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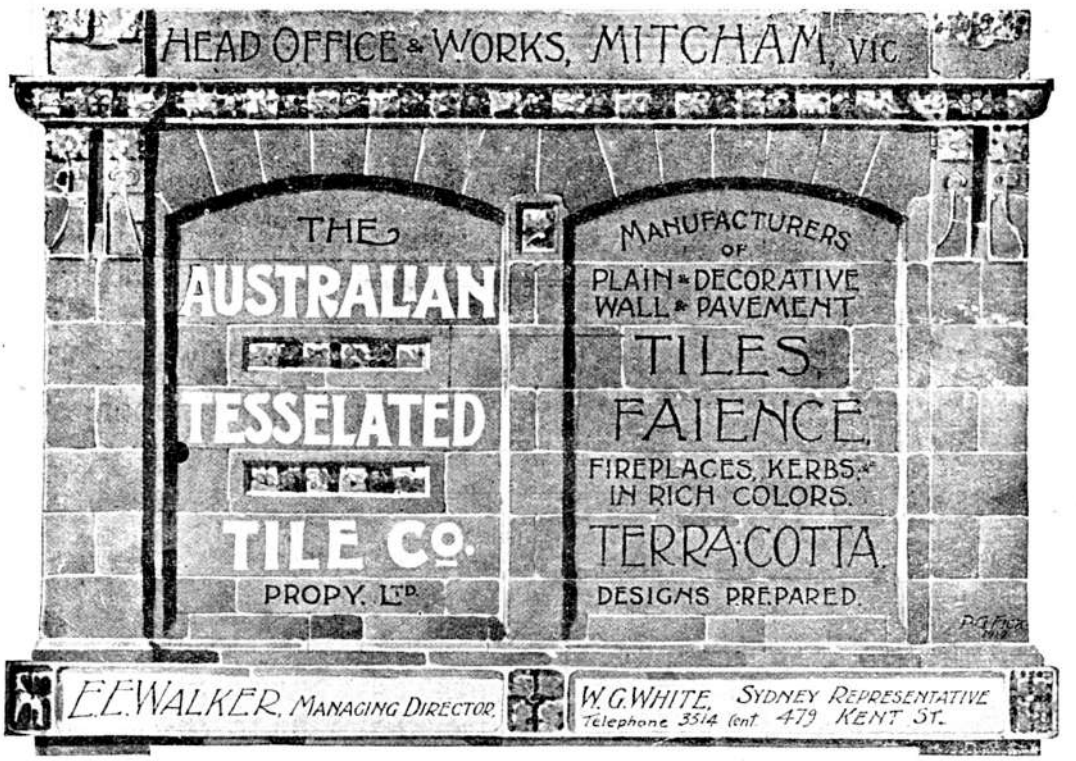
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A STORY.

Written and Illustrated by

GEORGE A. TAYLOR

Author of "The Devastators," "The History of Caricature," "Songs for Soldiers," "Town Planning for Australia," Etc.

This story of Australian Architecture, Art and Higher Thought appeared in "Building" Magazine; its publication doubling the shop sales of that journal.

The story is illustrated by 20 Art Reproductions of paintings by the author.

Some time ago some photographs of a few of these paintings were forwarded to B. O. Flower of the "Arena," Boston, U.S.A., who is one of the foremost reviewers of the day.

He wrote:—"In these pictures great solemn truths and suggestive lessons are pictured in an impressive manner. Mr. Taylor has done with the brush what our great poet, James Russell Lowell, some years ago did with his pen, when he wrote his vivid lines, which were never more appropriate than they are to-day."

The Editor of the Boston "Arena" also said:—

"Mr. Taylor is a man of natural ability; early touched by the spirit of enlightened civilisation and cannot fail to prove a positive factor for progress and human advancement in our great oncoming age, and I shall be surprised and disappointed if this artist does not become more and more a power for human emancipation and progress."

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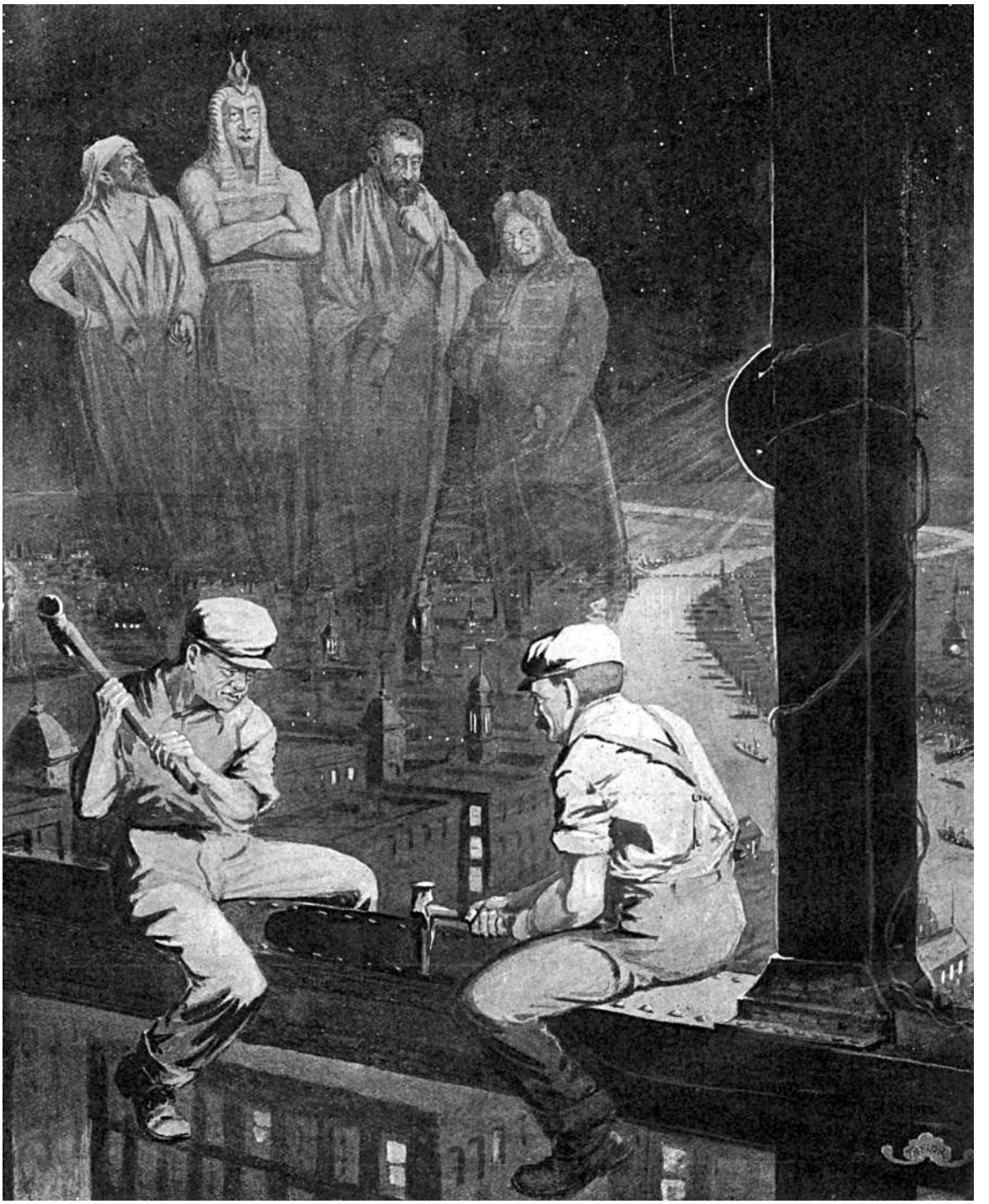

The Master Builders.

[*From the Painting by George A. Taylor*]

"The men who built the Tower of Babel, the Great Pyramid, St. Peters and St. Pauls watch the men of to-day."

From the Story—"The Schemers."

TOWN PLANNING FOR AUSTRALIA

BY

George A. Taylor

Editor of "Building and Real Estate Magazine"
"Construction and Local Government Journal"
and
"The Australasian Engineer"

WITH 109 ILLUSTRATIONS

Introduction by

JOHN SULMAN, F.R.I.B.A.

President Town Planning Association of N.S.W.

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PREFACE.

In view of the forthcoming meeting of the British Association for the Advancement of Science, at which Town Planning will be a feature of the Section dealing with Economics, and the ensuing Lecture Tour of Mr. W. R. Davidge and Mr. C. C. Reade on the same subject, the publication by Captain George A. Taylor of this volume on "Town Planning for Australia" is most opportune. I have perused it with the greatest interest and heartily commend it to my fellow citizens, more especially to those who are concerned in the welfare of the race.

Its graphic pen pictures of towns both old and new, its many illustrations and its analysis of economic conditions are most valuable and convincing, and will, I trust, make many converts to "the new science." Captain Taylor's energy is well known, and it is mainly due to his initiative that a Town Planning Association has been inaugurated in this State.

As one who has advocated for many years past, both by pen and voice, the improvement of the conditions of town life, I heartily welcome Captain Taylor's book, believing that its publication will conduce to the furtherance of that cause.

JOHN SULMAN, F.R.I.B.A.

Sydney, Australia, May, 1914.

CONTENTS.

TOWN PLANNING FOR AUSTRALIA

By GEORGE A. TAYLOR.

Section I.—"The Call of Our Brothers."

AND Cain said unto the Lord—My punishment is greater than I can bear.....I shall be a fugitive and vagabond in the earth....And Cain went out from the presence of the Lord....And he builded a city and called the name of the city after the name of his son—Enoch.—Gen. IV., 14, 16, 17.

The first mention of city building is in the first book of the first of all histories.

The Old Testament has no more pathetic figure than conscience-stricken Cain, the Macbeth of Genesis, wandering across the world seeking, by change of scene, to blot from his mind that awful deal of death, and stifle that ringing conscience cry of: "Where is thy brother?"

But work is ever good to a tortured soul; so in the building of a city he found mental peace, and in the love of his first-born he found a new life.

The building of a city assembled industrial interests, and, consequently, ended the wandering age of man and began the development of human society.

And looking across the world to-day, we ask ourselves to what has human society developed? There is little need to look beyond Australia for the answer.

We see, in this "glorious land of open spaces," our cities congested with physically-crushed and mentally-warped men and women.

We note the squalid environment breeding crime and disease. We watch Death stalking through the slums and marking down the defenceless child; passing it out without even a fighting chance.

In this "land of magnificent distances," Sydney has an infant death-rate of 11.7 per cent!

We are so crushing our houses together that the death-rate of our children is greater than that of London, where 9.02 per cent. go out in their first year. Yet, with proper city planning, as at Port Sunlight, the death-rate can be lowered to 3 per cent!

Are we not murdering, by neglect, 8 per cent. of our little ones?

The lack of Town Planning in an Australian City, where the death-rate of children is over 11 per cent.

Is it any wonder that our souls say to us, as Cain's said to him: "Where is thy brother?" We cannot snap back, "Am I my brother's keeper?" for we know we are. So we hasten to improve our cities. We desire to build towns better. We feel inspired, as missionaries of sunlight, to preach the gospel of pure air and clean living; and, with a "clean slate," we have the opportunity no other nation has to-day—the building of a capital city on virgin soil.

We can build it as a model city and its sweetness will spread; for a garden city is a hundred times more useful, because of the inspiration it creates. It gives an example for others to copy. The moral effect of the city beautiful is limitless.

We can build our capital city better than any other city in history, for we, to-day, are the great masters of the ages. As before our mental vision the centuries pass laden with the fruits of human achievement, we can pick the plums of history and plant them in Australia.

We can watch the City of Canberra rise, a city well and truly built. A city beautiful to look upon, and a city beautiful to live within. A world's centre of civic beauty and health. A city typical of the virile white race which is building a nation great in the Southern Seas.

Section II.—The Fruits of History.

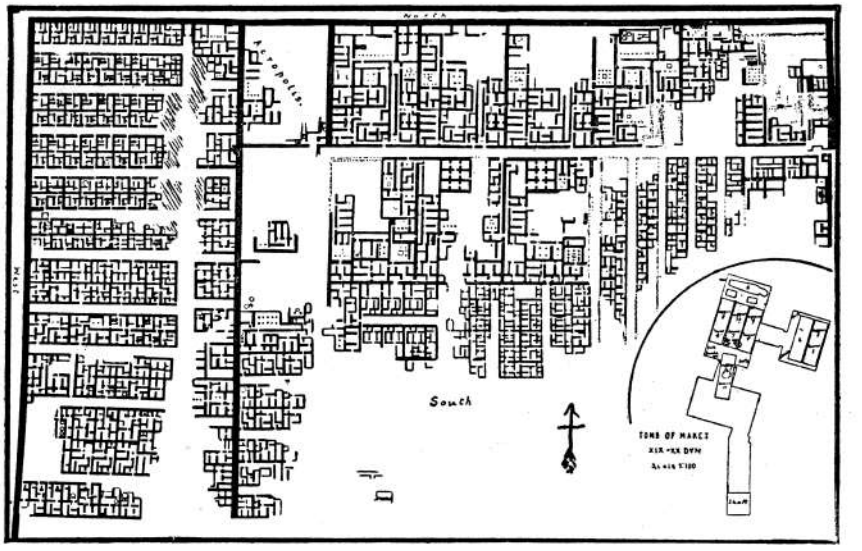
Way back in the murky mists of antiquity, a new pyramid was to rise in Egypt, so a town was built at Kahun to house the builders.

For five thousand years it slept beneath the desert sands, and when recently uncovered, it proved to be the earliest known town laid out on a definite plan. It was laid out in squares, the streets having a drain down the centre—a proposal recently advocated by an Australian newspaper as a novel method of saving kerbing and guttering in suburban streets!

This orderly organised industrial town was in remarkable contrast to the disorderly and haphazard growth of industrial towns of yesterday.

They were "giants in the days of old," but their arts died with them, for we find some centuries later the ancient cities of Greece were of narrow, winding streets, with houses clustered together round a central elevated site containing the temples of the gods.

The public buildings were fine and splendid—but the ancients evidently did not bring their gods home with them, for the private houses were shabby and ill kept. Refuse was thrown into the street. There were no pavements or lighting. At night one had to plunge through mud and slush, along narrow alleys and up and down steep inclines. In fact, it must have been as bad as some Sydney suburbs.



ANCIENT EGYPT.

Kahun—The earliest known town laid out on a definite plan.
(Date about 3000 B.C.)

Across the Ionic Sea systematic town planning began to revive and new cities began to be systematically planned Of the ancient City of Babylon Heredotus said: "The city was four square, with rectangular streets." Hence when Greece began to consider the better planning of her towns Babylon was asked to forward an expert. This often happens. The one outside the fence generally gets the better perspective.

So town planning developed in Greece, and a stereotyped design was widely adopted.

The ancient built his city of four parts. The first, the walls and towers for his defence; the second, the temples of the Acropolis rising above the city, for his religion; the third, the market place, for his trade; and the fourth for his home, the least considered.

In a view of Priene these four parts may be noted. Within the first part, the walls, the Acropolis rears its great head; at its feet lies the market place, with its colonnades and public buildings, the streets around being grouped with rectangular exactness, with the gymnasium and stadium near the walls. We are told "the market place was four square with the city."

An important feature of Grecian cities was that the main road and a river usually traversed the site.

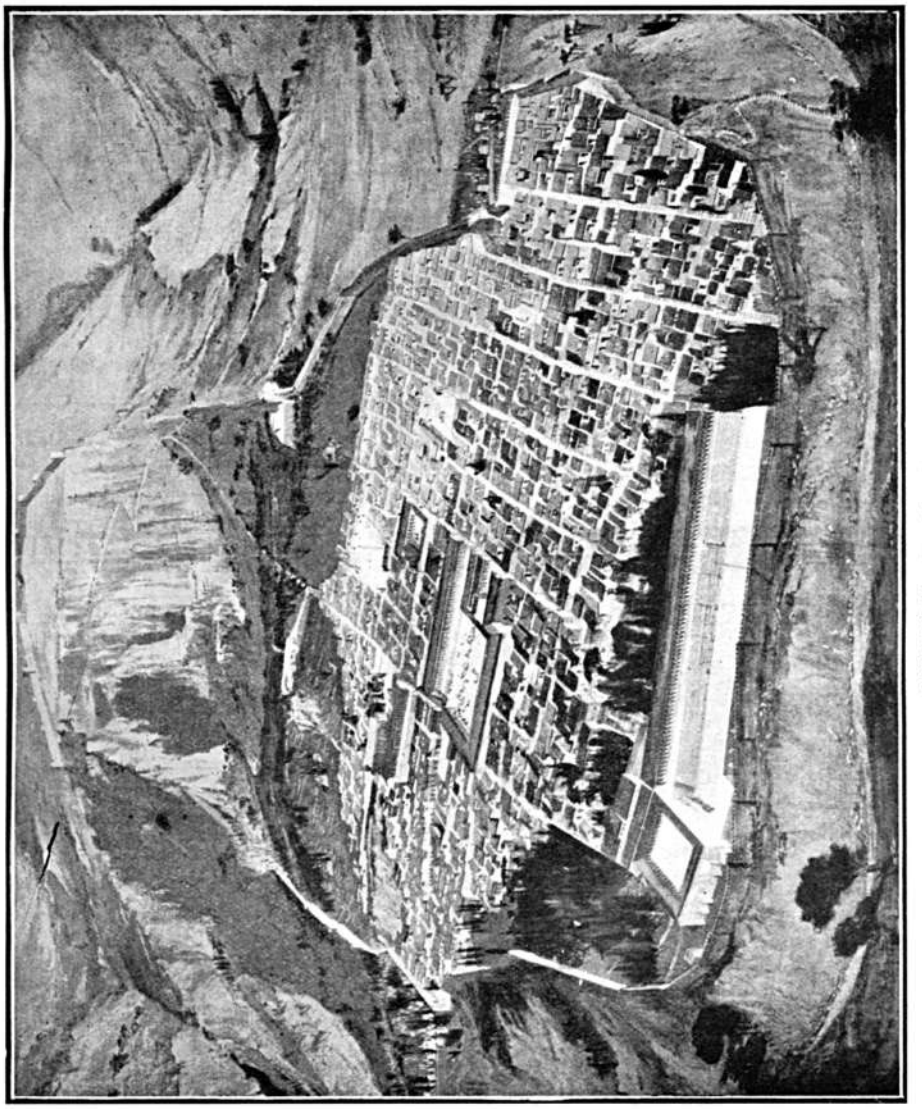
It suggests that the town builder followed the road and made his home at the river side. The flowing stream gave him food and drink, as well as transport facilities, as in ages later it was to do his work for him. Into Priene came this main road, bringing the trader past the Acropolis, as if in thanksgiving for a successful journey, which ended in the market place.

The Roman Empire was developed by town planning.

It is said that eighty new towns were founded in three or four hundred years. Each town, or colonia, was first established as a fortified group of houses, seldom less than thirty to forty acres, and seldom more than two hundred acres, but each possessing municipal life and government.

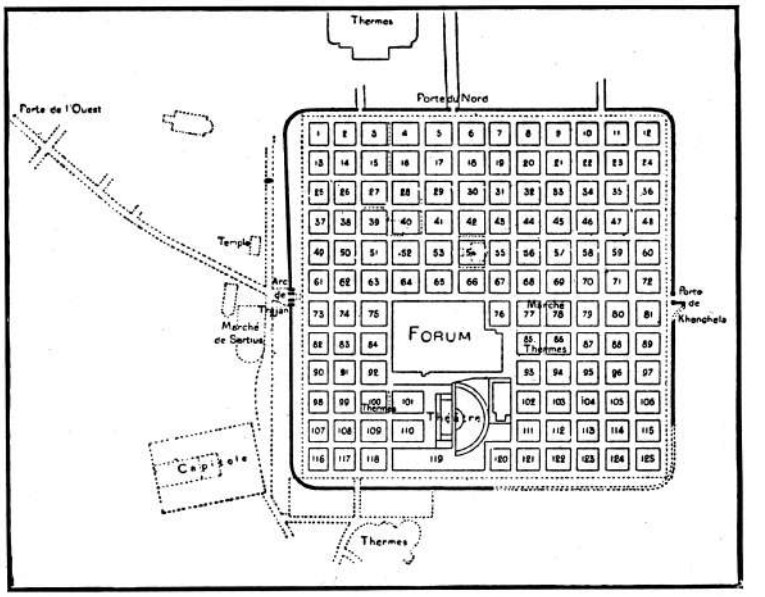
The municipal by-laws closely kept city building in view, one stating that "no owner might pull down a house, or let it fall, save with consent of the Town Council, unless he was going to build, at least, as good a one in its place." Again, "an imperial edict ordained that if a site owner did not build on his site, but held it up or neglected it, anyone else might peg out a claim there."

That seemed short shift for the property owner who was inclined, like some of his modern prototypes, to hold his land idle and neglected until the next-door neighbor improved his and so increased the value of surrounding property.



ANCIENT GREECE.

Priene—A typical town of the time of Alexander the Great.



THE ROMAN EMPIRE.

Timgad—A "Colonial" town built in North Africa for time-expired Roman soldiers.

(A.D. 100)

The Roman Immigration Department was evidently well organised, for groups of emigrants were systematically sent out to establish towns in newly conquered countries. These towns followed the rectangular street plan, as may be noted in old Roman ruins in England and Africa. An instance in Timgad, North Africa, shows a typical chess-board town. The central feature is the forum. The baths, with theatres and other establishments, complete the second features.

The capitol is outside the town—possibly "officially" set up when the town was first planted, the commercial and living conditions no doubt necessitating the town proper to be away from it, instead of being round it, as was the usual feature of ancient cities.

I am rather pleased to see that this "official" placing of towns, without consideration for the commercial and living necessities of its citizens, is of such ancient origin.

Hitherto, I had unfairly credited Australia with the invention of this "hyphenated town."

We have many towns in Australia hyphenated, by reason of there being two distinct locations. Maitland, Wyalong and Lawson are three in New South Wales.

These towns were "officially" placed with rectangular designs in situations that were not acceptable to the living requirements which located the busy part of the town at the most convenient place.

I once had an experience that drove home the absurdity of the haphazard system of town planning without first studying the best

possible conditions of the site. The story will prove the inconvenience, waste of time, and lack of progression such a system imposes on a district.

An important military manœuvre was to be carried out north of Maitland, New South Wales. As is usual with these affairs, it was to be executed with grim seriousness. Actual war conditions were assumed, and the great battle was to take place next day. Maps of the area were required without delay. I happened to be the officer to do the job. The army was then encamped ten miles north of Maitland, in which town I knew there was a Lands Office, the most likely place for map information.

I rode that ten miles a good deal over the regulation pace, and on arriving in Maitland and enquiring the location of the Lands Office, was informed it was over in the other Maitland, "the official town," a mile away. Tired horse and tired rider went at that mile with heavy hearts. The map was prepared and the tracings had to be carried back across that mile to the lithographers. The proof had to be taken back again and checked with the great pile of maps. and returned again across that awful mile to be printed.

At the fourth crossing of that unnecessary mile, I felt inclined to think harsh things of the place, its system of town planning, and its people; but when I considered that Maitlandites had to do that sort of thing every day, I felt somewhat consoled.

Discomfort is not so awful when you know the other fellow gets his share.

So "official Maitland" sits in solemn chess-boarded, stiff-shirted dignity, hardly claiming relationship with its commercial brother working in his soft shirt down by the river side.

Even to-day we find Australian officialdom planting down the stereotyped rectangular towns without much consideration as to whether the plan suits the site or harmonises with best living conditions.

The rectangular plan has been popular because it is the easiest to lay out on paper; so it has been the stereotyped design away back beyond the days of Ancient Egypt. In fact, it is of such early growth, that it is one of those things whose origin is so dimmed by the mists of antiquity that historians have given up probing for it and located its origin in Ancient China.

Professor Haverfield said: "The square and straight lines are, indeed, the simplest marks which divide civilised man from the barbarian. It has remained for the Teutonic spirit in recent days to connect up civilisation with a curve."

Section III.—Old Towns for New.

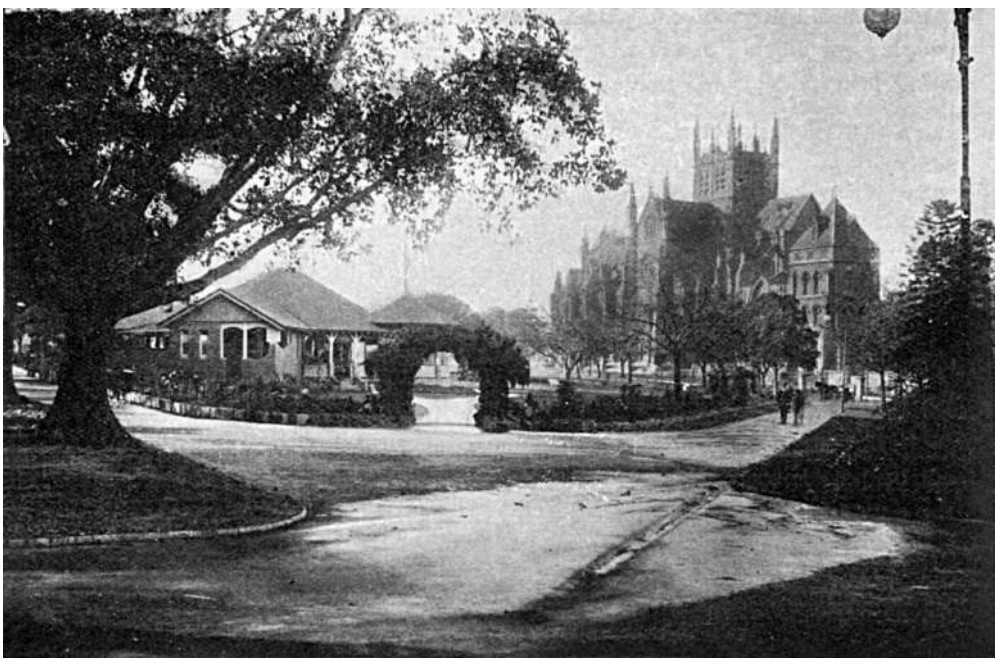
The internal arrangements of ancient cities differed from modern, just as conditions to-day differ from those of old.

The ancient was more socialistic. His interests centred in the Town Hall and spaces given to religion, including temples, and gymnasia. Passing so much of his time in public places, his home was narrow and neglected.

To-day, mankind is more individualistic. Man's home is his centre. His public places are scattered. His temples are spread, occupy little space, and are not so popular; whilst his Government is divided between municipal institutions, several Parliaments, and that mighty moulder of modern public opinion, the Press.

The ancient city also differed from the modern in that the former had no park areas, but was a compact conglomeration of houses, planted in the country and surrounded by high defensive walls.

The modern city idea is to bring the country into the city by means of parks and open spaces and systematically group the houses, the flying machine rendering the high walls useless.



"THE COUNTRY IN THE CITY."

Hyde Park, the rustic centre of Sydney.
(Showing St. Mary's Cathedral in the background.)

THE AEROPLANE IN TOWN PLANNING.

An aerial aspect of a town on the Rhine.

The effect of aviation on town planning will be very marked.

European cities are remodelling their defensive planning. The increased range in modern fighting weapons began this change, and the aeroplane, after all, is a fighting weapon with a range equal to the capacity of its motive power. Walls are being levelled, and the useless fortification areas are being turned into garden spaces.

Rheims and Vienna are now surrounded by great park rings, where once stood the ramparts. It is a variation of "turning the sword into a plough share."

Aviation will bring new requirements into town building, in that it will call for wide areas for alighting purposes. It will also tend to supplant domes and pinnacles with flat roofs.

The aeroplane will be a useful factor in town planning, as it will give, at a glance, an aerial survey of the exact angles and figures assumed by a series of roads. Yet, in the designing of the city, it will not supplant the ground survey, for there are no contours to the aerial observer. Hills are levelled, and the horizon line, rising with the observer, gives the earth below the appearance of a great depression. The town planner must work in three dimensions The aerial observer can only work in two. There is only one plane to the man in the air.

Section IV.—The Roads that Led from Rome.

Rome is the birthplace of town planning as an art.

Rome, with one foot planted in the misty marsh of antiquity, and the other in the sunlit arena of to-day, stands as the colussus of history. It holds in its embrace examples of town planning of all the ages. It is the architectural scrap heap of the world.

Rome differed from other mediæval cities in that its planning had an architectural tone. Other cities developed according to social and economic necessities.

The spirit of the renaissance, with its giants of architecture, was opposed to the restless unsystematic planning of the usual town of the dark ages. A straightforward scheme was sought in which the glories of architecture could be best displayed. So we find the lengths of open ways of Rome flanked with beautiful constructional masses, and crowned at each extremity with fine architectural monuments.

The colonnade of St. Peters aptly illustrates this scheme.

IN ROME.

St. Peters and its Colonnade.
A "Town Planning" Triumph.

Like a rippling rhythm of orchestral harmony the columns of the colonnades carry the attention to the grand triumph of melody in the great Cathedral of St. Peters.

The Farnese Palace was an instance where a town mansion had a wide street leading to its entrance and a square in front of it; the view on both sides of the building presenting pleasant architectural features, the building itself giving the effect of an imposing square block standing bold and unashamed, an object of beauty from every side; a great contrast to many buildings we find in almost every Australian city, with fine superficial fronts and ugly back and side elevations.

In Melbourne, the great Parliament House is a joy and delight at its front, but it has a backyard back.

The Sydney Hospital is another example.

It has a fine, bold sandstone front, but has a barbarous back which, with its factory funnel top, facing a park, completely wrecks the city skyline from the harbor. It is the first smack in the face to an oversea visitor. The Sydney Hospital is an architectural sham. It is like a fop with a stiff-starched front and a patched rear-elevation.

One of the first tasks of the re-planning of Renaissance Rome was to link up the isolated important parts. It is, to-day, the great feature in every scientific plan. The plan of Washington so developed.

The plan of Canberra is based upon three such great link-ways. The Capitol, market, and civic centre are linked up at the three angles of a triangle.

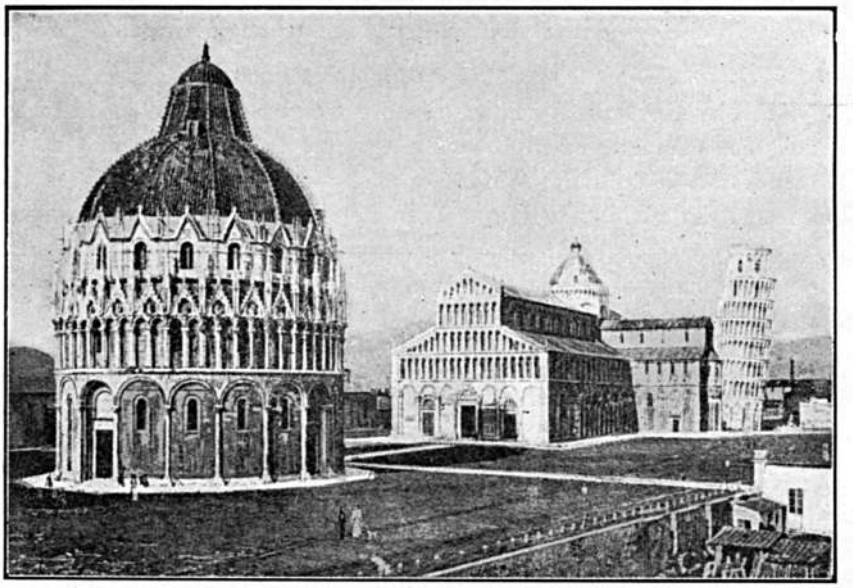
The great link-ways of Rome were great arteries that gave organic life to the sleepy city.

Buildings were swept away to concentrate three of these great ways at St. Peters Square. The idea was conceived to arrange great streets in such a manner that they would lead in both directions to some important building.

Street crossings in Rome were often distinguished by the magnificence of the view they disclosed.

The Roman town planners set the stride for the world. Their influence was wonderful. Their wonder-work was imitated. They built a road that leads through history.

Florence followed the example. The construction of the beautiful Uffizi Portico was one great result, and the Piazza Del Duomo developed its three great structures in Pisa. Milan grew in grandeur, and other Italian cities followed. The squalor of ancient days was eradicated, and cities vied with each other in civic beauty.



IN PISA.
The Piazza Del Duomo, showing the Duomo, Baptistry and the Leaning Tower.

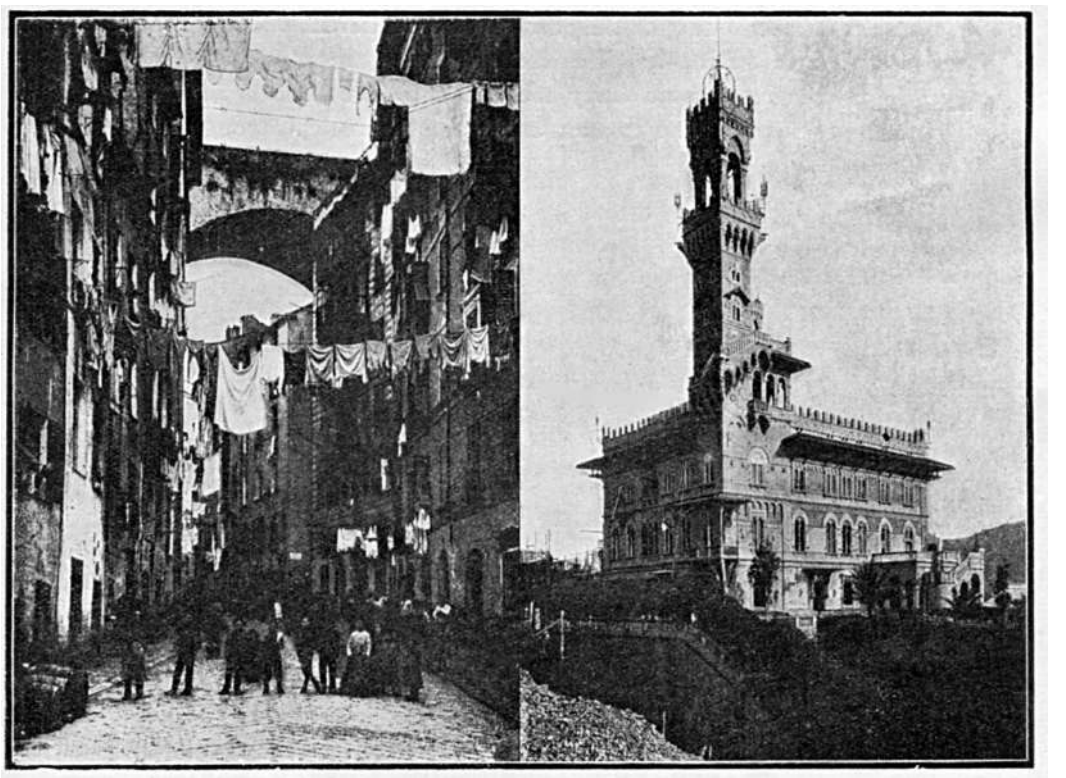
IN MILAN—THE CATHEDRAL SQUARE.
A Town Planning feature that is one of the world's glories.

On across Europe went "the Roman road" of town planning. It reached England, and widely influenced Sir Christopher Wren in his re-planning of London. The great St. Pauls and its square have Romish influence in their planning, if in nothing else.

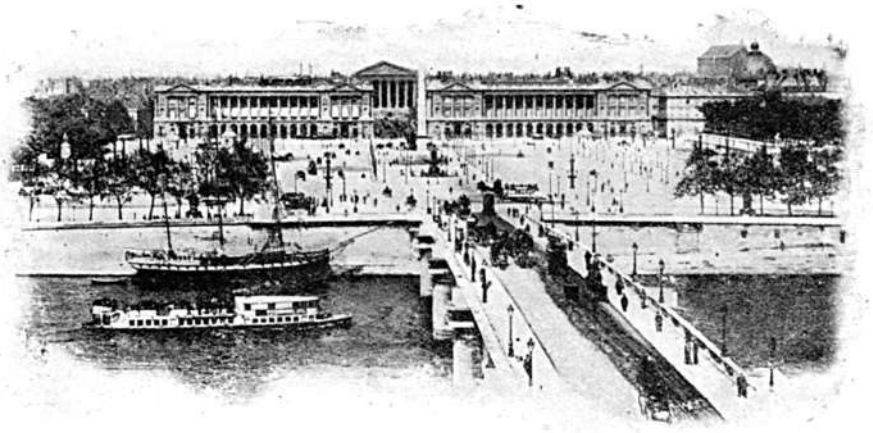
In many quarters, Paris is credited with originating scientific town planning, with Baron Haussman as the star actor. But great as was his work, it began in 1853, three hundred years after Rome had finished.

The town planning efforts of Rome were like violent explosions of energy—like the sudden uprising of sleeping giants—a wild whirlwind of action—then sleep again. Into the great design crept back the congestion of the past, and to-day we find slums crowding round what were, in the days of the Renaissance, palaces surrounded by open ways.

I wonder, as the world moves in cycles, if this outbreak of energy is about due again, and whether the mighty outburst of the town planning effort in the world to-day, which promises to be the most remarkable revolution of modern times, is a premonition of the second coming of the Mighty Spirits of the Renaissance.



IN GENOA—THE REAL AND THE IDEAL.



IN FRANCE—THE PLACE DE LA CONCORDE. PARIS.
A grand ornamental and traffic distributing city feature.

The French town planners introduced the typical town square in which they combined a sense of proportion of buildings to one another and to the area of the square. They added a high degree of landscape gardening, the principle being that the beauty of a city did not depend upon the number, but upon the position of the different buildings. They also made a feature of the street corners, giving an artistic finish where a length of street would carry the vision. The French School was more reposeful than the Roman, and more economical, though Roman influenced.

IN FRANCE—THE AVENUE DE L'OPERA. PARIS.
An instance of a monumental building planned with a thoroughfare leading up to it.
The greatest of Haussmann's Town Planning successes.

