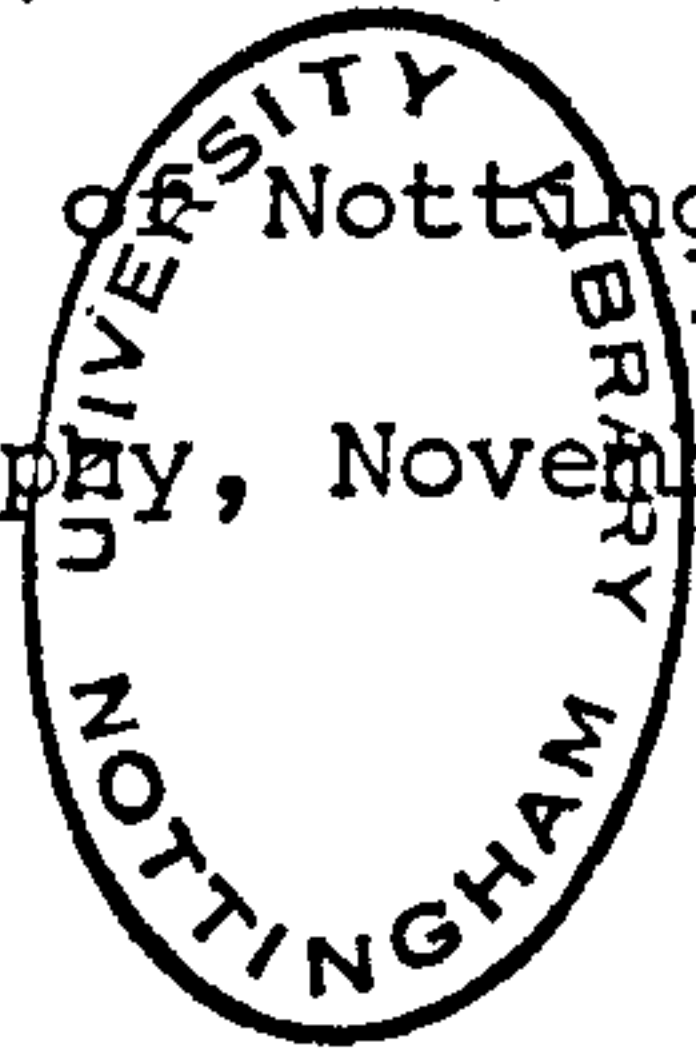


" 'A Comprehensive Approach to the Study of the Housing Sector in Iraq; With Special Reference to Needs, Standards, Inputs, Density and Costs as Factors in the Analysis of Housing Problems in Baghdad' by M.B. Al-Adhami, B.Sc., M.A., Thesis submitted to the University of Nottingham for the degree of Doctor of Philosophy, November 1975".



Vol III

**CONTAINS  
PULLOUTS**

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APPENDIX ( 1.1 )

Population change in Iraq : 1947 - 1970

<u>Area</u>	<u>Population 1947</u>	<u>'000 1970</u>	<u>Increase % 47-70</u>	<u>% to Iraq as of 1970</u>	<u>% to U. Iraq as of 1970</u>
Iraq	4800	9500	97.9	100.0	-
Four major cities	800	3000	275.0	31.5	55.0
Iraq urban	1600	5450	240.0	57.4	100.0
Cities (over 100000)	740	3400	360.0	35.8	62.3
Towns (over 20000)	1100	4680	325.4	49.8	86.0
Towns (over 5000)	1400	5250	275.0	55.2	96.3
City of Baghdad	500	2170	430.0	25.9	45.1

Note:        The four major cities are: Baghdad, Mosul, Basra, Kirkuk.

Sources:        K. Ueda, "Revised Population Projections for Iraq", 1970



APPENDIX ( 1.2 )

Settlement pattern and the distribution of population in selected countries.

<u>Country</u>	<u>Settlement sizes</u>		
	<u>over 100,000</u>	<u>over 20,000</u>	<u>over 5000</u>
Iraq (1965)	29.9 %	40.6 %	46.9 %
Jordan (1961)	15.3 %	38.3 %	51.7 %
Kuwait (1965)	non	57.2 %	94.3 %
Lebanon (1965)	19.4 %	25.9 %	43.6 %
Saudi Arabia (1963)	0.05%	0.1 %	0.7 %
Syria (1960)	25.1 %	31.6 %	42.9 %
Italy (1961)	24.7 %	46.9 %	75.7 %
France (1962)	18.0 %	37.3 %	44.4 %
Spain (1960)	27.9 %	45.3 %	70.9 %

Source: UNESOB, "Studies on Selected Development Problems in Various Countries of the Middle East", 1971, p. 72.

APPENDIX ( 1.3 )

Iraq Population - Historical Trends

<u>Year</u>	<u>Total pop. in '000</u>	<u>Urban %</u>	<u>Rural %</u>	<u>Nomads %</u>
1867	1300	24	41	35
1890	1700	25	50	25
1905	2300	24	59	17
1930	3300	25	68	7
1947 *	4800	36	59	5
1957 *	6500	37	59	4
1965 *	8200	44	53	3
1967	8800	46	51	3
1970	9500	58	----- 42 -----	

Note: (\*) General census year.

Sources:

1. Dr. M.S. Hasan, "Growth and Structure of Iraq Population, 1867 - 1930"
2. D.G. Adams, "Iraq's People and Resources", 1958
3. General censuses, Central Statistical Organization, Baghdad.
4. K. Ueda, "Revised Population Projections for Iraq", 1970

APPENDIX ( 1.4 )

The Evolution and Development of the City of Baghdad:

Cities in the developed countries are often characterised by main economic factors which influence their development and functions. Thus some cities may be described as industrial i.e. Birmingham, Coventry; or commercial and business centre, i.e. New York, London; or administrative i.e. Washington DC, Barazilya and Islamabad; or of mixed character, such as the case in many cities around the world.<sup>1</sup>

This classification applied only to those cities whose functions are distinctly crystallized. In the case of the cities in the developing world this classification cannot be applied directly, since the functions of these cities are not yet sufficiently developed, and the economy of their countries is in a transient stage.<sup>2</sup>

Baghdad is one of these cities which is undergoing development and changes, which makes any attempt to classify its function and role of a transient character. Having these reservations, Baghdad may be described as an administrative-business city, since it is the seat of the central political and economic authorities; and a high proportion of its population lives on proceeds from business and commerce.

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1. <sup>Laquer</sup> see, Jacqueline Beaujeu, Carneir and Georges Chabot, "An outline of the Geography of Cities", Paris, 1963..

2. see Robert J. Crooks, "Planning in Developing Countries" TPI Journal, June 1971.

This characterization is highly simplified, since it omits some important functions such as cultural, religious, and to a certain extent industrial activities.

A.- The Evolution of Baghdad:

Baghdad was founded in 762 A.D., on the west bank of the river Tigris in the present district "Al-Karkh" by the Abbasid Caliph "Al-Mansur".

Very few books were found dealing Baghdad's early history and development. Of these, the "Tarikh Baghdad", or History of Baghdad - Arabic - by "Al-Khateeb Al-Baghdadi", is regarded as the first book preserved by its entirety. But even this book dealt mostly with scholars and prominent personalities rather than design and form of the city.

In a recent study on the foundation of Baghdad, Saleh Ahmed Al-Ali, stated:

"In founding Baghdad, Al-Mansur created a city for his imperial army and a centre for the Islamic Arab Empire. A convenient site on a fertile land right on the major communication routes and in area closest between the Tigris and Euphrates was chosen". 3

The location of Baghdad seems to have been selected after a careful study of many factors, mainly the site was not far from other ancient capitals of the Mesopotamian civilizations, such as Opis of the Akkadians, Seleucia of the Seleucus and Parthians, and Etesithon of the Sassanians. Also the site was a fertile plain, with thickly cultivated areas and a number of canals which served for irrigation, communication and defence.

The original city of Baghdad had hardly any great structure of luxury or even places for recreation. The city was well fortified

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3. see S.A. Al-Ali, "The Foundation of Baghdad", Islamic City Edited by A.H. Hourani and S.M. Stern, 1970, Oxford, pp. 88-101.



by a wide and deep ditch as well as a double wall, which was made of mud bricks and reeds as a bonds.

The city plan was circular, and about 2700 m. in diameter, with four equidistant gateways named after the city or province towards which they opened. Although, the original round city of Baghdad may fairly be considered as one of the most remarkable examples of town planning at that time, the Muslims historians insist that the circular form was a feature that had never been known before. But such is far from being the case, since according to K.A.C. Creswell, there have been about twelve earlier cities with circular forms;<sup>4</sup> see Fig. (1.4.A ).

Apart from the military advantages, such as the avoidance of dead angles, there is another practical consideration which may have led to the adoption of the circular plan for Baghdad, viz, economy of walling, for if a given area has to be enclosed, the shape with the shortest boundary is the circle, the economy being roughly 11.40 per cent, which would represent a very considerable sum in the construction of walls of a city.

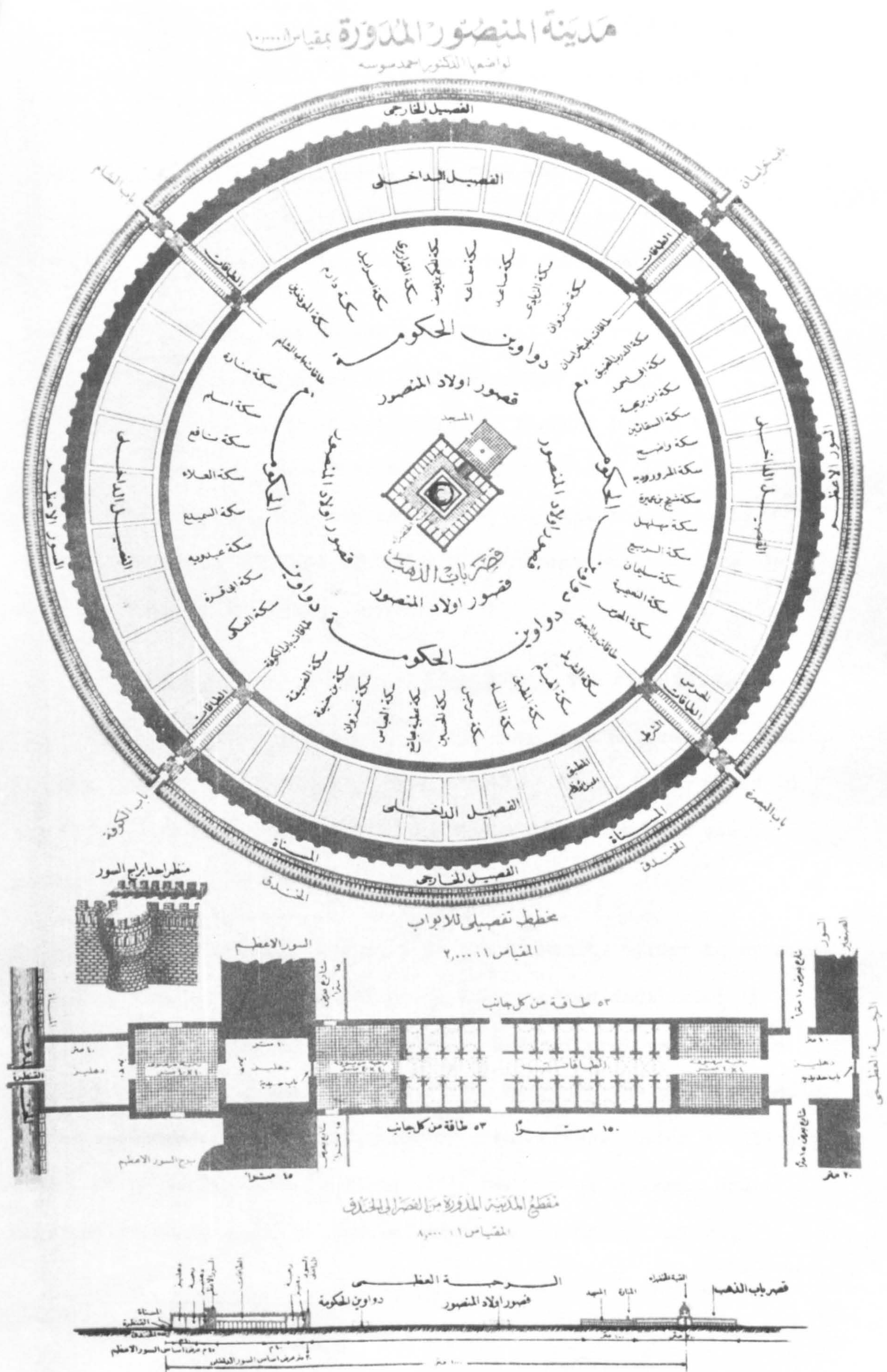
After twelve years of the original design, the areas around the city were developed. This was due to the rapid growth of population, but it was in the time of the Caliph "Haroon Al-Rashid" that the city of Baghdad became famous and attained its real glory and became a great political centre of the Islamic Arab Empire as well as the centre of the religious life of the whole Moslem World. Baghdad was also an outstanding centre of culture, science

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4. see K.A.C. Creswell, "A Short Account of Early Muslim Architecture", Pelican Book, 1958, pp. 172-173.



FIG. ( 1.4.A ) THE ORIGINAL CITY OF BAGHDAD





and arts, these factors contributed to the rapid development of the city in the later periods.

In the XIth century, the development of the city slowed down as a consequence of the general situation in the Arab World, but its complete downfall was in 1258, as a result of its capture by the Mongol army headed by "Hawlakow". The city was completely and systematically destroyed. Consequently there are now very few historical monuments left from the period of its greatest era.

In later periods, Baghdad became a provincial town for the Ottoman Empire, and served as an administrative and garrison centre. By the end of the First World War Baghdad became the capital of Iraq, with an estimated population of 100,000. At that time Baghdad had only one bridge and one street adopted to vehicular traffic, and most of the buildings were built of raw clay and dried bricks; see Fig. ( 1.4.B ).

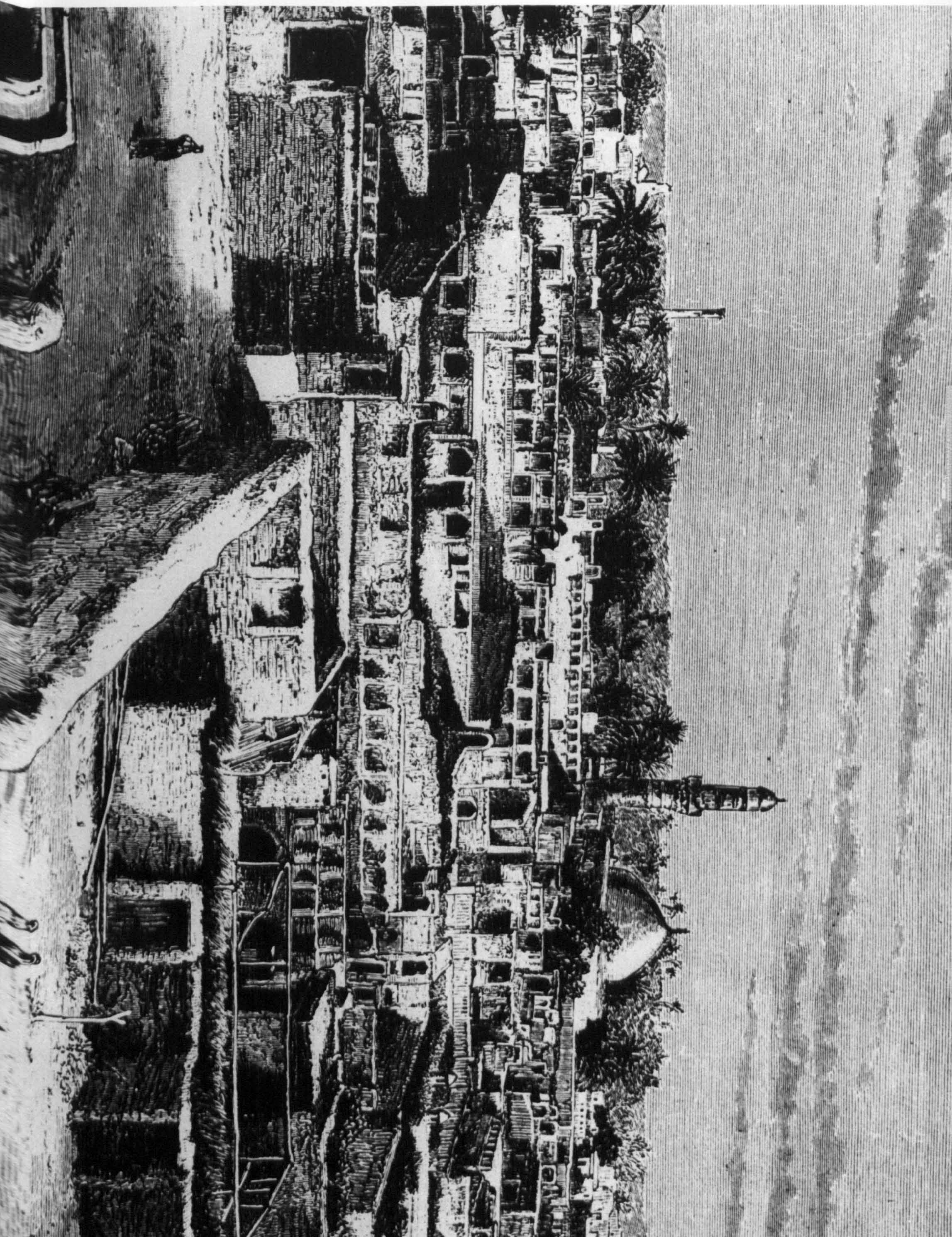
B. The Present Urban Structure of Baghdad: see Fig. (1.4.C ).

