

BUILT IN THE TENTH CENTURY, BUILT ON THE
RECTILINEAR ROMAN PLAN

The cathedral was built on the site of the ancient palatine building. In 1750 the new wall took in the neighbouring approaches; the face of the town was divided. The heart of the city has remained rectilinear throughout the ages.

I

THE PACK-DONKEY'S WAY AND MAN'S WAY

MAN walks in a straight line because he has a goal and knows where he is going; he has made up his mind to reach some particular place and he goes straight to it.

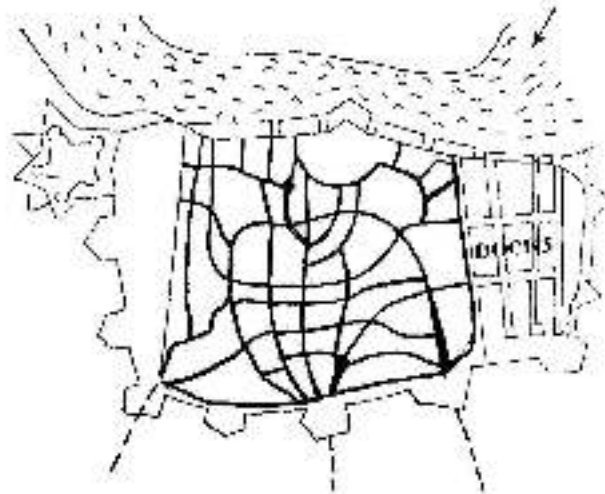
The pack-donkey meanders along, meditates a little in his scatter-brained and distracted fashion, he zigzags in order to avoid the larger stones, or to ease the climb, or to gain a little shade; he takes the line of least resistance.

But man governs his feelings by his reason; he keeps his feelings and his instincts in check, subordinating them to the aim he has in view. He rules the brute creation by his intelligence. His intelligence formulates laws which are the product of

experience. His experience is both of work; man works in order that he may not perish. In order that production may be possible, a line of conduct is essential, the laws of experience must be obeyed. Man must consider the result in advance.

But the pack-donkey thinks of nothing at all, except what will save himself trouble.

The Pack-Donkey's Way is responsible for the plan of every continental city; including Paris, unfortunately.



ANTWERP IN THE SEVENTEENTH CENTURY

The city has grown year by year, its plan being dictated by the existing roads leading to it. The result is an ingenious series of adaptations made during many centuries. Namely the less, the plan is a fine one of a circular type.

In the areas into which little by little invading populations filtered, the covered wagon lumbered along at the mercy of bumps and hollows, of rocks or mire; a stream was an intimidating obstacle. In this way were born roads and tracks. At cross roads or along river banks the first huts were erected, the first houses and the first villages; the houses were planted along the tracks, along the Pack-Donkey's Way. The inhabitants built a fortified wall round and a town hall inside it. They legislated, they toiled, they lived, and always they respected the

Pack-Donkey's Way. Five centuries later another and larger enclosure was built, and five centuries later still a third yet greater. The places where the Pack-Donkey's Way entered the town became the City Gates and the Customs officers were installed there. The village has become a great capital; Paris, Rome, and Stamboul are based upon the Pack-Donkey's Way.

The great capitals have no arteries; they have only capillaries: further growth, therefore, implies sickness or death. In order to survive, their existence has for a long time been in the hands of surgeons who operate constantly.

The Romans were great legislators, great colonizers, great administrators. When they arrived at a place, at a cross roads or at a river bank, they took a square and set out the plan of a rectilinear town, so that it should be clear and well-arranged, easy to police and to clean, a place in which you could find your way about and stroll with comfort the working town or the pleasure town (Pompeii). The square plan was in conformity with the dignity of the Roman citizen.

But at home, in Rome itself, with their eyes turned towards



ELM: THE ANCIENT STRATIFIED ENCAMPMENT

Six centuries later, everything remains the same!

the Empire, they allowed themselves to be stifled by the Pack-Donkey's Way. What an ironical situation! The wealthy, however, went far from the chaos of the town and built their great and well-planned villas, such as Hadrian's villa.

They were, with Louis XIV, the only great town-planners of the West.

In the Middle Ages, overcome by the year 1600, men accepted the leading of the pack-donkey, and long generations endured it after. Louis XIV, after trying to tidy up the Louvre (i.e. the Colonnade), became disgusted and took bold measures: he built Versailles, where both town and château were created in every detail in a rectilinear and well-planned fashion; the Observatoire, the Invalides and the Esplanade, the Tuileries and the Champs Élysées, rose far from the chaos, outside the town; all these were ordered and rectilinear.

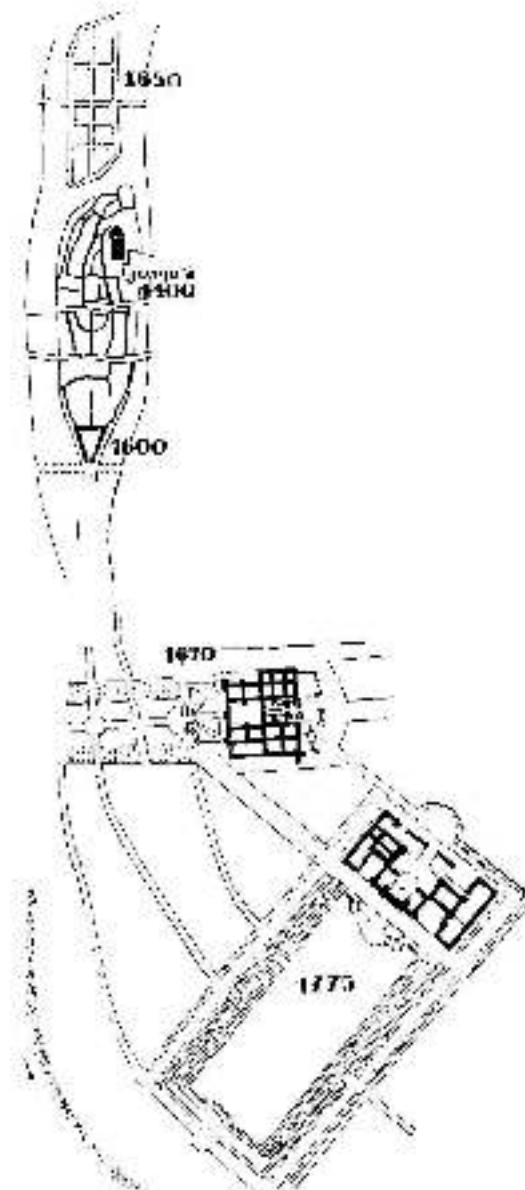
The overcrowding had been exercised. Everything else followed, in a masterly way: the Champ de Mars, l'Étoile, the avenues de Neuilly, de Vincennes, de Fontainebleau, etc., for succeeding generations to exploit.

But imperceptibly, as a result of carelessness, weakness and anarchy, and by the system of "democratic" responsibilities, the old business of overcrowding began again.

And as if that were not enough, people began to desire it; they have even created it in invoking the laws of beauty! The Pack-Donkey's Way has been made into a religion.

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The movement arose in Germany as a result of a book by Camille Sitte on town planning, a most wilful piece of work; a glorification of the curved line and a specious demonstration of its unrivalled beauties. Proof of this was advanced by the example of all the beautiful towns of the Middle Ages; the author confounded the picturesque with the conditions vital to the existence of a city. Quite recently whole quarters have been constructed in Germany based on this *aesthetic*. (For it was purely a question of aesthetics.)

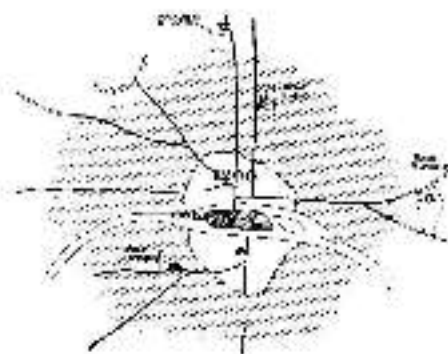


PARIS: THE CITÉ, THE PLACE DAUPHINE, THE SAINT-LOUIS, THE INVALIDES, L'ÉCOLE MILITAIRE

A significant diagram. These outline drawings, which are all to the same scale, show the trend towards order. The town is being policed, culture is manifesting itself and Man is able to create.

This was an appalling and paradoxical misconception in an age of motor-cars. "So much the better," said a great authority to me, one of those who direct and elaborate the plans for the extension of Paris; "motors will be completely held up!"

But a modern city lives by the straight line, inevitably; for the construction of buildings, sewers and tunnels, highways, pavements. The circulation of traffic demands the straight



FIRST LUTETIA, THEN PARIS

The buildings still occupy the original sites, e.g. Notre Dame, le Palais. The great provincial roads, from north, east and south, from Issy, from Cléry, from the maritime provinces, and from the temple of Mercury (Montmartre), all remain. Later, the Abbays form definite landmarks. As far as town planning is concerned, there is nothing but chance and the taking the line of least resistance. Haussmann, later on, will open up and remodel the city to the best of his ability. But it still remains based on the "Pack-Donkey's Way."

line; it is the proper thing for the heart of a city. The curve is ruinous, difficult and dangerous; it is a paralyzing thing.

The straight line enters into all human history, into all human aim, into every human act.

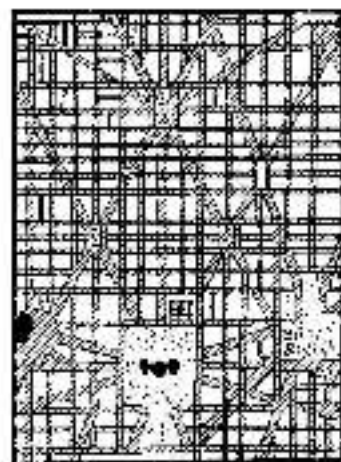
We must have the courage to view the rectilinear cities of America with admiration. If the æsthete has not so far done so, the moralist, on the contrary, may well find more food for reflection than at first appears.

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MINNEAPOLIS (A FRAGMENT)

This gives us an indication of a new moral outlook in social life, and provides some clue to the material achievements which Americans and Europeans can come and assist to feel. Our epoch has now reached a stage in which the Old World must react to the new conditions and must consider the question of Town Planning.



WASHINGTON (A FRAGMENT)

A work of the mind. Here the victory is on the other side; there were no more Pack-Donkey's Ways when this plan was designed, but instead there were Railways. The æsthetic problem still remains.

The winding road is the Pack-Donkey's Way, the straight road is man's way.

The winding road is the result of happy-go-lucky heedlessness, of looseness, lack of concentration and animality.

