THE URBAN GEOGRAPHY OF BAGHDAD

VOLUME II

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CONTAINS PULLOUTS

PART V

Baghdad's Modern Development II

CHAPTER 10

The Fifth Morphological Phase, Post-1956

Introduction:

This chapter will deal with the city of Baghdad in its present development which commenced after 1956. The previous developmental processes, social economic and morphological, prepared the city for its present evolution. To study the city in its present phase of development is to know how far the city has been influenced by its past and the socio-economic and technological factors which are mainly western. This chapter can be considered as a pivot connecting the city's contemporary growth with what has been discussed previously.

The analysis of the city structure in this period made use of various resources, the main ones being the master plan of the city prepared by Polservice, a Polish team of planning consultants, information of wide variety and general nature supplied by several governmental offices such as Amanat al-Asimah, the Ministry of Planning, the Ministry of Public Works and Housing, and the Department of Surveying. The latter supplied an aerial photograph of Baghdad taken in 1962 on the scale of 1:10,000. All maps supplied to the writer contained only general locational information and gave neither altimetric information nor plot boundaries. They are also out of date as the city has grown rapidly. The governmental information provided is not accurate nor does it cover the city as a unit. For certain years it is incomplete, and available material deals mostly with the Liwa of Baghdad and its administrative components. The aerial photograph of Baghdad was valuable, though out of date. It gave a better idea of the intensity of development in various areas and in general indicated the urban pattern of the city. The city of Baghdad still needs a detailed survey of its land-use and structural layout.

Fortunately the Polservice team are now undertaking this colossal task with the help of Iraqi engineers. It may be presumed therefore that new base maps on larger scales such as 1:2,500 and 1:1,000 will become available eventually.

Owing to the lack of information on present Baghdad, the writer has been obliged to carry out intensive fieldwork covering among other things a land use survey of the city (See Appendix A).

During its rapid and vast post-1956 expansion, Baghdad became a very complicated city. To ease the analysis of such a large city, a general regional scheme has been adopted. The city has been considered as consisting of eight large component regions. The division depends on historical, functional and morphological criteria. These eight morphological areas will be briefly discussed in this chapter. Four of them are located on either side of the city (Figs. 10.1,10.2). They are (1) Old Karkh (2) Greater Karradat Mariyam (3) Greater Kadhimiyah (4) Greater Mansur on the West Side (South-Western) (5) Rusafah (6) Greater Adhamiyah (7) Greater Karradah al-Sharqiyah (8) Qanat al-Jaish (the Army Canal) area on the East Side (north-eastern). Each of these composite regions consist of several smaller constituent sub-regions.

In its modern growth, Baghdad has been influenced by many morphological frames similar to those observed in the English town of Alnwick.[1] 'Morphological frame' is a technical term indicating the existence of an antecedent plan element, exerting a morphological influence on subsequent development on the same site in a variety of ways, and usually passing some of its features on as inherited outlines. The main morphological frames of modern Baghdad are represented by earlier roads and villages some of which may date as far back as the

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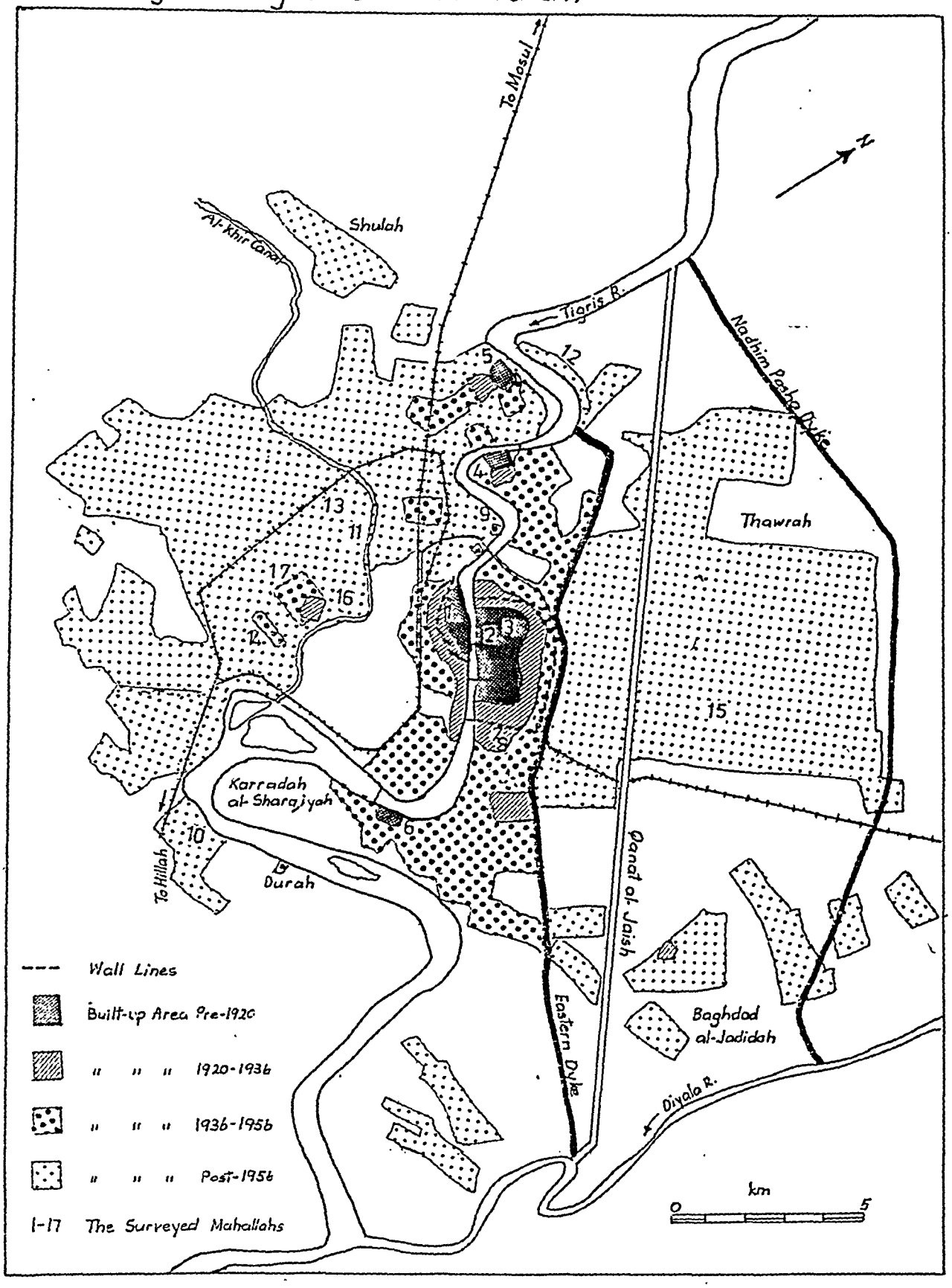
Fig.10.2 Baghdad's Growth Pattern



tenth century. Kraiat, al-Durah, Karradah al-Sharqiyah, Zufuraniyah and Abu Ghraib villages together with the roads linking them with the Old Town are very characteristic morphological frames that played their role in fashioning the modern morphology of the city.

The main topics of this Chapter are: The modern growth pattern of the city, the major factors behind the recent uncontrolled expansion, the main problems associated with this unprecedented growth, the analysis of eight morphological regions, the functional and morphological composition of the modern suburbs, the socio-economic structure of Baghdad, and motorization and mass transport in Baghdad.

Baghdad's modern growth pattern: (Fig. 10.2)

As observed in the preceding four morphological phases, Baghdad has an intimate functional and morphological relationship with the River Tigris. The main pattern of growth was linear, with some interspersed nucleations at vantage loops of the river, represented by Kadhimiyah, Adhamiyah and later Karradah al-Sharqiyah all of which acted as morphological frames. This linear pattern had always accorded with the general direction of the river, i.e. north-west to south-east. In the course of development the Old Town and the detached old nuclei of Kadhimiyah, Adhamiyah and Karradah al-Sharqiyah merged together created the large townscape of modern Baghdad, though this merging occurred earlier on the East Side.

As mentioned in Part II, the introduction of flood control in 1956 meant that the city as well as southern Mesopotamia became free from the floods of al-Rafidain, and the old dyke no longer represented the effective limit to any massive outward growth in the north-east. Thus ordinary, i.e.

residential growth could now leapfrog the city's first fringe belt on all sides. For the first time the city adopted an open circular type of physical growth, much more rapid than it had ever been since the eighth century when Baghdad was first built. The built-up area reached a diameter of up to 27 km within its new municipal area of 850 sq. kms which had been increased more than eight-fold compared with its pre-1956 size (100 sq. kms). The open pattern of growth has combined nuclear and linear forms. The former was evolving around certain physical or functional points such as bazaars, mosques and street junctions associated with older nuclei, while the latter occurs along the main arteries of transportation in the modern suburbs.

Simultaneously with this physical growth Baghdad is evolving functionally towards greater complexity, which increases its national and Arab appeal and in some respects even its international importance.

The building boom of Baghdad during the last two decades has taken the form of three types of building processes (1) vertical expansion, through the replacement of single-family houses by multi-storey structures in already settled areas, (2) filling-in of interstices in the built-up area, i.e. building on vacant plots and land already partially developed, (3) extension of the existing built-up area on the pheriphery of the city by the erection of new houses on newly sub-divided land. The last type is the most important one in providing a massive supply of dwellings to accommodate a large number of people.

As it stands, Baghdad has four house types accounting for much of the largest part of the city's building fabric, i.e. the traditional one or two-storey courtyard house, the modified one- or two-storey courtyard house, the covered one- to three-storey house, and the one- to two-storey western house. They have already been studied in the

Fig 10.3c Kadhimiyah Old Town, with successive period stages of development. Traditional zuqaq and courtyard house areas around al-Kadhim shrine, regular streets pattern with modified courtyard houses on its north side and western type houses immediately to south and north of the (dark) orchard area. Part of Kraiat, river side urbanized village at top of the photograph.

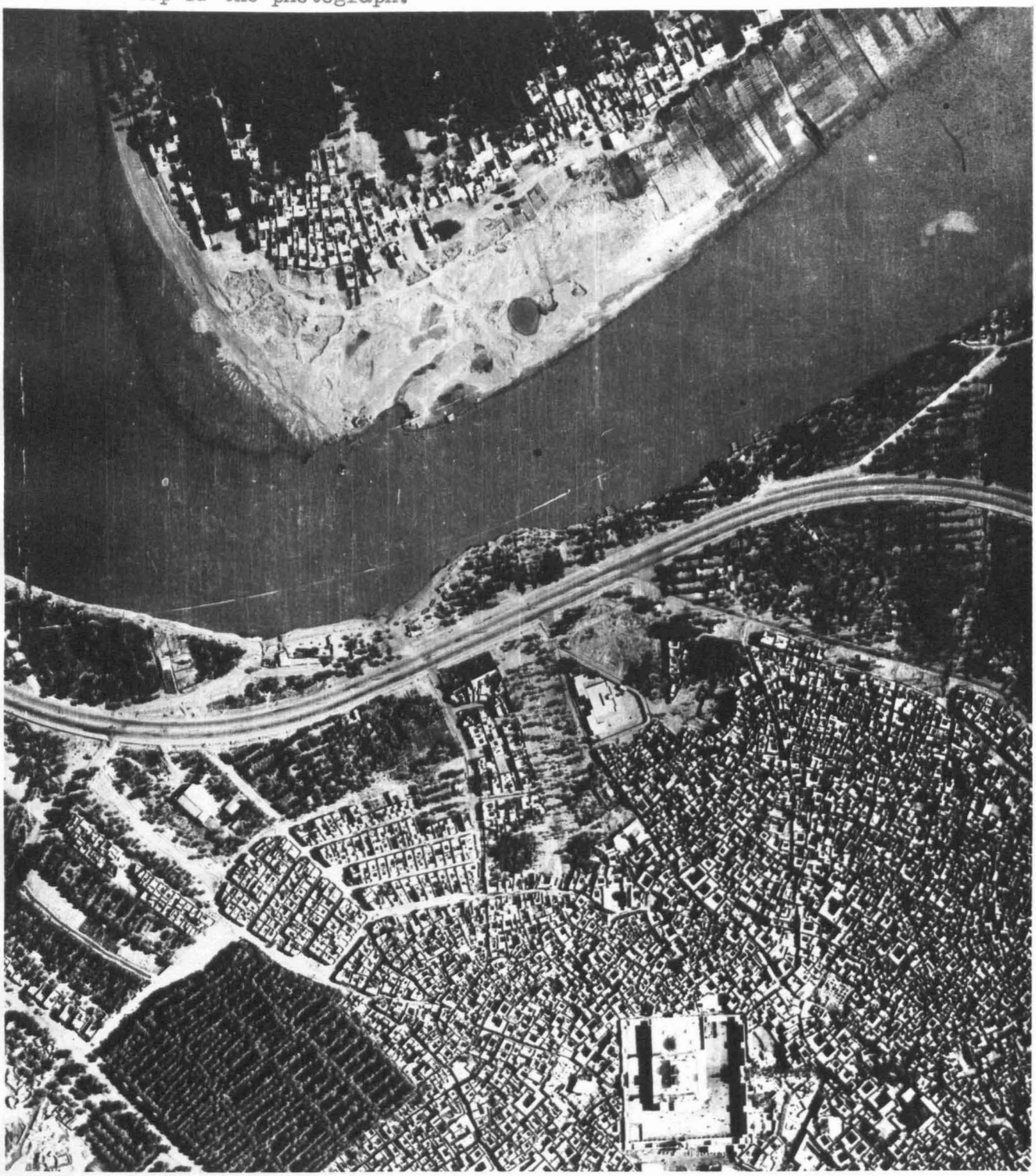


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Fig 10.3b Rusafah's Traditional courtyard house area, fragmented by successive generations of break-through streets.

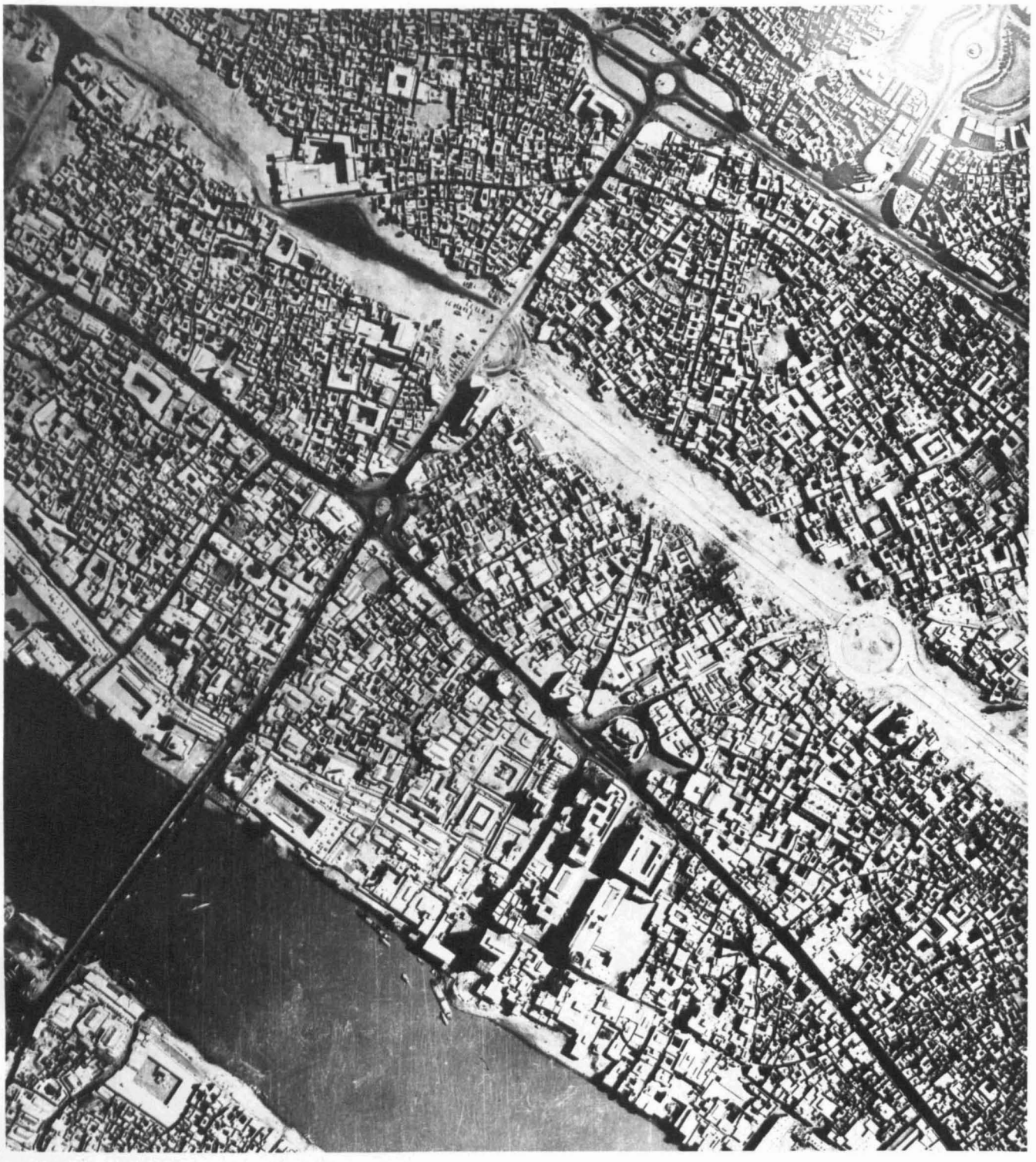
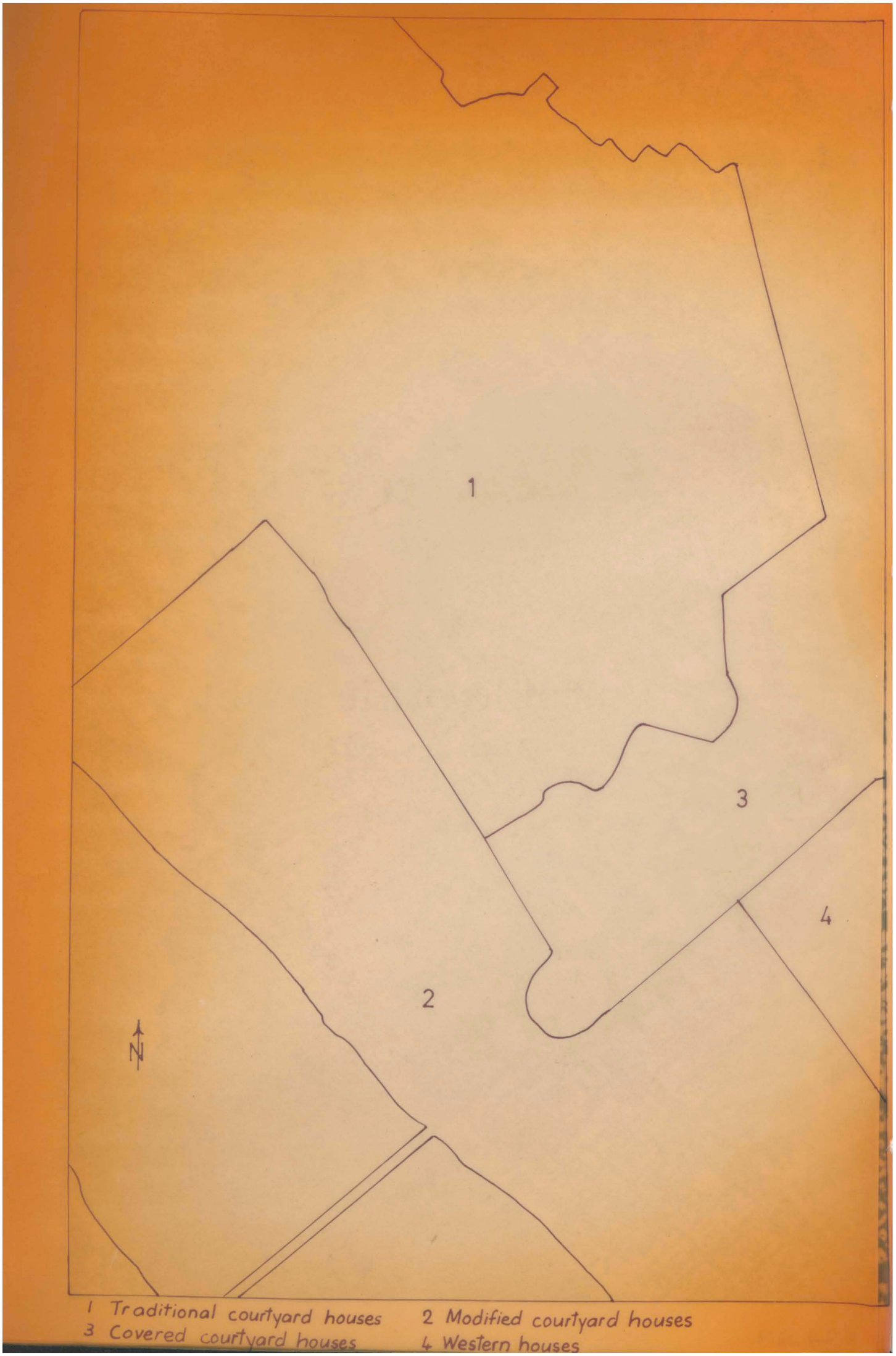


Fig. 10.3a Street evolution in Baghdad has a strong relationship with the house type



1 Traditional courtyard houses
2 Modified courtyard houses
3 Covered courtyard houses
4 Western houses

1 Traditional courtyard houses
2 Modified courtyard houses
3 Covered courtyard houses
4 Western houses

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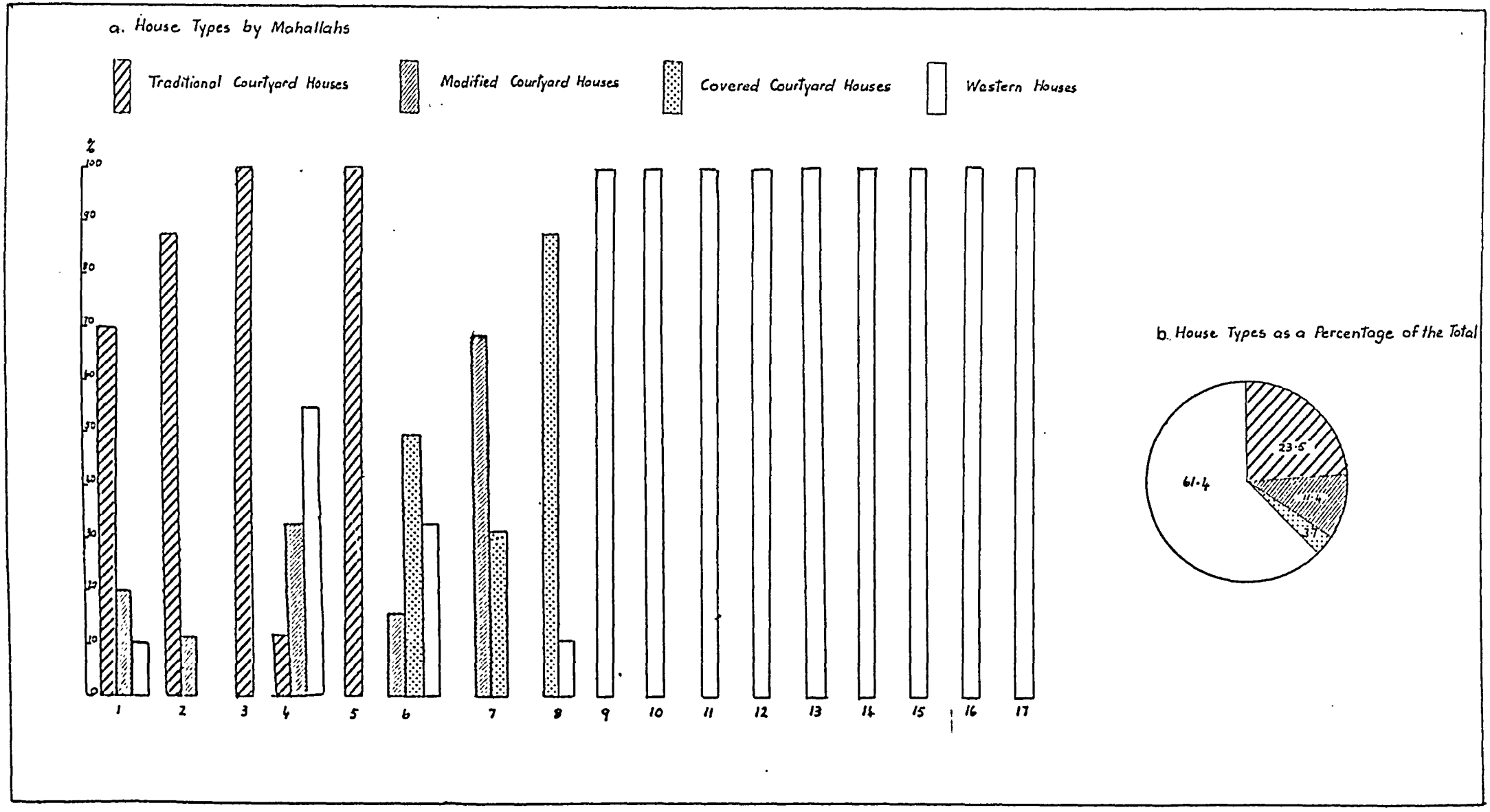
previous parts of this investigation and are associated with different types of streets (Fig. 10.3a). The first type goes with narrow, tortuous streets fronted with blind walls and the heavy doors never facing each other. These streets are almost closed in on the first floor by projecting wooden shanashil and cater exclusively for human and animal traffic. The second type is associated with straight and wider streets, the ground-floor walls having large regular windows, while doors mostly face each other. Houses on such streets are terraced with projecting metal-balconied windows, and their streets are used by wheeled traffic. The third and fourth house types alternate with each other, and as the latter type has many styles within the western framework they gave the street a western suburban look. The street system here is of the grid-iron pattern and many of the streets are of the boulevard type and designed mainly for vehicular traffic. Houses here are for single families and are mostly detached, standing in their own gardens.

The traditional centre came to be a segmented island surrounded by 'modern' developments in every direction (Fig. 10.3b). This contrast is to be found also around the shrines of Abu Hanifah in Adhamiyah and al-Kadhim in al-Kadhimiyah, reflecting the absence of planning, the rise of economic and technological standards, western influences and the advent of vehicular transport (Fig. 10.3c).

The fourth type dominates the areas developed outside the dykes after 1956, the first within the limits of the traditional centres of Baghdad, while the second and third are found within the limits of the dykes on the East Side and the Mosul-Basrah railways on the West Side.

Today Baghdad's scenery presents two very different pictures: outside the secondary fixation line the streets are almost devoid of

Fig.10.4 House Types in the Surveyed Mahallahs



human beings and inside that belt the townscape is too congested in parts to be appreciated in its full character. The following two tables (10.1, 10.2) show the incidence of house types in the surveyed areas by morphological phases.

Table 10.1: Incidence of House Types in the surveyed mahallahs by morphological phases (Fig. 10.4)

Mahallah	Pre-1920		1920-1936		1936-1945		1945-1956		Post-1956	
	No.	%	No.	%	No.	%	No.	%	No.	%
Suq Hamadah	8	80.00	1	10.00					1	10.00
Sayid Abdullah	8	88.89							1	11.11
Aguliyah	5	100.00								
Harah (Adhamiyah)	1	11.11	3	33.33			4	44.44	1	11.11
Shiukh (Kadhimiyah)	10	100.00								
Al-Bushuja (Karradah al Sharqiyah)	3	25.00	2	16.67	5	41.66			2	16.67
Orfaliyah } Batt-			11	68.75	5	31.25				
Bustan al- } awiin					7	87.50	1	12.50		
Khas }										
Ataifiyah							7	70.00	3	30.00
Al-Durah							1	11.11	8	88.89
Al-Washash							7	46.67	8	53.33
Kraiat							1	10.00	9	90.00
Al-Iskan									7	100.00
Al-Mamun									10	100.00
Al-Thawrah									20	100.00
Hai Dragh									10	100.00
Al-Mansur									7	100.00
Total	35	19.78	17	9.60	17	9.60	21	11.87	87	49.15

Source: Fieldwork 1971 - See Appendix A Table 0[a].

From the above it appears that only 20 houses or 36.36 per cent of the houses in the six traditional mahallahs have been built after 1920.

This suggests that the traditional parts of the city have maintained their physical pattern. In Orfaliyah, on the other hand 31.25 per cent of the houses were built after 1936. This expresses the fact that there was a considerable amount of vacant land in the developed area of the third morphological phase, 1920 - 1936. Almost all the houses of the last six mahallahs outside the Inner Fringe Belt are western houses developed after 1956.

The contrast between the density of inhabitants in two selected mahallahs belonging to the pre-1920 and post-1956 periods is shown in the table below. It appears that the average number of persons per house in Suq Hamadah is more than twice that of al-Mansur, while the average number of persons per family in the former mahallah is about double that of al-Mansur.

Table10.2: Residential (Dwelling) Density in the Mahallahs of Suq Hamadah and al-Mansur.

Mahallah	Morphological Phase	Average No. of families per house	Average No. of persons per house	Average No. of persons per family
Suq Hamadah	Pre-1920	1.3	9	7
Al-Mansur	Post-1956	1.14	4.14	3.63

Source: Field work 1971, See Appendix A, Tables A, P[a].

Most of the suburban houses are occupied by one family only. This has naturally reduced the population density (See Chapter 12).

At present three elevational levels can be distinguished in Baghdad; one- to two-storey houses, so common in old and modern Baghdad, constitute the lower level. Domes, minarets, water tanks and some buildings of three- to four-storeys constitute the medium level, whereas the huge buildings of more than six storeys, mainly located in

the business centre, constitute the upper level. In this respect Baghdad's centre represents the peak of physical development as an expression of the functional importance of this small area (see chapter 14).

The major factors behind the recent uncontrolled expansion:

Several factors, i.e. governmental, socio-economic and technological ones have been interacting in speeding the contemporary expansion of the city. The introduction of effective flood control was a major event and accelerated the modern growth, in 1956 (See Chapter 4). The population growth both resulting from natural increase and migration played a great role in this expansion (See Chapters 9 and 12). The industrial development of the city in its present morphological phase was another essential dynamic factor reinforcing the modern wave of suburbanization (See Chapter 13). Other factors are to be discussed presently such as road and transportation development as well as direct and indirect governmental intervention.

The government has aided the present expansion in many ways. The establishment of the Development Board in effect brought about the recent residential policy of free plot distribution in 1951, greatly accelerated after the 1958 - Revolution (See chapter 8). The encouragement of co-operative housing societies for the professions (See chapter 8) and the post -1958 nationalization of the vast lands and properties of the royal family, most of which were distributed to the professional co-operative societies, were other factors in speeding the present city growth. The Real Estate Bank financed members of building societies or governmental departments at the limited interest of 2 to 5 per cent. to build houses. The payment extends over a fifteen year

period in monthly or yearly instalments. The importance of this is discussed in Chapter 12.

Furthermore the government has allowed land sub-division for housing beyond the 1956 boundaries of the city . This abnormal rate of land subdivision has been associated with fast physical growth.

In the period 1958 - 63, the government wanted to attract popular support and did not hesitate to spend heavily in carrying out speculative town planning, no doubt at the expense of other forms of investment.

Land subdivision has encouraged individuals to buy plots in distant suburbs. They went up to 10 kms beyond the built-up area to localities where land costs will be less. Actually, though the home buyer feels he is obtaining a bargain by buying a cheap plot beyond the city, the saving may prove to be a false one, because of the cost of travel and the non-existence of many urban facilities.

Another hurried governmental decision giving momentum to the present mode of physical expansion was that for the extension of the city boundaries in 1956 by Act No. 1089. It was taken for the two-fold reason of increasing municipal revenues and providing land for new housing. This created many problems for Baghdad. Several villages have been incorporated within the new urban boundaries and services should be provided for the new areas such as water supply, roads, pavements, etc.

