

Articles

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(a translation from the original Greek)

Our Capital and its Future

Introduction

1. Our Capital lies of course in Athens but it would not be correct to say that it lies in Athens alone. There are many reasons which account for this.

2. The administrative services are widely dispersed, being housed in numerous premises, most of them on lease, inside Athens, on the outskirts and even outside it. Thus the High Command of the Greek Armed Forces is headquartered on the administrative boundaries of the city of Athens, but in closer proximity to the suburbs of Holargos and Psychico, while the Ministry of Merchant Marine is in Piraeus. Our Capital has no administrative centre proper. Its cultural establishments are scattered all over the place within an area ranging from Goudi, where the University buildings are to be found, to the Iera Odos on which the Agricultural School is situated. As regards communications, the Capital's airport lies in the suburb of Hellinikon and its main port is in Piraeus. The same is true for all its other functions.

3. The upshot of all this is all too clear. It is not Athens alone but the whole basin of Attica, which *is* the Capital, with some of its functions lying even outside this basin. Now within the confines of the city itself, while we can pinpoint the main business quarter as located in the triangle formed by Athenas-Ermou and Venizelou Streets, it is hardly possible to point to any specific spots as being the centres of any of the administrative or cultural activities of the Capital. It may therefore be said that Athens does not adequately fulfill its function as the Capital of this country.

4. Needless to point out, the Capital can scarcely meet the demands of its population. It is evident that every resident is faced by many and serious problems, such as lack of healthy homes, traffic congestion, lack of recreation and sports facilities, absence of proper social and business organization, shortage of cheap land, and lack of freehold State property, which could solve a good many problems.

5. Thus our Capital both is and is not in Athens. It exists only as a notion and it is rather inadequate to meet even the demands of its own population.

6. What is the reason for this state of affairs? What are the steps that could be taken to deal with all these problems? Through what means can Greece acquire a capital, and a better capital city for its population? Such questions have been preoccupying us for the past 25 years and it is to these questions that I will try to provide an answer in this

report.

The Early Start

7. Thousands of years ago the plain of Attica, which was fated to become the cradle of a great civilization and the setting of the present capital, was in a completely natural state. To the south and south-east lay the sea, the Saronicos, while on the other sides it was bounded by four mountains: Mt. Parnes, which completely blocked the north side, Mt. Pentelicon, which ran along the north-east side, Mt. Hymettus, which rose on the east side and the Aegaleo area which ran along the west side. In the middle there was a backbone of hills stretching all the way from a point near the sea, the modern suburb of Kallithea, in the south, through Kili, Philoppapos, the Acropolis and Lycabettus, to Turcovounia, the highest of these hills, with gaps in between the Acropolis and Lycabettus and between the Acropolis and Turcovounia.



Fig. 1. The physical setting

8. The plain was watered by three rivers: the Kiphissos, the largest of all, which flowed through the west section between the hilly backbone in the middle and the Parnes-Aegaleo range; the Ilissos, which ran between the backbone and Mt. Hymettus, and the Heridanos, a small stream which sprang on the sides of Lycabettus flowed between Lycabettus and the Acropolis and ran into Kiphissos.

9. In the heart of this plain and on one of the hills in close proximity to the sea, the first urban settlement, the Acropolis, was built some 3000 years ago when Theseus amalgamated the various municipalities into a single town. That marked the beginning of the history of our Capital as an important urban centre of narrower or broader areas (Fig. 1).

A New City that likes to think it is Old

10. A good many of the shortcomings of the present Capital are due to an excessive cult of ancient topography. We seem to think that Greece and Athens can hardly be saved unless we all cluster round the Acropolis. The most convenient way in which we seek to give expression to the continuity of the Greek cultural heritage is by trying to put up our buildings around the Sacred Rock and to imitate what we like to think was ancient Greek architecture. In a most primitive fashion we rally around a symbol instead of endeavoring to study this symbol, to grasp its inner meaning and to use it as a source of inspiration. The net effect of this is that we smother the Acropolis with the cement and steel structures of blocks of flats and that we attempt to build balconies in mock ancient style from concrete plaster. We then pretend that this is an ancient city and try to put a false mask on it in the name of antiquity.

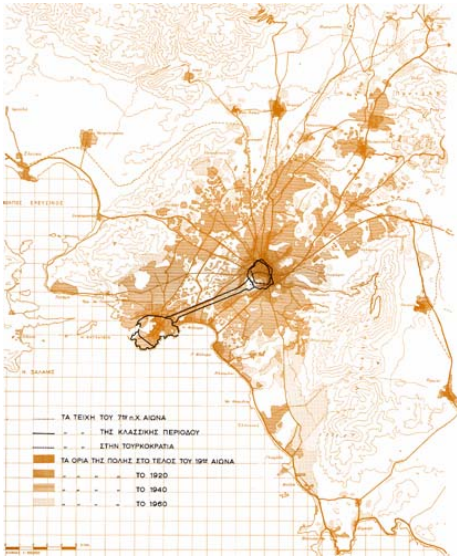


Fig. 2. The background of the ekistic development of Athens and Piraeus

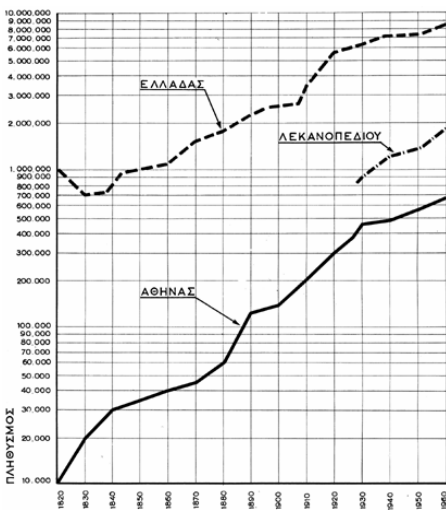


Fig. 3. The Growth of population

11. We must however resign ourselves to the fact that our Capital, i.e. Athens, Piraeus and the surrounding area, is a new city, newer than analogous cities in the American continent or even in Australia, the last continent to be settled. A hundred years ago the population of Athens barely numbered 50,000, while at the beginning of its modern history, when the country gained its freedom, it was just a village with no more than 4000 inhabitants. Even in the new continents there were cities of much greater size at that time.

12. Let us not imagine, however, that this was the result of Turkish rule alone. At no time in the past did Athens occupy more than a very small section of the land occupied by the present Capital. Even in the golden age Athens and Piraeus together with the district of Long Walls covered no more than 1/40 of the present area and their population was barely 1/10 of what it is now. The modern Capital boasts about 280,000 buildings, whilst down the ages and down to 1830 it had no more than a few hundred (Fig. 2).

13. In these circumstances how can we venture to speak of the Capital as being an ancient city? We should be nearer the truth if we described it as a very modern city built as compactly as possible; so much so that it has pressed hard round ancient ruins, small in area but rich in meaning, completely covering up some and threatening to stifle others in its embrace. We should thus be frank and not delude ourselves by seeking to imitate old styles or explain away our errors by invoking tradition and antiquity.

14. Quite on the contrary, our errors are due to the fact that everything has been done too quickly. For the basin of Attica has seen its population grow ten times larger in the span of the last 60 years, that is to say, it witnessed an invasion larger than that of any barbarian host. With the difference being that, while the barbarians did not come to stay, our own invaders settled down, and being of our own race they destroyed the shrines, covered over the paths and swamped the hills.

15. The tragedy of the Capital is a tragedy that occurred in the 20th century, since up until that time in history, its population had never exceeded 200,000 whereas today it is fast approaching the 2,000,000 mark (Fig. 3).

The 20th Century Capital

16. The time is ripe to look more closely at the 60 fateful years of the 20th century that created so many problems for us all.

17. During the first decade (1901-1910) the Capital was just beginning to awaken. Deep inside it new forces were beginning to stir but outwardly it still remained a small

city, the Capital of a small country.

18. The second decade (1911-1920) saw Greece on the move, fighting hard and enlarging its territory, while at the same time, the Capital was becoming the centre of a movement of regeneration, expanding and welcoming into its arms the multitude of Greeks who had for centuries been living in exile.

19. The third decade (1921-1930) was the tragic period of the influx of refugees but also of the development of industry. Those were lean years when tens of thousands of refugee homes had to be built. It was also the time when foreign architecture made its appearance. The Capital began to expand and to face its first major problems.

20. The fourth decade (1931-1940) confronted the Capital with the necessity of bringing order out of the chaos inherited from the previous period. It was during this time that the first important projects for water supply, sewerage, roads, parks and other installations were either completed or undertaken for the first time.

21. War, devastation, famine and complete disorganization marked the better part of the fifth decade (1941-1950). The Capital was on the decline, it was beginning to deteriorate and to fall to pieces since not even maintenance work could be done. Its organization was thrown out of joint. It only received first aid attention here and there towards the end of the period. The whole reconstruction effort was centered, right after the war, in the countryside, the most sensitive part of the country.

22. The last decade (1951-1960) was a period of repair, reconstruction and reorganization of the Capital. The various networks were completed, the water and power supply were improved and long neglected highways paved. But the population was also growing rapidly, thus continuing a process that had started 40 years ago and the Capital expanded from day to day.

23. We have now reached 1960. There are a few more months to go before the start of the seventh decade. Standing on the threshold of this year, I should like to propose that we look into our problems in good time so that we may be quite ready to deal with them at the beginning of 1961 (Fig. 4).

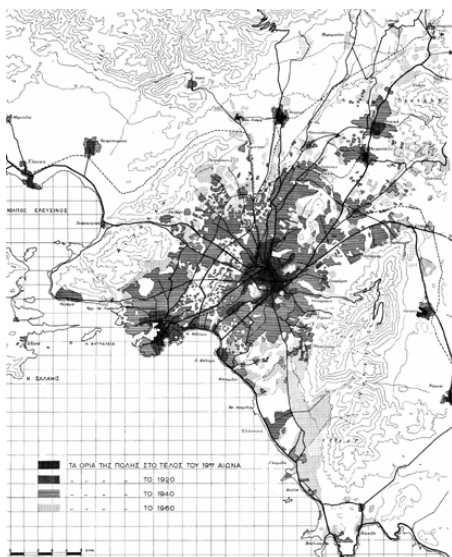


Fig. 4. The Attic plain from 1900 to 1960

The City that thought it was a Capital

24. Athens is not really and totally the Capital of this country if we consider that a good many of its functions are carried on outside it or on its outskirts. Included in these are certain ministries such as the Ministry of Merchant Marine, which is in Piraeus, the Armed Forces High Command which is in Holargos. Other departments, State or otherwise, are scattered all over the plain of

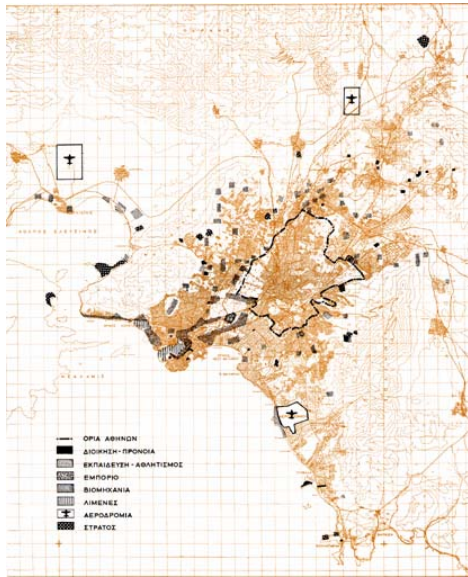


Fig. 5. Main functions outside the city limits of Athens



Fig. 6. Administrative division of Attica

Attica.

25. It is even more significant that Athens can no longer exist by itself. For a large proportion of the State functionaries now reside outside Athens and are not even Athenian citizens, whilst practically all the services on which its life depends are based on sources of energy lying outside the city, such as water which comes from the Marathon and Iliki lakes, electric power which is transmitted from Piraeus and Aliveri and petrol which comes from Aspropyrgos. The airport is at Hellinikon, the harbour at Piraeus and its industries are scattered about in the various municipalities all around the city. The vegetable market is being built outside the city and, as time passes, further facilities will be built outside it. It is therefore clear that the city thinks it is the Capital while in reality it is not a capital by itself. It is only a part of it - a part which cannot stand by itself, which depends for its existence on many others around it and which has been compelled to disperse central services, properly belonging to the Capital, outside of it (Fig. 5).

The real Capital

26. Let us now see what is the real capital. This can be no other than the area of Attica. Anything smaller than that would be a mistake because all the residents of Athens spend part of their lives inside Athens and another part of it in the countryside around it. Their children or they themselves go to the various summer resorts on the east coast of Attica, viz. Rafina, Aghios Andreas or Mati; they drive to Sounion for pleasure, bathe along the Saronicos coast, work in the plain of Eleusis or set off from the Hellinikon airport. This Capital, which is identified with Attica, together with a section of the district of Megaris, covers an area of 220,000 hectares and has a population of about 2,000,000. It is composed of 35 municipalities and 63 communities in accordance with the division made in 1951.

27. We can realize how different this Capital is from Athens if we point out that the size of its population is three times that of Athens, that it covers an area 50 times greater and that instead of being a single municipality it is an aggregate of 98 municipalities and communities (Fig. 6).

The Capital and its Problems

28. From what is said above it is clear that a Capital, which thinks it is a Capital though it actually is not, and which thinks it is old though it is new, has many problems.

29. An examination of the administrative aspect of the problem alone, namely the fact that the Capital is an area larger than Athens, that this area is governed by 98 municipalities and communities, many Ministries and many

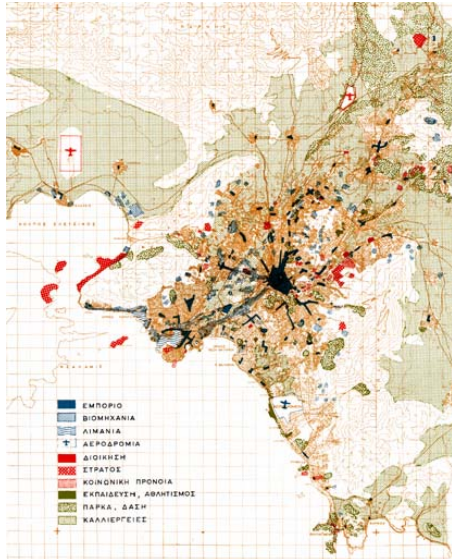


Fig. 7. Land use

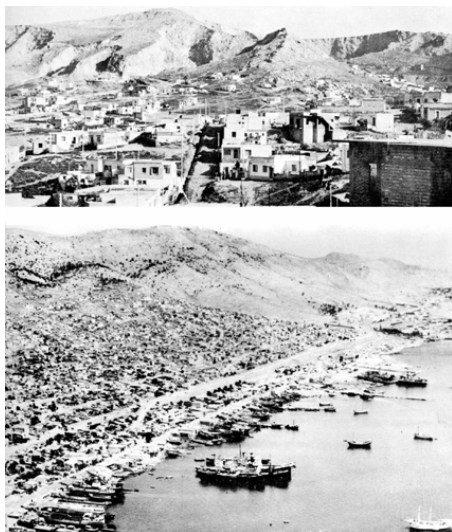


Fig. 8. The vanishing landscape

organizations and companies which control the transport services, the power supply or other public utility services, will clearly show that the Capital cannot but confront many and varied problems. They are problems that relate to transport, shortage of land, administration, economics, organisation, health, social services, technology, aesthetics, culture etc.

30. We cannot have an accurate picture unless we grasp all these problems and then try to discover the causes that are responsible for them. We can get a rough idea of these problems by considering the basin of Attica with its innumerable functions mingled together in such a manner as to cramp organization as a whole.