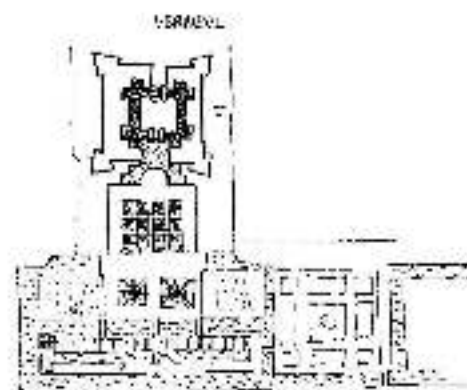
The straight road is a reaction, an action, a positive deed, the result of self-mastery. It is sane and noble.

A city is a centre of intense life and effort.

A heedless people, or society, or town, in which effort is relaxed and is not concentrated, quickly becomes dissipated, overcome and absorbed by a nation or a society that goes to work in a positive way and controls itself.

It is in this way that cities sink to nothing and that ruling classes are overtaken.

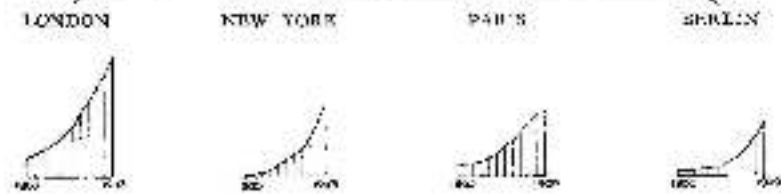
The right angle is the essential and sufficient implement of action, because it enables us to determine space with an absolute exactness.



ANNOUET DU CERCEAU (RENAISSANCE)

The Artist and the Planner have been at work.

GROWTH OF POPULATION



The GREAT CITY is a *recent* event, with devastating consequences!

The menace of to-morrow.

	1800	1880	1910
PARIS	547,000	2,200,000	3,000,000
LONDON	800,000	3,800,000	7,200,000
BERLIN	182,000	1,840,000	3,400,000
NEW YORK	50,000	2,500,000	4,500,000

VII

THE GREAT CITY

THE GREAT CITY IS A RECENT EVENT AND DATES
BACK BARELY FIFTY YEARS

The growth of every great city has exceeded all prevision.

This growth has been a mad race, with disturbing possibilities.

The industrial life and the commercial life which are adjusting themselves to it are new phenomena on an overwhelming scale.

Means of transport are the basis of all modern activity.

The security of the dwelling is the condition of social equilibrium.

The new phenomenon of the great city has arisen within the framework of the old city.

The disproportion is such that an immense crisis has been brought about.

THIS CRISIS IS ONLY AT ITS BEGINNING. It is a constant source of disorder.

Such cities as do not adapt themselves quickly to the new conditions of modern life will be stifled and will perish. Other and better adapted cities will take their place.

The anachronistic persistence of the original skeleton of the city paralyzes its growth.

Industrial and commercial life will be stifled in towns which do not develop.

The conservative forces at work in great cities obstruct the development of transport, congest and derialize activity, kill progress and discourage initiative.

The deranged state of these old towns and the intensity of modern toil lead to physical and nervous sickness. Modern life requires the recuperation of the forces which are used up in pursuit of it. Hygiene and moral health depend on the lay-out of cities. Without hygiene and moral health, the moral cell becomes atrophied.

A country's worth can be measured by the vigour of its inhabitants.

The cities of to-day cannot respond to the demands of the life of to-day unless they are adapted to the new conditions.

The great cities determine the life of a country. If the great city is stifled, the country goes under.

In order to transform our cities we must discover the fundamental principles of modern town planning.

(From a Manifesto accompanying the *Diagrams of a Contemporary City*: Salon d'Automne, 1922.)

The great city determines everything: war, peace and toil. Great cities are the spiritual workshops in which the work of the world is done.

The solutions accepted in the great city are those which are singled out in the provinces; fashions, styles, development of ideas and technical methods. That is the reason why the reorganization of the great city carries with it the renewal of the whole country.

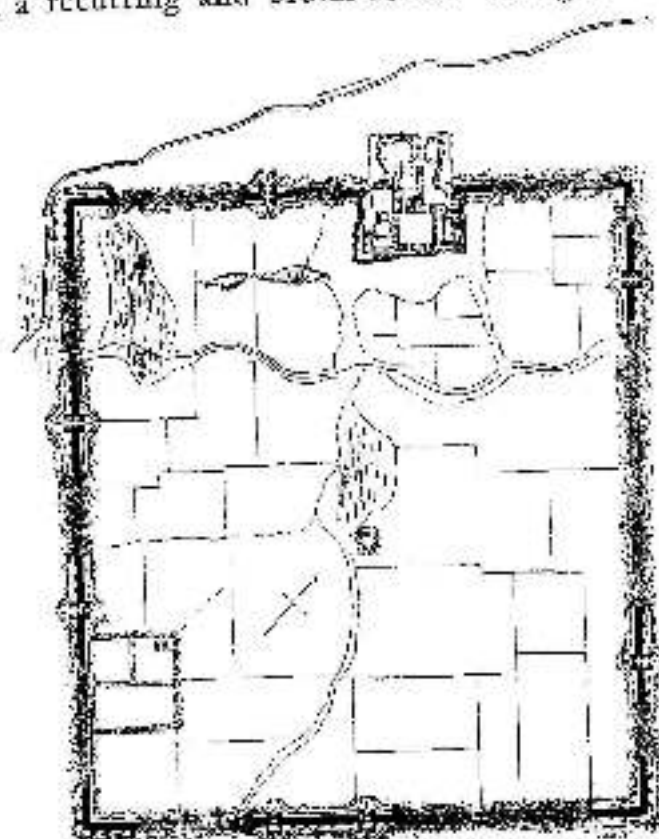
Let us get down to facts: countries are composed of millions of individuals engaged on definite tasks; the daily events of life are enough to preoccupy the restricted field of the day's thought. So it seems to us that we work as we do because this has always been the case. Yet history can show us alternations of famine and abundance, waves of happiness or of depression; it shows us the rise of nations and hegemonomies, and at the same time their decline and fall: it attributes different coefficients to different races as indications of their worth. The whole of history is an evolutionary movement. Born in the first place in the scattered tents of pastoral peoples, as mankind developed a social life so its field of action was transferred to villages and towns, and finally to the great capitals. These are now its home, and they affect profoundly the ordering of every other great city. Right away in the provinces, in factories or in ships at sea, in workshops and stores, in field and in wood, the work carried on is dictated by the great city: the conditions of this work, its quality, its price, its quantity and destination; the demand and the means of execution all come from the great city.

Now that the machine age has let loose the consequences attaching to it, *progress has seized on a new set of implements with which to quicken its rhythm*; this it has done with

such an intensification of speed and output that events have moved beyond our capacity to appreciate them; and whereas mind has hitherto generally been in advance of accomplished fact, it is now, on the contrary, left behind by new facts whose acceleration continues without cease; only similes can adequately describe the situation; submersion, cataclysm, invasion. This rhythm has been accelerated to such a point that man—(who has after all created it with his small individual inventions, just as an immense conflagration can be started with a few pints of petrol and one little match)—man lives in a perpetual state of instability, insecurity, fatigue and accumulating delusions. Our physical and nervous organization is brutalized and battered by this torrent; it makes its protest, of course, but it will soon give way unless some energetic decision, far-sighted and not too long delayed, brings order once more to a situation which is rapidly getting out of hand.

The peasant, as he works his land and sows his wheat, looks to the sun and rain to reveal once again the miraculous virtue of the seed. But other men, impelled by some force (the divine in man) to create with hand and mind, have laid the foundation stone of solidarity, and in getting away from mere individual achievement they are creating a collective manifestation. They are erecting an immense structure of labour. This collective manifestation is united by the spirit of "order," the first necessity of all action. A *feeling* is in the air, a sort of general assent to a group of new and opportune doctrines. The pyramid of values mounts slowly, stage by stage; a succession of developments informed by a prophetic enthusiasm. Light streams about us on these heights. Beauty emerges at times, the result of a real harmony. New forms are constantly appearing, based on what pleases the senses and the spirit. From every corner those who feel the emptiness of the old narrow ways and the urge of ambition flock to these centres of activity. It is only quite recently that the available material means at our disposal have made it possible for a wealth of ambition to be tapped and directed

into the centres of our great cities. These centres grow overcrowded and spread; men throng to them and squeeze in somehow, only to have their wings scorched by a flame which spares nobody. The law of survival operates perpetually and with a recutting and brutal force. The great city, with



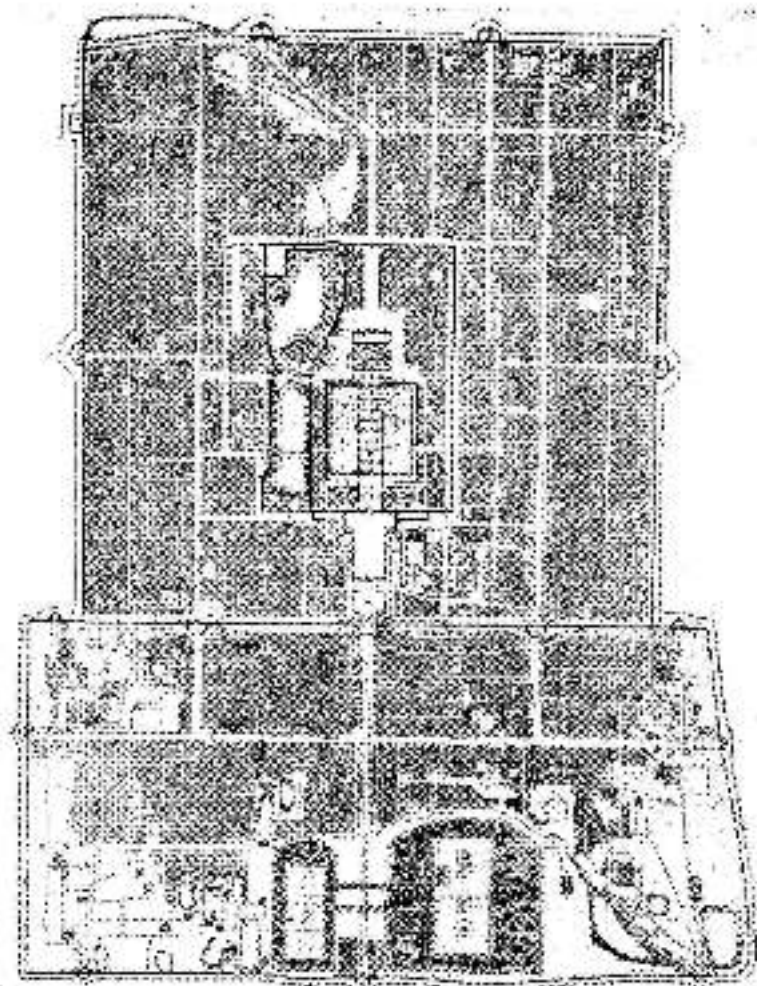
KHORABAD

its throbbing and its tumult, crushes the weak and raises the strong. And here it is, created by the peaceful *hinterlands*, that we shall find the transcendental and intensely vital cell.