Urban structures are a reflection of the level and nature of economic, social, physical and historical developments. Thus, urban areas in the highly developed countries would have a different land use pattern to that in the developing countries.

Urban structures are also a result of the community effort to overcome distances between places of residence and required facilities in order to pursue living in the biological and cultural sense. This suggests that human interaction is at the heart of the process leading to the development of the structure of urban areas. Urban facilities could not be infinitismally distributed because of economic and physical reasons, thus, to enable people to get to facilities,



FIG. ( 1.4.B ) BAGHDAD DURING THE OTTOMAN EMPIRE

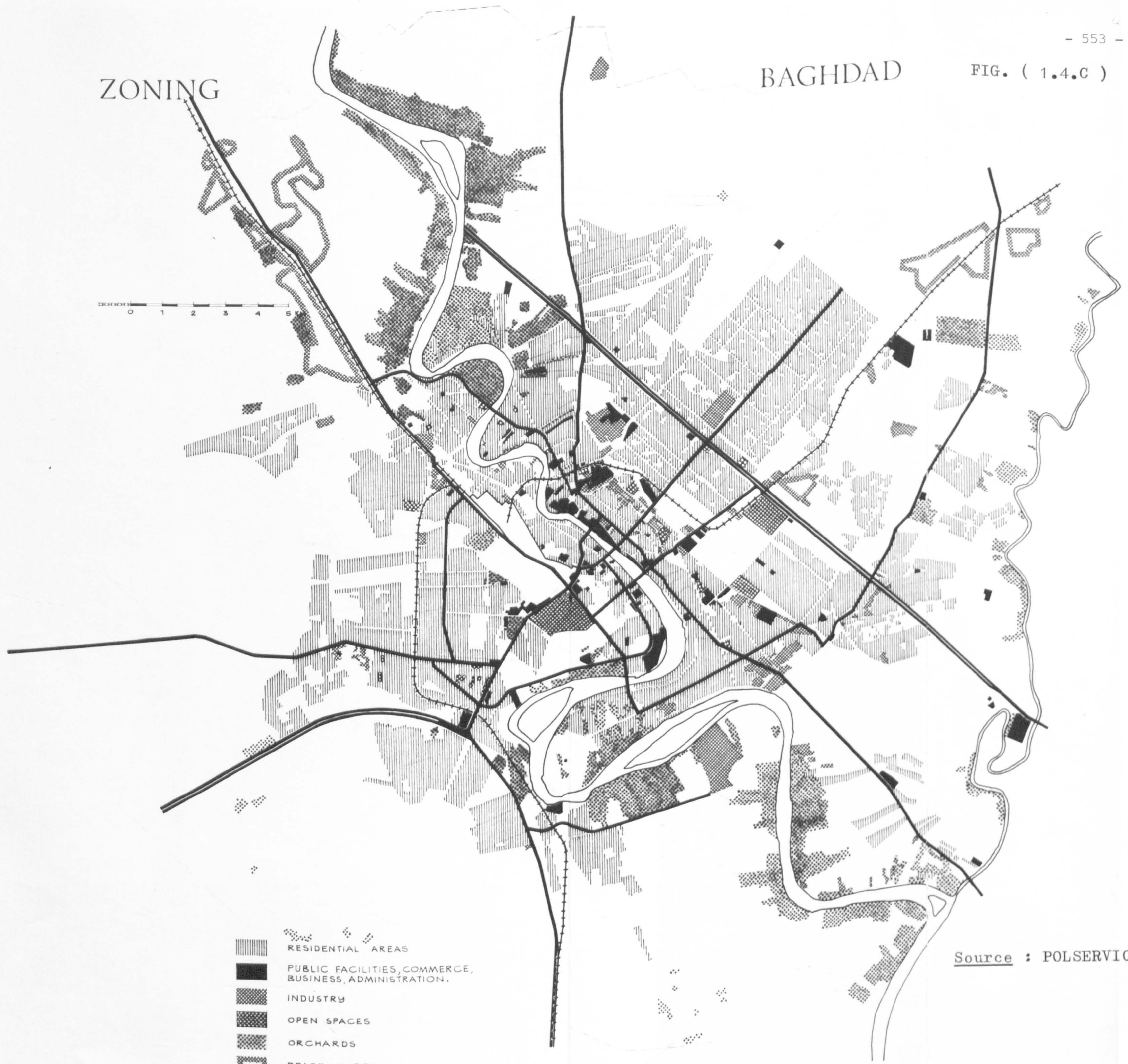




# ZONING

## BAGHDAD

FIG. ( 1.4.C )



- RESIDENTIAL AREAS
- PUBLIC FACILITIES, COMMERCE, BUSINESS, ADMINISTRATION.
- INDUSTRY
- OPEN SPACES
- ORCHARDS
- BRICK YARDS
- MAIN STREETS
- RAILWAY

Source : POLSERVICE



transportation is required. Generally speaking, facilities tend to agglomerate for economic and physical reasons. But as all people are not mobile, some of the facilities in the urban area are distributed within the structure. The proportion of distributed facilities of centrally located facilities is a function of the mobility standard thus a higher proportion of facilities are found undistributed in more mobile societies.<sup>5.</sup>

Before embarking on the examination of the present urban structure and land use pattern of the city of Baghdad, it is important first to review the historical development of Baghdad, so as to have a wider perspective of the physical changes of the urban structure of the city.

The changes that have occurred to the urban structure of Baghdad may be categorized into three periods as follows: see Fig.( 1.4.D ).

#### First Period:

Up to the middle of the 20th century the development had been determined by military and natural factors and took place by the process of joining up of separate towns and settlements, located in most preferential points by the river Tigris. These separate organisms of the city have their own service centres and the most important one is the centre of Baghdad which was developed along the Tigris on the eastern bank at the geographical centre of the city.

#### Second Period:

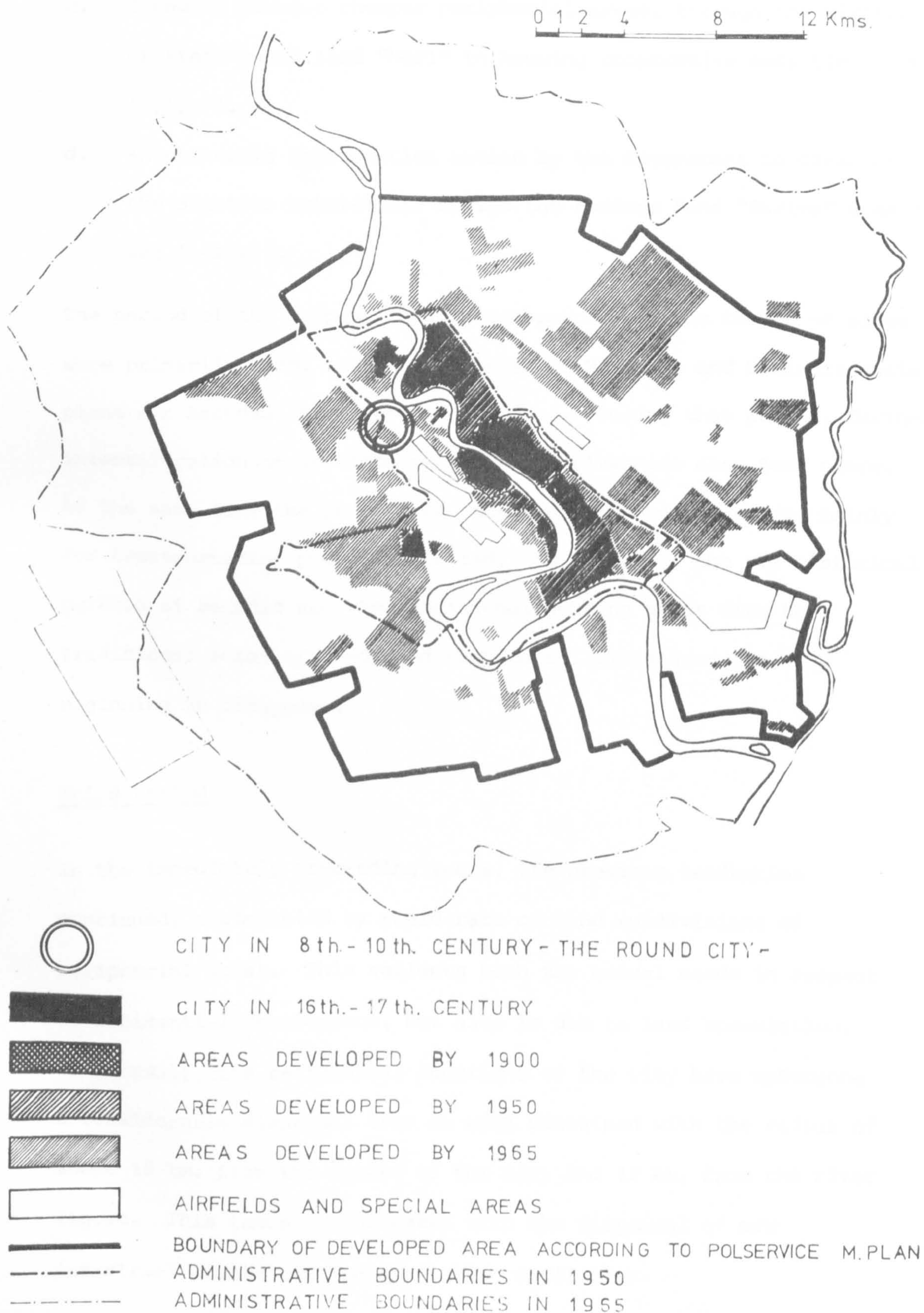
- a. Factors limiting development in the southern directions, in the form of military functions and of the large bend of the Tigris.

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5. see A.Z. Guttenburg, "Urban Structures and Urban Growth" J.A.I.P., No. 26, 1960.



FIG. (1.4.D) HISTORICAL DEVELOPMENT OF  
THE CITY OF BAGHDAD





- b. Partial elimination of the flood threat on areas situated behind the Eastern Band.
- c. Trend to develop cheaper peripheral areas, through the distribution of state owned land "Meri" to housing cooperative societies; see (7.3.0 ).
- d. An extensive intervention action by the Government to clear up the squatter settlements behind the Eastern Band "Sarifa" areas; see ( 441.1).

The period of the perpendicular development, and the choice of sites were primarily based on the principles of Minoprio and Doxiadis master plans for Baghdad; see Appendix ( 1.5 ). During that period, further intensification of development along the riverside also took place. At the same time the process of redevelopment and clearance, mainly for transportation purposes started. As a result, the old historical pattern of Baghdad and the traditional housing areas with the traditional forms of trade and service buildings are gradually beginning to disappear.

#### Third Period:

In the immediately preceeding years, the previous tendencies continued, accompanied by rapid rate of land subdivisions of peripheral areas. This reflects both the actual needs in respect of residential development, but also is due to land speculation. As a result, the residential functions of the city have undergone a considerable dispersal over an area contained with the radius of about 15 km. from the centre of the city and 12 km. from the river Tigris. This tendency increases with the dispersal of new industrial plants and transportation facilities.

An examination of the present urban land use pattern of Baghdad reveals that it is of a mixed character, whereby different activities could be found together in one area, although they might be of different nature and serve different purposes. This phenomenon was resulted partly from the lack of early and adequate urban planning, and partly from the historical trend of the Arab-Islamic urban structures, where residential, commercial, and administrative activities are intermixed in a compact, self-sufficient unit around the Mosques and religious institutions; see ( 3.2.2 ).

The mixed land use varies from place to place in the city, with the newly developed areas being relatively more differentiated in land use than the older ones. The mixed land use pattern implies that in the same area of the city, different uses of land must compete with each other, such competition results in many cases in a rise in land prices, because the intensive land user is better able to pay high prices. High land prices are bound to increase the total development costs regardless of whether the land is developed by the public or the private sector. Moreover, these increased costs act as obstacles or impediments to the development. Thus, both public and private institutions interested in developing high land cost areas will be discouraged, and this situation will inevitably slow down the development of such areas.

The analysis of the location of commerce, business, public facilities and administration, which amount to about 5.6 per cent of the developed area of Baghdad; see Appendix (1.5.A ), reveals the tendency of concentration, particularly in the central area of the city, where almost 50 per cent are located. The problems of the central area of cities are common all over the world, particularly



in those cities which are under urbanization pressures. In the case of Baghdad, these problems would exist even if urbanization had not occurred, although they would not have been on such a scale. The very nature of the city centre, on the one hand a generator of mass traffic and activity and on the other unprepared for adjustment from the traditional patterns, intensifies the difficulties associated with urbanization. In the central area, usually the population increase is translated into an increase of functions both in number and type.

Perhaps the major consequences of rapid urbanization and city expansion on the central area of Baghdad are the visible increase in density of functions, indiscriminate expansion of the centre over areas of other use, particularly the old residential areas surrounding it, and above all the difficulties of traffic both pedestrian and vehicular. The latter problem is acute in Baghdad, because of its original structure where the main roads lead to the centre, as well as being narrow and irregular, sufficient only for moderate pedestrian or slow speed traffic. Although in the last fifteen years, many attempts were made to alleviate this condition by opening new roads and enlarging existing ones, even in the central core of the city where land values are high, these attempts have not been successful.<sup>6</sup> Instead of lessening congestion, these measures have generated more traffic because they were accompanied by new regulations permitting high buildings which increased the density and provided for still more commercial functions at street level.<sup>7</sup> Another point associated with these attempts was

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6. An example of these attempts are the opening of "Al-Jumhourya" street in 1960, and the widening of "Abu Nawass" street along the Tigris river during the period 1962-1969.

7. In the case of "Al-Jumhourya" street for instance, the Municipality of Baghdad issued regulations prohibiting development along it unless the buildings are of six storeys in height.

that most of the openings and extensions were limited to the central areas and their vicinities and did not connect to any total rearrangement of the street network of the city.

The existing network of service centres is linked with the high-density built up areas, especially the old districts, where these centres composed of series of specialized markets "Suqs", such as vegetables, shoes, clothing, meat etc., some of them dated back to the Abbasid Caliphate period. These centres and markets are somewhat isolated from the main central business area of the city; in the dense residential area surrounding these markets lies the crafts and artisan district which spreads outward along the major streets together with other business establishments and workshops.

On the other hand, the newly built residential areas have not yet evolved any significant form of concentrations of service centres. Therefore, distances between some residential areas lacking services, and the nearest service centre amounted in many cases to almost 7 kms. These disproportions are sometimes compensated by dispersed substandard local shops, which are mainly operated by the local inhabitants of the area. It is also worth noticing that a large number of commercial activities in Baghdad take place directly in the street or in public spaces, where sidewalk vendors spread out their small collection of goods for purchase. Although the Municipality issued many and frequent regulations prohibiting this type of trading, these regulations lacked enforcement and in many cases were ignored.

Most of the commercial and business facilities in Baghdad are to be found in concentrations of various levels according to their nature and the size of population they serve; commerce and handicraft usually dominates along the main streets, while financial and insurance



enterprises and commercial companies are mostly concentrated in the central district of the city; see Fig. (1.4.E ). The existing network of streets in Baghdad is the result of a combination of historical origins, partly implemented various master plans, and some accidental decisions which are not based on any study of the transportation problems and the future needs of the city. As a consequence, the external traffic entering the city from many directions through radially arranged streets and causing congestions and conflict with the inner traffic running along the main streets.