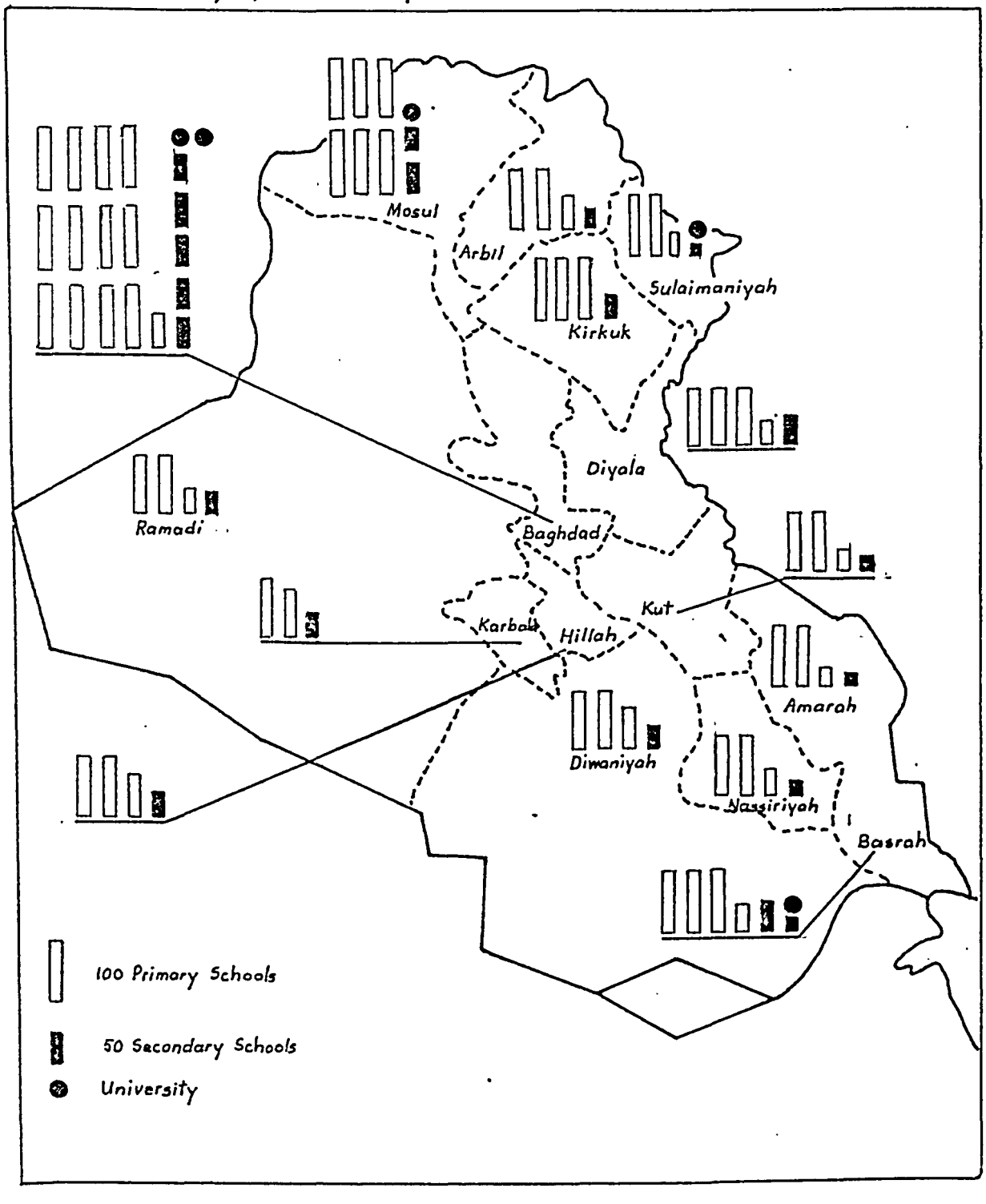
The government has added greatly to the north-east expansion of the city by the construction of Qanat al-Jaish (the Army Canal) as will be discussed later in this chapter.

To complete the factors accelerating the physical expansion one has to mention road and transportation development.

Transportation development has quickened the rate of, and to a large extent has patterned, modern physical expansion. Many external roads have been improved in this period e.g. those to Hillah, to Syria and to Kirkuk, and new roads have been constructed such as those to Kut and to Mosul. These highways have given the peripheral morphology of the city its present pattern (Figs. 10.1, 10.2). Each of these six ecternal highroads has attracted urban land uses, along both sides for considerable distances. Usually the intensity of urban development is higher in the first reach of the street nearer to the old parts of the city while it thins out as the street proceeds outwards and finally it disappears. The influences of these land uses on forms emerging along these streets also varies. The sky line is higher where the land is most densely used, while it is lower in the distal section, giving each street its characteristics denoting its age and functional significance.

It is a well established morphological fact that the townscape is not static; urban morphology is always dynamic, a fact which could be used to explain the frequent change in the pattern, intensity, and nature of the land uses, and forms, which line and evolve along these arterial roads. Most of the new residential suburbs emerged along the six major highways to which there is direct vehicular access, numerous side roads entering the main road. This is dangerous and obstructive to traffic, as it creates many potential collision points and encourages parking. With this spread the city has hastened its metropolitan period when many urban land uses, i.e. housing, industries and commercial services are decentralizing.

Fig.10.5 Primary and Secondary Schools and Universities in Iraq by Liwas 1969/1970.



The major problems of present growth:

In its present dynamic expansion, Baghdad has many problems in common with other cities, such as housing, slum and sarifah settlements (see chapters 9 and 12), traffic congestion, waste disposal, excessive land use and land speculation. This has been aggravated by the absence of any comprehensive plan. Growth has been so rapid during the last two decades that in terms of paved streets, telephone, sewage disposal, schools, health institutions, mosques, etc. the government has simply been unable to keep pace with it. To determine the magnitude of these problems and the means to solve them, detailed and accurate surveys of every activity in the city are needed. Unfortunately, no precise statistical information about the capital is available.

As an underdeveloped country Iraq is characterised by an unfair distribution of all kinds of services excessively favouring the capital. On the basis of liwas, Baghdad dominates the other liwas in all respects. In Baghdad the concentration of educational and health institutions has attracted great waves of migrants, resulted in the vast physical expansion of the city, and decreased the efficiency of such establishments. By their migration to Baghdad and other major towns, the illiterate fallahin have demonstrated a considerable desire to improve their sons' health and educational status, indicating that there is an important social revolution working inside Iraqi rural society (See Chapter 9).

In 1969/70 Baghdad Liwa had 24.59 per cent of the primary schools, 34.53 per cent of the secondary schools, 40 per cent of the universities (Fig. 10.5), 29.7 per cent of the primary school teachers, 39.31 per cent of the secondary school teachers, 35.56 of the primary school pupils, 40.06 per cent of the secondary school pupils and 78.69 per cent of the higher education students of the country.[2]

Fig.10.7 Facilities Required by Interviewees in the Surveyed Mahallahs.

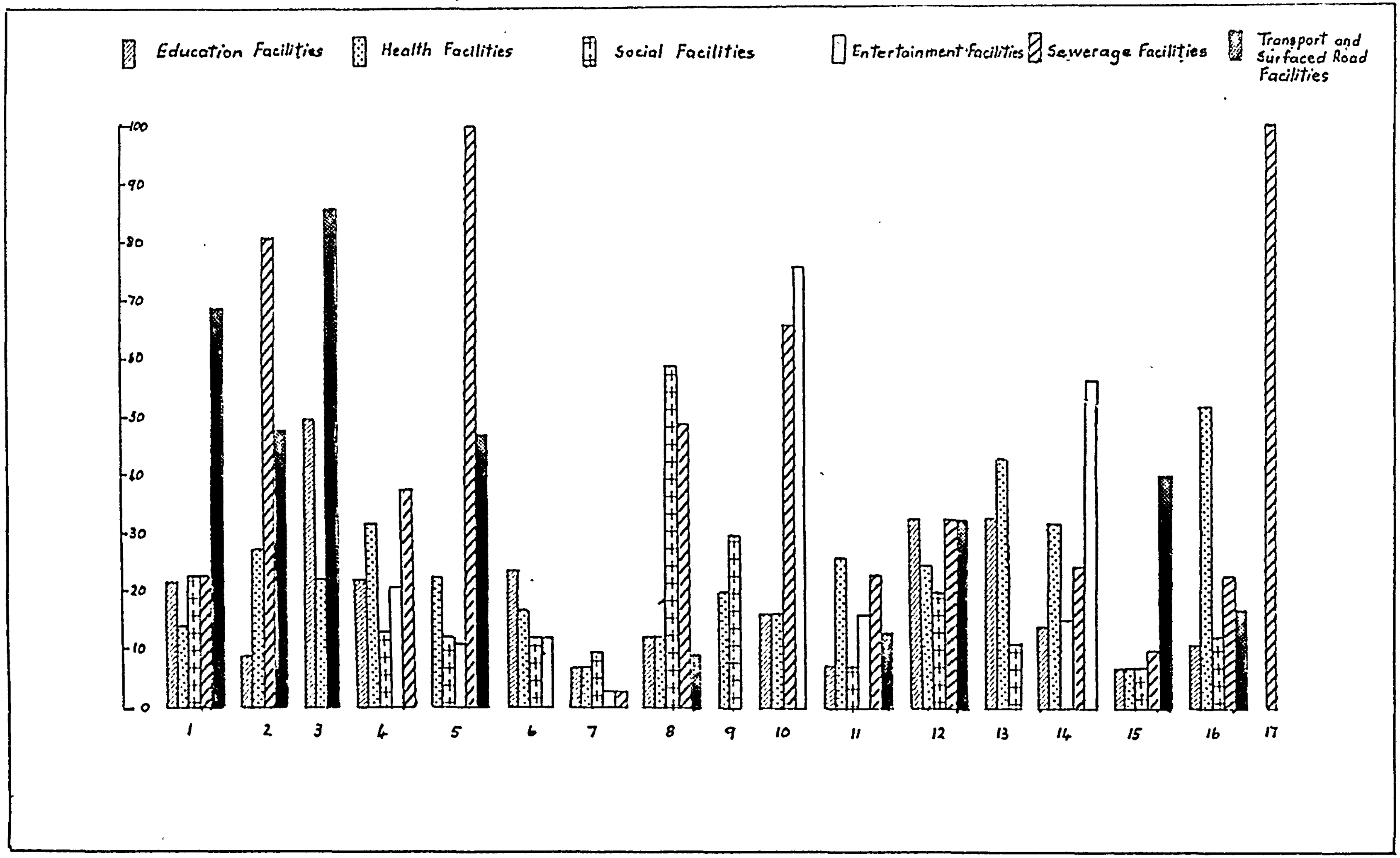


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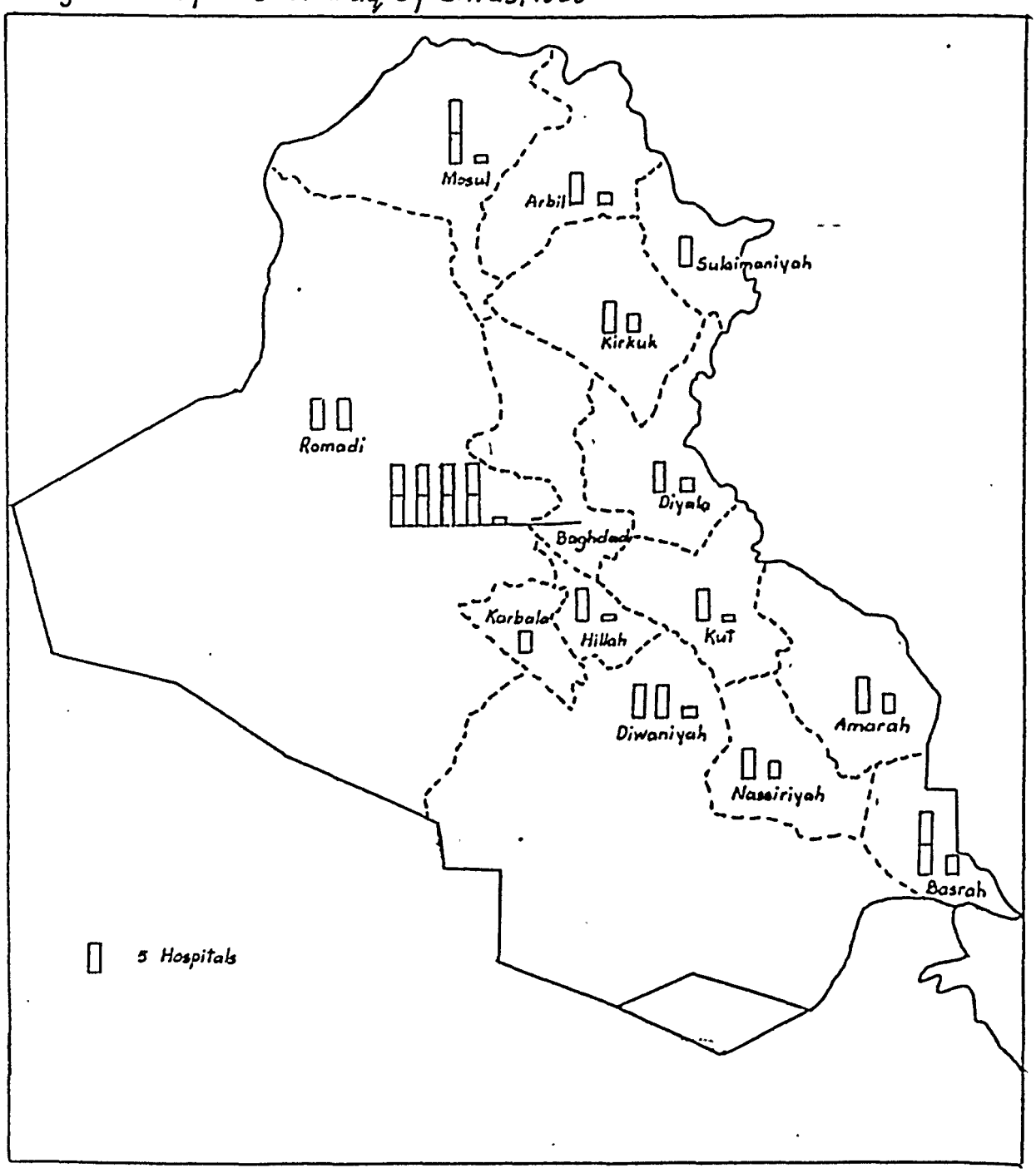
Fig.10.6 Hospitals of Iraq by Liwas, 1968



Likewise, in terms of health facilities Baghdad Liwa dominates the other liwas. In 1968 it had about 31 per cent of the country's hospitals (Fig. 10.6), 43.29 per cent of their total number of beds and 66.67 per cent of the private hospitals.[3] It also led the other liwas in telephone services, Baghdad City alone possessing 61.5 per cent of the telephone capacity of the country.[4]

Characteristically, the distribution of these facilities is not even in the liwa itself. Baghdad City monopolises most of the facilities leaving the other areas, whether urban or rural, in a rather primitive position. For example Baghdad had 85.19 per cent of the governmental hospitals found in the liwa in 1971.

Furthermore the field survey has shown that the distribution of such facilities is not right within the town itself. The problems have increased with the recent expansion of the built-up area of the city. Most of the new suburbs have no 'high schools' planned shopping centres, health centres, family planning centres, child welfare centres, local parks, playing fields, clubs, libraries, places of worship or entertainment facilities. The following table illustrates this situation:

Table 10.3 : Elements required by interviewees in the surveyed post-1956 mahallahs (Fig. 10.7).

	Facilities required for mahallahs					
	Educational	Health	Social	Entertainment	Sewerage	Street improvement
Al-Durah	16.67	16.67	-	-	66.67	75.00
Al-Washash	6.90	27.59	6.90	17.24	24.14	13.79
Al-Kraiat	33.33	26.67	20.00	-	33.33	33.33
Al-Iskan	33.33	44.44	11.11	-	-	-
Al-Mamun	16.67	33.33	16.67	25.00	58.33	-
Al-Thawrah	6.90	6.90	6.90	-	10.30	41.40
Hai Dragh	11.76	52.94	11.76	-	23.53	17.65
Al-Mansur	-	-	-	-	100.00	-

Source: Fieldwork 1971. See Appendix A, Table U.

It is to be noted here that many of the interviewees particularly in al-Thawrah, al-Iskan and al-Washash did not state what they require as their new settlements are a great improvement on their old localities. Also some of the families were not aware of what they needed. Some of them were suspicious of the writer's questions since many would suspect him to be a government representative likely to report their complaints, resulting in their being treated even less favourably. In suburbs such as Kraiat, Karradah al-Sharqiyah, Sulaikh, Durah etc., boys use the river as their swimming pool. Only if the schools buildings are designed as schools can pupils find some recreational facilities such as playgrounds for volley or basket ball, gymnastics, etc.

Most of the disadvantages of the new suburbs are observed in the low-class suburbs, which sometimes even lack an efficient water supply. In some of the migrant settlements one outside water standpipe still serves a number of dwellings in a similar fashion to a village spring or well.

Al-Thawrah, the migrant locality for example has the lowest proportion of educational establishments. Many of the pupils from this locality attend schools located in other parts of the city as either there are no schools in their mahallahs or there are no vacancies within them. Insufficiency of schools at secondary level is even more apparent.

While the ratio of schools per 100,000 people in Adhamiyah is 18.9/100,000 it is only 2.8/100,000 in Al-Thawrah. The average ratio for the city as a whole is 11.21/100,000. For every 5,290 people in Adhamiyah there is a secondary school; while for al-Thawrah the ratio is one school for every 35,668 people.

From the field survey it appeared that the old mahallahs have the highest concentration of educational facilities, compared with the modern

suburbs and particularly those of low-class communities such as al-Thawrah. However, most of the schools in the traditional parts of the city function in rented traditional houses lacking many necessary requirements found in the modern schools.

The following table shows the availability of educational establishments in the surveyed mahallahs:

Table 10.4: Educational efficiency of the surveyed Mahallahs.

Mahallah	Morphological Phase	% of pupils attending schools		
		in the same mahallah (walking)	nearby mahallah (either walk or by vehicle	distant mahallah (vehicle transport)
1. Suq Hamadah*	2	90.99	9.01	-
2. Sayid Abdullah	2	71.43	14.29	14.29
3. Aguliyah*	2	83.33	16.67	-
4. Harah (Adhamiyah)*	2	100.00	-	-
5. Shiukh (Kadhimiyah)*	2	73.33	26.67	-
6. Karradah al-Sharqiyah	2	62.50	37.50	-
Average		80.26	17.36	2.38
7. Orfaliyah*	3	64.29	17.86	17.86
8. Bustan al-Khas	3	55.56	33.33	11.11
Average		59.93	25.60	14.49
9. Al-Afiyah	4	62.50	37.50	-
10. Durah*	4	75.00	8.33	16.67
11. Washash	4	82.76	-	6.90
Average		73.42	15.28	7.86

* low-class

2/continued..

Mahallah	Morphological Phase	% of pupils attending schools		
		in the same mahallah (walking)	nearby mahallah (either walk or by vehicle)	distant mahallah (vehicle transport)
12. Kraiat	5	80.00	60.00	-
13. Iskan	5	66.67	22.22	11.11
14. Mamun	5	100.00	-	-
15. Thawrah*	5	41.38	20.69	6.90
16. Hai Dragh	5	47.06	11.76	41.18
17. Mansur	5	62.50	12.50	25.00
Average		65.27	21.20	14.00

Source: Field work 1971. See Appendix A, Table N[b].

This table indicates that about 98 per cent of the pupils in the traditional mahallahs attend schools located either in their mahallah or in a contiguous one. For the low-class suburban locality of al-Thawrah only 62 per cent of the students attend schools in their mahallah or in the nearby one. While only 2.38 per cent of the pupils in the traditional mahallahs attend distant schools, using vehicle transport, the percentage increases in the crowded mahallahs of the third morphological phase and in the suburbs developed in the fifth morphological phase.

As was seen in the fourth morphological phase, the schools of Baghdad fall into two accommodation categories, viz. government-owned, built mainly to function as schools, or rented by the government and therefore in unsuitable buildings. The latter category is concentrated in the old parts of the city and housed in traditional or modified

* low-class

traditional houses. They lack sports grounds, adequate rooms and sanitary facilities and are generally very crowded. The former category, i.e. state-owned schools, are located mainly in the suburbs, though a large number of them are located within the limits of the pre-1956 city.

Many of these school buildings, whether rented or designed as schools, fail to function properly owing to the high percentage catering for a dual or even triple type of school.

The percentage of rented primary schools in Baghdad Liwa for the school year 1970/71 was 26.11; the percentage for rented secondary schools being as high as 35.86. For the same year the percentage of combined primary schools was 33.70, that of combined secondary schools 15.19. Some of the buildings even house four schools. Besides, 6.25 per cent of the primary schools were constructed of mud, and are therefore not suitable as schools. This means that 64.12 per cent of the primary and secondary schools used buildings unsuitable as schools.* The whole school accommodation, rented schools, combined schools and mud-constructed schools, should be replaced by more appropriately distributed and better designed buildings. Thus Baghdad desperately needs a comprehensive educational plan not only to find schools for the various levels but to place them at the right sites. Unfortunately, the main factors determining the location of schools are not the population distribution and ease of accessibility, but the land values, rents, personal decisions, and sometimes the personal relationship between the person responsible and some of the property owners.

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* In 1965, the Polservice Master Plan of Baghdad stated that 25 to 30 per cent of the school buildings are unsuitable for their purpose.5

In 1970/71 the annual rent for schools in Baghdad was about a quarter of a million I.D., a sum which could be invested in building about 16 schools with 6 - 10 class rooms. In 1965/66, the Ministry of Education quoted 35.29 per cent of Baghdad's schools as being rented, 23.53 per cent as requiring partial restoration, 17.84 per cent as being deteriorated structurally and 9.77 per cent as being built with mud. This means that 86.43 per cent of the school buildings were not fit to function as schools.[6]

Neither is the distributional pattern of health institutions appropriate. While 68.27 per cent of the population live on the East Side, there are their 60.27 per cent of the city's hospitals and 55.38 per cent of its dispensaries. This rather proportional distribution does not reflect the real locational pattern. Rusafah has 13.82 per cent of the population of the city but only 4.35 per cent of the city hospitals, though it does have 13.85 per cent of the dispensaries. The eastern suburbs on the other hand, have 34.34 per cent of the population of the city, but only 17.39 per cent of the hospitals and 6.15 per cent of the dispensaries of the city, reflecting a great deficiency in this respect.

The uneven distribution is also expressed by the fact that for each 197,558 people in Rusafah there is only one hospital, in contrast to Karradah al-Sharqiyah where for each 29,988 inhabitants there exists a hospital, and the ratio of hospital per each 100.000 reaches 3.33 compared with 0.5 in Rusafah.

On the West Side the situation is slightly better - Karradat Mariyam for example, has only 0.35 per cent of the population but 8.70 per cent of the hospitals of the city. By contrast, the western suburbs have 14.76 per cent of the population of the city and only

8.70 per cent of the hospitals. The ratio of hospitals per 100,000 population was the highest in Karradat Mariyam and Kadhimiyah.

The imbalance in the location of health institutions influences mainly the poor-class communities. Ambulance services which are again unevenly distributed throughout the city, cannot be used by the public, unless the patient is critically ill. The large size of the city, however, results in many areas being too far away from the nearest available health institution. Specialized hospitals, are very few and far from adequate as most of them serve not only Baghdad but the whole country.

In general the West Side has better medical facilities, as there was a hospital for each 50,375 people, and a dispensary for each 15,633 people. For Rusafah there is one hospital and one dispensary for each 69,698 and 27,105 people respectively. The ratio of hospitals per each 100,000 people on the West Side is better than that on the East Side, being 1.99 hospitals for the former and 1.43 for the latter.

The field survey, as seen in Table 10.5 yielded some interesting and perhaps useful data. Only 1.44 per cent of the interviewees frequented public health centres located in their mahallahs. Actually all these live in mahallahs developed before 1920, i.e. traditional mahallahs. No interviewees in the post-1920 mahallahs visit public health institutions there, since there are none.

The highest percentages of interviewees who complained about the lack of medical facilities in their mahallahs were located in the traditional mahallahs, followed by interviewees living in the areas developed after 1956, then by interviewees living in areas developed during the fourth morphological phase (1936-1956), and the lowest percentage appeared in the mahallahs of the third morphological phase.

From the same table it appears that the highest percentage of interviewees who frequent public hospitals viz. 66.45 per cent, came from those who inhabit mahallahs of the third morphological phase. This is owing to the fact that all of the families here belong to the low-income class. Most of them are Christian migrants from the north.

The second lowest percentage was found in mahallahs developed in the fourth morphological phase. This is because two of the three component mahallahs are poor localities. This was followed by a lower percentage, but still more than 50 per cent of the families living in the traditional mahallahs. Four out of the six mahallahs of this part of the city are incorporated within the low-income strata of society.

The low percentage (35.43) of families living in suburbs developed after 1956 results from the fact that the area incorporates two high-class mahallahs, and three middle-class localities, who could afford the charges of private clinics.

As the area developed in the third morphological phase has recently been engulfed by the expanding business centre of the city, it attracts a large number of private clinics,thus deriving patients from the same area.

The low percentages of interviewees who frequent private clinics located in the mahallahs developed in the fourth and fifth morphological phases results either from the absence of such private clinics or from the fact that these mahallahs are inhabited by a high percentage of middle- and high-class people. 60.25 per cent of the interviewees in the mahallahs built after 1956, attend private clinics, indicating both their economic order and the fact that the areas are still dominated by residential land use.

As a result of the present health situation, the medical institutions have failed to provide proper health services for the increasing population of the capital. This has lowered the standard of medical treatment. Consequently and as seen in the Table 10.5, a high percentage of the interviewees were obliged to visit private clinics where presumably they find better treatment. Also public clinics are not appropriately placed throughout the city, hence the percentage of complaining interviewees in various mahallahs.

Table 10.5: Health facilities, in the surveyed areas according to their morphological phase:

Phase of development	% of interviewees frequenting				% of interviewees complaining of health service deficiency in their mahallahs
	public health institutions		private institutions		
	outside mahallah	inside mahallah	outside mahallah	inside mahallah	
1. Pre 1920	52.39	24.55	20.89	6.77	27.72
2. 1920-1936	66.45	-	11.10	51.87	12.70
3. 1936 - 1956	64.18	-	22.34	10.71	21.42
4. Post 1956	35.43	-	60.25	15.17	27.38

Source: Field work1971, See Appendix A, Table N[b].

As a direct consequence of the unsatisfactory and unplanned distribution of health centres medical treatment became an important item in the expenditure of Baghdad's families regardless of their economic status. The following table indicates this fact, according to the class of the interviewees:

Table 10.6: The average percentage of monthly expenditure of interviewed families for medical services:

Class	% of expenditure spent on medical treatment	Average monthly expenditure of each class on all items (I.D.)
High	6.28	89.65
Middle	7.04	48.30
Low	7.14	27.34

Source: Field Work 1971, See Appendix A. Table G.

The lower classes are thus the most badly affected by the present health situation of the city, which needs a comprehensive study and plan to cope with one of the most essential needs of the community.

The fragmented pattern of the city contributes to the diseconomies in water consumption, coupled with the vertical development particularly in the centre. Now 3/4 per cent of all buildings in Baghdad are estimated to be higher than 3 storeys, concentrated along main streets and in the centre. One of the major reasons for the unsatisfactory supply of water in some of the new suburbs, is because of the fact that many houses used to be built within a short time, without taking permission or even informing the water supply organisation of the city. This makes it impossible to predict precisely the quantities of water needed within a particular period of time.

The sewage and refuse disposal system is neither adequate nor modern. In this respect Baghdad is backward. Although the idea of the sewage system started in the 1930's when German experts were asked to devise a plan for the city, the system itself has not been completed.

According to the surveyed areas, the following table shows the percentage of houses connected to the main sewage system of the city according to their morphological phase.

Table 10.7: The existence of sewage system in the surveyed areas.

Morphological phase of the area	% of houses connected to main sewage system
Pre-1920	16.67
1920 - 1936	100.00
1936 - 1956	-
Post - 1956	16.67

Source: Field-work 1971. See Appendix A, Table O^b.

This table shows that most of the houses depend on the septic-tank system for disposal of their liquid refuse. The percentage of surveyed houses linked to the city sewage system or the secondary sewage system, were 11.11 on the West Side and 37.50 on the East Side of the city.

To solve these problems Amanat al-Asimah should be provided with sufficient technical staff required for the great job of planning the city properly. Town planners in office are not in a position yet to participate in, or guide, such development. There are few of them and these are fully engaged in routine office work. The lack of control spreads even to the quality of buildings that are being put everywhere, whether in the centre or along the major streets in the suburbs. This has resulted in architectural chaos and in visual disharmony. With the continuous physical expansion, forms of construction and shapes are multiplied day by day. These 'architectural acrobatics' are even recorded by the caricaturists of local newspapers.

As the efficiency of Amanat al-Asimah has not increased in the same proportion as the rapid development of the housing areas, one notices a marked drop in the level of services rendered to different communities. The overall national economic system did not allow Amanat al-Asimah to increase its revenue to meet the growing public demand for municipal services. This has increased the gulf between the growing needs and the city's effective response to them. Moreover, the recently established Supreme Economic Board took over the responsibility for development, leaving Amanat al-Asimah with a feeling of dependence on sources of finance other than the population of the urban centre. Gradually the relationship between the citizen and state is growing faster and becoming stronger than the relationship between the citizen and Amanat al-Asimah. Thus there is a basic need to restore the relationship between Amanat al-Asimah and the citizen, and to redffine the fading borderline between the entity of an urban centre and that of the national state.

There is hardly any mutual discussion or interchange of information between city planning and national planning. This gulf is deepened by the absence of regional planning which could act as an intermediary between the two.

Here it is worth suggesting that all the autonomous or semi-autonomous agencies of Government rendering services in Baghdad urban area should work within a defined and agreed framework, and should co-ordinate in their works.[7]

The law covering land taxation goes back to the nineteenth century, and was changed only by Act No. 35, 1927. This act authorised Amanat al-Asimah to levy a tax of 10 per cent of the annual revenue of commercial establishments, rented houses and factories within the

municipal boundaries. It excepted, however, religious and governmental institutions as well as lands of less than 150 sq. m in size.[8]

Only occasionally has it been enforced. Many landlords owed the government considerable amounts of taxes. Laxity and corruption side by side, with the absence of enough staff in the departments concerned to fulfill the requirement of the act render it in many cases a merely 'academic' law. By claiming absence, the landlord could avoid paying taxes for many years.

Characteristically, Baghdad has vast amounts of vacant lands and residual desert.* They are ripe for development, but owners do not develop these plots for several reasons. This can be seen in many suburbs on either side of the city. Amanat al-Asimah should have the right to levy charges for such vacant or uneconomic use. Landlords intend to keep their lands dormant or vacant so as to realise a much greater value later after the expected development initiated through the efforts of others have taken place.

Moving from one suburban area to another and from the city centre to any of the suburbs one has the impression that Baghdad is a disjointed city, for there are large open spaces right inside the city and between most of the inhabited and built-up areas. A glance at maps of Baghdad (Fig. 10.1) leaves little doubt that most of the new development is done in a piecemeal manner, creating many municipal problems. The hybridization processes commenced in the previous period have accelerated in this period. Physically, in its external expansion and in the modernization of its Old Town, Baghdad

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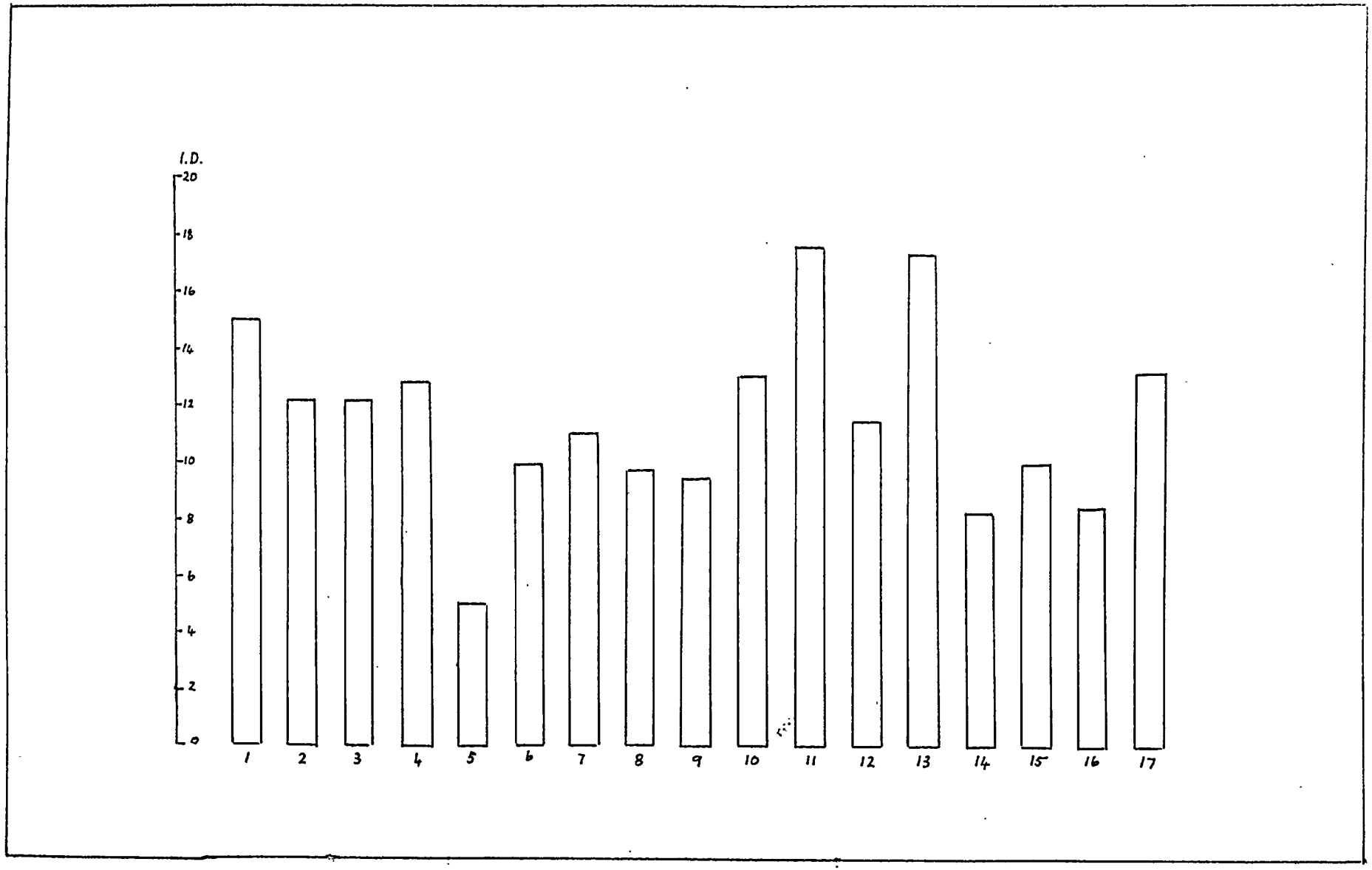
* Desert residual instead of the European agricultural residual, is found in Baghdad's fringe belt, consisting of parcels of residual desert land engulfed by the expansion of the built-up area.[9]

has become a hybrid city, part Arab and part Western. The new suburbs lack the Arab civic sense of articulated grouping. The monotony of dispersed and linear development of detached housing replaces the composite grouping around the mosque or other traditional institution. Generally, living has become more lonely, as may be expected with most material improvement. Most of the new localities seem to bear no relationship to the local regional character of the old. There is an enormous gulf between the neighbourhood concept and what is being developed in the new suburbs, where the feeling of unity has been lost.