... And far away, another *hinterland* has created another great city. And further away there are still others.

And these great cities challenge one another, for the mad urge for supremacy is the very law of evolution itself to which

we are subjected. We challenge, we quarrel, we go to war. Or else we agree and co-operate. From the great cities, the



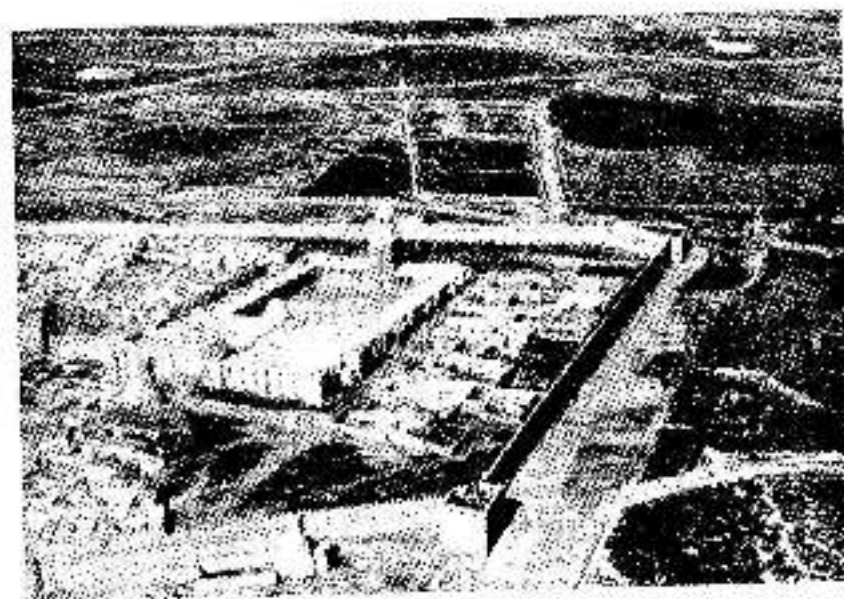
PEKING

Compare this plan with that of Paris, a little further on. And we Westerners felt called on to invade China in the name of civilization!

living cells of the earth, come peace or war, abundance or famine, glory, the triumph of the mind and beauty itself.



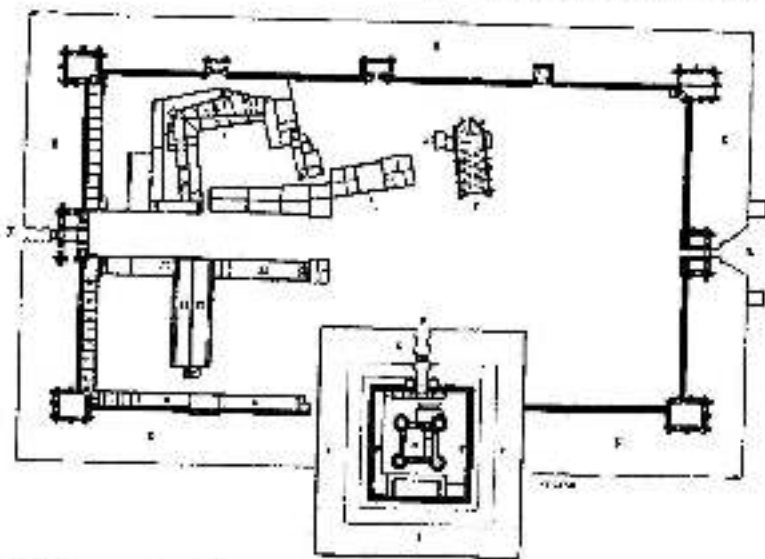
ROMAN CIVILIZATION: AN AERIAL VIEW OF ILDAGAN



NORTH AFRICA: KAIROUAN



PALMANOVA: A FORTIFIED TOWN OF THE RENAISSANCE



FRANCE: THE CHÂTEAU DE VINCENNES, FOURTEENTH CENTURY

The great city expresses man's power and might; the houses which shelter such an active ardour should follow a noteworthy plan. At least, this seems to my mind the logical conclusion of a quite simple reasoning.

Antiquity has left us, in its various remains, a demonstration of this fact. There have been golden moments when the power of the mind dominated the rabble. We have already seen it clearly in regard to Babylon and Peking, and they are but examples among many; great cities and smaller ones, even quite small ones, which during certain noble periods were illumined by talent, science and experience. Everywhere



MONPAZIER (PÉRIGORD), TWELFTH CENTURY

there are remains, or units still intact, which provide us with a model: Egyptian temples, the rectilinear cities of North Africa (e.g. Kairouan), the sacred cities of India, the Roman cities of the Empire, or those built in the great tradition: Pompeii, Aigues-Mortes, Monpazier.

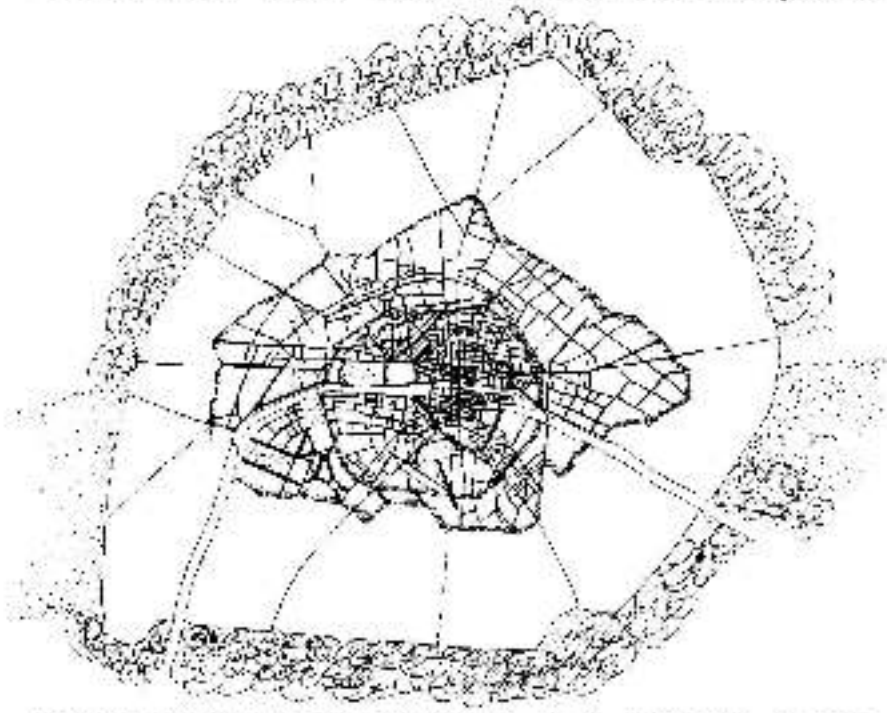
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The structure of cities reveals two possibilities; a progressive growth, subject to chance, with resultant characteristics of slow accumulation and a gradual rise; once it has acquired its gravitational pull it becomes a centrifugal force of immense power, bringing the rush and the mob. Such was Rome; such are now Paris, London or Berlin.

Or on the other hand, the construction of a city as the

expression of a preconceived and predetermined plan embodying the then known principles of the science; such is Peking and such are the fortified cities of the Renaissance (e.g. Palmanova), or the colonial cities set by the Romans amongst their barbarian subjects.

Our Western world, when Rome had been brought down



THE SIX SUCCESSIVE BOUNDARIES OF PARIS, DICTATED BY THE
"PACK-DONKEY'S WAY"

On the periphery there is the strange hold of the nearer suburbs, except that to right and left there are open parts; the Bois de Vincennes and the Bois de Boulogne.

exhausted by an effort too far-reaching, found itself left with the most rudimentary equipment; centuries passed before, little by little, out of the entrenched camp (which was a reminiscence of the savage surrounding his bivouac with his wagons) there began to emerge an intention, a clear idea, with a sufficiency of technical means to hand and with the

necessary provision in regard to financial resources. Men's minds, under great kings, formed their conception and strove to realize it; there were magnificent attempts, rays of light amidst the barbaric stirring; such are the Place des Vosges, under Louis XIII; Versailles, and the Île Saint-Louis, under Louis XIV; the Champ de Mars, under Louis XV; l'Étoile and the main roads leading to Paris under Napoleon. And finally, that magnificent legacy left by a monarch to his people: the work of Haussmann under Napoleon III.

We struggle against chance, against disorder, against a policy of drift and against the idleness which brings death; we strive for order, which can be achieved only by appealing to what is the fundamental basis on which our minds can work: geometry. In the general confusion there appear crystallizations of pure forms which bring strength and reassurance and give to beauty the material support it must have. At such moments, man has reflected well, he has employed the means proper to him and has produced works of a human order. So proud are we of his achievements that they form all our precedents. We surround these historic manifestations with such a veneration that it completely absorbs us. This pride is fully justified, but nevertheless we are apt to forget that we ourselves have so far done nothing. That living force, which inspired these noble creations, would be hated by us if by chance we met it to-day in the persons of men animated by similar passions. Our veneration creates in us a restless solicitude as if we were guarding the souls of the dead, as if we were watchmen in a cemetery. Our preoccupation with the past has given us the soul of an undertaker's mute. And for all response to the splendid and overwhelming impact of this new age we take on the air of some old gentleman pottering about among his old engravings, who, completely taken aback, says, "Go away, I am *much* too busy!"

So we may say that confusion is woven into the very texture of our modern cities. Built along the "Pack-Donkey's

Ways,"¹ the childlike configuration of their beginnings has persisted without change in the very heart of the immense cities of to-day; they are strangled in this fatal and disorderly network. This evil state of things grew worse from the tenth to the nineteenth century; the Donkey's Ways have become institutions and the main arteries of the city. In those days death gave you a good run for your money. *But the age of machinery arose, and death knocks constantly at the door.*

In a mere hundred years the population of the great city has increased at an incredible rate.

	1800.	1880.	1910.
Paris	647,000	2,200,000	3,000,000
London	800,000	3,800,000	7,200,000
Berlin	182,000	1,840,000	3,400,000
New York	60,000	2,800,000	4,500,000

And when, after the War, the resources of our modern equipment were at last appreciated and more fully developed, then we began to feel choked. And this sense of suffocation is a real thing. We have had our warning.

All over the world the problem of the great city is one of tragic importance. Men of *business* have at last settled what environment best suits their affairs; they have now definitely concentrated in the centres of towns. The rhythm which actuates business is obvious; it is speed and the struggle for speed. It is important to be housed close together and to be in touch; important also to be able to act easily and quickly. Alas, we have become like the rusty engine of some out-of-date motor-car; the chassis, the body, the seats (the peripheries of our cities) can carry on still, but the motor (the centre) is *seized!* This means complete breakdown. *The centres of the great cities are like an engine which is seized.* Here we have the very first problem of town planning.

