Informal Rooting _
Informal Permanences in the Contemporary City

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ABSTRACT **This work is based on the observation that within contemporary metropolises, there is a worldwide rooting process of informal cities that are structured around themselves and persist; they settle in the collective imagery, producing a new social-cultural mutation. This paradigm shift is more frequently triggering processes of "non-replacement", which can also be observed on the physical pattern of these settlements that begin to mutate and adapt to the logic of stabilisation and reorganisation. The basic idea is to observe these territories, not yet explored, with the accuracy required by scientific literature, through the "eyes of the architect", overcoming the wall of the unknowable represented by the hyper-complexity, the marginalisation, and the difficulty to access these territories. The aim is to create a specific and new informal "catalogue" that gathers the heritage of actions, forms, and urban spaces created "within the rooting process", and that can be used to accurately know and interpret the informality.**

KEYWORDS   informal rooting, informal space, informal spatial morphology, informal tissue, informal atlas

1   **Introduction**

This essay is a snapshot of the informal rooting that is the consolidation process of buildings and informal spaces that are initially precarious or temporary entities gradually transforming into enduring elements of the city: urban material is not removed or replaced anymore; it is rather reshaped and organised depending on its initial condition. Some elements belonging to these urban settings become fixed items in a landscape under construction.

This snapshot is not intended to show a thorough image of the urban informal, which is an extremely complex, manifold reality with different local varieties. It aims at framing the change of course perceived in some main metropolitan landscapes concerning the built environment, as well as the ideas and the actions undertaken by architects and city planners exploring it: even a rough overview on data, experiences, theories and plans, gives evidence on how the informal – the architecture and the city – is consolidating as an irreplaceable presence and becoming the keystone for any planning of the city's future.

Entities that sometimes continue to be deemed as evanescent and marginal, lacking any dignity in terms of architecture, are developing into complex, self-built urban systems. With regard to the most notable prime examples and historically stratified cases, there are some elements or parts of these systems affected by compositional and linguistic solutions as a result of conscious decisions. The input given by professional architectural planning is often lacking here: architecture and urban planning are distant from a reality that evolves independently. This condition leads to important questions about the current role and the architects' responsibilities, their ability in affecting the future of the city, as well as their way of production. However, there are experimental approaches concerning the willingness to combine planning-professional building and self-building.

Although the theoretical framework of reference is vast and inter-disciplinary, this case of informal rooting is observed through the eye of the architect. The aim is to understand which cities and which architectures emerge from the contemporary informal landscape. Buildings, open spaces, and tools are analysed as architectural devices with encodable logics, as elements of a city that is able to structure itself, to organize environments and relations, and to trigger transformations of a given context aimed at its consolidation.

The phenomenon is introduced through a brief roundup, on a global scale, of cases that show the rising and spreading of informal land-scapes, especially in Latin America, where its most significant expressions are avant-garde cases. The first section collects the opinions of some architects and researchers concerning the progressive consolidation of the informal environment and its fusion with so-called formal elements that proceed towards an ambiguous informal urban landscape. The second section characterises the actors and the places of informal rooting, the emerging urban paradigms and architectural

devices: a brief critical analysis interprets some self-built *ensembles*, architectures that are designed by professionals within informal contexts, and the products that result from a collaboration between the residents and institutional actors. A third section is an extension of the preceding one, expanding upon the planning: it is edited as an open and extendable dictionary and it explores the tactics of informal devices, that is to say, the ways in which buildings and built-up areas consolidate in space and time.

2   Informal Rooting

"*The history of architecture and material urban facts is always the history of architecture of the dominating classes; we should research to what extent and how successfully revolutionary epochs counterpose their concrete way to organize the city*" (Rossi, 2011, p. 15).

This quote of Aldo Rossi has been decontextualised in order to evaluate the condition of the contemporary city of the Global South.

Currently, the parts of the city that have grown outside the framework of the planning and supervision of urban development occupy, in many cases, vast and even dominating spaces with respect to the urban setting. This kind of growth entails a new dimension, to an extent that leads to the affirmation that "we are witnessing the birth of twenty-first century urbanism" (Brillembourg & Klumpner, 2010, p. 123). According to Brillembourg and Klumpner, "informal zones are not the exception – they are the rule" (Brillembourg & Klumpner, 2010, p. 123). It deals with "something that arises from within itself and its makers, whose form has not yet been recognised, but which is subject to rules and procedures potentially as specific and necessary as those that have governed official, formal citymaking" (Brillembourg & Klumpner, 2010, p. 123).

Referring back to the idea suggested by Rossi, and daring to combine it with the idea of the other two authors, we could suppose that the urban informal is the new rule that revolutionises the growth of the city. It is a concrete way to organise the city, which is subject to just as many rules and procedures as those that have governed the so-called formal development. This concrete way is disposed by a different subject, in opposition to the dominating classes, or, better said, to those who hegemonically own the power over urban development: hence, it is useful to enlarge upon the concept of subalternity. Ananya Roy suggests the concept of *subaltern urbanism* as its crucial interpretation, that is to say that the set of ideas that assumes "the theorization of the megacity and its subaltern spaces and subaltern classes" (Roy, 2011, p. 223). The *subaltern urbanism* suggests a positive interpretation of the informal phenomenon and works "against apocalyptic and dystopian narratives of the slum" and "provides accounts of the slum as a terrain of habitation, livelihood, self-organization and politics" (Roy, 2011, p. 223). At the same time, there are opinions that exalt the aestheticisation

of the city or the self-help economy and thus the misunderstanding of their dynamics. Roy affirms: "There are many arguments that can be marshalled against the frames of crisis and heroism. However, I hold that these critiques must be subsumed within a more substantial conceptual disagreement, one that rejects the notion of an informal sector and instead views informality as a *mode* of urbanization. Along with Nezar Al Sayyad, I have used the term *urban informality* to indicate an organizing logic, a system of norms that governs the process of urban transformation itself. Against the standard dichotomy of two sectors, formal and informal, we suggest that informality is not a separate sector but rather a series of transactions that connect different economies and spaces to one another question: how can we understand the inevitable heterogeneity of Southern urbanism, that which cannot be contained within the familiar metonymic categories of megacity or slum, and that which cannot be worlded through the 'colonial wound'?" (Roy, 2005, p. 148). The entire city as a heterogeneous and paroxysmal system is the product of the same dynamics. The new rule and way to organise the city are both situated within the space, differently legitimated by the state, by its contradictory regulatory setup and devices, and by its social components: "it has become obvious that informal housing and land markets are not just the domain of the poor but that they are also important for the middle class, even the élite, of Second World and Third World cities. Such trends point to a complex continuum of legality and illegality, where squatter settlements formed through land invasion and self-help housing can exist alongside upscale informal subdivisions formed through legal ownership and market transaction, but in violation of land use regulations. Both forms of housing are informal but embody very different concretizations of legitimacy. The divide here is not between formality and informality but rather a differentiation within informality" (Roy, 2005, p. 148). The rooting phenomenon is embedded right within this complex context: "illegal and extra-legal settlements extend, persist over time, gradually pass from precariousness to consolidation, absorbed into the large de-regulated urban *unicum* where all of the conventional distinctions between the "formal" and "informal" city [...] have begun to blur" (Perlman, 2010, pp. 29 – 30.). There is a landscape made of city pieces, suburbs, rural areas, production areas, discard, new *informal hybrids* dispersed in the "fractal geometries of metropolitan habitation" (Roy, 2011), where built-up areas are "either informally or formally initiated, but after a few years it is no longer possible to confirm the origin of a specific part or the whole of them" (Hernandez Garcia, 2010, p. 10). The revolution of this space – at the same time characterised by reactionary features – is hence fostered by a set of technically subordinated and unsubordinated figures that adopt the same rules for different scopes. These scopes merge in creating and transforming the same urban space. Different forms of making the city juxtapose and create heterogeneous *ensembles*: "in most cities around the world, several forms of urbanism coexist in the same space. These varied concepts of urbanism (whether everyday urbanism, new urbanism, post-urbanism or the several forms of indigenous urbanism) actually collapse into a simultaneous – often kaleidoscopic – manifestation which generates a variety of urban conditions" (Mehrotra, 2010, p. 11). This juxtaposition

conveys the consistency of the informal space that we are describing. There are different contents emerging from the interpretation of urban entities, as an evident result of a mix of compositions that are hardly ascribable to precise identities, to clear divisions. The settlements subject to updating programs concerning urban materials, exemplify this dynamic. The existing self-built *ensemble* is subject to reorganisations, implementations, infrastructural improvements imposed from the outside, or negotiations with local communities that stratify on the built-up areas, partially changing its shape and functioning. Another exemplifying case is government resettlements, where unplanned additions and modifications of pre-existing setups and architectures stratify by hotwiring them, changing their sense. At the edges, or in the sectors within both of the above-mentioned spaces, there are configurations and forms that go back to former times, as well as different, recent extensions. The dynamics governing the contemporary urban development also determine the destiny of these spaces.

Thus, it is necessary to go "toward a unified urban theory rather than one that operates through dichotomies like formal/informal and North/South" (Rao, 2010, p. 15). The theory in Rao's vision of a *slum* assumes "design itself as a research method, as a method for probing the provisional and for discerned as well as positing emergent states and forms of normativity from the contestation between the living and their milieu" (Rao, 2010, p. 17). The informal rooting process shapes a united hybrid space and reaches the planning dimension that changes the transitory environment into other forms.

3 Surviving Strategies

The analysis of this molten hybrid space dismisses the classification of genres and makes it useless. When the analysis deals with its specific manufactures, we need to compare different natures. The whole survey on the architecture of informal rooting aims at tracing the origin of assembled parts and layers, the way they interweave, the relations and new configurations. In this sense – apparently as a contradiction – we use and test the terms of informal and formal, we distinguish actors and identify specific places, we analyse the city and its different architectural devices. The aim is to analyse the transformations, which concern the built environment and lead to different identities.

As for the concept of informality in its various forms, being conscious of the problem concerning the terms and the current *way* of urbanisation, we conform to the consideration of Hernandez: "Although these issues of definition are important, they could cause confusion" (Hernandez Garcia, 2010).