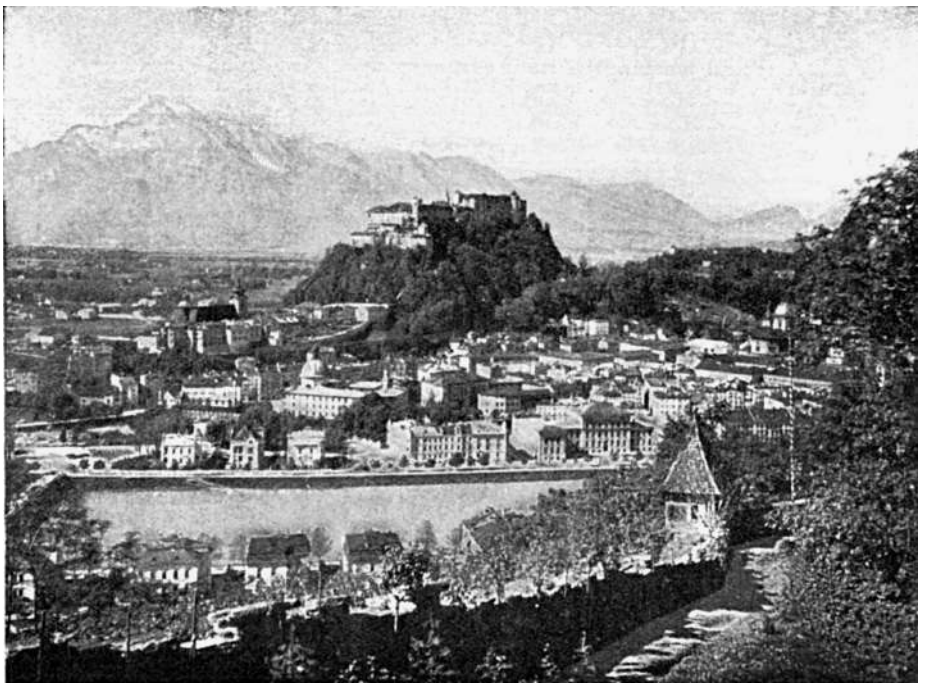
The Place de la Concorde was devised to distribute the traffic and, at the same time, to set off the architectural features.

The Roman idea for linking up important structures, resulting in radiating streets, was imitated in Paris, and it seems a pity that facts can extinguish the rather picturesque idea generally held, that the radiating streets of Paris were so designed to give better command for the cannon in suppressing revolutionary outbursts!

Facts are iconoclastic things.

German town planners depended greatly upon creating interesting and beautiful street pictures, though a reaction took place against the slavish imitation of geometrical designs.

German town planners closely followed French methods, but improved somewhat in their method of studying proportion in buildings. It was not sufficient that open ways should be cut, that fine squares, parks and garden spaces should be devised, but the proportion, harmony and color of buildings fronting certain streets were considered. For instance, at Ludingsburg, the houses round the market were built rather small, so as to enhance the optical effect of the church, which, therefore, appears very much larger than its actual size.



IN AUSTRIA—SALSBURG.
A city developed on the ancient principle of grouping round a central prominence.

IN LONDON—TRAFALGAR SQUARE.
A typical monumental feature serving several radiating streets.

German town planners aimed at monumental planning, endeavoring to make public squares manifest a certain idea. At Konigsplatz, the conception aimed at is "the army and the people"—the pillars of the German Empire, expressed by the buildings grouped around the square, with the Imperial Parliament, the Minister for War, the General Staff buildings and the Marine Office.

One could conceive a similar idea for London, if the naval and military offices were grouped round Trafalar Square.

Though architecturally backward in many respects, Brisbane claims the distinction of having pursued the idea of monumental grouping more successfully than other Australian cities.

The space adjacent to the beautiful Executive Buildings, in the Queensland capital city, has been transformed into a garden area. But the scheme can be enlarged with enhanced effect.

If the present police buildings on the opposite side of the garden were removed, a fine square would be formed, flanked on four sides respectively by the Executive Buildings, the Brisbane River, the Treasury Buildings and the Savings Bank. With this enchanting scheme complete, Brisbane would possess the finest monumental group in the Commonwealth.

Section V.—Steam the Wrecker—and Redeemer.

The modern town planner has a problem that did not trouble the men of Greece and Rome.

When steam was tamed, like a "frankenstein" it retaliated by wrecking our systems of city arrangements and wrecking the systems of our men and women. When the machine came in, the age of the soul went out.

In supplanting handiwork, the machine so concentrated industry that towns rapidly grew round factories and mills, while the necessity for workers being as near as possible to their tasks also promoted congestion.

The great steam workshops, with their giant chimney stacks belching smoke and grime, began to poison the air of the city and extinguish the health and beauty of the people.

The call of the machine shortened the distance between home and work. Parks and open spaces, by lengthening that journey, were only in the way; so old-world towns grew, with houses accumulating round industrial centres like filings on a magnet's end.

Little consideration was given to the lay-out of town areas. Insanitary hovels crowding together increased death-rates and brought physical and moral deterioration to the men and women whose duties chained them to their environment. Was it to be wondered at that, amongst these slaves of the slums, there arose some whose tortured spirits preached revolution and anarchy!

IN ENGLAND.
A cottage-lined street in the Garden Town of Port Sunlight.

IN ENGLAND—AT PORT SUNLIGHT.

Where scientific planning has increased the health and efficiency of workers, reducing the death-rate by 9 per cent.

This sin of human congestion was caused by the factories, and it was due to the factories that the crime was undone. In 1881, Lever Brothers, finding their site at Warrington too small for their growing works, laid out 230 acres at Port Sunlight. Cadbury, crowded out of Birmingham, built the garden village of Bournville. These two towns embody the main principle of successful town planning—the care and well-being of the people.

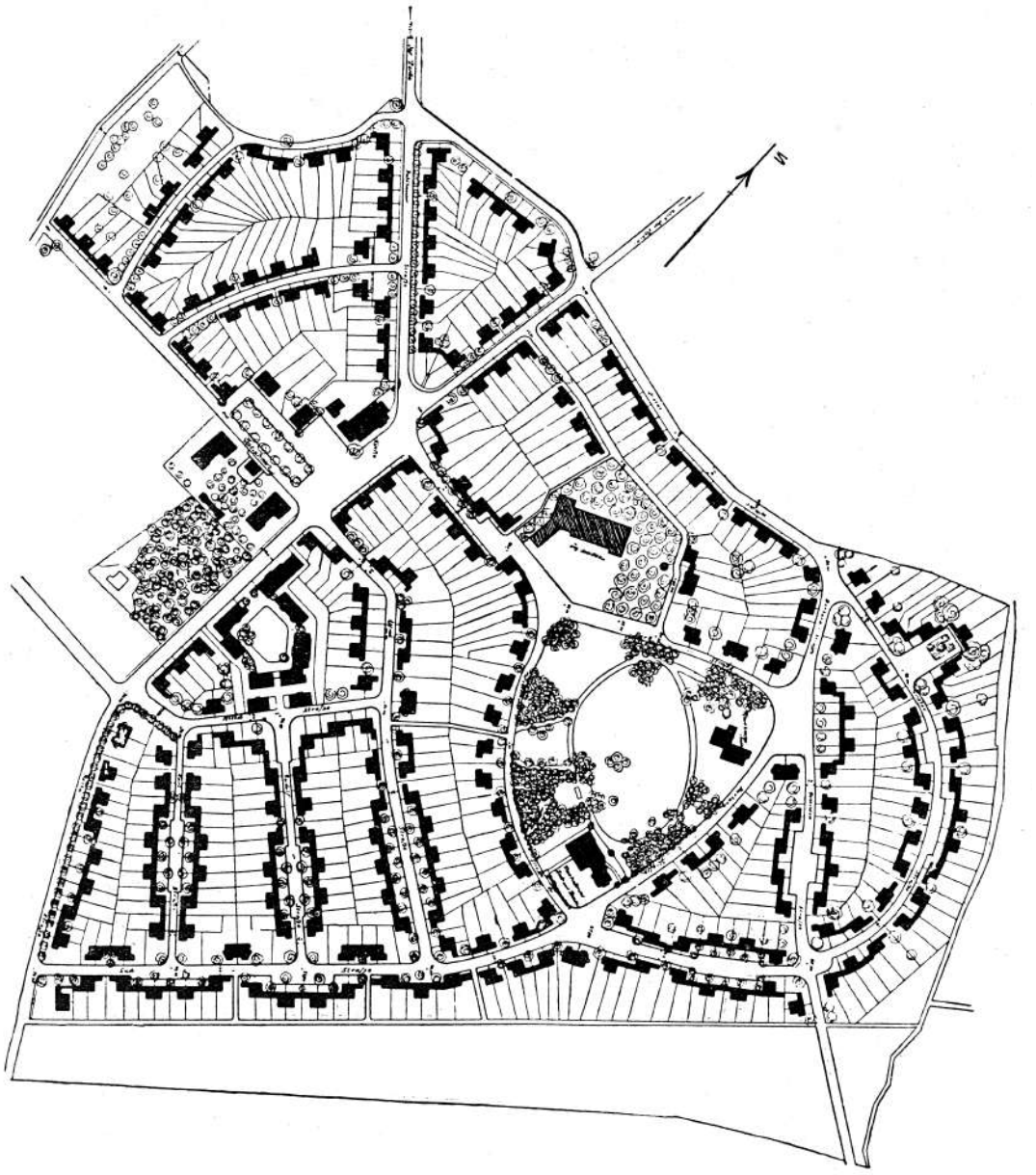
Prior to the building of Port Sunlight, Sir William Lever found that there was 10 per cent. waste in loss of time through sickness of employees. Therefore, in his factory returns alone there was a heavy annual financial loss. Just as war with nations could not be carried out without physically efficient soldiers, so he considered it useless to endeavor to carry on an efficient business with physically deficient employees

To-day, the physical efficiency at Port Sunlight has so increased, that the average height of the children at 14 years of age, is 10 inches higher than that of the children of Liverpool. The average weight of Port Sunlight children, 14 years of age, is 108lbs., 36lbs heavier than children of the same age, at Liverpool. The Port Sunlight death-rate of infants, per 1000 births, is 31.7, 112 lower than Liverpool's rate.

"Surround a home with slums," said Sir William Lever, "and you produce moral and physical weeds and stinging nettles. Surround a home with a garden, and you produce the moral and physical beauty of the flower and the strength of the oak."

IN ENGLAND.

A street way in picturesque Hampstead Garden Suburb, where the streets are as narrow as 20 feet—provided the houses are over 50 feet apart.



IN GERMANY.

One of the Krupp Villages, at Essen.

(Note the extensive garden spaces in parks and street centres and back of dwellings.)

IN GERMANY.

A Courtyard, at Essen, showing the flats occupied by several families.

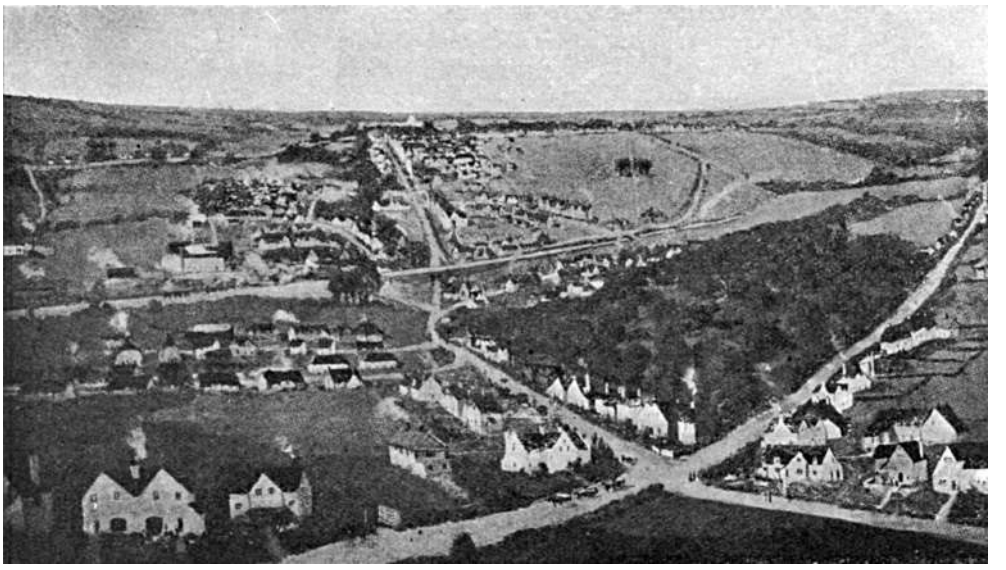
IN GERMANY.

A typical "family" house, at Essen. The number of rooms for each family varies from three to six.

To-day, we are beginning to realise the words of Alexander Pope:—

"Know then thyself, presume not God to scan,
"The proper study of mankind is MAN."

We are beginning to be aware that the spirit of the Creator is not so much in temples of brick and stone, as in temples of living flesh. So we look at our fellow creatures and we study their ways of life. We note, as John Burns said, "that the mean street makes the mean man, the sick mother, and the anæmic child." It also means the tottering empire.



IN ENGLAND.

Aerial view of Letchworth Garden Town, embracing several industries.

IN ENGLAND—AT BOURNVILLE.

Showing garden arrangement at street corner.

During the last Boer War, 69 per cent. of the recruits were rejected at Bradford, in England, because of physical disabilities consequent on unhygienic living.

To-day, we realise that there is an economic value, as well as a moral obligation, in improving the conditions of the workers. This economic value in improving workers' conditions has been put to practical test at Letchworth, England, which is planned to embrace not one, but many industries. Land was offered at low cost and cheap water, gas, electricity and blocks for workers were available. It has been such a national success, that the death-rate of children has been reduced from 108 of London to 31 of Letchworth.

In Germany, the Krupp Company, at Essen, found that best physical efficiency could only be obtained by seeing that their employees had best living conditions. It was also found that the works developed so rapidly, that employees had difficulty in getting suitable accommodation. So successive colonies of inexpensive hygienic dwellings were formed. Housing is provided for 46,000 people, the dwellings being grouped round flower-planted squares and playgrounds. It seems a travesty on human nature that the employees of the great Krupp gunworks are helped to best health and life to make them better able to turn out weapons of death!

IN ENGLAND.

Variations in street widths at Hampstead Garden Suburb.

Section VI.—The Tragedy of Washington City.

It was in America that town planning, on the grand scale, first had proper scope.

America had the opportunity no other nation had before and only one other since—the opportunity of laying out a great capital city on practically virgin soil.

When George Washington was charged by Congress to create the capital city, he sent for Major Elliott to mark the boundaries of the Federal territory, and commissioned Major L'Enfant to make the drawings, in 1791.

L'Enfant was an engineer with an extensive practice in Washington, but he immediately gave up his private work and connection, and went heart and soul into his job. Jefferson gave him large maps of European cities, and he was familiar with Paris planning.

His first two designs were rejected, but the third was accepted. The commissioners who had the general oversight of all matters pertaining to the district of Columbia, had decided upon a rectangular system of streets.

THE ORIGINAL PLAN OF WASHINGTON CITY.

Upon the plan L'Enfant imposed three diagonal avenues radiating from the Capitol and the White House. He also disposed public buildings to secure for each an appropriate landscape setting, and planned the city as a work of art with each feature having a distinct relation to every other feature.

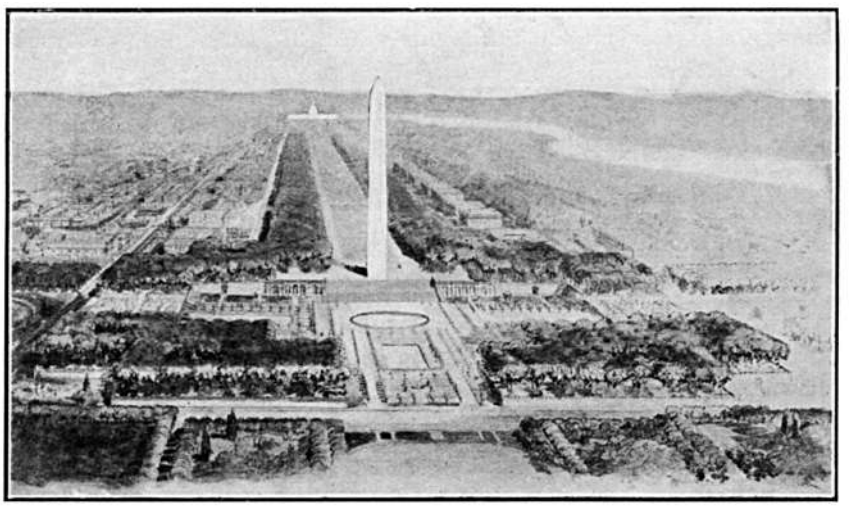
L'Enfant struck trouble with real estate speculators. They pestered him like mosquitoes. Whilst his plan was being prepared they haunted him, endeavoring to find out where his avenues were to go, so as to "get in early."

L'Enfant withheld his incompleted plan. The commissioners, on the plea that they required the plan to satisfy purchasers of lots from the sale of which revenue was needed for new public buildings, accused him of conceit, confiscated the whole of the plans and had him dismissed after a year of employment.

They offered him £350 as compensation, but he refused it, placing the value of his services, as he had cut off all his private practice, at £6250, and, until the day of his death, twenty-four years later, he trod the corridors of the capitol, a tall, thin, cloaked figure, pleading vainly for his fee.

Though President Washington insisted on the main features of L'Enfant's plan being fixed, the real estate speculators got busy and the scheme was gradually departed from.

Neglect, that brake on the wheel of progress, crept in. Grades were altered, streets were cut out and the unity that L'Enfant strove for



THE GRAND AVENUE—WASHINGTON CITY—AS RESTORED.
This is the great feature L'Enfant desired, but which was wrecked by Congress permitting it being cut up by a railway.

was destroyed, whilst the whole central scheme was absolutely wrecked in 1870 by Congress granting permission to allow a railroad to cut through the main avenue!

A remarkable thing in the history of town-planning is the resurrection of the soul of civic art. Through the ages the sweet has battled with the sordid, and when it has been crushed, it has risen again upon the shoulders of its adversary.

Looking back, we find, in earliest ancient towns, the religious factor so overbearing that it monopolised the civic scheme, crushing back the homes into squalor and neglect. Yet, in the Renaissance period, religion was the main inspiration of city remodelling.

Three hundred years later commerce came in with steam and wrecked the æsthetic spirit once again; yet upon the shoulders of commerce the bruised spirit climbed to the light, and we find the establishment of commercially artistic centres as at Port Sunlight, Bournville and Letchworth.

In America, the commercial element wrecked artistic town planning, and beneath its tramping feet fell the great design and plan for America's capital city. Yet upon the shoulders of commerce once again the unconquerable spirit reared itself, and in 1890 it shone as it never shone before, for in Chicago the commercial men had an exhibition, and it is best remembered not for its prize pork, wines or metals, but because of its æsthetic design and its gloriously artistic realisation.

The artistic beauty of the exhibition planning made a profound impression not only upon the highly educated part of the community, but upon the masses.

The universal question was asked, "Why not beauty such as this in our cities and homes?"

Planning commissions were discussed by civic authorities. Congress felt the spirit move, and a commission was appointed to remodel Washington City.

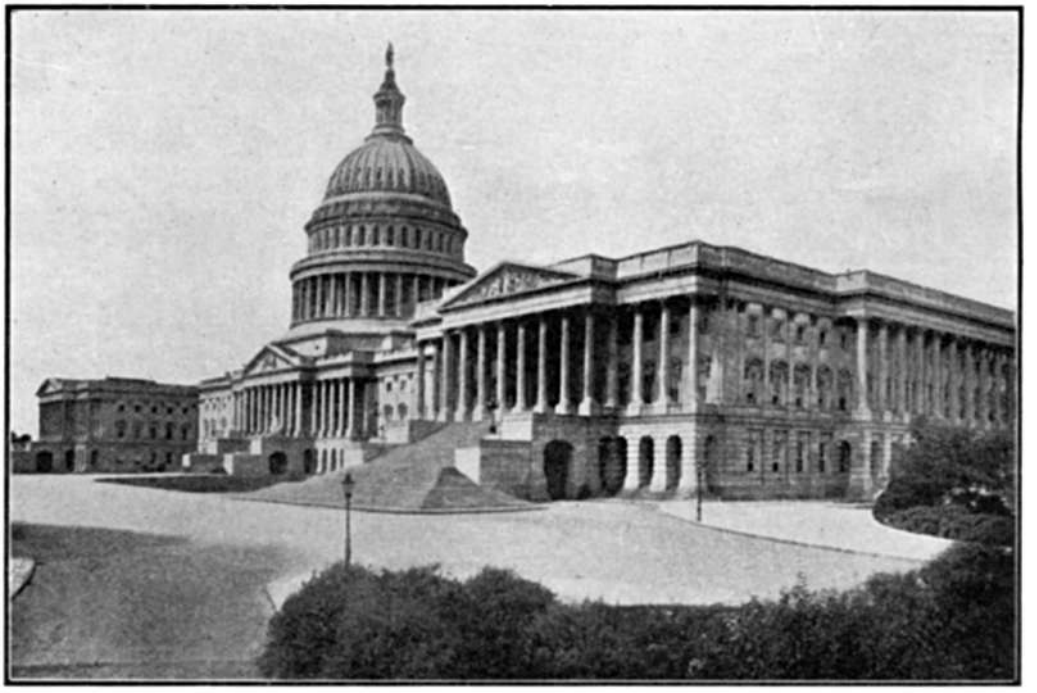
It comprised the four leading men of the Chicago Exhibition. Burnham, Architect-in-Chief, and the designer of the flat iron building, in New York; St. Gaudens, America's greatest sculptor; McKim, one of the greatest of American Architects; and Olmstead; and to the eternal credit of L'Enfant, the man who was "fired" and unpaid and who sank to a pauper's grave, this great Commission of America's greatest experts, armed with all the knowledge of these great days, found it could not do better than go back to L'Enfant's original plan of One Hundred Years before.

So the railway was torn out of the Grand Avenue, and the carelessness of the past had to be atoned for by the spending of £12,500,000.

The mistakes of the past are the signposts of the future. The story of Washington is a grim lesson that Australia should take to heart to-day—that it is expensive and criminal to interfere with a design for a city once the main features of that design have been carefully adjudicated upon and fixed.

From the spirit that rose at the Chicago Exhibition, a new city began to grow. It set the signal for the world to town-plan on the grand scale. It had a particular message for Australia. Through its wondrous paths and ways strolled an impressionable young fellow of fourteen, and the spirit possessing him marked him as a man of destiny. Twenty years later he was to win the World's Competition for Australia's capital city.

"The Chicago Exhibition gave me my first lesson in town planning," said Walter Burley Griffin.



THE CAPITOL OF WASHINGTON.
The great monumental feature that dominates the city scheme.

Section VII.—The New Nation.

Australia, at the end of its first century, held six States, with boundaries almost as strongly defined as those dividing antagonistic nations. Each mainland State had a differently gauged railway line with officious customs-brigands holding up travellers passing across each boundary, whilst the two chief cities, Sydney and Melbourne, sized each other like the chief parties to a vendetta!

The fact of the matter was that Australia was leaping ahead, and each State envied the progress of its brothers, like competitors in a race. Envy, after all, is only ignorance. The customs-barrier was a hedge that prevented proper understanding. It only wanted some national movement to introduce the young people to each other. The barriers fell at Federation.

With Australian federation rose the question of a capital city. Only one State could have the plum, and the dying spark of envy flared again. In the battle of the voices Sydney and Melbourne shouted long and bitterly, but the other States' capitals seemed silent; no doubt their pleas were drowned in the din between the two leading cities.

IN SYDNEY.

The city centre, where Pitt and Moore Streets join at the General Post Office.

(Showing the narrow winding way of Pitt Street.)

IN MELBOURNE
Collins Street, one of the finest tree-lined streets in Australia.

A compromise was reached in that Melbourne was to hold the prize for the first ten years, the capital city to be then established in New South Wales, but was not to be within one hundred miles of Sydney.

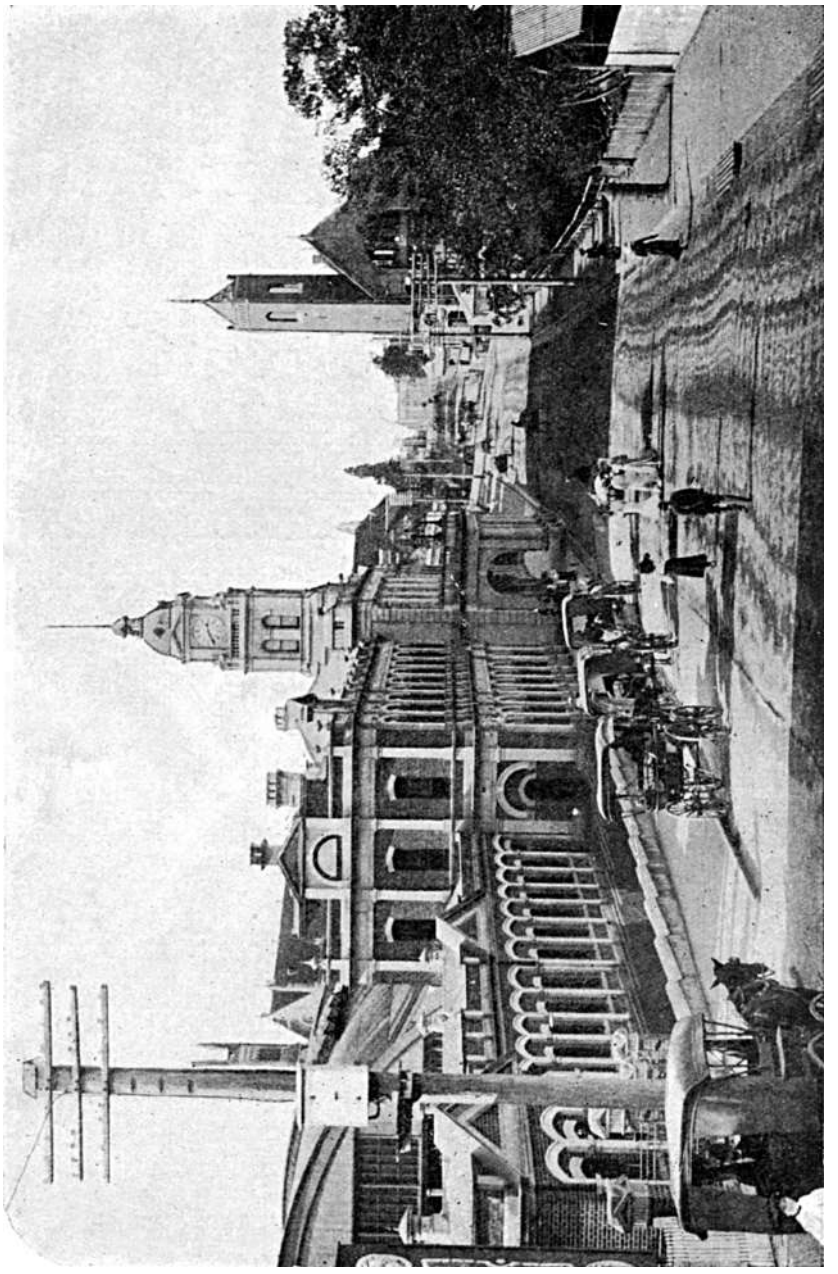
It was a backhand slap, but Sydney was tired and accepted it, like the youngster who didn't get the apple but was satisfied so long as the other fellow didn't get it.

So a site was sought in New South Wales, and not before twenty-eight months was it definitely fixed on the Molonglo River, at Canberra.

I have not the desire to animadvert upon the long history of political intrigue and "party manœuvring" that preceded the selection of the site—but once it was decided upon, active survey operations were taken in hand to provide contours and other data for a World's Competition for the capital.

It was to be Australia's first great opportunity for scientific town planning.

Hitherto little practical work had been done in this respect. Australian capital cities had little thought spent on their lay-out.



IN BRISBANE.

The central feature of Brisbane, the Railway Station, showing the lack of converging ways.

Sydney's first plan was rectangular with crooked roads emerging from the main streets, the city spreading along the winding ways, where the bullock driver followed the easiest contours:—

"He loaded up his bullock dray,
"And carelessly he picked his way;
"Yet in the grooves his cart wheels made,
"Ten thousand people tread to-day."

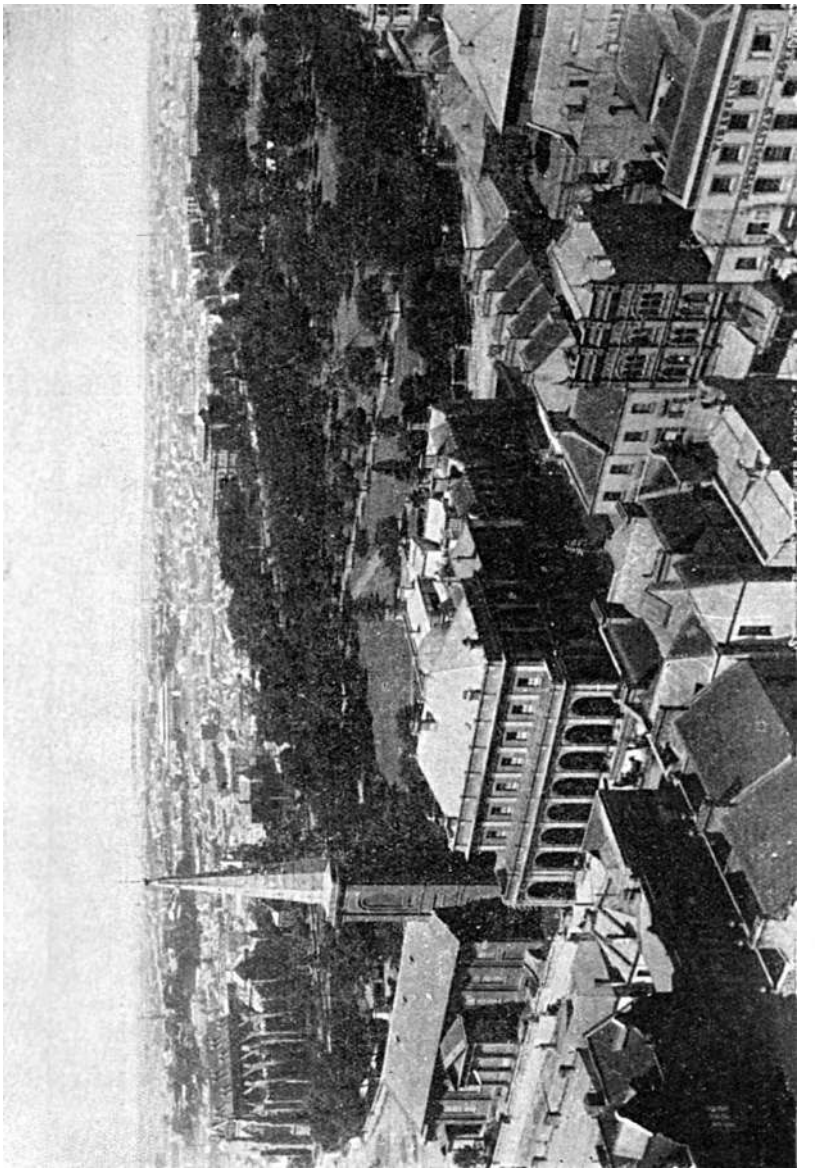
Melbourne was laid in rectangular fashion, with wide streets, but no scheme of cohesion between distinctive features. Its finest buildings, the Law Courts, Parliament House and public offices, are lost for the want of radial connecting lines, Parliament House being the only imposing building in the city commanding the long avenue of Bourke Street.

Brisbane, Adelaide and Perth also lack cohesion between prominent features.

Scientific town planning had an opportunity in 1909, with the appointment of a Royal Commission to advise on the proper planning of Sydney.

IN ADELAIDE.

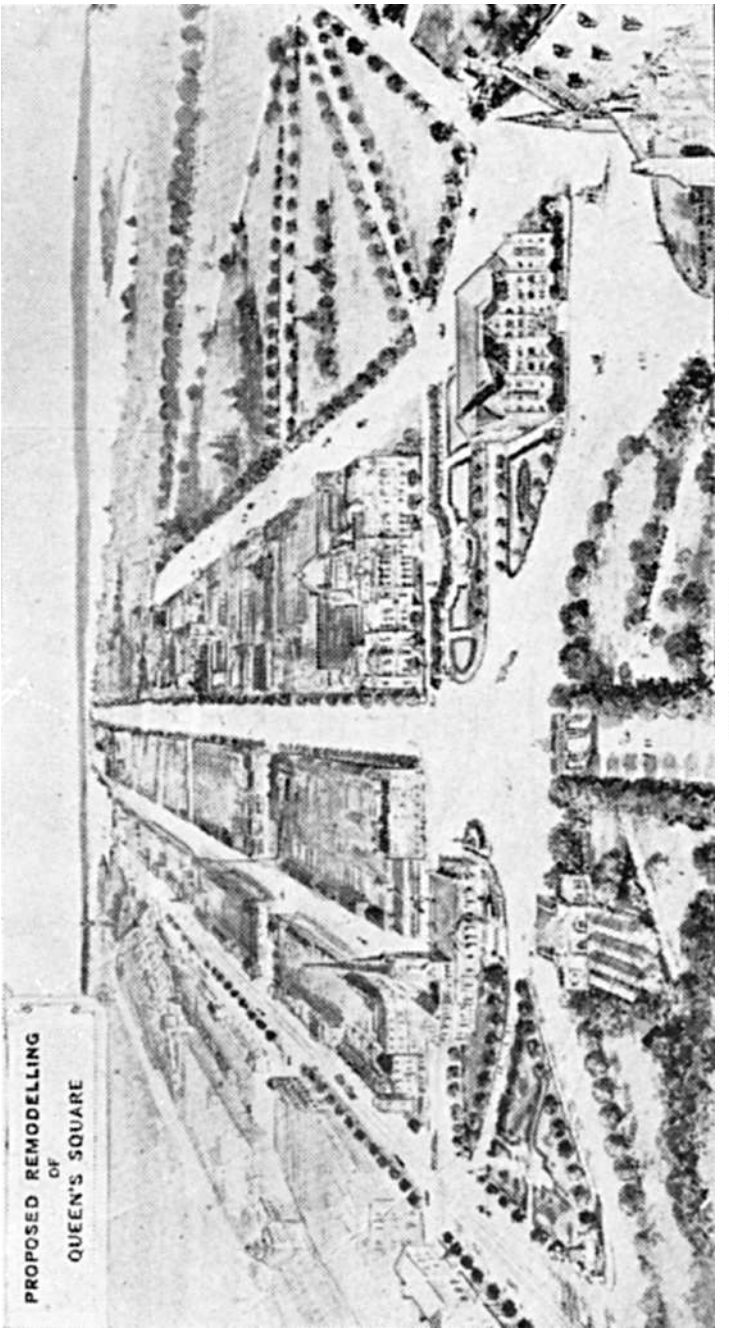
Australia's best planned city, showing a tree-featured street.



IN SYDNEY.

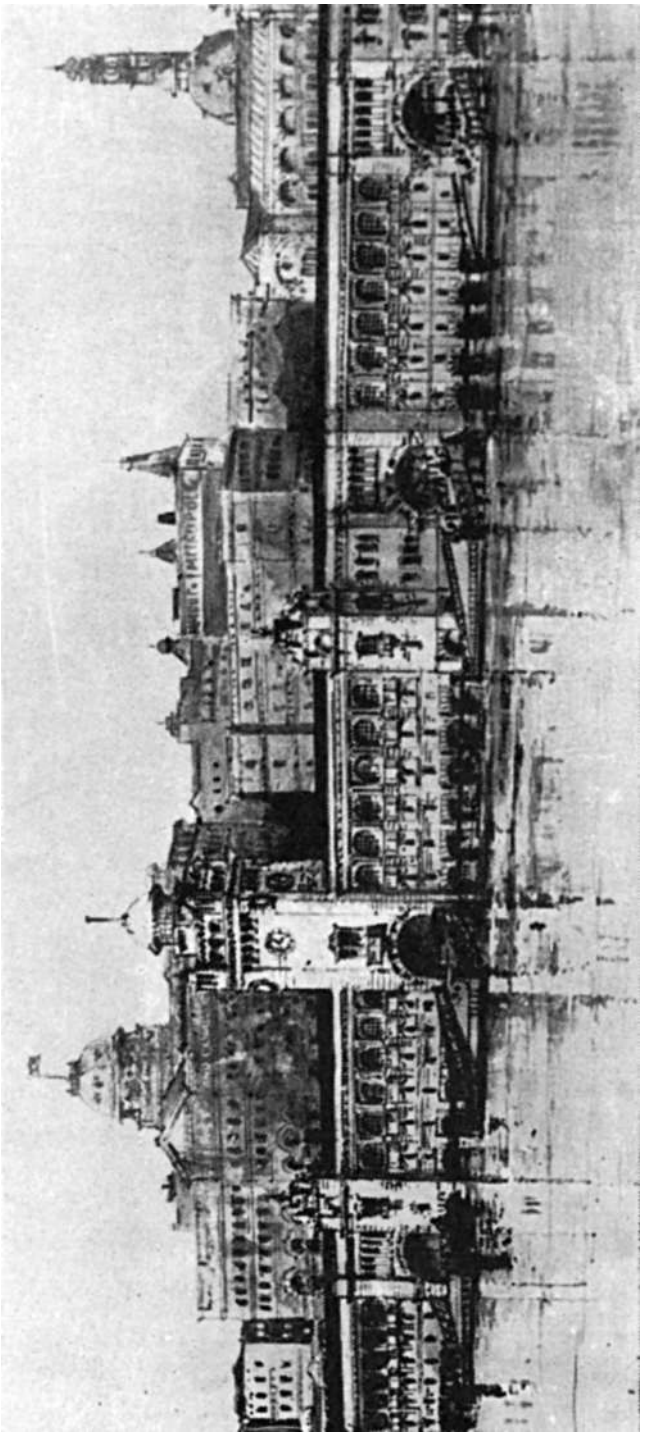
Aerial view of Hyde Park, overlooking the Supreme Court and St. James' Church in the foreground.