A city which has come to a dead stop means a country which

¹ See Chapter I.

does the same. We hesitate to admit the truth to ourselves; we have not the courage to diagnose the disease and recognize it, and to take the necessary bold measures to deal with it. Nevertheless, some forcible solution must be found.

But as against this there stand the following barriers:

The law of least resistance.

Lack of responsibility.

Respect for the past.

The curve of progress is quite clear: it is a matter of cause and effect, of deductions which are quite simple, consecutive and exact. But the dull and heavy mass of narrow interests, of acquired facts, of laziness, and of the sickly fog of a criminal sentimentality, raise up a giant obstacle. Boldly to confront this state of mind with the real facts is precisely the problem of town planning; to animate with one common impulse the overwhelming complexity of the present social phenomenon and to maintain movement where paralysis has begun to set in.

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Right up to the twentieth century, towns were laid out with a view to military defence. The boundary of a town was a definite thing, a clear organization of walls, gates with streets leading to them and from them to the centre.

Moreover, up to the nineteenth century a town was entered from the outside. To-day the city's gates are in its *centre*. For its real gates are the railway stations.

The city of to-day can no longer put up a military defence; its boundaries have become a confused and stalling zone comparable only to a camp of roving gypsies, who may have plumped their overcrowded caravans down anywhere. The result is that the city can only extend through this formidable obstruction.

The new factor of suburbs immediately adjoining a town did not exist in the period of fortified towns whose sharply defined limits dictated the precise ordering of the town itself.

The centres of our towns are in a state of mortal sickness, their boundaries are gnawed at as though by vermin.

How to create a zone free for development is the second problem of town planning.

Therefore my settled opinion, which is quite a dispassionate one, is that the centres of our great cities must be pulled down and rebuilt, and that the wretched existing belts of suburbs must be abolished and carried farther out; on their sites we must constitute, stage by stage, a protected and open zone, which when the day comes will give us absolute liberty of action, and in the meantime will furnish us with a cheap investment, whose value will increase tenfold, nay, a hundred-fold. If the centres of our cities have become a sort of intensely active form of capital for the mad speculation of private enterprise (New York is a typical instance), this projected zone would represent a formidable financial reserve among the resources of municipalities.

Already in various countries municipalities are redeeming the suburban zones by expropriation. Actually it is a way of making sure of a "lung" for their city.

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It is almost impossible to say everything and say it in a reasonable number of words. The theme is so new and its conclusions are so grave that, at the risk of repeating myself, it will perhaps be salutary to go into yet other aspects of the problem. Here, then, is an extract from a report made to the Town Planning Congress of Strasbourg in 1923.

Municipalities and the rulers of our great cities are busily engaged on the problems of the large suburbs, and are trying to provide housing further out for the populations which have descended on our capital cities like an invasion; their efforts are praiseworthy but incomplete. They ignore the heart of the problem, which is that of the *centres of our great cities*. It is as though we were to concentrate on an athlete's muscles and blind ourselves to the fact that his heart was weak and his life in danger. If it is a good thing to take the overcrowded populations of the boroughs farther out, it must also be remembered that every day, and at the same hour, those very same crowds which are better housed in the garden suburbs must return to the centre of the city. To improve housing conditions by the creation of garden cities is to leave entirely on one side the question of the city's *centre*.

We shall find it salutary to try and visualize exactly what is the phenomenon

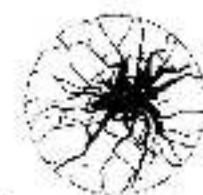
of the great city. The great city means simply four or five million individuals gathered together by chance in a definite spot. The great city has its *raison d'être*. In the biology of a country it is the vital organ; the whole national organization depends on it, and national organizations involve an international organization. The great city is the heart, the active centre of the cardiac system; it is the basin, the directing centre of the nervous system, and all its country's activities, all international events, are born in, and come from, the great city. Economics, sociology, politics, all are centred in the great city, and any modification it may bring about has its repercussion in the remotest corners of the provinces. The great city is the place where active "world elements" come together. This contact must be *permanent*, hand to hand; the decisions which arise from it are the result of hasty

THE ACTUAL DISPOSITION OF THE STREETS.



Ancient conditions still persisting.

TRAFFIC MOVEMENT IN GREAT CITIES.



Present conditions leading to its crisis which is only just beginning.

conferences and involve activities affecting all countries. The telegraph, the railway, the airplane have in less than fifty years so accelerated the speed at which international contacts can take place that a complete revolution has taken place in work. The march of ideas takes place all within the narrow area of the centres of great cities; these centres are, indeed, the vital cells of the world.

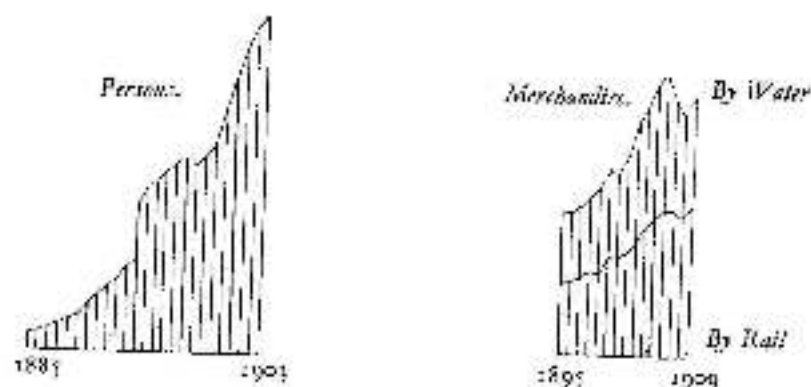
Now, the centres of our great cities to day are, as it were, implements or tools which can only be utilized with the greatest difficulty; punctuality in keeping vital appointments is nearly impossible because of the crowded streets. More than that, the occupants of the offices in which all this business is done, these offices with their narrow corridors and dark rooms, suffer a real handicap, a real calamity as a result of so much congestion.

In the first conclusion we come to is that a harmful process of wear and tear quite outside the conditions of their actual work is rapidly altering the very people who ought to be preserving all their mental alertness and powers of clear thinking; and that, furthermore, a country which had the centres of its towns well organized would have everything in its favour for gaining superiority over the others; an exactly similar superiority to that of the manufacturer who has an up-to-date plant. The results, good or bad, would be felt by the national purse.

It is necessary, therefore, to investigate with particular attention the present bad conditions in our great cities; it is a matter indeed of the greatest possible urgency. The lay-out of our great cities as we see them to day shows that, as a result of their modest beginnings (the ancient small town or village) and the extraordinary developments of the last century, their centres are made up of short narrow lanes, and that only the periphery possesses anything like main arteries. Yet it is in the centre that the great and overwhelming circulation of traffic takes place, while the outskirts remain relatively empty, being given up to family life.

And if one compares the state of the streets of the great city with the state of its traffic, they will be seen to be wholly opposed to each other. The streets represent an old and out of date state of affairs, whilst traffic represents an existing state of affairs. Here is the crisis (there is no need for me to enlarge on this point; every great city is undergoing its disastrous effects). But if we look at the curve of the temperature chart in this crisis we must realise that it is *slumbering madly*; we are getting into a blind alley.

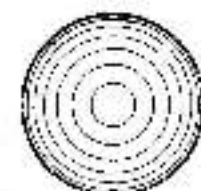
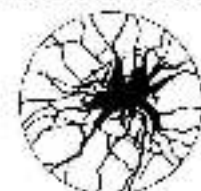
INCREASE IN TRAFFIC.



Figures prove that the great city is a recent event, dating only some fifty years back; and that the increase in population has surpassed all anticipation. Between 1800 and 1910, that is to say, in one hundred years, Paris grew from 500,000 to 3,000,000 people; London from 800,000 to 7,000,000; Berlin from 180,000 to 3,500,000; New York from 50,000 to 4,500,000; yet these cities are still living on their old buildings and lay-outs, which date from far before the astounding growth of population and of traffic (see the graphs above, whose curves show the increase of traffic from 1885 to 1905, both for ordinary traffic and transport of goods). The confusion is such that a growing anxiety is manifesting itself. The term "town planning" is of fairly recent date, and shows the germ of an idea. Quite naturally, the first efforts were directed to the least difficult problem—that of the suburb. A still more important point arises here; our present need is to re-investigate the fundamental problems of the "dwelling" so that it can be made to answer the needs of a family life which has been entirely transformed by mechanism; the garden-city dwelling enables us to isolate the problem and experiment with it. Again, the law of least resistance, and the hardships entailed by the only possible remedies, lead us to ignore resolutely the dreadful spectacle of the centres of our cities and the difficulty of doing anything with them; and stung-minded people

tell us that we must move the centre somewhere else, we must build a new city, a new centre, far away, right beyond the suburbs; where it can be done comfortably, with no constraint and no pre-existing state of things. This is a pure fallacy. A centre is determined, it exists only because of what surrounds it; its position is determined from a long way off by innumerable convergings of every kind which it would be impossible to change; to shift the axle of a wheel means that you must move the whole wheel. As regards one of our great towns, you might as well set out to shift everything fifteen or twenty miles round about, which is altogether impossible. The axle of a wheel must remain fixed. In Paris, the axle has for a thousand years oscillated from left to right and right to left, between Notre Dame and the Place des Vosges, between the Place des Vosges and the Invalides, the Invalides and the Gare de l'Est, and between the Gare de l'Est and Saint-Augustin. In relation to the wheel (*i.e.* the railways, the outskirts, the suburbs and the outer suburbs, the main arteries, the robes and the tramways, the administrative and commercial centres,

TRAFFIC IN CAPITAL CITIES.



Disrupt the centres.

the industrial zones and the residential quarters), this centre does not shift. *It has remained constant.*

It must still remain so. And, moreover, it is in itself irremediably valuable, and forms a considerable slice of the national fortune, which would be wiped out at a word by any law that displaced it. To say, "It is quite simple, let us make a new centre at Saint-Germain-en-Laye," is to talk nonsense; it is like crying for the moon. It is a vacillation by means of which the stupid people who are always with us can gain a little more time. The centre must be modified in and about itself. It crumbles and rises up again through the ages; just as a man changes his skin each seven years and the tree its leaves year by year. We must concentrate on the centre of the city and change it, which is after all the simplest solution, and more simply still the only solution.

