of the region's formation as Tatar national republic. The Arsk barracks served more as a symbol of Russian colonization of the Tatars, and defenders of the city's historical heritage were unable to sway residents and authorities to their side[52]. Active forgetting is no less an important tool in symbolic politics[9].

3. An Active Oblivion: selectively erasing heritage

Symbolically "forgetting" markers of the past that do not fit into the official narrative of a new identity has been characteristic of both imperial and post-colonial regimes to the same extent. For instance, the traces of German construction in former Königsberg were intentionally destroyed by the Soviet authorities as symbols of the defeated enemy regime[53]. It is interesting that the practice of "*active oblivion*," or the concealment of Soviet past, is actively used in the post-Soviet Kaliningrad region. The local community carries out symbolic production of the region as a post-colonial subject using the Königsberg identity, which implies, among other things, erasing the Soviet past. This causes dissatisfaction among supporters of the Russian image of the region. In addition to the planned demolition of the unfinished modernist House of Soviets, an illustrative example is the massive reconstruction of typical Soviet housing using symbols of German and Prussian aesthetics[54]. The removal of products of Soviet standardization is an effective way of symbolically differentiating and producing distinctions through architecture.

4. Historicism: creating heritage

One way to create symbolic differences without even selectively relying on existing historical memory is historicism - a stylistic borrowing of architectural elements from different historical epochs, a popular eclectic approach in global postmodernism. In the Republic of Mari El, and especially in its capital Yoshkar-Ola, historicism has been taken to a further extent than elsewhere. Leonid Markelov, the authoritarian leader of the region, rebuilt the city center according to his own tastes and values, combining the aesthetics of Italian Renaissance, Gothic, Flemish, and ancient Russian architecture. Despite criticism of the governor's policy for personalization in governance and ignoring any other problems besides symbolic construction, the uniqueness of the region produced by these practices of historicism is acknowledged by both its residents and external observers[55]. Similar historicist practices go hand in hand with practices of active forgetting, hiding decades of typical construction behind pseudo-historical facades. However, historicizing architects often resort to citing specific European practices, symbolically linking the region with European culture (an example being the Bruges embankment in Yoshkar-Ola), which is why historicism can also be attributed to integration practices, such as occidentalism.

5. Ethnicization: strengthening national identity

In the 1990s, the manifestation of ethnicity in urban spaces became the primary means of differentiation for national regions. For regions where the titular nation constituted the majority, ethnicization of architecture was a logical expression of the societal national upswing and consolidation of national differences in stone, along with the postcolonial autonomy acquired. In regions with predominantly Russian populations, similar counterintuitive practices could serve as symbolic legitimization of established borders and the consolidation of the right of regional elites to govern the region. For instance, the Jewish Autonomous Oblast, which was a part of the Khabarovsk Krai during Soviet times, was only granted the status of an federation subject in the 1990s. Despite its titular status, the Jewish population here comprises less than 2%, which raises the question of liquidating the region's autonomy and returning it to the Khabarovsk Krai. Thus,

for the local elites, symbolic production of the region as distinctive is a question of maintaining their own status. In addition to supporting Jewish cultural and religious institutions, symbolic differentiation based on ethnicity is achieved through the duplication of street names in Yiddish and other architectural and spatial techniques, such as the widespread use of the menorah in city landscaping, and the installation of a monument to the Jewish writer Sholem Aleichem[56].

Architecture of Integration

The main idea behind symbolic integration is to create common characteristics of a region that make it similar to another external region that serves as a reference point, an embodiment of a desired future image, or a carrier of similar values and ideas. Unlike many contemporary post-colonial societies, westernized globalization was not perceived as a threat to the local community in post-Soviet regions, but rather as an opportunity for independent political and economic partnerships with alternative poles of power outside of the former metropolis[57]. Creating symbolic global or westernized homogeneity in regions was an instrument in resisting the Soviet-imposed homogeneity from Moscow. Integration often accompanied differentiation, as the production of external similarities between the region and foreign countries often introduced differences from other regions within Russia. The key difference between these practices lies in their outward direction: while differentiation primarily aims to perceive the region as a unique self, integration, on the contrary, emphasizes the region's similarity to some external "Other." These decolonial architectural integration practices can be divided into five groups depending on the "object of aspirations."

1. Occidentalism: becoming part of the West

The Western world, which was once an antagonist to the Soviet Union during the Cold War, has become a consensus reference point for young democratic Russia, both among the political elite[58] and in wider society[59]. The appeal of the Western lifestyle and consumer culture is expressed through the ubiquitous use of "European" symbolism in advertising and branding, exemplified by the phenomenon of "Euro renovation." The appeal to Europe and the West is the most popular theme in the naming of post-Soviet residential complexes[60]. The need to demonstrate a region's belonging to the global, Western, or European world has given rise to numerous architectural practices that I propose to call Occidentalist (in analogy with Said's "Orientalism"). Occidentalist architecture is a stylistic imitation or complete reproduction of popular architectural techniques in Europe and the United States. Until recently, all post-Soviet architecture was commonly regarded as Occidentalist copying of Western postmodernism, but in our theory of capitalist romanticism, we have abandoned this oversimplified view. Nevertheless, some form of symbolic assertion of Westernized globalization or the "Western way" can be found in the Manhattan-like skyscrapers of Yekaterinburg-City and the Brugge-like embankment in Yoshkar-Ola.

The European vision of the region by local political, cultural elites and the public sometimes conflicts with internationalist globalization. For example, in St. Petersburg, whose identity historically constituted itself as a "window to Europe," a Chinese developer was forced to change its design for the "Pearl Plaza" shopping center under pressure from the public. Initially, the building was to be shaped like a lotus with a skyscraper in

the center - such an image, developed by Chinese architects, was to represent China's new position as a global player in the Russian market. However, the presented renders and positioning caused protests among the citizens of St. Petersburg, and the new project was eventually executed by Finnish architects in a neutral style without any references to the Chinese origin of the project. Thus, the local community defended its symbolic power in producing the region as integrated into Europe[57].

2. Transborderism: uniting with neighbors

For the first time in history, postcolonial "horizontalism" in the Russian Federation allowed regions to independently form external economic and political alliances. In contrast to the imperial and Soviet verticals, where all external power was concentrated in Moscow, international partnerships with neighboring countries were an important means for border regions to survive the difficult 1990s and provided impetus for development in the 2000s. Symbolic appeals to a neighboring country or desired partner were made by creating visual similarities, thus conveying the message to the domestic market that "soon we will live like them," and to the external market, "we are just like you, invest in us." This approach worked both ways - established economic partnerships not only brought financial resources to the region but also architectural and construction technologies and businesses from the partner, thus increasing symbolic similarities.

An illustrative example of such horizontal relationships is Chukotka. Isolated from the rest of the country, in Soviet times Chukotka was supplied through the "northern delivery" - transporting goods by ships during a short season along the Northern Sea Route. Typical large-block and panel buildings, as well as wooden barracks, were assembled from construction materials brought in from central regions of the USSR. The collapse of the Soviet vertical broke these logistical chains. In the 1990s and 2000s, postcolonial Chukotka, led by Abramovich, reoriented its logistics to neighboring Canada and the United States. Old Soviet housing in Chukotka's villages was replaced with prefabricated frame cottages imported from Canada[61]. The mass nature of the reconstruction meant that many Chukotka villages became indistinguishable from modern Inuit and Eskimo settlements in Alaska and Canada's Nunavut. Representatives of indigenous peoples of America and Chukotka, who received the right to two-way visa-free entry in the 1990s, now had the opportunity to observe not only cultural but also architectural similarities in their regions. Although the "Canadian" level of life and democracy was never achieved in Russia, Canadian-style homes in Chukotka became a symbol of aspirations towards its achievement.

3. Panethnicism: Unification based on Ethnicity

The post-Soviet rise of ethnic nationalism was not only evident in the production of regional uniqueness through the use of ethnic symbolism but also in appeals to kindred peoples. The growth of pan-Slavic, pan-Finno-Ugric, pan-Turkic, pan-Mongolist ideas in the post-Soviet space was due in part to the policy of national states to unite kindred peoples in diasporas and international ethnic communities. Such international policy, on the one hand, elevated the status of the national state as a "national home," while on the other hand, it created an independent foreign policy subjectivity for the national region, separate from Moscow[62].

For instance, economic growth in post-socialist Mongolia and Inner Mongolia, China, which occurred against the backdrop of economic difficulties in Buryatia, stimulated regional elites to increase contacts in this foreign policy track[63]. The positioning of Buryatia as part of the "Mongolian world" was facilitated by symbolic integration policies: the widespread use of Mongolian ornamentation and the image of the Buryat and Mongolian national hat "Malgai" in towers and pediments of buildings. In the symbolic production of the region, Buryatia did not simply go down the path of creating differences from the neighboring Irkutsk region: these differences also included visual similarities with the symbolism of the neighboring rapidly growing economy.

4. Desecularization: uniting around a common faith.

The freedom of religion obtained by citizens of the Soviet Union after many years of militant atheism led to the resurgence of religious movements throughout Russia. Mobilizing religion to strengthen ethnic groups and form homogeneous identities is a typical theme of post-colonial national state formation, and this has become relevant for Russian regions, especially for national republics[64]. Religious symbols, including architecture, were intended not only to unite the region around a common idea and aesthetic that distinguished it from others, but also to articulate regional membership in larger supranational religious alliances.

For example, in the 1990s, there was a surge of cultic construction in Kalmykia. Buddhist temples and stupas were erected in all cities and major villages of the republic. Buddhist aesthetics are present even in areas with predominantly Russian ethnic composition, as Buddhist architecture became an alternative means of producing symbolic differences in typical Kalmykian urban design, in the absence of its own architectural and urban planning traditions[65]. However, desecularization was not only an instrument of differentiation, but also of integration. In 1993, during his election campaign, the future president of the republic, Kirsan Ilyumzhinov, positioned Kalmykia as the center of the Buddhist world, including by inviting the Dalai Lama to the republic, offering him political asylum, and promoting the project of a Lamaist center similar to the Vatican in Rome[66]. After his election, Ilyumzhinov pursued an active foreign policy, including launching a program to repatriate Kalmyks from the Xinjiang Uygur Autonomous Region of China. Buddhist symbolism demonstrated Kalmykia's ambitions and openness to the persecuted Tibetan Lamaism, thereby strengthening the status of the region and its leader.

5. Sovereignization: pretending an independent state.

The relationship between symbolic and institutional formation of a region is two-fold. On one hand, this relationship is expressed through the desire of institutions to strengthen their own legitimacy and be recognized through symbolic production. On the other hand, this relationship is achieved through the performative ability of symbols to construct institutional expectations. Therefore, if symbolic politics was an obvious tool for the formation of post-colonial national states, aimed at strengthening and declaring their sovereignty, then for regions of Russia that received autonomy but remained within the federation, the production of state symbols could be directed both at strengthening and declaring their own autonomy, as well as at further expanding this autonomy until achieving full sovereignty. In any case, the bureaucratic institutions

inherited from the USSR, which discredited themselves as colonial agents of Moscow's will, urgently needed symbolic "whitewashing" - and the symbols of state sovereignty, characteristic of independent national states, were an ideal solution. This list includes the constitution, anthem, coat of arms, and capital city[67]. Architecture played a key role in the production of "capitalness" from the regional center.

The construction of a new capital city is a frequent case of such symbolic politics in post-colonial states[68] and was applied in a Russian region as well: the city of Magas, built from scratch in Ingushetia. The production of capital symbols in Saransk, which became the capital of the Republic of Mordovia, is also interesting. In this city, the representation of the new status serves as both form and function[69]. On the one hand, in post-Soviet buildings, elements of Stalinist Empire architecture are widely used alongside ethnic Mordovian symbolism: scale, order system, and even imitation of the silhouette of Stalin's skyscraper. On the other hand, a once-typical provincial city acquires all the features of the upper level of the Soviet urban hierarchy: a drama theater, a music theater, a philharmonic, a republican museum, a house of folk creativity - in post-Soviet Saransk, the symbolic function of buildings takes precedence over any utility or economy. This practice can be attributed to integration, as such architectural interventions created similarities between the main regional city and the image of the capital, the most obvious example of which for the post-Soviet space was Moscow.

Chapter 4: Regional symbolic regimes instead of architectural styles

The proposed categorization of decolonial architectural practices is not set in stone, and in most regions, they coexisted and interacted with each other. The horizontal nature of the country in the 90s resulted in a diversity of regional political regimes, which, in turn, produced varying symbolic policies. It is impossible to speak of a uniform regional architectural *style* during the 90s and 00s. In some regions, architectural practices were not unified, resulting from the elites' struggle for symbolic capital and the power to define the region's image. In contrast, in other regions, they were subject to a common canon.

To classify decolonial regional architectures, I suggest utilizing the concept of "*symbolic regimes*." [70] Symbolic regimes range from fully pluralistic, which is characterized by a wide range of actors and their architectural practices, to completely monopolistic, where architectural activity is relatively homogeneous. A symbolic regime refers to the type of regional symbolic policy where different actors utilize distinct architectural practices. The symbolic regime is determined by the number of agents involved in symbolic policy and the diversity of their viewpoints. Depending on the type of symbolic regime in the region, certain decolonial architectural practices may be more prevalent.

The number of symbolic politics agents

The relationship between political and symbolic regimes in a given region is not always clear-cut. On the one hand, internal architectural homogeneity is possible in regions with an authoritarian political regime that holds complete symbolic power in its hands. On the other hand, homogeneity can also arise in democratic regions where there is consensus among different elite groups about the region's identity. However, the number of agents of symbolic politics is not always determined by the political regime. Symbolic politics should not

be regarded as an immutable part of regional governance, but rather as a set of practical tools that can be mobilized by various actors to achieve their goals, and the administration is not necessarily part of that group. As such, an authoritarian leader in a region may eliminate their influence on the architecture while maintaining relative symbolic pluralism for other elites in their region, while in democratic regions, some elite groups united by a common idea of regional identity may create a symbolic monopoly. Thus, in addition to the type of political regime, the number of elite groups also determines the number of agents of symbolic politics.

In the context of post-socialism, regional elites, apart from being political actors, become primarily economic agents who have the ability to influence regional development not only through politics but also through business and cultural financing[71]. Even entrepreneurs who do not have political levers can act as agents of symbolic politics as builders or financiers. Therefore, economic indicators such as investment attractiveness and regional gross product are more indicative of the number of symbolic agents. A more prosperous region is likely to have more agents, while a less developed region is likely to have fewer, regardless of its political regime. The probability of one group capturing the "symbolic power" in a less economically developed region simply increases due to the smaller number of competing groups.

The possibility of canon: viewpoints of symbolic politics agents

The diversity of perspectives among agents of symbolic politics is influenced by a variety of factors, such as the region's history, its level of autonomy, and its cultural and ethnic homogeneity. In some regions, the process of forming a strong regional identity preceded the institutional stage that followed the collapse of the Soviet Union, while in others, it followed this stage. Consequently, the construction of regional identity began from different starting points in different regions. The depth of a region's history, its experience of statehood or autonomy in the past, its geographic remoteness and homogeneity, and its cultural and ethnic homogeneity can all serve as criteria for a strong regional identity[72].

In particular, ethnicity as a strong identity tends to be more prevalent in national republics with a dominant non-Russian population, whereas greater ethnic cohesion is observed in post-colonial groups that were colonized, while the identity of the former empire's titular nation becomes more open and flexible[73]. The age of a region's urban development history is an important marker of its formation process, with the regional center or capital serving as a site of symbolic power and regionalist ideas that are "carved in stone." If a region's capital was built recently, during the Soviet era, the region is more likely to lack "symbolic experience" due to the predominantly standard nature of the city's construction.

Taking this into account, we can consider the diversity of perspectives among agents of symbolic politics to be determined by the absence of a long-established strong identity in a region, which is more typical of "new" regions that have only recently entered the stage of symbolic formation. Conversely, in "old" regions with a strong identity, agents are more likely to have a symbolic consensus. The age of a region's idea and practice of formation, therefore, determines the dominant type of architectural practices that follow the institutional "acquisition" of autonomy. Agents in "old" regions are more inclined to use differentiation tools that create, reinforce, and highlight their uniqueness and distinction from others, thereby

"completing" symbolic formation based on previous experience. Integration practices that involve the search and subsequent adoption of symbolic foundations from outside are more characteristic of "new" regions.

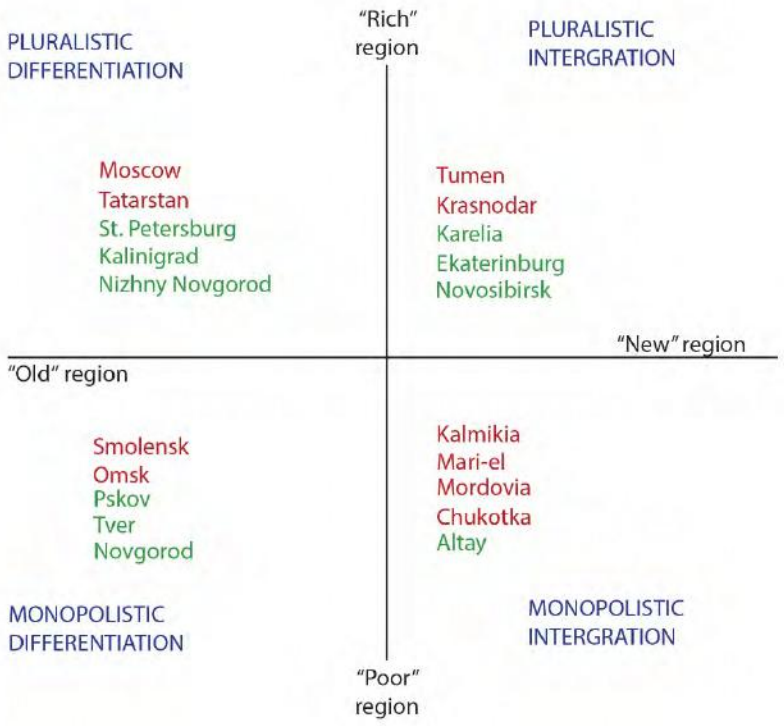


Figure 1. The symbolic regimes map as of 2001. Gradation rich/poor made by GDP per capita, old/new by the year of capital city foundation. Red regions have autocratic pollical regime, green — democratic.

Four symbolic regimes

The following identifies four symbolic regimes (see Figure 1).

1. Pluralistic-differentiation. This regime is characterized by a plurality of actors in symbolic politics, who primarily invest in the production of regional differences. The regime is primarily associated with "wealthy" regions with a long history of symbolic production. A typical example of a region with a pluralistic-differentiated symbolic regime is St. Petersburg. The city's architecture in the 1990s and 2000s was diverse, but contextualism, historicism, and commemoration were the most popular practices. The city's symbolic policy aimed to preserve and emphasize its uniqueness.

2. Pluralistic-integration. This regime is characterized by a plurality of actors in symbolic politics who primarily invest in the production of global similarities. The regime is primarily associated with "wealthy" regions without a long history of symbolic production. Actors in such regions are not inclined to reach a consensus regarding the region's image, resulting in highly diverse architecture. However, dominant practices are often those of integration, such as occidentalism, cross-border partnerships, and desecularization. Karelia is a typical example of this regime. The region's symbolic policy primarily aimed to produce similarities with neighboring Finland.

3. Monopolistic-differentiation. This regime is characterized by the dominance of a small number of actors in symbolic politics who primarily invest in the production of regional differences. The regime is primarily associated with "poor" regions with small economies but rich histories. The new architecture in such regions is relatively uniform due to a small number of clients and builders, as well as a consensus regarding the region's image. The Pskov region is a typical example of this regime, where most of the post-Soviet constructions are built using historicism and contextualism practices. The symbolic policy in the region aimed to reinforce the pre-existing differences that existed before the Soviet era.

4. Monopolistic-integration. It is characteristic of this regime to be dominated by a small number of actors in symbolic politics who invest primarily in the production of external similarities. This regime is mainly found in "poor" regions that lack a long symbolic history. These are typically young national republics with a mixed ethnic composition and authoritarian power, who only gained significant autonomy in the post-Soviet years. Symbolic politics in these regions is primarily directed towards strengthening the autocrat's own power through the mobilization of ethnic symbols, but also through the construction of symbolic similarities with national sovereign states. A typical example of such a regime is Mordovia, where the use of the Mordovian national ornament accompanied practices of sovereigntization - the construction of a pompous regional capital.

Of course, symbolic regimes are neither a discrete nor a constant category. Like political regimes, they are the product of a constant struggle for power, in this case, for symbolic power to dictate the definition of a region to its inhabitants and external observers. Symbolic struggles were particularly acute in pluralistic regimes, within which actors competed through integrative and differentiating practices. Such competition took place within architectural commissions, competitions, criticism, and public spaces. In monopolistic regimes, due to the limited number of actors, the struggle was less fierce and was fought not so much for specific images but for overcoming symbolic monopoly. Nevertheless, the key feature of architectural symbolic battles is that they took place overwhelmingly within the region, between regional actors, without significant influence from the center of the federation, which allows us to speak of them as an important post-colonial phenomenon.

Chapter 5. Conclusion and implications

1. The post-Soviet regional architecture is considered decolonial because it supported the establishment of regional subjectivity. he post-Soviet regional architecture is decolonial as it supported the formation of regional subjectivity. The decentralization of Russia that occurred after the collapse of the USSR is often referred to as uncontrolled, anarchic, and fictitious. However, the decisions made by Gorbachev and later Yeltsin were indeed a genuine decolonization: at the legal and institutional level, regions of the country, including individual cities and municipalities as federal subjects, were granted extensive political, economic, and cultural autonomy. Since the early 1990s, postcolonial processes have been underway in the regions to achieve and reinforce their acquired rights, with the symbolic formation of regions being particularly noteworthy as it represents institutional changes in the perceived reality. Architecture and urban planning have

emerged as crucial instruments for the symbolic formation of regions, with architectural practices that reinforce the institutional and symbolic subjectivity of regions being regarded as decolonial.

2. The description of post-Soviet architecture in the regions should not be based on "styles," but rather on "symbolic regimes" and architectural practices of "differentiation" and "integration". Decolonial architecture was the result of institutional changes, including in the field of architecture, which created their own architectural markets in the regions and decentralized symbolic politics in the country. Decolonial architecture was an instrument of regional symbolic policy, as it involved the struggle for the production of regional identity and the imposition of this image within and outside the region. This production was carried out through a variety of architectural practices, which can be roughly divided into *differentiation* - creating differences between regions - and *integration* - creating similarities between regions. Depending on the economic and political situation, various symbolic regimes were formed in the regions - pluralistic and monopolistic - which describe the number of actors involved in symbolic production and the dominant types of architectural practices they use. Symbolic regimes were arenas of constant competition for symbolic power in the region.

3. Decolonial architecture played a crucial role in post-Soviet Russia's decentralization. The uniformity of the Soviet era was broken down by diverse architectural landscapes that emerged in different regions. This allowed for the strengthening of Russia's horizontal structure, while also politicizing regional societies through symbolic identity production. Citizens were mobilized for participation in the region's self-governance or mobilized against imposed identity. Symbolic policy strengthened regional institutional autonomy by creating expectations for the region in society. This led to the proliferation of forms and visual languages in regional architectural schools. In the context of Putin's re-centralization of 2010-th, the symbolic distinctions created by architecture became a tool for defending regional institutional autonomy. Projects to unite certain regions were rejected, and symbolic production played a crucial role in supporting institutional autonomy as political and economic autonomy of regional elites were eliminated. Architecture remained one of the few fields for real subjectivity for these regions.

4. Decolonial architecture did not only contribute to the destruction of the imperial system of oppression, but also supported the emergence of new authoritarian hierarchies. Decolonial architecture cannot be regarded as an absolute good, as in many regions it has reinforced local authoritarian regimes. Through the example of architecture, it becomes evident that decolonial transformations do not necessarily lead to the emancipation of the inhabitants of a region that has been "liberated" from imperial rule, but always result in a redistribution of power in favor of regional elites. The breakdown of the center-colony hierarchy and the associated policies of oppression can lead to the construction of hierarchies within former colonies and the emergence of new forms of oppression. Thus, through symbolic production of regional identities, local elites attempt to impose their hegemony in defining the group, often depriving alternative groups and identities of representation. Decolonial architecture often bears traits of Orientalism, which simplifies generalizations, erases intra-regional diversity and complexity. By resorting to self-exoticism, regional elites can destroy architectural heritage, erasing layers of history that do not correspond to the constructed image.

5. The architect is not an independent observer of regional identity, but rather an agent who both produces and contests it. Understanding the symbolic production of post-Soviet regional policies enables a critical perspective on contemporary understandings of local identity held by architects and critics. They often perceive regional identity as a constant, possessing a physically tangible form that can be deciphered, reproduced, or "unveiled" for external observers. However, as demonstrated in this study, what is referred to as identity is a product of ongoing struggles within symbolic politics, and the architect is an active participant occupying a particular position within it. By "reading" identity, the architect constructs it, playing an active role as an actor within the regional symbolic regime.

6. Architecture of the transition from postcolonialism to re-colonialism in Russia: prospects for further research. The rise of Vladimir Putin led to a re-centralization of power in Russia, with direct regional elections abolished and regional autonomy reduced. Experts suggest this has led to a re-colonial state with increased centralization and suppression of counter-hegemonic discourse[74]. Architecture played a role in this process, and further research is needed to explore this role. The proposed research aims to examine the decision-making and language used by architects in constructing symbols and how they use regional identity. The study will also explore the interaction of class and re-colonial hierarchies, which was imposed within the symbolic politics as well. Lastly, the research will reflect on re-colonial and prospect decolonial architectural practices, questioning how to maintain a balance between pan-Russian civil identity and regional images. The research hopes to provide insight into possible architectural practice preventing the strengthening of the vertical of power and promoting horizontality, emancipation of residents on local level.

Bibliography

[1] Golubchikov, Oleg. “Urban Planning in Russia: Towards the Market.” European Planning Studies 12, no. 2 (2004): 229–47.

[2] Said's, Edward. "Orientalism." (1978).

[3] Bhabha, Homi K. The location of culture. routledge, 2012.

[4] Эткинд А., Уффельманн Д., Кукулин И. Внутренняя колонизация России: между практикой и воображением [Etkind, Internal colonization of Russia: between practice and imagination]//Там, внутри. Практики внутренней колонизации в культурной истории России. – 2012. – 6-53.

[5] Абашин С. Нации и постколониализм в Центральной Азии двадцать лет спустя: переосмысливая категории анализа/практики [Abashin, Nations and post-colonialism in Central Asia twenty years later: rethinking the categories of analysis/practice]//Ab Imperio. – 2011. – Т. 2011. – №. 3. – С. 193-210.

[6] Bourdieu, Pierre. "Identity and representation: Elements for a critical reflection on the idea of region." Language and symbolic power 223 (1991)

[7] Paasi, Anssi. "The resurgence of the ‘region’and ‘regional identity’: Theoretical perspectives and empirical observations on regional dynamics in Europe." Review of international studies 35.S1 (2009): 121-146.

[8] Гельман, Владимир Яковлевич. "Региональная власть в современной России: институты, режимы и практики." [Gelman, Regional Power in Modern Russia: Institutions, Regimes and Practices] Полис. Политические исследования 1 (1998): 87-105.

[9] Diener, Alexander C., and Joshua Hagen. "From socialist to post-socialist cities: narrating the nation through urban space." Nationalities papers 41.4 (2013): 487-514.

[10] Eggener K. L. Placing resistance: A critique of critical regionalism //Journal of Architectural Education. – 2002. – Т. 55. – №. 4. – С. 228-237.

[11] Patel, Ruchi. Architecture and identity: A study of colonial and post-colonial architecture in India. Diss. Iowa State University, 2021..

[12] Гуляков, А. Д. "Федерализация как всемирно-исторический процесс оптимизации государственного устройства." [Gulyakov, Federalization as a world-historical process of optimizing the state structure] Федерализм: эволюция и современное состояние. 2016.

[13] Martin, Terry Dean. The affirmative action empire: nations and nationalism in the Soviet Union, 1923-1939. Cornell University Press, 2001.

[14] Edgar, Adrienne. "Bolshevism, patriarchy, and the nation: The Soviet “emancipation” of Muslim women in Pan-Islamic perspective." Slavic Review 65.2 (2006): 252-272.

[15] Летняков Денис Эдуардович. "Постколониальная теория для постсоветского пространства: возможные ограничения" [Letnyakov, Post-colonial Theory for the Post-Soviet Space: Possible Limitations] Каспийский регион: политика, экономика, культура, no. 3 (64), 2020, pp. 110-118.

[16] Hauge, Åshild Lappegard. "Identity and place: a critical comparison of three identity theories." Architectural science review 50.1 (2007): 44-51.

[17] Ельцин, Борис. "Берите столько суверенитета, сколько сможете проглотить." [Yeltsin, Take as much sovereignty as you can swallow][электронный ресурс]//Ельцин Центр [сайт].-URL: https://yeltsin. ru/news/boris-elcin-berite-stolko-suverineteta-skolko-smozhete-proglotit/(дата обращения: 20.10. 2018) (2015)

[18] Сидоренко Анатолий Васильевич. "Этнический вызов российскому федерализму" [Sidorenko, An Ethnic Challenge to Russian Federalism] Политическая экспертиза: ПОЛИТЭКС, vol. 5, no. 1, 2009, pp. 100-115.

[19] Фадеичева М.А.. "Колония и терпение: внутренний неоколониализм и этнополитика на Урале" [Fadeicheva, Colony and Patience: Internal Neocolonialism and Ethnopolitics in the Urals] Дискурс-Пи, vol. 3, no. 1, 2003, pp. 46-48.

[20] Видякин А.Г.. "Становление местного самоуправления в Российской Федерации" [Vidyakin, Formation of local self-government in the Russian Federation] Контентус, no. 2 (55), 2017, pp. 1-12.

[21] Баранов А.В.. "Региональные политические режимы России в системе властных отношений: проблемы типологии" [Baranov, Regional political regimes of Russia in the system of power relations: problems of typology] Южно-российский журнал социальных наук, no. 4, 2012, pp. 62-73

[22] Магомедов Арбахан Курбанович. "Политическая элита и политическая идеология. Региональные элиты и региональный политический вызов в посткоммунистической России" [Magomedov, Political Elite and Political Ideology. Regional Elites and the Regional Political Challenge in Post-Communist Russia] Известия Саратовского университета. Новая серия. Серия Социология. Политология, vol. 11, no. 2, 2011, pp. 61-71.

[23] Dizayi, Saman Abdulqadir. "Locating identity crisis in postcolonial theory: Fanon and Said." Journal of Advanced Research in Social Sciences 2.1 (2019): 79-86.

[24] Малинова, Ольга Юрьевна. "Символическая политика и конструирование макрополитической идентичности в постсоветской России." [Malinova, Symbolic Politics and the Construction of Macropolitical Identity in Post-Soviet Russia] ПОЛИС. Политические исследования 2 (2010): 90-105.

[25] Туровский, Р. Ф. "Региональная идентичность в современной России." [Turovsky, Regional Identity in Contemporary Russia] Российское общество: становление демократических ценностей (1999): 87-136

[26] Streletsky, Vladimir N. "Ethnic, confessional and cultural patterns of regionalism in the post-Soviet Russia." Hungarian Geographical Bulletin 66.3 (2017): 219-233.

[27] Лепшокова, Зарина Хизировна, and Надежда Михайловна Лебедева. "Воспринимаемая дискриминация и аккультурация русских на Северном Кавказе (несовместимость этнической и региональной идентичностей)." [Lepshekova, Perceived discrimination and acculturation of Russians in the North Caucasus (incompatibility of ethnic and regional identities)] Общественные науки и современность 6 (2016): 125.

[28] Макарова Гузель Ильясовна. "Взгляд на региональную идентичность: к программе социологического исследования" [Makarova, Regional Identity Perspective: Towards a Sociological Research Agenda] Oriental Studies, no. 1 (29), 2017, pp. 84-94.

[29] Евстифеев Р.В. Локальная идентичность: символическая политика и несимволические практики. [Efisteev, Local identity: symbolic politics and non-symbolic practices] Философские науки. 2016;(1):88-95.

[30] Давиташвили, Георгий. “Архитектура последних времен” [Davitishvili, Architecture of the last times] [электронный ресурс]//Sygma [сайт].-URL: https://syg.ma/@george-morieli/arkhitiektura-posliednikh-vriemien/(дата обращения: 20.03. 2023) (2022).

[31] Ильевская Мария Михайловна. "Технологии проектирования как комплексный фактор развития архитектуры постсоветского периода" [Ilyevskaya, Design Technologies as a Comprehensive Factor in the Development of Post-Soviet Architecture] Architecture and Modern Information Technologies, no. 3 (60), 2022, pp. 65-73.

[32] Martin, Terry Dean. The affirmative action empire: nations and nationalism in the Soviet Union, 1923-1939. Cornell University Press, 2001.

[33] Успенская, А. М. "Развитие архитектурных школ СССР." [Uspenskaya, The development of architectural schools in the USSR.] Наука, образование и экспериментальное проектирование. Труды МАРХИ. 2018.

[34] Есаулов, Г. В.. "Из истории архитектурного образования в России. Памяти ГИ Пустоветова." [Esaulov, From the history of architectural education in Russia] ACADEMIA. АРХИТЕКТУРА И СТРОИТЕЛЬСТВО. Учредители: Российская академия архитектуры и строительных наук 4: 134.

[35] Савицкая, Алиса, and Артем Филатов. "В одном шаге от политики. Нижегородская архитектурная школа 1990-х и нижегородское уличное искусство в 2010-х годах." [Savitskaya, One step away from politics. Nizhny Novgorod architectural school of the 1990s and Nizhny Novgorod street art in the 2010s.] Неприкосновенный запас. Дебаты о политике и культуре 2 (2019): 167-177.

[36] Azowcaw, K. A. "О некоторых аспектах перехода строительного комплекса СССР к рыночным отношениям." [Some aspects of the transition of the USSR building complex to market relations] (1993).

[37] Зубаревич Н.В.. "Региональное развитие и региональная политика в России" [Zubarevich, Regional Development and Regional Policy in Russia] Всероссийский экономический журнал ЭКО, no. 4 (478), 2014, pp. 7-27.

[38] Ерофеев Николай Андреевич, and Сапунова Марина Викторовна. "Норматив и стандарт: (пост)советская трансформация" [Sapunova, Norm and Standard: (Post) Soviet Transformation] Городские исследования и практики, vol. 3, no. 4, 2018, pp. 7-11.

[39] Прахова, Т. Н., Д. М. Сатаева, and Л. В. Урявина. "Анализ состояния нормативно-правовой документации строительного комплекса." [Prakhova, Analysis of the state of regulatory and legal documentation of the building complex] Редакционная коллегия (2015): 107.

[40] Замятина, Надежда Юрьевна. "Территориальные идентичности и социальные структуры." [Zamyatina, Territorial identities and social structures] Общественные науки и современность 5 (2012): 151-163.

[41] Bhabha, Homi. "Of mimicry and man: The ambivalence of colonial discourse." October 28 (1984): 125-133.

[42] Андриянова, Т. В. "Город и культура: проблема управляемости (по материалам работ ВЛ Глазычева)." [City and culture: the problem of manageability (based on the works of VL Glazychev)] Известия Юго-Западного государственного университета. Серия: Экономика. Социология. Менеджмент 9.5 (2019): 207-216.

[43] Кияненко, Константин Васильевич. "Круг средового знания и его сегментация в теории архитектуры." [The circle of environmental knowledge and its segmentation in the theory of architecture] Academia. Архитектура и строительство 3 (2019): 44-50.

[44] Малиновская, Елизавета Григорьевна. "Национальные школы XX века-социокультурные и профессиональные парадигмы формирования архитектуры столиц. Центральноазиатский контекст." [National schools of the 20th century - socio-cultural and professional paradigms for the formation of the architecture of capitals. Central Asian context] Academia. Архитектура и строительство 3 (2020): 66-81.

[45] Махнин, А. А. "Приемы постмодернизма в современной архитектуре Ярославля." [Postmodernist Techniques in the Modern Architecture of Yaroslavl] Регионология 4 (2006): 383-393.

[46] Худин, Александр Александрович. "Контекстуализм как метод самоидентификации." [Contextualism as a method of self-identification] Фундаментальные, поисковые и прикладные исследования РААСН по научному обеспечению развития архитектуры, градостроительства и строительной отрасли Российской Федерации в 2015 году. 2016. 109-114.

[47] Магомедов Арбахан Курбанович. "Политическая элита и политическая идеология. Региональные элиты и региональный политический вызов в посткоммунистической России" [Political Elite and Political Ideology. Regional Elites and the Regional Political Challenge in Post-Communist Russia] Известия Саратовского университета. Новая серия. Серия Социология. Политология, vol. 11, no. 2, 2011, pp. 61-71.

[48] Лысàя Дарья Александровна, and Чжан Чуньян. "Административно-правовой механизм комплексной реконструкции жилищного фонда исторических центров городов России" [Administrative and legal mechanism for the complex reconstruction of the housing stock of the historical centers of Russian cities] Вестник Инженерной школы Дальневосточного федерального университета, no. 1 (46), 2021, pp. 136-148.

[49] Богатова Ольга Анатольевна, and Гусева Елена Николаевна. "Историческая память и этничность в городской архитектурной среде как фактор конструирования социальной идентичности населения столиц республик в составе российской Федерации на примере Ижевска и Саранска" [Historical memory and ethnicity in the urban architectural environment as a factor in constructing the social identity of the population of the capitals of the republics within the Russian Federation on the example of Izhevsk and Saransk] Вестник Удмуртского университета. Социология. Политология. Международные отношения, vol. 3, no. 4, 2019, pp. 409-429.

[50] Надырова Ханифа Габидулловна. "Проблема возрождения идентичности архитектуры Старо-Татарской слободы Казани" [The problem of reviving the identity of the architecture of the Old Tatar settlement of Kazan] Историческая этнология, vol. 4, no. 2, 2019, pp. 255-263.

[51] Аитов Р.Р., and Афанасьева Е.А.. "Проблема реконструкции традиционной татарской колористики (на примере квартала № 205 Старо-татарской слободы)" [The problem of reconstruction of traditional Tatar coloring (on the example of quarter No. 205 of the Old Tatar settlement)] Известия Казанского государственного архитектурно-строительного университета, no. 2 (32), 2015, pp. 13-23.

[52] Чернышева Любовь Алексеевна, and Хохлова Анисья Михайловна. "Создавая ценность и аутентичность: городские конфликты вокруг исторических зданий" [Creating Value and Authenticity: Urban Conflicts Over Historic Buildings] Журнал исследований социальной политики, vol. 19, no. 2, 2021, pp. 223-238.\

[53] Очеретяный, К. А. "Генеративный аспект семиотизации городского пространства (на примере Кёнигсберга/Калининграда)." [The Generative Aspect of the Semiotization of Urban Space (on the Example of Koenigsberg/Kaliningrad)]

[54] Шульгин, ВН. "К «современной» истории Калининграда: чего добиваются немцы и их подручные в Калининграде?" [On the "modern" history of Kaliningrad: what are the Germans and their henchmen in Kaliningrad trying to achieve?] Российская государственность в лицах и судьбах её созидателей: IX-XXI вв. 2021.

[55] Лобанова Анна Сергеевна. ""да, не в тему, но красиво же, красиво!": восприятие городского пространства жителями Йошкар-Олы" ["Yes, off topic, but it's beautiful, beautiful!": the perception of urban space by residents of Yoshkar-Ola] Журнал социологии и социальной антропологии, vol. 17, no. 4, 2014, pp. 124-135.

[56] Бедерсон Всеволод Дмитриевич. "Шолом-алейхем и «Вынужденный еврейский национализм» в идентичности еврейской автономной области" [Sholom Aleichem and "Forced Jewish Nationalism" in the Identity of the Jewish Autonomous Region] Вестник Пермского университета. Серия: Политология, no. 2, 2013, pp. 98-103.

[57] Dixon, Megan L. "The Southern Square in the Baltic Pearl: Chinese ambition and "European" architecture in St. Petersburg, Russia." Nationalities Papers 41.4 (2013): 552-569.

[58] Штурба Е.В.. "Изменение концептуальных основ внешней политики российской Федерации в условиях глобализации (1991-1994 гг.)" [Changing the conceptual foundations of the foreign policy of the Russian Federation in the context of globalization (1991-1994)] Наука и школа, no. 3, 2008, pp. 79-80.

[59] Seliverstova, Oleksandra. "Keeping alive the "Imaginary West" in post-Soviet countries." Journal of contemporary central and Eastern Europe 25.1 (2017): 117-134.

[60] Девелоперское бинго, [Developer's bingo] веб-сайт: https://www.urbanus.ru/ng-ratings/2020-08-03/developerskoe-bingo-samye-populyarnye-nazvaniya-zhilykh-kompleksov-v-rossii

[61] Смирнов, Н. А. "Композиция геокультур Арктики: новые основания геокультурного анализа." [Arctic geocultural composition: new foundations for geocultural analysis] Геокультуры Арктики: методология анализа и прикладные исследования. М.: Издательство "Канон+" РООИ "Реабилитация (2017): 38-80.

[62] Хан, В. С. "Корейцы центральной Азии: прошлое и настоящее" [Koreans of Central Asia: Past and Present] МБА (2014)

[63] Базаров Борис Ванданович. "К проблеме государственности монгольских народов: судьба бурятской автономии" [On the problem of the statehood of the Mongolian peoples: the fate of the Buryat autonomy] Власть, no. 8, 2013, pp. 004-008.

[64] Амоголонова, Д. Д. "Бурятский шаманизм и политика десекуляризации общественного сознания." [Buryat shamanism and the policy of desecularization of public consciousness] Этническое наследие и духовные практики в прошлом и настоящем: Сб. статей/Отв. Ред. ВИ Харитонова.-М.: ИЭА РАН (2013): 19-29.

[65] Гучинова, Эльза-Баир Мацаковна. "Элиста: национальные символы в пространстве города." [Elista: national symbols in the space of the city] Антропология города 1 (2013): 43.

[66] Биография Кирсан Илюмжинов. [Biography of Kirsan Ilyumzhinov] Веб-сайт: https://www.peoples.ru/state/governor/ilumzhinov/index2.html

[67] Мурзина Д.Ш.. "Роль символов и ритуалов в мифологизации сознания жителей регионов России" [The role of symbols and rituals in the mythologization of the consciousness of the inhabitants of the regions of Russia] Вестник Казанского технологического университета, vol. 17, no. 24, 2014, pp. 382-386.

[68] Schatz, Edward. "When capital cities move: The political geography of nation and state building." [When capital cities move: The political geography of nation and state building] (2003).

[69] Богатова, Ольга Анатольевна, and Елена Николаевна Гусева. "Визуальные репрезентации социальной идентичности г. Саранска в качестве столицы Республики Мордовия в городских публичных пространствах." [Visual representations of the social identity of the city of Saransk as the capital of the Republic of Mordovia in urban public spaces] Огарёв-Online 14 (135) (2019): 8.

[70] Борисова, Надежда Владимировна. "Городские политические режимы и пространство символической политики." [Urban Political Regimes and the Space of Symbolic Politics] Вестник Пермского университета. Серия: Политология 4 (2010): 48-55.

[71] Лапина, Н., and А. Чирикова. "Стратегии региональных элит: экономика, модели власти, политический выбор." [Strategies of regional elites: economics, models of power, political choice] (2000): 1-200.

[72] Keating, Michael. The new regionalism in Western Europe: Territorial restructuring and political change. Cheltenham, UK: E. Elgar, 1998. P 10.

[73] AlSayyad, Nezar. (1995). From Vernacularism to Globalism: The Temporal Reality of Traditional Settlements. Dwellings and Settlements Review 7, no. 1. pp. 13-24.

[74] Murawski, Michał. "Falshfasad: Infrastructure, materialism, and realism in wild-capitalist Moscow." American Ethnologist 49.4 (2022): 461-477.

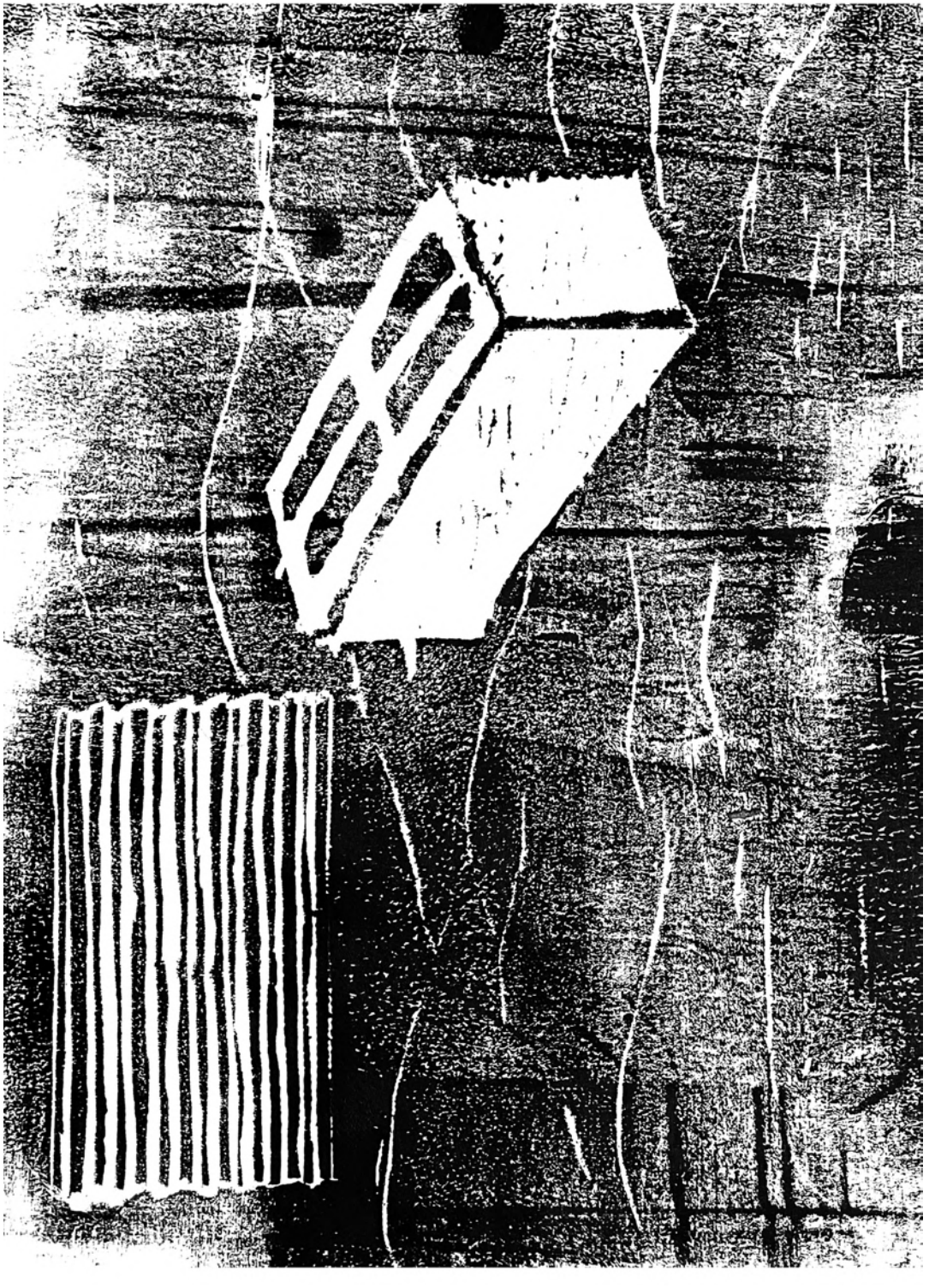
Breakout 2D:
Bedouin Communities and (Un)planning the Israeli Negev

Moderator: Ilana Rudishevsky

May 9, 2023 | 2:15 PM

Unrecognized Villages	**Lobna Alsana,** Bezalel Academy of Arts and Design
Plan for Additional Building Rights in Rahat **(Lecture)**	**Lenore Lankin,** Bezalel Academy of Arts and Design
The Unincorporated Zone **(Lecture)**	**Uri Reicher, Matanya Sack, Merav Morad,** shelter_expanse
Southern District Planning Department: Case Studies **(Lecture)**	**Rachel Katoshevsky, Naomi Sapir, Yuval Karplus, Rotem Ze'evi,** Southern District Planning Department

Urbanism in the Expanded Field International Conference on Urbanism and Urbanization
May 8-10, 2023, Bezalel Academy of Art and Design



رسائل العمران إلى الإنسان

المجلد الأول - بيت الإنسان

رسائل العمران إلى الإنسان

رسالة بيت الانسان هي الرسالة الأولى من سلسلة «رسائل العمران إلى الانسان» المنبثقة من سياق القرى مسلوبة الاعتراف في ديار بئر السبع، والهادفة إلى خلق منظومة تخطيطية محلية مستقلة عن منظومة الدولة.

في سلسلة الرسائل المقترحة هنالك رسالة مشتركة تتمثّل في رفض الانتظار للدولة التي لا تعترف بالحق التاريخي لتواجد العائلات البدوية على أراضيها منذ عشرات السنين.

تسعى الرسائل لأن تكون دليلاً نحو التنظم، من أجل خلق آلية مستقلة في التخطيط العمراني تمكّن القرى في النقب في تنظيم شؤون حياتها حتى يحين الاعتراف من الدولة.

المجلد الأول

بيت الإنسان

محتوى الرسالة

المقدمة

بيت الإنسان أو دار الإنسان هو المكان الذي ينظر إليه الإنسان كمأوى له ولأفراد أسرته وكلّ من يعيش معه.
في ديار بئر السبع يستخدم الأهالي البيت كوسيلة للصمود على الأرض في ظل محاولات الاحتلال انتزاعهم منها. أصبح بيت العائلة البدوية في قرية مسلوبة الاعتراف هو محطة انتظار للاعتراف وللتطور، لكن بعد مرور أكثر من ٧٠ سنة لم يحصل الاعتراف- فما العمل؟

في هذه الرسالة أحاول تقديم مقترحات تخطيطية لبناء البيت في ظل مخططات الدولة التهويدية لمساحات المعيشة البدوية. انظر الى البيت مجددا كمساحة عائلية صحية لا تقل أهمية عن الصمود.
البيت يجب أن يكون مساحة تكبر فيها أجيال، وتتبلور ذهنية تلك الأجيال.
لذا سأحاول إعادة قيم البيت من خلال مقدمات تخطيطية معاصرة لليوم ومتوفرة للإنسان، تمنحه حياة كريمة دون حاجة للانتظار للاعتراف بوجوده.

بيوت سكانية متروكة على مدى شارع ٣١ (بئر السبع- تل عراد). البيوت تابعة الى قرية الحمراء, شمال شرق بئر السبع. شتاء ٢٠٢٢. تصوير ربى الفراونة.

2.1 **البيت والحرية** في عيون أم البيت

"كان العرب ساكنين بحريتهم
بيطلعوا بحريتهم
بيخشوا بحريتهم
وعايشين على الحلال ومن بلادهم ورزقهم
بس هوظل بس جو حكموا- ظلموا."

مقابلة مع بسمة الصانع ٨١ سنة
تحاكي دخول الاحتلال الى مساكنهم الحرة.

بايكة تاريخية لعائلة أبو قرينات, شرق بئر السبع, شتاء ٢٠٢١. تصوير المؤلفة.

الجزء الأول

التطور التاريخي للبيت البدوي في قضاء بئر السبع

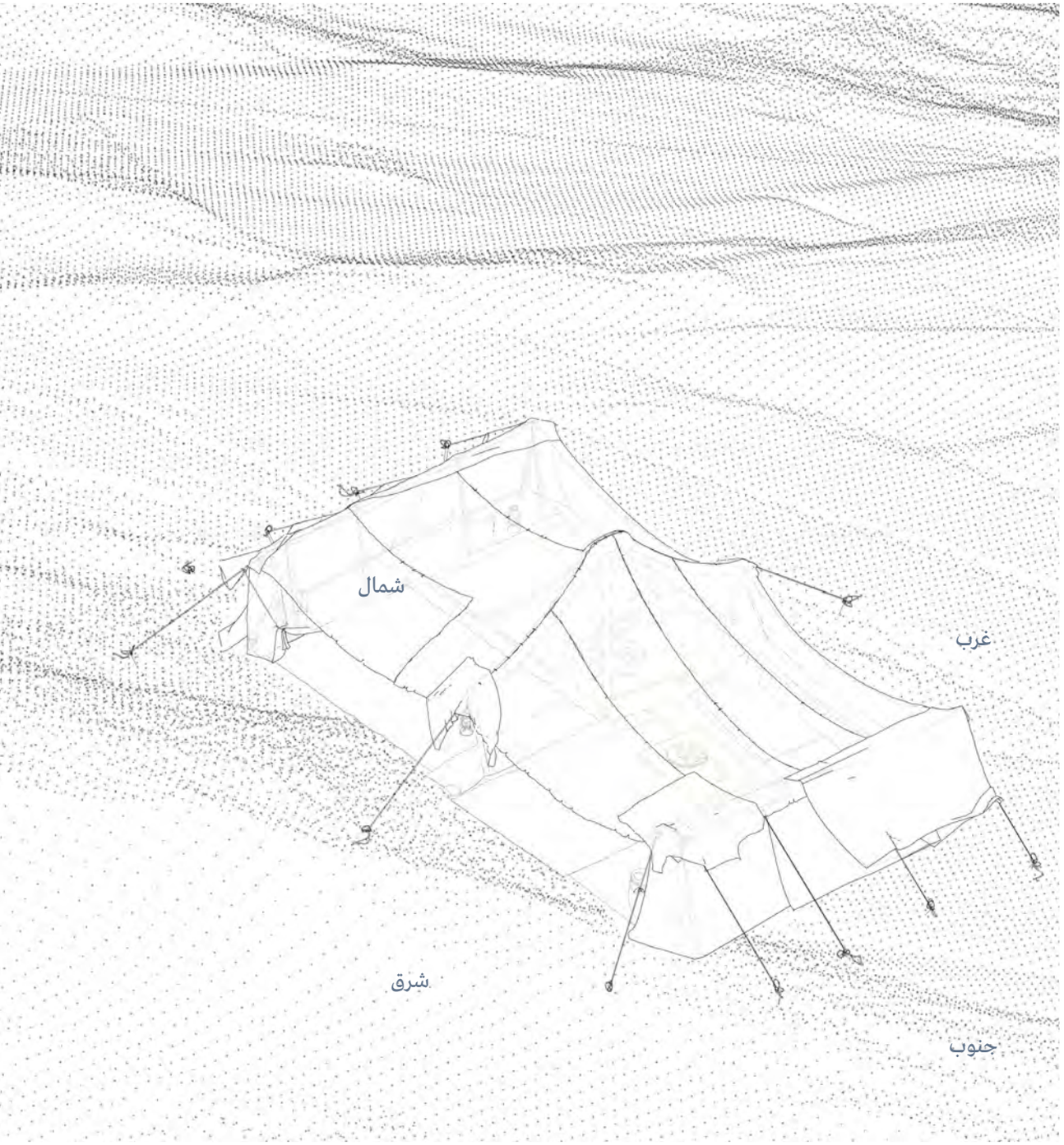
1

1.1 بيت الشعر- الفترة العثمانية-الانتداب البريطاني

إن نظرنا الى بيت الشعر البدوي قديمًا نجد قيمًا إبداعية كانت تخدم حاجة العائلة البدوية، في مواد بنائه وفي تقسيماته وفي طرق تركيبه وفي موقعه على الأرض بين الشرق والغرب، وحتى في قدرته على خلق بنية اجتماعية صحية.

إنّ دور الأم في مساحة بيت الشعر أساسي. هي خالقته، تنسجه وتصونه بين كل فصل وفصل، فكانت تعرف الأم البدوية كل زاوية في بيت الشعر، كيف وضعت ومن أجل ماذا؟ وكانت هذه المعرفة مصدر قوة المرأة البدوية في بيتها.

بيت شعر, ديار بئر السبع, 1932, مكتبة الكونغرس



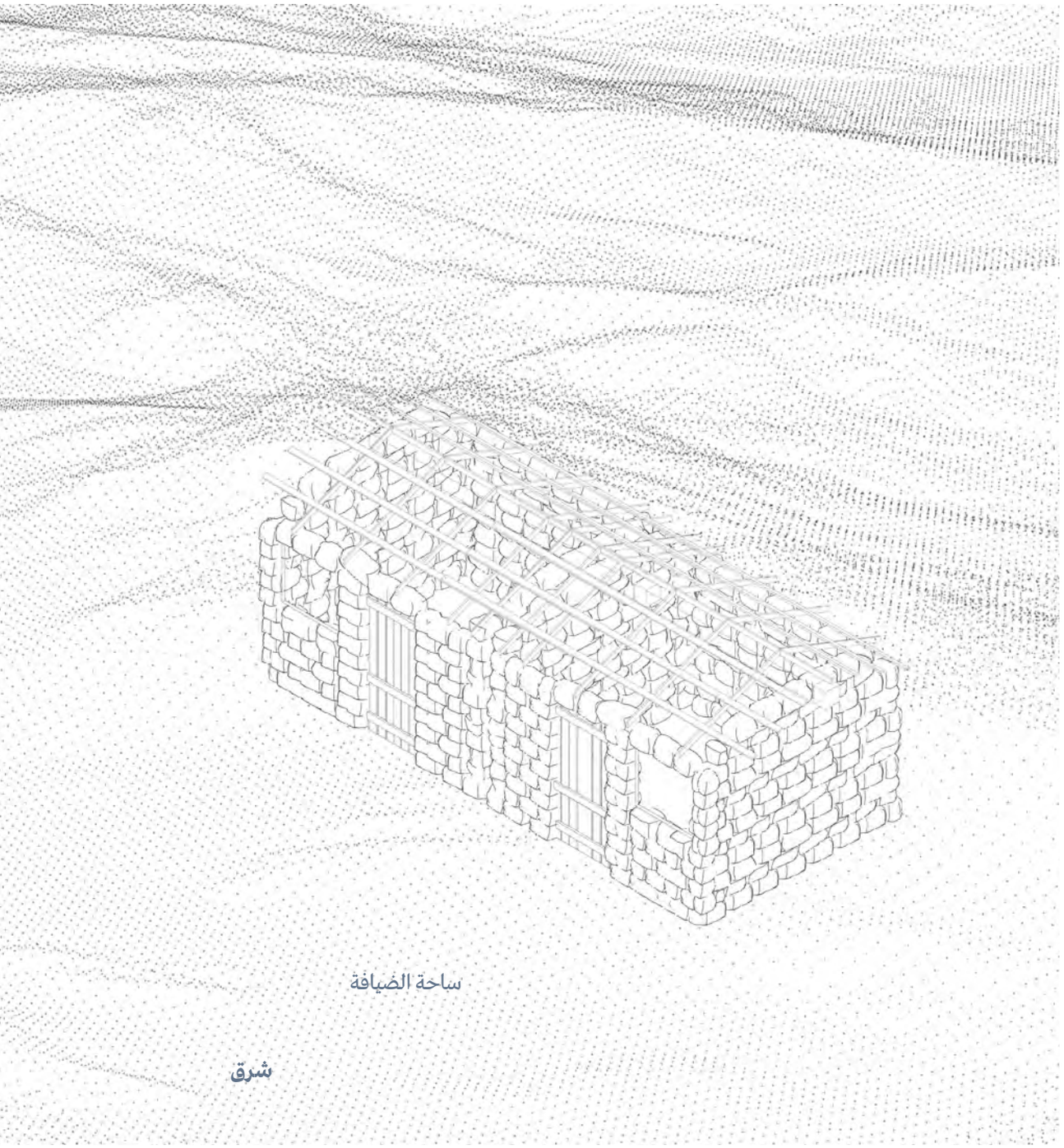
نمط بيت الشعر لعائلة بدوية في ديار بئر السبع

2.1 بايكة الحجر- الفترة البريطانية

حصلت نقلة نوعية بين بيت الشعر إلى بايكة الحجر في أواخر الفترة العثمانية حتى بدايات الانتداب البريطاني. تحول بيت الشعر الى بيت حجر ذي قسمين مركزيين، وفي كل قسم شباك . كما تم الحفاظ على تقسيمة بيت الشعر المعروفة وموقعه في «المطرح» (المكان).

إن أغلب العشائر التي بنت بايكات كانت تملك أراضي زراعية واسعة يعمل فيها فلاحون من غزة ومن الخليل- هم نفسهم من حمل معرفة البناء بالحجر ومارسوها بحسب طلب العائلات البدوية. سقف البايكات كان مبني من خشب شجر المتنان الصحراوي.

اثار بايكات عائلة ابو ربيعة, جنوب بئر السبع, خريف 2021,
تصوير: ربى فراونة



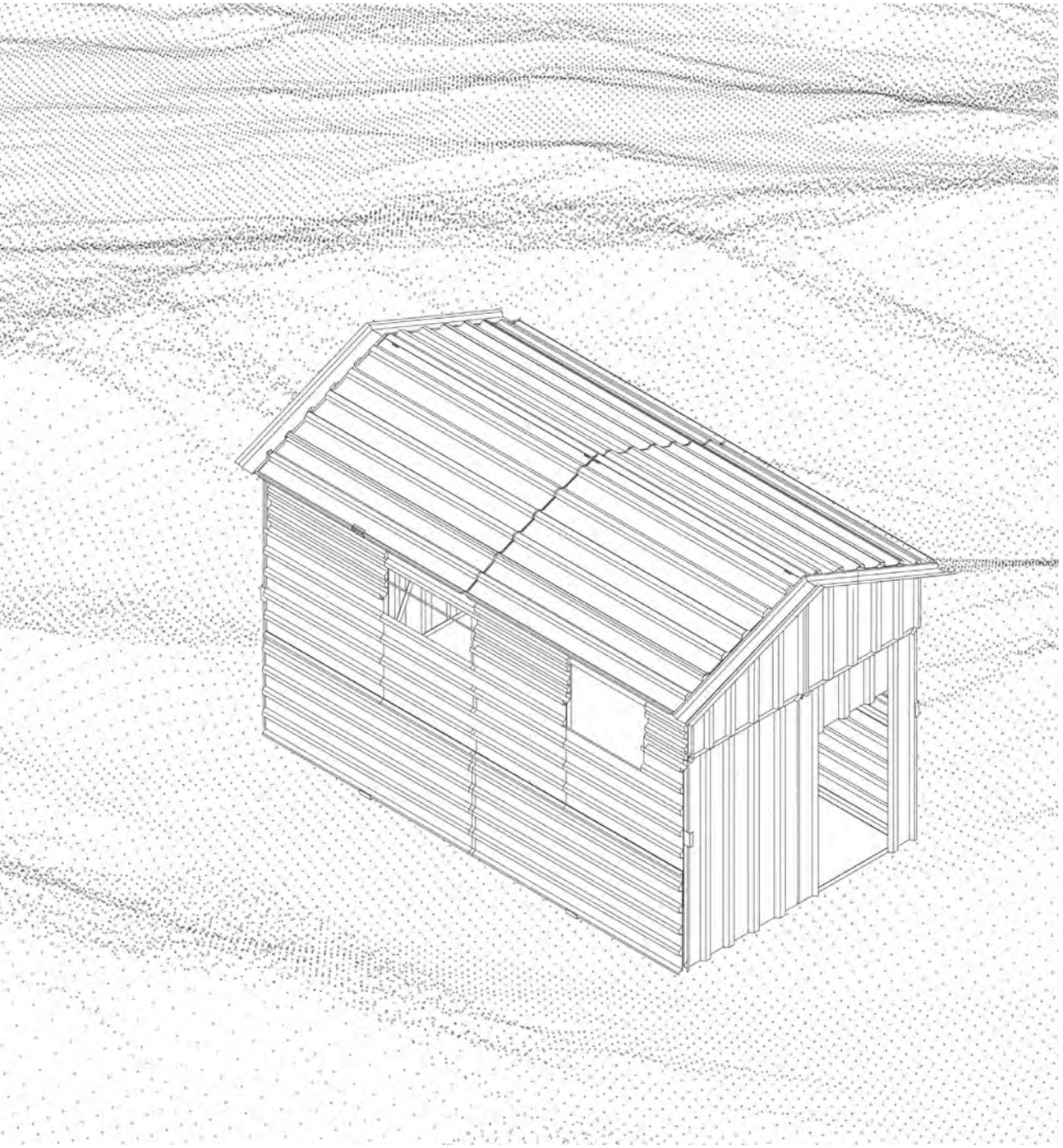
نمط بايكة حجر محلي في قضاء بئر السبع.

3.1 صريف الزينكوا-فترة السياج

في بدايات تأسيس الاحتلال الاسرائيلي على آثار أراضي القبائل البدوية جنوب فلسطين، وضع الاحتلال أغلب المستوطنين اليهود الشرقيين (من اليمن، العراق، المغرب...) واليهود من روسيا في صحراء فلسطين. في الوقت نفسه، حصرت إسرائيل العشائر التي صمدت على أراضيها الصحراوية داخل جدار حكم عسكري سميّ بالسياج.

داخل السياج، كان ممنوع على الفلسطيني ممارسة أي نوع من البناء بواسطة الطوب أو الخشب. لذا لجأت العشائر المختلفة تحت الحكم العسكري للبناء بواسطة بقايا المستوطنات الاسرائيلية المجاورة، فأخذت منها ال»زينكو» الأكثر استعمالًا.

عبارة "زينكوا" لمستوطنين جدد في ديمونا
(شرق بئر السبع) 1951 أرشيف دولة اسرائيل

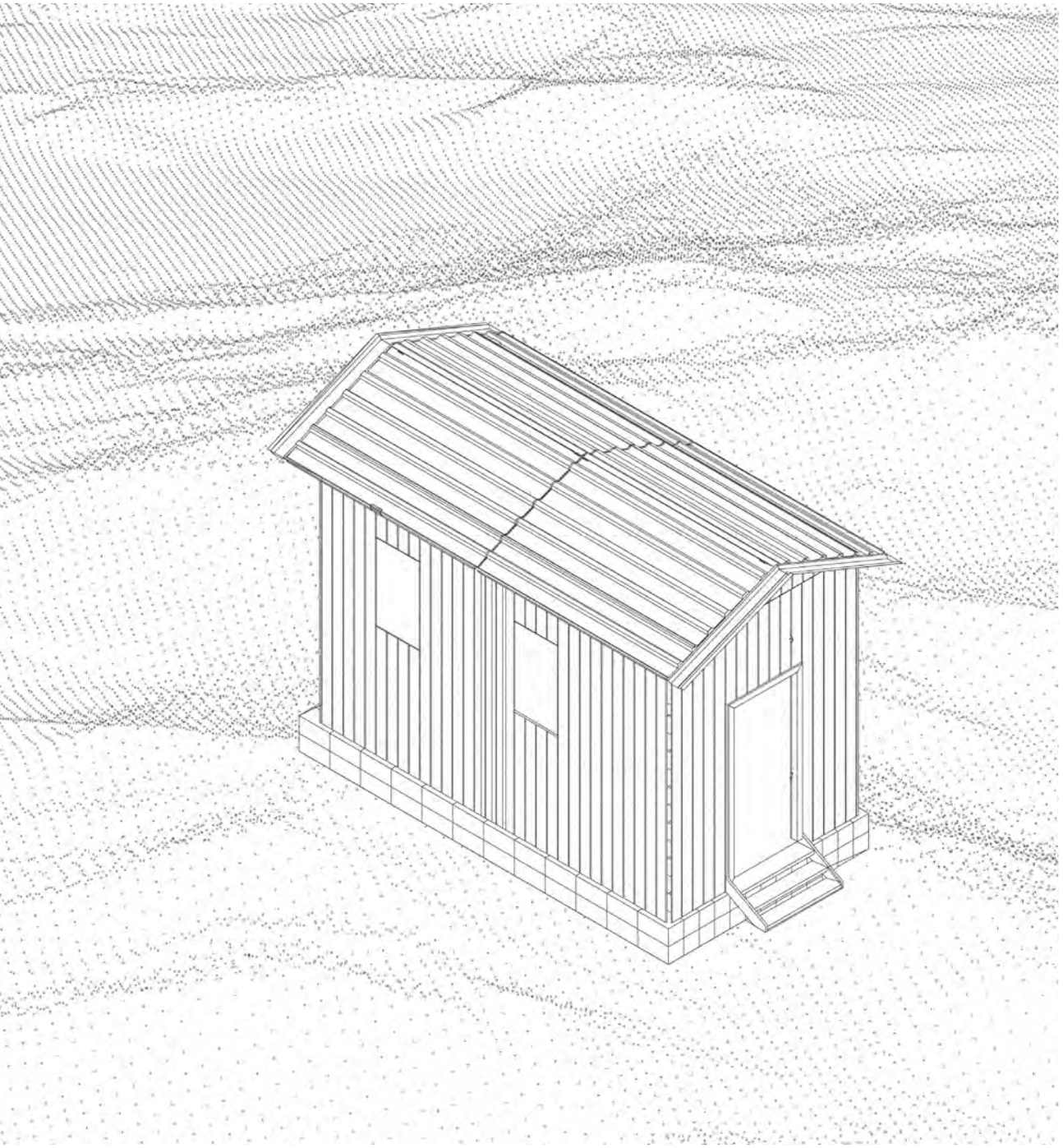


نمط صريف زينكوا في فترة الحكم العسكري.
نجد هذا النمط من البناء حتى اليوم في قضاء بئر السبع

4.1 بيت الخشب- الفترة الانتقالية

بعد فك سياج الاحتلال عن البلدان الفلسطينية، ومحاولة إيجاد التوازن بعد صدمة «كسرة» بئر السبع (النكبة بلسان أهل النقب) أصبحت العائلات البدوية في أزمة مالية، حين فقدت العديد من مواشيها ومن أراضيها ومصدر رزقها التجاري في سوق البدو في بئر السبع. نتيجة لذلك لجأت العديد من العائلات إلى شراء ‹صرفان، خشب مؤقتة ومتنقلة من اليهود في المستوطنات المجاورة.

صريف مؤقت, مستوطنة ديمونا 1951,
أرشيف دولة إسرائيل.



نمط صريف خشب في قضاء بئر السبع في نهاية الحكم العسكري

5.1 بيت الاسمنت- فترة الإعتراف الأول

نشهد اليوم واقعًا مأساويًا ناتجًا عن تخطيط البلدان التي تم الاعتراف بها بين السنين بين ١٩٦٥-٢٠٠٠ نهاية الحكم العسكري.

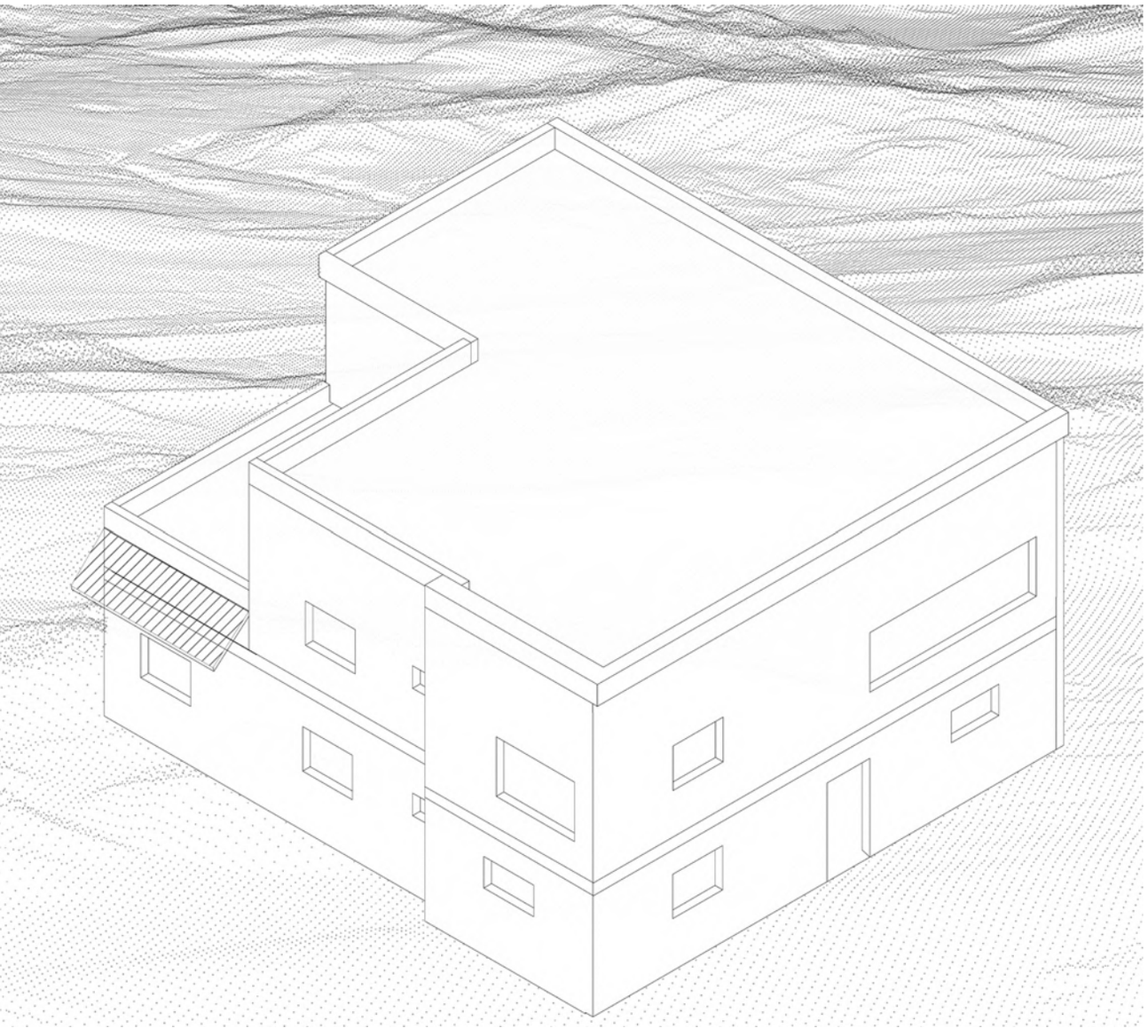
هناك إهمال في عملية تخطيط البيت، ناتج عن إسقاط مخططات البيوت الإسمنتية على نمط حياة العائلات البدوية دون أي تطور محلي طبيعي.

كان المخططون لبيوت الاسمنت الأولى المبنية للبدو إمّا اسرائيليين تابعين للحكومة لا يهمهم إلّا حشر البدو في مساحة محدودة، أو مهندسين من الخليل لم يزوروا البلدان العربية قط ولا يعرفون خصوصية العيش في المناخ الصحراوي اليابس.

أساءت أغلب القرى «المبنية» في بداية نشوئها فهم عملية البناء ال«معاصر» لذا اعتمدت على غرباء لبناء مخيلة مرغوبة لا تخدم احتياجات الناس الأساسية.
هذه العقلية المستسلمة إلى واقع أُسقط علينا خلقت تشوهات عدة يشكو منها الجميع في مساحة العيش في القرية.
أصبح الجميع يقضي حياته هاربًا من بيته، ساريًا في الهواء الطلق، مفضلًا ذلك على غرف الاسمنت المغلقة.

في هذه الرسالة أحاور فقط مساحة بيت العائلة في القرية.

فريتس كهن, بدو في تل السبع
صيف 1969 نوعم شوكد

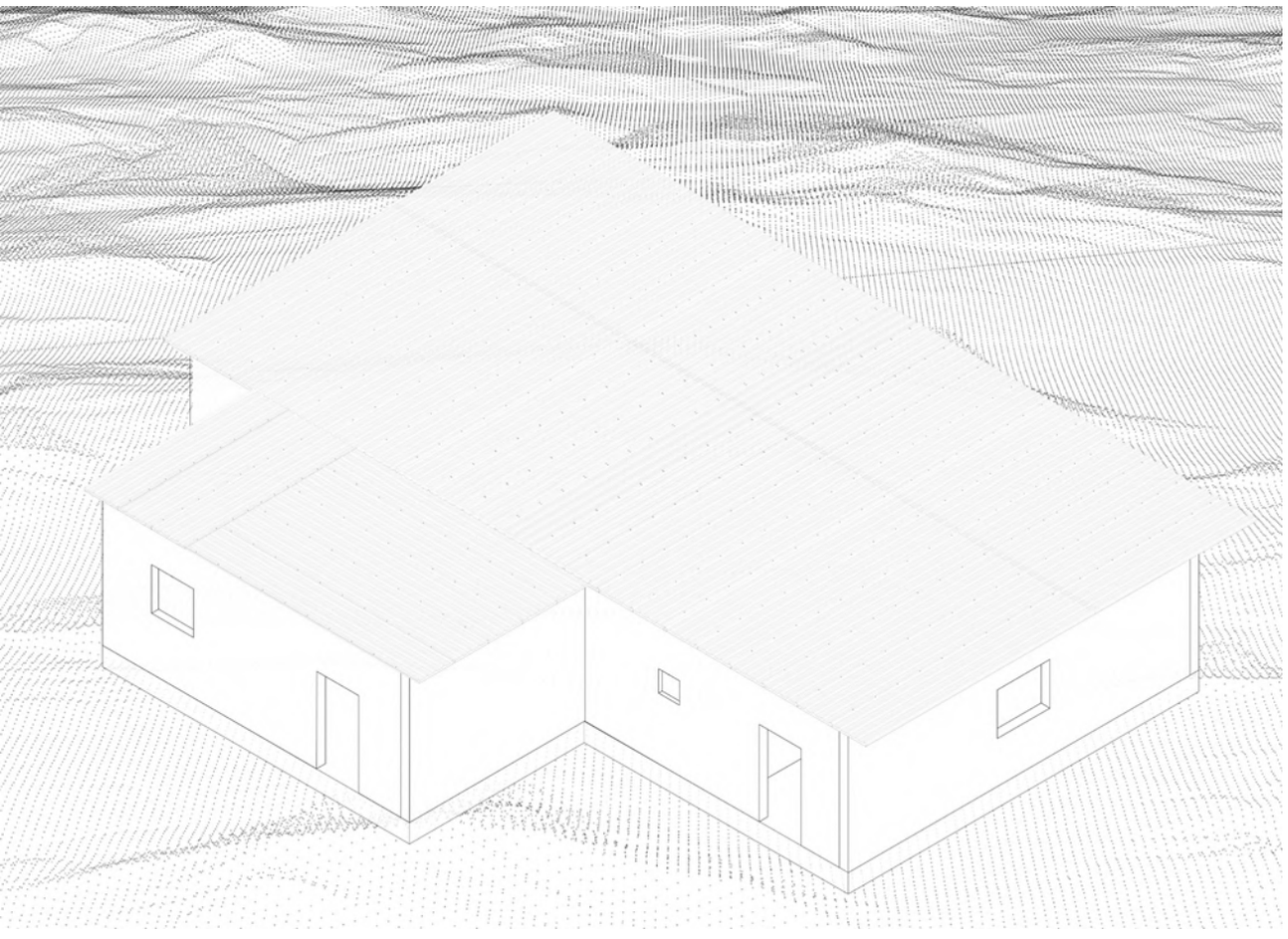


نمط بيت عائلة في قرية بدوية معترف بها, قضاء بئر السبع

6.1 بيت ال"اسكوريت"- فترة عدم الاعتراف المستمرة

مهمة البيت الأساسية في القرى مسلوبة الاعتراف في النقب هي إحاطة أراضي الملك- بمعنى رسم بصمة العائلة على الأرض ليتم تأمين مستقبل أفراد العائلة على أرضهم التاريخية.
مواد البيت وتقسيمات الغرف فيه، مخازنه، طرق تركيبه أصبحت موضوعًا هامشيًّا تحت تهديدات الاحتلال بالهدم- احتلال لا يعترف بحق السكان على أرضهم بتاريخ أتعاب أجدادهم.
يحدث البناء بسرعة وبساعات مظلمة بحيث لا تنكشف بيوت جديدة تم بناؤها.
يعدّ البيت «مؤقتًا» ومحطة انتظار حتى الاعتراف. والاعتراف لا يأتي. تولد وتكبر ٥ أجيال في بيوت «مؤقتة».

مبنى شق (مساحات لاجتماعات رجال كل قرية) في قرية الزرنوق, نقع السبع, خريف 2021, تصوير المؤلفة.



نمط بيت عائلة في قرية مسلوبة الإعتراف, قضاء بئر السبع

الجزء الثاني

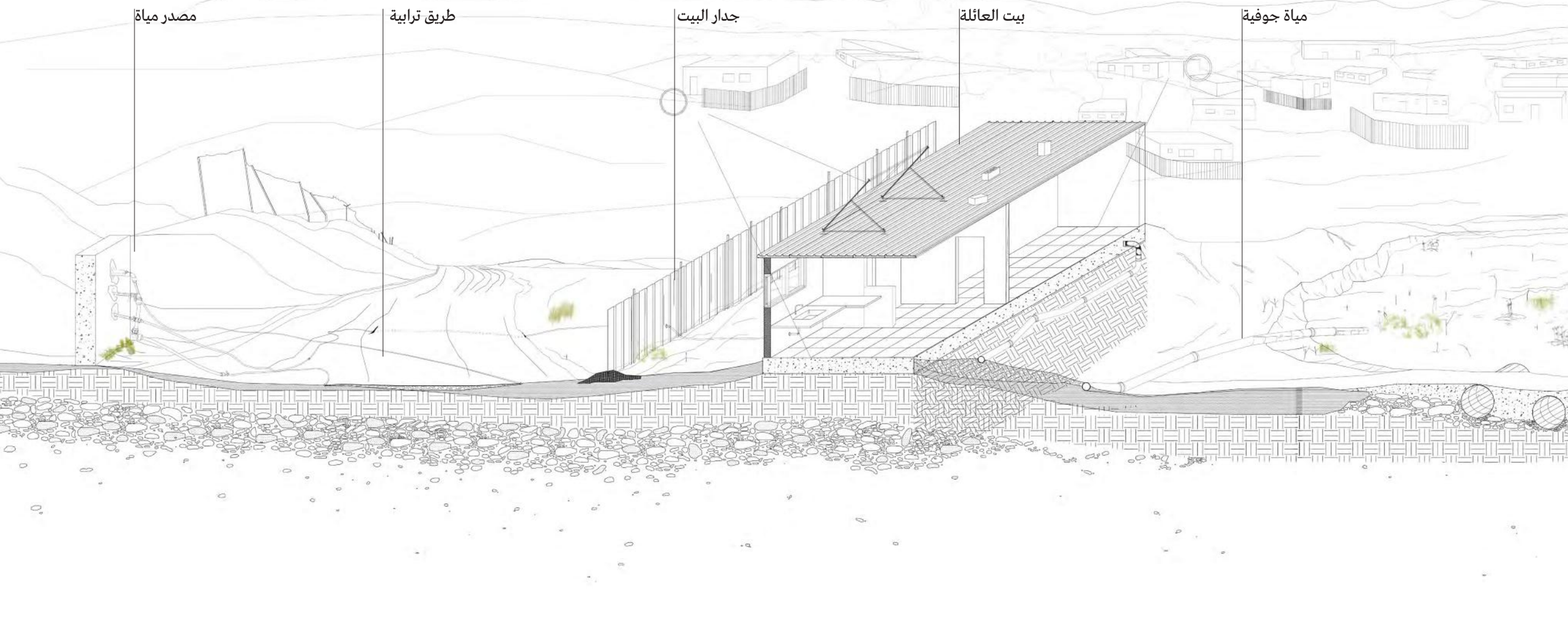
محيط البيت

2

محيط البيت
مركبات المحيط

ولدت في بيت اسمنتي ذي طوابق عدة. في زيارتي الأولى إلى قرية مسلوبة الاعتراف، لم أستطع فهم مركبات هذا المحيط. حركة المساحات فيه تختلف تمامًا عن حركة المساحات التي أعرفها وفيها كبرت، بالرغم من أنني أنا أيضًا ولدتُ في قرية بدوية.
لاحقًا، وبعد عدة زيارات، لاحظت مزيجًا متكررًا في كل قرية يعبر عن طبيعة تموقع العائلات البدوية في المساحات. نمط هذا المزيج الأساسي مكون من: مصدر مياه- طريق- بيت عائلة- مياة جوفية- وادٍ رئيسي- أرض زراعية.