3.1   Actors

Specific actors promote the premises for rooting and an evolution towards new configurations of the informal environment: they can be subdivided into endogenous and exogenous actors, depending on whether they work inside or outside the informal communities. Endogenous actors are mainly those who occupy lands and buildings and who built their housings or the surrounding spaces on their own. In structured communities, there might be organisations or associations of residents that defend the interests of the community in relation to property rights, equal access to property, resistance to eviction, decisions concerning settlements, promotion of an economic way of life and of mutual funds, as well as political representation. The *mutirão* (a practice aimed at a communitarian cooperation that is typical in Brazilian favelas for the building of residences or public infrastructures like external routes, stairwells, ramps or terracing) of Rio were one of the first examples of squatter associations. These organisations can currently represent extended communities composed of ten thousands of residents; they can be associated, and constitute global networks of slum dwellers sharing struggles and experiences. The SDI federation unites and establishes a communication between informal entities in thirty-four countries, managing financial resources coming from savings or crowdfunding promoted by the UFPI (Urban Poor Found International), and suggests plans for the improvement of the quality of life and spaces.

Secondarily, the endogenous actor is someone who works in the informal building market, hence there are contractors and small companies, owners of buildings and lands who trade and rent properties.

Endogenous actors can co-work with exogenous actors, that is, institutions, non-governmental organisations, companies, or other private partners. As for the plans for the upgrading and resettlement of informal built-up areas, these actors can trade or channel the funding, material resources and technical assistance for architectural, urban and infrastructural planning, for services, or in order to solve housing emergencies caused by natural disasters or for the prevention of that risk.

In some contexts, this cooperation turns out to be positive, as there is an improvement of the inhabitants' spaces and life. "There have been few land invasions over the past few years which, after careful negotiation with the authorities and the private sector, have resulted in participants securing the benefit of remaining close to sources of employment in areas where they have lived all their lives, as well as state support to stay. There have also been evaluations and studies that suggest improvement in some areas. Such as the promotion of participation, the reduction of the standardization of solutions, and responses which act more on a case by case basis" (Jirón, 2010, p. 87).

Links between endogenous and exogenous actors can involve professionals with different competences, like architects, technicians and engineers, artists, researchers, anthropologists etc., who produce

studies and tangible creations on site. These experiences can tangibly help to improve quality of life and spaces, in different ways and on different levels. The combination of both actors adds paradigmatic experiences to the considerations concerning the current situation, the urban forms that root through, or out of, conventional planning.

The actual interaction between endogenous and exogenous actors and the influence of updating programs is different from place to place and varies depending on the extent of the funding, the quality of the programs, the involvement of the communities and the appreciation of the accomplished work, hence depending on the success of the plans. Plans are often experimental interventions made in difficult contexts and in constantly mutating conditions, which can significantly affect their efficacy. Due to the experimental dimension and the different local form, neither their success, nor the quality of the taken measures, are assured: "it is not yet clear whether upgrading can achieve significant permanent improvements or will merely perpetuate social and spatial inequalities" (Beardsley & Werthmann, 2008). It is furthermore necessary to consult the residents and gather information on their actual involvement in the transformation of the environments that they have built, from a material and social point of view. From the planners' point of view, the crucial issues are the consensus and the funding: "In the absence of someone to build consensus, designers might be forgiven for finding this too time-consuming and demanding – not to mention professionally and financially unrewarding" (Beardsley & Werthmann, 2008). To solve this problem, some partners have structured themselves as a *for-profit* organisation that uses public funding for the planning and building of residences and equipment. These enterprises grant the access to the property at a minimum cost for the purchase, as they are sustained by specific financing plans. The experience of Elemental is paradigmatic. Alejandro Aravena expresses the concept of a private enterprise providing the solution to collective housing problems: "what started as an academic initiative, by 2005 became a company, a for-profit company with social interests. The for-profit condition is crucial in order to be sustainable. You can't depend on charity. Actually, the question of social housing is so difficult that if there's something that is needed, it's professional quality, not professional charity. Quality has to be paid" (Aravena, 2011).

As well as the crucial problem in financing and planning quality social housing, the transition from an illegal, self-built house to social housing also presents some dangers. The major risk is to exclude those who cannot afford to purchase, or pay back a loan for the purchase of a property, which means losing the self-built house and being relocated elsewhere. According to Roy, De Soto's approach, which is interested in legalising properties by granting their accessibility, does not lead to an actual redistribution of richness, but only to a transition from an informal economy to a financial system made of big assets.

The grey space, where the two actors relate to each other, often mixes them up and blurs the differences. An emerging middle-class, arising from informal contexts and economies, acts sometimes as a bridge

for real estate enterprises and speculators, while the state acts *ad hoc* to reproduce and keep these economies and spaces within different levels of legality, leaving room for infringements and illegal practices.

3.2   New Lands

The informal arises and consolidates on waste. These wastelands offer homeless people the chance to occupy space, to settle and build residential estates that grow and take roots. No man's land, forgotten or suburban land, both inside and outside the city, polluted land, swampy or unstable land, land that is of no interest to builders and their customers. Depressions and hollows filled with waste to build fragile constructions; landfills, residual spaces between railroads, under bridges and scarps of viaducts, frameworks of abandoned constructions, steep and hostile reliefs in urban areas. Waste, carelessness and planning mistakes become *new lands* (Marini, 2011). In Caju, Rio de Janeiro, many settlements are built on residual places between industrial areas, infrastructures, and the cemetery. Even the informal environment produces waste and is able to recycle it through restructuring plans: a sports area in Mangueira is situated on a steep slope, which was formally the landfill of the favela. Elsewhere, along the built-up coasts or between the shreds of soft isles, squatters go further, tearing land and water apart, occupying inhabitable areas, just as it happens in Maré. New stratigraphies of waste superimpose on natural territories, within the cities and in their suburbs, redesigning its topography. New waste stratigraphies compose the geology of ambiguous soils, just as it happened in ancient cities (among the cases in literature, there is *Monte dei cocci* in Rome, an artificial landfill shaped as a hill). Waste is used in this way as a construction material for buildings, embankments, fillings: "The new land, property of a foundation dedicated to F.E. Dinshaw, was unused. The government offered to the new occupants a ten year contract for a monthly nominal rent of five hundred rupees [...] When the occupants arrived to claim for their lands, they discovered that their new housing was a pile of stone chippings surrounding a crater twelve meters deep [...] The first issue to confront with was how to get rid of the hole. We filled it with waste. Any kind of waste. Two bulldozers have worked every day for four months. Every day something between two hundred and three hundred trucks threw their waste into the hole" (Neuwirth, 2007, p. 107). The informal rooting arises from the experience of recycling spaces, materials, and useless urban trays, which are abandoned or used for other purposes. The consolidation transforms waste into a resource, defining and organising it. This kind of procedure also entails discussions about the quality and the health risks borne by these spaces; nonetheless, the aspects concerning the planning also need to be considered. Considering that the situation varies from case to case, waste is currently the common thread for the different ways that cities grow. On the one hand, the quick economic and urban growth affecting a country during its development does not have the time, nor is not interested, in rethinking and replacing the urban swarf that it produces; this swarf is forgotten or set aside, while part of it becomes the land for an illegal occupation. On the other

hand, the consequent decrease or decline affecting the city and post-industrial territories generates *shrinking* phenomena that pull the city back, leaving waste and desertion. In some cases, these spaces become precarious housings for those who have been expelled from the economic and social system, or for those who illegally live in its shadow.

3.3 ## Urban Paradigms

New urban features crowd on waste lands, clearly measuring the space of the city, or blurring the distinction between the formal and the informal environment within the urban sea. As for Rio de Janeiro's favelas, Fessler Vaz and Berenstein Jacques (2004) observe that informal areas are characterised by an extreme heterogeneity of types and configurations, even within the same area. Considering the variety of these landscapes, some urban cases fix some elements; they strengthen them and influence the nearby environments, they are the focus of ongoing transformations. There are four informal urban types and paradigmatic cases: self-built settlements or self-built and redefined (or about to be redefined) settlements through architectural and urban interventions; governmental settlements whose original planning does not include certain developments; governmental settlements whose original planning includes and supports certain developments; and urban entities meant for other purposes, colonised and reorganised by the informal environment.

Proto-cities like emergency settlements or refugee camps need separate reasoning. This systematisation is a partial reorganisation of known experiences that were critically interpreted for the purpose of informal rooting.

The more enduring and stratified informal estates belong to the first paradigm. The role played by endogenous actors permeate the evolutionary process of the settlement. In general, these spaces are illegally occupied or built, and characterised by precise strategies intended to occupy the land, by a characteristic, morphological complexity, and by a tendency to use more refined architectural styles. Villa Canoas's residential area is a peculiar case of informal rooting in Rio de Janeiro.

The residential area is extremely small and has a population of about one thousand inhabitants. Situated between the wall that delimits the nearby green and the state street, it partially extends on a slope of a relief and partially on a riverbed. The built-up area is situated on the regular edge of the street to the east, creating a compact front over time, whose buildings imitate the features of the nearby middle-class districts. Behind the curtain wall, the settlement extends first below the carriageway, reclaiming the riverbed with residual material. Independent houses rise up to four storeys and crowd progressively, filling gaps and creating structures that collaborate statically. The result is an *ensemble* where single elements blend in a continuous and stratified self-built urban calcification. Although the settlement was the

concerned of the *Programma Bairrinho* and influenced by the context, its current shape is the result of an almost independent evolution without foreign elements that alter substantially its shape and functioning.

The second paradigm refers to settlements where the actions of several actors are combined. Endogenous data and exogenous data add up or hybridise, creating a heterogeneous environment. On a global scale, many settlements experience this condition, showing a varying intensity in the informal rooting. Two main attitudes characterise the planning of these urban landscapes: on the one hand, the exogenous plan imposes on the built-up area in order to replace it, while on the other hand it is kept and restructured in order to improve it. Governmental programmes that are more sensitive with respect to the social component and the urban habitat aim at replacing approaches meant to uproot the existent. The participatory planning and dialogue with exogenous actors allow the residents to denounce the problems and negotiate about the planning, to acquire new know-how and competences for the practice of self-building, and to solve structural defects that would be hard to solve only through *self-help.* This is due to the lack of liquidity, tools, and specific competences. The interventions coordinated by the programmes can concern basic equipment like: sewerage systems; connection to electricity grids and water supply networks; interventions aimed at improving pedestrian or drivable roads; consolidation of soils subject to landslides; improvement of driveability; and channelling of ducts and systems. They concern important works like: social residences; demolition of irrecoverable buildings situated in areas subject to hydrogeological risks; infrastructural works on the transport system; sports equipment; and public edifices like community centres and day hospitals. Santa Marta and the Complexo da Maré in Rio de Janeiro exemplify how the actions of two actors blend.