31. To list all these problems would be tedious. A reference to some of the key problems would be sufficient to show that it is needless to produce an exhaustive list to convince us that the Capital is actually facing serious problems which render our lives difficult, tiresome and irritating, our city an inconvenient place to live in, our summers hot, our winters cold, and a tragedy in the way of social organization tragic (Fig. 7).

The Loss of the Natural Scenery

32. Let me begin with this major problem since it is the first in point of time. I set out with a reference to the ancient physical setting of the Capital and I shall now consider what is left of it. We shall see to our regret that the Ilissos and Heridanos rivers have disappeared long since; that the greater part of the Kiphissos river has either disappeared or been covered; that the forests on most mountains around Athens have been burnt; that the hills are being defaced by quarries and gradually disappearing; that more and more houses clamber up the hills like goats. As a result, we shall soon be unable to identify not only the spots familiar to the ancient Athenians but even the scenery as we knew it at the turn of the century or as late as 30 years ago (Fig. 8).

33. The consequences are many. As a rule, when we speak of the disappearance of natural scenery, we merely establish the fact that we have lost certain values from an aesthetic point of view. Although this is quite serious, we forget to point out that the change of scenery has also caused a change in the climate. Instead of cool breezes blowing down cool mountainsides we have hot winds coming down hot mountainsides. There are no more streams of air such as those that develop along rivers and bring coolness to the city. There are no parks or olive groves. One might object that even though houses have been built on the hill tops this does not mean that the scenery has been ruined. After all Hydra, too, is built on steep hillsides and yet it looks beautiful. What has happened here in Athens, however, is most unsatisfactory. Because the houses built on the hillsides were built very

quickly and without any prearranged plan they have no transport or other public services.

34. This gradual disappearance of the scenery has played its part in bringing about extremely unpleasant living conditions and in eliminating all those features which made the life of man in the plain of Attica more decent. This evil, however, continues even outside the basin of Attica, in the Mesogeia district just behind Hymettus. One need only turn right at Stavros, where the road to Sounion begins, to see how Hymettus itself is eaten away at the edges by new quarries. As for Mt. Pentelicon, the work of destruction done by quarries has gone so far that the sides of this beautiful mountain will soon look like a skin afflicted with eczema.

35. In conjunction with the physical setting we should also give thought to the historical landscape and to the problems it raises for us. The Acropolis is not only just a feature of the physical setting which we must preserve. Its importance is even greater so far as our civilization is concerned. And yet, from a number of points, it is hard to have a proper look at it or to have access to it. From still other points the perspective and the view have been spoilt or lost completely. We have built blocks of flats too close to it or tear down light-heartedly the little houses lying at the foot of it, which look like the steps of a natural staircase, so to speak, leading up to it.

36. If we continue this work of wiping out from all around the Acropolis those many features which lend to it its proper scale -- namely the small one-storey or two-storey houses in the Plaka district -- we run the serious risk of reducing the Acropolis to the position of a site alien to the Attic landscape, a site surrounded by rows of blocks of flats which would raise a forbidding barrier precluding any intimate link between the city and the ancient symbol.



Fig. 9. The Acropolis and the scale of the neighbouring buildings

37. The only exception to note here in regard to the treatment of the historical landscape is a very laudable initiative of the State. I am referring to the use it made of the idea of Prof. Pikionis -- who was responsible for the construction of the right kind of project along the access roads to the ancient site -- thereby meeting all modern requirements in a way which respects the historical landscape. This is an effort worthy of our attention since it points to the proper method of approach to our ancient monuments (Fig. 9).

A City with small lungs

38. The fact that our city today has very small lungs is a natural consequence of the disappearance of open spaces in the landscape and of its commendable features and also of the lack of plans for the development of the Capital. Had we preserved these commendable features of the landscape, the city would now have proper lungs

everywhere. The Turcovounia would provide much better lungs than Lycabettus. In fact, as far back as 100 years ago steps were taken for the afforestation of Lycabettus, which has now become a lung in the heart of Athens. Conversely, the Turcovounia run the risk of being completely covered up with houses and nothing is being done for the afforestation of any section of it. The west section of the famous Athens olive grove, alongside the Kiphissos river, has now completely disappeared and the landscape in this spot is totally bare.

39. It is not, however, just large lungs that Athens is deprived of. Practically no provision has been made for small lungs either. A look at the map of Athens would show that practically every green space existing today was planned many generations back, such as the Acropolis, the Stadium, the Lycabettus Hill and the Royal Gardens. The Champs de Mars is the only green space added just before the war, but even this had remained an open space for years before that.

40. There are no parks corresponding to the new quarters of the city in the same way as the Royal Gardens were laid out to serve old Athens. It has no playgrounds or small squares where children could play. Let us not forget that children are now compelled to play their games in narrow streets full of dust and mud. How can we expect to create a healthy new generation when our children have no open spaces for their games, or the grown-ups a suitable place where they may rest during their hours of leisure and particularly during the hot days and nights of the summer?

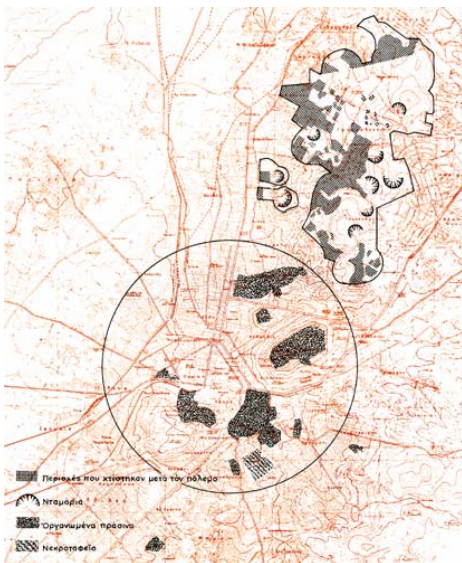


Fig. 10. Open spaces inside and outside the old town

41. Here we have to note with regret that old Athens had more lungs than the modern quarters of the city and that Piraeus has practically no lungs at all. The same is true of all the latest extensions whether to Athens itself or to Kiphissia, which still has only the old park near the main square (Platanos). The more modern quarters have no public or open spaces at all.

42. There is no question that this deficiency is a most serious drawback and one of the major problems confronting Athens (Fig. 10).

The danger of traffic congestion

43. It is quite obvious that our city runs the risk of suffering from traffic congestion. Both pedestrians and car-drivers are fully aware of the seriousness of the traffic problem and that it is getting daily more serious despite the intensive efforts of the State to ease the situation. This is only natural.

44. How could it be otherwise in a City which was planned and built at a time when there were no motor-cars; in a city which, even when it began to expand in the age of the motor-car, it still adhered to the old rules as if the motor-

car had not been invented in the meantime. At present we are obliged to open up new highways and pave the big axes of the city, but we have not really done any new road construction or broadening on any considerable scale. In point of fact, we are getting the benefit of the space that had been provided along the big axes a good many decades ago to ease the flow of traffic. The work carried out along Kiphissia Avenue, Syngros Avenue, Patissia Road and the coastal road was sound but it has exhausted the last possibilities available in the existing traffic routes. Measures of this kind will not solve problems such as that of traffic congestion in the heart of the Capital, notably in the section lying north of the Acropolis and east of it, to Lycabettus and beyond as far as Alexandras Avenue.

45. The measures now being taken will not solve any of the problems facing pedestrians, who are gradually losing every hope of being able to move freely inside their city. They are more and more confined to narrow pavements and arcades and their movements are restricted by chains and endless other measures which the Traffic Police is obliged to take.



Fig. 11. Hourly traffic peak

46. A glance at the map would convince us of the serious traffic congestion, which already exists on certain of the streets in Athens and is already spreading to other parts. We therefore have to note with regret that Athens may one day die of congestion, that it will be choked with vehicles and that it will no longer be able to function properly as a city.

47. The general problems already referred to should not make us forget certain specific problems. The most serious of these is the fact that entry into Athens from all parts of the country from north to south, lies at a narrow passage, the Daphne passage, and that if any thing goes wrong there, we shall be unable to have communication with the rest of the country. This fully shows how easy it is to stifle Athens (Fig. 11).

Where are the Homes for the People?

48. When we discuss our City we seldom make any reference to homes for the masses. All we concentrate on is public open spaces or traffic arteries and we sometimes go so far as to discuss public buildings.

49. And yet the question of homes for the people in the real sense, -- namely the provision of homes for the people as a whole -- should be our main concern. We have not however done as much as we should have in this area. The lack of a state policy on this issue of homes for the people has driven the poorer classes to areas far removed from their centres of interest. It has driven them to the sides of hills where they build houses illegally. One may even go so far as to say that a large number of people live outside the spheres of law and society since they are

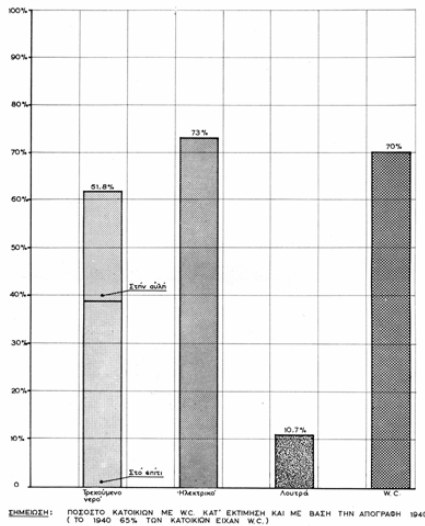


Fig. 12. Houses with running water, electricity supply and sanitary facilities (1951 census)

deprived of basic facilities such as water and power supply, transportation, schools and many others which are indispensable today.

50. Let us not however imagine that this applies to the poorer classes alone. For even those classes which enjoy higher incomes and which, externally at least, look as though they lead better lives, actually live under completely unsanitary conditions. One need only look at the blocks of flats with narrow light walls on narrow streets to realize that a large proportion of their rooms and practically all of their auxiliary spaces get no sun and are scarcely ventilated. How then could one expect that we have the right climate around us and proper living conditions?

51. We have not yet produced homes for the people of all classes. Whatever has been undertaken in this sector by private initiative has been achieved outside the framework of the law in a completely defective manner. To find healthy living conditions one has to go to certain suburbs. But even such suburbs may have no schools or other necessary facilities (Fig. 12). Absence of communal structure and organization

52. The problem of the lack of proper homes for the people is not limited to the drawbacks of the dwellings themselves. It is a much broader problem. Even if good houses were built, this would not solve the problem of a decent way of life. Because dwellings do not by themselves make decent human habitations. None of us spends his whole life in his home. We also need the right kind of neighbourhood; we need schools, marketplaces, streets, parks, playgrounds and recreation grounds, in other words, a well-organized community.

53. In our city these, i.e. playgrounds and parks, are either totally non-existent in large sections of it or if they do exist they are totally defective, as is the case with streets. In other districts, facilities such as schools are few and far between and scarcely meet the needs of the population, or are unsystematically dispersed in the area concerned. In some city quarters the school is at one place, the market at another and the rest of the public services scattered about in such a way as to make it impossible for them to meet each other's needs or to form a communal centre of interest and contribute to a proper communal organization of the population.

54. It is significant that a good many of us have no idea of the community or district to which we belong because we have no ties with the rest of the community and the other people living round about us. In old Athens, the original Capital, there were districts every one of which had a centre of its own, its own market place, coffee shops, schools and churches. The people identified themselves with their particular district and were styled after it. At



Fig. 13. The Piraeus plan - An unorganized community

present, however, you may live in one district and send your children to school by bus in another. Your place of work may be far from your district in which you may have no friends or acquaintances at all.

55. One of the basic problems facing the Capital today lies in the fact that its approximately 2,000,000 inhabitants are very badly organized from a communal point of view. This accounts for the fact that they have not properly organized the area in which they could meet their needs for a happier life (Fig. 13).

The absence of an administrative centre

56. In dealing with the Capital and its problems the first thing we should look at is that of an administrative centre. There is no such centre at the present moment. The House of Parliament is in one place with two or three Ministries grouped around it. The Parliament houses the country's Supreme Court. There are other Ministries further away in premises on lease. There are Ministries as far as Vathis Square and one in Piraeus. The headquarters of the Nation's Armed Forces is in Holargos, on the confines of the Athens municipality.

57. There has of course been talk of creating a centre on the extension of Korai street. But it has emerged from this talk that our efforts would tend to build up a centre for the administration of the country in the upper storey of shop buildings, as though we were relegating the administration to the garret of the premises where business is carried on.

58. The administrative machine is scattered in the business centre of the Capital or rather in the business centre of Athens, with some of its functions even outside the city limits.

59. It must be admitted that not only there is no administrative centre but, what is more, that we serve the needs of the country's central administration in the worst manner possible. How can the civil servant concentrate on his work or how can we achieve proper results when we are surrounded by the noise of the business district; when, in going from one Ministry to another, we have to pass through coffee shops or other premises completely unrelated to the administration of the country. How can we make sure that our civil servants actually concentrate on the work of administration rather than waste their time in coffee-shops or do their daily shopping or see their relatives who might happen to be passing by on their way to the business centre of the city? (Fig. 14).

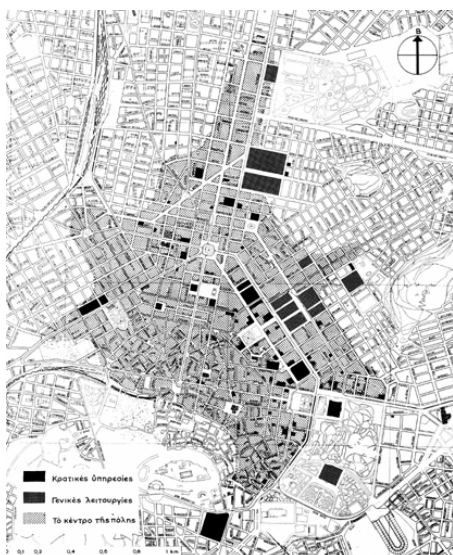


Fig. 14. Distribution of the Administrative Services in the present centre

No Land and no credits

60. The problems set forth so far are major and very difficult ones to solve. We shall find that at the root there are other very basic problems. Two of the most important

ones are the fact that there is no land owned by the State or that could easily be acquired by it (freehold land is now very scarce in Attica and it is either not owned by the State or is encroached upon) and the shortage of credits such as would enable us to carry out a plan for the improvement of our homes, our district or our city as a whole.

61. We do have land, but it is held by people who owned pastures and who now intend to make money out of it. These people are squatters who make bad use of the land they hold at the cost of the community. Besides, whatever funds are available are being spent without any prearranged plan. However, though there are no funds, financial means are indeed available since large-scale building is going on in Athens all the time. Yet, this building activity is carried on in such a way that people have to pay excessive prices for land, which means less money for the creation of useful spaces. No consideration has been given to any national programmes enabling people to utilize their savings in a more efficient way in order to provide better shelter.

62. The State, which should be a great landowner, has let the land slip through its fingers or be misused by private individuals who may or may not have the legal right to do so. This means that the State no longer holds sufficient land on which to build Ministries, other government buildings, to create the necessary parks and erect public utility installations.

63. The following two circumstances will show how disastrous the lack of land can be to an overall policy for rebuilding the Capital First, no new public buildings are being erected because the necessary land is unavailable and because if we were to buy land for such a purpose, we should have to pay very heavy sums of money. Second, because any houses for the people programme, such as the workers housing plan, loses its importance since only very small sites can be purchased and that at high prices.