The relationship between inhabitants of most of the new suburbs are based on professional status and economic order as against the traditional economically heterogeneous structure of the Old Arab mahallahs (See Chapter 8).

As we have seen in Chapter 8, the new economical or occupational segregation of inhabitants was imposed by the government. When the latter distributed plots to any particular occupational group, it did not allot any plot to individuals from other occupations. In addition the law forbade recipients to sell their plot to any other person. This artificial social grouping and its consequent morphological features is one of the characteristics of Baghdad representative of many other Arab towns. It is questionable, however, whether this class or occupational segregation, which was created by governmental decisions, will continue, as already there are indications that plot exchanges, rentals and re-sales to members of other economic orders have taken place. This process has been observed in the surveyed professional 'madinahs' of al-Iskan and al-Mamun. It was also noted by Fox and will probably alter the imposed pattern eventually.[10]

Fig. 10.8 The Average Monthly Expenditure of the Interviewees on Transport by Mahallahs.



20 per cent of the surveyed houses in al-Mamun and 14.29 per cent of those in al-Iskan madinahs were sub-leased to dwellers from other occupations.

Although religio-ethnic factors of major importance in the evolution of most of the traditional mahallahs have declined in significance, it can still be observed in some of the modern suburbs. This is seen e.g. in Hai Dragh where all interviewed families were Sunnahs. The geographic origin of people still plays a role in the spatial distribution of a great number of people in Baghdad (See Chapter 16). The development of public bus services has made it possible to live at greater distances from the Old Town. Most of the suburbs now are linked with the city by these services and their people commonly spend much time and money on transport. The average percentage of monthly expenditure of the interviewed families spent on transportation was 11.52. The following table indicates the importance of transport expenditure in four of the surveyed suburbs along the arterial roads to Mosul, Syria, Hillah and al-Thawrah.

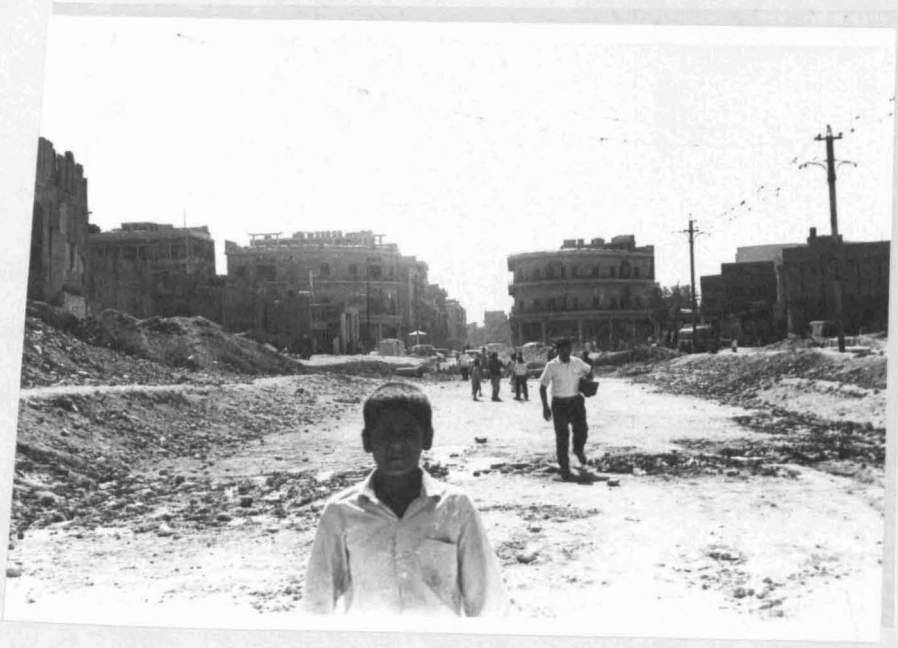
Table 10.8: Percentage of monthly income spent on transport by interviewees in four of the surveyed suburbs (Fig. 10.8)

Locality	% of expenditure on transport
Al-Washash	17.79
Al-Mansur	13.27
Al-Durah	10.87
Al-Thawrah	10.16

Source: Fieldwork, 1971. See Appendix A, Table G, 58.

A new dimension thus entered into the life of the citizens, that of distance. Thus the jostling of the old quarters is replaced by personal isolation in remote localities, which nothing can ever

Fig. 10.10



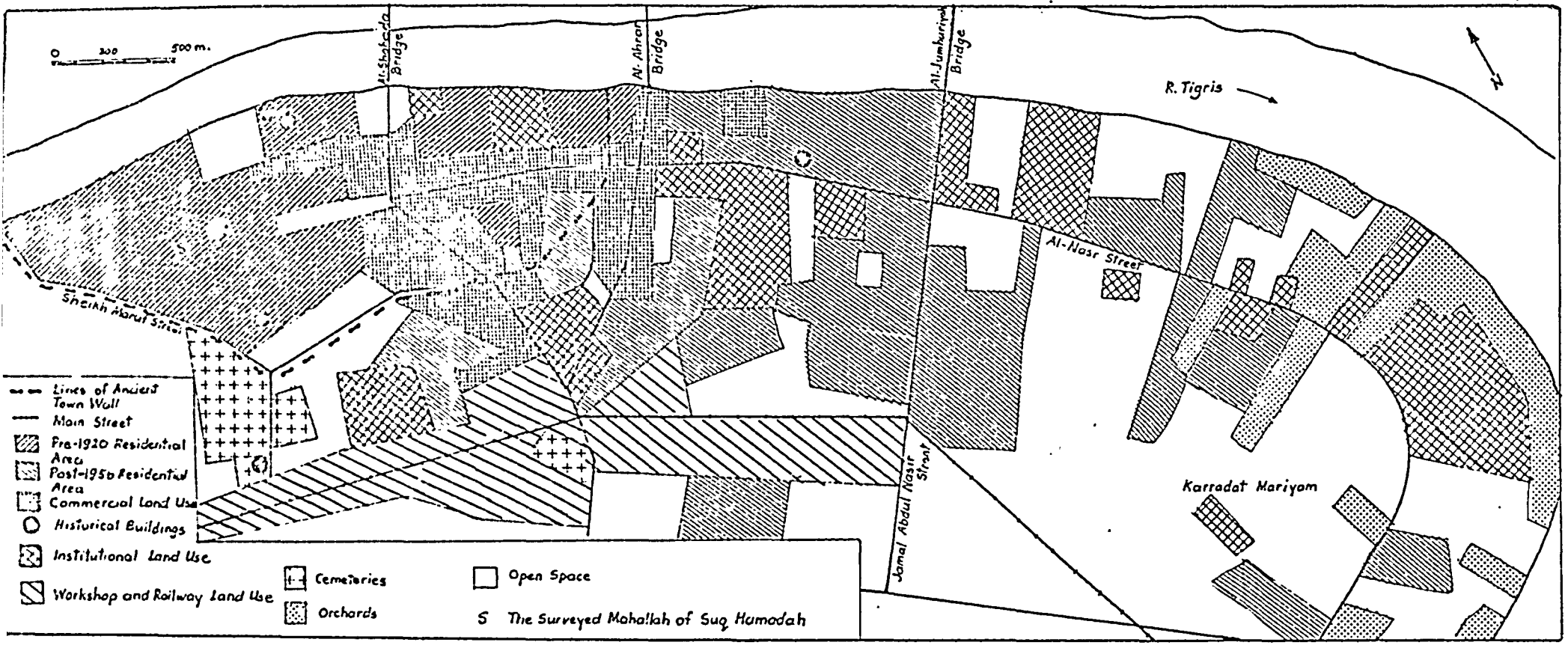
a. The new break-through street in al-Karkh looking south

b. The same street looking north

F P.4944

Fig 10.9b. Al-Karkh Old Town, Ancient Suq Hamadah with its alwahs in the centre. Fixation line of the 19th century wall line and its consequent road in bottom left corner. Al-Kadhim Street parallel to and near river.

Fig.10.9a Karkh-Karradat Mariyam Land-Use Map



alleviate except when one withdraws into the narrow confines of one's walled garden. The ever increasing scale of mainly residential accretion and filling-in, thus is beginning to cover all vacant land around Baghdad. Today the city has abandoned its tradition of turning its face towards the river but is advancing towards the desert on either side in an unprecedented growth of modern suburbs. The open stretches between Baghdad and the settlements along the roads to Khanagin, Basrah, Hillah, Syria and Mosul are being steadily filled by residential and other urban land uses.

Another problem which resulted from the present expansion of the city was that several villages were incorporated within the new urban boundaries, such as Abu-Ghraib, Zufuraniyah, Durah, and Kraiat (Fig. 10.1) and services need to be provided for the new areas such as water supply, electricity, roads, etc. These villages still retain their rural character and old nuclei, though the occupational structure has been relatively altered. They represent distinct morphological frames influencing the modern townscape of the city.

Baghdad's major morphological regions (Fig. 10.1)

The analysis will deal with the morphological regions of modern Baghdad considering the factors influencing their pattern and development. The discussion will start with the West Side followed by the East Side.

The West Side.

As mentioned before this side incorporates four morphological regions as follows:

1. Old Karkh.

10.10

Old Karkh (Figs. 10.9a,b) includes the western section of Baghdad's main business core. Together with Karradat Mariyam it

covers an area of roughly 5 x 1.8 km at an average altitude of 32 m above sea-level with a very slight inclination towards the Tigris approximately 6 cm/km. The pre-1920 town of Karkh rises more than 2 m above the surrounding area (See Chapter 4). Because of poor weight-bearing capacity here the Polservice Master Plan recommended low buildings of one or two storeys and high buildings only where economically justified.

Old Karkh possesses the most historic patterns and buildings which for cultural, architectural, and historic reasons should be restored. The Old Town of Karkh incorporates the whole West Side portion of Baghdad's main business centre. 90 per cent of it is built-up as it is dominated by traditional courtyard houses. In harmony with the prevailing climate and culture the old fabric is still maintained (See Chapter 16). 70 per cent of the surveyed houses in Suq Hamadah Mahallah were restored once each, and only 10 per cent of the houses were built after 1956 replacing deteriorated houses. 70 per cent of the surveyed houses in the same mahallah were built before the 1920 and 20 per cent between 1920 and 1936. With 400 - 600 houses per ha traditional Karkh is a very compact settlement. The average 'building coverage' per house in the surveyed houses was 88.5 sq. m, while the average 'block-plan'* of these houses was 154.2 sq. m. It appeared that 9 persons on average live in each house.

Along the main streets of Old Karkh, i.e. al-Nasir, Musa al-Kadhim and other streets, together with the bridge-head of al-Shuhada, all types of commerce, businesses and services are concentrated in buildings of from two to five storeys. Multi-storeyed buildings result

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* In the case of the traditional house, the courtyard is reconed as an integral part of the block.

from the functional development enhanced by both population growth and transportation development, from the 1930 's onward. Many khans, alwahs and traditional houses have been replaced by them. The bridges of al-Shuhada and their terminal squares where several break-through streets meet, mark the hub of building development. This is seen in terms of continuous rows of buildings as well as by their height, unmatched by any of the traditional buildings. The second, third and occasionally fourth floors are used mainly as hotels and offices. The ground floors, on the other hand, are occupied by shops, services and gahwahs. This has increased the traffic problem as the area attracts customers from a wider region within and without the city.

The greatest concentration of industry, workshops, warehouses and garages are located along the primary fixation line of the Inner Fringe Belt i.e. Sheikh Maruf Street (See Chapter 11). There are a considerable number of deteriorated houses in this part, some of which were replced by new houses but maintaining most of the elements of the traditional style, particularly the courtyard. This section is lacking in basic educational and cultural facilities, health services, childrens playgrounds and other recreational facilities, while there is a mains supply for drinking water, there is no sewage system or organized system of garbage disposal. 69.23 per cent of the interviewees in Suq Hamadah Mahallah complained of the non-existence of a sewage system23per cent of the inadequacy of the educational service and 15.38 per cent of the deficiency of health facilities.

Old Karkh is dominated by its close zuqaq network which has been cut by several break-through streets with four traffic lanes

without central separation. Between 1967 - 1971 a new break-through street was cut, leaving this part of the city with the appearance of having been pillaged or struck by an earthquake. Land along this street is now owned by Amanat al-Asimah. Because of their central location, plots lining the break-through streets are too expensive to be bought by individuals but at the same time Amanat al-Asimah does not have the necessary funds to develop them and this has resulted in health risks detrimental to the city (Fig. 10.10).

This situation can be remedied by reselling these plots with payments spread over appropriate periods and by allowing certain tax exemptions, especially on building licences. A reconstruction deadline should be enforced and it is also favourable to co-operate with other Arab businessmen from Kuwait, Libya, etc. who have shown an interest in building along some of the break-through streets.

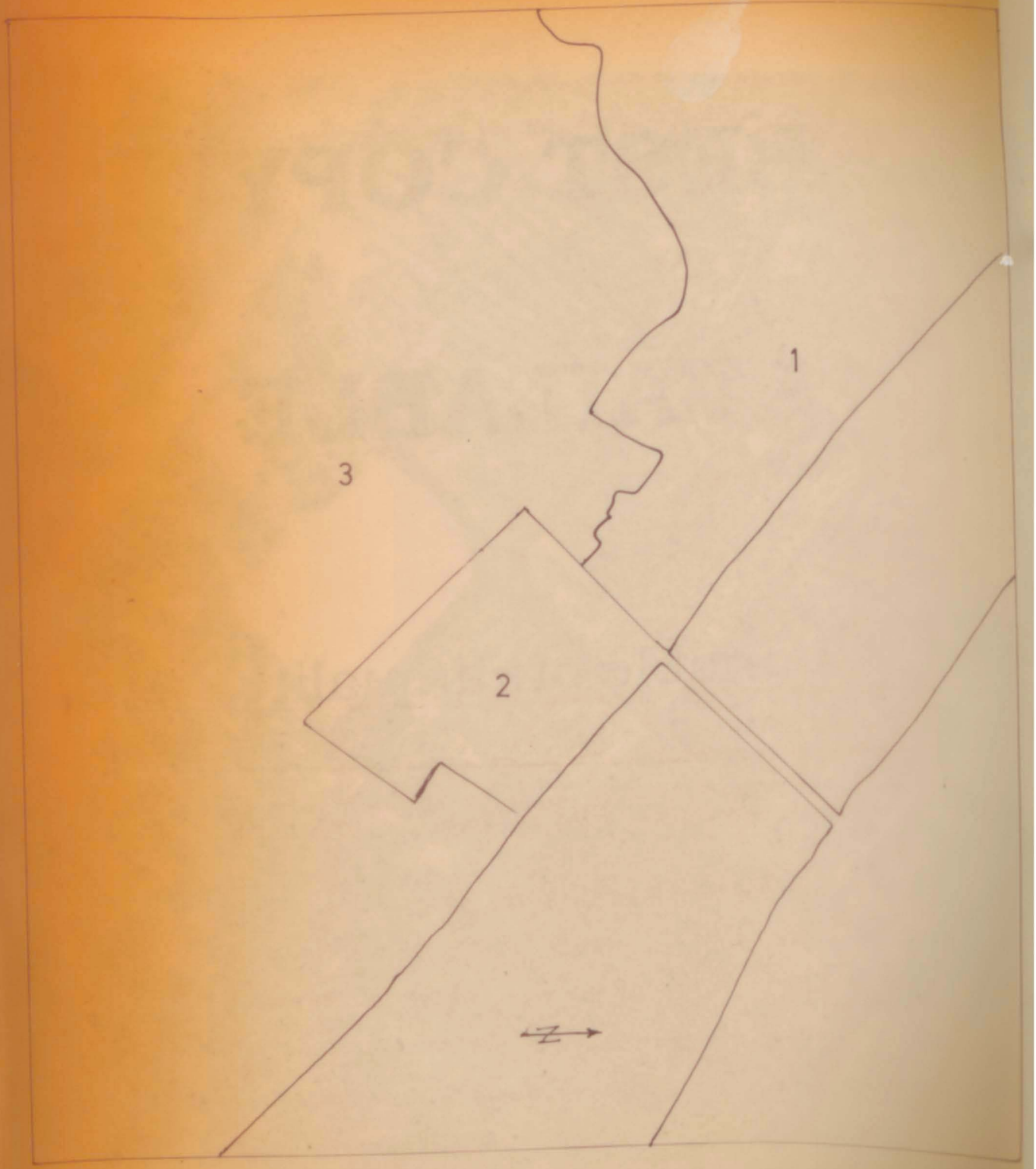
Pedestrian traffic is higher in Old Karkh, where the major suqs, bazaars*, and congregational mosques are located. Retailing is frequently done on the pavements and thus pedestrians are forced to use the roads, disturbing vehicular traffic and increasing the number of accidents. Furthermore, the area is used as a terminus and transit for many bus routes, mainly using al-Shuhada Bridge. The absence of any riverside street aggravates the traffic problem, the bank of the Tigris being occupied by residential buildings on premises of services and offices of administration, which practically cuts the river off from the body of the town.

2. Greater Karradat Mariyam:

Greater Karradat Mariyam (Fig. 10.9 a) includes Shawwakah, Duriyiin, Salihiyah and Karradat Mariyam. The land-use structure of

* The term suq denotes more covered shopping place, while bazaar is used to indicate covered shopping thoroughfare.

Fig. 10.11 Karkh and Karradat Mariyam pattern.



1 Pre-1920 houses 2 Pre-1936 houses 3 Post-1936 houses

Fig. 10.11 Karkh and Karradat Mariyam pattern.

1 Pre-1920 houses 2 Pre-1936 houses 3 Post-1936 houses

Greater Karradat Mariyan is shown in the table below.

Table 10.9: The land-use structure of Old Karkh and Greater Karradat Mariyan.

Type of land use	Land in ha	%
Services and public facilities	39.6	5.35
Government buildings	46.8	6.33
Single family houses	35.0	4.73
Old Karkh	96.0	13.00
Industry and warehouses	16.1	2.17
Transport (main roads and parking)	70.0	9.47
Public open spaces	16.8	2.28
Palm groves	31.0	4.20
Cemeteries	2.0	0.27
Waste and vacant land	317.0	42.9
Railways	68.7	9.3
Total	739.0	100.0

Source: Polservice Consulting Engineers, Master Plan of Baghdad, Karkh City Centre, Warsaw (1968).

Most of the buildings in Karradat Mariyan Salihiyah Shawwakah and Duriyiin were built after 1920. This means that there are no courtyard houses of the traditional type. Modified courtyard houses are located between al-Mansur Street and the river, mainly in the first section to the south of al-Ahrar Bridge (Fig. 10.11). The rest were built mostly before 1945 while a small percentage was built after that date. Most of them are single-family houses. The proportion of open-space in Shawwakah, Duriyiin and Salihiyah is higher than in Old Karkh, but lower than in Karradat Mariyam.

Shawwakah's and Duriyiih's residential significance is declining as fringe-belt land uses are steadily and continuously replacing them in the current consolidation of the belt, involving as this does some absorption of contiguous former residential accretion. Owners have left these houses which are now either occupied by more than one family or by warehousing, workshops, low-grade hotels, garages, shops etc. In this way Duriyiin, and to a lesser extent Shawwakah can now be considered part of the Inner Fringe Belt of the West Side.

Salihiyah covers the area between al-Jumhuriyah Bridge and al-Ahrar Bridge (Fig. 10.11). There are a few government buildings in this area such as the Traffic Headquarters on the river, the Radio-T.V. station,* police stations, the post office in the main street and the Ministry of Housing and Public Works on Abdul Nassir Street.

These institutions developed in al-Salihiyah as distal extramural elements. Sandwiched between the Old Town of Karkh and the new accretions outside, a residential area developed during the 1930's and 1940's mostly simultaneously with and around the above-mentioned institutions. This constituted a developmental context rather analogous to the fringe-belt aureole described for part of Newcastle[11].

The main shopping centre for the area is concentrated along al-Mansur Street, the oldest in the area, and the streets running at right angles to the Tigris, particularly near the bridgehead of al-Ahrar. This has resulted in morphological changes similar to that already observed near al-Shuhada Bridge but on a smaller scale. The development here is of more recent age and still retains its residential nature.

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*This government-controlled T.V. station, which opened in 1956, was the first fully fledged T.V. Station in the Middle East.

Population density is less, houses are more spacious and of suburban character, but proximity to the business centre has influenced the rate of development experienced by the area. However, the whole area is still dominated by residential function which takes various forms. The houses are from the north to the south modified courtyard houses, covered courtyard houses and western-type houses. Deterioration owing to age and lack of maintenance has begun to affect the houses of the norther part.

Karradat Mariyam (Fig. 10.9a)

This is located to the south of al-Jumhuriyah Bridge built in 1958 and has a high concentration of important government buildings and embassies. Many of the houses are one to three-storeys high, erected on privately owned land without any overriding general plan, and are single-family houses built mainly after 1945. The average plot here is 200 to 1,200 sq. m making the density from 80 to 300 persons per ha. Many of the great residential units here were abandoned by their original occupants and leased either to the government for economic reasons, but equally because the original inhabitants wanted to live as far as possible from essential government buildings for political reasons. Thus the prestige usually attached to such areas in European towns did not apply in Baghdad's case. The Polservice Master Plan proposed that this area should be the governmental centre of the capital. This part also has cultural and community functions for the city as a whole as al-Khuld Philharmonic Hall, cinemas, Baghdad's swimming pool and a number of schools are located in the area. 60 to 70 per cent of the buildings in Karradat Mariyam are in very good condition.[12]

Owing to the fragmented pattern of recent, mainly public development the area has no clear-cut functional and visual character. There

are inadequacies in public cultural facilities such as playing fields, primary schools and health services.

As a capital Baghdad attracted many embassies and foreign delegations who followed the government's shift from its traditional intramural sector in the north-west of Rusafah to this modern part. Until 1958, most of the embassies were situated in three sections: Waziriyah which was the royal headquarters, al-Nidhal Street and Karkh, where the British Embassy is located.

These institutional developments added to both the expansion and consolidation phases of the Middle Fringe Belt of the West Side. The presidential and parliamentary palaces inaugurated the extensive institutional southward development of the proposed government centre in a way similar to that observed in Newcastle upon Tyne.[13] However, the present planning undertaking has played its role in conditioning such development.

The built-up area is advancing to the south particularly after the construction of the Arbat Ashar Tammuz (14th July) Suspension bridge in 1965 connecting Karradah al-Sharqiyah with Karkh and Kadhimiyah (Fig. 10.1). The opening of the suspension bridge has already assumed morphological significance by rerouting private commercial traffic on either side of the city and creating a new internal artery by which traffic could be easily diverted to by-pass the more congested parts of the city.

To the west of Karradat Mariyam and almost to al-Khir canal the land is sparsely used by temporary agriculture, palmgroves, petrol stores, and stations, sarifahs and land sub-divided for housing. Most of these land uses are part of the Inner Fringe Belt (See Chapter 11).

Karradat Mariyam has a roughly rectangular grid system of streets, its directions being parallel and perpendicular to the Tigris (Fig. 10.11). The major traffic arteries have two carriage-ways, each of three lanes,

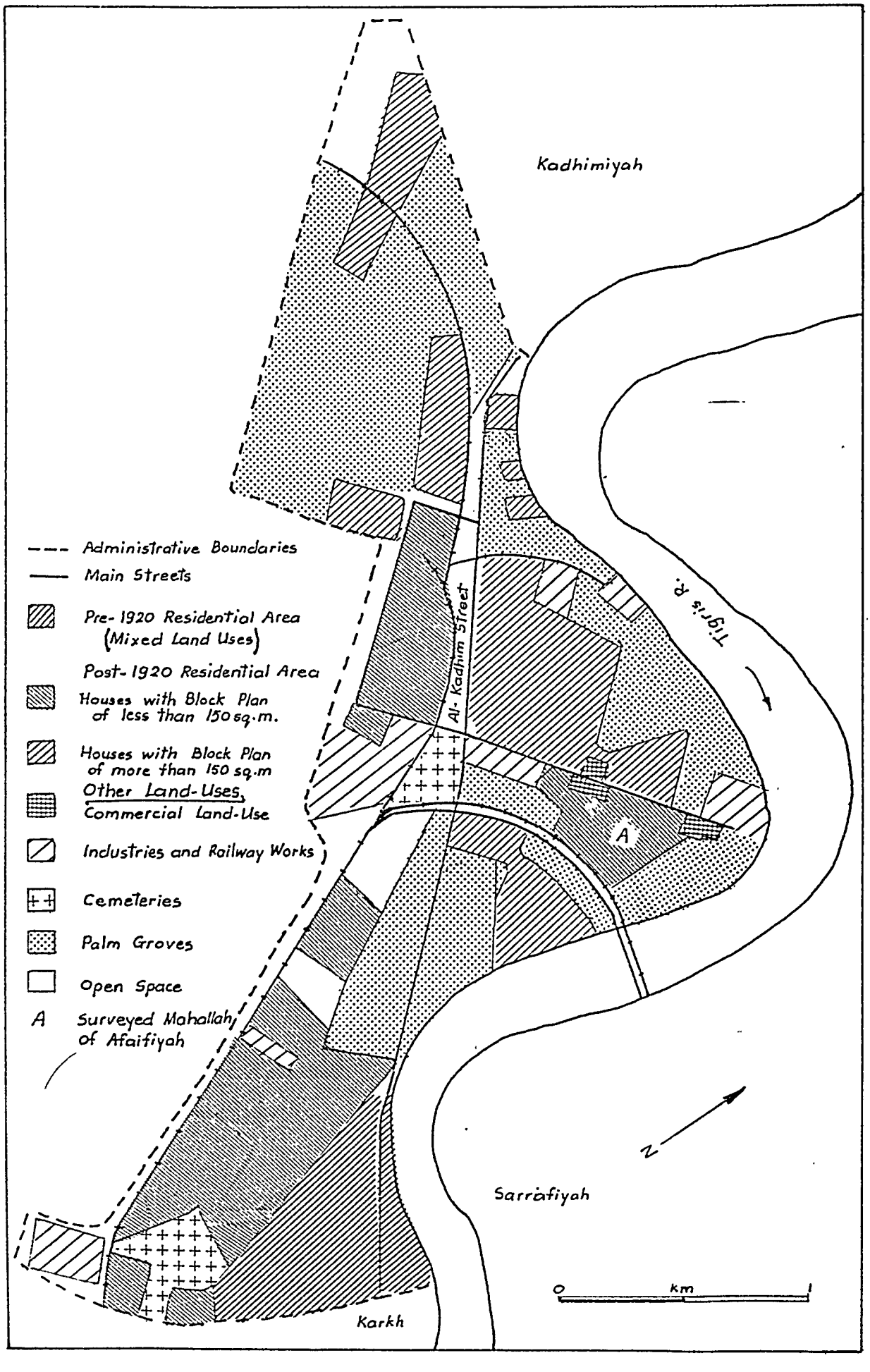
with a central dividing strip. Al-Mansur Street is exceptional in having six traffic lanes without a dividing strip for most of its length. The main streets are lined with commercial premises, hotels, offices and coffee-houses attracting vehicles of all descriptions.

The functional development along other streets in Greater Karradat Mariyam has been more local in character, influencing street morphology only in certain sections and on the ground floor of buildings. Replacement processes have not started yet on any large scale. This area, particularly to the south of al-Ahrar Bridge, is undergoing functional specialization. The government began to concentrate many of its offices here. This has led to the decline of the residential importance of the area, which encouraged the wealthy families to abandon their houses. As a result commercial and other service functions were discouraged.

The concentration of governmental institutions in this area represents functional segregation, a typical corollary of later stages in the consolidation phase of the Inner Fringe Belt. This means that as with Newcastle upon Tyne, Baghdad's Inner Fringe Belt, particularly extramurally, is undergoing a spontaneous and slow 'sorting-out' of land uses into distinct functional section.[14]

Greater Karradat Mariyam has three bridges, emphasizing its functional importance. There is thus considerable flow of traffic to and from the suburbs, for purposes of work, entertainment or shopping in the city centre. Most of these streets and roundabouts have thus been rendered inadequate, causing frequent congestion. Traffic capacity is reduced by cars parking along kerbs, the narrow cross-sections of roads, the lack of separate bus stops and inadequate intersections. The Polservice team found that of the vehicles parked daily in Old Karkh and Greater Karradat Mariyam 7 per cent were private cars and trucks, and 23 per cent of the buses parked in this particular area, the remainder parking elsewhere.

Fig. 10.12 General Land Use of Afaifiyah



3. Greater Kadhimiyah:

This morphological region includes the two major sub-regions of Ataifiyah and Kadhimiyah.

Ataifiyah (Fig. 10.12)

Ataifiyah with a population of 42,842 in 1965, lies at a height of 32 m above see level. Owing to the poor weight-bearing capacity of the area (0.8 kg/cm^2) the Polservice Master Plan discouraged high buildings unless necessary. Ataifiyah is well provided with open spaces and water-supply and has a partial sewage system. The area lacks playgrounds, schools and recreational facilities. Although it developed a certain degree of nucleation and a scatter of shopping centres, mainly in the northern part of the bridgehead and along the main street running towards the Tigris, they are of local character. Thus most of the inhabitants gravitate towards the neighbouring centres of traditional Karkh, Rusafah and Kadhimiyah for major services.

Table 10.10: Commercial efficiency of Ataifiyah in terms of percentages of interviewees frequenting shopping centres.

Place of Shopping	Daily needs		Non-perishable goods		Luxury goods	
	No.	%	No.	%	No.	%
Ataifiyah	10	100	4	40	9	90
Business centre			2	20	-	-
Kadhimiyah			4	40	1	10

Source: Fieldwork 1971, Appendix A, Table I.

The average size of plots in Ataifiyah ranges from less than 150 sq. m to more than 800 sq. m. The streets in Ataifiyah as well as other suburbs, are laid out on the grid-iron pattern. The houses vary from

row houses, chiefly near the bridgehead to detached houses within their own gardens. Depending on the type of houses found in Ataifiyah one can discern two distinct areas of residential pattern and evolution (Fig. 10.12) Firstly there is the congested area with smaller residential units, narrow lanes, lesser community facilities, and above all giving the impression of a poorer section. Secondly there is less congested area which contains large residences, with more open spaces, and enjoying more community facilities.

Accordingly, in broad outlines, two distinct localities come into being. Limited- and low-income groups cannot afford the prices of large plots and group themselves therefore in areas near the bridgehead of al-Shuhada where land is subdivided into small plots, mainly of 150 sq. m each.