The case of Santa Marta represents a transitory stage towards a new urban identity. It concerns the occupation of unstable soil, composed of woodland on a steep slope. Due to the unstable and steep soil, buildings need anchoring systems, which are actually bases composed of waste material and wooden piles traced on site. The piles' size predetermines the height of the terraces and the opportunity to expand vertically. The built-up area follows the contour lines, as do the roads. Today, Santa Marta is pressed between insurmountable physical limits: a retaining wall and a cableway to its sides, the forest to the north and the planned city to the south. The built-up area keeps growing vertically on itself, progressively structuring both the precarious and the consolidated buildings. The cableway and the contact points with the planned city become arterial roads for the urban development, guiding the alterations of the unplanned built-up area. Near the landing site of the cableway, buildings are different from the self-built type of buildings; concrete blocks that extend up to several storeys. At the foot of the hill, surrounding a strongly symbolic open space, the existing buildings evolve like a curtain wall on several storeys, sometimes adopting remarkable style solutions. On an urban scale, the setup is amplified by the work of the artist JR, who designs differently coloured geometric stripes on the facades. The southern edge becomes

susceptible to formalisation processes, as it lies near the planned district, which, in contrast, is subject to a sort of informalisation, at least on a social and functional level. Architecture and life reflect the ongoing change. These presences modify the architecture of the favela and the existing social and spatial relations. The case of Santa Marta represents a particular transitory phase of the informal rooting, the slow mutation towards a different urban identity.

The Complexo da Maré – today's largest built-up area of Rio de Janeiro – has several different configurations, which partly go back to the practice of self-building and partly to state interventions. Governmental aid had already been negotiated by the first residents during the fifties. The history of this complex is emblematic. Due to the nearby new industrial district, the first illegal housings started to settle on the territory along Guanabara Bay in the forties. The settlements grow on a plain area crowded by mangroves and swampland, which is hardly attractive for formal urbanisation. The built-up mass increased over time, pushing the inhabitants to colonise water with constructions on pile foundations, while the former buildings mutated and consolidated: "while the shacks on the banks expanded, the older favelas became well established and the inhabitants, some of who had been politically organized since the 1950s, fought together to get much needed infrastructure and services including electricity, water, and sewage systems, paved streets, public transportation, and telephones. At the same time Nova Holanda project grew denser, poorer, degraded" (Fessler Vaz & Berenstein Jacques, 2004, p. 66). The guidelines of the informal urban development settle down progressively, from the edge to the bay, the soil, the compact housing units and the paths that cross and frame them, which structure the urban morphology over time and affirm main access tracks to the built-up area of Avenida Brasil. The entire available area is filled during the sixties, when parts of the settlement are subject to actions of reorganisation by the government, which introduce block buildings on grid-like subdivisions and infrastructural connections. The soil was recovered from its first pile foundations with waste materials. It serves as a base for the building of new houses and the motorway Linha Vermelha, enclosing the built-up area and separating it from the sea. The informal dynamic is adopted by the exogenous planning that takes up sea area through further recovering in order to build new settlements. The Complexo da Maré is therefore an assembly of elements: concerning the morphology of its favelas and the building types, endogenous and exogenous contributions add up and are welded together, while the motorway delimits the informal expansion and compacts its building front.

Elsewhere, governmental programs have adopted experimental plans for open spaces, residences, equipment for leisure areas, public edifices, and infrastructures. As for the most typical expressions, the architecture and architectural systems use critical urban features as a keystone on which to found their planning, acting as both symbolic elements representing a political renewal, and values concerning the local community. The plan affects the informal space in different ways, acquiring its tactics or altering it with new dynamics. These

features are also common for several experiences in South-American favelas and barrios, from Lima to Rio de Janeiro and Medellìn, as well as Bogotà and Caracas.

The third paradigm identifies a governmental resettlement intervention, which was developed as a formal housing scheme for the planned city, but was situated to its edges. City of God in Rio de Janeiro was meant to host displaced persons coming from the old squats of the city centre. Several issues led to the failure of the plan: the substantial inadequacy of the appointed structures, the lack of basic and collective services, and the lack of restructuring programs pushed the inhabitants to act on their own, subverting the existing structures and upsetting its design. Appropriation and customising processes reorganise anonymous and insufficient environments; they implement the existing structures in functional and architectural terms. Buildings and spaces belonging to the original plan do not absorb the change that swallows them up, guiding them towards unexpected consequences. From the artefact to the settlement, a vast catalogue of architectural tactics is used to decompose the formal and functional unit of modernist building blocks and the monotony of houses on regular subdivisions: additions, cuts, densifications, ornamental excrescences, changes of use, and other kinds of interventions persist upon the built environment, reshaping it depending on the changing needs of the residents. The environments are improved in their practicability and the inner workings of the favela are reintroduced, just as occurs in the typical borderline space that mediates between public and private domains. The community is subject to critical housing and social conditions, which are further enhanced by the neglect of the government. It slowly rebuilds boundaries that were torn by relocation policies and shows a strong identity and ability to self-organise in local architecture. State interventions are finally obtained for public works.

The organisation of a plan for those who are to come, besides for those who are already there – with their respective needs and sensitivities – is crucial for this kind of intervention. Architecture is literally asked to "foresee the future", demanding the ability to mutate and adapt, in relation to the solid material of which it is composed and the necessary time for adapting. In respect of this point, some interesting considerations have been developed by designers who cared most about the informal city's way of production. Since the transformations of government districts for relocated persons upset structures and plans, it is necessary to observe these plans and structures carefully, in order to understand their basic deficiencies, the kind of establishing spatial appropriation dynamics, and the destiny of the conventional plan that is subject to informalisation processes. The PREVI district in Lima is the fourth type of settlement: it is a plan that tries to meet the real needs of the communities, suggesting interventions that are able to support and entail the most radical changes. This government intervention - set up by Peter Land in 1968 and still efficient in its general planning - draws attention to the destiny of the plan in order to foresee its results. Each of the architects involved are responsible for the planning of standard housing schemes that are replicable within the lot and that

are based on the study of the inhabitants' needs in future. Architects are asked to analyse the endogenous tactics behind the informal way to produce, in order to understand the dynamics, not to propose again existing schemes and vernacular forms, but rather to increase their potential and address the transformation of the building-residential estate-city, which will have an independent evolution. The completion of each building will be accomplished by other planner-builders – the inhabitants – who will change it, whether directly or indirectly influenced by the initial setup, depending on the supervening needs and their aesthetic preferences. The approval or refusal of the program can eventually nullify the plan, depending on the case, creating an extreme informal variety. The logic of the non-finished is typical for the barrios and is reconsidered here in terms of planning. Therefore, the planning includes and tries to guide the informal development of the city rather than to contrast it.

Some informal inhabitants that settle in abandoned or neglected places meant for other purposes belong to the fifth paradigm. Those who are homeless occupy spaces and structures without any permission, building their houses on their own or reshaping the environments they found on site, in accordance with their needs. Without any doubt, el-Arafa, the Egyptian town of the dead, is a particular case: within the large Arabic cemetery situated in Cairo since the 7th century, illegal squatters have colonised every corner of the necropolis over time, transforming it into a dense urban space, which extensively developed beyond the borders of the graveyard. The place of passing away combines with the place of dwelling, as also happens in some villages in Eastern Europe where domestic gardens are used to host private family gravestones. Life and death together, chapels and the places in front of them host housings, commercial establishments, roads to shared environments, while rudimentary houses fill up the gaps surrounding the gravestones. The city of the dead is an outstanding example of how the shortfall of housings and even of space to occupy, forces groups of people to live in a cemetery. In spite of the precarious conditions, this informal built-up area is a rooted example of how a place conceived for other scopes is used as a space for housing purposes – a common practice in the history of cities – like the transformation of gravestones and necropolis into temporary shelters or real homes. The precarious living conditions and the shortfall of housings pushes the inhabitants of overcrowded cities to search for an available space in which to dwell. This research can become a surviving tactic, a strategic occupation of maybe inhabitable spaces, or spaces that have not yet been considered by other squatters.

Hence, the informalisation of the city and of urbanised territories is a process that might involve the whole environment, interstitial or available spaces in the surroundings. This can be the result of different factors or of a sum of factors, as for example: the shortfall of affordable housings for the poorest; the scarce supply of social housings compared to the demand; the inability of buildings to adapt to the changing needs of the inhabitants; the willingness to support the informal development

of the city; and the tendency of some occupied buildings and urban spaces to transform.

While the political responsibilities concerning these factors are unquestionable, the increasing urban population and the creation of informal built-up areas can be directly fostered by serious financial crisis and conflicts. The consequent demand for houses can lead to an illegal occupation of lands and urban waste areas, to the creation of temporary housings promoted by governments or, further, to a mix of both situations. As for the housing emergencies caused by armed conflicts, grouping of emergency and temporary housings can last over time, creating other types of spaces.

Long-lasting critical situations or juridical problems arising before or after wars, concern refugee camps and makeshift shelters. Sometimes they arise out of necessity and turn into informal settlements, proceeding towards proto-urban forms through rooting processes.

A paradigmatic example of that process was triggered by the deportation of about one and a half million Greeks from Turkish territories in Asia Minor, after the Greek-Turkish war and the agreement of the Losan peace treaty. Since they were faced with a real humanitarian crisis, Greek authorities could not cope with the arrival of about four million people in a country of about eight million inhabitants at that time. Refugees settled down in the northern rural regions and to the edges of cities like Salonika or Athens. There were tents, shacks, and small makeshift houses. Over time, informal settlements extended and rooted in Athens's suburbs, generating the first urbanisation process of the neighbouring areas. Those emergency built-up areas in the Greek capital are currently consolidated districts, but their past cannot be deduced from their urban design. Nea Smirne and Nea Ionia are names that reveal the origin of the deportee, Smirne and Ionia, becoming signs of a geographic and cultural nostalgia that is by now far away. The Kakuma refugee camp – on the border between Sudan, Uganda, and Ethiopia - instead, is an example of how a site meant to host refugees can become a proto-city over time, without actually having its basic characteristics (Floris, 2007). A *naked city* for a *naked life* (Floris, 2007); a proto-city because of its dimensions, its micro-economies, the references to conventional urban structures; a non-city concerning a sentiment of citizenship, a sense of community and a legal status. As for the ancient roman institution of the *Iustitium,* Giorgio Agamben (2005) transposes to the present day the problem of juridical void that was created *ad hoc* by the political power during dangerous situations for the Republic, situations that imposed a suspension of the legal system. This concept triggers important repercussions on the physical shape of the contemporary city: "This anomic space that comes to coincide suddenly with the space of the city is so peculiar that it disorients not only modern scholars but also the ancient sources themselves [...] The iustitium seems to call into question the very consistency of the public space; yet, conversely, the consistency of the private space is also immediately neutralized to the same degree" (Agamben, 2005, p. 49). The physical-juridical space of the camp-city is the borderline

case where the legal system (concerning life and the space-hosting life) is suspended as it relates to both meanings of the term: on the one hand, it is temporarily called into question, and interrupted; on the other hand, it is a precarious condition, tending to the void. In this uncertain space, public and private spheres cease to exist, as do the persons' rights and identities.