We are now in a position, therefore, to lay the foundations of modern town planning, based on four direct and concise requirements which are capable of meeting effectively the dangers which threaten us:

1. *We must disorganise the centres of cities in order to provide for the demands of traffic.*

2. *We must increase the density of the centres of cities in order to bring about the close contact demanded by business.*

3. *We must increase the means whereby traffic can circulate, i.e. we must completely modify the present-day conception of the street, which has shown itself useless in regard to the new phenomenon of modern means of transport; trams, motor-cars, trains and airplanes.*

4. *We must increase the area of green and open spaces; this is the only way to ensure the necessary degree of health and peace to enable men to meet the anxieties of work occasioned by the new speed at which business is carried on.*

These four demands seem irreconcilable. Yet it would be well to realize how important they are, and how urgently necessary. And once the problem has been stated, town planning must find an answer. This it can do despite appearances. The technical apparatus and the organization of this age are such as to offer a satisfactory solution; it is at this stage that the whole question becomes exciting, and that we can envisage the advent of a new age of grandeur and mastery. Architecture in the course of any particular evolution of a period marks its culminating point; it is a consequence which is created by a whole mental outlook. Town planning is a support to architecture. A new architecture, that can find its own full expression and no longer depends upon tactics, is at hand. We are waiting for a form of town planning that will give us freedom.

It may be worth while to consider the different kinds of inhabitants of a great city. As the seat of power (in the widest meaning of the word); for it is there come together princes of affairs, captains of industry and finance, political leaders, great scientists, teachers, thinkers, the mouthpieces of the human soul, painters, poets and musicians), the city draws every ambition to itself: it is clothed in a dazzling image of unimaginable beauty; the people search into it. Great men and our leaders install themselves in the city's centre. There too we find their subordinates of every grade, whose presence there at certain hours is essential, though their desires are circumscribed within the narrower bounds of family life. The family is badly housed in the city. Garden cities satisfy these needs better. Finally, there is industry with its factories, thickly grouped, for various reasons, about the great centres: and working in these factories are multitudes of workers who can most satisfactorily be housed in garden cities.

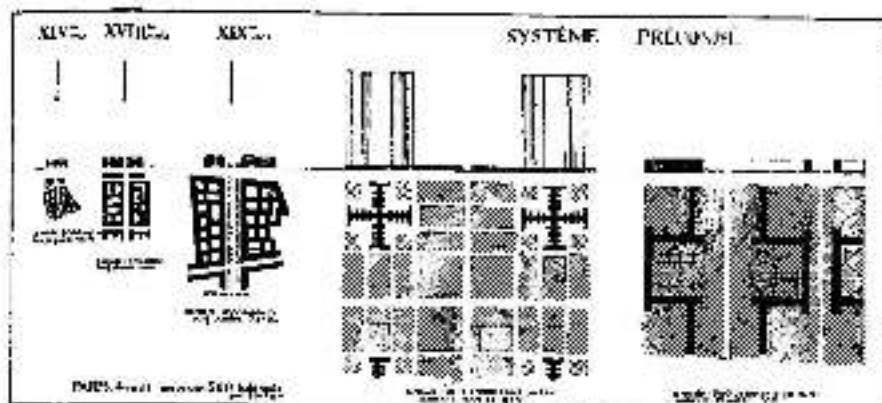
An classification of city dwellers would give us three main divisions of population: the citizens who live in the city; the workers whose lives are passed half in the centre and half in the garden cities, and the great masses of workers who spend their lives between suburban factories and garden cities.

This classification gives us what is practically a programme for our town planning. And to put it into practice is to begin the simplification of the great cities. For they are, to-day, as a result of their intense growth, in a state of the most terrible chaos. Our programme of town planning might well be expressed thus in regard to a city of three million inhabitants: in the centre, but only for purposes of daily toil, there would be 200,000 to 300,000 people; each evening the centre would be empty. The residential quarters of the city would absorb part, the garden cities the rest. Let us postulate then half a million citizens (around the centre) and two and a half millions in the garden cities.

The foregoing demonstration, which is clear as regards the principle, though the figures may vary, demands an ordered solution. It lays down for us the main

lines of modern town planning, it seeks for us the proportions of the city as regards the relationship between its centre and the residential districts, and puts before us the problem of means of communication and transport. It suggests a basis for urban hygiene, for methods of housing, for the lay-out of the streets and the particular forms of these; it dictates the relative densities and consequently the actual mode of construction of the city's centre, its residential quarters and its garden cities.

The question of sky-scrapers preoccupies Europe. In Holland, in England, in Germany, France and Italy the first theoretical essays have been made. But the sky-scraper cannot be isolated from the question of the streets and of transport both horizontal and vertical.



These plans are all to the same scale, and give the dimensions of various sites built over and of streets in the fourteenth, eighteenth and nineteenth centuries (Giotto, Louis XV, Napoleon III). In the centre is a suggestion for a modern site, densely populated, i.e. a sky-scraper of sixty stories (1 per cent. of the surface built upon, 5 per cent. planted over). Also a housing scheme with "set-backs" (15 per cent. of the surface built upon, 85 per cent. planted over; no internal courtyards, and immense open spaces).

Family life, therefore, will be definitely banished from the centre of our city. It seems most probable, as things are, that the sky-scraper cannot adequately provide for family life; for its internal economy demands so elaborate a system that if one of these structures is to pay, only business can afford the cost: while the means of getting about in what is practically a series of superimposed stations is so elaborate that it could never be appropriate to family life.

The residential quarters of the city would undergo the same rational transformation. The principal roads, their axes set at roughly 400-yard intervals, would cut through them. And, contrary to age-long custom, the buildings would not be grouped in great rectangular blocks overhanging the streets and subdivided in their interior into numerous wells and courtyards. Under a system of building with setbacks,¹ doing away completely with internal courtyards, the housing blocks

¹ This word is perhaps a trifle ambiguous. The plan of these buildings would follow the line of battlements laid horizontally. The French is "à rebords."—F. E.

would be set at distances of 100, 400 or 600 yards in parks larger than the Tuileries. The town would, in fact, be one immense park; 15 per cent. of it would be built over, and all the rest planned; yet it would have a density of population equal to that of the congested Paris of to-day. Main axial roads fifty yards wide would cut across each other at not less than 400 yards distance, for modern motor traffic demands the suppression of two-thirds of the existing streets; these would be parks for sport and pleasure contiguous to the dwellings, all internal courtyards would be suppressed, there would be a radical transformation of the appearance of the city and an architectural contribution of the greatest importance.

If only the question is minutely studied in the light of reason, and is touched with some poetical feeling, the reasoning of a great city should give results which are as practical as they are eminently architectural. The solutions of the problem which it can bring about take their rise from the purely theoretical analysis of the problem; of course they are bound to upset all our accustomed habits. But have not our very existences become completely changed within the last few years? Manifold things in terms of theory and acquires thereby certain theoretical certitudes. Theory suggests a line of conduct; and if he feels himself securely established in his first principles, man is able to embark on problems of a practical nature.

*

So many problems are raised by the question of town planning; so many interesting considerations and points of a technical or sentimental kind, that it seems to me advisable at this point to set forth the scope of this inquiry.

Beginning with "The Donkey's Way and Man's Way," the problem was shown as arising out of a most urgent actual situation. But immediately we attempt to follow the dictates of reason in order to escape from some evil pass, our hearts begin their counter-chorus. To assure ourselves against every risk, one primordial human basis is needed: "Order." And then, to appease our sensibilities and delicacies, we have "Sensibility comes into Play" and "Permanence." But here the aesthete comes in with his fears and alarms, for he is often a nuisance; in order to set him on a solid, human and well-chosen basis, we have "Classification and Choice (A Survey)" and "Classification and Choice (Timely Decisions)." For to-day, we have "The Great City." Then we have bald facts: "Statistics." Prognostications in the chapter headed "Newspaper Cuttings"; and acquired facts in "Our Technical Equipment." Then a definite and concrete proposal for a modern town-planning scheme supported by actual plans: in "A Contemporary City," followed by a

pathetic case of to-day: "Paris and its Centre." In order to present this pathetic case fully we have an inquiry into history: "Physic or Surgery." And to support all my arguments and inspire enthusiasm in view of the approaching realization of a form of town planning worthy of the twentieth century we have "Finance." And to conclude with the contemporary situation, where enterprise, courage and far-sightedness strive with apathy, fear and confusion we have "Discordant Noise."¹

Thus it may be that some of my readers, trusting to cold reason and their warm feelings, may find in these pages something to stimulate the generous powers of their imaginations.

¹ In the end I had to leave out this chapter. It was too painful and there was no room for it. In any case, it was too depressing. Alas! I have plenty of matter for it which is at the disposition of anybody with a sense of humor!



*Ancient conditions
still persisting,*



*Present conditions leading
to the crisis which is only
now beginning.*

XI

A CONTEMPORARY CITY



The existing congestion in the centre must be eliminated.

THE use of technical analysis and architectural synthesis enabled me to draw up my scheme for a contemporary city of three million inhabitants. The result of my work was shown in November 1922 at the Salon d'Automne in Paris. It was greeted with a sort of stupor; the shock of surprise caused rage in some quarters and enthusiasm in others. The solution I put forward was a rough one and completely uncompromising. There were no notes to accompany the plans, and, alas! not everybody can read a plan.¹ I should have had to be constantly on the spot in order to reply to the fundamental questions which spring from the very depths of human feelings. Such questions are of profound interest and cannot remain unanswered. When at a later date it became necessary

¹ As every architect knows to his sorrow.—P. H.

that this book should be written, a book in which I could formulate the new principles of Town Planning, I resolutely decided *first of all* to find answers to these fundamental questions. I have used two kinds of argument: first, those essentially human ones which start from the mind or the heart or the physiology of our sensations as a basis; secondly, historical and statistical arguments. Thus I could keep in touch with what is fundamental and at the same time be master of the environment in which all this takes place.

In this way I hope I shall have been able to help my reader to take a number of steps by means of which he can reach a sure and certain position. So that when I unroll my plans I can have the happy assurance that his astonishment will no longer be stupefaction nor his fears mere panic.

*

A CONTEMPORARY CITY OF THREE MILLION INHABITANTS

Proceeding in the manner of the investigator in his laboratory, I have avoided all special cases, and all that may be accidental, and I have assumed an ideal site to begin with. My object was not to overcome the existing state of things, but *by constructing a theoretically water tight formula to arrive at the fundamental principles of modern town planning.* Such fundamental principles, if they are genuine, can serve as the skeleton of any system of modern town planning; being as it were the *rules* according to which development will take place. We shall then be in a position to take a special case, no matter what; whether it be Paris, London, Berlin, New York or some small town. Then, as a result of what we have learnt, we can take control and decide in what direction the forthcoming battle is to be waged. For the desire to rebuild any great city in a modern way is to engage in a formidable battle. Can you imagine people engaging in a battle without knowing their objectives? Yet that is exactly what is happening. The authorities are com-

pelled to do something, so they give the police white sleeves or set them on horseback, they invent sound signals and light signals, they propose to put bridges over streets or moving pavements under the streets; more garden cities are suggested, or it is decided to suppress the tramways, and so on. And these decisions are reached in a sort of frantic haste in order, as it were, to hold a wild beast at bay. That BEAST is the great city. It is infinitely more powerful than all these devices. And it is just beginning to wake. What will to-morrow bring forth to cope with it?