It is significant that the number of rented houses in this and other areas within the limits of the 1956 city has increased. The owners of these houses came after 1936 from the Old Town and later moved again to better suburban areas. 60 per cent of the families interviewed in Ataifiyah were house tenants, as the original owners had either moved to distant suburbs or owned more than one house.

The construction of the railway bridge in 1951 speeded up the development of the community. Within the next decade, Ataifiyah expanded as a middle-class settlement between the Tigris and Shalchiyah, and between Jaifir and Kadhimiyah. Baratha mosque, where the Shiahs believe that Imam Ali, the fourth caliph and the first Shiah Imam had prayed, had promoted the development of this settlement (Fig. 10.12). In addition, the site is located along the heavily trafficked road linking Karkh and Kadhimiyah. The development of this settlement is accompanied by an increase of housing for high middle-class families,

starting to fill-up the area between Karkh and Kadhimiyah in ribbon or in scattered form, replacing and interspersing with orchards and palmgroves. The Tigris itself has attracted wealthy families building their rather splendid houses, sometimes with more than 1,200 sq. m to each. Consequently land prices along the river and the main streets have jumped from their 1940-value of from 50 to 500 fils to 3 to 25 I.D. per sq. m at present, whereas further to the west of the Karkh-Kadhimiyah road the land has remained cheaper. Thus the built-up area of Kadhimiyah merged with Karkh, not from the riverside as might have been expected, but from the west along the Mosul high road (Fig. 10.1). This road, together with the Mosul railway line, has attracted residential and other urban land uses as far as Kadhimiyah Railway Station, some 10 kms from Karkh. Besides the residential and commercial land uses and open spaces, Ataifiyah has its own industrial features, mainly mills on the riverside.

The street system of Ataifiyah has a T-shaped pattern: the main axis is the pre-existing Musa al-Kadhim Street, linking traditional Karkh with Kadhimiyah. Its width varies from 7 to 12 m. From this street there are several crossroads perpendicular to the Tigris, to the east, and to the railway in the west. The traffic volume measured in 1966 by the Polservice team reached 200 to 1,000 cars/hour on Musa al-Kadhim Street and 950/hour in the direction of the rail/road bridge.[15] Musa al-Kadhim Street has a two fold function i.e. residential and commercial. The residential density declines when moving away from both Kadhimiyah and Karkh. This constant decline is observed in Ataifiyah, compared with both of the traditional nuclei i.e. Kadhimiyah and Karkh. This street as well as the main transverse streets of Ataifiyah running to the Tigris promoted a new spatial specialization. Many shops developed a string-like as well as a scattered pattern. The former developed in those

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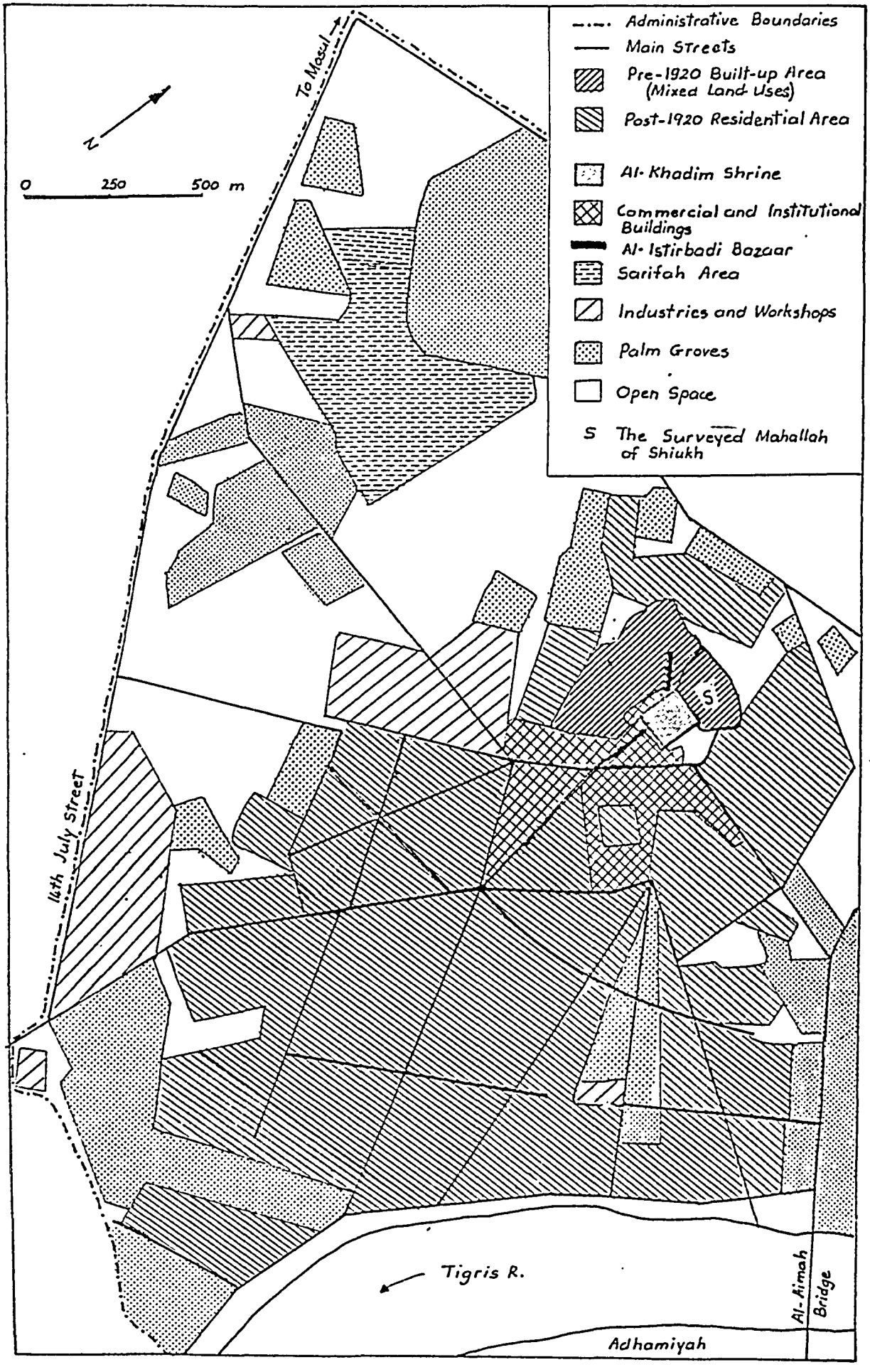
Fig.10.13 Kadhimiyah Land-Use Map



parts of the street traversing Kadhimiyah and Karkh, while the latter has emerged in Ataifiyah.

However, Karkh and Kadhimiyah occupy higher ranks in the commercial hierarchy of modern Baghdad than Ataifiyah. They serve a wider area even beyond the City of Baghdad. Karkh is part of Baghdad's business centre while Kadhimiyah owes its high rank to its religious position.

As in other suburbs there are no organized parking spaces in this area, neither is pedestrian traffic separated from road traffic.

Table 10.11: The land-use structure of Ataifiyah.

Area	ha.	%
One-family houses	141.70	29.36
Service & public facilities	5.74	1.19
Industry & warehouses	3.66	3.66*
Transport (main road & railways)	95.75	19.84*
Open spaces (palm groves)	127.13	26.34
Waste & vacant land	82.76	17.15
Cemeteries	11.85	2.46
	468.59	100.00

Source: Polservice Consulting Engineers, Master Plan of Baghdad, Karkh - North Central District, Warsaw (1968).

Kadhimiyah: (Fig. 10.13)

Kadhimiyah is about one kilometre in diameter. It is one of the oldest settlements within the Baghdad area, developed around al-Kadhim's Shrine (1.87 ha) and always intimately related to the history of Baghdad.

* Including small areas of the northern parts of traditional Karkh.

The shrine is enclosed in qadrangle and is one of the prominent spiritual and architectural centres of the city. A sacred Islamic monument, it forms an important element in the silhouette of Baghdad, providing visual orientation with its slender minarets and domes. Residentially the area has traditional courtyard houses, massed around the shrine in a semi-circle, with modified courtyard and western houses beyond it mainly to the south-east and south between the river and Musa al-Kadhim Street. Like Baghdad Kadhimiyah has its sarifah and kukh settlements which occupy the areas to the west of the traditional complex. Clay, bricks, mats and sheet iron are the main construction materials. The total number of houses including sarifahs was estimated by the Polservice Master Plan at 56,424. The average density of inhabitants was 247 persons/ha reaching 600 persons/ha in the old sections, and dropping to just 50 in the wealthy area.[16]

The writer's field survey in one of the traditional mahallahs of Kadhimiyah (Shiukh) showed the area to be very congested. The average number of persons per family was 6.94, and on average 1.7 families lived in each house, making the average number of persons per house as high as 11.8.

The settlement ranks high within the commercial structure of the city, occupying the second grade after the business core in traditional Baghdad (See chapter 14). The main reasons for the construction of the Istirbadi /bazaar were firstly the growing number of inhabitants, following the establishment of the tramway line between Karkh and Kadhimiyah, terminating as it did near the rear of the bazaar, and secondly the thriving pilgrimage industry. Statistics for the years 1960-1965 show that the number of visitors to Iraq from abroad amounted to 200,000 including

Fig. 10.14

a. Kadhimiyah from the air looking south-east with the break-through street of al-Fajr running to the Tigris

b. One of the minarets of the shrine of al-Kadhim

70,000 pilgrims. The Polservice Master Plan put the average number of daily visitors to al-Kadhimiyah at about 3,000. This number increases about ten-fold during religious festivals.[17]

Consequently, the area has developed a large number of restaurants, hotels of all descriptions, gahwahs, hammams and various kinds of services. In terms of the communication pattern the shrine typically acted as the terminus of the major streets and zuqaqs. Until recently the central area was devoid of any vehicular traffic. However, in the 1960's a few break-through streets were cut clearing away some rather fine architectural features,many traditional houses and alwahs among others (Fig. 10.13, 10.14,a,b). The shrine surroundings thus began to present an environment similar to that of Mashhad in Iran.[18]

The main break-through street of al-Zahra was cut to connect the new bridge over the Tigris, built in 1957, with the shrine. This bridge has activated development in this direction where the middle and lower middle classes built their houses in western type. Many casinos, a public park, a swimming pool and a girls' domestic science school emerged in the area, giving it a western pattern compared with the traditional sections.

Like Karkh, Rusafah and Adhamiyah, Kadhimiyah has two types of street system: the pre-1920 traditional type and the new rectilinear break-through type imposed on the former. As always the new streets cater for vehicular traffic and have resulted in important functional readjustments with new spatial segregation of functional specialization and greater locational choice. The old and new types of street system reflect the sequence in the physical and functional developments of the city and its various parts. Streets affect the timing and incidence of residential and other building booms while the volume of these booms naturally is influenced by the population growth and their economic

Fig. 10.15

a. A break-through street leading to al-Kadhim Shrine. Building weights decrease away from the shrine.

b. Al-Aimah Bridge; the modern part of Kadhimiyah is shown in the background

status.

Under the stimulus of new vehicular streets commerce, businesses and services begin to emerge. They are accommodated either in modified houses or in new buildings replacing old ones along these streets. Thus these new buildings, mainly multi-storeyed, became accessible not only to the business centre and its immediate vicinity but also to various distant areas. Through these dynamics the whole physiognomy of traditional Kadhimiyah has been influenced and is changing. Along the new streets building heights are greatest and decline as one proceeds away from them and from the shrine (Fig. 10.15a).

Away from the break-through streets the old section is characterised by its high density of housing and population, its inadequate network of services, and its deficiency in sanitary conditions, recreational or sports facilities and parking places.

In 1957 al-Aimah Bridge replaced the pontoon bridge moored in the 1920's, and thus for the first time the twin outlying religious communities of Kadhimiyah and Adhamiyah were linked by an easy and stable means of communication (10.15b). This bridge has initiated a new wave of urban development, which is still in progress and is typified by domestic and commercial activities bordering the streets starting from either end of the bridge.

All families interviewed in al-Shiukh (Kadhimiyah) complained of the absence of any sewage system, 47 per cent of them wanted the zuqaqs paved, 17.6 per cent indicated their needs for sport and social centres, and about 24 per cent complained of the lack of health facilities. In the modern areas, public facilities and basic services such as schools, health institutions, shops, workshops, mosques, mainly without minarets, local administrative offices, coffee houses etc.,

are dispersed throughout, with some concentration along the main arteries or intersections. Transportation here is carried by streets running concentrically from the Tigris to the traditional core, contrasting with the close zuqaq system in the latter. The industrial plants in Kadhimiyah are badly located within the expanding housing areas.

Table 10.12: The land-use structure of Kadhimiyah, 1965.

Zones	Land in ha	%
Old town, including al-Kadhim Shrine	58.80	8
Modern development (1920-67)	169.00	20
Sarifah and kukh shanties	24.00	3
Industry, workshops and warehouses	37.70	5
Waste land and cemeteries	263.00	31
Date-palm groves	205.90	24
Transport including railway (11.24 ha)	76.90	9
Total	835.30	100.0

Source: Polservice Consulting Engineers, Master Plan of Baghdad, Kadhimiyah Central District, Warsaw (1967).

4. Greater Mansur (Fig. 10.1)

This large and disjointed morphological region is the most recent part on the West Side. It includes all localities developed beyond the Basrah-Mosul railway incorporating al-Shulah, al-Hurriyah, al-Salam-Tobchi, al-Washash, al-Iskan, Hai Dragh, al-Mansur, al-Dawoodi, al-Shurtah, al-Zira'h, al-Harthiyah, al-Qadisiyah, al-Baiya and Abu Chraib settlements.

Among other factors discussed earlier, the road and transport development was a major element stimulating westward expansion.

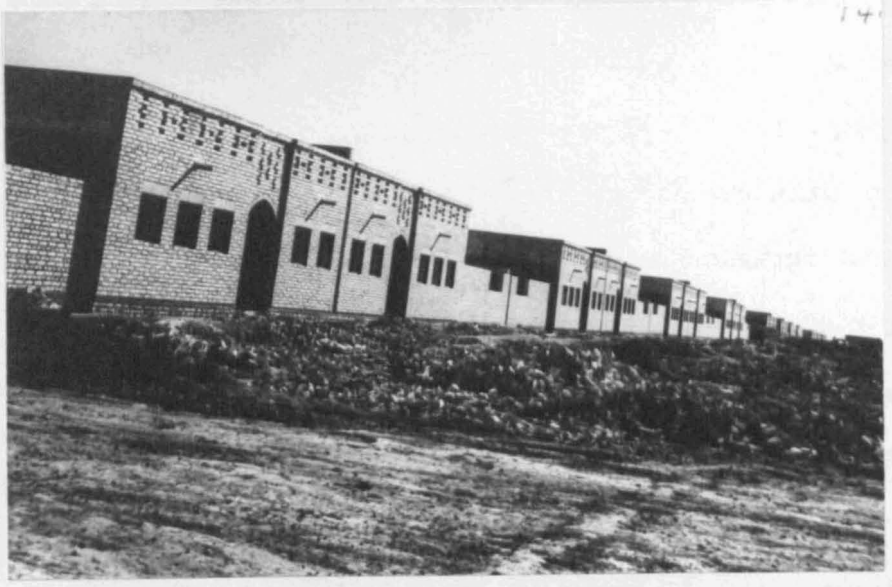
The 14th-July Street was built in 1956/57 linking Kadhimiyah with the 14th-July Suspension Bridge from which a road leads to the new university. It can be considered as a part of the Mosul highway, and has attracted both residential development of low and middle class families and land uses of fringe-belt nature (See Chapter 11). The area between the 14th-July Street and al-Khir Canal is occupied now by houses and other urban land uses. This street indeed has aided the north-western extension of the city.

As a result of building activities beyond al-Khir Canal, particularly along the highway to Syria, the new street of 14 Ramadhan was built in 1963, connecting Kadhimiyah with the new western suburbs. Its effect on the morphology of the city is comparable with that of Qanat al-Jaish on the East Side. It pulled the growth of the city westward under the dominance of upper- and middle-class residential development (Figs. 10.1, 10.2).

Various kinds of shops have emerged along it causing a distinctive physical change in the street (See Chapter 14). The change from residential to commercial functions has affected the overall land value pattern of the West Side. Land values per sq. m have doubled more than eight times within less than a decade (1960-68) making the street in some respects comparable to al-Sadun Street on the East Side, though on a smaller scale. Some of the houses on 14th Ramadhan Street have been modified and in some cases have even been replaced by 2- to 3-storeyed buildings, in which the top floors remained mostly residential.

The largest ribbon development along the highway to Syria terminates at Abu Ghraib 20 km from the centre of Baghdad. Abu Ghraib has been included recently within Amanat al-Asimah's boundaries. The highway to

Fig. 10.16



a. Abu Ghraib: buffalo owners' housing scheme similar to that of al-Fudhailiyah

b. The main street of al-Baiya - a typical business street in the lower middle and low class suburbs

Syria was the first one built during the second world war as a part of the desert route between Mesopotamia and the Mediterranean Sea. As a result of the westward growth of the city al-Washash Barracks, now changed into the finest park in the city, situated on the Syrian highroad, has been sandwiched between the high- and middle-class suburbs and some other institutional urban centres.

Between Abu Ghraib and the Old Town, vigorous accretion and filling-in is taking place, giving the Syrian highway its present appearance. The construction of the new airport to the south of Abu Ghraib will enhance such development. Abu Ghraib, now a semi-urban settlement already integrated functionally with Baghdad proper will also coalesce physically with it in the foreseeable future. Already a considerable area has been alloted to housing co-operatives many of which have subdivided their blocks of land to be distributed to their members. The pre-existing village of Abu-Ghraib with 10,554 urban and 31,989 rural population in 1965, is now undergoing urbanization from Baghdad which has recently absorbed it administratively (Figs. 10.2, 10.16a). Like Kraiat Abu Ghraib reflects the rural-urban conflict displayed in the contrasting forms emerging in its area and giving it a distinctive pattern. At present Abu Ghraib still retains some of its rural character though it has central administrative institutions as a nahiyah centre, besides specialized educational services represented by the complex of an agricultural college and school of veterinary medicine and a military academy.

Many industrial enterprises have emerged on either side of this street, which acted as a nucleus for incipient Outer Fringe Belt of the city (See Chapter 11). However, most of these industrial developments have been engulfed by residential development, thus marking a new stage in the urban expansion of the city.

The highway to Hillah gives another major impetus for a south-western urban appendage. Al-Baiya' with a population of 31.112 in 1965 and 12 kms from the Old Town, and al-Durah at a distance of 15 kms, developed along the Hillah highway. Their urban development began in the 1950's and accelerated after the 1958-revolution. Al-Durah madinah has attracted a big Armenian and Assyrian minority, most of whom came from Habbaniyah. It had a population of more than 15,000 in 1956 (Fig. 10.2).

Like many of the new suburban settlements in Baghdad, al-Baiya' has a main street, Shari al-Amanah, lined with one- and two-storeyed houses, but this soon changed to a major residential and commercial street. Al-Baiya' now has a sub-centre within the commercial hierarchy of Baghdad, and at the same time has its own local miniature commercial and service hierarchy.

Ground-floor rooms have been converted for commercial purposes, coffee-houses and workshops. The first floor is kept either for residential or professional uses such as dentists and doctors, who concentrated in the first section of the main street. This main street intersects almost all the other streets of the settlements (Fig. 10.16b).

The spatial distribution of shops in al-Baiya and most of the new suburbs is a random one, a goldsmith's shop adjoining a bakery which is followed by a carpenters or bicycle hiring shop and a mattress maker. Pharmacies, bakeries, mattress makers' shops, plumbers, glaziers shops and coffee houses are the main premises developed along the main street of the post-1956 suburbs. Coffee houses, however, occupy mainly the corners of buildings and along the intersecting streets. Grocers are widely distributed mostly at the intersections of main and cross streets.

Usually, houses of the new suburbs are of one or two storeys, those along the main streets having two. As a representative example of low

middle-class settlements al-Baiya' has a branch of the Bata shoe firm, a cinema, a mosque, several Husainiyahs (Shiah masjids) and a hammam. Several of these settlements have attracted branches of central banks particularly after 1969. Very recently land beyond al-Baiya has been subdivided and sold to various professional co-operative housing societies, some of which have begun building operations.

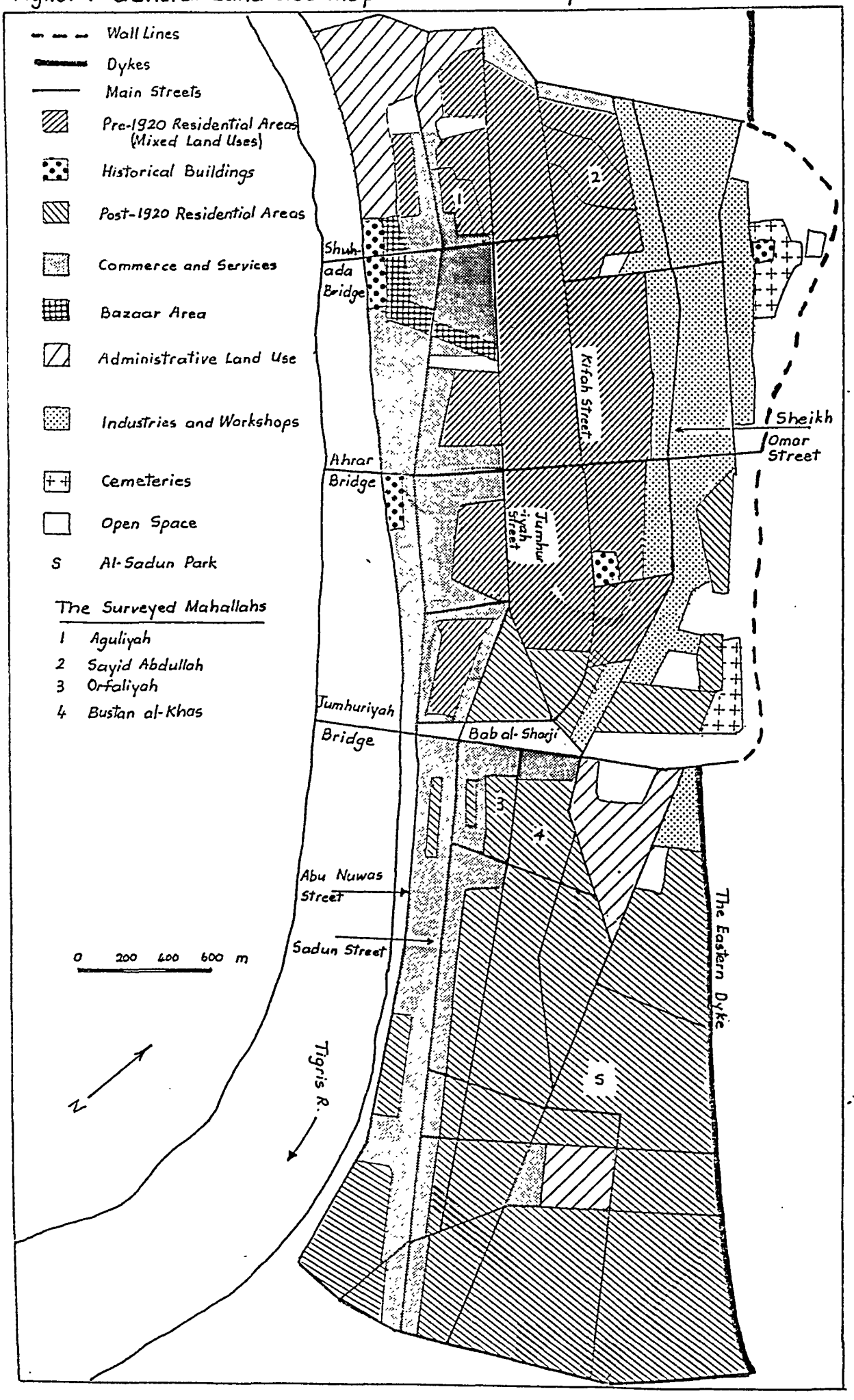
Along the Mosul highway, and to the south-west of Kadhimiyah, al-Hurriyah ('Freedom') madinah was developed in this period. Al-Hurriyah is a typical example of unchecked and unhealthy urban development. It emerged as a result of the promulgation of the law which permitted land sub-division early in the 1950's. Building operations began in Hurriyah the First and Second in 1956 and in the Third further to the west only after 1963. The average size of plots varies from 166 to 198 sq. m in the First and Second Hurriyah and between 150 and 200 sq. m in the Third. The average price per sq. m ranges from 2 to 3 I.D. along the secondary streets and from 5 to 10 along the main streets of Ahmad al-Ashur, al-Dabbash and Nuwab al-Thubbat.

The locational pattern and quality of shops and services, work-shops, coffee houses, etc. are similar to that of al-Baiya' and are determined by the economic status of the inhabitants. The main streets have attracted such poorly organized and equipped establishments. The population of al-Hurriyah was 91,775 in 1965, most of it of poor or low middle class, a mixture of Kurds, Sunnahs, Shiahs, workers, mostly migrants, petty officials and subaltern army officers.

This unchecked roadside location of residential development has turned the highways into slow-moving transport flows creating hazards for their inhabitants.

By the Mosul highway al-Taji settlement, 30 kms north of Kadhimiyah has come within the commuting zone of the capital.

Fig.10.17 General Land Use Map of Rusafah-Ilwiyah



The East Side (Fig. 10.1)

The four composite morphological regions of this side are Rusafah, Greater Karradah al-Sharqiyah, Greater Adhamiyah and Qanat al-Jaish area.

1. Rusafah (Fig. 10.17)

In 1965 the population of Rusafah and Greater Karradah al-Sharqiyah was 130,000 including about 40 per cent of all employed people in the city. Most of the Old Town of Rusafah (80.65 ha) has been developed before 1920 (See Chapter 6). As has been seen in chapter 4, the average altitude of this area is not more than 32 m in most places. However, in the central part of traditional Rusafah the ground rises 2 to 3 m higher than the surrounding areas.

Residentially, Rusafah is occupied mainly by traditional courtyard houses of one or two storeys. The housing function is gradually giving way to business, service and commercial land uses, as the core of the business centre of the city is situated here. Most of the original owners of these houses have moved to the city suburbs (See Chapter 12). The effect of this is demonstrated by the surveyed two central mahallahs of Sayid Abdullah and Aguliyah. In the former, more than 55 per cent of the surveyed houses were rented by newcomers, while in the latter mahallah all of them were so rented. However, Sayid Abdullah Mahallah lies further to the east of the core of the business area, while Aguliyah is located right in the core along al-Rashid Street (Fig. 10.17). Most of the houses in the area between al-Rashid Street and the Tigris have changed their residential function, mainly to commerce. The pattern of traditional Rusafah is characterized by an extremely varied run of zuqaq and agids with jettied shanashil (See Chapter 6). Here as in

Fig 10.19 Friday Mosques and Shrines in the Old Town of Baghdad

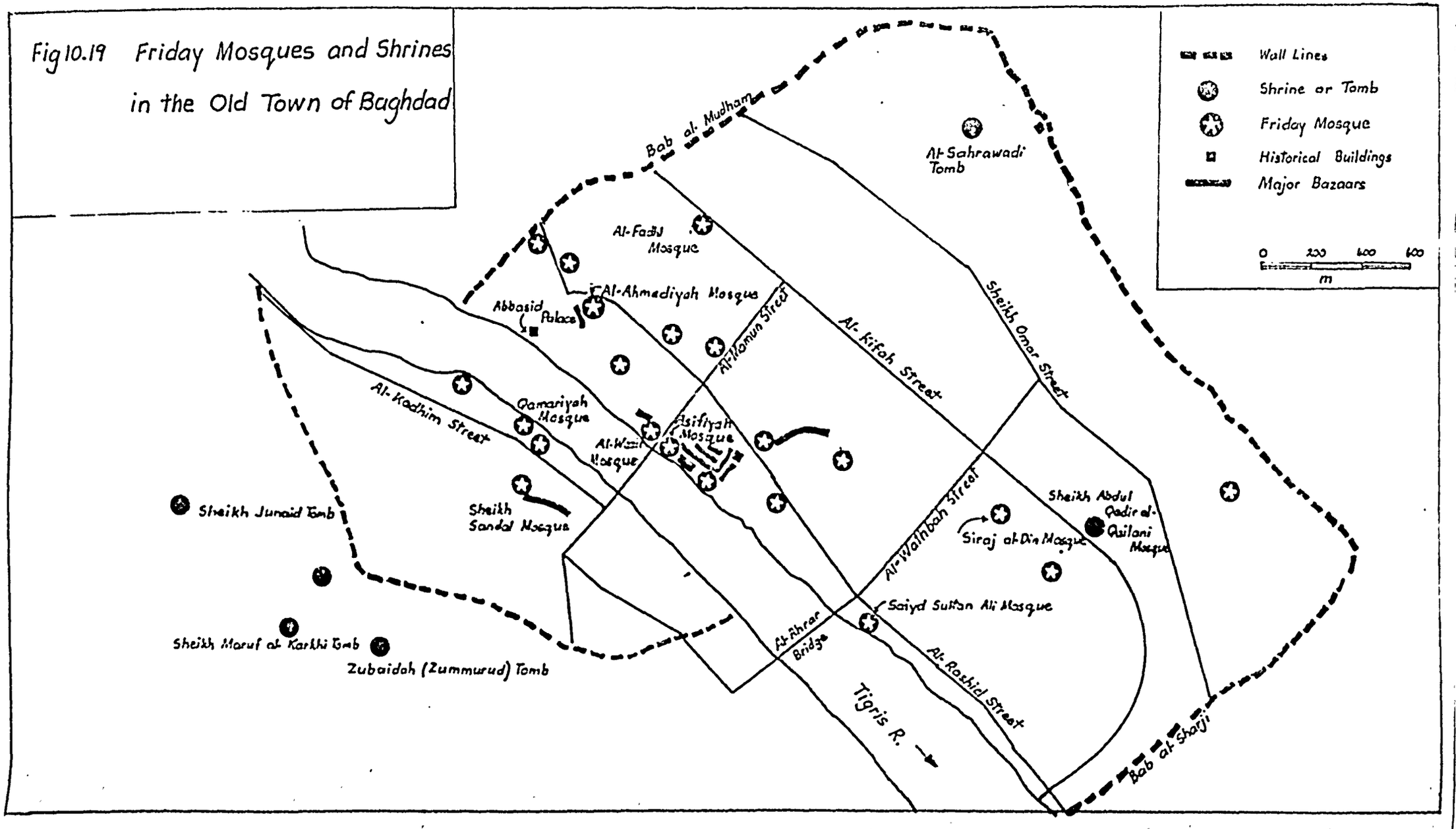


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Fig. 10.18

a. Al-Jumhuriyah - the new break-through street in Rusafah showing replacement processes in full swing (c. 1967 - 68)

b. Al-Sadun and its tributary side streets are undergoing functional and thus morphological change

traditional Karkh, the density of houses and population reaches its maximum of between 300 to 600 persons/ha. The average number of persons per house in the surveyed mahallah of Sayid Abdullah was 9.66, rising to 11.6 in Aguliyah, the more central mahallah. (See Appendix A, table Pa.)

Rusafah like other traditional centres, lacks basic services such as sewerage and waste disposal systems, as well as children's playgrounds. The area is almost totally built up.

After "modernization" by building replacements carried out in this section the area has become a jumble of buildings of many architectural styles and with strikingly different heights varying from one to more than twelve storeys (See Chapter 14) (Fig. 10.18a,b).

The area between Bab al-Madham and al-Ahrar Bridge comprises the bazaar complex with its associated institutions. Here a number of distinctive functional sub-sectors can be distinguished such as the financial sector which differs morphologically from the surrounding traditional fabric, being functionally homogeneous, the bazaar network, with its characteristic Arab atmosphere, and others (See Chapter 14).

Culturally there are many mosques, churches and schools, unevenly distributed throughout the Old Town (Fig. 10.19). Industrially, the area is characterised by small-scale firms, workshops and warehouses, garages, joiners and other mechanical and metal workshops (See Chapter 13). These establishments constitute the central intramural part of the Inner Fringe Belt on the East Side, particularly since the late 1950's. Sanitary facilities and buildings here are of a very low standard. Because of the lack of space Sheikh Omar Street has in fact become a single elongated workshop area. Traffic in Sheikh Omar is chaotic and there are no pavements. Car repairs are carried out on the sides of the

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Fig. 10.20

a. A common scene shows the traffic chaos in the central part of Baghdad (al-Sumawal street) with uncontrolled parking. Mirjan Mosque in middle ground.

b. Abu Nuwas Promenade looking south-east

main streets and right in the middle of many of the side streets (10.20). The general layout of the street system in Rusafh is a rectangular grid. Almost all of the streets are heavily congested with traffic. Illegal parking along the kerbs adds to the problem. There are few traffic signal installations, and traffic jams are a regular feature, particularly during rush hours.