هنالك منطق واضح وبسيط في هذا المزيج الطبيعي الذي تبقى في القرى مسلوبة الاعتراف، وسُلب من القرى المعترف بها، فوضعت الدولة العائلة فيها ضمن أحياء مربعة واضحة لموظفي الدولة، ومراقبي وتوسع الأحياء السكنية.



اتضح لي في زياراتي المختلفة إلى القرى كيف يكون الوادي جوهر القرية- تخرج إليه العائلات ساعة غروب الشمس للتنزه، متطلعة إلى أراضيها الزراعية المفتوحة، وإلى أفق يحمل نسمة هواء لا نستطيع إيجادها في القرى المعترف فيها والمبنية.

كيف أستطيع الحفاظ على هذا المنفس النقي في مقترحات تخطيط القرية وبيوتها السكانية ومساحاتها المفتوحة؟

'الطرفـــة
حطـــب
العرفـــة'

| مثل بدوي, سليمة, قرية رخمة

شرح للاقتباس: الطرفة هو نوع من الشجر يستعمل لإشعال النار واحيانًا للبناء. العرفة هي الفتاة المتمردة. كانت الفتاة المتمردة تشعل النار بحطب شجرة الطرفة للإنذار بالتمرد. يدل هذا المثل إلى العلاقة القوية بين البدوي\ة والمواد التي يستعملها وتخدمه في مواقف عدة- حتى في رمزية التمرد.

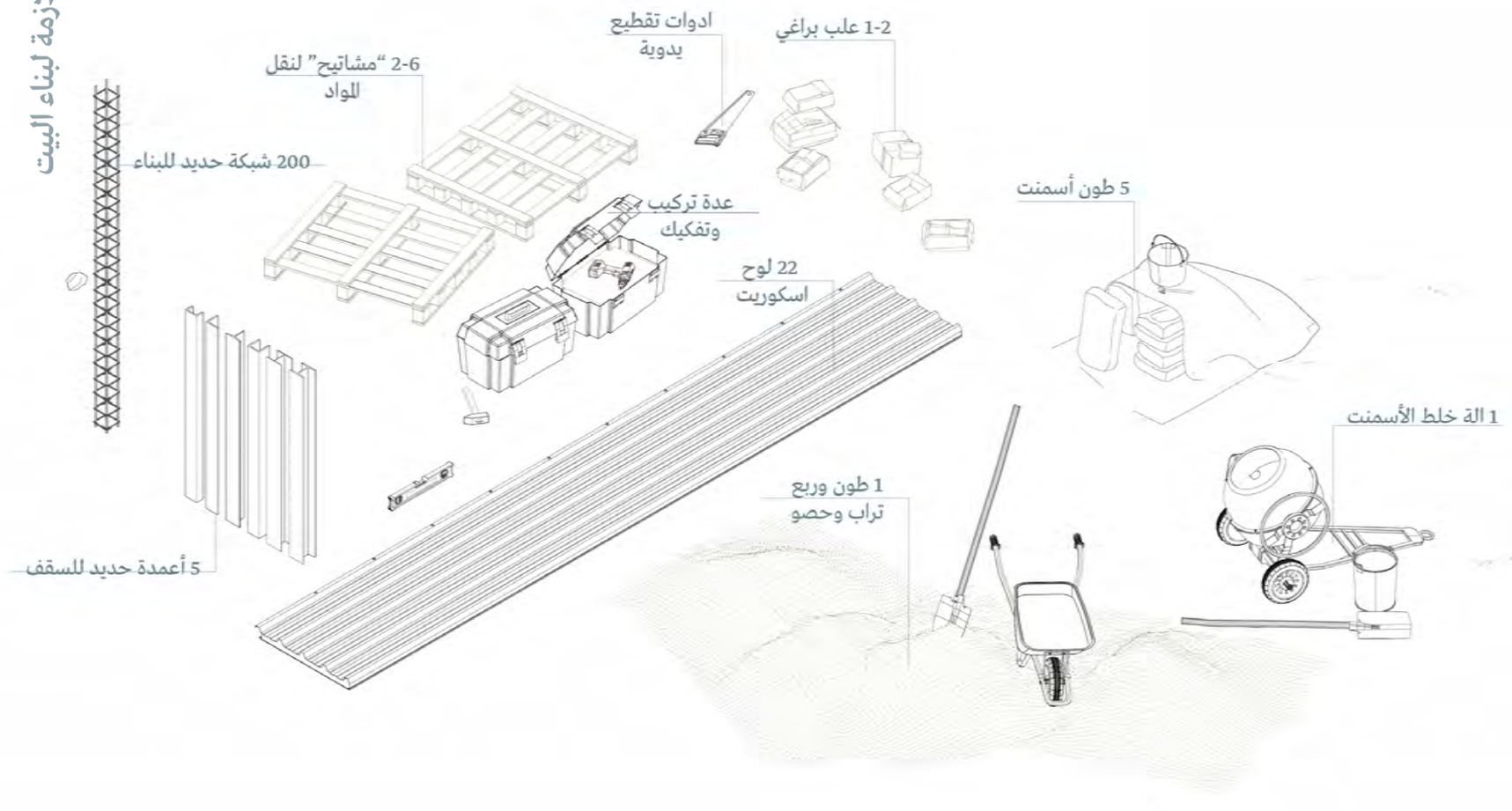
حكت لي هذا المثل أمراة قوية من قرية رخمة، وفكرت أننا جميعًا- نساء ديار بئر السبع- عرفات، متمردات، ضد منظومة تسعى إلى اضطهادنا بطبيعتها.
ونحن، بطبيعتنا، نتمرد ولا نتوقف عن الحركة والصمود والتطور في باطنها الضيق.
رومنسية الـ"صمود" تضيق علينا النظر إلى الواقع، ولكنها أيضًا تذكرنا بمعنى هذا الشكل من العيش المقيد.

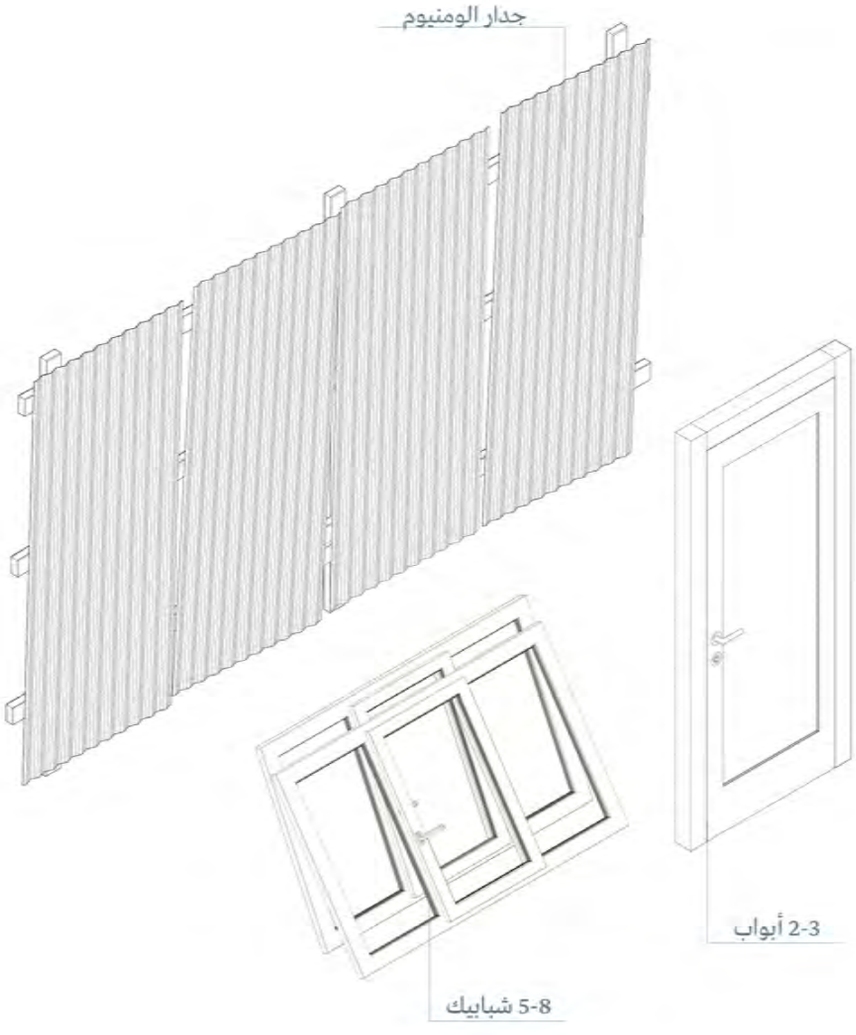
من بقايا بيوت عائلة الطوري في قرية العراقيب الصامدة والذي تم هدمها فوق ال190 مرة, عدسة ديجيتالية- 2019.

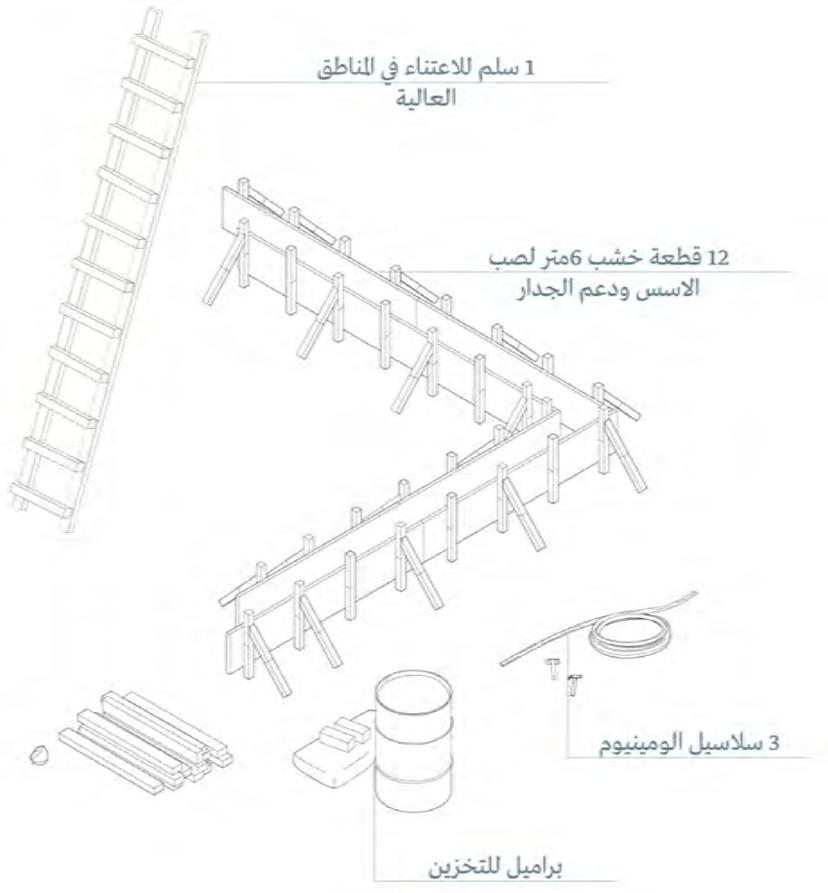
2.2 تجميع المواد في المحيط

في كل زاوية حي سكاني في انحاء القرى توجد تلة مواد بناء مختلفة لتوفير تكلفة البناء لأبناء العائلة لاحقا.

مواد بناء متراكمة بالقرب من احدى العائلات في منطقة نقع بئر السبع
صيف 2019, تصوير: المؤلفة.


ادوات تقطيع
يدوية
1-2 علب براغي
2-6 "مشاتيح" لنقل
المواد
200 شبكة حديد للبناء
عدة تركيب
وتفكيك
22 لوح
اسكوريت
5 طون أسمنت
1 الة خلط الأسمنت
1 طون وربع
تراب وحصو
5 أعمدة حديد للسقف


جدار الومنيوم
5-8 شبابيك
2-3 أبواب


1 سلم للاعتناء في المناطق
العالية
12 قطعة خشب 6متر لصب
الاسس ودعم الجدار
3 سلاسيل الومينيوم
براميل للتخزين

الجزء الثالث

مراحل بناء البيت

3

مواد بناء متراكمة في مكان واحد |

1.3 المرحلة الأولى

١- المرحلة الأولى من البناء في القرى مسلوبة الاعتراف؛ تجميع المواد اللازمة للبناء

هذه المرحلة تخدم حاجتين- الأولى هي خلق حركة بسيطة في المكان بحيث لا يظهر كأرض فارغة ولا يظهر كبيت مبني في الصور الجوية لدى السلطة الإسرائيلية. الحاجة الثانية التي تخدمها هذه الخطوة هي ملاءمة قدرات العائلة المادية- لذا إذا كانت العائلة تعاني الفقر وتحتاج إلى الكثير من الوقت لبناء البيت، تبدأ بتجميع المواد خطوة خطوة بالتلازم مع قدراتها المادية.

2.3 المرحلة الثانية
رسم الخطة العامة مع العمال وبناء هيكل لصب أرضية البيت

في هذه المرحلة يبدأ مسؤول العائلة بوضع خطوط عامة مع العمال، ومن ثم يوضع هيكل أساسي لصب أرضية هذه الخطة، وبحسبها يتم بناء البيت وتقسيم مساحاته. هذه المرحلة تبدأ في ساعات الليل بحيث لا تتم ملاحظة تحركات "غير مألوفة" على أيدي أذرعه السلطة الإسرائيلية.

صب أساس البيت |

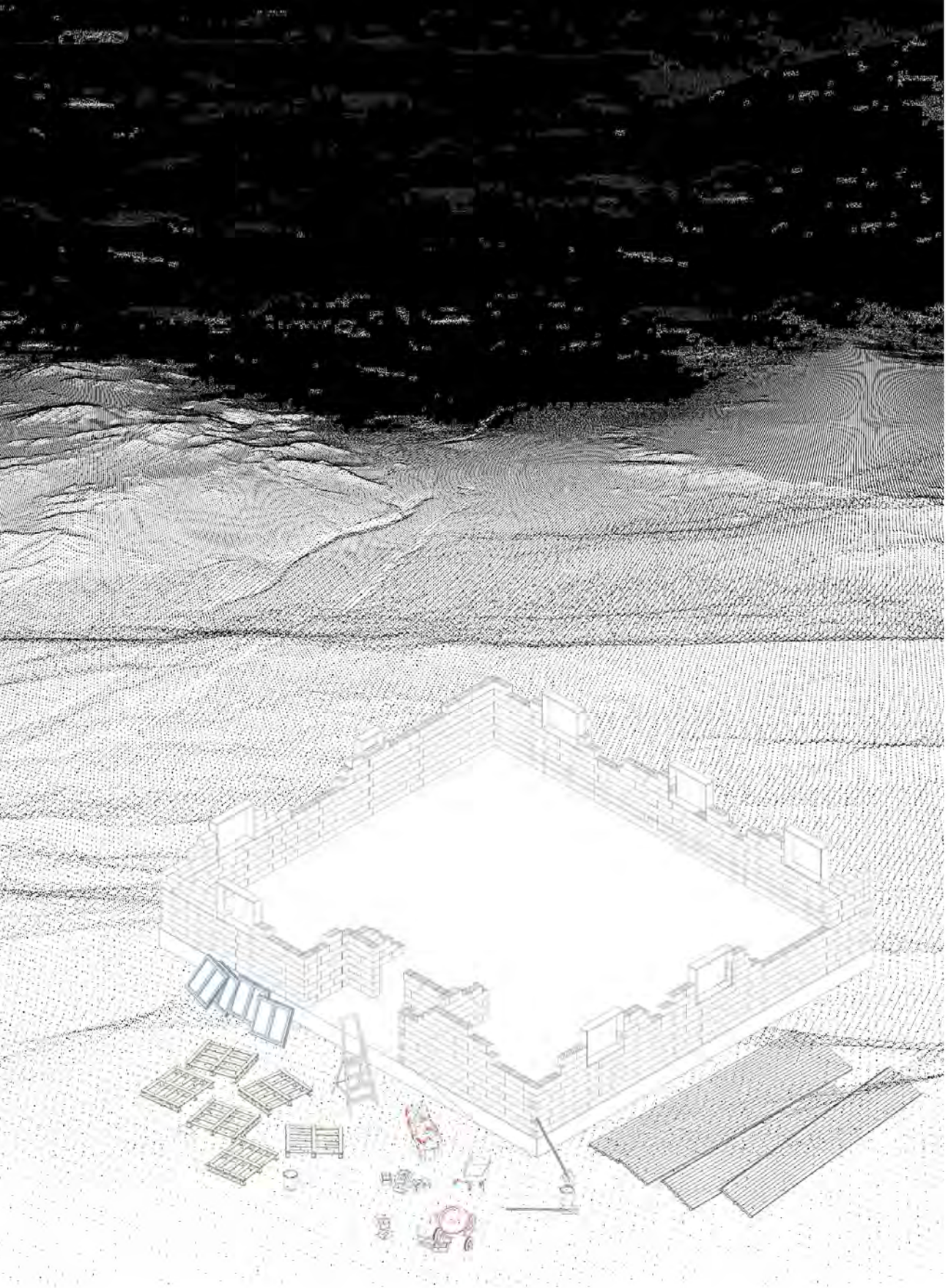
3.3 المرحلة الثالثة
صب أسس البيت في ساعات الليل

في هذه المرحلة يبدأ بناء البيت الفعلي، ويتم في الساعات المظلمة من اليوم بحيث لا تلاحظ كاميرات السلطة الاسرائيلية أي تحركات وتغييرات في المساحة. هذه المرحلة تتم خلال ليلة واحدة وتحتاج إلى ليلة أخرى لتمكين الاسمنت.

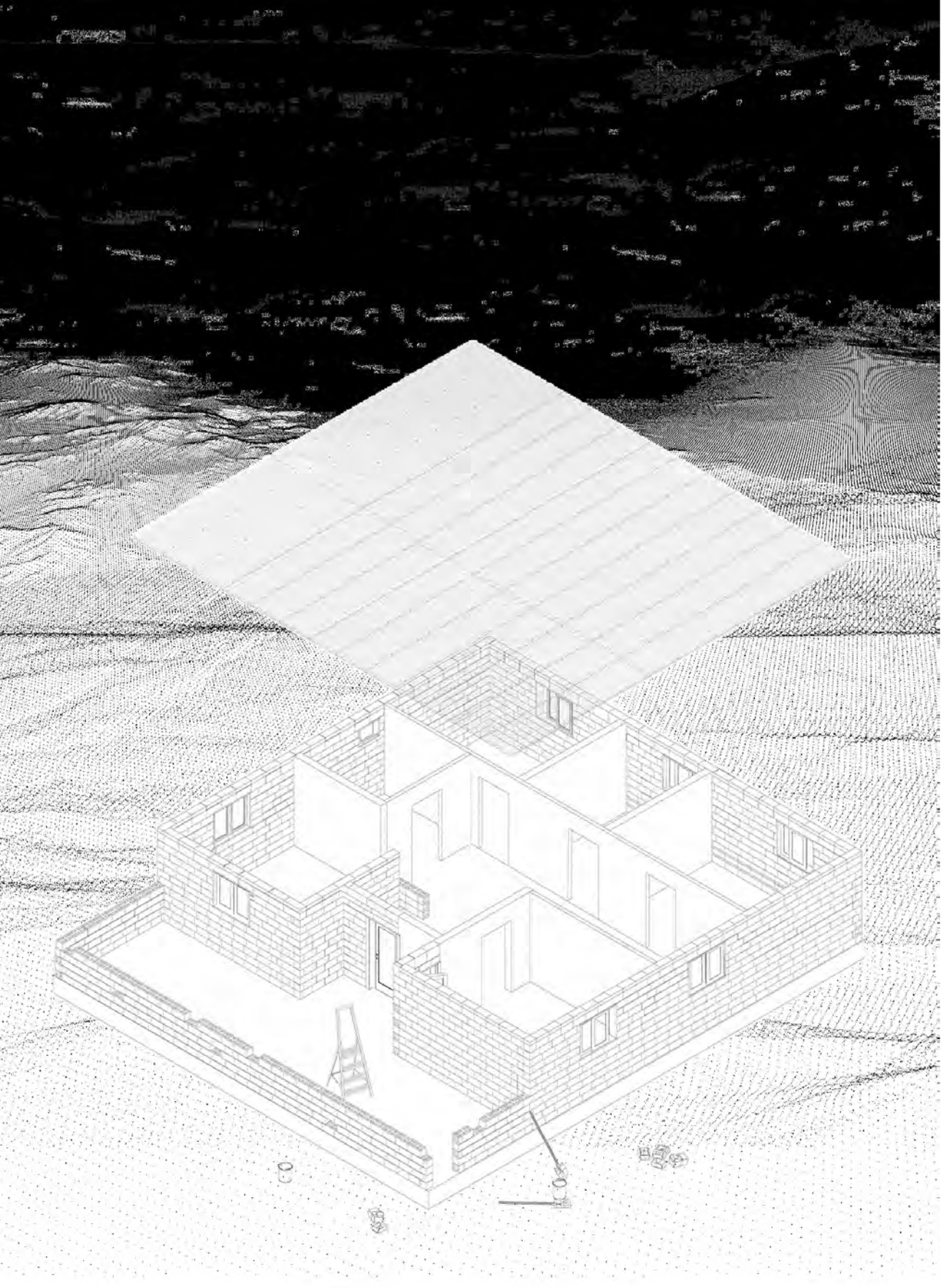
صب أساس البيت |

4.3 المرحلة الرابعة
بناء جدار البيت من «بلوك» الاسمنت

في هذه المرحلة يبدأ العمال ببناء جدار البيت من بلوك البطون بينما يتم تعيين مواقع الفتحات وهي الشبابيك والأبواب ويتم تحديد مساحات البيت المختلفة: غرف النوم, المطبخ, الحمام, وصالة العائلة وصالة الضيافة.



بناء جدار البيت بطوب الاتسمنت
ووضع موقع فتحات الشبابيك والأبواب



5.3 المرحلة الخامسة
تدهين وتركيب الشبابيك والابواب ورفع ألواح السقف

هذه هي المرحلة النهائية فيها يتم إختتام بناء بيت العائلة, في هذه المرحلة تختار العائلة ألوان جدار البيت وأنواع الشبابيك.

انهاء بناء بالبيت بوضع سقف الـ'إسكوريت' |

الجزء الرابع

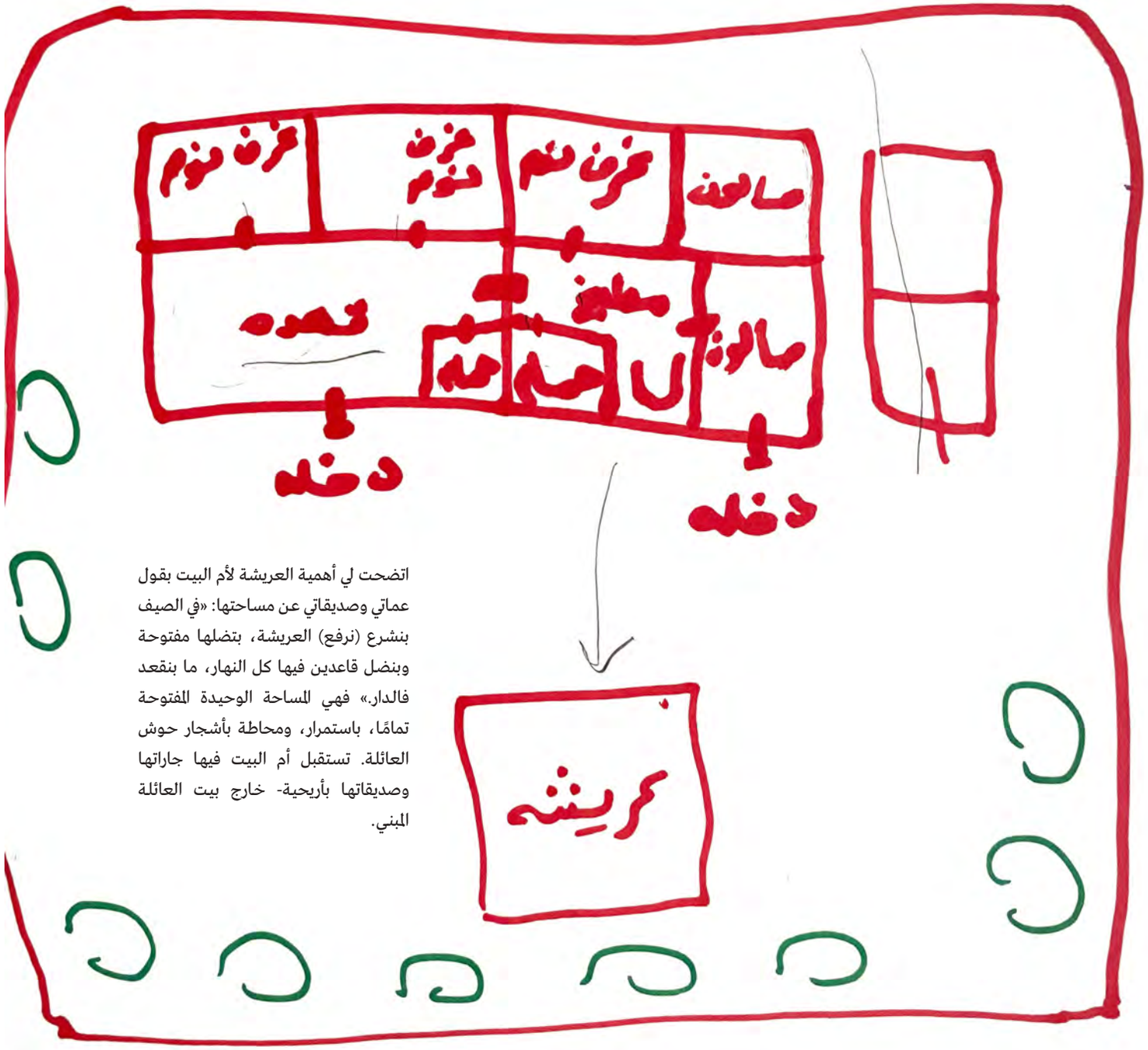
خطة البيت

4

1.4 البيت في عيون أم البيت

في إطار عملي، أقدم ورشات في مجال التخطيط لمجموعة نسائية في القر
مسلوبة الاعتراف. وفي إحدى الورشات غيرت المسار، وقررت التحدث مع
النساء عن بيوتهن؛ عن تقسيم البيت، قبل نقاش تقسيم القرية.
كانت من أجمل الورشات وأكثرها تعبيرًا. وجدت أنّ البيت هو أكثر مكا
يهمّ النساء، وأوسع باب لنقاش موضوع "مساحات المعيشة".

في الرسمات، تتضح إشكالية رئيسة، وهي التوسع داخل حوش البيت
التوسع مع تزايد أفراد عائلة الأم الواحدة، إضافة إلى التوسع عند تزو
أحد الأبناء.
اليوم، حين تكبر العائلة يضيف إليها الأفراد غرفة. إنما هنالك أسباب أخر
خلف إضافة غرف أخرى إلى البيت، منها معتقدات تقليدية بدوية.



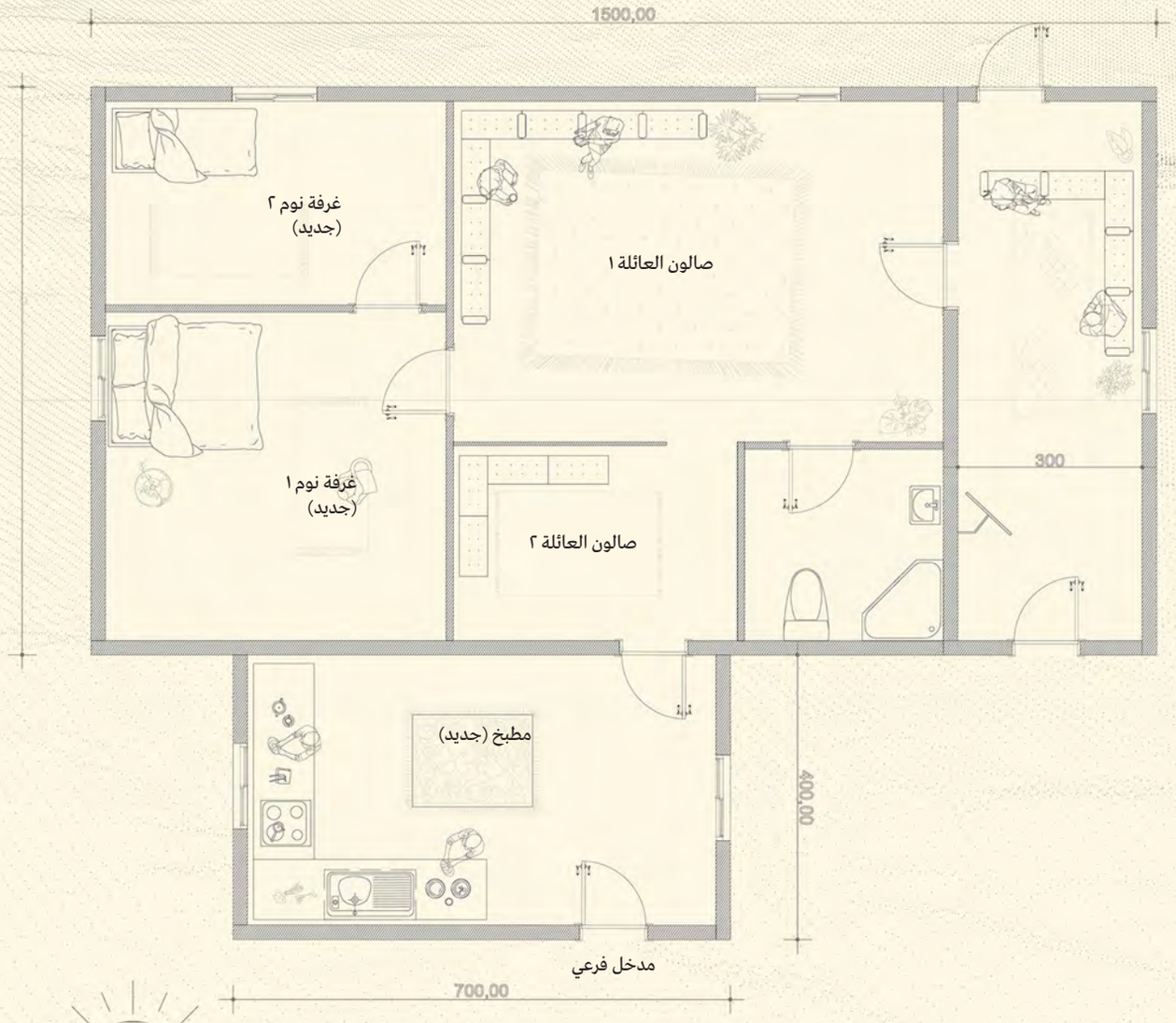
اتضحت لي أهمية العريشة لأم البيت بقول عماتي وصديقاتي عن مساحتها: «في الصيف بنشرع (نرفع) العريشة، بتضلها مفتوحة وبنضل قاعدين فيها كل النهار، ما بنقعد فالدار.» فهي المساحة الوحيدة المفتوحة تمامًا، باستمرار، ومحاطة بأشجار حوش العائلة. تستقبل أم البيت فيها جاراتها وصديقاتها بأريحية- خارج بيت العائلة المبني.

2.4 بيت أم

رسومات خطط
مناقشتها مع نس
تساعد في فهم ال
في بيت العائلة ال

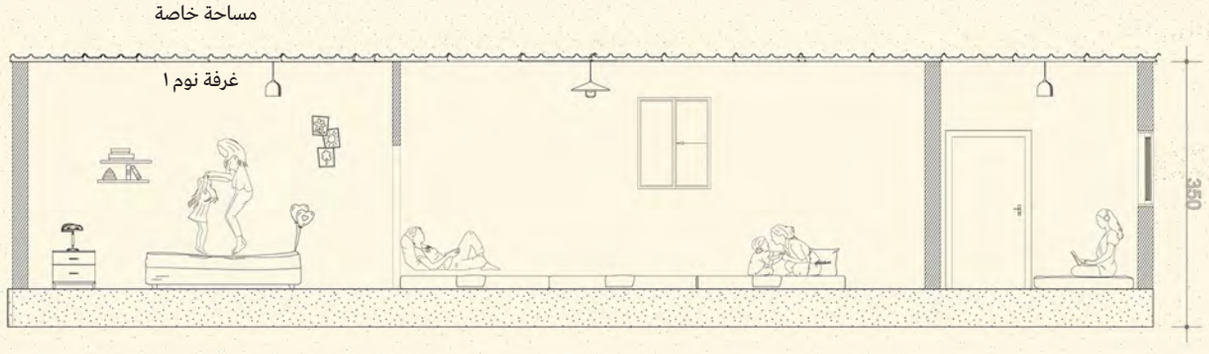
إضافة الغرف تخ
مسلوبة الاعترافا
والبناء وعدم
الحكومية لبناء «ن
إذ يظهر البيت من
تقريبًا، حتى لو
غرفتين إليه.

في البيت مساح
مساحة عامة و
خاصة لأفراد أهل
البيت في أغلب
لتمنع الاصطدام



بيت الأم الأول يكون نصف حجمه بعد سنتين إذ يجب علينا التفكير في بناء البيت بتمرحل زمني. وكثيرًا ما تشكو الأمهات من تكاليف تصليحات البيت بعد المشاكل العديدة التي ظهرت فيه بعد بنائه.

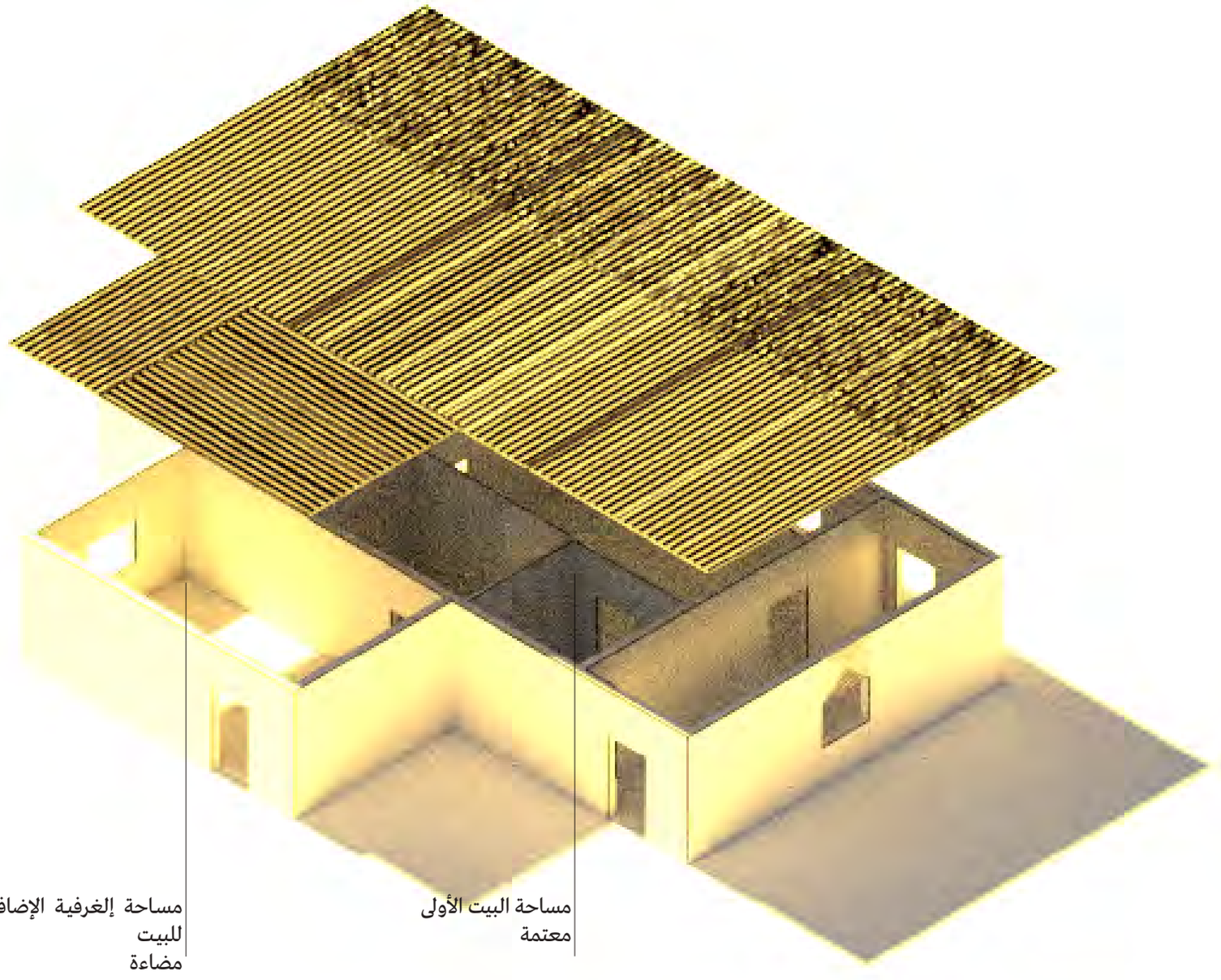
كنت أفكر في أنهم يواجهون تحديًا تخطيطيًا صعبًا- بناء بيت يستطيع التوسع على مر السنين. هذه مهمة مركبة لمعظم المخططين، فكم ستكون سهلة على الأهالي الذي يبنون البيوت بشكل طارئ وسريع خوفًا من الهدم؟



لن يكون باستطاعتي فهم مشكلة ا
صحراء فلسطين قوية- كيف لا تدخل

بعد بناء مودل لخطة أحد بيوت الور
الغرف لخدمة أفراد العائلة الأكبر، وج
تحيط بيت الأم يزيد كلما أضافت العائا
الضوء أو الهواء عن البيت الأول الأسا
أفراد العائلة الامتناع من الجلوس فيه

تعود هذه الملاحظة إلى أهمية تخط
الجديدة حول البيت؟ ما الممر الذي ي
على جودة الغرف "الأولى" بينما نتوس



الجزء الخامس

مقترحات تخطيطية

5

مقترحات تخطيطية
شرح عام عن المخططات الأولية المقترحة

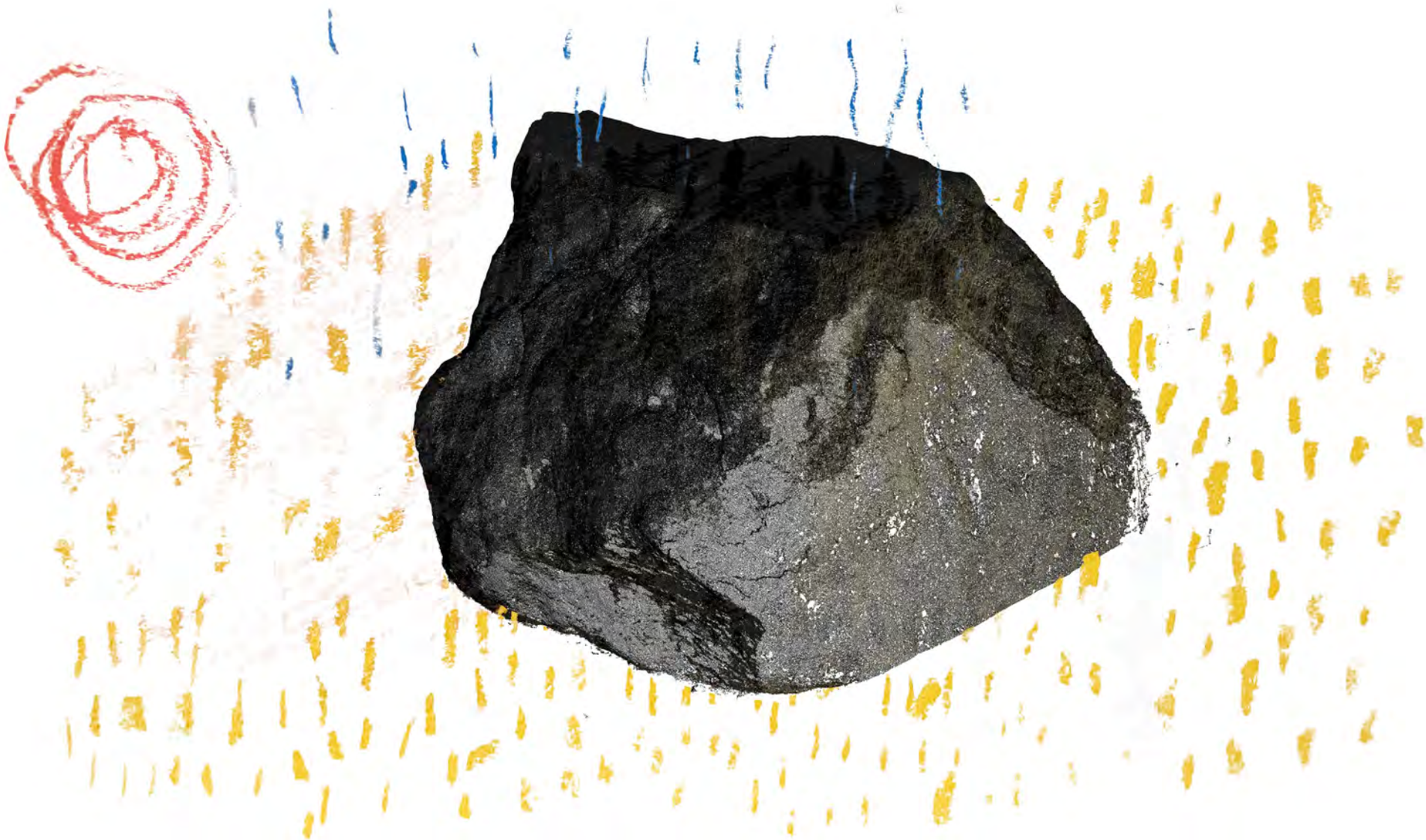
يعرض الجزء التالي، وهو الجزء الاخير لرسالة البيت، مخططات أولية أقدمها لكيفية تخطيط البيت في القرى مسلوبة الاعتراف. كثير من طرق البناء اكتسبتها خلال جولاتي في القرى ومن معرفة وتجربة أهالي البيوت الذين استضافوني.

ثلاثة مقترحات تخطيطية:

المقترح الأول بيت متاح, يستطيع ا

المقترح الثاني بيت تكلفته أعلى, مد

المقترح الثالث بيت أجتماعي, مبني

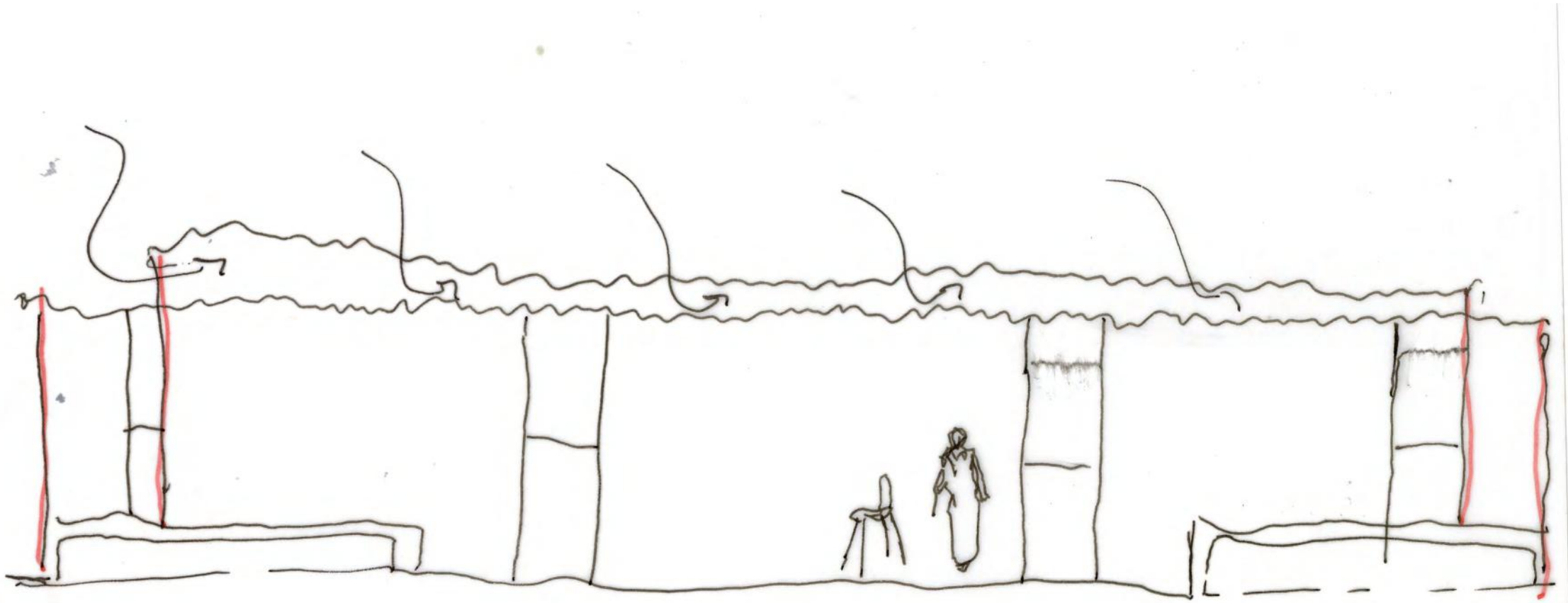


| حجر قرية الفرعة, شرق بئر السبع, ته

1.5 المقترح الأول

المقترح التالي يحمل 5 أساسات:

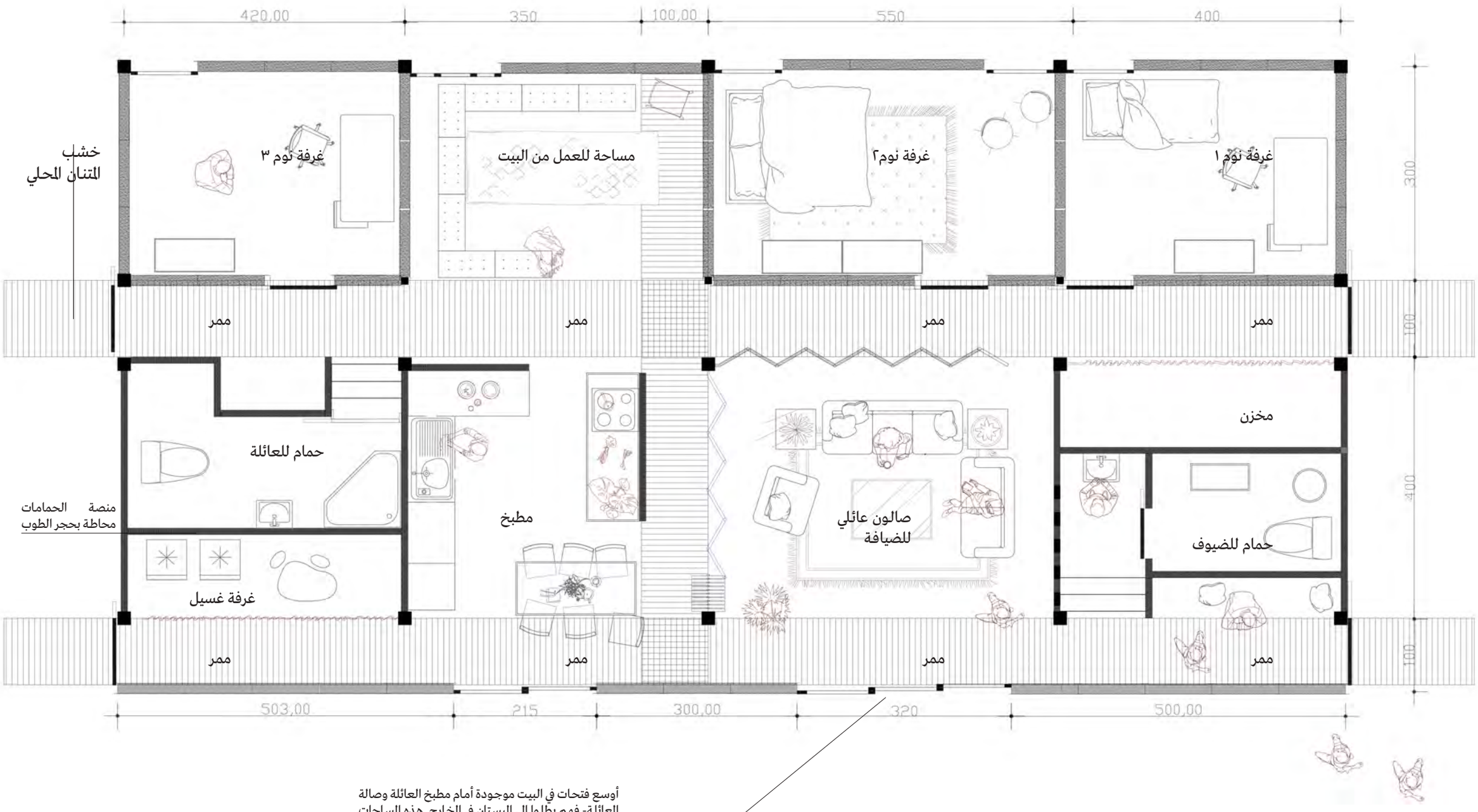
1. سعره معقول
2. ضوء وتهوءة مستمرة في كل أنحاء البيت
3. قابل للتفكيك وللتركيب في حال تلقي إنذار للهدم
4. مساحات للتخزين والنفايات
5. التوسع بواسطة نمطين من الغرف
6. مواد محلية متوفرة



1.5 المقترح الأول
خطة البيت الفوقية

بمساعدة الخطة الفوقية للبيت نستطيع تحديد المساحات في حدود الأرض المبنية. في الخطة الفوقية لأول مخطط مقترح، حافظة على ممرات واضحة بين كل جزء وآخر من البيت. مساحة صالة الضيافة متغيرة- قابلة للانفتاح وللانغلاق.

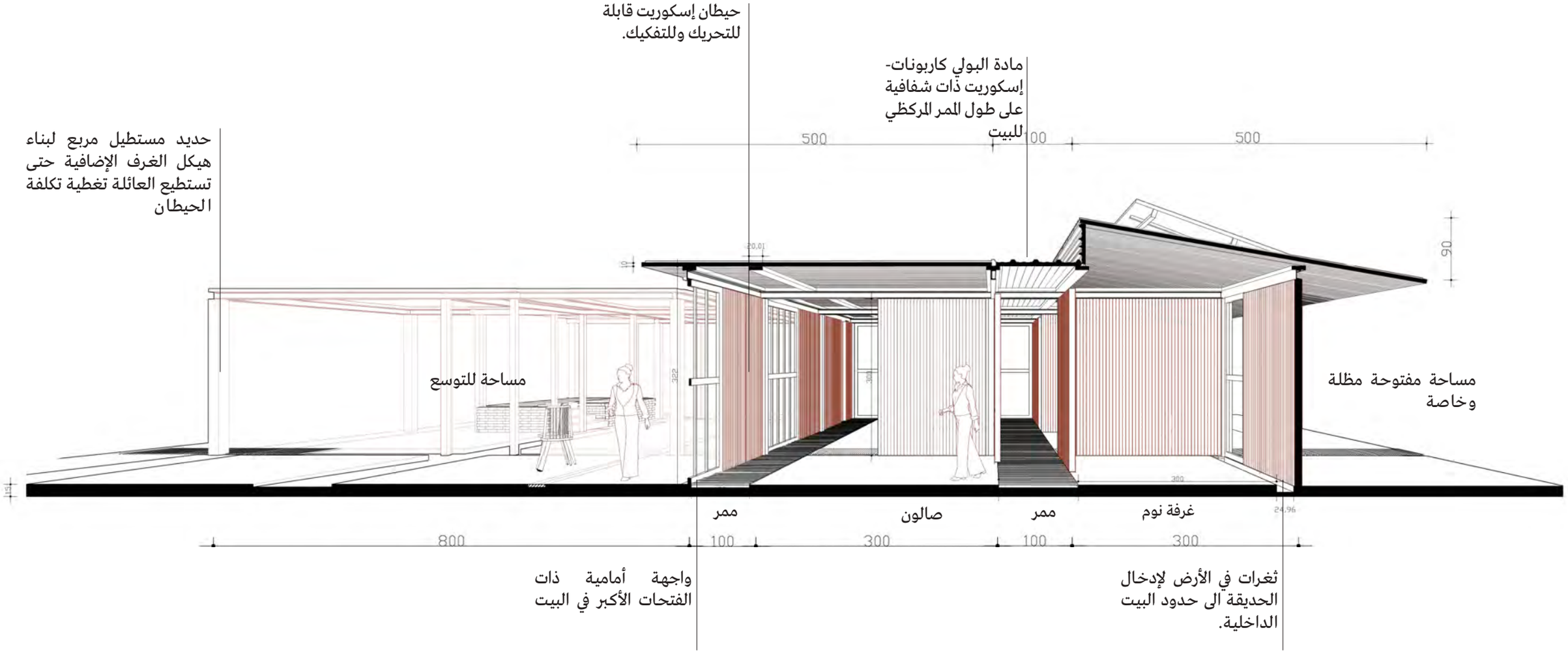
حمامات البيت مبنية على منطق الكومبوست الذي يستغل نفايات الإنسان لتغذية المحاصيل الزراعية- لذا رفعت منصة صغيرة لحمامات البيت الاثنين- واحد بخدمة الضيوف وواحد بخدمة أهل البيت.

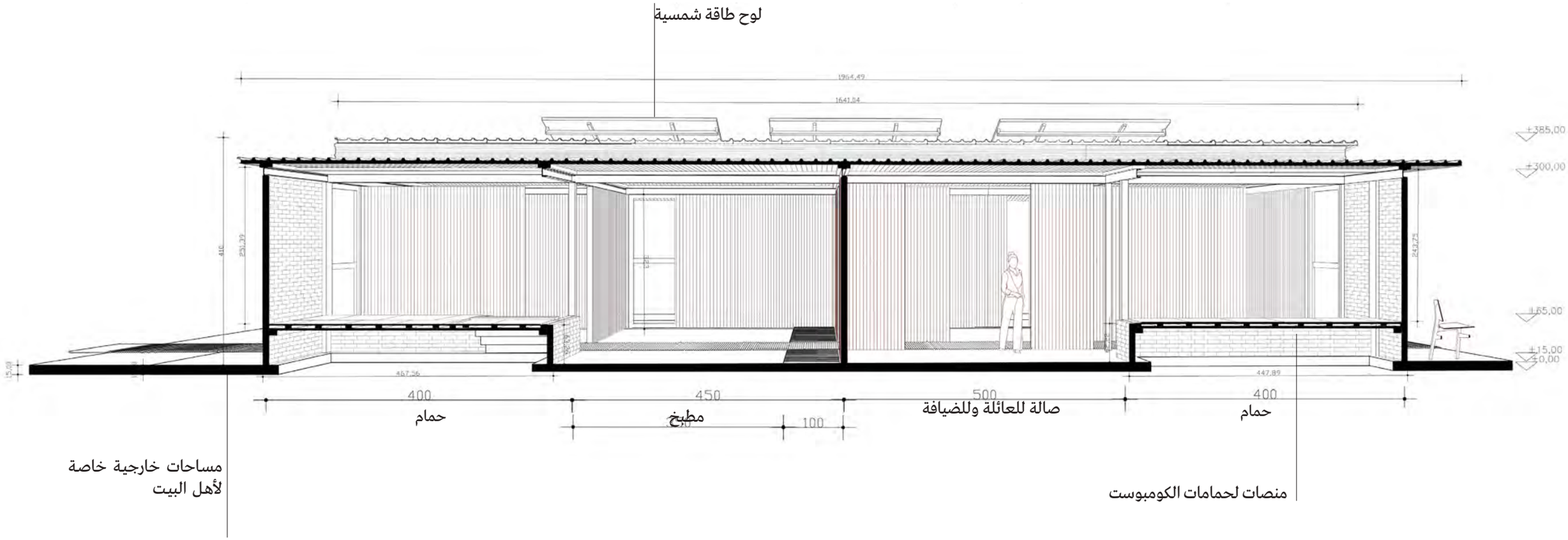


أوسع فتحات في البيت موجودة أمام مطبخ العائلة وصالة العائلة- فهم يطلوا الى البستان في الخارج. هذه المساحات تستبدل العريشة الخارجية وتلبي قيمها في داخل البيت نفسه.

1.5 المقترح الأول
مقطع البيت 1

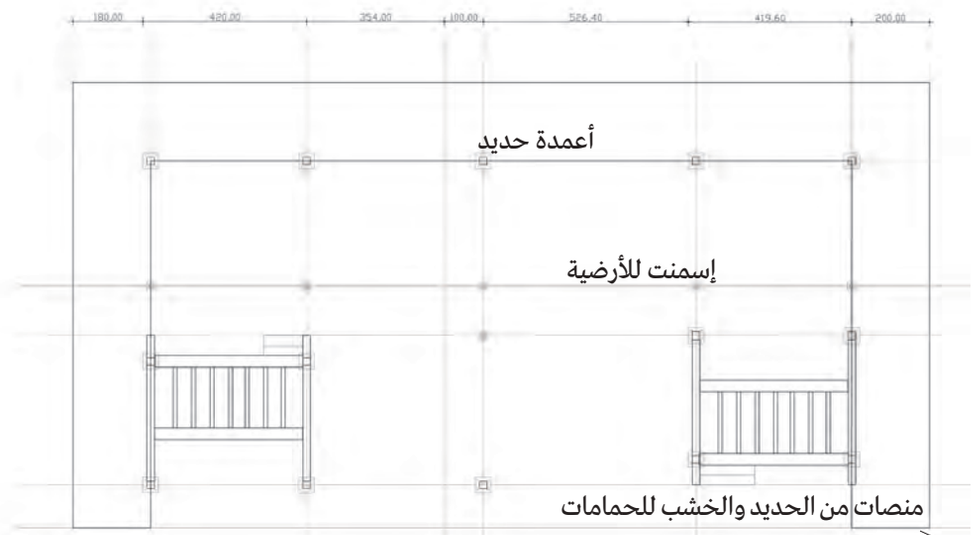
في البيت إضاءة وتهوية باستمرار. يحدث ذلك بواسطة زاوية في السقف تؤمن تهوية وإضاءة في أغلب مساحات البيت، بواسطة فتحات تخدم الإنسان كممر وكمدخل للضوء- بمعنى أن الفتحات تكون هي الباب وهي أيضًا الشباك. تم تخصيص مساحة جديدة في البيت تدخل بين غرف النوم وتكون بخدمة أهل البيت لهدف العمل من البيت.
حسبما تعلمت من أغلب البيوت في القرى، فإنّ هذا البيت يطل على جهة الشرق يمنع الاصطدام بالرياح الغربية.



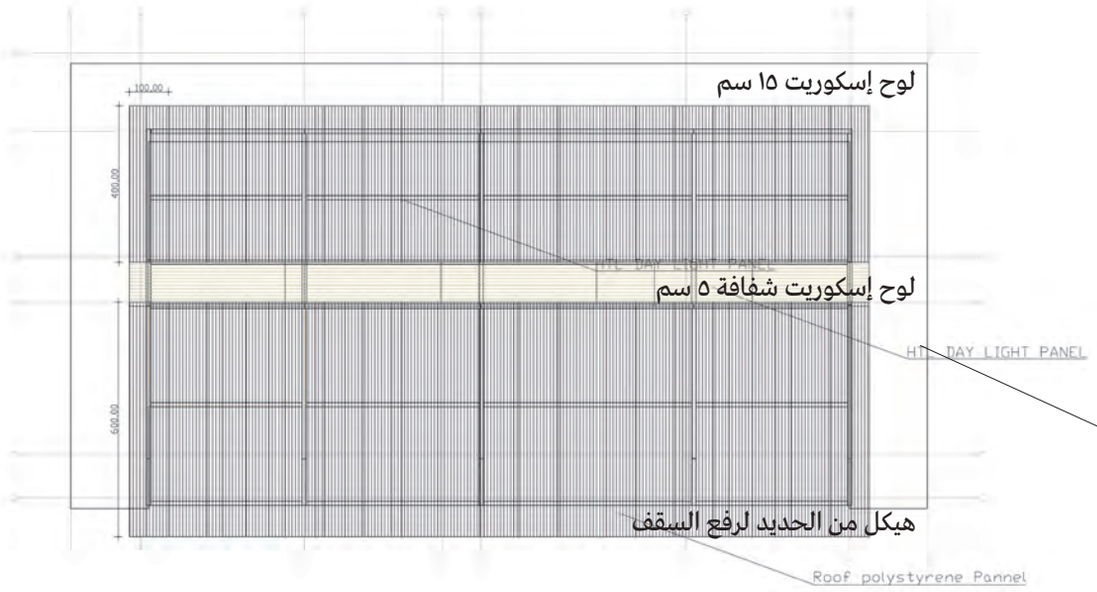

لوح طاقة شمسية
1964.49
1641.04
+385.00
+300.00
+165.00
+15.00
±0.00
410
251.39
243.75
15.00
467.56
447.89
400
450
500
400
100
حمام
مطبخ
صالة للعائلة وللضيافة
حمام
مساحات خارجية خاصة
لأهل البيت
منصات لحمامات الكومبوست

1.5 المقترح الأول
خطة أرضية البيت وخطة سقف البيت

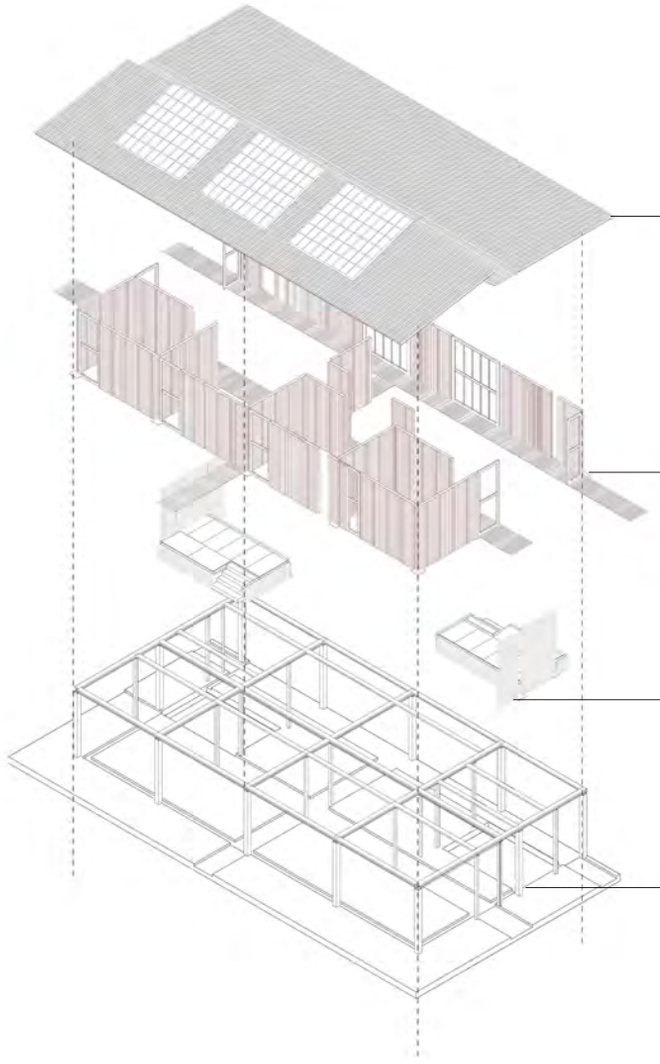
بالإضافة الى خطة البيت الفوقية فيها نجد تقسيمات البيت واحجام كل غرفة فيه ننظر إلى خطط البيت الاخرى في المستويات المختلفة.



خطة لإرضية البيت توضح المواد المستعملة لبناء أرضية المقترح لتخطيطي الأول



خطة لسقف البيت توضح فيها المواد المستعلمة لبناء سقف المقترح التخطيطي الأول



سقف البيت

- ١٠ الواح إسكوريت شفافة Polycarbunate
- ١٦ لوح إسكوريت ١م\٣م
- ١٦ لوح إسكوريت ١م\٦م

حيطان البيت والفتحات

- ٢٧ لوح إسكوريت
- ١٣ فتحة باب-شباك
- خشب المتنان للأرضية

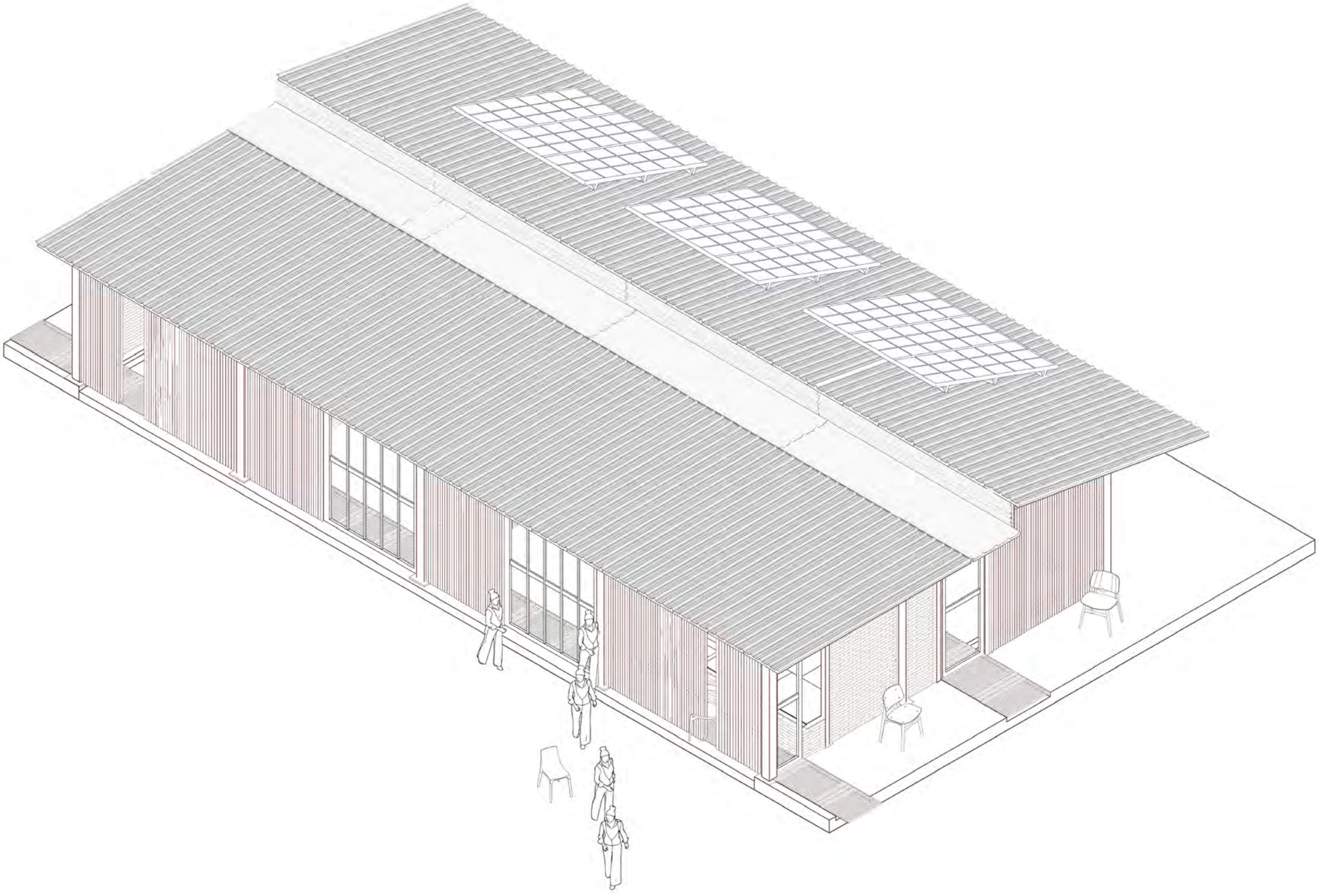
حمامات البيت

- طوب طين
- الواح خشب OSB
- ٤ عمدان حديد ٤م

هيكل البيت

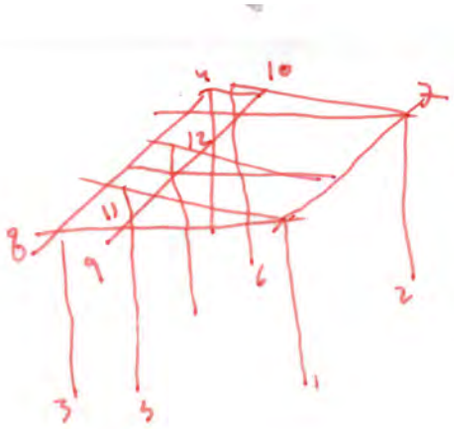
- حديد مربع للأعمدة ١٠سم\١٠سم × ٦ (٦م)
- حديد مستطيل للسقف ٥سم\١٠ سم × ٥ (٦م)

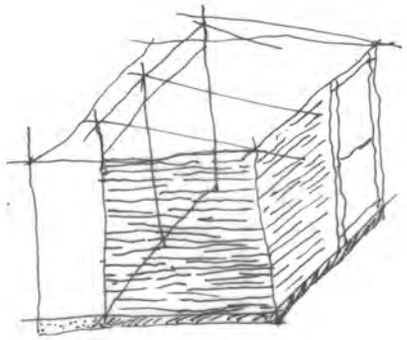
تكلفة نهائية
٥٥,٠٠٠ شيكل

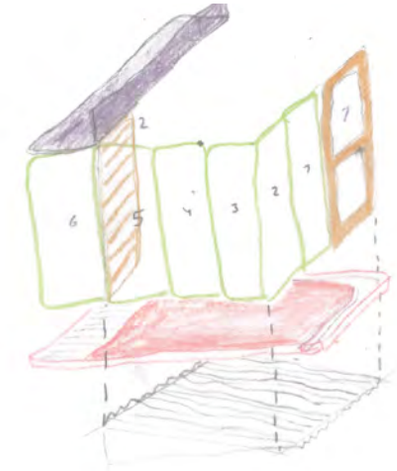


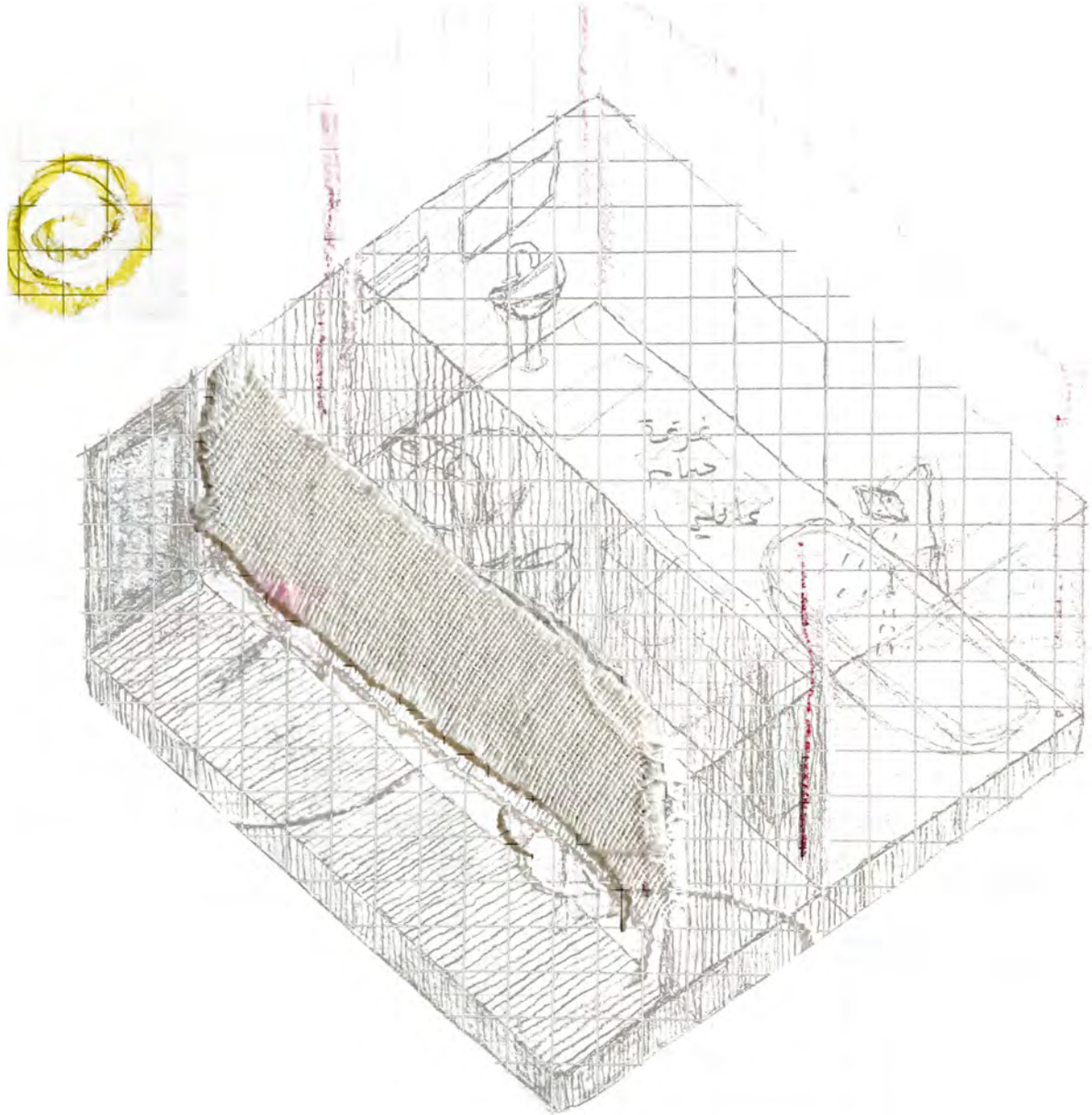
1.5 المقترح الأول
غرفة إضافية

عند عرض خطة أحد بيوت النساء ومناقشتها في ورشة عمل، اتضحت الصعوبة لدى العائلات في القرى مسلوبة الاعتراف في التوسع. لذا يتوسعون بإضافة غرفة صغيرة حسب الحاجة، وفي فترات متباعدة. هذه الإضافة من المساحة أصبحت تضيق على مساحات البيت الأول، بحيث تفقد الممرات فيصعب الوصول إليها وإلى بقية المساحات في البيت، وتسد الإضاءة والتهوية عن بقية المساحات الأولى في البيت. من هذا الباب اتضحت أهمية وضع مخطط يوضح الطرق الممكنة لتخطيط هذه الغرف وبنائها، بحيث تتوسع العائلة وتحافظ على قيم البيت الموجودة.





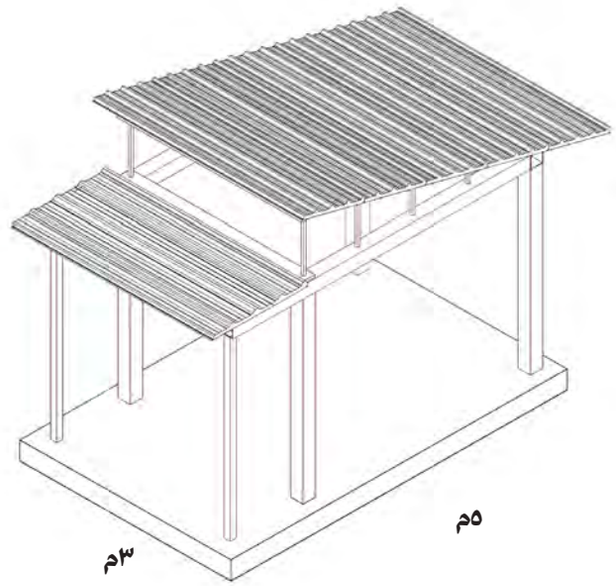


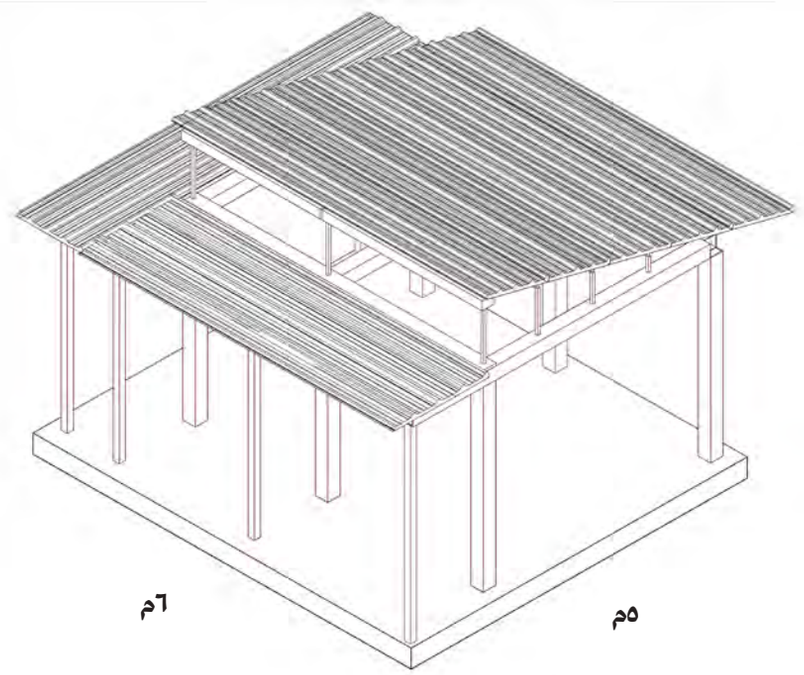


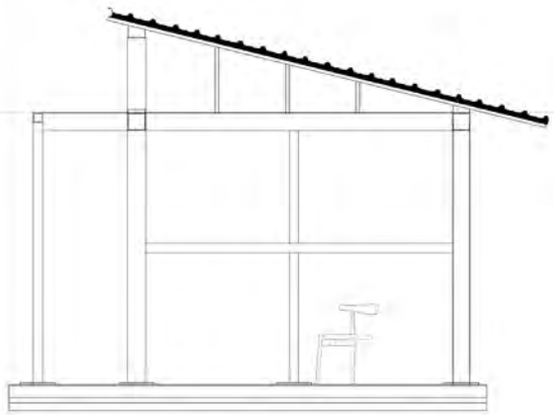
رسمة سكتش لمساحة الغرفة الإضافية للبيت

الغرفة الإضافية للمخطط المقترح تتلاءم مع مبادئه الأساسية وهي الحفاظ على ممرات واضحة بين المساحات، والحفاظ على فتحات تهوية وإضاءة في السقف ومن ثم في الجدران بعد بنائها.

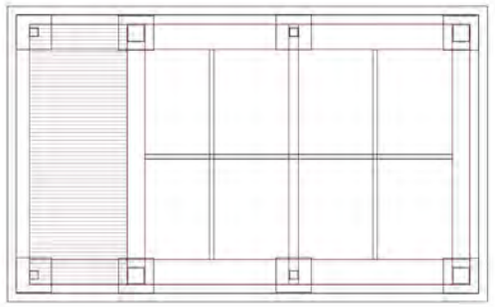
الغرف المقترحة تأتي على شكلين: الأول صغير حجمًا ملائم أكثر لإضافة غرفة نوم. وواحد كبير ملائم أكثر لإضافة مطبخ أو صالون أو غرفة عمل وقعدة أرضية للعا ئلة .