(Note proposed treatment of this group in improvement plan on opposite page.)



IN SYDNEY.

Aerial view of planning proposed by the Royal Commission, looking from Hyde Park along Macquarie Street, with St. James' Church on the left and the Registrar-General's Office on the right. The proposed continuation of Moore Street, to form a grand avenue to the Domain, has since been blocked by new buildings.



SYDNEY.

The scheme submitted to the Royal Commission, by Norman Selfe, to remodel Circular Quay.

This honorable commission of distinguished professional men sat through ninety meetings, held long examinations of the best authorities (forty witnesses giving evidence), the highest experts gave freely of their wisdom, elaborate drawings and plans were prepared, and excellent recommendations made for immediate action in a report of wonderful value, and one that history will treasure.

Nothing was done!

The report—that great work that so many eminent men had given time and skill to prepare—was pigeon-holed.

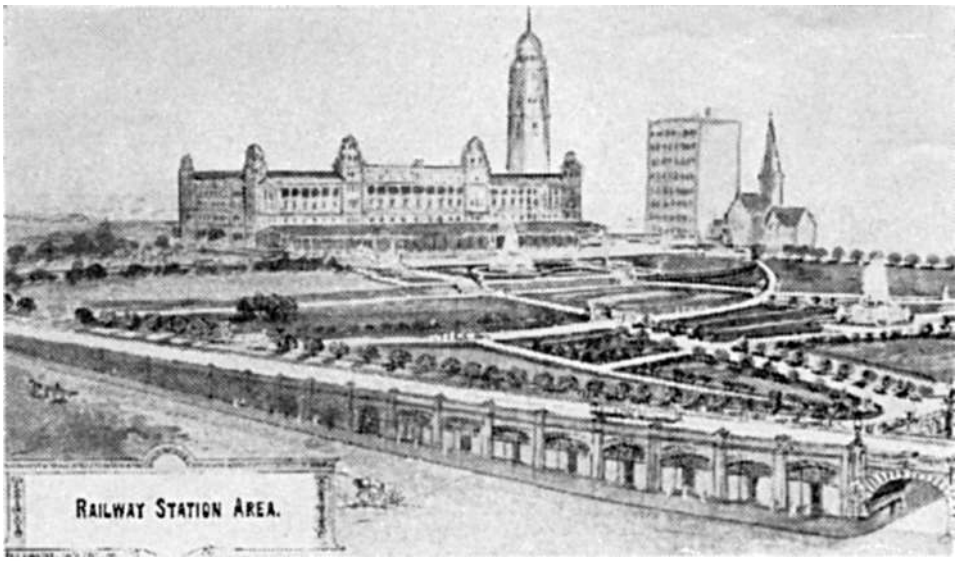
And be it remembered that the services of the commissioners and witnesses were given to the nation without reward other than the satisfaction that something would be done to beautify their beloved city.

The authorities slept!

Grand avenues that were recommended, were blocked for years by speculators buying areas in the line and building upon them in the hope of their being resumed; and to crown the scheme with thorns, the Government planted a huge stone building in the direct way of a grand avenue that could connect Circular Quay with National Park, an avenue that could be made to pay for its own widening by the increase in real estate values of Government land it would traverse at Botany.

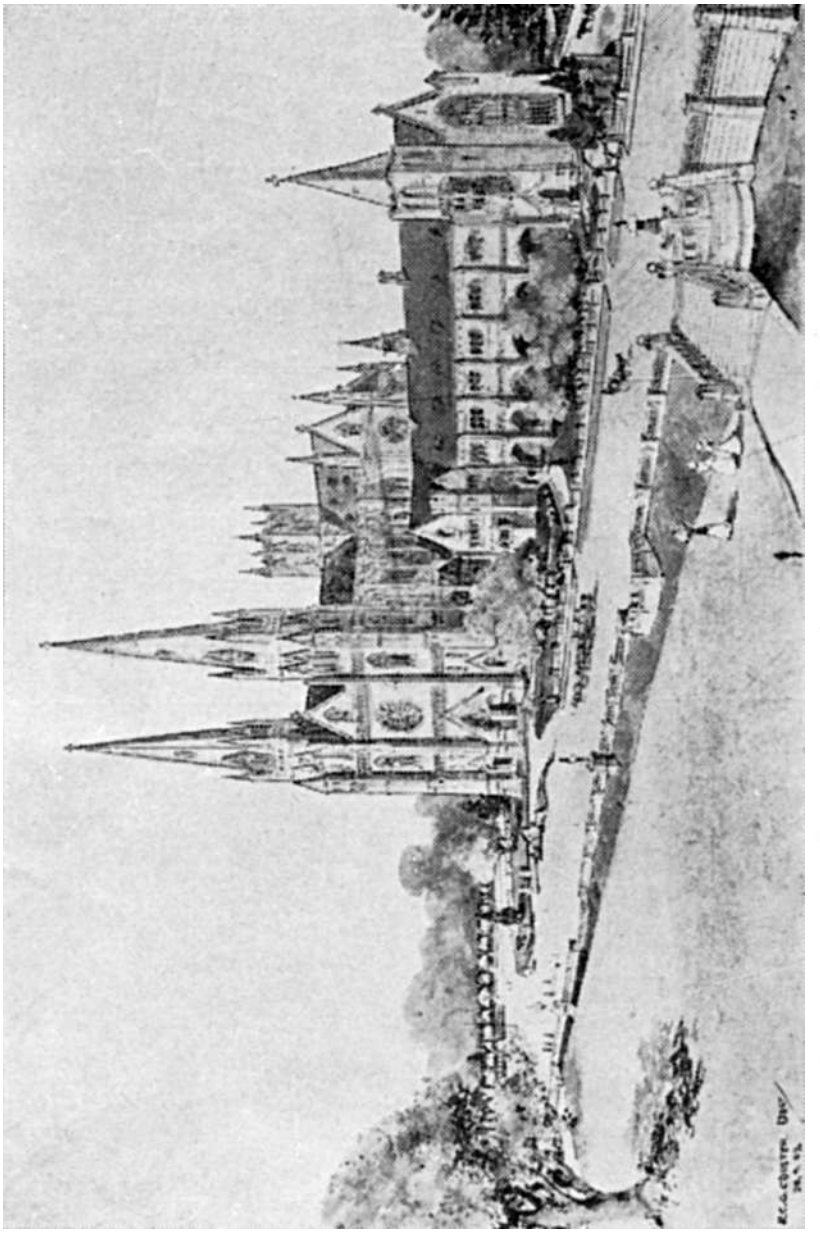
If the report had to be paid for as a commercial transaction, it would have cost about £4536 in fees alone.

The authorities got it for nothing, and they valued it at the price they gave for it!



SYDNEY.

Replanning proposed by the Royal Commission, showing scheme by Norman Selfe for raising Belmore Park with viaduct up Elizabeth Street.



IN SYDNEY.

Replanning proposed by the Royal Commission, showing the Regrading of Cathedral Street, from Hyde Park to Woolloomooloo.

Section VIII.—The Competition for a Capital.

The decision to build an Australian capital city suggested that, in the first glow of national enthusiasm, the spirit of town planning would possess the powers of the period, if not the community at large. Not so. With the final selection of the site there began an era of official mal-administration that was extraordinary.

A new Federal Government came into power, and under its rule a system of day-labor construction was introduced. The inefficient administration of this system scattered over £150,000 in faulty construction and wasteful labor that would have been saved had the work been carried out under proper competitive contracts by skilled builders and engineers.

Concrete houses were erected at great expense, and roads constructed before any definite scheme was decided upon.

Constructional inefficiency was manifested almost everywhere. A water supply system had to be reconstructed owing to faulty design in pipes and pumping plant, and a sewerage scheme had to be remodelled owing to defective arrangement.

It was a grim lesson wisely learnt in our national youth. In city development it is advisable to have all constructional work carried out by skilled builders, under a proper competitive contract-system.

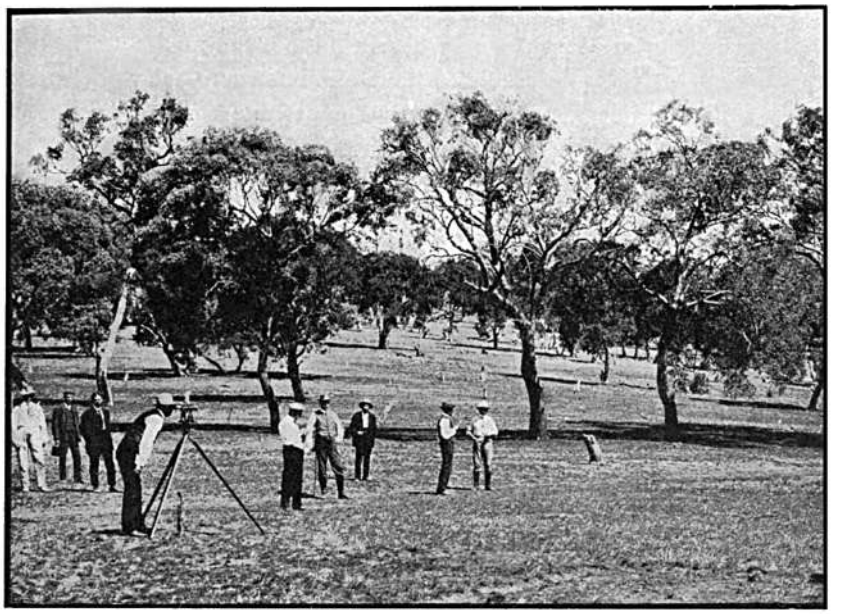
The blame for this orgy of extravagance was thrown at the then Federal Ministry. But it should be remembered that Ministers ever were greatly influenced by their administrative officers.

In the framing of the conditions for the competition for the capital, the ineptitude of the administration was again displayed. The first prize, £1500, was paltry, and the Minister was to have final adjudication. So a storm of disapproval rose from Australian architectural institutions and extended round the world. On the Minister-in-Charge the storm crashed. Yet he was hardly to blame, as he practically followed the advice submitted to him in a report prepared by three of the administrative officers with whom was associated the State Architect for New South Wales, Colonel Vernon. It should be noted that the latter, on his appointment, requested the architectural institute of his State to suggest any requirements, but no response was made, and the conditions were framed and issued.

The contour plan, issued with the competition conditions, was also somewhat misleading. It had a proposed railway line that led to the baulking of a good many competitors, and the creation of absurdities by others in vain attempts to plan round or dovetail it in.

THE SITE FOR CANBERRA CITY.

The Prize Painting by President W. Lister Lister, of the Royal Art Society of N.S.W.



THE START OF A CITY.

The First Sight in the Survey of the Federal City being taken by the then Federal Minister for Home Affairs, tne Hon. W. H. Fuller.

WALTER BURLEY GRIFFIN,
Whose design was selected in the World's Competition for Australia's Capital City, and who was appointed Federal Director of Design and Construction.

The men who ignored it won the first and the second prizes—the first prize going to Walter Burley Griffin, of Chicago; the second prize to E. Laarinen, of Finland; whilst the third prize went to Dr. Agache, of Paris.

One of the judges disagreed with the other two, favoring an Australian design. This minority design the Government purchased for £400.

Section IX.—The Plans that Pleased.

Griffin's plan shows he has utilised the Molonglo River for developing five basins which determine the location of the public groups. Many critics consider that so much water will be difficult to obtain, but the Molonglo is in flood about twice a year, and Griffin has practically followed the flood level line, which in the eastern lake gives an area of about six square miles.

The principal centres have been linked together by radial arteries, as in the days of Rome, and wide boulevards will carry the swift city traffic to the outskirts.

Of the site, Griffin picturesquely said that it may be considered as an amphitheatre, with Ainslie in the north, flanked by Black Mountain and Mount Pleasant forming the top gallery; the slopes forming the auditorium; the water-way, the arena; a terraced stage, set with the monumental Government structures; and Red Hill and Mugga Mugga Hill forming the back-scene of the theatrical whole.

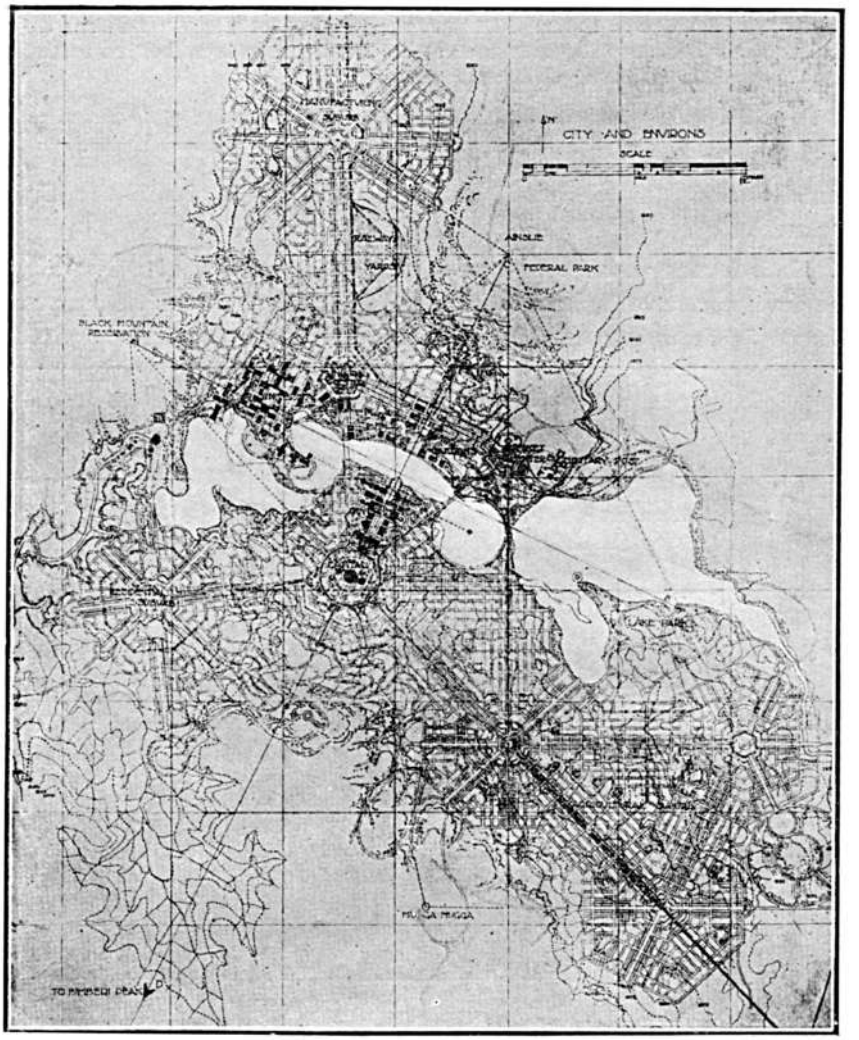
He has finely grouped his city zones. The first, the Public Group, we find he has divided into two branches of Government—Federal and Municipal, separated by the water basins. The Federal Group, as being of dominating importance, is given the central position; a clever consideration being that such governmental deliberations require an accessible, but quiet position.

Note also his clever allocation of offices, beginning from the Executive, where the Bills are considered, to the Legislative where they are made law and passed on to the Law Department for administration. The Town Hall centres in the Civic administration, with Commerce, supported on the west by Knowledge, and on the east by Defence.

In connection with the location of the position for the latter, Griffin informed me that he located it on the east, as that hill commands attack from the most likely direction—the sea coast, and also best commands the town. He was unaware that the Military College was already on that site.

The Government Group shows the arrangement of Government offices centralised in the House of Parliament. A happy idea, looking from the water front, is the arrangement for flanking the capitol with the Governor's residence on the right and the Prime Minister's on the left. You will note that this placing of the Governor-General's residence close to the House of Parliament is very unusual in Australia.

I questioned Griffin on this innovation. "Well," he said, "an Australian is a very democratic individual, and he will appreciate his



Walter Burley Griffin's Prize Design for Canberra and its Environs.

vice-regal representative being closer to him than is usual; in fact, as close to the people as the Prime Minister."

The Recreation Group is north-east of the water axis, and combines physical and mental recreation.

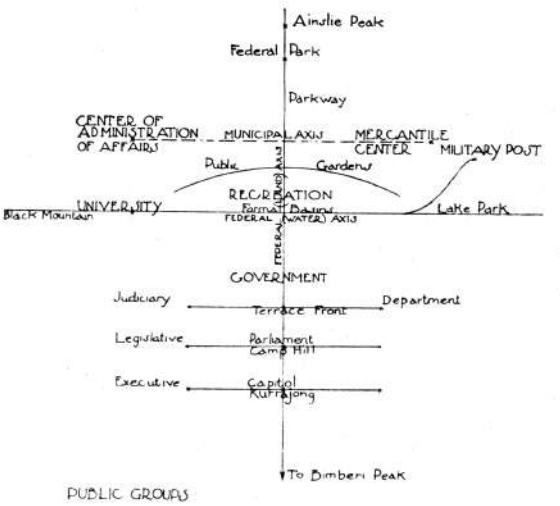
It will be noted, in this wonderful system of groupings, how Griffin has had a definite scheme in each arrangement, yet all consonant with the whole.

His University Group is self-contained, and is one of the most remarkable, as well as the most ingenious, of the groupings.

The fundamental sciences descriptive of nature lead directly to the theoretical sciences derived from them; these, in turn, leading to those sciences in which the theories are applied; and these are directed to those spheres where they will be utilisd in real life.

Thus "Physiology" opens out to the hospital, "Mining" opens into the Black Mountain, "Engineering" stands between it and "Architecture," "Government" and "Economics" approach the Civic Centre.

It is a most concise and most graphic illustration of the story of the development of human knowledge. It is first used at Canberra and stamps Griffin as a town planner of high ideals and practical purpose.

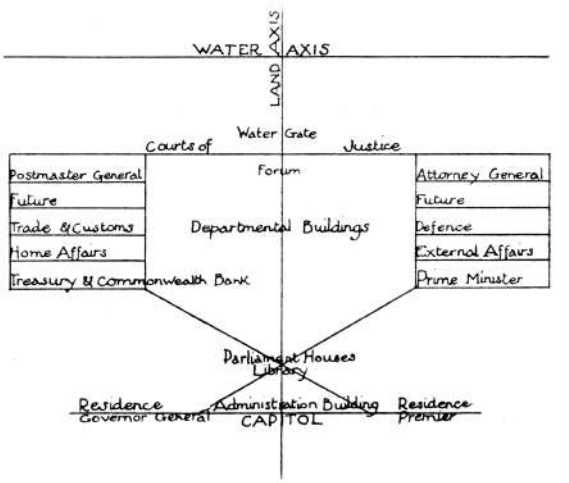


AT CANBERRA.

A main axis line for the Public Groups, looking north-east to Ainslie Hill.

AT CANBERRA.

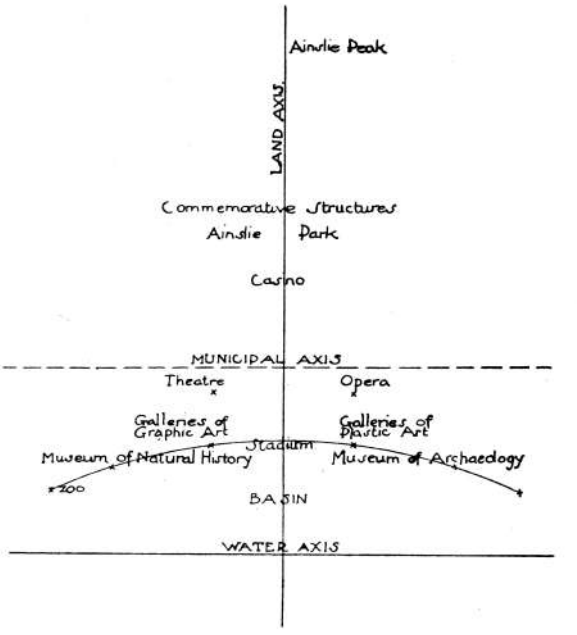
The Government Group, showing allocation of positions for consecutive departments (looking down hill from the Capitol to water axis).



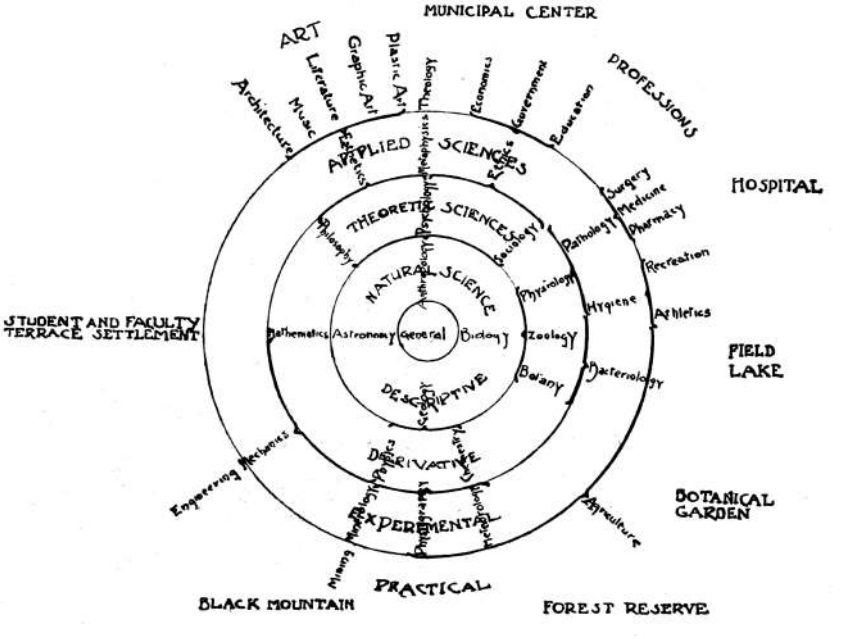
GOVERNMENT GROUP (Scheme 1)

AT CANBERRA.

The Recreation Group, placed about the upper half of the main axis line, between water axis and Ainslie Hill.



RECREATION GROUP

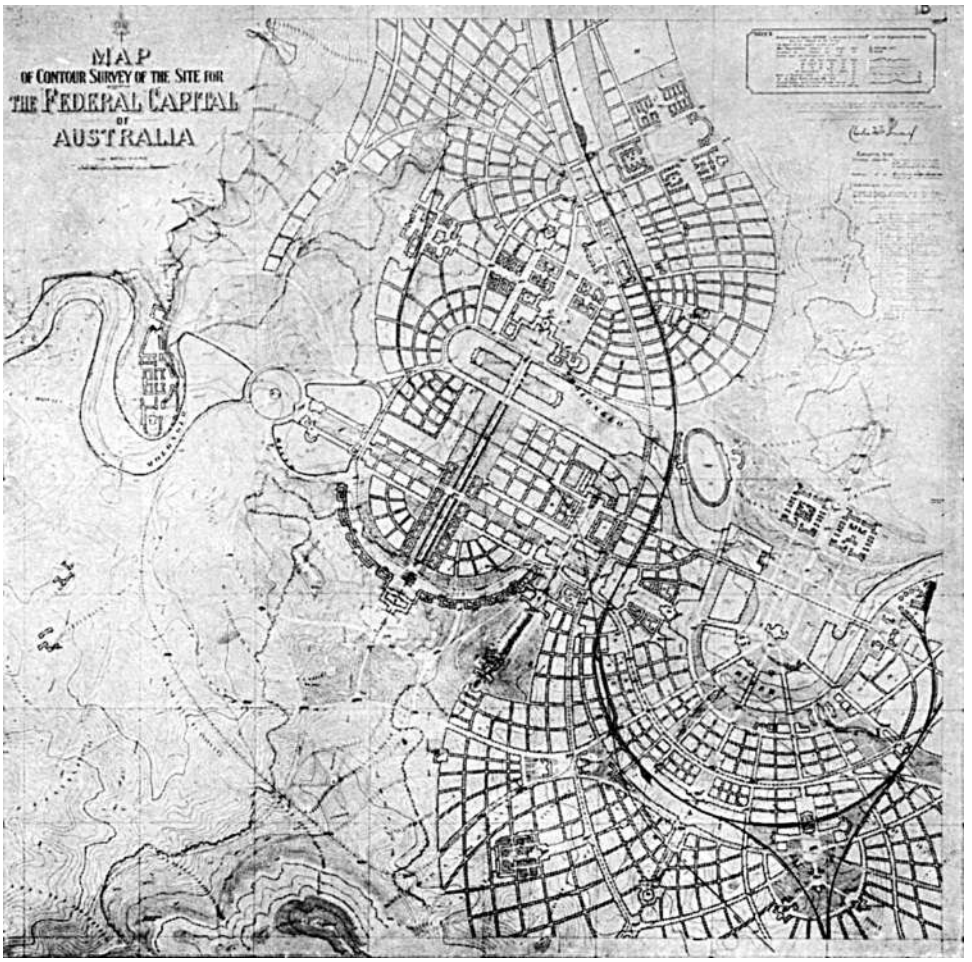


UNIVERSITY GROUP

The second prize design depended on considerable alterations of the site to win horizontal lines. Hills had to be obliterated, and filling-in up to fifty feet was required in places for a level terrace.

The Prime Minister's house was to be on an artificial bed sixty feet deep.

The public buildings, including Parliament House, fronted along a narrow stretch of water. Formal lakes divided the city, with four different levels in the ornamental waters governed by weirs. Most of the streets are crescents. Even the railway doubles back upon itself.

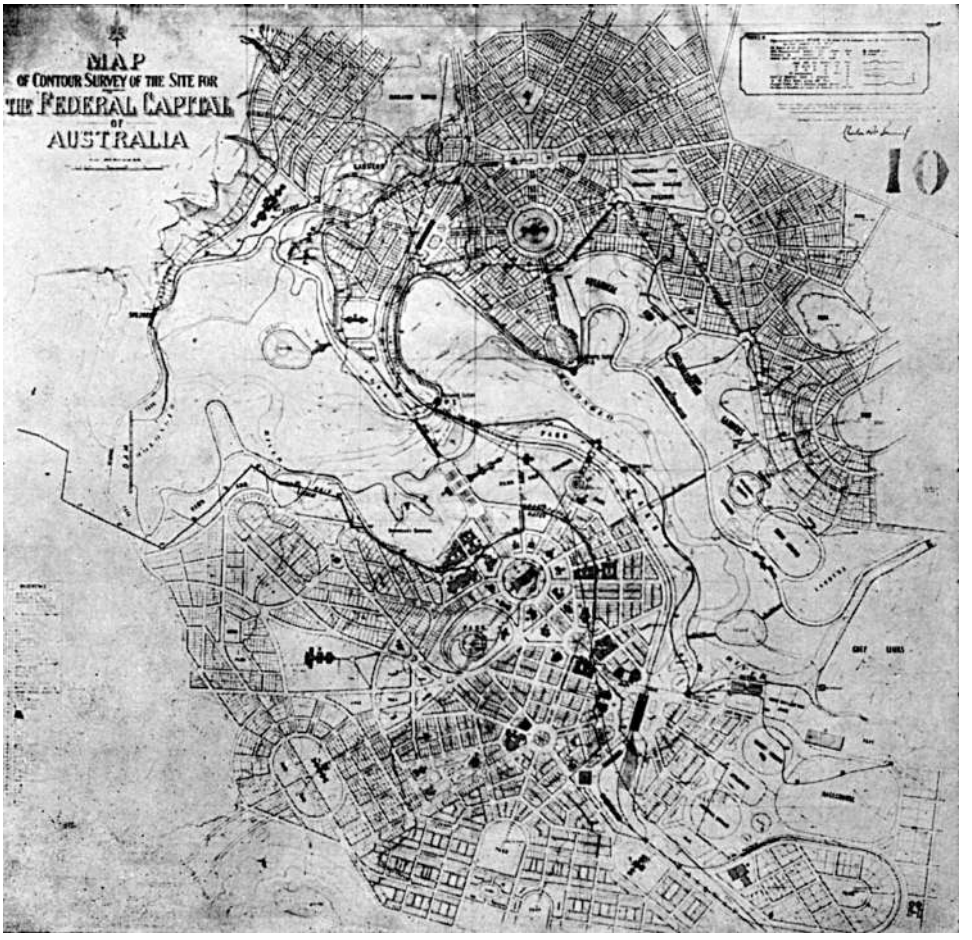


THE COMPETITION FOR AUSTRALIA'S CAPITAL.

The Second Prize Design by E. Laarinen, of Finland.

The third-prize design placed the eight departmental buildings in crescent form. The river is not blocked but widened along its course, and the railway station is between the official buildings and the river. Two fine hill-features are crowned with a gaol and a cemetery!

The minority-prize design had, as its main feature, a great lake with two islands. Parliament House was placed on Camp Hill, with public buildings grouped around it. There seemed a certain hesitancy regarding the disposition of the main streets; the railway line, as shown on the contour plan, was adopted, thus actually dividing the city into two parts. Wide sporting areas were placed in the city, producing an obvious defect.



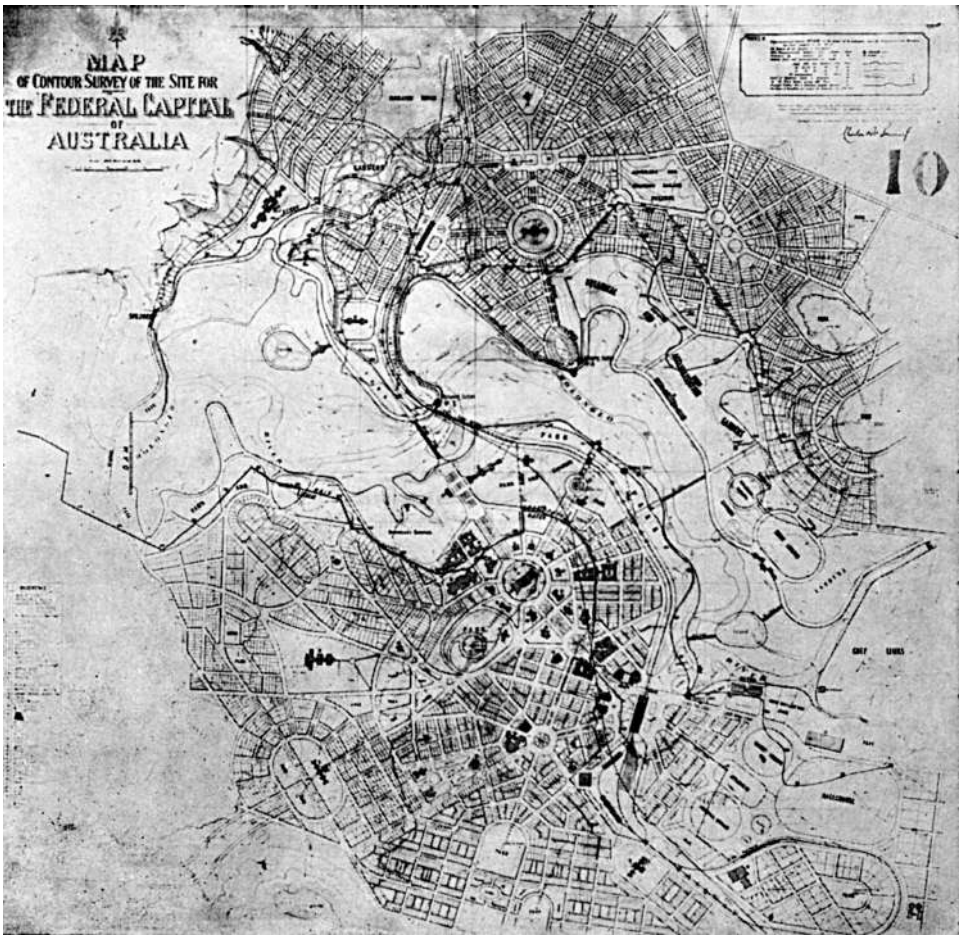
THE COMPETITION FOR AUSTRALIA'S CAPITAL.
The Third Prize Design, by Dr. A. Agache, of Paris.

There was no question of the superiority of Griffin's design. John Sulman, F.R.I.B.A., a leading Australian authority, stated at the time:—

"Compared with the second and third designs, the first stands pre-eminent."

Referring to the minority-prize design, he said:—

"It was gratifying to note that local competitors have been able to produce a plan worthy of consideration and the commendation of a minority report, but its defects are serious. One of the chief, in my estimation, is the adherence to the route of the railway shown on the contour plan. It skirts and cuts across the principal parks



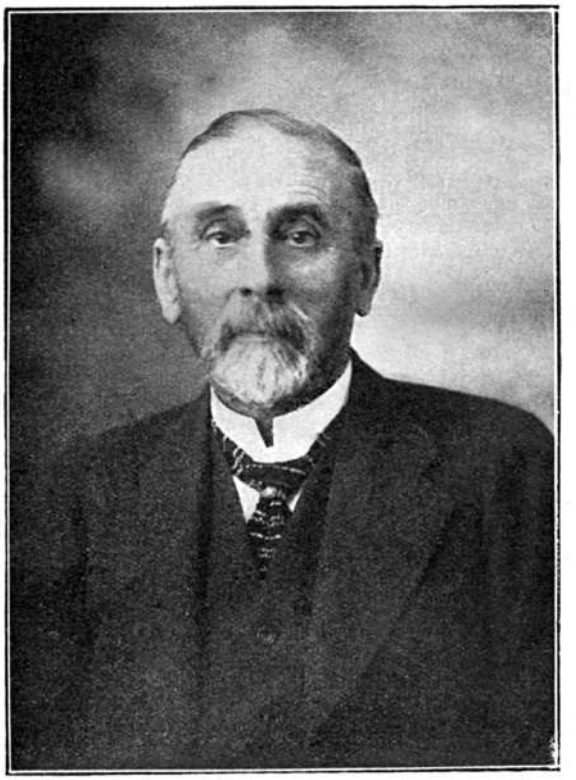
THE COMPETITION FOR AUSTRALIA'S CAPITAL.

The Plan Recommended by the Minority Report.

and lake in the centre of the city, and the contrast of a huge steel bridge for the railway and a well-designed stone traffic bridge is altogether too awful in a model city."

That the accepted design was the best possible was later to be disclosed in a bitter battle of criticism that followed its final acceptance.

Political peace did not come with the acceptance of the design for the capital city. Even at the laying of the foundation stone of Canberra, on March 12th, 1913, party feeling was so great that the leading members of the Opposition in the Federal Parliament were uninvited. Canberra was conceived in trouble.



JOHN SULMAN, F.R.I.B.A.

John Sulman, F.R.I.B.A., the first President of the first Town Planning Association in Australia, is a recognised authority on "the new science," as it is called in its later-day application. That recognition not only holds in Australia, but in parts of the world where town planning is firmly established. Were a Chair of Town Planning inaugurated in any Australian University, Mr. Sulman would be the right man for the position, but he recently confessed that while his advice and experience were always readily available, he had no ambition in that connection.

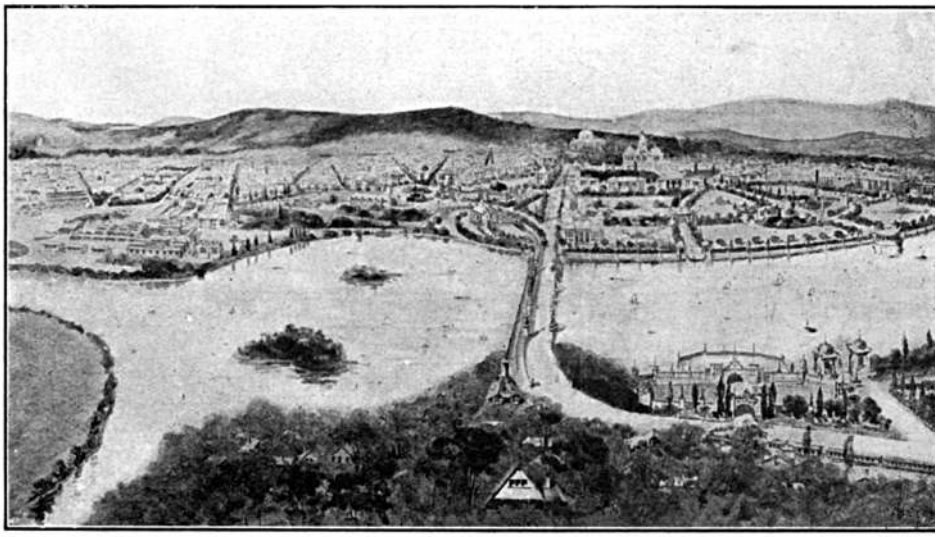
The N.S.W. Association has made serviceable strides under his presidency.

Section X.—The Battle for Fair Play.

Nor did peace come to Canberra with the granting of the prize. The administrative officials once again displayed what seemed a conspiracy against common sense, by rejecting the first-prize design, and adopting one built up of parts of the four first plans, like a patchwork quilt.

Some of the features of the prize design were adopted—the railway on the north-west of the city, for instance; although one member of the Departmental Board was the official who placed it cutting through the centre of the site on the contour plan issued with the competitive conditions. The railway, however, was brought across the river along the surface of the main avenue.

This "built-up plan"—as it was commonly called—appeared to acknowledge but one principle of town designing--that of dotting every prominence with a building, but without any idea of logical grouping. It was a travesty on town planning, yet the administrative officials, with an eye on history, subscribed their names on the plan and pushed ahead with the construction work. An electric power-house was erected on the bank of the water-way and a railway rushed from Queanbeyan, a town five miles eastward. This line has been laid through what is to be the great lake! The most charitable construction that could be placed on the efforts of the administrative officers, was that their design was not altogether as deliberately destructive of the prize-design as it suggested.