There are no parking spaces in this busy business area and virtually all open spaces and street kerbs are occupied by parked cars. In 1966, the Polservice Master Plan of Baghdad put the average daily number of parked vehicles in Rusafah and Greater Karradat Mariyam at 10.000.[19]

All the major break-through streets of Rusafah meet in the Bab al-Sharji area to the south and Bab al-Mudham area to the north of traditional Rusafah. In the former area al-Tahrir square came to be the major square in the city, acting as a traffic bottleneck. Seven major arteries converge in this square, so work has already started on a new underpass, and on a modification of the square to cope with the traffic increase and the functions of the area. This square acquired a high land value with the functional extension of the commercial centre to the south. It is now lined with multi-storey business and office buildings, restaurants, a park and an ornamental pool. After 1961, an impressive brass and marble monument depicting the history of Iraq's people was erected in the square. The main southern street emerging from this square is the recreational promenade of Abu Nuwas, al-Sadun and al-Nidhal streets, all of which have attracted urban growth southwards before and after 1956.

The second peripheral square, where the through streets join is of Bab al-Mudham (the north gate). It is the junction type of square, of great importance as it is the centre from which students and citizens

make for the various colleges of the university scattered in al-Waziriyah or for the main governmental offices, concentrated to the north of traditional Rusafah. The rebuilding of the medical school-hospital and the existence of various health institutions have stabilised the importance of this area.

2. Greater Karradah al-Sharqiyah: (Fig. 10.1)

This region incorporates Battawiin (Orfaliyah and Bustan al-Khas), al-Sadun, Ilwiyah, Camp Sarah, al-Masbah, Karradah al-Sharqiyah (Dakhil and Kharij including al-Bu Shuja), al-Ziwiyah and al-Jadiriyah (The New University area).

Battawiin is characterised by its two-storey modified courtyard and covered courtyard houses fronting straight streets (See Chapters 7 and 8). These houses are occupied at present by multi-family units, mainly Christians drawn from the north of Iraq particularly after the politically unstable period 1958 - 1963.

Since its development in the 1920's this area has been a Christian Stronghold. 75.5 per cent of the interviewed families in Orfaliyah and all of the families in Bustan al-Khas were Christians. In choosing their mahallahs the religious factor was decisive for 52.27 per cent of the interviewed families in Orfaliyah and 58.82 per cent in Bustan al-Khas. This area is very crowded, being comparable only to some of the traditional mahallahs.

Table 10.13: The average number of persons per house and family in Battawiin.

Mahallah	Average no. of families per house	Average no. of persons per family	Average no. of persons per house	
			excl. bachelor tenants	incl. bachelor tenants
Orfaliyah	2.75	6.23	17.13	18.50
Bustan al-Khas	2.13	5.12	10.88	12.25

Source: Fieldwork 1971, Appendix A, Tables A.Pa.

In this area it is not unusual to find more than 32 persons or even more than 40 living miserably in one house, which results in bad moral and health conditions.

Further to the south and on the east edge of these areas of modified courtyard houses come the covered courtyard and western houses. The average residential plot of the modern part is between 200 to 1,000 sq. m. Here as on the West Side, the density of housing decreases as one goes south. Most of the houses to the south of al-Nasir Square are each occupied by a single family.

Al-Sadun and Ilwiyah areas have developed along al-Sadun and al-Nidhal Streets. This area represents the concentrated modern section of the business centre of Baghdad with a diversity of services, modern shops, restaurants, hotels, offices, cinemas, many airline and tourist agencies, etc. (Figs. 10.17, 10.18 b.). These two streets, particularly al-Sadun, are undergoing rapid modification and alteration as commercial premises graudally spreading southwards replacing many residential units. Consequently the street shows a haphazard mixture of styles and building heights. The height and physical structure of the street as surveyed by the writer is shown in Figs. presented in Chapter 14.

Al-Sadun Street is growing towards the south-east and it is likely that Karradah al-Sharqiyah commercial sub-centre will merge with the business core of the city by means of this street. It is like most of the suburban streets, having many roundabouts, with four carriage lanes, and a planted or paved central area.

The Unknown Soldier Monument was constructed in the style of the great arch of Ctesiphon, in front of the recently completed al-Shahid Friday Mosque. Both reflect the modern trends in architecture, influencing the new Baghdadi scene.

This street, although attracting most of the modern business and recreational establishments, fails to attract pedestrians during daytime as its pavements are exposed to direct sunlight . At night both this and Abu Nuwas streets, attract flocks of Baghdadi youth, seeking the western type of recreational and shopping centres (See Chapter 14).

The other main street of the area is al-Nidhal Street. It has many workshops, hospitals, administrative offices, embassies, car showrooms, shops and houses. It is less attractive to businesses and retailing than al-Sadun Street as it is further away from the business centre, and therefore it retains a good deal of its residential nature. Generally, plot frontages of 30 m dominate al-Sadun and al-Nidhal streets. In the course of the shift of population, i.e. suburbanization and economic development, the frontages of many houses have been changed owing to either rebuilding of houses or amalgamation of block-plans. Consequently both street character and building morphology have changed. The nearer the street is to the centre the greater is its metamorphosis.

Another important street in the area is the river-side street of Abu Nuwas which reached nearly to the suspension bridge in the south. This street functions as the major recreational quarter of the city during the evening. It is lined with mansion-like houses built before 1945, hotels, gahwahs, bars, restaurants, auction shops and institutional buildings (Fig. 10.20b). Most of the house owners along Abu-Nuwas Street, have moved to distant suburbs and consequently these buildings have changed their functions but without any essential changes in their forms.

In the summer season, unique Baghdadi fish shops emerge along the mud bank of the Tigris. Both casinos and fish shops are rented seasonally or annually from Amanat al-Asimah, and each casino is enclosed by a picket fence and festooned with strings of colourful electric lights.

Their clientele is attracted on summer evenings from all over the city and its commuting zones, to eat, play table games, drink soft or alcoholic drinks and pass the time in gossiping and endless political discussion. Numerous fish selling stands are carefully placed near the most frequented casinos along the street, where they display live fish in tubs. Clients and fishermen alike enjoy spending time in chaffering for their fish and when both arrive at an agreed price, the fish is killed and roasted on the site over open brush fires. Clients sit and wait in one of the nearby casinos, known to fisherman, and the roasted fish is later delivered by one of his assistants, most of whom are young boys. The coffee house thus became a sort of restaurant too. Several 7- to 12-storey buildings have begun to emerge along this street, mainly used as hotels or government offices.

Being at 30 to 31 m above sea level Karradah al-Sharqiyah is one of the lowest areas in Baghdad. Apart from some part of Karradah near the suspension bridge, where there are relatively old settlements with some traditional houses, the rest of the houses developed after 1936. As shown in (table 10.14) more than 41 per cent of the surveyed houses in al-Bushuja, were built between 1936 and 1945 and 16.67 per cent after 1945. This illustrates the fact that the area is still undergoing residential development.

Table 10.14: Age of houses in al-Bushuja (Karradah al-Sharqiyah)

Period	%
Pre 1920	25.00
1920 - 1936	16.66
1936 - 1945	41.67
Post 1945	16.67

Source: Field work 1971, See Appendix A, table 0a.

The modern houses built along the main street of al-Mahdi were mainly of the covered-courtyard and western type accommodating one family each. The average block-plan is between 200 and 1,200 sq. m. Many of these houses underwent some essential or slight adaptation so as to function commercially, or to be used for business and services. Many detached houses were replaced by apartment buildings of 2 to 5 storeys. The upper floors were mostly used as dwellings.

Karradah al-Sharqiyah enjoys a high status in the commercial hierarchy of the city. There is a large concentration of shops of all kinds, workshops mixed with buildings for public facilities and administration, as well as houses. There is no wholesale trading in this or most of the other commercial sub-centres (See Chapter 14). The land use structure of Greater Karradah al-Sharqiyah is shown in table 10.15.

Al-Mahdi and al-Jamiah (the University) Streets represent the arteries which attracted the earliest commercial, services and housing units. Al-Jamiah Street and the western part of al-Mahdi Street have two carriageways, each 7 m wide. The new University of Baghdad will occupy the tip of the peninsula (Jadiriyah). This has begun

Table 10.15: Land-use structure of Greater Karradah al-Sharqiyah, 1965.

Land Use	Area(ha)	%
Services and public facilities	158.00	23.00
Single family houses	151.35	21.97
Transport and communication	107.00	15.52
Public open spaces	19.00	2.80
Cemeteries	18.00	2.60
Waste land and vacant land	155.00	22.50
Industry and warehouses	80.65	11.70
Total	689.00	100.00

Source: Polservice Consulting Engineers, Master Plan of Baghdad, Rusafah-Karradah City Centre, Warsaw (1967).

to affect the whole pattern of land-use and land values in the area. The southern residential street, 10 m wide, is of no sight-seeing value since it does not reach the river.

Al-Mahdi Street is the oldest. The whole complex of the subsequent development along this street had to fit into pre-existing outlines of al-Mahdi Street using this as its morphological frame,[20] linking the outlying village of al-Karradah with traditional Rusafah. After the 1920's it was improved to cater for horse-drawn carriages and cars.

Al-Jamiah Street was developed for vehicular use to connect Rusafah with the new university in Karradah peninsula. Al-Mahdi and al-Jamiah Streets parallel to each other and to the Tigris as well. Both streets have exerted a much greater influence upon the growth pattern and functional structure of the buildings lining them. Traffic is generated by the spacing of settlements, and traffic volume on particular routes

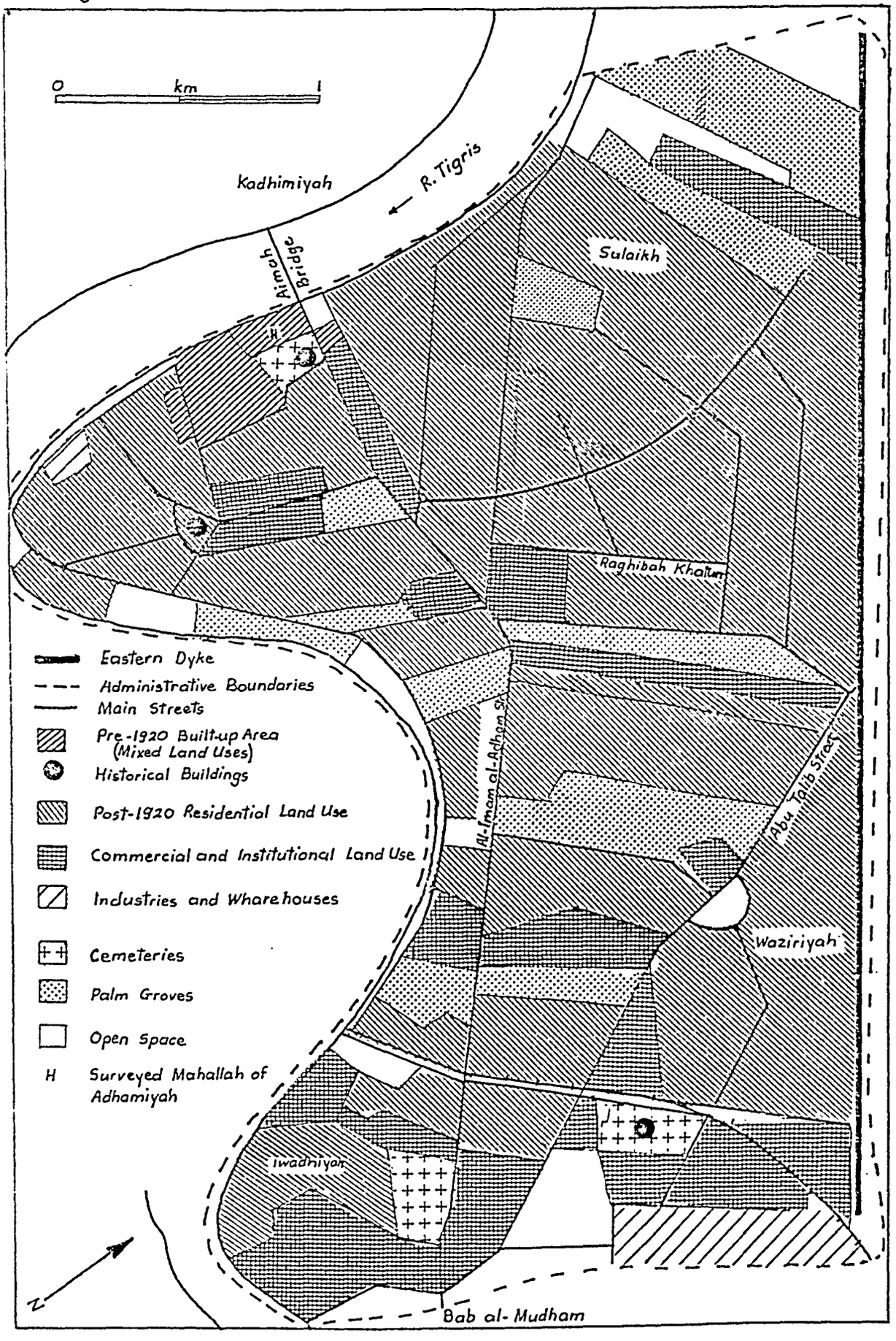
F. P. 5-2

Fig. 10.22

a. Adhamiyah from the air looking south-west, al-Imam al-Adham street in the centre. Abu Hanifah Shrine in the background and the College of Science to the left of Antar Square.

b. Abu Hanifah Shrine looking west with its attached College of Islamic Law

Fig. 10.21 Adhamiyah Land Use Map



is affected by location and siting of new development. However, the street system of the area came as the result of various interacting factors, i.e. historical development, river orientation and recent planning.

Planning is seen more distinctly in the case of al-Jamiah Street which attracted high-class commercial and other services as it traverses well-to-do residential areas. However, face-lifting has commenced on the ground floor. The distribution of shops is still scattered. This is in contrast with the morphological frame street of al-Mahdi which traverses a denser area inhabited by lower income groups. Metamorphosis is more vigorous here as most of the buildings, particularly near the main junctions are affected by adaptation and in many cases by replacement. The upper storeys of the new 2- to 5- storyed buildings are used as residences offices and other services. The new buildings have mostly replaced houses developed after 1936. This expresses the functional importance of this section, induced by population redistribution.

Industrially Greater Karradah al-Sharqiyah has its own importance. This will be discussed in Chapter 13.

3. Greater Adhamiyah: (Figs. 10.1, 10.21, 10.22)

Greater Adhamiyah incorporates traditional Adhamiyah, Kraiat, Sulaikh, Raghibah, Khatun, Kasrah, Waziriyah and Iwadhiyah. The population of this area was about 20,000 in 1965, most of whom are Sunnahs, reflecting the importance of the denominational factor in the existing grouping of people in particular mahallahs of modern Baghdad. 66.67 per cent of the interviewed families inhabited Adhamiyah because of the proximity Abu Hanifah's shrine.

The average height of this area is 32 m above mean sea level.

Residentially, Adhamiyah has the four types of houses known in Baghdad, reflecting the architectural development of the area (Fig. 10.21). The traditional courtyard houses are located near the bridgehead around Abu-Hanifah's Shrine, mainly to the south of it. These houses are homogeneous in shape, style and material used. Their built-up area is characterized by the maze of zuqaqs. The population density reaches 800 persons/ha.[21] Like other traditional quarters of Baghdad, traditional Adhamiyah lacks basic community and service facilities. Most of the houses developed around the old core are occupied by a single family each. The average plot of the surveyed houses in Old Adhamiyah was 126.67 sq. m, while the average number of persons per house was 8.

Commercially, Adhamiyah like Karradah al-Sharqiyah acquired a second-rank centre compared with traditional Baghdad. Commercial activities are either of nucleated or linear pattern, both emerging not far from Abu-Hanifah's Shrine, the spiritual, cultural and architectural centre of Adhamiyah. However, Waziriyah, Raghibah Khatun and Sulaikh have their own commercial sub-centres, serving the immediate local communities. (Figs. 10.21, 10.22) (See Chapter 14).

Adhamiyah has a leading cultural position in Baghdad because of Abu-Hanifah's Shrine and most of Baghdad University's colleges, scattered throughout the area, attracting students from all over the country. It also possesses the medical complex, including the hospitals and colleges of medicine, pharmacy, and dentistry. Schools and mosques are widely scattered, reflecting the age and maturity of the development of their surroundings.

Industrially there are several kinds of firms, ranging from small workshops to the modern textile industry located on the Tigris, south-

west of the royal tombs, and there is also a warehouse concentration in the south-eastern part of this area, which form an integrated industrial sector with Sheikh Omar Street as part of the Inner Fringe Belt. Industries and warehouses occupy 0.23 per cent of the area. However, the district is mainly residential as 53.3 per cent of the land is occupied by dwelling houses. Outside Old Adhamiyah the street systems of this large morphological area are linear, rectangular and radial. The rectangular and radial systems are located in the modern residential sections. All the systems are successfully integrating the area into the wider framework of the city. The pre-existing linear pattern is the oldest of all being the morphological frame for further development. The linear pattern originated to link the twin traditional nuclei of Rusafah and Adhamiyah in the context of river conformation. Al-Imam al-Adham, the oldest street, and the more modern street of Abu Talib run parallel to the Tigris. The earliest and major type of developments along these streets were of the high-class residential variety. The rate of development has depended on the price of land, on population growth and transportation improvement. However, the area nearest to the river was the most expensive, thus attracting rich families. These arteries were soon colourized by continuous and intermittent pattern of retailing, commerce and other land uses. Most of the houses flanking these streets have been adapted in various degrees and when necessary replaced by 2- to 4- storeyed buildings in the same way as in Karradah. This is seen in particular sections such as al-Iwadhiyah, al-Kasrah and Old Adhamiyah, indicating the uneven distribution of population. The other three sub-systems of streets, i.e. rectangular, radial and triangular, have developed on the basis of planning decisions

either to serve particular high-class localities or to integrate with the major linear pattern. However, their ability to attract other than residential land uses and so changing the morphology of the area has been less pronounced compared with that of the old main roads, because these areas still retain their residential nature and are at the same time more secluded from transit traffic.

Abu-Hanifah's Shrine, the bridge of al-Aimah, the rail/road bridge and the North Gate (Bab al-Mudham) are the main starting points for arterial roads and therefore attract commercial activities. The commercial subcentres are fairly well spaced out, faithfully related to the stage of residential evolution along the streets. The main roads have two carriageways, each of three traffic lanes, with a dividing strip. The traffic volume varies from one street to another, depending on socio-economic status of the areas served by them. In rush hours it reached 1,950 cars/hour in al-Imam al-Adham Street. This area is a major terminus for several local bus routes as well as a stopping place for several long-distance buses.

The area lacks major public parks but has a number of orchards, mainly palmgroves, in the northern and central parts. Cemeteries are concentrated around Abu-Hanifah's Shrine. These cemeteries have been cut by some new break-through roads and by clearance for parks, especially to the west of the shrine (Figs. 10.21, 10.22).

An important morphological element in Greater Adhamiyah is the pre-existing rural settlement of al-Kraiat, which will be discussed as representative of several other pre-existing villages, i.e. as significant morphological frames in Baghdad's modern townscape. These morphological frames have influenced and been influenced by the overall morphology of Baghdad. Al-Kraiat, a typical village located on the

Table 10.16: Functional Structure of Greater Adhamiyah.

Land Use	Area(ha)	%
One-family houses	548.00	53.20
Services & Public facilities	147.47	14.31
Traditional Adhamiyah	24.90	2.41
Industry & warehouses	2.38	0.23
Transport (railway, main roads & parking)	135.20	13.12
Open space (palmgroves)	71.60	6.98
Cemeteries	4.73	0.45
Waste land & vacant land	95.72	9.30
	1030.00	100.00

Source: Polservice Consulting Engineers, Master Plan of Baghdad, Adhamiyah Central District, Warsaw (1968).

Tigris opposite to Kadhimiyah, was incorporated within the city of Baghdad when the latter extended its municipal boundaries in the 1950's (Fig. 10.2). In 1956, the first vehicular street bisecting the village, was metalled. The owners of the demolished houses were compensated, and some of them built new houses of brick, concrete and steel, in a western style. 90 per cent of the surveyed houses in Kraiat were developed after the construction of the only new street in the fifties. 60 per cent of the houses used concrete in their construction, and 80 per cent of these have roofs built of brick, tiles and steel.

The rate of urbanization in this village, however, was further increased by the growing contact between the village and the city. A bus route was established, linking the village with Baghdad and taxis are increasingly used. The urban development now forms an integrated

ribbon along the main street.

Though it was still residential, the refashioned street generated new urban land uses affecting the morphology of the settlement. The penetration of the urban element is exemplified by the emergence of a host of scattered shops as well as a number of coffee houses located at vantage points in the street. However, today this street still shows the dualism of urban and rural features.

Most of the people in al-Kraiat are Shiahs, thus they have intimate relationships with Kadhimiyah across the river. All the fifteen interviewed families in Kraiat were Shiahs. The main occupation of the people is farming, thus supplying the city with bedding plants, vegetables, fruits and dates. Lorries and pick-ups are the main means of transport. The new generation have gradually abandoned agriculture and have become inolved in urban occupations.

Table 10.17 shows the occupational structure of the interviewed families in al-Kraiat, which indicates the influence of urbanization on it, but at the same time reflects its residual rural characteristics which still persist. All 25 economically active persons in the interviewed families were males. On average each family has 1.67 active members. The dependency ratio* in al-Kraiat was 40 per cent as compared with al-Mansur which has a dependency ratio of 48 per cent.

Agriculture is still the dominant occupation of the poople. Even the traders here can be considered practically as agriculturists. This is because they are marketing only the products from their own farms and orchards.

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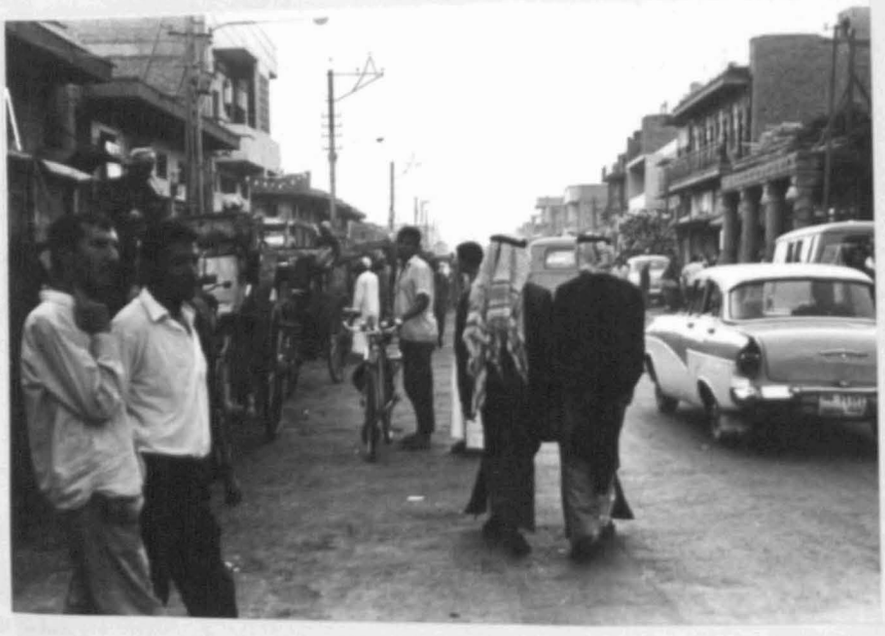
* The dependency ratio (R) gives the number of dependents, i.e. those of ages 0 - 14 (D_1) and over 65 (D_2) per 100 adults of working age(w):

$$R = \frac{(D_1 + D_2) \times 100}{w}$$ [22]

F.P.53

Fig. 10.23

a. A general view of Qanat al-Jaish looking north-west soon after construction



b. Arabanahs still function in various parts of the city. Sheikh Maruf Street in al-Karkh looking north-west.

Table 10.17: The Occupational Structure of the economically active* persons in Kraiat.

Occupation	No.	%
Agriculture	12	48
Officials, Army and Police	6	24
Traders	5	20
Workers	2	8
	25	100

Source: Field work 1971, See Appendix A, Table E.

Although the occupational characteristics and the resident population are diversified, most of the land is still in agricultural use. This is similar to what Abu-Lughod found in the northern wedge of Cairo.[23]

4. Qanat al-Jaish area: (10.23)

Like Greater Mansur on the West Side the Qanat al-Jaish area occupies a large section of the East Side developed mostly after 1956. It includes al-Shab, al-Sulaikh al-Jadidah, al-Qahirah, Arbat Ashar Tammuz (14th July), Jamilah, al-Thawrah, al-Dhubbat, Tel-Muhammad, Baghdad al-Jadidah and other settlements along Khanagin highway. After the construction of Qanat al-Jaish (Army Canal) considerable numbers of these settlements developed in its vicinity. To enable expansion on this side the new Northern Dyke was built in 1961, 4.5 kms to the north-east of the old dyke (See Chapter 4). The whole situation on the East Side has been revolutionized by its construction and has added a new dimension to the recent pattern of growth (Figs. 10.1, 10.2, 10.23).

* People aged between 15 and 65.

Though it attracted development to an area stretching some six kms to the north-east, it has itself followed the classical orientation of the city's previous growth, i.e. north-west to south-east running parallel to the Tigris like the major streets built in the city before 1958.

Qanat al-Jaish is a straight canal, 27 km long, starting from the Tigris north of Baghdad, and joining the Diyala River to the south-east of the city. Its bottom is 4 m wide its top surface 11 m. The average depth of this canal is $2\frac{1}{2}$ m. Gardens 56 m wide, lined both sides beyond which two parallel streets were constructed, each 12 m wide. A water pumpwas established at the intake point of the canal, with a capacity of 3,000 m^3/hour, to facilitate the southward drainage of the water. The main purposes in building the canal were flood control for urban expansion, beautification of the area, and amelioration of desert condition on the East Side of Baghdad. This canal has proved that it has more than economic significance. It provided the necessary impetus for enormous urban development, mainly of a residential and recreational nature. It also became the most prominent single feature in the landscape of modern Baghdad. Its importance as a promoter of residential development came to be more than had been expected. Many residential estates (hais) have quickly emerged and building operations continue vigorously. However, so far it has failed to attract significant commercial activities. It is now one of the most popular recreational centres on the East Side of the city. Gardens and casinos as well as a children's sports centre and a camping site have been developed along the canal. The enormous housing development which took place along it was aided by the fact that almost all the land located on either side is owned by the state, which has distributed plots at nominal prices either directly to government officials and employees or indirectly through professional co-operative societies. Qanat al-Jaish indeed has changed the whole pattern of the city, and by 1965 about 400,000 of the total population were living

in the area directly affected by it. The number has now reached perhaps a million.

The new arterial roads running towards Khanagin, Basrah and Kirkuk have played their role in the expansion of the city to the north-east of the Tigris, in a similar way to that on the West Side.

Development along the Khanagin highway stretching as far as al-Ubaidi and al-Rashad is more than 17 kms to the east of the city. Like the highway to Syria this road is comparatively old having been built during the second World War. Al-Kamaliyah is a new settlement along the Khanagin road, some 20 kms due south-east of the city and is occupied by low-class families, its population being more than 11,000 in 1965. On the same road but further east al-Rashad madinah was built in 1963 on an area of 75,000 sq. m to house homeless and blind people. Al-Fudhailiyah with a population of 6,898 in 1965 is another recently built settlement where plots and 289 houses were distributed to buffalo owners. The other buildings are mere sarifahs and kukhs, and the settlement lacks any kind of hygienic or sanitary facilities. Ease of movement and accessibility has also encouraged further prong-like industrial development along the Khanagin highway almost reaching Khan Bani Saad Nahiyah 31 kms to the east of Baghdad.

Basrah highway is another arterial road on the East Side being one of the most significant and frequently used arteries for transport purposes. This highway extended the urban growth of the city in this direction as far south as Jisr Diyala on the other side of the Diyala river. Although growth was interrupted by the existence of al-Rashid Barracks, yet the development, mainly residential and industrial has leapfrogged and re-appeared beyond the Barracks with various patterns including the cluster, scatter and ribbon variations. A

considerable number of houses here have been developed on state-owned land distributed to various professional housing societies. The existence of al-Hikmah University, a private American University now nationalized and incorporated within Baghdad University, and the experimental fields of the agricultural college give these areas cultural significance.

This urban appendage is comparable with urban extensions along the other radial highways. Recently and to avoid al-Rashid Barracks, all traffic has been diverted further to the east, to cross the newly constructed bridge in the southern part of Qanat al-Jaish, which will naturally accelerate urban growth in that direction.

The third eastern radial highway was constructed in 1971. It emerges from beyond Qanat al-Jaish, linking the north-eastern corner of the country with Baghdad via al-Khalis settlement in Diyala Liwa. Its morphological significance is demonstrated by the new urban upsurge of a number of residential areas, some of which were however, begun before the construction of this highway, but have been accelerated in growth by it. Most of the residential areas here are of low and low-middle-class communities. A considerable part of the land being privately owned a community of heterogeneous occupational structure has emerged in contrast to single-occupation residential suburbs.

The Functional and Morphological Composition of the Modern Suburbs:

Baghdad's post-1956 suburbs differ considerably in size and standard. This is intimately related to their period of development and to whether the settlement is governmental or private or intended for a low or a high-class clientele. Yet all these new suburbs are characterized by great uniformity, even monotony, a consequence of the

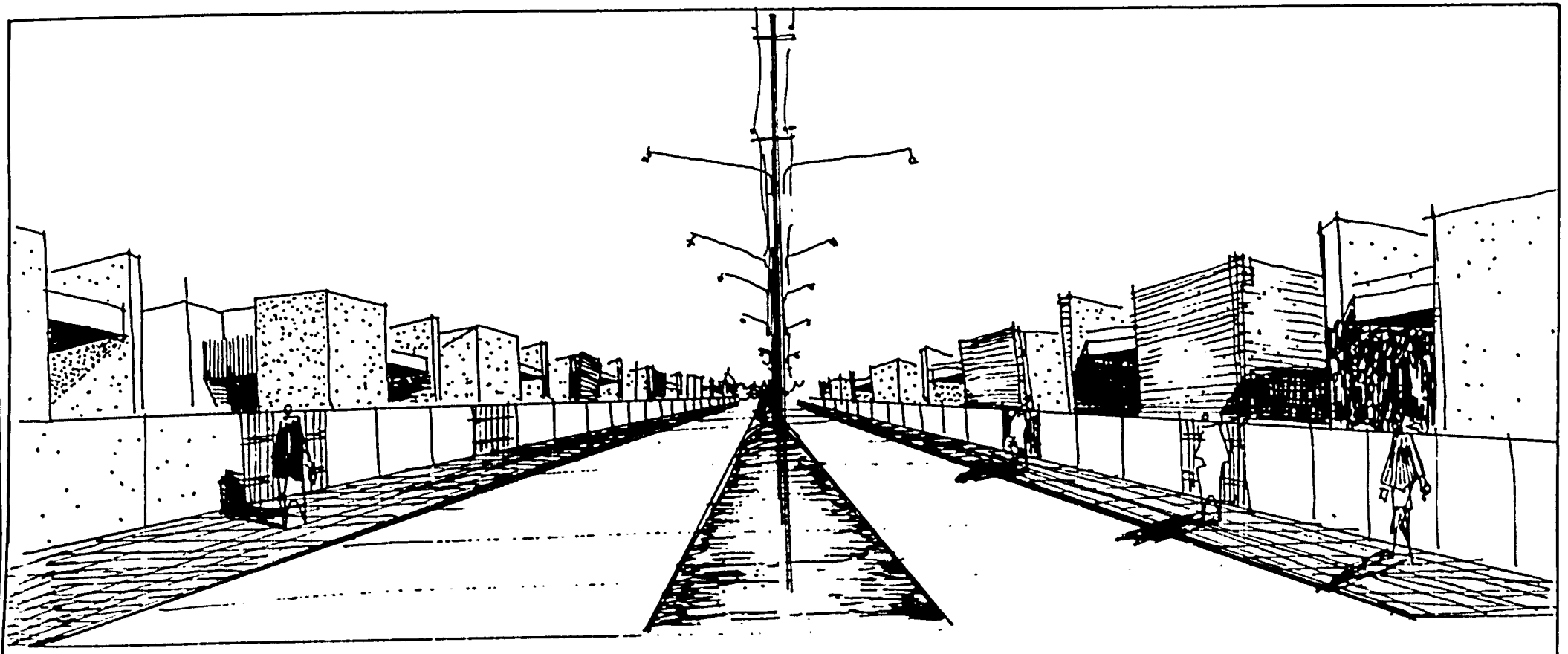


Fig.10.24 One of the Streets of al-Yarmuk Governmental Suburb on the West Side.

lack of originality in house design and street layout on the part of developers and clients. In tune with such indifference social traditions, climatic factors and the requirements of land-use differentiation were ignored almost completely in the plan of these suburbs (Fig. 10.24).