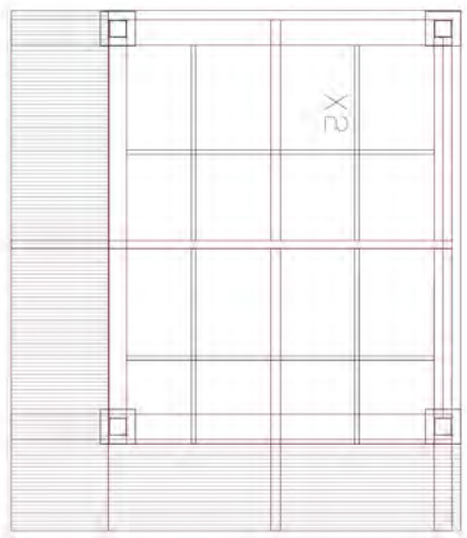




مقطع جانبي للغرفة



خطة فوقية للغرفة الصغيرة



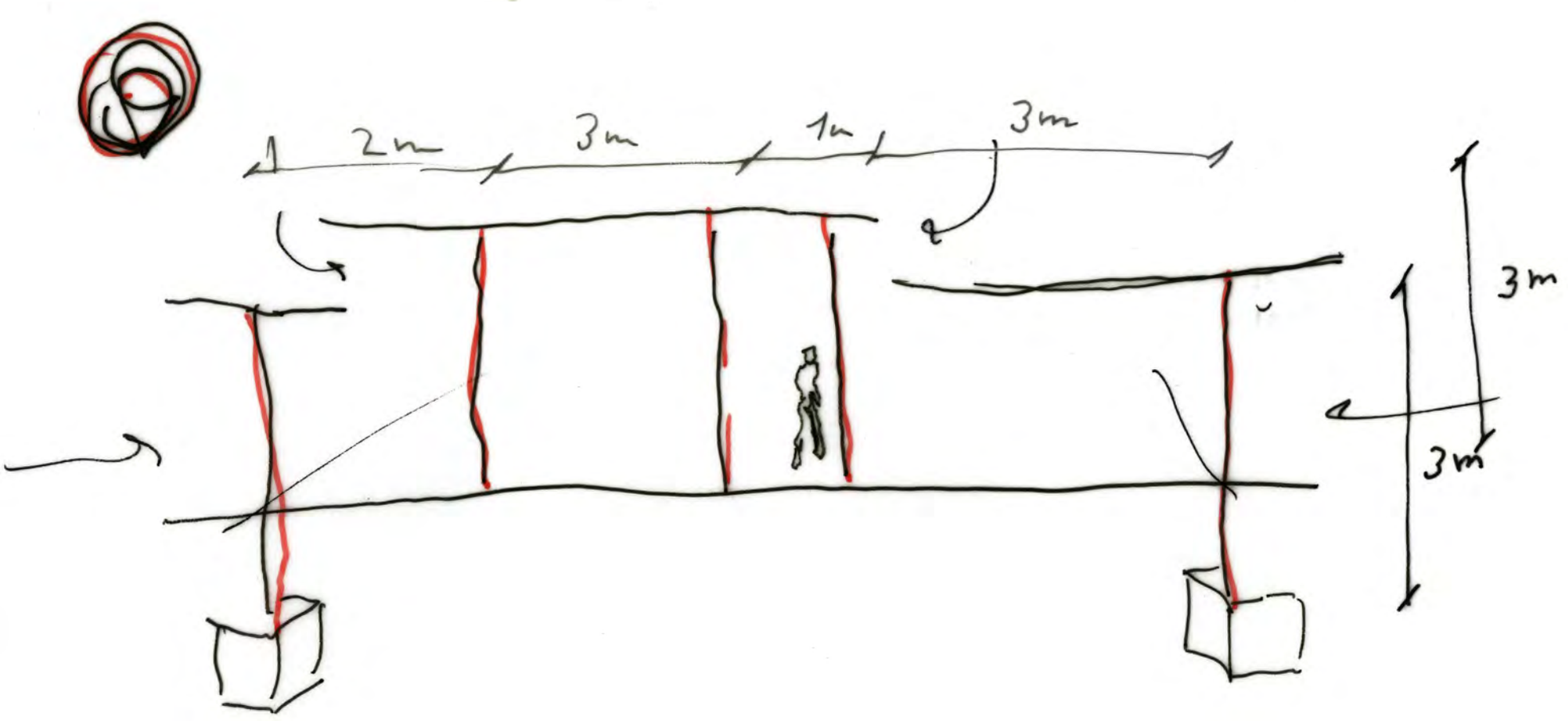
خطة فوقية للغرفة الكبيرة

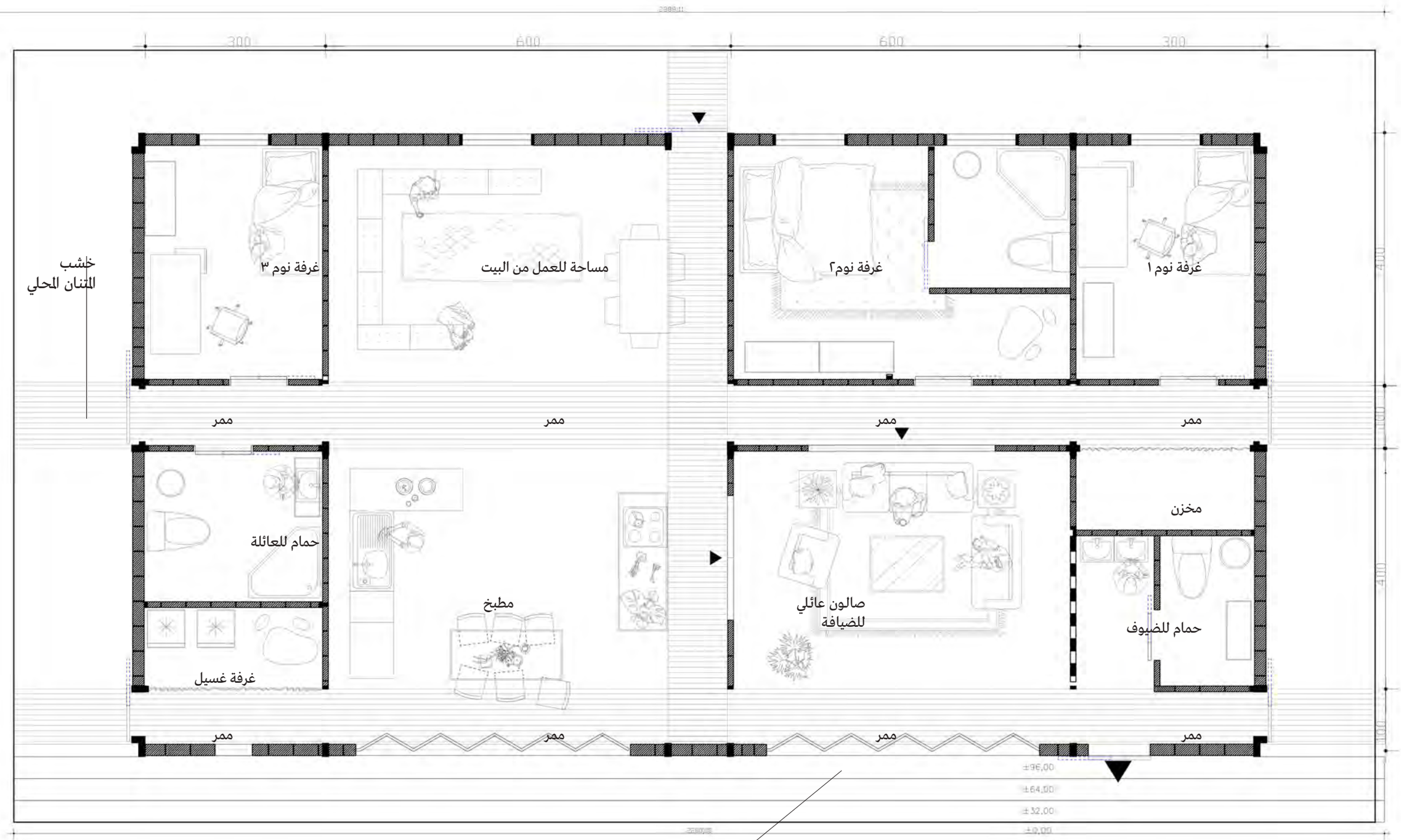
2.5 المقترح الثاني

المقترح التالي يحمل 6 أساسات:

1. فوق الأرض- أساسات حديد مرتفعة (تكلفة عالية)
2. ضوء وتهوءة مستمرة في كل انحاء البيت
3. قابل للتفكيك والتركيب في حال تلقي إنذار بالهدم
4. مساحات للتخزين تحت الطابق الأول
5. التوسع بواسطة نمطين من الغرف
6. يوفر إمكانية بناء مستقبلي إلى الأعلى
7. هيكل بناء حديدي، جدران اسمنتية, أبواب خشب محلي

تدعي دولة إسرائيل أنها بعد الاعتراف سوف تقدم ميزانية 250,000 لكل مواطن بدوي يتعاون مع خططها المقدمة لإسكانه وإسكان عائلته.
أيضا تدعي أجسام الدولة أن هذا المبلغ لا يكفي لبناء بيت "طبيعي" حسب قوانين الدولة.
اليوم، يبني سكان القرى مسلوبة الاعتراف بيوتهم بميزانية 70-40 ألف شيكل- فما الذي يستطيعون بناءه بميزانية 250 ألف شيكل؟
المقترح التخطيطي الثاني يتراوح بين تكلفة البيت في القرى مسلوبة الاعتراف اليوم وبين المبالغ الدولية للعائلة المتعاونة مع خطط الدولة.



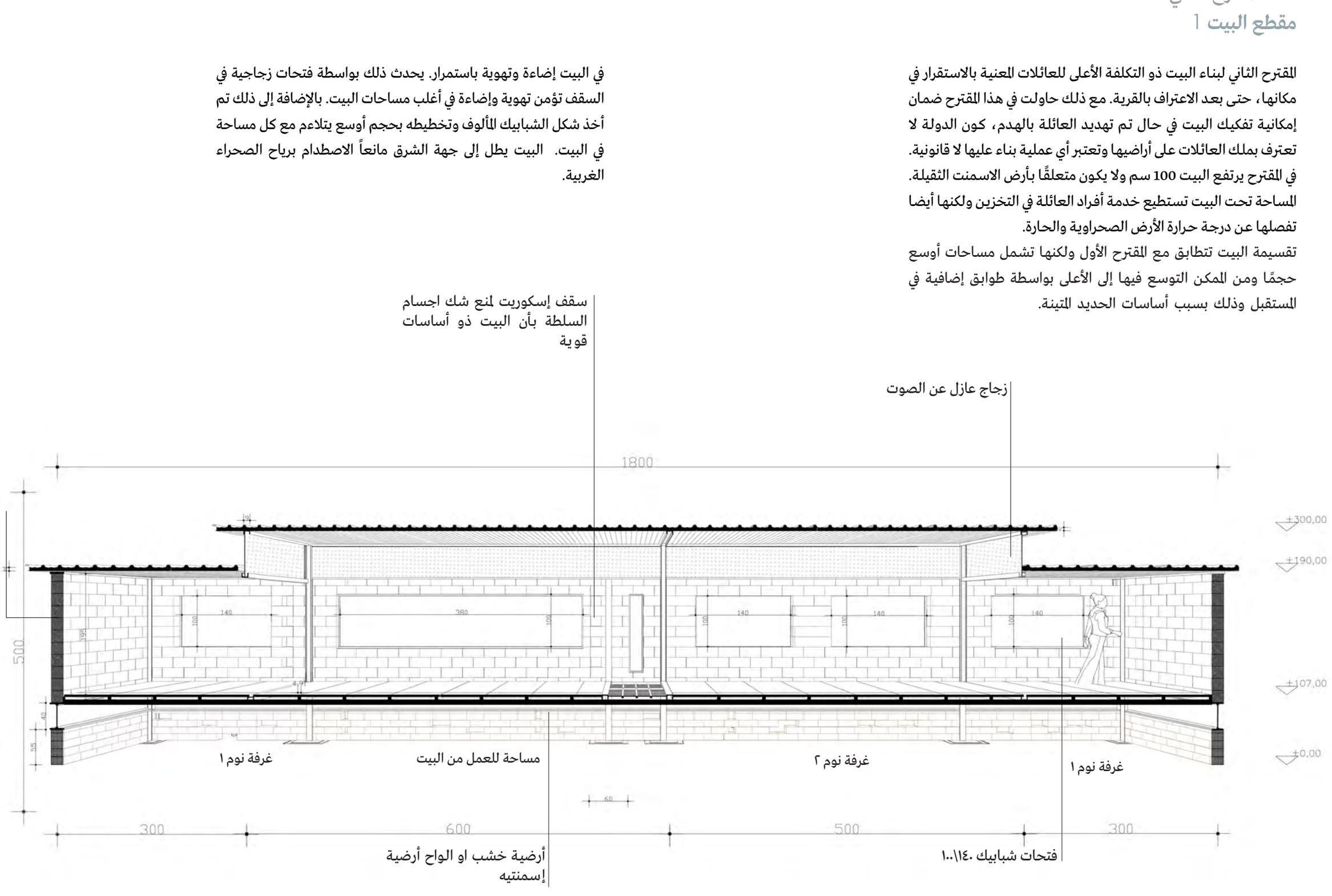


أبواب إنثنائية للتشريع أو التسكير الكامل إثناء الفصول المختلفة.

2.5 المقترح الثاني
مقطع البيت 1

المقترح الثاني لبناء البيت ذو التكلفة الأعلى للعائلات المعنية بالاستقرار في مكانها، حتى بعد الاعتراف بالقرية. مع ذلك حاولت في هذا المقترح ضمان إمكانية تفكيك البيت في حال تم تهديد العائلة بالهدم، كون الدولة لا تعترف بملك العائلات على أراضيها وتعتبر أي عملية بناء عليها لا قانونية.
في المقترح يرتفع البيت 100 سم ولا يكون متعلقًا بأرض الاسمنت الثقيلة.
المساحة تحت البيت تستطيع خدمة أفراد العائلة في التخزين ولكنها أيضا تفصلها عن درجة حرارة الأرض الصحراوية والحارة.
تقسيمة البيت تتطابق مع المقترح الأول ولكنها تشمل مساحات أوسع حجمًا ومن الممكن التوسع فيها إلى الأعلى بواسطة طوابق إضافية في المستقبل وذلك بسبب أساسات الحديد المتينة.

في البيت إضاءة وتهوية باستمرار. يحدث ذلك بواسطة فتحات زجاجية في السقف تؤمن تهوية وإضاءة في أغلب مساحات البيت. بالإضافة إلى ذلك تم أخذ شكل الشبابيك المألوف وتخطيطه بحجم أوسع يتلاءم مع كل مساحة في البيت. البيت يطل إلى جهة الشرق مانعاً الاصطدام برياح الصحراء الغربية.



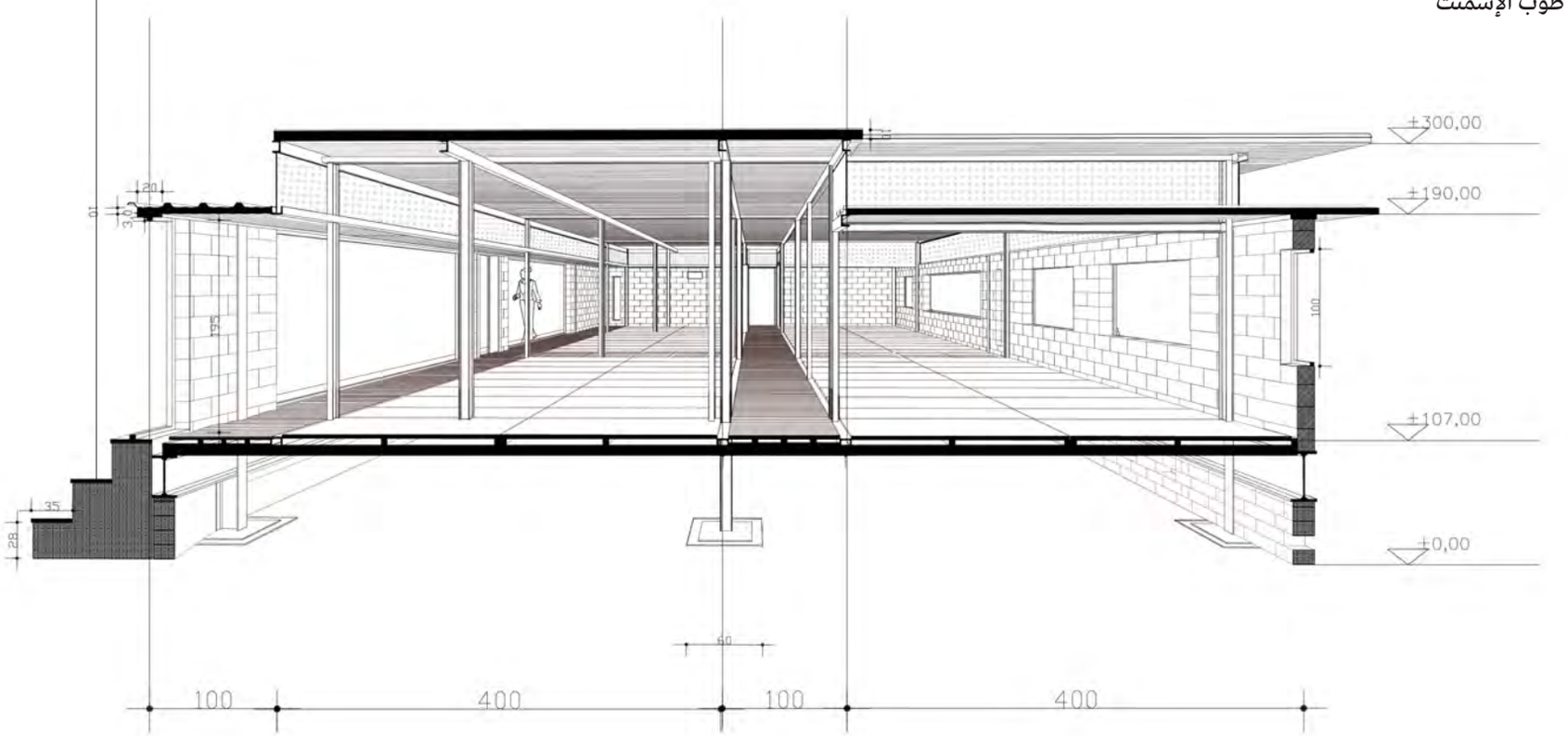
2.5 المقترح الثاني
مقطع البيت 2

الجميل في الهيكل الحديدي المقترح للبيت بأنه يخلق مساحة مفتوحة، لا محدودة قابلة للتغيير دومًا داخل إطار الهيكل الموجود. يختلف هذا تمامًا عن هيكل الأسمنت الذي يمنع أي تغيير ووحده يغلق مساحات البيت ويفصلها عن بعضها.

في ممرات البيت يكون الفصل بين أجزاء البيت المختلفة وفي الوقت نفسه يكون الفضاء الذي يربط بين جميع أقسام البيت.

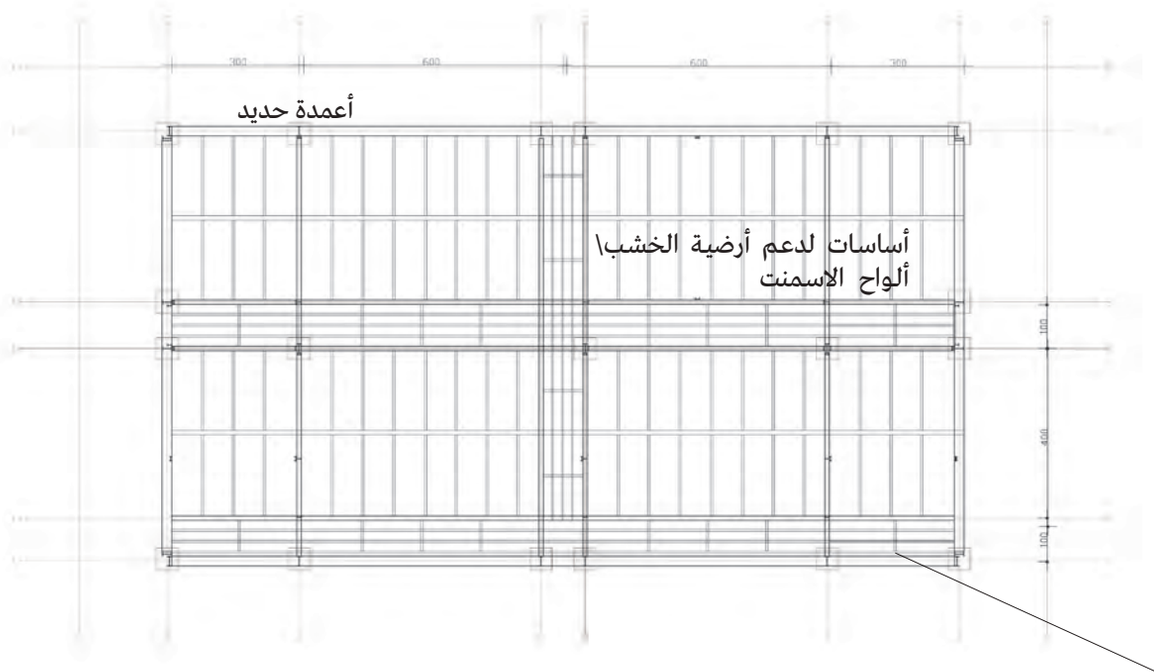
طوب الإسمنت

مدرج للصعود إلى البيت وللجلوس في ساحته الأمامية

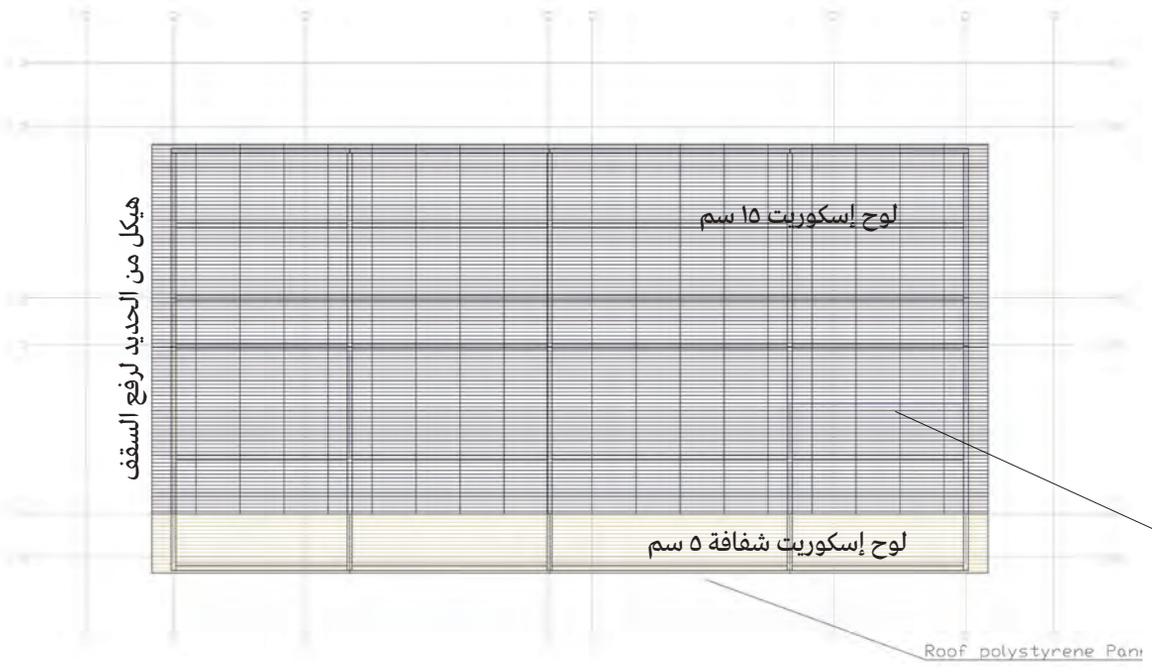


2.5 المقترح الثاني
خطة أرضية البيت وخطة سقف البيت

بالإضافة الى خطة البيت الفوقية فيها نجد تقسيمات البيت واحجام كل غرفة فيه ننظر إلى خطط البيت الاخرى فو المستويات المختلفة.

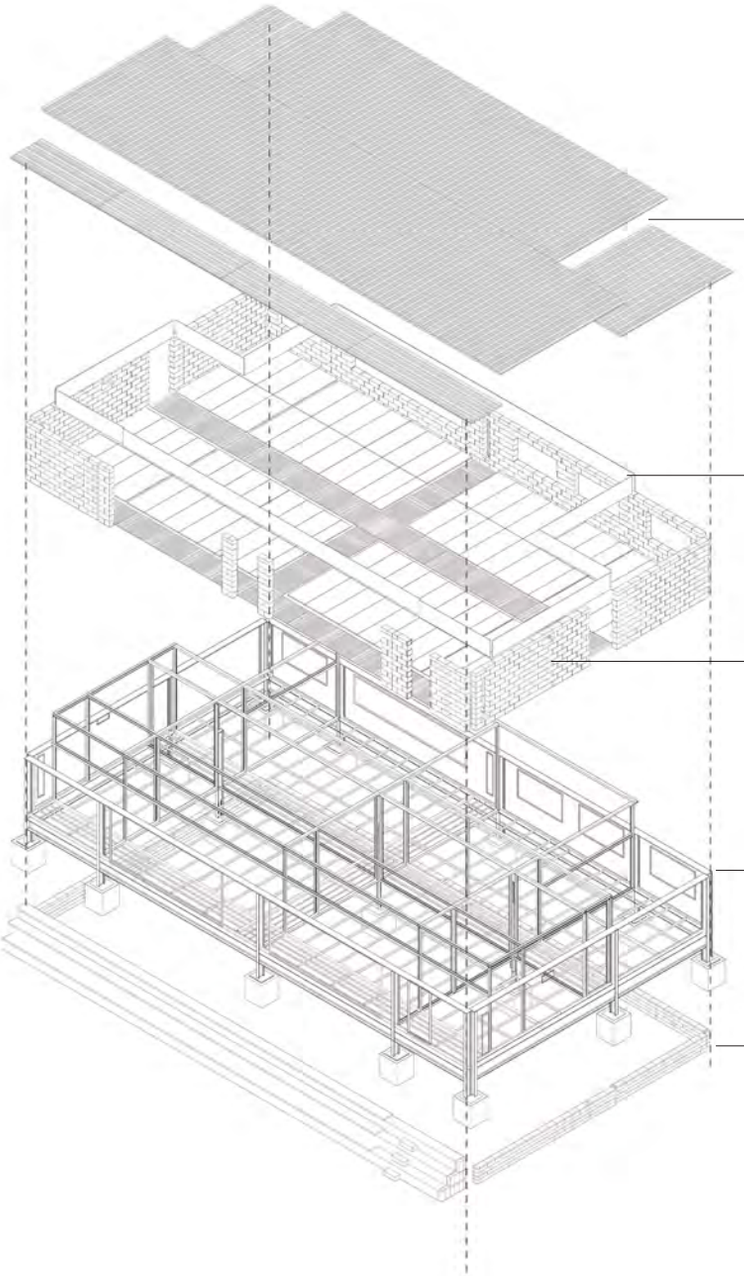


خطة لإرضية البيت توضح فيها المواد المستعملة لبناء أرضية المقترح التخطيطي الأول



خطة لسقف البيت توضح فيها المواد المستعلمة لبناء سقف المقترح التخطيطي الأول

1:50



سقف البيت

- ١٠ الواح إسكوريت شفافة Polycarbunate
- ١٦ لوح إسكوريت ١م\٣م
- ١٦ لوح إسكوريت ١م\٦م

فتحات السقف

- زجاج ٣٠ سم

حمامات البيت

- طوب إسمنت ١٩\٣٩ سم

هيكل البيت

- حديد بروفيل I ١٨-٤٠
- أساسات بطون

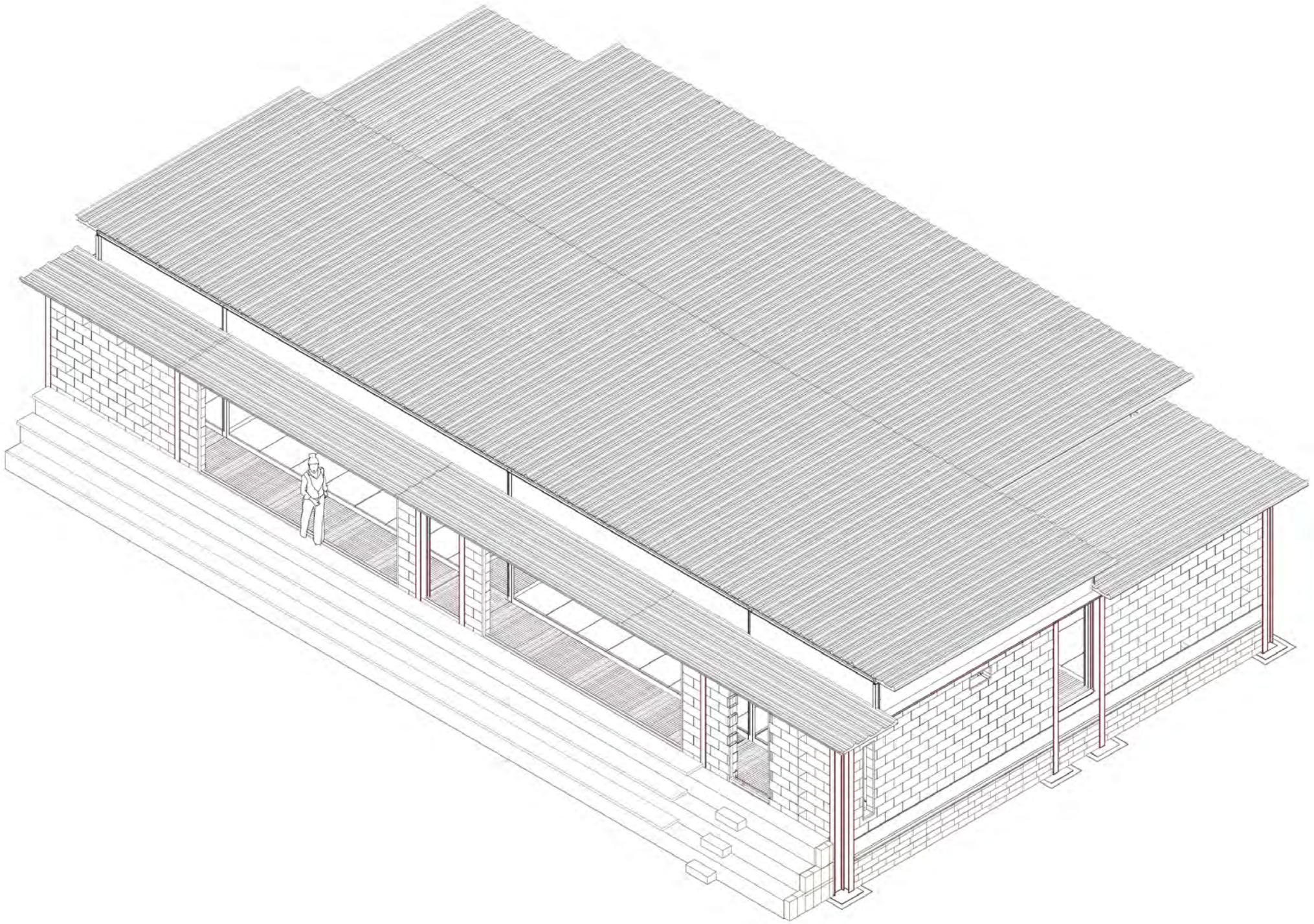
أرض البيت

- طوب طين لإحاطة الفراغ بين البيت والأرض (لا ضروري)

تكلفة نهائية

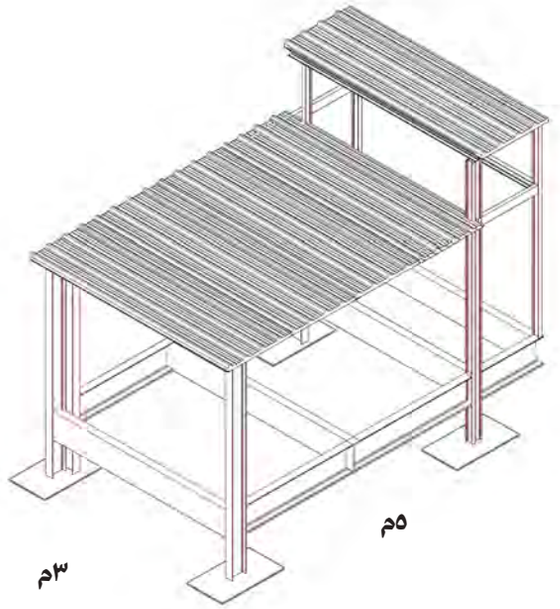
١٧٠,٠٠٠ شيكل

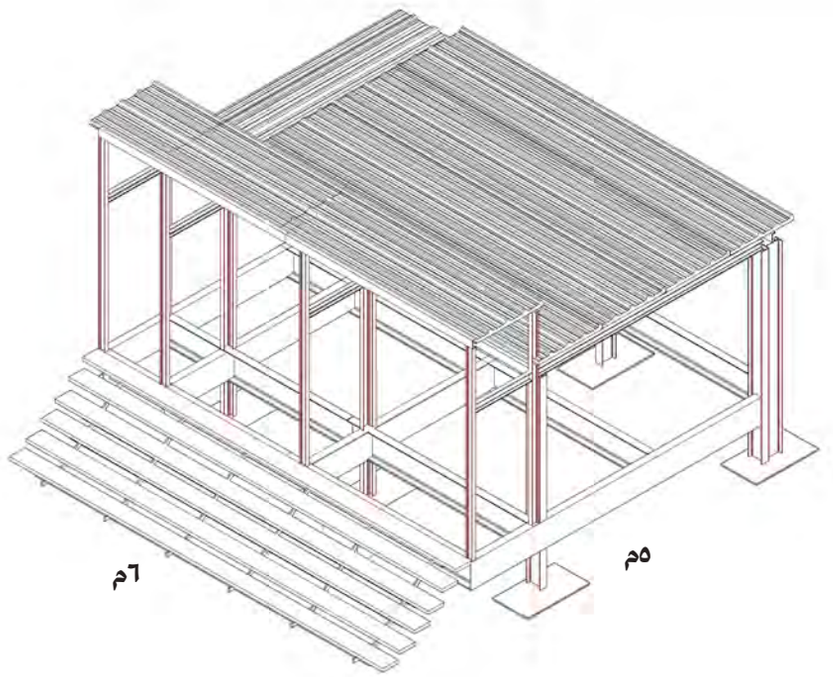
بال
وال
أيضً
إض
المخ

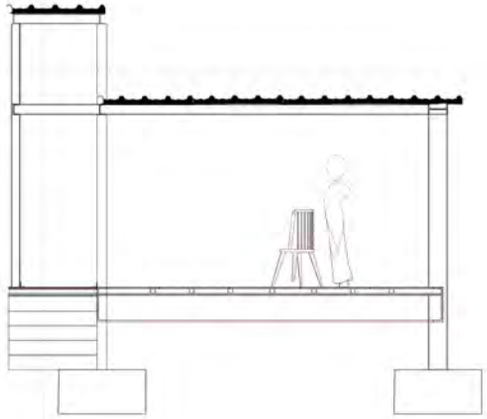


2.5 المقترح الثاني
غرفة إضافية

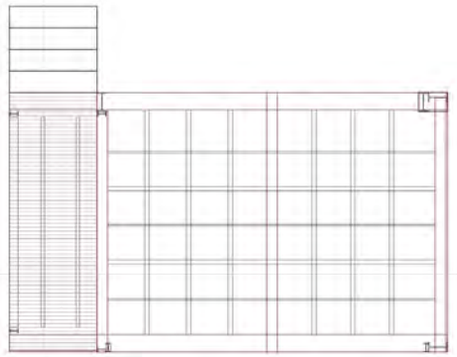
في هذا المقترح، كما تبين في المقترح السابق، الغرف الإضافية تأتي على شكلين: الأول صغير حجمًا ملائم أكثر لإضافة غرفة نوم. والثاني كبير ملائم أكثر لإضافة مطبخ أو صالون أو غرفة عمل وقعدة أرضية للعائلة.



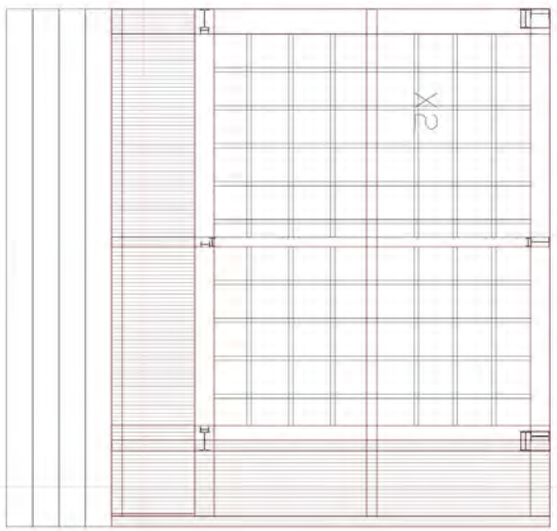




مقطع جانبي للغرفة



خطة فوقية للغرفة الصغيرة

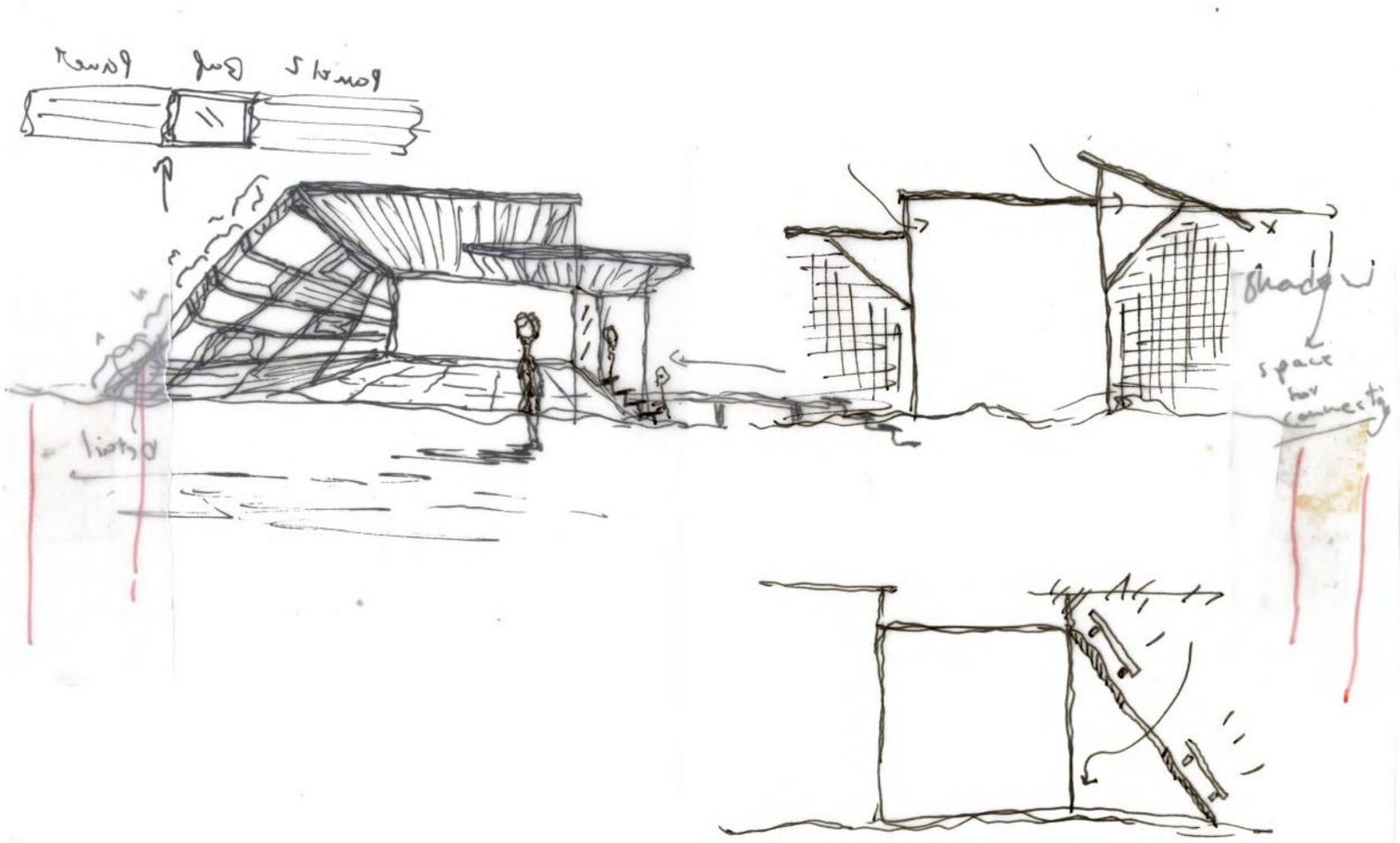


خطة فوقية للغرفة الكبيرة

3.5 المقترح الثالث

المقترح التالي يحمل 6 أساسات:

1. بيت اجتماعي ثقافي مفتوح للجميع
2. ضوء وتهوءة مستمرة في جميع انحاء البيت
3. 3 مستويات أرضية مختلفة
4. مساحة اجتماعات, مساحة ورشات, ومساحة دراسة
5. التوسع بواسطة نمط واحد
6. يوفر منظر طبيعي علوي يطل على أنحاء القرية



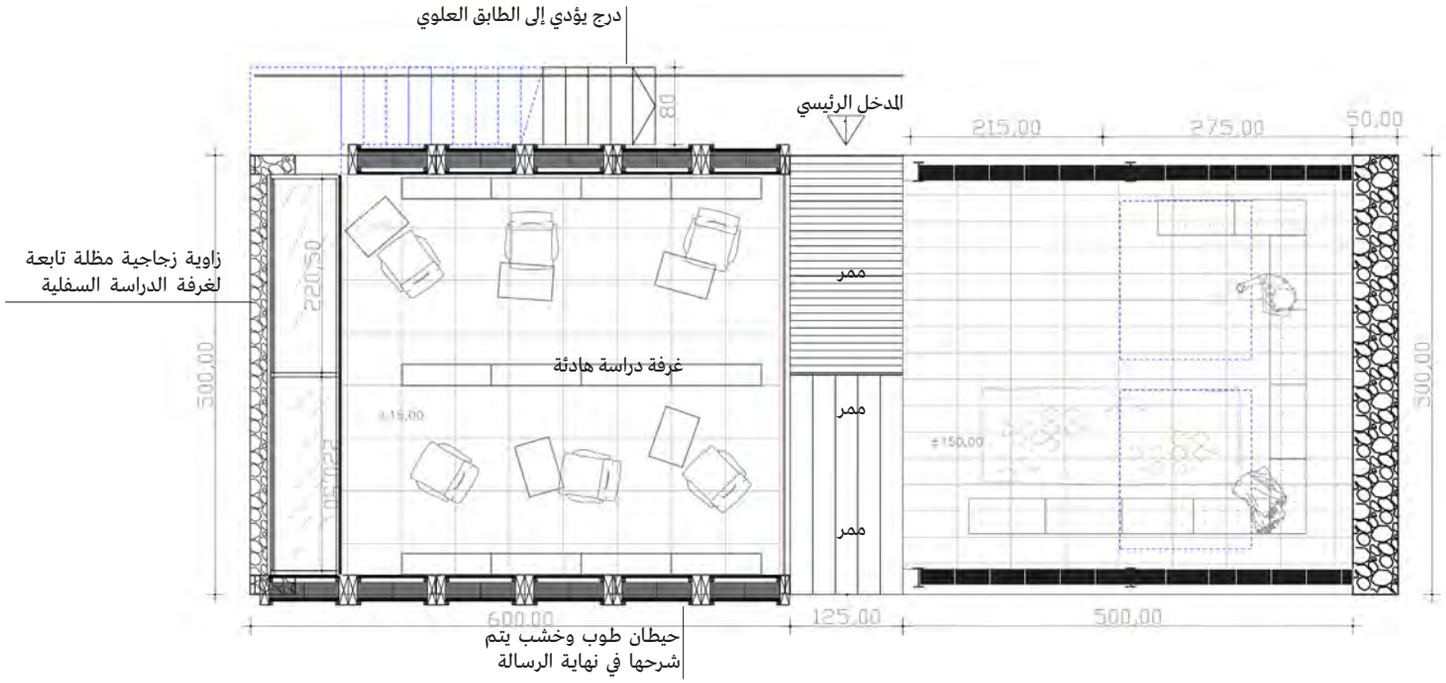
تفتقر مساحات القرى مسلوبة الاعتراف إلى أي نوع من المراكز التربوي والثقافية والاجتماعية واللامنهجية لخدمة الأطفال الشباب والأمهات. لذا تقوم العديد من الأمهات بخلق هذه المساحات في بيوتها.

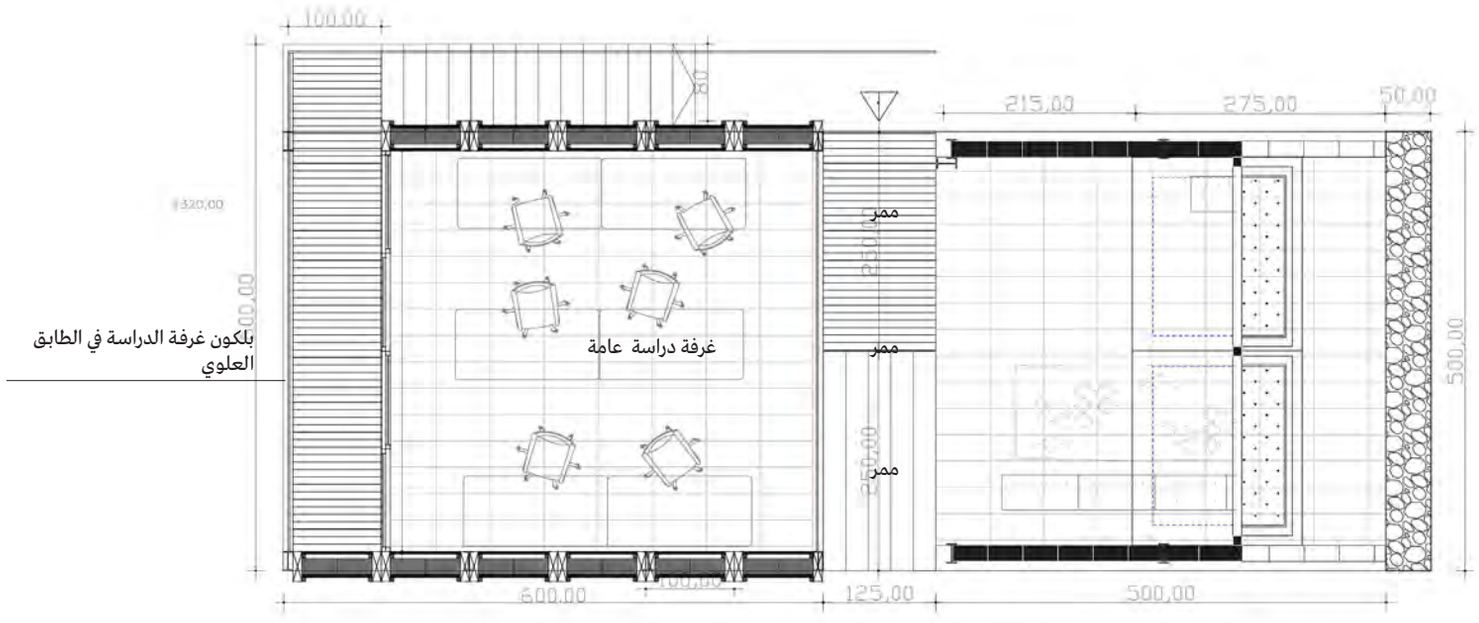
هذا المقترح يلبي حاجة القرية إلى مساحات جماعية تربوية لا منهجية تعزز تعليم الأطفال والشباب والأمهات في القرية. سمي هذا المقترح بـ"بيت كونه بيت بخدمة الجميع، وليس بمركز جماهيري تابع للدولة.

3.5 المقترح الثالث
خطة البيت الفوقية

البيت الثقافي التابع للحي السكني أصغر حجمًا من البيت في المقترحات المسبقة. من يصب الجهد في بنائه هم سكان كل حي يحتاجون ويطالبون بهذا النوع من المساحات.

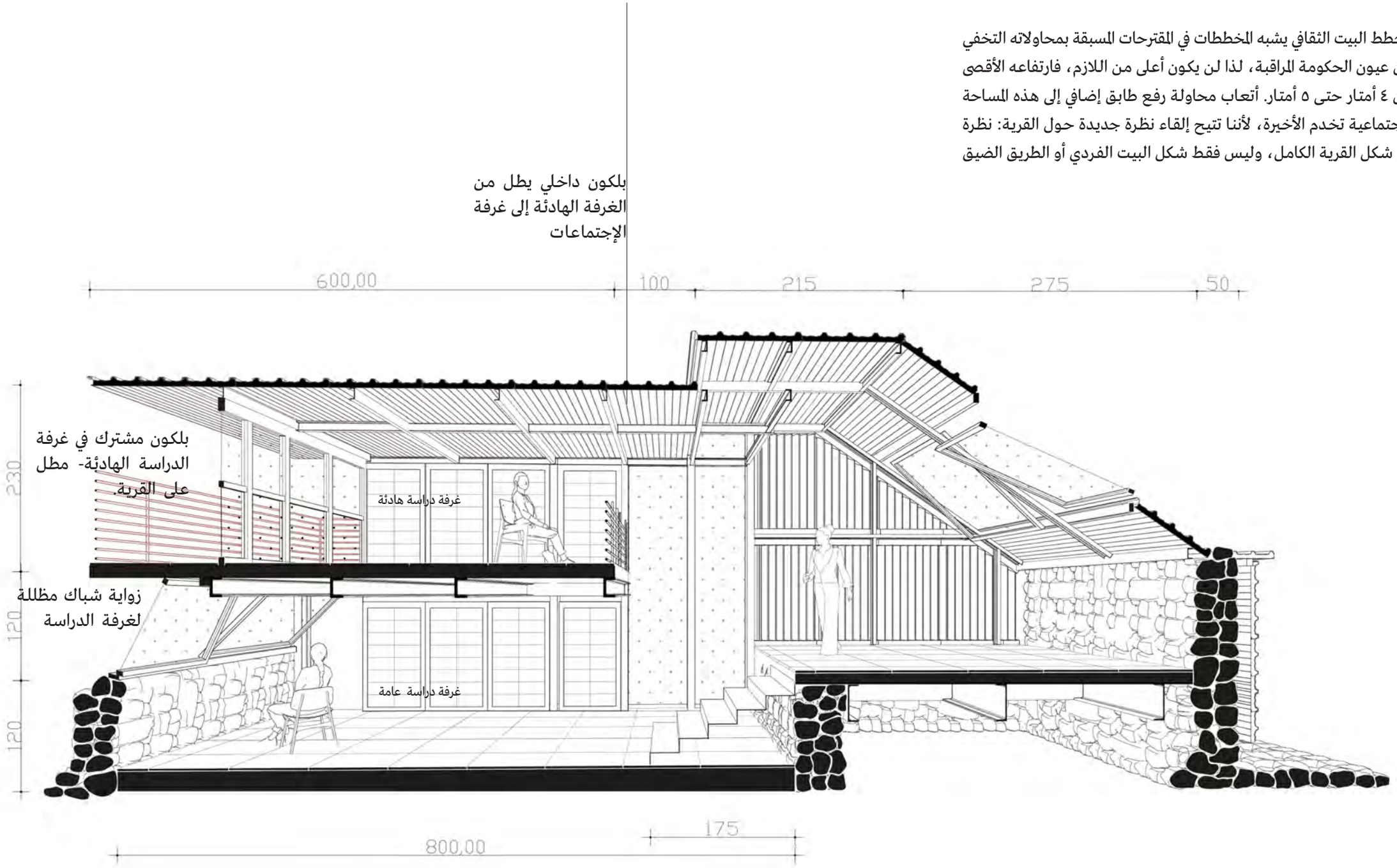
لهذا البيت خطتان لأنه مبني من طابقين و٣ مستويات أرضية، لذا نحتاج إلى خطة نلاحظ فيها ‹محتوى› كل طابق.





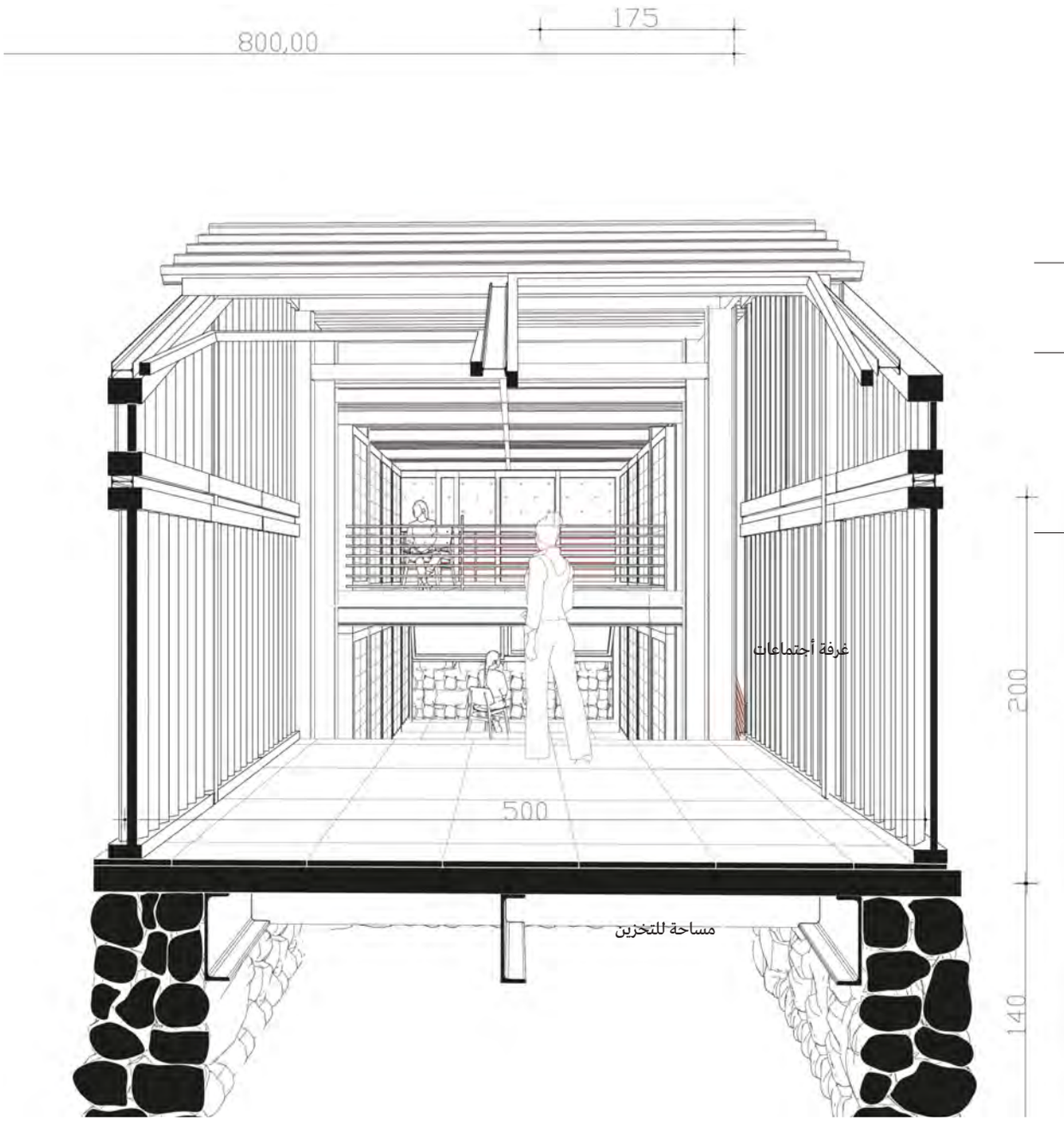
3.5 المقترح الثالث
مقطع البيت 1

مخطط البيت الثقافي يشبه المخططات في المقترحات المسبقة بمحاولاته التخفي عن عيون الحكومة المراقبة، لذا لن يكون أعلى من اللازم، فارتفاعه الأقصى بين ٤ أمتار حتى ٥ أمتار. أتعاب محاولة رفع طابق إضافي إلى هذه المساحة الاجتماعية تخدم الأخيرة، لأننا تتيح إلقاء نظرة جديدة حول القرية: نظرة إلى شكل القرية الكامل، وليس فقط شكل البيت الفردي أو الطريق الضيق



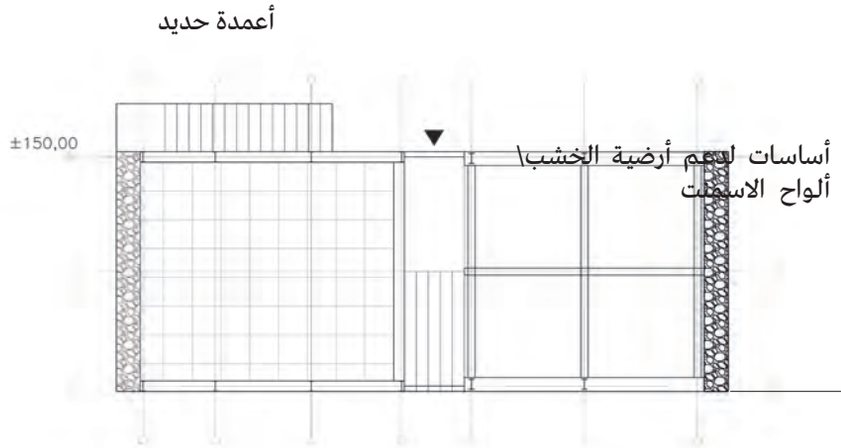
3.5 المقترح الثالث
مقطع البيت 2

مساحة البيت الثقافي لن تكون ضخمة لأنها من أتعاب أهل الحي، وكلما كان حجمها أصغر كانت التكلفة أقل.
شكل البيت الثقافي مختلف عن بقية البيوت من أجل أن يلاحظه السكان كبيت ثقافي مفتوح للجميع فعلًا.

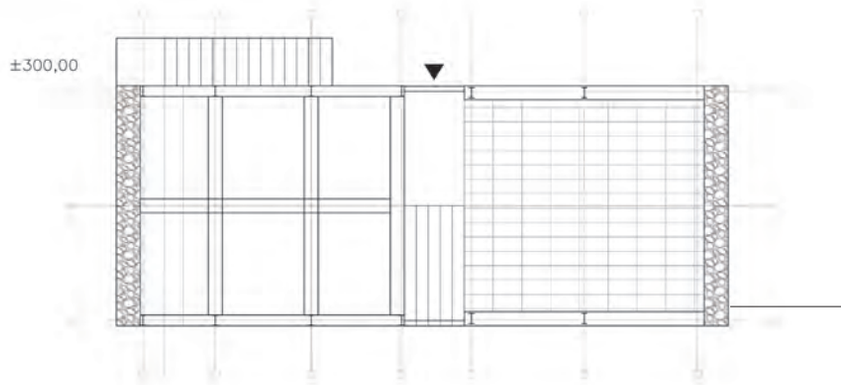


3.5 المقترح الثالث
خطة أرضية البيت وخطة سقف البيت

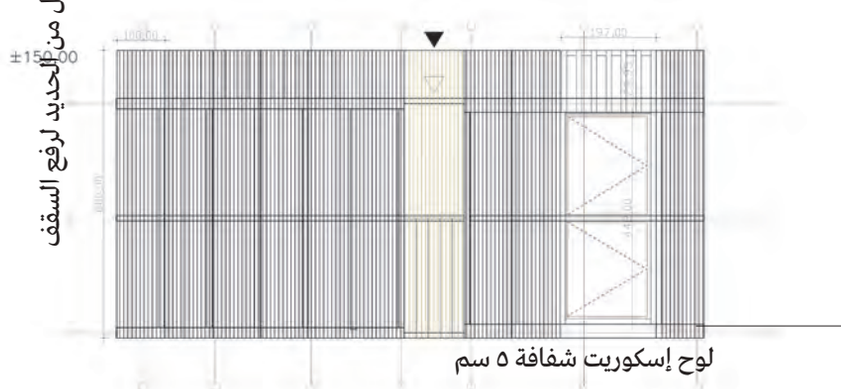
في المقترح ال٣ توجد ٣ مستويات أرضية مختلفة.
هنالك أرضية بطون تلمس الأرض وفوقها ب٢ متر أرضية مرتفعة بواسطة الحديد. امامهن نجد أرضية مرتفعة ب١٠٠ سم مدعومة بالحجر والحديد.



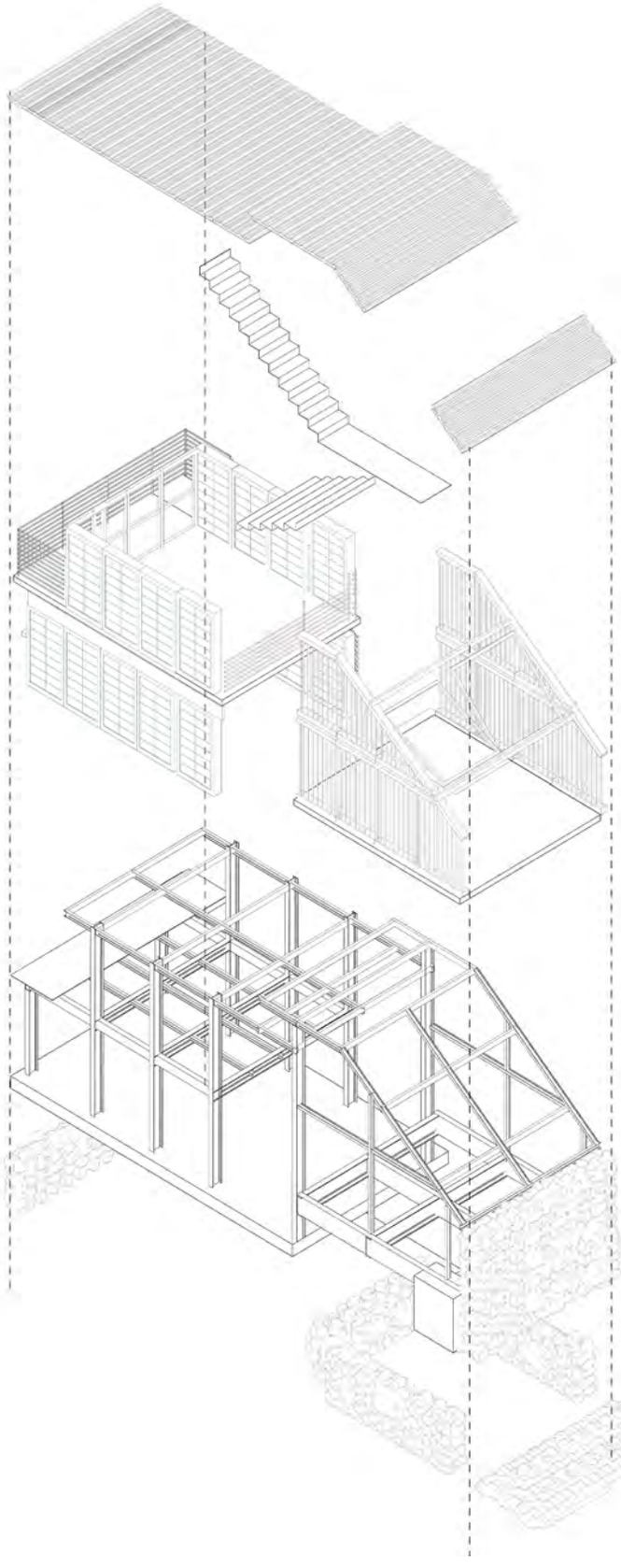
خطة هندسية لمستويين مختلفين من أرضيات المخطط ال٣.
المستوى الأول على اليسار وهو البطون الأرضي, امامه مستوى منصة الحجر والحديد المرتفعة عن الأرض.



خطة هندسية لمستويين مختلفين من أرضيات المخطط ال٣.
المستوى الأول على اليسار وهو البطون الأرضي, امامه مستوى منصة الحجر والحديد المرتفعة عن الأرض.



خطة لسقف البيت الاجتماعي فيه على اليمين فتحتات زاوية شبابيك غرفة الإجتماعات. في نصف المخطط سقف شفاف يضمن دخول الضوء إلى غرف الدراسة.



سقف البيت

- ١٠ الواح إسكوريت ٤\١ ١متر
- ٣ الواح سكوريت شفافه ٢\١ متر

فتحات السقف

- زجاج ٣٠ سم
- أطار خشب ٤\١٤ سم

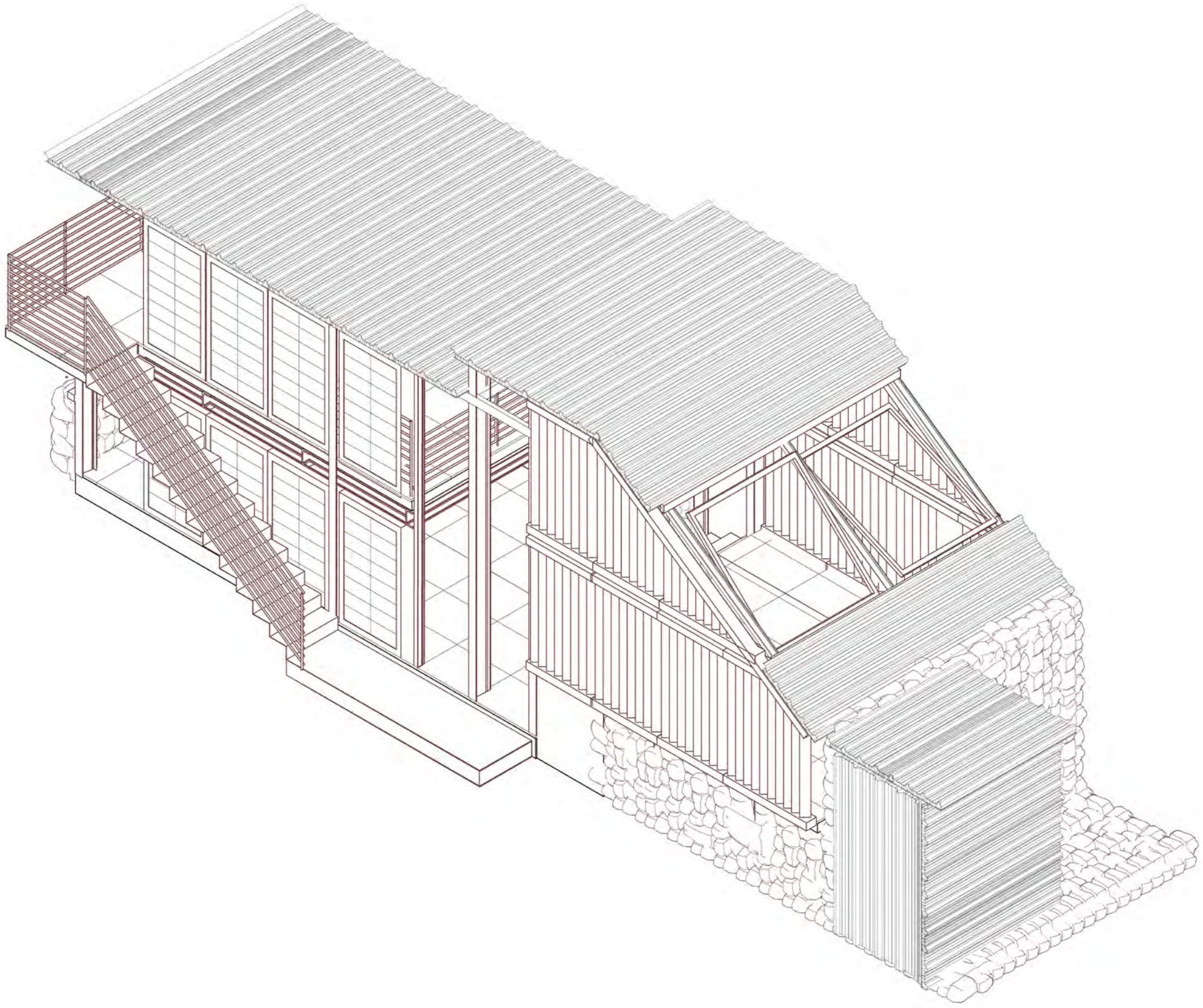
هيكل البيت

- حديد بروفيل I ١٨-٤٠ سم
- خشب ١٥\٢١ سم

أرض البيت

- حجر الكراكار المحلي

تكلفة نهائية
٧٥,٠٠٠ شيكل



3.5 | رسمة

يخلق الـ
المساحة
وتسمى
مهمة أ
النساء د

تضطر ا
في ساح
العائلة،
تصبح ه

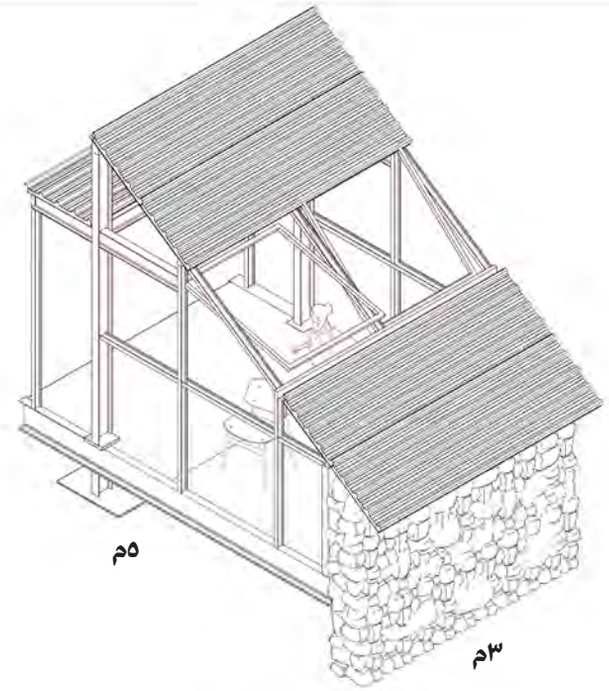
مساحة

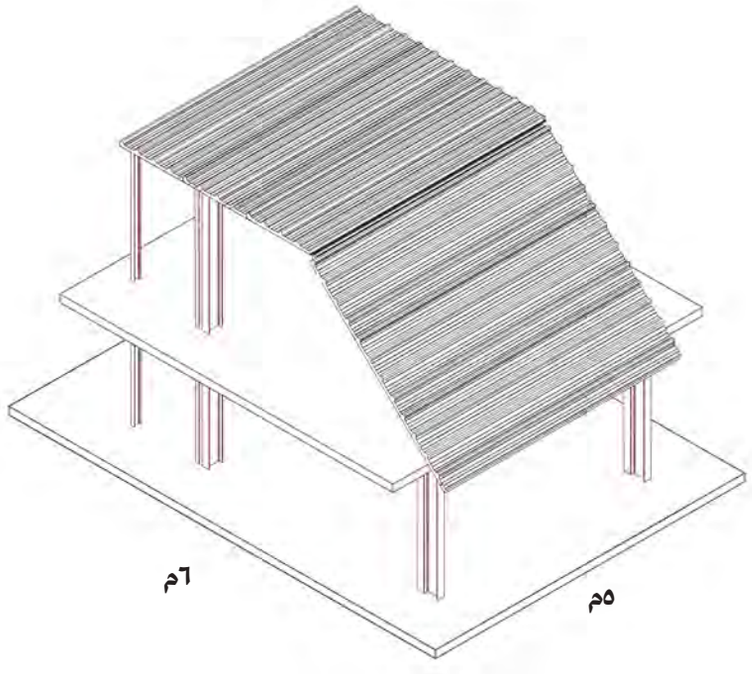
الألومني
الخصود
التي اق
بعضها،
المفتوحة

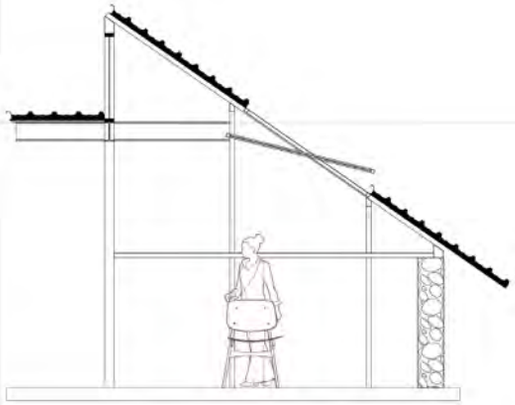
ليس
الألومني
العائلات
بإحاطة
خصوص
مساحة
البنية ال
التي ف

3.5 المقترح الثالث
غرفة إضافية

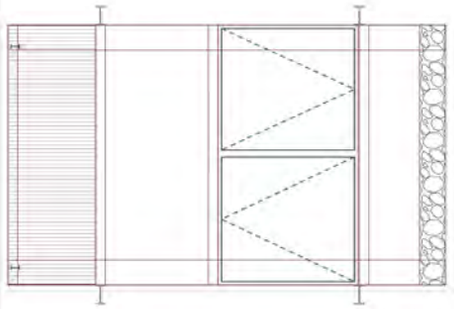
تبنيت فكرة ال»غرفة الإضافية» لبيت العائلة حتى في مبنى البيت الإجتماعي كونه أيضًا بيت محدود سوف يحتاج الى التوسع في المستقبل بحسب عدد مرتاديه، الذي سيتزايد بطبيعة الحال مع توسع الأحياء السكنية من حوله.



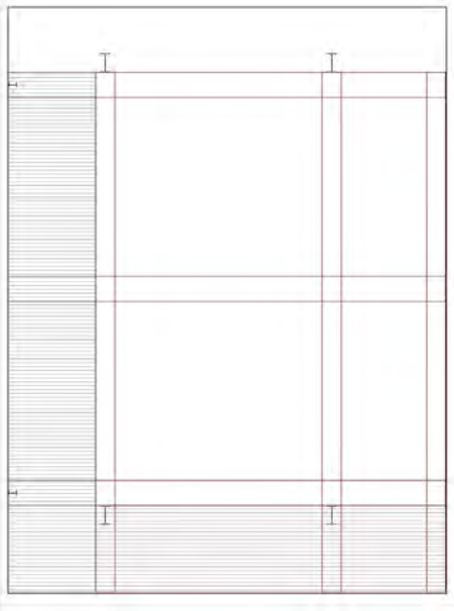




مقطع جانبي للغرفة



خطة فوقية للغرفة الصغيرة



خطة فوقية للغرفة الكبيرة

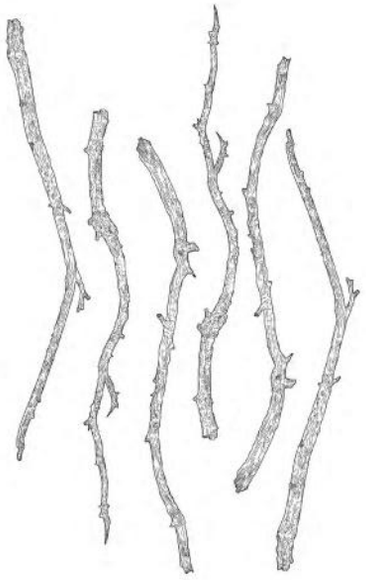
الجزء السادس

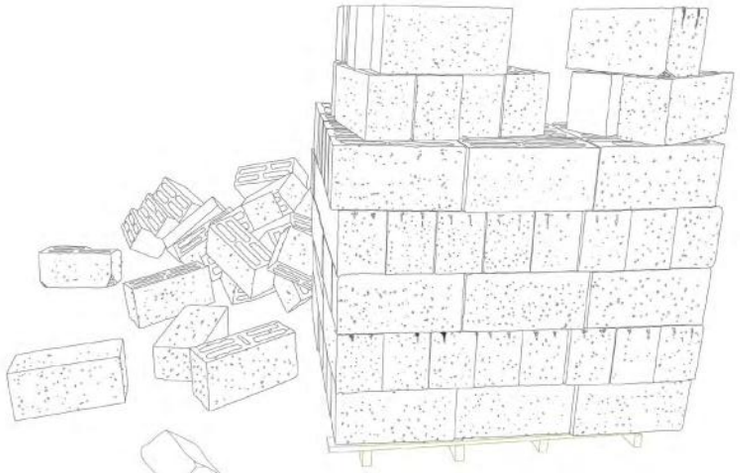
تفاصيل مواد البناء

6

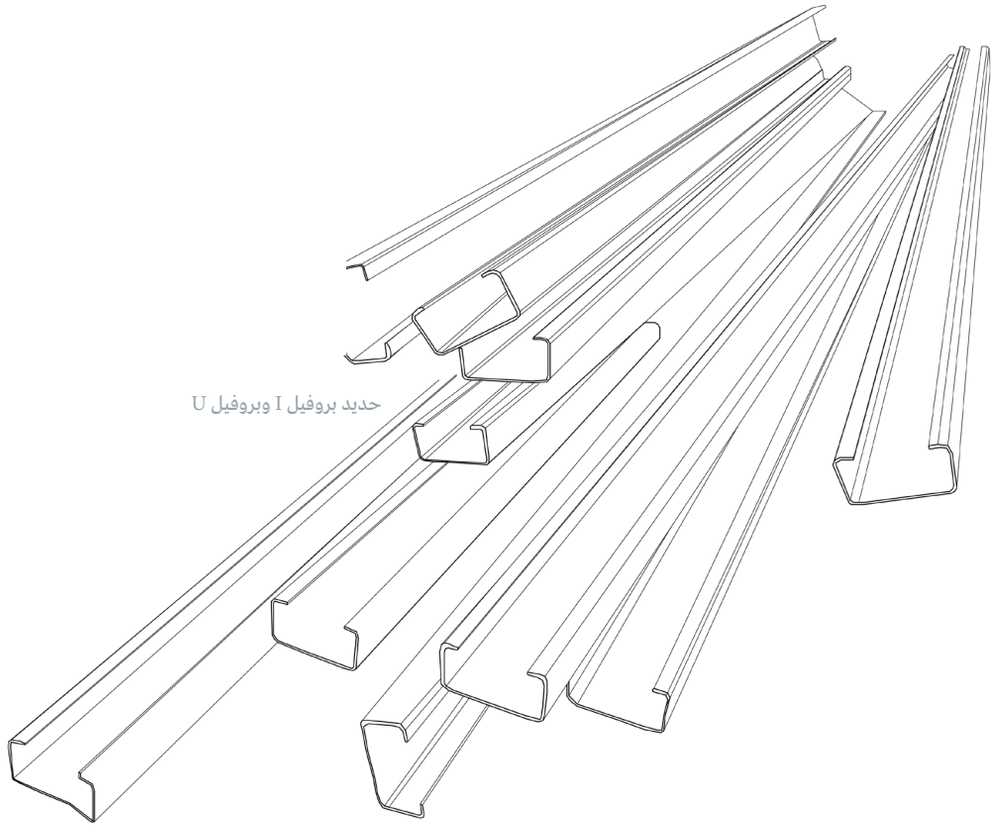
1.6 تفاصيل مواد البناء

تفاصيل المواد الأساسية التي تم التركيز عليها في المخططات هي د
وموجودة في القرية دون تكلفة عالية وهي المواد التالية:

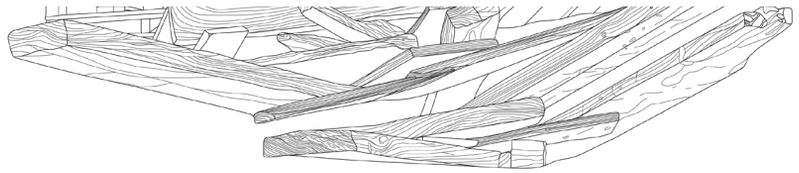




بلوك طوب الأسمنت (شراء أو من بقايا بناء)



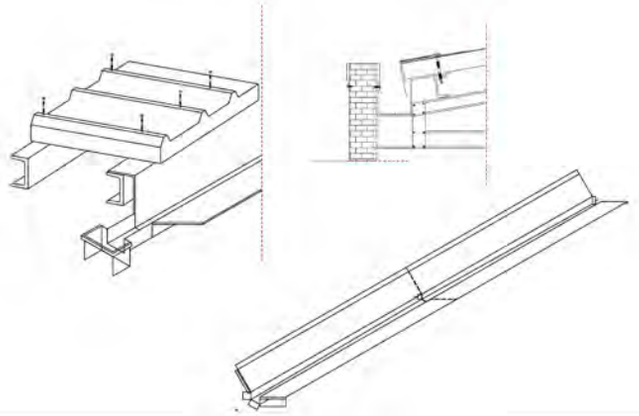
حديد بروفيل I وبروفيل U

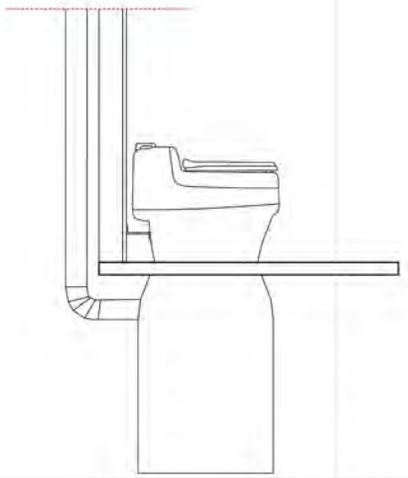


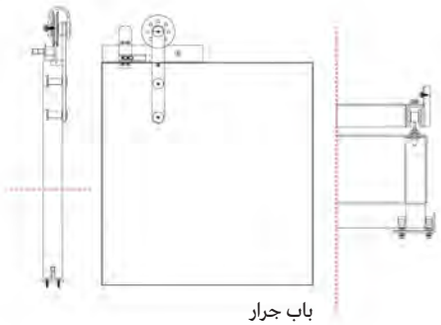
بقايا خشب بناء أو شراء خشب

2.6 تفاصيل عامة

يحوي كل مخطط الكثير من التفاصيل، فدونها قد يفشل- لذا من المهم فهم تفاصيل المخططات الأساسية للحصول على التنفيذ الأفضل للبيوت.
التفاصيل التالية هي تفاصيل عامة تتكرر في أغلب المخططات- وسأتوسع بالشرح فى الصفحات التالية.

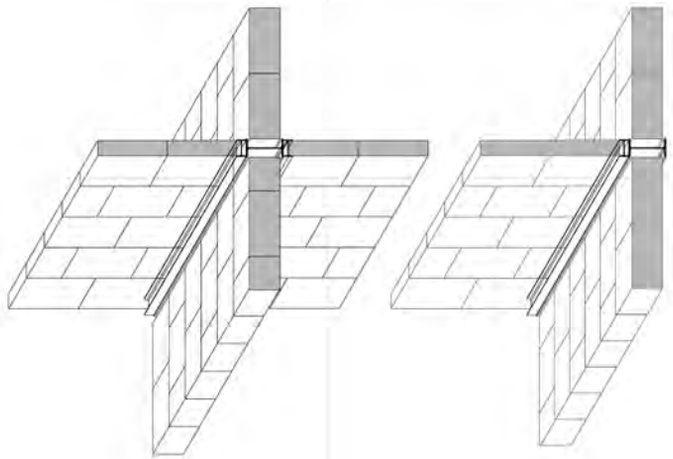


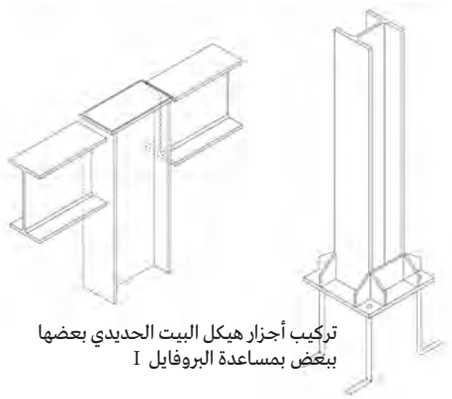




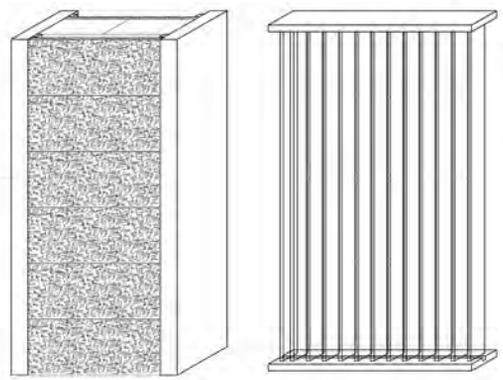
باب جرار

زاوية حائط الشباك الزجاجي





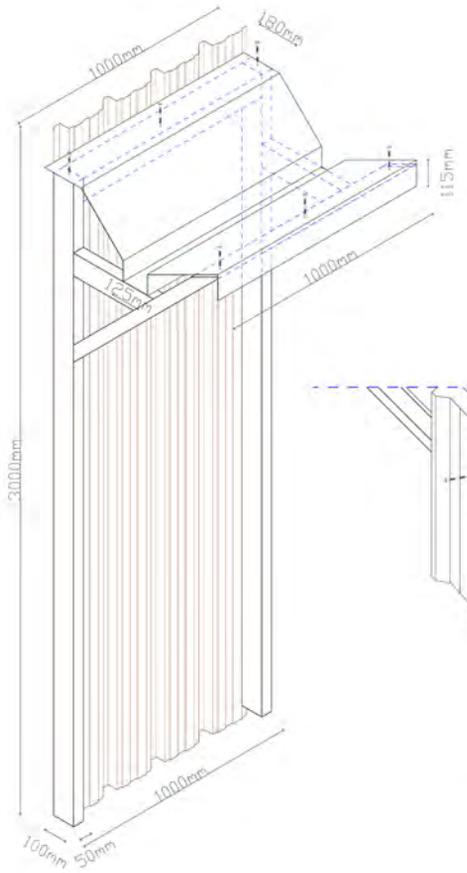
تركيب أجزار هيكل البيت الحديدي بعضها ببعض بمساعدة البروفايل I



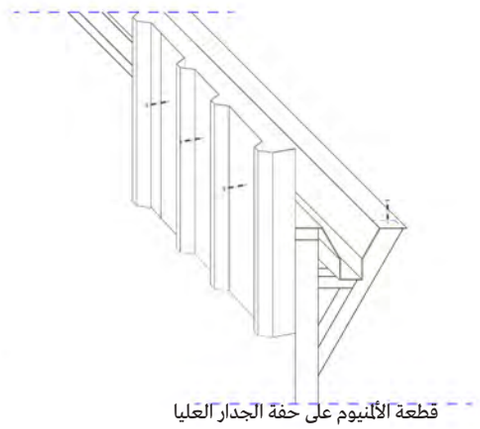
حائط إطار خشب وطوب البطون

حائط خشب

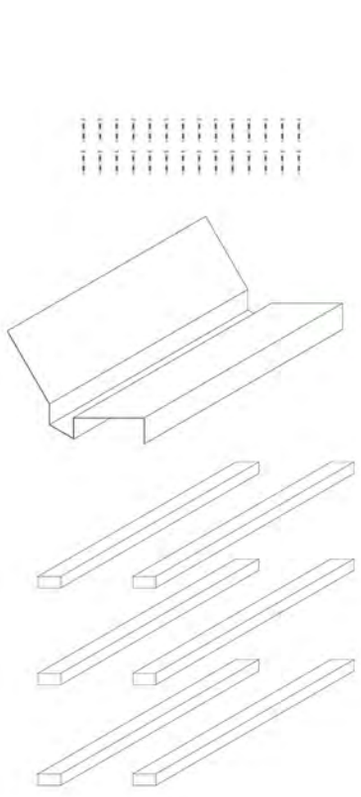
كل بيت في قرى النقب محاط بجدار يفصل بين مساحته الخاصة وبين المساحات العامة خارجه- حتى لو كانت هي أيضًا تابعة للعائلة المقربة- فيفضل الجميع الخصوصية التامة في هذا العصر.
في تخطيط مفصل لجدار الألمنيوم شائع الاستعمال في القرى مسلوبة الاعتراف، فكرت بطريقة للاستفادة منه. ووجدت أن هناك إمكانية لإضافة قطعة ألومنيوم إلى هيكل الجدار الحديدي تساعد بتيسير مياه الأمطار وتجميعها للاستفادة منه.