During the emergency that lasts for an undefined period, "These settlements become permanently the *living environment* for many years, consider the Palestinian refugee camps in Gaza, in Lebanon, or the camps of Afghan refugees in Pakistan or Kakuma itself. Refugee camps take roots and relate to the surrounding territory, evolving as social and economic entities, soar to *landmarks*, that is to say to the limits, to icons of social and political presences, that embody *self-asserting logics,* logics that foster themselves of 'deserts that are unsuitable for human life' and sharing with other, definitely temporary spaces the non-real belonging to a place" (Floris, 2007, p. 113).

The way to city status, an ambiguous definition, is therefore a long stretch for camps. The identities of places and non-places, as well as the identity of the citizen, establish a contrasting relationship within the contemporary space. The start of a first rooting process within these spaces, together with the improvement of the inhabitants' living conditions, could transform them into proto-urban entities over time, into informal, structured, residential estates, and could create cities in the future, as happened with the Greek case.

The recent Middle Eastern conflicts have forced hundreds of thousands of refugees to migrate to look for shelter in Europe. Improvised refuges arise in abandoned places or on the borders of the European Union, following the same process that took place in other places and at other times, where the early-arising shacks are today's extended informal settlements or parts that are already absorbed by the conventional city.

3.4   ## Architectural Devices

As we observed above, the informal rooting is subject to the presence of various actors in different urban contexts: endogenous actors that act independently in order to consolidate informal and exogenous actors, that is all those who act from the outside pursuing the same goal. The action of these groups can be individual or mixed. With respect to the rooting process, the devices created in spatial terms – buildings and architectural and urban tools – become devices for an enduring existence. These devices can be classified as endogenous devices that take the shape of self-built work-in-progress buildings; exogenous devices meant to be catalysing bodies, replicable prototype buildings, architectural systems that act on an urban scale like infrastructures; endogenous-exogenous devices on a double level that is informal parasites and informal hybrids. Among the endogenous devices belonging to the first type, the more developed residential buildings in some of Rio de Janeiro's favelas represent an interesting case

of informal rooting. Constructions are characterised here by smart building and organising solutions, forms of decoration and linguistic ambitions, technical equipment, and engineering. These buildings are meant to evolve over time, depending on the changing needs of the inhabitants, rising and extruding towards the open space in order to obtain small rooms and precious areas. When the buildings are not prepared to sustain a transformation, the modifications and the additions overload the structure and the composition, creating strongly heterogeneous *ensembles.* The stratification of the building processes decomposes on the facades, which are rough archaeologies of life and architecture. They constitute the spaces of transition between the public and private spheres, compensating for physical and functional defects of the interiors or the spaces in front of the ground floors. These places host generally commercial establishments and entryways like small verandas, which are considered as living areas for the community. The interiors are often worlds apart, private spheres with symbols and references interweaving local traditions and mass culture. As well as the finishes, the furniture – in terms of style, quantity and disposition – is also sometimes a further confirmation, between exhibition and identity, an individual value and adhesion to the middle-class role models.

The phenomenon of the informal rooting is mainly visible in the endogenous dimension and the arrangement of the plan: the latter – from an urban to an architectural scale – is "open", as multiple subjects define it over time. The way spaces are used, the lack or presence of commercial establishments, parties, and rites, the expansion of familial units or the interaction with the inhabitants of neighbouring buildings, all contribute to the modification of a building, its function, the design of its facades, its symbolism, and its ability to organise a space in front of itself. Even if the popular buildings composed of blocks placed on pillars hark back to modern design, the ability to alter and adapt to changes astonishes any modernist lesson on planning.

These informal architectures sometimes arise within a strongly heterogeneous landscape that includes intermediate situations and elementary buildings with some issues concerning the dwelling. Architectural features, decorations, and iron grates reveal a social scale similar to planned middle-class districts. The architecture creates landscapes composed of different subalternities, *micro-physics of the power.*

The second type of device includes different kinds of landmarks: architectures that serve as "catalysing bodies", systems that push changes in the urban context and the community. Scale, language, and programmes burst into the informal environment, working in contrasts. The goal of these architectures is to introduce acts that focus on the social sphere, which is sometimes lacking or not provided with appropriate spaces; secondly, these elements are detectable within an urban setting, without any accents, as synonyms of a social-urban redemption and an identity to which the communities can refer. This is the pursuit of architectures like the library España in Medellín, the Social Kindergarten El Povenir and the Cubierta Cazucá in Bogotà

by Giancarlo Mazzanti, or indeed the school by Wolff and Petrus in Cape Town. Informal spaces are newly interpreted by architectural planning that serves as a reorganising device. These architectures aim for a monumental scope and spread their magnetic power on an urban scale: they are the focus; they reorder the context and provide an added value. Here, the plan serves different goals and programs, but it is always aimed at introducing important qualitative improvements of the environment in which it is embedded. Planning strategies change depending on the physical contexts, the needs of the inhabitants, and the problems. Interventions like those mentioned above, express - from a qualitative point of view and with respect to the types of plans, as well as to the importance of the investments – the rooting level of the physical context, which definitely aims at a permanent condition.

On the contrary, these exogenous architectures sometimes introduce or accelerate opposed dynamics. Interventions aimed to improve the life of the residents can strain their balance, for example by increasing the rent and real estate values of lots and estates.

Another kind of exogenous device enters the context in order to test and verify the efficiency of its purposes. Acting on a small scale, this device can multiply by triggering processes that replace complicated existent situations. This is the case of experimental architectures like the floating school of NLÉ in the Lagos lagoon: half-building and half-vessel, this is a replicable element, which can be placed elsewhere and whose function can be reorganised. The use of standardisation and prefabrication lowers the building costs, while the use of elementary building techniques suggests or guides the self-built copy.

The consolidated occupation methods (colonisation of water) and the building technique (floating frameworks) are reused in the planning of this device in order to favour the restructuring of the urban material. Hence, there is no intention to act in conflict with a consolidated practice: the plan learns from the informal environment. Still, it seems that the plan might not be applied in other plans beyond the prototype, and that it struggles to mutate a system of consolidated practices and models. Furthermore, there are doubts concerning the chance to finance it and spread it as far as it would be necessary to influence the context. There is the feeling of an object caught in the experiment.

In Caracas, the association Urban Think Tank is instead responsible for an important infrastructure intervention for the traffic system in San Agustín's *barrio*, a system of exogenous devices that act on an urban scale, organising an infrastructure for the traffic system. Metro Cable is a cable car whose three stations are placed in the low-income district, connecting it to the commercial district, the heart of the city, and the urban transport network. The system winds harmoniously along the strategic parts of the city, implementing small interventions of requalification, integration, and communication in the informal sector. The connected stations in the barrio have been designed to respect the needs of the local community and offer services of public utility, thus becoming a gathering point. The flow of people quickly crosses the

system, which now connects distant spots of the city in one physical and symbolic space. As the plan involves strategic spots, it becomes a chance for a radical reformulation of the traffic system inside and outside the barrio, a chance to trigger architectural improvements and social cohesion: "Such designs are urban "acupuncture," interventions based on contextual assessments [...]. After more than a decade of studying various favelas, interviewing residents, and testing and implementing new slum-upgrading concepts and solutions, we now turn our efforts to a socially oriented, "prêt-à-porter" architecture [...]. We promote architecture as an event whose outcomes can only be realized with the active participation of the inhabitants. Our concept of architecture manages pre-existing spaces—building over, under, around and through–and creates new spheres that assuage segregation. We strive to construct bridges among cities' stratified sectors and to eliminate contention at the crossroads by maximizing the potential of the borders" (Brillembourg & Klumpner, 2010, p. 57). Considerations and actions concerning the present situation are therefore a crucial issue in Brillembourg and Klumpner's idea. From here on, they imagine the city of the future. The improvements concerning the marginal areas and the suppression of conflicts lead to an architecture that involves political and social features.

The interconnection between the architecturally and socially distant parts of a city is experimental. The barrio is subject to a constant risk concerning the increasing level of people, culture, money, and safety, which might not only lead to increased opportunities and wealth, but also to increased speculation. On the one hand, similar interventions are necessary to improve dwelling standards, while on the other hand the worthy political aims behind the plan can be absorbed by other opposed and manipulated political developments.

As for the third type of architectural device, the rooting mixes endogenous and exogenous data. Elemental in Quinta Monroy is a paradigmatic example for social housing. It is one of the most interesting examples worldwide for the "consolidation of an informal settlement in the city center" (Greene & Rojas, 2010, p. 111).

This complex of agreed-upon apartments, developed as a part of the programme of Chile Barrio, establishes a dialogue between institutions, planners, and residents, building good quality houses with a minimal budget. Elemental pursues ambitious aims such as the reconstruction of houses in a place that has been occupied for thirty years, a high housing density, the opportunity to expand the properties without deteriorating the quality of the housing as a whole, the involvement of residents in the planning process, and access to the property. Several critical issues endanger the success of the intervention, including the removal of shared spaces as a setting for situations of conflict between the residents, and the high cost of the land. Planners are forced to formulate an innovative plan because of the hurdle in finding a type of architecture approved by the residents and economically sustainable with respect to both the building and the trade.