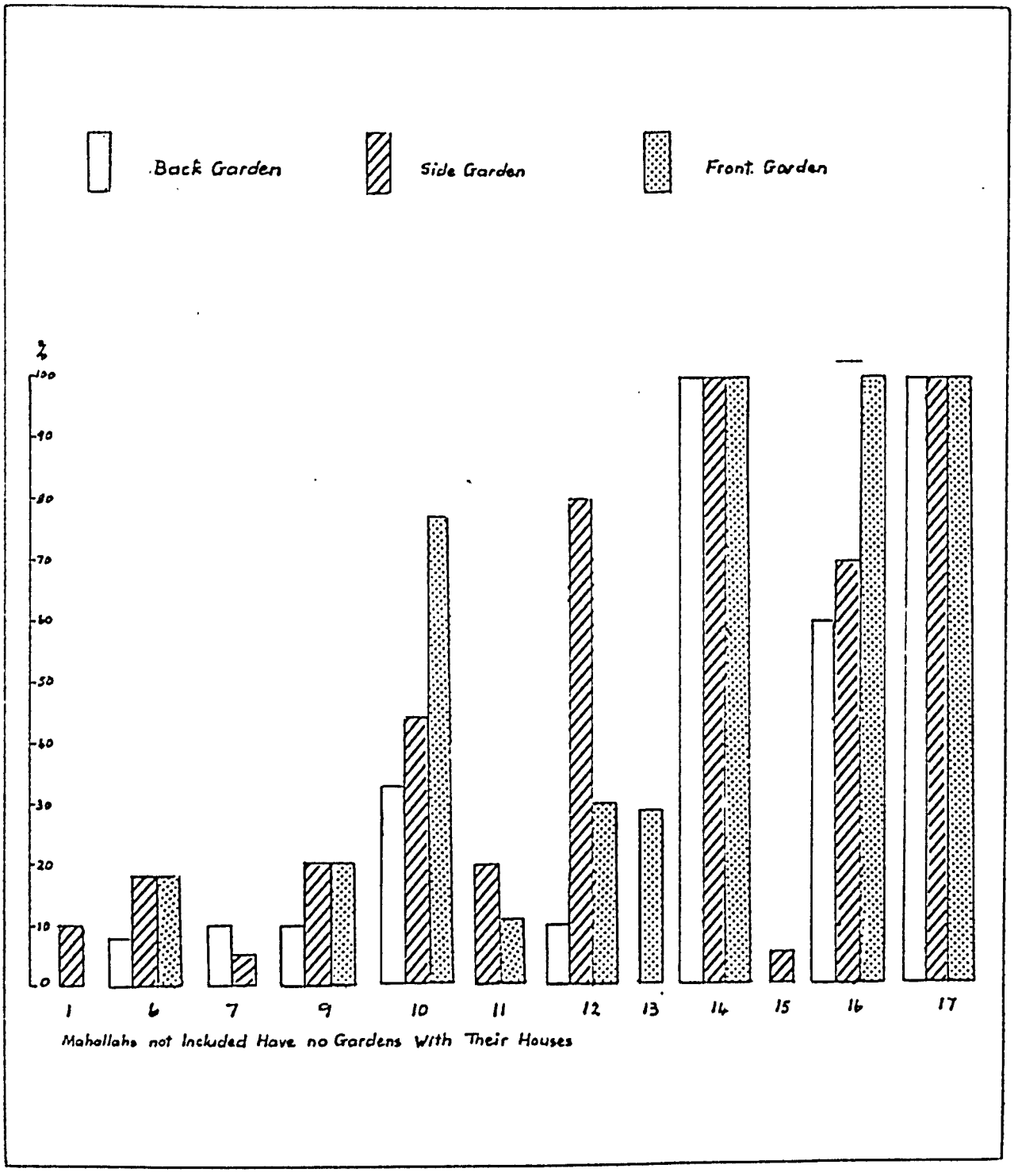
The geometric gridiron system is distinctive in almost all the post-1956 suburbs, equally in the poor and high class localities. All the three master plans of Baghdad have suggested such geometric street systems as the only way to 'modernize' the city. However, when accepting and partially implementing such plans, the government showed that it had no planning awareness or experience.

Many of the new suburbs have wide roads, sometimes with six-lane carriageways, encouraging fast driving and short-cuts at the risk and inconvenience of the community and pedestrians. This was done in the suburbs where development density is low, while the pre-1956 city has its bottleneck problems.

Many of the suburban streets have failed to attract functions other than residential. This is because of the small size of these localities as well as the ease of accessibility to other functional centres by vehicular transport.

Almost all suburbs expanded in size, both in area and population, through a process of transfer from the over-congested residential areas of the Old Town. The impetus for the individual landowner to build his residence in the new suburbs was given by the gradual completion of the street pattern. Locations on roads early to be paved were the most attractive, for they benefitted not only from the ease of transportation on the new residential roads, but also assured the prospects of commercial nucleation. As the ground floors

Fig. 10.25 The Incidence of Gardens in the Surveyed Mahallahs



of residential structures were turned over to commercial purposes the seed of urbanism germinated: new localities were born, a cluster of which matured into a community. Subsequently numerous 'madinahs' came into being. Some of the suburban communities have stabilized their urban personality affecting a harmonious inter-relationship of their various urban functions.

Thus some of the suburban madinahs came to be distinct units of urban functional organization in Baghdad, with relationships to the urban pattern of the city with which they communicate functionally in many ways, and therefore form an organic part of the townscape.

Almost all suburban houses are open to the outside world compared with the traditional houses which are inward-looking. In some of the houses, a sizeable space is left for a backyard and front garden. As a social practice, the backyards space is used by families, whereas front spaces are used by the males of the house. The social tradition of secluding womenfolk from sight-seeing, has led to the development of the backgarden which in some ways plays the role of the courtyard of the traditional Arab house where women can meet, eat and gossip without being seen. The influence of social tradition on the incidence of gardens in modern houses is shown in the following table.

Table 10.18: Incidence of gardens and their relative location in some of the surveyed mahallahs (Fig. 10.25)

Mahallah	Garden location in p.c. of the number of houses surveyed		
	Back	Front	Side
Suq Hamadah (a)	-	-	10
Sayid Abdullah(a)	-	-	-
Mansur (b)	100	100	100
Mamun (b)	100	100	100

(a) = Traditional mahallah (b) = Modern mahallah.

Source: Fieldwork 1971, See Appendix A, Table 0b.

The new suburbs are also characterized by an excessive number of roundabouts, imposed on the new gridiron street systems. These are western models, completely ignoring the desert climate of Baghdad. Therefore though superficially the new suburbs have a 'planned' appearance, some of the forms are environmentally inappropriate. Prescribed western geometric patterns pay no attention to their environmental relevance or to the need for the creation of integrated residential areas.

Functionally the new suburbs are characterised by five main components of urban structure, viz. residences, commercial service centres, ways and means of transportation, industrial and public utilities. Residential use is the predominant land use in these suburbs. The road pattern in part reflects the individual size of the residential unit. A wide variety of residences exist which differ in size (150 - 2,000 sq. m), period characteristics and degree of modern facilities contained in them. Generally residences near the business centres are among the oldest and the most congested, those further out are among the youngest and perhaps the best. Houses with a larger plot possess gardens while the smaller ones do not. Accordingly, the residential density varies within one community and between the various communities as a whole.

The second functional component is represented by commercial services. Morphologically, most of the commercial development is of either clustered or linear pattern. There are also some scattered shops particularly in very recently developed areas. The main commodities available in these local shopping centres are those catering for daily needs especially bread, vegetables, fruit, meat and general provisions.

No building in the shopping centres of the new suburbs is totally devoted to commercial purposes. Shops usually occupy the ground floor, while the upper floors are used mainly as residences.

Furthermore, most suburban areas show an increasing tendency to develop linear shopping centres along main streets. Another feature is the increasing replacement of houses on major traffic streets by commercial buildings, the latter being either specialized or combining commercial and residential uses. All the time houses along arterial roads are being pulled down or at least facially altered to accommodate commercial and service establishments, a kind of land-use metamorphosis.

Shopping centres, especially along arterial roads, cause traffic jams at peak hours as happens regularly in al-Mansur, Baghdad al-Jadidah and elsewhere. In such localities land values have been raised particularly at street junctions (See Chapter 14).

There is no distinctive spatial pattern, each individual service establishment is placed as close to the settlement nucleus as possible, depending on the owner's ability to pay the rent for any specific location.

Generally, two main types of transportation systems can be found in the suburbs. The first connects each residential area with the Old Town. The other is part of a wider regional transit system passing through many of Baghdad's suburbs along major arterial roads and connecting the city with other areas beyond. The peak-hour pattern is almost the same for both types of transportation, since a large majority of the local residents are employed in other parts of Baghdad, mainly the Old Town. From the following table based on interviews of families in four of the surveyed suburbs it appears

that more than 58 per cent of the economically active persons of these four suburbs work in Old Baghdad.

Table 10.19: The importance of the Old Town in Attracting workers from four surveyed suburbs.

Suburb	% of persons working in the Old Town
Iskam	36.36
Washash	30.00
Mansur	87.50
Mamun	80.00
Average	58.47

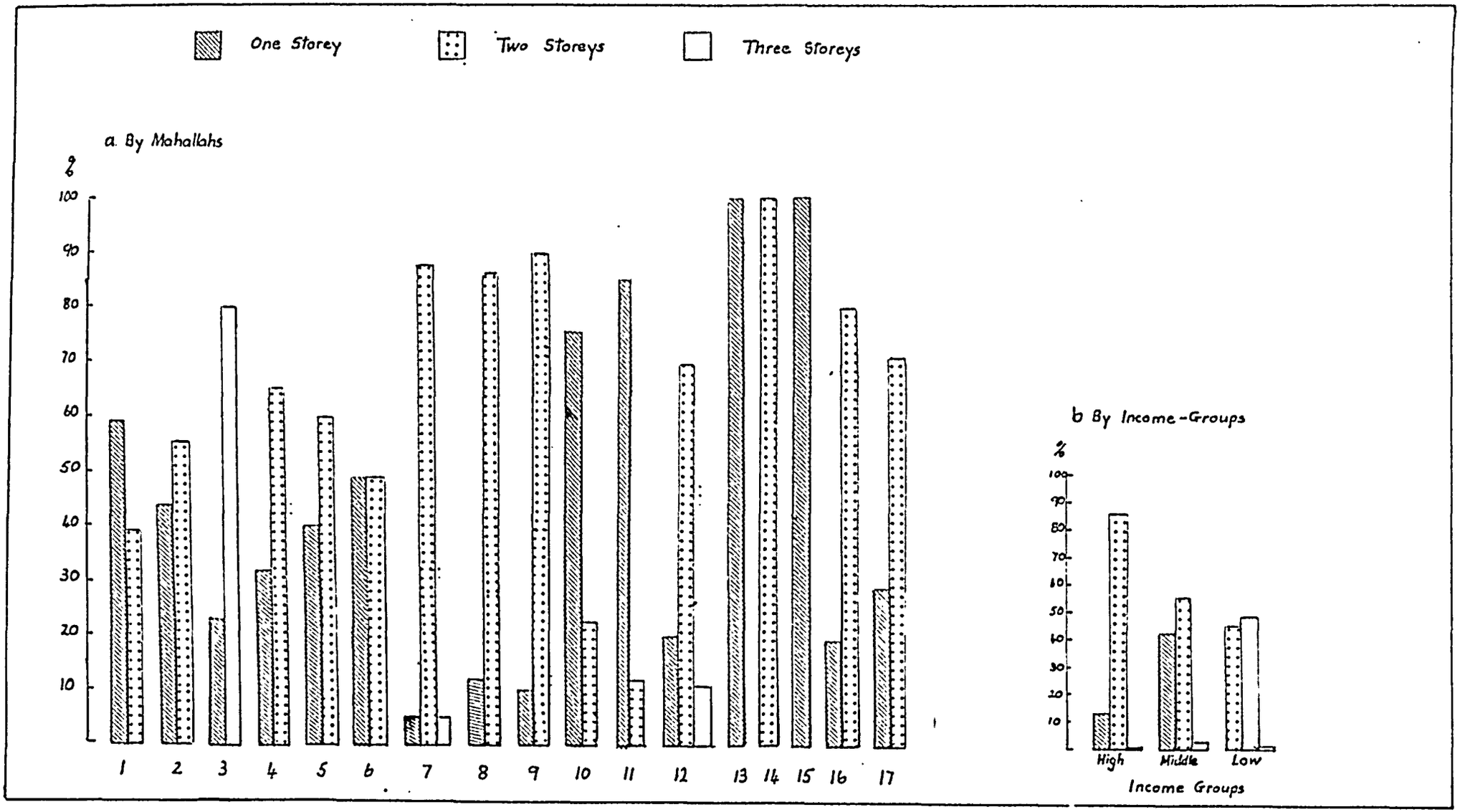
Source: Fieldwork 1971, See Appendix A, Table N[a].

One of the main characteristics of the land use pattern in the new suburbs is the complete absence of car parks, whether public or private. This affects the stabilization of the business centres, most of which are not fully anchored and have hesitantly though steadily followed the main roads. This has encouraged kerb-parking for long distances on either side of the streets.

Besides the land uses already mentioned there are others in these areas. Schools are widely distributed, and because of the fact that many of them are not well spaced, some serve only pupils from the community and others those from various parts of the city.

Most of them have parent-teacher organizations which build up a closer relationship between family, school and community, and help in the social and cultural integration of society. Functions like general meetings, debates, parties and exhibitions are arranged by these associations. The importance of school and its place in society makes it a natural focal point of the new residential areas.

Fig. 10.26 Number of Houses According to Storeys in the Surveyed Mahallahs



Mosques or churches again are widely scattered and in many areas such as Harthiyah, Raghibah Khatun, etc. are badly located serving the population very unevenly. The mosque is an important focal point of many of the suburbs. 83.33 per cent of the worshipers in the families interviewed in al-Mamun and 80 per cent in al-Mansur frequent mosques located in their mahallahs. This indicates the significance of these religious institutions in stabilizing the life of the new localities and the degree of self-sufficiency.

Industrial land uses and warehousing are to be found either scattered or concentrated in various suburbs. Most of these industrial establishments are larger than those found in the Old Town and some of their labour contingents exceed 200, as in al-Durah or Camp Sarah (See Chapter 13).

Coffee-houses (gahwahs) are a popular land-use element in the majority of the residential areas in the townscape of Baghdad and form the most common meeting places particularly those of low-class inhabitants (See Chapter 19). In virtually none of the suburbs developed after 1956 are there any hotels, which reflects their characteristic function as dormitory suburbs.

The expansion of the suburbs resulted in a rather monotonous townscape. Only minarets, water tanks and a few scattered three-to four-storey buildings along the main arteries reach markedly above the average flatness of the roofline of the new suburbs and constitute an upper level in the profile of modern Baghdad as they do in the traditional parts (Fig. 10.26).

This dominantly low height reflects the primary function of the new suburbs as dormitary madinahs for residents who had left the Old Town for various reasons. Non-residential land uses were

developed in varying degree only to keep pace with local demand or partly to cater for wider tributary areas. Professional services and commercial establishments are basic necessities of the suburbs and should therefore be provided at an early stage in the development of a suburb. Instead, they have lagged behind in the development of residential areas, leaving already established inhabitants poorly, or not at all, served with some of the primary commodities and the provision of elementary luxuries and professional services, especially medical and pharmaceutical.

However, in some of the these areas such as al-Mansur and Baghdad al-Jadidah, commercial and service establishments seem to have caught up with a good deal of the demands of the inhabitants of these areas as well as some others who are drawn from through traffic. This fact is testified by the amount and variety of goods of various kinds and tastes which are available in the commercial centres of such areas. Service centres occur on main arteries intermittently for considerable distances in the well-developed areas and less so in those most newly developed.

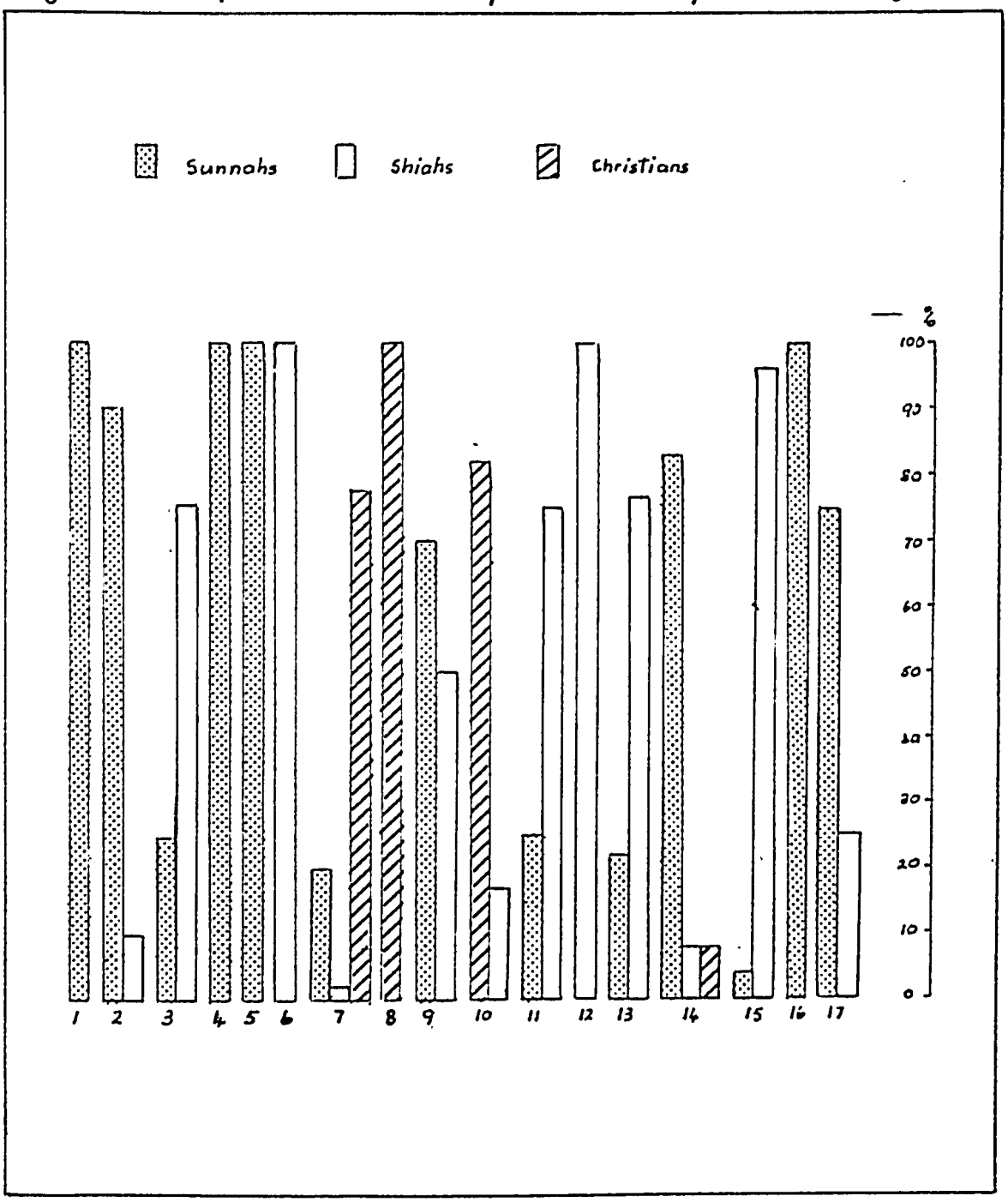
The commercial efficiency of the surveyed mahallah will be discussed in Chapter 14.

The Socio-economic Structure of Baghdad

Next follows an analysis of the main traits of Baghdad's socio-economic structure based on the findings of the writer's field survey (See Appendix A.)

Moslems form the greatest part of the population of the city, accounting for 90 per cent of the total population of the city in 1965. In the overwhelming majority they are Arabs, followed by Turks, Kurds and Iranians.

Fig.10.27 The Population of the Surveyed Mahallahs by Sect and Religion



Religion is still a prominent fact of determining the residential distribution of many people. This is observed particularly in areas developed before 1956 (Fig. 10.27). Christians living among Moslems in the new suburbs had obtained their houses from the government as in al-Mamun. Some of them have already sold their houses to buy or rent a different one in another mahallah with a larger Christian community.

An interesting finding was that 51.67 per cent of the Shiahs living in the houses surveyed had come from the southern liwas, while 37.78 per cent of Sunnah families came from the northern and Ramadi Liwas, and 65.22 per cent of Sunnah families were original Baghdadi's compared with only 47.5 per cent of Shiahs of the same origin. Most of the migrant Shiah families (51.61 per cent) chose two mahallahs, i.e. al-Thawrah and al-Washash, whereas Sunnahs have a tendency to a wider distribution, though 56.25 per cent of them chose three particular mahallahs, viz. Mansur, Hai Dragh and Washash. The choice of al-Washash by Sunnahs was mainly for economic reasons, i.e. low rent, while the main reason for Shiahs was proximity to relatives as well as economic considerations. One of the other findings was that there was a strong relationship between belonging to a particular class of population and the percentage of this population originating from migration. The lower the economic class of population, the higher was the percentage of population coming from migration. This is shown in the following table.

Table 10.20: The relation between economic status and migration.

Mahallah	Average monthly income per family I.D.	% of migrant families
Mansur	618.88	25.00
Hai Dragh	69.18	47.06
Washash	32.95	65.52
Thawrah	28.4	96.55

Source: Field work 1971, See Appendix A, Tables E,J.

The study showed that the population of Baghdad has three broad socio-economic classes. Occupation and income were considered as criteria of the class position which is to a certain extent related to ethno-religious affiliation. In the field investigation the living standard of Baghdad's population appeared as very differentiated. The level of existence of the majority is below the standards acceptable for modern life, and there is still a wide gulf between the incomes of the higher and the lower classes. This is expressed in wealth, power, attitude, dress and pattern of houses. The interviewed families (276) have been separated according to family income.*[27]

High-income Group: Families in this group earn more than 100 I.D. per month. This represents 7.25 per cent of the interviewed families. The professional structure of this class was as follows:

	%
Professional and business men	12.50
Police and army officers	8.33
Civil servants	41.66
Retired	37.50
	100.00

High-class families are concentrated in two mahallahs, i.e. in 11.76 per cent of the surveyed settlements.

Middle-Income Group: The average monthly income of the family in this class was between 50-100 I.D. This group accounts for 28.26 per cent of the interviewed families. The professional structure of this class

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* The average annual per capita income in Iraq was 20 - 30 I.D. in 1949.[24] The increase of per capita income in subsequent years is owing to the growth of oil revenues. In 1931 the oil revenue amounted to just 400,000£. By 1969 they had jumped to 200 million £.[25] Al-Midfai put the annual per capita income of the Baghdadi citizen at 70 I.D. in 1957, i.e. twice the average of the country, excluding income from the oil industry.[26]

was as follows:	%
Civil servants	40.00
Workmen in governmental and private employment	19.20
Professional and business men	10.40
Agriculturists	9.60
Retired	9.60
Police & army officers	8.80
Vendors	1.60
Soldiers	0.80
	100.00

Families of the middle class are distributed more widely over the city than the high-income group but are still concentrated in six mahallahs. It was strange to find that Sayid Abdullah, a pre-1920 mahallah, was within this order in spite of the fact that more than 50 per cent of the families do not own their houses. However, 100 per cent of the interviewed families were original Baghdadis.

Low-Income Group: The average monthly income of each family was between 26 - 50 I.D., accounting for 64.49 per cent of the interviewed families.

The professional structure of this class was as follows:

	%
Workers	57.20
Civil Servants	18.68
Police & soldiers	9.73
Vendors	6.23
Professional & Business Men	5.84
Retired	2.33
	100.00

Low-class families show the greatest dispersion. They dominated nine of the surveyed localities within the fixation line of the Inner Fringe-Belt and beyond it. These mahallahs represent more than 52 per cent of those surveyed. It was found that more than 66 per cent of the interviewed families living in these mahallahs were migrants.

The Polservice Master Plan of Baghdad stated that 5 per cent of families were high-class, 20 per cent middle-class, and 75 per cent low-class.

The field study showed that while the average number of persons per family in the low-income group is 6.55, the average number of rooms in their houses is 4.45. On the other hand, the average number of persons per family in the high-class groups is 5.02, the average number of rooms per house being 5.87. Size of rooms cannot be considered here as virtually all the poor-class families are tenants sharing their houses with other families. Those who owned their houses as in al-Thawrah settlement are living in government-designed houses with much smaller rooms. Generally Baghdadi families fall into the following major types. The simple or natural monogamous family is associated with the new generation, mainly living in western houses in the suburbs. The joint family still exists in Baghdadi society consisting of the parents, their children, and the eldest married son with his children. The son here is playing two roles, the first as a son in his father's family and the second as a husband and father for his wife and children. Sometimes there are two married brothers and perhaps other relations. The percentage of joint families in the surveyed areas was 27.12.

The polygamous family has the husband, his wives and their children. This family has two kinds of brothers: full-siblings and half-siblings.

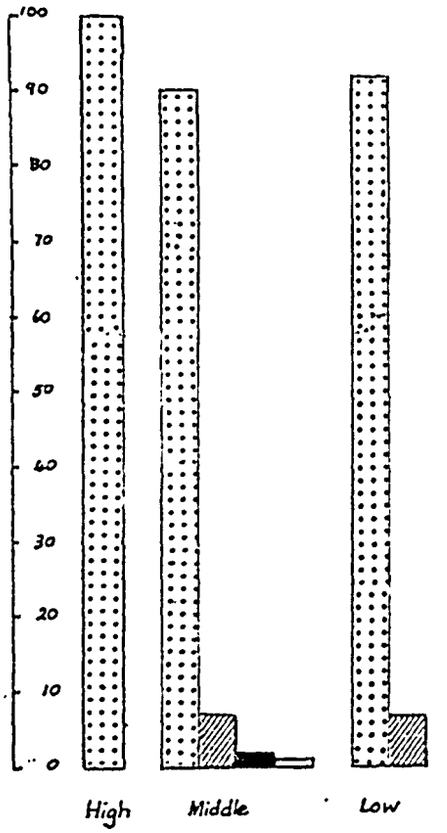
In numerical terms, the number of this kind of family is declining for economic and social reasons. Almost none of the educated people can afford or wish to practice polygamy.

One of the findings of the field survey was that the family in Baghdad is generally a monogamous one of patriarchal type. This is shown in table 10.21 below. From this table it appears that 93 per cent of the interviewees were married with one wife. All those married with two or more wives were in the low and middle classes. Marriage with a relative seems to be very important in all classes, though it is higher in high-class society. Christians have a low percentage of marriage with relatives, apart from Durah, and those who did marry relatives came mainly from the same village in the north.

In the Iraqi family it still is the man's exclusive task to earn the living for the family as a whole, while the women as a rule is in charge of the household and of the education of the children. Therefore most women stay at home. This pattern however, has begun to show a slow but steady decline. In 1965 it was found that 10 - 20 per cent of the women in particular economic classes earn an income away from home.[28] In the families interviewed they accounted for about 28 per cent of the total number of income-earners, the percentage of women in families of the higher income classes working away from home being greater than that of women in the lower classes. Table 10.22 shows the percentage of women working in the three economic orders of the interviewed families. The rather high percentage of working women in the low class groups does not reflect the prevailing situation in Baghdad because this class incorporates three Christian mahallahs. But for that, the percentage would definitely be lower than what was found in the middle class group. If one excludes the

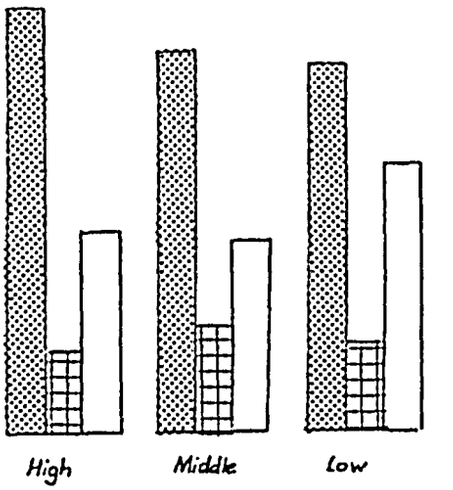
Fig. 10.28 Marriage Status of the Interviewees.

a. Percentage of Interviewees According to the Number of Wives by Income-Groups.



Married with One Wife
Married with Two Wives
Married with Three Wives
Married with Four Wives

b. Marriage Preference in Percentage of the Interviewees by Income-Groups



Married to a Relative
Married to Someone from the Same Mahallah
Not Married To a Relative

Table 10.21: Marriage status in the surveyed mahallahs by class (Fig. 10.28)

Mahallah	Married men with				
	one wife %	two wives %	three wives %	four wives %	relatives as wife %
High Class					
Mamun	100.00	-	-	-	66.67
Mansur	100.00	-	-	-	50.00
Average	100.00	-	-	-	58.34
Middle Class					
Iskan	88.89	11.11	-	-	66.67
Karradah al-Sharqiyah	75.00	12.50	6.25	6.25	57.89
Hai Dragh	100.00	-	-	-	47.06
Sayid Abdullah	90.09	9.09	-	-	45.45
Ataifiyah	90.00	10.00	-	-	54.55
Kraiat	100.00	-	-	-	73.33
Average	90.66	7.12	1.04	1.04	51.49
Low Class					
Harah (Adhamiyah)	100.00	-	-	-	44.44
Shiukh (Kadhimiyah	82.30	17.65	-	-	19.05
Bustan (Battawiin)	100.00	-	-	-	17.65
Crfali-yah (Battawiin)	93.18	6.82	-	-	26.67
Washash	89.29	10.71	-	-	58.06
Thawrah	86.21	13.79	-	-	79.31
Aguliyah	100.00	-	-	-	50.00
Durah	100.00	-	-	-	66.67
Suq Hamadah	92.31	7.69	-	-	84.62
Average	93.31	6.30	-	-	49.61

Source: Fieldwork , 1971, Appendix A, Table 8.

Christian mahallahs, the percentage of women among income earners in the low class drops to 5.65 per cent. This justifies the conclusion that for the majority of the population, the percentage of working women is proportional to the income order of the group.

Table 10.22: The percentage of working women among the total number of income earners.

Income class	Working women as a percentage of the total work force of the respective class
High Class	29.92
Middle Class	8.05
Low Class	11.80

Source: Field · 1971, See Appendix A, Table E.

From the field survey several interesting facts emerged concerning the nature of housing accommodation according to the three economic classes. The average size of high-class families was less than that of all interviewed families. As may be expected the average number of rooms per house is higher in high-class areas than among the lower classes.

The average number of persons per room was 1.89 times higher in low-class houses and 2.08 times higher in middle-class houses compared with that found in high-class houses. The average number of persons per room and the average number of persons per family was less in the high class than the average of all classes. On the other hand, the average number of rooms and the size of block-plan per house was much greater than those of the houses of the lower classes. In the higher classes the average area of block-plan per house was 3.39 and 4.74 times greater than those of the middle and low class houses respectively.

This can be seen in Table 10.23, below.

Table 10.23: Average family and house structure of the surveyed areas according to income classes.

Income Class	No. of Persons per family	No. of Persons per room	No. of rooms per house	Average block-plan per house
High	5.02	1.20	5.87	886.29
Middle	6.04	2.46	4.30	261.58
Low	6.55	2.50	4.45	187.08

Source: Field work 1971, Appendix A, Table A.0[2].

On the basis of Polservice's sample study their Master Plan of Baghdad put the average number of persons per family as 7 for both the middle and high classes and at between 8 and 10 for the low class. It also gave the average number of rooms per house as 5, 4 and 3 for the three classes and the percentages of population by classes as 5 per cent, 20 per cent and 75 per cent for the high, middle and low classes respectively,[29] whereas the writer's field-work produced corresponding percentages of 7.25, 28.26 and 64.49.

One family, ie. 0.36 per cent of the 276 interviewed families, was observed to live in a multi-storey building, i.e. one of three storeys on the main street of Karradah al-Sharqiyah. The failure of high-rise buildings to attract Baghdadi families is owing to the long-standing social tradition of living in a separate house to secure maximum privacy, and also to the fact that nearly all multi-storey residential buildings were copies of designs from climatically and culturally quite different regions. The new buildings do not have roofed balconies, terraces, deep loggias, porches and other elements observed in the traditional courtyard house. The requirement for privacy has been paramount in all types of houses, old and new. For those built before 1936 it had been satisfied by the

use of blank outer walls, dog-leg entrances, high window sills and courtyards. In the post-1936 houses privacy is achieved by additions and modifications such as the height of garden walls and roof parapets among other instances. This is indicated in the table below.