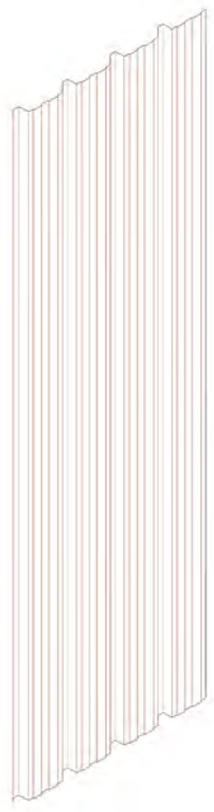


جدار عازل مسير لمياة الأمطار



قطعة الألمنيوم على حفة الجدار العليا

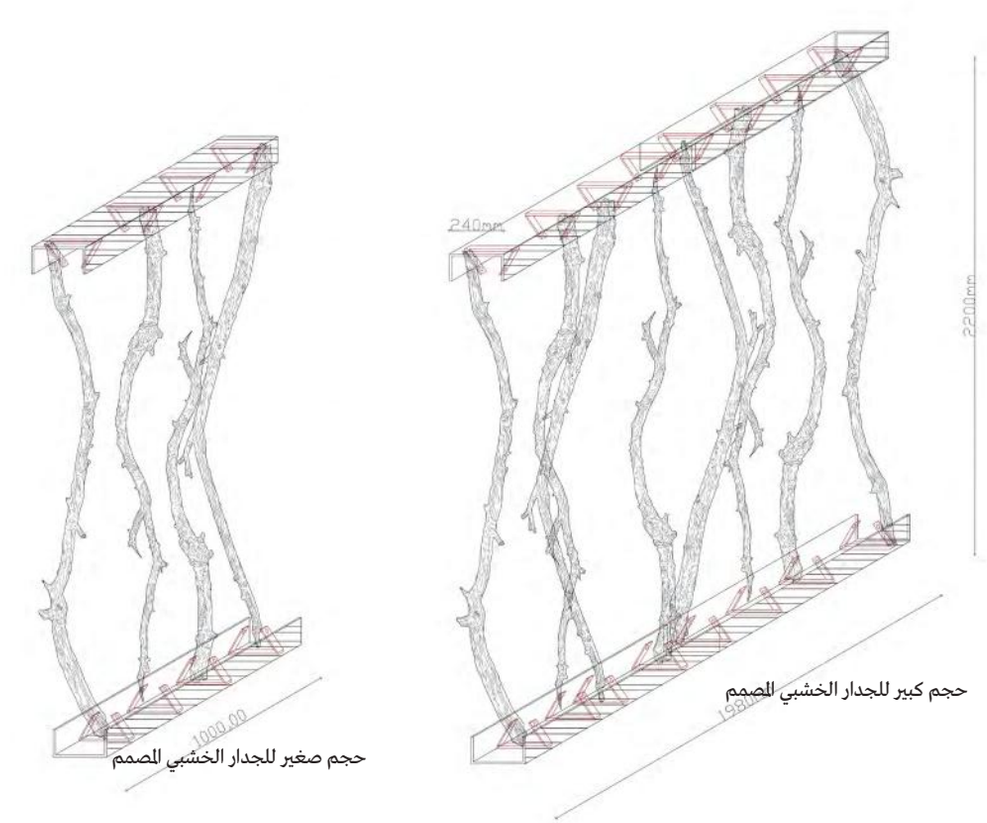




القطع لجدار الالمنيوم مسير المياة

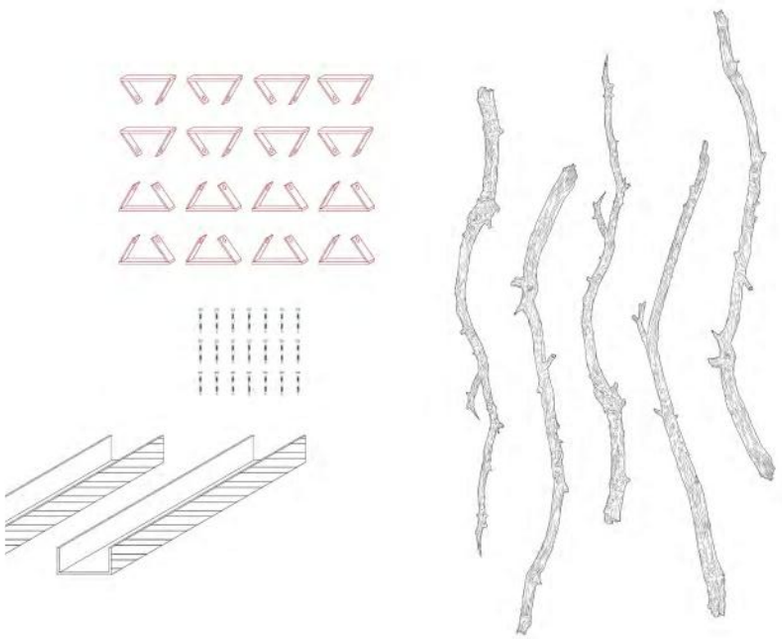
3.6 تفاصيل خاصة - جدار خشبي محلي

خلال التجول في القرى البدوية في ديار بئر السبع، منها المعترف بها ومنها مسلوبة الاعتراف، نلاحظ أكوامًا من الخشب الطبيعي الجميل.
من هنا تخيلت استعمال هذا الخشب لتصميم شكل جديد لجدار العزل بين البيوت والأحياء، دون حاجة لشراء قطع ألومنيوم جديدة تضر الطبيعة.



حجم صغير للجدار الخشبي المصمم

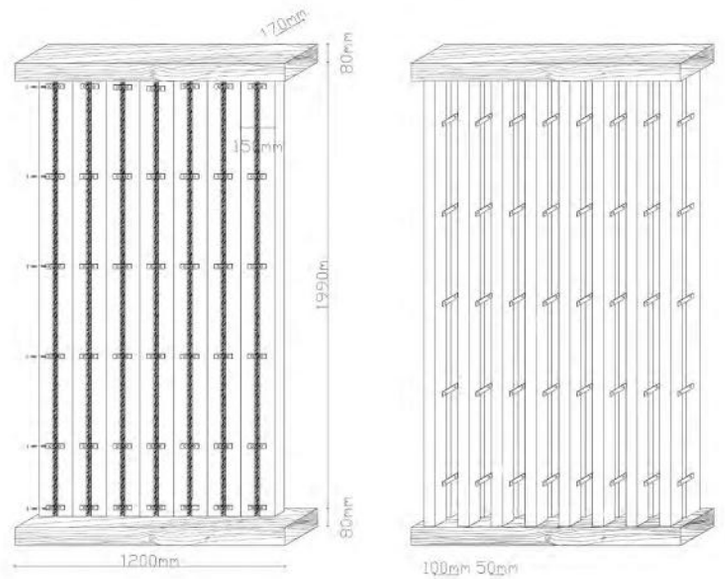
حجم كبير للجدار الخشبي المصمم



قطع الجدار الخشبي المحلي

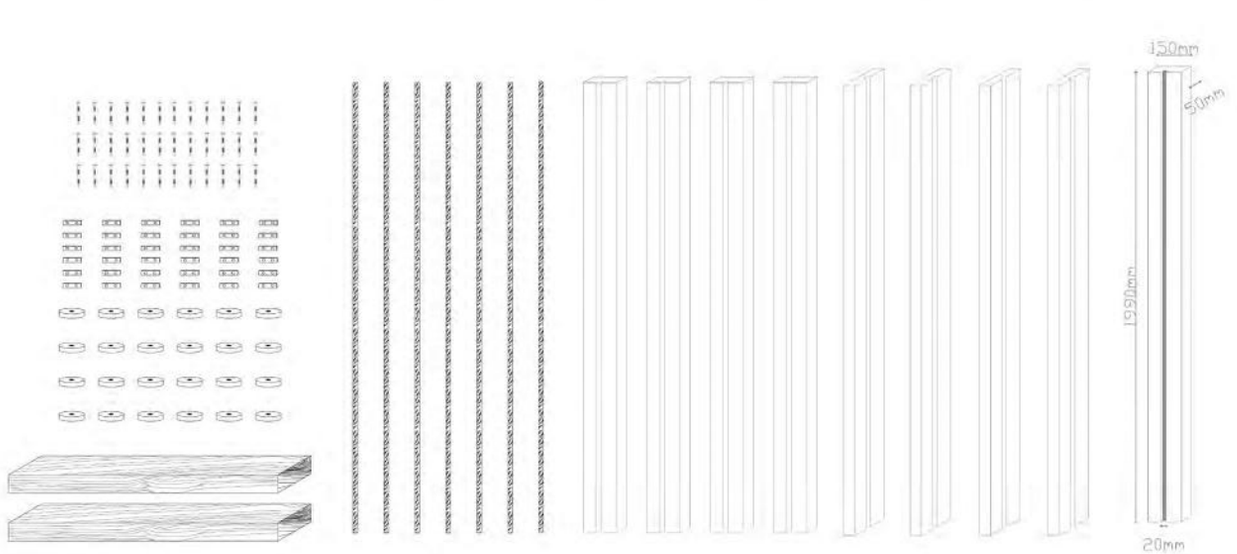
3.6 تفاصيل خاصة - حائط 'تريس' خشبي

أغلب الجدران التي نعرفها ونستعملها في التخطيط تكون مغلقة تمامًا دون أي إمكانية للتهوية إلا بحال تم فتح فتحة للشباك. في تصميم هذه التفصيلة وجدت إمكانية لبناء جدار خشبي من الممكن إغلاق أجزائه العمودية- تقريبًا مثل 'تريس' الشباك الذي نستعملها لفتح الشباك وإغلاقه في ساعات اليوم المختلفة.



الحائط في حال كان مغلق

الحائط في حال كان مفتوح

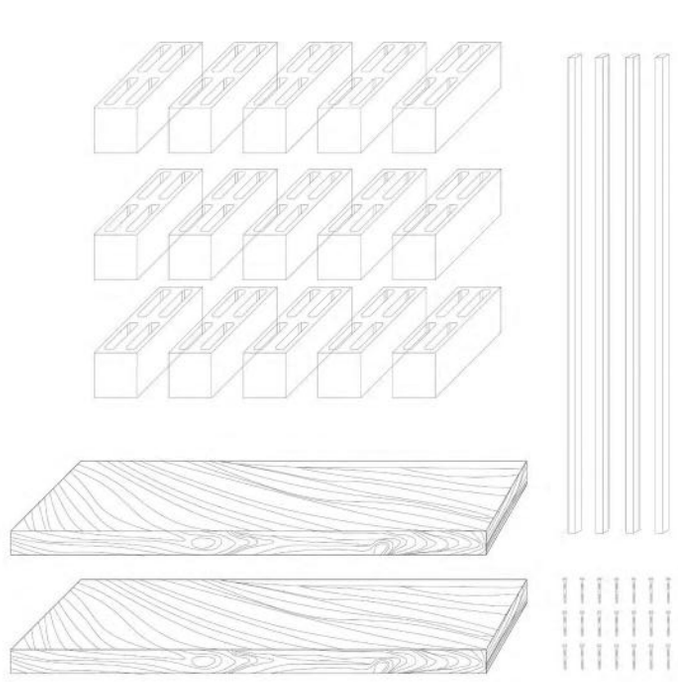


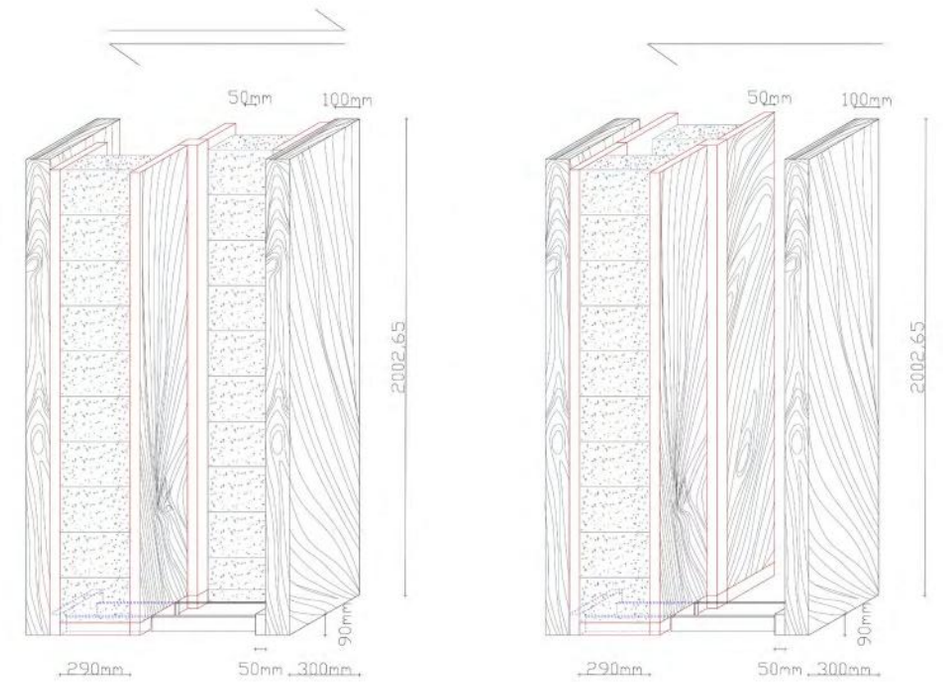
قطع حائط ال'تريس' الخشبي

3.6 تفاصيل خاصة - حائط خشب وطوب جرار

طوب الاسمنت جيد لعزل مساحة البيت الداخلية عن مساحته الخارجية أكثر من مواد أخرى متوفرة في سوق مواد البناء- لذا يلجأ الكثيرون إلى استعماله. الإشكالية باستعمال طوب الأسمنت تكمن في كونه منغلقًا تمامًا، ويشكو الكثير من الشعور بالاختناق حين يجلسون في البيت محاطين به. لذا فكرت في طريقة لاستعمال طوب الطين، تترك مجالًا لإغلاقه بشكل كامل أو لفتحه جزئيًا.

يحدث هذا بواسطة سكة حديد موضوعة تحت سطر طوب عمودي، بجانب سطر طوب عامودي آخر ثابت. يثبت السطران بواسطة إطار خشب على أطراف كل سطر عامودي من الطوب، وعلى أطراف السطرين العموديين معًا.





قطع حائط ال'سكة' الطوب

إستنتاج مؤقت

7

7 استنتاج مؤقت

معادلة تخطيط بيت عائلة في قرية مسلوبة الاعتراف تبدو في كثير من الأحيان من أصعب المهام المعمارية في واقع اليوم. فهي مركبة من ٣ معضلات رئيسية تظهر بالترتيب التالي:

حذر من الهدم وعدم الاعتراف
حالة اقتصادية حرجة
معتقدات اجتماعية وتقليدية

إن عدم اعتراف الحكومة بالقرى البدوية في النقب هو نفسه السبب الرئيسي الذي يدفع الناس للجوء إلى طرق بناء خفية وطارئة لا تتلاءم مع نمط حياتهم ويسميها الكثير من الأكاديميين الغربيين بـ»بناء عشوائي»- دون التعمق بالظروف الخصوصية لقضية الملكية في النقب، والتي أدت إلى هذا الواقع. هنالك معادلة مركبة تدفع الناس للبناء السريع والمؤقت ظانين أن الاعتراف سوف يأتي في الوقت القريب. الاعتراف حتى ولو حصل، لن يجلب معه البناء والتطور القانوني إلا في حال تنازلت العائلات عن ملكيتها على الأراضي، وهذا أيضًا شبه مستحيل.

في رسالة البيت أميل إلى التنازل عن مكانة الدولة ومسؤوليتها في تطورنا العمراني، وأدعوهم إلى التنظيم المجتمعي وجمع المعلومات اللازمة من أجل البناء والتطور بشكل أفضل يخدم السكان للمدى الأبعد، دون الانتظار اللانهائي هذا.
إذا كان الإنسان هو نفسه القادر على تخطيط مساحاتنا تحت اسم الدولة أو تحت اسم أي مكتب معماري, نستطيع نحن كأفراد ومجتمع فعل ذلك.
كل ما نحتاج إليه هو المعرفة اللازمة للتطور المرغوب.

Breakout 2E:
New Tools for the Urban Field

Moderator: Adva Matar

May 9, 2023 | 2:15 PM

Urban Design, Distilled	**Ofer Manor,** City Architect, Jerusalem Municipality
Critical Preservation and Urban Resilience **(Lecture)**	**Shmuel Groag,** Bezalel Academy of Arts and Design
Malawi Secondary Cities Plan: A Spatial Guide for Development	**Kobi Ruthenberg,** ORG Permanent Modernity
Holy Land, Coast Line, The Last Mile, and the Great Rift Valley: Exploring the Distinct Local Conditions of Israel's Urban Field **(Lecture)**	**Ifat Finkelman, Dan Hasson, Sagit Yekutiel, Dor Schindler, Iddo Ginat, Rachel Gottesman,** Bezalel Academy

Ofer Manor

City architect, Jerusalem municipality

Founding director, Jerusalem Urban Design Center

Lecturer, Graduate Program in Urban Design, Bezalel Academy of Design, Jerusalem.

omanor@netvision.net.il

Urban Design, Distilled

The Singular Voice of Urban Design in an Expanding Field

The School of Architecture at The Bezalel Academy of Art and Design, the hosting party for the *Urbanism in the Expanded Field* conference, comprises an Architecture Program and a Master's Program in Urban Design, rendering it as a seemingly natural venue for such an event. Yet surely an initial epistemic inquiry into the *urbanism-urban design* dialectic is called for, prior to pursuing the frontiers of the former?
Childs (2010) provides a compelling point of departure for this polemic in stating "…cultural studies, philosophy, economics and other disciplines may well be critical informants to design…However urban design is the making of propositions for the physical forms of our settlements." Moudon (1992) further elucidates this relationship by stating: "While research is usually associated with substantive information and with understanding specific phenomena (e.g., *urbanism* O.M.), it is expected that research for urban design will yield information that has normative dimensions and that eventually helps design. Hence while understanding (describing) cities and designing (prescribing) them are *opposite* conceptual poles, they also represent a *continuum*." Thus, the author rightly claims that understanding urban conditions must precede their design, but also notes the jarring contrariety between research in urbanism and in urban design.
In parallel to this instructive clarification, Moudon also alludes to urban design's nascent condition by stating that "As a young enterprise at the edge of established professions, urban design must endure many punches, pushes and pulls" (ibid.).
Picking up on Moudon's notion of polarity and alliance, a resonating balance can be established between her subsequent identification of the indeterminacy of urban design and the unexplored territorial boundaries of urbanism. By extension, this paper suggests that an elucidation of the one will benefit the other, i.e., an investigation into the essence of urban design will contribute to the exploration of the elusive limits of urbanism's constantly expanding field, and vice versa.

Pertinently, this year marks the 70th anniversary of the first apparent public use of the term 'urban design', made by Jose Luis Sert in a lecture thus titled (Mumford, 2009). Since then and up to the present, the endeavor to identify the field of urban design continues ["We read in the proceedings of the first (urban design O.M.) conference (of 1956 O.M.) … the struggle to specify the territory for urban design's work. This struggle continues today: Urban design has always had no clear role, territory, and authority" (Marshal, 2009)]. Distilling the essence of the field today is ever more pressing, due both to the compounding complexities of urban conditions, as well as to the proliferation of professional specializations eager to respond to these challenges ["But how does the designer get a seat at the table when the decisions are being made?" (Barnett, 2009, p.103)]. While in professional practice the resulting disciplinary overlaps and obscurities can be (and are) overlooked in the realm of the dynamics of civic administrations, this vagueness is certainly unjustified in the education of urban designers. Indeed, how can one teach urban design without seeking out its singular voice (notwithstanding its acknowledged interdisciplinary underpinning, and precisely due to its overlap with related professions, which also rest on weak theoretical foundations)?

The proposed point of departure in the quest lies in the very appellation Sert prudently designated to the field. '*Urban*' and '*design*' reflect its two epistemic foundations– the first entrenched in the realm of the social

sciences, the latter in the design professions (Verma, 2011). Rather than playing out the tensions and disparities of these contradicting sources (ibid.), I suggest embracing urban design's apparent solitary disciplinary positioning in this overlap (or, recalling Moudon, in the knowing-designing continuum). I further propose that recognizing this singular duality provides a compelling framework for identifying the field's fundamentals.

Undeniably, a myriad of identifications for urban design already appears in the literature, yet a comprehensive review of them reveals that not only are they non-consensual, but also inconsequential (Manor, 2013). Considering the impasse in academic inquiry of urban design's singular voice, the epistemically-based framing suggested in this paper overrides the ephemerality of the normative definitions and the low level of refutability of the descriptive ones (ibid.), by suggesting an approach *about* urban design, rather than *in* urban design.

I further propose to pursue this framework through the investigation of the realm of urban design *practice*, while still referencing scholarly thought. I so pay heed to Richard Sennet's (2008) lament that "History has drawn fault lines dividing practice and theory…modern society suffers from this historical inheritance" (p.11). This failing is particularly appropriate to our subject of inquiry, for, as Verma (2010) notes "there is a hope for the kind of hierarchical knowledge where theories undergrid practice. But this is not the model of knowledge acquisition in urban design… Urban design has been conscious of its practical mission" (p.64). Schurch (1999) even more ambitiously contends, "There must also be a development of theory born from practice which establishes the field's boundaries" (p.25).

In this paper, the path of inquiry by way of urban design practice substantiated by scholarly thought is addressed through the lens of my position as city architect in the Jerusalem municipality for the past twenty-five years[1], as well as my coincident involvement in the study, research, and teaching of urban design over an accumulated period of a decade and a half[2]. Thus, my inquiry into the essence of urban design is propelled by my desire to both 'make sense' of the uniqueness of my professional activity as well as to inform academic debate on it.

Relying on my joint teaching-practice experience as well as recalling the suggested approach of a design-social science scaffolding, I propose six tenets of urban design, three of which are gleaned from the social sciences and three from the realm of the design fields. I further suggest that when coupled together, the resulting triad can rightly describe urban design's elemental core, in a manner which is both exhaustive (i.e.: incorporates all veritable fundamentals) and exclusive (i.e.: which no other discipline can rightly claim) and thus they together constitute the singular voice of urban design.

The three tenets, which interlock thematically and elaborated forthwith, are: the field of urban design as a process-product matrix unique in its expanse, its singular approach of fusing system thinking with an anthropocentric perspective, and its specific focus on the creation of successful urban spaces as a design 'product' predicated on benefiting the public good.

The first precept combines the element of 'process' inherent to the social sciences, and the concept of 'product' familiar to the design fields. Indeed, Lawson (2006) notes that "'design' is both a noun and a verb and refers to both processes and products" (p.3). Also, Madanipour (1996), Carmona et.al. (2003), Lang (2005), and others apply this tandem to describe the field of urban design.

---

[1] In effect the city architect and his unit interface with broad-based issues of policy, planning, and infrastructure (particularly transportation), and also with specific topical areas of professional activity such as conservation, sustainability, and walkability; are tightly engaged with urban development initiatives at the project level; propose and oversee public realm upgrade projects and devise design guidelines for them as well as for private developments; communicate initiatives to publics, and provide design review for building schemes and permits. In this capacity I also direct the Jerusalem Urban Design Center, which provides a platform for exchanging ideas and information on related topics.

[2] Loeb fellowship, Harvard GSD 2003-4; Master's thesis track in Urban Design, The Technion, Haifa 2010-2013; course instructor at The Technion, Hebrew University, Bezalel; studio instructor at Bezalel (Urban Design Program, Department of Architecture, Department of Industrial Design); affiliated studio instructor, Harvard GSD.

The built environment comprises predetermined, designed elements at different scales – from street furniture, through small structures, buildings, districts, neighborhoods, and up to a city in its entirety (and perhaps beyond?). While most urban design practitioners[3] will not design a city in its entirety during their careers, they typically contribute to the formation of some of its components, in forms of engagement as described forthwith through the lens of process.

Process is an ingrained characteristic of eventualizing an urban environment at any of the aforementioned scales, from conception through the planning approval process and up to materialization. In articulating the urban designer's engagement in this process, it is conductive to introduce George's (1997) notion of 'second order design'. This concept refers to the urban designer's preoccupation with the formation of policies, plans, regulations, linkage programs, incentive frameworks, design guidelines etc.[4], which create a 'decision environment' (ibid.) within which the aforementioned products of the built environment are subsequently directly designed ('first order design'). That is, George distinguishes urban design from other design practices in how it *indirectly* affects the product. While wholeheartedly adopting this notion as an elemental component of my work experience, I suggest two extensions of it. Firstly, I propose to not exclude first order design from urban designers' repertory since design-for-build (be it a structure or public space), lies squarely in their potential scope of work. Secondly, I offer to substitute the term 'second order design' with the more generic 'delegated design', since the practitioner's engagement may occur at various stages of actualization of the urban sphere (from conceptualizing through drafting a policy, formulating a land use plan, to drawing up a permit request and subsequent construction documents, and site supervision)[5].

A further clarification regarding process relates to the practitioner's capacity within them, which may extend beyond preparing a design to providing design review (sometimes referred to as design control) or communicating design proposals to various publics [as occurring in my work and substantiated in a wide body of references in the literature [Shirvani (1981, 1985), Carmona (1998a, 1998b, 2016), Lassar (1989), Alterman & Corren (1999), Punter (1994, 1999), Alterman & Weisman, 2009)].

Should the aforementioned range of urban products be arrayed in a horizontal sequence, and the stages of realization pitched in a perpendicular array, a matrix is created, which, I suggest, represents a field of activity whose scope is unique to urban designers (Manor, 2013).

process stage \ product scale	City-wide	District-wide	Precinct-wide	Land parcel	Urban feature
Policy					
Planning					
Permitting & Construction					

Fig. 1: A basic process-product matrix defining urban designers' potential field of operation.

[3] Due to the weak institutional grounding of urban design, forthwith the term 'urban designer/s' is casually applied regardless of the individual's/s' professional training or diplomas. In order to overcome the vicious circle in defining the field, it is applied to practitioners who would probably be regarded as such by an informed evaluator of their work.

[4] Particular attention is drawn to the task of preparing design guidelines, which is an exclusive expertise of urban designers (Lang, 1994, P. 466).

[5] Also, the total number of orders vary from locale to locale, dependent on the statutory system and accepted modes of practice there.

The second precept combines the systemic approach inherent to the social sciences with the designer's anthropocentric-experiential outlook (Sternberg, 2000) to describe urban design's bifocal approach to the formulation of settlements (or parts thereof) based on a fusion of both 'top-down' and 'eye-level' approaches.

The system approach is well known in the elemental social sciences such as economics, sociology, and political science, as well as in applied social science fields, and specifically in urban planning[6], which is intrinsically bound with urban design.

Acknowledging the innate disciplinary entanglement in both academia and practice of these two fields, I bring to the fore a generally overlooked characteristic exclusive to urban designers, namely their experiential or sensual point of view (Cook, 1980; Southworth, 1990; George, 1997; Sternberg, 2000). Antecedently, the urban design luminary Kevin Lynch emphasized the experiential aspect, such as in *The Image of the City* (1960), as did Jon Lang in his writings, e.g.: *Urban Design: The American experience* (1994). Lamentably, over the years urban design has often been ascribed to dealing only with the aesthetics, in the latter-day meaning of the term relating to beauty, taste, or visual pleasure, whereas ironically, the word was originally defined more pertinently as 'relating to perception by the senses'[7].

Reverting to the realm of praxis, urban designers, rooted in the complexities of civic challenges, are invariably imbued (willingly or otherwise), in system thinking, just as are their colleagues, be they planners, traffic engineers, environmentalists or economists. Yet urban designers' widely acknowledged added value lies in their championing of an anthropocentric point of view and expounding the aesthetics (in its earlier, more profound sense, but also in its lay understanding) in deliberations relating to the shaping of the built environment.

This tenet clearly intertwines with the first since only a practitioner who possesses this bifocal approach is equipped to engage with the full range of the matrix, from preparing a city master plan to designing a park bench.

The third precept combines the social sciences' fundamental commitment to the public good together with designers' product-oriented motivations, to portray urban design's focus on the creation of successful urban public places.

The object of creation of urban designers is public space, and their predisposition to materialize these 'products' combines with a socially responsible inclination which renders them best suited for this task. Indeed, many references to the scope of urban design limit the field exclusively or primarily to this task "…urban design…. should be seen as an integrative activity, at the heart of which should be concern for making places for people." (Carmona et.al., 2003, p.20). Summoning their aforesaid forms of engagement, urban designers may not only design a public space for direct realization ('first order design') but can also conceptualize public spaces, curate insertions in them, draw up guidelines for their performance and appearance (in the form of streetscape manuals or instructions for street frontages of buildings), devise incentive measures to promote their materialization, communicate the design to stakeholders, or orchestrate the work of other specialists to ensure delivery (and thus, this tenet meshes well with the previous two).

I suggest the above-described troika provides a sorely-lacking clarity to the field of urban design. Though substantiated by practice and literary referencing, this proposition certainly invites validation through future

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[6] "Planners take a broad view and look at how the pieces of a community — buildings, roads, and parks — fit together like pieces of a puzzle." American Planning Association website (https://www.planning.org/aboutplanning/); "As a professional activity, town planning balances the social, economic and environmental needs of urban and rural areas." Royal Town Planning Institute website (https://www.rtpi.org.uk/become-a-planner/about-planning/why-plan/); "(Planners) balance the built and natural environment, community needs, cultural significance and economic sustainability to create better places and public spaces for everyone to enjoy." Planning Institute of Australia website (https://www.planning.org.au/certificationnew/what-is-planning).

[7] Urban planning literature, notably, is rife with affirmation of the *aesthetics* distinction of urban design, usually in its superfluous connotation and oft times to justify its disciplinary colonization into the field of planning (Gunder, 2011; Cuthbert, 2011).

research, perhaps by way of adopting varying case study venues (geographic and institutional) or by confronting the approach with additional literary sources and further scholarly analysis.

In the realm of academia, the illumination made here beckons serious contemplation of the structure and substance of urban design programs' curriculum. A thorough syllabus revision could more appropriately align study with the practice of graduates and better equip them to sound the singular voice of urban design in confronting today's intense global urbanization processes and their troubling ramifications.

Bibliography

Alterman, R., & Corren, N. (1999). *Design control in Israel: Between freedom of architectural practice and public-planning goals*. [Hebrew]. Haifa: Center for Urban and Regional Studies, Technion.

Alterman, R., & Gazit-Weizman, S. (2009). *The Weak Link: Design Control and Planning Law in Practice*. [Hebrew]. Haifa: Center for Urban and Regional Studies, Technion.

Barnett, J. (2009). The way we were, the way we are: The theory and practice of designing cities since 1956. In A. Krieger & S. Saunders (Eds.), *Urban design* (pp. 101-112).

Carmona, M. (1998a). Design Control: Bridging the Professional Divide - Part 1: A New Framework. Journal of Urban Design, 3 (2), 175-200.

Carmona, M. (1998b). Design Control: Bridging the Professional Divide - Part 2: A New Consensus. Journal of Urban Design, 3 (3), 331-358.

Carmona, M. P. (2016). Design Review – Past, Present and Future. Town and Country Planning, 85 (9), 386-391.

Childs, M.C. (2010). A spectrum of urban design roles. *Journal of Urban Design*, *15*(1), 1-19.

Cuthbert, A. R. (2011). Urban design and spatial political economy. In T. Banerjee & A. Loukaitou-Sideris, *Companion to urban design* (pp. 84-96).

George, R. V. (1997). *A procedural explanation for contemporary urban design*. *Journal of Urban Design*, *2*(2), 143-161.

Gunder, M. (2011). Commentary: Is urban design still urban planning? An exploration and response. *Journal of Planning Education and Research*, *31*(2), 184-195.

Lassar, T. (1989). *Carrots and sticks: New zoning downtown*. Washington D.C.: The Urban Land Institute.

Lang, J. (1994). Urban Design: The American Experience. New York, NY: John Wiley & Sons.

Lang, J. (2005). *Urban design: A typology of procedures and products*. Oxford: Architectural Press.

Lawson, B. (2006). *How designers think: The design process demystified* (4th ed.). London: Architectural Press.

Lynch, K. (1960). *The Image of the City*. Cambridge, MA: The MIT Press.

Madanipour, A. (1996). *Design of urban space: An inquiry into a socio-spatial process*. Chichester: John Wiley & Sons.

Manor, O. (2013). *Charting the Domain of urban design: Jerusalem as a case study*. (Master Dissertation). Technion, Israel Institute of Technology: Haifa.

Marshall, R. (2009). The elusiveness of urban design: The perpetual problem of definition and role. In A. Krieger & S. Saunders, *Urban design* (pp. 38-60).

Moudon, A.V. (1992). A Catholic approach to organizing what urban designers should know. *Journal of Planning Literature*, *6*(4), 331-349.

Mumford, E. (2009). Defining urban design: CIAM architects and the foundation of a discipline, 1937-1969. New Haven, CT: Yale University Press.

Punter, J. (1994). Design control in England. *Built Environment*, *20*, 169-180.

Punter, J. (1999). *Design guidelines in American cities: A review of design policies and guidance in five West-Coast cities*. Liverpool: University of Liverpool Press.

Schurch, T. (1999). Reconsidering urban design: Thoughts about its definition and status as a field or profession. *Journal of Urban Design*, *4*(1), 5-*28*.

Shirvani, H. (1981). *Urban design review: A guide for planners.* Washington D.C.: American Planning Association.

Shirvani, H. (1985). *The urban design process*. New York: Van Nostrand Reinhold.

Sennet, R. (2008). *The craftsman*. New Haven: Yale University Press.

Sternberg, E. (2000). An integrative theory of urban design. *Journal of the American Planning Association*, *66*(3), 265-279.

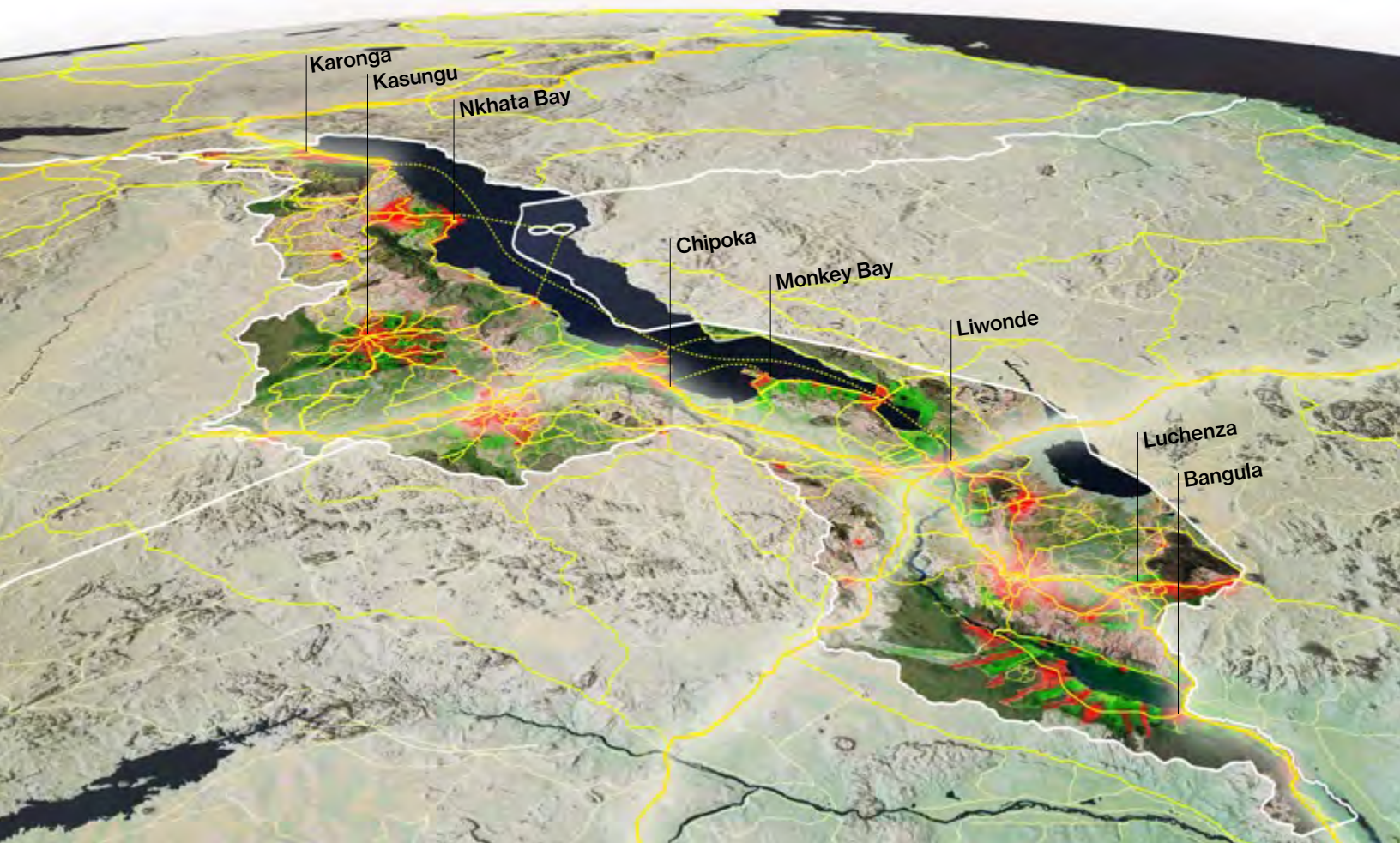
Verma, N. (2011). Urban design: An incomplete theorized project. In T. Banerjee & A. Loukaitou-Sideris, *Companion to urban design* (pp. 57-69).

MALAWI SECONDARY CITIES PLAN (MSCP)

A Spatial Guide for Development

In support of

MW2063 MALAWI



Foreword to the Malawi Secondary Cities Plan

The Malawi Secondary Cities Plan (MSCP) has been developed to provide a spatial foundation for implementation of the country's Vision, the Malawi 2063 (MW2063). By extension, MSCP will also be operationalizing the Agenda 2063 for Africa and the United Nations New Urban Agenda.

In the MW2063, the voice of Malawians is loud and clear; viz, *'Our country shall have smart, well-planned and serviced secondary cities that are anchored on sustainable economic activities in agriculture, tourism, mining and industry. Urbanization will follow an integrated approach encompassing spatial, economic, social and environmental considerations.'*

The MSCP therefore lays out the current spatial configuration, key trends related to land use, opportunities for infrastructural development as well as urbanization scenarios of our country for the next two generations. The MSCP comes to spearhead a coordinated cross-sectoral planning effort for the management of urbanization processes across the country. Through the identification of cities as anchors for development in their respective regions, the MSCP enables coordinated investments in agriculture, leisure, tourism, mining, logistics and commercial opportunities; as well as industrial and infrastructural investments, with a long-term agenda in mind, intended to serve the best interests of the current generation while ensuring coordinated sustainability needs for generations to come.

While Malawians broadly agreed, under MW2063, to the need for secondary cities, the strong push for the development of the cities at the earliest has largely been motivated by the country's political leadership led by His Excellency President Dr. Lazarus McCarthy Chakwera and his Vice, right Honourable Dr. Saulos Klaus Chilima, who is also the Minister of Economic Planning, Development and Public Sector Reforms. The Ministers responsible for physical planning, urban development, local government, and natural resources, along with their technical heads, showed unwavering and unprecedented support. Such high-level leadership and commitment is central to the plan's realization and success.

Malawi today has a population of over 17.5 million, with an average annual growth rate of 2.9%; which is one of the highest in the region. The population is projected to be over 30 million by 2040, and go over 45 million by 2063. The fertility rate is, however, higher in rural areas than in urban centres. These trends will increasingly put land under pressure, due to the related increase in agrarian, growing housing and social service needs. The country is also characterized by much better services and more diverse livelihood options in the urban areas than in rural areas which increases the desire of people to migrate to cities. This MSCP is, therefore, meant to create secondary cities that will divert the rural population from concentrating in the country's four primary cities and strengthen the rural-urban linkages. This is intended to ensure that urbanization benefits spread to rural areas, as espoused in MW2063 under the Urbanization Pillar which seeks to universally improve the quality of life at all levels, in the quest for an inclusively wealthy and self-reliant nation.

As it is still in its early urbanization stages, Malawi is currently well-positioned to formulate plans, policies and projects to maximize the known benefits of urban agglomeration into the future. The country's main cities and emerging urban areas form the economic backbone of the national economy, with their contribution to the national GDP far larger than their population share which amplifies the motivation to strengthen their capacity to grow and prosper in a well-planned and coordinated manner.

The envisioned secondary cities, presented in the MSCP, will offer opportunities to develop a wide range of economic sectors seen as foundational for national economic development. The plan envisages cities and urban areas that are built around a diversity of economic activity to support sustainable growth. Sectors such as tourism, mining, logistics and transport, combined with improved value chain systems of produce will benefit from enhanced proximity and shared infrastructure, establishing a productive economic and social ecosystem. The cities' economic activities will tie in to existing assets and opportunities that have been well-extrapolated in the MSCP together with their urbanization potential.

The cities, which will be well-planned through their master plans, will leverage productivity in rural areas with good connectivity and freeing of land meant for agricultural purposes.

The choice of secondary cities, as a priority, was largely based on, *inter alia*, their potential to urbanize, levels of connectivity and the existing opportunities for wealth creation.

The creation of prosperous cities, as espoused under MW2063, is possible and will happen, but with guarded impetus and adherence to meticulous planning.

Signed

Prof. Richard Mlombochi Mkandawire
Chairperson
National Planning Commission

Signed

Ambassador Bernard Sande
Secretary for Lands, Housing and Urban development

The Malawi Secondary Cities Plan (MSCP)

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Thomas Chataghalala Munthali, PhD
Director General
National Planning Commission

TABLE OF CONTENT

EXECUTIVE SUMMARY

Malawi Secondary Cities Plan: A Spatial Guide for Development

In support of 'Malawi 2063'

In the context of development planning, secondary cities are often overlooked. There is a tendency in planning to consider the "urban/rural" division in binary terms; that is, that people inhabit either cities or the countryside. "Secondary (or provincial) cities" fall between these two categories. The working realities of the "secondary city" model is often more nuanced and complex than the theoretical binary one. However, secondary cities play a critical role in the success of both urban and rural economies. Essentially, they perform as 'bridges' in the establishment of infrastructural, operational and cultural feedbacks between either end of the urban/rural spectrum.

In the case of Malawi, the role of secondary cities could be even more catalytic. Unlike most countries, Malawi's main urban centers generally do not appear along coastlines and water bodies. In most countries, these typical settlement structures allow goods and passengers flow to form clusters of habitation and economic intensity. Yet in Malawi, the main urban centers (Lilongwe, Blantyre, Zomba, Mzuzu) have been concentrated near areas with fertile soils, good climatic conditions, and convenient topography for agricultural development.

Consequently, Malawi's main urban settlements have not established deep relationships between larger systems of flow (e.g., goods, water, energy, people) and centers of economic and cultural activity. That is not to say that Malawi's established main cities are not extremely valuable for a wide variety of services and systems, deserving adequate attention and investments, but their performance is greatly hindered by their evident disconnect with the natural and infrastructural assets the country has. Consequently, activation opportunities for such natural and infrastructural assets of national importance fail to fully preform. This is most pronounced in relation to Lake Malawi where both water system infrastructures and water transport related services are largely absent.

To address the enormous disparities in services distribution across the country, the 1987 Malawi National Physical Development Plan (NPDP) defined a hierarchical network of centers, according to levels of service provision such as administration, commerce & business, health, education and infrastructure. The primary incentive for creating the hierarchy was efficient service provision for the population as a whole. However, given the agricultural focus of Malawi's economy, the NPDP called for "economic services which are well spread in order to satisfactorily serve the needs of the rural economic sectors". Ultimately, the main mission of the plan was to redistribute populations and divert rural-urban migrants away from Blantyre and Lilongwe, towards small- and medium-sized urban centers.

Since 1987, the need for urbanization has steadily risen, given Malawi's high population growth rates (2.9% in 2018). Conservatively, it is expected that the country's population will double over the next two generations, from the current 17.5 million to over 45 million by 2063. Despite that, Malawi's urban population rate remains persistently low and, at 17%, is among the lowest in the world. The need for urbanization is further intensified by the pressure on rural smallholder populations to migrate from subsistence farming, as plots of land decline to uneconomic levels. Some 75% of farms had less than 1ha in 2016 and alternative rural livelihoods remain few. Yet rapid urbanization has its own associated risks, and unless a high degree of planning and enforcement accompanies these internal migration shifts, urban poverty (i.e., slums) would beckon. However, although these concerns are genuine and severe, they also highlight an opportunity. If Malawi's urbanization wave is yet to unfold then critical decisions, as they relate to rural-to-urban migration influx management to the main cities and the establishments of 'Agri-Industrial Secondary Cities' in strategic locations, remain pertinent and relevant.

In an environment where infrastructure offerings are particularly scarce and budgets are highly constrained, it is especially imperative to maximize impact through groupings of investments and by designing multi-purpose infrastructure for a wide variety of beneficiaries and stakeholders. As an example, investments in irrigation where potable water or sewage systems are not prevalent, should be leveraged and coordinated to allow for general improvement of water, sanitation and hygiene (WASH) systems servicing the greater population of the area, instead of focusing on one sector (commercial farming in this case). Or how an investment in a port facility for multi-modal transport (rail to road to ship), could serve both commercial freight handling as well as smaller volumes for local farmers or fisheries.

The Malawi Secondary Cities Plan (MSCP) comes to guide national long-term agendas through spatial planning, proposing a method through which the Malawi 2063 vision would be rendered into actual projects and where, as a matter of priority, these projects should take place, what will they look like, who will they serve, and how will they roll out.

Key Plan Goals:

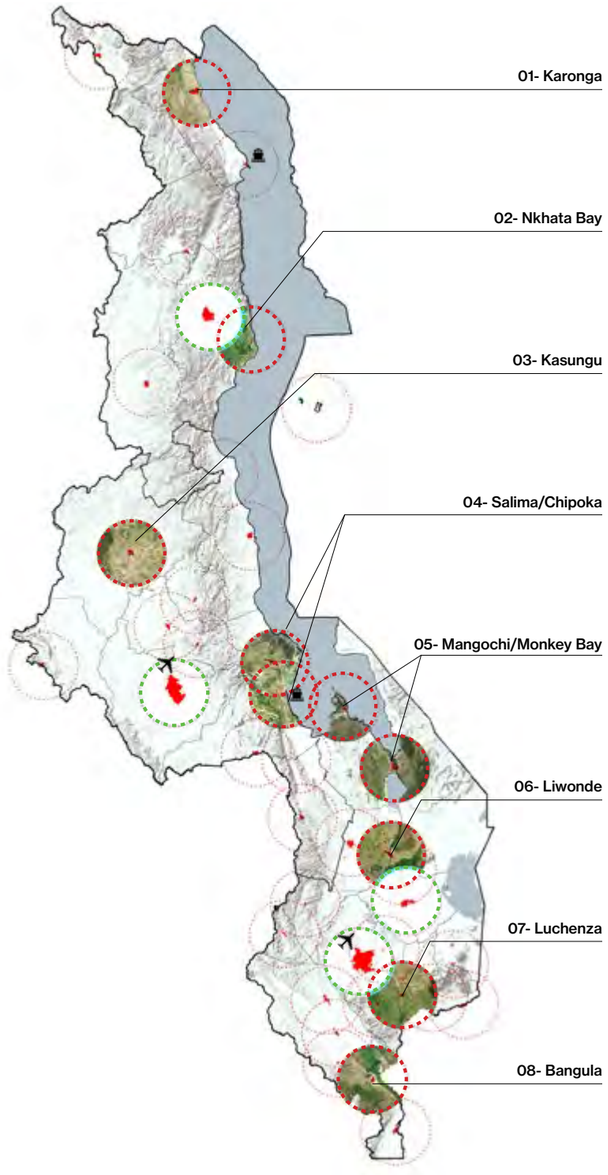
1. Identification of catalytic locations for strategic investments through a data-driven analytical process guided by national agendas
2. Promotion of land use efficiency in locations where land is on high demand
3. Diversify economic growth in rural areas through integrative planning
4. Coordinated and comprehensive development promotion through strategic clustering of assets and projects

1. Identification of catalytic locations for strategic investments through a data-driven analytical process guided by national agendas

The MSCP initiated through a mapping exercise of the country for assets and opportunities across a wide variety of sectors and themes (including natural resources, demographic trends, infrastructure systems, economic activity, climate vulnerability and more), in search of critical intersections between systems, where investments could catalyze the pressing processes of urbanization, industrialization and environmental restoration. MSCP identifies a set of locations across the country which present great opportunities, especially for transportation infrastructure development; agriculture land suitability; and potential for substantial urbanization. The findings identified by MSCP derive from an intensive process of consultation with a wide variety of stakeholders.

From a transportation infrastructure development perspective, MSCP has selected locations which correspond to either existing or planned multi-modal ports. The four southernmost locations (Bangula, Luchenza, Liwonde and Chipoka), present opportunities for rail-based ports connecting to the Nacala and Beira corridors, and with possible links to inland water-based transport such as Mangochi and Monkey Bay. From the North, both Karonga and Nkhata Bay present opportunities for water transport infrastructure development, (and even rail in the case of Karonga) which could support enhanced connectivity and trade with Tanzania through the TAZARA and Matwara corridors.

Proposed Secondary Cities



Legend

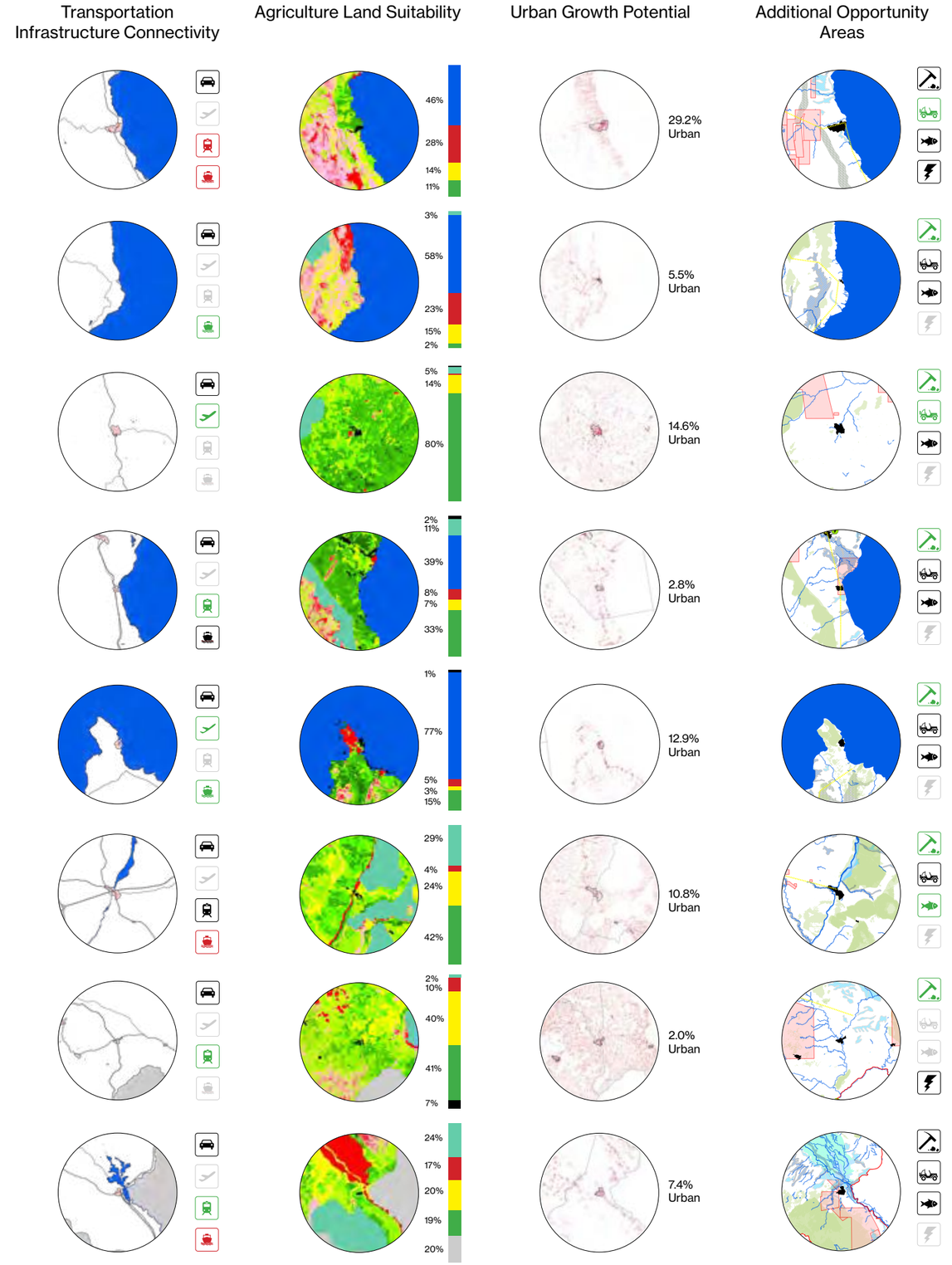
Main roads
Rail lines
Port Facilities

Agriculture Land Suitability
Settlement
Highly Suitable
Medium Suitable
Water body

Transportation Infrastructure
Road
Airport
Rail
Port

Additional Opportunities Areas
Eco-tourism
Fisheries/Aquaculture
Energy Production
Mining Activity

Existing Absent Rehabilitation Proposed



2. Promotion of land use efficiency in locations where land is on high demand

Each of the eight locations is a proposed ‘priority development zone’ for the establishment of a secondary city. A diverse set of projects would be clustered and designed in a manner which maximizes cross-sectoral feedback and benefits. Each zone has an existing town at its heart, with properties that would allow it to grow into a substantial urban center with national importance, attracting populations from the countryside and servicing its proximate rural communities. The urban centers would subsequently be the location for modern infrastructure development, providing adequate energy, water, transportation, and communications infrastructure; benefiting both urban communities as well as the commercial and industrial sectors. Finally, through the development of those secondary urban centers, the surrounding rural communities of small farms would benefit from enhanced market linkages and from the soft and hard infrastructures those cities will provide.

A projective render of the port city of Chipoka in Salima District for the year 2063 as an example of one of the eight secondary cities proposed in the MSCP - A view from the lake side, depicting land use adaptations, infrastructural and real estate development for logistics, industrial and commercial programs, well connected to residential districts and recreational amenities. Illustrated in the background are the agricultural communities and commercial farms of TA Ndindi which are designed in an integrated manner with the growing urban core.

1- Industrial and logistics port
2- Fisheries port
3- Commercial and tourism boardwalk and marina
4- Industrial and logistics district
5- Commercial business district (CBD)
6- Existing settlement
7- Residential district
8- Regional gateway

3. Diversify economic growth opportunities in rural areas through integrative planning

From an agriculture development perspective, all eight locations present highly suitable lands for agriculture and aquaculture development; and by that pose a great opportunity with respect to the preservation of fertile lands and the intensification of land uses with long-term resource conservation in mind. More so, the eight locations are all located in great proximity to substantial bodies of water which would allow for the development of irrigation projects, and the WASH sector at large.

A projective render of the port city of Chipoka in Salima District - A view from the city's agricultural periphery, depicting land use adaptations for growing farming communities, agricultural commercialization and environmental conservation, and their spatial relationships with the industrial urban core at the lake front.

1- Planned smallholder communities
2- Linear small farm consolidation
3- Existing villages
4- Public amenities center
5- Infrastructure linkages to secondary city
6- Commercial farms
7- Commercial aquaculture ponds
8- Secondary city core

4. Coordinated and comprehensive development promotion through strategic clustering of assets and projects

A robust multi-purpose design agenda should be implemented across a minimal set of locations, where clusters of projects can aggregate, emerge, and build sufficient capacity and momentum to catalyze a process of urbanization and economic development. Where key projects serve both as facilitators and as leverage for subsequent investments while reinforcing one another.

On the following spread four types of spaces/projects are highlighted as they hold catalytic potential for integrative urban development. These are industrial districts, small farm communities, urban centers, and recreational amenities. Within each spatial area of focus, a range of infrastructural investments are embedded, including water and sanitation, energy and transportation amenities, without which none of the projects can be realized and which call for enhanced coordination between related sectors.

Diagram of project clustering across the three Pillars of MW2063, in and around an existing settlement, to develop it as a Secondary City.

“**Agriculture productivity and commercialization** will produce and supply raw materials for industrial processing and healthy and nutritious food. The growth of agro-based industries associated with job creation will economically anchor the creation of urban centers. The urban centers that include tourist-based cities will act as off-takers of agricultural produce. This connectivity in agriculture shall ensure an increase in the number of youths engaged in competitive agricultural value chains.”

Excerpt from MW 2063

“**Industrialization** of our economy shall be achieved by increasing investment to establish both traditional and non-traditional manufacturing firms, technological innovations, mining and other services. Manufacturing will be essential in building a resilient, integrated, independent and self-sufficient economy. The growth of industries will thus create more jobs, income and opportunities for our people. Most of all, industrial growth means availability of a ready market for agricultural produce, thus enhancing commercialization.”

Excerpt from Malawi Vision 2063

AGRICULTURE

- Wetland restoration
- **Small farm communities**
- Reforestation
- Natural Resource Management
- Aquaculture
- Irrigation
- Commercial Farms

INDUSTRIALIZATION

- **Industrial and Logistics districts**
- Energy Infrastructure
- Water Infrastructure
- Mining
- Transport Infrastructure

“**Urbanization** offers considerable Opportunities for accelerating socio-economic transformation. Our country shall have smart, well-planned and serviced secondary cities that are anchored on sustainable economic activities in agriculture, tourism, mining and industry. Urbanization will follow an integrated approach encompassing spatial, economic, social and environmental considerations.“

Excerpt from MW 2063

URBANIZATION

- Multi-modal transit hub
- Port district
- **Tourism hub**
- Housing development
- **Urban and commercial center**
- Public space
- Sanitation and waste management

Urban Centers

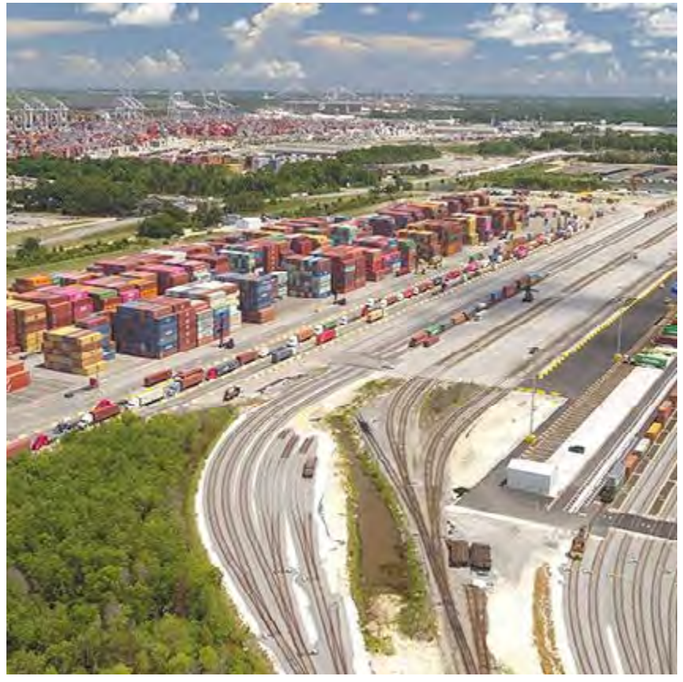
Perhaps the most essential and catalytic space for the development of a commercially successful and democratic city is its civic core, an infrastructural intersections the backbone of the Commercial Business District (CBD) of the planned secondary city. These centers are planned around a key multi-modal hub that connects different modes of transport, a main commercial and market space, civic and cultural institutions, as well as mixed-use commercial spaces which could include offices and urban hospitality offerings.

A transit-oriented development,
A case study from Brasil.
Photo Credit: Mariana Gil/EMBARQ Brasil.

Industrial Districts

Industrial and logistics zones are at the core of the Industrialization Pillar of MW2063. Such spaces come to support and serve district-wide industrial activities, including lake ports, rail stations, different processing and packaging facilities, storage facilities, research and design, skills training and more. Surrounding critical industrial infrastructure, the plans developed herein allow for a balanced and inclusive transition from spaces of production and intense economic activity to domestic spaces of residence and quality urban living.

A Logistics Zone Development,
A case study from Georgia Port.
Photo Credit: Georgia Port Authority.



Recreactional Spaces

Within the Urbanization Pillar, MW2063 also highlights the critical importance of an integrative approach to recreational amenities and tourism attractions. These are leisure and entertainment spaces both for locals and tourists, domestic and international. For cities along Lake Malawi, the plans feature public beaches, passenger ferry terminals, marinas and water sport centers, aquariums, as well as hospitality offerings. Inland cities would feature their nature reserves, forested mountains, and urban parks, to name a few.

A harbor boardwalk,
Fontvieille, Monaco.
Photo Credit: Selestina, Flickr.

Small Farm Communities

Providing spaces for small farm residential development not only provides such communities with access to necessary infrastructural needs, but also guarantees that land will be used efficiently as demand for farm land grows countrywide. Furthermore, an inclusive growth strategy for secondary cities in areas which are currently primarily agricultural, calls for attention to anticipated processes of land use change over time, which requires highly flexible forms of subdivision.

A view of Moshav Nahalal,
A case study from Israel.
Photo Credit: Zeev Stein.

1. BACKGROUND

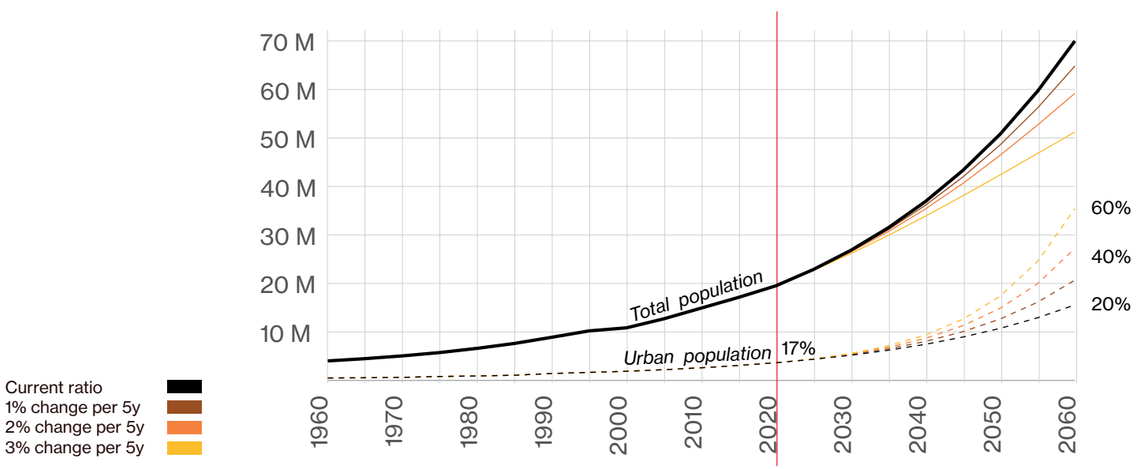
A Brief Overview on Malawi's State of Urbanization

Malawi is experiencing two pressing trends related to land use planning which are in urgent need of harmonization: on the one hand, diminishing agricultural land sizes of rapidly growing populations of rural farmers; while on the other hand, cities are expected to require vast amounts of land, especially in areas where land is most suitable for agriculture. The inherent conflict between both pressure, calls for a unified view and understanding of both trends, with a hypothesis that a key solution lies in spatial management and efficient land use practices. This line of inquiry leads to an understanding that both land-related pressures could well benefit from compatible investments in infrastructure integration in city regions, as water systems, transport systems and energy systems are critical on both ends of the rural-urban spectrum.

To provide more accurate and elaborate background on the nature of those trends as they are understood at the moment, hereby a brief overview on key statistical and spatial trends Malawi is undergoing.

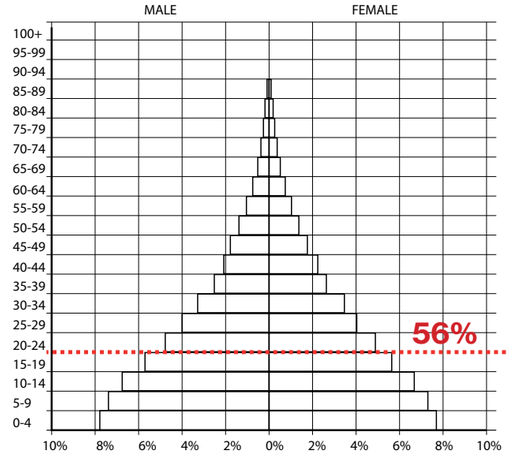
High population growth rates

Malawi has a population of over 17.5 million, with an average annual growth rate of 2.9% (NSO 2018). Its population is projected to pass 30 million by 2040, and go over 45 million by 2063 (UNDESA 2019), expecting to more than double the current population in the next 40 years. This growth rate is among the highest in the region, with Zambia at 2.89%, Mozambique 2.62% and Tanzania 2.71%.



Population growth projections presenting urban ratio variances

Data sources: UN DESA Population Division 2019



Malawi population pyramid 2019, total population at 18,628,748

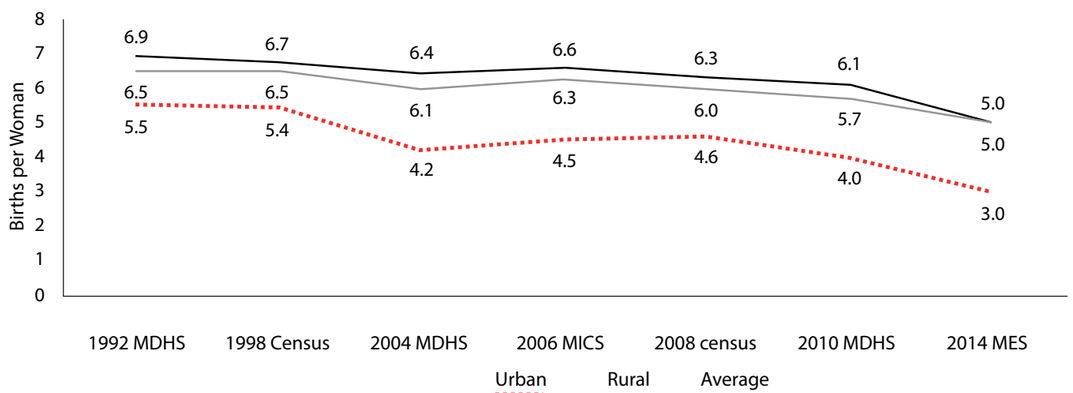
Data source: population pyramid.net

Youthful age pyramids

Those high growth rates render incredibly youthful age pyramids, where the majority of Malawians (56% in 2017) are currently under 19 years of age. This has severe impact on economic dependability ratios with increased burden on employment and livelihood metrics.

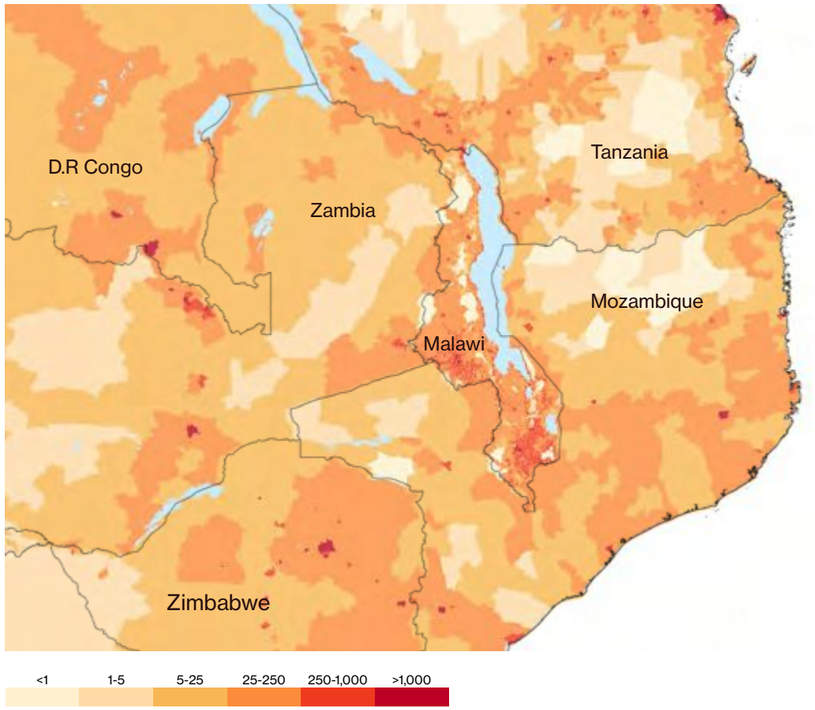
Fertility rates are not equal between rural and urban areas

Although from a long-term view Malawian fertility rates are declining, it is necessary to distinguish between fertility rates in urban areas (moderate) vs rural areas (high). These high fertility rates are projected to result in extreme population growth in rural Malawi, where the large majority of the population are peasant farmers and sources of livelihood are very limited. The options for mitigating those ratios lay in family planning policies (health, education, financial incentives), as well as policies which promote rural to urban migration and urbanization of the countryside.



Trends in total fertility rates

Source: NSO 2009;2015



Regional population density 2010 - persons per sqkm

Data sources: Center for International Earth Science Information Network - CIESIN - Columbia University. 2016. Gridded Population of the World, Version 4 (GPWv4): Population Density. Palisades, NY: NASA Socioeconomic Data and Applications Center (SEDAC).

	Pop (2020)	Land Area (sqkm)	People per sqkm	Urban Population %	Population growth rate	Urbanization Rate	Annual Urbanization rate
MAL	21,196,629	94,080	225.3	17.40%	3.30%	4.19%	0.89%
MOZ	30,098,197	786,380	38.3	37.10%	2.62%	4.35%	1.73%
TAN	58,552,845	885,800	66.1	35.20%	2.71%	5.22%	2.51%
ZAM	17,426,623	743,398	23.4	44.60%	2.89%	4.23%	1.34%
ZIM	14,546,314	386,847	37.6	32.20%	1.87%	2.19%	0.32%

Key population and land statistics for Malawi and its neighbors

Data sources: CIA Factbook, Density map by Andy Nelson, University of Leeds

Low urbanization rates

Malawi is at an early stage of urbanization (around 17.4% for 2020) and with urban population growth rates at 4.19%. This is lower than urban growth rates in the region, with Zambia (4.23%), Mozambique (4.35%) and Tanzania (5.22%). Rural to urban migration is currently the main contributor for urbanization. At current population growth rates, Malawi's urban population share will remain below 20% until 2040.[1]

National assets development

Still the country has many assets worth noting, which embodies great promise and hope for the future of the country and the prosperity of its population. Malawi has an abundance of natural resources and fertile land, a great lake which is incredibly underutilized, positive climatic conditions and a rather well-developed transportation infrastructure network of roads, air, rail and lake ports.

Urbanization could present great opportunities

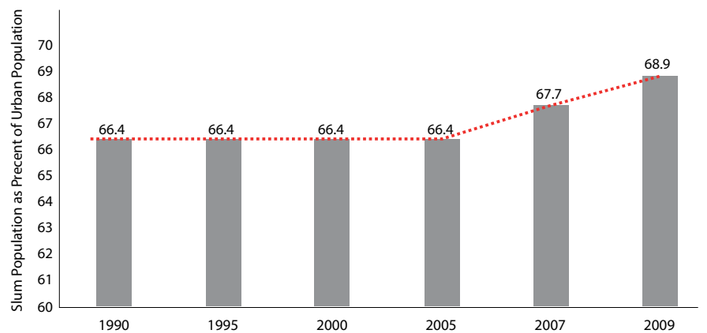
As it is still in early urbanization stages, Malawi is well-positioned to formulate plans, policies and projects to maximize the known benefits of urban agglomeration into the future. Recent economic indicators provide signs of positive structural change, with the share of agriculture to GDP and employment falling and that of more productive sectors, such as industry and services, increasing especially in urban areas.[2]

The Risks of unplanned urbanization

Still urbanization processes hold substantial risks, especially if they occur rapidly and without proper planning and spatial consideration. Malawian cities are likely to experience increased slumming and territorial expansion with lack of sufficient effective tools for population growth control, influx management and land resources management. In Malawi, policies have tended to be wary of urbanization and of its potentially adverse impacts, mainly the urbanization of poverty. Since Malawi is predominantly rural, naturally national development policies have mostly focused on the development of rural areas. With lack of proper attention to Malawi's urban areas, slumming has become the dominant form of urban development with about 2/3 of its urban population.

Competing pressures on land

Urban slumming will be mostly taking place at the fringes of expanding cities as they merge with their hinterlands to accommodate for natural growth and in-migration. These are likely to occur at the 1.5-hour commute zones from established urban cores. That transition zone between urban and rural conditions will be critical to manage in a manner that preempts ecological and land stresses, through strategic open land conservation and investments in public right of way for future infrastructure. In Malawi, the immediate pressures on land is already experienced around the two main cities of Lilongwe and Blantyre. Even more so, because of the topographical form of the country and its relatively small size, it is anticipated that the two main urban plateaus will rapidly populate and densify. This projected population concentration around Lilongwe and Blantyre is especially problematic due to the fact that these are also identified as the most productive arable lands in the country which would likely to experience immense pressure for agriculture uses.

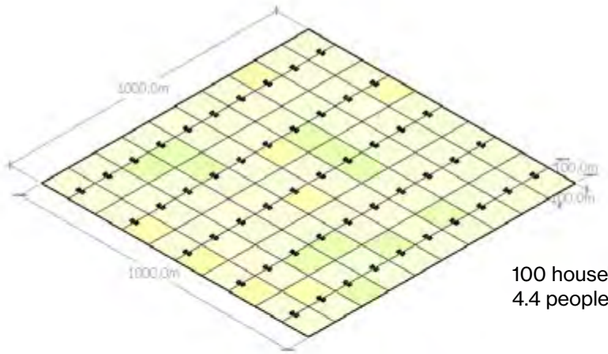


Proportion of urban population living in slum condition in Malawi

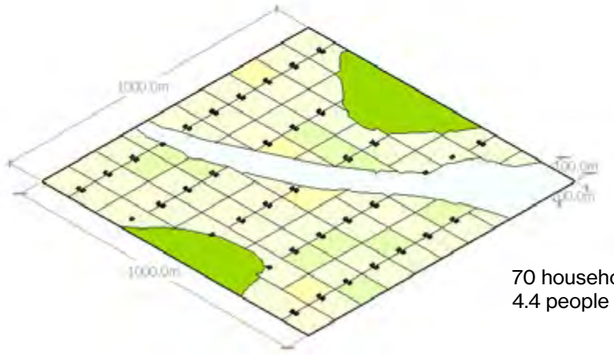
Source: UN Habitat 2012

Urban growth requires space

Even at best scenarios, when cities are well serviced by modern infrastructure and spatial policies, as population in cities grow so does the settlement footprint. On average, city footprints are expected to triple as population counts double[4]. This matter has great implications on land use efficiency planning in Malawi. As of 2020, 0.8% of total land captures the country's urban population (at 3,386,002 people representing 17.7% of the population). Assuming urbanization and population growth trends maintain, Malawi should expect by 2040 that 2.9% of total land will be used by cities (with about 7 million urban dwellers), and up to 12% of total land by 2063 (for an urban population of about 19.6 million). And to be clear – maintaining current urbanization trends will not suffice as land pressure on the rural areas will increase exponentially. Therefore, these figures should be seen as highly conservative in respect to Malawi's urban footprints.



100 households per sqkm
4.4 people per ha = 4.4 per ha



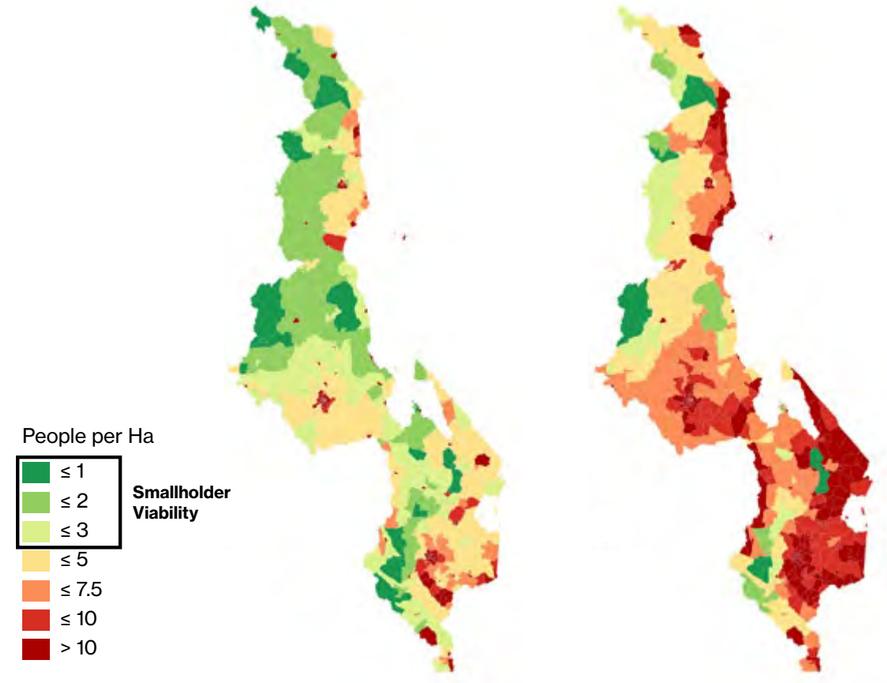
70 households per sqkm
4.4 people per ha = 3.08 per ha

People per ha density ratio calculation
Theoretical maximum density where every household has 1 hectare, where;
National household family average is 4.4 (2018 census)
With regional variances, North (4.8), Central (4.4), South (4.3)
If taking into account non-arable areas at 30% (for forest, water bodies, roads buildings, etc.) *(Estimated to be 50% on national scale)*

4.4 x 0.7 = 3.08 with regularly layed out land subdivision

Unsustainable farm sizes for long term

Assuming an average household size of 5 persons (NSO 2018), a 500 persons/km2 translates to 5 people per ha of land. This roughly means unsustainable agricultural intensification kicks in when population densities exceed one household per hectare. By this metric, and by considering available suitable land for agriculture, population density projections show that about 12% of the land in rural Malawi has already reached the 5 persons/ha population density threshold and about 42% of the population is trapped in areas where sustainable intensification is not feasible for the long run. It is projected that over 90% of the population will be residing in areas with population densities exceeding the 5 persons per hectare threshold in 2048.



Population per hectare 2018 - based on arable land area

Population per hectare 2048 - based on arable land area

[1] Malawi Urbanization Review (April 2016). "Leveraging Urbanization for National Growth and Development", GSURR, Africa, World Bank.
[2] Malawi Economic Monitor (May 2017). "Harnessing the Urban Economy", World Bank Office Malawi.
[3] Malawi Urbanization Review (April 2016). "Leveraging Urbanization for National Growth and Development", GSURR, Africa, World Bank.
[4] Angel, Shlomo, Alejandro M. Blei, Daniel L. Civco, and Jason Parent (2012). Atlas of urban expansion. Cambridge, Lincoln Institute of Land Policy.

2. SCENARIO PLANNING

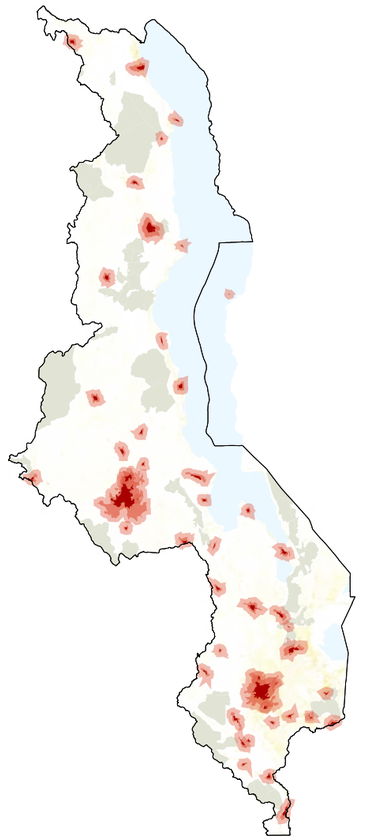
A Comprehensive Approach to Spatial Planning and Urban Development

Many critical questions about the future of the Malawian economy and the sources of livelihood of its population arise following the background provided above. Where should Malawi settle the additional 15 million citizens expected in the next generation? What will those Malawians do for work? Where will they source their food from?

It is deemed that Malawi's population requires a national shift towards new patterns of settlements, that must be driven by land use efficiency and economic diversification and productivity. Urban and rural areas require carefully devised land and population management plans to help guide public policies and critical investments in transportation, water and energy infrastructures as well as the corresponding private investments in commercial enterprises to catalyze a process of industrialization and modernization across the country.

By conservatively projecting current population growth trends to the year 2063, we learn that the current 0.8% of land inhabiting the 17% of urban population today will need to expand up to 2.9% of land by 2040, to accommodate for an estimated 23% of the population, and further up to 12% of the country's land by 2063 where an expected 42% of the population will be living in cities. This rough analysis applies a rule of thumb formulated at the Marron institute for urban expansion at NYU, estimating a city to triple in footprint while its population doubles in numbers.

The subsequent question should be then, how should Malawi distribute these massive quantities of anticipated populations, and their corresponding urban footprints? Can Malawi continue to rely on the current established cities to absorb such an enormous growth – from the current 3 million urban dwellers up to 20 million urban dwellers by 2063. The evident conclusion is negative, especially considering current pressures from slumming. Alternatively, Malawi could consider establishing alternative locations where a large amount of population would settle around established nodes of economic activity, and by that offset some of the pressure, projected to be experienced in the main cities.