In the wake of the PREVI experience, this architecture is prepared to host informal parasites, supervising the spaces to be colonised. Empty and full, internal and external environments are subject to the same linguistic characterisations and addition processes that can be seen in resettlements and in the features of self-built settlements. Inhabitants create individual spaces, while the architecture serves as a substrate on which to anchor, as well as an organising element for the evolution of the housing. The author's project and the informal project featuring various actors are combined, creating an assembly. Even if the original plan of this ongoing architecture vanished behind the cuts and the additions of its assembly, its goal would be achieved anyway: to foresee and support the change. Elemental's plan creates an ambiguous entity that preserves the imminence of a planning idea that changes its shape, language, and appearance: it is an architecture intended as a sort of bone structure that supports the change during an urban life.

The case study analysed by Kang (2009) is an example of a parasitic settlement. An apartment building from 1962 is subject to remarkable alterations concerning the planimetry of the units and the distributional spaces by splitting up interior and exterior additions, parasitic expansions deforming the layout of the facade and the unity of the surfaces. It is a proliferation of cell types over space and time that expand by absorbing nearby units, stairwells, and external balconies, which become rooms on which to add further volumes that protrude towards the street.

Other parasites invade spaces meant for other purposes. The former *Centro Financiero Confinanzas*, also known as Torre de David, is a peculiar case. A unique case rather than an episode marking a trend, it could become paradigmatic if it was systematically applied as a solution to the overcrowding of the cities. This office skyscraper, which measures forty-five storeys or one hundred and ninety meters in height, was abandoned during its construction in the heart of Caracas, and then some squatters started to occupy it. Infill walls, dividing walls and illegal structures were built inside, creating a *vertical slum* that hosted seven hundred and fifty families. The case was internationally supported and promoted by the association Urban Think Tank, which exposed the results of the research during the 12th international architecture exhibition *La Biennale di Venezia*. In spite of the critical mass due to the occupation and the fame achieved thanks to the group of architects, the skyscraper was cleared in July 2014, when the Venezuelan government, who owned the property, dropped the possibility to support this housing experiment in order to sell it to a Chinese investor who will complete its construction. Although it might be considered as a concluded episode, the experiment of *Torre De David* reveals scenarios that could have consequences affecting the imagery and the actions taken by global squatters: the skyscraper of Caracas is a new spatial configuration of the informal. At the same time, considering that the initial intentions of the local government, and the involvement of cultural actors, stated an eventual rooting in the community and its space, *Torre De David* is still a typical case because of the harsh change of direction concerning the persistence of an informal entity in the urban landscape. The informal

rooting can be interpreted here as an end in itself, which will conclude in taking an opposed direction.

4 Informal Dictionary

This section examines the set of planning tactics used for the urban, self-built informal system and is a premise for the case studies with which this work will deal later. What does the term rooting mean exactly? In the Italian language, the verb to root has the following meanings: "Planting or taking roots, clinging, with reference to plants and also of teeth, calluses, tumours […] the assimilation and the perfect acclimatisation […] with reference to persons […] letting penetrate, inserting deeply".

Clinging, acclimatisation, definitely establishing within a place, planting roots, penetrating deeply in the mind or the environment. The verb enhances two crucial issues concerning the debate about informal rooting: the first concerns a physical adjustment strategy within a space; the second concerns the metaphorical adjustment in the mind, the ideas, and the spirit. The latter tells us about rooting in the collective memory of local communities and urban societies, but it also refers to the constitution of groups who share places and habits, efforts and a daily routine; it tells us about the groups that consider informal residential areas as spaces that are vital, necessary, and irreplaceable.

The first matter suggests concepts and practices that allow for informal rooting and state it in architectural or urban terms. The entire evolution of the informal environment can be seen from actions and smart solutions adopted by vegetal species, in the functions of the rooting system (anchoring to the soil, storage organs, hormone production), and in its different types (aquatic, hypogeum, air plants; roots that branch off from nodes like stems, or whose growth is triggered by traumatic events; roots that extend vertically due to negative gravitropism; roots of parasite plants that absorb the sap of host plants). *Clinging, air, acclimatisation, anchoring, negative, nutrition, storage, underground, parasitism, and trauma:* some terms belonging to the botanical glossary become a vocabulary of informal architectural and urban design, as an expression of their devices.

These terms are preceded by two parameters: *time* and *proliferation.* The radical proliferation distinguishes an expansion within a space – underground, air, water – that follows horizontal, vertical, diagonal, zigzag, etc. trajectories, regardless of the different species and their structures. The proliferation distinguishes a movement within a space that can occur very quickly or slowly, but progressively. The relation between accomplished space and time records the movement of a body, which is sometimes temporary and visible, sometimes continual and imperceptible. Architecture and informal cities are bodies and plastic structures that adapt and impose on the context in order to resist to uprooting.

Words will be given to the task of exploring the operational potential of the informal environment, in order to outline a *handbook under construction* as an open project for a theory concerning this informal rooting. Regardless of geographical and cultural peculiarities, this dictionary fits all informal settlements on a global scale.

4.1   Time

The first parameter focuses on the development of the process and its duration. In many current approaches concerning city planning and design "informal zones and their inhabitants are not really part of the city, being considered temporary" (Brillembourg & Klumpner, 2010, p. 127). The emblematic Brazilian experience does not correspond to the idea of a temporary phenomenon: "As they have lasted for more than a century, favelas could not be considered as a transitory phenomenon anymore" (Conde, 2004). This passage stresses the fact that the informal urbanisation of the city and its informalisation are deeply rooted phenomena that go back to early times across many global contexts.

Furthermore, the transience can be interpreted in another sense: the concept does not refer nor cannot be reduced to a short duration, nor the inexorable disappearance of the informal environment, but rather to the transition from one state to the other, from a basic level to a more advanced level. In fact, rooting entails the idea of a progressive and continuous growth. As for the Colombian case of Santa Marta, Kellett's observations, made over a period of seventeen years, transpose the idea of transience as a transition from one state to another over time. The phenomenon focuses on the house as the embryo of this evolution: "the idea of the house project as a process of change through time" (Kellett, 2013, p. 151).

Another meaning of transience refers to the opportunity to organise fluid, variable spaces. In the *kinetic city*, Rahul Mehrotra (2010) associates the concept of informality with data concerning time and dynamics of this new landscape, as a counterweight to the *static city*: "in these urban conditions, the physical manifestation of the city is reversed and, here, the "static" or formal city is most often situated in the temporal landscape of the "kinetic" or informal city [...] it is not necessarily the city of the poor, as most images and discussions of the informal city might suggest; rather the temporal articulation and occupation of space" (Mehrotra, 2010, p. 12).

4.2   Proliferation

From the house in a temporal sphere, to the house in a spatial sphere, growth and consolidation of the domestic microcosm expand to the surrounding environment "copying from the design models of the more affluent beyond the barrio for the generic design patterns, and secondly within the barrio. Dwellers recognise that they observe and appropriate selectively the designs and motifs of neighbours which

they believe express the values to which they themselves aspire"
(Kellett, 2013, p. 155).

The criterion of proliferation translates into the distribution of building types, building techniques, and styles, from an architectural to an urban scale, and hence to the relations established between persons, objects, and open spaces. In fact, Hernandez's research on Bogotà's popular districts explore the consistency of the informal open space, which is the propagating medium for these kind of relations. Parks and sports fields, pedestrian streets and stairways, bus stops, internet points, and rooms and extensions of commercial establishments that look onto the street create a landscape subject to a *permanent transformation*, marked by the architecture in its configurations and outer appearance: "the inside and the outside of the house are closely related to the activities that take place in and out of doors; a similarly close relationship obtains between the housing and the physical setting. What happens to the house directly affects the image of the urban spaces, in terms of their form and language" (Hernandez Garcia, 2010, p. 231). The concept of transience described above actually acquires the spatial dimension, identifying the element that connects the inside and the outside as a medium for the proliferation of concepts, tastes, and ideas: "the façade is the transitional component between both spaces (interior and exterior, Ed.), with the interchange mediated through windows, doors, terraces and balconies" (Hernandez Garcia, 2010, p. 242). The city is a universe populated by single planning subjectivities. Each of these permeates contents and spreads them in turn.

4.3   ## Clinging

As pioneer species that root and grow along the edges of the streets, some informal settlements have strategic abilities and take root in uncontrolled areas. Here, a first unit of elementary housings consolidate in order to build a critical mass that discourages demolition and the destruction of what was assembled through hard work: the shelter made of waste and few relief goods. Elevations and hollows are strategic positions because they allow the context to be overlooked and a position outside the field of view of those who are in charge of supervising the areas. In rooted settlements, those who join the community later rise higher and higher, using spaces that are unused or dangerous and precarious. As a consequence, there is a hierarchical differentiation between the first and the last occupants: "Many are erecting new dwellings on previously untouched steep slopes – some close to the city center and on the hills surrounding existing settlements" (Kellett, 2013, p. 155).

These very places belong to the geography of waste. Rio's *morros* are such urban isles that brush the centre of the city, as well as Caracas' hills, where houses are placed along the elevation curves of steep and unstable slopes. Elevations alternate with soil depressions: similar to an undergrowth, where the soil grown by noble and long-lasting plants

is composed of rotten layers of residual material, the marshy chasms in Darhavi are filled with waste material.

These built-up areas are stratified on the urban topography as long-lasting, differently structured settlements. The long history of Brazilian and Indian occupations demonstrates the unshakable tenacity of the squatters.

4.4   Aerial

The informal space extends everywhere on the endless horizontal axis of the suburbs and on the new horizons of wastelands. Once the available space runs out, the sky is colonised and considered a new informal land. The vertical extension, an ancient and modern practice in every city, is established for illegal housings that plan to extend vertically right from the start, arranging thicker brickwork for the base and leaving exposed re-bars on the upper floor. Once the time is right, new volumes can stick one onto the other, preparing to host further layers, protruding as an overhang over the surrounding space in order to gain a few precious centimetres. Thus, the roof becomes a resource for physical and economic growth, a space to enlarge the house, a space in which to host new family members, or ensure rental income. New, vertically extended environments increase in quality as they are better aired and provided with natural lighting and views. In some contexts, the roof is not only used to host new volumes but it also becomes storage or a working space. In Cairo's suburbs, the *Zebeleen* sift through garbage searching for materials that can be sold, accumulating them everywhere, along the streets, inside rooms, and on the roofs of houses. The roof is not only an opportunity, but also the extreme edge of precariousness, being the last habitable space, the house of those who came last and who cannot afford to rent a house in the city, nor in the slum: "In Cairo and Phnom Penh, recent urban arrivals squat or rent space on rooftops creating slum cities in the air" (Davis, 2006, p. 13). This habit is also common in Hong Kong, where the rooftops have been colonised by those who cannot afford to rent houses with the highest prices per square metre. In *Portraits From Above*, Canham and Wu (2009) show this landscape in detail using pictures, sketches, and texts.