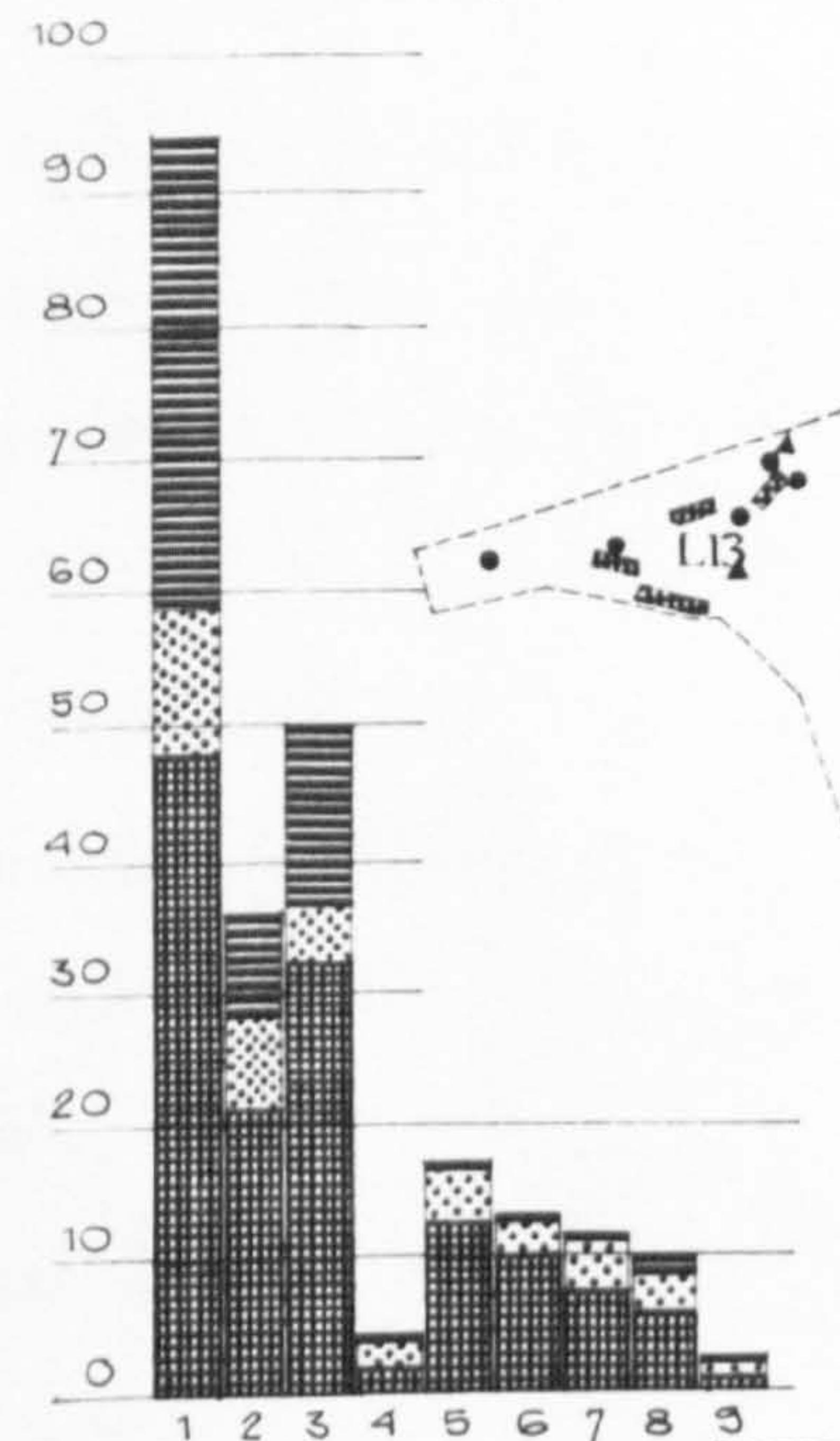
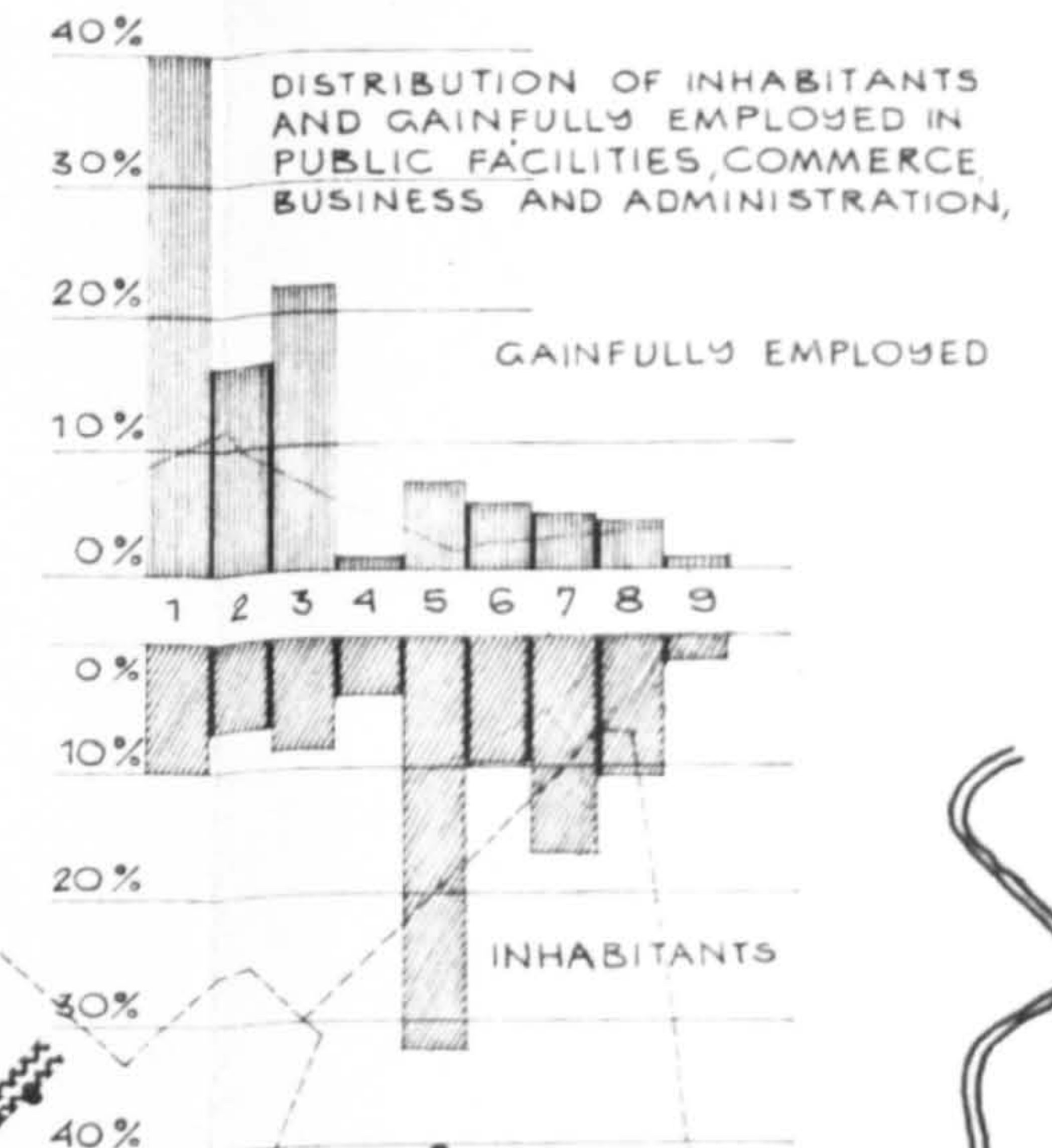
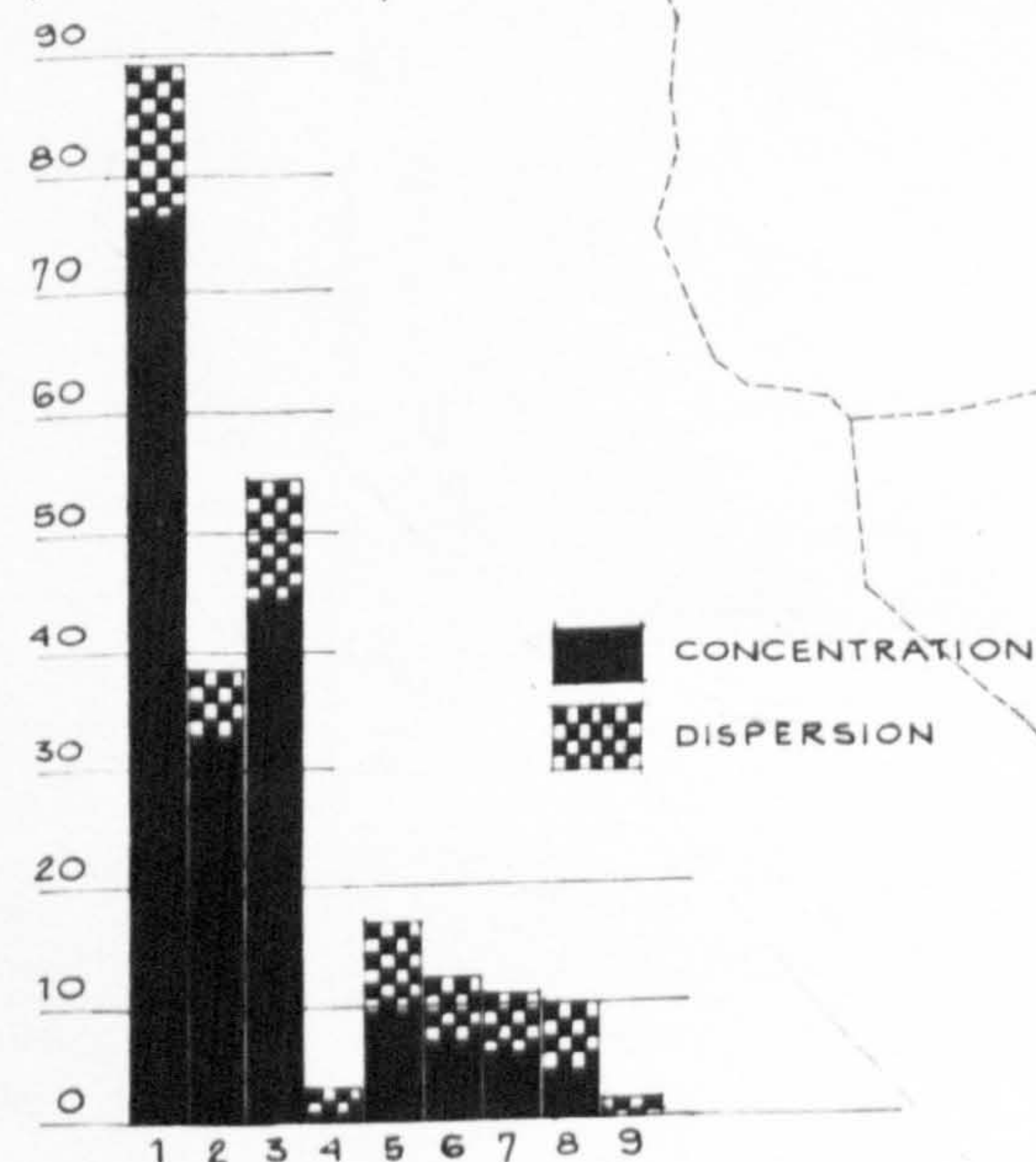
The geometry of the main streets in the centre and in the residential areas of Baghdad, is rectangular or semi rectangular. In some places this pattern changes into radial and some streets become national or international highways. The lack of parts of streets and the incomplete pattern makes connections between the city districts indirect, therefore, the traffic in many cases run through street patterns of other districts, and very often through the central area, which in turn increases traffic congestions. These traffic problems were created by the complete lack of any functional or technical classification of the network.

To solve the traffic problems in Baghdad, the Municipality selected a French firm "OTAM" Omnium Technique d'Management, in 1971, to prepare a study on the traffic situation and propose recommendations at a cost of about 44,000 ID. The work was divided into four main stages to be completed by March 1972. The final report proposed the adaptation of one way traffic for a number of narrow streets within the central area, the redesigning of selected intersections, the construction of some grade separations, increasing the number of lanes by widening existing pavements, more efficient regulation of



## CITY, DISTRICT AND LOCAL CENTRES

0 1 2 3 4 5 KM

GAINFULLY EMPLOYED IN COMMERCE,  
BUSINESS, PUBLIC FACILITIES AND  
ADMINISTRATION /IN THOUSANDS/GAINFULLY EMPLOYED IN PUBLIC FACILITIES,  
COMMERCE, BUSINESS AND ADMINISTRATION  
IN CONCENTRATIONS AND DISPERSED,  
/IN THOUSANDS/

CONCENTRATION  
DISPERSION

MULTIFUNCTIONAL  
CONCENTRATIONS,  
CONCENTRATION WITH PREVAILING  
BUSINESS AND COMMERCE,  
CONCENTRATION WITH PREVAILING  
PUBLIC FACILITIES,  
CONCENTRATION WITH  
PREVAILING ADMINISTRATION,  
BOUNDARIES OF CITY  
CENTRE,

DISPERSED ADMINISTRATION,  
DISPERSED PUBLIC  
FACILITIES,  
CENTRAL CONCENTRATION,  
DISTRICT CONCENTRATION,  
LOCAL CONCENTRATION,

Source : POLSERVICE



traffic and, finally, installation of a traffic lights system which is to be executed in a phased manner. Measures have also been recommended for developing off-street parkings which are lacking especially in the central area, where almost all vacant plots including sites of demolished buildings are used for parking purposes. Also further expansion in the public transport was envisaged to serve the low income residential areas.<sup>8</sup>

Available land use data shows that almost 60 per cent of the total developed land is occupied for residential use; this relatively high percentage may be attributed to the relatively low housing densities in the newly developed areas where the detached, one-two storey houses prevail; see Appendix (1.5.A ). On the other hand industrial areas were estimated at around 6.8 per cent of the total, which implies that industry is not very well developed as compared with other cities in the developed countries of similar size of population of that in Baghdad; See Fig. (1.4.F ). Another feature of the land use pattern of Baghdad is the lack of adequate recreational public open spaces as proportionate to the number of inhabitants; this is attributed to the fact that it is highly expensive in a hot-dry climate of Baghdad to maintain a large area of green open spaces, and the Government emphasis seems to be placed on providing and maintaining flower beds and strips of lawn at street intersections or between traffic lanes; while the individuals in turn maintain a high percentage of their house plots for private gardens. This percentage varies between the

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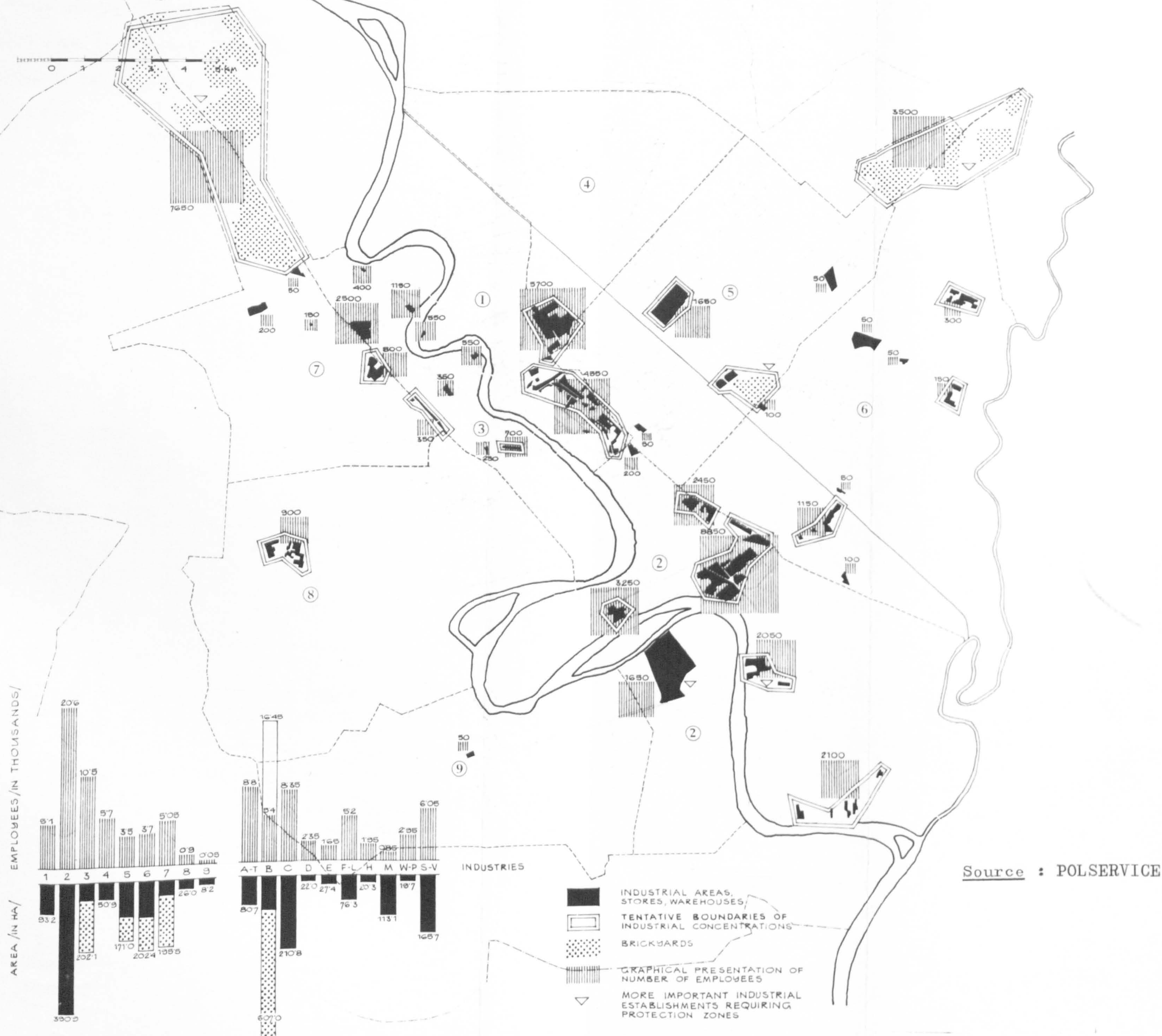
8. In 1972, there were about 96 bus routes, which constituted the basic means for public transport in Baghdad; see Polservice "Comprehensive Civic Survey for Baghdad", 1972.