As a rule of thumb:
When population counts double, settlement footprints triple*

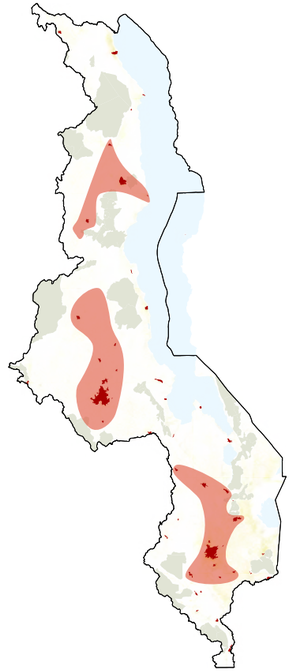
- **2020 urban land accounts for 0.8% of total land, urban population 2,971,650 (17% of total)**
- **2040 urban land accounts for 2.9% of total land, urban population 7,065,263 (23% of total)**
- **2063 urban land accounts for 12.0% of total land, urban population 19,608,639 (42% of total)**

** Angel, Shlomo, Alejandro M. Blei, Daniel L. Civco, and Jason Parent. Atlas of urban expansion. Cambridge, MA: Lincoln Institute of Land Policy, 2012.*

Year	2020	2040	2063
Urban Population	2,971,650	7,065,263	19,608,639
Total population countrywide	17,563,749	31,317,322	47,097,970
% Urban population	17%	23%	42%
Urban Area (ha)	76,140	271,541	1,130,436
% of total land	0.8%	2.9%	12.0%
Total land (ha)	9,455,183	9,455,183	9,455,183

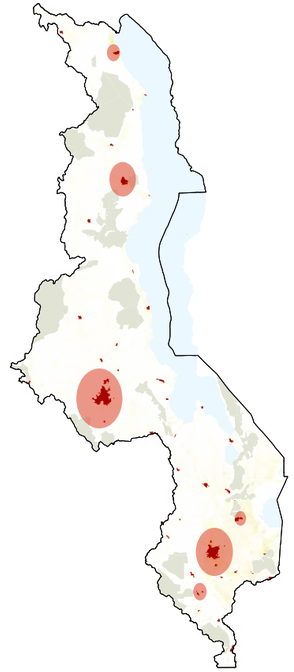
Data sources: World Population Review, Land Cover 2010 RCMRD

Three urbanization scenarios for Malawi in 2063- Considering a total population of 47 million citizens with 42% urban population, amounting to 20 million urban residents and 27 million rural residents.



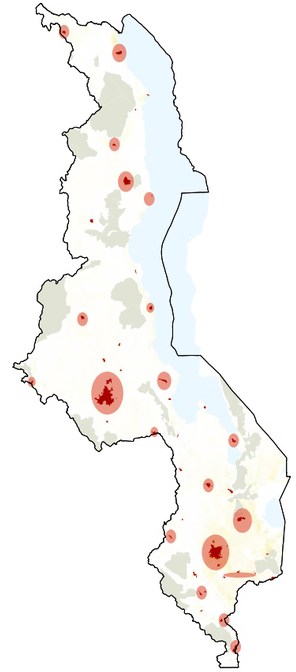
Status Quo - **Sprawled scenario**

Conurbations with connections to regional infrastructure form sprawled continuous settlements. Lilongwe and Blantyre have populations of 7M to 10M each. These are likely to experience extreme levels of urban poverty (slums) at their peripheries and will consume the large majority of arable land across the Lilongwe and Blantyre plateaus, and by that greatly stress the agricultural sector across the country.



Moderate scenario

Moderate growth rates for Lilongwe and Blantyre (around 5M inhabitants each) could be encouraged through the establishment of a series of secondary cities designed around critical national infrastructure (2M - 3M inhabitants) such as Salima/ Chipoka, Mzuzu/Nkhata-Bay, and Liwonde/Zomba.



Compact scenario

Lilongwe, Blantyre and Mzuzu are managed at around 3M each. Mid-sized Secondary Cities of around 1m inhabitants each are planned around intersections of infrastructure and natural resources to form a well distributed and balanced settlement patterns. Karonga, Liwonde, Salima, Kasungu, Mangochi and Bangula, are just a few locations in which large amounts of populations would settle, to both sustain local urban economies as well as service the adjacent rural communities benefiting from the preservation of quality arable lands at the main plateaus and across the country.

Faidherbia and tomatoes on a farm in Salima District

Photo by: Tracy Beedy/World Agroforestry Centre

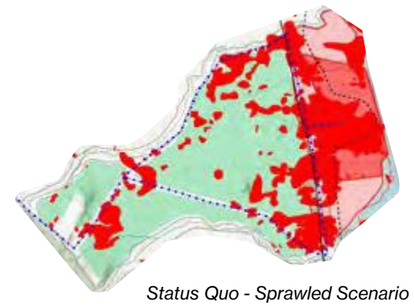
Local scale growth scenario analysis

Similar to national scale population growth trends and their spatial footprint constraints and implications, it is critical to analyze and model such process on a local scale. Between both scales of analysis, the MSCP aims to deduce policies and plans for the management of both urban and rural populations. On a local level, the scenarios being considered are quite similar to those on national scale, but with greater detail and accuracy. Below is an example of a population growth analysis that was done for the areas of TA Ndindi and Chipoka urban in Salima district. A number of parameters are taken into consideration when modeling such projections, including anticipated population amounts (varies according to degree of desired urbanization), population density ratios (varying between urban and rural families), and projected people in each household.

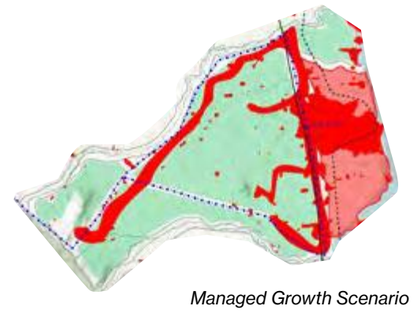
Lastly we come to the ratio of population settling in this area in relation to land available for each household. The Table presents under the *status quo* scenario that each household will have about 0.3ha of farm land by the year 2063, while on the other scenarios it will grow up to 0.5ha and 1.1 accordingly. This has to do with local ability to structure population settlement footprints along infrastructure provisions (road, eater, sanitation, etc.), and by that linking rural and urban livelihoods with economic and social structures.

Population 2020 = 12,615
Chipoka Urban and TA Ndindi (partial)

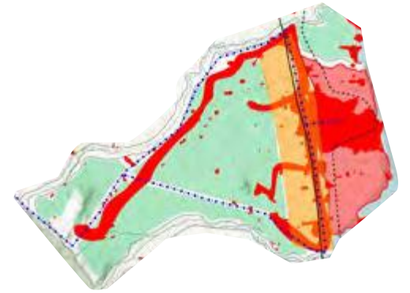
Population 2063 = 73,994 0.3ha per rural household
status quo - scenario 1
Population 2063 = 73,994 0.5ha per rural household
Managed Growth - scenario 2
Population 2063 = 124,300 1.1ha per rural household
Controlled growth - scenario 3



Status Quo - Sprawled Scenario



Managed Growth Scenario



Controlled Growth Scenario

Compact urban footprint *Urban boundary*
Peri-urban zone *Agricultural land*

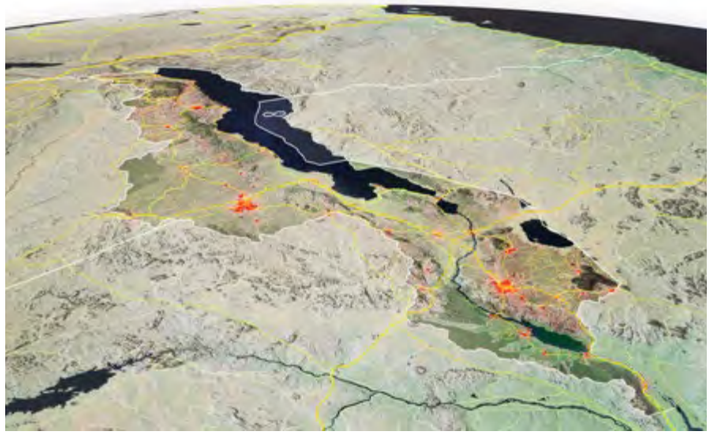
	Status Quo - Sprawled Scenario			Managed Growth Scenario			Controlled Growth Scenario		
Growth Rate 104.2	*2020*	*2040*	*2063*	*2020*	*2040*	*2063*	*2020*	*2040*	*2063*
Urban Jurisdiction Footprint	1,124			1,124			1,124		
Population	6,395	14,561	37,510	6,395	14,561	37,510	6,395	56,200	112,400
# of Families	1,453	3,309	8,525	1,453	3,309	8,525	1,453	12,443	25,545
Settlement Footprint (Ha)	458	728	1,875	1,124	1,124	1,124	1,124	1,124	1,124
Urban Density	20	20	20	5.69	12.95	33.37	5.69	50	100
Chipoka Rural									
Growth Rate 104.2									
Population	6,220	14,163	36,484	6,220	14,163	36,484	6,220	11,900	11,900
# of Families	1,414	3,218	8,292	1,414	3,218	8,292	1,414	2,705	2,705
Settlements Footprint (Ha)	311	708	1,824	311	785	785	595	595	595
Rural Density	20	20	20	20	18	46	20	20	20
Ag Land/Family	3.1	1.2	0.3	3.1	1.2	0.5	3.1	1.1	1.1

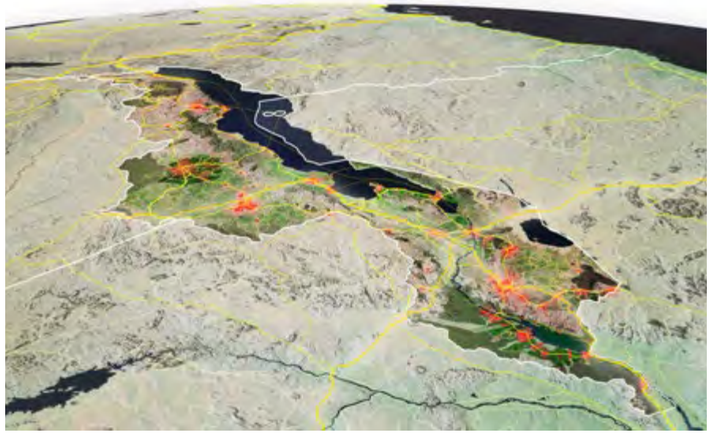
3. PROPOSITION

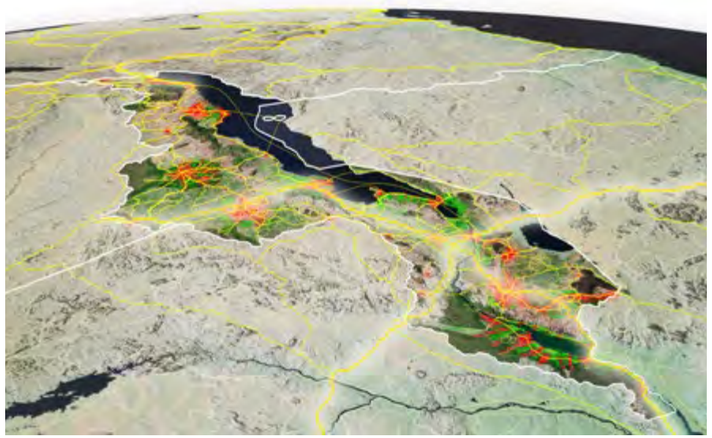
The Case for Secondary Cities Development in Malawi

Secondary cities are often overlooked in the context of development planning. Considering the common interpretations of the Urban/rural binary, which suggests that people inhabit either cities or the countryside, secondary cities, or provincial cities, fall in between categories where realities are often more nuanced and complex. Consequently, development agendas often tend to focus on: (a) the various pressures urban areas face, which call for massive investments in infrastructure and service provisions; or (b) the mirrored realities of rural communities and smallholder farmers, where due to the more dispersed nature of their agricultural practices, support is naturally often decentralized. This study comes with an agenda to point to the critical role secondary cities should play in establishing infrastructural, operational, and cultural feedbacks between both ends of the above described binary.

The cities, if planned well, could play multiple roles in respect to both the urban and the rural economies. The point of this study is not to write a manifesto of sorts, with a comprehensive disciplinary ideology for the design of secondary cities. But rather our approach is opportunistic, in the sense that we are putting an emphasis on analysis of local conditions through a wide variety of sources across disciplines and sectors, and suspending judgment in respect to modes of action, as they relate to interventions through investments or policies. Therefore, this Chapter provides a perspective on the status of urban settlements in Malawi in the year 2020, and the various challenges and opportunities each one of them presents, as it relates to processes of urbanization, industrialization and agriculture commercialization.







2020

Lilongwe, Blantyre are clearly visible situated on both plateaus inhabitting more than half of the country's urban population (9% of total population), while the large majority of the population (83% of total) inhabit the country's rural areas in fairly dispersed footprint around the two main cities.

2040

Eight Agri-Industrial Secondary Cities are developed across the country in strategic locations where natural and infrastructural assets are connected to both urban and rural populations in their respective areas.

2063

Urbanization levels across the country are largely balanced, where the eight secondary cities managed to absorb the pressures of migration away from Lilongwe and Blantyre while activating and linking rural communities to urban economies and diverse sources of livelihood.

Urbanization in Malawi

The study of urbanization in Malawi has, to some extent, been neglected due to the overwhelming predominance and importance of the agricultural sector, and the interest generated by aspects of its political life. Pre-independence Malawi did not urbanize rapidly due to colonial powers and their distributed land practices. Post-independence urbanization rates in Malawi rose slowly, while significant urban policies took place in attempt to decentralize population and older political power structures, such as transferring the capital city from Zomba to Lilongwe, and the development of specific programs and policies directed towards smaller centers at the lower end of the urban hierarchy[1]. Such policies, as apparent from the following quote, have struggled to fully establish a clear urbanization agenda from rather early stages, while a dual tension appeared, both for population control in the countryside as an agricultural economic engine, and for the establishment of urban centers for reasons which were largely cultural or symbolic.

"Until recently, Malawi has suffered from the "primate city syndrome" with one moderately large urban center (Blantyre) nearly ten times as big as the next largest town. This trend is now being reversed with the siting of the New Capital City at Lilongwe in the Central Region and with the creation of new urban growth point such Liwonde. The new industrial location policy, which requires all new "footloose" industries to be sited in Lilongwe, is also helping to bring about a more even distribution of urban population. This will have beneficial effects on rural areas, in that it will provide them with easier access to urban facilities. With a large number of small urban centers spread around the country, the contrast between urban and rural living conditions will become less pronounced. However, it will still be necessary to avoid making town life too attractive if disruptive rural emigration is to be avoided"[2].

While the historical development of settlements in Malawi has been rarely studied, nor the reason for the location and patterns of existing settlements, there are apparent spatial relationships between institutional and physical assets which over time guided habitat formations and locational decisions, such as; the establishment of early Christian missions, locations of administrative centers (colonial and thereafter), the establishment of nature reserves and national parks, areas where soil suitability for agriculture is higher, lake-shore and mountainous areas where there are topographical constraints, availability of year round water sources, and lastly, transportation infrastructure which provides access and linkages even beyond Malawi's national borders[3].

Unlike most countries where key urban centers generally appear along its coastlines and water bodies, where flows of goods and passengers form clusters of habitation and economic intensity, in the case of Malawi, the main urban centers have largely been concentrated near areas with good soils, climate and convenient topography for the purpose of agriculture cultivation, and kept shy from establishing deep relationships between larger systems of flow (of freight, water, energy, people) and centers of economic and cultural activity. That is not to say that the main settlements which have been established in Malawi are not extremely valuable for a wide variety of services and systems, but that their performance is hampered by their evident disconnect with the physical and infrastructural assets the country has to offer.

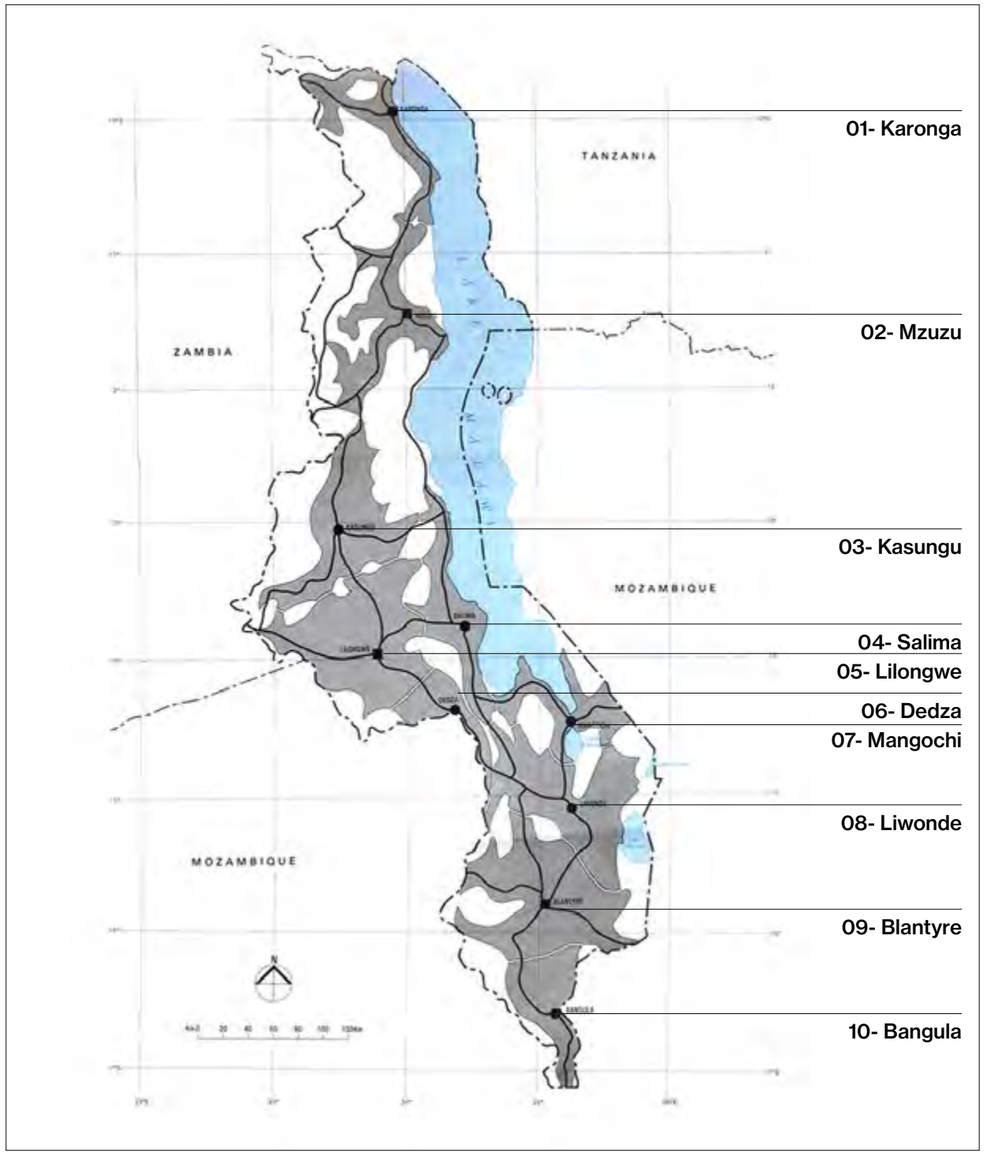
Hierarchical definitions of urban settlements

As part of this work and building on the 1987 National Physical Development Plan, an emerging national urbanization agenda has been developed, which calls for (a) the further reinforcement of the four key established urban centers (Lilongwe, Mzuzu, Zomba and Blantyre), combined with (b) an urgent need to decentralize the rapidly growing rural population of the country into smaller cities, or secondary cities.

Those secondary cities would provide the populations in the countryside urban services (administrative, commercial, health, educational, etc.), as well as reinforce infrastructural and industrial activities that support modernization processes of the agricultural and industrial sectors. Such a strategy requires a thorough understanding of the existing status of settlements across the country and their prospects of becoming secondary cities, serving a larger population within a 25 km radius and beyond.

A hierarchy of settlement directly relates to various urban service provisions, infrastructural systems configurations, land use and zoning, all of which have spatial implications. The resulting physical consequences significantly affect the social, economic, and political realities within any given country. And, since the geographic distribution of policies and financing is a crucial aspect of its development process, physical planning intelligence (which includes data collection and analysis) should be emphasized. In the case of Malawi, it seems that the full spectrum of the hierarchy has not been applied since 1987.

To address the enormous disparities in distribution of services in the country, the 1987 National Physical Development Plan (NPDP) set up a hierarchical network of centers, according to levels of service provision such as administration, commerce and business, health, education and infrastructure. In addition to having an efficient service provision for the population as incentive for creating the hierarchy, the NPDP argued that given the agriculture-based economic structure of Malawi, it calls for "economic services which are well spread in order to satisfactorily serve the needs of the rural economic sectors". NPDP further stipulates that such an effort requires an understanding of the network of linkages and services among the different centers. Ultimately, the aim was to redistribute populations diverting rural-urban migrants away from Blantyre and Lilongwe, towards small and medium sized urban centers.



Proposed national regional and sub-regional centers with influence areas for 2000
Source: National Development Physical Plan 1987

National centers
Lilongwe (political-administrative)
Blantyre (commercial-industrial)

Regional centers
Mzuzu

Sub-regional centers
Karonga
Kasungu
Salima
Mangochi
Liwonde
Dedza
Bangula

District / Main market Centers
Chitipa, Rumphi, Euthini, Nkhata Bay, Mazimba, Nkhotakota, Mponela, Mchinji, Monkey Bay, Zomba, Ntaja, Mwanza, Mulanje, Ntcheu, Phalombe, Ntchisi, Dowa, Chikwawa, Thyolo, Nsanje, Chiradzulu, Machinga

The NPDP qualified 187 centers (or alternatively settlements) to be included in this effort of hierarchical ranking, which led to their classification in six levels: (i) National, (ii) regional, (iii) sub-regional, (iv) district/ main market centers, (v) rural centers, and (vi) villages.

District centers development program (1980s)

The Program was fundamentally aimed at developing urban centers below the level of Blantyre and Lilongwe; and had two main missions: (a) to decentralize urban development in a manner that supports Malawi's overall economic development; and (b) to develop and define the role of spatial linkages within the urban network. It was assumed that decentralization would not generate the positive rural-urban relationships necessary for the development of both rural and urban sectors if there was no strong spatial linkages between the units of the urban network.

For the purpose of defining urbanization, we adopt Prof. John Friedmann's definition (1973) as two inter-related processes: "(i) The geographical concentration of population and non-agricultural activities in urban environments, and (ii) the geographic diffusion of urban values, behavior, organizations and institutions." Considering this definition to the context of Malawi and through the lens of the National Spatial Planning Program, we are raising the question as to which settlements have the most potential to become substantial secondary cities and facilitate a process of national urbanization?

[1] Deborah Potts (1986). "Urbanization in Malawi". Doctoral thesis, University of London.
[2] Malawi Economic Planning and Development Division (1971). "Malawi, Statement of Development Policies 1971 – 1980".
[3] Malawi Ministry of Lands and Urban Development, Department of Physical Planning (1987). "Malawi National Physical Development Plan".

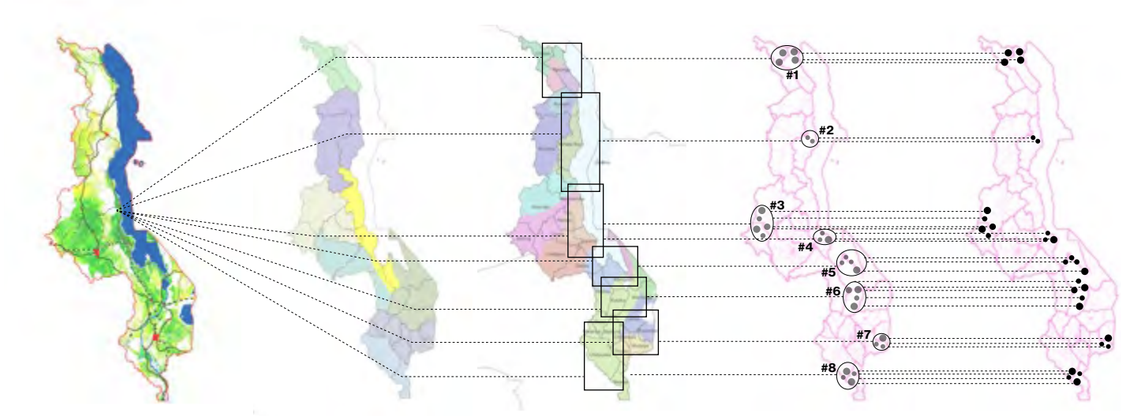
4. SETTLEMENT CATALOGUE

Multi-scalar Spatial Analysis

The process of spatial analysis includes two essential phases of investigation, the first being the establishment of a baseline scenario in which current assets, plans and policies are classified and laid out. The second phase of analysis comes from the act of clustering assets and projects by proximity and/or theme, in a manner which allows for subsequent propositions to form, in relation to emerging project concepts and the identification of possible links and feedbacks where infrastructure investments and land allocation and usage priorities. Those links are designed to reflect the shared interests of both public and private sector stakeholders, and by that provide a balanced framework for medium and long-term sustainable development and investments.

At the core of this analytical process is the application of multi-scalar design thinking. The plans presented in this plan aims to bridge scales of analysis and policy from national and regional scales, from watershed and district scale, down to the project level, and back again. This agenda of alignment between top-down and bottom-up realities, comes to the fore not only through the intentional positioning of investment clusters towards the development of secondary cities, but is further embedded in the actual implementation strategies of each cluster of investments, whether through phasing, financing, or partnership curation.

The baseline exercise of survey and analysis included both the collection and classification of existing data sets provided by a wide variety of sources, as well as through a series of consultations and interviews with a wide variety of stakeholders. Overlaying different layers of data allowed us to then identify critical intersections of opportunities and highlight areas of particular importance in relation to the program's agenda.



National planning

Setting values and targets to meet goals

Regional planning

Differentiating regions by common geographic characteristics

District planning

Operationalization district level leadership for large scale impact with local opportunities

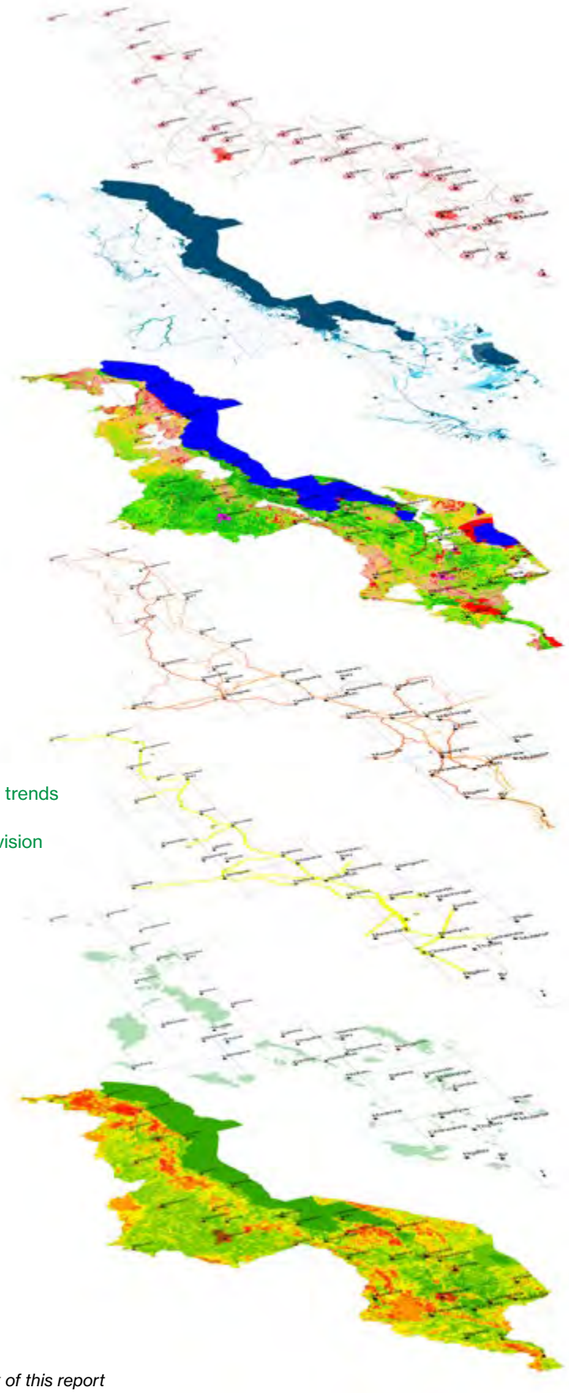
Cluster planning

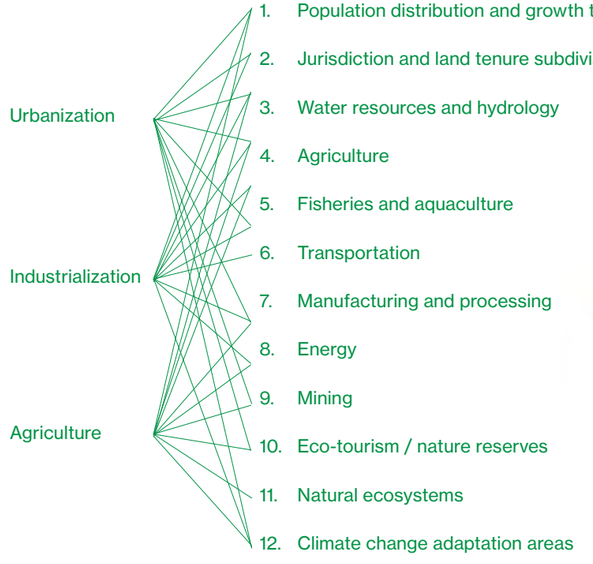
Master planning at a cluster level of coordinated groupings of projects with ppp concepts

Project design

Detailed design and implementation of projects with near term schedules

As this work comes to support the MW2063 vision, the plan makes a deliberate effort to tailor the mapping themes undertaken to the three thematic Pillars of **Urbanization, Industrialization and Agricultural Productivity and Commercialization** established by the MW2063. Consequently, we have expanded each Pillar into several related sub-themes which we have mapped and analyzed at varying scales. As illustrated by the diagram below, each Pillar doesn't relate exclusively to a sub-theme, or vice versa – meaning that there is a high degree of interaction and feedback between systems and across themes, which is precisely the point in this exercise. For example, energy sector projects are not limited to either Pillar as they provide power for cities, farms, and factories. For a full account of the data sources used in this analysis and the lists of projects and assets taken into consideration in this analysis please refer to *Appendix II* - Assets and Planned Opportunities.



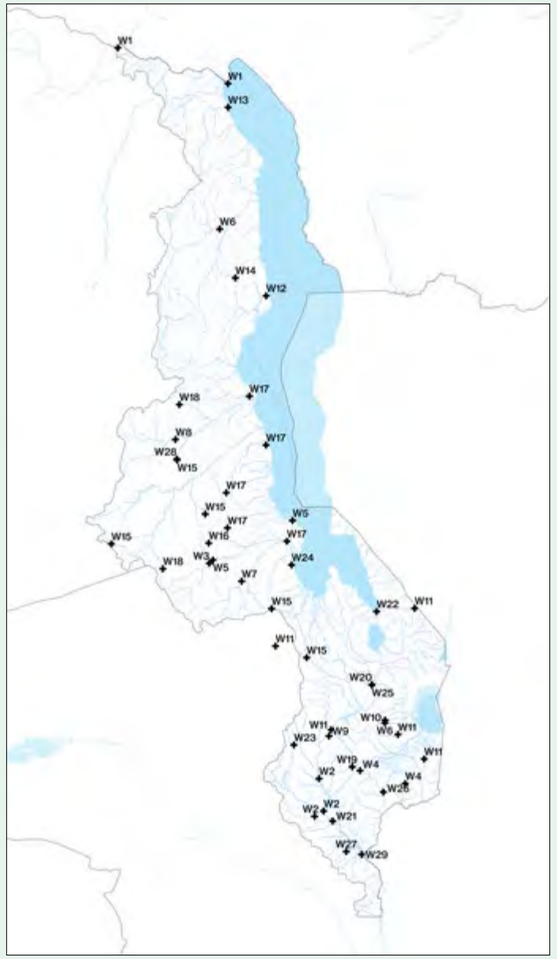


Data sources: for a detailed account of all sources, please refer to the back of this report

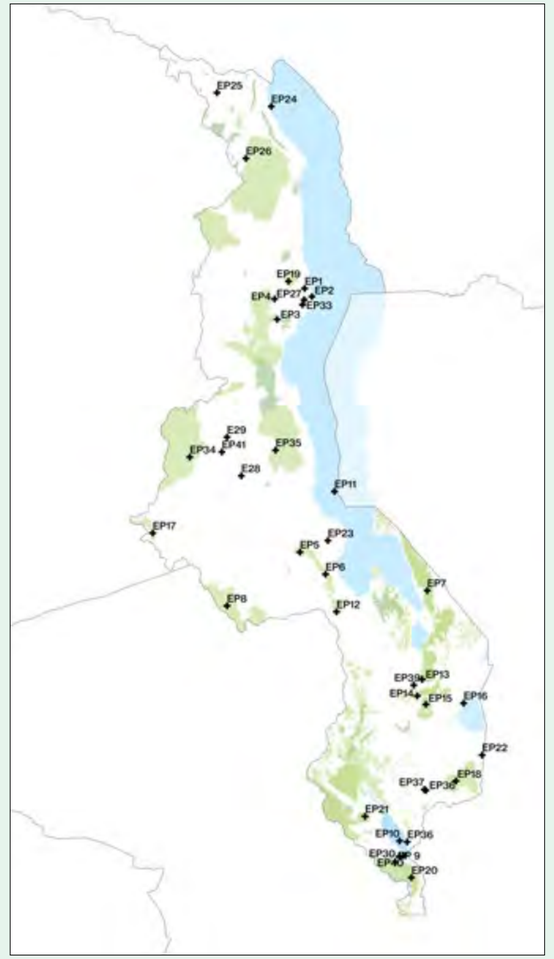
National assets and opportunities mapping

1 Population growth centers

2 Jurisdiction



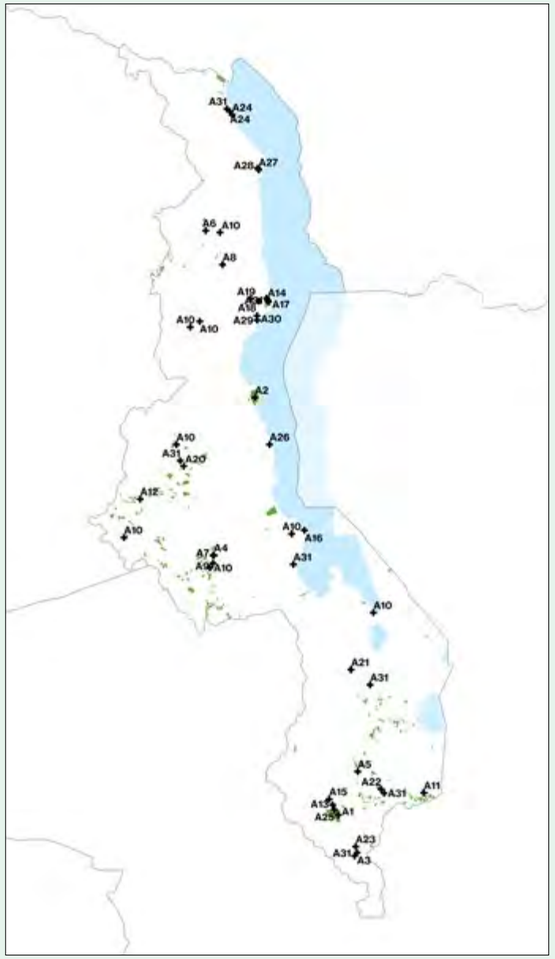
3 Water systems



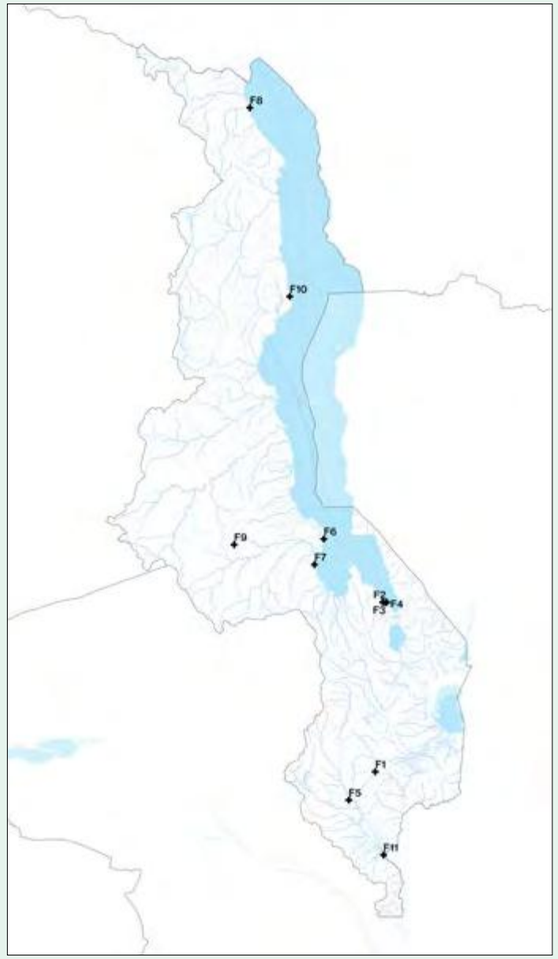
4 Natural ecosystems

Data sources: For a detailed account of all sources, please refer to the back of this report

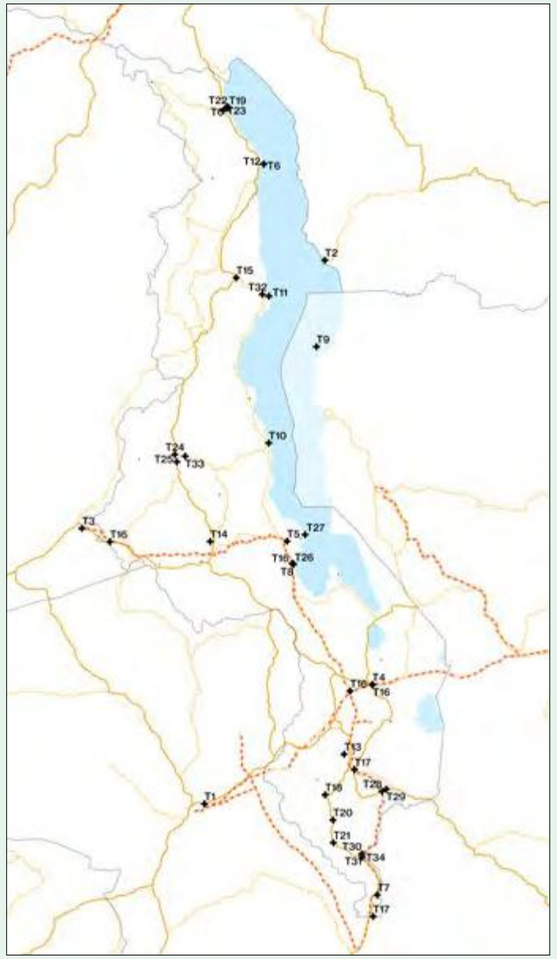
National assets and opportunities mapping



5 Agriculture



6 Fisheries



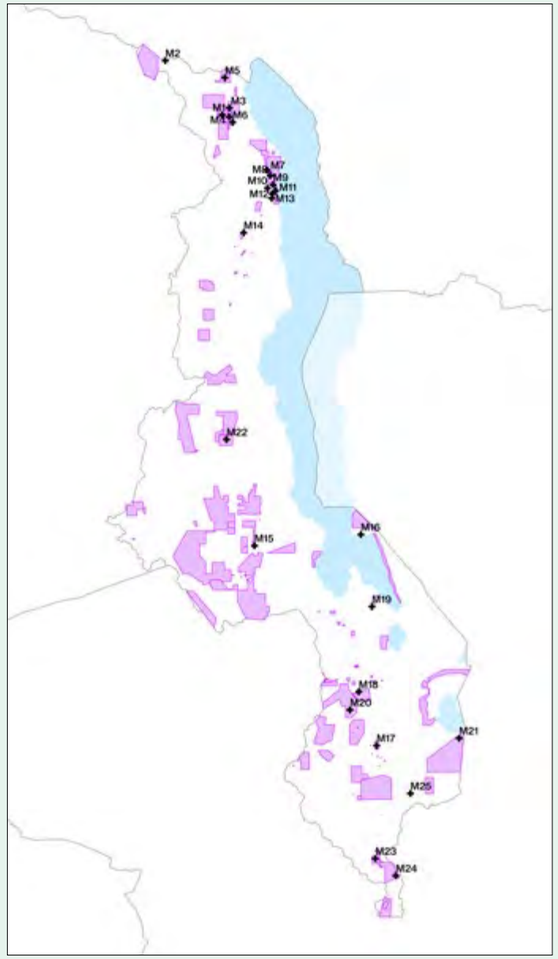
7 Transportation

8 Industry

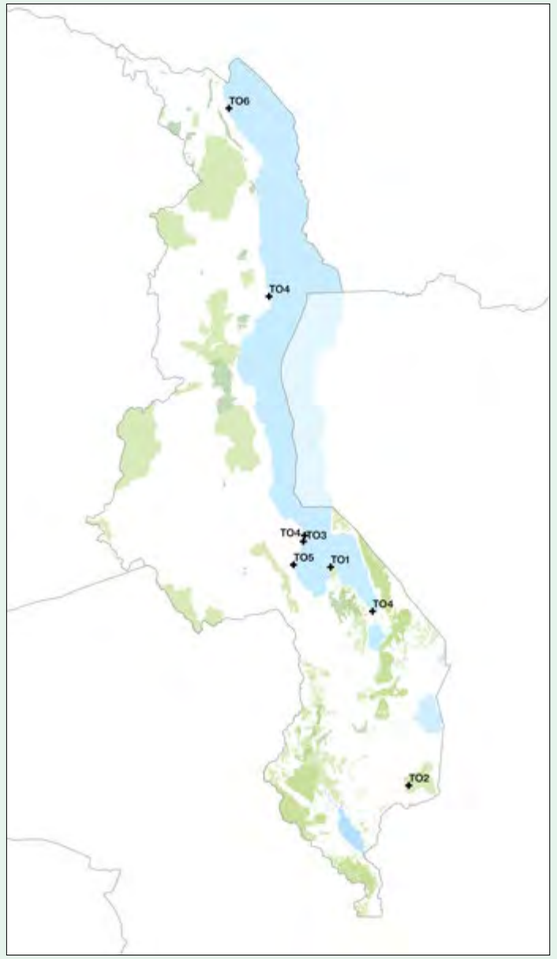
Data sources: For a detailed account of all sources, please refer to the back of this report

National assets and opportunities mapping

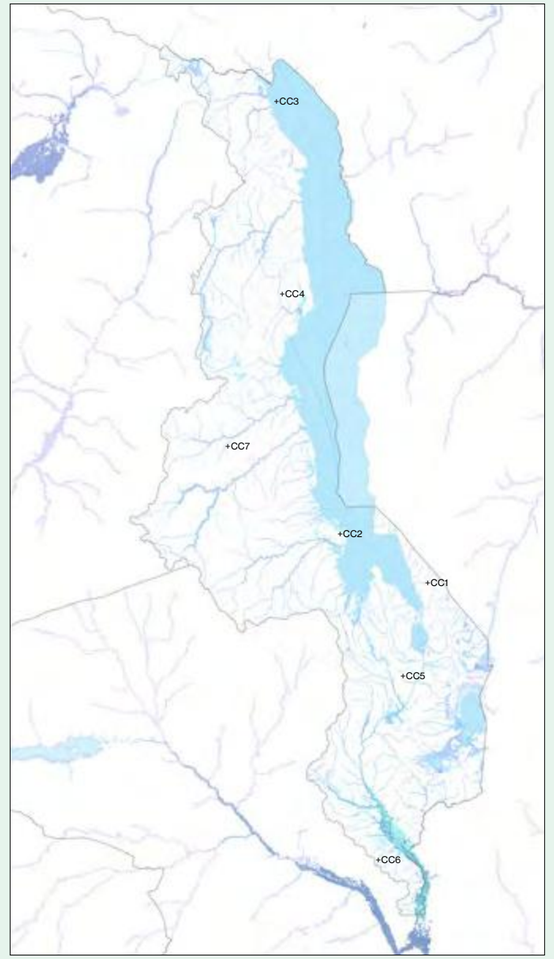
9 Energy



10 Mining



11 Tourism



12 Climate change

Data sources: For a detailed account of all sources, please refer to the back of this report

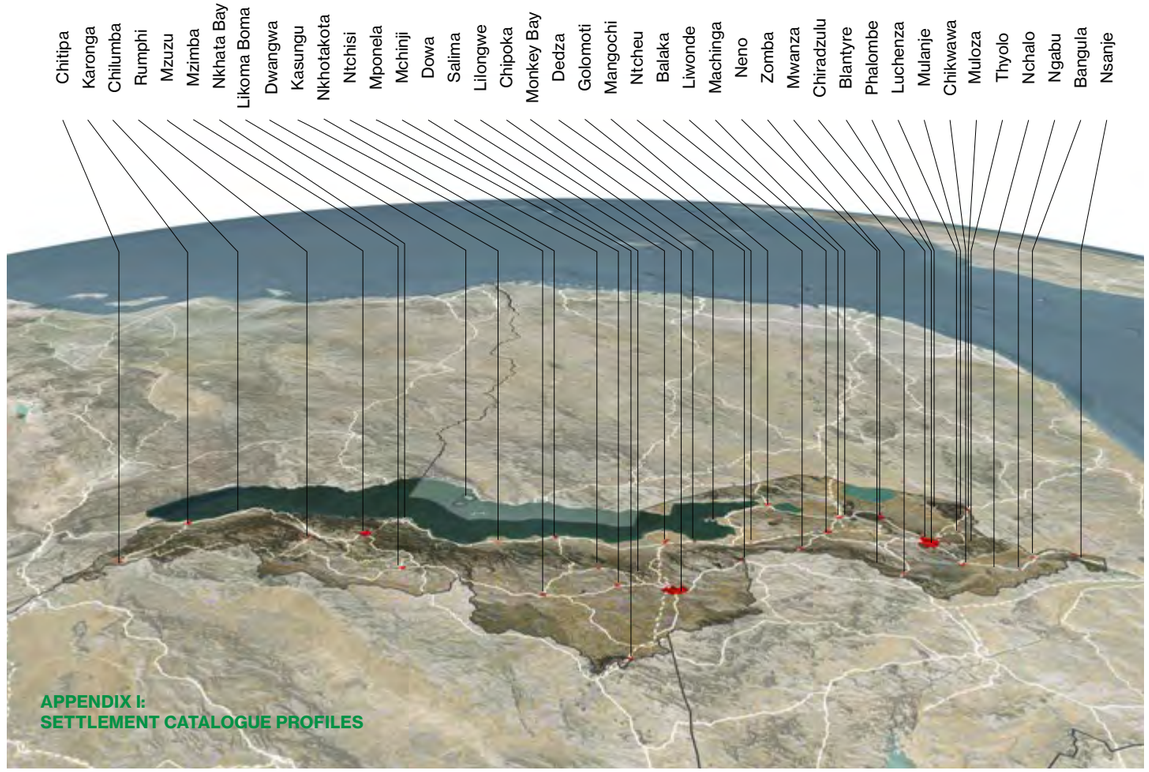
Defining and analyzing urban settlements

To zoom in further into project clustering level, as described above, we classified the baseline scenario data library, through the prism of potential urban development of secondary cities. Yet the definition of whether a settlement or a larger area and its population should be classified as urban can be rather problematic. Factors such as minimum population thresholds, minimum levels of population density, and the area of the urban labor market are often used in developed countries. However, none of them addresses the question of a functional difference between urban and rural areas, the occupational structures as well as the provision of services. Furthermore, it is not appropriate to use an occupational classification in isolation, since in some African countries such as Malawi, agricultural employment and "urban" categorization are not mutually exclusive.

In her dissertation titled Urbanization in Malawi (1986), Deborah Potts notes that there is a lack of consistency in the definition of which centers are defined as "urban". This has led to problems associated with international comparison of urbanization levels and growth rates. For instance, the majority of places designated as "urban" in the 1966 census had populations of under 1,000 and most of the rest were under 2,000. And, while 51 places were assigned an urban status in 1966, a somewhat tighter set of criteria led to only 32 being defined in 1977. For instance, in the 1966 urban areas were defined as all townships and district centers as well as those centers "having installations such as a Police Post, a Works Camp or a Post Office, in addition to trading stores and market". Although this would go some way to exclude fundamentally rural settlements (many of these villages have a much larger population than the smaller urban centers) it is clearly not a strict definition, and would easily allow settlements with populations almost entirely engaged in agricultural production to be included as "urban". Furthermore, Potts noted the boundary changes that occurred throughout the years as these censuses were being generated. These boundary changes (which occurred during the same time as Lilongwe was being developed as the new national capital) affected the area within which people were enumerated as "urban" for nearly every center.

For the purpose of this study, since we are looking not only to evaluate existing infrastructures, labor markets and hierarchies of service, but rather also their potential for development as urban employment markets and service centers, and in particular due to Malawi's predominantly agricultural economy, we choose to avoid the functional approach described above. Our method of selecting settlements for analysis was that any settlement that currently holds a status of urban jurisdiction is treated as such, and consequently evaluated and ranked for its characteristics. This list includes 35 settlements across the country as defined by the Ministry of Lands and Urban Development.

Each settlement was profiled based on a combination of statistical and spatial information. The profiles provide an account of matters which relate to the settlements existing conditions as well as indications of opportunities as identified by various policies and programs. Those opportunities are largely evident through physical proximities to projects and assets we have mapped through a wide variety of sources. The main purpose of these profiles is to visualize the main characteristics a settlements and its surrounding holds, and by that allow for an informed process of comparison and ranking between settlements. The profiles help the decision-making process in infrastructure planning and investments as well as urbanization policies, which in turn help maximize impact across scales and geographies.



APPENDIX I:
SETTLEMENT CATALOGUE PROFILES

Nsanje

District: Nsanje

Population Distribution and Growth Trends	
Settlement Footprint 2018 (ha)	1,424
Settlement Population 2018	32,778
Settlement Density	23
25 km radius	
Population 2018	164,411
Urban/Rural Ratio	20/80

Jurisdiction and Land Tenure	
Urban Jurisdictional Area (ha)	1,542
Population with Jurisdictional Boundary	26,844
Density in Jurisdictional Boundary	17
Estates (within 25 km radius) (ha)	149

Natural Ecosystems (25 km radius)	
Agricultural Land Suitability	31,932
Conservation Area	23,337
Water Resources	-

Fisheries and Aquaculture	
Active/Potential for Fishing and Aquaculture	Yes

Transportation	
Lake Port	1
Rail	1
Major Road	1
Airport	-

Tourism	
Attractions	Yes

Climate Change and Resiliency	
Flood Risk	Medium

Mining	
Active Licence	Yes

Projects and Assets in a 25 km radius

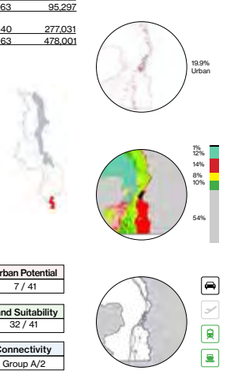
Flagship Projects
T7: Development of Nsanje World Inland Port
T17: Limbe to Marka Rail Line Rehabilitation

Environmental Protection Projects
EP19: Matandwe Forest Reserve

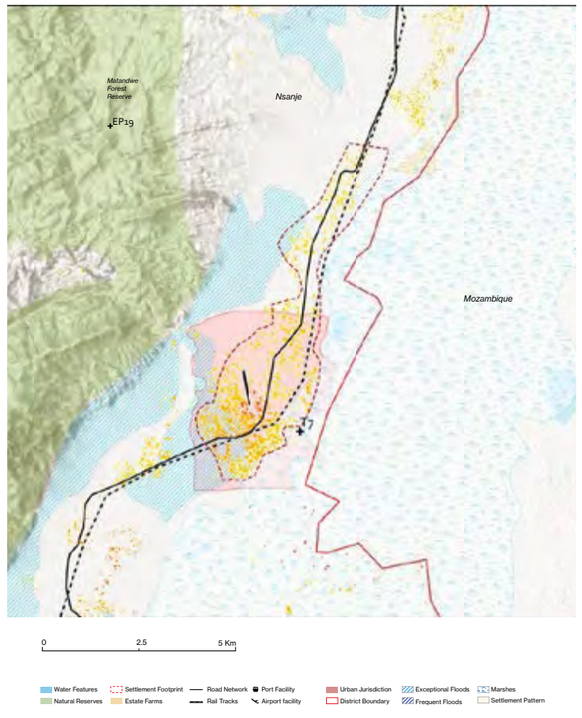
Mining Projects
M24: Crown Minerals (Heavy Minerals Sand)

Population Projections

Growth rate	2.4%
by 2040	55,230
by 2063	95,297
by 2040	277,031
by 2063	478,001



Urban Potential	7 / 41
Land Suitability	32 / 41
Connectivity	Group A/2



Still, we further analyzed the 2018 census using Enumeration Area data sets, to potentially identify settlements which present both a significant density (greater than 10 households per ha) and an amount of population within that density (clusters of 5,000 residents and more), as a method of highlighting 'emerging cities' which may have been neglected by previous or current policies. Through this analysis we have identified additional 16 settlements which present traits of urbanity, and as such they have also been evaluated with respect to their potential in agricultural and infrastructural development opportunities. From the list of 16 settlements, we have identified a subset of 6 which clearly presented highly valuable economic and infrastructural opportunities. Those 6 settlements have been added to the list of 35 settlements, to form a list of 41 settlements to be evaluated in this study.

+ Urban Jurisdictions 2018
+ Urban Settlements removed from 1987
+ Urban Settlements proposed by NPC 2020

Comparative Table of Urban Jurisdictions and Settlements

1987 NPDP	Urban Jurisdictions 2018	NPC Settlement List 2020
-	Balaka Town	Balaka Town
Blantyre	Blantyre City	Blantyre City
Chikwawa	Chikwawa Boma	Chikwawa Boma
-	Chipoka Urban	Chipoka Urban
Chiradzulu	Chiradzulu Boma	Chiradzulu Boma
Chitipa	Chitipa Boma	Chitipa Boma
Dedze	Dedza Boma	Dedza Boma
Dowa	Dowa Boma	Dowa Boma
Karonga	Karonga Town	Karonga Town
Kasungu	Kasungu Boma	Kasungu Boma
-	Likoma Boma	Likoma Boma
Lilongwe	Lilongwe City	Lilongwe City
Liwonde	Liwonde Town	Liwonde Town
-	Luchenza Town	Luchenza Town
Machinga	Machinga Boma	Machinga Boma
Mangochi	Mangochi Town	Mangochi Town
Mchinji	Mchinji Boma	Mchinji Boma
Monkey Bay	Monkey Bay Urban	Monkey Bay Urban
Mponela	Mponela Town	Mponela Town
Mulanje	Mulanje Boma	Mulanje Boma
Mwanza	Mwanza Boma	Mwanza Boma
Mzimba	Mzimba Boma	Mzimba Boma
Mzuzu	Mzuzu City	Mzuzu City
-	Neno Boma	Neno Boma
-	Ngabu Urban	Ngabu Urban
Nkhata Bay	Nkhata Bay Boma	Nkhata Bay Boma
Nkhotakota	Nkhotakota Boma	Nkhotakota Boma
Nsanje	Nsanje Boma	Nsanje Boma
Ntcheu	Ntcheu Boma	Ntcheu Boma
Ntchisi	Ntchisi Boma	Ntchisi Boma
Phalombe	Phalombe Boma	Phalombe Boma
Rumphi	Rumphi Boma	Rumphi Boma
Salima	Salima Town	Salima Town
Thyolo	Thyolo Boma	Thyolo Boma
Zomba	Zomba City	Zomba City
Bangula	-	Bangula
Euthini	-	-
Ntaja	-	-
-	-	Chilumba
-	-	Dwangwa
-	-	Golomoti
-	-	Nchalo
-	-	Muloza

Settlement Profile Template

Aerial imagery

Population distribution and growth trends

Balaka

District: Balaka

Population Distribution and Growth Trends

Settlement Footprint 2018 (ha)	2,206
Settlement Population 2018	60,150
Settlement Density	27
25 km radius	
Population 2018	480,012
Urban/Rural Ratio	12/88

Population Projections

Growth rate	3.8%
by 2040	136,639
by 2063	322,193
by 2040	1,090,420
by 2063	2,571,183

Jurisdiction and Land Tenure

Urban Jurisdictional Area (ha)	1224.3
Population within Jurisdictional Boundary	36,308
Density in Jurisdictional Boundary	29.66
Estates (within 25 km radius) (ha)	1,609

Natural Resources (25 km radius)

Agricultural Land Suitability	164,417
Conservation Area	-
Water Resources	-

Fisheries and Aquaculture

Active/Potential for Fishing and Aquaculture	-

Transportation

Lake Port	-
Rail	1
Major Road	1
Airport	-

Tourism

Attractions	No

Climate Change and Resiliency

Flood Risk	Low

Mining

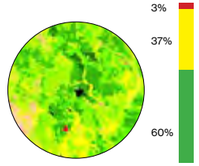
Active Licence	Yes

Projects and Assets in a 25 km radius

Flagship Projects
T16: Nkaya to Mchinji Rail Line Rehabilitation

Mining Projects
M18: Lynnas Africa Limited (Rare earth mine)
M20: Plinth Mining Group (Limestone and Rock Aggregate)

Mineral Resources
M29: Marble



Urban Potential
16 / 41

Land Suitability
4 / 41

Connectivity
Group B/2

Aerial imagery

Each profile includes an aerial imagery depicting a 1km x 1km representative sample of the density and urban morphology present in the settlement. The patterns of settlement depicted in the aerial photography can offer a reading of growth, expansion, and densification.

Population distribution and growth trends

Settlement Footprint
We examined each settlement individually in detail through high resolution aerial photography and manually drew outlines based on a visual assessment of the settlement area. This process allows for a rather clear distinction between a settlement form and its surrounding based on an understanding of boundary and diffusion. Naturally, some settlements have more blurred edges which make the case harder than others, but we have made an effort to at least capture the large majority of a settlement footprint, until densities and settlement continuities become hard to trace.

Population 2018
We intersected the above-mentioned settlement footprint polygon with the population census from 2018 at the most detailed grains available (enumeration areas level), in order to summarize the population counts of all EA's that interest the settlement polygon. This process allows for the most accurate assessment of population amount for each settlement, in a manner which is not prejudiced by political boundaries.

Density
Once a settlement outline and population counts have been established, we have calculated population densities for an average hectare. Those figures could provide a good indication with respect to the possibility of a settlement to further densify and populate within its current footprint. This naturally depends on building typologies and block structures, but still a very useful indicator for further planning purposes.

Population Projections
Urban population increase can occur through three processes: (i) net in-migration from rural areas; (ii) population reclassification as jurisdictional boundaries expand; and (iii) natural increase dependent on fertility and mortality rates. In our analysis of population projections, we are only accounting for the later since the two other processes are very hard to assess in long term.
Average Annual Growth Rates - To project population counts on generational intervals, we looked as far as 2063 (the target year of the visioning exercise), as well as 2040 as a mid-point. We used census data on district level from 2008 and 2018 to calculate average annual growth rates for each district. Once average growth rates for each district have been calculated, we multiplied population counts on the 4th level (2018 census) with those growth rates. Naturally, this process assumes growth rates maintain for the next three decades.

Settlement Profile Template

Balaka

District: Balaka

Projects and Assets in a 25 km radius

Flagship Projects
T16: Nkaya to Mchinji Rail Line Rehabilitation

Mining Projects
M18: Lynnas Africa Limited (Rare earth mine)
M20: Plinth Mining Group (Limestone and Rock Aggregate)

Mineral Resources
M29: Marble

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Natural Resources (25 km radius)

Agricultural Land Suitability	164,417
Conservation Area	-
Water Resources	-

Fisheries and Aquaculture

Active/Potential for Fishing and Aquaculture	-

Transportation

Lake Port	-
Rail	1
Major Road	1
Airport	-

Tourism

Attractions	No

Climate Change and Resiliency

Flood Risk	Low

Mining

Active Licence	Yes

Population Projections

Growth rate	3.8%
by 2040	136,639
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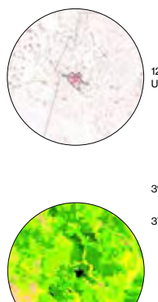
by 2040	1,090,420
by 2063	2,571,183



Urban Potential	16 / 41
Land Suitability	4 / 41
Connectivity	Group B/2

Jurisdiction and land tenure

Jurisdiction and land tenure

Urban Jurisdiction area (ha), Population within Jurisdictional Boundary and Density in Jurisdictional Boundary

For the 35 settlements which have an urban jurisdictional boundary, we recorded the population counts from the 2018 census, areas of jurisdiction and calculated the population density (persons per ha). Important to distinguish here the difference between the jurisdictional area and the *de-facto* settlement footprints which we account for above as they rarely overlap. Still although the settlement may well be larger than the actual jurisdiction, matters of jurisdiction are of critical importance when it comes to securing foreign or local investments; especially in the context of the Malawian dual legal system. Therefore, we point to the legal value of an urban jurisdiction as it may well ease processes of financing for investments in infrastructure projects.

Estates within 25km radius (ha)

Similarly to the case of urban jurisdictions, estates present an attractive opportunity in respect to their legal status as 'titled' land, instead of 'traditional' land. Therefore, a settlement's proximity to an estate, is not merely an opportunity from a value chain or contracting agreement perspective, where a larger commercial operation could reinforce a smallholder co-op in various ways, but also as an opportunity for investments in infrastructure which could support larger populations in the area. As an example, an estate located downstream from a settlement could be suitable as a site for a wastewater treatment plant which would service the settlement upstream. Or in the case where the estate is even closer to a settlement, it could be grounds for an urban neighborhood project, designed as a PPP and benefiting from a 'titled' legal status.

Settlement Profile Template

Balaka

District: Balaka

Projects and Assets in a 25 km radius

Flagship Projects
T16: Nkaya to Mchinji Rail Line Rehabilitation

Mining Projects
M18: Lynnas Africa Limited (Rare earth mine)
M20: Plinth Mining Group (Limestone and Rock Aggregate)

Mineral Resources
M29: Marble

Population Distribution and Growth Trends	
Settlement Footprint 2018 (ha)	2,206
Settlement Population 2018	60,150
Settlement Density	27
25 km radius	
Population 2018	480,012
Urban/Rural Ratio	12/88

Jurisdiction and Land Tenure	
Urban Jurisdictional Area (ha)	1224.3
Population within Jurisdictional Boundary	36,308
Density in Jurisdictional Boundary	29.66
Estates (within 25 km radius) (ha)	1,609

Natural Resources (25 km radius)	
Agricultural Land Suitability	164,417
Conservation Area	-
Water Resources	-

Fisheries and Aquaculture	
Active/Potential for Fishing and Aquaculture	-

Transportation	
Lake Port	-
Rail	1
Major Road	1
Airport	-

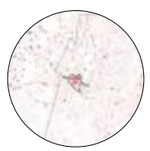
Tourism	
Attractions	No

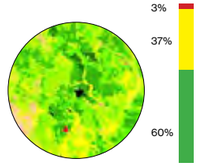
Climate Change and Resiliency	
Flood Risk	Low

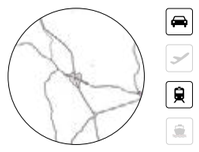
Mining	
Active Licence	Yes

Population Projections

Growth rate	3.8%
by 2040	136,639
by 2063	322,193
by 2040	1,090,420
by 2063	2,571,183







Urban Potential
16 / 41

Land Suitability
4 / 41

Connectivity
Group B/2

Natural resources

Natural resources (25km radius)

Agricultural land suitability

Within the agricultural sector in Malawi, continuous cropping without the use of long-term sustainable strategies and frequent cultivation on marginal lands have resulted in declining soil fertility. A study done at Michigan State University (Li et al. 2017) found that highly suitable, moderately suitable, marginally suitable, and unsuitable agricultural areas account for 8.2%, 24%, 28% and 39.7% of the total land area. The majority of suitable lands are currently used for agriculture, but more than half (57.4%) of Malawi's total cropland exists on marginally suitable or unsuitable land categories. In order to increase agricultural productivity and improve food security, it is imperative to improve soil quality of marginal lands, as well as begin a process of rehabilitation through sustainable agricultural practices. More so, it is of critical importance that areas of highly suitable lands are planned in a manner that ensures those lands are not consumed by unplanned urban expansion. Therefore, for settlements that are located on highly productive lands, and are still projected to expand rapidly, it is of urgency to devise plans to not only control urban growth, but also ensure a productive integration of agricultural practices within the cities' greater area. The land suitability analysis associated with each settlement is within a 25 km radius, an area that could easily be serviced by the associated settlement even for a very pedestrian mobility system.

Conservation areas

We have accounted for the areas dedicated for natural conservation within the analyzed 25km radius, to indicate opportunities for both ecosystem restoration and extension of reserves through ecological corridors and waterworks green infrastructure strategies, as well as the more commercial and recreational opportunities those areas present, as they relate to both local residents and for domestic and international tourists.

Water resources

Waterbodies have been accounted for only as long as they have been registered in the above described land suitability study as a surface area. Those include the main rivers (such as the Shire and Bowa) and of course the various lakes across the country. This surface area does not account for the wetland and *dambo* areas which are represented in the closer maps, as we were not able to validate the sources accuracy.

Important to note here that we have recently identified a study titled "Malawi National Water Atlas" prepared by the Ministry of Water and Irrigation (2018), and we are in the process of acquiring the GIS data which was used for that study. Once our team receives this data set, we would look to include it in those profiles.

Settlement Profile Template

Balaka

District: Balaka

Population Distribution and Growth Trends

Settlement Footprint 2018 (ha)	2,206
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25 km radius	
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Active/Potential for Fishing and Aquaculture	-

Transportation

Lake Port	-
Rail	1
Major Road	1
Airport	-

Tourism

Attractions	No

Climate Change and Resiliency

Flood Risk	Low

Mining

Active Licence	Yes

Projects and Assets in a 25 km radius

Flagship Projects
T16: Nkaya to Mchinji Rail Line Rehabilitation

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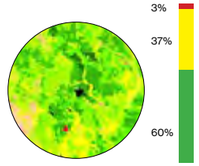

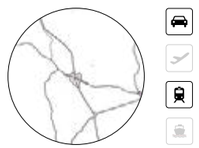

Urban Potential
16 / 41

Land Suitability
4 / 41

Connectivity
Group B/2

Fisheries and aquaculture
Transportation
Tourism
Climate change and resiliency
Mining

Fisheries and aquaculture

Although Malawi has a very robust fisheries sector, our analysis was only able to capture those areas which are formally recognized as such, as the large majority of activities of the sector is informal and undocumented. In this analysis, we have pointed out settlements which present especially pronounced opportunities for both aquaculture and fisheries sector investments, as they are in close proximity to a substantial body of water.

Transportation

Our analysis offers an inventory of significant existing transportation routes and hubs, their status as it relates to necessary rehabilitation or upgrades, and any project concepts which are promoted by the Ministry of Transportation and Public Works, in the Malawi National Transportation Master Plan 2017 - 2037 (2017).

Tourism

Our analysis points to those settlements which are in proximity to existing and potential touristic attraction points. Those include both the more established resorts and hotel offerings, and the national parks and nature reserve which could be further developed over time to attract a significant number of visitors for ecological tourism.

Climate change and resiliency

It is important to stress how critical it is for Malawi's spatial planning processes to account for an evidently changing climate, and to actively intervene, where possible, to mitigate the impacts of widespread processes such as rapid deforestation, soil erosion, drought cycles and flooding. The effects of those processes on the livelihoods of urban and rural populations, could well be mitigated through strategic investments in green infrastructure measures, or directly through zoning policies that protect settlements impacted most. While our team has yet to identify a study which provides an account for climate sensitivity across the country, we were able to account for the areas where flooding appears to be consistent, in varying degrees of severity.

Mining

Our analysis points to those settlements which are in proximity (up to 25km) to current licensed mining activity. While there are many reconnaissance missions ongoing across the country, we have not included those in this analysis due to their early stage.

Settlement Profile Template

Projects and assets

Balaka

District: Balaka

Projects and Assets in a 25 km radius

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Lake Port	-
Rail	1
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Tourism	
Attractions	No
Climate Change and Resiliency	
Flood Risk	Low
Mining	
Active Licence	Yes

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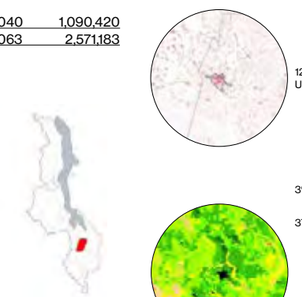

Urban Potential	16 / 41
Land Suitability	4 / 41
Connectivity	Group B/2

Projects and assets in a 25km radius

Our study provides an account of the main infrastructural and physical assets the country has, as well as those which are in the process of planning, whether as projects or as programs and initiatives. The premise behind this inventory work is that investments could benefit from identifying proximities to other ongoing initiatives and projects, by co-financing, or by collaboratively designing elements of their plans to increase impact and sustainability. Our team has listed 12 sectors of interest in which we have mapped assets and projects. The sectors we have analyzed are: (1) Population Distribution and Growth Trends; (2) Jurisdiction and Land Tenure Subdivision; (3) Water Resources and Hydrology; (4) Natural Ecosystems; (5) Agriculture; (6) Fisheries and Aquaculture; (7) Transportation; (8) Industry; (9) Energy; (10) Mining; (11) Tourism; (12) Climate Change and Resiliency.

Two key governmental sources have been used to develop this projects and assets list. The first is the Public Sector Investment Program (PSIP), which compiles all projects which have a public funding component. Our team scanned through the portal and its various projects, both ongoing and in pipeline, and summarized the ones that fit in our 12 categories of study for further analysis.

The second source for this inventory is the Malawi Implementation Plan (MIP-1), which is the medium-term strategy designed to contribute to Malawi's long-term development aspirations. The strategy covers a period of ten years, from 2021 to 2031. MIP-1 is guided by a set of prioritized interventions which, if implemented at a minimum, will contribute to the attainment of the lower middle-income status and realization of the SDGs by 2030. It defines foundational transformative strategies and interventions, including flagship projects, that will help meet the set milestones at the shortest time possible. Some of these projects have been approved and allocated funding from various sources while others await funding. Some are in the process of being implemented while others have not been initiated yet. As these projects are of national importance endorsed by the government of Malawi and supported by the different ministries in charge, the team mapped all projects across the country.

Settlement Profile Template

Balaka

District: Balaka

Population Distribution and Growth Trends

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Transportation

Lake Port	-
Rail	1
Major Road	1
Airport	-

Tourism

Attractions	No

Climate Change and Resiliency

Flood Risk	Low

Mining

Active Licence	Yes

Projects and Assets in a 25 km radius

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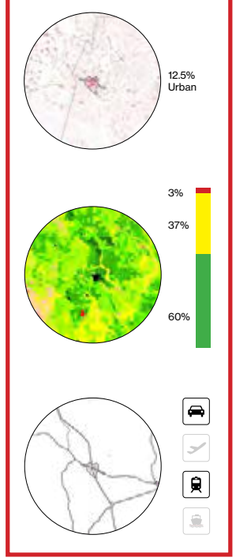


Urban Potential	16 / 41
Land Suitability	4 / 41
Connectivity	Group B/2

Urban growth potential

The urban growth potential ranking presents an assessment of a settlement's factor of population concentration by way of calculating the percentage of people living within the settlement boundary in relation to population living in the 25 km radius area. Those cities which present high concentration values are considered to be in a good position territoriality compared to its neighboring towns and villages (within a 25km radius), in the sense that it would be able to act as a 'pull' force for rural to urban migration.

Agricultural land suitability

As described in the previous Section, the land suitability study maps out the different land qualities across the country. As a method for ranking the different settlements, we used the combined area of the first two categories (highly suitable and moderately suitable) to see which settlements have the highest area of good agricultural land.

Transport infrastructure connectivity

The transport infrastructure connectivity presents an assessment of a settlement's degree of connectivity across modes of transportation. The ranking takes into account two variables. First, a settlement's existing or potential mode of transport (major road, port, rail, airport). Second, the condition in which the existing mode is (i.e needs rehabilitation or not).

5. PRIORITIZATION FOR DEVELOPMENT

Settlements Comparison, Scoring and Ranking

In an environment where infrastructure offerings are severely lacking and budgets are highly constrained, it is imperative to maximize impact through project groupings and by designing infrastructure as multi-purpose provisions for a wide variety of beneficiaries and stakeholders. Such an agenda should be ideally implemented in a minimal set of locations, where groups of projects could emerge and build enough capacity and momentum to catalyze a local process of long-term development.

Once the reasoning behind locational prioritization is laid out, the natural following question should be, where then? Where does it make most sense to invest in order to propel national development agendas? Which urban settlements present the most opportunities in respect to multi-purpose infrastructure investments, impacting both industry, AND smallholders, both urban development AND environmental restoration?

The settlement catalogue presented in the previous Chapter with its statistics and rankings, provides an instrument for the evaluation of alternatives, visualizing complex realities for multi-stakeholder consultations, and ultimately meant to simplify the challenge of comparison and prioritization, as decisions on national development agendas are taking place. In the following Chapter, we will elaborate on the process of classification and prioritization of those locations that appear to provide the most opportunities for the development of robust multi-industry secondary cities and the subsequent master planning exercise (presented in Chapter 6) as a means of facilitating the spatial integration of investment opportunities.

As the ultimate goal of profiling the different settlements is to identify the most outstanding candidates for investment promotion and national development prioritization compatible with the MW2063 Pillars of (1) industrialization (including mining), (2) urbanization (including tourism), and (3) agriculture commercialization; a number of corresponding scoring tools have been developed to assess the potential of each settlement in facilitating these processes.

Which urban settlements present the most opportunities in respect to multi-purpose infrastructure investments, impacting industry, smallholders, urban development and environmental restoration?

View over Lilongwe, 2018.

Photo by Kwathu Ndi Kwanu

Urban growth potential

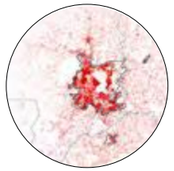
The urban growth potential ranking presents an assessment of a settlement's factor of population concentration by way of calculating the percentage of people living within the settlement boundary in relation to population living in the 25 km radius area. Those cities which present high concentration values are considered to be in a good position territoriality compared to its neighboring towns and villages (within a 25km radius), in the sense that it would be able to act as a 'pull' force for rural to urban migration.

For scoring purposes, we have divided the analysis results by quartiles, and gave points accordingly. Thus settlements with an urban population percentage over 49.2% received 4 points (including Blantyre, Mzuzu and Lilongwe), settlements with an urban population precent over 16.5% but under 49.2% received 3 points (including Bowa, Chitipa, Karonga, Mangochi, Salima, Nkhotakota and Nsanje), settlements with an urban population percentage over 9.1% but under 16.5% received 2 points, and lastly settlements with an urban population percentage under 9.1% received a single point.

Naturally three of the main urban centers in the country ranked the highest; **Lilongwe, Blantyre** and **Mzuzu** – in this order, as they also take the most space in footprint, and by that take up a significant percent of the area of analysis predefined at 25km radius which is estimated to correspond to about an hour commute for a very minimally motorized environment.

Still, it is relevant to examine the results for those settlements that present high ratios of concentration, mainly due to natural difficulties in inhabiting large parts of their surroundings, such as steep topographical conditions, water bodies, nature reserves, or national boundaries for settlements close to the national borders. Thus, settlements such as **Nkhotakota, Karonga, Nsanje, Chitipa, Bowa**, among others, are ranked rather high, as the degree of concentration in those settlement is very pronounced, and as dictated by spatial constraints, it is not expected to change over time.

Another category of settlements worth noting are those which rank surprisingly low due to higher density rates in their peripheral rural communities, and by that reduce the 'centrality' of a settlement from a density perspective, although operationally they may well be still very central to the areas activities. This also indicates locations where smallholder communities experience significant pressure for land, and may well point to a number of cities which are rather urgent to activate by increasing their urbanization rates and attracting larger amounts of populations in the near future. Those include **Zomba, Liwonde, Mponela, Thyolo, Luchenza, Ntchisi** and **Dowa**.

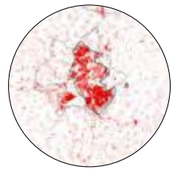


56.2%
of population
concentrated
in settlement
in 25km radius

Blantyre
1

54.5%

Mzuzu
2



49.2%

Lilongwe
3

29

Karonga
4

21.1%

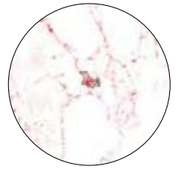
Nkhotakota
5

20.9%

Chitipa
6

19.9%

Nsanje
7

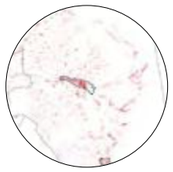


19.3%

Mangochi
8

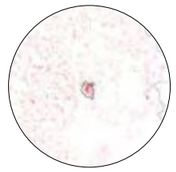
18.9%

Bowa
9



18.0%

Salima
10



16.5%

Mzimba
11

15.

Zomba
12

14.6%

Kasungu
13

12.9%

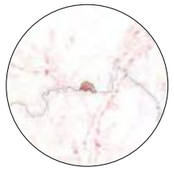
Monkey Bay
14

12.7%

Mchinji
15

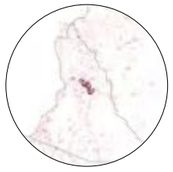
12.5%

Balaka
16



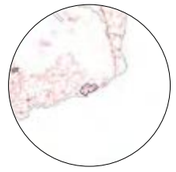
12.3%

Rumphi
17



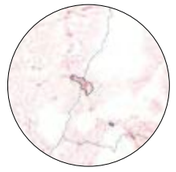
12.2%

Mwanza
18



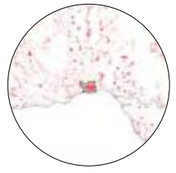
11.0%

Muloza
19



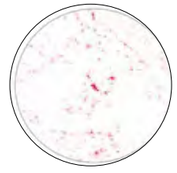
10.

Liwonde
20



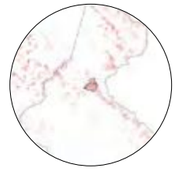
9.1%

Dedza
21



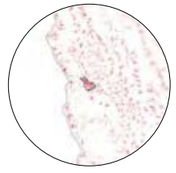
7.7%

Nchalo
22



7.4%

Bangula
23

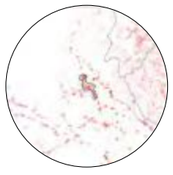


7.3%

Ntcheu
24

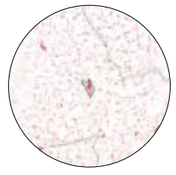
7.0%

Chilumba
25



6.5%

Chikwawa
26

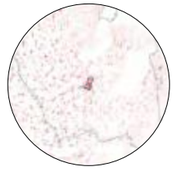


5.9%

Mponela
27

5.5

Nkhata Bay
28



4.1%

Ntchisi
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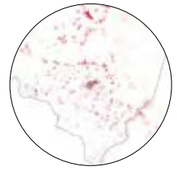

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Ngabu
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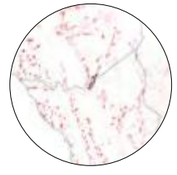

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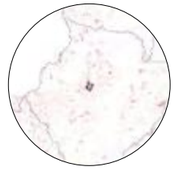
Golomoti
31



2.9%

Neno
32

2.8%

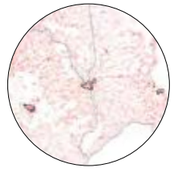
Chipoka
33

2.6%

Likoma Boma
34

2.6%

Phalombe
35



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Luchenza
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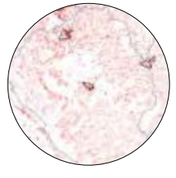

1.9%

Thyolo
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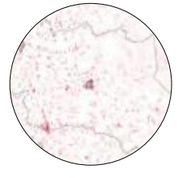
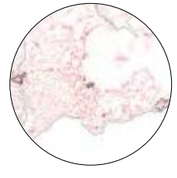


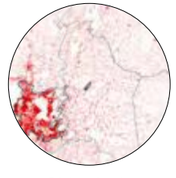
1.5%

Dowa
38



1.1%

Mulanje
39



0.4%

Chiradzulu
40

0.3%

Machinga
41

Urban Growth Potential Ranking

Data sources: Traditional Area (TA) and Urban Boundaries - 4th Level (Department of Surveys and GIS, MoLHUD), High Resolution Settlement Layer(HRSL) population counts for Malawi (Facebook Connectivity Lab, Center for International Earth Science Information Network - CIESIN - Columbia University. Source imagery provided by DigitalGlobe), Urban Settlement Footprints (ORG Desktop Mapping)

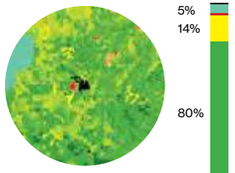
Tea plantations near Mulanje.

Photo by Ashley Cooper.

Agricultural land suitability

As described in the previous Section (Chapter 4), the land suitability study maps out the different land qualities across the country. As a method for ranking the different settlements, we used the combined area of the first two categories (highly suitable and moderately suitable) to see which settlements have the highest area of good agricultural land.

For scoring purposes, we have divided the analysis results by quartiles, and gave a point accordingly. Thus settlements with a percentage of good agricultural land within a radius of 25km of over 66% received 4 points (including Balaka, Chiradzulu, Dowa, Lilongwe, Liwonde, luchenza, Mponela, Ntchisi, Thyolo and Zomba), settlements with a percentage of good agricultural land over 51% but under 66% received 3 points, settlements with a percentage of good agricultural land over 37% but under 51% received 3 points, and lastly settlements with a percentage of good agricultural land under 37% received a single point.
The settlement areas which stand out here are largely those which are located on the Lilongwe plateau such as **Kasungu, Mponela, Lilongwe, Dowa** and **Ntchisi**. The other area of the country which ranked high is the upper shire area up to the southern west lake front areas. Those include **Salima, Balake, Liwonde, Golomoti, Chiradzulu, Zomba** and **Luchenza**. Other parts of the country prove to be more difficult from either a topographical standpoint, or where substantial parts of the 25km radius are consumed by water bodies and areas for natural conservation. Still within that category, settlements such as **Nkhotakota, Bowa, Monkey Bay, Karonga** and **Chilumba**, present a substantial opportunity for agriculture development, especially with possible productive links to value chain verticals related to fisheries and aquaculture benefiting from their proximity to Lake Malawi.