64. During the past two or three years land values in the Capital have ranged between 9.85% and 11.1% of the cost of a flat in a workers' block of flats, without including civic works (public spaces, streets, sewers etc.) in such cost. These percentages are even higher when accounting for land development.

65. One major problem is the lack of a master plan and programming for the development of the Capital. Some may say that there is such a programme but the fact is that none has really been worked out so far. Again, there may be plans for Athens, for Piraeus and the suburbs, but there is no overall plan. So a good many services, organizations and private individuals are still at liberty to start operations, put up buildings and construct installations and arteries without any coordination between

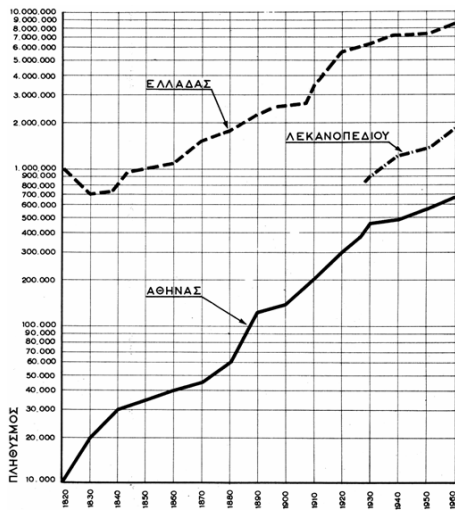


Fig. 15. The Growth of population

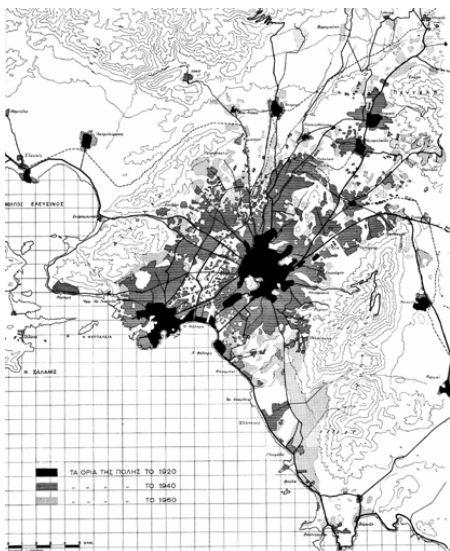


Fig. 16. The Attic plain from 1920 to 1960

them. How can we possibly solve the many problems we have referred to and many others still to be mentioned without having at least an overall plan and programme?

66. We must admit this and arrive at the basic conclusion that we are facing great problems and that life in the Capital is very difficult; that large sections of the population are not served at all and that the population as a whole has not tackled its problems as a well-organised entity. How can we then deal with the present? And what is the outlook for the future? If things stay as they are, we should be very pessimistic for the future.

The root of the evil

67. Great wrongdoing has already taken place and it is only natural that there should be important causes for it. The principal one is, of course, the sharp growth of population. If we look at the curve for the growth of the Capital's population, we shall note big increases, particularly after 1922. Thereafter the growth continued at such a rapid rate that in one generation the basin of Attica became completely crowded with people (Fig. 15).

68. The Capital began to cover the lower sections of the basin and it is gradually tending to occupy the whole of it, not accounting for the tops of hills and mountains. Thus the basin looks like a cup that is getting filled up to overflowing, like a lake which first floods the plains, then the hills and then spills over to neighboring plains.

69. This is not however the only cause. There is no doubt that there are other important causes such as lack of financial means and the difficult economic periods the country went through, notably between 1920 and 1930 and between 1940 and 1950 -- first on account of the influx of refugees and second of the war and the problems it brought about. (Fig. 16).

70. Let us not, however, try to hide behind such excuses. For it is a well-known fact that, even with our limited means and without any increase in the resources made available, we could have achieved better results, if we had secured control over the land and if the State had taken the initiative to make decisions as to what should be done in every district and when this should be done; or if we had a plan and programme. None of these have been achieved so far. This should be a good lesson to us about the future.

What is the future of the Capital?

71. In the light of the situation we have described, we should now put the following question to ourselves: What is the future of our Capital? Before answering this question, we should provide an answer to certain basic questions.

72. What is the anticipated growth of population? As it stands today, we should not expect any drop in the rate of population growth. Available data shows that during the past decade the population has grown at the annual rate of 3.4%. It is reasonable to assume that this growth will continue. If it does continue, in 21 years time the population of the Capital will have doubled and by the year 2000 it may be as high as 7,000,000.

73. It is of course very easy to say that we shall apply a policy such as would enable a decentralization of functions and a reduction of the swift pace of growth in the centre of the country. It must be noted however that whatever we say or try - and the application of measures is a difficult matter — the Capital will still have a considerable growth in relation to the total population of the country. This is due to the fact that the Capital is the centre of high level activity and that as progress is made with the industrialization of the country and the gradual organisation of the State, the population will inevitably tend to move, for purely financial reasons, more and more towards the centres of high-level economic, administrative and cultural activity.

74. It is only natural that productivity should drive people away from the countryside, hence, its population will remain more or less stable. It will not be easy for small towns to make large additions to their population since they will not have to serve the needs of increased populations in the countryside. So people will flow into the large cities and particularly towards the Capital.

75. We may rest assured that the population of the Capital, even if it continues to grow at the same rate as heretofore, will in any case grow at a sufficiently rapid pace so as to double in 35 years time and reach at least the 4,000,000 mark by the year 2000, if we work hard to carry out our national plans (Fig. 17).

76. Let us not imagine that the growth of population will be the only problem we shall have to deal with in future. We might recall that one of the greatest problems which in many ways influences our life in the Capital and our dispersal outside the city limits is the mechanization of transport, in other words the use of motor-cars, trains and perhaps in a few years time other means as well, such as the hovercraft.

77. Let us reflect on the increase in the number of motorcars in the years to come. In the first place, this increase is relative to the increase in international income. The increase in the national income anticipated under the Government's 10-year plan is 6% per annum on average. If this actually proves true throughout the country then the increase in the Capital will be even higher. It may even reach 12%, that is to say double the average for the

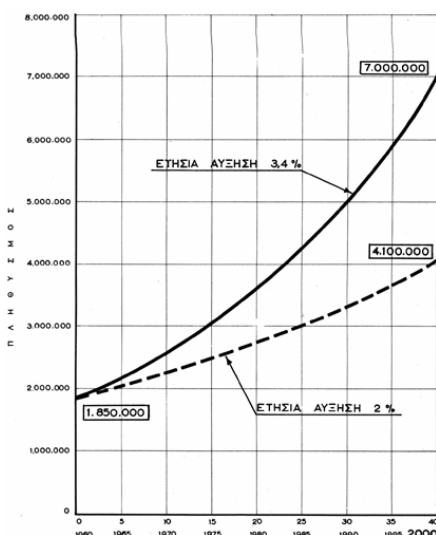


Fig. 17. Population growth in the Capital

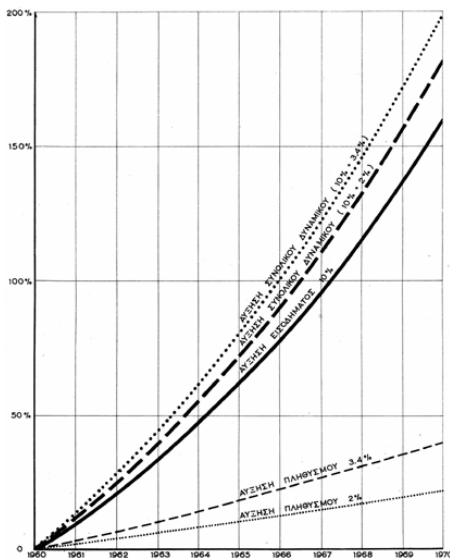


Fig. 18. The increase of the total potential of the Capital

country as a whole. But let us assume that it is a little less than that, say 10%. So if the population increases by 3.4% annually and the national income by 10%, then we shall have altogether a 13.4% increase of the total potential annually.

78. This leads to the conclusion that a population which is by so much richer will acquire at least 17% more cars annually, since a percentage of increase higher than the average will correspond to cars. This is also confirmed by the fact that in recent years there has been a 17.4% increase in motorcars annually. The increase was even higher in the year 1959. But that is not all. When the population is better off financially, it will drive about by car more often, and it will consume larger quantities of petrol. It is therefore clear that more and more cars will circulate in the Capital every year and that this increase will be at least 20% annually. This means that 4 years from now the number of cars will have doubled and that traffic problems will increase accordingly. As, however, there is no change in our streets, the prospect in this connection appears very grim indeed. It looks as though the City will be choked with cars (Fig. 18).

79. The higher income population will however require even greater facilities. It will in any case need more and better schools. And, as there is not enough room in the Capital for more schools, new schools are bound to be built outside the city limits. This will mean an increased movement to and from such schools. A great many more school buses will have to travel beyond city limits and even more time will be wasted by our children and their teachers in traveling to the various communities outside Athens where their schools will be situated. Nor is there enough room for playgrounds in Athens and Piraeus. These too will now have to be moved beyond the city limits. Again, more and more State functions will have to be established outside the City, something that will add more and more problems all the time.

80. We should fully realize that the rate at which our problems will increase would steadily become more rapid. Now, as the means which we have available both as a City and as an organisation are limited, chances are that our difficulties will multiply to a tremendous degree.

81. We should not be afraid to say that the future of the Capital will be truly bleak if matters remain as they are today. Our City will be a very difficult place to live in, in ten years' time, and will be actually uninhabitable in twenty years' time. Athens will be abandoned because all those who today build in the centre of the city will regret having done so because the centre will be unable to function and because the State will no longer have even its present primitive administrative centre since this will lie in a steadily declining city.

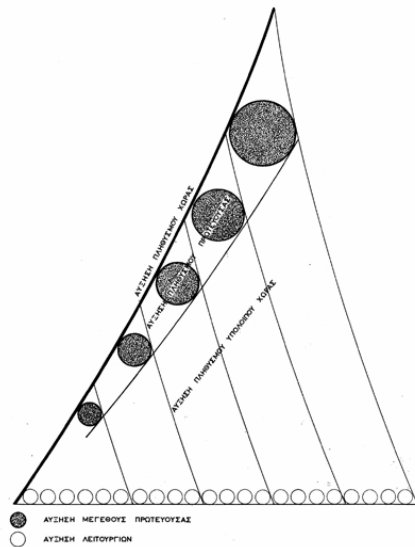


Fig. 19. Population growth in the country and in the Capital

82. We shall of course have to refer again to the need and desirability for decentralization. This matter must be cleared up first before we proceed to the discussion of other problems of the future. What we must try to do is to achieve the highest possible measure of decentralization by every means. No country has managed to achieve decentralization to the point of controlling the rapid growth of the population of the Capital. We can only hope for a reduced rate of growth. Even those countries which are administered in a strictly centralized manner -- which carefully planned their economic development and wished to avoid an expansion of the Capital -- have failed to achieve this. Two good examples are Russia and China both of which failed to control the great growth of their respective capitals and prevent the vast increase in their populations (Fig. 19).

83. This was even more true in countries where there is no central control. But even assuming that we can discover new methods of controlling the distribution of population or go to the lengths of using dictatorial methods to control all economic activity and population movement, we must still not be led to think that these things can happen overnight or that we can achieve such a degree of control before the lapse of a good many years.

84. We must therefore conclude that the Capital will continue to grow and that whoever says anything to the contrary deludes both himself and other people. It can be proved scientifically that the central points of economic functions expand faster than any other points, while it can be shown in practice that whoever tried to halt a normal development of this sort - as Hitler did - has failed. In practice we see that large economic centres, particularly when they coincide with large administrative centres, expand much faster than other centres into vast metropolitan complexes.

The course we should follow

85. Since the future is so bleak and since the path we are following today leads to multiple disasters for the Capital and for every one of its citizens, we should give serious consideration to the question of what course we should adopt from now on. In investigating this question we should not bar any solution in order to make sure that we have tackled this vital problem of the country in the best way possible.

86. We should first put certain basic questions to ourselves. If the Capital has taken the wrong course and if we cannot rescue it from this, which would be better, to build a new Capital or to preserve the present one? And if we decide to build a new Capital, we should consider how and where we should build it. If we decide to preserve the present Capital, we should provide answers to other questions. Can we leave the situation as it is or must we

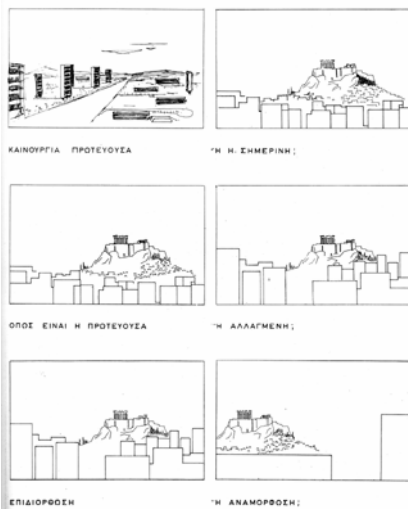


Fig. 20. Which course are we to follow

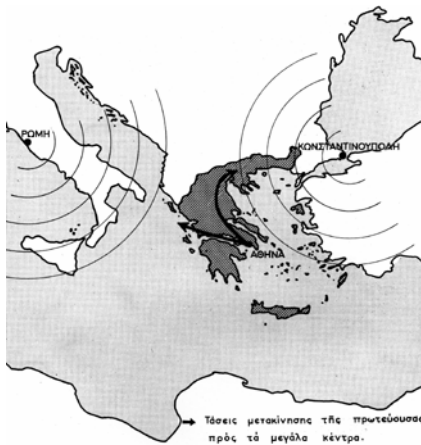


Fig. 21. The site of the Capital - Influence of Rome and Constantinople

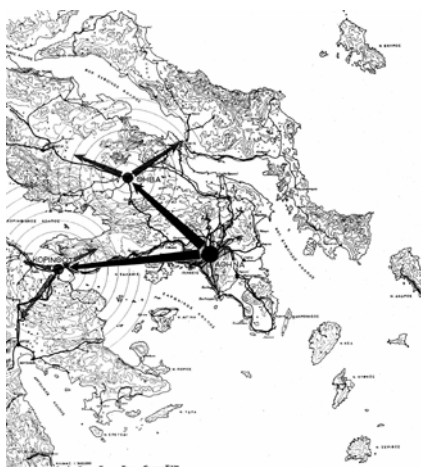


Fig. 22. The site of the Capital - Corinth and Thebes

take action to improve it? If we decide to maintain the situation as it is, we are heading towards disaster. We should realize this and give the signal of the "sauve qui peut". If we, however, decide not to leave the situation as it is, we should seriously consider the course we ought to take. Must we repair our Capital or must we reconstruct it? Can we carry out certain small repairs, broaden streets here and there, draw up new regulations and in that way save the situation or must we make a radical change? If it were a question of repairs, the matter would be very easy. If we are to reconstruct the Capital, what should this reconstruction be like? Should it be a reconstruction designed to change the texture, the flow of circulation and the centre of gravity of the Capital? Should it affect the shape of the City? Should it affect its size?

87. Let us now sort out these problems that lie ahead of us: the choice between a new or the present Capital.

88. Let us try to provide an answer to these very basic problems. Is there a case for abandoning the present Capital? Many people are perhaps turning this over in their minds. In point of fact, various proposals have in recent years been made in this respect. Some have suggested Megara or Thebes as prospective sites. Others have suggested various other sites. But is this really attainable? (Fig.20).