INDUSTRY

BAGHDAD

FIG. ( 1.4.F )





different income groups, while in the low income groups it amounts to 2.7 sq.m. per one inhabitant, in the high income groups it rises as much as 14.3 sq.m. per one inhabitant,<sup>9</sup> see Fig. ( 1.4.G ).

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9. see, Polservice, "Comprehensive Civic Survey for Baghdad", 1972.

APPENDIX ( 1.5 )

Planning Attempts for the City of Baghdad:

In the recent past, several attempts were made to direct and control the growth and development of the city of Baghdad. In the late 1930s, a German planning firm - F. Brecks and Bronoweiner of Berlin -, was engaged to prepare a master plan for the city. At that time, the consultants found Baghdad to contain roughly 200,000 inhabitants and the plan was designed for an ultimate population of 500,000.<sup>1</sup>

More recently, in 1956, a British firm - Minoprio, Spencely and Macfarlane -, was commissioned to prepare another master plan. The plan with its brief report remained as the official plan for the city, and was partly adopted by the Municipality of Baghdad. The plan conceived the city as following more or less a semi-circular structure with a diameter of about 20 km. As a result new roads were sliced out of the middle of some of the most representative areas of old traditional Baghdad, while other areas were completely bulldozed to create profitable real estate along these roads. This plan can only be described as a guide, since it provided no phasing of development and no detailed drawings. Also, there was no ancilliary legislation to enforce it; see Fig. ( 1.5.A ).

The Minoprio plan was followed by yet another master plan in 1958, this time by Doxiadis Associates. The plan came as a result of the approval by the development Board of the Basic Foundation Programme

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1. see, M.V. Jones, "Population of Baghdad", paper submitted to the Municipality of Baghdad, 1967`.





FIG. ( 1.5.A )

MINOPRIO , SPENCELY  
AND MACFARLANE  
MASTER PLAN FOR  
BAGHDAD

Development plan for Baghdad. Key: 1 Houses of Parliament 2 Government centre 3 civic centre 4 hospital 5 market 6 sports centre 7 bus station 8 principal mosques 9 museum 10 stadium 11 municipal garden 12 park 13 racecourse 14 University 15 technical college 16 oil refinery 17 Al-Rashid army camp 18 park and zoo



to solve the housing problems of Iraq. However, although much of the plan was implemented, the Government was concerned that Baghdad was continuing to grow haphazardly without any logic or restraint. By 1965, the Municipality decided to initiate yet another planning exercise to control and guide development of the city, and selected a Polish planning firm - Polservice - now known as - Budimex -, to undertake the task of the preparation of a comprehensive master plan for the city.

The following is a detailed account of the most significant attempts to control the haphazard growth of Baghdad which contributed to the present state of the urban structure of the city.

A. Doxiadis Associates Master Plan:

During the implementation of the housing development schemes in Baghdad by Doxiadis Associates, which were part of the Basic Foundation Programme to solve the housing problems of Iraq, it became apparent that these schemes should be incorporated within the master plan for the city of Baghdad, so that their planning could be integrated and the realization of functional communities secured with the minimum of expense.

By 1958, the then Development Board; see, ( 2.2.1 ), assigned to Doxiadis Associates the preparation of a master plan for Baghdad. The master plan covered an area of about 500 sq.km. to accommodate the functions required for serving 3,000,000 inhabitants by the year 1978. This population target was based on the assumption that the population of Baghdad will increase at an average annual

rate of 5.19 per cent.

The master plan also provided for further expansion in the population to take place during the development of the plan, because of factors unforeseen by the consultants at the time of plan formulation, i.e. migration. The physical strategy of the plan was based on the assumption that in order to cover the needs which will be created through the development of the city, a relatively wide breadth of expansion must be envisaged on both banks of the river Tigris. This strategy made the consultants ponder over the possibility of bringing the water nearer to those people who are going to live far from the river and its influence. The solution was the construction of canals along the river banks, such as the "Army Canal". As a result of the construction of these canals, it became possible to rehouse a large number of squatter families on new areas, especially those who were occupying the "Sarifa" area behind the Eastern Band.

Doxiadis Associates master plan provided for the grouping of Baghdad into physically, economically, and socially homogeneous communities each of which comprises approximately 100,000 inhabitants. These communities will be almost self sufficient in terms of shopping, education, recreation, and health services. These communities will in turn be divided into smaller units, designed to accommodate different socio economic groups; see Fig. ( 1.5.B ). A considerable portion of Doxiadis Associates master plan was implemented, mainly by the central Government.



FIG. ( 1.5.B )

DOXIADIS ASSOCIATES  
MASTER PLAN FOR  
BAGHDAD





Perhaps, the major projects implemented according to the plan were the Eastern and Western Housing Development projects which were planned to accommodate low income families and squatters; see ( 4.1.1 ).

B. PolSERVICE Master Plan: See, Fig. ( 1.5.C )

This recent master plan for Baghdad represents an effort of over two years of research, analysis and planning. The plan making exercise has been spent on the examination of the physical, social and economic aspects of the city of Baghdad. The trends, which were determined from studies and surveys of the various components of the community, have been projected into future. The entire work was done in three stages, the first stage being reached in September 1966, the second stage in April 1967, and the final stage in March 1968. The master plan was expected to serve as a guide to the future growth and development of Baghdad up to the year 1990.

Some of the policy highlights of the PolSERVICE master plan were:<sup>2</sup>

1. That the master plan is to be considered in a wider national context: that it should serve as a link in the larger planning framework which means providing the needed components of physical development of Iraq's main city within the general scheme of national economic planning and, also, thus furnishing a basic link in the national, regional, and city planning hierarchy;

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<sup>2</sup> see, Baghdad Municipality, "Master Plan for Baghdad, a brief report on development of the city: 1967-1990", 1972, p.2.

2. That the basic design proposals contained in the master plan furnishes an overall framework; it is not rigid but flexible and can be adjusted or modified to ensure proper development of the city of Baghdad while safeguarding the essential elements and pattern of development envisaged in the plan;
3. That the plan is to initiate a continuum of plan preparation, sanctioning and implementation; that the plan is conceived as a useful tool in the hands of the Municipality of Baghdad to conduct effective and correct implementation of the various goals and objectives of balanced and orderly development;
4. That the Municipality of Baghdad cannot alone carry out the development Programme envisaged without national support; support and active cooperation is required from private institutions and agencies. The needs of the city of Baghdad are too extensive and complex to be met by the meagre resources of the Municipality alone. Therefore, it is essential that all publicly financed development must be coordinated, designed, located and its execution synchronized so as to produce maximum benefit to the citizens, thereby fulfilling the objectives of orderly and planned development. Moreover, such projects must be carried out in a manner so as to guide and direct privately planned and financed development as well.

According to Polservice:<sup>3</sup>

"The master plan attempts to present an integral picture of the future city by considering together various elements and aspects of city development at various

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3. . (see, "Master Plan for Baghdad, a brief report on the development of the city: 1967-1990", 1972, pp 18-19'.

levels and scales and within the requirements of the community, social, economic as well as physical. The land use pattern envisaged is in context with the minimum standards of community services and facilities related in a functional manner. The plan gives attention to the problems of the present particularly in regard to meeting the existing deficiencies and shortages. The basis of the plan is the existing reality; the present is the link between the past and future".

Regarding the land use pattern envisaged in the master plan, the consultants continued:

"The land development pattern attempts to retain some of the historical features and traditional areas of Baghdad, while at the same time, making it possible to introduce the necessary innovations and modernization".

In the field of residential development, the master plan proposed that the residential land uses would be the most wide spread and important. Compared with the existing 13360 hectares occupied by residential uses, the plan proposes a total area of about 213900 hectare for residential use, which would be approximately 53.6 per cent of all land proposed for development by 1990; see Appendices ( 1.5.A and 1.5.B ).

The residential areas of the city will be divided into six self-contained districts. These districts would have their own focal points with facilities for shopping, commerce and community facilities. Each district in size is to range around 300000 or more in population; within each district there will be several communities, the size of these communities, depending upon densities, may range from 50000 to 80000 persons, and sometimes up to 100000. Each community in turn will have neighbourhoods of a size ranging from 7000 to 10000. The plan also propose a gradual reorganization of all the residential areas in Baghdad



to make it possible and feasible to introduce the much needed community facilities, public amenities and schools, parking and playgrounds and health facilities.<sup>4</sup>

In respect to housing, the plan envisaged broadly two types of housing development:

- a. Single-Family housing development.
- b. Multi-Family housing development.

The single-family housing development will be divided into three zones with population density as a differentiating factor between them. The plan proposed about 199.6 sq.km. to be developed up to 1990 for single-family housing as compared to 151.8 sq.km. already developed for the same purpose.

The master plan also introduced a multi-storey housing development. This development is to provide a variety of dwelling sizes and rents for a wide range of family groups and incomes while, at the same time, earmarking land for higher residential construction. This type of housing development will be classified into four different zones on the basis of population density and its location in the city. The plan proposed about 14.3 sq.km. to be developed in multi-family housing up to 1990, with density varying between 300 to 600 in/ha.

To implement the master plan, Polservice proposed the formulation of a Physical Planning Act, which will incorporate the basic institutions necessary to conduct such activities. The object

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4. For a detailed account of these proposals, see, ( 4.2.0 )

of the Act would be the determination of the legal framework for physical planning and codification of regulations and establishing the means of its realization.

Apart from this Act, Polservice also envisaged the following measures:

- a. Right of mandatory referral for the Municipality of Baghdad in the decision making process regarding the location and development of major urban activities and uses within the city limits, and in the region of Baghdad, so as to ensure complete coordination in planning and development of these areas in relation to the central part of the city and vice versa.
- b. The setting up of a Municipal City Planning Organization and, in the future, District Planning Offices and Zoning Inspectors to be supervised by the Chief Town Planner, which would work out terms for periodical reviews and revisions of the master plan, prepare outlines for detailed development plans as and when required, offer guidelines for locational policy etc., and would render advice and recommendations on matters concerning land use and city development.
- c. The introduction of other planning regulations in regard to the control of development, i.e. prohibition of development not in accordance with the plan, orders for demolition, development, and priorities for investment and funding according to the principles set in the plan and later in detailed plans.

The total cost of the implimentation of the master plan was estimated at about 1639 millions ID by the end of 1990. The distribution of this cost according to the category of development is as follows:

Table ( 1.5.A )

Polservice Master Plan for Baghdad; Total Implimentation Cost:

<u>Category</u>	<u>cost in millions ID</u>	<u>% of the total cost</u>
Residential development	660	45
Social Services	213	15
Technical infrastructure	489	35
Green spaces, recreation	77	5
<hr/>		
Total	1439	100
Other investments	200	15
<hr/>		
Grand Total	1639	
<hr/>		

Source: Polservice, "Master Plan of Baghdad", 1969, Vol. 1, p. x-9.

C. The Civic and Land Use Survey of Baghdad:

Following the formulation of Polservice master plan for the city of Baghdad in 1968, the Municipality of Baghdad requested the consultants to carry out a comprehensive civic and land use survey for the city so that further elaborations of the plan could be made

since that plan was formulated on the basis of a very limited set of material and data provided by the Municipality, which in general lacks accuracy and detail.

The agreement between the Municipality of Baghdad and Polservice was concluded and signed in September 1971, at a total cost of about 150 thousands ID. The consultants under this agreement, which was called - Phase II of the Master Plan -, were to carry out the following major tasks:

1. A detailed civic and land use survey, to be followed by a review of the master plan and its performance.
2. The preparation of a comprehensive development plan in an extended perspective to year 2000 AD.
3. Preparation of development plans for some selected areas of the city of Baghdad.

The civic and land use survey was executed in the period of ten months, between November 1971, and September 1972. The major components of the survey were:

- a. Land use inventory and analysis.
- b. Traffic and Parking.
- c. Social and Economic conditions.
- d. Survey of areas of special Architectural, Archeological, and Historical interest.
- e. Land ownership.



Under the agreement, at the end of each interval, the Municipality is to review the results of the work, study and accept, reject or modify each stage. An important part of the agreement was that the entire work should be done in close collaboration with an Iraqi team of planners. The agreement also stipulated an Iraqi Consultative Board to advise the Municipality on various aspects of the work and assist in arriving at decisions according to a given time schedule.

The survey covered an area of some 83120 hectares within the built up areas of the city, using the Block as a basic unit on which various uses were recorded with other relevant information regarding use of land and buildings. This was done by dividing the city into nine survey districts and then into about 400 blocks. The survey furnished data on the percentage of actual built up areas, physical condition of structures, status of services and utilities, size of plots and other information. This data was then transferred and coded onto punch cards for computer analysis.

While the survey was mainly intended to provide the basis for further development and elaboration of the master plan of Baghdad, there were some notable gaps in its methodology and analysis; especially by the choice of the Block as the basic unit rather than the house, which makes the data obtained insufficiently accurate to be used directly for the elaboration of detailed plans and development programmes. Also, most of the socio economic data was confined to the family and household size, income stratification and housing by location and size of



accommodation, which does not provide the adequate basis for perspective planning. Ideally there should have been a sectoral analysis of the economic structure of the entire city, and the relationship of the economic factors to the land in use, its location and distribution, etc. For instance, while it is desirable to know the employment characteristics and the problems arising due to the nature and location of the manufacturing industries, it is equally important that the analysis should identify the relationships between industries, land, location, housing and income. Likewise, in the commerce and business sector, while it is useful to know that it claims a high proportion of the gainful employment, it is even more important to know the relative contribution of this sector compared with other sectors to the city economy.

Another serious gap in the survey was the almost total absence of financial analysis of resources available and cost of various services rendered by the Municipality, since it is essential to know cost implications and resources required to put into effect the recommendations of any development plan for the city. Such a financial study should suggest alternative means to finance development, particularly due to the increasing cost of development.

D. Brief Appraisal of Polservice Master Plan:

No single criterion or standard could be employed in the evaluation of the Polservice master plan. This is caused by the fact that



there are no well defined national goals and objectives, especially in the field of physical planning, to guide the development; also the state of frequent changes in the political and administrative structures, which makes it very difficult to foresee and predict the future pattern and values of society and the Government alike. This situation has been reflected in the Polservice master plan, where neither the consultants nor the Government have been able mutually to understand fully the future consequences of this exercise, and its impact on the aspects of life in Baghdad and the country as a whole.

The master plan of Polservice is beset with some serious limitations and shortcomings. Apart from the lack of essential data, unavailability of accurate and up to date base maps and surveys; the plan suffers from the general lack of understanding of the social and economic forces crucial to development, and the limited communications due to the language difficulty which led to lack of appreciation and understanding between the planners and their clients. Perhaps the most serious single factor contributed to this limitations and shortcomings is the agreement under which this work was carried out. To illustrate this point, it has been found that the agreement had some serious defects including vague and incorrect usage of the language, as well as substantial gaps with regard to essential studies and surveys normally required before plan making commences, leaving many things solely to the discretion and good sense of the consultants. In other words, the terms of reference and the method of collaboration between the consultants and local counterpart



were not clearly spelled out.

This situation left Baghdad Municipality without the resources and the technical know-how to evaluate the various proposals submitted to them by the consultants during various stages of the contract, and the representatives of the Municipality were obliged to give a written opinion or consent within two weeks of a given submission.<sup>5</sup> Failure to transmit acceptance was to be taken as acceptance in toto. The agreement did provide for establishment of an Iraqi Consulting Board, which was subsequently formed by the Government, under the title of the Higher Committee for the Master Plan of Baghdad.<sup>6</sup>

The main task of this Committee was to help Baghdad Municipality to formulate basic policies and to review, accept or modify the given work submitted at various stages. But the manner of cooperation and collaboration between the consultants and the Committee was not explicitly spelled out. And the authority of this Committee was merely advisory and not binding, either on the Municipality of Baghdad, or the Consultants. Though in actual practice, Baghdad Municipality did give due consideration a thorough review of the work submitted on which it had to render advice. If the Committee had been properly conceived and its terms of reference clearly defined and it had been associated with the planning team from the very start, then it would have been able to render assistance in formulating the necessary

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5. For details, see Agreement Article 3:A(c), pp: 10-11.