Kasungu
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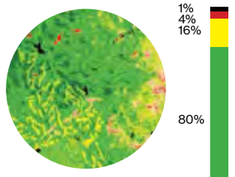

Mponela
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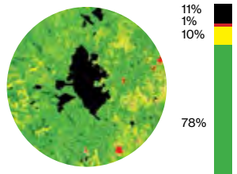
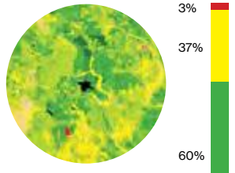


Lilongwe
3



Balaka
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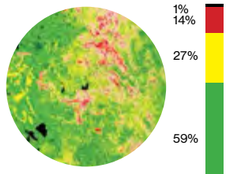

Dowa
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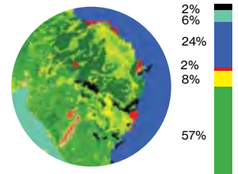

Salima
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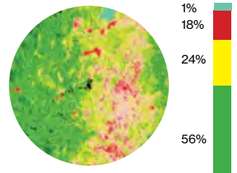

Ntchisi
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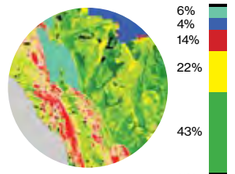

Golomoti
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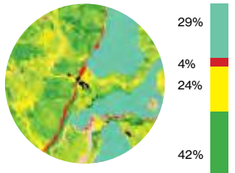

Liwonde
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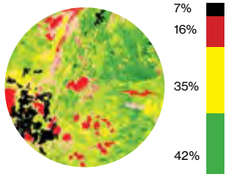

Chiradzulu
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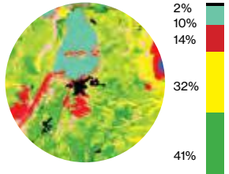
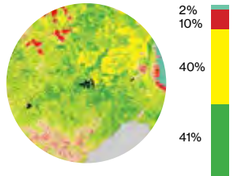


Zomba
11



Luchenza
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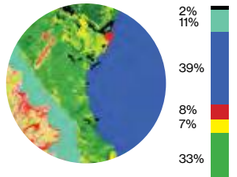

Chipoka
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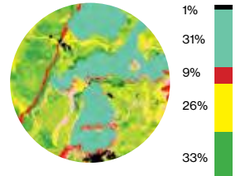

Machinga
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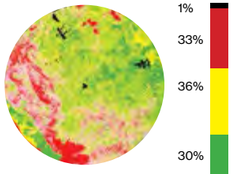

Thyolo
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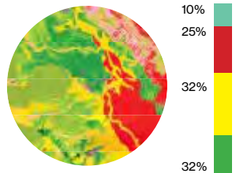

Nchalo
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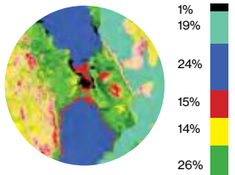

Mangochi
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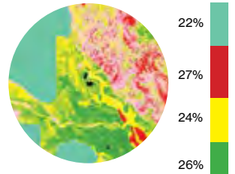

Chikwawa
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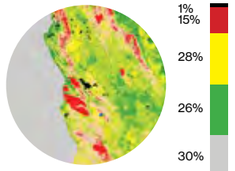

Ntcheu
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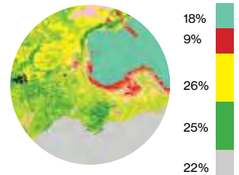

Mulanje
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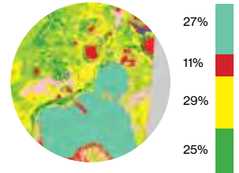

Phalombe
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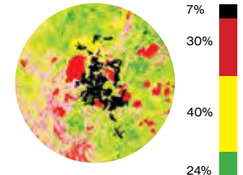

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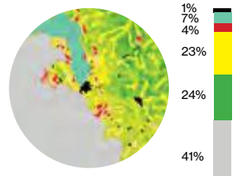

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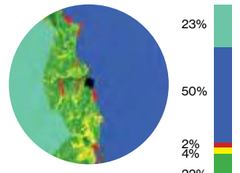

Nkhotakota
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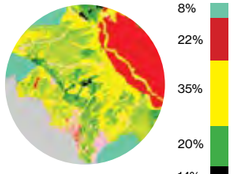

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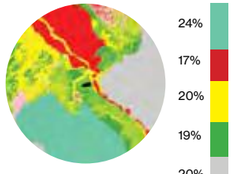

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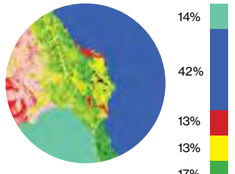

Bowa
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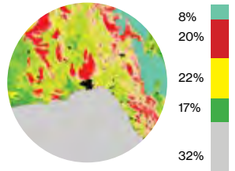

Dedze
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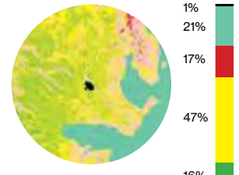

Mzimba
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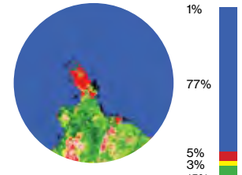

Monkey Bay
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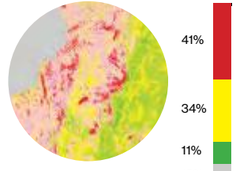

Neno
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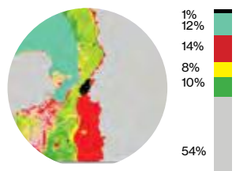

Nsanje
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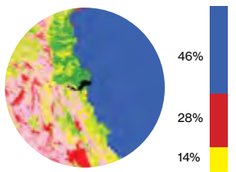

Karonga
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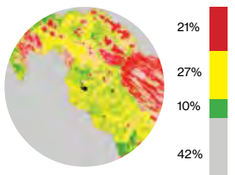

Chitipa
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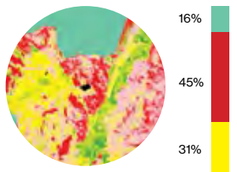

Rumphi
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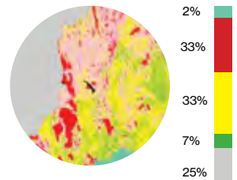

Mwanza
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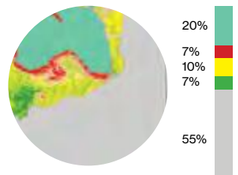

Muloza
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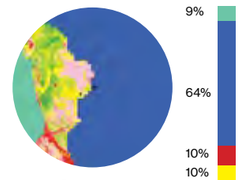

Chilumba
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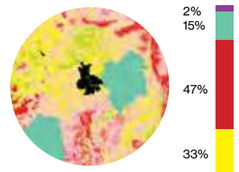

Mzuzu
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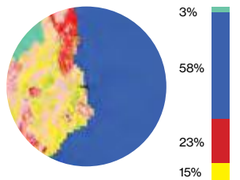

Nkhata Bay
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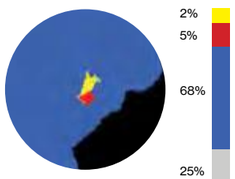
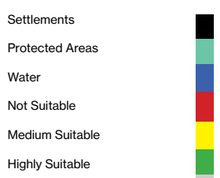


Likoma Boma
41



Land Suitability Ranking

Data source: Land suitability for agriculture study
Guiying Li, Joseph P. Messina, Brad G. Peter and Sieglinde S. Snapp. (2017). "Mapping land suitability for agriculture in Malawi". Michigan State University.

Chipoka Port, 2010.

Photo by Michael Phoya.

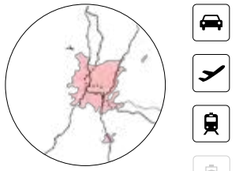
Transport infrastructure connectivity

The Government of Malawi, with the support from the World Bank, has developed the Malawi National Transport Master Plan which provides a clear framework for delivering sustainable interventions to enhance the transport sector across the country for the period between 2017 and 2037. The plan includes interventions in roads, rail, inland water transport, civil aviation as well as urban transport. As some of those project are also flagship projects of the MIP-1, some have been allocated funding, and/ or are in progress of implementation, while others have not been initiated yet.

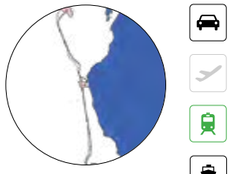
This scoring presents an assessment of a settlement degree of connectivity across modes of transportation. Scores were calculated in the following manner. First, settlements were grouped into four groups, based on the existing or potential mode of transport they present (major road, port, rail, airport). As such, group A includes settlements that offer 3 modes of transport, group B includes settlements that offer 2 modes of transport, group C includes settlements that offer 1 mode of transport, and group D includes settlements that have no mode of transport. As a second step, settlements were scored and ranked within each group in the following manner: Each mode of existing transport gets a full (1) point, a mode of transport that needs major rehabilitation in order to be operated gets a half (0.5) point, a mode of transport that is proposed by our team or by the Transportation Master plan gets a quarter (0.25) point. The final result was captured in the following manner: Group A/2.5 would mean the settlement has three modes of transport (group A) and 2.5 reflects its score based on the status of those modes.

Again, not surprisingly, the two main cities ranked the highest - **Lilongwe** and **Blantyre**, as they are both established connections by air, road, and rail. Here, we find particular interest in settlements that appear to be located at critically important multi-modal intersections, such as **Chipoka**, and **Liwonde**, which present unique opportunities for water and rail links, should their water ports be rehabilitated, or constructed (accordingly). There are other settlements which present opportunities from a transportation development perspective, namely **Bangula, Karonga, Nsanje, Monkey Bay and Chilumba** – all of those are included in larger transportation initiatives, and could be considered as key transport hubs in relation to future urban development planning.

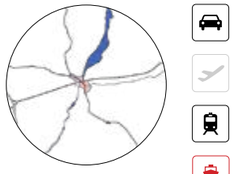
Lilongwe
1



Blantyre
2



Chipoka
3



Liwonde
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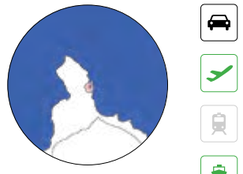
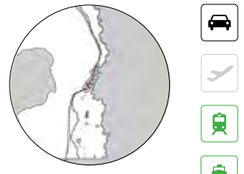


Monkey Bay
5



Nsanje
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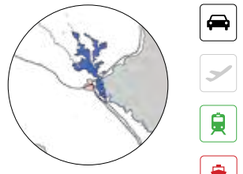

Bangula
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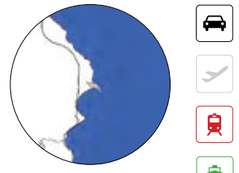

Chilumba
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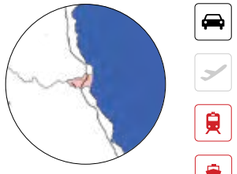

Karonga
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Salima
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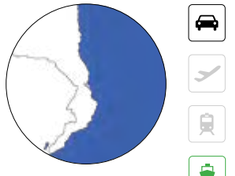

Nkhata Bay
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Balaka
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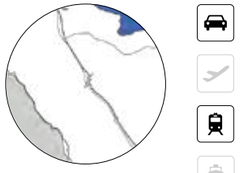

Golomoti
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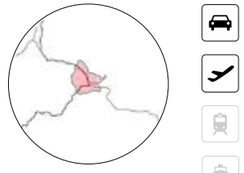

Mzuzu
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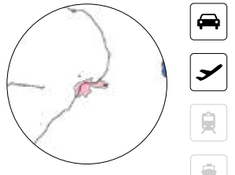

Zomba
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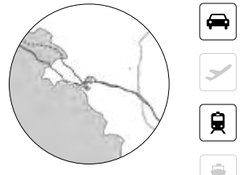

Mchinji
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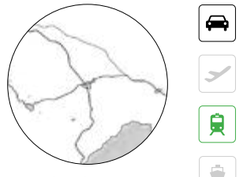

Luchenza
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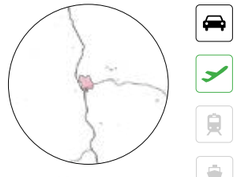

Kasungu
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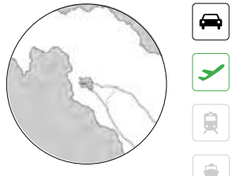

Chitipa
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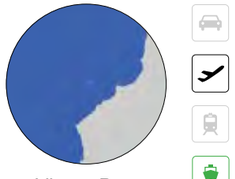

Likoma Boma
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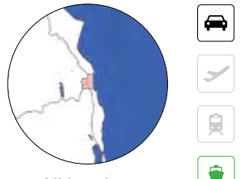

Nkhotakota
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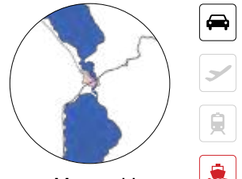

Mangochi
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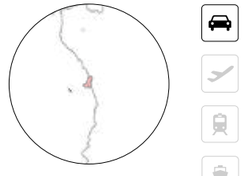
Dowa
23



Ntchisi
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Machinga
25

Thyolo
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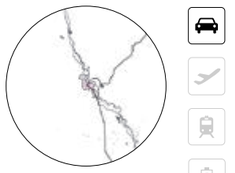

Chikwawa
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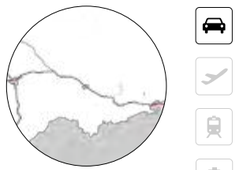
Ntcheu
28



Mulanje
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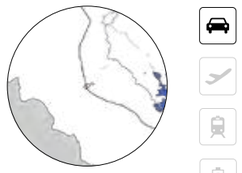

Ngabu
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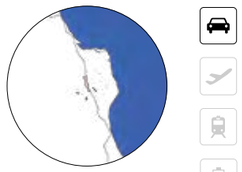
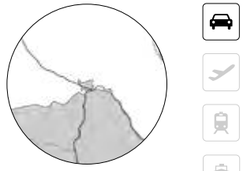


Bowa
31

Mponela
32



Dedze
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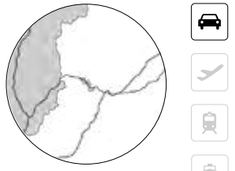
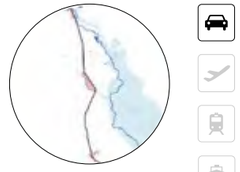
Mzimba
34

Rumphi
35



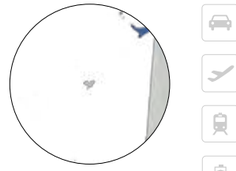
Mwanza
36

Muloza
37



Nchalo
38

Chiradzulu
39

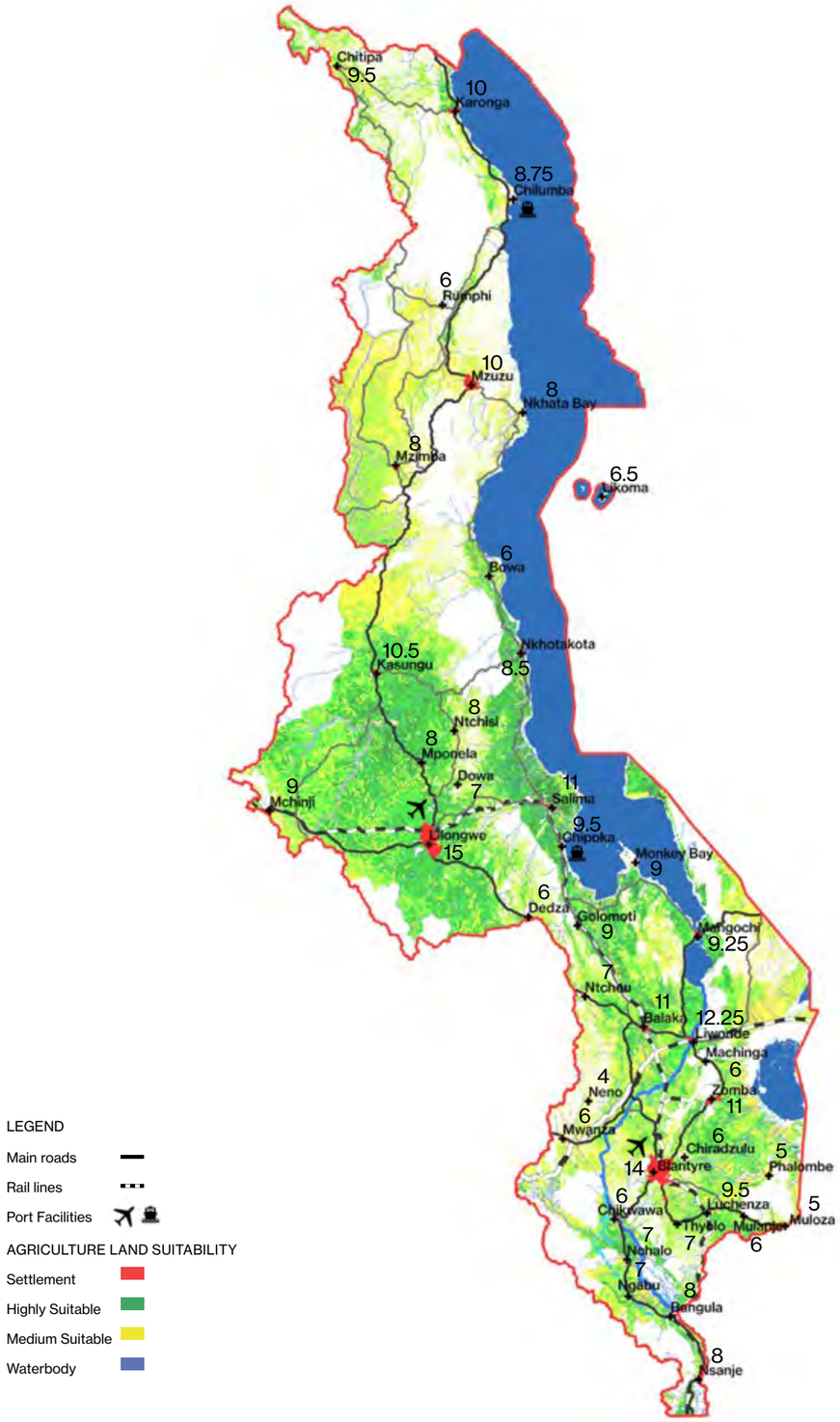


Phalombe
40

Neno
41

Transportation Ranking

Data sources: Roads (MASDAP - unknown author), Rail Lines (Ministry of Transportation, National Transportation Master Plan (NTMP), Airports (Ministry of Transportation, National Transportation Master Plan (NTMP), Water ports (Ministry of Transportation, National Transportation Master Plan (NTMP), ORG mapping Analysis)



LEGEND

Main roads

Rail lines

Port Facilities

AGRICULTURE LAND SUITABILITY

Settlement

Highly Suitable

Medium Suitable

Waterbody

Settlement scoring summary based on the three main ranking parameters and including a transport premium

Settlement scoring
by key agri-Industrial urbanization parameters

Settlement	Settlement population % in 25km radius	Agriculture Land Suitability % in 25km radius	Transport Infrastructure Connectivity ranking	Combined Score	**Score with Transport premium**
Blantyre	56.2	64	A/3	11	**14**
Lilongwe	49.2	88	A/3	12	**15**
Salima	18.0	65	B/2	9	**11**
Liwonde	10.8	66	A/2.25	10	**12.25**
Karonga	29.2	25	A/1.5	8	**10**
Bangula	7.4	39	A1.75	8	**9.75**
Balaka	12.5	97	B/2	9	**11**
Zomba	15.3	73	B/2	9	**11**
Chipoka	2.8	40	A/2.5	7	**9.5**
Kasungu	14.6	94	B/1.5	9	**10.5**
Chilumba	7.0	16	A/1.75	7	**8.75**
Nsanje	19.9	18	A/2	8	**10**
Chitipa	20.9	37	B/1.5	8	**9.5**
Mangochi	19.3	40	B/1.25	8	**9.25**
Monkey Bay	12.9	18	A/2	7	**9**
Nkhotakota	21.1	26	B/1.5	7	**8.5**
Luchenza	2.0	81	B/1.5	8	**9.5**
Golomoti	3.5	65	B/2	7	**9**
Mchinji	12.7	47	B/2	7	**9**
Mzuzu	54.5	36	B/2	8	**10**
Nkhata Bay	5.5	17	B/1.5	6	**8**
Chikwawa	6.5	50	C	6	**6**
Nchalo	7.7	64	C	7	**7**
Ngabu	3.9	56	C	7	**7**
Rumphi	12.3	39	C	6	**6**
Thyolo	1.9	66	C	7	**7**
Likoma	2.6	2	B/1.5	5	**6.5**
Mzimba	16.5	63	C	8	**8**
Mponela	5.9	96	C	8	**8**
Ntchisi	4.1	80	C	8	**8**
Dowa	1.5	86	C	7	**7**
Machinga	0.3	59	C	6	**6**
Mulanje	1.1	51	C	6	**6**
Mwanza	12.2	40	C	6	**6**
Ntcheu	7.3	54	C	7	**7**
Phalombe	2.6	54	D	5	**5**
Bowa	18.9	30	C	6	**6**
Chiradzulu	0.4	77	D	6	**6**
Dedza	9.1	39	C	6	**6**
Muloza	11.0	17	C	5	**5**
Neno	2.9	45	D	4	**4**

Points	Quartiles	Quartiles	Ranking*
4	49.2<	66<	A
3	16.5 <	51<	B
2	9.1 <	37<	C
1	3.5 <	2<	D

*additional transport premium

Additional Opportunity Areas

While the three parameters presented above correspond to the three Pillars of the MW2063 vision, we would like to point out to a number of additional areas of opportunity as identified through our analysis and support other opportunity areas. These include a number of sectors which are not necessarily seen as drivers urbanization, although they could certainly contribute to it as well as benefit from such processes. Those sectors include the following:

Mining

Although large parts of the country hold potential for commercialization of extractive resources, for the purpose of this analysis, we are highlighting especially those established opportunities which currently hold mining licenses. By analyzing existing mining licenses, we have allocated a single point to those cities which are located in proximity of at least 25km to an active mine. Among those we would like to highlight a number of prominent settlements including; **Karonga** and **Chilumba** in the North, with large coal and uranium mines in their immediate vicinity; as well as **Bangula** in the South, where deposits of heavy mineral sands as well as coal are being mined in great proximity to the city. Additionally we allocated a quarter point to cities which are proximate to areas where mining opportunities are currently explored.

Eco-tourism

While large parts of the country appear to hold substantial opportunities in respect to tourism development, all along the lake front, as well as those which have a major nature reserve near by, we would like to point to a number of cities that seem to be actively promoting tourism as a substantial economic activity for the benefit of the city itself and the larger regional economy. Those include; **Monkey Bay**, which is not only one of the most beautiful lake shore areas in the country, it also appears to have beaches which are particularly well protected against winds. As such Monkey-bay has become a point of great interest for the promotion of international tourism activity, which could prove to become a substantial economic engine for the Mangochi peninsula and beyond. Similarly, the beaches around **Salima** and **Chipoka**, and specifically the area close to Senga Bay, are seen as an established attraction point for both international and domestic tourist with convenient commuting times from Lilongwe. Lastly in respect to tourism we should note a number of nature reserves which could well become engines of economic activity in relation to near by cities, a few worth noting are: **Mulanje** with the Mulanje Mountain reserve nearby; **Nkhatokota** with the adjacent Nkhotakota game reserve; **Liwonde** with the adjacent game reserve; **Rumphi** with the Nyika plateus and game reserve; and the Majete and Vwaza game reseves in the **Lower Shire Valley**, to just name a few.

Fisheries and aquaculture

Opportunities for substantial development in the Aquaculture and fishing sectors appear to be highly relevant in relation to the development of secondary cities in Malawi for two main reasons: (i) the natural linkages with lake and river ports which would benefit from the multi-use application of their facilities, to reinforce adjacent water transport and logistics services; and (ii) the possible shared benefit from water network utilities and sanitation facilities, which could be integrated with a pond aquaculture farming area. Locations which appear to be presenting opportunities for such development are naturally along the lake shore and major waterbodies, and particularly in **Karonga, Chilumba, Nkhata Bay, Nkhotakota, Chipoka, Monkey Bay, Mangochi, Liwonde, Bangula** and **Nsanje** to name a few. The abundance of substantial waterbodies in the country is clear, and intentional investment in formalization of the fishing sector seems to be a critical opportunity for infrastructure development of secondary cities in Malawi.

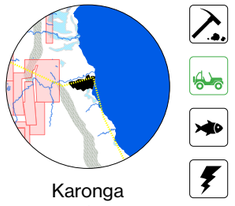
Energy

While energy production is largely a matter of national infrastructure development, which isn't often directly related to any locality or city, we want to point to the opportunities for the development of smaller energy production facilities, which could well benefit from proximity to urban development areas, both from a land management perspective as well as from an off-take perspective for a large commercial anchor entity. This is especially true in early stages of development where energy back up facilities are a necessity for any industrial activity. Local hydro-electric multi-purpose dams seem to be one attractive option for investments in facilities which would reinforce local water system development and power provision options. Settlements which are in close proximity to streams and rivers which have been identified as opportunities in the energy sector, including: **Chitipa** and **Karonga** being close to the Songwe river, **Chilumba** with the Wovwe river nearby, **Kasungu** which is close to the Dwangwa river, and **Luchenza** with the adjacent Zoa Falls. Similarly worth highlighting is the emerging Solar Power Plants curretly established near the towns of S**alima, Nkhotakota** and **Nkhata Bay.**

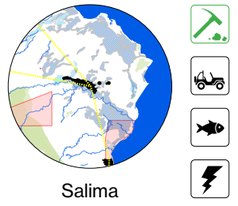
Main crops*

Lastly, in respect to agricultural development of specific crops and the possible advantage certain cities have over others to become key centers for farming, value addition or marketing, we would like to highlight a number of key crops which seem to be worthy of attention. For rice (wetland rice cropping under traditional management and improved traditional management) development, we can point to **Karonga, Salima, Chipoka, Nkhotakota** and **Bowa**. For soybean development (Rain-fed cultivation under improved traditional management), settlements such as **Karonga, Balaka** and **Nkhotakota** appear to be most suitable. For tea development (rain-fed cultivation under improved traditional management), settlements such as **Neno, Mulanje, Luchenza, Thyolo** and **Muloza** appear to be most suitable.

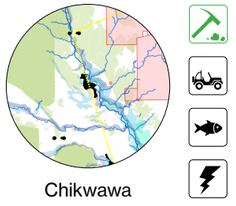
*Sourced from the detailed crop suitability maps prepared by Benson, Mabiso and Nankhuni under NAPAS in 2016.



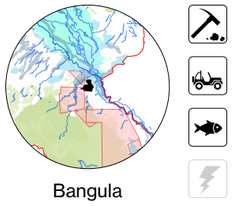
Karonga
1



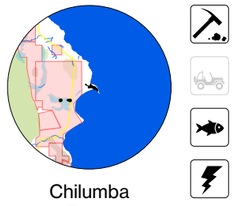
Salima
2



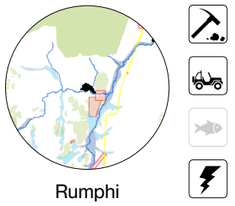
Chikwawa
3



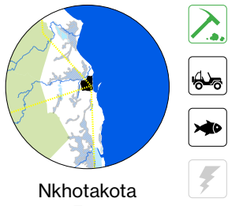
Bangula
4



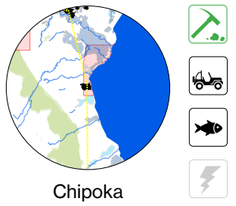
Chilumba
5



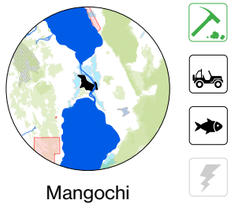
Rumphi
6



Nkhotakota
7



Chipoka
8



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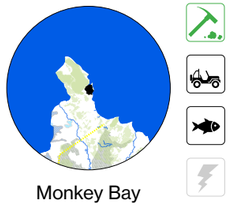

Monkey Bay
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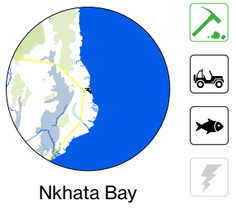

Nkhata Bay
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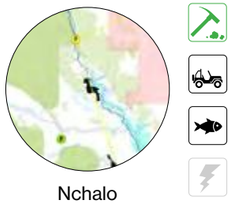

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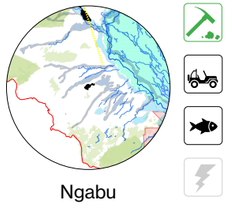

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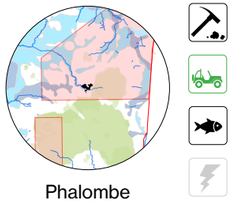

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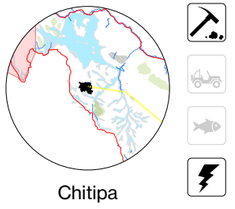

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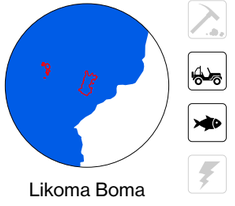

Likoma Boma
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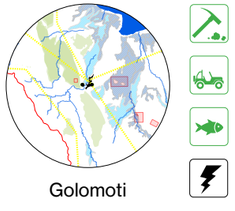

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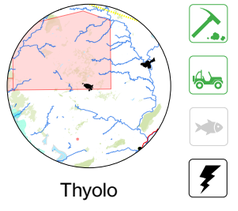

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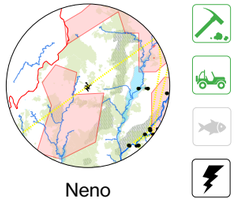

Neno
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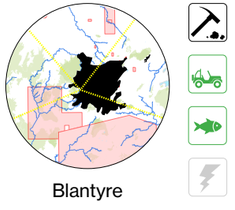

Blantyre
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Liwonde
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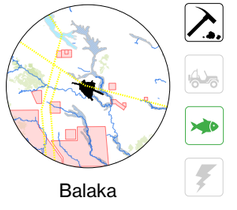

Balaka
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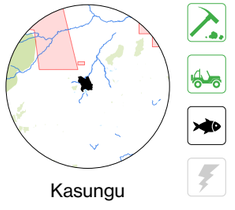

Kasungu
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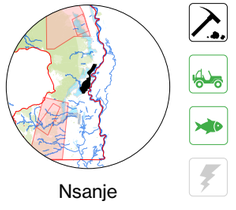

Nsanje
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Luchenza
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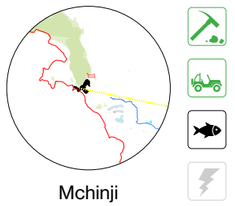

Mchinji
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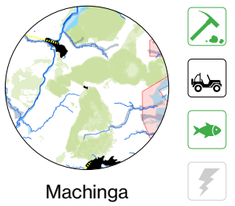

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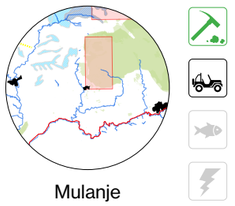

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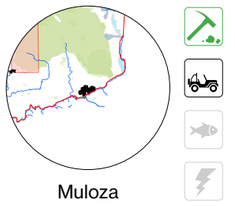

Muloza
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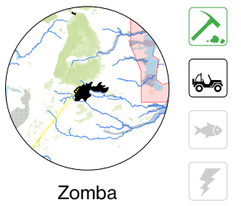

Zomba
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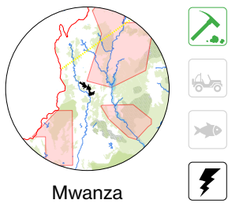

Mwanza
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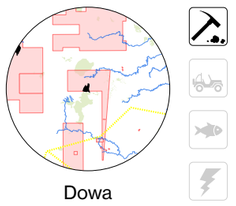

Dowa
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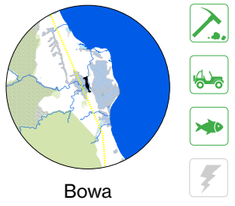

Bowa
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Chiradzulu
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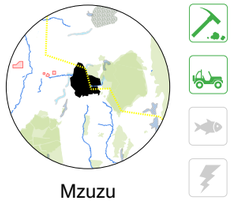

Mzuzu
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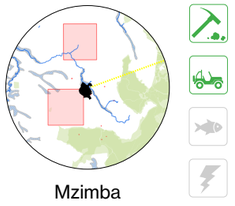
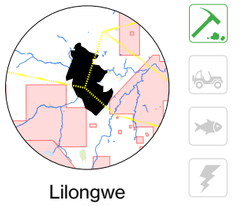


Mzimba
36

Dedza
37



Lilongwe
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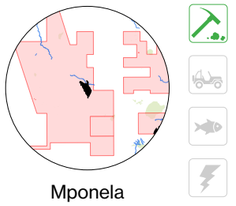

Mponela
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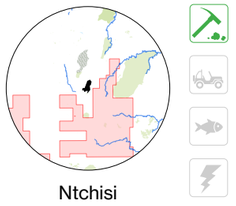

Ntchisi
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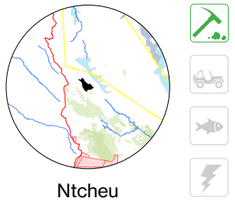


Ntcheu
41

Mining Activity

Eco-Tourism

Fisheries and Aquaculture

Energy Production

Existing

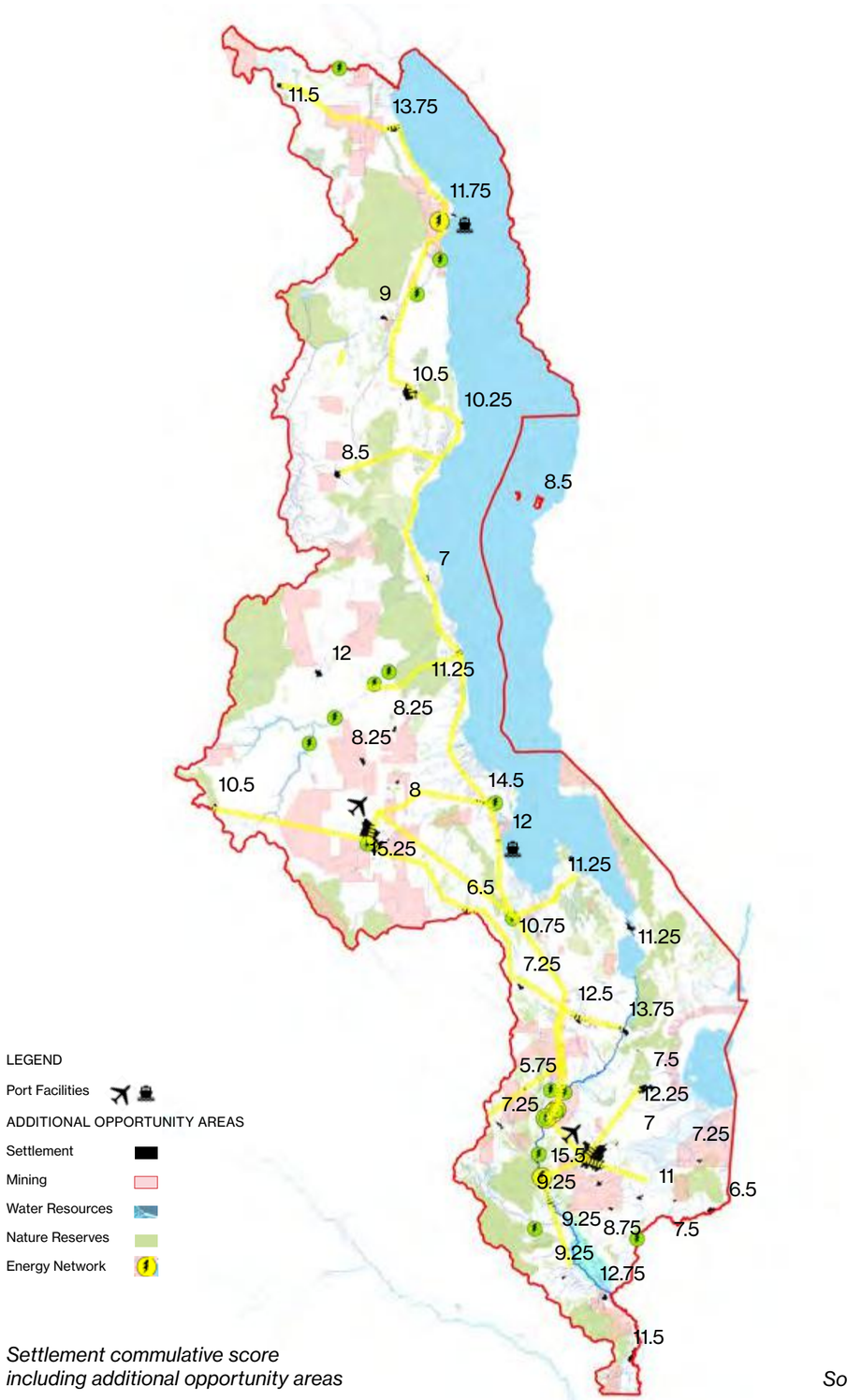
Absent

Prospective

Additional Opportunities Ranking

Sources: Mining (Malawi Mining Cadastre Portal), Eco-Tourism (Ministry of Tourism and Ministry of Natural Resources and Forestry), Energy (Ministry of Energy), Fisheries and Aquaculture (Ministry of Natural Resources and Forestry)

Cumulative Settlement Scoring
including additional opportunity areas



Settlement commulative score including additional opportunity areas

Sorted from North to South

Sorted by final score

Settlement	Mining	Eco-Tourism	Fisheries and Aquaculture	Energy	Rice	Soy	Tea	Commulitive Score (FINAL)
Blantyre	1	0.25	0.25					**15.5**
Lilongwe	0.25							**15.25**
Salima	0.25	1	1	1	0.25			**14.5**
Liwonde	0.25	1	0.25					**13.75**
Karonga	1	0.25	1	1	0.25	0.25		**13.75**
Bangula	1	1	1					**12.75**
Balaka	1		0.25			0.25		**12.5**
Zomba	0.25	1						**12.25**
Chipoka	0.25	1	1		0.25			**12**
Kasungu	0.25	0.25	1					**12**
Chilumba	1		1	1				**11.75**
Nsanje	1	0.25	0.25					**11.5**
Chitipa	1			1				**11.5**
Mangochi	0.25	1	1					**11.5**
Monkey Bay	0.25	1	1					**11.25**
Nkhotakota	0.25	1	1		0.25	0.25		**11.25**
Luchenza	0.25			1			0.25	**11**
Golomoti	0.25	0.25	0.25	1				**10.75**
Mchinji	0.25	0.25	1					**10.5**
Mzuzu	0.25	0.25						**10.5**
Nkhata Bay	0.25	1	1					**10.25**
Chikwawa	0.25	1	1	1				**9.25**
Nchalo	0.25	1	1					**9.25**
Ngabu	0.25	1	1					**9.25**
Rumphi	1	1		1				**9**
Thyolo	0.25	0.25		1			0.25	**8.75**
Likoma		1	1					**8.5**
Mzimba	0.25	0.25						**8.5**
Mponela	0.25							**8.25**
Ntchisi	0.25							**8.25**
Dowa	1							**8**
Machinga	0.25	1	0.25					**7.5**
Mulanje	0.25	1					0.25	**7.5**
Mwanza	0.25			1				**7.25**
Ntcheu	0.25							**7.25**
Phalombe	1	0.25	1					**7.25**
Bowa	0.25	0.25	0.25		0.25			**7**
Chiradzulu	1							**7**
Dedza	0.25	0.25						**6.5**
Muloza	0.25	1					0.25	**6.5**
Neno	0.25	0.25		1			0.25	**5.75**

Existing	1
Prospective	0.25

Combined Scoring summary

As a way to estimate a settlement's suitability for development as a Secondary City, we have developed a combined scoring method which represents all of the parameters taken into consideration, while giving the transportation parameter an additional weight as it is understood to serve at the basis of all sectors (urban, agricultural and industrial), and by that is seen as most influential also on regional scales.

Looking at the combined score ranking, it is not surprising that **Lilongwe** and **Blantyre** stand out at top, as the most connected cities, AND with the most urban growth potential. Perhaps less intuitive is their extremely high ranking when it comes to premium land for agriculture suitability, although it should be recalled that the very establishment of both cities at the core of the two main plateaus of the country is based on them being the main agricultural markets in Malawi.

At the next level of combined scores, we find **Liwonde, Balaka, Salima, Zomba** and **Kasungu**. Those cities are all located in relatively short commute distances (about an hour driving maximum) from Blantyre or Lilongwe, and in fact benefit from similar advantages to the main two cities – connectivity to rail (except for Kasungu), premium agricultural lands on largely flat areas, and high degree of population concentration, which is seen to be rather dominant in its 25km radius. Among this tier, it is especially interesting to point out Liwonde and Chipoka, which present the rare occasion where rail and water transport opportunities intersect. For Salima, this intersection is in fact established just at the southern edge of its radius in **Chipoka**, where a multi-modal port was established in the 80's, and due for rehabilitation. In Liwonde, the water transport port has not been developed yet but it is identified as an opportunity for future consideration and could well reinforce an established industrial district currently serviced by rail along the Nacala corridor.

Finally, we come to a tier of cities which are located further away from the main plateaus, yet still present high degree of suitability in respect to the analyzed parameters. Those include: **Karonga** and **Mzuzu** in the North; and **Mangochi**, **Nsanje** and **Bangula** in the South.

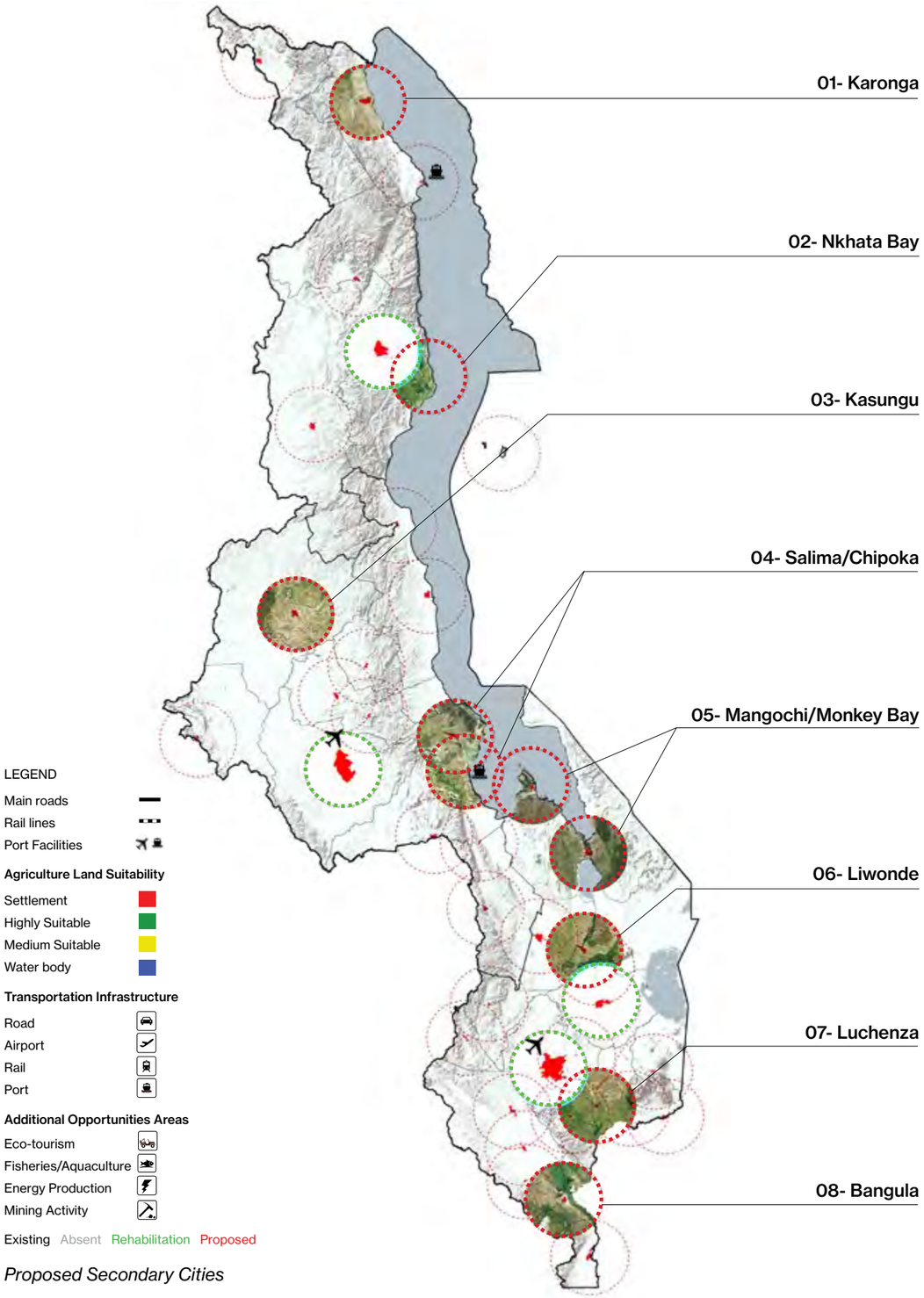
Considering the utmost northern part of the country, **Karonga** stands out as a location where not only agriculture and urban development could flourish, but also as a city where connectivity through multiple modes of transport could be established, with possible benefits for growth in the mining sector. This could be achieved by either reinforcing links to the existing port in Chilumba (60km southwards), or by developing a local urban/industrial port at the heart of the city. Such a lake port could be further reinforced in the future through a rail connection to the TAZARA corridor only 120km northwards in Mbeya, Tanzania.

While Mzuzu is by far the most urban settlement in the Northern region, and should be invested in as the primary city that it is (rather than as a secondary one), we come to identify **Nkhata Bay**, which is only 45km East of Mzuzu, as a location presenting critical opportunities for the reinforcement of Mzuzu as the capital of the north and solidifying and expanding its industrial and logistical activity towards the rest of the country and the region. As such, the Nkhata-bay port together with the opportunity to develop a substantial industrial district at the lake front, would enable water transport links to the ports of Chipoka, Chilumba and potentially Liwonde, as well as the lake ports of Tanzania such as Itungi and Mbamba Bay (merely 65km west).

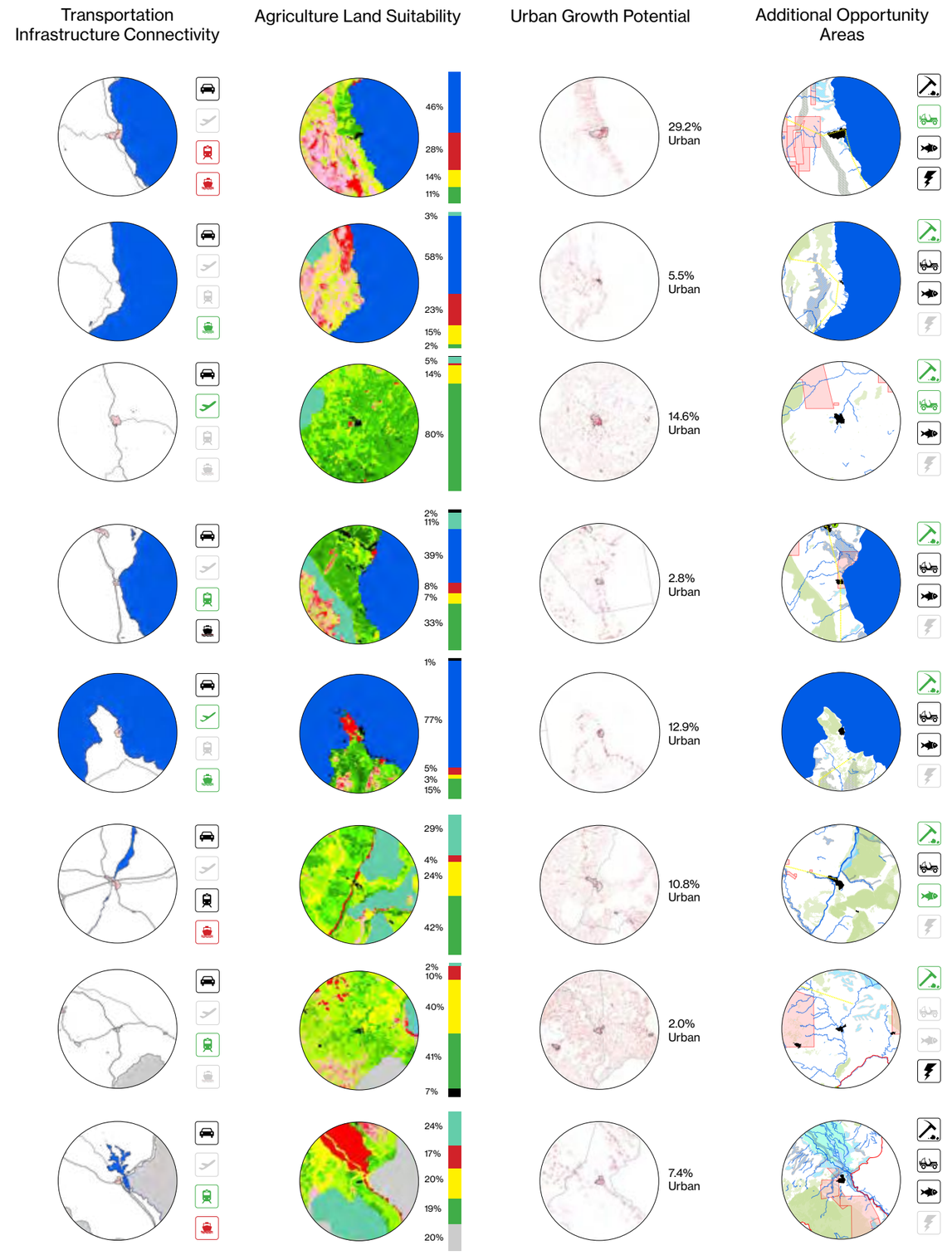
With respect to secondary city development opportunities in the southern region, Nsanje and Bangula clearly stand out since they both present opportunities for water transport development with possible links to rail, should it be rehabilitated. Such a multi-modal port would allow for the establishment of a critically important industrial district to service the Lower Shire Valley area and by that facilitate market connectivity to a highly challenged area of the country. This, combined with the apparent opportunities the area presents in the mining and tourism sectors, make a strong case for a central multi-industry investment cluster. By comparing the two cities in respect to investment opportunities, we would like to argue for **Bangula**, mainly due to its location at the edge of the Elephant Marsh. Here, and as critical crossing point, circulation around the marsh should be re-established by rebuilding the collapsed bridge. Moreover, Bangula is currently considered as the southern-most point of the ongoing Lower Shire Valley Transformation Program, and could well serve as a critical anchor and economic engine for development of the valley at large.

Additionally in the Southern region, we identify **Mangochi** as an important settlement for the development of the southern shores of Lake Malawi, and a critical hinge connecting the Nankumba penninsula, where there appears to be incredible opportunities for developments in the 'blue economy' sectors, and particularly in tourism. The town of **Monkey Bay** which is located at the northern tip of the penninsula and presents ideal conditions for marine transport, presents an ideal setting for the development of a city to service the tourism sector in the area as well as become a substantial center for fisheries and aquacultrue industries.

Lastly, we would like to point to Luchenza as it stands out in respect to its neighboring cities on the Blantyre plateau due to its rail link. While the plateau at large is highly suitable for agriculture development (with an apparent specialty in tea), **Luchenza** is seen as an opportunity to establish a critical industrial node to benefit Thyolo, and Mulanje and through which existing road links could be reinforced to the border crossing in Muloza and to the ports in Mozambique. This opportunity is especially attractive due to the extreme pressures the plateau is projected to experience from rural to urban migration, and the further subdivision of farm plots which are the smallest in the country already.



Proposed Secondary Cities



6. PLANNING GUIDELINES

Positioning Discrete Projects in a Holistic Environment

The relationship between infrastructure development and processes of urbanization is essential to carefully plan in any context. Yet in environments where informal settlements and economies are ubiquitous, and enforcement of land policies is a constant struggle, infrastructure is often the primary tool for land use management, as populations and economic activities gravitate towards engines of opportunity. As such, cities become harbors for populations migrating from the countryside, either by a 'pull' force, as cities present opportunities for enhanced quality of life, or by 'push' forces where rural livelihood becomes untenable and forces citizens to search for alternatives.

As mentioned earlier in this Report, we propose a hypothesis in which by carefully clustering investments in multi-use infrastructure, we can deliberately catalyze a process of urbanization in a specific area; and by that, enhance economic activity and diversification of sources of livelihood to the local residents. Yet, the relationship between urbanization and economic growth is not predetermined. A mindset of 'if you build it, they will come' should be discredited. In fact, the opposite dynamics should be pursued, where existing opportunities for economic development are identified, to be enhanced by infrastructure investment, which subsequently benefit large populations and multiple stakeholders across a variety of sectors. That dynamic represents an urbanization agenda which is 'demand driven' and accommodates the shared interest of the public and private sectors at large.

For that reason, we have made a concentrated effort represented in previous Chapters to identify those locations where 'investment clustering' could be most impactful. Such locations represent multiple opportunities for development across several sectors; and by that, allow for the design of multi-purpose infrastructure in the deepest sense – where water systems would benefit agriculture, AND industry AND residential communities. Or where a port facility would be used by ferries for passengers AND container vessels, AND for the small fisheries community. Such projects would both enhance the economic viability of a city and its region, while enhancing the benefit/cost ratio significantly.

Maximizing investment impact around critical intersections of opportunity

Specifically, for the purpose of the master plans developed in those 'intersections' of opportunity, we propose investments in three key sectors corresponding to the MW2063 Pillars of: Urbanization; Agriculture; Industrialization. Under each sector, we envision a number of possible projects taking place, tailored into each locality as demand and context allows. The diagram below illustrates how certain project categories fall under a particular sector although, as stated above, those are not siloed, and are meant to fully service the full range of stakeholders and potential beneficiaries. An industrial zone, which is well integrated with its urban environment will not only provide for land plots for prospective factories and warehouses, but also increase commercial activity for the daily workers in those business, supported by various civic and academic institutions which would reinforce a sense of community to establish substantial feedbacks between businesses and local leadership. By that, an agenda of project clustering represents the dynamics of a city, where a given activity is never siloed and the public is included throughout the process and exposed to economic activities, that are integral to a location's success.

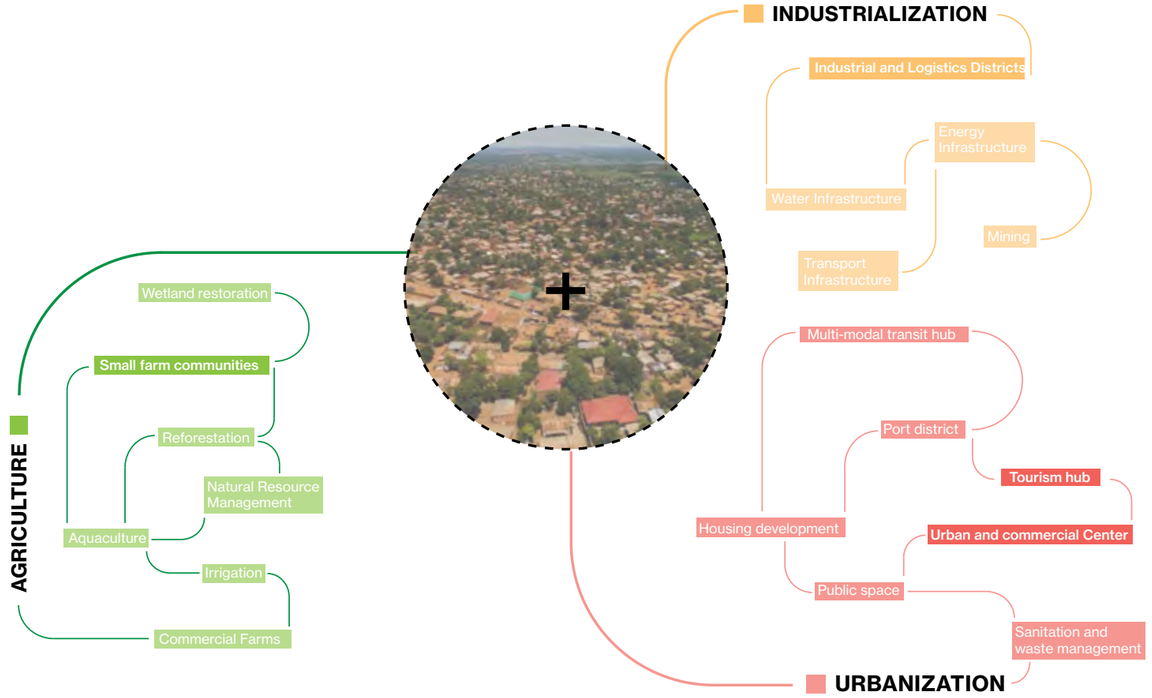
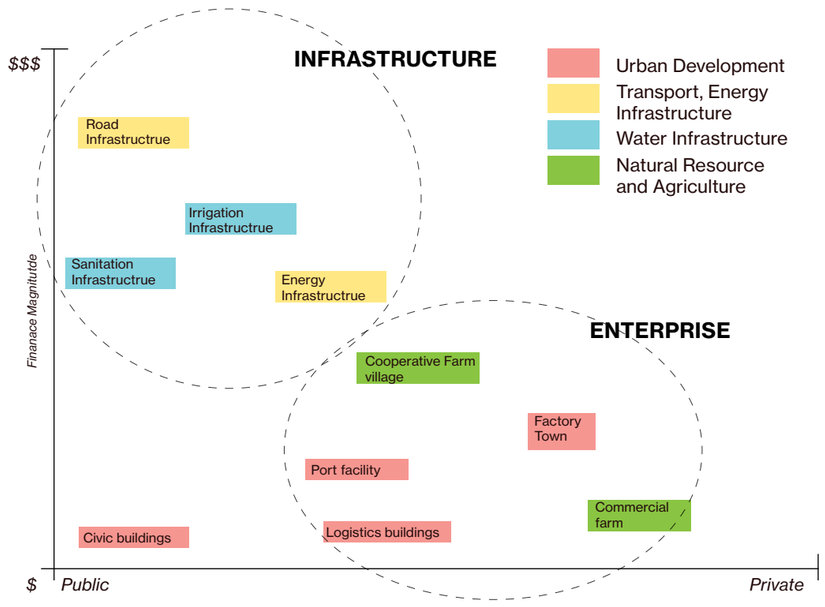


Diagram of project clustering across the three pillars in and around an existing settlement, to develop it as a Secondary City.

To further support the concept of sectoral integration and multi-purpose infrastructure, let us take a contrary view for a moment and imagine an environment which is intentionally designed in an opposite manner. Such an environment would look for isolation and exclusivity for a certain type of activity. An 'industrial park' distant from other activities, with matters of privacy or autonomy in mind. Such an isolated development would require independent investments in transport, ICT, energy and water systems – an expense hopefully recuperated through the economic activity in the park, but without direct benefit to neighboring development. Workers in the park would have to commute longer distances, on the expense of their time while burdening the transit system. This would have direct impact on both the residential areas from which they arrive, which may well become commuter towns, as well as the very park we are describing which would be possibly only active during working hours, and would not be adequately used in early mornings or afternoons. Such a scenario is what we are aiming to contrast here through our proposals, which largely represent a consensus among contemporary urban planners in both developed and developing countries.

A wide range of investment opportunities across sectors and scales

Our planning process dedicates specific attention to the difference between infrastructure and enterprise developments, both on the spectrum of public vs private finance, as well as on the spectrum of anticipated cost, where mostly infrastructure projects tend to be much more expensive – as illustrated in the diagram below. Yet it is important to note that the differences between infrastructure and enterprise financing do not necessarily imply the inability of the private sector to invest in projects which are normally associated with expensive and large infrastructure. Specifically, more affordable options for investment in water, power and transportation sectors should not be merely envisaged as 'off-grid' rural options for locations which are too far to conceive as urban, but also to the locations we are proposing in this Report as key secondary cities. In such cases, small investments in gravity fed water supply systems, or small solar panel farms, as examples, could well become early stage investments in larger infrastructure networks, which will take a longer time frame and larger budget to become reality. Still, even those preliminary and small investments should be located in such strategic locations where the overall grid could develop, as dots connect over time.



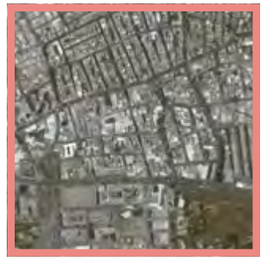
A diagrammatic project 'menu' which provides investment opportunities across the Public/Private and cost scales

A selection of global case studies through a sectoral definition

As this Report comes to promote cross-sectoral alignment through project clustering under comprehensive master plans, it is important to define what we mean by 'project' as a vehicle for investment and to catalyze development. Therefore, we have selected a number of projects which we consider relatable to the ones aspired through this program, and that would contribute to the process of development of secondary cities. Below, you will see a complimentary 'menu' of global case studies building on the previous axis graph and the general sectoral division applied in this work. In the next few pages we will highlight one project from each sector as an illustration towards the projects envisioned later in Chapter 7.

Urban Development

Urban industrial districts



Florentine, Tel Aviv, Israel

Housing and urban growth

Mekele, Ethiopia

Transport, Energy Infrastructure

Water ports

Mahajanga, Madagascar

Trade centers

Edirna Market, Turkey

Water Infrastructure

Multi-purpose urban water Systems

Medellin, Columbia

Multi-purpose dams

Shardara, Kazakhstan

Natural Resources and Agriculture

Commercial agriculture

Makushi, Zambia

Agricultural cooperatives

Aldeia Nova, Angola

Intersection of two segments of arterial roads in Bahir Dar, Ethiopia
Image source: A new plan for African cities, The Ethiopia Urban Expansion Initiative

Bahir Dar team updating concept plan, July 2013
Image source: A new plan for African cities, The Ethiopia Urban Expansion Initiative

The “making room” approach presents a method for cities to prepare the grounds, literally, for population growth before significant development occurs in an informal manner. After analyzing where population growth and development will likely occur, cities would preemptively acquire land to be used for public infrastructure and services later. According to the project team, retroactively building infrastructure for already developed communities can cost three to nine times as much as if the city had made room in the first place, while also disrupting or displacing existing communities.

The project process

1. Preparation of realistic maps based on forecasts of urban growth.
2. Creation of generous metropolitan boundaries for development and expansion (allow jurisdiction flexibility).
3. Securing of land for a 1km x 1km grid of 30 meter wide arterial roads aside. Roads would carry public transport and major trunk infrastructure (including water, electricity and ICT).
4. Establishing a hierarchy of public open spaces in the expansion zone.

The argument for these actions is that while planning activities such as determining land uses or the location of public facilities can come later, land for key public works must be secured in advance of development. This process catalyzes a smoother urban expansion.

Selection of cities

As part of NYU’s Marron Institute Urban Expansion initiative, Dr. Shlomo Angel led a team of planners to develop expansion schemes for various cities in Ethiopia. The selection of cities for participation in the initiative was partly technical, and partly political. The candidate cities had to meet three criteria:

- (i) not be the primary city in the country;
- (ii) have population growth rates of at least 3% per year, meaning a doubling time of 20 years; and
- (iii) have a population of at least 100,000 as of 2010.

In terms of distribution, it was important to select cities across the country in order to demonstrate the workability of the concept in more than one region and, in the future, apply the same approach on the country scale.

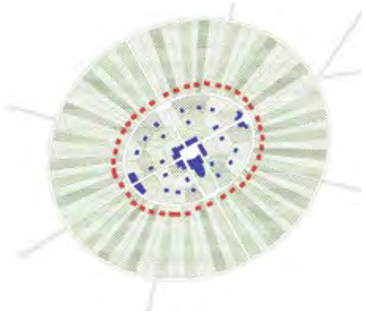
The selected cities were Bahir dar, Mekele, Adama and Hawassa; and have to date approved plans for over 1,700 km of 30m wide arterial roads, along with 81,000 hectares of land for expansion - enough to accommodate a 4-fold increase in the current built-up area of the cities. The cities budgeted over 8$ million for their expansion plans in 2014, and in 2015 they budgeted at least $24 million.

Financial model

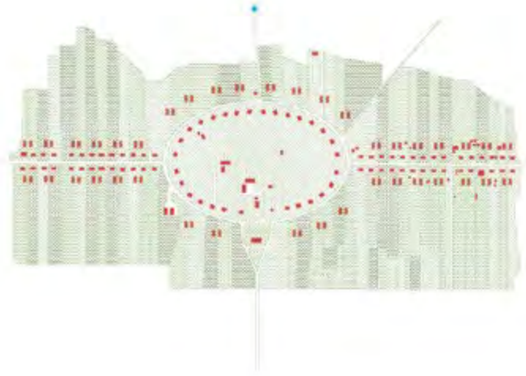
In order for cities to agree to allocate big sums of money on urban expansion, there has to be a mechanism for them to capture the value increase that would result from the conversion of land to urban use. In other words, the urban expansion model should work as an investment. In Ethiopia, that took the form of a revolving fund for the revenues from leasing land in the expansion areas.

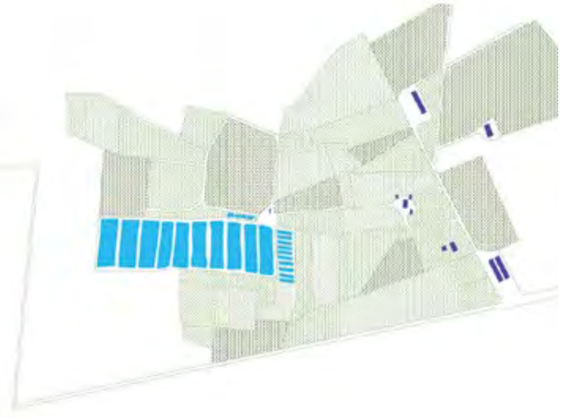
Source: A new plan for African cities, The Ethiopia Urban Expansion Initiative. Patrick Lamson-Hall, David Degroot, Richard Martin, Tsigereda Tafesse, Shlomo Angel

Name: **Moshav Nahalal**
Location: Jezreel Valley, Israel
Population: 803 inhabitants (2016)
Residential Area: 1,08km²
Economy: Fruit and Vegetable agriculture



Name: **Aldeia Nova**
Location: Cuanza Sul province, Angola
Population: approx. 600 families
Residential Area: 0,34 km²
Economy: Livestock, Fruit and Vegetables, Grain.



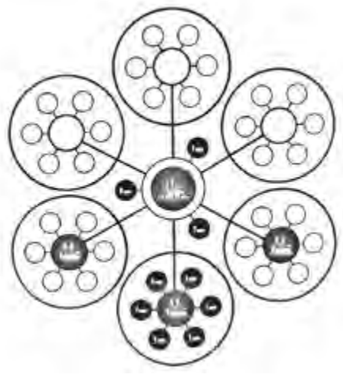


Established in the early 20th century in Israel, the Moshav is a rural settlement which unites a group of residents (formerly mostly farmers) in a cooperative economic framework. The participants in the settlement are called members. In contrast to the historic communist kibbutz, the family is an independent economic unit that operates within the framework of mutual aid rules. Each member of the Moshav is assigned a plot, which in most cases is used for residence and agricultural uses. Overtime, some of the Moshav's accepted additional people who are not members of the cooperative and are called residents. The moshavim movement and the kibbutz movement are the largest settlement movements in Israel and comprise of the large majority of agricultural production.

In a moshav, the basic production unit is the individual farmstead. There are between 50 to 150 private farmsteads, with an average of 80 farmsteads per moshav. Production is carried out individually but under certain constraints (such as mutual aid among different farmsteads on the moshav, cooperative purchasing and marketing, self-employment, etc.), and consumption is individual. Every farmer has to budget part of his time for a collective farming of the moshav's lands. Expensive agricultural tools are purchased collectively as well.

From a regional planning stand point, the Moshav's and Kibutz's were planned around secondary cities in a way that would serve the agricultural communities urban services and utilities. In the digram below you will see a diagram applied for regional development of the agricultural communities in Israel in the 1950's pointing to a hierarchy of settlements circling a secondary. While each Moshav has a population of about 1,000 people, Afula city has a population of around 40,000 people.

The Aldeia Nova village in Angola, was developed by an Israeli private investment group in partnership with the Angolan Government as a PPP, based on the Moshav model in 2005, aimed at demobilizing ex-combatants to rural areas and settling them in modern agricultural communities with regional economic development and job creation agenda in mind. Today around 600 families reside on farmsteads between 8 villages, divided to 160 dairy farms, 120 egg farms, 120poultry farms, 20 pullet farms and 80 pig farms; all sharing logistics and processing facilities as well as water system infrastructure developed as part of the project. The project is estimated to contribute around $3.5 million annually to the local economy.



Regional settlement hierarchy digram, 1950's Israel rural areas
Source: Efrat, Zvi. "The Israeli project: Building and architecture 1948–1973." Tel Aviv: Tel Aviv Museum of Art (2004).

Source on Aldeia Nova: Ayal Kimhi (2010) Revitalizing and modernizing smallholder agriculture: The Aldeia Nova Project in Angola, Development Southern Africa, 27:3, 381-395.

Regional map of Jezrael Valley, Israel
Total population: 216,233
Agrarian population: 79,562
Area in image: 576 km²

4,5 km
1,8 km
2 km
4,1 km
5,4 km
3,9 km
1,4 km
1,8 km
3,4 km
9 km
8,2 km
7 km
8,2 km
5 km
0,9 km
1,3 km
4,6 km
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4,3 km
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4,6 km
9,2 km
3,8 km

0.5 km 1 km 2 km 3 km 4 km 5 km

Integrated water management system (IWMS) is the practice of managing freshwater, wastewater, and storm water as components of a basin-wide management plan. It builds on existing water supply and sanitation considerations within an urban settlement by incorporating urban water management within the scope of the entire river basin. IWMG seeks to change the impact of urban development on the natural water cycle, based on the premise that by managing the urban water cycle as a whole, a more efficient use of resources can be achieved. This provides not only economic benefits but also improve social and environmental outcomes.

The Medellín system

Population growth coupled with urbanization had turned the Medellín River into a dump site for millions of tons of municipal household waste. At the same time, the lack of open land had led people to settle on the banks of the river and along its 200 tributaries. Urban drainage became a substantial challenge for the city. The approach in Medellín was to establish an inner, urban, water cycle loop through the implementation of reuse strategies. Accounting for flows in the pre- and post-development systems was an important step toward limiting urban impacts on the natural water cycle.

Original Infrastructure: Moscú Tank
Neighborhood/Commune: San Pablo, Popular
Design and Construction: January 2013 - March 2014

The program included six more objectives as well:

1. Partial decontamination of the river and its tributaries.
2. Partial treatment of the wastewater to be collected from wastewater treatment plants.
3. Extension of the potable water networks and sewer system to all areas lacking these services.
4. Optimization of the water distribution system, management of consumption and reduction of unaccounted-for water losses.
5. Preparation of phase two of the sanitation program.
6. Institutional strengthening of EPM's management system for aqueducts and the sewer system.

Legal and financial framework

In order to influence industrial users to adopt clean technologies for the production of goods, a Water Taxation Law was introduced in 1999. The law emphasizes the use of economic instruments to induce water users to comply with environmental laws and ensure that water used for industrial purposes is reusable. Environmental authorities that guarantee the renewability of water could make use of this compensatory tax to cover expenses related to carrying out their responsibility.

Water tanks as public parks

As part of this project, several water tanks across the city were identified to become public spaces for the communities around them. Initially secluded sites of violence, the water tanks were transformed into public social spaces that the city desperately needed. In addition to serving its original purpose of storing water, the tanks provided an opportunity to bring together urban infrastructure and urban dwellers, turning the area into a social hub.

A transit-oriented development (TOD) is a paradigm for urban development which maximizes land uses in a variety of programs (residential, commercial, industrial, recreational, etc.) within walking distance of transport nodes. By that, it promotes a mutually beneficial relationship between dense, compact urban form and transport uses. A TOD typically includes a central transit hub (such as a ferry, train or bus station) surrounded by a high-density mixed-use zone, with lower density areas spreading out from this center. A TOD is also typically designed to be more walkable than other built-up areas, through using smaller block sizes and reducing the land area dedicated to cars. The densest areas of a TOD development are normally located within a radius of 800m around the main transit stop, as this is considered to be an appropriate distance for pedestrians, averaging at about a 10 minute walking shed.

To illustrate the potential benefits of a well integrated transportation based district in an urban development we have chosen the port of Mahajanga as it presents an especially compact and efficient urban form. Madagascar's second-largest port, it is situated in Bombetoka Bay with direct access to the Mozambique Channel. A transshipment port, Mahajanga is linked by road with Antsiranana and with the national capital, Antananarivo, about 225 miles (360 km) south-southeast. The port is mainly used for local trade on Madagascar's west coast and small neighboring islands.

The principal commodities handled in the Port of Mahajanga are rice, salt, and containers (ICTSI, 2017). Large prawn farms near Mahajanga also use the port to export their products. Due to its low water depth at berth of 4.5 m, Mahajanga is only capable of handling small-to-medium-sized vessels, with an average vessel size of 800 TEU. The stated water depth is measured during high tide; and, with a tidal range of roughly 4m, there is hardly any water depth during low tide. This severely limits the operations and cargo handling activities in the port. Because of limited water depth at the wharf, only small ships can call at the terminal. Deeper-draft ships anchor off the terminal and transfer cargoes to and from barges, which move it to and from the terminal.

It is quite significant that despite being a shallow port, Mahajanga is still preferred by customers because of its connectivity to the main center of production and consumption. The plan of the Mahajanga port district sits right at the edge of the city. The port is divided into three main zones: a freight for containers and industrial uses; a passengers zone which directly connects the port to the urban fabric; and a fishing zone right adjacent to the main market along the main street of the city. Mahajanga's industries include the processing of agricultural products, meat canning, and the manufacture of soap, sugar, and cement. The marine terminal accommodates container ships and small (150 gross ton) general cargo freighters.

Mahajanga port district plan, Madagascar

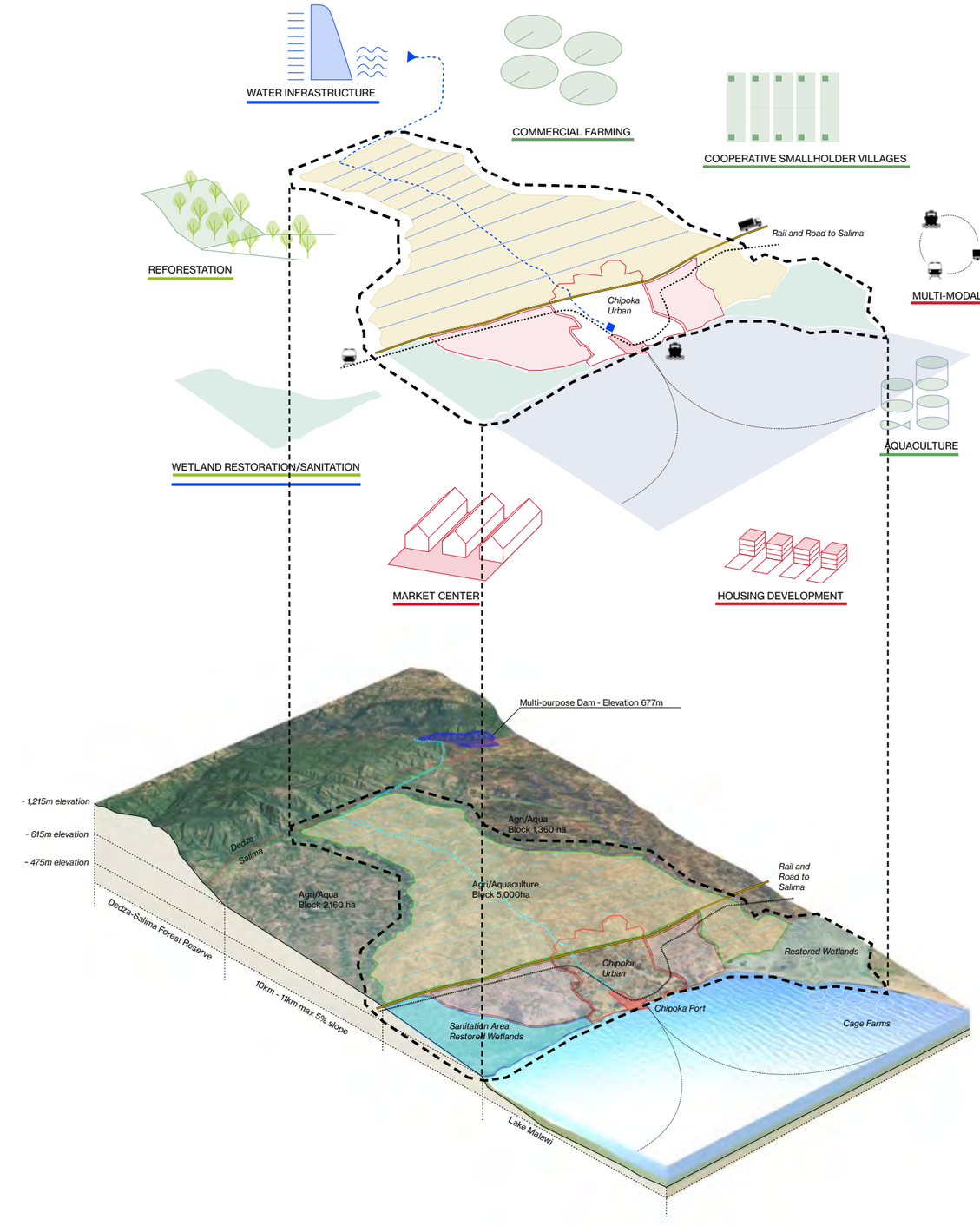
Mahajanga port, Madagascar

Sources: Restructuring the secondary deep sea shipping ports in Madagascar, Ronhi Gabriel Ralamboarivony

Project sequencing and phasing strategies

Matters of project origination and strategic investment promotion through early stage project designs are at the core of the master planning process as proposed in this report. The master plan becomes a platform for both the conceptualization of a comprehensive environment with well-defined relationships between its elements and takes into consideration conflicting pressures in space - where independent activities are assigned a location, a footprint, a budget, an operator and an investor. This is not an abstract experiment in which we satisfy common interest through a shared vision, but rather a method of work through which we ensure that prospective investors are able to achieve their respective goal, while fitting into a larger framework.

As for a timeline, these investments should not only be sequenced in space, but also on a time scale that corresponds to other planned activities, i.e. strategic phasing. In this context, the matter of 'bankability' becomes extremely pertinent. Projects, whether private or public, require formality to allow for international investors to take part. Such formality includes aspects of land titling, legal relationships between the parties, government supervision and enforcement protocols. As far as land use management practices are concerned, formality of land designation and the deliberate positioning of a certain activity in relation to its neighbors are among the key activities facilitated through a master plan.



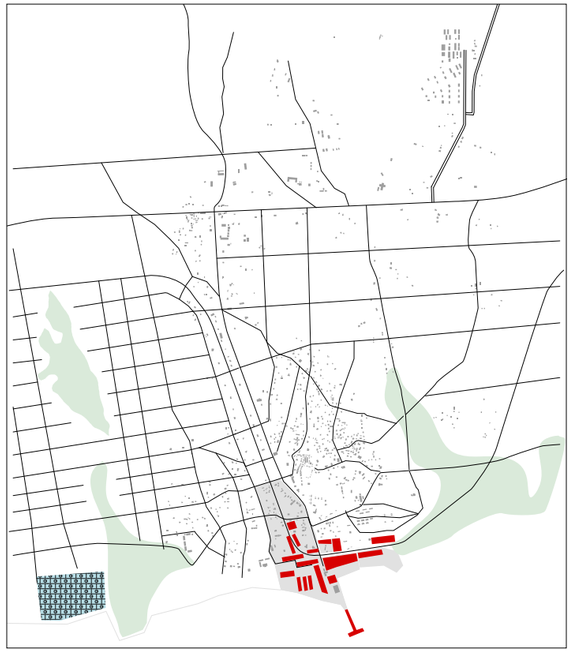
Project clustering strategy and development zone designation for Chipoka urban and TA Ndindi

2020 - Existing condition

Population: 12,615

Urban Population: 6,395
Urban Density: 6 per ha

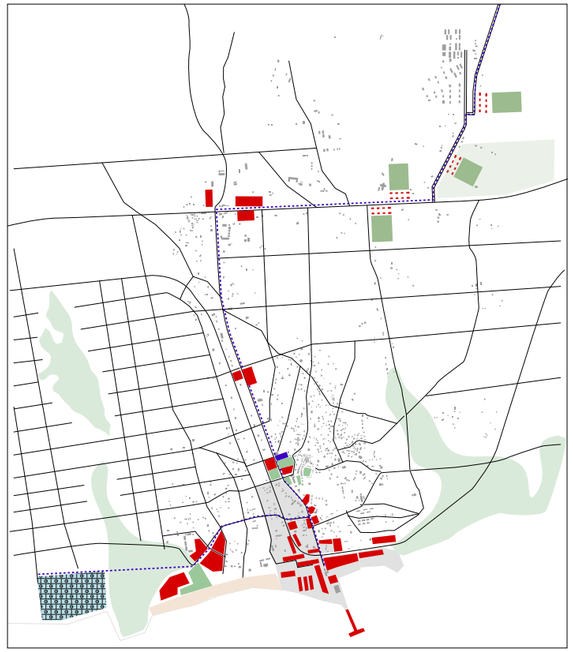
Rural Population: 6,220
Rural Density: 3.1ha per household



2030

Independent developments located strategically

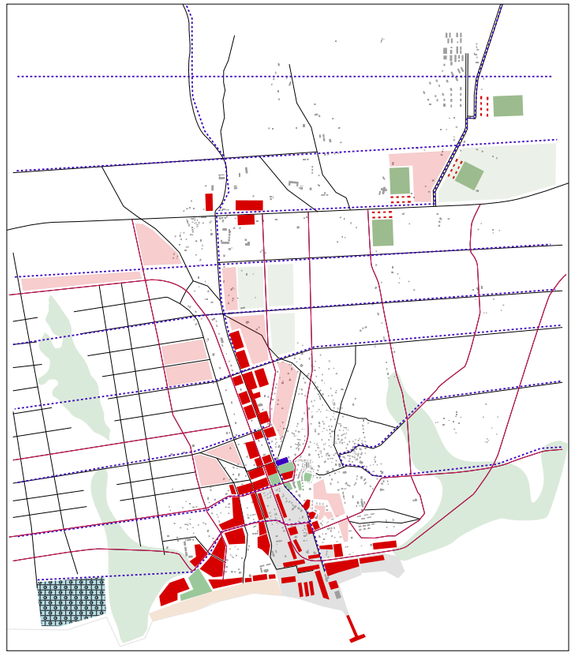
- Port rehabilitation and development of multi-modal industrial district.
- Establishing smallholder and commercial agriculture and aquaculture cooperatives serviced by off-grid water and energy systems.
- Formalizing land use plans in urban and rural areas to allow for further development in next phases.



2040

Connecting independent developments into a network

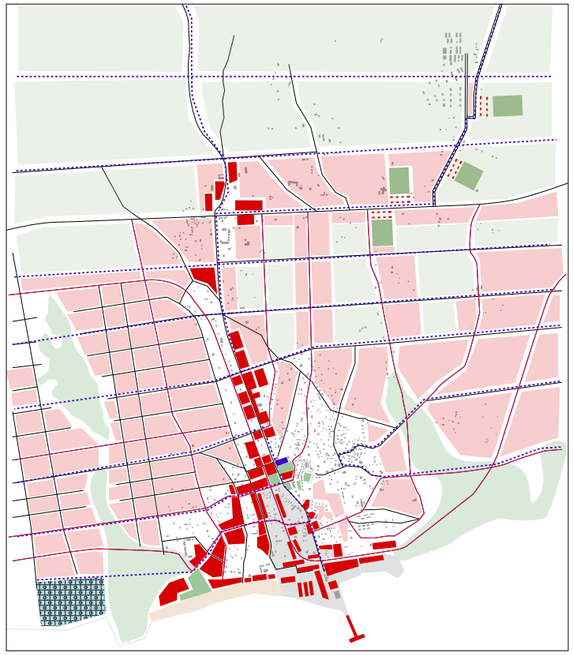
- Water network development connecting the municipality and adjacent industries.
- Development of green infrastructure at the edges of the city as sanitation areas for wastewater treatment.
- Development of an urban commercial center with a passenger rail / bus / ferry station.



2050

Establishing a fully distributed infrastructure network servicing urban and rural areas

- Development of commercial strip along the lake shore with boardwalk and recreational amenities combined with tourism attractions and hotels.
- Development of residential neighborhoods with civic and social amenities.
- Development of regional commercial district at the city's gateway along the highway.