THE "BUILT UP" DEPARTMENTAL DESIGN THAT WAS ABANDONED.

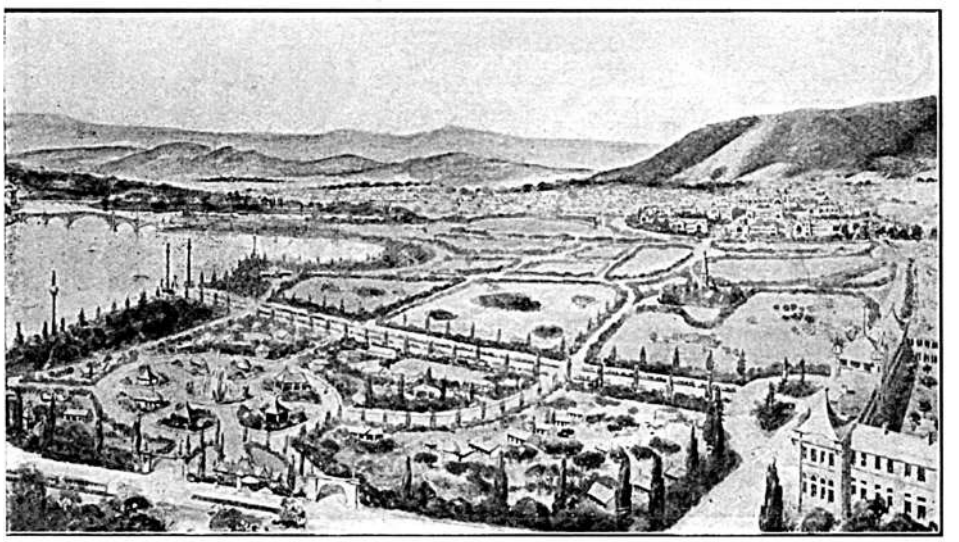
A conference with Colonel Vernon convinced me that this awful "built-up" plan was impracticable. That public-spirited gentleman was good enough to prepare sections, showing the difference between the Departmental design and that by Griffin.

I remembered the tragedy of L'Enfant and the interference with his plan of Washington. I remembered the millions that had to be paid as a result of that interference, and for three months I pleaded with Colonel Vernon for permission to place his sections before the public.

He hesitated. He felt public criticism might hurt the feelings of officers with whom he had worked so long; but to his eternal credit he felt the national call was greater, and almost reluctantly let me proceed. Even when I had drawn up the great petition of Australian architects, asking that the Departmental design should be discarded, the grand old man had a feeling of regret that I had gone so far.

To Colonel Vernon must be ever given the glory that Canberra got fair play. I write this knowing.

Had Colonel Vernon been spared, his achievements in town planning would no doubt have been equal to those in other spheres of activity. As it was he was right in the forefront of the Town Planning movement in N.S.W., having been one of the first councillors of the Association, and one whose experience and time were fully given in the preliminary work. His name will ever be associated with the planning of Canberra, because of the manner in which he fought for the adoption of the right plan and the rejection of that almost foisted upon the people. He had

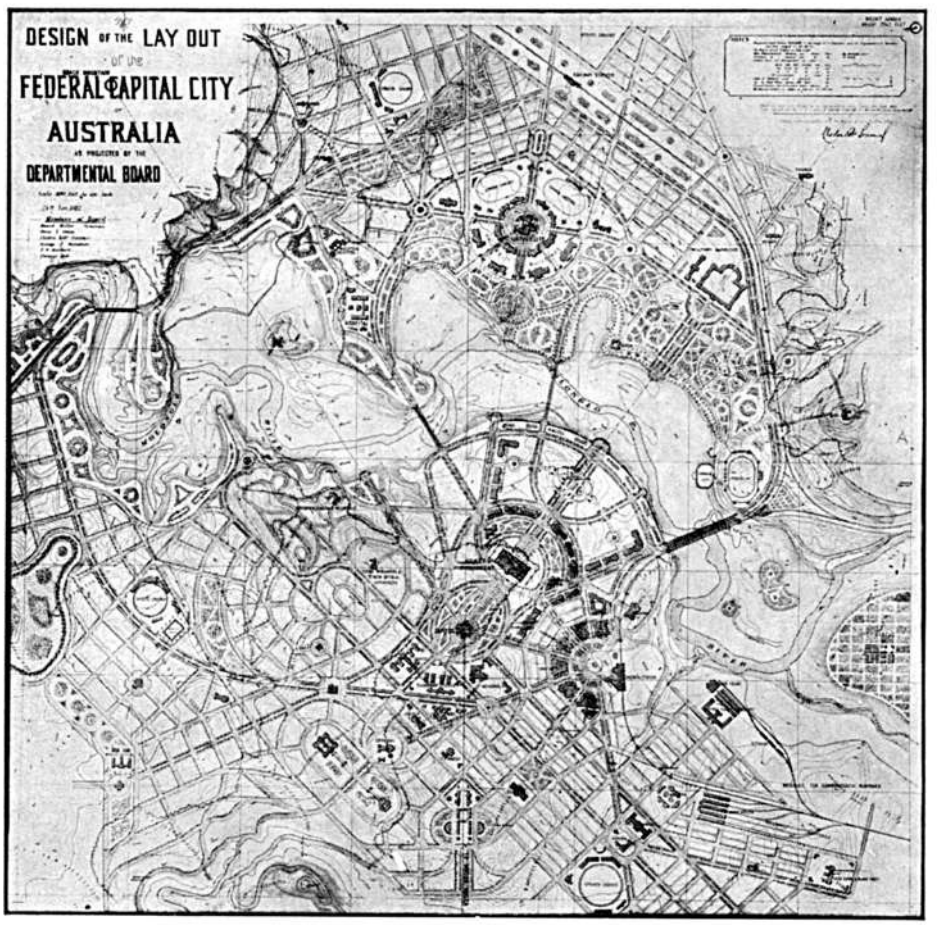


THE "BUILT UP" DEPARTMENTAL DESIGN THAT WAS ABANDONED.

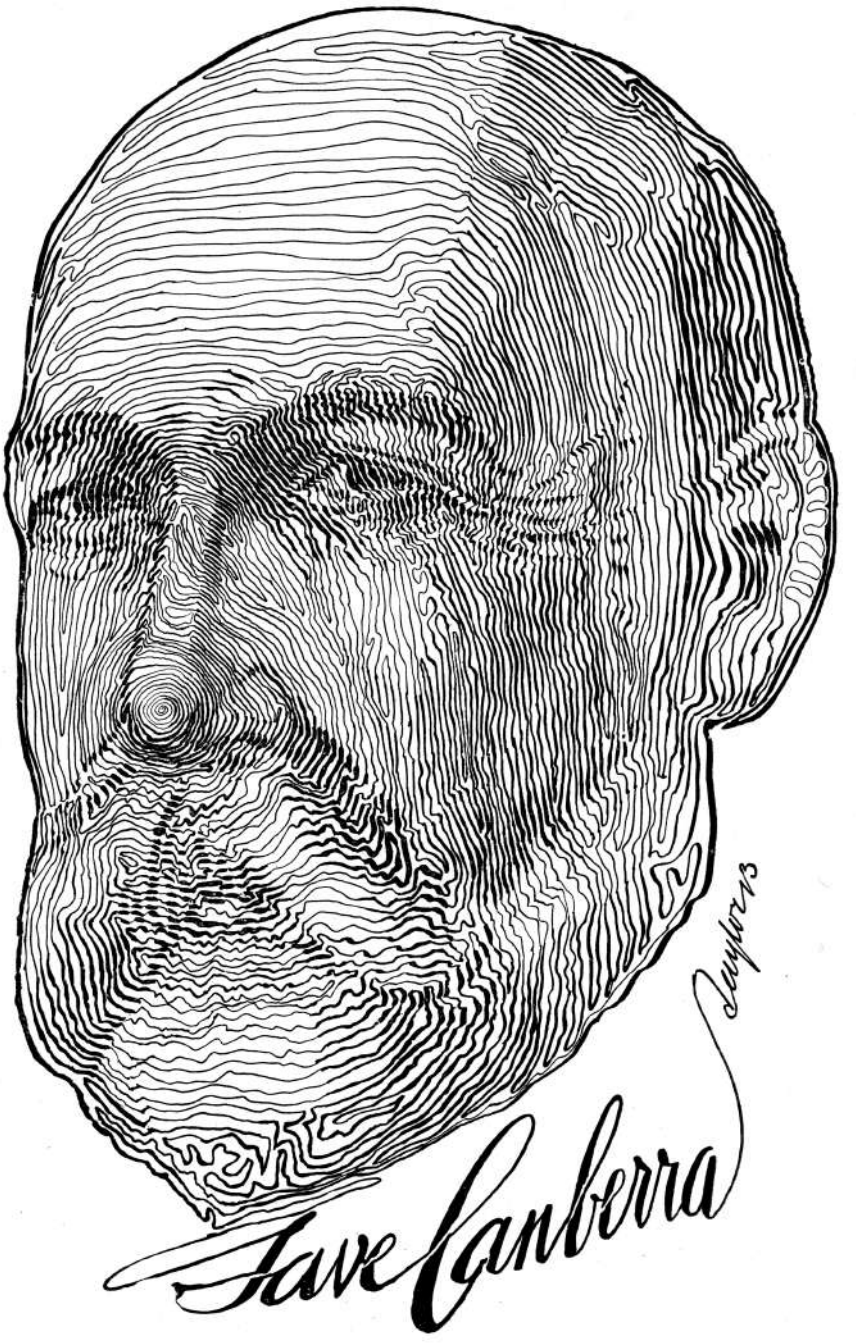
all the essentials of a town planner—breadth of vision, patriotism, foresight, the artistic soul, and that democratic impulse that makes men who need no aid from men help those men who need. But Vernon Hill will always keep his name at Canberra.

The professional call for "a square deal for Canberra" was remarkably popular. Australian architects sank all sectional strife in the great national appeal, and the Prime Minister of the day, Hon. Joseph Cook, followed the only rational and fair-minded course open to him. He rejected the Departmental design and sent for Griffin.

The Prime Minister also stopped the system of day-labor, that had practically wasted £250,000, and in that he set an example that history should follow.



THE DEPARTMENTAL DESIGN THAT WAS ABANDONED.



A LINE THE PRIME MINISTER WAS ASKED TO FOLLOW.
(This drawing was made with one continuous unbroken line.)

To

The Hon. Joseph Cook, M.P.

Prime Minister, Commonwealth of Australia.

Sir — We, the undersigned Architects and Engineers practising in Australia, respectfully and urgently petition you to appoint a Royal Commission of professional experts, to inquire into, and report upon, the general administration relative to the building of **Canberra**, and to review the present built up design, to which so much expert objection has been taken, notably by Col. W. L. Vernon. V.D. F.R.I.B.A. in the June issue of "Building" Magazine. —

You are well aware of the uncompromising attitude adopted by the ex-Minister for Home Affairs toward the professional counsel offered him at various stages of the competition, and we recognise in the fortunate turn of the political wheel, an opportunity for yet saving Australia's Capital City from the grave constructional disaster that threatens it. —

The power that you would have gladly exercised in opposition, you now have the opportunity of putting into effect as Prime Minister, and we can assure you that the exercise of that power is most necessary in this phase of national affairs. —

Alfred Spain G. A. Julius Burcham Clamp M. Cooper Day
Hector Kidd Henry A. Wilshire J. F. Copeman Geo. Roberts
A. Ruskin Rowe Edw. N. Kennard
E. Lind. Thompson
J. Haydon Cardew M. Inst. C.E. W. Trenchard Smith Donald Esplin
Thos. Darling L. G. H. McCredie Buchanan & McKay
H. R. Mead Alfred H. Hale H. Ernest Stowe Harry C. Kent
A. F. Somerville Ernest E. Hassall

NEW SOUTH WALES.

Howard Joseland Louis A. Curtis Theodore J. Marks A. L. McCredie
A. J. Venables Vernon Wm. M. Nixon & Sons
William De Putron Waterhouse & Lake G. A. Down
M. M. Halligan John Reid Lindsay Clarke
J. H. B. Wilson Frederick Stockham James Campbell
Geow. Durrell Jno. Dunstan F.I.A. W. Henry Lumley.
Reginald G. Prevost Evan Evans Rutledge Louat M. Rigden
S. N. Rickard J. Bradshaw Johnson Butement & Brennan
Kemmis and Backhouse Alfred A. Forman F.R.I.V.A. G. L. Grant
Charles Rosenthal A.R.I.B.A. H. A. Reuss
Arthur Brown Herbert Dennis A.R.V.I.A. Eaton & Bates
Alfred G. Newman Stanton Cook C. J. Kerr E. Sillarton
Reginald A. Jepper A. Dixon Chater G. Harton
Edward Roffe (Granville) Reg. E. Chapman Bondi. (All of SYDNEY)
Charles W. Harris A.I.A. Eastwood. Edward Labatt B.A. M.C.E. A. H. Lewis Randwick Fredk. Nicholls Ryde
Frederick H. Fuller Walter Lane Pymble A. A. Layt Carlton P. J. Ward A.I.A.
F. M. Fox (Baulkham Hills) Ryde A. C. Hind Manly J. J. Kenny Bathurst R. Hardy
Alfred Hayward Mosman William H. Lee Armidale Popplewell & Sykes Casino
R. Mickson Armidale William Gill Casino Fred. J. Purves M.S.A. Cootamundra S. Mhow Jones M.S.A. C.E. (Lond.) Grafton
Ernest R. Laver Cootamundra Andrew Brand Eden F. J. Madigan Glen Innes. W. A. Dods Murwillumbah.
William Fred Goulburn J. J. Board A.I.A. Lismore J. E. Lundholm Junee Donald A. Porter Tamworth
Percy F. Jabrett Katoomba. J. L. Morris & Son Lithgow. John L. Luscombe Muswell brook. Geo. Pullinger Mullumbimby John Hale Orange.
A. Stewart Jolly Lismore Harold Hardwick Mudgee Walter H. Pender W. Maitland. Ernest G. Yeomans Newcastle
W. J. Knopp Goulburn Peter Bennett F.I.A. Newcastle F. G. Castleden Newcastle. Thomas J. Pepper Newcastle
James J. Henderson Newcastle W. L. Amrong Orange P. E. Rancland F.I.A. Tamworth.
Alfred W. G. Ackroyd Newcastle Alex. L. Elphinstone Wollongong
F. J. Bishop Tamworth Fred.k D. Anderson Singleton
H. Wilfred Webster Taree. Ernest O. Gale Wagga Wagga Arthur Blacket Riverstone.
Annesley Kennard Wellington H. Schumacher Wyalong. A. Hamilton Colac.

Charles P. Smart BCE (Melbourne)
John S. Gawler A.R.V.I.A. Melb
Wm. Blackett F.R.V.I.A. L.R.I.B.A. Melbourne
J. J. & E. J. Clark Melbourne
Arthur Peck (Melbourne) F.R.V.I.A.
Walter R. Butler F.R.I.B.A. Melbourne
Nahum Barnet Melbourne
A. J. Inches Melbourne
Frank Stapley F.R.V.I.A. Melbourne
Edward J. Ruck F.R.V.I.A. Melbourne
Klingender & Alsop Melbourne
John & A. B. Koch & Son Melbourne
J. C. Morrell A.R.I.B.A. Malvern Vic
W. E. Gribble Ballarat
Barlow & Hanala Ballarat
George Hall Pattison Melbourne
Ernest H. Wells Melbourne
Wm. G. Goss Melb
W. H. Smith Melbourne
Harry French Bairnsdale
Philip B. Hudson ARVIA Melbourne
Gerald William Vanheems Melbourne
Cuthbert McCarleton F.R.V.I.A. Melbourne
R. A. MacGibbon Castlemaine
J. G. Beaver Melb
W. P. Knights Camperdown
Robt. Sloan Melb
S. M. Maughan Echuca
A. E. J. Tate Warrnambool
W. Beebe F.R.V.I.A. & G. D. Garvin Bendigo
V. R. Dossetor Melbourne
Jas. B. Barnes Nhill
Seeley King & Everett J. F. Seeley (Geelong)
J. Plottel (Melb)
Richard G. Webb Melbourne
B. Coulsdory-Woods Melb
B. W. Lapner Melb
H. R. Crawford, B.C. Melbourne
Ashworth & Oakley Melb
J. H. Webb Melbourne
J. F. Gibbins & Son Melb.
J. Talbot-Hinchen Melb.
John Beebe (Bendigo) A.R.V.I.A.
Alex Eggleston Melb
Austin Bastow Melb
W. E. Blackwood Melbourne
John B. Grut Melb
F. W. A. J. A.
Edward Charles Sharland Mildura
Edmund Burke Melb.
J. J. Meagher Melb.
William Ward Northcote
W. J. Sadgman Warrnambool
W. A. Tombs ARVIA Geelong
William J. Crook Melb
J. J. Kelleher Murrumbeena
Sydney H. Wilson Melbourne
Geo. H. Cain (Clegg Miller and Cain) Hamilton
William Henry Cleverdon Geelong
Thomas Culshaw Malvern
Pearce & Nash Melb
Henry Arlett Melb
Thos. Watts & Son Melb
Charles J. Reel Melb
Frank W. Thomson B.E. M.Inst.C.E. Malvern
D. F. Stevenson Melb.
Maude T. Merrett (Melb) A.R.V.I.A.
L. Stansfield Smith Horsham
William Berry Oakleigh
Wm. Mackay F.R.V.I.A. Caulfield
Billing Peck & Kemter Melbourne
Michael Ryan (Ararat)
Frederick Purbrick (Caulfield)

C. W. Chambers F.Q.I.A.
President
Queensland Inst. of Architects (Brisbane)

Hubert G. O. Thomas
M.S.A. (Lond.) F.Q.I.A. (Brisbane)

W. C. Voller Brisbane

G. Trotter Gill F.Q.I.A. (Ipswich)

T. R. Hall (Brisbane)

J. H. Burley (F.Q.I.A.) (Brisbane)

Joseph Warren Brisbane

H. Langland (Brisbane)

G. H. M. Addison (Brisbane)

Richard Gailey Senr

Richard Gailey Jun (Brisbane)

George Trotter Jr (Brisbane)

Henry James Marks (Toowoomba)

W. Hodgen A.R.I.B.A. (Toowoomba)

Fred. H. Faircloth (Bundaberg)

Carl Jorgensen (Bundaberg)

E. M. Hockings (Rockhampton)

W. Hunt (Townsville)

C. D. Lynch Townsville

South Australia

Edward Davies (adelaide)

Philip R. Claridge adelaide

Guy St. J. Makin. A.S.A.I.A (adelaide)

H. E. Sibley (adelaide)

W. H. Bagot Assoc Royal Institute of British Architects F.S.A.I.A (adelaide)

Alfred Barham Black L.R.I.B.A (adelaide)

F. Kenneth Milne (Adelaide)

E. H. McMichael (Adelaide)

Bruce Wooldridge & Harris adelaide

J. Firmin Jenkins adelaide

George Gardner Wallace (adelaide) Ulney. S.A

C. Eaton Tapler (Adelaide)

F. G. Goss (Adelaide)

S. Jackman adelaide

QUEENSLAND }
VICTORIA } (Continued)

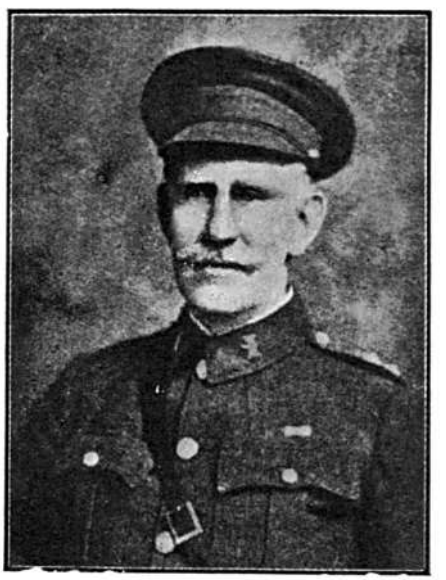
Montague Stanley Brisbane

James Irwin (Ararat)

Prime Minister Cook actually saved Canberra. It is a distinction and an honor from which his name cannot be dissociated through all political vicissitudes of the future. But here also tribute must be paid to the Labor leader, Andrew Fisher, though in a minor degree. Under his regime the question of a national capital became more than a perennial subject for aspiring political orators. He launched is as a reality. He achieved. Where he failed and forfeited much of his formerly-won merit, was in permitting the day-labor waste, and acquiescing in the acceptance of "the built-up plan." Fisher launched Canberra on the sea of reality; but Cook saved it from destruction. And of the two achievements, each in their way noteworthy and meritorious, the latter must ever possess the more historic significance and earn the greater measure of national gratitude.

Griffin came to Australia and was appointed Federal Director of Design and Construction for a period of three years. The Departmental Board was disbanded.

On the adoption of the preliminary design, it was immediately decided to prepare conditions for the design for the Federal Parliament House. These were drawn up and approved. Canberra rose from the mire of political intrigue and inept official administration, and had its first opportunity for development.



Colonel W. L. Vernon, F.R.I.B.A.

But though Canberra was saved and the Departmental Board disbanded an attack on the design came from another quarter.

The history of Canberra up to now had been a chain of remarkable coincidences. It was established when Australia's population was about 4,591,000. Washington was established when the population of the United States was 5,308,483. The area of Australia is 2,974,581 square miles; that of the United States, 2,973,890 miles.

The first two designs for Washington were rejected, as were the first two for Canberra. Griffin's first design was supplanted by the Departmental Board's, which was rejected for Griffin's accepted preliminary plan.

The accepted plan of Washington was ripped to shreds by the interferers, resulting in a wrecked scheme and an expense of £12,500,000 to reinstate it. The accepted plan for Australia's capital seemed to be destined for the same fate.

The new attack, however, was futile. There is little need to give it in detail. Still, a precis of the criticisms will assist the student of town planning in the study of detail, will confirm the excellence of the accepted design, and reveal the weakness of the criticism, but which criticism may be detrimental to "the city beautiful."

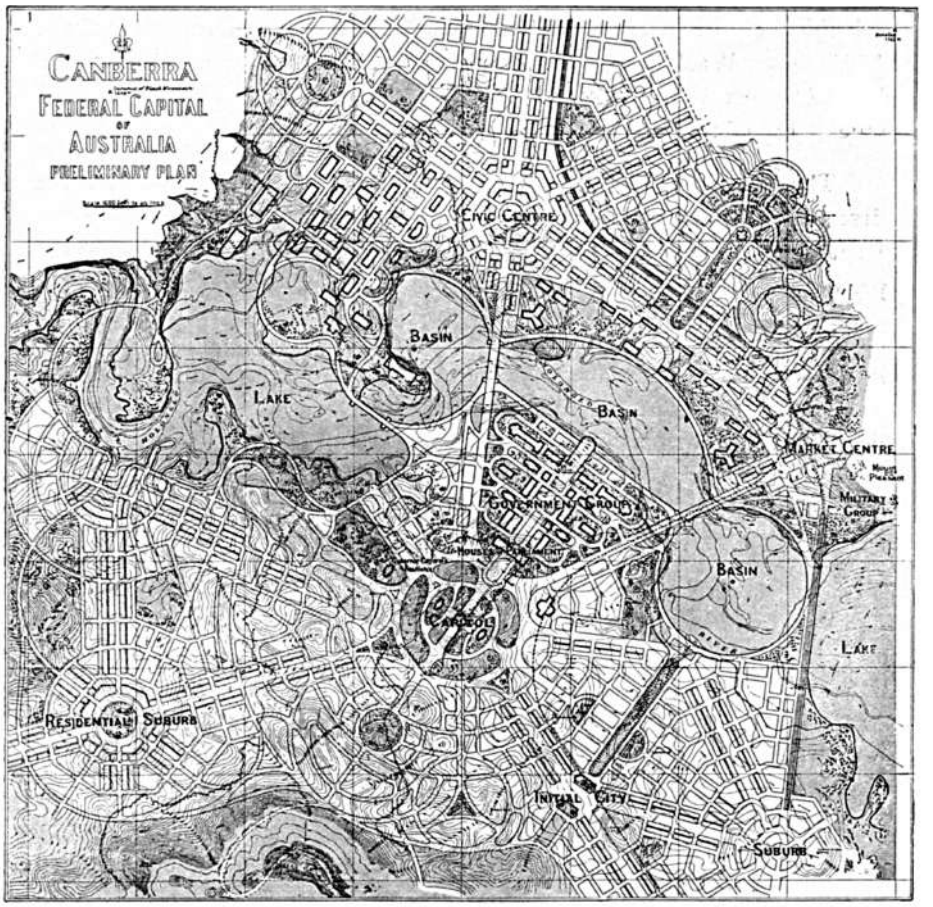
The first shot was fired when Walter Burley Griffin had left for America to fix his business during his Australian engagement. One can excuse the attack, because it was made upon the first publication of the preliminary design. One might also have been inclined to charitably consider that the criticisms were inspired by patriotic motives; that all that was desired was that Australia should get the best possible design for her capital city.

Having had good time to study the accepted plan, I was well versed in its details. Having qualified as a public draughtsman, I was professionally competent to judge of its points, and having prepared the military contour map of the Canberra district, I was well acquainted with the site.

I was, therefore, in a position to judge of the inaccuracy of the criticisms, and took up the defence.

Eighteen letters, attacking the design, appeared in the press. Of these, three were written by displaced Federal city competitors.

The critics chief criticisms were:—(1) That the preliminary plan showed that the sewage of the city would pollute the ornamental lakes; (2) that the railway intersected the streets no less than thirty times;



CANBERRA.

The Approved Preliminary Plan by Walter Burley Griffin.

This is the plan referred to in the criticisms mentioned on opposite page. It will be noted that the main railway line enters the city from the north, passing into a tunnel as it approaches the market centre, continuing between the basin and the lake to the suburb. A dotted line, passing to the south-west, is a suggested underground line passing over the embankment promenade but under the main avenue and continuing underground.

A fine feature of the water area is the embankment boulevard around the basins, but below and so not being interfered with by the main lines of traffic.

(3) that the railway isolated the market centre by a deep cutting; (4) that the capitol avenue was disfigured by a railway running along its centre; (5) that this railway necessitated destroyed areas being remodelled; (6) that this railway meant that an iron stone sugar-loaf hill would have to be cut away, thus destroying a vantage point 60 feet high.

The six main points were answered as follows:—

The plan did not show that filthy sewage polluted the lake—in fact it would be as ridiculous for any individual, without looking at the specification of a building, to say that the roof had no support because a section was not shown on the architect's plan.

Regarding the railway, the critics were unaware that, though the main railway line crossed the river some distance to the east of the Avenue, a detour line, shown dotted on the plan, was underground. It, therefore, could not intersect streets "thirty times"; it could not isolate the market centre by a deep cutting; it could not disfigure the Capitol avenue by running along its centre; it would not necessitate destroyed areas being remodelled, nor would it mean cutting away an ironstone sugarloaf hill.

The discussion proved two things; that the general scheme must be a good one, and, secondly, that such a great question as the establishment of a nation's capital, must be open to fair criticism. We should endeavor to speak authoritatively with an eye upon history, especially as we are, to-day, doing things that will be closely studied in the days to come. We are puppets of circumstance upon the stage of history, and our advent happens to be at a period of our national life that future historians will probe with more than usual interest. We must put on our best behaviour, for we are to come under the magnifying glass of destiny.

Throughout the whole battle for fair play for Canberra, my motives were impersonal and disinterested beyond the elemental determination to have Canberra rise to a plan worthy of a nation's capital. However radically some might have disagreed with many of my plainly-worded opinions, the great majority of the people competent of rendering judgment were, I feel assured, ready to acknowledge the purity of my convictions. And after fighting zealously in a cause, rightly or wrongly considered right, and being subjected to severe criticism and not always desirable publicity, that thought was to me a measure of great satisfaction and joyous recompense. From the many congratulatory notes received, I select and print here the tribute of the Prime Minister, addressed to the Master Builders' Association of Melbourne:—

COMMONWEALTH OF AUSTRALIA.

Prime Minister, 11.4.14.

My Dear Sir,—

Your invitation to Mr. Taylor's lecture on "Canberra, To-day and To-morrow," has just reached me.

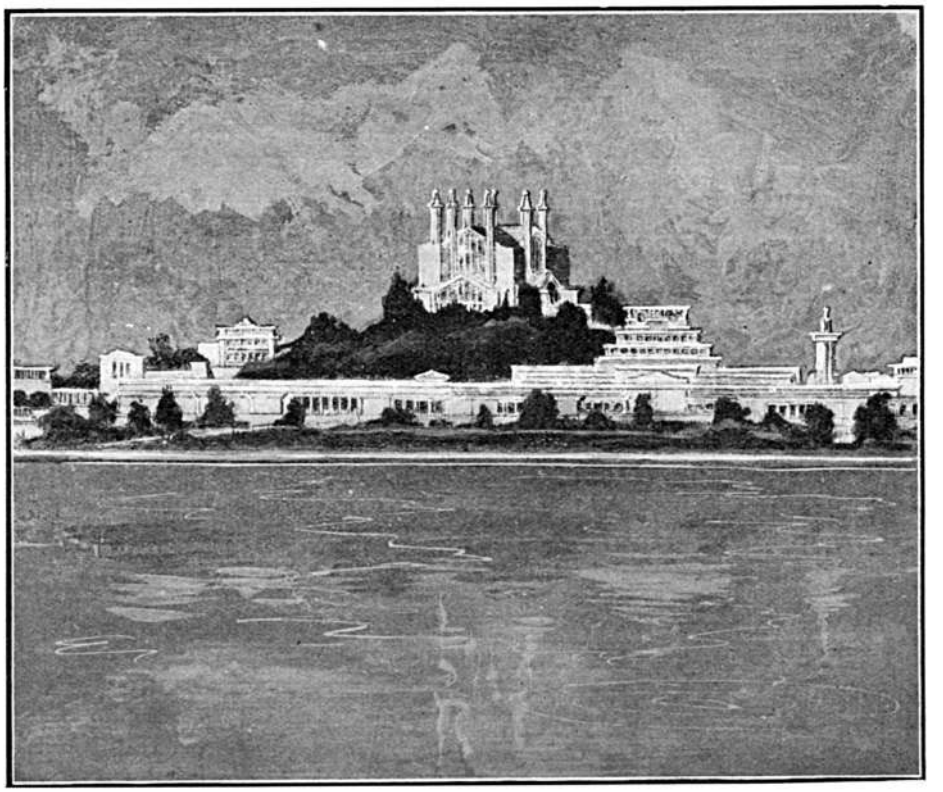
I can only say, at the moment, that it looks as though I should be otherwise engaged on that evening. I mean that Parliament will be sitting for its first real day of business.

Nothing would delight me more than to be present at Mr. Taylor's lecture. I know how unweariedly, and at the same time how unselfishly, he has labored for the future of this great project. And when, later on, it rises proudly in its place, it will justly be said of him, that he sought with all his might to have its foundations worthily and correctly laid.

I appreciate highly all he has done, and recognise his great disinterested patriotism in connection with the evolution of the "city beautiful."

Yours faithfully,

(Sgd.) JOSEPH COOK.



AT CANBERRA.

One of the great features of Walter Burley Griffin's Prize Design, showing the Church Hill, looking north, from the Ornamental Waters.

Section XI.—The Mission of the Town Planner.

The mission of the Town Planner must be inspired by imagination.

The Town Planner is not an architect in the sense that he is a designer of structures. He is not an engineer in the manner of the men who throw great steel links across ravines, though he knows well where and how water can be best conserved for drinking or for ornamental purposes. He knows where a bridge should be artistically and comfortably placed across certain ways, though he may not be so concerned in the stresses and strains it needs to serve in its individual construction. He knows enough of architecture to judge how certain buildings would look, if the ground were properly planned. He is sufficiently aware of the principles and practices of surveying to know how a road would look and be useful if running in a particular direction to suit his scheme and the general character of the landscape; and he knows a very great deal about sanitation and what hygienic requirements to provide for healthful conditions of home surroundings for the men, women and children who must live in the city that will develop from his plan.

During the battle for fairplay for Canberra, a good deal of controversy arose as to whether an architect, a surveyor, or an engineer should have had first say in the question of the laying out of our capital city, or for that matter any new city.

It was contended by the surveyor that he ought to have been first in the field. The engineer also claimed first place, because he considered the engineering scheme should first have been put down. But in the designing of a city the surveyor, the engineer and the architect should always be preceded by the Town Planner—the man of imagination; the man who looks up from his drawing-board and peers into the centuries; the practical idealist with a heart for the people who must live on the site; the man whose study is not so much concrete and stone, as ideal conditions of human life; the man to give the city dwellers a fighting chance for clean bodies and clean souls.

So the Town Planner conceives his scheme and lays it on paper.

He notes the area carefully and groups his various sections; administrative, commercial, residential and recreative.

He notes the most prominent elevations and marks them as vantage points for the chief buildings of the particular section allotted to that part of his plan. He links these vantage points by main streets; straight, if easy grades permit, and connects up with some central features.

Zones are carefully considered for the efficient placing of the varied interests of a city.

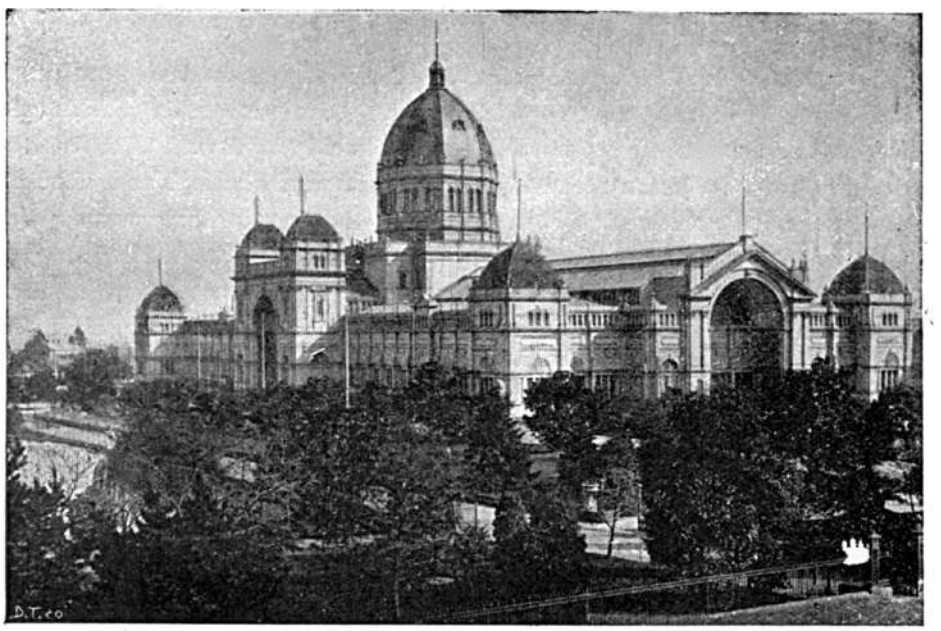
The various contours are studied for most efficient surface and sewer drainage, and streets and park ways arranged with an eye to the practical, the economic and the artistic.

Under the direction of the Town Planner the surveyor fixes the alignments and the engineer builds the ways, rail and street, along which the traffic of the city will easiest move; constructs the water areas for drinking, for traffic and for ornamental purposes; builds the sewer scheme that will keep the city healthy; lights the streets and ways, and prepares the site for the architect.

The Architect designs the buildings, keeping in view the grand scheme devised by the Town Planner, so that the harmonious whole will develop, whilst the Master Builder completes the work by seeing that the city is well and truly built.

And throughout all this harmony of human effort, there rings the one predominant tone—the keynote struck by the Town Planner.

This ideal sequence of the professions in the building of a city has had practical and successful treatment at Gary. U.S.A., as a study of its development will convince.



IN MELBOURNE

The Exhibition Building, occupying a site that could be made a magnificent central feature, commanding a prominence and being surrounded by park areas.

Section XII.—The Development of an Ideal Town.

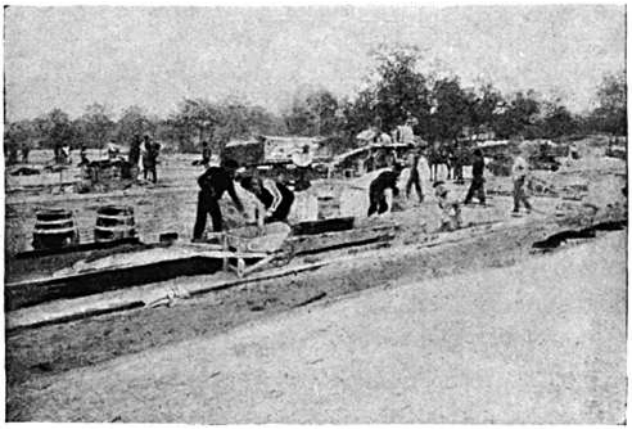
Wise is the man who profits by the experience of others, and particularly in town planning, for history tells us that experiments made in the building of a city are oftentimes expensive.

To America, the land of initiative, we look for the development of the latest in the world's "garden cities," and we discover it in Gary. The conditions of its establishment differed from those of all previously developed industrial centres. Philanthropy had little part in the building of this city by the Steel men of Chicago. There were three reasons for considering the proposition.

Firstly, because the South Chicago Plant was crowded for room. Secondly, the hostility of trades unions prevented the "open shops." Thirdly, by building a separate city; it would colonise the works superintendent, foremen and office employees near the works; and, by making the City attractive with garden homes, reasonable rents and cheap and best municipal services and conveniences, would bind the employees permanently to the works, thereby increasing individual and general efficiency.

Gary was purely a business proposition. Sentiment was barred, but practical recognition was given to the truth that ideal surroundings, good drainage, comfort and best convenience in workers' homes are reflected in increased factory output.