6. For further detailed information on this Committee, see The Master Plan for the City of Baghdad Act, No. 156, 1971, Article 3, Government Gazette, No. 2125, April 1972.



research proposals and surveys, and later in the analysis of data and the arriving at conclusions. The Committee could have played a more constructive and meaningful role in the master plan.

Another significant problem was that the agreement did not mention the submission of the final report on the master plan. This led to many avoidable complications, particularly with regard to the official approval and legal adoption of the plan.<sup>7</sup> Many essential studies were not specifically mentioned in the agreement for the master plan, they were not considered mandatory, and when attempted were not always done in a very satisfactory manner. This was due to the serious handicap of strict financial limitations as well as administrative wrangles.

Perhaps the greatest gap in the agreement was the absence of a specific requirement for a comprehensive land use survey.

Although the survey was done later on, it was on a very tentative and preliminary basis; no detailed inventory of land uses could be prepared and the analyses were done in a perfunctory manner.

The failure to understand the Iraqi and Baghdadi society, particularly their sense of values, led to many erroneous conclusions especially with regard to housing, neighbourhood, and community planning.

The absence of adequate studies and surveys regarding the economic base of the city of Baghdad led to several assumptions and conclusions made on an arbitrary basis. For example, it is still difficult to ascertain with any degree of precision or accuracy, a

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7. (The latest draft of the Final Report was submitted in November 1971, but even this was not found satisfactory for publication and required substantial editorial work).



reliable figure on the population of Baghdad city. In fact, the population for the city of Baghdad, within the limits of the Municipality, was proportioned out from the Baghdad Province, "Mohafadha" given in the 1965 population census, which in itself was a matter of deep concern and controversy.<sup>8</sup> These problems often led to a very questionable formulations; for example, the consultants worked on what seemed an artificial limit for population that Baghdad could or should have.<sup>9</sup>

According to the Polservice the city should not be allowed to grow more as this would reduce the standards of urban facilities to an intolerable limit.<sup>10</sup> This strategy of controlling future population for Baghdad, is in contrast with the common practice in many developing countries where the cities grow, not because they have or have not the basic urban amenities, but rather due to several extraneous factors, and their growth cannot be simply explained by purely economic factors.

Another doubtful formulation was the arbitrary assumption of an index or growth for various components of the projected working force and its structural composition.<sup>11</sup>

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8. However, in 1971, estimates of Baghdad's population made by Baghdad Municipality and by the Central Statistical Organization put it close to 2.5 millions; also see Fadhil Ansari's "Iraq's Population: A demographic Study in Comparative Human Geography", University of Damascus, 1970.

9. The population of Baghdad in the target year of the master plan 1990, was estimated to be between 3.2 to 4.2 millions, see Polservice, "Master Plan for Baghdad", 1969, Vol. 1 p. 11-12.

10. see Polservice, "Master Plan for Baghdad: A Brief Report on development of the city of Baghdad, 1967 - 1990", 1972, pp. 5,6 and 14,20.

11. For a discussion of working force distribution and its anticipated growth index, see S. Shafi "Proposals for augmented Municipal Revenues for Planned Development", table 1, Baghdad.



The lack of knowledge about the legal and administrative system of Iraq led to confusion with regard to recommendations for development control. Although the master plan does contain a chapter on the cost of implementation, these estimates have not been worked out on a sound fiscal basis or upon the financial capacity of Baghdad Municipality to afford such a scale of investment given its meagre tax base.

There is also no mention as to how the required financial resources would be secured or what steps should be taken to augment the municipal revenues. Even the estimates for the relatively short-term phase, Ten-Year Development Programme, have not taken into account some of the more essential items, like the cost of land acquisition or the construction of new bridges. No attempt has been made to identify other possible sources for raising additional funds, or if there was to be a short fall of investment, no ideas have been given as to alternative financial measures of strategies which could be restored.

Apart from the basic limitations and short-comings of the Polservice master plan for Baghdad, it must be stated here that the master plan put some real questions about the development of Baghdad in a perspective. Although some assumptions or formulations were questionable, nonetheless, the land use pattern envisaged was flexible and it does furnish a workable framework for further development. Perhaps more than anything else, the Polservice master plan has contributed in one way to an increasing awareness among the administration of the problems of urbanization and planning.



APPENDIX (1.5.A )

The General Composition of Land Use in Baghdad by 1972

<u>Land Use</u>	<u>Area (hectare)</u>	<u>sq.m./inh.</u>	<u>%</u>
Residential	13360	59.0	60.0
Industrial	1340	5.9	6.8
Public Utilities	100	0.4	0.4
Commerce and Business	200	0.9	0.8
Administration	215	0.9	0.8
Public Facilities	880	3.9	4.0
Open Spaces	860	3.8	3.9
Transportation	3120	13.8	14.0
Other Uses	2115	9.4	9.3
<hr/>			
Sub Total	22190	98.0	100.0
Vacancies approved by the Municipality of Baghdad, but not yet built up	3490	15.0	-
<u>Total Developed Areas</u>	<u>25680</u>	<u>113.0</u>	<u>31.0</u>
Agriculture Land	54410	-	-
Open Water and Flood Protection Areas	3050	-	-
<u>Total Undeveloped Areas</u>	<u>57460</u>	<u>254.0</u>	<u>69.0</u>
<hr/>			
Grand Total	83140	367.0	100.0
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Source: Municipality of Baghdad, Polservice, 1972.



APPENDIX (1.5.B)

The General Composition of Land Use Proposed by  
PolSERVICE for the City of Baghdad in 1990.

<u>Land Use</u>	<u>Area (hectare)</u>	<u>sq.m./inh.</u>	<u>%</u>
Residential	213900	66.9	53.6
Industrial	30700	9.6	7.7
Public Utilities	4200	1.2	1.0
Administration, Commerce, and Business	9500	3.0	2.4
Public Facilities	16600	5.2	4.2
Open Spaces	41900	13.2	10.5
Transportation	63500	19.9	15.9
Other Uses	19000	5.8	4.7
<hr/>			
Sub Total	399300	124.8	100.0
Reserve	30400	95	-
<u>Total Developed Areas</u>	<u>429700</u>	<u>134.3</u>	<u>44.8</u>
Agricultural Land	405400	126.7	-
Open Water	28300	8.8	-
<u>Total Undeveloped Areas</u>	<u>433700</u>	<u>135.5</u>	<u>55.2</u>
<hr/>			
Grand Total	863400	269.8	100.0
<hr/>			

Source: PolSERVICE, Master Plan of Baghdad, Vol. 1, Fold (A), 1967.



APPENDIX ( 1.6 )

Population projections for Iraq : 1970-1990

<u>Year</u>	<u>Population Range (Millions)</u>	<u>Percentage Rural</u>	<u>Range Urban</u>	<u>Urban Population Projections (Mill</u>
1970	9.5	42	58	
1975	11.21 - 11.65	42 - 36	58 - 64	6.5 - 7.4
1980	13.40 - 13.97	35 - 31	65 - 69	8.7 - 9.6
1985	16.08 - 17.00	30 - 25	70 - 75	11.2 - 12.7
1990	19.32 - 20.73	28 - 25	72 - 75	13.8 - 15.2

Source: K. Ueda, "Revised Population Projections for Iraq", 1970



APPENDIX ( 1.7 )

Distribution of the population of Baghdad and Iraq according to age and sex groups in 1970:

<u>Age Group</u>	<u>Baghdad</u>		<u>Iraq</u>	
	<u>M %</u>	<u>F%</u>	<u>M %</u>	<u>F %</u>
0- 4	19.1	19.7	19.4	19.1
5- 9	15.6	15.2	15.9	15.6
10-14	13.1	12.3	12.9	12.7
15-19	9.8	9.9	10.5	10.4
20-24	8.3	8.2	7.3	7.2
25-29	5.1	6.8	5.6	5.7
30-34	5.9	5.6	5.3	5.3
35-39	5.1	5.1	4.9	5.0
40-44	4.0	3.9	4.3	4.5
45-49	3.3	3.3	3.4	3.5
50-54	2.7	2.5	2.8	2.8
55-59	2.5	2.6	2.3	2.5
60-64	1.5	1.8	1.8	1.9
65-over	3.0	3.3	3.6	3.9
Total	100.0	100.0	100.0	100.0

Source:

1. Statistical Pocket book 1960 - 1970, C.S.O., Baghdad.
2. Tentative calculations by Polservice, Baghdad.



APPENDIX ( 1.8 )

Size and Net Migration of Provinces (Mohafadha)  
for 1965

<u>Province</u>	<u>Migration to '000</u>	<u>%</u>	<u>Migration from '000</u>	<u>%</u>	<u>Net Migration '000</u>	<u>%</u>
Baghdad	604.2	58.1	51	5.0	+ 553.2	88.1
Basra	67.4	6.5	27.7	2.0	+ 39.7	6.3
Kirkuk	70.9	6.8	35.8	3.5	+ 35.1	5.6
Arbil	35.9	3.4	37.4	3.0	- 1.5	0.3
Sulaimaniya	35.5	4.3	44.5	3.5	- 9.0	1.4
Muthana	4.7	0.5	19.3	1.2	- 14.6	2.3
Kerbala	10.6	1.0	40.4	4.0	- 29.8	4.7
Babil	19.8	1.9	49.8	4.9	- 30.0	4.8
Qadisiya	25.1	2.4	58.0	5.0	- 32.9	5.3
Nineveh	47.4	4.6	82.6	8.1	- 35.2	5.6
Diyala	22.5	2.2	66.6	6.0	- 44.1	7.0
Dohuk	12.5	1.2	59.1	5.8	- 46.6	7.4
Anbar	17.8	1.7	89.0	8.0	- 71.2	11.3
Thee-Qar	19.5	1.9	77.7	7.6	- 58.2	9.3
Wassit	25.5	2.5	128.6	12.6	- 103.1	16.4
Maysan	10.2	1.0	161.8	15.2	- 151.6	24.2

Source:

Central Statistical Organization, Baghdad.



APPENDIX ( 12.1 )

Proposed Short and Long term Staff Requirements  
for the Municipality of Baghdad.

<u>Post</u>	<u>Existing</u>	<u>Short Term</u>	<u>Long Term</u>
Senior Town Planners	2	4	6
Town Planners	1	3	12
Civil Engineers	3	4	6
Architects and Urban Designers	4	8	20
Traffic Planners	2	3	6
Electric Engineers	1	1	2
Landscape Architects	1	1	2
Socio-economic Staff	2	4	6
Planning Draughtsmen	1	20	30 - 40
Assistant Architects	-	5	10
Surveyors	-	6	12
Zoning Inspectors	-	4	10
Field Investigators	-	6	12
<hr/>			
Total	21	69	138 -148
<hr/>			

Source:

- (a) Figures on the existing set-up, Municipality of Baghdad, 1973.
- (b) Short and Long term set-up proposals, S.S. Shafi, UNDP, 1973.



APPENDIX ( 3.1 )

The Relationships Between Population, Number of Houses Constructed by the Private Sector, and the Number of Houses per 1000 Population in Iraq and Baghdad During the Period 1960 - 1971:

<u>Year</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
1960	6.930	12880	1.85	1.246	5740	4.60	44.5 %
1961	7.145	13170	1.84	1.328	6510	4.90	49.4 %
1962	7.365	12140	1.65	1.410	6120	4.34	50.4 %
1963	7.600	12830	1.63	1.492	7110	4.76	55.4 %
1964	7.845	14330	1.84	1.574	7770	4.93	54.2 %
1965	8.095	16370	2.02	1.655	7220	4.11	44.1 %
1966	8.360	18270	2.18	1.758	7840	4.46	42.9 %
1967	8.635	14810	1.72	1.860	7030	3.78	47.5 %
1968	8.915	15720	1.76	1.963	7700	3.92	49.0 %
1969	9.205	18130	1.97	2.065	10500	5.08	57.9 %
1970	9.500	16960	1.79	2.168	13500	6.22	79.6 %
1971	9.820	15870	1.62	2.270	13000	5.73	81.9 %

Notes:

1. Total Population of Iraq, mills.
2. Number of houses built by the private sector in Iraq.
3. Number of houses per 1000 population in Iraq.
4. Total Population of Baghdad, mills.
5. Number of houses built by the private sector in Baghdad.
6. Number of houses per 1000 population in Baghdad.
7. Percentage of the houses built in Baghdad by the private sector to that in Iraq.

Source: data based on Central Statistical Organization Publications, Baghdad.



APPENDIX ( 3.2 )

Total Number of Dwellings Constructed or Under Construction or Proposed by the Public Sector According to the Authority Concerned, up to the year 1970:

<u>Authority Concerned</u>	<u>No. of Dwellings Constructed up to 1970</u>	<u>No. of Dwellings Under Construction or Proposed</u>
<u>Central Government</u>		
Ministry of Labour and Social Affairs	1340	4000
Ministry of Agriculture	700	62
Ministry of Agrarian Reform	532	4330
Ministry of Industry	2655	1346
Ministry of Northern Affairs	820	2560
Ministry of Communications	564	170
Ministry of Housing and Public Works	14940	6030
<u>Local Authorities</u>		
Basra Province (Mohafadha)	278	110
Nineva "	200	-
Babil "	142	10
Kerbala "	833	50
Anbar "	207	24
Kirkuk "	107	855
Sulaimaniya Province	187	-
Total	22226	19547

Source: Ministry of Planning, Baghdad, 1972



APPENDIX ( 3.3 )

The Relationship Between People and House Construction Type: (General Census 1965) in Iraq:

<u>Type of House Construction</u>	<u>Percentage of Population</u>
Brick	14 per cent
Stone	6 " "
Mud	42 " "
Sarifa	27 " "
Others	11 " "
	<hr/>
Total	100 per cent
	<hr/>

Source: Iraq General Census, 1965.

APPENDIX ( 3.4 )

Houses provided with Baths, Toilets, Electricity and Piped water supply in Iraq and Baghdad: 1956.

	<u>Iraq</u>		<u>Baghdad</u>	
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
Houses with bath	75840	10.2	30096	30.7
Houses with toilet	247638	33.4	66204	67.7
Houses with electricity	125672	16.9	49725	50.4
Houses with piped water	154395	20.8	53705	54.8

Source: Iraq Housing Census, 1956, Tables 6 and 18.



APPENDIX ( 3.5 )

Number of Flats, Average Size in terms of Rooms, and Estimated Cost per Flat.  
Built by the Private Sector in Baghdad and Iraq, 1969-1971:

<u>Year</u>	<u>Baghdad</u>			<u>Iraq</u>		
	Number of Flats	Rooms per Flat	Cost per Flat	Number of Flats	Rooms per Flat	Cost per Flat
1969	388	4.36	2850 ID	555	4.19	2480 ID
1970	478	3.35	2000 ID	579	3.39	1900 ID
1971	335	2.95	2100 ID	576	3.20	2550 ID
Average	400	4.00	2320 ID	570	3.60	2320 ID

Note: The number of flats built in Baghdad represents about 70 per cent of the total in Iraq.

Source: Central Statistical Organization, Construction Statistics Dept., Baghdad.



APPENDIX ( 3.6 )

The Distribution of the Socio - Economic Groups in Baghdad, According to Age Structure :

<u>Socio - economic Group</u>	<u>Age Structure of the Population, %</u>		
	<u>Up to 14</u>	<u>15 - 64</u>	<u>Over 65</u>
A	54.8	17.1	1.67
B	48.5	19.1	1.64
C	41.1	23.0	1.61
D	36.8	21.7	1.73

Source: Polservice, "Comprehensive Civic Survey for Baghdad", 1972



APPENDIX ( 3.7 )

The Relationships Between the Average Annual Rents per Household, Household Size and Household Annual Income in Six Different Sectors of Baghdad, 1972:

<u>Sectors</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
1. "Al-Thawra"	324	7.5	78.840	24.3
2. "Bab-Shaikh"	324	8.3	113.640	35.1
3. "Bayaa"	864	7.4	146.160	16.9
4. "Ragiba Khatoon"	864	7.7	194.400	22.5
5. "Mansur"	1767	6.6	345.600	19.6
6. "Masbah"	1767	6.1	328.800	18.6
Average:			201.240	

Notes:

- A : The average annual income, based on the Comprehensive Civic Survey for Baghdad, Polservice, 1972. ID.
- B : The average household size.
- C : The average annual rent paid per household
- D : Annual rents paid as a percentage of the annual household income.

Sources:

Sample survey carried out by the Central Statistical Organization in Baghdad, 1972; also Polservice, "Comprehensive Civic Survey for Baghdad", 1972, P. 27.