Table 10.24: Privacy devices on Baghdadi houses according to class

Class	% of houses having garden walls higher than eye level	% of houses having roof parapets higher than eye level
High	50.72	58.57
Middle	63.33	85.00
Low	33.33	60.58
Average	49.13	68.05

Source: Fieldwork 1971, Appendix A, Table D.

It appears that middle-class families were the most conservative. This actually results from the fact that most of the low-class houses have neither garden nor roof parapet, many poor-class families sleeping in their court-yards at night. Roof construction is expensive for them. Furthermore, most of the houses distributed to these families by the government have low garden walls and parapets as they are mere copies of European or American styles. Nevertheless, a high percentage of their owners have subsequently heightened these walls as a social necessity. Most of the gardens, particularly among the middle and low classes, are situated at the back of the houses where they do not need any walls as they are bordered by back neighbours' blank walls.

All Baghdadi houses are one to three storeys high. In general single-storey houses are associated with low-class families and multi-storeyed houses with higher classes. The average number of storeys of the surveyed houses by economic classes was as below (Fig. 10.26)

Table 10.25: Average number of storeys per house for different income groups in the surveyed mahallahs.

Class	one storey		two storeys		three storeys	
	No.	%	No.	%	No.	%
High	2	14.28	15	85.72	-	-
Middle	22	40.80	35	57.60	1	1.60
Low	56	48.50	45	50.80	1	0.70

Source: Fieldwork 1971, See Appendix A, Tables E, O[a].

The two three-storeyed houses in the middle- and low-class areas are exceptional cases as they are owned by a landlord agriculturist in Kraiat, and a landlord in Orfaliyah who has left his house to live in the new suburbs, the house now being rented by several families.

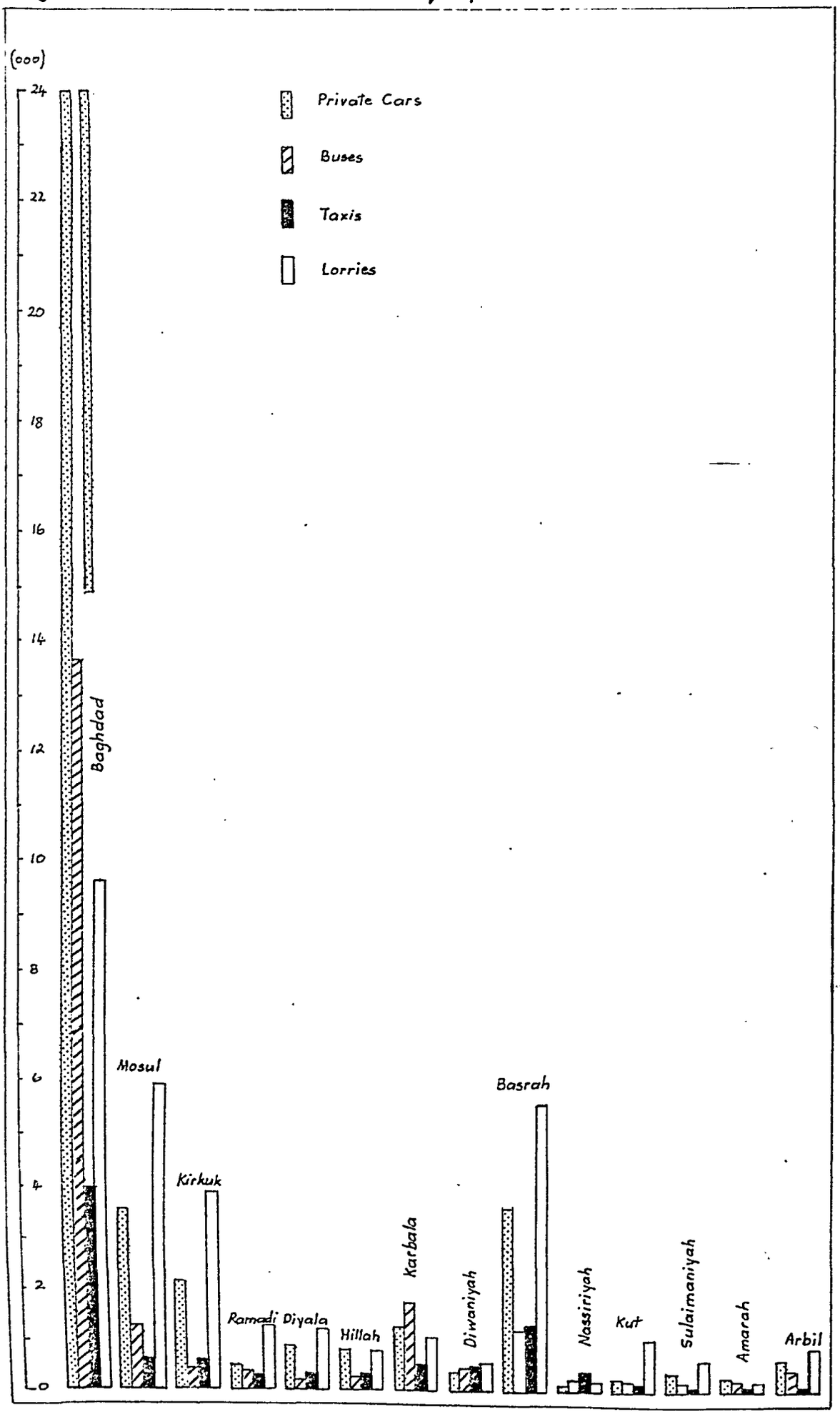
The three income classes can also be easily distinguished by the places they frequent in their leisure time, by the quality of their houses, the daily or monthly expenditure and the furniture they own. While all high-class families interviewed owned T.V. sets and refrigerators, these items were found in only 37.41 per cent and 47.69 per cent respectively in low-class families. For the middle-class families the percentage also was much higher than what was found in the low-class as shown in the table below.

Table 10.26: Domestic equipment of different income groups

Class	T.V. ownership %	Refrigerator ownership %	Bedding Ownership %
High	100.00	91.67	100.00
Middle	59.94	68.88	78.04
Low	37.41	30.31	47.69

Source: Field work 1971, See Appendix A, Tables E, H.

Fig. 10.29 Vehicle Distribution in Iraq, by Liwas, 1970



Motorization in Baghdad:

There is no doubt that the various means of transportation have played a prime role in the development of the different morphological patterns of the city. Both the internal structure and external morphology of any city is highly influenced by its street system and by motorization though the effect varies widely depending on the nature, age, location and functional significance of each street, the overall distribution pattern of population according to their socio-economic status and the land-use pattern of the city. Mostly streets attract various urban functions such as residential, commercial and industrial, owing to the ease of movement and accessibility of both goods and people.

No traffic census has been made within the City of Baghdad, and like the statistics of other aspects traffic censuses are based on liwa units. The City of Baghdad as well as other Mesopotamian towns thus lack any kind of survey of the movement of people to and from their places of work and the amount of money and time spent in this movement. However, steps have been taken in 1971 to assess the traffic flow in particular parts of the city. The results will be of vital assistance in understanding the present situation and in a functional classification of streets. Baghdad Liwa has always led the other liwas in the number of vehicles. In its geographical key position, Baghdad is a gathering and distribution centre for produce of its hinterland, which practically covers the whole country.

In 1970 Baghdad had 9,661 lorries (29.52 per cent of the country's total), 3,902 buses (42.2 per cent), 13,766 taxis (64.39 per cent) and 30.319 private cars (65.86 per cent)(Fig. 10.29.)

The high percentage of private cars in Baghdad Liwa reflects the high economic standard of its population compared with other liwas, while the high percentage of taxis indicates the horizontal expansion of the city, which is inadequately served by public buses.

While the ratio of private cars in Iraq was 4.87 per 1,000 inhabitants in 1970, it was 12.64 in Baghdad. In the same year an average of one person in 205 owned a car, but in Baghdad the ratio was one in 79.[30]*

For the period 1961 - 1970, the growth of motor vehicle registration in Iraq and Baghdad has been increasing at the average rate of 4,474 and 1,866 per year respectively, depending on government regulation regarding general import-export policy.**

There are no car statistics in the City of Baghdad, nor do the authorities know the locational pattern of car ownership in the city. All cars holding the Baghdad registration refer to Baghdad Liwa, an arrangement which should be changed to make proper traffic planning possible.

However, at the end of 1965, the Polservice Master Plan of Baghdad estimated the total number of registered motor vehicles which included motor cycles as follows:

Passenger cars	51,800
Trucks	8,200
Motor cycles	3,100
	63,100

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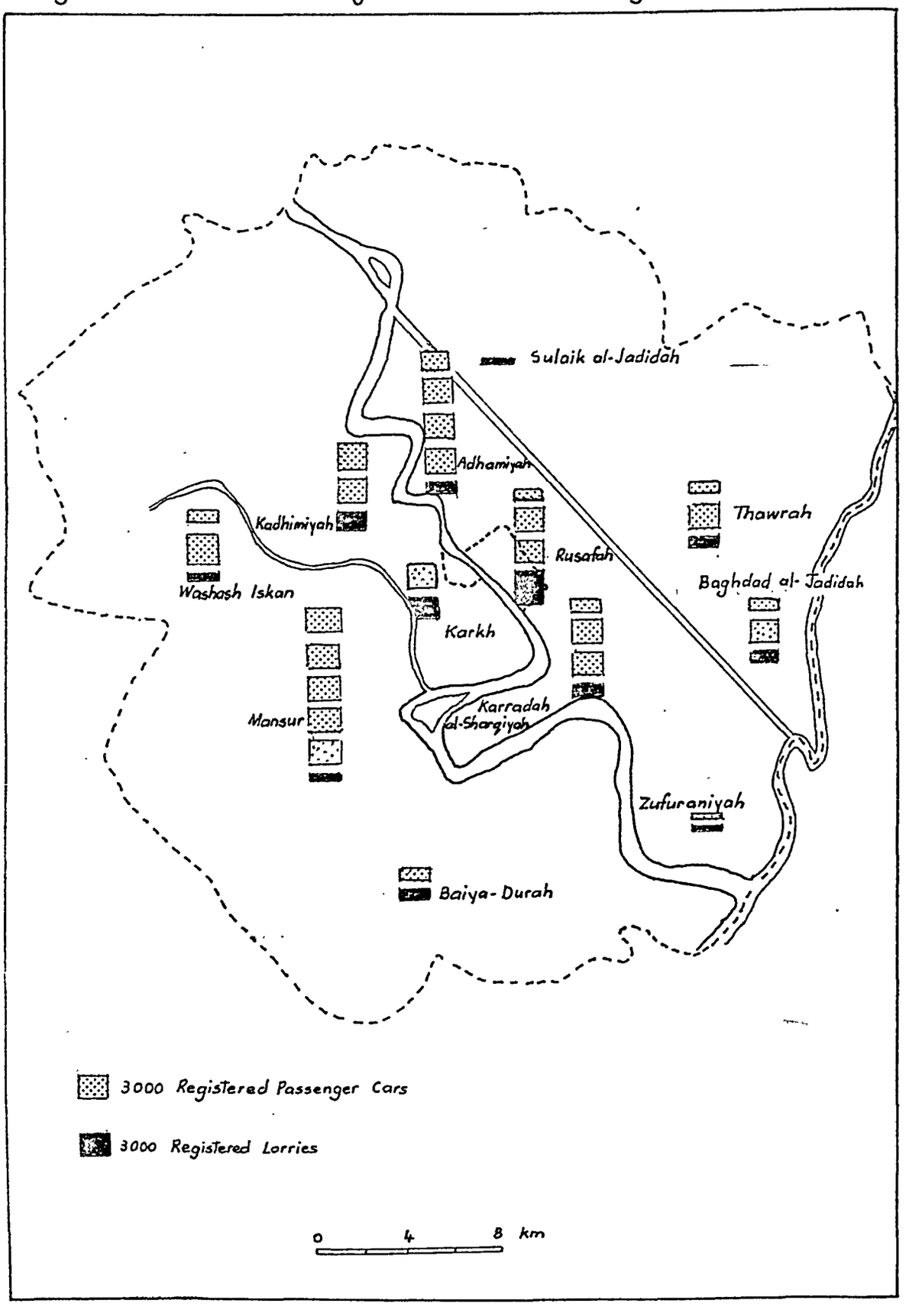
* It is a low ratio compared with developed countries. For example, in 1964, there was one private car for every 8 persons in the U.K.[31]

** The growth in the number of cars can also be seen from the fact that in 1961 there was on average 9 transport vehicles per km of roads; increasing to 13 cars per km in 1969. In England the corresponding ratios were 38.1 and 86.2 cars per km of road.[32]

Fig.10.30 Distribution of Registered Vehicles in Baghdad



According to the materials obtained by the social survey conducted by the Polservice team among the inhabitants of Baghdad, the structure of ownership of private cars was as follows:

Table 10.27: Car ownership in Baghdad by class

Social group	Monthly Income I.D.	%	Population in group. Approx. number	Index	Cars Approx. No.
Low class	10-50	75	1,180,000	4:1000	4,300
Middle class	51-100	20	315,000	100:1000	31,500
High class	100	5	80,000	200:1000	16,000
Total	> 100		1,575,000	30:1000	51,800

Source: Polservice Consulting Engineers, Master Plan of Baghdad Vol. 1 Warsaw (1969) p. v-4.

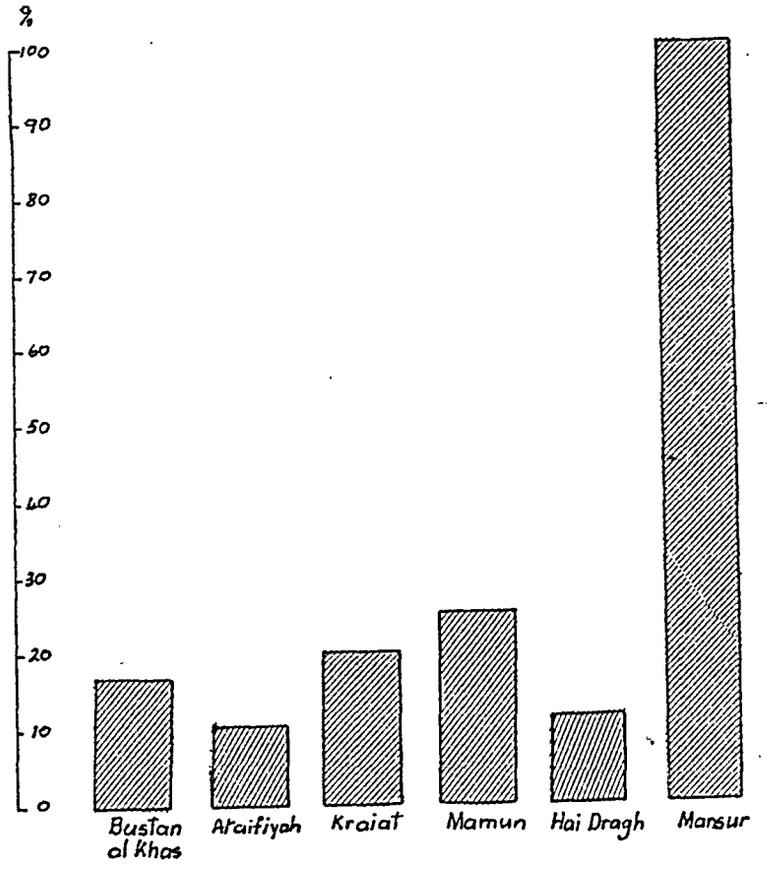
It was found that the following districts have the largest number of registered cars: al-Mansur - about 8,600, Karradah al-Sharqiyah (including Masbah) 5,100, and Kadhimiyah and Adhamiyah each about 5,000. Each of the latter two districts include a number of modern suburbs (Fig. 10.30). The districts having the smallest number of registered cars were al-Baiya with about 800, and al-Thawrah with about 200.

If one considers the places of registration of vehicles as the origins of the traffic, and the places of work and other functional centres as journey destination centres, then more interesting and useful data will be achieved.

Private cars are of trivial importance in the internal transportation of Baghdad. The percentage of car owners is strongly correlated with the economic order of the community. This was distinct in the surveyed mahallahs as shown below.

Fig. 10.31 Car Ownership of Interviewees.

a. Average Percentage of Car Owners Among Interviewees by Mahallahs.
(There are no Car Owners in Mahallahs not Listed.)



b. Percentage Car Owners Among Interviewees by Income-Groups.

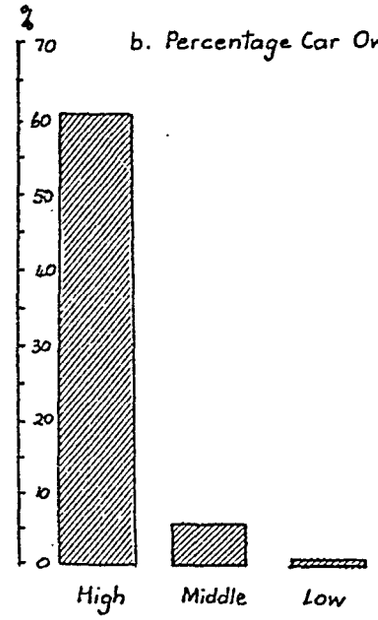


Table 10.28: Car Ownership in Baghdad City by classes: (Fig. 10.31)

Class	% of car owners
High	62.50
Middle	6.96
Low	0.02

Source: Field work,1971, See Appendix A., Table Na.

Furthermore, the field study revealed that the highest percentage of car owners was found in the post-1956 suburbs, followed by areas developed in the third morphological phase, i.e. 1920 - 1936, and after that by the areas developed during the fourth morphological phase, which includes two low-class mahallahs. None of those interviewed and living in the pre-1920 city owned a private car. However, the distance dimension increases according to the morphological phase of the area, as well as the high-class mahallahs located in suburbs developed after 1956. This is shown in the table below:

Table 10.29: Car ownership in Baghdad City according to the morphological phase of the area:

Morphological phase	% of car owners
Pre-1920	-
1920 - 1936	8.83
1936 - 1956	3.33
Post-1956	21.96
Average	10.85

Source: Field work1971, See Appendix A, Table Na.

For Baghdad, traditional Rusafah is the main journey-destination, because of the concentration of business, commercial (wholesale and retail), recreational, administrative and other cultural land uses which

naturally draw people from all other residential areas. In 1966, it was found that about 9,000 cars, i.e. about 50 per cent of all cars being parked in the vicinity of places of work, were in Rusafah. In Baghdad as well as in most of the Arab capitals transport links between outlying suburbs are negligible.

For Baghdad as well as other cities, there is an intimate relationship between the residential districts, i.e. garaging areas of vehicles and the distribution of the functional centres of the city, i.e. places of work, shopping, entertainment, etc. This relationship determines the traffic circulation between the residential areas and centres of interest.

If the statistical relationship were known, it would be possible to determine the structure of vehicular traffic; i.e vehicles on the streets and the vehicles parked during rush hours. It would help in determining the amount of traffic between separate areas and its distribution compared with the number of registered cars and number of parked vehicles. However, a distinction should be made between passenger car units and lorries.

Field observation indicates that the cars terminate in the Old Town of the city and can be categorised into three kinds; private cars owned by the government and business employees; cars carrying supplies for the commercial firms and shops, and cars of people visiting professional or governmental offices on personal business.

As in many other large towns, there is no great volume of direct through traffic in the City of Baghdad. Transit traffic accounts for 0.2 - 4.1 per cent of all incoming traffic depending on its direction.

Besides this there also exists broken transit traffic, involving a break of journey town before continuing.

The volume of traffic entering daily (for goods and passengers) along the five major radial roads of the city, was as follows:[33]

Mosul highway entrance	1350 vehicles
Syrian highway entrance	3000 vehicles
Hillah highway entrance	4300 vehicles
Basrah highway entrance	3750 vehicles
Khanaqin highway entrance	1750 vehicles

Through these entrances, Baghdad received its supplies of agricultural, animal and industrial products, as well as national and international visitors, particularly during religious festivals.* It is important to point out that in spite of the differences between the pressures on these roads, all of them are of similar width to 6.7 - 7.2 m. And for example the Hillah highroad on which more than 4,000 motor vehicles pass per day, is about the same width as Baghdad - Rashidiyah which takes only a few vehicles per day.

In 1971 and according to the information provided by the transport union of Karkh and Rusafah there were 3,655 vehicles (taxis and buses of various types), running from Baghdad, to various parts of the country, in regular service. The frequency of these vehicles varies

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* Baghdad lacks fast and easy roads linking the city with its immediate tributary agricultural areas. In many cases a farmer in a village situated 45 Kms from the capital has to spend five hours to reach the city. He has to walk to the nearest road and wait for the first means of transport. This could be a lorry or 15-year old wooden-bodied bus, and he has to sit on the top of a load or be squeezed in with the passengers. Some of the farmers even have to attach themselves to the side of the vehicle, which results in breaking a few motoring regulations and may even cause the death of the passenger.[34]

Fig.10.32 Distribution of Traffic on Main Routes (After Polservice Master Plan)
1965

greatly depending on the destination and the season of the year and the religious festivals.

Vehicles originate either from Karkh or Rusafah's Inner Fringe Belt, where large garages were established in 1969/1970, one on either side. These two garages have incorporated all other terminal garages previously scattered throughout the pre-1956 city. Their importance is shown below.

Table 10.30: The total number of vehicles running from Karkh and Rusafah Terminal Garages.

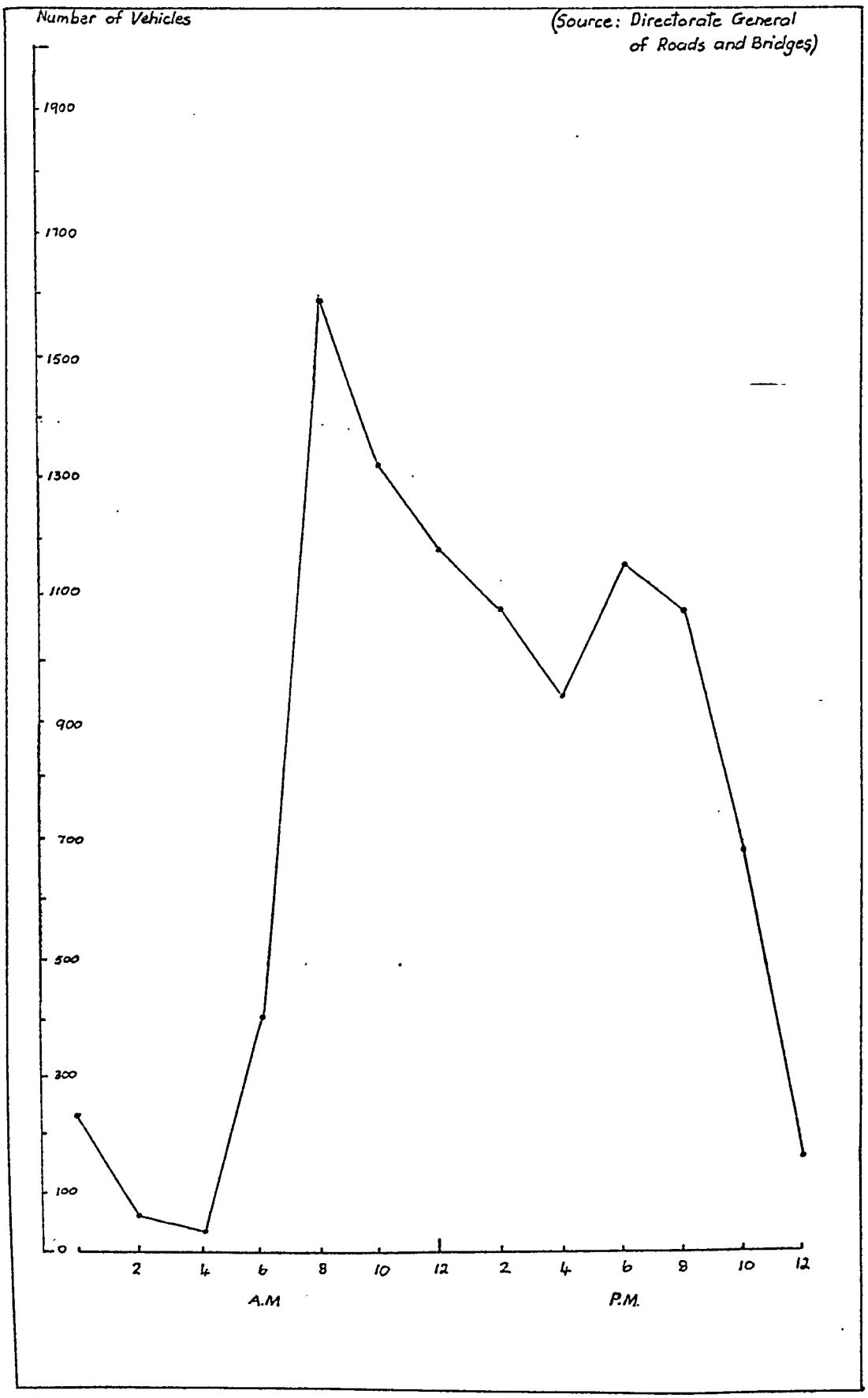
	Taxis	%	Buses	%
Rusafah	656	56.11	1,182	47.89
Karkh	521	43.89	1,286	52.11
Total	1,187	100.00	2,468	100.00

Source: Personal interview with the transportation Union of Rusafah and Karkh, Baghdad, 1971.

As already mentioned, there is no statistical information about the traffic volume on Baghdad's streets. In 1965 the Polservice Master Plan checked the traffic flow in 152 points throughout the city, proving a large amount of traffic in the central streets and the intra-city streets leading to the traditional central areas (Fig. 10.32).

In many cases the volume of traffic during the peak period amounted to as many as 2,000 vehicles per hour in one direction, and along al-Sadun Street and Damascus Street it even reached over 3,000 vehicles. However, these two streets lead to the most prosperous suburbs of the city, as well as to other parts of the country. This fairly high volume of traffic lasts for several hours, but it is heaviest during the rush hours of 7.30 a.m. - 8.30 a.m. and 12.30 p.m. -

Fig. 10 33 Hourly Variation of Traffic Volume on the Central Jumhuriyah Bridge, 1967



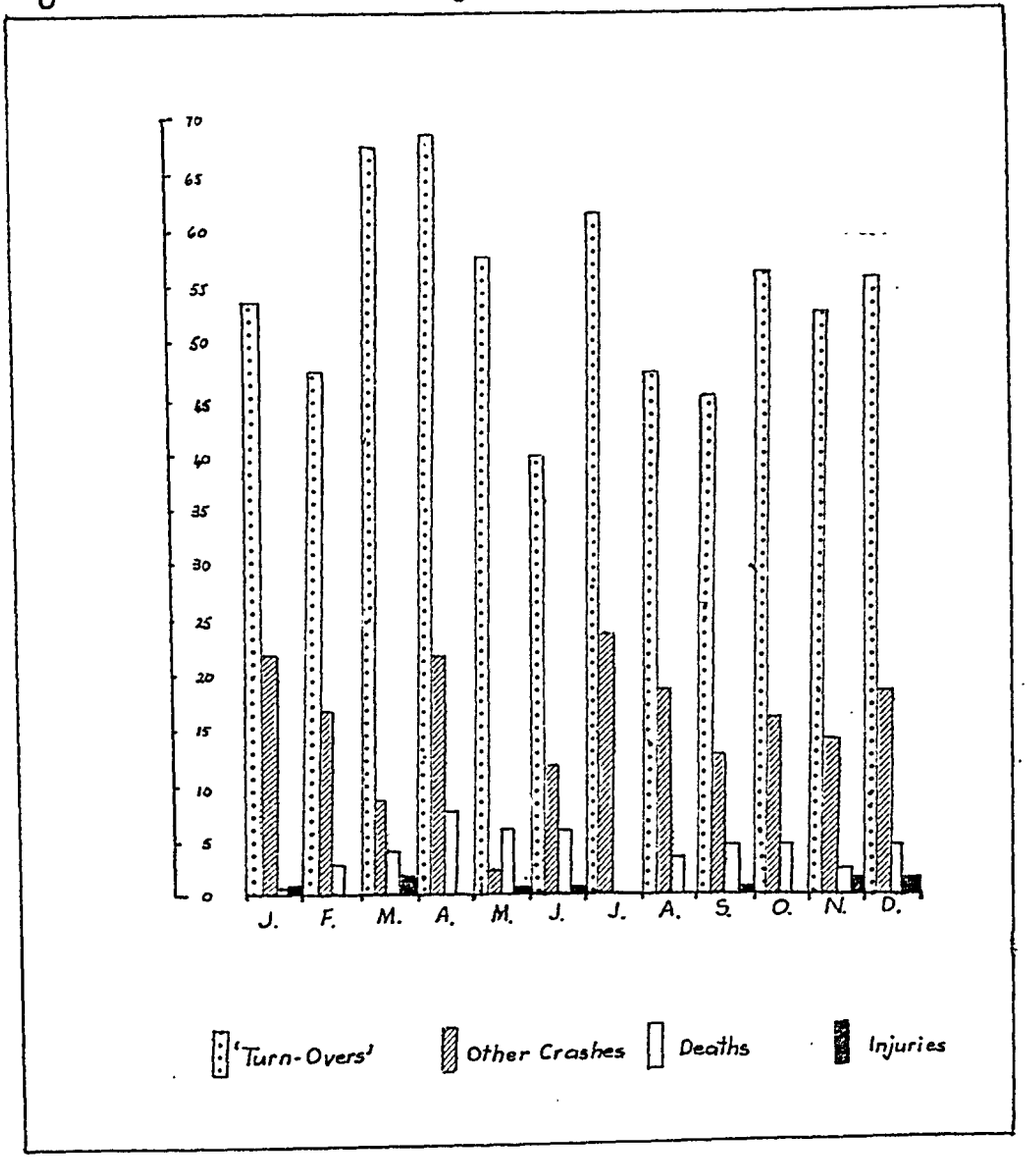
3.00 p.m. i.e. when work begins and finishes. During the late evening and at night the traffic declines (Fig. 10.33).

The increasing traffic pressure on the central area led to numerous decisions for the construction of the break-through streets, mainly running in a north-west, south-east direction. These streets on either side of the river soon became the major central business streets of the city, attracting various urban functions and adopting chaotic architectural forms.

Consequently, the modern urban fabric introduced forcibly into the most traditional sections of the city, resulted in increased social and morphological heterogeneity, so characteristic of Arab towns after the second World War.

Although in common with other metropolises Baghdad is having increasing traffic problems, yet it has its own specific problems, aggravated by inadequate supervision of the internal traffic flow, and the low standard of efficiency of the traffic police establishment, viz. 700 officers in 1969, having only 51 cars and 84 motor cycles[35] who in Baghdad are reduced to always begging God to solve the problem as they are not able to intervene. Baghdad badly lacks effective traffic legislation although the number of cars is increasing substantially and open spaces are receding because of the growth of other urban developments. With pavements being narrow vendors are always encroaching upon the main streets, adding to the traffic problem which is moreover increased by the lack of any direct and convenient links between most of the suburbs developed after 1956 and the poor access from some of these districts to the main roads. This is responsible for most of the intra-city traffic passing through the central area, whether its destination is there or not.