To think was to act, and £20,000,000 was allocated to build a new city. So a site was selected amongst sandhills; and on a remote shore, five miles from a harbor, twelve square miles were purchased before any intentions were divulged.



THE BUILDING OF GARY.
Making the Footpaths with Concrete Machinery.

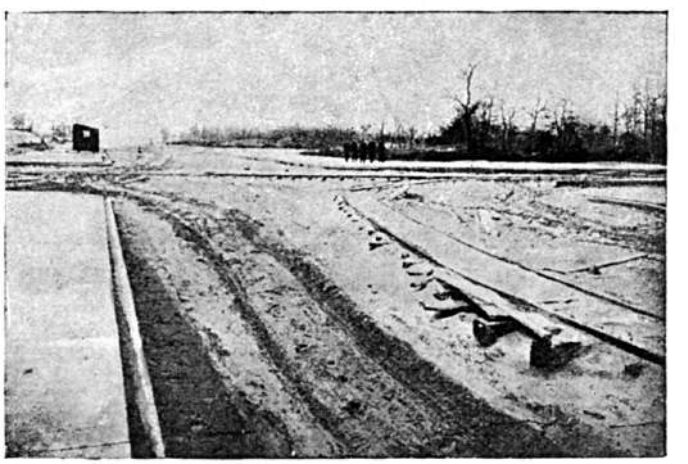
The problem was to build an industrial City for the cheapest manufacture of steel and to house in it fifteen thousand workmen, their fifty thousand kinsfolk, and tradesmen to supply the necessities of life.

The town planner was the first commissioned, and the whole area was minutely mapped for him with levels and water depths.

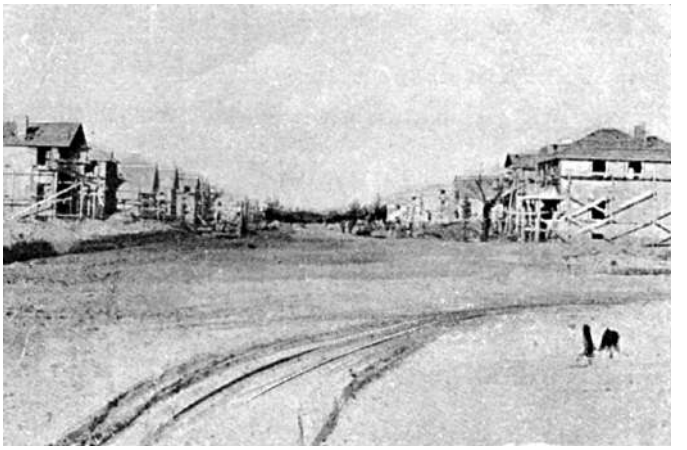
Spaces were allocated for the industrial quarter, the administrative quarter, the business quarter and the residential quarter. So the new City was planned.

The Engineers then entered into the scheme. The transportation problem was first tackled. Water transport would be cheap; so a harbor was first constructed on the lake-shore by excavating a slip, building a breakwater and dredging a channel in the sand. When completed the harbor was a mile long and two hundred and fifty feet wide, with concrete docks and twenty-five feet of water-depth. The works were then built on the reclaimed land so that, instead of bringing the water to the mills, the mills were brought to the water; with this added factor, that the waste from the furnaces could be dumped so as to further reclaim land as the work extended.

With the site, transportation facilities, and space for expansion assured, the works began to grow while, at the same time, the City plan assumed shape. The streets were marked out and trolly rails were laid down their centres. The footpaths were then made—hugh travelling concrete-mixers pouring out acres of material for the purpose. At the same time the water, sewer and lighting services were placed so as to be connected up. Up to £2,000 per day went into construction.



THE BUILDING OF GARY.
Completing the Paths, showing the Trolley Rails for Materials.



THE BUILDING OF GARY.

Beginning the Erection of Buildings.

The first sub-division had twenty-seven miles of paved streets with water, gas, electric service and sewer mains to each allotment. Then the houses began to grow under the watchful eye of the town-planner, who saw that all was consonant with the main scheme of the lay-out.

Every question that arose was analysed and all the strategy and tactics of organisation were applied with an understanding possible only to an organisation of experts.

Nothing that could contribute to the economy of manufacture, the maximum of output and, incidentally, to the comfort of the citizens, was neglected in the designing and placing of the Gary plant; for, after all, the employees were only coldly considered in the proposition as so many cogs in the great wheel of industry.

In the Gary scheme each factor was analysed by the expert Town Planner, the Engineer, the Builder and the man of business.

The plan for efficient transport and living, the assembling of raw materials, the distribution of product, existing future markets, labor supply and efficiency of workmen, proper construction of buildings and the possibilities of their revenue production, were developed with the care and certainty of a chemist compounding a familiar formula.

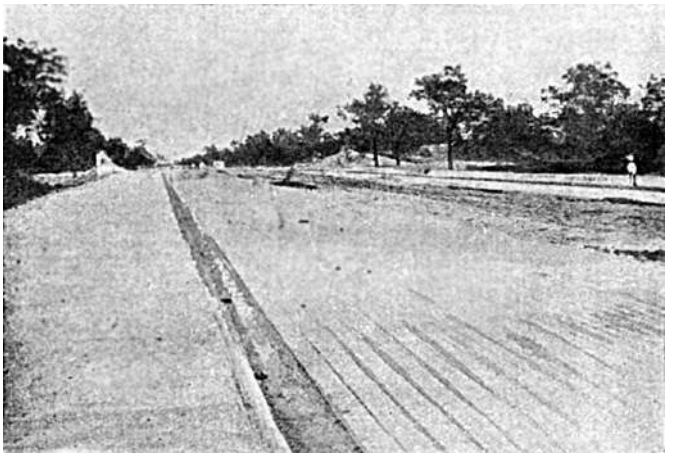
As far as it was possible in a human undertaking, chance was eliminated.

Gary was profitable in three respects.

Firstly, as a manufacturing centre. It produces £14,000,000 of new wealth per year. Secondly, as a real estate speculation. It returns a remarkable profit on its cost. At its outset, land that was practically waste was almost immediately given a value of £30 per foot for street frontage. Thirdly, in the health and wealth of employees. Both are helped at Gary.

The "business" organisation did not stop at the building of the City. Gary was also to be a "model" city in the civic governmental sense. It differs from other "garden cities" by putting a premium on property holding, thus eliminating company control of municipal affairs. It has its City Council, Mayor, School Ward and Political Parties, and is practically self-governed. The Company's control ceases as soon as lots are sold, bearing restrictions in the deeds that hotels and speculators are barred-liquor being considered as sapping the energy of the workers, while it was held that speculation would retard the sale of the company's blocks at a fair figure and prevent workmen purchasing.

Water, gas and electricity were supplied in bulk to the Municipality at about cost—so as to reduce living expenses and anchor employees to their work with the chains of self-interest. Business blocks in the first sub-division were limited to two thoroughfares, each one hundred feet wide, with residential streets, each sixty feet wide. All sewers, water and gas mains, electric and telephone conduits are containd in paved alley-ways, thirty feet wide.



THE BUILDING OF GARY.
Completing the Roadways.

The keen "business" organisation that built Gary still concentrates upon its best development. Nothing is wasted, even the gases freed in the great coke burners and iron smelters are not allowed to waste and pollute the air, but are tanked and burned, producing the entire operating power of the vast institution.

The whole scheme of Gary is an example of business enterprise.

The pity is that its plan had not more of the modern town planner's art; that it was made conform so rigidly to old principles when newer and better planning ideas were available.

Hitherto in the history of the world's manufacture experts had devised schemes for saving waste in production and eliminating the element of chance in machinery output, but the main factor—the man—had been neglected. It is true the consideration of him at Gary as just an additional bit of machinery was somewhat inhuman, yet by the scheme he came back into part of his own in improved living conditions, and he was provided with a chance to become a better citizen and develop a better race.

Australia has a better opportunity at Canberra, in that it has a grand plan as the basis of development. It is only at the beginning of things that schemes and plans can be devised for smoothest working, and—our time is now.

Truly our legislators have opportunity for greatness that the statesmen of the future will surely envy.

Will the men of to-day appreciate the magnitude and magnificence of their responsibility? I think so—for they are realising more that they can be the Great Ones of History.

THE BUILDING OF GARY.
The City, Four Years after Commencement.

Section XIII.—The Development of an Australian Town.—the Site.

There were five factors in the building of Gary, and these five factors come into every city-development scheme.

(1) The price to be paid for land to be embraced by the proposition.

(2) The cost of Services, including streets and roads, water supply, sewerage, lighting and transportation. This cost to include maintaining same in order.

(3) The cost of buildings and their upkeep.

(4) The cost of administration for city government; as well as for maintaining all services in profit-earning conditions.

(5) The cost of publicity in advertising the advantages of living or investing in the new city.

The general view of the working of these factors at Gary enables us to study the development of Canberra as an ideal Australian city and judge how these factors would operate, not only there, but in the establishment of any other new Australian town.

Taking the first factor, that of price to be paid for land; it is the greatest problem of all town-planning schemes.

Gary City developed from marshy, cheaply-priced land. It was purchased before the usual speculator had an opportunity to come in, sit down and dictate terms.

The speculator can be a good genie or a wicked ogre. He can be the good genie, when he advances money at such a low rate of interest that the resumptions can easily pay as well as provide for sinking fund. He can be a wicked ogre by getting scent of a proposed purchase or resumption, buying in and sitting tight.

He got in at Washington and wrecked the original plan. And he got in at Jervis Bay, the future port for Canberra. Land at that centre was purchased by the Government at 10/- per acre. Some land adjacent was required; the Government wished to purchase so had to pay £25 per acre for it because the speculator got busy and got in ahead of the administrative officials.

It is unfair to the greater part of the population that individuals should be capable of enriching themselves by holding land given a higher value by the efforts of others round them.

A recent instance occurred in Sydney. In 1906 half an acre of ground fronting Castlereagh, Market and Elizabeth streets was bought for £38,500. In the meantime the Government built a tramway along Castlereagh Street, and the City Council widened Elizabeth Street, so

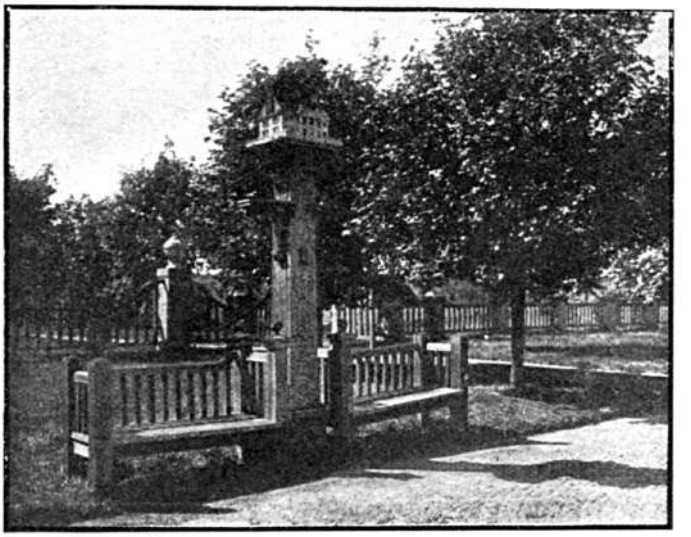
enriching the value that, in 1914, it was sold for £80,000. The first purchaser received the rents from the tenants for the eight years, during which period he did nothing to the area and made a profit of £41,300!

Are the citizens of Sydney, who paid for the street widening, and the people of the State who paid for the tramway, entitled to any of that £41,300 profit?

Consider that that profit would pay 5 per cent. interest on City improvements to the value of £826,000 and then remember that cannot happen at Canberra. For the whole area of Canberra, the railway line area to Jervis Bay and the area for a Sea City belong to the people of Australia! And it was bought from 10s. an acre at Jervis Bay to £4 and £5 an acre at Canberra.

Instead of having to pay the heavy prices for land to property-owners if the capital had been established at Sydney, Melbourne or other closely-populated areas, the people have the advantage of Canberra commencing with profit-winning real-estate opportunities.

Canberra is unique in city building; it begins with land purchased at a very low figure; the area holds few structures of any value and is practically virgin country. This is the more remarkable when it is remembered that its scenic beauty and other attractions are very great, yet the area is only within a few miles of a main railway line.



A GARDEN SUBURB FEATURE.
The Bird-house Garden Seat.
An artistic arrangement, but absurd from the hygienic point of view.

Section XIV.—The Services—Streets and Roads.

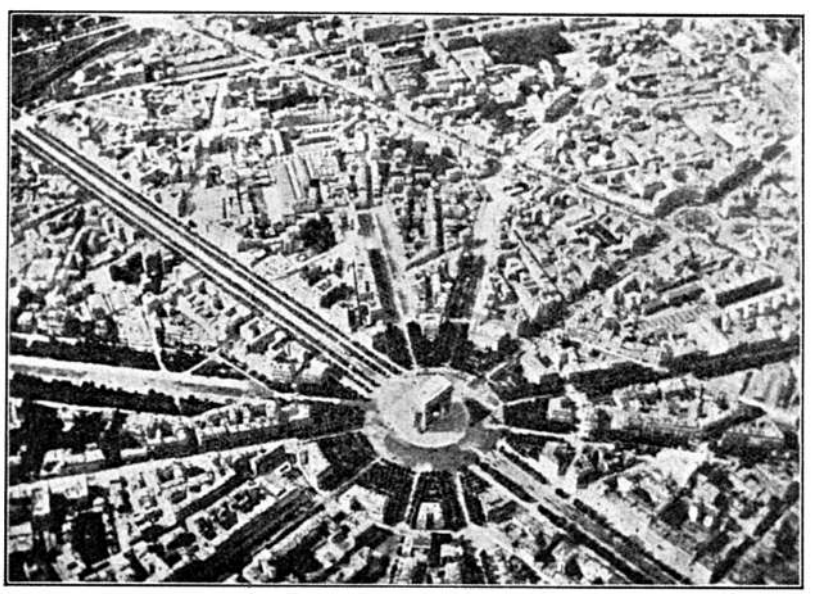
The second factor in Town Development is the placing and cost of services, including streets and roads, water supply, sewerage, lighting and transportation. At Canberra the streetways are planned so that the majority of the roads follow the contours, yet keep to a remarkably symmetrical plan. The streets differ in width according to the zone in which they are to be constructed.

Streets must be considered from a new viewpoint. They must be adjusted to the changes in human conditions. In the past the workmen crowded their homes near their work; but the quickening and cheapening of modern transport have made it possible for homes to be outside the city. So a new problem in town-planning is furnished.

Zones should be established for distributing population into districts of varying character. This may be ridiculed in such an emphatically democratic country as Australia, but human nature will never be levelled. Hence the differences must be considered.

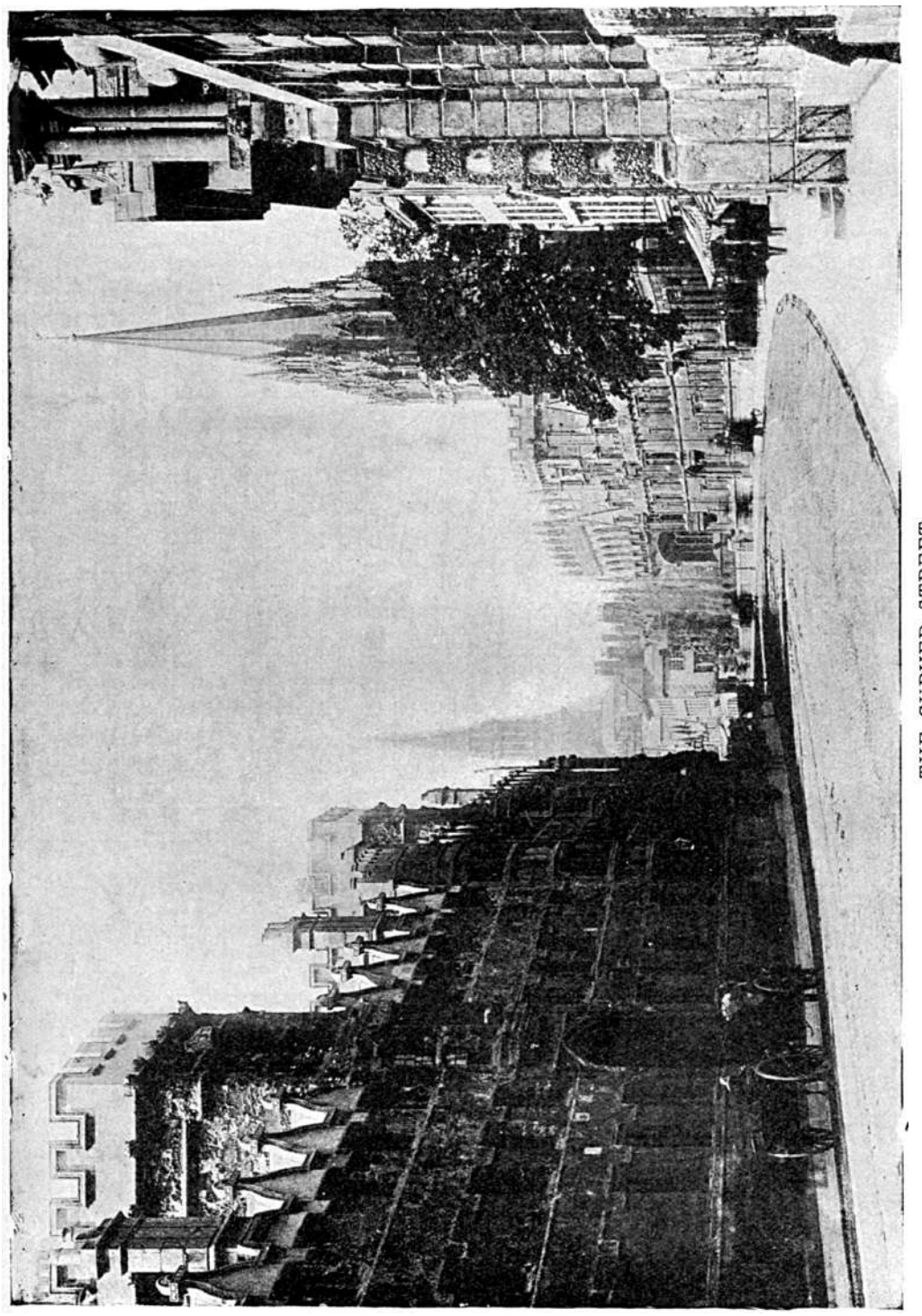
The development of zones for new cities should not necessarily be in the sense of concentric rings around a common centre. Such a scheme would be too artificial—too much like the standardisation that is fatal to anything where mental action is called for.

Adelaide is an instance of a city surrounded by a ring-park like certain continental cities, as already explained, where the ringed fortifica-



RADIAL STREETS.

Aeroplane view of the Arch of Triumph, Paris, showing the streets leading from the famous monument.



THE CURVED STREET.

High Street, Oxford (England), exemplifying the artistic possibilities of other than straight streets.

tion areas are utilised as parks. Even Wren planned a ring of cemeteries around London to prevent the city spreading.

The inner zones should have great straight, broad, radial express-highways from the City Centre for speedy traffic, the outer zones to have narrower connecting roadways, where traffic may be slower, and where streets need not be straight, but follow easy contours for economical construction, thus economising maintenance and giving pleasant variety from the straight street.

The curved street gives an ever-changing picture; a new grouping of buildings ever comes into view. High Street, Oxford, is a typical street of this nature.

On a flat site the spider's-web design for streets presents many advantages, but on a broken-surfaced site beyond the main arteries, which should radiate from main points, the lines of roads should follow the contours in the most economical manner.

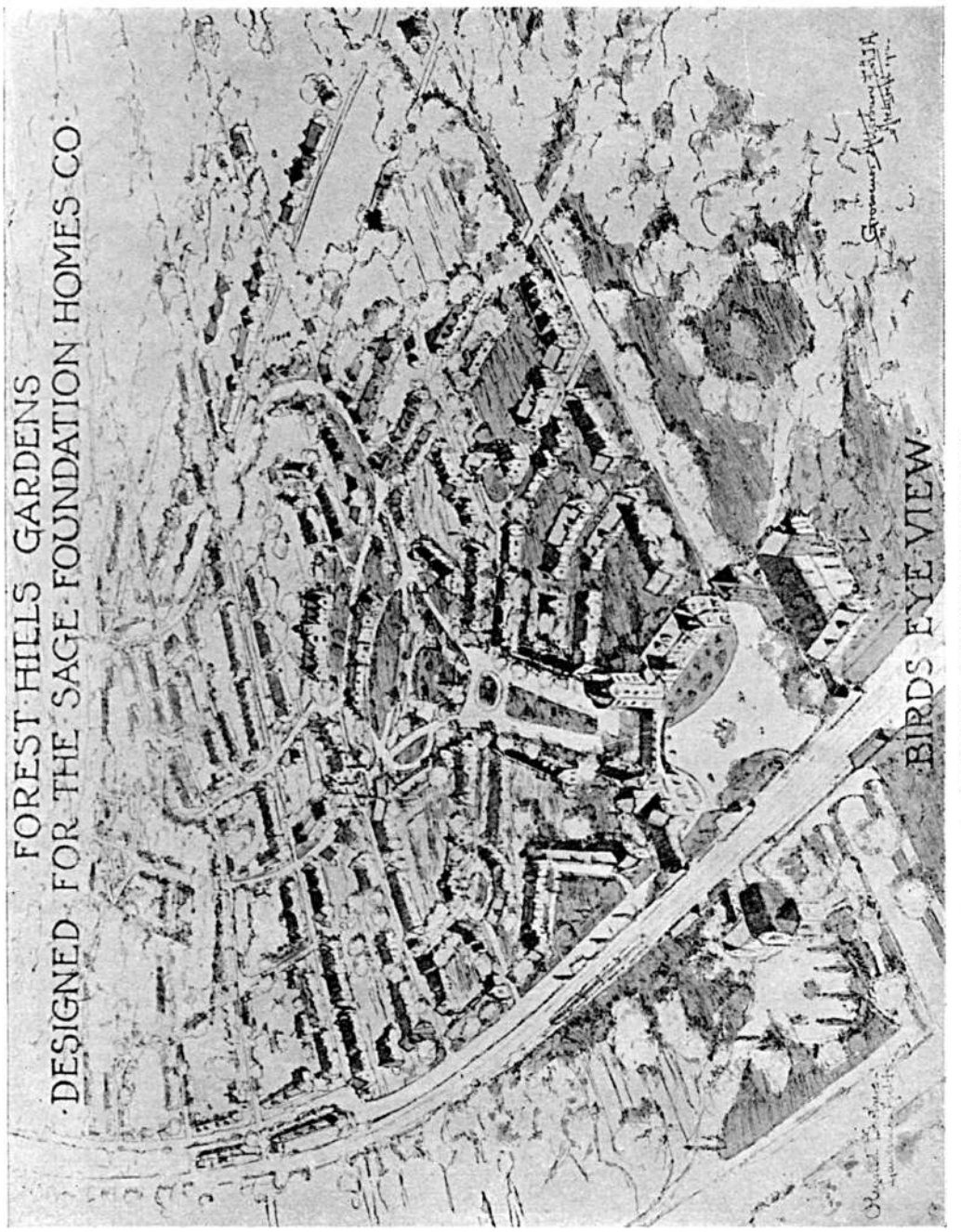
A good deal of nonsense is written regarding standardising street widths. Melbourne is an example where the main city streets are uniformly wide, whether carrying a tramline or not.

This is unwise in city planning, as some streets are fully taxed with traffic, and others are not so much used. The citizens, therefore, lose in three ways.

First, by the waste of area taken up by unused parts of streetways. Secondly, the expense of the upkeep of unnecessary street areas; and thirdly, by the cost of making the wide street; compelling authorities to so tax adjoining owners, that in the city high tenement buildings must go up to give sufficient rental to pay for the increased tax. Pushing the buildings back usually means squeezing them up.

Berlin has 200,000 families squeezed into one-room dwellings. She is suffering from "Streetitis," having too wide, too well-paved, and too-highly organised streets.

Street widths should vary to suit local traffic conditions; from 120 feet, with divided tracks for fast and slow traffic, down to access streets of 20 feet wide. Raymond Unwin considers a width of 20 feet most convenient, if provided with turning places for cars and carts, where the width can be increased to 25 feet. Such a road with a grass margin and simple kerbing, including street sewers and drains, would only cost from one-third to one-half as much as an ordinary fifty-foot road. Such access roads should have a relationship to the ordinary roads as the latter should have to the main arteries, so that a general road scheme would develop from narrow paths at the house entry, leading to wider access roads, these in turn leading on to main streets.



VARYING THE STREET WIDTH.

Plan of Forest Hills Garden Suburb, New York, where the streets are planned with widths to suit varying conditions.

THE ENTRANCE TO FOREST HILLS GARDEN SUBURB, U.S.A.

Showing a main road before being broken up into street widths to suit the varying housing requirements.

The increased cost of living is already looming up as one of the big problems of modern life, and the leakages in unnecessary items such as over-wide streets with increased rates for upkeep, must be considered vital to the success of any town development scheme.

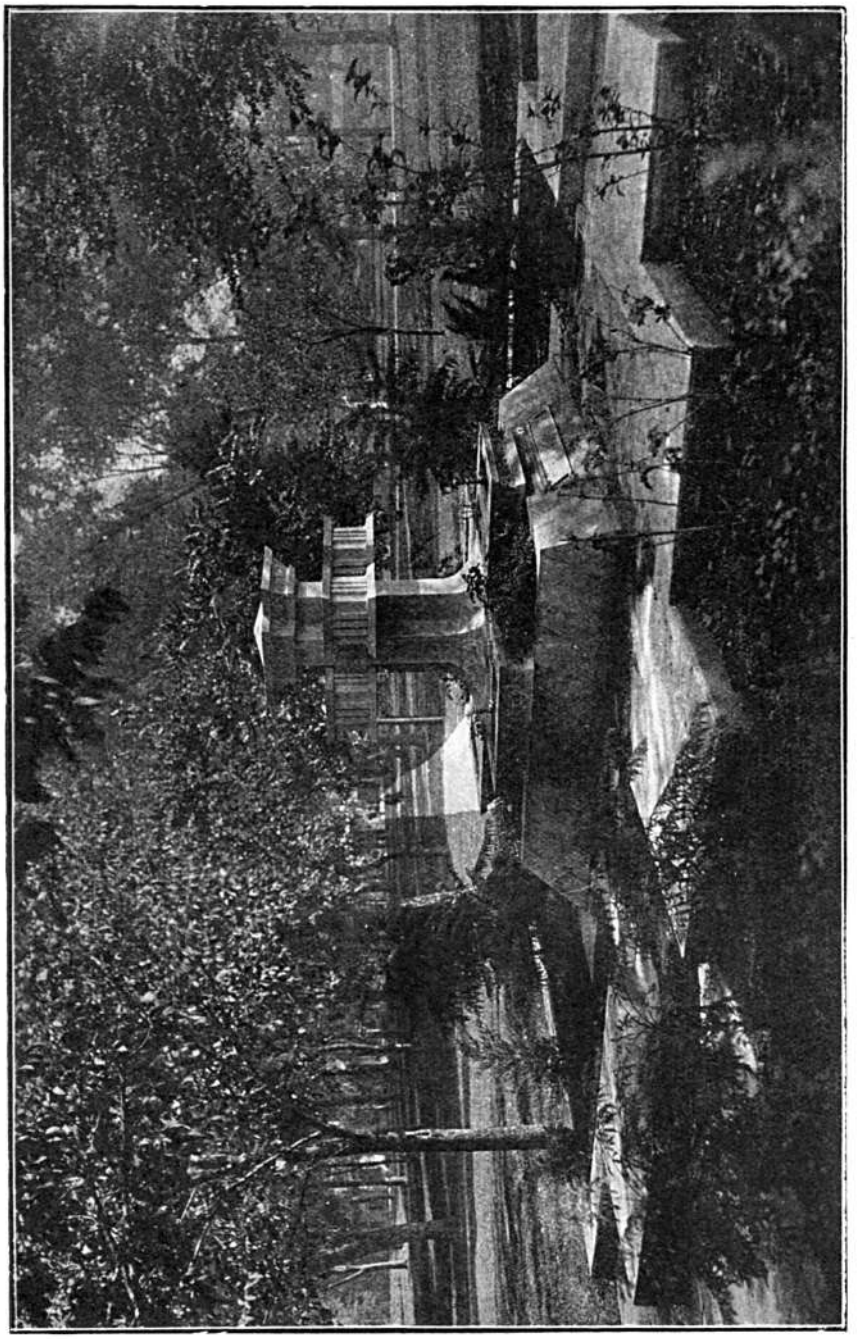
The plan of Forest Hills Garden, America, shows these changing widths of streets, opening in from the archway and tower structure at its entrance.

The cost of street-making depends on the design and the availability of materials.

In the development of Canberra the principal streets on the preliminary plan are estimated to cost £252,840. This includes street-making, kerbing, guttering and paths; but does not include street-planting, water crossing or subways beneath footpaths to carry water, lighting and other services. That amount should be available for immediate outlay.

THE CENTRAL STREET VISTA.

View along Spring Street, Sydney, showing the main tower of the Lands Office, an idea from Rome, to give an artistic central feature to a street length. A similar opportunity, in Elizabeth Street, Melbourne, was missed through not centreing the tower of the Flinders Street Railway Station with the street.



THE GARDEN IN THE CITY.

This fountain is illuminated by reflected light from lamps around the centre.
Walter Burley Griffin, Architect.

Section XV.—The Services—Water, Sewerage and Lighting.

The efficiency of the services defines the comfort of the town dweller; whilst economy in design and construction with minimum of upkeep, define revenue possibilities from those services.

For the water supply a catchment area should be secured free of possibility of contamination. If a flowing stream be utilised, it should be protected from any inflow of impurities. A site for a reservoir should be selected above the town level if possible, and if constructed embracing a stream with a fall, the opportunity to generate power from the water-flow for lighting and other purposes should be availed of.

It is recommended that the water supply for Canberra be obtained from the Cotter River, where a dam would be connected with a Pipe Head Reservoir, from which one pipe would take a steady flow of five million gallons per day to the Service Reservoir at Canberra. Another pipe, or pipes, would carry a varying flow down the hillside to turbines, eight hundred and thirty feet below. These could generate 7,000 h.p.; the variations of the flow depending upon the demand for power at Canberra.

At night the demand would be chiefly confined to street lighting whilst, during the hours of daylight, a moderate tramway and motor load would be expected, followed by, and towards sundown at mid-winter by overlapping the shop-lighting load, which, in its turn, falls rapidly from 5.30 to 6 p.m., and is succeeded by the evening residential lighting load. With a population of 50,000, at Canberra, 700 h.p. might be expected to be required for lighting and power and 2,000 h.p. for tram traction, or 2,700 h.p. in all, as against the 7,000 h.p. that could be generated, vide report by Electrical Engineer W. Corin, M.Inst.C.E., 1909. The cost of the water and power scheme for Canberra was estimated at £853,000, including £100,000 for a dam and £706,000 for a steel pipe line; the latter expenditure, however, having a possibility of being reduced by the substitution of an open race.

The Sewerage scheme for every town-development proposition should, if away from seaboard, embrace a low-lying area selected below town level for biological treatment; otherwise expensive pumping must be provided for, as at Melbourne and Brisbane.

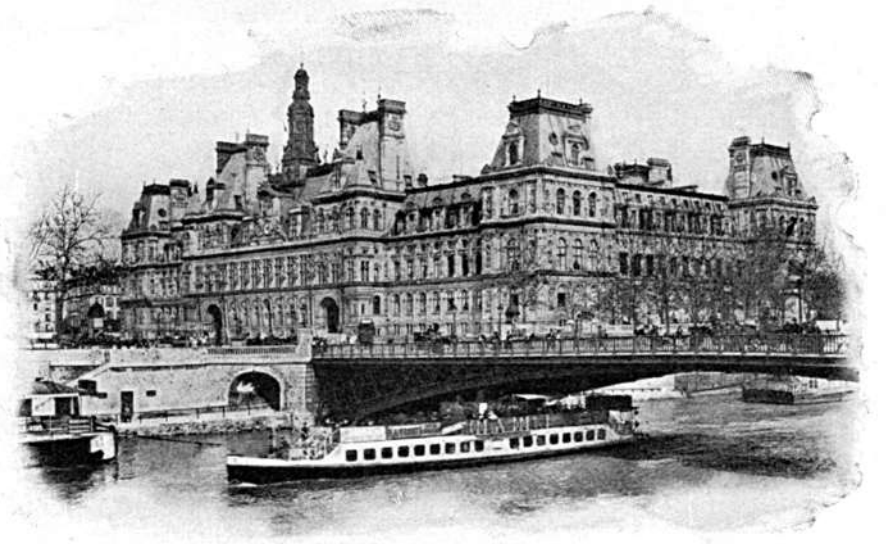
At Canberra, the sewage will be disposed of by biological treatment; that is, will be first passed through septic tanks, then through filters, and lastly treated by land filtration. Regarding storm waters and scourings from street surfaces; these can be prevented from polluting any

ornamental waters by intercepting the storm water drains and carrying them to a point to the Molonglo River below the lake. This would not be a very costly matter at Canberra. It is interesting at this point to note that this sewerage scheme was the subject of an excellent report in 1909, by the Chief Engineer for Irrigation and Drainage for N.S.W., L. A. B. Wade, M.Inst.C.E.

For seaboard towns, ocean discharges are usually undertaken. This is a risky provision unless a current exist to efficiently distribute sewage.

The present-day methods of sewage treatment leave much to be desired, being mostly dependant on the destruction of the matter. It will be found profitable to change the nature and commercially utilise the valuable constituents of city sewage.

On this point Sir William Macgregor, Governor of Queensland, recently stated:—"There was a great need for some system whereby the sewage, wasted at present, could be turned to profitable account. They had only to look back to the methods of the ancients to realise the importance attached to the proper utilisation of sewage. It was the most valuable fertiliser extant, and some genius among them should set to work to discover a means of scientific treatment, so that the valuable ingredients could be turned to the land so much in need of it."



THE WATER HIGHWAY.

The Seine as a Transport Factor.

Section XVI.—Transportation.

Transportation is one of the chief factors in Town design; and provision must be allowed for the two sections, internal and external; as traffic is the backbone of town extension.

For internal transportation the space for lines can be provided on principal streets for traction, which may be either electric, steam, or internal-combustion. Steam, with its necessity for carrying its own furnace, is unlikely to be popular in a modern city; so that the race for superiority will lie between electric and internal-combustion, which may be oil, petrol, or powerful explosive. The electric power for city traction at Canberra is provided for in the Water Supply Scheme.

The question of internal transportation is one of the most serious problems of modern cities. Streets cannot be always widened in the ratio of population increase. There comes a limit to street widths, hence, to prevent street congestion, authorities of great American cities are trying to turn away from the main streets the people crowding them.

New York's first solution of the problem by means of an overhead railway should not be considered in any town-planning scheme.

In many great cities the street construction had to be altered by constructing single or double lines under all business streets, in some cases meaning the double-decking of underground tunnels.

The underground railway in city planning calls for openings at intervals for efficient ventilation and accessibility to stations. Edinburgh

THE WATER HIGHWAY.
Its Widest Utilisation at Venice.

THE TRAFFIC PROBLEM.

An attempt to solve it at New York by means of the elevated railway.

furnishes an ideal treatment of area over underground stations by making it a decorative feature.

City traffic is a problem that demands careful attention, and must be studied with an eye to every possible city development.

It will be found that the internal traffic of a city can be greatly relieved if the external transportation has been considered. American civic authorities have noted that in a large city like Chicago about sixty-six per cent. of the tonnage in and out is for distribution to other places, while only thirty-three per cent. is for city use. It was, therefore, proposed to have situated outside the city a simple arrangement of car yards, goods depots and warehouses combined, at which all freight trains could load and reload. From the warehouses all goods were to be sent to the city by underground tunnels, so that the city would be relieved of more than fifty per cent. of its street goods traffic, doing away with the heavy wear and tear of the pavements and enabling thoroughfares to carry more people and more people-bearing vehicles.

The illustrations of the Grand Central Terminal, at New York, give a striking explanation of the systematisation of transport conditions that modern cities call for.

Facilities for external transportation lines must be considered and easy grades allowed for linking the city with the main transportation lines. The transport entry of visitors to a city should be through pleasant vistas, so that the first impression will please. Australian cities generally lack this desideratum; the principal rail entry to Sydney being through the slum quarters of Redfern.