We must have some rule of conduct.¹

We must have fundamental principles for modern town planning.

SITE.

A level site is the ideal site. In all those places where traffic becomes over-intensified the level site gives a chance of a normal solution to the problem. Where there is less traffic, differences in level matter less.

The river flows far away from the city. The river is a kind of liquid railway, a goods station and a sorting house. In a decent house the servants' stairs do not go through the drawing-room—even if the maid is charming (or if the little boats delight the loiterer leaning on a bridge).

POPULATION.

This consists of the citizens proper; of suburban dwellers; and of those of a mixed kind.

¹ New suggestions shower on us. Their inventors and those who believe in them have their little thrill. It is so easy for them to believe in them. But what if they are based on grave errors? How are we to distinguish between what is reasonable and an over-poetical dream? The leading newspapers accept everything with enthusiasm. One of them said, "The cities of to-morrow must be built on new virgin soil." But no, this is not true! We must go to the old cities, all our inquiries confirm it. One of our leading papers supports the suggestion made by one of our greatest and most reasonable architects, who for once gives us bad counsel in proposing to erect round about Paris a ring of sky-scrapers. The idea is romantic enough, but it cannot be defended. The sky-scrapers must be built *in the centre* and not on the periphery.

(a) Citizens are of the city : those who work and live in it.

(b) Suburban dwellers are those who work in the outer industrial zone and who do not come into the city : they live in garden cities.

(c) The mixed sort are those who work in the business parts of the city but bring up their families in garden cities.

To classify these divisions (and so make possible the transmutation of these recognized types) is to attack the most important problem in town planning, for such a classification would define the areas to be allotted to these three sections and the delimitation of their boundaries. This would enable us to formulate and resolve the following problems :

1. The *City*, as a business and residential centre.
2. The *Industrial City* in relation to the *Garden Cities* (i.e. the question of transport).
3. The *Garden Cities* and the *daily transport* of the workers.

Our first requirement will be an organ that is compact, rapid, lively and concentrated : this is the *City* with its well-organized centre. Our second requirement will be another organ, supple, extensive and elastic ; this is the *Garden City* on the periphery.

Lying between these two organs, we must require the *legal establishment* of that absolute necessity, a protective zone which allows of extension, a *reserved zone* of woods and fields, a fresh-air reserve.

DENSITY OF POPULATION.

The more dense the population of a city is the less are the distances that have to be covered. The moral, therefore, is that we must *increase the density of the centres of our cities, where business affairs are carried on.*

LUNGS.

Work in our modern world becomes more intensified day by day, and its demands affect our nervous system in a way

that grows more and more dangerous. Modern toil demands quiet and fresh air, not stale air.

The towns of to-day can only increase in density at the expense of the open spaces which are the lungs of a city.

We must *increase the open spaces and diminish the distances to be covered.* Therefore the centre of the city must be constructed *vertically.*

The city's residential quarters must no longer be built along "corridor-streets," full of noise and dust and deprived of light.

It is a simple matter to build urban dwellings away from the streets, without small internal courtyards and with the windows looking on to large parks ; and this whether our housing schemes are of the type with "set-backs" or built on the "cellular" principle.

THE STREET.

The street of to-day is still the old bare ground which has been paved over, and under which a few tube railways have been run.

The modern street in the true sense of the word is a new type of organism, a sort of stretched-out workshop, a home for many complicated and delicate organs, such as gas, water and electric mains. It is contrary to all economy, to all security, and to all sense to bury these important service mains. They ought to be accessible throughout their length. The various storeys of this stretched-out workshop will each have their own particular functions. If this type of street, which I have called a "workshop," is to be realized, it becomes as much a matter of *construction* as are the houses with which it is customary to flank it, and the bridges which carry it over valleys and across rivers.

The modern street should be a masterpiece of civil engineering and no longer a job for navvies.

The "corridor-street" should be tolerated no longer, for it poisons the houses that border it and leads to the construction of small internal courts or "wells."

TRAFFIC.

Traffic can be classified more easily than other things.

To-day traffic is not classified—it is like dynamite flung at hazard into the street, killing pedestrians. Even so, *traffic does not fulfill its function*. This sacrifice of the pedestrian leads nowhere.

If we classify traffic we get:

- (a) Heavy goods traffic.
- (b) Lighter goods traffic, *i.e.* vans, etc., which make short journeys in all directions.
- (c) Fast traffic, which covers a large section of the town.

Three kinds of roads are needed, and in superimposed storeys:

(a) Below-ground¹ there would be the street for heavy traffic. This storey of the houses would consist merely of concrete piles, and between them large open spaces which would form a sort of clearing-house where heavy goods traffic could load and unload.

(b) At the ground floor level of the buildings there would be the complicated and delicate network of the ordinary streets taking traffic in every desired direction.

(c) Running north and south, and east and west, and forming the two great axes of the city, there would be great *arterial roads for fast one-way traffic* built on immense reinforced concrete bridges 120 to 180 yards in width and approached every half mile or so by subsidiary roads from ground level. These arterial roads could therefore be joined at any given point, so that even at the highest speeds the town can be traversed and the suburbs reached without having to negotiate any cross roads.

The number of existing streets *should be diminished by two-thirds*. The number of crossings depends directly on the

¹ I say "below ground," but it would be more exact to say at what we call *basement level*, for if my town, built on concrete piles, were realized (see *Towards a New Architecture*, Chap. IV), this "basement" would no longer be buried under the earth. See also Chapter XII of this volume: "Housing Schemes on the 'Celular' Principle."

number of streets; and *cross-roads are an enemy to traffic*. The number of existing streets was fixed at a remote epoch in history. The perpetuation of the boundaries of properties has, almost without exception, preserved even the faintest tracks and footpaths of the old village and made streets of them, and sometimes even an avenue (see Chapter I: "The Pack-Donkey's Way and Man's Way").

The result is that we have cross-roads every fifty yards, even every twenty yards or ten yards. And this leads to the ridiculous traffic congestion we all know so well.

The distance between two bus stops or two tube stations gives us the necessary unit for the distance between streets, though this unit is conditional on the speed of vehicles and the walking capacity of pedestrians. So an average measure of about 400 yards would give the normal separation between streets, and make a standard for urban distances. My city is conceived on the gridiron system with streets every 400 yards, though occasionally these distances are subdivided to give streets every 200 yards.

This triple system of superimposed levels answers every need of motor traffic (lorries, private cars, taxis, buses) because it provides for rapid and *mobile transit*.

Traffic running on fixed rails is only justified if it is in the form of a convoy carrying an immense load; it then becomes a sort of extension of the underground system or of trains dealing with suburban traffic. *The tramway has no right to exist in the heart of the modern city.*

If the city thus consists of plots about 400 yards square, this will give us sections of about 40 acres in area, and the density of population will vary from 50,000 down to 6,000, according as the "lots" are developed for business or for residential purposes. The natural thing, therefore, would be to continue to apply our unit of distance as it exists in the Paris tubes to-day (namely, 400 yards) and to put a station in the middle of each plot.

Following the two great axes of the city, two "storeys"

below the arterial roads for fast traffic, would run the tubes leading to the four furthest points of the garden city suburbs, and linking up with the metropolitan network (see the next chapter). At a still lower level, and again following these two main axes, would run the one-way loop systems for suburban traffic, and below these again the four great main lines serving the provinces and running north, south, east and west. These main lines would end at the Central Station, or better still might be connected up by a loop system.

THE STATION.

There is only one station. The only place for the station is in the centre of the city. It is the natural place for it, and there is no reason for putting it anywhere else. The railway station is the hub of the wheel.

The station would be an essentially subterranean building. Its roof, which would be two storeys above the natural ground level of the city, would form the aerodrome for aero-taxis. This aerodrome (linked up with the main aerodrome in the protected zone) must be in close contact with the tubes, the suburban lines, the main lines, the main arteries and the administrative services connected with all these. (See the plan of the Station in the following chapter.)

THE PLAN OF THE CITY

The basic principles we must follow are these :

1. We must de-congest the centres of our cities.
2. We must augment their density.
3. We must increase the means for getting about.
4. We must increase parks and open spaces.

At the very centre we have the STATION with its landing stage for aero-taxis.

Running north and south, and east and west, we have the

MAIN ARTERIES for fast traffic, forming elevated roadways 120 feet wide.

At the base of the sky-scrapers and all round them we have a great open space 2,400 yards by 1,500 yards, giving an area of 3,600,000 square yards, and occupied by gardens, parks and avenues. In these parks, at the foot of and round the sky-scrapers, would be the restaurants and cafés, the luxury shops, housed in buildings with receding terraces : here too would be the theatres, halls and so on ; and here the parking places or garage shelters.

The sky-scrapers are designed purely for business purposes.

On the left we have the great public buildings, the museums, the municipal and administrative offices. Still further on the left we have the " Park " (which is available for further logical development of the heart of the city).

On the right, and traversed by one of the arms of the main arterial roads, we have the warehouses, and the industrial quarters with their goods stations.

All round the city is the *protected zone* of woods and green fields.

Further beyond are the *garden cities*, forming a wide encircling band.

Then, right in the midst of all these, we have the *Central Station*, made up of the following elements :

(a) The landing-platform ; forming an aerodrome of 200,000 square yards in area.

(b) The entresol or mezzanine ; at this level are the raised tracks for fast motor traffic : the only crossing being gyratory.

(c) The ground floor where are the entrance halls and booking offices for the tubes, suburban, main line and air traffic.

(d) The " basement " : here are the tubes which serve the city and the main arteries.

(e) The " sub-basement " : here are the suburban lines running on a one-way loop.

(f) The " sub-sub-basement " : here are the main lines (going north, south, east and west).

THE CITY.

Here we have twenty-four sky-scrapers capable each of housing 10,000 to 50,000 employees; this is the business and hotel section, etc., and accounts for 400,000 to 600,000 inhabitants.

The residential blocks, of the two main types already mentioned, account for a further 600,000 inhabitants.

The garden cities give us a further 2,000,000 inhabitants, or more.

In the great central open space are the cafés, restaurants, luxury shops, halls of various kinds, a magnificent forum descending by stages down to the immense parks surrounding it, the whole arrangement providing a spectacle of order and vitality.

DENSITY OF POPULATION.

(a) The sky-scraper: 1,200 inhabitants to the acre.

(b) The residential blocks with set-backs: 120 inhabitants to the acre. These are the luxury dwellings.