89. We must resign ourselves to the fact that this cannot be done for a good many reasons.

90. History has shown that life in Greece has the Athens area as its centre of gravity. This is after all only natural, except in those periods when Greece was not free but a part of a larger area, with its Capital lying virtually far away, somewhere else. Specifically, her Capital was either in Rome, in which case greater importance was attached to Corinth since it lay on the west side of the country, or in Byzantium, in which case Athens completely lost its importance as an administrative centre (Fig. 21).

91. When Constantinople was captured by the Turks, Athens definitely lost its importance not only as a large administrative centre but also the centre of its own wider area (Central Greece). There were periods in history when Athens was part of Thebes from an administrative point of view. This happened of course during abnormal periods when we were not free, that is when Greece was unable to develop a centre of its own, when subordinated to various other centres which cast their reflection upon her (Fig. 22).

92. It was also true during periods when sea traffic was not free and the country's organisation as a whole was therefore based on land transport radiating from other centres.

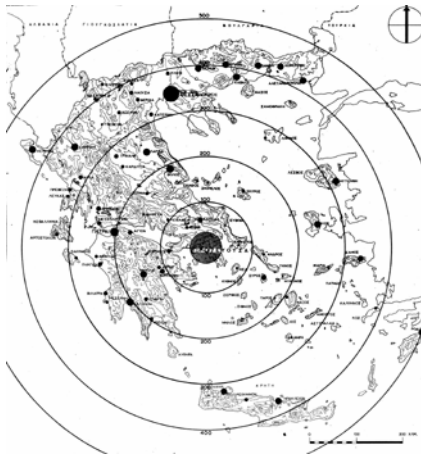


Fig. 23. Centrality of the Capital

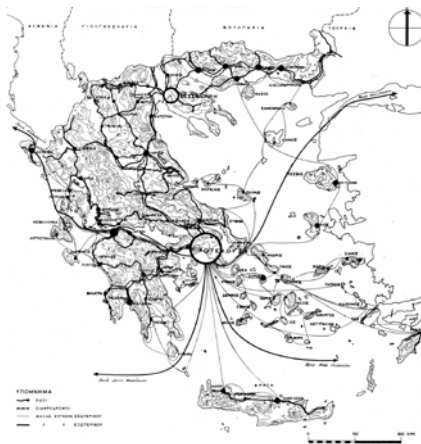


Fig. 24. The site of the capital from the transport point of view

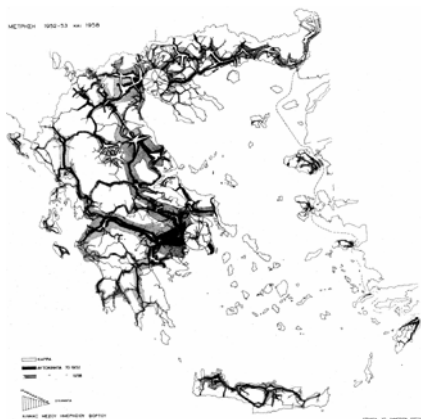


Fig. 25. Average daily traffic load

93. Today this sort of thing would be unnatural since now Athens is the country's real centre of gravity. From North to South or East to West, whichever way we view the length or breadth of the country we shall find that the Capital is at the centre of gravity (Fig. 23).

94. To move the Capital would not be possible since Athens is not only the centre of gravity of the country and of its population but also the centre of important lines of communication. In other words, it lies at a place through which the lines of communication can operate with ease from North to South and from East to West (Fig. 24).

95. Besides, a look at the chart showing the volume of traffic in Greece would show that the present site of the Capital is fully justified as the centre of land communications (Fig. 25).

96. Of course there are other near-by sites which could meet such requirements. The town of Megara is a case in point. But why has this never been selected as the site of the Capital? Why has it never become a large centre? The reason for this is purely topographical. A large city sited there without a proper harbour or proper hinterland and with only very narrow links to the rest of the country would be completely stifled.

97. Sites such as Thebes or other continental locations need hardly be discussed because it is natural that the Capital should be located at the junction of sea and land communications, that is to say near a large harbour. It is unthinkable that Greece, a combination of mainland and islands, should have a Capital which did not lie at its centre of gravity and near a large harbour which links the sea to the mainland.

98. There is therefore no doubt that these requirements can be met only by a Capital which lies at its present location, that is Attica.

99. These are not the only reasons why it would not pay to change the site of the Capital. There are others, even more overriding. The Capital may today suffer from many drawbacks but the fact is that large amounts of wealth are already invested in its site. A very large proportion of this wealth has been here since ancient times. It is the wealth which is represented by history, tradition and the ancient monuments. It would be unnatural to quit this centre of civilization.

100. But there is also another form of modern-day wealth, which has nothing to do with history, a kind of wealth which cannot be abandoned since any such abandonment would be economically unworkable. I refer to the wealth invested in our communications, in the large harbour and the airport, things which cost thousands of million drachmas to rebuild; to the considerable wealth invested

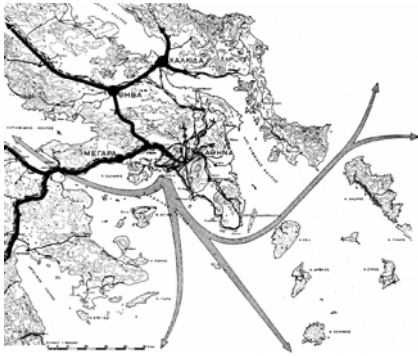


Fig. 26. The site of the Capital from the transport point of view

in the great transport arteries, particularly the railways, though the roads may have to be rebuilt. The water and electric power supply works and the sewer system are other forms of such wealth and also that invested in basic installations which, if one had to rebuild from the start in the Capital, would wreck our plan and make it unworkable (Fig. 26).

101. The upshot of all this is that it would be absurd to seek another site for the Capital, since the present site is the most sensible and since it would be unreasonable to seek a new site which would require new basic installations and would therefore render our plan economically unworkable. So we must rest assured that we are adopting the right course when we say that we cannot build a Capital on a new site but that the Capital must stay where it is.

Should the Capital stay as it is or should it be altered?

102. Since the Capital is to stay on its present site, would it not be better to drop the idea of altering it and resolve to leave it as it is now?

103. We have no right to do this either vis a vis ourselves or vis a vis future generations. We have a duty to weigh our responsibilities carefully. At this moment we should be blind if we did not realize that we are heading towards disaster. The fact that we can not change the site of our Capital because such a change would be both disastrous and unworkable, should not lead us to the conclusion that we should sit back with our arms folded and leave things as they are far from it. We have a duty to alter the Capital.

Repair or Reconstruction

104. Given that it will be necessary to alter the Capital, let us consider whether we ought to follow the present policy of repairing our streets, making full use of the distance between building lines and building arcades here and there. We are actually doing this, but can it lead to a solution? Our reply to this is categorical: repair work alone leads to no solution but merely to a vicious circle.

105. If the Capital is merely to be repaired, life in the centre will become more and more difficult, however efficient such repair work may be. Before long, the main arteries of the City, i.e. Patissia, Venizelou, Stadium and Academy Avenues, and other main axes, will no longer be able to cope with traffic, just as old Athens is unable to do at present. We shall simply have a recurrence of the evil which happened a hundred years ago.

106. In this way the repair work also will be wasted. Let us examine one of the ideas for repair work, namely the

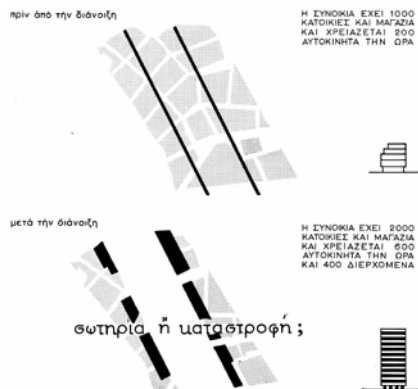


Fig. 27. Opening up of new streets

opening up of new streets. If we create a new street somewhere and in the place of the old houses we put up new big houses, the moment the construction of the new road is over and the new houses are settled in, the situation in that area from the transport point of view will be even worse than before. For on that same road, even if its size is three to five times greater than that available today, we shall have created five times more costly functions requiring the use of a great many more vehicles. So we shall be unable to serve the buildings to be erected on this now road. As for the other neighboring streets which will have retained their old size, these will now be completely stifled. For if these streets on which there are small two-storey and three-storey buildings are today unable to cope with a small volume of traffic, they will be totally unfit in the future to deal with the increased volume of traffic which will pass over the new artery, or if the traffic does manage to pass over them, it will be unable to enter the near by-streets (Fig. 27).

107. I do not mean by this that no new streets should be created in Athens. To say that would be an error and contrary to the purpose we aim at here. It may be necessary to open up new streets, but such an operation should come as a result of an overall conception for a solution of our problem and not viewed as something self-contained since otherwise it would defeat the very purpose it was intended to achieve. In other words, the results would be heavier traffic at central points and faster congestion in the city, which, moreover, would have cost both the national economy and private economy vast sums of money.

108. We should avoid the vicious circle produced by repair works which do not enhance the overall plan of a City.

109. With reference to the work of opening up new streets and the heavier traffic to which they would lead, we should also talk of the cyclical appearance of certain phenomena noticeable in large cities today. I have already expounded this theory in relation to American cities, but we shall see that it also applies to Athens.

110. In the beginning there may be congestion. As a result of this the intensive building activity in the centre would come to a halt and the situation would get so bad that the State would decide to create new streets. If these operations proved unsuccessful, things would stay as they were. If, however, they were to prove themselves a success, there would be decongestion, the transport services would improve and people would start building in the centre anew. The net effect would be that small dwellings would be replaced by large buildings, that new and more costly functions would be grouped there requiring the use of large numbers of vehicles and, ultimately, we should have congestion again. As a consequence of such congestion building operations would

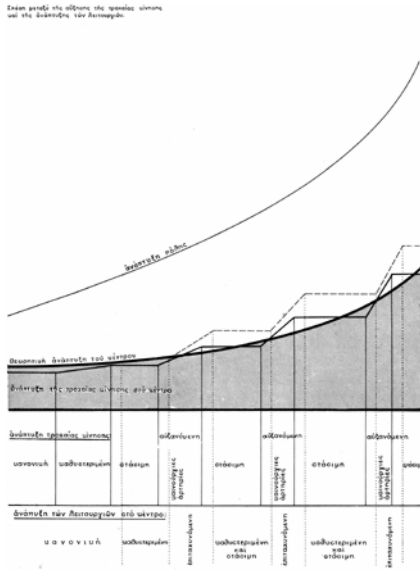


Fig. 28. The phases of the development of the centre

be halted again, forcing us thus to pass through successive phases leading to the ruin of the centre of the city. No problem would be solved except only temporarily while on the contrary vast sums of money would have to be spent on ever increasing expropriations and demolitions.

111. The conclusion to be drawn from all this is very clear. We should not confine ourselves to repair operations alone, since this would lead to results contrary to those aimed for. We should resign ourselves to the fact that we can no longer repair our Capital and that we must resort to a fundamental reconstruction of it (Fig. 28).

The kind of reconstruction needed

112. If we look carefully at the analysis of the problems facing our City and pay due regard to the risks we shall run if we persist in our present course, we shall find that our two major problems are as follows:

- a. The centre of the city suffers from congestion.
- b. The perimeter suffers from anemia.

113. It is now too late to rescue the centre. Besides it is now out of touch with the times. It would be the same as if the residents of Athens in the year 1830 -- when the Capital was transferred to Athens -- had attempted to build the new centre required by their Capital in the then existing town, a town which would be destroyed if new axes were to pass through it, a town which, if it were to save itself, should not be turned into the centre of the Capital. Thus the Capital was transferred to Athens but it was constructed outside the Athens of the time, in the area between Omonia and Syntagma Squares.

114. A glance at the past would convince us of the soundness of that course of action. We are still today proud of the Plaka district. We cherish it like a heritage though we do not respect it, as we should. The Plaka district has survived because 130 years ago we were lucky to have architects, town planners and a wise administration that did not wish to build our large administrative centre on Hadrian street, did not wish to build the University close to the ancient library and did not wish to build the new market-place on the site of the old. They were far-sighted enough to build everything on new sites (Fig. 29).

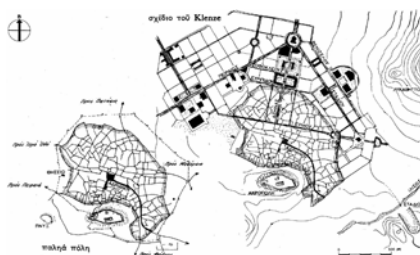


Fig 29. The old town and the Klenze plan

115. Let us now examine the question not against its historical background as heretofore, though history will tell us what to do. Let us look at it from a purely scientific point of view.

116. If we wish to appreciate what is happening in the Capital today, we should bear in mind that our City, which in the past was a small settlement, has now grown

tremendously and has a larger centre. This centre which has grown on the dwellings of the old town has led to a very unsatisfactory situation. This is because the dwellings had to be turned into workshops and stores, the narrow streets had to handle heavier traffic and in this way the centre, having to develop inside the body of the City, has now been strangled.

117. What must we do in future in order to avoid a gradual death of our City? Under the circumstances, there is only one course open to us. As the City is being stifled because it is being pressed hard by its own mass, and because the centre has been surrounded by other structural masses, it should break out, just as a surrounded army breaks out of a city, not in all directions but in only one.

118. Thus if we wish to save our City, then we should let the Centre break out towards a certain direction so that the Capital may no longer grow in concentric circles. If the centre moves in a certain direction, the City too will gradually be shifted. If, later, the centre extends in the same direction, then again the City will move parallel to it. Thus by degrees the static city of the past will be converted into the dynamic city of the future, into a Dynapolis. The extension of the city in a single direction alone would permit the unobstructed extension of the centre and a constant correspondence between the various districts of the city and the centre of it (Fig. 30).

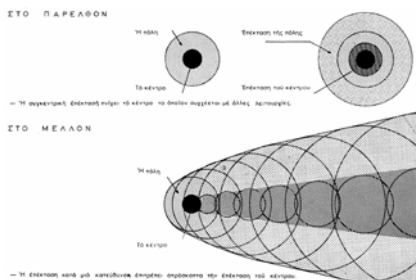


Fig. 30. The expansion of cities

119. We have thus arrived at a new theory based on Ekistics, the theory of Dynapolis, of a city which can expand in the future without ruining the past, a city which can respect what has been done so far and what is to be done in the future; which does not try to patch up the present and make compromises about the future.

120. This Dynapolis, which is gradually developing from theory to practice and is being applied in various cases, is founded on the basic principles of Ekistics which require:

a. Unity of purpose in our effort to solve simultaneously political, administrative, technical, architectural, aesthetic and cultural problems.

b. A hierarchy of functions, where our effort constitutes a gradual passage from the house which serves just one family, to a small neighbourhood, to a larger neighbourhood, to a small community, to a larger community and to the super-community of a large city.

c. Freedom for a dynamic development in time, that is in the fourth dimension of time also, and

d. The construction of a city on all the necessary scales, the scale of man to begin with, the scale of the

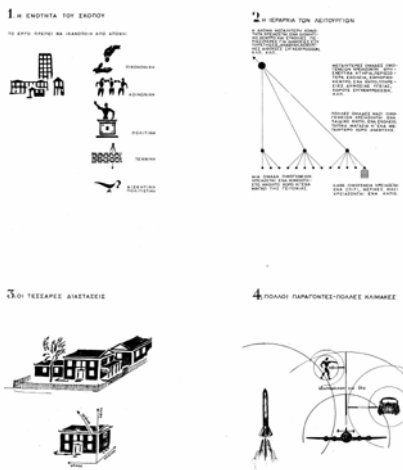


Fig. 31. The principles of ekistics

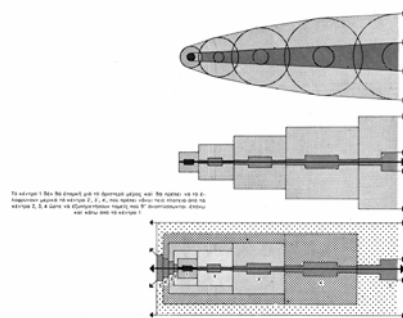


Fig. 32. Dynapolis

motorcar, that of the airplane and even that of the rocket (Fig. 31).