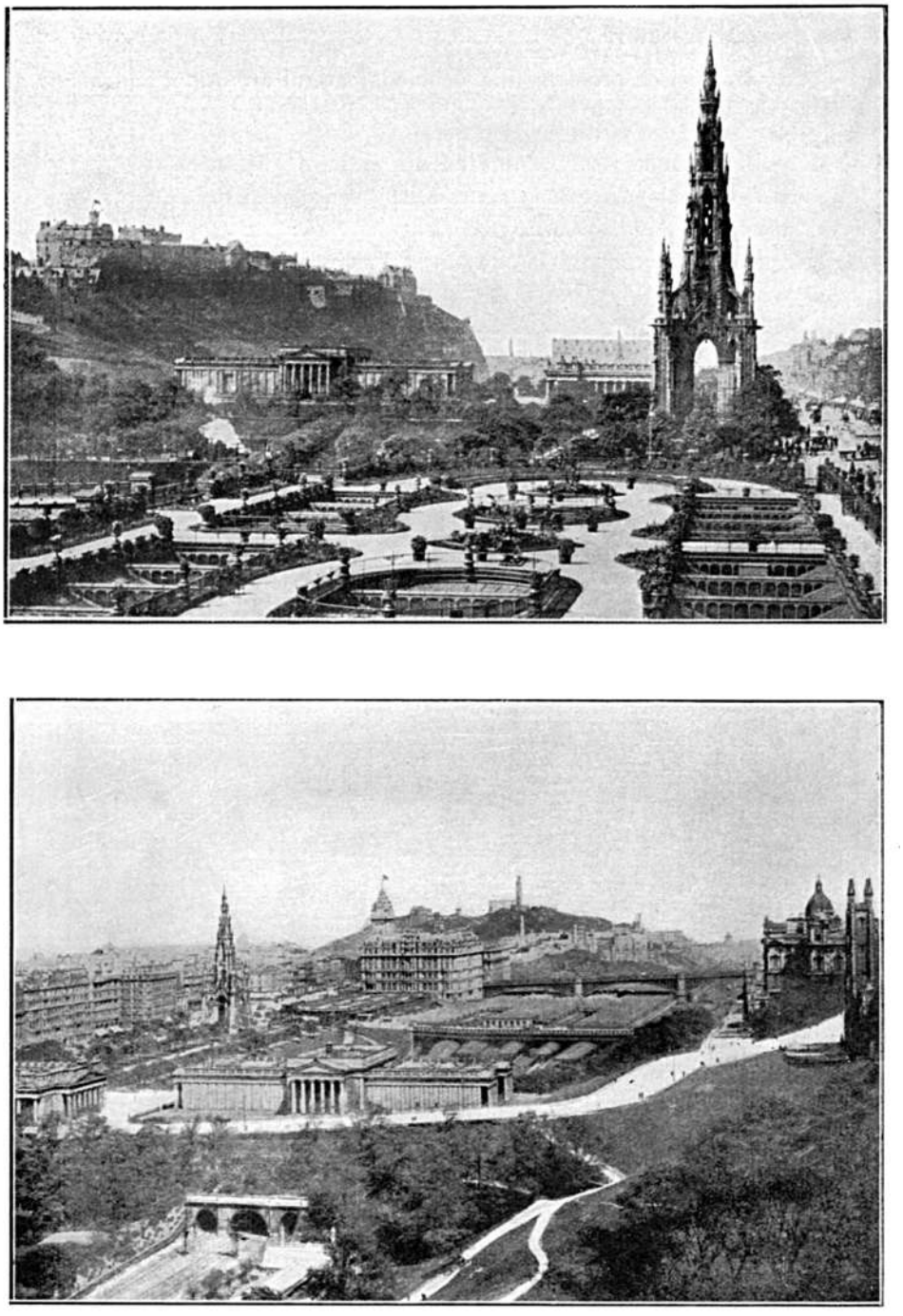
The northern rail entry to Sydney is better placed for picturesque aspect, taking in a fine view of the city and environs as the train descends the heights of North Sydney.

The principal rail entry to Melbourne is through closely populated suburbs, but the railway area is relieved with garden patches.

Brisbane is the best situated of the principal Australian cities, having its rail through tree-planted and picturesque home areas.

At Canberra provision is made for the main line to enter from the north, giving the visitor a fine panorama of the city as the train sweeps towards a tunnel to the Central Railway Station, where it will emerge, cross the river and give a fine view of the Capitol and the magnificent administration buildings as it turns away to the east.

At Canberra a line connecting the main line to the sea coast must receive early consideration. This will be a line of 134 miles length, joining Canberra easterly to the seaboard, and north-westerly to the Main



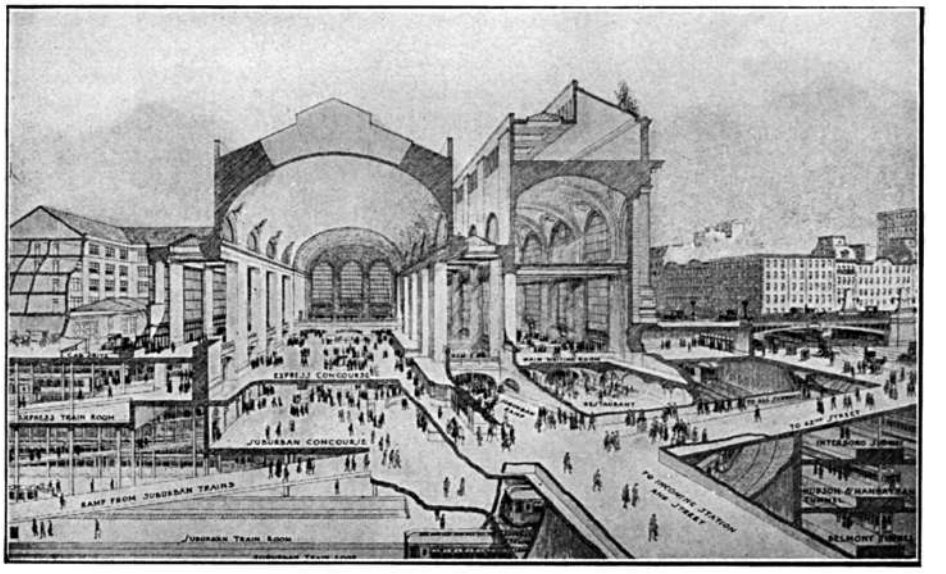
THE TRANSPORT PROBLEM IN EDINBURGH.

Showing (upper picture) the artistic treatment of the underground station and (lower picture) the railway entering the tunnel.

line at Yass. It will be inexpensive in construction, so far as railways go, the grades being one in forty. It will cost £1,180,000 to build, and should be commenced early. It will probably be electrified later.

European and American Civic Authorities are insisting on electricity displacing steam for city traction, as it is cleaner to burn fuel at one centre than to burn it in many hundred locomotives and pollute the city air with smoke. All the great trunk lines of New York are being electrically worked; this being particularly necessary in view of the underground tunnels and the difficulty of ventilation. It is expected that within four years all lines between Chicago and the seaboard will be electrically operated a distance of nine hundred miles. If electric traction for the Jervis Bay-Canberra line be considered, Australian engineers may find it advisable to generate electric power for this line at the southern coalfields, which are forty-two miles from Jervis Bay. This would provide electric power and lighting for Jervis Bay City and work the connecting line with Yass. The extreme length of electric transmission from the source to Yass would be 150 miles.

The complete transport scheme for Canberra must be immediately taken in hand, as upon the facilities suggested depends the economical building of the city in the easy transport of building materials.



TRANSPORT IN NEW YORK.

Section of the Grand Terminal Station,

Section XVII.—The Buildings and Their Requirements.

The third factor in city development covers buildings—administrative, residential, and commercial. In this respect the sub-division of areas must be first noted.

The areas of sites for administrative buildings suggest themselves by the character of the structures, which would include Government and Municipal offices, Law Courts, Military and Police buildings, Museums, Art Galleries, Schools and Churches.

In the placing of buildings pertaining to the co-operative interests of the people, such as the Chief Government and Civic centres, Museums and Schools, facilities for speedy transport must be considered.

In all Australian Cities we find educational establishments, such as Public Schools and Technical Colleges, needlessly scattered and multiplied. These could be economically grouped and so more efficiently controlled. In Sydney alone there are 146 public schools with separate staffs, most of which could be economically centralised with special transport facilities. That such a central group would be an educational as well as an economic success is proven in Sydney by the Fort Street Model Public School. Though it has practically no transport assist-

HOW NEW YORK IS SOLVING THE TRANSPORT PROBLEM.
The Grand Terminal Station, serving the world's busiest city.

THE CITY HALL, NEW YORK.

A unique illustration of the continuation of a street through a building.

ance to it, situated as it is 500 yards from tram and steamer, and on the height of a heart-breaking hill, it has the largest attendance of any school in the State of New South Wales, and its thousand pupils come from as far off as Picton, Richmond, and Bulli, over 40 miles away!

The centralisation of factors that can be co-operatively administered, is advisable and economical.

The residential areas demand most careful attention, as they determine the livable offerings of a town, and are the main factors for that revenue-return which counter-balances the expense of city construction.

Authorities widely differ as to minimum of area that should be permitted to carry a residence. I have seen plans over which not even a kitten could be swung without swishing its head over each boundary line. And yet one can go to the other extreme. An instance was recently given in an address on town planning, when it was advocated that no allotment under seven thousand five hundred square feet should be permitted for residential purposes at Canberra, it being pointed out that that area permitted six thousand square feet to be utilised outside the house area. This is absurd for many reasons. Firstly, because in every community there are varying natures. Some men can enjoy their Saturday afternoons pursuing the slothful snail in their six thousand square feet of garden. Such an area may seem even too small for "Reginald." But what about "Bill," who prefers spending his off-hours at a football match or watching pony-racing? "Bill" would not stick a shovel in the soil and his area would become "a wild where weeds promiscuous shoot," and in summer time a menace to the town.

I placed the predicament of "Bill" before a member of the audience. He airily solved the problem by suggesting that "Bill" could get over the difficulty by keeping poultry. But fowl yards must be barred at Canberra, as in every modern city; hence "Bill" will not relish paying rent on an area he does not require.

Away then with the ideas of standardising residential areas or street widths in city development. Standardisation means eliminating originality. You cannot standardise the human intellect. The designing spirit of the town planner must have some scope for his imagination. There are changing natures in every community, and the "Bill" type will be with us in the growth of every new town.

Areas must be established where artistic cottages can be grouped and face a common garden, allowing every class to enjoy the maximum of comfort and hygienic conditions. If any houses have unnecessary areas of ground around them, it will mean the unnecessary spreading of the city, and so increase the cost of supplying and maintaining the

distribution of water, light, sewerage and heat services, telephone and other communications.

Germany limits the amount of land to be covered by structures at seventy-five per cent. in city, and thirty-five per cent. in residential areas.

The developmental scheme for Canberra, and such new towns must have facilities for communistic structures. "Every man his own cottage" may be a fine political platform phrase, but it is impracticable in these days when the unmarried and the flat-dweller must be catered for. These may be undesirable as regards home-building and population-producing prospects, but they are products of the age; factors that cannot be suddenly extinguished by an Ordinance or a Building Act. The best we can do is to direct their desires to the best possible conditions of the community.

The buildings of a city have a direct bearing upon its place in the scale of the artistic and useful; and the character of the structures is considerably influenced by the available building materials of the district. Thus Sydney, with its great sandstone foundation, has sandstone for its chief buildings. Melbourne and Brisbane, by lack of high-class building stone which can be economically worked, are mostly built of brick, with sandstone or bluestone at rare intervals. Reinforced concrete, however, is coming into extensive use, from the fact that it is a compound of cement and steel, the chief factors of which can be easily transported.

Brick, however, is the universal material; and in Canberra, with its lack of timber and stone, will compete with concrete for popularity for the smaller buildings.

Reinforced concrete, however, will lend itself to the larger structures, because of the distance structural steel would have to be carried for large brick buildings.

The style of buildings in new Australian towns will, therefore, be greatly influenced by local conditions. Stereotyped designs suitable for foreign countries are not suitable for other lands. Australia, therefore, should not dog-follow foreign types.

Though conditions for clean living and best human comfort should be the common aim of town-planners the world over, it must be remembered that as nations vary in aspirations, social habits, temperaments and social conditions, so should their cities vary. Climatic conditions considerably determine the type of dwelling; and where, as in Australia, sunshine rules the year round, our architectural type should be simple and open.

Australia, on account of its isolation, has developed a somewhat independent spirit. It has little reverence for the classic and conven-

tional. Tradition, usually a difficult thing to uproot, is not of hardy growth in Australia, as it usually represents the Utopian, and little concerns itself with the general material requirements of the preesnt. In older countries it has got a particularly strong grip on architecture, but not in newer countries, where there are less examples of the classic to imitate.

In Europe the buildings where justice is dispensed are great structures with a certain pompous, Bumble-like dignity, with much space within devoted to wide passages, great stairways and mighty corridors, to impress upon the mind the majestic character of the work done in the building.

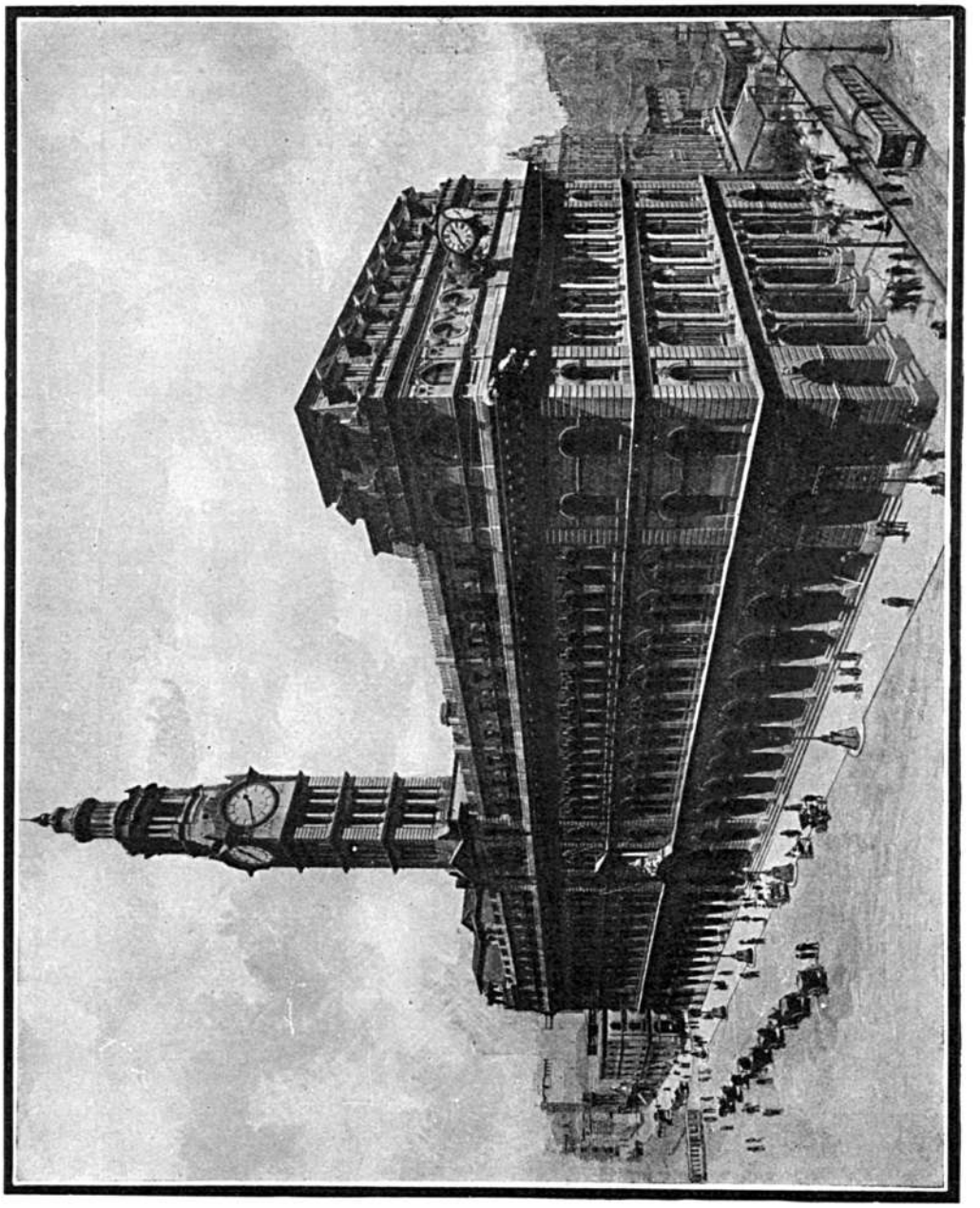
The new-world Architect, untrammelled by tradition, though he makes his building dignified, mixes common sense with his art; saves space and that valuable factor in law matters, time, by giving easiest facilities to entrants, and he does not affix the high-sounding name of "Palace of Justice," which sonorous title endeavors to create a demand for respect for the work done within, he affixes the short, sharp, no-humbug, businesslike name--"Law Courts."

For the economic and efficient building of a City we must reduce the cost of our architecture by lopping off the ornamental excrescences. The maximum of air and sunlight calls for simplicity and economy in our street architectural ornament. The Law Courts of Melbourne are constructionally wasteful. One has but to wander through its many corridors and areas to note the loss of valuable space; whilst the Sydney General Post Office, though of classic dignity without, is a misfit within, practically the whole of the beautiful facade facing its long front being devoted to a passage way.

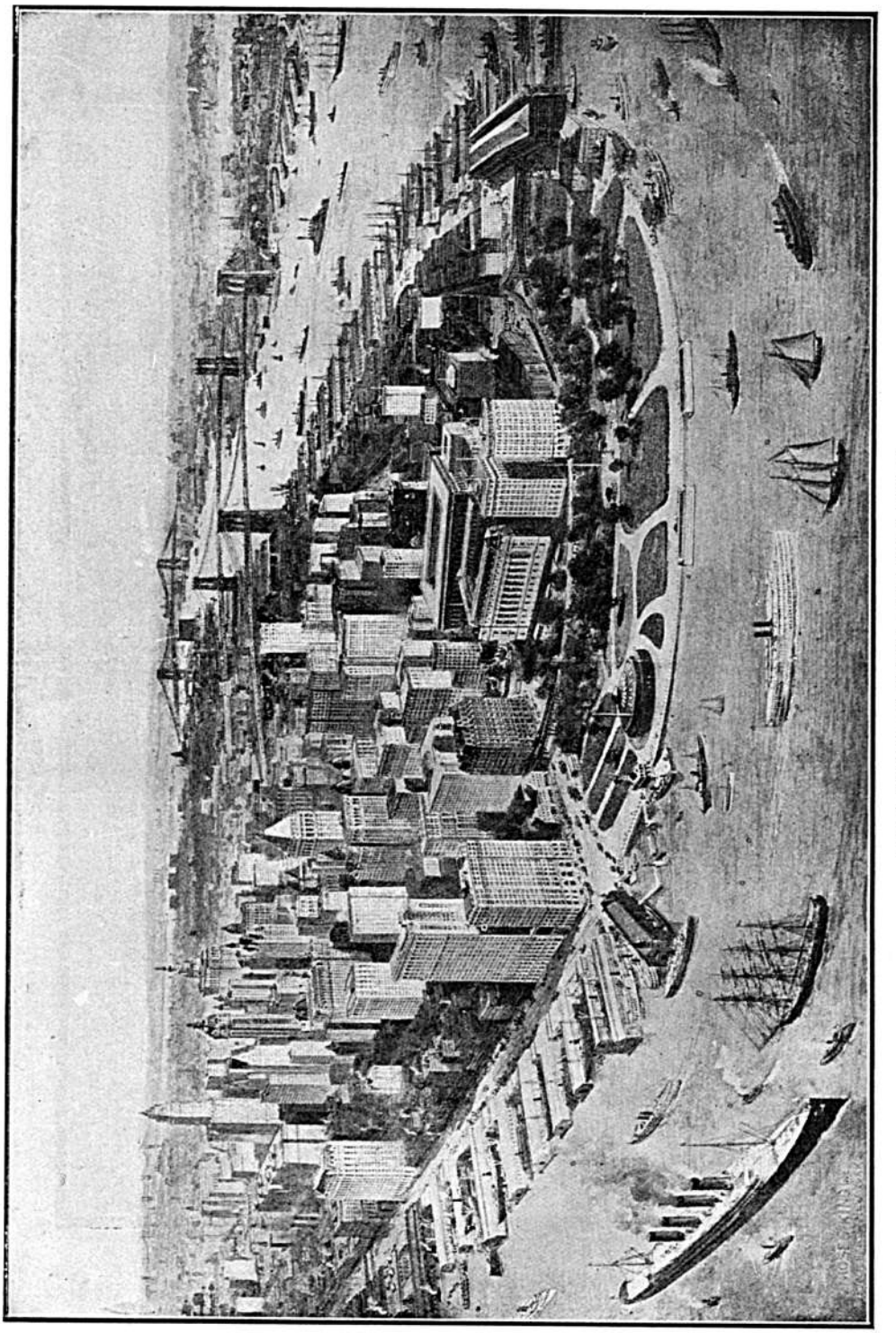
Our Architecture should be useful. Sir Richard Paget once said, that as the Skyscrapers of New York were necessary factors in modern commerce, to consider the effect if they had been built to a preconceived plan; made uniform in shape, though not in design; made in form, like magnificent and perfectly proportioned monuments and grouped in an open way space in the centre of the city, they would form one magnificent and stupendous temple of modern industry and Commerce.

There are many buildings in Australian cities where the facades are so filled with heavy architecture that artificial light must be used in most of the rooms.

In Collins Street, Melbourne, the Union Bank holds much classic, yet useless construction, whilst in George Street, Sydney, a building opposite Bridge Street, though dignified and stately, has great trachyte pilasters. These stone masses squeeze the front window space into tiny openings that will hardly be of any use for lighting. Let



ARCHITECTURAL BEAUTY AND CHAOS.



THE SKYSCRAPERS OF NEW YORK.
A magnificent scheme if the buildings could have been grouped in an open-way space, as suggested by Sir Richard Paget and referred to elsewhere.

our city architecture be based less on tradition and more on hygiene and common sense.

The town-planners of Australia need not expect Australian tall buildings to rise to the height of American skyscrapers, which developed from plain commercial blocks of undecorated material to the Architectural glories of New York City Hall and the Woolworth Building.

The skyscraper started with the necessity to get as much rental as possible from a small area; the ground area was carried upwards and multiplied many times; so that the owner of the lot could by the simple process of building up, be the owner of fifty or more.

The height limit has now apparently been reached in New York, for it has been found dangerous to health to live above the twenty-third story; there being a vibration and swing in every structure. So much so, that at fifty stories it is like a chimney with a distinct movement. The skyscrapers actually "scrape" the sky, hence their top storeys are becoming tenantless.

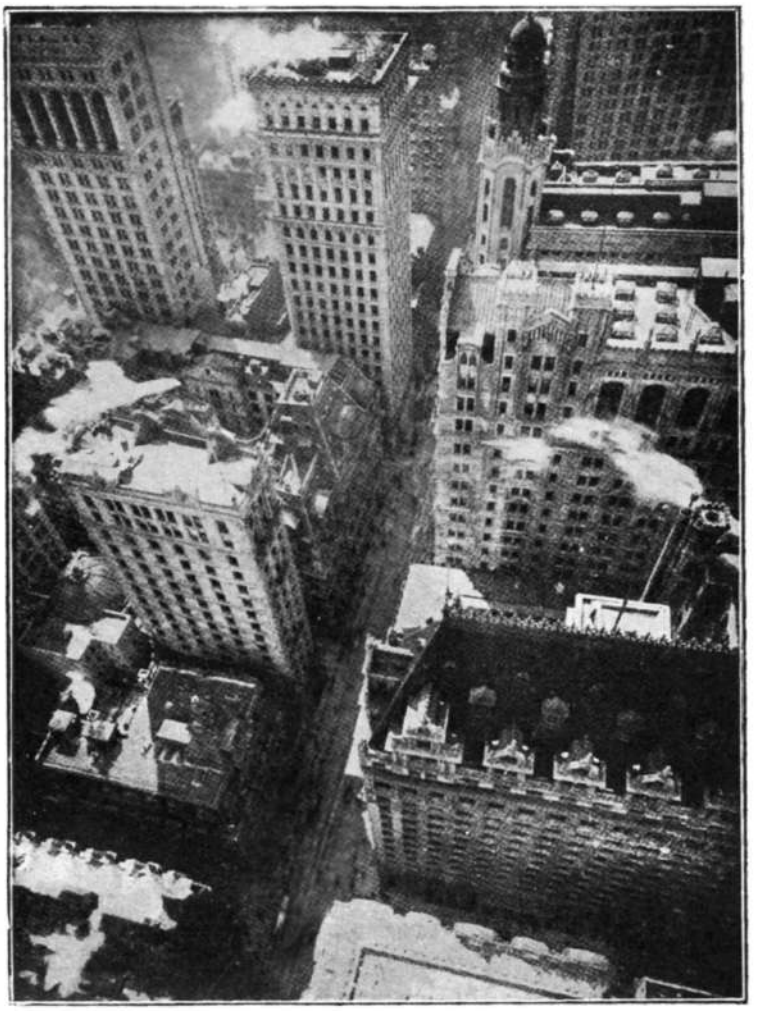
For efficient building of Australian towns, there must be strict building regulations and all construction made to a set scheme. Paris holds an ideal plan of the whole City, and it is superimposed upon the present plan, so that when any contemplated alteration is proposed, it is specially reported upon by special commissions of experts, who consider it a great honor to serve on such a commission. A similar scheme should be in operation in every City.

The "Jerry-builder" has long been a scapegoat for bad suburban construction, but he is, after all, only a product of the people. Those for whom he builds get what they ask for. Let them request decent homes, and be prepared to pay for them, and they will get them. Show how good houses can be built for less than it now costs to built bad ones. Let us lift public taste. It is useless to expect a decent city unless we have a decent people. A city is a reflex of the calibre of the crowd.

The areas for commercial buildings vary according to the type of business to be carried on therein. Banks and such high-class commercial entities should command street corners where possible.

The Town-planner, in placing his site, should consider where power can be most economically obtained, and transport facilities furnished for employees and manufacturing materials secured.

The location of towns of the future will differ from those of the past in the respect that, instead of being chosen for a defensive position,

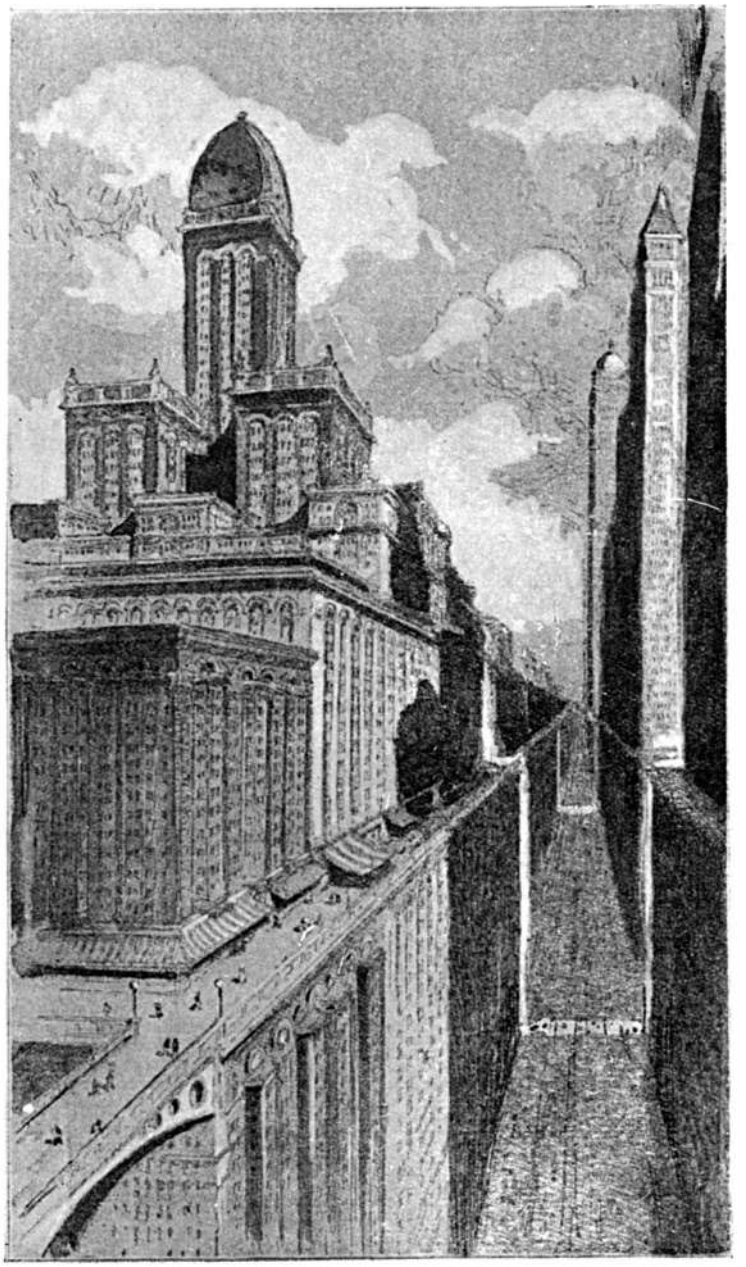


"SKY—SCRAPERS."
A unique view of New York's giant buildings.

the most economic and healthful manufacturing conditions will be sought.

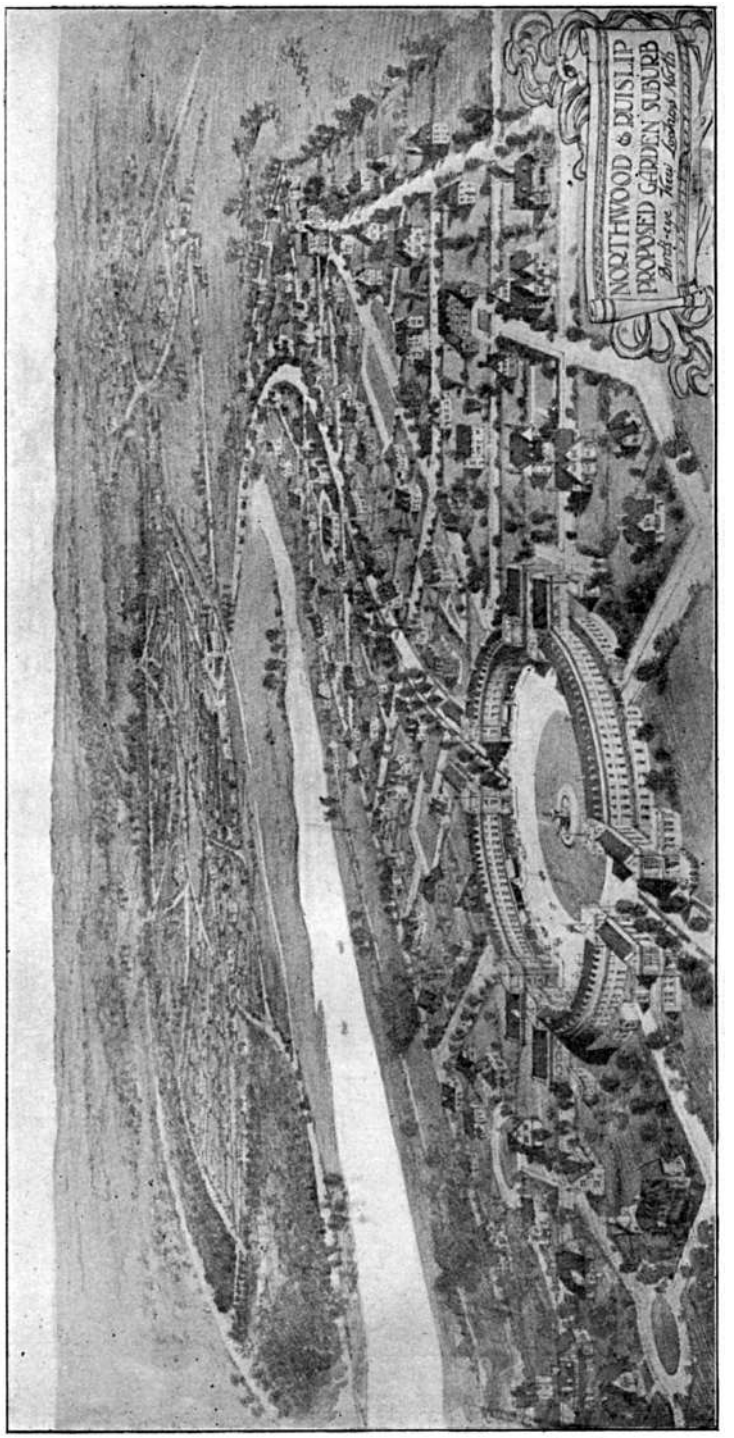
It is usual to condemn the factory. It has a long-held bad character to live down. It has been so long associated with smoke emission and steam pollution that we are slow to realise that a modern factory can be as clean and as hygienic as a beautiful home. Even to-day the average town-planner looks for the worst location for his factory. Factories can be smell-less, noiseless, and nuisance-less; and their presence in every town-planning scheme should be welcomed. They are commercially necessary to a community, because they are profitable factors in financing development; and the workers need more than anyone else the best

thoughts of the town-planner; so that, instead of looking at a possible factory with the sour eye of a rich relative viewing the approach of a poor relation, we should welcome it in our City and tame it to suit ideal conditions.



FUTURE CITY CONGESTION.

How the American Architect, F. W. Fitzpatrick, would solve the problem of tall buildings and their stability.



THE MAIN ROAD AND ITS TREATMENT.

Design for the Northwood Garden Suburb, showing the main road opened out to a grand circle, making a central feature of the scheme.

Section XVIII.—Financial Factors.

In the financing of town planning development, revenue may be looked for from sales and rents of sites, profits from services of water, sewerage, lighting power and traction, as well as the profits from manufactures controlled by the civic authorities.

The profits from land sales, or rents, depend upon the prices originally paid for the sites.

The Canberra area was procured for £4 and £5 per acre. Consider what this city area will be worth in one hundred years!

To appreciate the great possibilities of garden-suburb development under good business administration it is worth while investigating some Australian examples.

Garden suburbs have been established near Sydney at Kensington, Haberfield, and Rosebery.

Some years ago saw Australia's first garden-suburb scheme proposed for the sandy and swampy areas of Kensington, three miles south from Sydney. Though the original idea was not carried out, that waste land of some years past is now valued up to £12 per foot frontage.

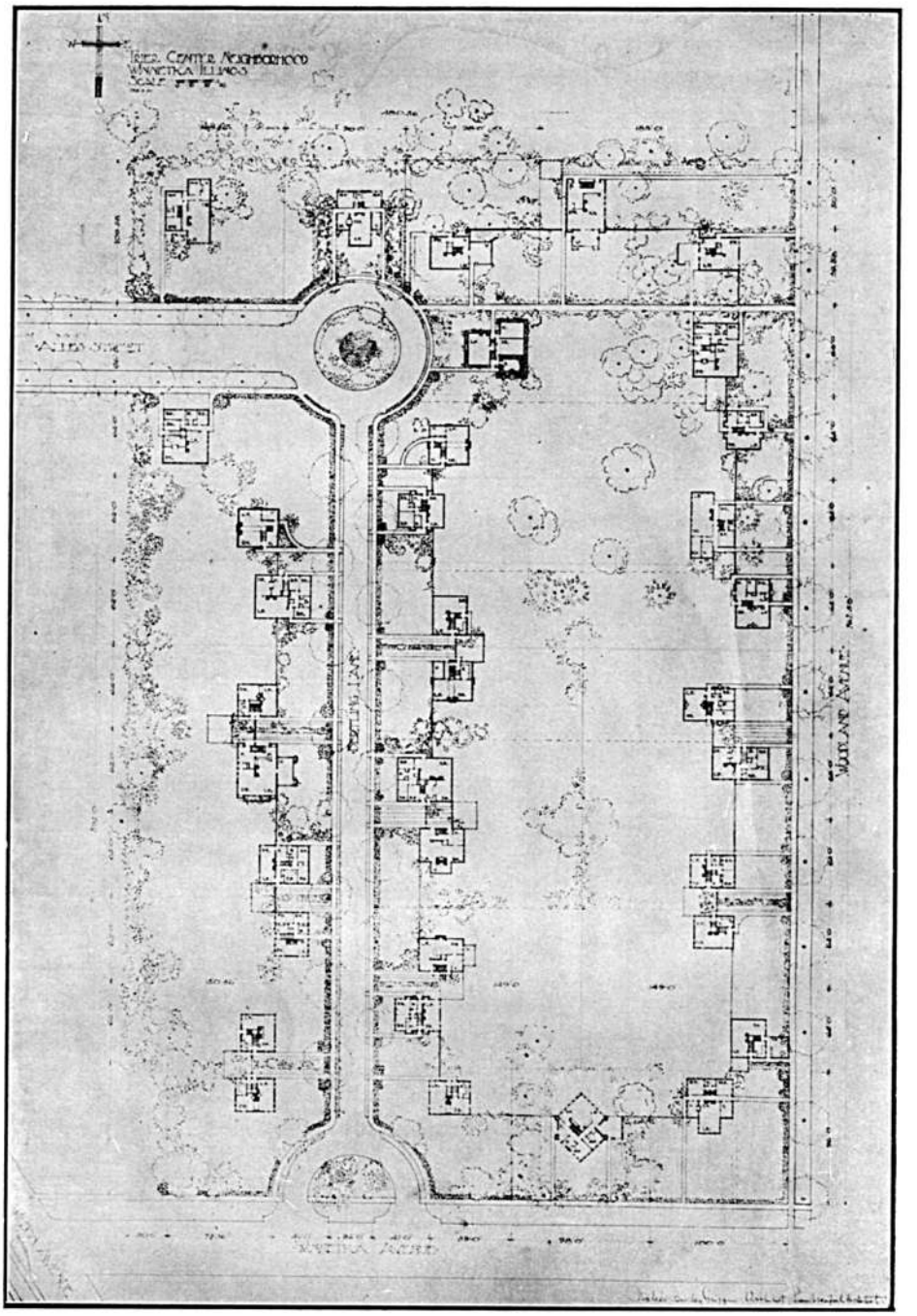
Haberfield and Rosebery furnish still more striking evidences of the accruing profits from land properly planned combined with good business management. These projects were originated and developed by Richard Stanton, a real estate expert, who was practically the first in Australia to make community housing with garden surroundings financially successful.

The Haberfield scheme was developed about eight miles west from Sydney. The first subdivision of 50 acres was purchased in 1903 for £110 per acre and gradually added to.

Streets were made and trees planted; grades were levelled, and artistically designed homes were erected and sold.