2063

Population: 207,260

Urban Population: 112,400
Urban Density: 100 per ha

Rural Population: 94,860
Rural Density: 1.1ha per household

Diagrammatic phasing strategy for Chipoka urban and TA Ndindi selected area with key investments highlighted

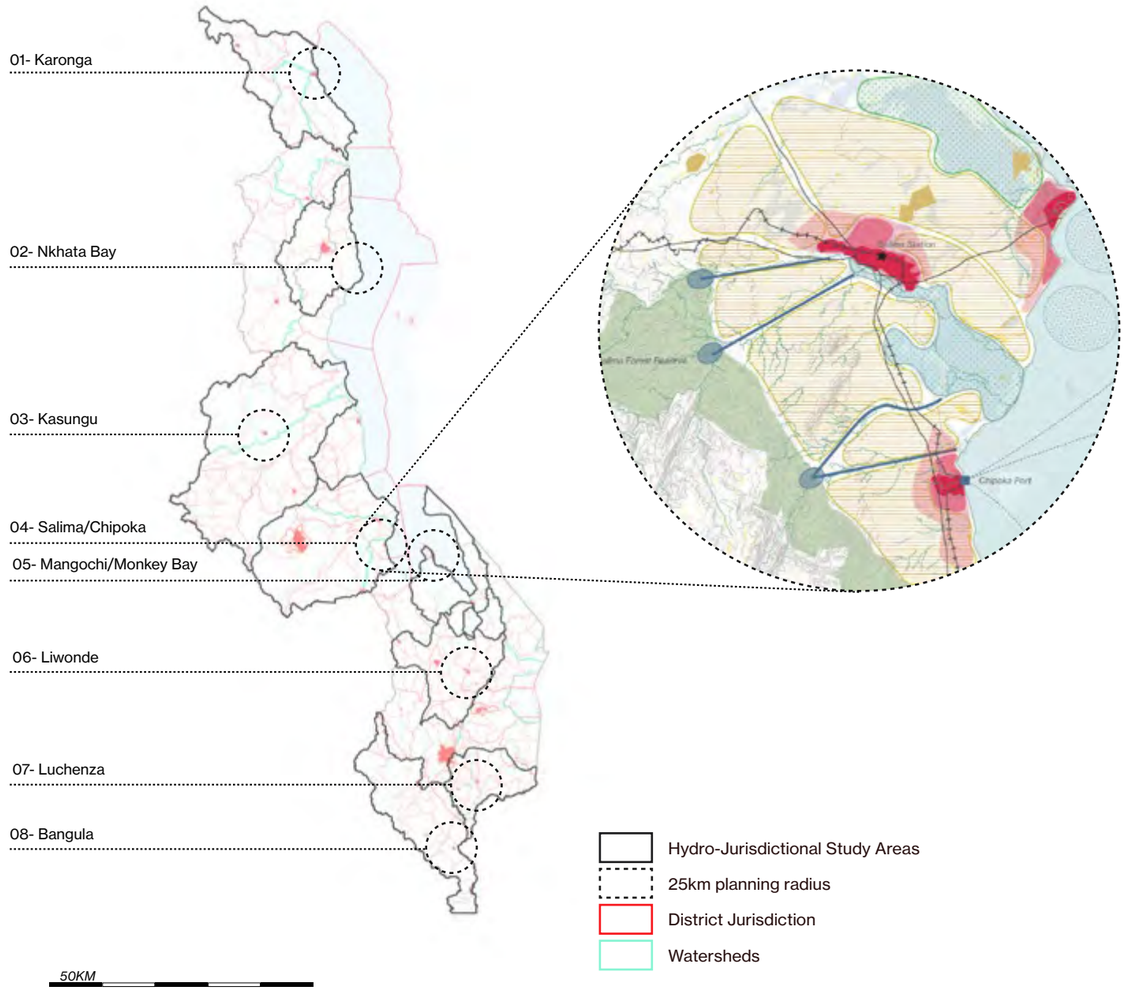
7. MASTER PLANS

Spatial Integration of Long and Medium Term Investments

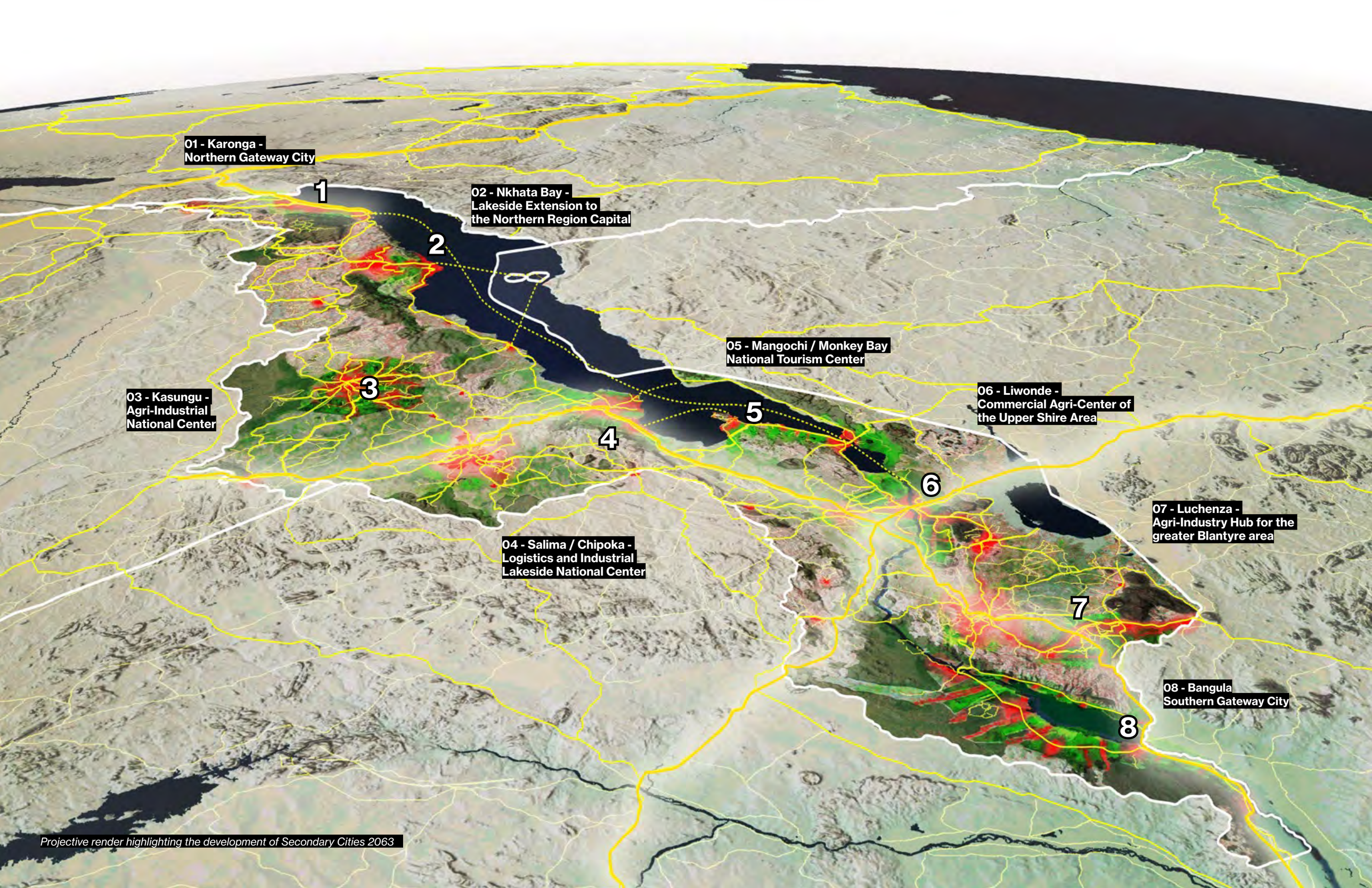
Following the identification of the most appropriate locations across the country where opportunities for the development of Agri-Industrial Secondary Cities appear, we have developed a spatial planning protocol through a number of intermediary scales. The first being a regional scale through which we come to define a scale of analysis which relates both to watershed(s) in which the prospective city is in, as well as the corresponding district(s) jurisdictional boundaries. Between both aspects of political jurisdiction and hydrology, we are able to establish the largest scale of analysis necessary to properly address matters of Environmental Social Governmental (ESG) analysis which will be of critical importance for an Environmental Impact Statement (EIS), necessary for each one of the proposed projects as they head towards implementation.

Such area definitions naturally diverge from the predetermined 25km radius applied in earlier stages of the work, and allows the design process to include assets and resources which may have been neglected earlier on. The following map diagram presents in thick black outlines the regional areas which have been taken into consideration under each one of the eight master plans. You can see how they differ in size in a manner which corresponds to local topographic and political conditions.

Once larger area definitions are established with long term planning processes in mind, the second step is to establish a more local scale of planning, which allows for more detailed understanding of local population footprints and growth trends, land use patterns and spatial relationships between the different sectors. Those local scales of design are highly tailored for each of the locations, while trying to maintain a rough radius of about 25km, corresponding to an hour commuting time for a largely non-motorized transportation network.



Two key scales of analysis and design - the one on a watershed and district jurisdiction scale, the other on a local TA level scale. Highlighting the Salima/Chipoka area as an example.



Projective render highlighting the development of Secondary Cities 2063

01 Karonga
Northern Gateway City

Logistics and industrial multi-modal port district: A case study from Chile. Photo credit: By Peretz Partensky.

Karonga
District and watershed boundaries

Karonga stands out as a location where not only agriculture and urban development could flourish, but also as a city, where connectivity of multiple modes of transport could be established. This could be achieved by either reinforcing links to the existing port in Chilumba (60km southwards and in need of rehabilitation), and by developing a local urban/industrial port at the heart of the city. Such a lake port could be further reinforced in the future through a rail connection to the Tazara corridor only 120km northwards in Mbeya, Tanzania. Apart from its lake port, a multi-modal hub in the heart of the city, at the intersection of rail and the M1 highway, would be the main connection to movement of goods and people through land. Fisheries development on the lakefront near the port would become an important source of employment and nutrition for the towns and villages of the northern region of the country.

Data sources: RCMRD, Open Street Map; USGS / NASA SRTM DEM; Facebook Connectivity Lab; CIESIN, Columbia University; DigitalGlobe; Malawi Spatial Data Platform (MASDAP)

Karonga

Land use scenario planning

DISTRICT	TA JURISDICTIONS
Karonga	Karonga Town
Karonga	TA Kilupula
Karonga	TA Kyungu
Karonga	TA Mwakaboko
Karonga	TA Mwirang'ombe
Karonga	TA Wasambo

WATERSHED UNITS
17A, 17B, 17C, 8A, 9A, 9B

The Table below uses projection scenarios to illustrate local land constraints in each of the planning areas.

Year 2018 is taken as a base and three possible scenarios are projected for the year 2063, using the district's growth rate from the last decade.
First, a *status-quo* 2063 scenario projects an urban density and urban population growth not too far from the 2018 trend. In this scenario, it becomes clear that as the population grows with an urban density of 30%, the urban settlement footprint would grow 8 times which would in turn have a negative impact on the availability of land per family, dropping from 1.0 ha/family to 0.37 ha/family.
Second, the moderate scenario 2063 assumes a higher urban density of 60 people/ha, which would constrain the expansion of the settlement area and in turn positively impact the land per family average area to 0.61 ha. Lastly, the compact scenario 2063 applies an even higher urban density of 80 people/ha, as well as a 50% of the population living in urban areas.

This allows smallholder families to have access to 0.51/ha per family. Apart from dedicating land for small farms, the moderate and compact scenarios also increase the capacity for commercial farms from 4,196 ha in 2018 to 6,000 ha in 2063 conservative scenario and 12,000 ha in 2063 compact scenario.

In conclusion, in order to maintain smallholder farming viability in rural areas, it is essential to make room for cities to grow as well as apply a high population density. However, even with a compact scenario, there is need to further urbanize, in order to make smallholder farming viable.

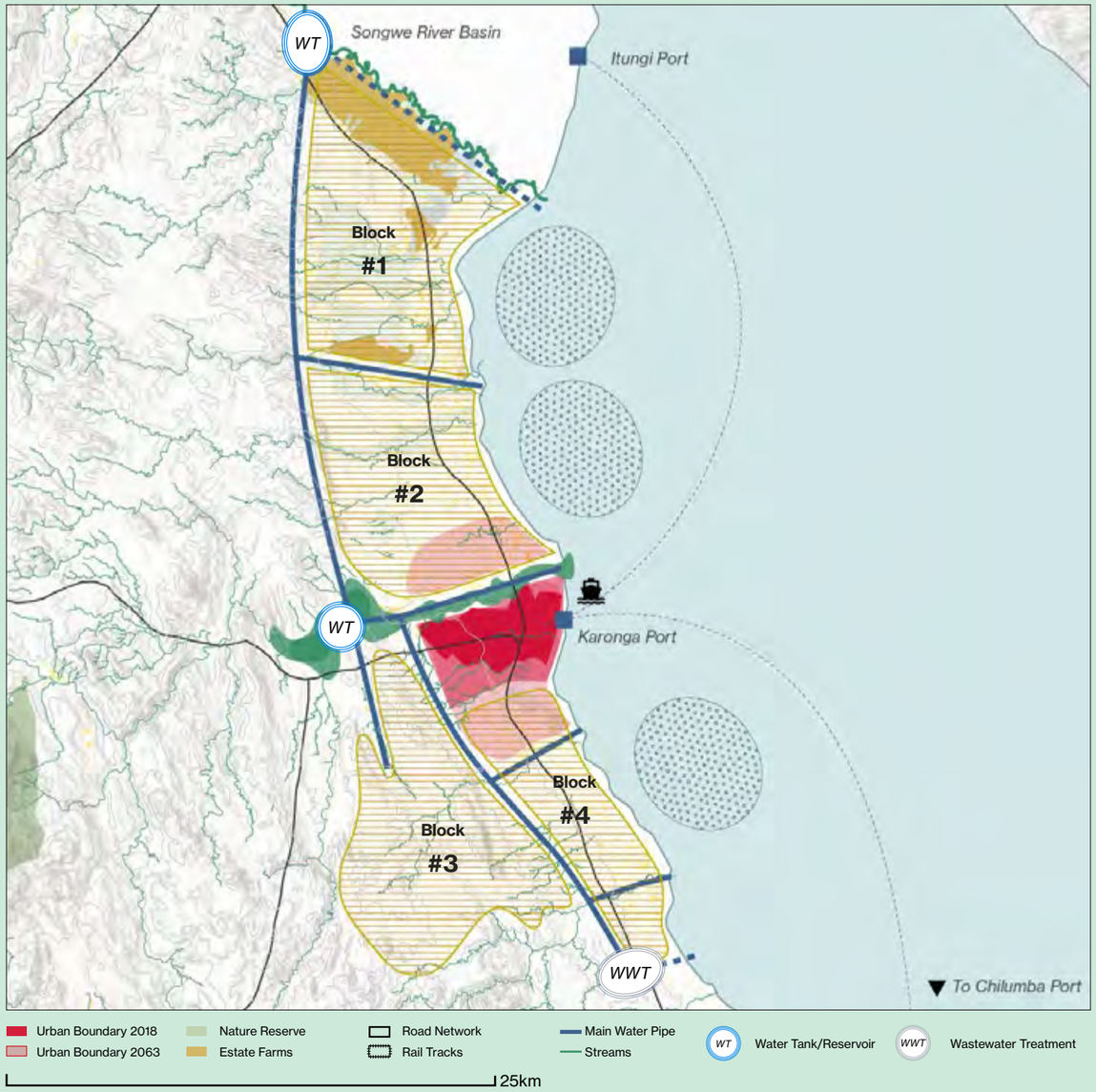
Here, other industries such as fishing and aquaculture as well as tourism would bring additional livelihood for the population.

	Base Scenario 2018	Status Quo - **Sprawled 2063**	**Moderate Scenario 2063**	**Compact Scenario 2063**
Total Surface Area (ha)	286,048	286,048	286,048	286,048
Arable Land (ha)	124,364	124,364	124,364	124,364
Non-Arable Land (Forest and Conservation Lands) (ha)	161,684	161,684	161,684	161,684
Crop Land / Small Farms (ha)	117,789	100,886	108,723	100,313
Crop Land / Commercial Farms (ha)	4,196	4,196	6,000	12,000
Settlement Area (urban footprint - ha)	2,379	19,282	9,641	12,051
Urban Density (people per - ha)	25.1	30.0	60.0	80.0
Percent Urban Population	17%	30%	40%	50%
Total Population	359,975	1,928,205	1,446,153	1,928,205
Urban Population	59,613	578,461	578,461	964,102
Rural Population	300,362	1,349,743	867,692	964,102
# of Households (total)	73,901	393,511	295,133	393,511
Household Members Ave.	4.9	4.90	4.90	4.90
# of Households (rural)	61,298	275,457	177,080	196,755
Land per Family Average (ha)	1.9	0.37	0.61	0.51

Karonga
Northern gateway city

The Karonga area is projeted to grow from 204,194 inhabitants in 2018 to 463,857 in 2040; and 1,093,764 by 2063. If the boundary of the urban growth is controlled and density is encouraged, the surrounding plateau can be dedicated to commercial agricultural production on highly fertile lands. The urban boundary on the north will be defined by a proposed eco-corridor to protect the stream coming from the mountains to the lake. At the high points along the mountain, reservoirs would capture water and serve the agricultural lands as well as Karonga city. A wastewater treatment area would also be defined along the lake south of the city.

Aerial view of Karonga town center close to the lake front



Karonga

Project clustering scheme

Urban Development

I12 Karonga Transit-oriented Industrial and Commercial Development

Infrastructure

T19 Karonga Passenger Port Facility
T6 Chilumba to Mbeya Rail Line
T12 MIP-1 Flagship: Ports and jetties: Likoma, Nkhotakota, Nkhatabay, Monkey Bay, Chilumba
T22 Karonga Multi-Modal Hub
T23 MIP-1 Flagship: Malawi Air Travel Development and Modernization program (Karonga Airport Rehabilitation)

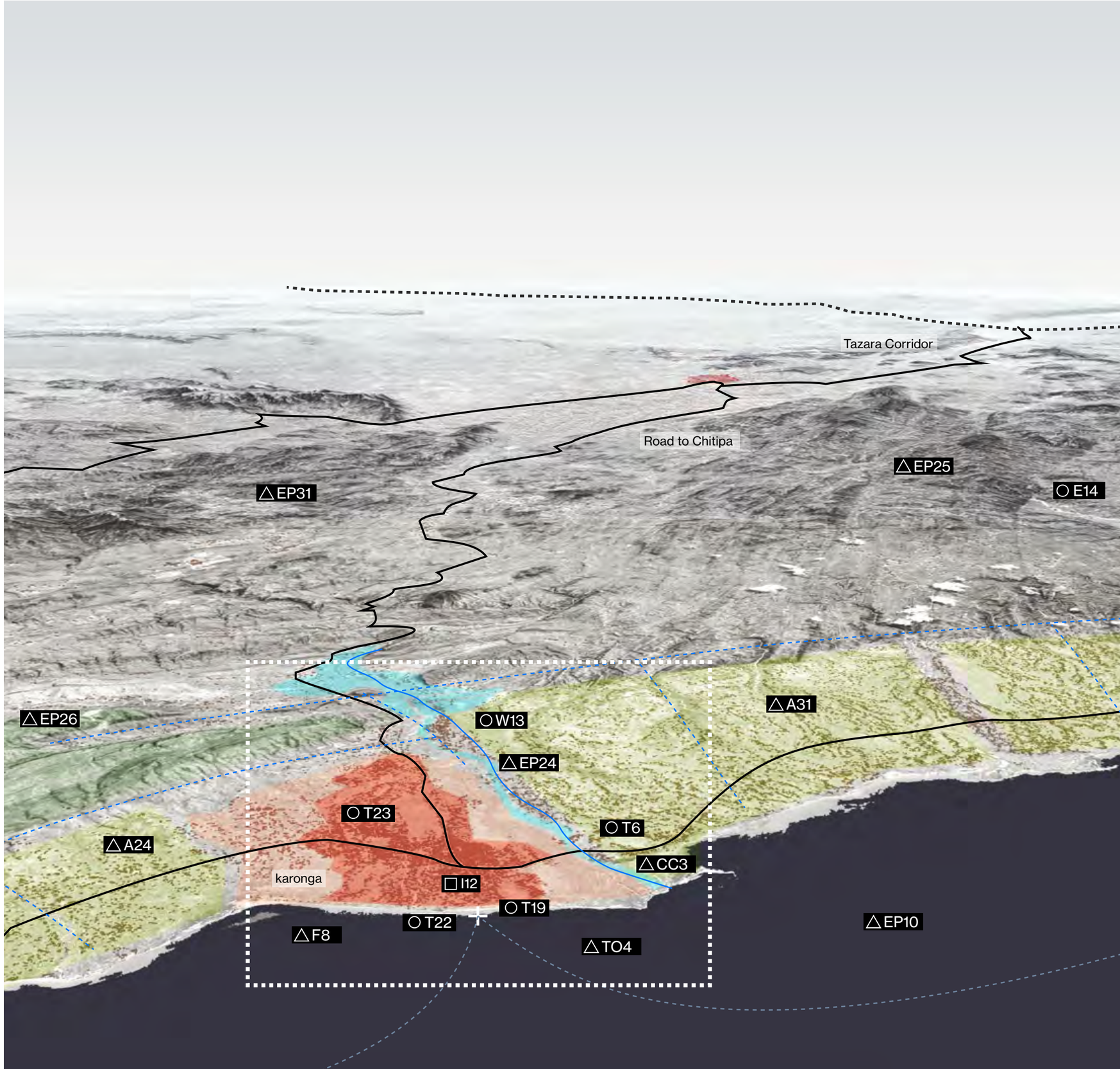
W1 MIP-1 Flagship: Songwe River Basin Development Program
W13 Karonga Town Water Supply and Sanitation Project
E14 Manolo Hydro-electric Dam (60-130 MW)

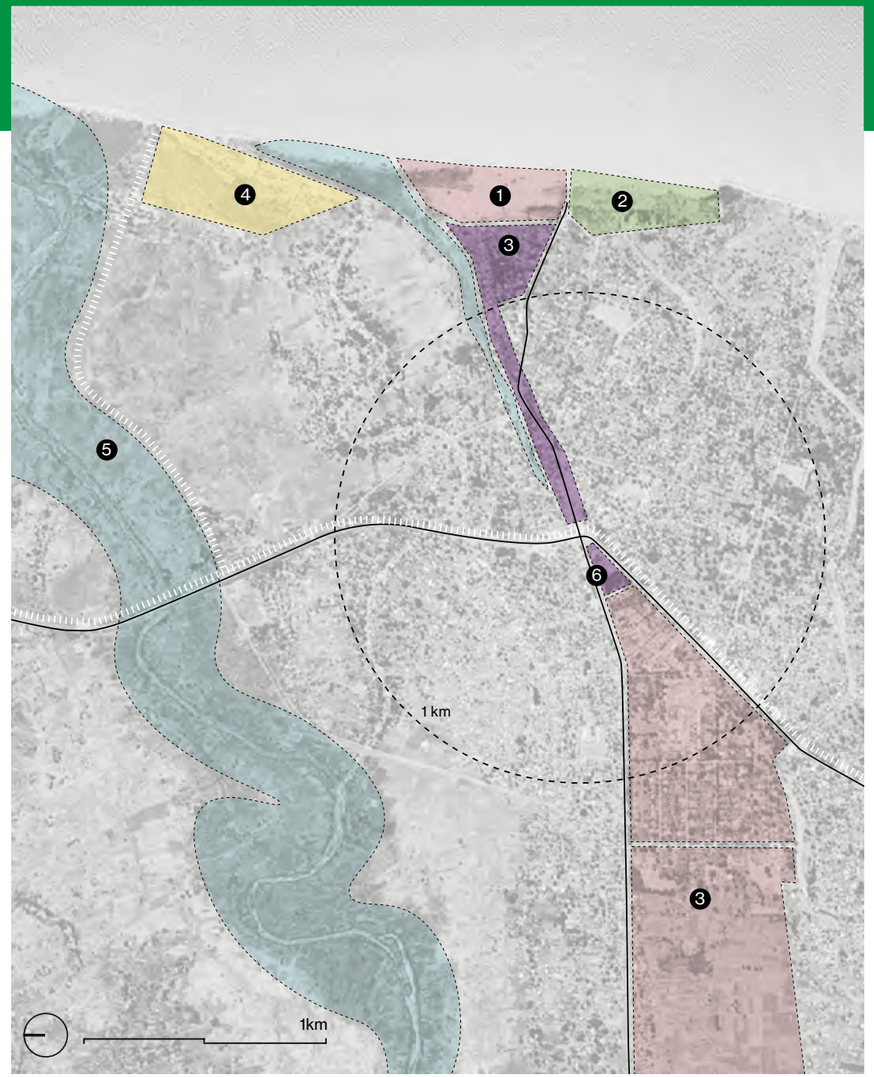
Natural Resources

TO4 MIP-1 Flagship: Malawi Lakeshore Tourism Development Program (Mangochi, Liwonde, Karonga, Nkhatabay, Salima)
EP25 Matipa Complex Forest
EP26 Nyika National Park
EP31 Musissi Forest Reserve
CC3 Karonga Flood Zone Management and Green Infrastructure Plan

F8 MIP-1 Flagship: Sustainable Aquaculture and Fisheries Development (Karonga Fisheries)
A31 Commercial and Small Farm Development for Karonga

- Urban Footprint 2020
- Urban Footprint Projection
- Nature Reserves
- Agricultural Lands
- Water Resources
- Irrigation





Karonga

Project clustering scheme - Project references

1- Karonga Passenger Port Facility Development (T19)
Connects to: Chilumba, Nkhotakota, Chipoka ports in Malawi, Itungi and Mbamba Bay ports in Tanzania.
Development Area: 12 Ha
Proposed FAR: 0.75

2- Karonga Fisheries (F8)
Area : 6 Ha
Proposed FAR: 0.75

3- Karonga Transit-oriented Commercial Center Development (I12)
Existing Commercial Area: 65 Ha
Potential Cost: TBC
Proposed Extension Area: 147 Ha
Proposed FAR: 2

4- Karonga Transit-oriented Industrial Center Development (I12)
Proposed Extension Area: 40 Ha
Proposed FAR: 0.75

5- Karonga Flood Zone Management and Green Infrastructure Plan - North Rokuru River conservation (CC3)
Area: -

6- Karonga Multi-Modal Hub (T22)
Area: 1 Ha
Proposed FAR: 2


2- Fisheries port, Jaffa, Israel


3- Rueil-Malmaison TOD, Paris France


4- Kigoma industrial port, Tanzania


5- Urban wetland, Accra, Ghana

02 Nkhata Bay
Lakeside Extension to the Northern Region Capital

A cruise passing through Port Kotor, Montenegro. Photo credit: jbdodane, Flickr.

Nkhata Bay
District and watershed boundaries

The Nkhata Bay port together with the opportunity to develop a substantial industrial district at the lake front, would enable water transport links to the ports of Chipoka, Chilumba and potentially Liwonde, as well as the lake ports of Tanzania such as Itungi and Mbamba Bay (merely 65km west). Through its strategic position, Nkhata Bay has the potential to become the port city of Mzuzu. Both as a touristic attraction through the development of beaches along the shore, as well as the development of industry on the coast, Nkhata Bay has the potential to become an important hub that alleviates some of the pressures from Mzuzu by providing essential services, employment opportunities as well as recreational offerings to the northern region.

Data sources: RCMRD, Open Street Map; USGS / NASA SRTM DEM; Facebook Connectivity Lab; CIESIN, Columbia University; DigitalGlobe; Malawi Spatial Data Platform (MASDAP)

Nkhata Bay

Land use scenario planning

DISTRICT	TA JURISDICTIONS
Nkhata Bay	Nkhata Bay Boma
Nkhata Bay	TA Fukamalaza
Nkhata Bay	TA Fukamapiri
Nkhata Bay	TA Malanda
Nkhata Bay	TA Mankhambira
Nkhata Bay	TA Mkumbira
Nkhata Bay	TA Timbiri

WATERSHED UNITS
16E, 16F, 16G

The Table below uses projection scenarios to illustrate local land constraints for Nkhatabay area. Year 2018 is taken as a base and three possible scenarios are projected for the year 2063, using the district's growth rate from the last decade.

First, a *status-quo* 2063 scenario projects an urban density and urban population growth not too far from the 2018 trend. In this scenario, it becomes clear that as the population grows with an urban density of 60 people/ha, the urban settlement footprint would grow almost 20 times which would in turn have a negative impact on the availability of land per family, dropping from 1.1 ha/family to 0.34 ha/family. Second, the moderate scenario 2063 assumes a higher urban density of 70 people/ha, which would constrain the expansion of the settlement area and in turn increase the land per family average area to 0.51 ha.
Lastly, the compact scenario 2063 applies an even higher urban density of 80 people/ha, as well as a 50% of the population living in urban areas. This allows smallholder families to have access to 0.34/ha per family. Apart from dedicating land for small farms, the conservative and compact scenarios also increase the capacity for commercial farms from 3,873 ha in 2018 to 5,000 ha in 2063 moderate scenario and 10,000 ha in 2063 compact scenario. Since Nkhata Bay is a coastal and hilly settlement, its arable land capacity is particularly limited compared to other areas. This results in low capacity for smallholder land.

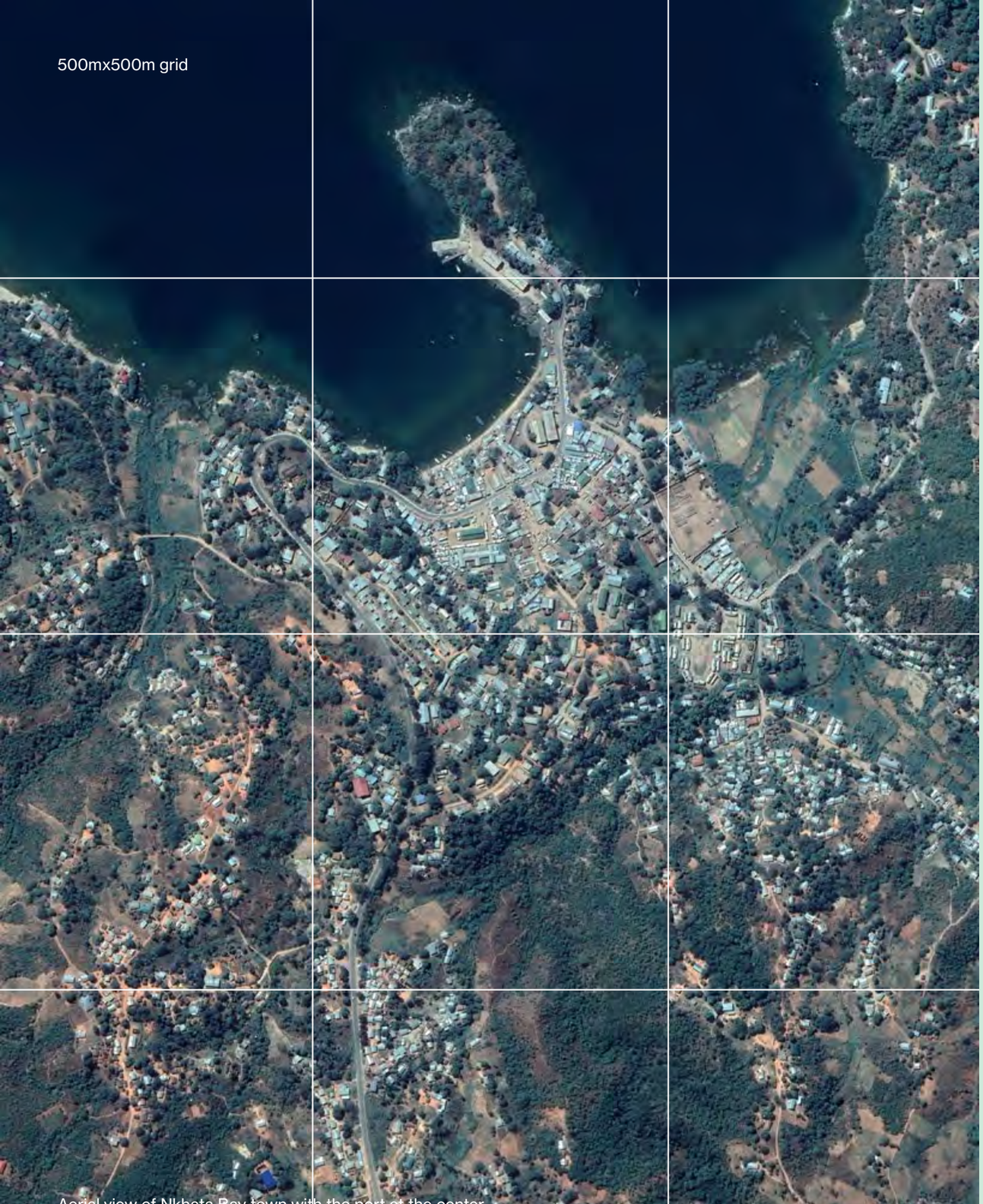
In conclusion, in order to maintain smallholder farming viability in rural areas, it is essential to make room for cities to grow as well as apply a high population density. However, even with a compact scenario, there is need to further urbanize, in order to make smallholder farming viable.

Here, other industries such as fishing and aquaculture as well as tourism would bring additional livelihood for the population.

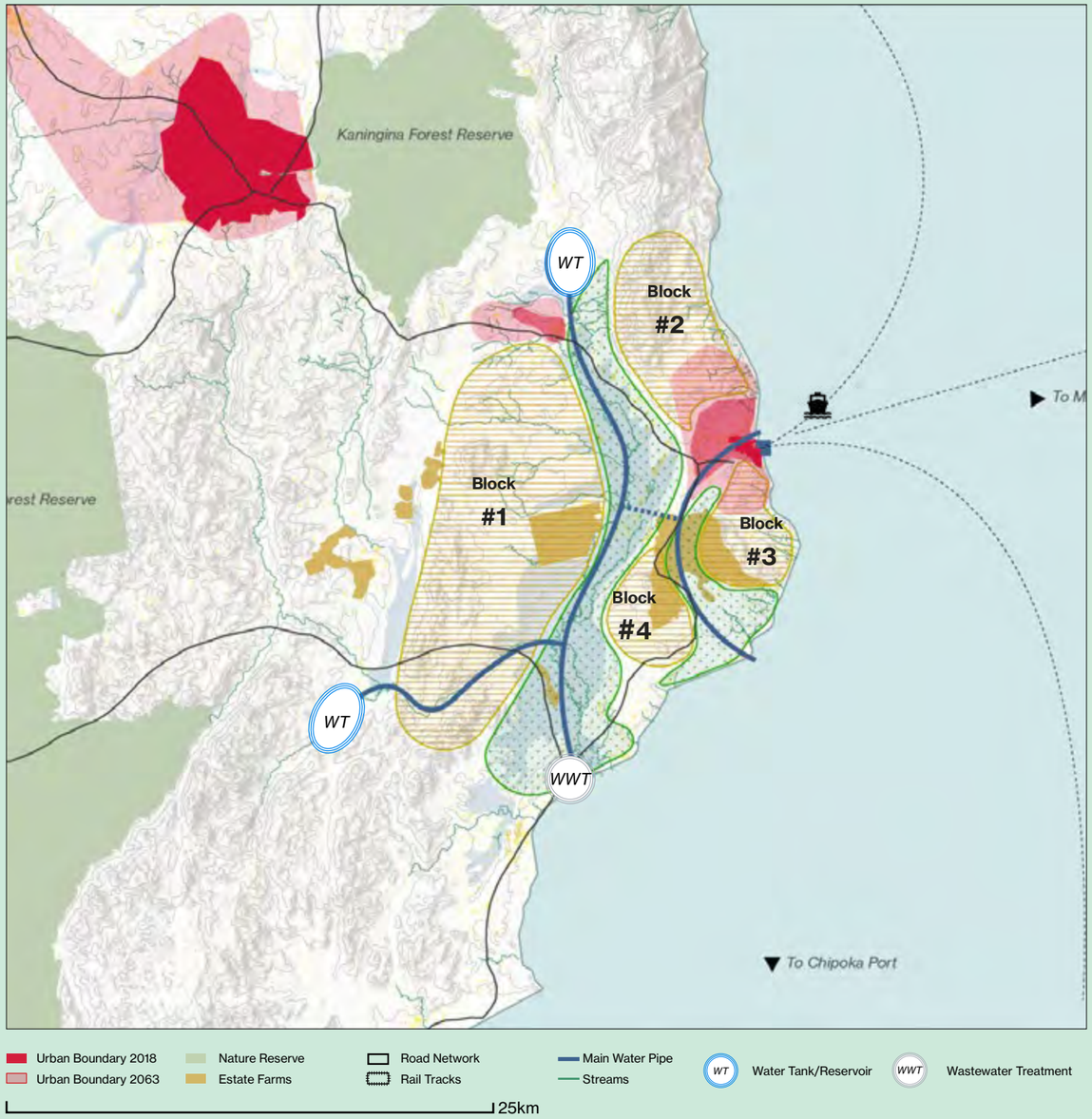
	Base Scenario 2018	Status Quo - Sprawled 2063	Moderate Scenario 2063	Compact Scenario 2063
Total Surface Area (ha)	90,215	90,215	90,215	90,215
Arable Land (ha)	31,915	31,915	31,915	31,915
Non-Arable Land (Forest and Conservation Lands) (ha)	58,300	58,300	58,300	58,300
Crop Land / Small Farms (ha)	27,891	25,081	24,377	18,214
Crop Land / Commercial Farms (ha)	3,873	3,873	5,000	10,000
Settlement Area (urban footprint - ha)	151	2,961	2,538	3,701
Urban Density (people per - ha)	51.9	60.0	70.0	80.0
Percent Urban Population	5%	30%	40%	50%
Total Population	143,519	592,237	444,178	592,237
Urban Population	7,831	177,671	177,671	296,118
Rural Population	135,688	414,566	266,506	296,118
# of Households (total)	25,841	106,634	79,975	106,634
Household Members Ave.	5.6	5.55	5.55	5.55
# of Households (rural)	24,431	74,643.80	47,985	53.317
Land per Family Average (ha)	1.1	0.34	0.51	0.34

Nkhata Bay
Lakeside extension to the northern region capital

Nkhata Bay area will grow from 143,226 inhabitants in 2018, to 286,401 in 2040; and 591,028 in 2063. If the urban growth is controlled, the lands north and south of the urban boundary would be dedicated to commercial agriculture. The lowland west of the urban center would be ideal for rice geowing. Along its western edge could run the main water pipe to service both Nkhata Bay center as well as the agricultural lands around. The water reservoirs would be located on the higher points of the mountains. The wetland near the lake would have a wastewater treatment area.



Aerial view of Nkhata Bay town with the port at the center



Nkhata Bay

Project clustering scheme

□ **Urban Development**

I13 Nkhata Bay Transit-oriented Industrial and Commercial Development

○ **Infrastructure**

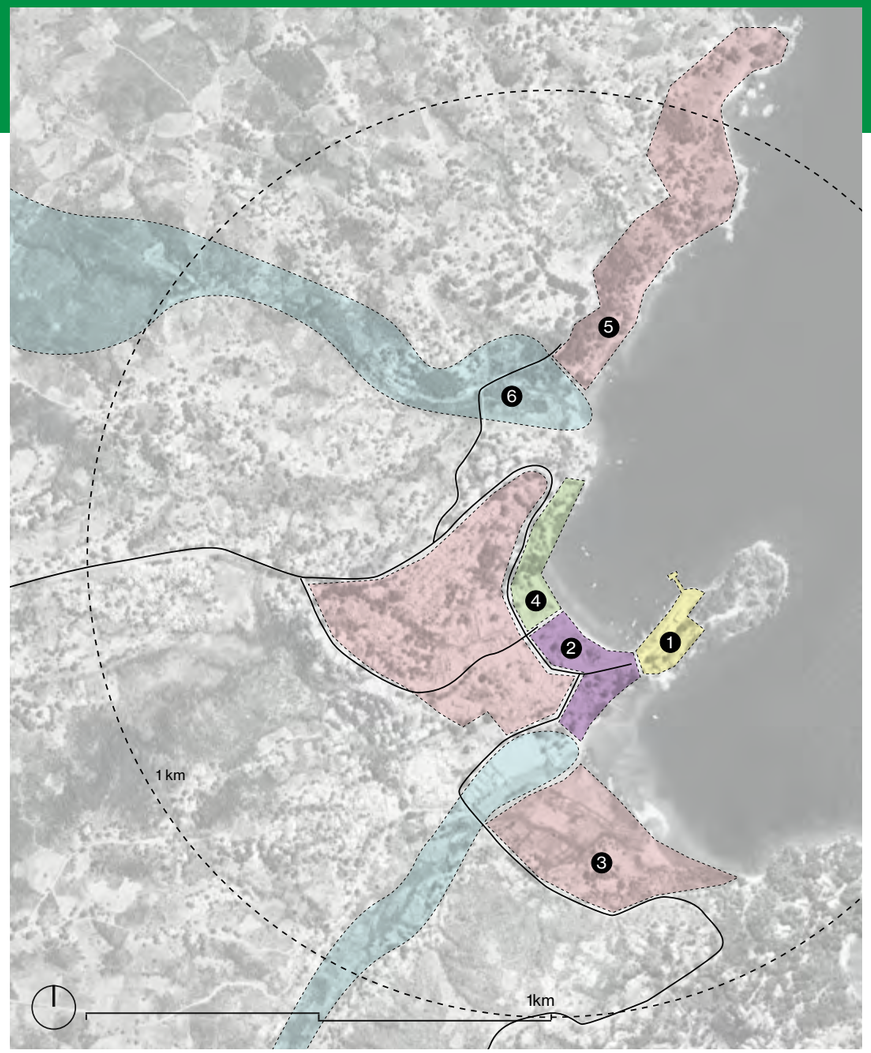
T11 MIP-1 Flagship Ports and jetties: Likoma, Nkhotakota, Nkhata Bay, Monkey Bay, Chilumba
T32 M5 road between Mzuzu and Nkhata-bay
T33 M18 road to Nkhotakota and Mchinji
W12 Nkhata Bay Water Supply and Sanitation Project

△ **Natural Resources**

TO4 MIP-1 Flagship: Malawi Lakeshore Tourism Development Program (Mangochi, Liwonde, Karonga, Nkhata Bay, Salima)
EP29 Nkwadzi Hill Forest Reserve
EP1 Kandoli Forest Conservation Project
CC4 Nkhatabay Flood Zone Mangement and Green Infrastructure

EP2 Fish Conservation Project
F10 Nkhata Bay Fisheries Development
A17 Vizara Rubber Estate
A18 Chombe Tea Estate
A19 Kawalazi Tea Estate
A29 Luweya Irrigation Scheme
A30 Limphasa Irrigation Scheme
A31 Commercial and Small Farm Development for Nkhatabay
F10 MIP-1 Flagship: Sustainable Aquaculture and Fisheries Development (Nkhata Bay Fisheries)

- Urban Footprint 2020
- Urban Footprint Projection
- Nature Reserves
- Agricultural Lands
- Water Resources
- Irrigation



Nkhata Bay

Project clustering scheme - Project references

1- Nkhatabay Jetty Rehabilitation (T11)
Connects to: Chilumba, Nkhotakota, Chipoka, Monkey Bay, Likoma ports, Itungi and Mbamba Bay ports in Tanzania.

Rehabilitation Area: 1.15 Ha Proposed FAR: 0.75

2- Nkhatabay Transit-oriented Industrial Center Development (I13)
Area : 2.5 Ha Proposed FAR: 0.75

3- Nkhatabay Transit-oriented Commercial Center Development (I13)
Existing Commercial Area: 13 Ha Potential Cost: TBC
Proposed Extension Area: Proposed FAR: 2

4- Nkhatabay Fisheries Development (F10)
Area: 1.7 Ha

5- Development of Public Beaches along the Shores of Lake Malawi (TO4)
Length : 10 Ha Proposed FAR: 2

6- Nkhatabay Flood Zone Management and Green Infrastructure Plan (CC4)
Area : -

1- Zanzibar ferry terminal


4- Grouper fingerlings indoor hatchery, Taiwan


5- Mwanza commercial boardwalk, Tanzania


6- Wetland in industrial district, Zanzibar, Tanzania

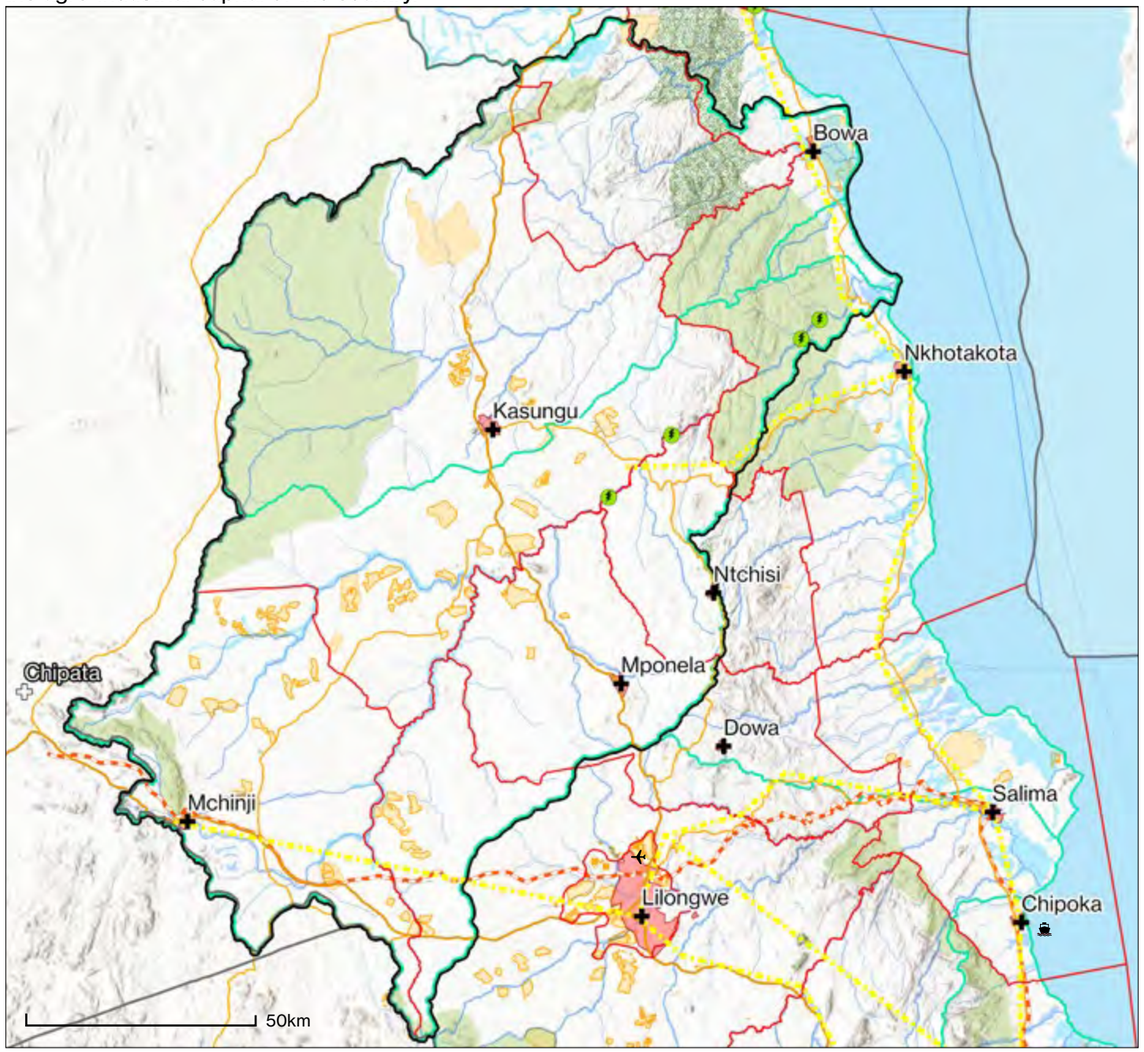
03 Kasungu
Agri-Industrial National Center

Agri-industrial zone development: A case study from China. Photo credit: Prologis.

Kasungu
District and watershed boundaries

Kasungu is the urban center of Kasungu district, central region of Malawi, known for its fertile soils and history of agricultural excellence. As a city with a high concentration of estates, Kasungu could be a potential asset for development plans that require large plots of titled lands. As an inland city, it would benefit from the rehabilitation of its airport facility, around which an economic zone could make Kasungu the agro-industrial capital of the country.

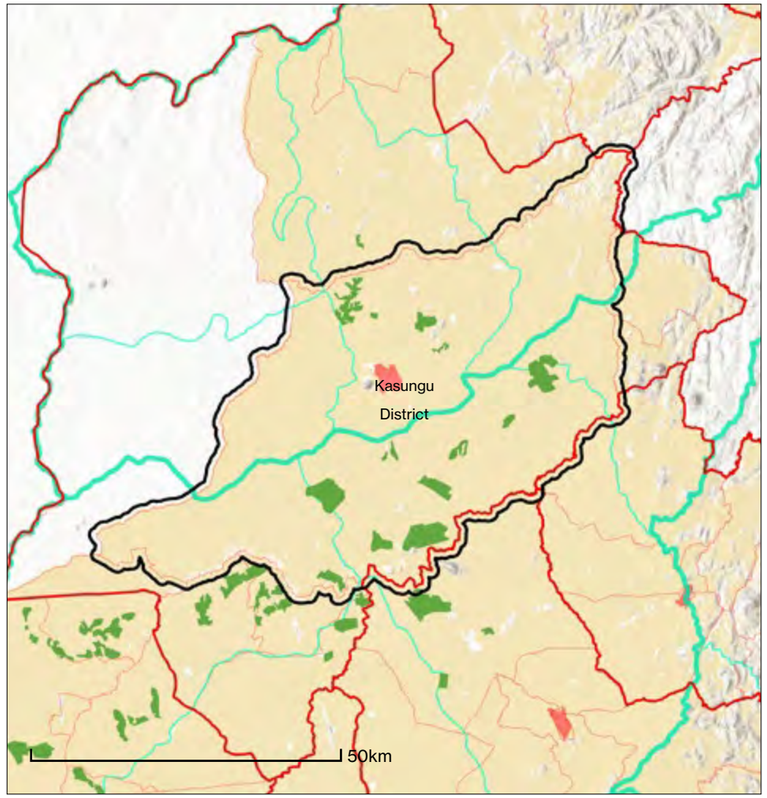
Through its airport, productive farmlands, and proximity to Lilongwe, Kasungu would be able to provide essential services and nutrition to settlements of the central plateau and divert some urban dwellers from Lilongwe to its city center.



Data sources: RCMRD, Open Street Map; USGS / NASA SRTM DEM; Facebook Connectivity Lab; CIESIN, Columbia University; DigitalGlobe; Malawi Spatial Data Platform (MASDAP)

Kasungu

Land use scenario planning



DISTRICT	TA JURISDICTIONS
Kasungu	Kasungu Boma
Kasungu	STA Chambwe
Kasungu	STA Mangwazu
Kasungu	STA Mawawa
Kasungu	TA Chilowamatambe
Kasungu	TA Kaomba
Kasungu	TA Kawamba
Kasungu	TA Lukwa
Kasungu	TA Mwase
Kasungu	TA Njombwa
Kasungu	TA Wimbe

WATERSHED UNITS
5C, 5D, 5F, 6B, 6C, 6D

The Table below uses projection scenarios to illustrate local land constraints for Kasungu area. Year 2018 is taken as a base and three possible scenarios are projected for the year 2063, using the district's growth rate from the last decade.

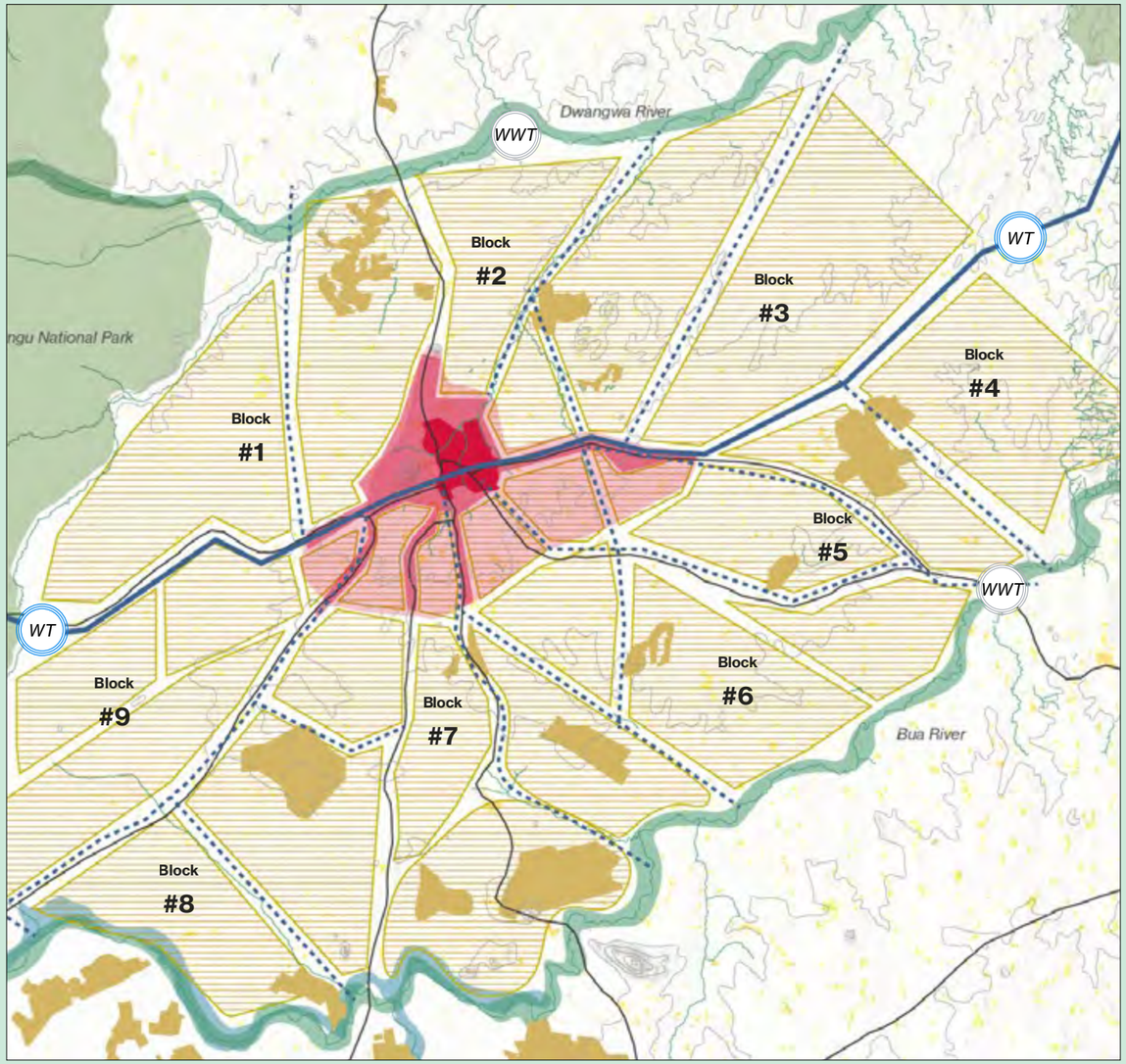
First, a *status-quo* 2063 scenario projects an urban density and urban population growth not too far from the 2018 trend. In this scenario, it becomes clear that as the population grows with an urban density of 40 people/ha, the urban settlement footprint would grow almost 11 times; which would in turn have a negative impact on the availability of land per family, dropping from 3.2 ha/family to 0.77 ha/family. Second, the moderate scenario 2063 assumes a higher urban density of 60 people/ha, which would constrain the expansion of the settlement area and in turn increase the land per family average area to 1.23 ha.
Lastly, the compact scenario 2063 applies an even higher urban density of 80 people/ha, as well as a 50% of the population living in urban areas. This allows smallholder families to have access to 1.05/ha per family. Apart from dedicating land for small farms, the moderate and compact scenarios also increase the capacity for commercial farms from 1,058 ha in 2018 to 10,899 ha in 2063 moderate scenario and 21,798 ha in 2063 compact scenario.

In conclusion, in order to maintain smallholder farming viability in rural areas, it is essential to make room for cities to grow as well as apply a high population density.

	Base Scenario 2018	Status Quo - **Sprawled 2063**	**Moderate Scenario 2063**	**Compact Scenario 2063**
Total Surface Area (ha)	287,509	287,509	287,509	287,509
Arable Land (ha)	279,186	279,186	279,186	279,186
Non-Arable Land (Forest and Conservation Lands) (ha)	8,323	8,323	8,323	8,323
Crop Land / Small Farms (ha)	276,735	252,121	257,510	243,917
Crop Land / Commercial Farms (ha)	1,058	10,899	10,899	21,798
Settlement Area (urban footprint - ha)	1,393	16,166	10,777	13,471
Urban Density (people per - ha)	39.1	40.0	60.0	80.0
Percent Urban Population	12%	30%	40%	50%
Total Population	458,371	2,155,424	1,616,568	2,155,424
Urban Population	54,446	646,627	646,627	1,077,712
Rural Population	403,925	1,508,797	969,941	1,077,712
# of Households (total)	99,084	465,928	349,446	465,928
Household Members Ave.	4.6	4.63	4.63	4.63
# of Households (rural)	87,315	326,149.95	209,667	232,964
Land per Family Average (ha)	3.2	0.77	1.23	1.05

Kasungu
Agri-industrial national center

Kasungu area will grow from 373,567 inhabitants in 2018, to 796,262 in 2040; and 1,756,645 in 2063. If the urban growth is controlled, the land all around the urban boundary would be dedicated to commercial agriculture. A buffer would protect Dwanga and Bua rivers. A main pipe running parallel to the rivers and cutting through the urban center would connect the highest points on the two adjacent mountains.



Aerial view of Kasungu town center

Kasungu

Project clustering scheme

□ Urban Development

I14 Kasungu Transit-oriented Industrial and Commercial Development

○ Infrastructure

T24 Kasungu Airport Rehabilitation
T25 M1 road to Lilongwe and Mzuzu
T33 M18 road to Nkhotakota and Mchinji

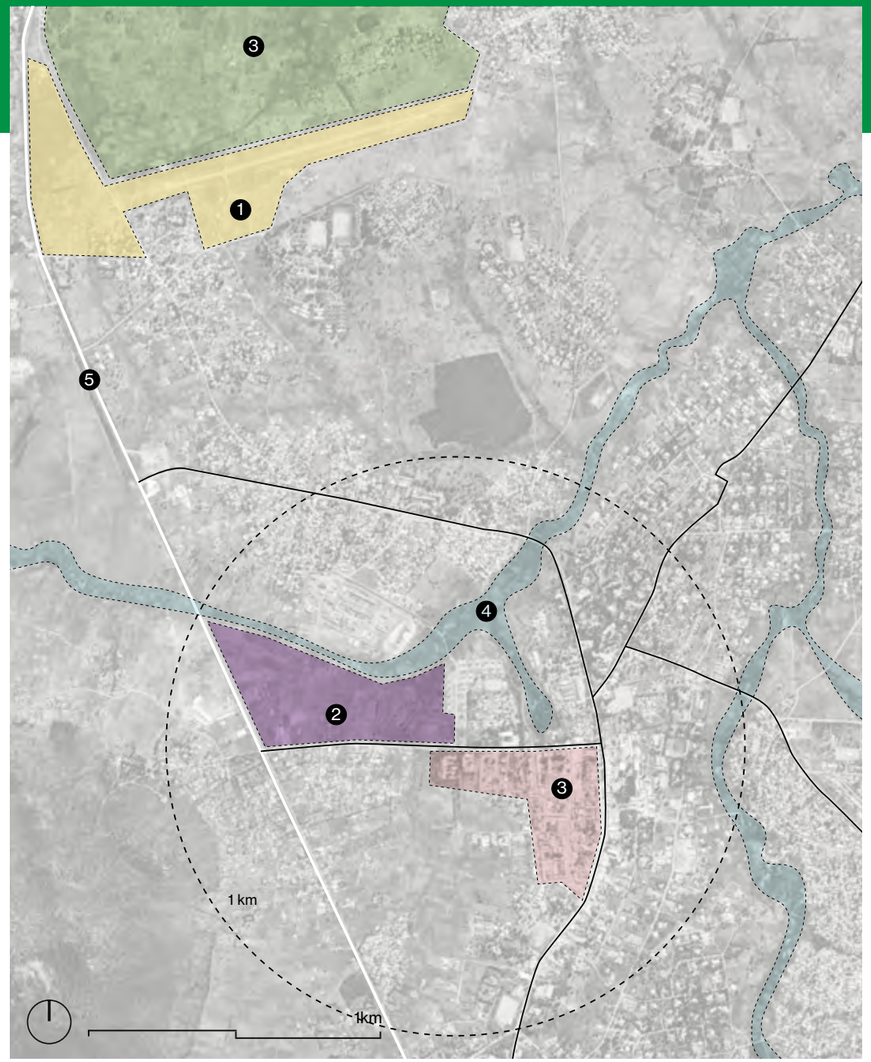
W8 Dwangwa Multi-purpose Dam
W15 Development of Multi-purpose Dam and Integration of Water Supply Schemes for Kasungu
W28 Chitete Dam
E9/10/11/12 Bua River Series of Hydro-electric Dams (Mbongozi, Malenga, Chasombo, Chizuma)

△ Natural Resources

EP28 Bua River Buffer Zone
EP29 Dwangwa River Buffer Zone
EP32 Kasungu National Park
EP31 Nkhotakota Wildlife Reserve
CC7 Kasungu Green Infrastructure Plan

A10 Exagris Ngala Estate
A12 Multiple Press Agriculture Estates around
A20 Dumbo Farming/Conservation Policy Development
A31 Commercial and Small Farm Development for Kasungu

Urban Footprint 2020
Urban Footprint Projection
Nature Reserves
Agricultural Lands
Water Resources
Irrigation



Kasungu

Project clustering scheme - Project references

1- Kasungu Airport Rehabilitation (T24)
Connects to: Lilongwe and Blantyre Airports
Airport Area: 55 Ha Proposed FAR: 0.75

2- Kasungu Transit-oriented Commercial Center Development (I14)
Existing Market Area : 66 Ha
Extension Area: 27 Ha Proposed FAR: 2

3- Kasungu Transit-oriented Industrial Center Development (I14)
Area: 220 Ha

4- Kasungu Green Infrastructure Plan (CC7)
Area - 15 Ha

5- M1 road to Lilongwe and Mzuzu (T25)
Length : 66 Ha


2- Transit-oriented development, Johannesburg, RSA


3- Tnuva dairy plant, Beer Tuvia, Israel


3- Special Economic Zone, Kigali, Rwanda

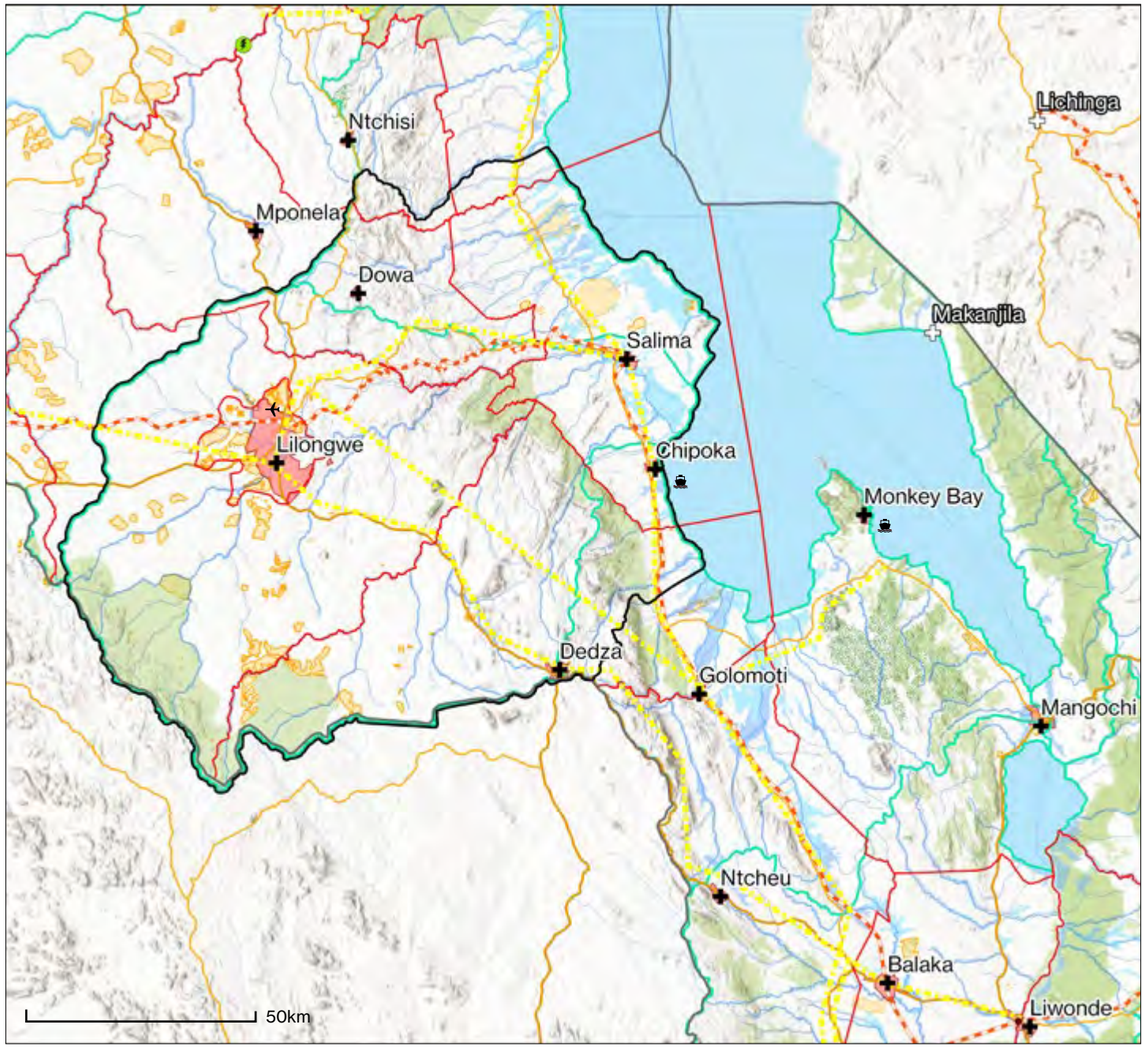

4- Urban green infrastructure, Edrina, Turkey

04 Salima/Chipoka
Logistics and Industrial Lakeside National Center

Freight activity near an industrial port: A case study from Los Angeles, US. Photo credit: Port of Los Angeles.

Salima/Chipoka
District and watershed boundaries

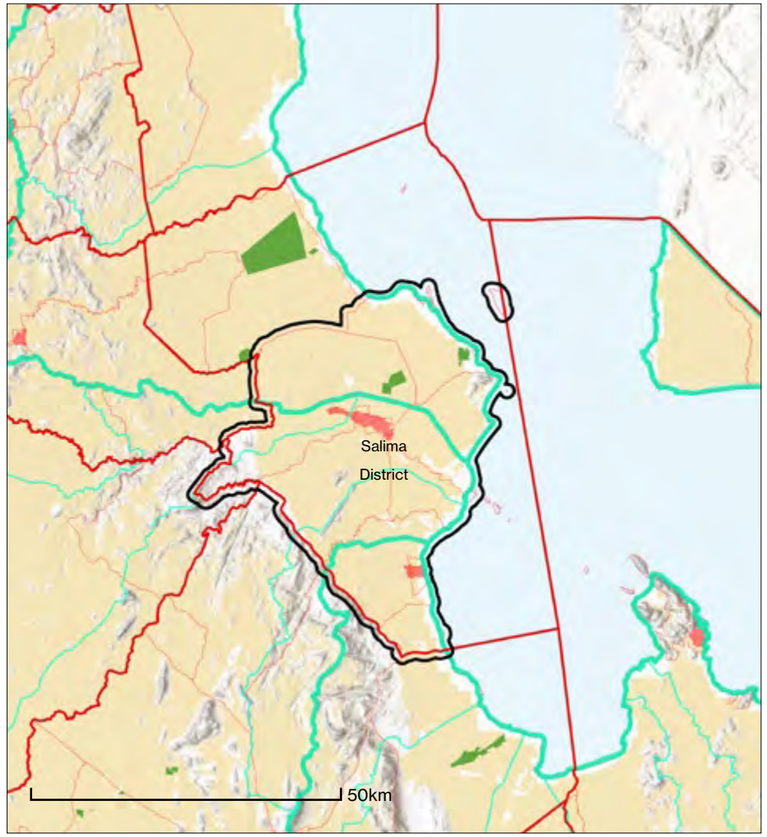
Chipoka is the closest waterfront to the capital Lilongwe. It is also the only point in the country where rail and lake port meet. Chipoka is close to and connected to Salima, an urban administrative hub, via rail, as well as Senga Bay, a touristic hub with great potential for expansion. The rehabilitation and development of the port district with industrial, fisheries and passenger facilities could transform Chipoka into the national and regional center for industry and logistics. The establishment of a major fisheries sector at Chipoka would also provide economic diversification for smallholders in the area as well as support food diversification programs. Furthermore, the area's beaches and natural beauty would allow for the development of a commercial waterfront attracting both local and international tourists.



Data sources: RCMRD, Open Street Map; USGS / NASA SRTM DEM; Facebook Connectivity Lab; CIESIN, Columbia University; DigitalGlobe; Malawi Spatial Data Platform (MASDAP)

Salima/Chipoka

Land use scenario planning



DISTRICT	TA JURISDICTIONS
Salima	Chipoka Urban
Salima	Salima Town
Salima	TA Kambalame
Salima	TA Kambwiri
Salima	TA Karonga
Salima	TA Kuluunda
Salima	TA Maganga
Salima	TA Ndindi
Salima	TA Pemba

WATERSHED UNITS
15A, 3F ,4A, 4B, 4C

The Table below uses projection scenarios to illustrate local land constraints for Salima area. Year 2018 is taken as a base and three possible scenarios are projected for the year 2063, using the district's growth rate from the last decade.

First, a *status-quo* 2063 scenario projects an urban density and urban population growth not too far from the 2018 trend. In this scenario, it becomes clear that as the population grows with an urban density of 40 people/ha, the urban settlement footprint would grow almost 7 times which would in turn have a negative impact on the availability of land per family, dropping from 2 ha/family to 0.31 ha/family. Second, the moderate scenario 2063 assumes a higher urban density of 60 people/ha, which would constrain the expansion of the settlement area and in turn increase the land per family average area to 0.50 ha.
Lastly, the compact scenario 2063 applies an even higher urban density of 80 people/ha, as well as a 50% of the population living in urban areas. This allows smallholder families to have access to 0.43/ha per family. Apart from dedicating land for small farms, the conservative and compact scenarios also increase the capacity for commercial farms from 1,058 ha in 2018 to 2,000 ha in 2063 moderate scenario and 4,000 ha in 2063 compact scenario.

In conclusion, in order to maintain smallholder farming viability in rural areas, it is essential to make room for cities to grow as well as apply a high population density. However, even with a compact scenario, there is a need to further urbanize, in order to make smallholder farming viable.

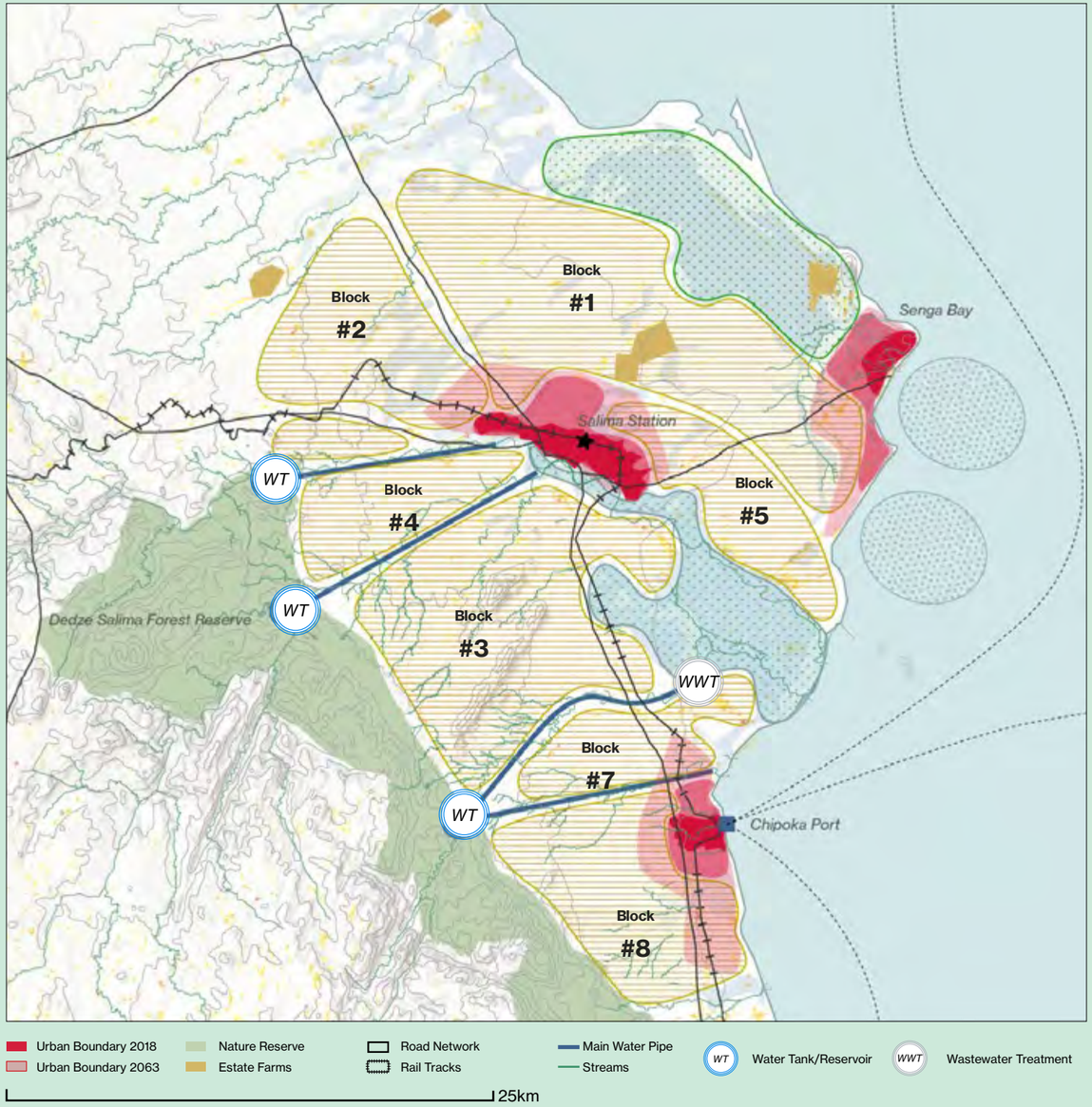
Here, other industries such as fishing and aquaculture as well as tourism would bring additional livelihood for the population.

	Base Scenario 2018	Status Quo - **Sprawled 2063**	**Moderate Scenario 2063**	**Compact Scenario 2063**
Total Surface Area (ha)	145,925	145,925	145,925	145,925
Arable Land (ha)	121,910	121,910	121,910	121,910
Non-Arable Land (Forest and Conservation Lands) (ha)	24,015	24,015	24,015	24,015
Crop Land / Small Farms (ha)	118,537	104,241	108,863	104,068
Crop Land / Commercial Farms (ha)	1,058	1,058	2,000	4,000
Settlement Area (urban footprint - ha)	2,315	16,611	11,074	13,842
Urban Density (people per - ha)	32.5	40.0	60.0	80.0
Percent Urban Population	22%	30%	40%	50%
Total Population	347,759	2,214,755	1,661,066	2,214,755
Urban Population	75,305	664,426	664,426	1,107,377
Rural Population	272,454	1,550,328	996,639	1,107,377
# of Households (total)	75,417	480,304	360,228	480,304
Household Members Ave.	4.61	4.61	4.61	4.61
# of Households (rural)	59,086	336,213	216,237	240,152
Land per Family Average (ha)	2.0	0.31	0.50	0.43

Salima/Chipoka
Logistics and industrial lakeside national center

Salima area will grow from 372,202 inhabitants in 2018, to 920,170 in 2040; and 2,370,424 in 2063. Salima would develop to become the main urban, administrative and political center of the area, with Chipoka its port industrial city and Senga Bay the resort town. The lowlands would be protected and dedicated to wastewater treatment as well as rice or other cultivation while the highlands would be active for commercial agriculture.
The highest points along this stretch would have the water reservoirs that serve the ag lands as well as the urban centers of Salima and Chipoka.

Aerial view of Chipoka town center with the port at the center



Salima/Chipoka

Project clustering scheme

Urban Development

I5 Chipoka Transit-oriented Industrial and Commercial Development
TO5 Chipoka Commercial Boardwalk
TO4 MIP-1 Flagship: Malawi Lakeshore Tourism Development Program (Mangochi, Liwonde, Karonga, Nkhata Bay, Salima)

Infrastructure

T5 Admarc Salima Rehabilitation
T8 Chipoka Port Rehabilitation
T16 Nkaya Mchinji Rail Line Rehabilitation
T26 Chipoka Multi-modal Hub
T27 Senga Bay Jetty

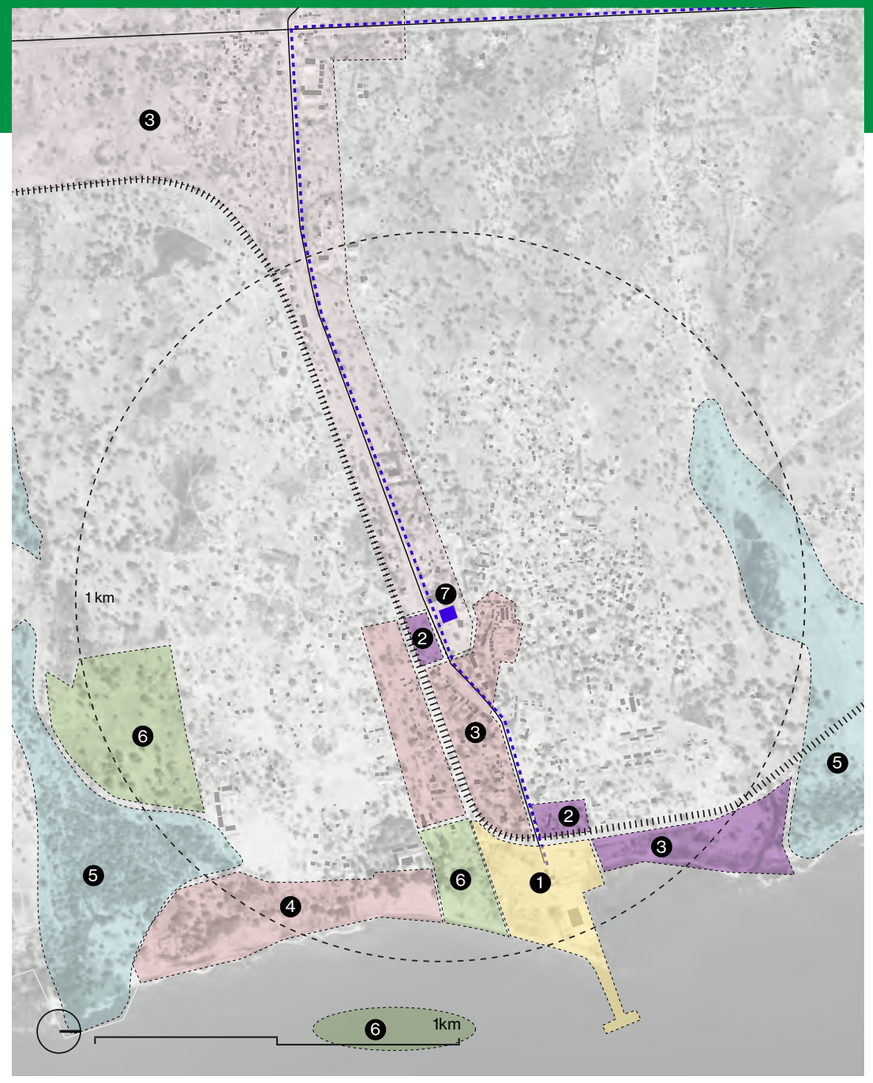
W8 MIP-1 Flagship: Salima-Lilongwe Water Supply Project
W11 Lilongwe Water Project/Diamphwe Multi-purpose dam
W24 Chipoka Town Water and Sanitation Project

Natural Resources

CC2 Salima/Chipoka Flood Zone Management and Green Infrastructure Plan
EP5 Thuma Forest Reserve and Ecosystem Management
EP6 Dedza-Salima Forest Reserve

F7 MIP-1 Flagship: Sustainable Aquaculture and Fisheries Development (Chipoka Fisheries)
A10 Exagris Nakondwa Estate
A16 Lifuwu Rice Scheme
A24 GBA:Nthola-Illora-Ngosi Irrigation Scheme
A31 Commercial and Small Farm Development for Salima/Chipoka

- Urban Footprint 2020
- Urban Footprint Projection
- Nature Reserves
- Agricultural Lands
- Water Resources
- Irrigation



Salima/Chipoka

Project clustering scheme - Project references

1- Chipoka Port Rehabilitation (T8)

Connects to: Mangochi, Monkey Bay, Nkhotakota, Nkhata Bay, Likoma, Chilumba ports in Malawi and Itungi, Mbamba Bay Ports in Tanzania

Fishing: Area - 3.8 Ha Proposed FAR: 2
Freight: Area - 5.3 Ha

2- Chipoka Multi-modal Hub (T26)

31 km from Salima, 125 km from Lilongwe

Logistics Station: Area - 9.5 Ha Proposed FAR: 2
Passenger Station: Area - 6.5 Ha

3- Chipoka Transit-oriented Commercial and Industrial Center Development (I5)

Existing Market: Area - 6.8 Ha
Extension of Com. Center: area- 43 Ha Proposed FAR: 4
Industrial Center: Area - 7.6 Ha Proposed FAR: 2

4- Chipoka Commercial Boardwalk (TO5)

Area - 15 Ha Proposed FAR: 2.5

5- Salima/Chipoka Flood Zone Management and Green Infrastructure Plan (CC2)

Area - N/A

6- Chipoka Fishing and Aquaculture (F7)

Area - 119.5 Ha

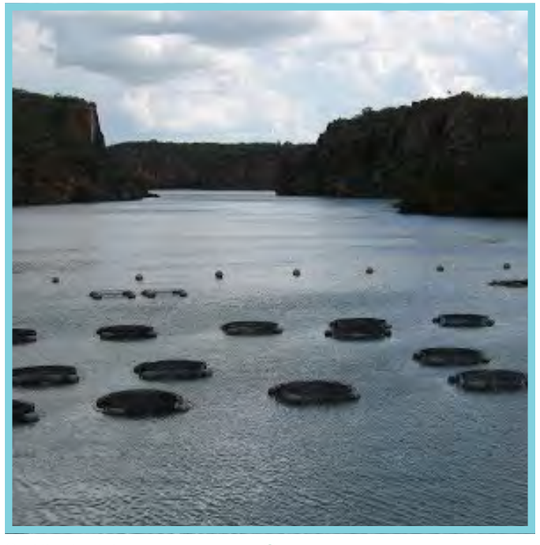
7- Chipoka Town Water Supply and Sanitation Project (W24)

To serve 250,000 people (by 2040)

1 - Fishing port, Tema, Ghana

3 - Grandi fish processing plant, Reykjavík, Iceland

4 - Durban coastal boardwalk



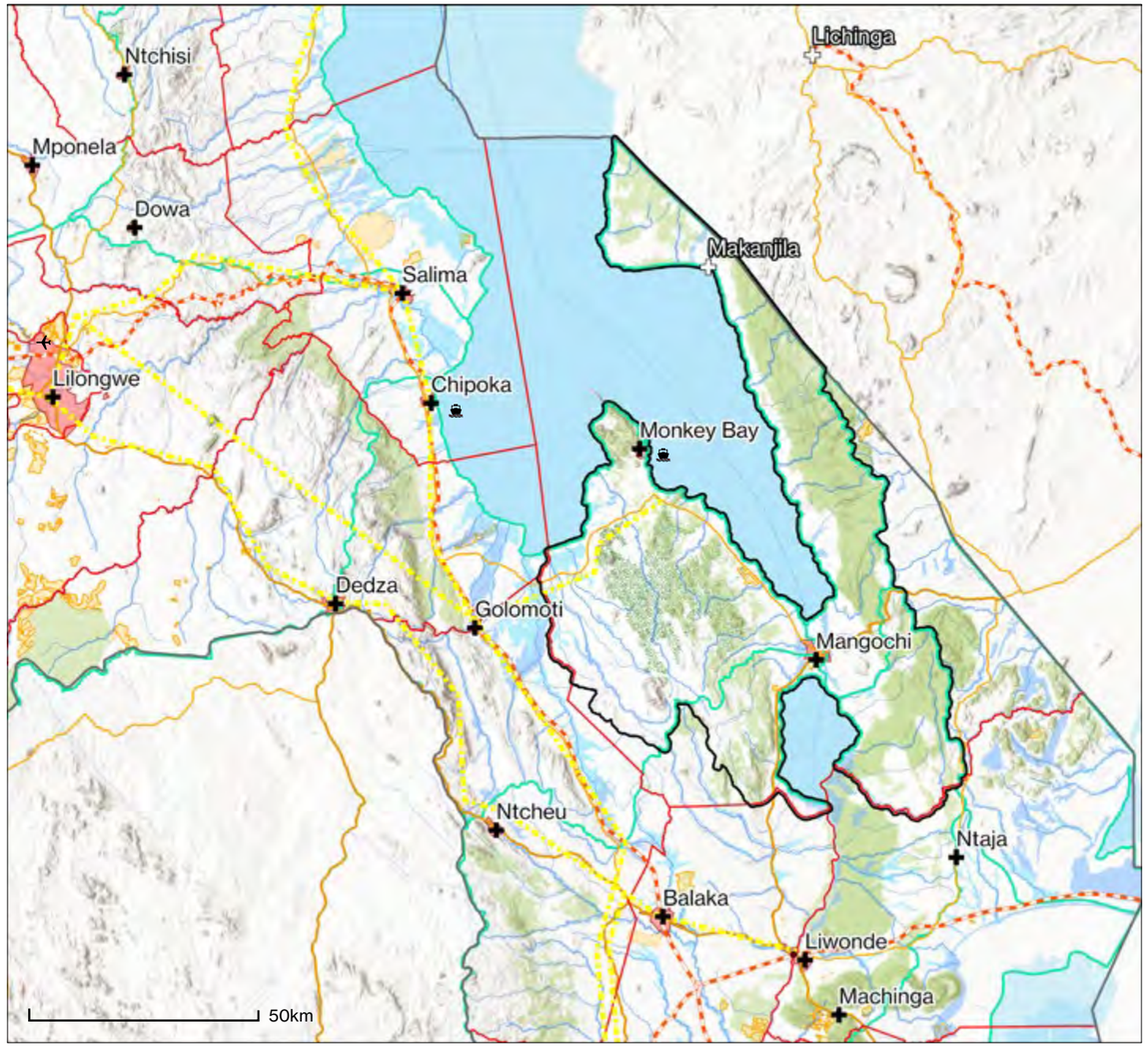
6- Tilapia fish farming cages, Greece

05 Mangochi / Monkey Bay
National Tourism Center

Beachfront Development: A case study from Florida. Photo Credit: Tammon, Pixabay.