There are two cases that summarise opposing realities, reflected in the quality of the spaces: in the case of Kwun Tong, tensions between the residents, concerning job opportunities and the risks of clearance, create precarious, minimal spaces that do not become structured over time. On the contrary – even though detrimental to the quality of living – the Tai Kok Tsui community could develop better social relations, and therefore a consolidation of the buildings composed of rooms on different storeys in edifices built in the fifties. The inhabitants can benefit from the central position and thus from the proximity to working places and services. Nonetheless, the political strategy of the government aims at peripheral resettlements, thus favouring real estate operations for wealthy classes on lands that increased their property value.

<div style="text-align: right">4.5</div>

Acclimatisation

Easing down between the folds of the built-up area, detecting invisible advantages, watching the city through different eyes, and giving a different interpretation of space. The informal way of building requires an ability to adapt to critical conditions, but also, broadly speaking, requires capable planning: "More in general, a way to use the imposed system constitutes an attitude of resistance to the historical law of a state of things and its dogmatic legitimation. This kind of practices, introduced by others, redistributes its space, creating at least a margin, in order to keep the control over uneven forces and glimpse utopian references. This is probably where the opacity of «popular» culture is displayed – the black rock that opposes to assimilation [...] A thousand ways to *support* or *destroy* the action of others, that is to say the space created by others, characterize the subtle, tenacious, resistant action of groups that have to unravel within a tangle of established forces and representations, as they do not have a place of their own. It is necessary to "make use". Among these stratagems of fighters, there is an art in scoring, a pleasure in bypassing the rules of a constrictive space" (Certau, 2012, p. 49).

Sacrifices and smart solutions, small marks and weaves that are invisible to the stranger's eye, daily form pieces of consolidating houses and cities.

Many statements talk about the attachment to the places conquered through hard battles and burdensome sacrifices, undergoing long processes. The inhabitants of informal areas often say that they are unwilling to move away, even if this would mean greater comforts. Adapting means therefore adapting to the conditions imposed by the context, but at the same time rebuilding an individual concept of habitat.

<div style="text-align: right">4.6</div>

Anchoring

The anchor allows a temporary or permanent fix; it allows for repositioning and feeling safe. This device is characterised by several functions, standing both for fixity and mobility. The occupation of a soil is characterised by the use of smart strategies: the housings are elementary, dry construction made of lightweight materials that are easy to transport and advantageous for quick and simple assembly. This rudimentary tectonic will also allow a quick rebuilding in case of demolition. By repositioning, they can also choose to put themselves in a different, safe place. By the time they find this place, they will shape a basement made of brick, stone, and concrete aggregate, a solid base that will serve as a plateau and anchor the house onto the ground during the rainfalls that cause outwash on the slopes. In case of destruction, a new house will quickly arise on the solid basement. In some Brazilian *favelas,* this tactic has led to a consolidation of the early housing units.

Again, framework constructions arise elsewhere during the night in order to delimit a space that was taken through an illegal occupation, a space that can no longer be dispossessed. Without window frames

or infilling, those constructions faintly mark the shape of a house. In Istanbul, this first act gave rise to the growth of vast informal districts like Sultanbeyli.

Again, once the ground and the air have been colonised, the occupation changes over to water. In Makoko, in Lagos's lagoon, since the 17th century, fishermen and wood merchants have colonised the water, building informal housings made of vessels, floating slabs, and pile foundations. The amphibious landscape of houses and trunks on water is constantly changing, some elements anchor onto others, and the space between them is filled and recovered. Small isles unite and form layers of new coasts. The informal consolidates the soil on slopes as well as on the edges of the sea, where new houses, pedestrian routes or streets and industrial plants will be able to arise.

4.7   Negative

The risk factor and the myth of marginality stigmatised by Rao (2010) and Perlman (1976), both underline a crucial topic: the informal issue cannot be explained by the contrast between modern and non-modern. The increase in self-built settlements marks the failure of the big modern plan as a rational and equal space where class struggles can come to an end. This fact involves the whole city.

As for the informal rooting, the topic comprises two points of view: on the one hand, it is clear that the modern standard and its concepts of architecture and city cannot be a term of comparison for informal settlements. In fact, they are characterised by other measurements and values. On the other hand, the consolidation concerns strictly technical and technological data of settlements and buildings: installations, energy expenditure, and requalification of the buildings, must necessarily consider the agenda of those who work in these contexts. The two points of view are combined to inform the plan.

As for environmental sustainability, which is only a semi-crucial issue today, there are precise planning issues that arise and which combine urban growth, environmental care, and energy efficiency. The determination and the upkeep of intrinsic values concerning the informal, interweave with their necessary modernisation, as Beardsley and Werthmann observe: "We have two chief areas of concern. One is the severe competition between the expansion needs of informal cities and the protection of ecological and economic resources like farmlands, wetlands, and preservation areas. Witness, for instance, the squatter invasion of the forested slopes of Tijuca National Park in Rio or of the fertile farmlands around Bogotá. How are we to balance a growing population's right to shelter with the aims of environmental management? Our second concern is about the wisdom of conventional upgrades during a time of climate change: If we bring electricity to hundreds of millions of slum dwellers, for example, should it come from coal-fired plants? Or can we skip antiquated technologies and make low-income settlements models of sustainable development?

Already they have smaller environmental footprints than formal cities: They are denser and more walkable with fewer cars and more public transportation. Can the best qualities of these places be retained, even as they are upgraded? We need to work in anticipation of future conditions and constraints" (Beardsley & Werthmann, 2008).

4.8 Nourishment

Some opportunistic tactics and evaluations resort to different latitudes during the building of informal housings: the proximity to a productive area or to a crucial area related to places of work; the positioning in unbuilt areas near places to find building materials; the proximity to a transport infrastructure for mobility; or the use of an artificial barrier that separates the settlement from other urban areas. Not least, the supply of energy: the necessity to use electricity and drinking water is a triggering factor for settlements to establish nearby an existing network in order to purloin the contents. This strategic evaluation allows built-up areas to root.

The lack of infrastructures for drinking water and electricity, or the improper ways to provide for their supply (tank trucks, shafts, dangerous wiring) lead sometimes – as for the cases of upgrading – to the installation of specifically built, paid networks.

As for the architectural facts, the consolidated informal landscape is characterised by installation infrastructures that are generally concealed in formal sectors. Yet, this presence stands for disguised issues: "Gatos, if understood as emblematic of the relationship between the formal and the informal, would represent the point of transition from a controlled and regulated network to an "invisible" and undocumented complex" (Fabricius, 2008).

Just as roots do, tangled cables and pipes grab onto the host body – an urban body in this case – and translate it materially into sedimentation and rooting processes, also through the adding of networks installed at a later time, like sewage systems or water supply systems. The tangle of these improvised networks is an aesthetic element, while in technical terms it represents a hazard that can entail risks "While perhaps no more haphazard than the tangles of wires and tubes that run through the walls of any building, the lines that zigzag through a favela are remarkable in both their complexity and their fragility. Electrical wires and thin plastic tubes carrying fresh water drape over buildings, run along paths and stairs and up walls, bundling and splintering in often dangerous configurations, as when electrical wires are used to support water pipes. In some instances, electricity poles are co-opted and used as support pillars for houses. Most poles are heavy with hundreds of power lines" (Fabricius, 2008).

4.9   ## Underground

Plants like Bermuda grass strengthen their rooting system once they are eradicated. Just like icebergs, the visible part on the surface is a tiny part of what lies underneath. There is a problem with the interpretation of informal dynamics and forms, depending on who is observing them. Generally speaking, the unmapped parts of the city can coincide with what has not yet been ascertained. From the residents' point of view, as independent planners and builders, this white space entails meanings unknown to a stranger: "when exploring the issue with residents, ...less obvious landmarks appear" (Hernandez Garcia, 2010, p. 237). Small spaces, houses and urban objects become reference points and have a meaning only for those who know them, live them, and use them.

Another invisible or uninterpretable aspect is the plan. Although it is often considered to be the "great absent", it is differently conceived, edited, carried out, sometimes with the same ambitions and role models of conventional cities. The architecture and the open spaces around which it develops sometimes follow specific planning intentions, designs, and morphological types, expressing sensitivities and tastes.

As a confirmation, Turner (1972) and Kellett (2013) have examined on a different scale the reproduction of formal urban configurations within the morphology of settlements and buildings. "The most vital aspect of the grid layout is that it will be read as conventional and have the potential to develop and become the same as other parts of the city. The expressed aim of many settlers is to produce places that are as close as possible to the dominant formal housing areas. Hence they adopt the rigid layout of blocks and plots – and significantly they leave open spaces for squares, schools, clinics etc. In short, their collective aspiration is to create conventional, legal, fully serviced neighbourhoods" (Kellett, 2013).

Klaufus and Mitzman (2012) underline the use of graphic works as sketches and precise indications concerning the subdivision of the interiors, the scheme for decoration, the colours of the facades, and the shape of the roofs. Hernandez aims instead at enhancing the visible ambitions and dignities of informal architecture: "the richness and creativity that can be found in popular settlements confirm the existence in these areas of a design language and forms with significant characteristics" (Hernandez Garcia, 2010, p. 219).

4.10   ## Reserve

The area of an informal settlement differs depending on the available space. The area spreads within its physical limits (a railroad, a channel, a motorway, etc.). Some settlements occupy minimum areas; they arise on the edges of crossroads filling few square meters; others occupy vast urban areas like planned districts.

This way to create space seems to aim at taking up the entire available space. Even when built-up areas consolidate, the informal urban growth is horizontal in nature, as it cannot rely on techniques that allow a significant vertical expansion, and because the new buildings are necessarily situated at ground level.

Nonetheless, within some informal spaces, there are empty spaces, some space reserves. The community that created and saved those places agrees on their non-occupation, lending to them a symbolic value.