APPENDIX ( 3.8 )

The Relationships Between the Number of Households, Total Value of Rents Paid and the Average Rents per Household in Iraq, 1960 - 1969:

<u>Year</u>	<u>A</u>	<u>B</u>	<u>C</u>
1960	930	11.89	127.850
1961	960	12.13	126.350
1962	1000	12.45	124.500
1963	1020	12.40	121.560
1964	1050	14.80	140.950
1965	1080	14.19	131.390
1966	1100	14.54	132.180
1967	1160	15.10	130.170
1968	1200	15.86	132.170
1969	1240	16.65	134.270
		Average:	<u>130.139</u>

Notes:

A : Total Number of Households, ('000)

B : Total Value of Rents Paid by Households, (Millions ID)

C : Average Annual Rent per Household, (ID)

Source: Ministry of Planning, Baghdad, 1971.



APPENDIX ( 3.9 )

Average Rents of Houses in Baghdad, 1956 :

Average Annual Rent, ID.

Rent per house	99.210
Rent per room	39.600
Rent for sub-let portions	94.700

Source: Iraq Housing Census, 1956, Table 17.



APPENDIX ( 3.10 )

Number of Housing Permits and the Average Cost of Dwelling Unit, Issued in Iraq and Baghdad for the Private Sector, 1960 - 1971:

<u>Year</u>	<u>Baghdad</u>		<u>Iraq</u>	
	<u>No. of Permits</u>	<u>Cost/ Dwelling</u>	<u>No. of Permits</u>	<u>Cost/ Dwelling</u>
1960	5739	1550	12880	1160
1961	6513	1730	13170	1360
1962	6117	1690	12140	1390
1963	7108	1510	12830	1360
1964	7768	1640	14330	1490
1965	7221	1780	16370	1460
1966	7843	1930	18270	1390
1967	7031	1620	14810	1390
1968	7703	1720	15720	1510
1969	10502	1800	18130	1640
1970	13495	1580	16960	1860
1971	13000	1520	15870	1910
_____	_____	_____	_____	_____
Average:	8336	1670	15123	1490
_____	_____	_____	_____	_____

Source: Central Statistical Organization, Dept. of Construction, Baghdad.



APPENDIX ( 3.11 )

The Relationship Between the Growth of the No. of Families and the Development of the G.N.P. in Iraq, 1960 - 1973:

<u>Year</u>	<u>Pop. mill.</u>	<u>No. of Families*</u>	<u>G.N.P./Capita</u>	<u>G.N.P./Family</u>
1960	6.929	1.333 mill.	63.1 ID	328.12 ID
1961	7.143	1.374	67.8	352.56
1962	7.367	1.417	71.5	371.80
1963	7.601	1.462	69.1	359.32
1964	7.847	1.509	75.9	394.68
1965	8.097	1.557	81.4	423.28
1966	8.360	1.608	84.4	438.88
1967	8.633	1.660	82.8	430.56
1968	8.914	1.714	87.8	456.56
1969	9.205	1.770	90.6	471.12
1970	9.500	1.827	93.5	486.20
1971	9.820	1.888	95.4	496.08
1972	10.150	1.952	97.8	518.56
1973	10.490	2.017	100.4	522.08

Note:

\* Based on average family size of 5.2 persons.

Source: Data compiled from different publications of the Central Statistical Organization, Baghdad.



APPENDIX ( 4.1 )

The United Nations Committee Housing Programme for Iraq,  
1969 - 1973:

<u>Year</u>	<u>Total pop.*</u>	<u>Urban Sector</u>		<u>Rural Sector</u>	
		<u>Private</u>	<u>Public</u>	<u>Private</u>	<u>Public</u>
1969	9.21 mill.	16704	7159	8750	20415
1970	9.50	17305	7416	9064	21151
1971	9.82	17888	7666	9370	21862
1972	10.15	18489	7929	9685	22597
1973	10.49	19070	8173	9989	23309

\* Population increases was based on a 3.4 per cent growth rate per annum.

The committee also worked out estimates of the total cost of such undertaken as follows:

<u>Year</u>	<u>Total cost million ID</u>	<u>Urban Sector</u>		<u>Rural Sector</u>	
		<u>Private</u>	<u>Public</u>	<u>Private</u>	<u>Public</u>
1969	50.192	33.408	7.159	3.500	6.125
1970	51.996	34.110	7.416	3.625	4.345
1971	53.749	35.776	7.666	3.748	6.559
1972	55.555	36.978	7.964	3.874	6.779
1973	57.301	38.140	8.173	3.996	6.992

Note:

Based on the assumption that each house will cost around 1000 ID.



To cover this cost, the committee recommended that 6 per cent of the G.N.P. should be devoted each year to housing development. The following table illustrates that:

<u>Year</u>	<u>G.N.P. mill. ID *</u>	<u>6% G.N.P. mill ID.</u>	<u>Surplus **</u>
1969	834.0	50.04	0.152
1970	884.0	53.04	1.004
1971	937.0	56.22	2.471
1972	993.3	59.58	4.025
1973	1053.0	63.18	5.879

Notes:

\* The G.N.P. was based on 6 per cent annual rate of growth.

\*\* The surplus will cover the expected inflation as well as the cost of providing electricity to the rural areas, and house demolition cost.

Source: Ministry of Planning, "Study on the problems of Housing in Iraq and their planning", June 1971, Baghdad.



APPENDIX ( 4.2 )

Ministry of Housing and Public Works Housing Programme for Baghdad and Iraq for the years 1971-1980 :

<u>Year</u>	<u>Baghdad</u>		<u>Iraq</u>	
	<u>Private</u>	<u>Public</u>	<u>Private</u>	<u>Public</u>
1971	8972	2991	21831	9159
1972	9319	3107	22658	9540
1973	9666	3223	23483	9885
1974	10013	3339	24309	10232
1975	10360	3455	25134	10580
1976	10707	3569	25967	10922
1977	11054	3686	26787	11270
1978	11402	3801	27617	11612
1979	11749	3917	28440	11961
1980	12096	4032	29270	12304

Source: Ministry of Housing and Public Works, "Proposed Housing Programme for the Urban Sector for the period 1971 - 1980" Baghdad, April 1972.



APPENDIX ( 4.3 )

The Basic Characteristics of the Neighbourhood Unit Proposed by Polservice, as part of Baghdad Master Plan:

	<u>N.U. type A Houses</u>	<u>N.U. type B Houses</u>
1. Number of inhabitants	6960	6050 persons
2. Number of Houses	1152	1008 houses
3. Average number of family members per house	6	6 persons
4. Average size of house plot	252	360 sq.m.
5. Gross residential area	50.63	57.96 hectare
6. Gross residential ratio	0.37	0.44
7. Gross residential density	137	104 persons/ha
8. Number of housing units	16	16
9. Net housing area	31.68	37.73 hectare
10. Net housing ratio	0.59	0.67
11. Net housing density	220	160 persons/ha
12. Total space of house plots	28.96	36.29 hectare
13. Childrens play-grounds	2.72	1.44 "
14. School grounds	1.56	1.56 "
15. Recreation and sports greens	3.42	3.39 "
16. Commercial centre	0.39	0.45 "
17. Shops in housing units	0.64	0.24 "
18. Reserve grounds	0.51	0.50 "
19. Circulation space/streets parkings, foot-paths, and adjacent green spaces	12.32	13.91 "

Note:

The shopping and civic centre (commercial centre) will consist of shops, restaurants, cafes etc. The open spaces include ground reserve to be used later for erection of a Mosque, expansion of shopping and services, erection of nursery schools etc.

Source: Polservice, "Master Plan For The City of Baghdad", 1968, Baghdad.



APPENDIX ( 4.4 )

The Basic Characteristics of the Housing Unit Proposed by Polservice,  
Part of Baghdad Master Plan :

	<u>H.U. type A houses</u>	<u>H.U. Type B. Houses</u>
1. Number of inhabitants	435	380 persons
2. Number of houses	72	63 houses
3. Average number of family members per house	6	6 persons
4. Average size of house plot	252	360 sq.m.
5. Gross residential area	2.50	3.27 hectare
6. Gross residential ratio	0.47	0.49
7. Gross residential density	174	117 persons/ha.
8. Net housing area	1.98	2.37 hectare
9. Net housing ratio	0.59	0.66
10. Net housing density	220	160 persons/ha.
11. Total space of house plots	1.81	2.27 hectare
12. Children play-grounds	0.17	0.10 "
13. Shop plot	0.04	0.02 "
14. Circulation space	0.47	0.88 "

Source: Polservice, "Master Plan For The City Of Baghdad", 1968, Baghdad



APPENDIX ( 4.5 )

The Basic Characteristics Of The House Types Proposed By Polservice, as Part Of Baghdad Master Plan:

	<u>House type A</u>	<u>House type B</u>
1. Number of family members	6	6
2. Size of house plot	252	360 sq.m.
3. Built-up area	138.7	69.8 "
4. Built-up area ratio	0.55	0.20
5. Total floor space	160.5	250.8 "
6. Total living space	278.1	387.5 "
7. Useful floor space	101.7	121.1 "
8. Useful floor space per person	17.0	20.2 "
9. Living floor space	75.6	90.4 "
10. Living floor space per person	12.5	15.0 "
11. Number of bedrooms	3	4
12. Service floor space	18.1	22.2 "
13. Circulation floor space	8.0	8.5 "
14. Living patios or garden	83.4	220.0 "
15. Service yards	21.8	46.4 "
16. Sleeping roof terraces	71.8	- "
17. Service shed	7.2	8.4 "
18. Garage or parking shed	27.0	19.0 "

Source: Polservice, "Master Plan For The City Of Baghdad", 1968, Baghdad.

APPENDIX ( 5.1 )

The Relationship Between Household Size and No. of Bed-rooms in Iraq:

<u>Household size</u>	<u>Percentage</u>		<u>No. of bedrooms</u>
1 person	4.58	)	1 bedroom
2 persons	9.69	)	
3 persons	13.19	)	
4 persons	14.96	)	2 bedrooms
5 persons	14.25	)	
6 persons	12.52	)	
7 persons	10.38	)	3 bedrooms
8 persons	7.57	)	
9 persons	5.15	)	
10 persons	3.84	)	4 bedrooms and over.
11 persons	1.46	)	
12 persons and over	2.41	)	
Total	100.00	100.00 %	

Source: Government of Iraq, Ministry of Housing and Public Works,  
Dept. of Statistical Studies, "Proposed Housing Programme for  
Iraq, 1971-1980", Baghdad, April 1972, Table 31.



APPENDIX (5.2 )

Houses Constructed by the Ministry of Housing and Public Works in Iraq and Baghdad, During the Period, 1956 - 1970 : and its Estimated Cost, '000 ID

<u>Year</u>	<u>Iraq</u>		<u>Baghdad</u>	
	<u>No. of houses</u>	<u>Estimated cost</u>	<u>No. of houses</u>	<u>Estimated cost</u>
1956	2626	5219	1270	2140
1957	2896	3715	1120	915
1958	1490	2334	-	-
1959	3028	4812	1385	2680
1960	1376	6176	700	5110
1961	1773	4710	1129	3872
1962	894	1396	782	1238
1963	-	-	250	1247
1964	250	200	-	-
1965	86	134	-	-
1966-1968	The total number of houses constructed = 351 (Unclassified)			
1969	-	-	100	100
1970	170	-	129	-
Total	14949	-	6865	-

Source: Ministry of Housing and Public Works, Baghdad, 1972.

APPENDIX ( 6.1 )

Possible Combinations of Housing Standards: (Low-Medium-High)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
a.	100- 0-0										
b.	90- 10-0	90-0- 10									
c.	80- 20-0	80-0- 20	80-10-10								
d.	70- 30-0	70-0- 30	70-10-20	70-20-10							
e.	60- 40-0	60-0- 40	60-10-30	60-20-20	<u>60-30-10</u>						
f.	50- 50-0	50-0- 50	50-10-40	50-20-30	50-30-20	50-40-10					
g.	40- 60-0	40-0- 60	40-10-50	40-20-40	40-30-30	40-40-20	40-50-10				
h.	30- 70-0	30-0- 70	30-10-60	30-20-50	30-30-40	30-40-30	30-50-20	30-60-10			
i.	20- 80-0	20-0- 80	20-10-70	20-20-60	20-30-50	20-40-40	20-50-30	20-60-20	20-70-10		
j.	10- 90-0	10-0- 90	10-10-80	10-20-70	10-30-60	10-40-50	10-50-40	10-60-30	10-70-20	10-80-10	
k.	0-100-0	0-0-100	0-10-90	0-20-80	0-30-70	0-40-60	0-50-50	0-60-40	0-70-30	0-80-20	0-90-10



APPENDIX ( 6.2 )

Average Cost per Dwelling, ID : (One Bedroom Dwelling)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
a.	750										
b.	790	830									
c.	830	920	880								
d.	880	1010	960	920							
e.	920	1100	1050	1010	<u>960</u>						
f.	960	1190	1140	1090	1050	1000					
g.	1000	1270	1220	1180	1130	1100	1050				
h.	1050	1350	1310	1260	1220	1180	1130	1090			
i.	1020	1440	1390	1350	1310	1260	1220	1170	1130		
j.	1130	1520	1480	1440	1390	1350	1300	1260	1220	1170	
k.	1170	1610	1570	1520	1480	1430	1390	1350	1300	1260	1210

APPENDIX ( 6.3 )

Total Cost of One Bedroom Dwellings that might be built in Baghdad Annually, millions ID : (No. of dwellings : 7470)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
a.	5.6										
b.	5.9	6.2									
c.	6.2	6.8	6.5								
d.	6.5	7.5	7.1	6.8							
e.	6.8	8.2	7.8	7.5	<u>7.1</u>						
f.	7.1	8.8	8.5	8.1	7.8	7.4					
g.	7.4	9.4	9.1	8.8	8.4	8.2	7.8				
h.	7.8	10.0	9.7	9.4	9.1	8.8	8.4	8.1			
i.	8.1	10.7	10.3	10.0	9.7	9.4	9.1	8.7	8.4		
j.	8.4	11.3	11.0	10.7	10.3	10.0	9.7	9.4	9.1	8.7	
k.	8.7	12.0	11.7	11.3	11.0	10.6	10.3	10.0	9.7	9.4	9.0



APPENDIX ( 6.4 )

Average Cost per Dwelling, ID : (Two Bedrooms Dwelling)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
a.	1050										
b.	1080	1140									
c.	1110	1230	1170								
d.	1140	1320	1260	1200							
e.	1170	1410	1350	1290	<u>1230</u>						
f.	1200	1500	1440	1380	1320	1260					
g.	1230	1590	1530	1470	1410	1350	1290				
h.	1260	1680	1620	1560	1500	1440	1380	1320			
i.	1290	1770	1710	1650	1590	1530	1470	1410	1350		
j.	1320	1860	1800	1740	1680	1620	1560	1500	1440	1380	
k.	1350	1950	1890	1830	1770	1710	1650	1590	1530	1470	1410

APPENDIX ( 6.5 )

Total Cost of Two Bedrooms Dwellings that might be built in Baghdad Annual, millions ID : (No. of dwellings: 8340)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
a.	8.7										
b.	9.0	9.5									
c.	9.2	10.2	9.7								
d.	9.5	11.0	10.5	10.0							
e.	9.7	11.7	11.2	10.7	<u>10.2</u>						
f.	10.0	12.5	12.0	11.5	11.0	10.5					
g.	10.2	13.2	12.7	12.2	11.7	11.2	10.7				
h.	10.5	14.0	13.5	13.0	12.5	12.0	11.5	11.0			
i.	10.7	14.7	14.2	13.7	13.2	12.7	12.2	11.7	11.2		
j.	11.0	15.5	15.0	14.5	14.0	13.5	13.0	12.5	12.0	11.5	
k.	11.2	16.2	15.7	15.2	14.7	14.2	13.7	13.2	12.7	12.2	11.7



APPENDIX ( 6.6 )

Average Cost per Dwelling, ID : (Three Bedrooms Dwelling)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
a.	1500										
b.	1570	1690									
c.	1630	1890	1760								
d.	1700	2080	1960	1830							
e.	1760	2280	2150	2020	<u>1890</u>						
f.	1830	2470	2350	2220	2090	1960					
g.	1890	2670	2540	2410	2280	2150	2030				
h.	1960	2860	2740	2610	2480	2350	2220	2090			
i.	2030	3060	2930	2800	2670	2540	2420	2290	2160		
j.	2090	3250	3130	3000	2870	2740	2610	2480	2350	2220	
k.	2160	3450	3320	3190	3060	2930	2810	2680	2550	2420	2290

APPENDIX ( 6.7 )