121. In accordance with this theory, we proceed gradually from the parabolic theoretical form of Dynapolis we have just spoken of, to a rational form, which conforms with the effective rules for the arrangement of the urban area (Fig. 32).

122. In pursuance of these rules we should always divide the area by two vertical axes because -- by contrast to what happens in rural areas where the principle of the shortest distance between two points and the need for a total coverage of the land and a rational distribution thereof lead us to the acceptance of circular and hexagonal patterns in a built-up area -- it is the big vertical axes which secure the most economical construction and the most economical movement. This is so because the vertical axes emerge from a repetition of the rectangular axes used in building rooms, dwellings, neighbourhoods, squares and larger entities. In other words, by contrast to rural patterns which may be more natural, i.e. circular, hexagonal, or radial, in the city itself we can speak of architectural and technical patterns which are based on the two rectangular axes.

123. On the basis of those considerations a parabolic Dynapolis is gradually converted into a rectangular one which develops mainly along a single axis, while being completed along the other three.

124. What we see happening in Athens today is precisely what happens in other large cities. The city is growing steadily to such an extent that the fourth dimension, that of time, acquires considerable importance influencing to a higher degree our future city which is now developing into a dynamic city. To appreciate the full importance of this we need only note that according to the latest statistics, during every hour of every 24-hour period that passes, the Capital grows by 3 dwellings, i.e. 2.4 new dwellings and 0.6 additions to old ones (expressed in terms of volume of new buildings) or by 700 m³ which are added to the building wealth. In terms of an 8-hour working day this increase is three times as large. In other words, during every working hour Athens grows by 9 dwellings. If we now based our calculations on the statistics of the Capital area as a whole and not of Athens alone, we should find that 18 houses are added during every working hour.

125. The city is growing steadily whether we like it or not, and it is this fourth dimension which ought to influence our decision in regard to its future arrangement. The right solution is provided by Dynapolis which guides the city in a definite direction and determines which way it is to grow so as not to expand on the old residential quarters and thus stifle them, but be able to grow steadily outside these quarters. This is something with which we have been

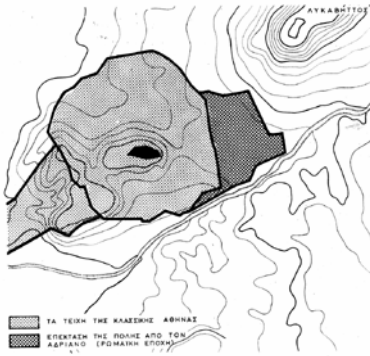


Fig. 33. The expansion of Athens in Roman times

unfamiliar so far. Up till now, as had been the case with old Athens and with Hadrian's city built by the Greeks during Roman rule, expansion has been going on outside the city but this, too, has been static. We have now entered a new period during which the remedy lies only in a Dynapolis which permits a steady growth both of the centre and of the city itself (Fig. 33).

126. In sum, our duty is to abandon the over congested centre and to create a new city centre.

A new centre for the Capital

127. The Capital could only be saved if we decide to abandon the present centre in the heart of the city and plan another one on totally new ground.

128. We are living in a historic period. Following in the footsteps of the Athenians of 1830 who decided to leave Athens within the walls alone and to build a new Athens outside these walls, we should now treat our own city in the same way. We should leave old Athens alone and stop slicing it up and ruining it by adding more and more functions which cause a steady growth of traffic. The city has its problems and an increasing volume of traffic any way, and so it stands in need of repair work and opening up of streets. But let us not bring more functions to the centre.

129. Our concept of the capital should involve a new centre to be located in the Athens plain outside the built-up areas since the plain continues to be the centre of gravity of the present Capital. This new centre must be located in some open space such as can only be found north of the Capital, near Menidi and the Tatoi airfield. That is where we should build a new centre and make arrangements for a new expansion of our City. We should thus be able to create outside Athens, our Capital of the future, the dynamic city we need so urgently.

130. A serious study of the subject would show that this is the only sound course of action. That is the only place where we can build a centre because such will make available a large level section of the plain, the last one left to us, particularly to the north, at a place which, as will be explained below in our proposals, would serve much better both the capital and the country as a whole.

131. This is the only proper solution. The idea of a Dynapolis is an idea which has gradually asserted itself and which we now try to apply in other cities such as Washington, Khartoum, the capital of Sudan, Islamabad, the new capital of Pakistan, and Baghdad, the Iraqi capital (Fig. 34).

132. The area of Washington, as it stands today, has stifled the administrative centre lying round the Capitol to

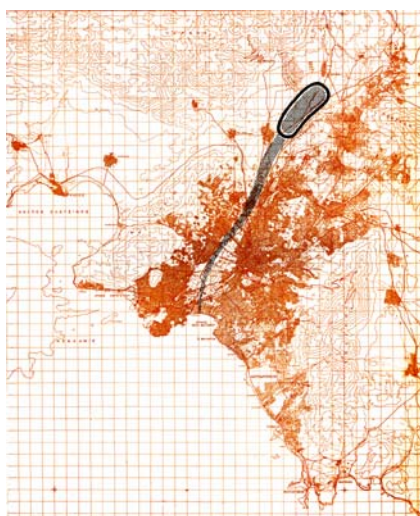


Fig. 34. The expanding centre of the Capital-Dynapolis

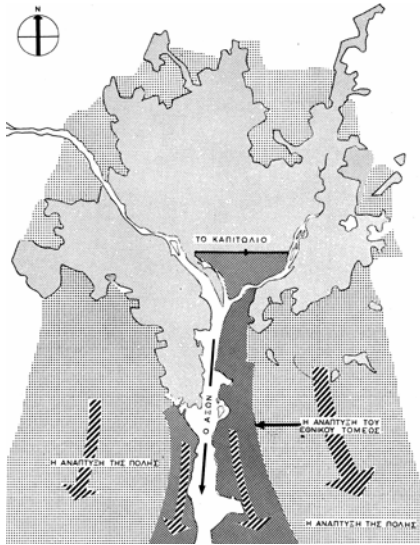


Fig. 35. The future development of Washington, D. C.

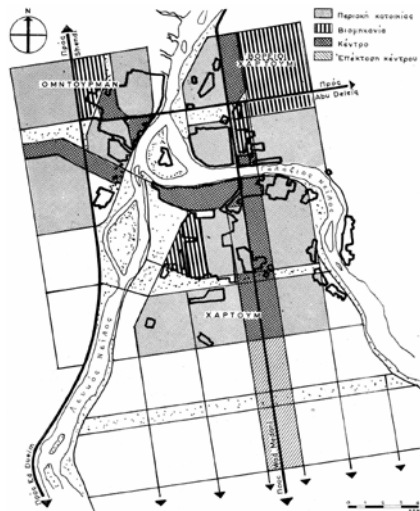


Fig. 36. The Khartoum metropolitan area master plan

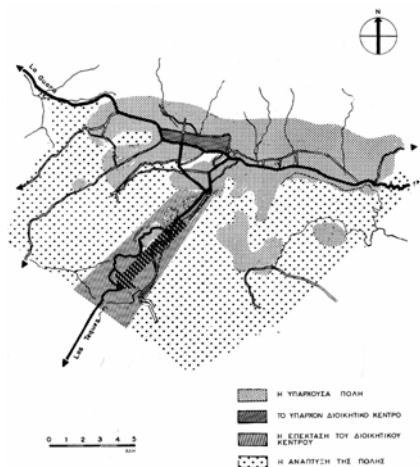


Fig. 37. The future development of Caracas

such an extent that new large State installations have to be built in places outside the limits of the city, including neighboring States, as was the case with the Pentagon, which is situated in Virginia. A good many other State services have been installed outside the administrative area of Washington, though strictly speaking they belong to the Capital (Fig. 35).

133. In the study which I drew up in the year 1958 on the reconstruction of Washington, a study which is now under consideration, I proposed as a solution to the problem the expansion of the city, according to the principles of Dynapolis, to the south along the Potomac river, so that both the centre could be moved and allowed to expand in a certain definite direction and the city itself develop the rest of its districts in that same direction. In this way Washington could be replanned as a completely new city.

134. Similar principles imposed the new plan which has already been approved by the Sudanese Government for the new larger Capital which is coming into existence through the merging of Khartoum, North Khartoum and Omdurman, lying on three sides at the confluence of the three Niles (Fig. 36).

135. The plan has shown that if the city continued to expand in concentric circles, the centre of gravity of the city would continue indefinitely to be exactly on the confluence of the three Niles. This would in turn mean that the city would be doomed indefinitely to rely on transport services running over big bridges across the river, which is completely uneconomic in every respect. Thus, in accordance with the theory of Dynapolis, following a study of the question, a scheme has been approved and is now being applied, such as will allow expansion to the south from the old centre of Khartoum, the other towns and districts being merely tidied up to enable a modern dynamic city to arise.

136. Caracas, the capital of Venezuela, is a city stifled by hills and mountains. Its centre cannot carry on a normal existence because of the density of traffic. In these circumstances there is only one course open. Namely, by completely reversing the present course to turn a city which is orientated towards a centre in a valley ringed around by hills and mountains, into one with its centre developing to the SW, along the national highway leading to the interior of the country. Thus the new quarters will develop parallel to the centre so long as the city needs to expand (Fig. 37).

137. Baghdad, which was originally built on one side of the Tigris, is now gradually developing on both banks of the river. This has made necessary the preparation of a plan which provides for its continued smooth development without concentration of its functions at any one specific point. This plan, drawn up by our Office, has been



Fig. 38. The Baghdad master plan

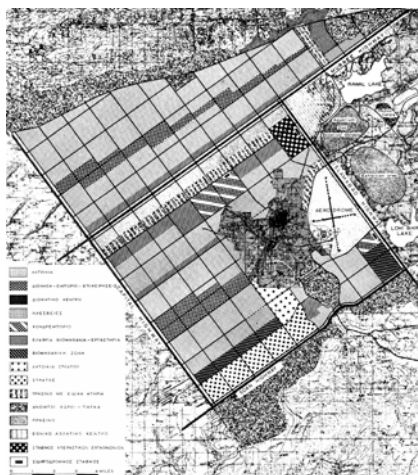


Fig. 39. The Islamabad metropolitan area master plan

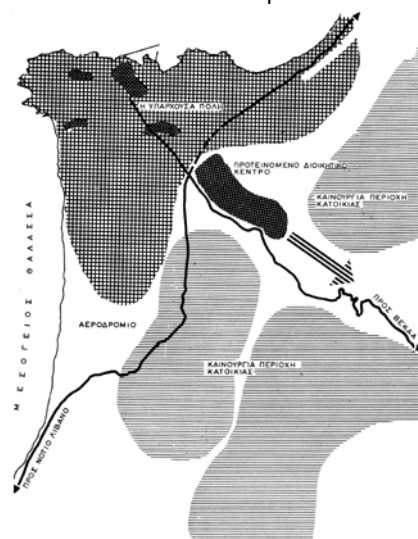


Fig. 40. Beirut - The proposed Administrative Centre

approved and is already being applied for the reconstruction of this centre of the Iraqi area (Fig. 38)

138. Islamabad, the new Capital of Pakistan, the fifth largest country in the world in population size, has been studied by our Office as a typical Dynapolis, as a city which could, to begin with, be built on a small scale with room for expansion until it reaches physical limits for the accommodation of even 2,000,000 people. It will be the largest city to be built from start and it is already under construction on virgin soil (Fig. 39).

139. Even in the case of Beirut, the city which is stifled by large blocks of flats and other huge structures, the only solution which offered itself when plans were studied to create a new administrative centre, was that this centre should be built outside the city thereby allowing the latter to expand towards the mountains and to begin being integrated into the centre of gravity of the Lebanese area, with the residential quarters of blocks of flats always developing on either side of the expanding centre (Fig. 40).

From theory to implementation

140. So far we have seen what is at fault with our city and have dealt with the problems which beset us. We have also had a look at the problems which we shall have to face in future. And we have ended by working out a theory on the dynamic city of the future and by putting forward an overall proposal which will save Athens, consisting of the creation of a new centre outside the present built-up area, notably in the only important place left inside the plain.

141. From now on we should consider ways and means of giving effect to this basic concept which is the backbone of any one solution (for though this may not be the first to put into practice, it is nonetheless the main point to which we should give our attention) and assess the impact it may exercise on the Capital as a whole, that is to say, the whole plain. It remains to examine how with this central idea as a basis we can gradually build up the Greek Capital not only in general outline but down to the last detail. In what follows we shall go over some of the points on which we shall concentrate our attention.

PROPOSAL 1. How to save the landscape

142. The first problem touched upon was the ruining of the landscape. If the Capital stays as it is, the ruin will continue. Specifically, this is what is going to happen.

143. As time passes, we shall encroach more and more upon the surrounding mountains. We shall blot out Aegaleo, Mt. Pentelicon will suffer the same fate as Hymettus and we shall soon cover up Mt. Parnes with

urban dwellings. We shall continue to press hard upon our coasts. We are all aware of the hard battle that is being fought now to save our coasts, but all for nothing. We shall continue to stifle our archaeological sites not so much by building closer to them as by constructing taller buildings round them. Besides, the proposed opening up of new streets through the centre of Athens would raise precisely a danger of this kind, since it would bring the tall buildings into sharp contrast with the ancient landscape. On the contrary, now that the Plaka district and its low houses supervene, we create the appropriate scale for the Acropolis, which we do not have to look at through blocks of concrete at least from certain spots. Who will question the fact that it is preferable to see the Acropolis from the Plaka in relation to its small houses rather than from Dionysiou Areopagitou Avenue with its huge blocks of flats built on a disproportionate scale and spoil the landscape?

144. If the solution we now propose is adopted, if we ease the congestion in the Capital and if a new centre is created outside the city limits, then we shall be able to develop new neighbourhoods close to and on both sides of it, thereby relieving the strains and stresses from which the present centre suffers. This will enable us to save our physical landscape with greater ease. As this will not however be enough more specific measures will have to be taken.



Fig. 41. PROPOSAL 1 - Ring roads around the mountains

145. Around every one of our hills and mountains we should lay out immediately a ring artery to mark the limit up to which building should be permitted. Any persons owning property beyond that limit should prove such ownership now and not 10 or 20 years from now by which time they will have gradually trespassed on the land, as usually happens in such cases. Such ring arteries around the hills and mountains must be surveyed and laid out both for reasons of transport and for the sake of protecting the landscape. These roads should consist of three ingredients, namely, a road in one direction at one level, a second road leading in a different direction at another level and a circular moat intended to collect the rainwater and save the Capital from flooding (Fig. 41).

146. Immediate decisions must be taken as to the altitude at which such ring roads will be laid out. It is not of course possible to maintain them at the same level all around Hymettus, since the northern part has already been built up at a higher level. It is, however, absolutely necessary that the same level be maintained over large sections of the mountain, so that no one may have an opportunity to tamper with the personal interests of alleged properties. For example, the north section of Hymettus leading on to the plain could be maintained at the highest level of all, the southwest section at a lower level and the whole of the east section on the Mesogeia side at an even lower level, with few crossings over from one level to the other. Such passage from one level to another should be effected

gradually and not in a meandering fashion so as to preserve the continuity of ring roads and ensure a better link with the landscape and a harmonious blending of the mountain with the area as a whole. Similar principles should apply to Aegaleo, Parnes and Pentelicon and, even at this late hour, in regard to such Athens hills filled up with dwelling houses, e.g. the hills south of the Zappeion group of buildings and those on the roads to Vouliagrneni and Nea Smyrni on part of the tops of which there are still open spaces which can be saved by turning them into green belts.