In Rio de Janeiro's Santa Marta favela, a small open space becomes a reserve: a rift in a dense built-up area becomes, for a moment, the set for a popular music video by Michael Jackson. This event lends an air of myth to the ordinary that is therefore saved from the urban development that absorbs any available lot or shred. It is a rare example of a public space, a space that is open, according to the meaning proposed by Jamie Hernandez, to the morphology of the favela that notoriously uses, at least at an early stage, those that can be defined as biological reserves. In fact, *morros* are urban elevations that skim the city centre, reserves for the third landscape. As they are occupied by illegal settlements, these vegetal reserves become urban reserves for residents of the favelas, and at a later time for builders and real estate speculators.

The emptiness, considered as a space that acquires weight in urban morphology, is a rare exception in informal landscapes. In a scenario that aims to occupy the entire soil, the emptiness is triggered by particular factors, especially if it is situated within the existing tissue: "The need for soil, especially for highly dense urban systems, leads to ready-made procedures applied on the architectures that shape the city […] As for the case of Caracas, we see a different way to recycle a stadium. The new building concerns the expansion of a favela: small makeshift housing units have occupied the bleachers of the sports structure. The stands are interpreted as a soil, waiting to be built-up, while the field is ascribed the value of the emptiness that has to be preserved […] The soccer field is instead interpreted as a public space, the representative element of the communitarian culture, as a consequence, the new settlement develops on the edges of this large emptiness" (Marini, 2008, p. 75).

4.11   ## Parasitism

Regarding the parasite-society relation, as it refers to the second declination of the parasite, i.e. "*who lives off others*", Sara Marini explores how the relation between the figure of the parasite and the resource, space in this case, becomes a crucial element to understand the evolution of space and time of the contemporary city. The arising concept of globalisation has in fact erased the connotation of *borders*, which is a representative feature for the spatial structure of modern politics in Europe. Now the image of the *web* translates new territorial configurations, surpassing their physical limits and nullifying the effectiveness of the tools for their supervision. The parasite plants itself

on a limit that has become ambiguous and unstable, and creates new temporal and spatial relations, revealing as "useful to the social system just as it is for the natural system: a factor that triggers evolution, yet not without the features of an exploitation, a 'state of exception' that can become 'paradigm of government'" (Marini, 2008, p. 75).

The parasite therefore defines an alternative, an evolution of urban systems that can become a paradigm. Sara Marini quotes an important passage of Luhmann: "The advantages of a deviation can be seen on the dominating habits and practices. Each order is based on exclusions, a symmetric order on the exclusion of asymmetries. This presents a *chance* that could not be possible without distinct exclusions, that is the opportunity to discover and use ordering advantages in what has been excluded. Just the well structured orders make the opposite visible – not equality, but inequality – and offer, when put to the proof, the *chance* of a bifurcation, thus the *chance* entailed by a different way which makes, when pursued, irreversible history in turn. Hence, just according to the sense meant by Michel Serres, parasites who use this chance can establish. A parasitic order arises, whose transition from the state of exception or deviation to the primary order passes nearly by unnoticed – only to be, in turn, again parasitable. *The evolution creates parasites, that, in turn, create evolution*" (Luhmann, 2008, pp. 49 - 50). The informal city is a mark of this evolution, and, once it roots, it marks the transition to a new stage of the urban shape: "As a response to the struggle for space, the space in the center and not the marginal space, the figure of the parasite propagates due to the practices of self-building that modify the city and due to the conceptual transposition into contemporary architectural strategies, marking the need of a mutation of the rules in force, concerning the occupation of the territory" (Marini, 2008, p. 50).

Today, the return to the concept of physical limit is reaffirmed by rhetorical myths of security that organise the spatial devices of new frontiers. The creation of gated communities, militarised walls between the states, and barriers between parts of the city, strengthens the social subdivision of space. Within this setting, the parasite and its ambiguous position, takes on new tasks concerning the physical and political building of the city.

4.12   ## Trauma

The stratification or extension of a dense residential area undergoes fragile stages that weaken its structure. Critical issues concerning hygiene and sanitary conditions, overcrowding, hydrogeological risks, illegal occupation, etc. expose it to the risk of being wiped away or relocated in resettlements. For decades during the nineteenth century, the *tabula rasa* theory has been systematically applied in South America as well as in Africa and Asia, de facto impeding a consolidation and a quicker improvement of the same issues that they tried to solve, which would have simply recurred elsewhere. The eradication of various favelas during the sixties for example, has triggered the social disaster

of thousands of people relocated in resettlements, away from their living and working places. As demonstrated by the case of City of God, these communities were forced to live in residential blocks and move every day from distant proto-suburbs without services, to the centre of the city. The tabula rasa that erased the informal environment promoted metropolitan sprawling everywhere, the dispersion of houses, working places, equipment, and basic services – as well as "formal" ones - wasting resources and non-urbanised lands.

On the other hand, just as pyrophytes reactivate and bloom thanks to fires, the informal settlements are subdivided on the level zero of the *tabula rasa*. The trauma increases the propagation of the informal environment rather than slows it down and triggers rhizome tactics of reproduction through the modification and implementation of governmental settlements, or the quick reoccupation of evacuated areas. The trauma can thus be an event around which to organise new dynamics aimed at the consolidation of a built-up area.

4.13 Rhizome

If we take the prime example of the rooting phenomenon as a reference, that is the South-American informal environment, we need to underline the significant change of paradigm that can be noticed: the transition from an unstable and temporary status to a stable and permanent status, even though it is characterised by an endemic dynamism. The theory of rooting, the botanical metaphor applied to the informal environment, reaffirms the propagation and the presence of a new phenomenon, analysing its theory observing acquired tactics and its practices observing actions aimed at a physical permanence of urban cases. Yet, it is an ongoing phenomenon, just like the urban systems and architectural tactics that it describes, and which are summarised in the dictionary of the informal rooting.

Some authors understand the root figure as a structural and hierarchical concept. In her reflection about the work of the Brazilian artist Hélio Oiticica, Paola Berenstein Jacques (2001) organises her considerations starting from the book-manifest by Christopher Alexander, *A city is not a tree*, from 1965. Alexander exposes a distinction between artificial cities and natural cities that is between planned cities and vernacular, non-planned cities. In this case, the botanical metaphor is a critic to the approach of architects and city planners that, according to Alexander, "organize the city as a tree, as they are used to a system of thought that works alike. This system of thought is rather simple, binary, and architects discover themselves unable to reflect the most complex, multiple forms, like the semi-network forms" (Berenstein Jacques, 2001, p. 107). Nonetheless, according to Berenstein Jacques, there are other urban shapes that cannot be associated with the dichotomy suggested by Alexander: favelas are in fact "much more complex than cities deemed to be natural, according to Alexander's semi-network logic [as] they are constantly arising, never terminate their evolution, nor do they stop growing, and, above all, they are not fixed

like cities deemed to be formal, whether artificial or natural, whether planned or unplanned. The special complexity of the favela mixes up with their impermanence. Hence, there is a basic difference in the way they are rooted. The planned city - the tree-city, like the tree or the concept of the tree, is strongly rooted in a root-system, an image of order; the partially planned city, the bush-city, follows the rhizome-system, which Alexander would have some issues to demonstrate in his mathematical-geographic diagrams, that are rational, Cartesian, tree-like, all in all" (Berenstein Jacques, 2001, p. 107). The rhizome, the concept that the author borrows from Deleuze and Guattari, is opposed here to the conventional theoretical structures ascribable to the figure of the root; it is a thought system which is "the opposite to the tree/root system [...] (which) in order to preserve an arborescent structure, is characterized by a false multiplicity [...] (the rhizome) is not a model [...] it does not have a precise image. What matters the most is the process rather than the formal image, the movement, the germination, the growth, the impulse" (Berenstein Jacques, 2001, p. 107).

The rhizome is therefore an operation, not an image, an aestheticisable entity. It is a headword to be included in the handbook of the informal rooting that is needed to downgrade conventional theoretical structures, urban theories, and conventional cities.

Hence, according to Berenstein Jacques, the favela is a moving entity and its rooting follows a rhizome-system, not a root-system. Nonetheless, the informal rooting, as the phenomenon that we are describing now, highlights a new issue: through upgrading processes, the favela can end up structuring spatial and social hierarchies, internalising mechanisms of real estate speculation, finishing its stage of spatial expansion, embracing plans that hybridise endogenous and exogenous actors and strategies, thus elements to organise the city. This stage seems to be more similar to a root-system: it is therefore possible that the two systems for the creation of space can coexist within an informal hybrid system responding to the dynamics studied by Roy. As Hernández and Kellett remarked with regard to the concepts of *smooth space-striated space* expressed in *Mille Plateux,* "Deleuze and Guattari (2002) underline the fact that in spite of their intrinsic differences, the two spaces "exist only in mixture: smooth space is constantly being translated, transversed, returned to smooth space" (Deleuze & Guattari, 2002, p. 474). Such a proposition is of interest for us because (we) will demonstrate, through examples from different Latin American cities, how the inherent interdependence between these two forms of space operates. Another aspect of great interest to us is the fact that, according to Deleuze and Guattari, shanty towns – or informal settlements – are the places where, as well as through which, the two different kinds of space are reversed into one another" (Hernández & Kellett, 2010, p. 9).

5 **Conclusion**

5.1 The Eyes of the Architect

Tearing down the wall of the unknowable that divides us from the informal spaces of the city; going beyond the hyper-complexity, the marginalisation, the physical and cultural inaccessibility of these spaces, eliminating the widespread stereotype that labels them uniformly as chaos and danger. The eyes of the architect suspend judgment by investigating with objectivity and accuracy; they bring the observation to a level of impartial evaluation of urban materials; they enhance the intrinsic spatial aspects, bringing to light the collective intelligence and effort that produced these parts of the city. Within the increasing interest in the topic of informality that we find in the international scientific panorama, the work displays a new vision: the vast literature that has been produced by the different branches of social and urban sciences – focused on examining how these settlements develop and transform themselves, the habits of the community created inside, and the ongoing dynamics involved in the action of taking roots – lacks a truly morphological study, as well as a theoretical study on the produced urban space. The study fulfils this need, configuring itself as a constant attempt to focus, to "understand through the eyes of the architect" the complexity that challenges the consolidated schemes of the interpretation of the city. It is a heritage of knowledge of important aspects concerning the informality not yet explored with the necessary attention; it is a tool, able to provide cognitive elements related to the urban informality and the city as a whole, able to inform the theory and the planning using a precise snapshot of the reality; it is furthermore an extendable method that can be exported elsewhere.