Mangochi / Monkey Bay
District and watershed boundaries

The cities of Mangochi boma and Monkey Bay are both located along the Southern shores of Lake Malawi, in Mangochi district. Mangochi is the district capital and the larger city of the two, while Monkey Bay is located at the northern end of the Nankumba Peninsula, presenting a beautiful natural harbor currently used by the army as its main port facilities. The pristine nature around Monkey Bay, with the development of a robust international conference and eco-tourism sector, could transform the area into the main tourism attraction of the country. Alongside tourism, industrial and economic zones could also be established with the development of ports both in Mangochi and Monkey bay, connecting to the Central and Northern regions of the country, as well as to neighboring countries.



Data sources: RCMRD, Open Street Map; USGS / NASA SRTM DEM; Facebook Connectivity Lab; CIESIN, Columbia University; DigitalGlobe; Malawi Spatial Data Platform (MASDAP)

Mangochi/Monkey Bay

Land use scenario planning

DISTRICT	TA JURISDICTIONS
Mangochi	Mangochi Boma
Mangochi	Monkey Bay Town
Mangochi	TA Jalasi
Mangochi	TA Mbwana Nyambi
Mangochi	TA Chimwala
Mangochi	TA Chowe
Mangochi	TA Mponda
Mangochi	TA Nankumba
Mangochi	Lake Malawi National Park

WATERSHED UNITS
10A, 1A, 3A, 3B, 3C

The Table below uses projection scenarios to illustrate local land constraints for the Mangochi area. Year 2018 is taken as a base and three possible scenarios are projected for the year 2063, using the district's growth rate from the last decade.

First, a *status-quo* 2063 scenario projects an urban density and urban population growth not too far from the 2018 trend. In this scenario, it becomes clear that as the population grows with an urban density of 50 people/ha, the urban settlement footprint would grow almost 11 times which would in turn have a negative impact on the availability of land per family, dropping from 1.8 ha/family to 0.31 ha/family. Second, the moderate scenario 2063 assumes a higher urban density of 60 people/ha, which would constrain the expansion of the settlement area and in turn increase the land per family average area to 0.49 ha.
Lastly, the compact scenario 2063 applies an even higher urban density of 80 people/ha, as well as a 50% of the population living in urban areas. This allows smallholder families to have access to 0.42/ha per family. Apart from dedicating land for small farms, the conservative and compact scenarios also increase the capacity for commercial farms from 660ha in 2018 to 1,000 ha in 2063 moderate scenario and 2,000 ha in 2063 compact scenario.

In conclusion, in order to maintain smallholder farming viability in rural areas, it is essential to make room for cities to grow as well as apply a high population density. However, even with a compact scenario, there is need to further urbanize, in order to make smallholder farming viable.

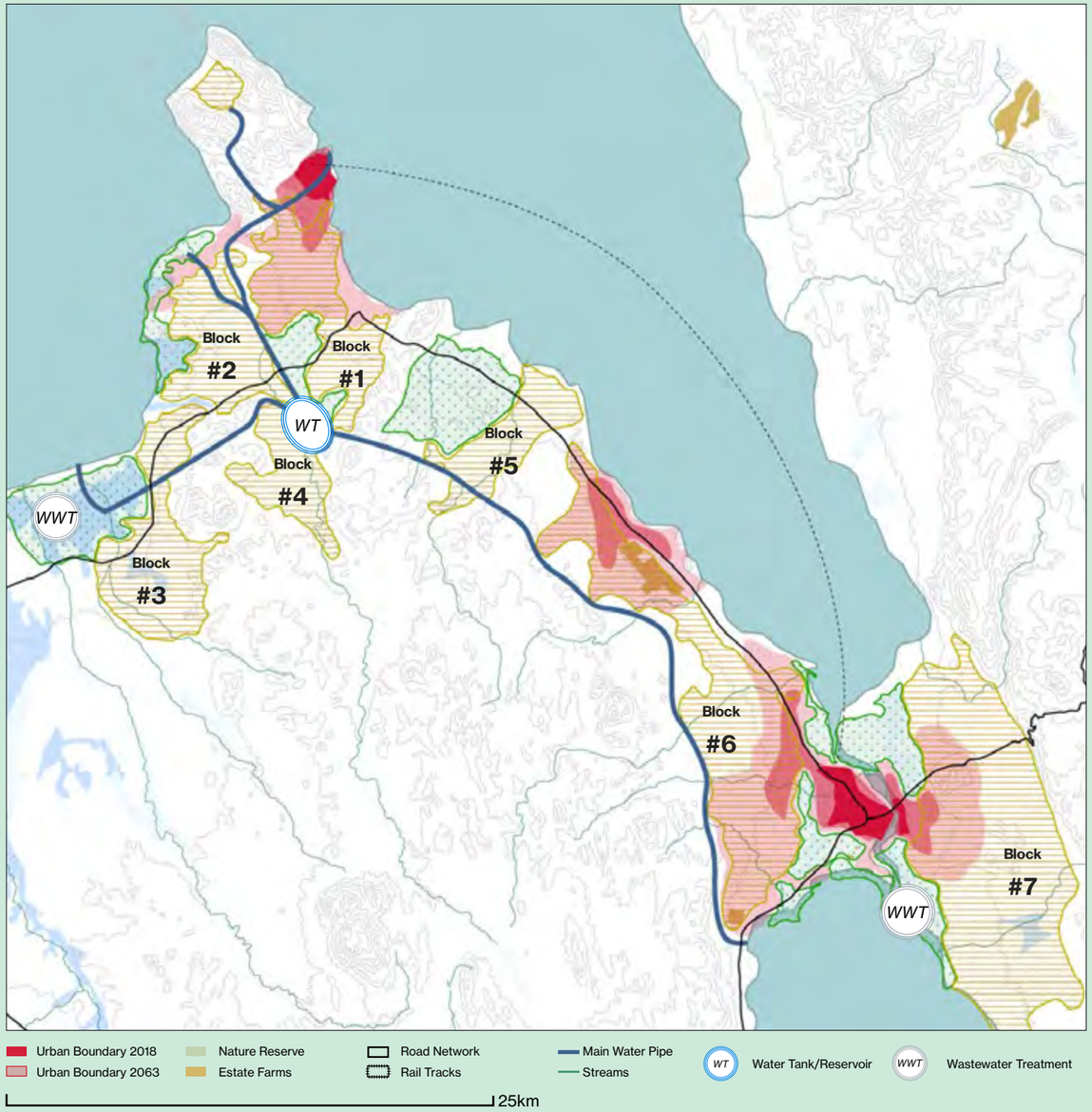
Here, other industries such as fishing and aquaculture as well as tourism would bring additional livelihood for the population.

	Base Scenario 2018	Status Quo - Sprawled 2063	Moderate Scenario 2063	Compact Scenario 2063
Total Surface Area (ha)	297,844	297,844	297,844	297,844
Arable Land (ha)	193,406	193,406	193,406	193,406
Non-Arable Land (Forest and Conservation Lands) (ha)	104,439	104,439	104,439	104,439
Crop Land / Small Farms (ha)	190,758	170,805	174,122	168,551
Crop Land / Commercial Farms (ha)	660	660	1,000	2,000
Settlement Area (urban footprint - ha)	1,988	21,941	18,284	22,855
Urban Density (people per - ha)	45.3	50.0	60.0	80.0
Percent Urban Population	16%	30%	40%	50%
Total Population	574,190	3,656,814	2,742,611	3,656,814
Urban Population	90,056	1,097,044	1,097,044.5	1,828,407
Rural Population	484,134	2,559,770	1,645,566.7	1,828,407
# of Households (total)	124,837	795,043	596,282.3	795,043
Household Members Ave.	4.60	4.60	4.60	4.60
# of Households (rural)	105,258	556,530	357,769	397,521
Land per Family Average (ha)	1.8	0.31	0.49	0.42

Mangochi/Monkey Bay
National tourism center

The Mangochi area is projected to grow from 574,190 inhabitants in 2018, to 3,656,814 in 2063. Mangochi boma would continue and develop as the main urban, administrative and political center of the area, with Monkey Bay as its port industrial city as well as service center for the Nankumba Pennisual which would be developed as the main tourism attraction of the country, for both regional and international tourists. The lowlands of the area would be protected and dedicated to wastewater treatment as well as rice or other cultivation while the highlands would be active for commercial agricultural.
The highest points along this stretch would have the water reservoirs that serve the agricultural lands as well as the urban centers of Mangochi and Monkey Bay.

Aerial view of Chipoka town center with the port at the center



Mangochi/Monkey Bay

Project clustering scheme

☐ **Urban Development**

I1 MIP-1 Flagship: Development of Special Economic Zones
TO1 Cape Maclear Tourism
TO4 MIP-1 Flagship: Malawi Lakeshore Tourism Development Program (Mangochi, Liwonde, Karonga, Nkhata Bay, Salima)
I16 Monkey Bay Transit-oriented Industrial and Commercial Development

◯ **Infrastructure**

T35 Monkey Bay Port Development
T36 Mangochi Port Development

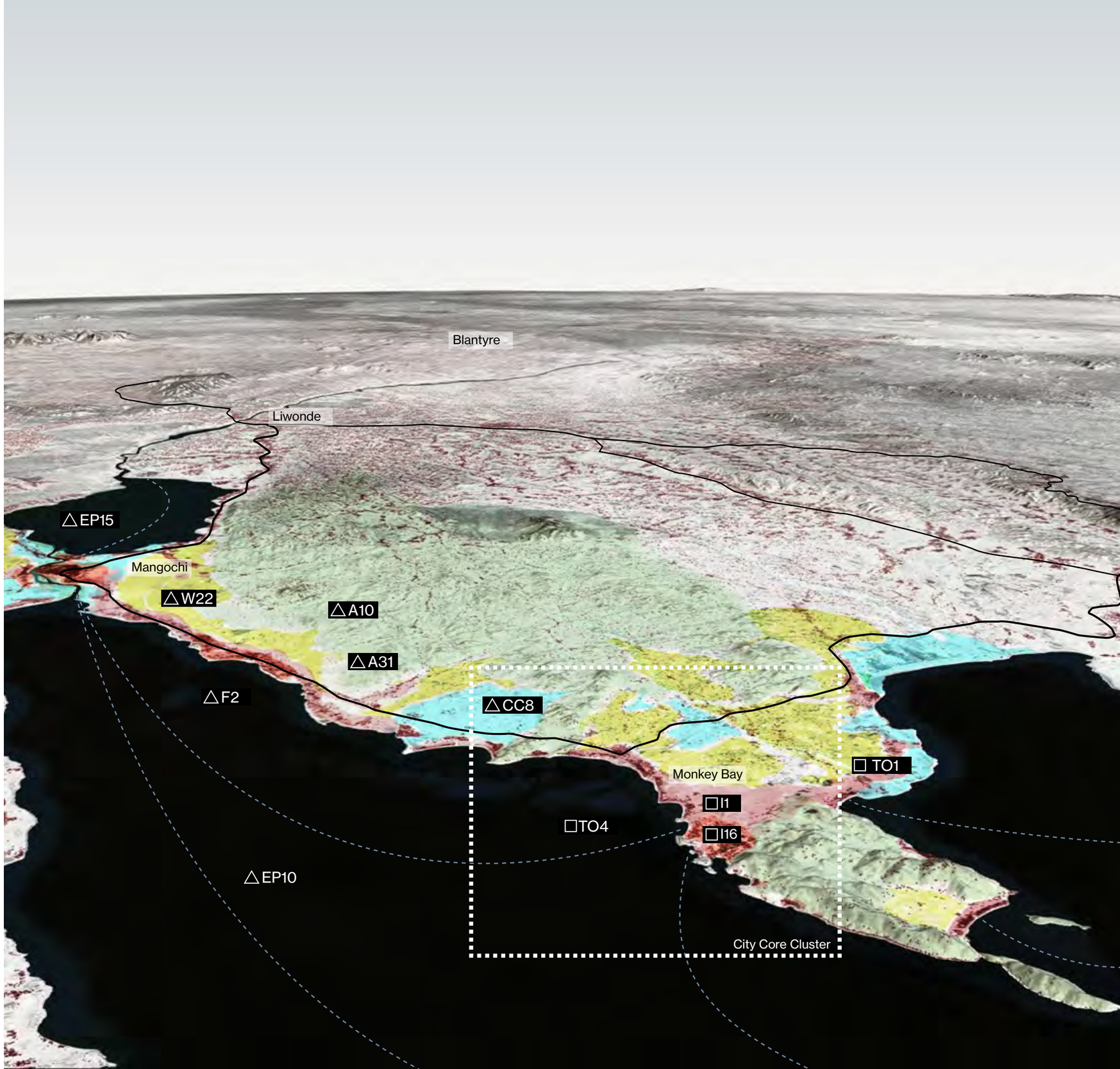
W22 Proposal for Extension of Mangochi Water Supply System to Lakeshore Areas

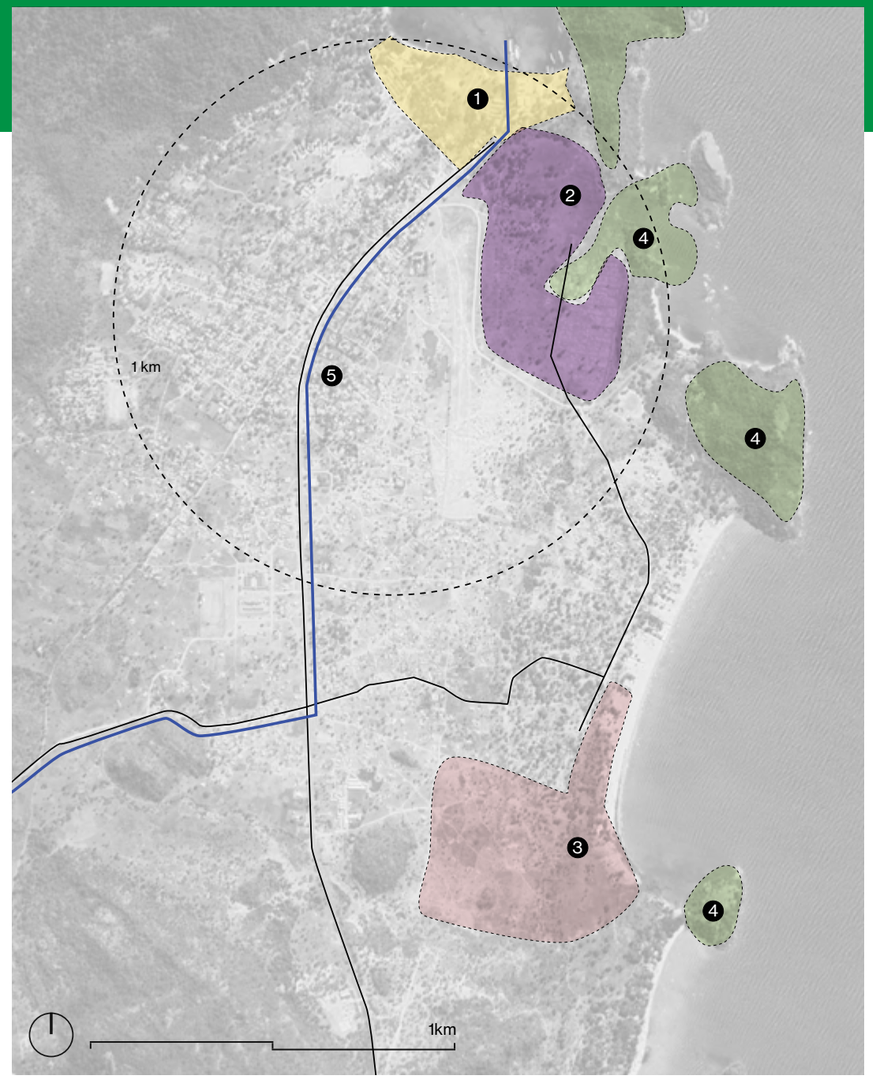
△ **Natural Resources**

CC8 Mangochi Flood Zone Management and Green Infrastructure Plan
EP10 Lake Malawi
EP15 Lake Malombe

F2 Maldeco Fisheries Development
A10 Exagris Nakondwa Estate
A31 Commercial and Small Farm Development for Mangochi/Monkey Bay

- Urban Footprint 2020
- Urban Footprint 2063
- Nature Reserves
- Agricultural Lands
- Water Resources
- Irrigation





Mangochi/Monkey Bay

Project clustering scheme - Project references

1- Monkey Bay Multi-modal Port Development (I1)
Connects to: Mangochi, Nkhotakota, Nkhata Bay, Likoma, Chipoka, Chilumba ports in Malawi and Itungi, Mbamba Bay Ports in Tanzania
Fishing: Area 20 Ha — Proposed FAR: 0.5

2- Monkey Bay Transit-oriented Mixed-Use Commercial Development (I16)
100 km from Liwonde
Logistics Station: Area - 40 Ha — Proposed FAR: 2

3- Monkey Bay Tourism Development Area - Conference Center
Area - 22 Ha — Proposed FAR: 4

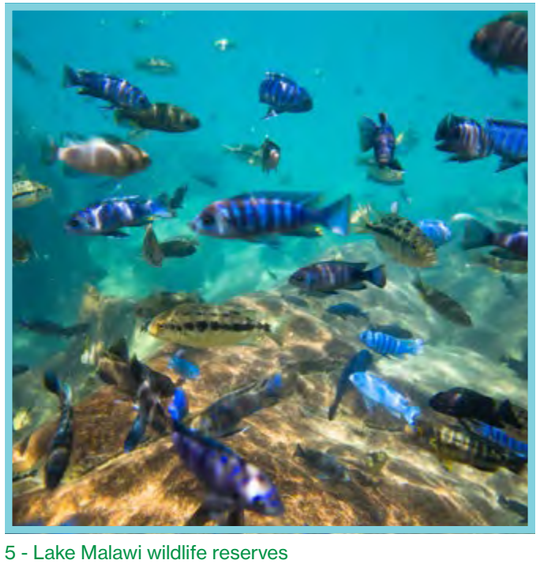
4- Monkey Bay Green Infrastructure Plan (CC8)
Area - 55 Ha — Proposed FAR: 2

5- Nankumba Peninsula Water Supply and Sanitation Project

1- Zanzibar shipping terminal


5 - Chief's camp, eco-tourism, Botswana


3 - Conference center, Cascais, Portugal

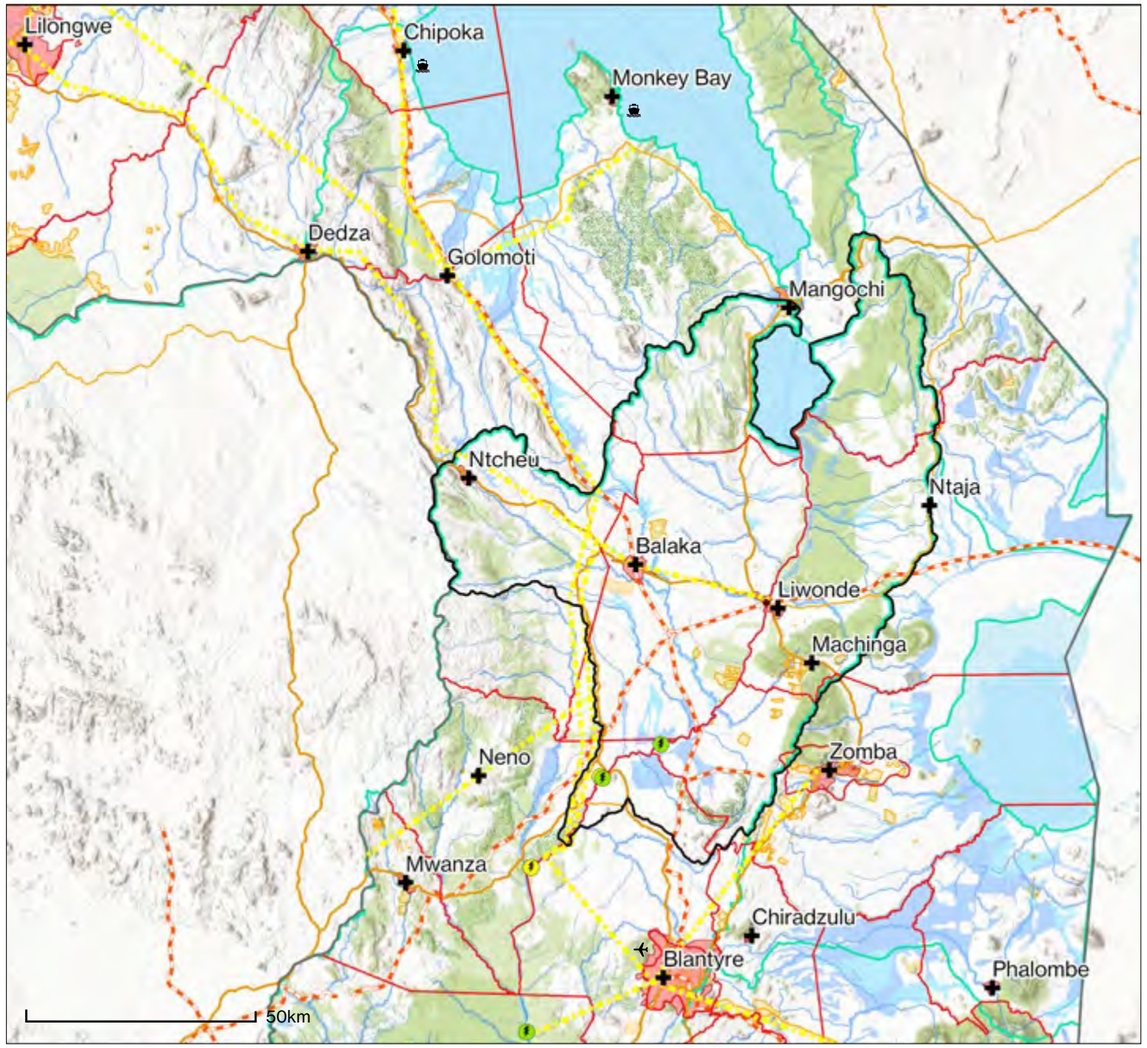

5 - Lake Malawi wildlife reserves

06 Liwonde
Commerical Agri-Center of the Upper Shire Area

A transit-oriented development: A case study from Singapore. Photo credit: Sing Studio, Shutterstock.

Liwonde
District and watershed boundaries

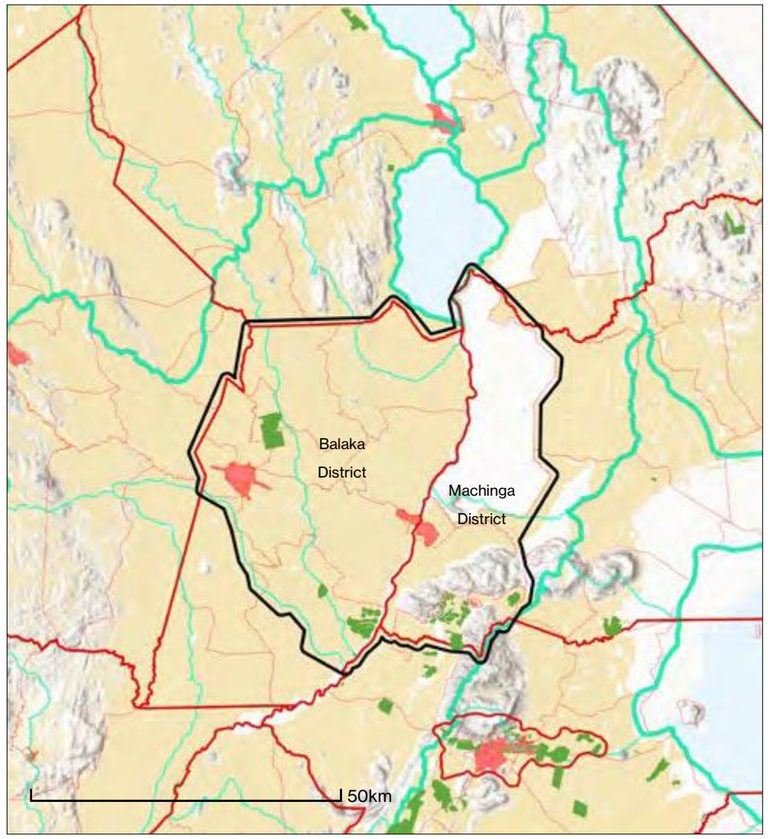
The town of Liwonde is situated at a critical regional crossroads, connecting nationally four districts (Balaka, Machinga, Mangochi and Zomba), and regionally situated on the Nacala corridor, holding the potential of becoming a great transportation and logistics hub, at the junction between two national highways and a rail line to Mozambique. Liwonde is also important as the staging area for tourists exploring the Liwonde National Park, by boat along the Shire River (all year around) or by vehicle from the southern entrance. Establishing an agro-industrial center at Liwonde would not only serve the upper Shire area, but also attract migrants from neighboring districts, who would otherwise look for opportunities



Data sources: RCMRD, Open Street Map; USGS / NASA SRTM DEM; Facebook Connectivity Lab; CIESIN, Columbia University; DigitalGlobe; Malawi Spatial Data Platform (MASDAP)

Liwonde

Land use scenario planning



DISTRICT	TA JURISDICTIONS
Balaka	Balaka Town
Balaka	Liwonde Town
Balaka	STA Kachenga
Balaka	STA Matola
Balaka	STA Toleza
Balaka	TA Amidu
Balaka	TA Chanthunya
Balaka	TA Kalembo
Balaka	TA Msamala
Balaka	TA Nkaya
Balaka	TA Sawali
Machinga	Liwonde National Park
Machinga	Liwonde Town
Machinga	Machinga Boma
Machinga	STA Nsanama
Machinga	TA Chamba
Machinga	TA Mlomba
Machinga	TA Nkula
Machinga	TA Sitola

WATERSHED UNITS
1A, 1R, 1S, 1B

The Table below uses projection scenarios to illustrate local land constraints for Liwonde area. Year 2018 is taken as a base and three possible scenarios are projected for the year 2063, using the district's growth rate from the last decade.

First, a *status-quo* 2063 scenario projects an urban density and urban population growth not too far from the 2018 trend. In this scenario, it becomes clear that as the population grows with an urban density of 40 people/ha, the urban settlement footprint would grow almost 6 times which would in turn have a negative impact on the availability of land per family, dropping from 2 ha/family to 0.27 ha/family. Second, the moderate scenario 2063 assumes a higher urban density of 60 people/ha, which would constrain the expansion of the settlement area and in turn increase the land per family average area to 0.44 ha.
Lastly, the compact scenario 2063 applies an even higher urban density of 80 people/ha, as well as a 50% of the population living in urban areas. This allows smallholder families to have access to 0.38/ha per family. Apart from dedicating land for small farms, the moderate and compact scenarios also increase the capacity for commercial farms from 5,142 ha in 2018 to 10,284 ha in 2063 compact scenario.

In conclusion, in order to maintain smallholder farming viability in rural areas, it is essential to make room for cities to grow as well as apply a high population density. However, even with a compact scenario, there is need to further urbanize, in order to make smallholder farming viable.

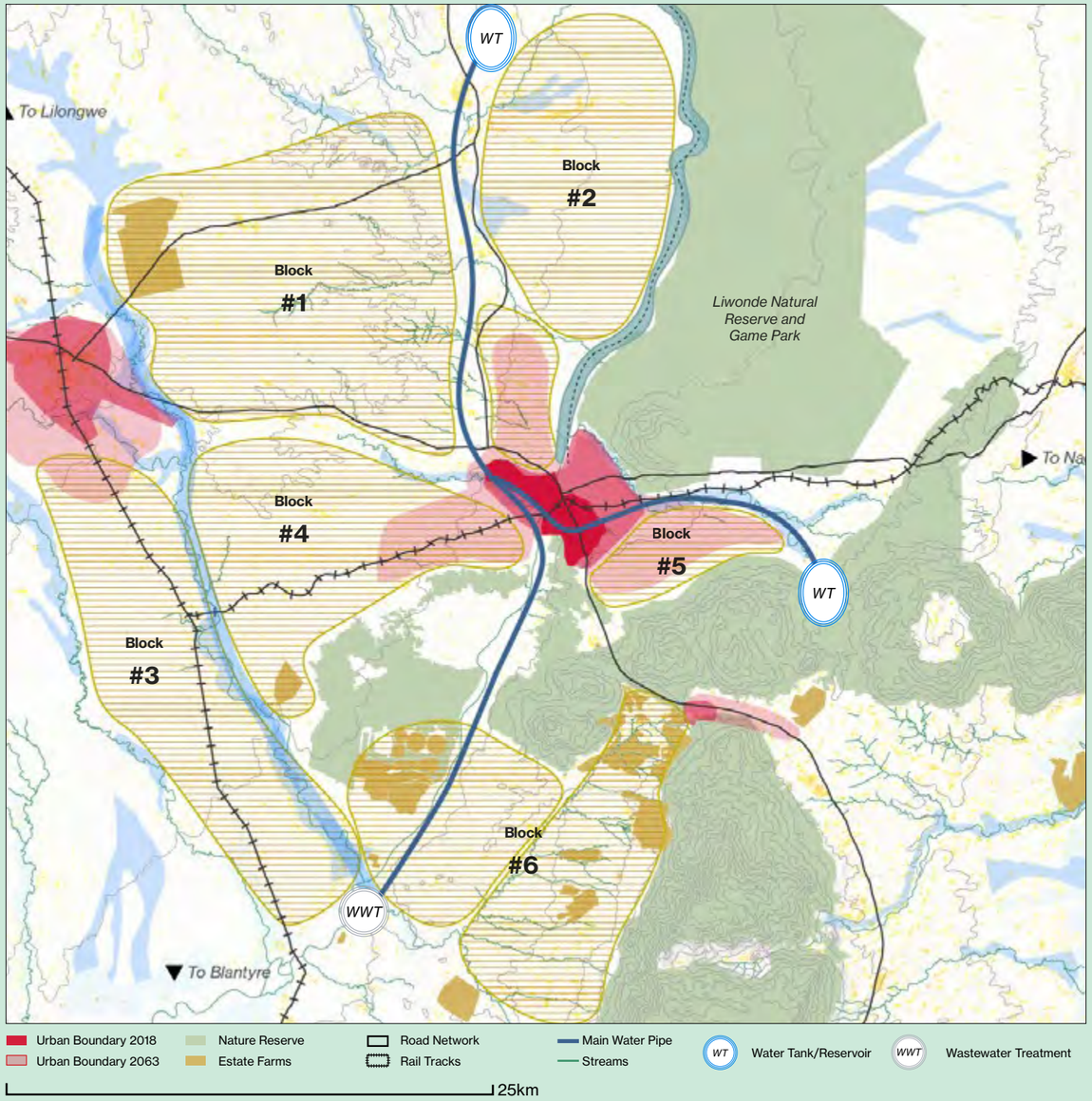
Here, other industries such as fishing and aquaculture, as well as tourism, would bring additional livelihood for the population.

	Base Scenario 2018	Status Quo - Sprawled 2063	Moderate Scenario 2063	Compact Scenario 2063
Total Surface Area (ha)	238,300	238,300	238,300	238,300
Arable Land (ha)	172,601	172,601	172,601	172,601
Non-Arable Land (Forest and Conservation Lands) (ha)	65,699	65,699	65,699	65,699
Crop Land / Small Farms (ha)	163,686	142,954	1451,122	141,896
Crop Land / Commercial Farms (ha)	5,142	5,142	5,142	10,284
Settlement Area (urban footprint - ha)	3,773	24,505	16,337	20,421
Urban Density (people per - ha)	28.2	40.0	60.0	80.0
Percent Urban Population	23%	30%	40%	50%
Total Population	468,842	3,267,359	2,450,519	3,267,359
Urban Population	106,332	980,207	980,207	1,633,679
Rural Population	362,510	2,287,151	1,470,331	1,633,679
# of Households (total)	108,469	755,920	566,940	755,920
Household Members Ave.	4.32	4.32	4.32	4.32
# of Households (rural)	83,869	529,144.26	340,167	377,960
Land per Family Average (ha)	2.0	0.27	0.44	0.38

Liwonde
Commercial agri-center of the Upper Shire Area

Liwonde area will grow from 409,233 inhabitants in 2018, to 1,055,313 in 2040; and 2,841,142 in 2063. Liwonde urban would be controlled within its existing urban jurisdiction. If a port is possible at Liwonde, a multi-modal hub connecting port to rail would be established at this important intersection along the Nacala corridor. The Liwonde natural reserve would be extended to include an area south of Liwonde urban, while the rest of the flat lands would be dedicated to agricultural production. Two water reservoirs would serve Liwonde area from its north and east, and a waste water treatment facility would be developed on the south.

Aerial view of Liwonde town with the Shire river crossing at the center of the city



Liwonde

Project clustering scheme

Urban Development

I10 Liwonde Transit-oriented Industrial and Commercial Development
I4 Malawi Fertilizer Company - Superfert

Infrastructure

T1 Tete-Nacala Rail Corridor
T4 Liwonde Multi-modal Port
T16 MIP-1 Flagship: Nkaya to Mchinji Rail Line Rehabilitation

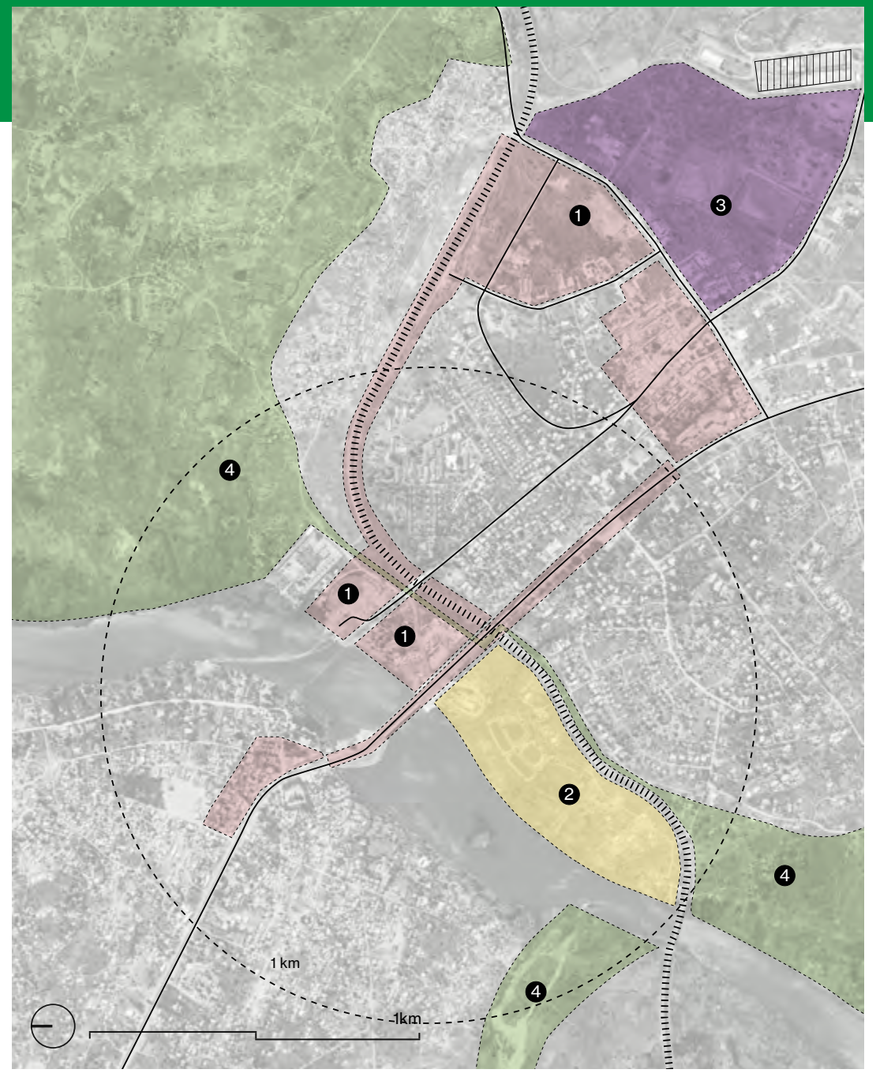
W20 Upgrading, Rehabilitation and Extension of Liwonde Water Supply Project (to include Balaka)
W25 Liwonde Town Water Supply and Sanitation

Natural Resources

EP12 Liwonde National Park
EP13 Liwonde Forest Reserve - Mongolwe Hills, Liwonde Forest Reserve, Chikala Hills
EP14 Zomba Malosa Forest Reserve
CC5 Liwonde Flood Zone Management and Green Infrastructure Plan

A21 Toleza Government Food Farm
A31 Commercial and Small Farm Development for Liwonde

- Urban Footprint 2020
- Urban Footprint Projection
- Nature Reserves
- Agricultural Lands
- Water Resources
- Irrigation



Liwonde

Project clustering scheme - Project references

1-Liwonde Multi-modal Port (T4)
Connects to: Mangochi, Monkey Bay, Nkhotakota, Nkhata Bay, Likoma, Chilumba ports in Malawi and Itungi, Mbamba Bay Ports in Tanzania
Logistics Station Area: 37 Ha Proposed FAR: 2
Passenger Station Area: 3 Ha

2-Liwonde Transit-oriented Commercial and Industrial Center Development (I10)
80 km from Blantyre, 200 km from Lilongwe
Existing Market Area: 18 Ha
Extension of Com. Center Area: 23 Ha Proposed FAR: 0.75

3- Liwonde Transit-oriented Industrial Development (I10)
Industrial Center Area: 35 Ha Proposed FAR: 0.75

4- Liwonde Flood Zone Management and Green Infrastructure Plan (CC5)
Area: -


1- Multi-modal station, Casablanca, Morocco


2- Aqaba SEZ, Jordan


3- Iloilo province, Philippines

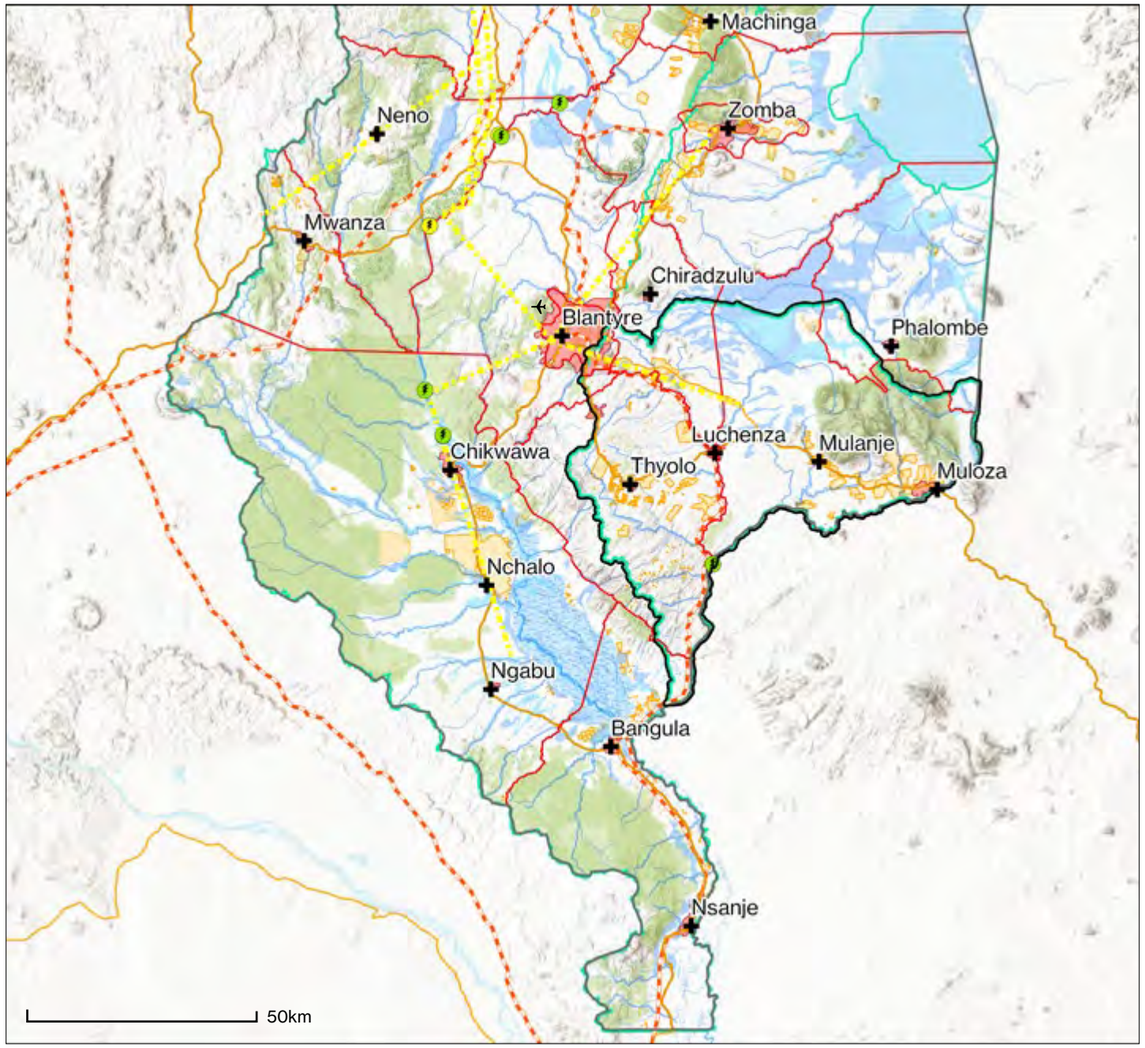

4- Green infrastructure research center, Shanghai, China

07 Luchenza
Agri-Industrial Hub for the Greater Blantyre Area

An industrial and logistics zone:A case study from Bucharest. Photo credit: CTPark Bucharest.

Luchenza
District and watershed boundaries

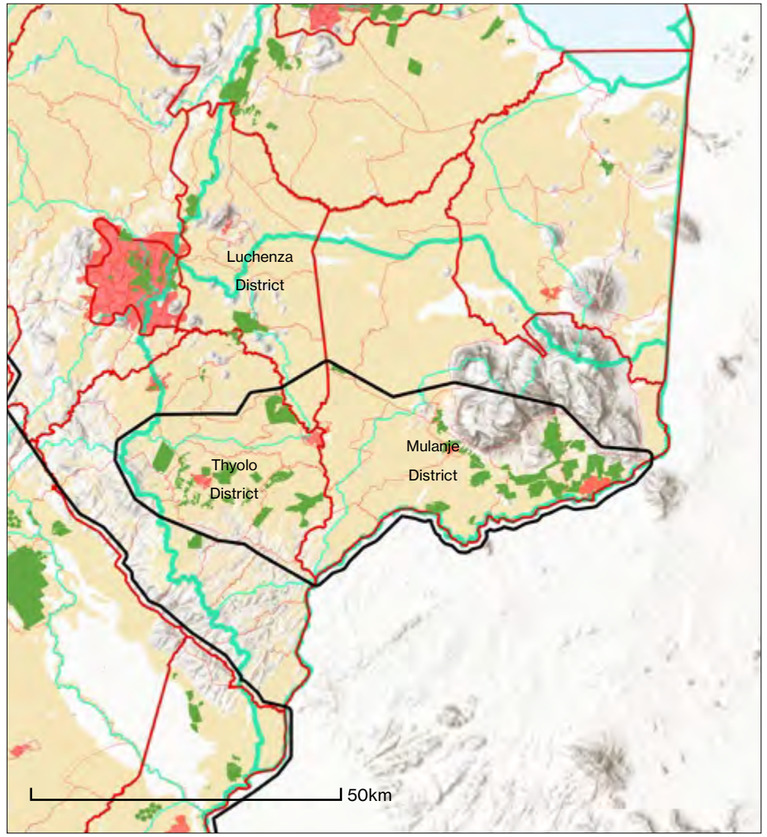
Luchenza is a town in Thyolo district, Southern region of Malawi. It is strategically located along the rail line, in great proximity to Blantyre. Locally, Luchenza is situated along an urbanized ridge-line threading the towns of Thyolo, Mulanje and Muloze. While the surrounding plateau is highly suitable for agriculture development, Luchenza is also identified as an opportunity to establish a critical industrial node to service Thyolo and Mulanje and reinforce existing road links to the border crossing in Muloza and further to the ports in Mozambique. Luchenza is also connected via rail to Bangula and Nsanje, the most southern urban areas in the country. Developing an agro-industrial center at Luchenza would assist in servicing the southern region and alleviating population growth pressure from Blantyre.



Data sources: RCMRD, Open Street Map; USGS / NASA SRTM DEM; Facebook Connectivity Lab; CIESIN, Columbia University; DigitalGlobe; Malawi Spatial Data Platform (MASDAP)

Luchenza

Land use scenario planning



DISTRICT	TA JURISDICTIONS
Chiradzulu	TA Nkalo
Mulanje	Mulanje Boma
Mulanje	Mulanje Mountain Reserve
Mulanje	STA Sunganinzeru
Mulanje	STA Tombondiya
Mulanje	TA Chikumbu
Mulanje	TA Laston Njema
Mulanje	TA Mabuka
Mulanje	TA Nkanda
Mulanje	TA Nthiramanja
Thyolo	Luchenza Town
Thyolo	STA Tombondiya
Thyolo	TA Chimaliro
Thyolo	TA Kapichi
Thyolo	TA Nanseta
Thyolo	TA Nchilamwela
Thyolo	TA Ngolongoliwa
Thyolo	Thyolo Boma

WATERSHED UNITS
14A, 14B, 14C

The table below uses projection scenarios to illustrate local land constraints for Luchenza area. Year 2018 is taken as a base and three possible scenarios are projected for the year 2063, using the district's growth rate from the last decade.

First, a *status-quo* 2063 scenario projects an urban density and urban population growth not too far from the 2018 trend. In this scenario, it becomes clear that as the population grows with an urban density of 40 people/ha, the urban settlement footprint would grow almost 9 times which would in turn have a negative impact on the availability of land per family, dropping from 0.6 ha/family to 0.16 ha/family. Second, the compact scenario 2063 assumes a higher urban density of 60 people/ha, which would constrain the expansion of the settlement area and in turn increase the land per family average area to 0.27 ha.
Lastly, the compact scenario 2063 applies an even higher urban density of 80 people/ha, as well as a 50% of the population living in urban areas. This allows smallholder families to have access to 0.19/ha per family. Apart from dedicating land for small farms, the conservative and compact scenarios also increase the capacity for commercial farms from 16,345 ha in 2018 to 32,690 ha in 2063 compact scenario.

In conclusion, in order to maintain smallholder farming viability in rural areas, it is essential to make room for cities to grow as well as apply a high population density. However, even with a compact scenario, there is need to further urbanize, in order to make smallholder farming viable.

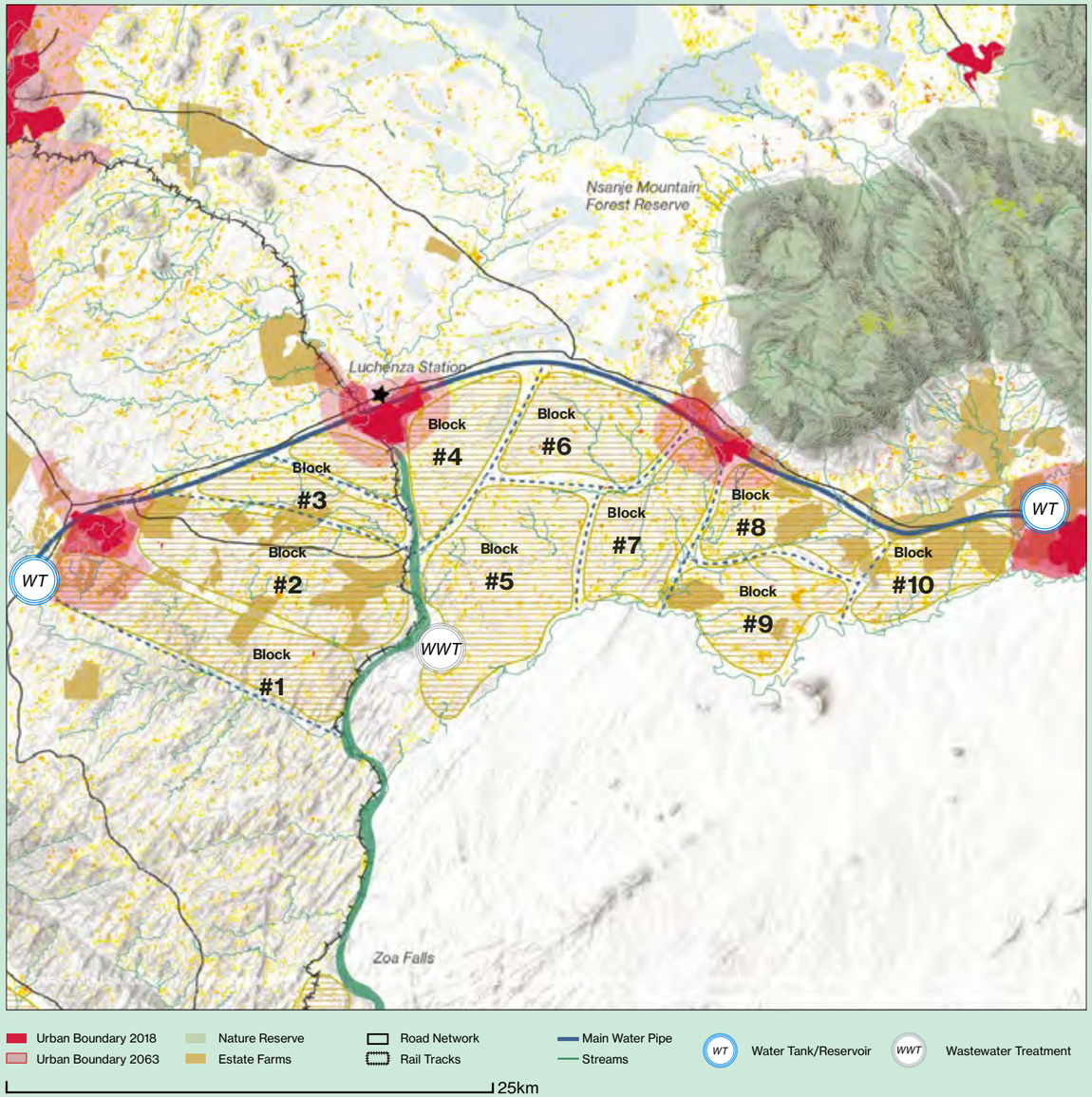
Here, other industries such as fishing and aquaculture, as well as tourism, would bring additional livelihood for the population.

	Base Scenario 2018	Status Quo - **Sprawled 2063**	Moderate Scenario 2063	Compact Scenario 2063
Total Surface Area (ha)	149,400	149,400	149,400	149,400
Arable Land (ha)	116,232	116,232	116,232	116,232
Non-Arable Land (Forest and Conservation Lands) (ha)	33,168	33,168	33,168	33,168
Crop Land / Small Farms (ha)	97,641	78,025	85,312	65,323
Crop Land / Commercial Farms (ha)	16,345	16,345	16,345	32,690
Settlement Area (urban footprint - ha)	2,246	21,862	14,5575	18,219
Urban Density (people per - ha)	32.8	40.0	60.0	80.0
Percent Urban Population	10%	30%	40%	50%
Total Population	737,893	2,914,964.9	2,186,223	2,914,964
Urban Population	73,619	874,489.5	874,489	1,457,482
Rural Population	664,274	2,040,475.4	1,311,734	1,457,482
# of Households (total)	177,456	701,020.4	525,765	701,020
Household Members Ave.	4.16	4.16	4.16	4.16
# of Households (rural)	159,751	490,714	315,459	350,510
Land per Family Average (ha)	0.6	0.16	0.27	0.19

Luchenza
Agri-industrial hub for Greater Blantyre

Luchenza area will grow from 890,028 inhabitants in 2018, to 1,742,217 in 2040; and 3,515,957 in 2063. A main pipe that runs along the main road connecting Luchenza to Thyolo and Laston Njema would serve both their urban centers and the agricultural lands south of it. A wastewater treatment area would be located at the southern edge along the border. As Luchenza is the rail point between Bangula and Blantyre, it would serve the surrounding centers with services.

Aerial view of Luchenza town at the intersection of the railway and the river



Luchenza

Project clustering scheme

Urban Development

I15 Luchenza Transit-oriented Industrial and Commercial Development
TO2 Integrated Cable Car Resort on Mount Mulanje

Infrastructure

T17 MIP-1 Flagship: Limbe-Marka Rail Line Rehabilitation
T28 Luchenza Multi-modal Station
T29 M2 road from Blantyre to Laston Njema

W7 Construction of New Water Source from Likhubula River in Mulanje to Blantyre
W26 Luchenza, Thyolo, Muloza and Mulanje Water Supply and Sanitation Project
E13 Zoa Falls Hydro-electric Dam

Natural Resources

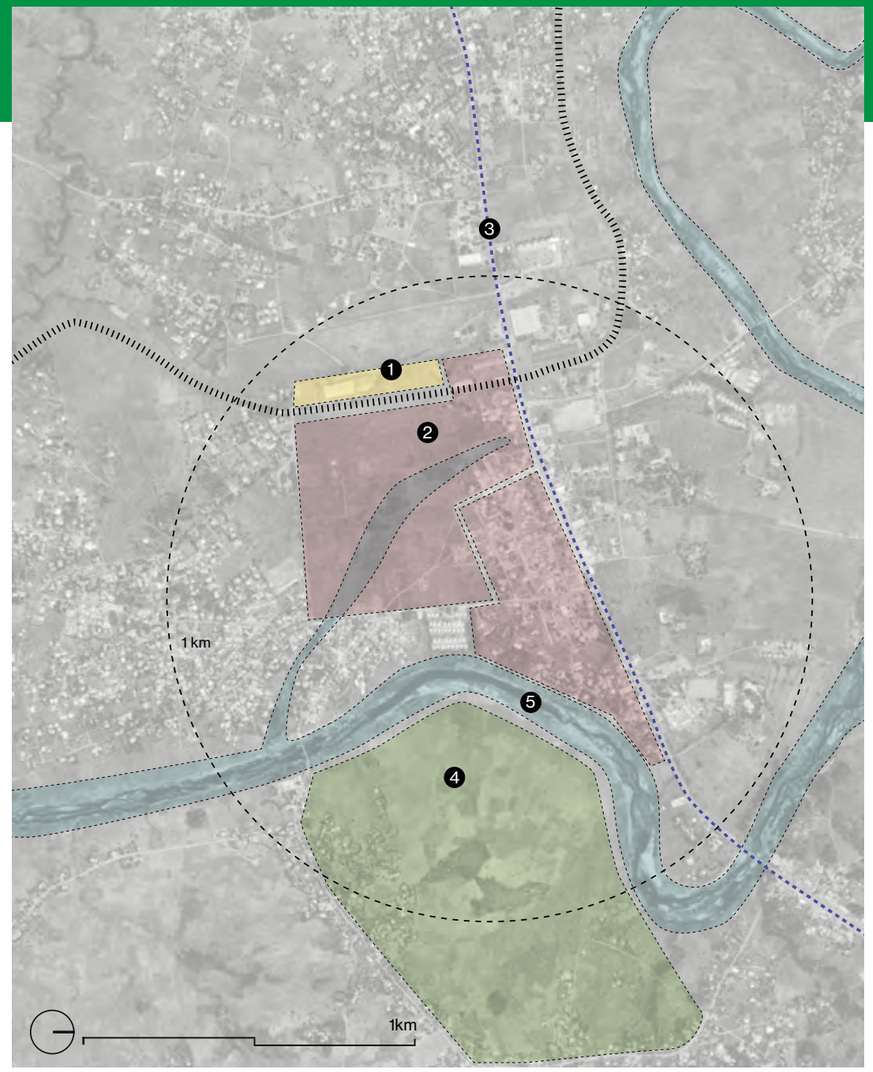
EP17 Mulanje Mountain Forest Reserve
EP32 Tuchila River Buffer Zone
EP33 Makade River Buffer Zone

A22 Sanjika Estate
A31 Commercial and Small Farm Development for Luchenza

- Urban Footprint 2020
- Urban Footprint Projection
- Nature Reserves
- Agricultural Lands
- Water Resources
- Irrigation

Luchenza

Project clustering scheme - Project references



1- Luchenza Multi-modal Station (T28)
Connects to: Blantyre, Bangula stations.
Station Area: 3.5 Ha Proposed FAR: 2

2- Luchenza Transit-oriented Commercial and Industrial Center Development (I15)
45 km from Blantyre
Existing Market Area: 12 Ha
Extension of Com. Center Area: 40 Ha Proposed FAR: 0.75

3- Luchenza, Thyolo, Muloza, and Mulanje Water Supply and Sanitation Project (W26)
Project Area: -

4- Commercial and Small Farm Development for Luchenza (A31)
Area: 70 Ha

5- Tuchila River Buffer Zone (EP32)
Area: -

1- Train station, Mbeya, Tanzania


2- Morowali industrial district, Central Sulawesi, Indonesia


4- Agricultural co-op, Kfar Baruch, Israel

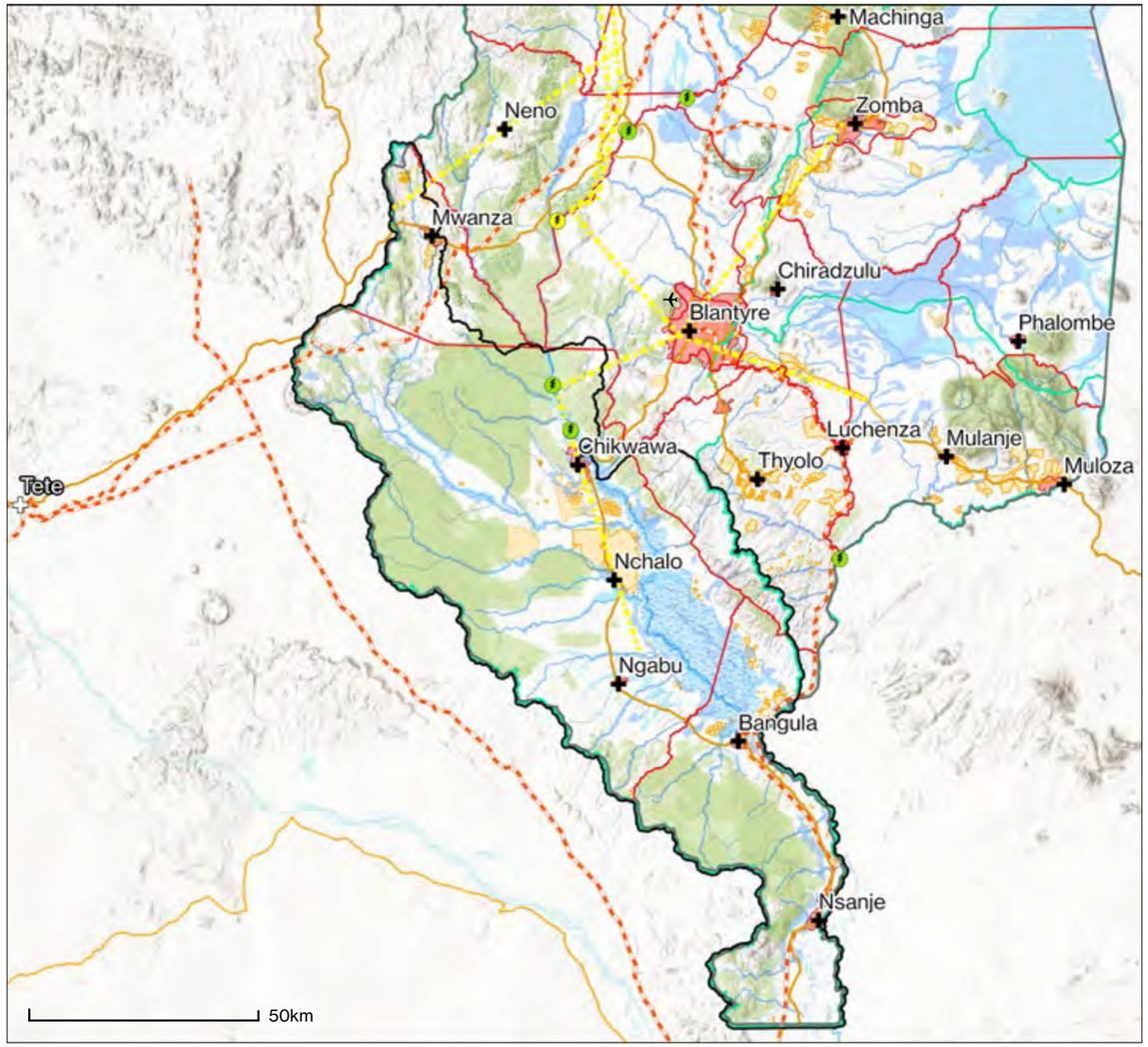

5- Urban wetland, Harbin, China

08 Bangula
Southern Gateway City

A wetland park development: A case study from Harbin, China. Photo Credit: Kongjian Yu, Turenscape

Bangula
District and watershed boundaries

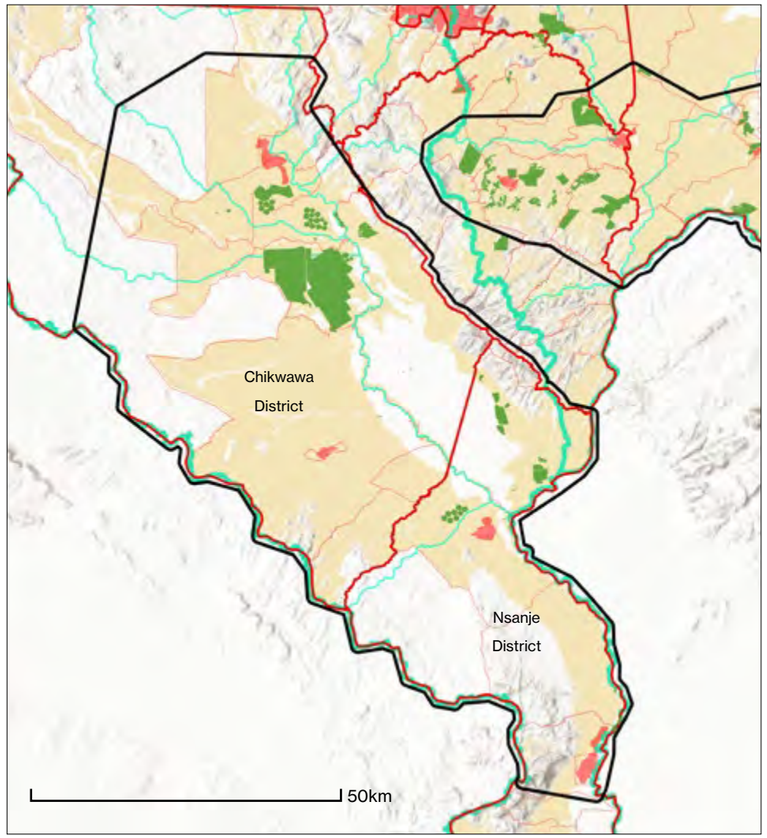
Bangula is located along the lower Shire river and near the confluence of Ruo river and Shire, positioned at a strategic intersection between rail and river port. In addition to the rail line running north to south through Luchenza, the main highway between Blantyre and Nsanje runs through Bangula. The town of Bangula is planned as the southernmost point of the Lower Shire Valley Transformation Program (ongoing development), and hence could well serve as a critical anchor and economic engine for development of the valley at large, well connected and servicing the neighboring towns of Ngabu, Nchalo and Chikwawa. Bangula also sits at the southern edges of the Elephant Marsh, a critical ecological area for large land mammals, fish habitat and migratory birds, and by that could become a point of attraction for tourists from the region and beyond.



Data sources: RCMRD, Open Street Map; USGS / NASA SRTM DEM; Facebook Connectivity Lab; CIESIN, Columbia University; DigitalGlobe; Malawi Spatial Data Platform (MASDAP)

Bangula

Land use scenario planning



DISTRICT	TA JURISDICTIONS
Chikwawa	Chikwawa Boma
Chikwawa	STA Masache
Chikwawa	STA Ndakwela
Chikwawa	TA Kasisi
Chikwawa	TA Katunga
Chikwawa	TA Lundu
Chikwawa	TA Makhwira
Chikwawa	TA Maseya
Chikwawa	TA Mlilima
Chikwawa	TA Ngabu
Chikwawa	TA Ngowe
Nsanje	Mwabvi Game Reserve
Nsanje	Nsanje Boma
Nsanje	STA Masache
Nsanje	TA Mbenje
Nsanje	TA Mlolo
Nsanje	TA Ngabu
Nsanje	TA Tengani

WATERSHED UNITS
14D, 1B, 1E, 1F, 1G, 1H, 1K, 1L

The Table below uses projection scenarios to illustrate local land constraints for Bangula area. Year 2018 is taken as a base and three possible scenarios are projected for the year 2063, using the district's growth rate from the last decade.

First, a *status-quo* 2063 scenario projects an urban density and urban population growth not too far from the 2018 trend. In this scenario, it becomes clear that as the population grows with an urban density of 30 people/ha, the urban settlement footprint would grow almost 5 times which would in turn have a negative impact on the availability of land per family, dropping from 1.8 ha/family to 0.58 ha/family. Second, the moderate scenario 2063 assumes a higher urban density of 60 people/ha, which would constrain the expansion of the settlement area and in turn increase the land per family average area to 0.93 ha.
Lastly, the compact scenario 2063 applies an even higher urban density of 80 people/ha, as well as a 50% of the population living in urban areas. This allows smallholder families to have access to 0.79/ha per family. Apart from dedicating land for small farms, the conservative and compact scenarios also increase the capacity for commercial farms from 16,113 ha in 2018 to 32,226 ha in 2063 compact scenario.

In conclusion, in order to maintain smallholder farming viability in rural areas, it is essential to make room for cities to grow as well as apply a high population density. However, even with a compact scenario, there is need to further urbanize, in order to make smallholder farming viable.

Here, other industries such as fishing and aquaculture, as well as tourism, would bring additional livelihood for the population.

	Base Scenario 2018	Status Quo - Sprawled 2063	Moderate Scenario 2063	Compact Scenario 2063
Total Surface Area (ha)	481,200	481,200	481,200	481,200
Arable Land (ha)	253,899	253,899	253,899	253,899
Non-Arable Land (Forest and Conservation Lands) (ha)	227,301	227,301	227,301	227,301
Crop Land / Small Farms (ha)	237,786	214,066	219,996	206,848
Crop Land / Commercial Farms (ha)	16,113	16,113	16,113	32,226
Settlement Area (urban footprint - ha)	4,560.9	23,720	17,790	14,825
Urban Density (people per - ha)	25.7	30.0	40.0	80.0
Percent Urban Population	16%	30%	40%	50%
Total Population	711,268	2,371,978	1,778,983	2,371,978
Urban Population	117,111	711,593	711,593	1,185,989
Rural Population	594,157	1,660,384	1,067,390	1,185,989
# of Households (total)	157,177	524,163	393,122	524,163
Household Members Ave.	4.53	4.53	4.53	4.53
# of Households (rural)	131,298	366,914	235,873	262,081
Land per Family Average (ha)	1.8	0.58	0.93	0.79

Bangula
Southern gateway city

Bangula area will grow from 222,641 inhabitants in 2018, to 375,149 in 2040; and 647,296 in 2063. An inland port and a railway intersection would make Bangula a logistical hub in the Lower Shire Area. A water reservoir at the edge of the reserve would serve Bangula center as well as the adjacent agricultural lands. If the LSVT pipe would be extended, it could connect to the Bangula water reservoir. An eco-corridor along the stream connecting the Mwabwi Wildilfe Reserve to the Elephant Marsh would be established to protect the ecosystem and contribute to the eco-tourism in the area. A wastewater treatment area would be located along the river.

Aerial view of Bangula town showing the marsh and the shire river on the top

Bangula

Project clustering scheme

Urban Development

I11 Bangula Transit-oriented Industrial and Commercial Development
T7 Development of Nsanje World Inland Port
T21 Ngabu Bus Depot and Produce Market

Infrastructure

T17 MIP-1 Flagship: Limbe-Marka Rail Line Rehabilitation
T30 Bangula Multi-Modal Port
T31 Bangula Bridge Reconstruction S151
T34 M1 road from Blantyre to Nsanje

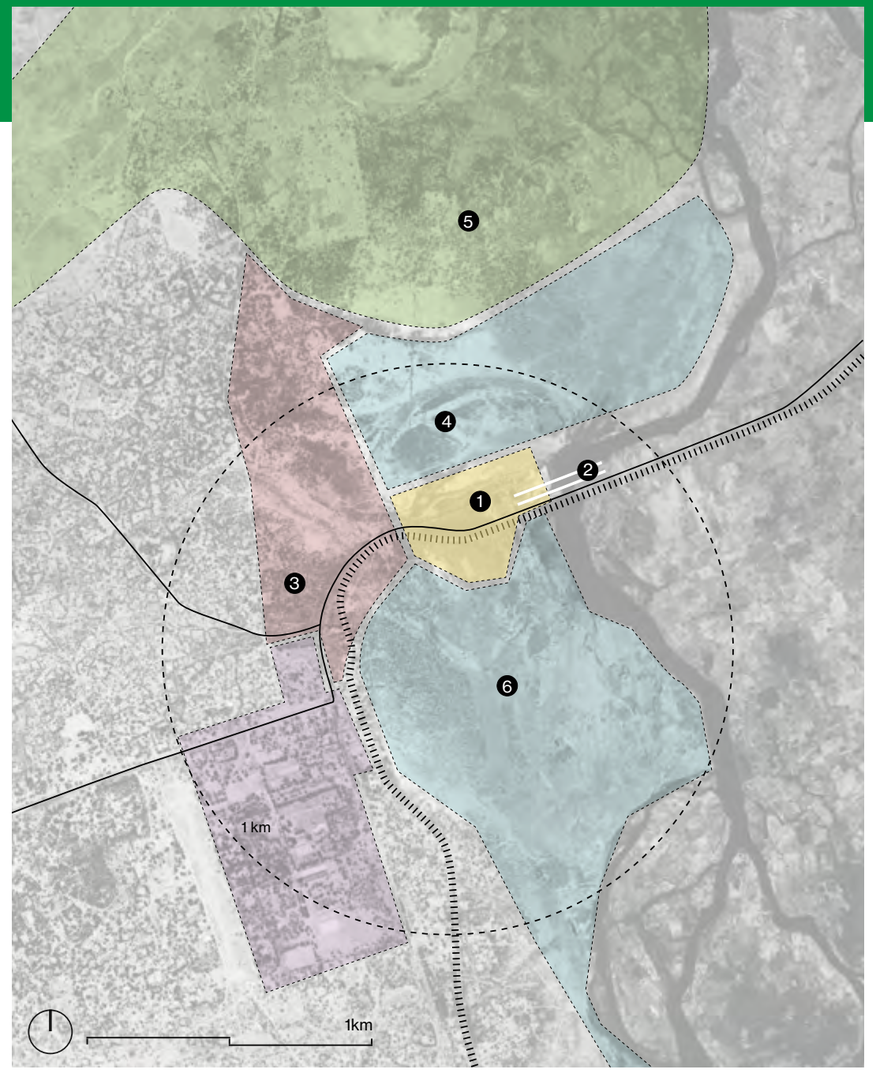
W5 MIP-1 Flagship: Shire Valley Transformation Programme
W27 Extension of LSVTP to reach Bangula
W29 Bangula Town Water Supply and Sanitation Project
E13 Zoa Falls Hydro-electric Dam

Natural Resources

EP8 Mwabvi Game Reserve
EP9 Elephant Marsh Protection
EP26 Eco-corridor between Mwabvi Game Reserve and the Elephant Marsh
EP36 Tomaninjobi Pool
CC6 Bangula Flood Zone Management and Green Infrastructure Plan

A23 GBI: Mwana Na Njovu Chikwawa District
F11 MIP-1 Flagship: Sustainable Aquaculture and Fisheries Development (Bangula Fisheries)
A3 Kaombe Sugar Estate
A31 Commercial and Small Farm Development for Bangula

Urban Footprint 2020
Urban Footprint Projection
Nature Reserves
Agricultural Lands
Water Resources
Irrigation



Bangula

Project clustering scheme - Project references

1- Bangula Multi-modal Port (T30)
Connects to: Nsanje Port, Luchenza station.
Station Area: 11 Ha Proposed FAR: 2

2- Bangula Bridge Reconstruction S151 (T31)
Length: -

3- Bangula Transit-oriented Commercial and Industrial Center Development (I11)
133 km from Blantyre
Existing Market Area: 11 Ha
Extension of Com. Center Area: 40 Ha Proposed FAR: 0.75

4- Bangula Fisheries Development (F11)
Area: 125 Ha

5- Eco-Corridor between Mwabvi Game Reserve and Elephant Marsh (EP26)
Area: -

6- Bangula Flood Zone Management and Green Infrastructure Plan (CC6)
Area: -

1- Mixed-use transit oriented development in Lagos, Nigeria

4- Main stream aquaculture, Australia

3- Tourism boardwalk, Alamine, Egypt

6- Urban wetland, Colombo, Sri Lanka

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BIBLIOGRAPHY AND SOURCES

Bibliography (by publication year)

- Malawi Economic Planning and Development Division (1971). “Malawi, Statement of Development Policies 1971 – 1980”.
- John Friedmann (1973). “Urbanization, planning, and national development”.
- Deborah Potts (1986). “Urbanization in Malawi”. Doctoral thesis, University of London
- Malawi Ministry of Lands and Urban Development, Department of Physical Planning (1987). “Malawi National Physical Development Plan”.
- National Executive Council (2000). “Malawi Vision 2020”
- Malawi Ministry of Local Government and Rural Development (2005). The Malawi Secondary Centers Development Programme.
- Malawi National Statistics Office (NSO) (2009). “Spatial distribution and Urbanization report”
- Deborah Potts (2009). “The slowing of sub-Saharan Africa’s urbanization: evidence and implications for urban livelihoods”, Environment and Urbanization, International Institute for Environment and Development (IIED).
- United Nations Human Settlements Programme (UN-Habitat) (2012).” Malawi National Urban Profile”
- Angel, Shlomo, Alejandro M. Blei, Daniel L. Civco, and Jason Parent (2012). Atlas of urban expansion. Cambridge, Lincoln Institute of Land Policy.
- Malawi Ministry of Lands and Housing (2013). “Situation of Urbanization in Malawi Report”
- Malawi Ministry of Industry and Trade (2013). "Malawi National Export Strategy 2013 – 2018”
- Malawi Urbanization Review (April 2016). “Leveraging Urbanization for National Growth and Development”, GSURR, Africa, World Bank
- Todd Benson, Athur Mabiso, Flora Nankhuni (2016). “Detailed crop suitability maps and an agricultural zonation scheme for Malawi: Spatial information for agricultural planning purposes”.
- Guiying Li, Joseph P. Messina, Brad G. Peter and Sieglinde S. Snapp. (2017). “Mapping land suitability for agriculture in Malawi”. Michigan State University.
- Malawi Ministry of Economic Planning and Development (2017). “Malawi Growth Development Strategy 3, 2017 - 2022 (MGDSIII)”
- Ministry of Transportation and Public Works (2017) “Malawi National Transportation Master Plan 2017 – 2037”.
- Malawi Economic Monitor (May 2017). “Harnessing the Urban Economy”, World Bank Office Malawi
- Malawi Ministry of Water and Irrigation (2018) “Malawi National Water Atlas”.
- Malawi Vision 2063: An Inclusively Wealthy and Self-reliant Nation, 2021, NPC.

GIS Sources (by research theme)

1. Population Distribution and Growth Trends

- Census population EA level - 1998
  Source: National Statistics Office
- Census population EA level - 2008
  Source: National Statistics Office
- Census population EA level - 2008
  Source: National Statistics Office
- High Resolution Settlement Layer(HRSL) population counts for Malawi.
  Source: Facebook Connectivity Lab, Center for International Earth Science Information Network - CIESIN - Columbia University. Source imagery provided by DigitalGlobe.
- Urban Settlement Footprints
  Source: ORG Desktop Mapping

2. Jurisdiction and Land Tenure Subdivision

- National Boundary - 1st Level
  Source: Department of Surveys and GIS, MoLHUD
- Regional Boundary - 2nd Level
  Source: Department of Surveys and GIS, MoLHUD
- District Boundary - 3rd Level
  Source: Department of Surveys and GIS, MoLHUD
- Traditional Area (TA) and Urban Boundaries - 4th Level
  Source: Department of Surveys and GIS, MoLHUD
- Estate boundaries
  Source: downloaded from MASDAP - unknown source

3. Water Resources and Hydrology

- Waterbodies
  Source: Department of Surveys and GIS, MoLHUD
- Rivers and Streams
  Source: OSM
- Topography
  Source: USGS, SRTM DEM
- Watershed units
  Source: Water resource units: Water Resources Investment Strategy project, Atkins 2012
- Wetland Areas
  Source: Geological Survey of Finland, Espoo (GTK)

4. Natural Ecosystems
- Topography / Hill shade
  Source: USGS, SRTM DEM
- Soil degradation areas
  Source: RCMRD and Malawi Department of Disaster Management Affairs (DoDMA)
- Watershed units
  Source: Water resource units: Water Resources Investment Strategy project, Atkins 2012
- Land Cover 1990, 2000, 2010
  Source: RCMRD - Sentinel-2 global land cover data
- Landscape Restoration Priority Areas
  Source: International Union for Conservation of Nature (IUCN) as part of Malawi's National Forest Landscape Restoration Assessment (2017)
- Soil Classification in Malawi
  Source: Department of Surveys and GIS, MoLHUD
- Malawi Nature Preserves and National Parke
  Source: Department of Resource Center, MoLHUD

5. Agriculture
- Land suitability for agriculture study
  Guiying Li, Joseph P. Messina, Brad G. Peter and Sieglinde S. Snapp. (2017). “Mapping land suitability for agriculture in Malawi”. Michigan State University.
- Crop Suitability study
  Source: IFPRI 2016
- Agricultural Opportunities Study
  Source: Forest Landscape Restoration, World Resources Institute (WRI)
- Estate boundaries
  Source: MASDAP - unknown author
- Green Belt Authority Sites
  Source: Green Belt Authority
- Agro Ecological Zones
  Source: MASDAP - unknown author

6. Fisheries and Aquaculture
- Development and Status of Freshwater Aquaculture in Malawi
  Source: Russell et al, 2008. WorldFish Center Studies and Reviews No. 1869.
  Source: ORG Desktop research and Stakeholder consultation

7. Transportation
- Roads
  Source: MASDAP - unknown author
- Rail Lines
  Source: Ministry of Transportation, National Transportation Master Plan (NTMP)
- Airports
  Source: Ministry of Transportation, National Transportation Master Plan (NTMP)
- Water ports
  Source: Ministry of Transportation, National Transportation Master Plan (NTMP)
  Source: ORG mapping Analysis

8. Manufacturing and Processing
- Agricultural Markets
  Source: MASDAP - unknown author
- Industrial Districts
  Source: ORG mapping Analysis
- Special Economic Zones (SEZ) Proposed locations
  Source: Malawi Public Sector Investment Programme (PSIP)
- Locations and Activity of Processing (value addition) and manufacturing facilities
  Source: ORG Desktop Mapping and Stakeholder consultation

9. Energy
- Power plants (Existing)
  Source: MASDAP - unknown author
- Power plants (Planned)
  Source: Malawi Public Sector Investment Programme (PSIP)
- Earth at Night Orthophoto
  Source: NOAA 2016

10. Mining
- Mining activity
  Source: Malawi Mining Cadastral Portal (un-editible format)
- Mining Opportunities
  Source: Malawi Mining Cadastral Portal (un-editible format)
  Mineral Resources and Occurances 1990 (un-editable format)

11. Tourism
- Hotel and Lodges Locations
  Source: MASDAP - unknown author
- Nature reserves and National parks
  Source: MASDAP - unknown author
- Touristic Attractions
  Source: ORG Desktop research and Stakeholder consultation

12. Climate Change and Resiliency
- Flood Frequency Analysis
  Source: GIS processing UNEP/GRID-Europe, with key support from USGS EROS Data Center, Dartmouth Flood Observatory 2008
- Flood zone analysis
  Source; Atkins - 2012
- Economic Vulnerability and Disaster Risk Assessment
  Source: RMSI with WBG

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