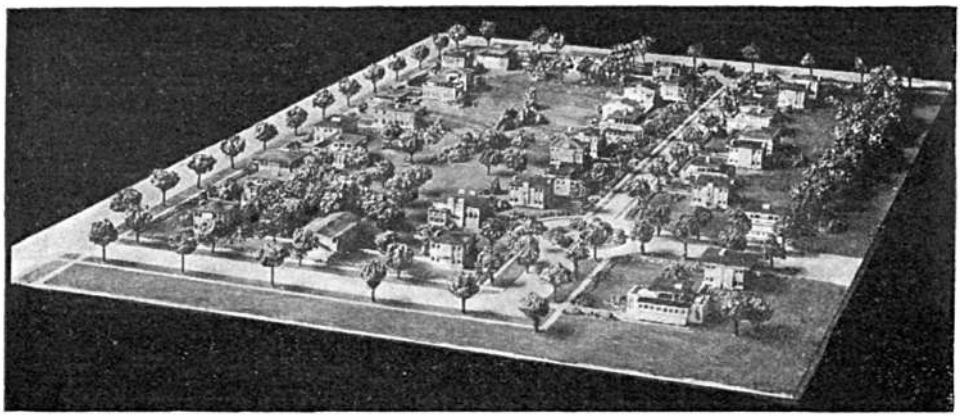
To-day the land is valued at £5 per foot frontage, equal to over £1000 per acre.

The profits on the sales of the land up to 1913 were as follow:—1904, £7784/10/-; 1905, £7453/8/-; 1906, £15,991/15/-; 1907, £10,965/10/10; 1908, £8720/0/9; 1909, £8964/7/3; 1910, £10,570/13/3; 1911, £8679/19/10; 1912, £8091/12/2—a total profit on land sales alone of £87,221/17/11.



COMMUNITY BUILDING.

Design of part of a suburb, at Winnetka, Illinois, by Walter Burley Griffin, showing houses placed to share a common garden area.



COMMUNITY BUILDING.

Model of Suburb at Winnetka, Illinois, in which the designer, Walter Burley Griffin, made each unit blend into a picturesque whole. Note the absence of fences and the good-fellowship appearance of the general scheme.

At Rosebery, next to Kensington, 300 acres were purchased in 1911 at £140 per acre and planned by John Sulman, F.R.I.B.A. Its value is now £3/10/- per foot (equal to £800 per acre), with values rapidly rising. It should, however, be understood that expert business management was a great factor in the increases of the land values stated; and only expert management will make Canberra a great real-estate profit winner.

Naturally, land value increases at Canberra will depend on the development of its population: hence it is worth while to study Washington's progress and compare it with Canberra's possibilities.

Though the rate of Australia's immigration at the present time does not encourage any hope of a rapid population increase in the immediate future, there is no doubt that the population expansion of the Northern Hemisphere will tend to find an outlet to Australia. Hence the latter, for its very existence, must institute and vigorously maintain a policy of European immigration as a counter move to any threatened Asiatic influx.

The world is moving faster than ever to-day, and Australia is the richest, emptiest, and most attractive of the world's continents. With a vigorous immigration policy our development during the next hundred years should at least equal that of the United States during the past century, particularly as sea transport is cheapening.

One hundred years ago saw the capital city of the United States established at Washington with a total population of 5,308,483. Australia then held 6500. Australia's capital city was established with our total population at 4,449,496, and that of the United States at 75,508,000. Our population increased 700 per cent., whilst that of the United States increased 16 per cent.

The population of Washington during the past hundred years increased to 289,596. Canberra's population one hundred years hence should at least total 200,000. Therefore, in 25 years we may expect a population of 50,000 at Canberra.

The ground value of the average present-day inland city can be estimated by comparing Ballarat (Victoria), having a population of 47,410, with Canberra. The frontages of Ballarat's principal streets are valued at £110 per foot. This gives a ground value of about £22,000 per acre; a 6 per cent. return, therefore, being £1320 per year per acre.

A careful estimate has been made of the Canberra City plan. Its commercial and residential frontages have been divided into five classes as follow:—

	Per ft.	No. of ft.	Value.	6 p.c.ret.p.a.
	£		£	£
(a) First Class Commercial	100	90,000	9,000,000	540,000
(b) Second Class Commercial ..	50	150,000	7,500,000	450,000
(c) First Class Residential	25	224,000	5,600,000	336,000
(d) Second Class Residential ..	10	160,000	1,600,000	96,000
(e) Third Class Residential ...	5	48,000	240,000	14,400
Total				£1,436,400

Twenty-five years following a policy of vigorous development at Canberra the ground rents from commercial and residential areas would be £1,436,400 per year, without reckoning on any rental returns from public and government buildings.

At Haberfield garden suburb the land was sold. The vendor gained a profit of £87,221. The purchaser is still winning the profits of continually-increasing values, as the freehold system allows him to reap the harvest of quickly accumulating values given by surrounding properties.

But Canberra is Government-owned, and cannot be sold; hence the leasehold system will rule.

Leasehold is an ideal system for best city development, because it is the only system by which one owner is protected from an adjacent owner doing him an injury. Freehold gives an owner practically free license to do as he likes—to build how he likes and what he likes; but a lease can hold him in check.

The leasehold system is the only system under which a poor man can build. Instead of having to pay down a large amount for land, he pays by the instalment system for possession for a long period. He

practically has it for life; and if he be a man of grit, he will see his children are fitted to fight the world without having the backing of his property.

Canberra being leasehold, the accumulating values will belong to the people, and can be devoted to reducing the cost of living and providing a sinking fund for clearing loans incurred in Canberra's development.

Canberra will be a profitable venture, if the Commonwealth Government jealously guards all sites, letting them on long leases at low rents; and has the housing regulated by a competent board, which must not erect buildings except under very exceptional circumstances.

The profit from services will depend on economy and efficiency in construction and businesslike administration. Water supply and sewerage are profit-winning factors at low rating in Sydney and other Australian cities. So they can be at Canberra.

RICHARD STANTON.

An Australian who has made a financial success of town planning.

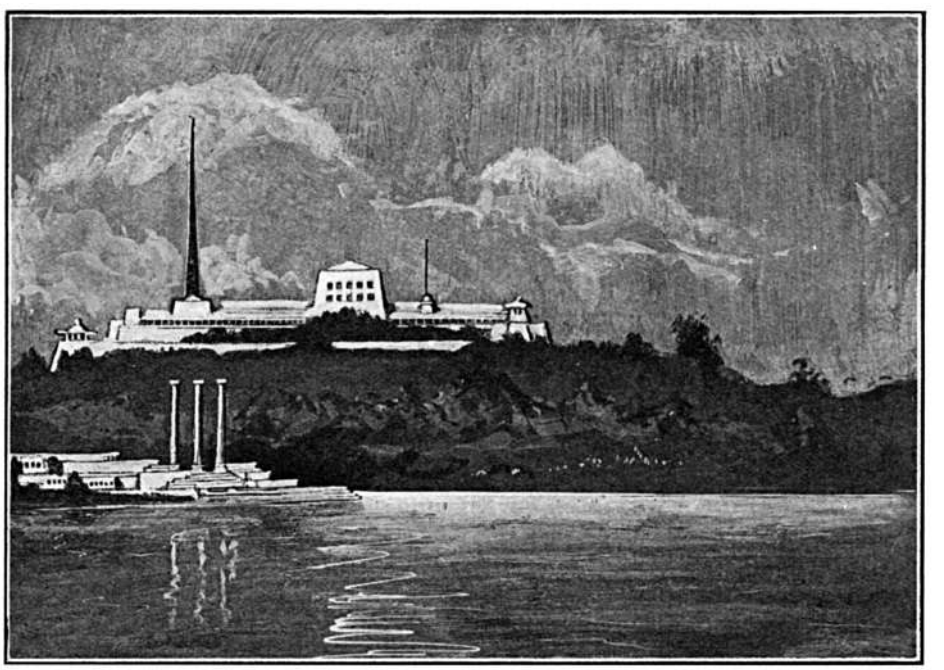
Lighting, Power and Traction at Canberra will be important revenue winners, in-as-much as the electric power will be economically generated in connection with the water supply. Thus a great source of revenue is immediately created.

The cheapness of electric power will entice the factory to Canberra; and the cheap transport to the seaport town at Jervis Bay will further popularise Canberra as a manufacturing centre. Factories at Canberra will populate the district and start to counterbalance the big outlay necessary to establish the City. The sequence of factories at Canberra should be as follows:—

The first " Factory "—the Federal Parliament House—is now being considered. This will bring a population of 1,000, not including legislators; but including officials and families, about 300; and, anticipating the erection of at least six hotels, which, with necessary staffs and requisite tradesmen, including the present population, should make the first "factory" settle 2400 at Canberra.

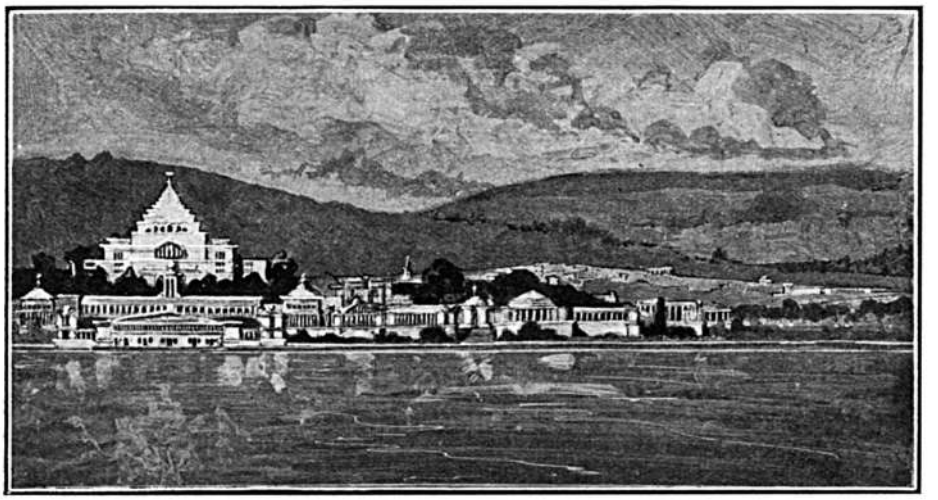
The second factory should be a Federal Printing Office.

Recently I proved that a Printing Office for Federal work could save the Commonwealth Government at least £700 per annum on the printing



CANBERRA.

Showing Walter Burley Griffin's treatment of the Military Post looking north from the water axis.



CANBERRA.

The Capitol and Administrative Group looking from the water axis. Parliament House is the long structure at the foot of the Capitol. As the architect has, in a manner of speaking, to harmonise with the town planning conception, these architectural types may prove a guide to competitors.

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of Telephone books, and give a profit on the printing. The Federal Printing Office, with cheap power, could profitably print Federal Reports, "Hansard," electoral rolls, Bills, Acts, notes, stamps and military publications. This factory should bring 1500 employees, who, with families and tradesmen, would raise the population to 5900 within the first three years.

The third class of factory we may expect at Canberra will be the food factory. Manufacturers of food and flour stuffs will find it profitable to establish at Canberra and save freight on raw material and yet be within easy distance of a deep sea port. With rail connection between Yass and Jervis Bay, half of the present rail journey between the million wheat acres of Riverina and Sydney will be saved, meaning £170,000 per year less in freights.

The establishment of six food and flour factories, if only employing 100 hands each, would mean, with families and tradesmen, an addition of 1,980 to the population.

The establishment of such factories, with increased population and wider use of the civic electric power, would also furnish a considerable revenue to the Authorities.

It must be borne in mind that about £250,000 would be annually paid away in Canberra in Government salaries, and about £125,000 in wages. City amusements and pleasure resorts would be established, attracting visitors and circulating the increasing wealth. Within seven years of the establishment of services Canberra should,

therefore, be a profitable source of revenue production.

All these services should be established without delay. In the Gary system, the streets were first formed; such should be done at Canberra. It would mean an immediate expenditure of £252,840.

As was successfully done at Gary, the water supply, sewerage and other services must be taken in hand at Canberra at the outset. That means that an additional £859,920 must be made available for immediate outlay.

The public buildings must be commenced, and the first cost of these will be £350,000; that is, to build them sufficiently—so as to enable them to be occupied without being fully completed. This money must be early allocated, as the competition for the first great building, the Federal Parliament House, is now being called.

This building will face the north-east, on the slope of the administrative group, between the Capitol and the centre basin of the ornamental waters. It should be flat-roofed to give visitors a clear vision across the city.

In style, it should be simple, without massed ornamentation, and should depend for its decoration upon recessed features. As it will be one of a group of administrative buildings, excessive ornamental detail would be wasted. The style for the Federal Parliament House will probably strike the key for the city architectural scheme, hence the whole city design should be kept in view. Owing to the lack of suitable building stone, it will probably be built of reinforced concrete with marble or other decorative facings.

The building should cost about £1,500.000; but £250,000 should be expended on it to make it available for immediate occupation.

Transport facilities, internal and external, must also be immediately considered to facilitate transport of building materials, as well as officials and workers; hence, the railway line connecting Canberra with the seaport, at Jervis Bay and with the main line at Yass, must be taken in hand. That means the amount of £1,180,000 must be earmarked for early allocation.

The port at Jervis Bay must be formed, dredged and lighted, at an estimated cost of £350,000; and as that is Government territory, it will mean the establishment of a new city with great revenue-producing possibilities.

The electric power houses at the coal fields and the transmission lines need not be begun until the revenue begins to return from Canberra. In the first seven years' expenditure estimate, the sum of £1,500,000 should be included as salaries of officials, so that a total sum of £5,668,760 must be early available, as follows:—

CANBERRA.

Panoramic view looking south from Mt. Ainslie. The Capitol and Parliamentary Buildings are in the centre of the picture, being on the main axis between Mt. Ainslie and Bimberi Park.

Purchase of territory, £1,100,000.
Services, streets and roads, £252,840.
Water supply, lighting and power, £859,920.
Sewerage, £75,000.
Railway, Jervis Bay to Yass, £1,180,000.
Port at Jervis Bay, £350,000.
Buildings (first seven years), £350,000.
Administration, salaries and wages, £1,500,000.
Total, £5,667,760.

As that sum must be invested in Canberra without delay, the question arises as to the best means of raising it.

At the present time, the building of Canberra is being paid for out of revenue. As a young and developing nation, it is ridiculous to pay ready cash for an investment that will not return its greatest profit till another generation has arisen.

To-day, we are foolishly squeezing our pockets, increasing the cost of living and impoverishing ourselves, that Canberra, the tangible proof of our nationality, will be paid for in our time. This is a financial obligation fairly due to the generations to come, who will be enjoying the rich financial returns from it.

Canberra will be annually yielding greater profits, and Australia will be vastly richer fifty years hence, and thus better able to pay than we of to-day.

The five and a half million pounds required for the development of Canberra, Jervis Bay port and the territory between, should be a national loan.

It will be the safest loan in the history of finance, if administered rightly. Efficient administration means the success, or failure, of Canberra—financially and æsthetically.

THE OLD-TIME STREET.
The artistic effect of architectural variety.

Section XIX.—Organisation and Administration.

In the planning and development of a town, be it old or new, the question of administration is supreme. The inefficiency of any scheme, through being badly administered, would not only mean loss of, perhaps, millions of money in subsequent alterations, but the health and convenience of the people would be in danger. But before efficient administration can be entered upon, organisation must be complete.

An ideal town-planning propaganda is instanced in the constitution of the Town Planning Association of N.S.W., which I had the honor to inaugurate. A similar policy could be adopted in the furtherance of town-planning development in any community.

The council for its first year consisted of Architects in Messrs. John Sulman, F.R.I.B.A. (President), Walter Burley Griffin, Major F. E. Stowe (Hon. Treasurer), Burcham Clamp, Lieut.-Colonel Spain, V.D., J. Nangle (Superintendent of Technical Education), G. Sydney Jones, A.R.I.B.A., and W. De Putron; Engineers in Messrs. L. A. B. Wade, M.Inst.C.E., J. H. Bradfield, G. A. Julius, B.Sc., W. J. Spruson, and C. Caswell; a Master Builder in Mr. W. Williamson (President Master Builders' Association); Artists in Messrs. W. Lister Lister (President Royal Art Society) and Norman Carter; Real Estate and Municipal Government Experts in Messrs. Richard Stanton, J. Garlick, Alderman Milner Stephen, Alderman Leitch; J. H. Maiden (Director Botannical Gardens); and the two leading authorities on Housing in Professor Irvine and Mr. J. D. Fitzgerald (Vice-Presidents), with the writer as Hon. Secretary.

The Committees and their functions are as follow:—

Information.—To obtain plans of improvement elsewhere; (2) form library; (3) obtain plans of Sydney and country towns with contours where possible; (4) obtain early information of proposed subdivisions and report to council; (5) obtain information as to traffic routes, existing and prospective, and secure information from the Federal Government regarding proposals for the establishment of cities and towns in the Federal territory.

Legislation.—To support a modern Building Act for Sydney; (2) to support Consolidated Act for suburbs; (3) to support Building Acts for country towns; (4) to support the foundation of Chair of Architecture and Town Planning at the University; (5) to promote Town Planning Act for the State and modifications of width of Roads Act; (6) to further connection between parts of cities and towns separated by waters.

Planning.—To prepare outline schemes of Town Planning for Sydney and other places to enable the Council to take action thereon; (2) to report to council on all proposals for buildings that will detrimentally affect the health, convenience or beauty of Sydney and its suburbs; (3) to report on the placing of public buildings, statues, fountains and other architectural works; (4) to report on the housing of the people and especially re-housing where such is necessary.

Publicity.—To provide a lantern and lantern slides of subjects suitable for lantern lectures; (2) to arrange for meetings, social meetings, lectures and discussions on Town Planning and Association objects in Sydney and its suburbs and country towns; (3) to arrange for and maintain a press campaign; (4) to arrange for exhibitions.

Finance.—To report on matters of expenditure referred to it by the Council; (2) to report on the financial aspect of all suggested schemes of improvement; (3) to establish a reserve fund.

Parks and Playgrounds.—To report on street planting and suggest adoption; (2) to report on existing parks, reserves, or playgrounds, their use and improvement; (3) to report on any additional parks, reserves, or playgrounds that are considered desirable in inhabited localities; (4) to suggest the reservation or acquisition of land required for such purposes in the future; (5) to report on the disfigurement of the city by sky signs, posters and hoarding advertisements, and suggest means of amelioration or removal; (6) to report on any proposed destruction of scenes of natural beauty.

Public Hygiene.—To report on insanitary or congested areas, and suggest ameliorative measures; (2) to report on localities lacking in lighting, water supply and insanitary conveniences; (3) to report on all nuisances that may be or become inimical to public health and comfort; (4) to properly locate hospitals and other institutions for treating diseases; (5) the location of gaols; (6) to report on establishments of noxious trades; (7) abatement of smoke nuisance.

A similar organisation on a scale dictated by circumstances could, with advantage, and should, be established in all centres of any importance in Australia. At least all capital cities should possess an organisation capable of applying correctives to mistakes of the past and preventing their repetition in future undertakings. As a matter of fact the constitution of the N.S.W. Association, modified to suit local conditions, as in the case of country districts, could be generally adopted as the foundation, at least, of a system of preserving order, grace and uniformity by predetermined methods.

In the case of districts in the primary stages of development, the functions of the Publicity Committee could be suited to circumstances and the districts' possibilities advertised.

The Publicity Committee will look for opportunities to talk about. The fall of a river or creek may suggest water-power possibilities near the town. To this the attention of manufacturers could be called.

In this respect a plan by Walter Burley Griffin will interest. It was for a site of 18 acres on two steep sides of a stream which, though within three blocks of the centre of Mason City, U.S.A., was neglected in favor of common-place building sites around it, until the landscape architect, by damming the stream, made connection between the two parts of the estate, at the same time winning sufficient power from the waterfall to generate electricity to light and heat the new homes that were to be picturesquely dotted on the hillside.

Proper publicity can develop districts and populate towns. The good reasons why a town is worth living in should be worth telling; and it would be still better to live in that town when its town planning committee got to work.

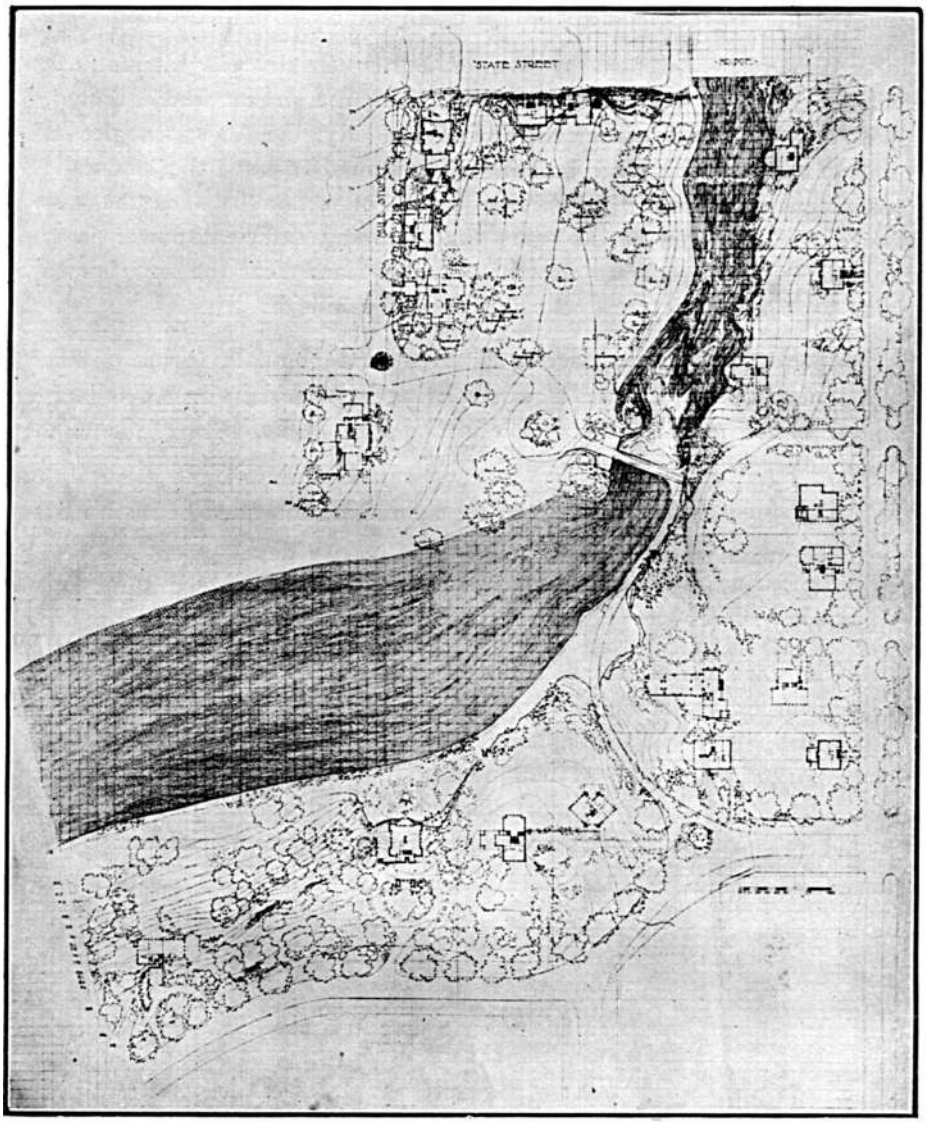
The organisation being complete, administration must be instituted.

The main factors to be administered in city development are cost of land, cost and placing of services, building administration and publicity.

The town planner should be first appointed, together with a business-organising expert having a keen knowledge of real-estate values. These two principals should then appoint their technical experts—the surveyor, the engineer, etc. This system must be followed in regard to Canberra without delay, because the most efficient administration is called for and Canberra's past history has proved the inefficiency of officialdom.

IN GERMANY.

A Picturesque Street at Altenhof, Essen, testifying to the enterprise of the great Krupp firm.



COMMUNITY BUILDING.

Plan of Rock Crest and Rock Glen, Iowa (U.S.A.). The site of 18 acres, severed by a creek, and contiguous to Mason City, was originally regarded as suitable for common-place building sites only. Walter Burley Griffin, however, converted it into a centre with ideal possibilities for domestic architecture. The creek is dammed to generate electric current.

GENERAL VIEW OF ROCK CREST AND ROCK GLEN DEVELOPMENT.
Walter Burley Griffin, Landscape Artist.

Canberra must be developed by experts with a staff, and free from any political interference.

Australian politics are practically experimental, and rightly so for a progressive race; but they should not interfere with Canberra's development, provided that, firstly, land titles are preserved for the community, and, secondly, the health and comfort of the inhabitants are kept the main consideration in the development of the area.

With the town planner can be associated the architects who win the competitions for the public buildings. A technical staff should advise the town planner in the carrying out of the construction of the various services. The business-organising expert would study the best revenue possibilities of city areas at Canberra and Jervis Bay, and devise revenue-producing schemes for opening up the territory generally, as well as supervising the expenditure.

With a loan subscribed and the work commenced, Canberra should rapidly and successfully develop. But too much stress cannot be laid upon the necessity for the immediate appointment of the business expert. Because of past circumstances he must be selected in this particular instance from without official circles. He must be a man who, in the commercial sense, has fought in the world; fought and won out, if "the city beautiful" is to develop along solvent, as well as constructionally efficient lines.

Once the questions of finance and administration are settled, the building of a city is not such a mighty task.

Cities were once of slow development. To-day, speed can come into city building, as into most other things. An instance comes to hand from South America. It is interesting as it was a battle against real estate speculators.

The City of Ouro Preto, till recently the capital of the State of Minas Geraes, South America, is enclosed in a circle of mountains and perched upon steep hills dominated by twenty cathedrals. The ring of mountains prevented the city being extended; moreover the owners of suburban lands would only sell at fabulous prices. After prolonged negotiations the Government abandoned the idea of buying out the speculators and threatened to remove the seat of Government. The speculators were amused, the threat seemed ridiculous; but the Government were in earnest, and other cities of the State immediately clamored for the honor of having the seat of Government transferred to them.

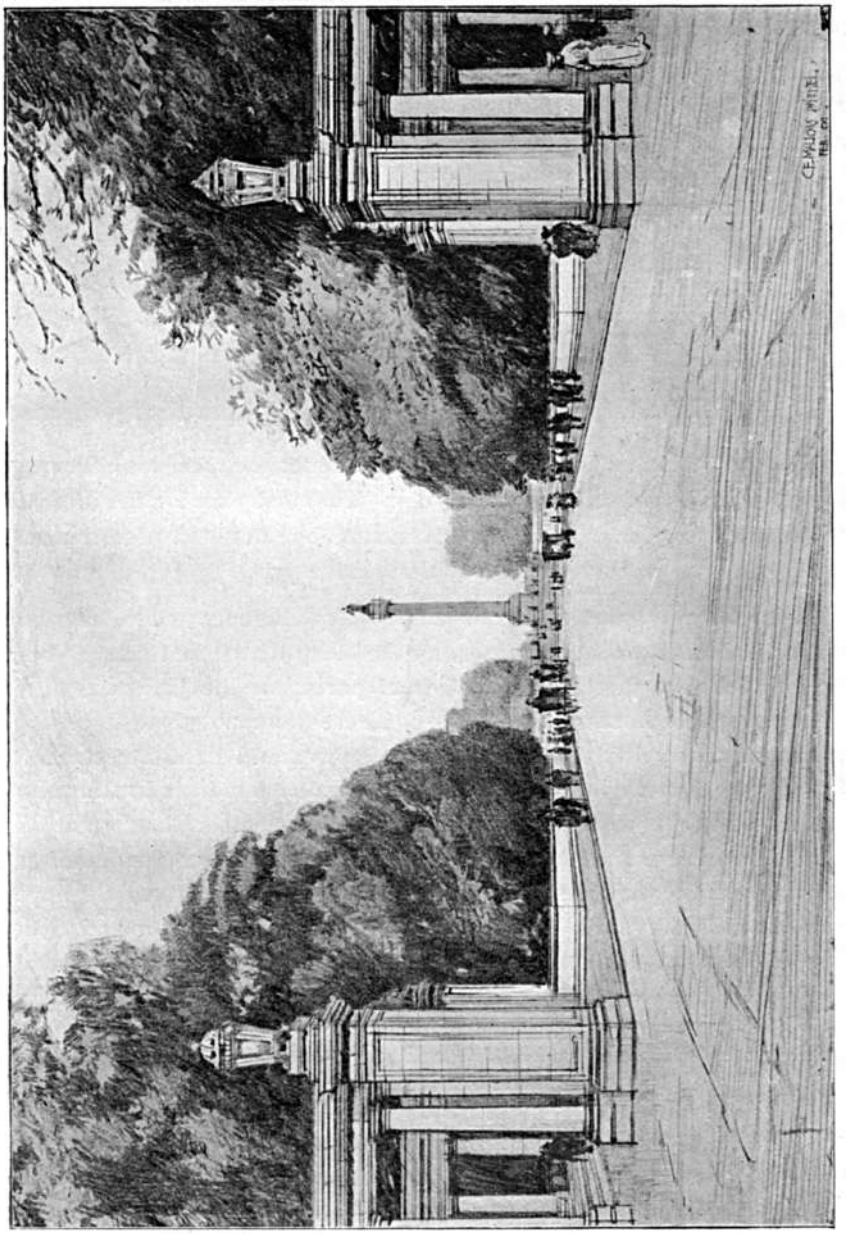
In order not to displease any of these cities, it was decided to establish a new capital. So, in 1894, virgin land was purchased, at Bello Horizonte, and within five years the Government had lodged its palaces of the Interior, Justice, Finance and Agriculture, with four thousand clerks, police and military.

Business people followed with their families. Two large hotels were erected to house the people visiting the city to consult the Government, and in 1913, from twenty-five to thirty thousand people were living in a new city, with magnificent avenues shaded by the most beautiful trees in the tropics. The post office is a monumental and spacious edifice, the railway station is a fine structure, and electric light, trams, theatres and other luxuries are available. Great markets and schools are established; factories, spinning mills, and other manufacturing concerns have developed; and a great commercial city has arisen as if by the wave of a magician's wand.

But there is no such word as magic to-day; it is business administration. The new city cost £2,120,000 and has been a remarkably profitable financial investment for the Government. Recently some land was required for a private school at the extremity of the suburbs. It covered two and a half acres and was purchased for £4000. The Government purchased the whole of the city and suburban land for almost nothing, in 1894. The city values to-day are enormous, and that in one of the unjustly reviled South American States.

Yet Canberra has even greater possibilities for artistic and financial success.

Australia holds world's records in achievements where energy has been called into action. It is practically the only nation that has federated within itself without the whip of war. Hence the building of her capital city as the most beautiful on earth is an ambition surely within her power to speedily accomplish.



THE ARTISTIC AVENUE.
Showing a long vista relieved by a monument.

Section XX.—The City Beautiful and How to Achieve it.

A city beautiful has been the ideal since human intelligence began to dawn.

As the Co-operative spirit developed in mankind, the city became the crux of civilisation, giving birth to the idea of heaven as a beautiful city paved with streets of gold. Our heaven can be with us, and we can make our cities, towns, homes and lives ring with a hymn of beauty that can make this earth a heaven where:—

"Every clod feels a stir of might,
"An instinct within it that reaches and towers;
"And groping blindly above it for light,
"Climbs to a soul in grass and flowers."

The city beautiful must, to-day, be something more than a dream.

The town planner is often termed a dreamer, because his schemes may sometimes seem somewhat Utopian. He must plan for the future; for if he plans for the present, our successors, one hundred years hence, will sneer at our work, as we do at that of the past.

Burnham aptly puts it: "The angle of intelligence widens as the speed of its development increases, as the story of the last sixty years proves. In 1850, there was little street paving in the United States, and not much in London and Paris. There were no great sewerage systems, water systems, gas and electric power and light, street cars, sidewalks, or system in any form. Compare the public improvements of sixty years ago with those of to-day, and remember that, great as is this difference, you are much more dissatisfied with your surroundings than was your grandfather with his. We do things that would have made our forbears think us magicians, because we are equipped with scientific knowledge and experience they did not possess. The men of 1850 knew much, but those of 1910 know enough more to make their work seem marvellous in contrast; and we may be sure that the men of 1960 will regard us as we do our predecessors. For remember that that knowledge brings desire, and desire brings action."

The Town Planner, therefore, must be a seer armed with the knowledge of the practical. His flights of fancy must be measured by the financial factors. The first cost, however, may seem so great, that it is too often allowed to govern our decision, and instead of thinking of the best for all time, we think of the cheapest now—forgetting that it will be dear in the long run.

The shoddy and the veneer have already crept into Canberra. Thousands of pounds have been spent on the Military College, which is, to-day, outside of an old stone building and a few concrete residences for officers, a great collection of timber and sheeted structures.

Byron's assertion: "Man marks the earth with ruin," is a striking commentary on the human destruction of natural beauties—and in Australia, we have striking evidences of enchanting places haphazardly transformed into murky centres.

Beauty in a city is a commercial asset, and Canberra, with its naturally beautiful setting, can win a profit from its attractiveness.

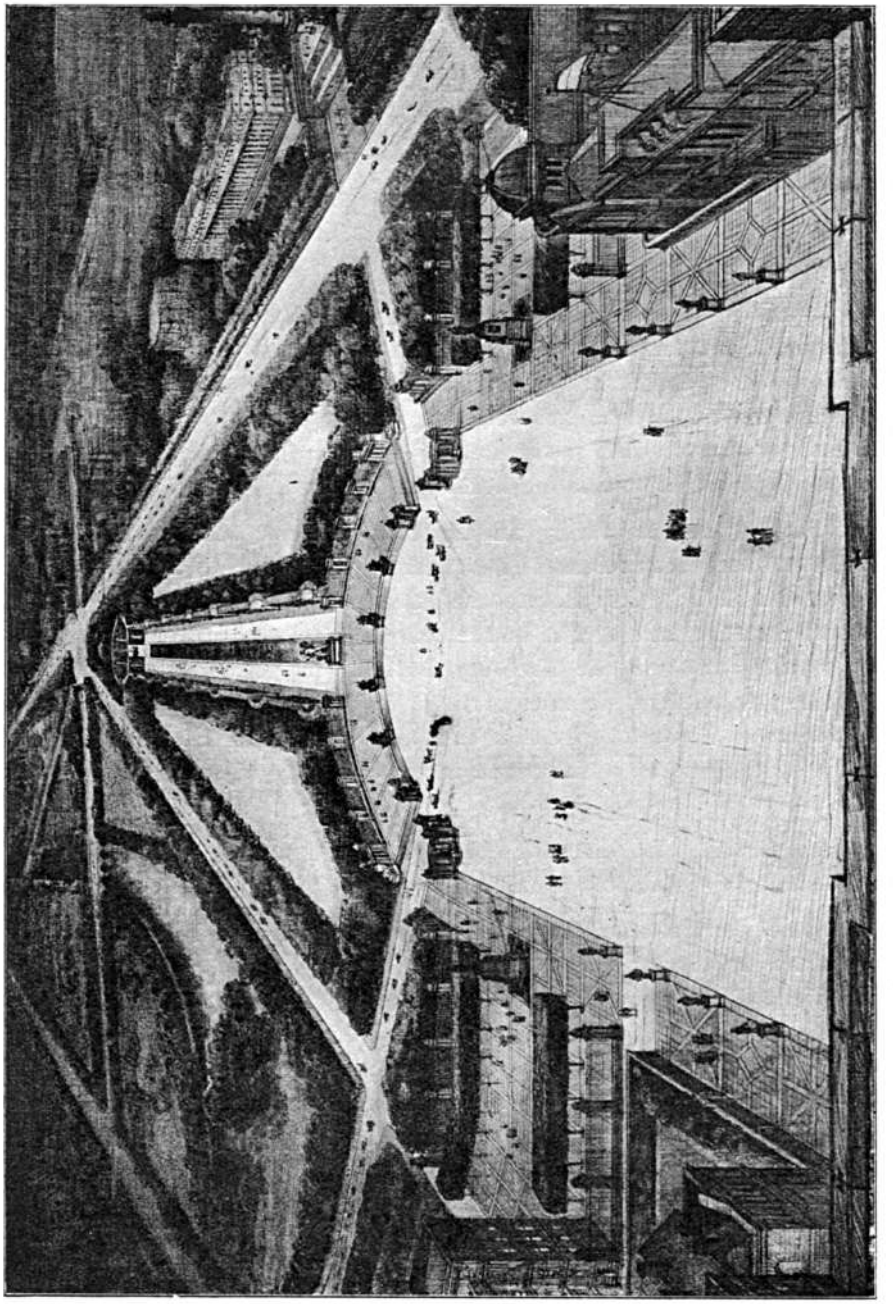
Civic art is often fancied to consist of portrait statues, inscribed horse troughs and fountains. Portrait statue propositions should be regulated in cities, for in their placing we inflict what is often an unfair introduction upon future generations. Look through Australian cities and you can convince yourself that a number of the street statues do not merit public exhibition for eternity!

Portrait statues are rarely artistic, therefore city statues should represent an idea; such as Peace, Liberty, or the National Spirit. People pass, but ideas live. City statues and monuments must be regulated. We know that the fairest vista in Melbourne, that of the approach to Parliament House from the Treasury Building, is spoilt by a great gilt barber-pole design commemorating the shortening of working hours per day. It could be featured in a fine design, but in its present shape it is an eyesore. Melbourne is not the only offender in that respect.