Brazilian favelas offer a favourable chance to test this analysis method, extendable to other informal contexts that display rooting processes. Crossing a faulty vision that, especially in the past, has been fostered by the "myth of marginality", the exploration has clinically surveyed the built environment in order to prove the initial assumption of the work: the informal city increases progressively in quality and joins the urban maps that enclosed it between white spaces of non-representation. Thanks to the vitality of the communities that live there, Rio de Janeiro's favelas are undoubtedly one of the most significant statements of this rooting, of a persistent and enduring process of sedimentation and growth of the extra-legal city, or extra-plan city, which increases its weight within the urban development. Here, as well as elsewhere, there is a growing necessity for an analytical and accurate study where the observation of urban phenomena can shift from the large scale to the guts of the city, down the roads of the community, in their homes, and in the complexity and widely unknown consistency of these environments; the need for a time travel and a travel inside the history of a minor architecture and city.

5.2   ## Urban Settings

There are crucial issues that emerge from the bottom of the urban body. First, the rooting process of the informal environment is embedded in a frame of a definite dissolution of the modernist idea of the city that is this organic vision of the urban machine, which is accurately organised within functional compartments. The informal parts of the city combine different functions like work and residence, creating a heterogeneous and mutating space. At the same time, the urban development – or the way to urbanise – as a unitary movement that fuels contemporary cities, is held by the idea of modern spatial production related to the economic concept of endless growth. Hence, it is of no concern whether this city is rigorously subdivided into residential blocks, lots and suburban villas, or shacks belonging to the new working class. The expected and predictable city, the image and the scheme of the working class and petty bourgeois city, which is perfectly logical and known, has, however, made way for an unexpected city in South America as well as in other latitudes, which is dysfunctional and populated by new shapes; it has made way for waste lands with different consistencies and inhabitants. However, just the drifts of the modern city that are the focus of the housing issue, are becoming a possible "plan B". The requalification programme of Rio's favelas and other South American metropolises overturns the base of the debate: the difficult situation that exists is not negated; it is rather consolidated on a spatial and functional level, protected in its social dynamics, which are sometimes rich in features that cannot be imitated by the planned city and its communities. Furthermore, the informal rooting itself is a process that is historically related to the city, regardless of the updating programs: many urban entities, even in the western world, seem to be associated with the idea of taking roots, the idea of transformation and progressive calcification of the poor, overcrowded, self-built parts, placed on waste and made of waste. These parts progressively become new centres of the urban system, which ends up absorbing them. The informal rooting, in spite of the single entities and their recorded qualitative levels, runs the risk of an unwilling participation in these typical dynamics commanded by real estate speculation that can be found everywhere, which may manifest as the incorporation of popular settlements within new plans or requalification, the transformation of waste into high value goods, or the expulsion of the weak parts of the population as a consequence. The point is to combine two elements that seem to exclude each other, that is to say, the wellness and the quality standards of life – not forcedly western ones, but still respectable – with the innate peculiarities of the city, the economy, the informal spaces. The access to the property, the constitution of political and economic organisations of residents, and the protection of values that support the communities of occupants and self-builders, seem to be possible ways.

5.3   ## Devices and Spatial Grammar

The second crucial issue emerges when changing the observation angle, moving away from the expanded urban frame and its evolutionary trends within these territories, and going deep into analysing the single favela and its urban spaces. This clarifies what is essentially the possible contribution made by the rooted informality in favour of the contemporary plan, what should be saved or introjected. A precise spatial grammar characterises the favela and contributes to guiding the activities: the built-up area, up to its limits of density, shows a strong reduction of the passages and open spaces that might serve as distributive and aggregating elements. Deemed as "informal continuous space", this fluid and dynamic sphere, defined by the residents and how they use it, entails several shades of privacy that vary according to the flows, the habits within the social life, and the community. Its capillary distribution absorbs open and semi-open areas, even arriving to the domestic interiors. Its ability to "change nature" depending on the type of use, the times of day, and the events in the community, as well as relative independence from formal support, makes it a mutating and kinetic environment. The "informal continuous space", the true essence of the favela, becomes the centre of social and economic life, floating in a continuous sphere of actions of reprogramming and reconfiguration, in the extreme possibilism that makes it vital and surprising. The space of representation of the community is often an extension of domestic life, hosted within measured, small rooms, often barely illuminated. These rooms are branches of the urban body, as if they compressed the individual privacy that melts in the neighbourhood, in the human stream that crosses the favela. The meticulous order of the interiors and the stylish options that dominate the rooms, as opposed to the *papier déchire* of the prospects looking like an unfinished construction. These extend onto the street space and into the sky, as posters of an architecture that turns the act of becoming into its instance. Hence, the facade is a diaphragm that mediates, a further architecture with respect to the exterior or interior environment, and which can be articulated on the ground floor, becoming a patio, a veranda, a store or a counter, or different elements at the same time, according to a program that is versatile by necessity. The facade is sometimes a finished architectural element, adorned, planned, a part of architectures that present re-markable stylistic and compositional solutions if framed within the self-building process and the overall condition of the settlements. The architecture of the favela roughly develops some themes that are immediately perceived by the architect as material to be given value, as elements on which to imprint an articulated reasoning about planning.

5.4   ## Learning from the City

The third issue concerns the theory of architecture: is it able to assimilate the settings and the grammars and translate them into precise methods of a planning action? What kind of issues does the informal rooting raise for the contemporary plan? Learning from the city seems to be a possible option for the urban and architectural

plan, both in the case of being called to intervene upon the existing, as well as when faced with spaces to urbanise from scratch. In fact, the urge to assimilate this informal vocabulary into a theory is confirmed, as in the case of many recent works that are constituting a heritage of experiences to be replicated, implemented, and monitored: to be replicated, in order to apply the successes elsewhere and to extend the experimentation, the scope of a planning ideal and a political ideal; to be implemented, in order to suppose the declinations of a strategy, to test the functioning of a method within different contexts; and to be monitored, since only time will reveal the validity of theoretical purposes, of the practices as planning methods and finished works. Learning from the city means to interpret the fragile balances, grafting spatial devices that are able to relate environment and life, maintaining the spatial features that represent the original and fundamental element of this architectural vernacular. Therefore, there are choices to be made concerning the alteration or non-alteration of the status quo, facilitated by the knowledge of the places and their dynamics. The construction of a horizontal dialogue between planners and the community of residents is vital for any type of operation. On the urban scale, the plan must respond to the openness, and the unfinished and collective nature of the informal city. It cannot avoid being a point-by-point procedure, proceeding bit by bit like the rhizome, accepting the challenge of the construction of unexpected new land and new geographies, becoming dense due to a gradual replacement of the "objects" and not only due to its expansion, arranging regulatory mechanisms of both the existing parts and the new expansions. On the one hand, there is a need for action on the issues concerning hygienic, sanitary, and ecological conditions, as well as in static and functional terms. On the other hand, we need a serious housing policy, designed according to local conditions, which may interfere with the endless expansion of the city. The choice to improve the existing situation based on the process of taking roots, is a part of this framework, with residences affected by a high housing and building density, the implementation strategies based on the unplanned processes, and investments to limit the waste of energy resources. On an architectural and spatial scale, the plan assimilates the informal tactics, appropriating, for example, the idea of the unfinished, the participation in the creative process, and the self-building of parts of the work. The invention of new housing opportunities based on the procedural idea of conceiving the house, the possibility of social coexistence within this density rather than in a rarefied environment, and the constant fluctuation and transformation of the "informal continuous space" that is able to trigger very strong, social-identity dynamics, represent some of the topics around which the planner has to think case by case. Undertaking this approach, the architect is conscious of having lost his "authority" within the urban setting, and he searches for a way to emphasise the urgency of his authorship. From the heart of the informal city, there are important issues that emerge concerning the impact that the architectural and urban plan has on reality, on its ability to introject changes and drifts, on the ability to create a dialogue with the existing environment. There are also questions emerging on the role of the architect, that are profoundly called into question, and are brought back to the focus

of the debate: if the city is a self-made product, what kind of future awaits the architect in this process? The concept of cure seems to suggest some hypotheses. Several shades of meaning characterise it: cure meant as a medicine for the illnesses that affect a body; cure meant as protection, a caring attitude towards something or someone; cure meant as an organisation and a managing of the contributions that characterise the figure of the curator. This figure, very tied to the world of arts, has had different interpretations in the course of history: "In the Roman Empire, in fact, the "*curator*" is responsible for the management of various public works: transport, health, police, sewage, aqueducts, navigation, roads, games, even the examination of the accounts. He performs a "repairing" function in a culture that prefers to restore and reuse, rather than a tabula rasa. Such prosaic activities take a more spiritual turn in medieval Europe, where the effective "regard" manages both the souls and the earthly affairs. This function certainly describes the responsibility of the modern "curator", who is, first of all, the one who takes care of what happens to the objects, once they have been created" (Lebovici, 2015). Borrowing this concept, the curator whom the city needs, is the architect: the physician that heals the illnesses affecting the city; the custodian of its goods, of its assets; the organiser, manager of contributions within a culture that cannot help but fix its mistakes, that must recycle its waste; he (or she) who is, or will have to be, responsible for the cure, the fate of the plans, the fate of the city. In the informal environment, the figure of the architect seems to become that of the self-builder, or the independent planner who plans or creates, who takes care of the city that he built, and even more, who is on the frontline of the struggle for the right to have a house and the right to share the resources. The interest, primarily ethical, of the architect – understood this time as an author – concerning this city, cannot avoid being evaluated on an aesthetic level also, at the level of architectural theory. In this scenario, the architect's "domain" – architecture and the city – is obviously no longer his exclusive prerogative. To reconnect with this domain - that became independent because of its demerits, or because it has been exiled from the world - he can only be a curator, which means to transfer his work from the object to the system of objects, or better said to their organisation, their conservation, and their management. However, the cure defined as the organisation of the different contributions to this city, runs the risk of becoming complicated in terms of authorship. There is a need for a curator-architect for the self-made city, a figure that does not abandon the architecture, being conscious that he could not extend his control to the entire urban setting and sometimes to the single work: physician, custodian, manager of contributions, but also an actor - or author - on stage. An effective response is, in fact, provided by those plans, where tactics belonging to the informal environment – self-building, parasitism, etc. – are assimilated and supported by the architect, who acts as an organiser of contributions without disappearing behind them, without sacrificing his authorship, finding instead new ways to express it and putting it at the service of the collectivity.

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