147. This is the only way to preserve the landscape and our climate. For if we manage to save the landscape and all these places grow green again, we can be sure of having a cooler climate in summer thanks to the drifts of cool air which will sweep across the built-up areas of the plain from the hilltops.

148. It would not, however, be enough to preserve our hills and mountains. We should also rescue our coasts. To do this it would be necessary for the Government plan -- that has been decided upon to implement all the way from the Piraeus Peninsula to Varkiza -- to be extended to practically the entire length of the Attica coastline. The plan, already carried out to Varkiza, is intended to meet the transport and tourist requirements, but above all to serve the needs of the population of the plain by providing an outlet to the coast to all social classes, whatever the financial means at their disposal, and to all the inhabitants of the Capital, regardless of age. This effort should be enlarged to cover the whole of Attica. To achieve this successfully we should, however, even at this stage, lay out a ring road round Attica, though the actual construction of it should have to take place much later.

149. The zone between the coastal avenue and the coast itself should be arranged on the basis of a special plan that would provide for its full development through the installation of either public or private facilities

150. Methods must be devised to protect all public interests from the encroachments of private citizens who usually push down to the sea and turn the coast into their own private preserve. In parallel fashion, an opportunity should be afforded to large groups, whether private or organised as summer camps, to buy land and live near the coast in close touch with the sea both now and in future.

151. Moreover, we should safeguard not only our natural but also our historic landscape. We should try to safeguard all our archaeological sites in the plain by marking off their boundaries and laying down the policy we are to follow in each case.

152. The historic landscape around the Acropolis is of particular importance. In this case there is a series of

problems to which we should address ourselves so that a timely decision might be taken.

153. Our first problem would be to define the demarcation line between the built-up zone and the free zone. About thirty years ago the State had sufficient courage to mark off a fairly large archaeological zone which seemed far too wide at the time. In spite of that -- now that with the assistance of the foreign archaeological schools a great part of that zone has already been freed -- it is considered altogether reasonable that the site of the ancient Agora in Athens should be free for the greater part and not occupied by one of the quarters of old Athens.

154. The time is ripe to consider the matter even more drastically and decide how far this zone should be enlarged and when. May be it will be necessary to preserve a large section of the Plaka, particularly the better part of it, as a built-up area the way it is today, to provide the right standard of comparison with the Acropolis (after all the ancient city was built on the same scale as the Plaka) and also provide a picture of old Athens and not of ancient Athens alone. In such a case altogether special regulations would apply to preserve this part of Athens. It might perhaps be advisable for this to be acquired by the State but to remain in the hands of private citizens who would have the right to repair the houses but not to demolish them or change their purpose. They would have to keep them up in the same spirit and use them for dwelling purposes by paying a small rent. In this way the whole of this section of Plaka would form an Athenian Museum and a necessary aesthetic support for Athens.

155. Even more drastic measures should be taken in the section south of the Acropolis Philoppapos group with respect to which it must actually be decided which of the houses should be preserved, as in the case of the area around the former Hill of the Nymphs, and which should be pulled down, which installations should be completed and which should be removed so that the landscape should acquire some unity.

156. One of the most serious problems to consider is the height to which houses should be permitted to be built at the city limits on the side of the archaeological site. For when the spectator sees on one side of Dionysiou Areopagitou an ancient site and on the other side of it modern blocks of flats, one cannot very well say that we have solved the problem of the relationship between the historic and the present landscape.

157. Lastly, we should consider even more drastic action involving, on the basis of a long-term plan, to abolish various streets which today cross the archaeological zone and are a peril to it. The main one of these streets is that of Dionysiou Areopagitou which is extended into Apostolou Pavlou street. It is high time we made up our mind to

abolish this street so that the ancient site between the Philoppapos hill and the Acropolis should acquire the unity which is in keeping with the lay-out of the group of hills around the Philoppapos monument served by suitable roads. It would perhaps be best to reserve these roads to pedestrians and to allow motorcars to drive through only in exceptional circumstances. The pedestrians would then dominate the landscape and be able to enjoy it.

158. Such a solution would cause serious difficulties to the Athens transport problem which relies in a large measure on the link which this artery forms. But this difficulty, too, could be overcome by means of a tunnel starting at a short distance from the Macriyanni intersection, where the ground begins to rise, and ending beyond Thisseion, thereby restoring to the landscape its proper scale and unity.

159. In sum, we should also direct our attention to such recreational grounds as are smaller than mountains, coasts or archaeological sites. I refer to small parks and squares scattered here and there. In this respect, too, if the centre was moved outside the city limits and the city was decongested, we should be able to create such grounds with greater ease.

160. The conclusion reached so far is that we must transfer the centre of the Capital in order to achieve a better organisation of the recreational facilities and must work out a plan for open spaces, mountains, coasts, archaeological sites and smaller green and recreational spaces.

PROPOSAL 2. The lungs of the Capital

161. It would not be enough to see to it that the Capital acquires the large lungs it needs. It is our duty to create other smaller lungs as well all over the Capital. Old Athens had such open spaces which have now disappeared following the new extensions. It would be necessary to create lungs while there are still large estates in the non-residential sections of the plain. So far as such spaces are concerned, we could lay down that 25% thereof would be set aside for lungs and another 25% for the transport network. In this way, in every section to which the town plan would be extended, we should mark off an area, which would belong to the public.

162. To illustrate what we mean by real lungs, let us look at the model sectors being built up in other cities. In such sectors the plan is to provide small lungs, e.g. small squares, for every 15, 20 or 30 houses, larger ones with children's playgrounds for every 100 to 200 houses and still larger ones for every 300 to 400 houses. Lastly, we provide lungs equipped with a gymnasium for every 1000 to 1500 houses. These lungs are linked together by a network of lanes which allow people to walk about freely

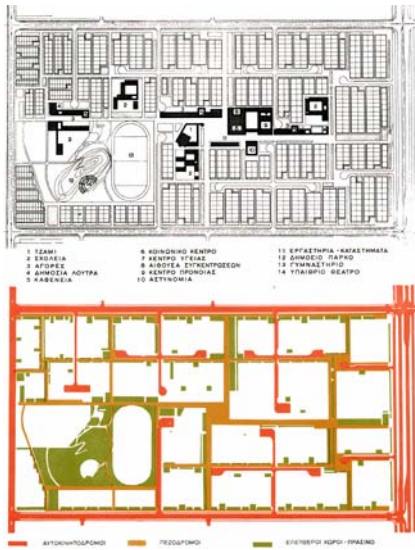


Fig. 42. PROPOSAL 2 - (Example)
Open spaces in pilot sectors

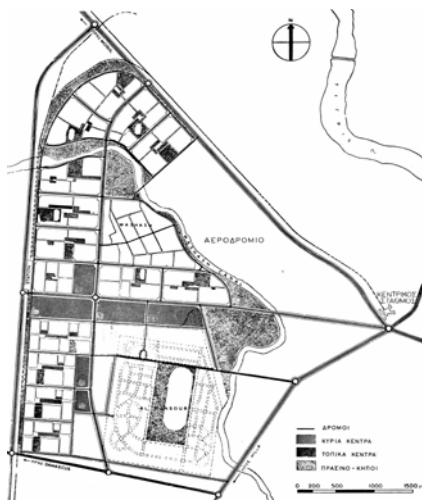


Fig. 43. PROPOSAL 2 - (Example) The
lungs in a Community Class V - West
Baghdad development plan

and enjoy the view. These lungs must in turn be linked to even larger ones which correspond to between 8000 and 10000 families and so on (Figs. 42 and 43).

163. This way the Capital would get the lungs it needs in order to function. For such lungs can prove truly useful only when the green space which is available forms part of an entire network of green, that is to say, when a man setting out from his house in a small street lined with trees can proceed to a local square, thence to a larger square and finally get to a park. If one had to walk for half an hour in the dust through heavy traffic to get to a park and breathe all that dust again on his way back, such larger lungs would be of no avail. Only if we manage to build up a complete network of green, we should be able to provide Athens with the lungs it needs and help it and its population to breathe freely.

PROPOSAL 3. Easing the congestion in the Capital

164. Let us now examine the problem of how to save the Capital from congestion. To do this we must create a new centre and new axes. All new large installations for which there is no room in Athens and Piraeus must be moved outside these two cities. We must try to achieve a development of all settlements towards the free areas.

165. This can be done if we provide the Capital with the two large axes which it needs. Fortunately, we still have the time to do this.

166. One of these axes should start from the coast and proceed north across the plain in order to link the Capital with the whole of North Greece. This is an indispensable axis which is now missing from the plain. In the old days this requirement was met inside the plain, specifically on the east section of it, by Syngros and Kiphissia Avenues which did not however link the Capital to North Greece. They came to a dead end. On the west section of the plain there was Piraeus and Patissia roads. But in this case, too, there was no link with North Greece. Hence this axis was a blind alley so far as the national network was concerned.

167. We must now open up a new axis which leads north from the coast. There is only one route for this axis and that is the route along the Kiphissos. The Kiphissos is the natural axis of the west section of the plain between the Acropolis-Turcovounia backbone and Mt. Aegaleo. At the same time, it is the largest axis of the plain as a whole. This is an important axis which must be constructed. Fortunately, there is still time to do this. The axis should be sufficiently wide to meet the requirements of all types of transport. Namely, slow traffic, e.g. horse-carts, if still in existence, the fast moving traffic across the plain and the very fast traffic which will ensure a link between the Piraeus and the coastal zone, on the one hand, and North Greece on the other. Room should be provided along this



Fig. 44. PROPOSAL 3 - The national axes and the existing road artery network

axis for a railway line to be laid in a trench. Fast moving trains on this line would connect all the sections of the plain between them and might one day also link the plain to its northern suburbs. The line could then be extended to Boetia and perhaps even as far as Chalkis. This is the main axis we should construct.

168. There is however yet another great axis, which runs perpendicular to the one referred to above. It is the axis which will link the rest of Greece, Western Greece and the Peloponnese to the plain, and then the plain of Athens to the rest of Attica as far as Sounion. This axis can only be driven across the northern section of the Eleusis plain so as to secure a good route for fast moving vehicle traffic. From there, it will be continued north of Mt. Aegaleo, through the pass between Mt. Aegaleo and Mt. Parnes, will turn off perpendicularly to the other great axis, will run between Marousi and Kiphissia and between Mt. Pentelicon and Mt. Hymettus and end at Sounion across the Mesogeia area (Fig. 44).

169. Thanks to these great axes we can achieve the complete traffic decongestion of the Capital. So, whoever wished to move along the plain, he would seek to get out perpendicularly on the first axis coming from Kallithea or Athens, Kiphissia or Piraeus, Aegaleo or the other settlements and continue his journey on this great north to south axis. In this way we should not all have the tendency to cross Athens through the narrow gap between the Acropolis and Lycabettus which is responsible for all our problems. Quite on the contrary, we would tend to avoid this gap and get out on the great axis. Again whoever wished to get to the southern suburbs of Athens, he would be interested in moving on the second great axis and then continue on the long coastal road. This demonstrates the need for a long coastal road, which would start from Piraeus, would cut across the Piraike Peninsula perpendicularly (possibly one day by means of a tunnel) and would then push on to Vouliagmeni and Sounion. These two roads in the form of a cross inside the plain together with the long coastal road would thus form our main network of axes. Our main inner roads would of course continue to be the existing Syngros, Kiphissia, Piraeus and Patissia axes, which we should repair to the utmost.

170. I suggest that the sections of the two now main axes starting at their intersection should be named as follows: North Greece Avenue, the road leading in that direction; South Greece Avenue, the road which would form a link with south Greece; Islands Avenue, the road running parallel to Kiphissos and Attica or Mesogeion Avenue, the road running across the Mesogeia district. The great coastal artery should be named Saronicos Avenue.

171. This system would be supplemented by ring roads round the hills and mountains. Mt. Hymettus needs a ring

road for purely transport reasons unconnected with those relating to the preservation of the landscape. The same applies to Mt. Pentelicon, Mt. Aegaleo and Mt. Parnes, as well as to Turcovounia. In this manner, traffic would flow, on the one hand, towards the central points of the landscape, and on the other, towards the outskirts of the mountains and hills, thereby avoiding the congested areas in the plain.

172. We should thus build up a system which would divert traffic in new directions and ease the congestion in the Capital.

173. Unless we carried out what is being suggested here, we should continue to spend millions of drachmae to create new streets, to build larger houses on them and to increase the volume of traffic necessitating the opening up of more streets and the expenditure of more millions of drachmae. This means that we should be continuously moving around a vicious circle. On principle, this should be avoided. It must however be emphasized again that this new system of axes does not preclude the opening up of certain streets of minor importance; on one condition, however, that such work would be part of an overall plan and general review of the communication problems of the plain, based on the principle of decongestion, that is to say, the development of the various functions in new directions.

174. With specific reference to the driving of new streets, it should be emphasized that if we mean to succeed, such work should fulfill the following conditions:

- a. It should be necessitated by a study of the plan of the Capital.
- b. It should be designed to meet certain definite transport requirements:
- c. It should be studied, in all its financial implications;
- d. It should contribute to the decongestion of the centre and the reinvigoration of the neighbourhoods of the city and
- e. It should be studied on a comparative basis. This is because we run a serious risk lest, if such streets are opened up in the wrong places, the landscape and our archaeological sites might be ruined by a new transport network built on a different scale from that of the landscape and the ancient monuments.

175. In view of the plan to drive new streets, which is being discussed of late, and of the small space which they involve inside the plain as a whole, which is effectively our real Capital, one cannot help wondering whether any problems could be solved by such minor surgical operations without an overall approach to the question. The answer is a categorical no. We cannot solve our traffic problems if we confine them to the narrow area between the Acropolis and Lycabettus, that is to say the Athens of



Fig. 45. Proposed opening up of new streets

a hundred years ago. We can only solve our problem if we view the Capital as a whole with its serious traffic difficulties and the need to build new great arteries. Then and only then would it be proper to speak of the minor work of creating new streets (Fig. 45).

PROPOSAL 4. The fate of the port

176. Next to the problem of the great inland arteries, we should also consider that of our sea communications, and in particular that of our port.

177. It is a fact that the Piraeus port is beginning to be overcrowded with shipping, particularly passenger shipping. It is also a fact that we shall continue to have a larger and larger influx of tourists. At the same time, however, with the increase in our population -- and since we do not anticipate the institution of air services to all our islands very soon -- we must also consider as certain an increase in the volume of internal sea traffic. In these circumstances it is a fact that our port will no longer be adequate to serve our demands.

178. Before long, maybe in 10 to 20 years' time (or even in 5 years' time so far as passenger steamers are concerned), the Piraeus harbour, and Keratsini, to which the present harbour extends, will be far from adequate. So we must at this stage consider the question of the future port of the Capital. There are two probabilities: one is to use Phaleron Bay and the other, the large Eleusis Bay. For it is a fact that, particularly from a technical point of view, the two bays could be turned into harbours. With this difference that Phaleron Bay would have the need of larger protective works than Eleusis Bay.