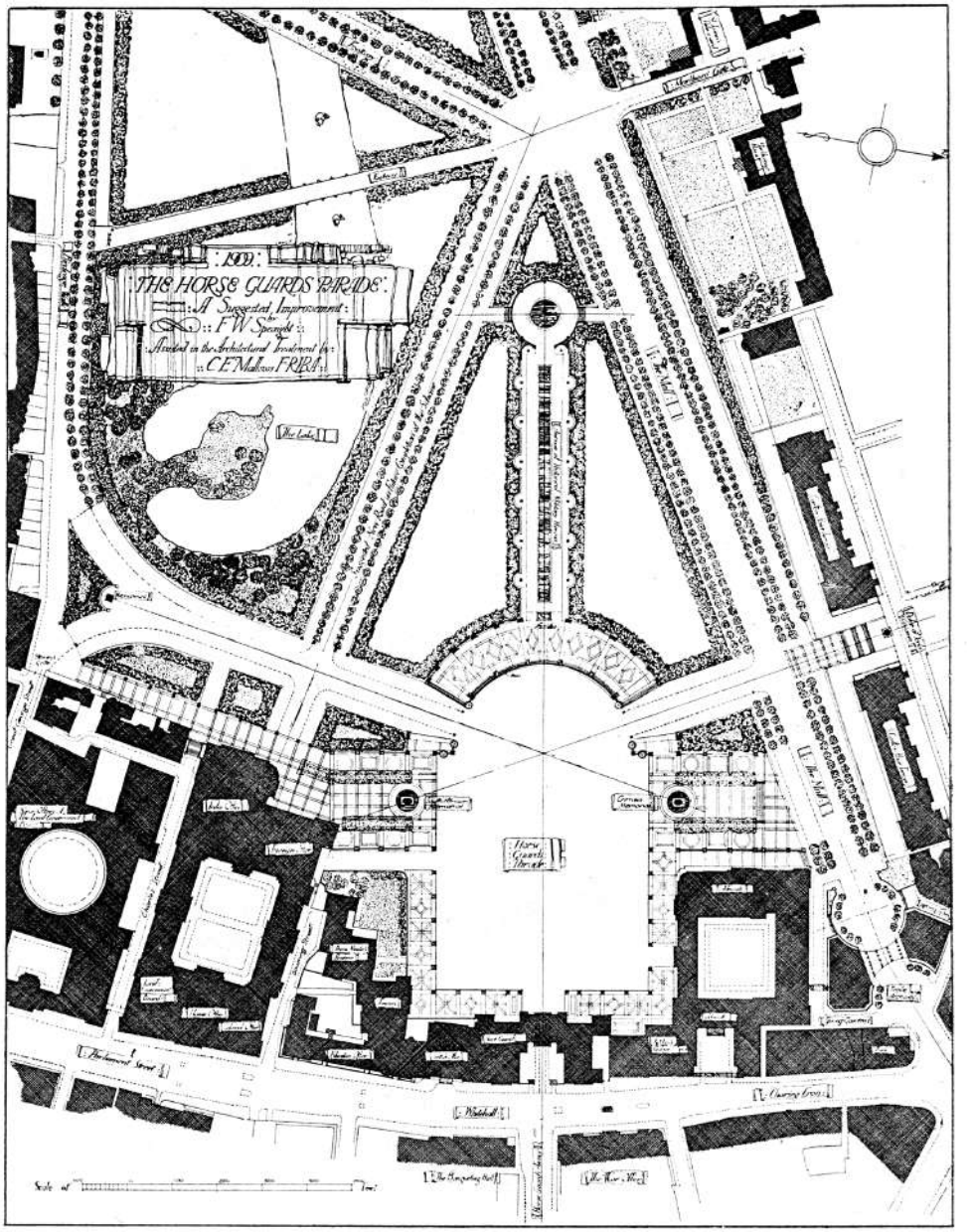
In the planning of a town, the cheapest, yet the principal element of beauty—sunlight—is seldom considered.

The chief glory of a building depends upon the way the sunlight and shadows can properly play upon it. As an instance, take that beautiful building, the Parliament House, Melbourne. Crowning the hill of Bourke Street, it is an architectural triumph. Contrast its sombre appearance before the morning sun has flicked its front, and the afternoon effect—the features kissed by sunshine and the great columns thrown into grandeur by the heavy shadows behind them.

The Place de la Concorde, at Paris, has been admirably placed for the sunlight to show out its best features. At Canberra, Griffin has placed the capitol and the monumental buildings, the most imposing of all the architectural groups, so that the sunlight will be on them during the greater part of the day, and pretty shadows play as the sun sets. It will be a remarkably brilliant architectural ensemble with the great capitol crowning it.



"THE CITY BEAUTIFUL."
Suggested scheme of improvement for the Horse Guards Parade, London, by F. W. Speaight and C. E. Mallows.
(By courtesy, "Academy Architecture.")



"THE CITY BEAUTIFUL."

Plan of the suggested scheme of improvement for the Horse Guards Parade, London, by F. W. Speaight and C. E. Mallows.

(By courtesy, "Academy Architecture.")

There are, however, two cranks who must be kept out of town planning schemes—by brute force if necessary. One is the historic crank, who, because an old insanitary dilapidated hotel may have given some distinguished individual a night's rest, insists that it must be preserved. What though it stand in the way of a necessary avenue, let a finger dare to point at it as an object in the path of scientific town planning and the historic faddist will flood the daily press with protesting letters. The other crank is the artist; not the reasonable type we find in our societies, but the party who has a faint feeling that he has a soul somewhere about him, and when any old tree is to be lopped out of the way of a necessary improvement, will carry on as if some stranger, with a butcher's knife, had met him in a dark and dismal cul-de-sac and in sepulchral tones demanded his appendix.

This kind of crank ruined the Great Thames improvement scheme. The great embankment was prevented at Chelsea from being carried from Battersea Bridge to Hammersmith, by a number of Chelsea artists, who objected to the blocking of the view from their studio windows of the "pretty brown sails of the barges."

Immediately they blocked the embankment scheme, the area was taken up by a great electric light station with three tall chimneys belching out smoke and grime that must have made the artists' language more vivid than their brightest colors.

Sense offences must be regulated in every modern city. The unsightly, such as inartistic hoardings, or designs; noxious smells and noises should be possible of remedy. Motor horns should have a common note and the cart driver with squeaking cart axles should be suppressed.

A city is not merely a dumping ground for goods, a collection of houses or a conglomeration of humans; it is a place where utility, comfort and beauty can be combined. Just as a man to-day is only as great as his spirit, just as a building is only as great as the beauty of its design, so a city is only as great as the spirit of the nation of which it stands as the material representation.

What to do with the wilfully unclean is going to be a big problem when town planning is law. The squalid environments of the past have evolved the dirty type with poverty of spirit, and the dirt must be worked out of them. No town can be made a model town without model inhabitants, but model residents cannot be made without a model town.

Environment has a great effect on character. John Burns touched a mighty truth when he said that "the beautiful manor house, the restful vicarage, the stately homes of England and the beautiful public schools and colleges have turned out the Ruskins, the Kingsleys, the Morrises, the Nelsons, the Newtons and the Darwins."

Environment in youth has an enormous influence on the personal and civic development of the future citizen. Our "cities beautiful" can be the reflex of the civilisation of the moment.

Parks, gardens and playgrounds are essential in every town planning scheme, not only for recreation purposes, but also as decorative features.

Our city belongs to the future more than to the present, and we must make it beautiful—a place "Where every prospect pleases," and where the rest of the phrase need not be quoted.

J. D. FITZGERALD, L.L.B.

An ardent advocate of Town Planning, and Local Government in its highest form, for Australia.

Mr. Fitzgerald is a Vice-President of the Town Planning Association (N.S.W.) and a recognised authority on municipal government His books, "Greater Sydney" and "Greater Newcastle," may be accepted in Australia, at all events, as standard works of their class. He is chairman of the Housing Board (N.S.W.).

Section XXI.—The City of the Future.

It is easy to say that the prophecy of to-day is the reality of to-morrow, but most forecasts sink in the sea of history like the spent stone flung along the water surface.

But of this we can be sure; the city of the future will be smokeless, because commercial economy is conserving all waste. In Duluth, U.S.A., a great iron plant tanks its smoke and gases and sells them to two cities for lighting, power and heat. The cheapening of motor vehicles will end the use of horses and our streets will be cleaner.

In lighting, communication and transportation services science is almost keeping step with the wildest prophecy.

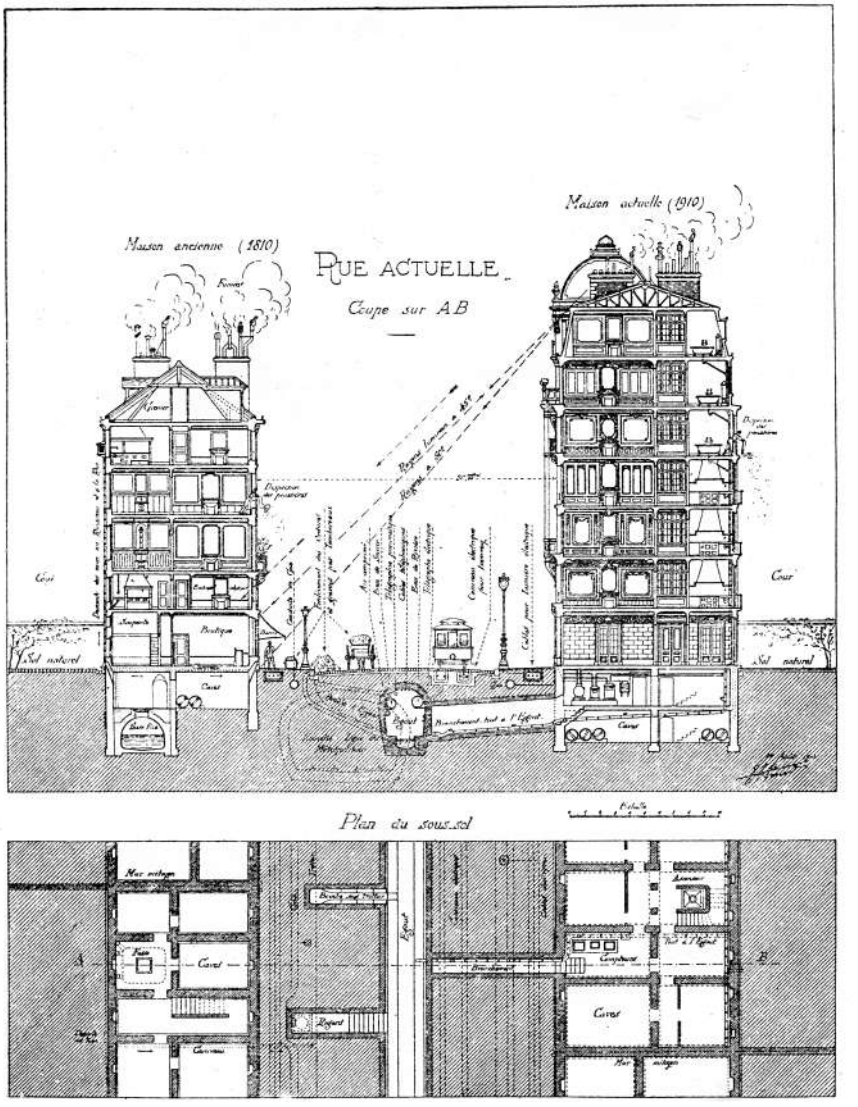
Within the short span of the last decade radium and its lighting wonders set a new line of light investigation; wireless telegraphy burst upon a grateful world as a new factor in communication, and the air was conquered as a new kind of transport. These recent triumphs of discovery prove how swiftly the angle of human knowledge is widening; and other mighty discoveries that are undoubtedly beneath the veil of research, will tend to revolutionise modern ideas in town living and building.

Take, for instance, the drawings of the street of to-day and the street of the future, prepared by E. Henard, City Architect of Paris, for the Town Planning Conference, in 1910. Some of his predictions during the short interval are already back numbers.

A study of the drawings will interest. In the sketch of the actual street, the house of 1810 is compared with that of 1910. Note in the former that the cesspit is in the cellar; there are no bathrooms; the roof waters descend on to the road; the housemaid shakes the dust into the street; and the chimneys pour out their air-polluting smoke.

On the other side of the street the house of 1910 is connected to a sewer; bathrooms are on the three upper floors; heating apparatus is shown in the cellar; gas and cables for electric light are shown under the footpath; the street has a tramway; and in the house an elevator is shown for each floor; yet the chimneys still smoke and the housemaid still shakes the dust into the street.

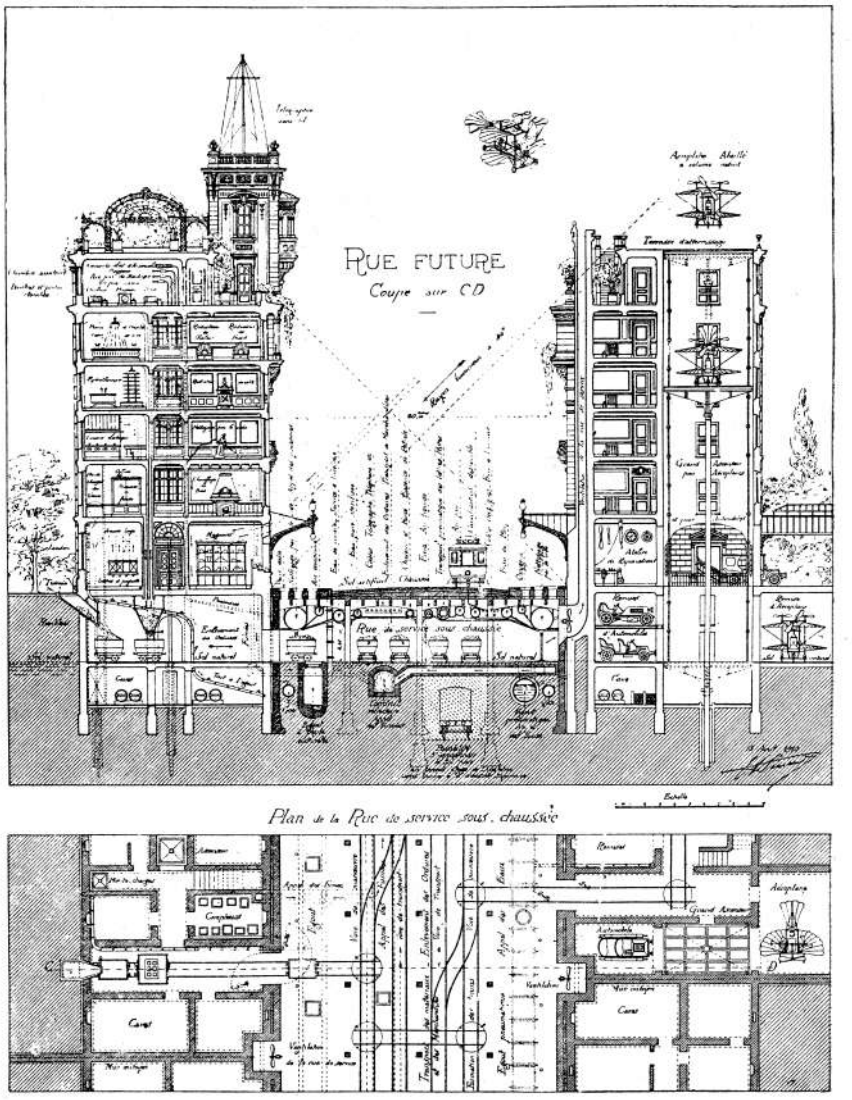
In the drawing of the Street of the Future, the building on the left of the street has the roof water and all drainage connected with the sewer; the refuse from the street is shot into a truck; the housemaid no longer shakes the dust over the street, as it will be noted the house is cleaned by a vacuum cleaner which is being used on the second floor and all dust and refuse are shot down a shaft-way into a track into the cellar. A roof garden and wireless station complete the building.



THE STREET OF 1810 AND THE STREET OF 1910.

By E. Henard, City Architect, Paris.

(See page 70.)



THE STREET OF THE FUTURE.

By E. Henard, City Architect, Paris.

(See page 70.)

The building on the right of the street has an aeroplane and automobile elevator, the section showing the work room and four rooms artificially heated. It also has heat and cold radiators and the chimneys have disappeared. The roadway covers conduits for compressed air, water for fire extinguishing purposes, sterilised water for domestic purposes, telegraph and telephone lines, petrol, liquid air, oxygen, electric light and power cables and pneumatic tube for letters.

The normal heights of buildings are regulated to the width of the street, admitting sunlight to footpaths, and the ingenious architect has shown how he would ventilate his underground tunnels by means of a fan and ventilating shaft. Yet only four years after the issue of this forecast an important feature in it is out of date. The elevators are shown worked by means of hydraulic rams; these have already been supplanted in Australia by electric hoists.

It is, therefore, unsafe, in view of the rapid advance in scientific research, to attempt to forecast far ahead.

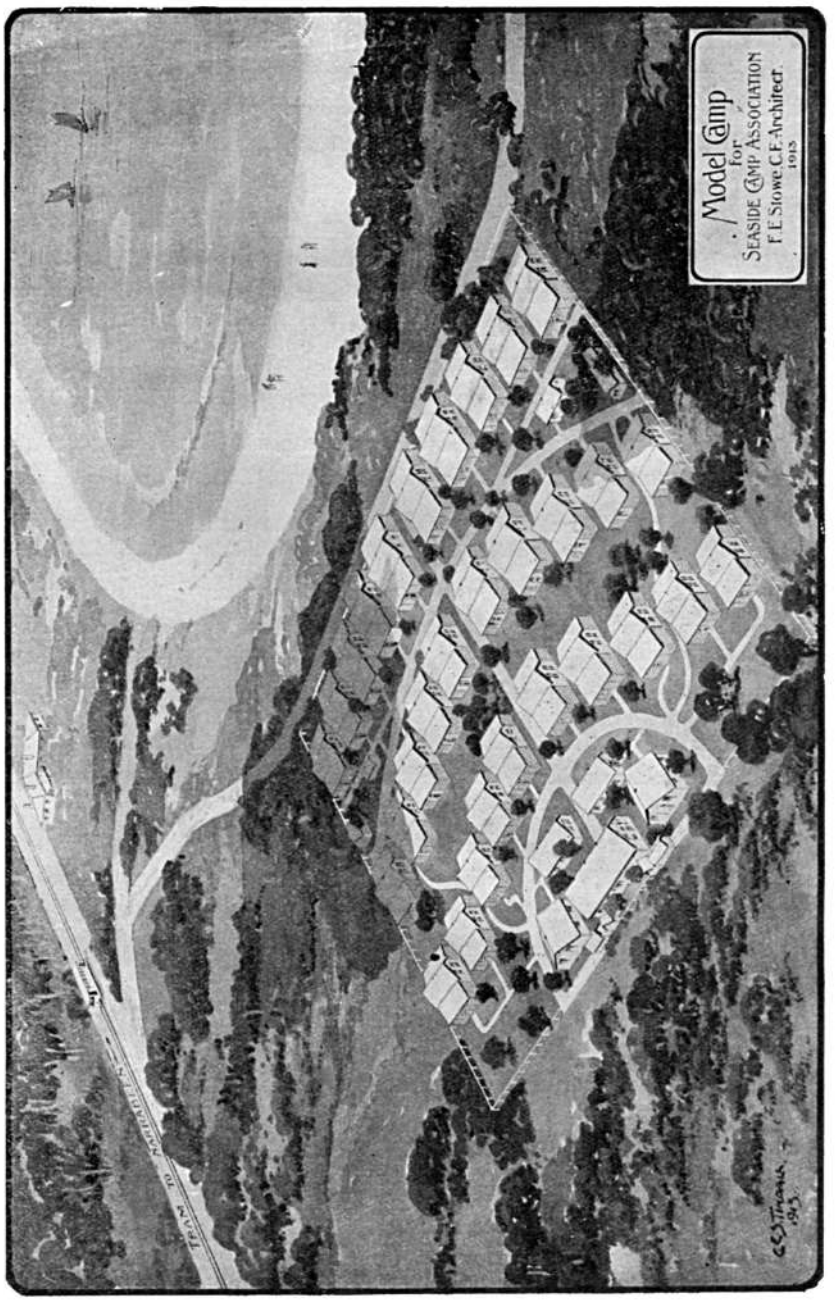
The invention of the flying machine and the necessity for landing stages set prophets predicting the cities of the future as being flatroofed with the abolition of towers and spires. The advent of wireless telegraphy, with its early necessity for tall aerials, however, checked the flat-roofed prophets; and yet the advance in wireless will, no doubt, supplant the perpendicular aerial by the horizontal.

But aerial navigation will not abolish the spire, tower or dome; it will not bring such a radical change in architecture as its novelty might suggest. There will be areas over which flying will not be permitted. The falling of an airship upon a museum or Art Gallery may mean the total destruction of the building, as airships are great masses of machinery and explosive petrol, and to-day they are over 700 feet long, with every possibility of increasing in size and weight.

Air roads will be allocated into and through cities and will probably be over present railway tracks or special road lines.

The question of the aerial right-of-way over private property will soon have to be settled. It has already been questioned in Australia, when Australia's first aviator, W. Hart, was summoned for flying over privately owned land. There were two charges, that of flying over private property, the right of which was considered to extend upwards, and that of frightening some cattle, one of which died from shock. The judge passed over the first charge, leaving it to the future to be settled, as settled it soon must be. It will, no doubt, result in the establishment of air roads.

The greatest change in the city of the future will not be in its



The Plan of the "Seaside Camp for Country Women and Children," by Major F. Ernest Stowe, Architect and Engineer.

planning, not in the character of its houses, but in the character of its citizens.

With better environment, a better class of individual will result. To-day it would be unsafe to abolish garden railings in Australian cities; yet, in America, where towns are developing into garden cities, fences and railings are disappearing, proving that beautiful surroundings are touching the better spirit of the people.

Crime is, after all, mostly a matter of environment; and the improved living conditions of the city beautiful will reform the criminal and make him a man of merit. With better natures uppermost, honesty in business dealings will be general, and mankind will knit closer together in fraternal companionship.

The town planners of to-day are imbued with that spirit, and look with hope at the building of an ideal city from which the spirit of the world's peace can flow and influence the nations of the earth.

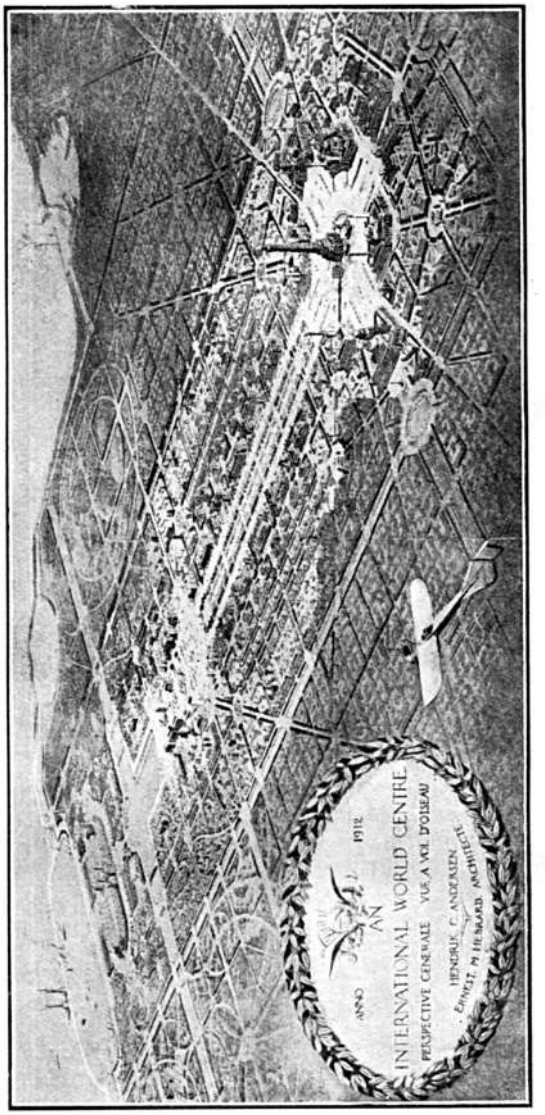
A scheme for such a city is winning world wide support. Its originator is Hendrik Christian Andersen, and his objective is the establishment of a great city as a world centre to house international interests and unite peoples and nations for the attainment of peace and progress upon broader humanitarian lines.

The author of the scheme considers that one of the most pressing questions of the age is how best to further right and friendly relations between men and nations.

"We would have this," he asserts, "in an international centre, assimilating and distributing intellectual and scientific knowledge from one people to all people, because it would go far towards creating peaceful economic relations, as well as towards facilitating practical co-operation between all men and all nations.

"The products of all peoples are essential to the progress of the world. Yet, at present, should one State suffer from the antagonism between capital and labor in another, even though a solution might be arrived at, yet no redress is possible till such a centre is created as can unite the representatives from all nations and bring them together to discuss these questions scientifically and economically for the welfare of labor and of capital, of industry and humanity.

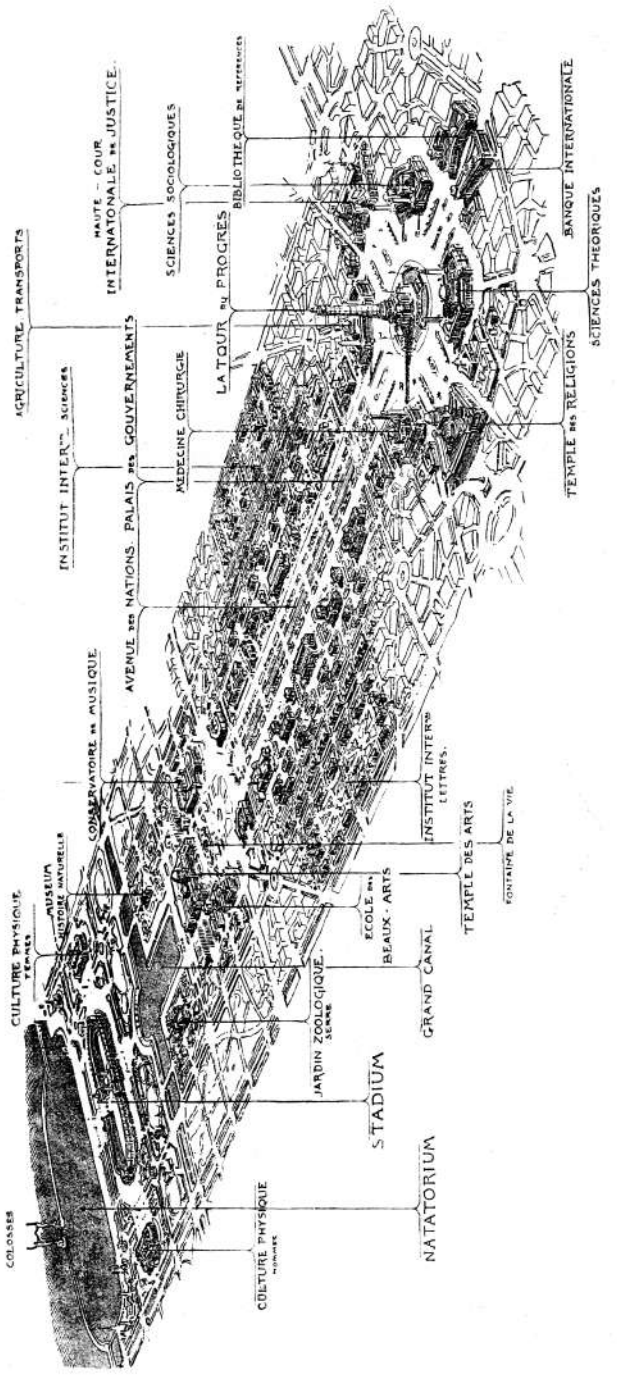
"The plans then for an International World Centre of Communication have been made that nations separated by ocean and mountains, by language and customs, by politics and prejudice, by religion and culture, might here imbibe living and vibrating knowledge at a great fountain, and offer of their best. . . ."



THE CITY OF THE FUTURE.

Suggested design for proposed World's Centre—"The City of Peace."

Hendrik C. Andersen and Ernest M. Hebrard, Architects.



THE CITY OF THE FUTURE.

Plan showing location of principal buildings in "The City of Peace."

Hendrik C. Andersen and Ernest M. Hebrard, Architects.

As will be seen by referring to the general plan, the Tower of Progress, rising in the midst of the Congress Square, forms the heart of both international centre and city. Long avenues, radiating from it in all directions, connect every part of the latter with the great monumental group. This last is divided from the residential, business and industrial quarters by a broad canal surrounding it on three sides and traversed by bridges.

The adjacent city is divided into zones, each containing several sections or quarters. These zones are likewise separated from one another by broad belts of water. The outermost of these forms a wide,

PROFESSOR R. F. IRVINE, M.A. (SYDNEY UNIVERSITY.)
Vice-President of the Town Planning Association (N.S.W.) and the author of a splendid Housing Report compiled as a special commissioner of the N.S.W. Government.

navigable canal, connecting the sea with the inland basins for commerce, which lie at the further extremity of the town.

The Terminal Railway Station, lying on the main axis of the plan, is widely accessible. Above ground it forms the radiating point of a network of broad avenues, which are to the greatest extent possible to be kept free from rails. Underground, it communicates with sub-stations placed in immediate connection with all the principal buildings of the international centre and with the several quarters of each zone. Two branches of the main line of rails are carried underground, to the right and left, as far as the sea. By these simple lines of communication, none of the heavy traffic need to be carried above. The navigable canal, however, furnishes an additional mode for the transportation of freight.

The civic centre is situated in the first zone, and lies opposite the terminal railway station. It is designed with a great square which will be surrounded with public buildings. From this centre spread the principal boulevards upon which hotels, theatres, and the largest shops may be built.

To right and left of this business and administrative section are the residence quarters, six in number, capable of holding from 1000 to 120,000 inhabitants each. These are planned on the checker-board system, which has been found to be the most convenient since motor power has superseded animal traction.

It will be noted that each section has its own central square, about which ample space is allotted for those buildings for the public service which are essential to the needs of the people, such as the administrative buildings, schools, libraries, conference-halls, markets, theatres, churches, etc. Each quarter is supplied with heat from a central station on the outskirts of the town, thus avoiding the nuisance of smoke and gas and greatly facilitating sanitary conditions.

Long, straight avenues, starting at the business section, traverse the residential quarters and end in two large parks bordering the sea.

Thick masses of verdure, in the form of a long band of gardens and playgrounds, edging the second canal, separate the one zone from the other. Directly connected, however, with the railway station, the navigable canal and business quarters, are the freight depots, gas and power houses, as well as the coal and wood yards, slaughter-houses, etc. All these have been carefully studied with a view to making them practical and advantageous in their relation to the whole plan. To right and left, and greatly enriched by parks and recreation grounds, begin the garden cities. Stretching towards the sea, in spaces invariably wooded, spread the hospital and sanatorium grounds.

Beyond the navigable canal, are the industrial quarters, and towards the open country stretch the garden suburbs. Each of these is provided with its own schools, markets, libraries, churches, theatres, recreation grounds and the necessary administrative buildings. The dwellings are placed in the midst of greenery and stand singly or in groups in such manner that light and air may penetrate profusely. Reached by the navigable canal, as well as by underground rail, these garden suburbs thus enable working men and women to enjoy pleasant and healthful conditions, while being within easy reach of both city and industrial quarters. They are, moreover, so placed that they can be indefinitely extended.

Thus, radiating from the Tower of Progress, the several parts of the city permit a new circulation from one to another, and provide the residents of each quarter with the chief necessities conducive to health and the enjoyment of life

It is a magnificent scheme, gloriously ambitious; and yet, with the great development of town planning and the consequent improvement of mankind, who can, in these rapid days of action, dare say it shall not be an accomplished fact within the present century.

The location of this World's Centre has not yet been determined; but as it is to be the World's City of Peace, what more appropriate location is there than Australia—the only Continent that has never known war.

The author acknowledges assistance from the following works:—

"Transactions of the Town Planning Conference, London, 1910."

"Housing of Workmen in England and America," by Professor R. F. Irvine, M.A.

"How to Lay Out a Town," by John Sulman, F.R.I.B.A.

"Town Planning in Practice," by Raymond Unwin.

"The Science of Town Planning," by J. D. Fitzgerald, L.L.B.

"Town Planning, Past, Present and Possible," by H. Inigo Triggs.

"Notes on the Federal Capital of Australia," by Col. W. L. Vernon, F.R.I.B.A.

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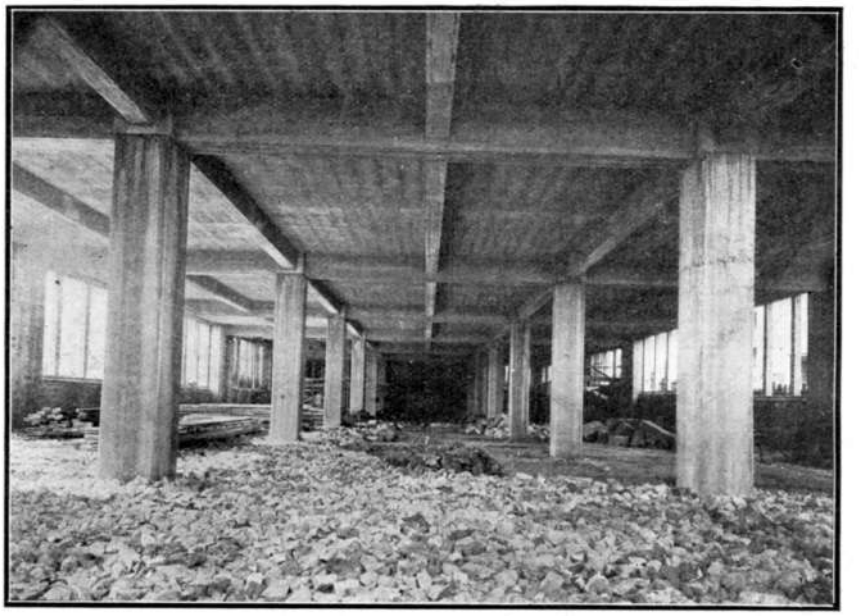

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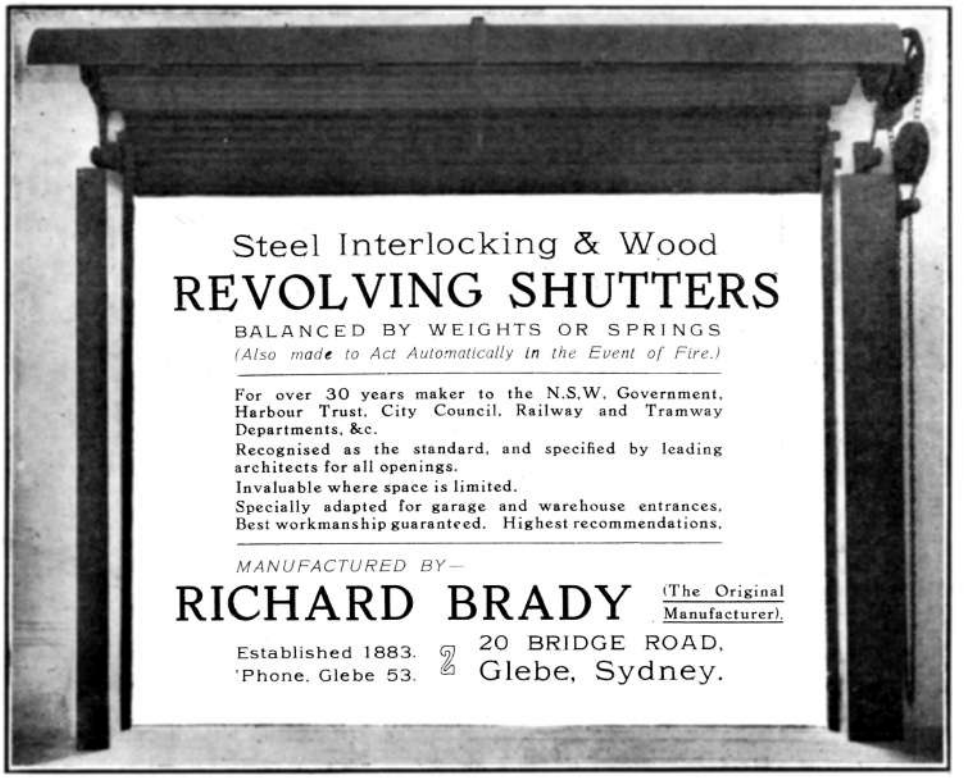
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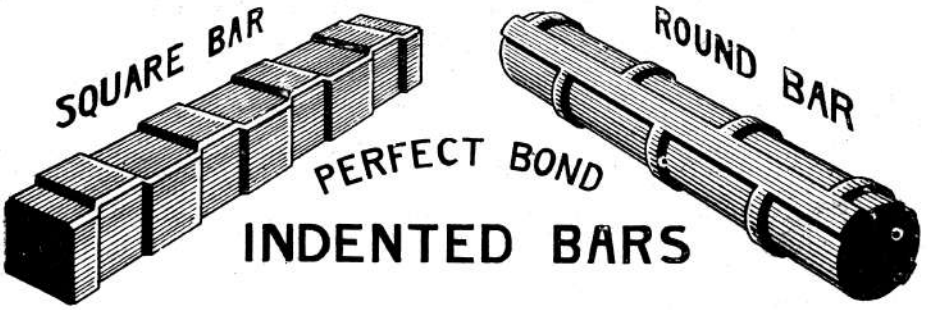

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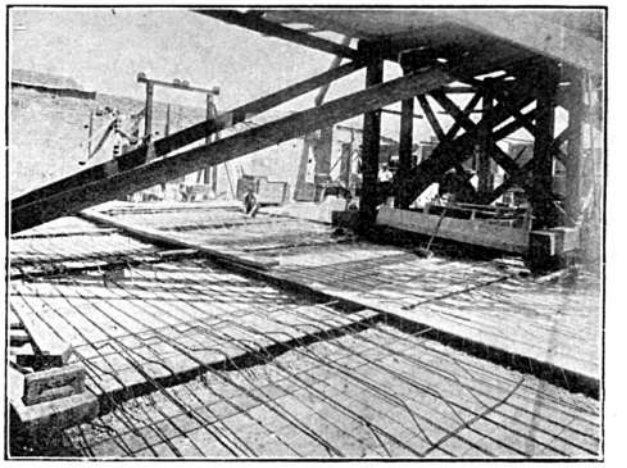

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