Total Cost of Three Bedrooms Dwellings that might be built in Baghdad Annually, millions ID : (No. of dwellings :6600)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
a.	9.9										
b.	10.3	11.1									
c.	10.7	12.4	11.6								
d.	11.2	13.7	12.9	12.0							
e.	11.6	15.0	14.1	13.3	<u>12.4</u>						
f.	12.0	16.3	15.5	14.6	13.8	12.9					
g.	12.4	17.6	16.7	15.9	15.0	14.1	13.4				
h.	12.9	18.8	18.0	17.2	16.3	15.5	14.6	13.8			
i.	13.4	20.2	19.3	18.4	17.6	16.7	15.9	15.1	14.2		
j.	13.8	21.4	20.9	19.8	18.9	18.0	17.2	16.3	15.5	14.6	
k.	14.2	22.7	21.9	21.0	20.1	19.3	18.5	17.6	16.8	15.9	15.1



APPENDIX (6.8)

Average Cost per Dwelling, ID : (Four Bedrooms - Six Bedrooms Dwellings)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
a.	2780										
b.	2930	3150									
c.	3080	3530	3310								
d.	3240	3910	3690	3460							
e.	3390	4290	4060	3840	<u>3620</u>						
f.	3550	4670	4440	4220	4000	3770					
g.	3700	5040	4820	4600	4370	4150	3930				
h.	3860	5420	5200	4970	4750	4530	4300	4080			
i.	4010	5800	5580	5350	5130	4910	4680	4460	4230		
j.	4170	6180	5950	5730	5510	5280	5060	4840	4600	4390	
k.	4320	6560	6330	6110	5890	5660	5440	5210	4990	4770	4540

APPENDIX (6.9 )

Total Cost of Four - Six Bedrooms Dwellings that might be built in Baghdad Annually, millions ID: (No. of dwellings: 2490)

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
a.	6.9										
b.	7.3	7.8									
c.	7.6	8.7	8.2								
d.	8.0.	9.7	9.1	8.6							
e.	8.4	10.6	10.1	9.5	<u>9.0</u>						
f.	8.8	11.6	11.0	10.5	9.9	9.3					
g.	9.2	12.5	12.0	11.4	10.8	10.3	9.7				
h.	9.6	13.5	12.9	12.3	11.8	11.2	10.7	10.1			
i.	10.0	14.4	13.9	13.3	12.7	12.2	11.6	11.1	10.5		
j.	10.3	15.4	14.8	14.2	13.7	13.1	12.6	12.0	11.4	10.9	
k.	10.7	16.3	15.7	15.2	14.6	14.1	13.5	13.0	12.4	11.9	11.3



APPENDIX ( 7.1 )

Number of Housing Co-operative Societies in Iraq, According to Province in 1970:

<u>Province "Mohafadha"</u>	<u>Co-op. Housing Societies</u>
Duhok	-
Nineva	40
Sulaimaniya	9
Arbil	11
Kikuk	11
Diala	6
<u>Baghdad</u>	<u>190</u>
Anbar	6
Waset	20
Babil	31
Mothana	3
Karbala	25
Qadissiya	19
Maysan	4
Thi-Qar	10
Basra	23
<hr/>	<hr/>
Total	408
<hr/>	<hr/>

Source: Ministry of Labour and Social Affairs, Annual Report, 1969 - 1970, Baghdad.

APPENDIX ( 8.1 )

The Relationships Between Plot Sizes, Number of Plots, Total Plots Area, and the Total Undeveloped Plots Area :

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Up to 200	9840	13.5	3590	23.0	255	12.0
From 201-300	21500	29.5	2270	14.0	425	19.0
From 301-600	31870	43.5	5575	35.0	745	34.0
Over 600	9880	13.5	4425	28.0	815	35.0
Total	73090	100.0	15860	100.0	2240	100.0

Where:

- (1) Plot sizes, sq.m.
- (2) No. of Plots.
- (3) Percentage of the Total No. of Plots.
- (4) Total Plots area, hectares.
- (5) Percentage of the Total Plots area.
- (6) Total undeveloped Plots area, hectares.
- (7) Percentage of the Total Undeveloped Plots area.

Source: Data calculated by the author, based on the Civic Survey of Baghdad, Polservice, 1972.



APPENDIX ( 9.1 )

Classification of Building Materials Plants According to  
their Products in Iraq and Baghdad, 1970 :

<u>Plants</u>	<u>Baghdad</u>	<u>Iraq</u>
Bricks	68	92
Juss (Gypsum)	7	18
Concrete Products	20	28
Tiles	35	50
Cement & Asbestos	2	7
Glass	5	5
<hr/>	<hr/>	<hr/>
Total	137	200
<hr/>	<hr/>	<hr/>

Source: Iraqi Union of Manufacturing Industries, "Directory  
of Iraqi Industries and the Year Book", Baghdad, 1970

APPENDIX ( 9.2 )

Houses in Iraq and Baghdad According to the Type of Construction:

<u>Type of House</u>	<u>Iraq</u>		<u>Baghdad</u>	
	<u>Number</u>	<u>Percentage</u>	<u>Number</u>	<u>Percentage</u>
Brick	111871	15.10	49476	50.17
Stone	46127	6.20	41	0.04
Mud	304296	41.10	27491	28.04
Sarifa	194629	26.30	16413	16.74
Others	84183	11.30	4898	0.49
-----	-----	-----	-----	-----
Total	741106	100.00	98019	100.00
-----	-----	-----	-----	-----

Source: Iraq Housing Census, 1956, Tables 1 and 12.



APPENDIX (9.3 )

The Distribution of Building Permits for the Private Sector  
According to the Principal Construction Material, in Iraq and  
Baghdad, 1970 - 1971 : (Percentage)

<u>Materials</u>	<u>Baghdad</u>		<u>Iraq</u>	
	<u>1970</u>	<u>1971</u>	<u>1970</u>	<u>1971</u>
Bricks	99.5	97.8	83.7	83.0
Stone	-	-	10.8	9.6
Concrete	0.5	2.2	4.8	6.8
Mud	-	-	0.7	0.6
_____	_____	_____	_____	_____
Total	100.0	100.0	100.0	100.0
_____	_____	_____	_____	_____

Source: Central Statistical Organization, Baghdad.

APPENDIX ( 9.4 )

Cement Production, Importation, Exportation, and Consumption  
in Iraq, 1960 - 1968: in millions Tons :

<u>Year</u>	<u>Production</u>	<u>Import</u>	<u>Export</u>	<u>Consumption</u>
1960	0.813	0.013	0.095	0.731
1961	0.937	0.014	0.145	0.806
1962	0.892	0.013	0.149	0.756
1963	0.941	0.007	0.281	0.667
1964	1.091	0.010	0.377	0.724
1965	1.295	0.014	0.485	0.824
1966	1.278	0.015	0.335	0.958
1967	1.255	0.017	0.526	0.746
1968	1.320	0.016	0.364	0.972

Source: Central Statistical Organization, Baghdad.



APPENDIX ( 9.5 )

Production trends of Asbestos, Juss and Concrete Products in  
Iraq, 1960 - 1968:

<u>Year</u>	<u>Asbestos in mill. cub. ft.</u>	<u>Juss in mill. ton</u>	<u>Concrete Products in mill. units.</u>
1960	1.953	0.396	2.533
1961	1.633	0.610	2.428
1962	1.644	0.516	2.637
1963	1.060	0.436	2.849
1964	1.072	0.497	2.970
1965	1.498	0.567	3.930
1966	1.972	0.500	5.080
1967	1.188	0.358	7.725
1968	1.280	0.377	8.482

Source: Central Statistical Organization, Baghdad.

APPENDIX ( 10.1 )

Employment composition for Iraq : 1965 and 1969 :

<u>Occupation</u>	<u>Percentage of Gainfully Employed Workers</u>	
	<u>1965</u>	<u>1969</u>
Agriculture	53.00	55.00
Mining	0.58	0.58
Manufacturing	5.80	5.44
Public Utilities (Electric, Water, Gas)	0.53	0.47
Construction and Building Trades	2.63	2.18
Commerce and Trade	5.40	5.44
Transportation	5.57	5.44
Services	11.64	10.88
Defence Service	9.90	9.97
Others	4.89	4.60
<hr/>	<hr/>	<hr/>
Total	100.00	100.00
<hr/>	<hr/>	<hr/>

Source: Nils Strom, "Manpower in Iraq, employment trends : 1960 - 1975"



APPENDIX ( 10.2 )

The Distribution of Employees among the Economic Sectors in Baghdad in 1972:

<u>Sector</u>	<u>Total Number</u>	<u>Percentage</u>
Administration	54000	15
Public Facilities	33000	9.2
Industry	55000	15.1
Commerce	140000	39
Building & Construction	23000	6.4
Transportation	42000	11.7
Water & Electricity	6000	1.6
Agriculture	7000	2
<hr/>		
Total	360000	100.0
<hr/>		

Source: Polservice, "Comprehensive Civic Survey for Baghdad", 1972.

APPENDIX (10.3)

Average Daily Wages Paid to the Labourers in the Private and Public Construction Sector in Baghdad, 1965 - 1970 (ID):

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
<u>Private Sector:</u>						
Unskilled Labourers	0.42	0.47	0.52	0.58	0.58	0.60
Skilled & Semi-Skilled Labourers	1.59	1.63	1.66	1.75	1.75	1.80
<u>Public Sector:</u>						
Unskilled Labourers	0.58	0.56	0.58	0.58	0.60	0.63
Skilled & Semi-Skilled Labourers	1.31	1.34	1.39	1.39	1.39	1.52

Source: Central Statistical Organization, Baghdad.



APPENDIX ( 10.4 )

Average Number of Persons Working in the Public Construction Sector  
in Baghdad per day, 1965 - 1970, According to their Type:

<u>Type</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
Skilled and Semi-Skilled	2200	2600	2300	2350	2550	2400
Unskilled	2250	3300	3850	4500	4700	4750
Juveniles	15	10	10	10	15	10
Technicians	300	450	600	400	400	300
Administrators	250	350	400	300	300	350
Guards and Porters	250	350	450	500	550	500
Unpaid	50	50	100	100	100	100
<hr/>						
Total	5265	7060	7710	8060	8515	8310
<hr/>						

Source: Central Statistical Organization, Baghdad.

APPENDIX (10.5)

Average Number of Persons Working in the Private Construction Sector  
in Baghdad per day, 1965 - 1970, According to their Types:

<u>Type</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
Skilled & Semi-Skilled	4250	5000	3500	4000	5500	4400
Unskilled	18900	18700	13300	15000	18200	15000
Juveniles & Unpaid	210	230	300	300	500	870
Technicians	150	130	80	100	120	80
Administrators	200	350	150	100	100	50
Guards & Porters	2500	2750	1800	2150	2500	2100
<hr/>						
Total	26210	27160	19130	21650	26920	22500
<hr/>						

Source: Central Statistical Organization, Baghdad.



APPENDIX ( 10.6 )

The Actual and Projected Construction Costs in Baghdad for a 70 sq.m. two rooms, Low Cost House, ID, at 1960 Constant Prices:

<u>Item</u>	<u>1960</u>	<u>1965</u>	<u>1970</u>	<u>1975</u>
BUILDING MATERIALS				
Cost	613	550	582	612
Cost/sq.m.	8.8	7.8	8.3	8.8
Percentage	57.74%	53.17%	52.76%	52.42%
LABOUR				
Cost	270	300	330	360
Cost/sq.m.	3.8	4.3	4.7	5.1
Percentage	24.93%	29.30%	30.00%	30.36%
LAND				
Cost/sq.m.	0.28	0.28	0.28	0.28
Percentage	1.83%	1.90%	1.78%	1.67%
LAND DEVELOPMENT				
Cost/sq.m.	1.10	1.07	1.15	1.22
Percentage	7.20%	7.78%	7.31%	7.27%
MANAGEMENT				
Cost & Profit	88.0	85.0	91.0	97.0
Cost & Profit/sq.m.	1.26	1.22	1.30	1.39
Percentage	8.30%	7.85%	8.15%	8.38%
TOTAL				
Cost	1078.0	1029.7	1103.3	1174.2
Cost/Sq.m.	15.24	14.67	15.73	16.79

Notes:

- The relative low cost of land was due to the assumption that this land was heavily subsidised by the Government.

Source:

U.N.E.S.O.B, "Trends in Building and Financing Costs in Iraq", May 1970.

APPENDIX ( 10.7 )

Labour Input in a Medium Construction Standard House in Baghdad, 200 sq.m. Floor space, at a Total Cost of 3600 ID., Excluding Land Cost; According to Main Construction Stages:

<u>Construction Stage</u>	<u>Basic Team Unit</u>	<u>Man/Month</u>	<u>Duration of Stage</u>
I     Infrasturcture			
1. Foundations	1 - 1 - 3	4.6	28 days
2. Floors	1 - 1 - 2	2.0	5 days
3. Garden	1 - 0 - 2	1.4	10 days
II			
4. Walls	1 - 1 - 3	7.0	50 days
5. Roofs	1 - 1 - 1	4.0	25 days
6. Windows & Doors	1 - 1 - 1	3.0	7 days
III   Finishing			
7. Plastering	1 - 1 - 0	1.4	10 days
8. Painting	1 - 0 - 2	1.0	7 days
9. Tiles	1 - 1 - 2	2.6	14 days
IV   Utilities			
10. Electricity	1 - 1 - 0	1.0	14 days
11. Plumbing	1 - 1 - 2	1.6	10 days
12. Cooling	1 - 1 - 0	0.4	5 days
<hr/>		<hr/>	<hr/>
Total		30.0	185 days

Notes:

- a. The composition of the basic construction team is as follows:  
Skilled - Semi Skilled - Unskilled.
- b. Construction based on continuous supply of capital and labour.
- c. Labour wages as follows:  
0.600 ID/day, unskilled  
1.000 ID/day, semi skilled  
2.600 ID/day, skilled

Source: Data calculated by the Author.



APPENDIX ( 12.1 )

The Average Unit Costs of the Main Construction Operations in Three Different Construction Standards of House Building in Baghdad by the Private Sector, ID 1972 prices; Classified According to Two Types of Contracts: (A) The Supply of Building Materials and Labour, (B) the Supply of Labour Only:

<u>Const. Operations</u>	(1)		(2)		(3)	
	<u>A</u>	<u>B</u>	<u>A</u>	<u>B</u>	<u>A</u>	<u>B</u>
a. Plot levelling	-	15.00	-	20.00	-	25.00
b. Earth excavation cu.m.	-	0.15	-	0.20	-	0.25
c. Sub-foundation brick work, sq.m.	0.20	0.05	0.23	0.07	0.25	0.10
d. Brick work with cement, cu.m.	3.00	1.00	5.00	1.20	6.00	1.50
e. Brick work with Juss, cu.m.	2.00	0.90	4.00	1.10	5.00	1.40
f. Concrete work;						
Plain	4.50	0.80	6.00	1.10	6.50	2.25
R.C. Foundations	-	-	12.00	2.00	15.00	4.50
R.C. Structure	12.00	5.00	18.00	7.00	23.00	10.00
g. Door frames, sq.m. essembly only	-	0.20	-	0.30	-	0.40
h. Window frames, essembly only.	-	0.20	-	0.30	-	0.40
i. Brick work with Juss for roofing sq.m.	1.50	0.30	1.80	0.50	2.00	0.60
j. Stone work, cu.m.	6.00	1.00	7.00	1.25	8.00	1.50
k. Roof paving sq.m.	0.90	0.10	1.35	0.15	1.50	0.25
l. Floor paving sq.m.	0.60	0.20	0.80	0.25	1.50	0.40
m. Plastering with cement, sq.m.	0.25	0.10	0.40	0.25	0.60	0.35
n. Plastering with Juss, sq.m.	0.15	0.07	0.25	0.18	0.35	0.20

	(1)		(2)		(3)	
	<u>A</u>	<u>B</u>	<u>A</u>	<u>B</u>	<u>A</u>	<u>B</u>
0. Painting, sq.m.	0.10	0.05	0.20	0.07	0.30	0.08
p. Water pipes, labour only.	-	15.00	-	25.00	-	50.00
q. Septic tank unit	-	7.00	-	10.00	-	15.00
r. Manholes, unit	3.00	1.00	6.00	1.50	7.00	1.70
s. Electric unit	2.00	1.00	3.00	2.00	3.50	2.00

Notes:

(1) Low Construction Standard.

(2) Medium Construction Standard.

(3) High Construction Standard.

A Unit cost, including building materials and labour.

B Unit cost, including labour only.

Source: , Data compiled by the author from different contractors and architecture consultant firms in Baghdad, notably, Hisham Munir & Associates, Baghdad, Iraq.



APPENDIX ( 12.2 )

Total Cost of Repairs and Renewals in Housing in Iraq and Baghdad  
by the Private Sector, 1968-1971; Millions ID:

	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>
<u>Iraq:</u>				
Repairs	0.380	0.414	0.489	0.462
Renewals	-	2.653	3.421	3.362
<u>Baghdad:</u>				
Repairs	0.184	0.184	0.277	0.293
Renewals	-	1.490	2.012	2.037

Source: Central Statistical Organization Publications, 1969-1971,  
Baghdad.