(c) The residential blocks on the "cellular" system, with a similar number of inhabitants.

This great density gives us our necessary shortening of distances and ensures rapid intercommunication.

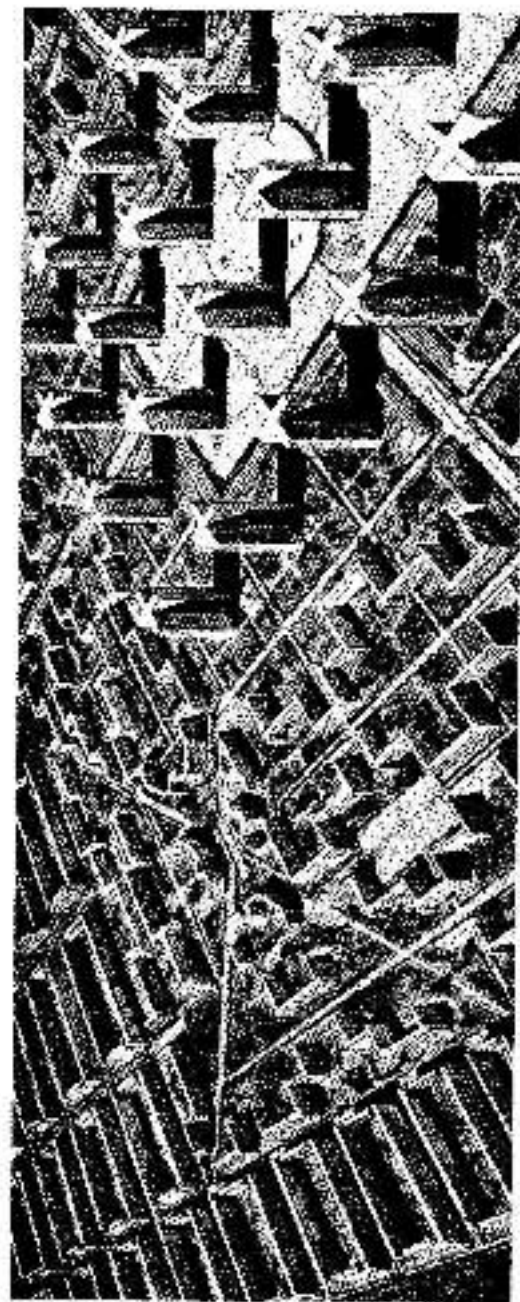
Note.—The average density to the acre of Paris in the heart of the town is 146, and of London 63; and of the over-crowded quarters of Paris 213, and of London 169.

OPEN SPACES.

Of the area (a), 95 per cent. of the ground is open (squares, restaurants, theatres).

Of the area (b), 85 per cent. of the ground is open (gardens, sports grounds).

Of the area (c), 48 per cent. of the ground is open (gardens, sports grounds).



TWO VIEWS, TO THE SAME SCALE AND SEEN FROM THE SAME ANGLE: ONE OF MANHATTAN AND THE OTHER THE CENTER OF "A CONTEMPORARY CITY"

The contrast is startling.

EDUCATIONAL AND CIVIC CENTRES, UNIVERSITIES, MUSEUMS OF ART AND INDUSTRY, PUBLIC SERVICES, COUNTY HALL.

The "Jardin anglais," (The city can extend here, if necessary.)

Sports grounds: Motor racing track, Racecourse, Stadium, Swimming baths, etc.

THE PROTECTED ZONE (which will be the property of the city), with its AMBRODOME.

A zone in which all building would be prohibited; reserved for the growth of the city as laid down by the municipality; it would consist of woods, fields, and sports grounds. The forming of a "protected zone" by continual purchase of small properties in the immediate vicinity of the city is one of the most essential and urgent tasks which a municipality can pursue. It would eventually represent a tenfold return on the capital invested.

INDUSTRIAL QUARTERS.¹

TYPES OF BUILDINGS EMPLOYED.

For business: sky scrapers sixty storeys high with no internal wells or courtyards (see the following chapter).

Residential buildings with "set-backs," of six double storeys; again with no internal wells: the flats looking on either side on to immense parks.

Residential buildings on the "cellular" principle, with

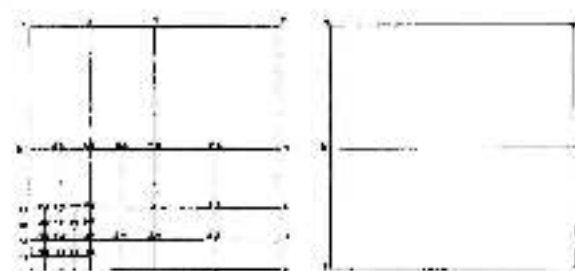
¹ In this section I make new suggestions in regard to the industrial quarters: they have been content to exist too long in disorder, dirt and in a hand-to-mouth way. And this is absurd, for Industry, when it is on a properly ordered basis, should develop in an orderly fashion. A portion of the industrial district could be constructed of ready-made sections by using standard units for the various kinds of buildings needed. Fifty per cent. of the site would be reserved for this purpose. In the event of considerable growth, provision would thus be made for moving them into a different district where there was more space. Bring about "standardization" in the building of a works and you would have mobility instead of the crowding which results when factories become impossibly congested.

"hanging gardens," looking on to immense parks; again no internal wells. These are "service-flats" of the most modern kind.

GARDEN CITIES

THEIR ÆSTHETIC, ECONOMY, PERFECTION AND MODERN OUTLOOK.

A simple phrase suffices to express the necessities of to-morrow: WE MUST BUILD IN THE OPEN. The lay-out must be of a purely geometrical kind, with all its many and delicate implications.



A. A diagram showing the system of street crossings in a typical existing town.

B. A diagram showing crossings at intervals of over 400 yards.

A shows 46 crossings, and B only 6 crossings.

The city of to-day is a dying thing because it is not geometrical. To build in the open would be to replace our present haphazard arrangements, which are all we have to-day, by a uniform lay-out. Unless we do this there is no salvation.

The result of a true geometrical lay-out is repetition.

The result of repetition is a standard, the perfect form (i.e. the creation of standard types). A geometrical lay-out means that mathematics play their part. There is no first-rate human production but has geometry at its base. It is of the very essence of Architecture. To introduce uniformity into the building of the city we must industrialize building. Building is the one economic activity which has so far resisted industrialization.

It has thus escaped the march of progress, with the result that the cost of building is still abnormally high.

The architect, from a professional point of view, has become a twisted sort of creature. He has grown to love irregular sites, claiming that they inspire him with original ideas for getting round them. Of course he is wrong. For nowadays the only building that can be undertaken must be either for the rich or built at a loss (as, for instance, in the case of municipal housing schemes), or else by jerry-building and so robbing the inhabitant of all amenities. A motor-car which is achieved by mass production is a masterpiece of comfort, precision, balance and good taste. A house built to order (on an "interesting" site) is a masterpiece of incongruity—a monstrous thing.

If the builder's yard were reorganized on the lines of standardization and mass production we might have gangs of workmen as keen and intelligent as mechanics.

The mechanic dates back only twenty years, yet already he forms the highest caste of the working world.

The mason dates . . . from time immemorial! He bangs away with feet and hammer. He smashes up everything round him, and the plant entrusted to him falls to pieces in a few months. The spirit of the mason must be disciplined by making him part of the severe and exact machinery of the industrialized builder's yard.

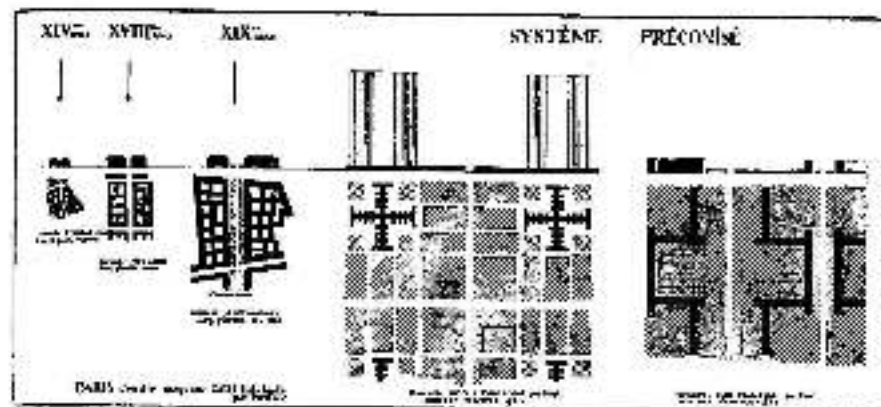
The cost of building would fall in the proportion of 10 to 2.

The wages of the labourers would fall into definite categories; to each according to his merits and service rendered.

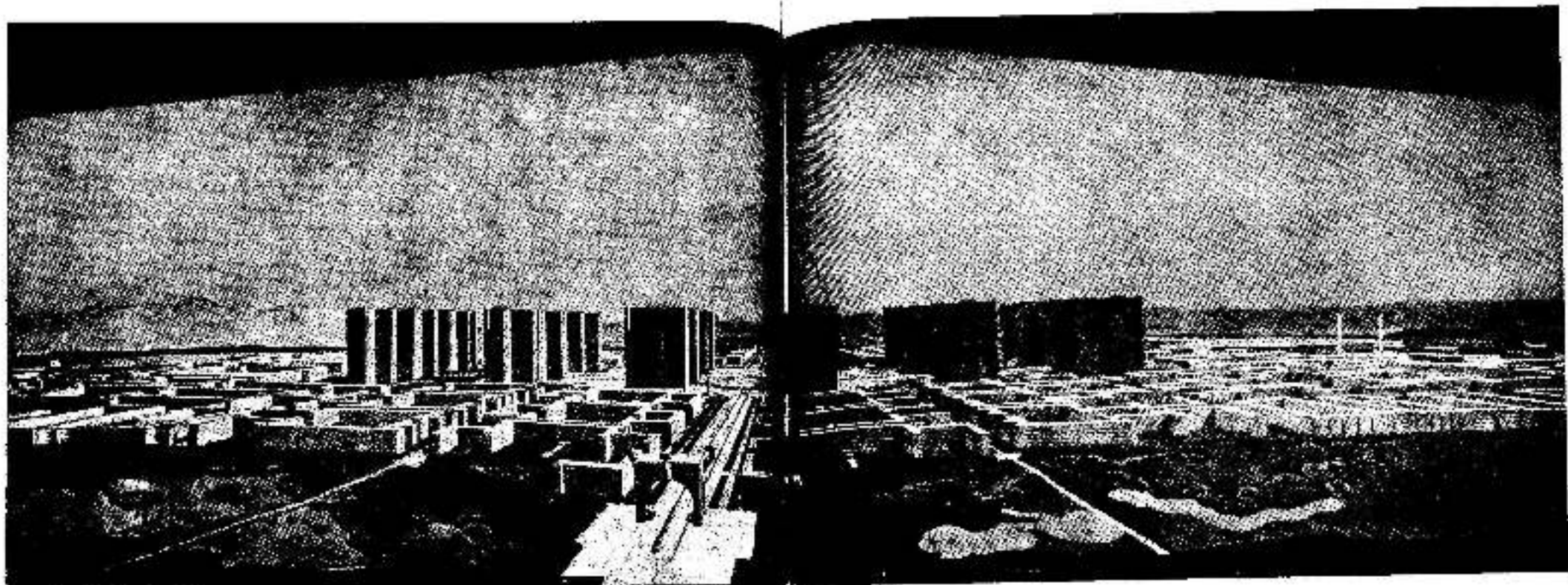
The "interesting" or erratic site absorbs every creative faculty of the architect and wears him out. What results is equally erratic: lopsided abortions; a specialist's solution which can only please other specialists.