179. It should be made clear at the outset that if Phaleron Bay were used as a harbour, then a large central area of the Capital, a natural lung and natural outlet to the sea would be ruined forever. All the seaside settlements, namely Piraiki, Old and New Phaleron, Kallithea and Tzitzifies, would have to undergo a complete change. From residential districts that they are now, they would have to be converted into warehouse and industrial areas. At a considerable distance from the sea all dwelling houses would have to be turned into harbour installations. This would cause ruin to a considerable amount of building wealth and also bring ruin to the thousands of people who for decades have been investing their savings to build houses near the shore. All the municipalities and communities lying on the way to the sea would have to go, their existing works and installations would be a total loss and the area as a whole would be ruined.

180. But this would not be all. The impact of the harbour and of the foul waters flowing out of it would be such that soon (and in the life of cities soon means in the space of a few decades) the water would get more and more polluted

and all coastal settlements down to Vouliagmeni would be ruined if the harbour was transferred to Phaleron Bay. Accordingly, in the interest of the Capital and looking at the question in its broader aspect and not from the narrow point of view of the site of the harbour alone, we would say that the construction of a harbour in Phaleron Bay should be precluded.

181. But there is yet another reason why it should be precluded. Phaleron Bay, if ever it was turned into a harbour, could never acquire adequate installations or industries because, if such were built there, then the plain as a whole would be ruined. Generally speaking, it is impossible to permit the creation of fresh industries in the plain for reasons both of transport and health. At dawn, particularly following a day of rest, the eye of the beholder meets a completely clear sky over the plain. At about 8 o'clock however, when industrial factories start work, the plain begins to fill with smoke which ruins our health, pollutes the Attic sky and interferes with our normal way of life in the plain.

182. Thus the only course open is to turn Eleusis Bay into a harbour for Athens. That is where we can build up a well organised industry (a large part of it has already moved there) and healthy settlements against a green setting free from industrial fumes, particularly in the upper part of the plain. The harbour and the industrial plants could easily be linked with the whole of Greece since all the roads leading away from the harbour would meet the national East-West axis or the Northern axis.

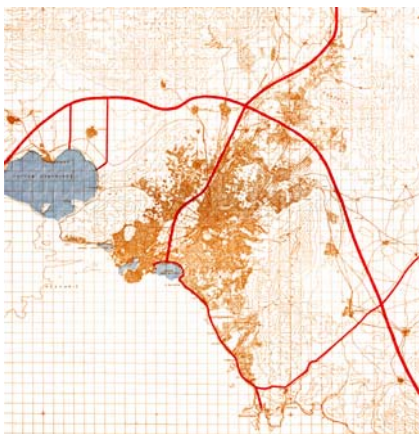


Fig. 46. PROPOSAL 4 - The Capital and its harbour

183. This is the most proper harbour we should create. It would play a special part in decongesting the Capital, in saving the whole Athens plain, in furthering the interests of industry and also serving those of Greece as a whole.

184. The Piraeus port could then be retained as a passenger traffic or even partly commercial port. Eleusis would however be the main trading and industrial harbour (Fig. 46).

PROPOSAL 5. How to provide shelter for the people

185. The solution of this major problem is obstructed by the dearth of cheap land. Now, if we now make up our minds to decongest the plain, to devise the right kind of programmes for the development of a harbour and an industry at Eleusis, the right kind of programmes for the development of the other sections of the Athens plain, e.g. the northern sections which are still free, and the right kind of programmes for the development of the Mesogeion area, we shall be able to overcome the lack of cheap land and then proceed to provide cheap shelter.

186. Such shelter should be developed where there is still cheap land which must be secured by expropriating it in

favor of the State before any town plans are made or by freezing its price at present levels now that a plan of this kind is being announced for the first time. This is not of course an unprecedented policy. Other States have applied it in the past or are putting it into practice now. Let us not forget that London was saved in this way after the war.

187. If such a policy is to prove really effective, it is essential that we should extend the Capital to new territory in accordance with a definite plan and not to allow it to extend itself in the present happy-go-lucky fashion.

188. It is high time the State took the initiative in this sector instead of allowing such extension to be carried out by people who exploit the masses by selling land at exorbitant prices and growing rich by not paying taxes. The time is ripe for a definite programme which would enable us to build the new large communities of Athens, the new communities of the greater Capital. The new residential areas should be the following three:

- a. The Eleusis plain
- b. The north section of the Attic plain
- c. The Mesogeion area.



Fig. 47. PROPOSAL 5 - New ekistic areas

189. When these areas have been clearly defined and the land secured, we can proceed to implement a systematic policy in public saving and in State lending to provide shelter for the masses. We shall put an end to the present inertia the net effect of which is as follows: there is no really purposeful saving by the masses who, unguided and unassisted, use whatever money they have saved up to buy land on mountain sides, thereby making it extremely costly to develop the new districts and meet their requirements (Fig. 47).

PROPOSAL 6. A new national centre

190. If the plan we are proposing is to succeed, that is to say if the new axes are to justify their *raison d'être* outside Athens, the present Capital, and if the dwelling houses to be built in the new areas are to survive, this new structure of the traffic system and new conception of housing and employment must be supplemented by the creation of a new centre.

191. In point of fact, our Capital can no longer use Athens as its centre. Athens is now overcrowded. It cannot sustain any fresh functions. We cannot build an administrative centre there nor, of course, add any of the new functions which will be needed either now or in the next 10, 20, 30 or 40 years.

192. The centre of the Capital will unavoidably be moved. The ideal place for it would be at the intersection of the two projected national axes. At such a place the new

Centre would be close to such as are moving from the north, the south, the east and west. It would be the real centre of the country because there is virtually no such centre at the moment. Considering that one has to cross old quarters and narrow streets and to look for it on the upper floors of trading establishments, if one ever finds it.

193. Such a new centre situated on cheap land could be built at much less cost and much more efficiently than is the case today. It could develop into the centre of administration and the centre of interest of the country as a whole. That is where the House of Parliament, the various Ministries and the Defense Departments could be built. The various scientific societies, the Supreme Court and the Council of State should also be located there.

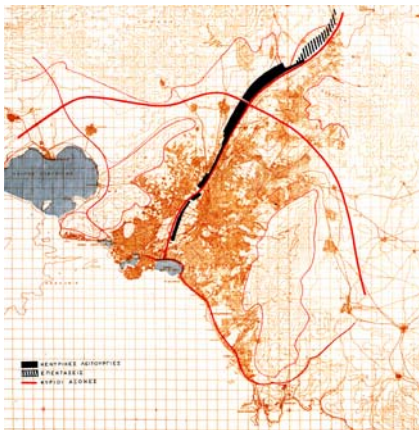


Fig. 48. PROPOSAL 6 - The Administrative Centre of the country

194. Athens would retain its Court of Appeal and its other functions which serve the needs of the population: its county engineers and doctors and its regional services. But the country's central brain would be in no city in particular. It would belong to Greece as a whole.

195. The proposed centre would be established on the axis marked on the plan along the Kiphissos. There would be room for steady expansion to the north for many years, even centuries, to come. In these northerly extensions one would then add without any obstruction the new functions which would be needed each time. It could be extended even to the south over a narrow strip, always along the Kiphissos, by the addition of certain functions which would give a direct service to the population of the Athens-Piraeus ekistic complex (Fig. 48).

PROPOSAL 7. The new structure of the Capital

196. If the Capital is to carry on its life properly and if the new system is to work properly and the population of the Capital to live happily in it, we should give to it a new structure.

197. The Capital should be divided into homogeneous areas, each of which would have its own dwelling houses, employment patterns and recreational grounds. This way its people would not have to set out from one section of the city to go to another, say from Piraeus to Athens, for work or in order to get to the centre. Thus, people would live next to their place of work. The State should in effect assist this reorganisation by providing land to civil servants and army officers and enabling them to buy houses of their own in the vicinity of the new administrative centre. It should moreover provide plots and shelter to the workers in the new industrial areas.

198. The Capital would thus be arranged in large communities roughly as follows. The Capital as a whole could be divided into 14 areas, as shown on the plan opposite. I am giving below a general description of these

areas to show what their composition should be. I begin with the west side.

Area 1. North of the horizontal road axis which leads to South Greece. It would consist of dwelling houses and a rural district. Homes in healthy surroundings would be provided here to people working and living in the large industrial area of Eleusis and in the area of the harbour.

Area 2. South of the same axis down to the sea. Here we should have dwelling houses, an industry, transport services, the harbour and in part even agriculture distributed rationally over the better part of the land between the industrial plants and dwelling houses.

Area 3. The administrative centre with residential districts and recreational grounds up to the foot of Mt. Parnes.

Area 4. South of the above axis and west of the North-South axis. This would be devoted to dwelling houses, light industry and considerable agriculture.

Area 5. From the Sacred Way to the centre of Piraeus. This would be mainly residential and retain the existing industry. No further industry should be added.

Area 6. The heart of Piraeus. It would consist of dwelling houses and the old harbour which would one day be restricted to passenger traffic alone.

Area 7. Northern suburbs, east of the N-S axis and north of E-W axis as far as Mt. Pentelicon. This would cover the sides of Mt. Pentelicon which are used for dwelling and relaxation purposes.

Area 8. This would have as its axis that of Patision road. It would cover the area bounded by the Kiphissos, Turcovounia and the centre of Athens.

Area 9. The old centre of Athens with all its functions, residential quarters, business districts, recreational grounds and archaeological sites.

Area 10. From Athens to the sea and between the Kiphissos and Syngros Avenue. Residential quarters, gardens (whatever can be saved), the existing industry and places of recreation along the seashore.

Area 11. The present northern suburbs of Athens from Marousi to Thon and from Turcovounia to the sides of Mt. Hymettus and the Stavros road junction. A small number of dwelling houses, the existing industry plus some light industry to provide employment to these particular areas and any gardens that may be saved.

Area 12. The southern suburbs of Athens down to the sea, bounded to the west by Syngros Avenue and to the



Fig. 49. PROPOSAL 7 - Division of the Capital into communities

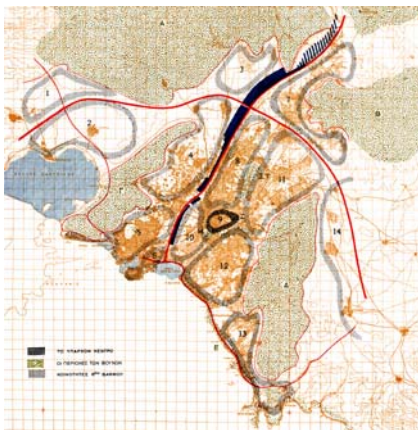


Fig. 50. PROPOSAL 7 - The communities and the large mountain areas

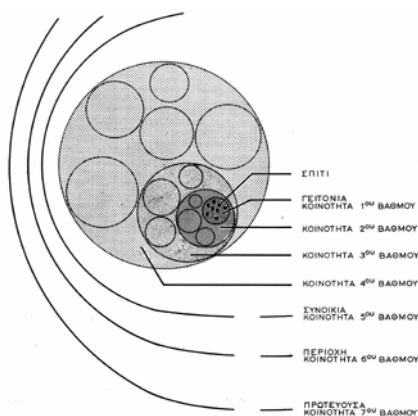


Fig. 51. PROPOSAL 8 - The Structure of communities

east by the airport and the sides of Mt. Hymettus. Dwelling houses, the existing industry plus some more light industry of the kind that does not hurt the health of the population and places of recreation along the seashore.

Area 13. The Hellinikon airport to the sides of Mt. Hymettus and Vouliagmeni. Dwelling houses, recreation, some business activity and light industry.

Area 14. The Mesogeion district. Dwelling houses, agricultural industries, agriculture.

199. We would thus arrange the Capital into fourteen areas of residence, employment and recreation. To these there would be added the 8 special areas shown on the opposite map (Fig. 49) and already referred to above: that of Mt. Parnes in area A, that of Mt. Pentelicon in area B, that of Mt. Aegaleo in area C, that of Mt. Hymettus in area D, all of the coast in area E, the Turcovounia group of hills in area F, Lycabettus in area G, and the Acropolis in area H (Fig. 50).

PROPOSAL 8. A better organization of our life.

200. Once, we have achieved this new structural arrangement of the Capital in broader communities, we should also seek to effect a better organization of our lives so that each such community may become self-sufficient.

201. When it is considered that the Capital today has a population of about 2,000,000, that this figure may go up to between 4 and 6 million and that by the year 2000 the population may rise to 7,000,000 if the present rate of growth is maintained, we should reckon that these communities will one day have an average population of between 400,000 and 500,000 each. In other words each of these areas would be of the size of a whole city such as Salonica or Piraeus. Each area should have a centre of its own and should be subdivided into smaller districts down to small neighbourhoods.

202. On the opposite page (Fig. 51) I indicate in broad outline how such an area could be subdivided consecutively into communities of different sizes. Let us name the smallest community in which we shall organize our life, that is to say our particular neighbourhood, Community Class I. The slightly larger community with open space for children to play in would be named Community Class II, the next larger with a primary school Community Class III and that which would contain a high school and a business centre a Community Class IV. These communities must be combined into larger Communities Class V, and these in turn into still larger ones. These Communities Class VI would be called "areas", as suggested above.

203. So if each area is a Community Class VI, then the Capital itself would be a Community Class VII and would be divided into 14 Communities Class VI with a population of 400,000 to 500,000 each. These would in turn be subdivided into Communities Class V with a population of 80,000 to 10,000, then into Communities Class IV with a population of 10,000 to 15,000, into Communities Class III with a population of 2,000 to 3,000, Communities Class II with a population of 500 to 600 and, lastly, into Communities Class I with a population of 100 to 200 each.

PROPOSAL 9. The consolidation of the Capital.

204. Having given a description of what our Capital should be like in the future, we should now consider ways and means of providing a solid foundation for it so that our plans may not remain on paper alone.

205. In order to build our Capital of the future we should look far ahead. We should persuade ourselves that one way or another this Capital will eventually come into being, for the population will build dwelling houses, shops and factories, the State will construct roads and carry out public works and the municipalities will assist by executing works of recreation or saving situations in every particular case.

206. It does not depend on us whether the Capital of the future will be built or not. What does depend on us is whether it will be a beautiful or an ugly city. A vast amount of funds will unavoidably be invested in the Capital. If we are well advised, then all this wealth will produce a better Capital, if not, then our Capital would be worse than it is now.

207. If we are to build the right sort of Capital, we should look far ahead and we should draw up a programme and a plan. Unless we look far ahead, we shall be unable to understand anything. The situation will get out of control. Unless we prepare a programme, we shall be unable to direct our energies properly and unless we draw up a plan we shall be unable to see clearly as to how we should give definite expression to our energies in space.

208. It should be stressed that it would be an error if we only drew up a plan. Those who have only made plans have failed. For the city of the future will be a Dynapolis, a dynamic city, which will develop with the passage of time. We ought therefore to lay down a programme in order to control its growth. Then and only then can we illustrate such a programme with a plan each time.

209. If we are to build our Capital on the right foundations, we should grasp its general structure and, depending on its importance, provide the details of programmes and plans.



Fig. 52. PROPOSAL 9 - The new Capital: Its Epicentre - Its zones of influence

210. So, in the future our Capital should have as a centre the intersection of the national axes of the country, at the place where the roads from north to south and from east to west meet.

211. It would then have a first zone, the one which already exists and is expanding and in respect to which we ought to take immediate measures. Then is the zone of the Athens and the Eleusis plains.

212. The Capital, however, has also a second zone, namely the whole of Attica. With respect to this zone, too, we should take the necessary measures under a topographical plan.