APPENDIX ( 12.3 )

Basic characteristics of Three Representative Houses; Low, Medium and High Costs:

Low Cost House: see Fig. ( 12.3 )

1. Age : 15 years.
2. Location : West Baghdad Housing Project, Baghdad.
3. Plot area : 100 sq.m., (8.70 m. x 11.50 m.)
4. Floor space : 80 sq.m., including 50 per cent of the roof, since it is used for sleeping at summer only.
5. Garden area : 33.50 sq.m.
6. Structural system : Brick bearing walls; external walls 24 cm. internal walls 12 cm. and 7 cm. thickness. Jack arching and coregated Asbestos for roofs.
7. Finishing : External  
Face bricks and cement plastering for walls and parapets.  
Internal  
"Juss" plastering for walls and ceilings; cement tiles for floors; white wood for doors; steel frames for windows.
8. Utilities : Air fans for cooling; 18 electrical units; one septic tank and 2 manholes.
9. Total construction cost, including: building materials, labour and profit, adjusted to 1972 prices = 1000 ID; see also Appendix ( 12.1 ).

Medium Cost House: see Fig. (12.4)

1. Age : 5 years
2. Location : Army Canal district, Baghdad
3. Plot area : 315 sq.m., (15 m. x 21 m.)
4. Floor space : 200 sq.m. including 50 per cent of the roof since it is used for sleeping at summer only.



5. Garden area : 180 sq.m.
6. Structural system : Brick bearing walls; external walls 24 cm. internal walls 12 cm. and 7 cm. thickness. Reinforced concrete for the ground floor roof, and jack arching for the first floor roof.
7. Finishing : External  
  
Face bricks and cement plastering for walls and parapets.  
  
Internal  
  
"Juss" plastering for walls and ceilings; cement tiles for floors; white wood for doors; steel frames for windows.
8. Utilities : Air coolers and fans for cooling; 30 electrical units; one septic tank and 5 manholes.
9. Total construction cost, including: building materials, labour and profit adjusted to 1972 prices = 3600 ID; also see Appendix ( 12.1 ).

High Cost House: see, Fig. ( 12.5 ).

1. Age : 5 years.
2. Location : "Al-Sarrafiya", Baghdad.
3. Plot area : 600 sq.m., 20m. x 30m.
4. Floor space : 260 sq.m.
5. Garden area : 370 sq.m.
6. Structural system : Brick bearing walls; reinforced concrete flat roofs. External walls, 36 cm. internal walls, 24 cm. and 12 cm. thickness.
7. Finishing : External  
  
Face bricks, "Mately" for walls; fareface concrete for beams and verandas.

Internal

"Juss" plastering with glossy paint for walls and ceiling; ceramics for kitchen, baths, and toilets; mozaic tiles for all the floors; teak wood for doors; aluminium frames for windows.

8. Utilities : Air conditioning system - units -; 50 electrical units; one septic tank and 9 manholes.
9. Total construction cost, including: building materials, labour and profit, adjusted to 1972 prices = 6450 ID; also see Appendix ( 12.1 ).

Source: Data calculated by the Author.



APPENDIX ( 12.4 )

The Relationships Between House Construction Cost, Floor Space, and Construction Standards in Baghdad; 1972 Prices:

<u>Stage of Construction</u>	<u>Low Standard</u>		<u>Medium Standard</u>		<u>High Standard</u>	
	<u>Cost ID</u>	<u>ID/sq.m.</u>	<u>Cost ID</u>	<u>ID/sq.m.</u>	<u>Cost ID</u>	<u>ID/sq.m.</u>
I :						
1	200	2.500	510	2.550	1200	4.620
2	60	0.750	230	1.150	270	1.030
3	40	0.500	100	0.500	200	0.770
Sub.Total	300	3.750	840	4.200	1670	6.420
II :						
4	225	2.800	770	3.850	700	2.700
5	95	1.190	570	2.850	1000	3.850
6	105	1.310	400	2.000	1300	5.000
Sub.Total	425	5.300	1740	8.700	3000	11.550
III :						
7	40	0.500	190	0.950	200	0.770
8	25	0.310	130	0.650	170	0.650
9	95	1.190	320	1.600	660	2.540
Sub.Total	160	2.000	640	3.200	1030	3.960
IV :						
10	55	0.690	150	0.750	200	0.770
11	60	0.750	190	0.950	450	1.730
12	0	0.000	40	0.200	100	0.380
Sub.Total	115	1.440	380	1.900	750	2.880
GRAND TOTAL	1000	12.500	3600	18.000	6450	24.810

Source: Data Calculated by the Author, based on prices provided in Appendix ( 12.1 ).

APPENDIX ( 12.5 )

Average Unit Cost for Utility Services in Baghdad; 1972 prices:

<u>Item</u>	<u>Unit Cost, ID</u>
Roads	10 ID/sq.m.
Footpaths	1 ID/sq.m.
Sewerage	
- Mains	10 ID/m.
- House outlet	7 ID/m.
Drainage	7 ID/m.
Water Supply	
- Mains	5 ID/m.
- House supply	20 ID/house.
Lighting	
- Mains	3 ID/m.
- House supply	15 ID/house.

Source: Approximate data provided by : Municipality of Baghdad  
Sewerage Board  
Water Board  
Electricity Board.



# APPENDIX ( 12.6 )

## Basic Data on Utility Services for Five Housing Areas in Baghdad - Case Studies:-

	<u>Case 1</u>		<u>Case 2</u>		<u>Case 3</u>		<u>Case 4</u>		<u>Case 5</u>	
	<u>A.</u>	<u>B.</u>	<u>A.</u>	<u>B.</u>	<u>A.</u>	<u>B.</u>	<u>A.</u>	<u>B.</u>	<u>A.</u>	<u>B.</u>
<u>Utility Services</u>										
<u>Roads:-</u> House Access	6400	15.0	6600	15.0	9500	8.0	5860	8.0	2140	8.0
Minor Roads	1250	4.5 *	2100	15.0 *	4660	6.0	2920	6.0	2410	8.0 *
<u>Footpaths:-</u>	14200	1.5	15300	1.5	4300	5.0	5300	5.0	14360	6.0
	2260	3.0	600	2.0						
<u>Sewerage:-</u> -Mains	10000		9300		14160		8780		14360	
-House outlet	3300		4300		4000		4600		4000	
<u>Drainage</u>	16460		18600		28320		17560		14360	
Water Supply:										
-           Pure	10000		9300		14160		8780		14360	
-           Raw	10000		9300		14160		8780		14360	
<u>Lighting:-</u>	10000		9300		14160		8780		14360	

Notes:   A. Length, m.  
          B. Width, m.  
          \*   Half road width.

Source:   Data calculated by the Author, based  
            on the plans of the housing areas.

G L O S S A R Y    O F    T E R M S

A. Arabic Words and Terms:

AMANAT AL-ASSIMA	Municipality of Baghdad
AMIN AL-ASSIMA	Mayor of Baghdad
ARADI	Land
ASWAQ	Shops
AMIL	Labourer
ABNYA	Buildings
BALADIYA	Municipality
BAIT	House
DAR	Dwelling
DONUM	Land measure equal to $\frac{1}{4}$ hectare
DIJLA	Tigris river
FALLAH	Peasant
FILKA	Roundabout
FINDIQ	Hotel
HADIQA	Garden
HAKUM	Rule
HUKUMA	Government
IHSAA'	Census
IHSAAYAT	Statistics
ISTIMAL AL-ARD	Land Use
INSHAA'	Construction



JADEED	New
JADUAL	Table or Chart
JAMA'	Mosque
JAMIA'	University
JAMHOURIYA	Republic
JISR	Bridge
KHAREETA	Map
KHIDMA	Service
KHUT	Line
KORNISH	River - front street
KUMRIK	Customs
KULFA	Cost
LAJNA	Committee
MADINA	City/Town
MADRASSA	School
MAIDAN	Open ground
MAJARI	Sewerage
MAJLIS	Board
MALOMAT	Information
MASKAN	Residence
MANTAKA	District
MAHALA	Neighbourhood
MAWAD INSHAYA	Building Materials
MARHALA	Stage
MARKAZ	Centre
MARKAZ AL-MADINA	City Centre

MEEZANYA	Budget
MIQYASS	Scale
MOHANDIS	Engineer
MOHANDIS MA'MARI	Architect
MOUHAFIDH	Governor in charge of province
MOUHAFADHA	Province (Administrative)
MOUSIM	Season
MUAAQAT	Interim, Temporary
MUKHATIT	Planner
MUKHATAT	Plan
MUNTAZAH	Park
MUROUR	Traffic
MUWASALAT	Communications
MUDIR	Director
MUDIRYA	Diroctrate
NAFT	Oil, petroleum
NAHIA	Lowest administrative unit
NAHR	River
QADHA	Second lowest administrative unit
QADEEM	Old, traditional
QANOON	Law, Act
QARARAT	Resolutions
QIT'AA	Plot, piece of land
RAI'S	Head
RIBIH	Profit



SANAD	Certificate, deed
SAYARA	Car
SAHAN	Courtyard
SHA'AB	People
SHARA'	Main Road
SHABAKA	Network
SINA'AT	Manufacturing industry
SIIR	Price
SHUQA	Flat
TA'LEEM	Education
TADREEB	Training
TAFSEEL	Detail
TAJDEED	Renewal
TAKHTEET	Planning
TANTEEQ	Zoning
TAPOU	Land and property records department
TAQREER	Report
TAREEKH	Date
TASMEEM	Design
TASMEEM AL-ASSASI	Master Plan.
TIJARA	Commerce
TAREEQ	Street
WIHDA SAKANYA	Dwellings unit
WAZARA	Ministry
WAZIR	Minister

B. Definition of Terms:

It has been found useful to define concisely the various terms which have been used, together with others which are associated with them in this study.

This glossary has been based on the following sources:

1. Bernard Benjamin, "Demographic Analysis", ed. by George Allen and Unwin, London, 1968.
2. P.A.S., "A Dictionary of Economic Terms", de. by Routledge and Kegan Paul, London, 1968.
3. J.N. Jackson, "Surveys for Town and Country Planning", ed. by Hutchinson University Library, London, 1968.
4. Greater London Council, "Greater London Development Plan, Statement", 1969.
5. U.N., "Methods for Establishing Targets and Standards for Housing and Environmental Development", Dept. of Economic and Social Affairs, New York, 1968.
6. P.H.M. Stevens, "Densities in Housing Areas", Tropical Building Studies, Department of Scientific and Industrial Research, B.R.S., H.M.S.O., London, 1960.

Note: Number in brackets refer to the list of sources.



1. Access Index - the percentage of housing area used for roads, footpaths, or other means of public access not forming part of a house plot. (6)
2. Birth Rate - relation of total live births in a year to the total population of all ages expressed as a rate per 1000. (1)
3. Capital Formation - the process by which money capital is accumulated and converted into capital goods. (2)
4. Communal Services Index. - the total percentage of the housing area used for access and open space. (6)
5. Dependents - economically inactive part of population without personal income. (1)
6. Dwelling - any suit of rooms/or any room/ intended or used for habitation, having separate access to the street, or to common landing or staircase. (1)
7. Development - the process of mobilizing and organizing a country's or region's resources - natural, human, industrial, institutional and so on - for purposes usually involving the creation of an increasingly higher level of material wealth, social well-being and individual self-fulfilment. (5)

8. Floor Space Rate - the ratio of floor space to the number of inhabitants in a house or group of houses. It is expressed as square meters of floor space per person. (6)
9. Family - in the broad meaning it is a group or groups of related persons found to be living together within a household, so, in many cases the family and the household will be identical. (1)
10. Fixed Capital - that capital which is in durable form and can be used repeatedly. (2)
11. Floor Space - the total floor area of a house measured inside the main external and party walls, including the thickness of internal partitions. It includes all rooms, covered balconies and verandas, service space and circulation space. It excludes all external and common stairs, lift-shafts, landings, corridors, etc. (6)
12. G.N.P. (Gross National Product) the sum of the domestic product and the net balance of external flow, which can be positive or negative, depending



on the country, It includes:

Fixed capital formation + Private  
and public consumption export +  
Increase in stocks + Export and  
import of goods and services +  
Net income from the rest of the  
world. (2)

13. Goals

- a fairly specific objectives  
formulated, with due regard for  
resources available or reasonably  
likely to become available within  
a specified period of time, to  
indicate the direction of desired  
development and results to be  
achieved. (5)

14. Gross Density

- rate of the total number of persons  
permanently living within a  
predominantly residential district  
to the total area of that district.  
The area of that district includes  
not only the residential area but also  
the area of:  
  
primary schools, local shops, open space,  
local services and internal roads  
network. (3)

15. Housing Area

- the area of land actually developed or to be developed for houses and including:

- a. all house plots;
- b. all communal open space, i.e. any small public or private open spaces including in the layout intended solely for the enjoyment and use of nearby households and not for the purpose of the neighbourhood as a whole.
- c. half the width of any street on which land mentioned in (a) or (b) abuts, except that where a curtilage abuts on a principal traffic road only 6 meters of the width of that road is included. (6)

16. Housing Area Density -

the total number of persons to be accommodated in the housing area divided by the housing area in hectare. It is expressed as persons per hectare. (6)

17. Housing Area Ratio -

the total floor space within the housing area divided by the housing area in square meters. It is expressed to two places of decimals. (6)



18. Household

- a. a one person household is a person who lives alone in a separate housing unit / defined as a structurally separate and independent place of abode / or who occupies, as a lodger, a part of the whole or a separate room or rooms in a part of a housing unit, but does not join together with any of the other occupants of the housing unit to form part of a multi-person household as defined below.
- b. a multi-person household - a group of two or more persons who combine together jointly to occupy the whole or part of a housing unit, and to provide themselves with food or other essentials for living. The group may pool their incomes and have a common budget to a greater or lesser extent in different circumstances. The group may be composed of related persons or unrelated persons or a combination of both, including boarders and servants, but excluding lodgers. (1)

19. House - a building designed or occupied as the living quarters of one or more families or households. It may or may not be equipped with facilities for cooking, bathing, toilet, storage, heating or cooling, or garaging motor cars. For the purpose of this definition, a house includes all ancillary buildings which provide separate facilities for its occupants. (6)
20. Habitable Room - Any living room, sitting room, bedroom, etc. excluding bathroom, kitchen, storeoom, garage etc. (1)
21. Independents - economically active population and that part of inactive population which has personal income/e.g. pensioners. (1)
22. Inhabitants per Room/ or "Occupancy Rate" / - number of persons resident per habitable room. (3)
23. Imigration - an inward flow of new residents. (4)
24. National Income - the total net earnings received by the factors of production/ i.e. wages + profit + interest + rent / for their productive effort in an economy and



- for a specific period of time. This is also called "national income per factor cost". A national income figure which has not had allowances for depreciation deducted is called the "gross national income". Once deducted the figure is "net national income". (2)
- 25. N.D.P. (National Domestic Product).
  - the total contribution made to production by all sectors of the economy including the fixed capital after eliminating the value of intermediate products i.e. those used up in the production of others. (2)
- 26. Overall population Density.
  - rate of the total number of persons permanently living within the boundaries of a local authority to the total area of land within those boundaries. (3)
- 27. Open Space Index
  - the percentage of the housing area used for small communal open spaces intended solely for the enjoyment and use of nearby households and not for the purposes of the community as a whole (6)

28. Priorities

- a set of goals or targets ranged in some form of sequential order referring to time or other relative rank. (5).

29. Plans

- a detailed, specific statement, in words or graphic form, of how a set of development goals or targets will have been translated by a given date into a set of physical change in a country, region or urban area. (5)

30. Programmes

- the step-by-step listing of the specific things that need to be done to carry out a plan, identified as to time, place, and means. (5)

31. Plot Coverage

- the proportion of the house plot covered by the total ground area of the house or house sited thereon. For the purposes of this definition, the ground area is the total area of ground covered by a house, measured to the outside face of external walls, but not including uncovered verandas, porches, terraces or steps. (6)



32. Residential Density - a term used to describe the existing or proposed number of habitable rooms, or people occupying them, in a given area. It is usually expressed in numbers of habitable rooms or persons per hectare. (4)
33. Standards - the measures of levels of acceptability, at a given time and place and in a given set of cultural, technological and economic conditions. (5)
34. Total Living Space - within a house plot or group of house plots comprises the total uncovered area of such plot or plots together with the total floor space on all floors contained therein. (6)
35. Total Living Space Rate - the ratio of total living space to the number of inhabitants in a house or group of houses. It is expressed as square meters of total living space per person. (6)
36. Targets - a qualified or limited goals or specific stages in the achievement of longer-range goals

they are usually expressed in  
quantitative terms. (5)

37. Values

- the fundamental beliefs as to the nature and purpose of human life, the relationships of human beings to one another, and the essential social conditions which make life meaningful. (5)



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