We must build *in the open*: both within the city and around it.

Then having worked through every necessary technical stage and using absolute ECONOMY, we shall be in a position to experience the intense joys of a creative art which is based on geometry.

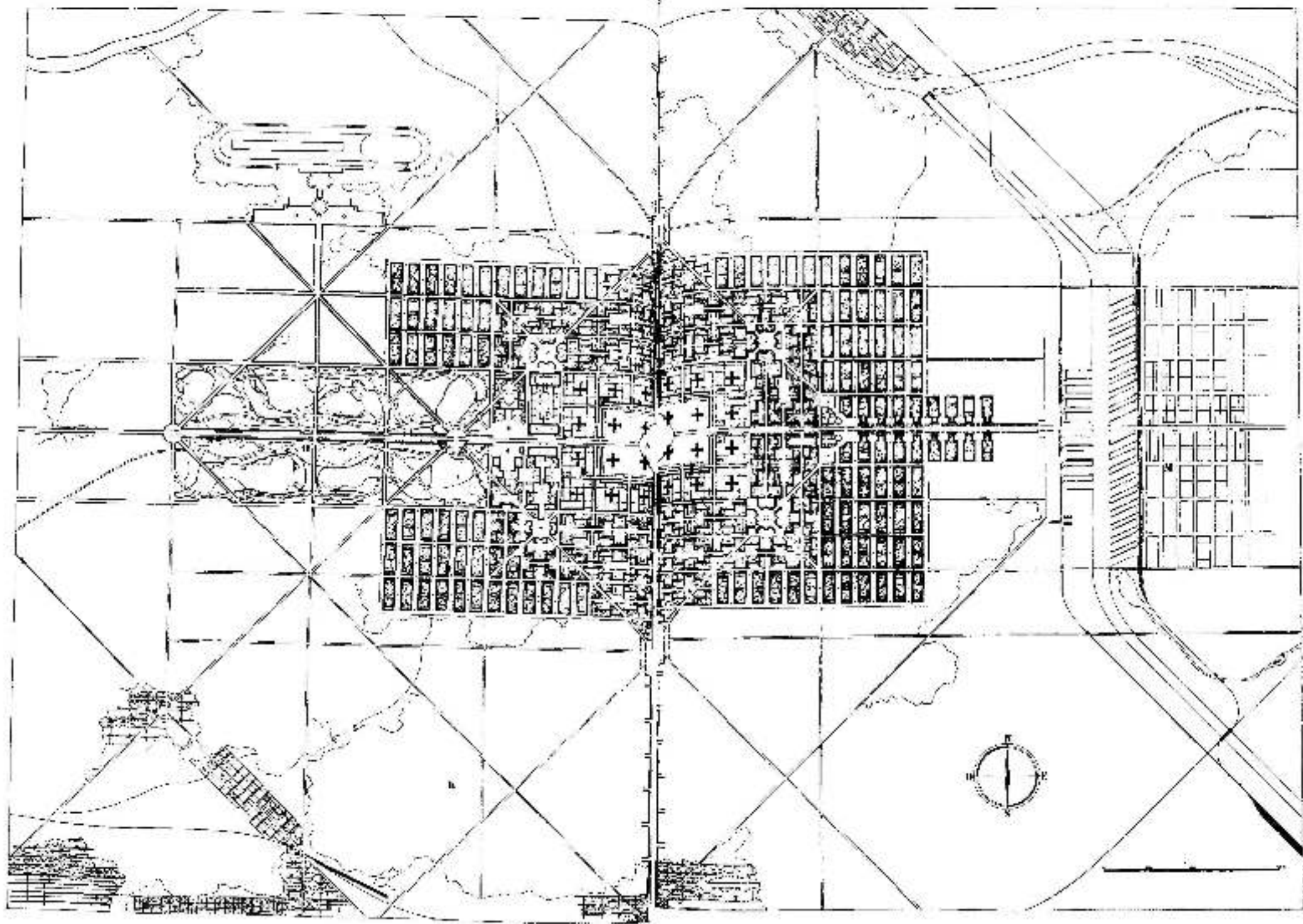


A diagram showing the increase in size of building site, from the fourteenth to the eighteenth and nineteenth centuries. In the nineteenth century the Boulevard Haussmann again offered the "corridor street" at a solution. But in this plan follow forty scrapers at intervals of 450 yards and for blocks of dwellings with "set-backs." The magnification of the site and is in proportion to the columns that bar taken place and to the means at our disposal



A CONTEMPORARY CITY

Panoramic view of the city. In the foreground, are the woods and fields of the protected zone. The Great Central Station can be seen in the centre and the two main tracks for fast motor traffic crossing one another. Among the hills on the horizon and beyond the foliage of the protected zone can just be seen the Garden Cities.



A CONTEMPORARY CITY

The heavy black lines represent the areas built upon. Everything else is either streets or open spaces. Strictly speaking the city is an immense park. Its lay-out furnishes a multitude of architectural aspects of infinitely varying forms. If the reader, for instance, follows out a given route on this map he will be astonished by the variety he encounters. Yet distances are shorter than in the cities of to-day, for there is a greater density of population.

- | | |
|---|---|
| A. Station. | G. Public Services. |
| B. 24p-apartments. | H. Park. |
| C. Housing blocks with "set-backs." | I. Sports. |
| D. Housing blocks on the "collar" system. | K. Protected zone. |
| E. Garden cities. | M. Workshops, Industrial city, Goods station. |

THE CITY AND ITS ÆSTHETIC

(The plan of a city which is here presented is a direct consequence of purely geometric considerations.)

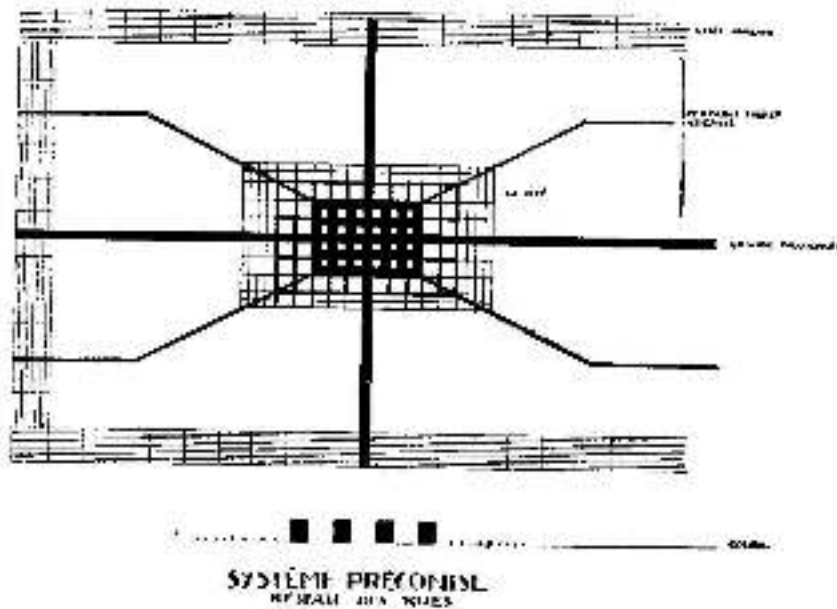
A new unit *on a large scale* (400 yards) inspires everything. Though the gridiron arrangement of the streets every 400 yards (sometimes only 200) is uniform (with a consequent ease in finding one's way about), no two streets are in any way alike. This is where, in a magnificent contrapuntal symphony, the forces of geometry come into play.

Suppose we are entering the city by way of the Great Park. Our fast car takes the special elevated motor track between the majestic sky-scrapers: as we approach nearer there is seen the repetition against the sky of the twenty-four sky-scrapers; to our left and right on the outskirts of each particular area are the municipal and administrative buildings; and enclosing the space are the museums and university buildings.

Then suddenly we find ourselves at the feet of the first sky-scrapers. But here we have, not the meagre shaft of sunlight which so faintly illumines the dismal streets of New York, but an immensity of space. The whole city is a Park. The terraces stretch out over lawns and into groves. Low buildings of a horizontal kind lead the eye on to the foliage of the trees. Where are now the trivial *Procuracies*? Here is the CITY with its crowds living in peace and pure air, where noise is smothered under the foliage of green trees. The chaos of New York is overcome. Here, bathed in light, stands the modern city.

Our car has left the elevated track and has dropped its speed of sixty miles an hour to run gently through the residential quarters. The "set-backs"¹ permit of vast architectural perspectives. There are gardens, games and sports grounds. And sky everywhere, as far as the eye can see. The square silhouettes of the terraced roofs stand clear against the sky, bordered with the verdure of the hanging gardens. The

¹ As before, this refers to set-backs as *plots*; buildings "à rebords," i.e. with projecting salients. F. B.



A diagram showing the relative importance of streets in a great city. The black lines give the width of the streets. This system, which indicates what is needed under the new conditions, is absolutely contrary to the peculiar state of things shown the diagram at the beginning of this chapter.

uniformity of the units that compose the picture throw into relief the firm lines on which the far-flung masses are constructed. Their outlines softened by distance, the sky-scrapers raise immense geometrical façades all of glass, and in them is reflected the blue glory of the sky. An overwhelming sensation. Immense but radiant prisms.

And in every direction we have a varying spectacle: our "gridiron" is based on a unit of 400 yards, but it is strangely modified by architectural devices! (The "set-backs" are in counterpoint, on a unit of 600 x 400.)

The traveller in his airplane, arriving from Constantinople or Peking it may be, suddenly sees appearing through the wavering lines of rivers and patches of forests that clear imprint which marks a city which has grown in accordance with the spirit of man: the mark of the human brain at work.

As twilight falls the glass sky-scrapers seem to flame.

This is no dangerous futurism, a sort of literary dynamite flung violently at the spectator. It is a spectacle organized by an Architecture which uses plastic resources for the modulation of forms seen in light.

A city made for speed is made for success.