213. Finally, the Capital has even a third zone, that is to say, Greece as a whole. It is our duty to consider all the problems, which flow from the link between the Capital and the rest of Greece, so that we can treat them in a manner as efficient as possible by providing the right kind of transport network which would help people from all parts of the country to reach the Capital (Fig. 52).

PROPOSAL 10. A programme for the year 2000 A.D.

214. If we are to be consistent with what has been set forth above, we should look far ahead, we should draw up a programme for the next 40 years, and should visualize what Athens is going to be like in the year 2000 A.D.

215. Such a programme should be divided into four separate 10-year programmes to enable us to achieve our purpose. Each ten-year programme should be worked out before the ten-year period involved starts, but we must at this stage elaborate the general structure of this programme. The outline I propose is as follows:

216. When, in January, I first presented these ideas in the course of my lecture in the *Parnassus Literary Society* Hall, I had suggested that the year 1960 should be used as a basis for the elaboration of the general outline of the proposed forty-year programme and that the 4 ten-year programmes should be worked out and put into practice afterwards. It did not however prove feasible to do that and the Government, having considered the matter, has now decided to take action on the proposed programme. One of the first steps taken was to call a German town planner who is due to arrive in Athens in November to suggest a few ideas about such a programme. The next step is expected to be the assignment of the task of studying the programme to a Government Department or some Greek Office.

217. In this way it may prove possible to draw up the first programme during the first half of 1961. The following may then be ready by the end of 1961:

- a. The forty-year programme and plan, and
- b. The first 1960-1970 plan in greater detail.

218. Meanwhile a definite decision will have been made as to whether all the works underway today will be continued so that activity inside the plain of the Capital may continue to be intensive. This will be the first year of the 10-year plan. Beginning with the second year, the works concerned will be continued on the basis of the new 40-year and 10-year plan, and each year more detailed plans will be worked out before the year commences.

219. The overall programme to be prepared in the course of 1961 will set ten-year and yearly aims.

220. The 1961-1970 ten-year period will be the period of consolidation of the programme. By 1970 the Capital may already have a different look, it may already have acquired its great axes, a nucleus of its administrative centre and new districts which will spring up at all points with shelter for the people and new installations.

221. Between 1971 and 1980 this structure outline may have been completed so that, by 1980, Athens may have already solved all its present acute problems.

222. After that there will be another two decades left, from 1981 to 1990 and from 1991 to 2000, during which the Capital will take final shape and become a real Capital of the country.

223. You must not think that these periods are so far off. We ought to remember that the average span of life of a Greek is 65 years. In other words, in ten years' time, thanks to the improvement in living conditions and considering that the average length of life is greater in the Capital, 6/7 of the present population of the Capital will still be alive. In 20 years' time 5/7, i.e. 70%, will still be alive, in 30 years' time 4/7, i.e. 60% and in the year 2000 3/7 or 40%, that is to say half of the present population of Athens, will still be alive.

224. If we remember that in 10 years' time 6 out of every 7 present inhabitants will still be alive to see a very different Capital and that in 20 years' time 70 out of the 100 people living today will see it completed, we easily realize how important it is that we should carry out this task.

225. We must not think that financially this is difficult to achieve. As I have already emphasized, we can do it with the resources at our disposal today, provided we plan everything ahead.

226. Let us not forget that if in 21 years' time the Capital will have double the present population, at an annual rate of growth of 3.4%, then the number of dwelling houses

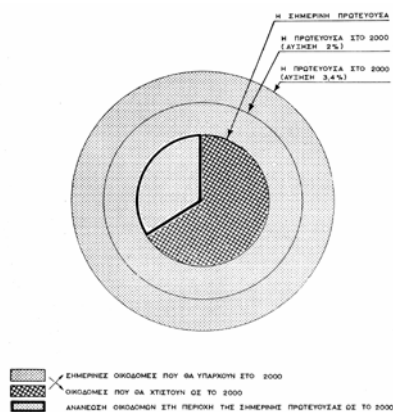


Fig. 53. The increase in building wealth during the next 40 years

will be double too. Furthermore, a good many of those existing today will be renovated (public buildings, commercial and industrial establishments). Hence 2/3 of the dwellings in the Capital in 20 years' time will be new. It depends on us whether these will be the right or the wrong kind.

227. If the rate of growth is only 2% per annum, then 2/3 of the Capital will be new in 35 years' time. If the rate is 3.4% of be new in 40 years' time, that is in 2000 A.D., while with a 2% rate of growth 3/4 will be new (Fig. 53).

228. Let us look more closely at the financial aspect, that is to say the increase in income. An increase in income can be achieved only by raising productivity which can be done through better organisation. We cannot expect to discover, at least during the next decades or so, new sources of wealth. We should rely not on miracles but on hard work. By this I do not mean that we should work longer hours or that we should work harder than we are doing now. The only solution is that we should work more efficiently to raise productivity. To do this we must try to organise our lives and our country more efficiently. To achieve this we must in turn organise our Capital, the brain which is to control everything else. We should set the example by making the Capital a symbol and a centre which the country will look up to.

229. While we are on the subject of the chances for the execution of such a programme, we should point out that in view of the anticipated increase in income, the projects to be carried out will be of much greater importance than those carried out in the past.

230. We shall have a steady increase in income (and this is only natural) which will be higher in the Capital than anywhere else in the country. We should try not to waste this increase in income by building our city the wrong way, a city in which we would waste time getting from one place to another, getting exasperated at street junctions, and running serious risks of being run down by motor-cars. We should build a city in which we would be able to increase both production and productivity and to lead a happy life.

231. If we are to carry out our plans for the development of our country, it is not enough that we should effect larger investments. We should try to increase our productivity and to become individually more useful by organising our lives more efficiently.

232. We should not lose sight of the fact that a very high percentage of our national income, that is to say, roughly a fourth of it, if we take account of primary production, or a third of it, if we exclude that production, is produced by the Capital, and that unless we organise it more efficiently, we risk wrecking our effort at investing more

wealth and increasing our national income.

233. Developing the country as a whole means improving our organisation and our administration, something which largely depends on the efforts we are prepared to make in the Capital. Unless we manage to organise our State machinery more efficiently, we shall be unable to carry out our development plans. We stand no chance of organising our State machinery efficiently so long as the various Ministries and other government departments remain scattered about and are installed in the garrets of business premises.

PROPOSAL 11. The Capital of the year 2000 A.D.

234. If it is, therefore, our plan to build a new Capital, what should this Capital look like? A great deal of discussion is going on about the city of the future. Do we conceive of this new city as one composed mainly of multistorey buildings? Will the main feature of the new city be a system of elevated roads? Or do we conceive of the new city as one with imaginary buildings, full of mystery and wonder?

235. We may rest assured that the Capital of the year 2000 will have nothing mysterious about it. For we can reasonably predict what is likely to happen. It is of course true that if unforeseeable forces come into play to upset the rate of change it will be hard to predict the turn which events will take. If, however, we consider that the atom was split in 1943 and that so far, despite the lapse of 17 years, this has had no effect on the shape of cities; and when we moreover consider that it will take another 10-20 years until we are able to produce nuclear energy in Greece, we shall realize that if new forces are discovered today, it will be a generation and a half before these forces can in any way affect our lives and the shape of the Capital.

236. When it is considered that the future of the Capital depends essentially on various financial factors and on the country's economic development in general, it becomes evident that economic conditions are unlikely to change to such an extent within the next 20 to 40 years as to be unpredictable.

237. At the present moment the plans available for the development of the country provide for a 60% increase in the national income. Let us assume that this will actually be the case. And let us further assume that in the future this rate of increase will be even higher. Still, the fact remains that in 30 to 40 years time Athens cannot possibly have an income higher than that enjoyed by Milan, Rome or other cities of the same size. Hence, Athens will be unable to spend more than these cities are spending on reconstruction. We should not therefore anticipate any miracles or revolutionary changes.

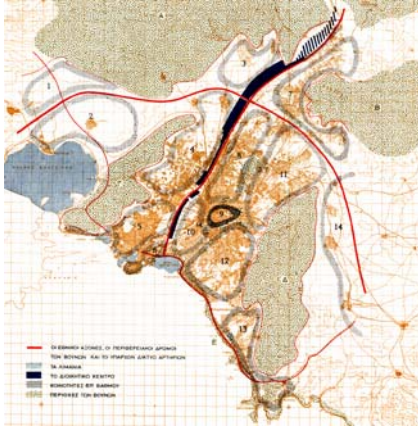


Fig. 54. The New Capital

238. Whatever changes take place will depend on our brainwork and on resources which we anticipate will be available. The changes we are proposing to make, if a well thought out plan is followed, can definitely lead to the creation of a new Capital, a Capital whose future we can predict even at this stage.

239. The main features of this new Capital will be as follows (Fig. 54):

240. First, it will have a better climate. For if we try to preserve our mountains, to plant our hills with trees, conserve whatever green spaces we now have and create fresh such spaces according to a definite plan, we shall positively improve the climate of Athens.

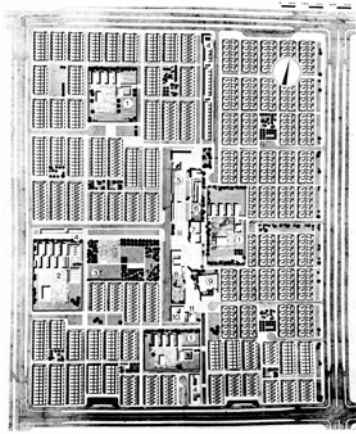
241. Next, we shall have a much more beautiful Capital surrounded by belts of green. In whichever direction we turn we shall see beautiful scenery and our archaeological sites properly maintained.

242. Life in the new Capital will be much more attractive. We shall know what district it is we reside in and we shall arrange so that our movements may be confined to the districts near by to avoid having to cross great distances.

243. We may be residing in the Eleusis plain, in the Mesogeion district or even at the foot of Mt. Parnes, but we shall easily be able to send our children to the great cultural centre which will have been created inside the Capital along the Kiphissos. For they will be able to get on an electric train running along the Kiphissos and get to their destination in a very short time over a vertical artery through which modern trains, trolleybuses or perhaps atom powered buses or hovercraft will operate.

244. Each area to be created will have its own centre and its own trade and will be subdivided into smaller communities. In the centre of each area there will be a business and administrative complex of multi-storey buildings surrounded by hotels and some multi-storey blocks of flats. These buildings will be occupied by small families for the most part, new families without children, families of elderly people whose children have left to form families of their own, other elderly people and bachelors and, lastly, students.

245. However, families with children will reside outside these zones, on the circumference of these areas, in dwelling houses with gardens organised in modern communities. In the heart of such communities there will be schools, churches, playgrounds and parks. People will be able to walk to all these centres without coming across any cars since we shall have built human communities. These communities will be properly organised and will have all the State and public utility buildings they need



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Fig. 55. PROPOSAL 11 - (Example) A
Community on a human scale

(Fig. 55).

246. From all the areas of this new Capital one will be able to move easily towards the great national parks of Mt. Hymettus, Mt. Pentelicon, Mt. Parnes and Mt. Aegaleo with their summer resorts and recreational grounds of every kind. It will also be easy to reach the various Attica beaches which will be organised in such a way as to enable everybody to come to them and enjoy the sea and the landscape.

247. Our big harbour will be at Eleusis. That is where our industry will also be located, a modernized industry which will not stifle us with its fumes. The passenger traffic harbour will be in Piraeus. Our large airport will continue to be at Hellinikon or will have to move further away. This will depend on the technical developments in the manufacture of aircraft. This problem may preoccupy us again when that time comes. We cannot provide an answer now since we cannot tell exactly what progress is likely to be made in aircraft manufacture. The question is whether we shall need long runways or whether we shall be successful in our efforts to produce aircraft of vertical landing and take-off. In such a case are we to anticipate the construction of a much greater number of airports and the revival of an airfield on the north section of the plain, close to the existing Tatoi airfield; the existence of another airport at Hellinikon, much smaller than the present one, and the existence of other airfields, one at Eleusis and another in the Mesogeion district. Conversely, if in future aircraft require longer runways, we may find it necessary to build an airport even further away from Athens.

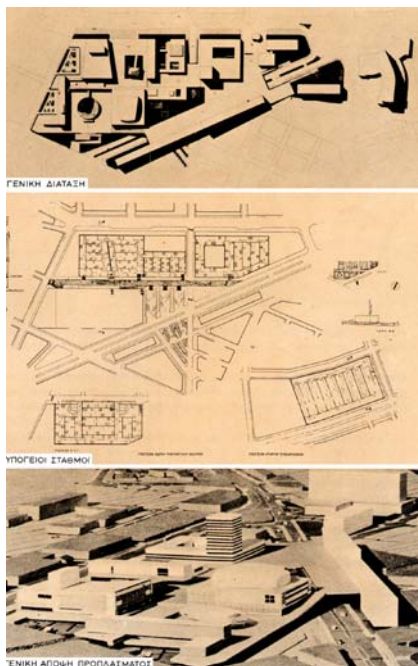


Fig. 56. PROPOSAL 11 - (Example)
The Cultural Centre of Athens

248. The great roads, which will cross Athens, will be laid out at a lower level than the surrounding area to enable all other roads to pass over them without intersecting them and without accidents. In other words we shall have a high-speed road network in deep trenches and a low speed surface road network.

249. All the communities which will have been established in Athens should be on the human scale. People should again be able to move freely in these communities whether they are residential communities or communities with special functions.

250. The Cultural Centre would be such a community. It is hoped that this will be built in the right way, leaving motorcars and buses to circulate below and bringing man back to the surface of the earth as master of traffic and of space.

251. On Fig. 56 I reproduce the model and the plan of the Cultural Centre prepared by our Office when the competition was held, as an illustration of the ideas set forth above.

252. The Cultural Centre was planned as a centre which would facilitate the free movement of pedestrians. Unfortunately the Committee ignored this solution which would create the right atmosphere of a cultural centre and proposed one which provides for the maintenance of the small blocks already existing there and the dispersal of the buildings among the various blocks without any coherence. The Committee also overlooked the fact that the solution we had proposed provided for parking space not only for the motorcars of the Cultural Centre but also for those of the surrounding districts and important inter-urban lines. Accordingly, if this plan is not carried out, we should be losing a unique opportunity in achieving the following two things:

- a. The proper organisation of a Cultural Centre which is to live not in the past but in the future.
- b. The arrangement of an extensive parking lot intended to meet the requirements both of the particular district and of the Capital as a whole.

The need for immediate action

253. Such is the programme and plan which will help us build a much better Capital for Greece. It is a national duty for us all to see this carried through.

254. I am absolutely confident that this plan can be carried out within the framework of our efforts to achieve the recovery of our economy and the development of all the resources of the country. That the plan is actually workable can easily be proved by facts and figures.

255. The plan cannot however be translated into practice by private individuals because it involves the mobilization of large amounts of resources such as no private individual can command. It is the Government alone that can carry out the plan and must carry it out without further delay. The question must be cleared up very soon because if action is postponed, the plan is doomed to failure. The vested interests, which run counter to the interests of the Capital and of its population, are both powerful and persistent. We should therefore appeal to the Government to take the initiative in getting a programme and a plan ready for the national Capital of the future. The Greeks as individuals, the people as a whole and the political parties should play their part in supporting this appeal. The leadership must however be in the hands of the Government.

256. In closing I wish to renew my appeal for the preparation of a programme and a plan for the future Capital so that by the end of 1961 the country may be able to announce that the plan is ready and that it will be carried out in the succeeding years. As a Greek citizen and a specialist I am loath to see so many other countries preparing similar programmes and, furthermore, with our

assistance, without our being able to do the same in this country.