Fig. 10.34 Traffic Accidents in Baghdad in the Course of the Year, 1969



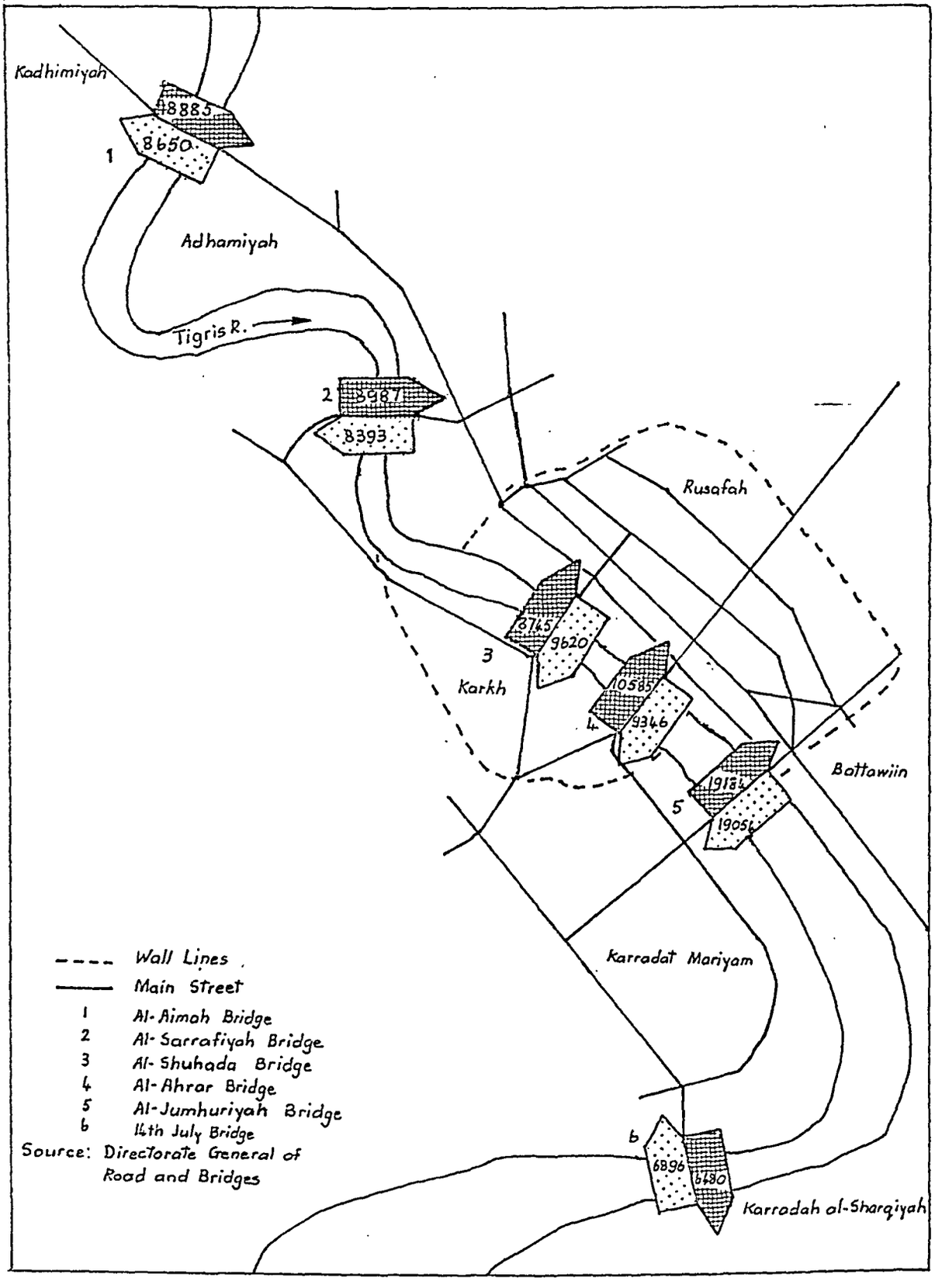
The absence of any functional classification of streets has resulted in a situation where almost every street except the local ones, are motorable and accessible not only for local traffic, serving the adjoining areas, but also for transit traffic from other unrelated areas.

Baghdad streets lack trafficlights, even at roundabouts which are the most common form of junction, and pedestrian crossings, and this also contributes to the traffic problem. The design of most roundabouts is of an orthodox circular pattern, which does not facilitate easy traffic flow. Therefore, their design should be readjusted to avoid the unnecessary blockage of traffic so common in the pre-1956 streets of the city.

Baghdad also lacks riverside streets and parking spaces. Nor are most of the governmental and private buildings, whether located in the centre or otherwise, provided with parking places. The lack of parking areas in Baghdad is responsible for the common Baghdadi practice of kerbside parking almost anywhere in the city. While this has a negligible effect on traffic in the outskirts it is highly detrimental to the traffic flow in the central area. Sometimes cars in the central area park two or even three abreast, reducing the width of the carriageway. Cars also park on intersection corners reducing visibility for drivers and endangering both passengers and pedestrians. The high rate of road accidents illustrate the traffic situation in Baghdad and the rest of the country. For every 104 cars in Iraq there is a traffic accident, while the corresponding ratio is 375 in Italy, 935 in France, 1410 in the U.K. and 2,000 in the U.S.A.[36]

Fig. 10.34 shows the traffic accidents in Baghdad City during 1969.[37] Most of the road accidents took place along the entrances of the city, particularly along the Kharagin, Mosul and Syrian highroads, owing

Fig. 10.35 Daily Traffic Flow on Baghdad's Bridges, 1967



to the absence of proper traffic supervision and because of the ignorance of drivers about traffic regulations, and affected particularly mini-bus drivers, who drive hazardously when competing with each other for passengers.

All unbuilt sites in the central area are used for parking. These open spaces are the result either of the creation of new streets, or demolition, and are therefore only temporary, unpaved car-parks, not organized zones. Furthermore, streets are misused by workshops such as tile works, repair garages, cycle-hire shops, gahwahs, casinos, restaurants, taxi agencies, car shows, auction shops and a host of other mobile land uses, which encroach upon the streets, increasing the driving risks.

Baghdad's bridges, six at present, play their own part in the internal motorization of the city. Three of them are located within the limits of the Old Town. Apart from al-Jumhuriyah and the suspension bridge they are of limited traffic capacity, the central bridges being over-used, particularly at the peak hours when they become completely congested (Fig 10.35).

The reasons for this are that the bridges are of limited width, and are incorrectly approached owing to the traffic system. The central bridges of al-Ahrar and al-Shuhada, measuring 8 m each, are inadequate for two lanes of traffic (one in either direction). The bridges are used by buses and lorries of all description.

The railway bridge 6 m wide, which endangers the normal traffic because of contiguity with the railway track. Only the suspension bridge at Karradah al-Sharqiyah, has considerable capacity reserves. This perhaps is because the route does not continue in the southern direction.

There has been a recent re-organization of traffic to reserve the capacity of the central bridges, al-Ahrar, al-Shuhada, each 2 to 3 lanes , and al-Jumhuriyah Bridge with 4 lanes.

To re-route the intra-city motor traffic another three bridges are going to be built: one near the Presidential Palace, one in al-Durah area and a third in Bab al-Mudham area. They will provide convenient cross-river routes for traffic from different parts of the West and East Sides of Baghdad. Al-Durah Bridge will connect al-Durah industrial and residential area with the South Rusafah industrial area, and also with the Basrah highway, and thus provide a southern by-pass to Baghdad for traffic from the southern liwas wishing to get either to the holy cities of Najaf, Karbala and Kufah, or to Hillah, Mosul and the Damascus highway.

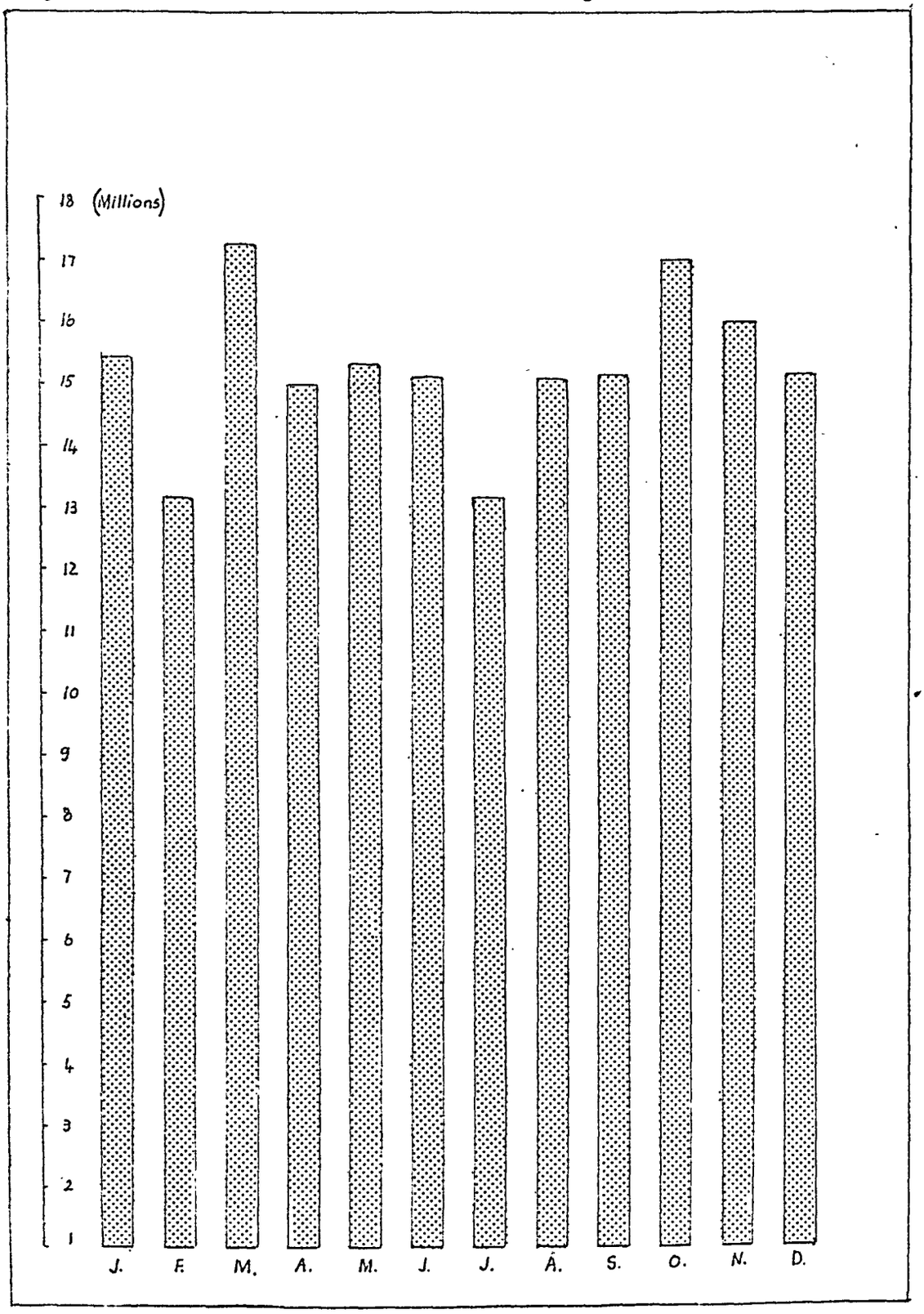
Public Transport:

Traffic in Baghdad is a nightmare mixture of many modes of transportation, involving travel at greatly varied speeds and with virtual disregard for lane discipline. All kinds of traffic make frequent use of their horns, whether it is allowed or not. The main internal passenger transport media are public buses, owned by the government, private buses of all kinds, taxis, which are mostly owned by individuals, although occasionally by companies, private cars and horse-drawn carriages. It is not uncommon to find civilians, wealthy and middle-class people owning taxis, which are put in service, being run either by the owners or by salaried drivers.

At present, buses are used for mass transport in Baghdad. The development of the public bus services has aided both the present areal expansion of the city, as well as being a cheap solution to the

F. P. 56

Fig. 10.36 The Distribution of Public Bus Passengers (By Months), 1967



commuting problem of the inhabitants of the new, widely spread residential suburbs. The average charge for a 7.3 km journey is 15 fils (1½ pence), so that many lines of the Baghdad buses are uneconomical.

To indicate the great part played by public buses, Baghdad buses provide more than 50 per cent of the buses in the country as a whole.[38]

As has been seen in earlier chapters, Baghdad Transport Administration was established in 1938, but it had to wait until 1943 to commence its services, when it owned 21 wooden-bodied buses. The area served by the buses in 1943 was 10 kms in radius, a figure which has increased to 50 kms during the recent physical expansion of the city, i.e. five-fold within three decades.

In 1969 the number of Baghdad buses rose to 687, out of the 1,083 buses existing in the country.

The average number of operating buses in 1947/1948 was 96, and these transported 45,510,300 passengers. In 1969, and owing to the population explosion of the city, the number of operating buses was increased to 467, transporting 184,254,575 passengers.[39] The average number of passengers per month is 15,354,575.

The average number of daily passengers in 1947/1948was 128,000 rising to 511,819 in 1959 and 506,051 in 1969.[40] During rush hours and religious occasions naturally the number of passengers increases considerably. The average monthly passengers served by buses in 1967 is shown in (Fig. 10.36). It was more than 13 million in all in any one month with an increase in March, April, May and June owing to the weather being more agreeable during these months, therefore attracting visitors from all over the country.

The following table shows the importance of the major media of intra-city transport in the surveyed areas by classes:

Table 10.31: Media of transport in the surveyed mahallahs

Class	Percentage of interviewees using			
	Public buses	Mini-buses	Taxis	Private cars
High	33.33	-	-	62.50
Middle	36.25	24.06	10.13	6.96
Low	33.60	18.62	9.14	-
General Average	36.33	17.90	8.41	10.85

Source: Field work1971, See Appendix A, Table Na.

From this table it appears that the majority of interviewees use public buses. Mini-buses are of secondary importance, followed by taxis. People who use taxis are charged per head and not as in Europe.

More than 60 per cent and 52 per cent of the middle and low class interviewees use public buses and mini-buses but only 33 per cent of high class interviewees, most of whom own private cars.

Most of the buses are over 15 years old. According to data from 1969/1970, Baghdad has 687 buses, 332 of them English double-deckers, the rest single-deckers, these being English, German, Egyptian and Hungarian, most of which are of low capacity, seating 65 passengers plus standing space.

There are six depots, three of them with current maintenance service facilities, for the public buses. Most of them are located on the Inner and Middle Fringe Belts, on either side of the city, e.g. Bab al-Mudham at the northern end of Sheikh Omar Street, with 7,200 sq. m area, Sheikh Omar Garage, 10,000 sq. m , Tal Muhammad Garage 27,000 sq. m, al-Ataifiyah Garage 17,000 sq. m, and Waziriyah and Dawoodi Garages.

Each garage houses between 120 → 150 buses.*

In 1971 there were 102 routes for the public buses, covering a distance of more than 1,000 kms,of which more than 80 per cent is within the city boundaries. They serve almost the whole city, and a number of settlements outside the municipal boundaries. During the last decade the number of routes has increased from 39, in 1960 with a total length of 353 km to about 100 in 1970 with some 1,000 km.[41]

Most of the bus routes have their starting points on the periphery of the Old Town, or from the central bridgeheads.

The starting points are located proportionately in the areas, or not far from the areas where a great majority of the inhabitants converge and disperse every day.

Table 10.32: The main bus centres in the city:

Area	No. of routes	% of the total no of routes
East Side		
Al-Tahrir square	29	28.43
Al-Maidan and Al-Ma m.-uniyah squares	21	20.59
Bab al-Mudham square	18	17.65
Al-Nasir square	2	1.96
Adhamiyah	2	1.96
Al-Nahdhah square	1	0.98
Baghdad al-Jadidah	5	4.90
	78	76.47
West Side		
Al-Shuhada square	11	10.78
Jamal Abdul Nasir square	4	3.92
Kadhimiyah	6	5.88
Total	21	20.59
** Other Places	3	2.94
General Total	102	100.00

Source: Public Bus Administration, Route Map of Baghdad public buses 1971.

* Private garages and their locational pattern will be discussed in Chapter 14.

** The other three routes start as follows: al-Ziwiyah-Jamiah; Custom's Stores - Second Police Town, and al-Taji Barracks.

From this table it appears that more than 67 per cent of the bus routes start from the peripheral squares of traditional Rusafah. 78 per cent of the city bus routes originate from the Eastern Side compared with the West Side which had only 21 per cent of the lines.

Al-Tahrir square alone, had more than 28 per cent of all the lines, indicating its increasing significance.

Most of the bus stops* in the central areas, where the most congested junctions are, should be replaced as they create difficulties for other vehicles using these junctions.

The number of routes passing through the city centre, and serving the suburbs, and the frequency of buses running on those routes, does not meet the transport demands of these areas. Buses do not always run according to the principle of the shortest and quickest connection between the various parts of the city and its centre.

The municipal transport routes are served by between 70 and 80 per cent of the number of buses.[42] Some of the incapacitated buses are either in repair depots or are awaiting spare parts or mechanics who are not readily available, or are kept in reserve.

Table 10.33: The running frequency of Baghdad's Public buses.

Running frequency in minutes	No. of lines	%
1 - 5	-	-
5 - 10	46	45.10
10 - 15	33	32.35
15 - 20	14	13.73
20 - 30	6	5.88
30 - over	3	2.94
	102	100.00

* In 1971, there were 5,679 bus stops with an average interval of 349 m with request stops in the suburbs. The average length of each payable trip is 7.3 km.

On central routes where several lines run, the frequency increases to one bus every 5 minutes or less. On particular streets buses may run every 30 seconds. The average number of trips per working day of 18 hours from 5.30 a.m. to 11.30 p.m. ranges between 25 and 135 depending on the size and economic standard of the area linked between the starting and destination points of each routes. The average speed allowed for public buses ranges between 10 and 30 km per hour, depending on whether the bus operates in the central or peripheral parts of the city.

From field observation the average frequency of buses decreases during rush hours owing to increased congestion during these times.

In 1965, the Polservice team studied journey times, which illustrated the time efficiency of the mass transportation pattern. Their analysis of journey times was illustrated by using mass transportation, buses and vans (mini-busss) jointly. They considered al-Tahrir Square as the centre of the pattern. From their results they determined the extent of mass transportation and the number of inhabitants served on individual journeys, for access to the centre. It appeared that more than 43 per cent of the inhabitants of Baghdad had journeys of more than 50 minutes, and less than 10 per cent had journeys of less than 20 minutes on public buses. On public buses and mini-buses combined the average journey-time decreases and the majority of the inhabitants had journeys of less than 40 minutes. This is shown in table 10.34.

From this table it appears that only 9 per cent of the population can arrive at the centre within a time of less than 20 minutes; the rest spend more than that in commuting to the centre. More than 82 per cent of the population spend more than half an hour in their trip to the centre. This indicates the fact that Baghdad has become a large

city with the majority living in the suburbs.

Table 10.34: The length of journey-times for access to the centre by buses and buses and mini-buses combined*

Journey time in minutes	Buses No. of inhabitants	%	Buses and Mini-buses combined	%
0 - 10	26,000	1.71	53,000	3.49
10 - 20	114,000	7.50	302,000	19.87
20 - 30	126,000	8.29	348,000	22.89
30 - 40	225,000	14.80	355,000	23.36
40 - 50	339,000	23.30	231,000	15.20
50 - 60	225,000	14.80	164,000	10.79
+ 60	445,000	29.28	67,000	4.41
Total	1,520,000	100.00	1,520,000	100.00

Source: Polservice Consulting Engineers, Master Plan of Baghdad, Warsaw,1(1969) v - 17.

The Polservice Master Plan estimated that between 80 per cent to 85 per cent of the passenger traffic was directed towards the Old Town of Baghdad. There was only a small amount of journeying between separate residential areas, which according to the Master Plan accounted for about 15 - 20 per cent of the whole traffic.

* The calculated index of the transportation accessibility of the centre, that is the average time needed for travel from home to the centre, amounts to 45.9 minutes for the bus, and to 32.7 minutes for bus and van used in combination. The maximum time needed for travel to the centre is 90 minutes by bus and 60 minutes for combined bus and van.

10 per cent of all the daily passenger traffic in the rush period of 7.30 - 9.00 a.m. was found to be directed towards the central area, while the second peak period between 1.00 - 3.00 p.m. accounted for about 8.5 per cent of the daily load of the municipal buses.

Owing to the existence of various functional centres beyond the 1956 limits of the city, it was observed that, during the morning rush hour, the size of passenger traffic directed away from the central area, approaches about 6 per cent of the daily load during the morning rush hour.[43]

From field observation it has been found that generally the intensity of bus occupancy is not very high, and the buses are normally occupied to about 70 to 90 per cent of their full capacity.

Usually, about 70 -80 per cent of the bus capacity is occupied at the starting points, and a further 20 - 30 per cent of the passengers get in along the route, but at the same time perhaps about 10 per cent of the passengers get off along the way, therefore between 80 - 90 per cent of the passengers arrive in the central area.

Mini-bus transportation:

The municipal mass transport buses are spontaneously supplemented by a fairly large number mainly of Ford transit vans (mini-buses) taking 12 - 14 passengers. As there are no data about this aspect of the registered vehicles, their number has been estimated by contacting the Transport Workers Union and assessed at 2,427. In addition there were in 1971, 850 buses of all descriptions.[44]

The van routes have their starting points on the periphery of the 1956-city, sometimes near the starting points of the public bus routes. These routes are permanent, though not very organized. The mini-bus stops to collect passengers upon request, or to drop passengers, at any

point along the route. The starting point for mini-buses are Bab al-Sharji, Alawi al-Hillah, Kadhimiyah Salihiyah and al-Shuhadah bridgehead. The routes where several lines run have a frequency as high as every 15 seconds as in the case of al-Nidhal Streets.

The minimum and maximum time needed for travel to the centre by mini-bus is nearly half the time that is needed on the public buses. Usually, mini-buses are full when starting from the central areas, and perhaps 20 - 30 per cent of their passengers alight along the way at request stops. On the other hand, they are not necessarily full when starting from the residential areas; but collect passengers while heading towards the central areas.

Taxis

Statistics about taxis again are not available. According to traffic police headquarters, there were 196 taxi agencies (companies), each having a fleet of 4 - 20 vehicles depending on the location, age of settlement and the wealth of the area.[45] There are moreover certain defined routes, along which fixed numbers of taxis run their services. The number of the taxis having such defined routes was estimated by the Transport Workers Union at 1,809.[46] Most of these taxis are run by individual owners or by hired drivers.

These taxis operate in two ways, either commencing a journey only when full, taking normally five passengers each, or commencing when not full, and collecting passengers along the way at request stops. Either way passengers are charged per head.

Along their fixed route, taxis might work up to 2 a.m. They operate along 4 fixed routes on the West Side and another 16 routes on the East Side. The other taxis, which are the most common in

Baghdad, have no fixed starting point or routes, and operate whenever the driver wishes. Such taxis, particularly in the poor suburbs, offer the same services as mini-buses, as they frequently carry more than seven passengers each.

In Baghdad one can order a taxi at any time, day or night. Taxis, like buses, are used frequently during the rush hours and also benefit from the long intervals between buses during the non-rush.

Horse drawn carriages: (Figs. 10.15a, b, 10.23b)

Since the 1950's the number and importance of horse carriages for passenger transportation has declined substantially. This was because of the successful competition of car transport as well as new regulations restricting the areas to be used by arabanahs (horse-drawn carriages). In 1970, and because of the depressed situation of the arabanah owners, several areas in the capital were allowed to be served by arabanahs. In 1971, the number of arabanahs in commission in Baghdad was estimated at 263. The average daily revenue for arabanahs is slightly over 2 I.D.[47] They concentrate in the religious areas, and on the periphery of the 1956-city, where car transport is not convenient.

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CHAPTER 11

Modern Fringe-Belt Development.

As a direct consequence of its vast physical expansion in modern times, Baghdad has at present a set of three fringe belts, the first or Inner Fringe Belt (IFB), the second or Middle Fringe Belt (MFB) and the most recent or Outer Fringe Belt (OFB) (fig. 11.1).

These fringe belts reflect successive growth stages of Baghdad during its history. Each of them is a self-perpetuating zone of characteristic land-use elements, going successively through its initiation, expansion and consolidation phases. Although these fringe belts have their own unique characteristics yet they can be compared with those of other towns[1]. Like those of Alnwick, Baghdad's fringe belts are separated by other, mainly residential, integuments[2].

The first two fringe belts of Baghdad, i.e. the IFB and the MFB have developed a belt-like zone originating from the once stationary fringe of the town along the old town walls in the case of the former and from the temporarily stationary fringe within the city's dykes and railway installations in the case of the latter. The OFB on the other hand has initiated its incipient dispersed urban development without having an antecedent fixation line or any physical contact with those of the IFB and MFB.

However all three fringe belts are initially characterized by their mixture of certain land-use elements seeking peripheral location for various reasons though the belts react and develop subsequently in response to what is happening in the city centre. The functional development and consequent changes taking place in the fringe belts, whether intra or extramurally, reflect the interplay of various economic, social, technological and planning factors.

Iraq has no topographical survey maps and plans such as those available in Britain. None of the obtainable maps show plot boundaries. To trace the history of individual plots in the fringe belts is impossible, not only in Iraq but in most Arab countries. However, Baghdad Old Town had a precise and detailed map with plot boundaries in 1918*[3] and as described in Chapter 6, the built-up area then was not filling the walled town.

A sizeable unbuilt intramural existed in Rusafah, being the urban fallow resulting from the repeated destruction of former built-up areas during the long centuries of Baghdad's decline. While this vacant land was being gradually filled between 1918 and 1956, the city authorities kept no maps recording the new plot boundaries. This has increased the importance of the field investigation carried out by the writer to give a fair review of the modern evolution of the city's fringe belts.

The Inner Fringe Belt: (Fig. 11.1)

Among three fringe belts, Baghdad's IFB is the first and unlike that of many British towns of medieval origin, was the only one in the city before 1920.[4] It has evolved around its primary fixation line, i.e. Rusafah's eleventh-century and Karkh's early nineteenth century wall, surrounding the traditional kernel or Old Town of Baghdad in a characteristic asymmetrical pattern. Like that of Alnwick, Baghdad's IFB has two different plot and building patterns, viz, the relatively restricted, close-grained traditional intramural inherited outlines and a much larger coarse-grained historically more recent and so morphologically

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* This map was supplied by Amanat al-Asimah. It derived from an enlarged air-photo survey of the city on the scale of 1:880. There is no reference on the map as to the original source of the air-photo, but the writer believes that it was taken by the R.A.F. in the years 1918-19.

Fig. 11.4

a. Buniyah Mosque - a modern element in the Inner Fringe Belt of the West Side

b. The new dyke, al-Saddah al-Shamaliyah, surrounding most of the modern development of the East Side for flood control

Fig. 11.3

a. Part of Sheikh Maruf cemetery in al-Karkh's fringe-belt. Typical fringe-belt land uses with jubahs (sheep pens), railway installations in the background.

b. Al-Khir canal - another backbone for fringe-belt development on the west side.

(a) (b)

Fig. 11.2 The Eastern Dyke (al-Saddah al-Sharqiyah) at the north bend of Rusafah's town wall.

Al-Sahrawardi cemetery on the left, partly superimposed over the town wall. The Dyke in the middle ground and right foreground in proximal extramural position to the original town walls but forming a secondary fixation line with its characteristic bend conformer to the north bend of Rusafah's ancient fortification.

different extramural.[5] The intramural development of the IFB is dominated by traditional and modified traditional buildings lining the tissue-like zuqaq system of the Old Town.

As seen in previous parts of this study, the first fringe belt was evolving mainly intramurally during its initial fixation phase. In the third and fourth morphological phases of the city, i.e. between 1920 -1956, and as a result of the population increase of the city the IFB around the city walls began to expand transversely on the West Side where the flood risk was less.

In the fifth or post-1956 morphological phase it has become an IFB proper, entering its consolidation phase. This means that the IFB has gone successively through its fixation and expansion phases[6] during which it was influenced by floods. The expansion of the IFB before and after 1956 was stimulated by the introduction of additional or 'secondary' fixation lines in relative proximity to the original or 'primary' one and represented by the dykes on the East Side and the railways on the West Side (see Chapter 7) (Figs. 11.1, 11.2 ., 11.3, 11.4).

In the present morphological development phase of the IFB one can trace two distinct sub-phases, a first one during the period 1956 - 1963, during which the fringe belt was more shifting in nature owing to the existence of the spontaneous sarifah and kukh settlements in its extramural and a second one after 1963 when those settlements were demolished and new permanent housing areas were developed as a typical morphological correlative[7] to house the migrant fallahin.

In both sub-phases then, the IFB of Baghdad has been influenced by a characteristic fringe-belt element found in large cities all over the Third World, i.e. the shanty towns of rural migrants. As has been seen in the previous chapters particularly Chapter 9, the chronology of the

modern development of the city, especially after World War II has been influenced by these sarifah and kukh accumulations.

Baghdad's sarifah and kukh development itself passed through a cycle of three phases, viz. an initiation period in the 1930's and 1940's a climax phase in the 1950's and early 1960's and a recessive phase after 1963.

Fallahin migrants tried to stay in one chosen area as long as possible. Thus they avoided the lands that were attractive to other urban land-uses, and so the floodable areas on the East Side and the sites along the railway on the West Side became their 'favoured' sites. This means that on either side, the city has had its own light and transient extramural element of sarifahs and kukhs. These illegal extramural squatter towns exhibited greater topographical freedom, and at times extended for more than 5 kms to the east. However, some scattered or clustered sarifahs were found intramurally both within the fringe-belt and outside it on vacant unfenced areas within the built-up area. Sarifah shanties here have interspersed with other pemanent intramural land uses, such as cemeteries, small industries, warehouses, garages, governmental institutions, transport facilities and some dormant land.

Sarifah towns developed in either a scattered, a clustered or a large irregular block colonization pattern. The first two patterns were evident in the 1940's and early in the 1950's when they were passing through their initiation and expansion phases, while the latter pattern was developed in the 1960's when they entered their climax and then recessive phases.

Since their emergence and up to now, sarifah and kukh structures have proved to be extraordinarily mobile in nature both extra and intra-murally. Repeatedly both within and without the fixation lines, either

floods or the government have forced these constructions to be moved. In addition urban land-use dynamics themselves frequently required the clearance of sarifahs from many intramural sites. Usually, other urban land uses are ready and able to pay for using such lands compared with the temporary constructions of sarifahs which pay nothing for using the land. One must remember that the fallahin migrants themselves are prepared for such mobility. Their constructions are light and cheap and at the same time they are able to find alternative sites particularly those owned by the government and religious bodies. Generally the land here is rent-free.

Government-owned land was extramural before 1956 and since then has become 'desert residual'. Accordingly, almost all sarifahs became parts of the consolidating IFB or the expanding MFB. The year 1963 marked the second sub-stage of sarifah development, which may be called the 'recessive phase'. In this year sarifahs were demolished and their lands became the major axes along which various urban developments took place usually of fringe-belt character with some residual residential integuments.

In this sub-phase, the intramural areas were almost filled mainly with permanent fringe-belt elements, thus acquiring a more complex, heterogeneous nature compared with the expanding extramural because of historical, and more so functional, factors. The same sub-phase can be observed in the evolution of the IFB of the West Side. Here, however, extramural development came earlier than on the East Side because the West Side was safely from floods. The existence of al-Khir Canal helped in fashioning the pattern of the western IFB as will be seen presently.

Since 1968, the evolution of the IFB has again been influenced by a new wave of sarifah and kukh shanties despite severe restrictions imposed by the government. Temporary sarifahs have emerged on either side of the city mainly along the fixation lines of both the IFB and the MFB but showing a tendency to expand slowly and persistently. They have chosen areas that would not be developed for urban uses in the foreseeable future such as al-Khir Canal (Fig. 11.3.b) or al-Chazali cemetery thus reinforcing fringe-belt development at least temporarily. At present one cannot say how much further sarifah and kukh settlements willdevelop. It remains to be seen whether Baghdad will again exhibit the unpleasant feature of large sarifah accumulations by the end of this decade.

It will depend on government decisions and more importantly on the improvement of the depressed rural condition of lower Mesopotamia.

Since 1956, land uses seeking cheaper land but relatively near to the centre, have been accumulating all the time along the fixation lines, and it is easy to distinguish between new and old fringe-belt land uses and the associated buildings accommodating them.

New fringe-belt land uses have needed larger sites, more modern buildings and vehicular transport. As in other towns Baghdad's fringe-belts discourage residential land uses particularly those of the upper midde and high-class. Accordingly the proximal extramural 'desert residual' of both the IFB and the MFB which lay either 'fallow' or had been colonized by sarifahs have attracted these modern extramural land uses. Since 1956 the IFB has entered its consolidation phase when warehouses, garages and various types of workshops have gradually filled up the intramural vacant land between the primary fixation lines on either side of the city and the medieval kernel. Simultaneously with these repletive developments, new streets were emerging, the major of

which run parallel to the primary fixation lines, with crosswise secondary streets.

As a result of the expansion of the city, elements in once distal extramural location such as al-Washash Barracks, now al-Zawra Park and the cemeteries of Sheikh Maruf on the West Side as well as the Christian cemeteries on the East Side have merged with the new urban development.

Most of the small and low-standard housing elements that emerged on the edge of the Old Town of Rusafah, intermingled with other fringe-belt land uses, were of the long-lease variety. The housing colonization started on the northern section of the primary fixation line, beyond the old Baghdad North Station and east of the Coca Cola factory and ended near the dismantled Baghdad East Railway Station. To the north and south of al-Wastani Gate, both the houses and graves have used some of the bricks of the old wall in their construction. Housing of the poor classes, interspersed with governmental and industrial land uses, has accreted to the east and has almost touched the wall line to the south of al-Wastani Gate. Inhabitants of some of these houses work in the nearby workshops of Sheikh Omar Street. A slaughter-house was built in the 1950's close to the eastern cemetery and the Baghdad East Railway Station was dismantled and transferred from its intramural to an extramural site in 1958 further to the east beyond the secondary fixation line amidst a wild jungle of sarifahs. The eastern railway line became another backbone for the expanding IFB of Rusafah. Thus fringe-belt alienation[8] has occurred in the intramural of the IFB though the old station building continued to be used by other peripheral land uses. The new railway marked the western limits of new middle and lower middle-class residential areas developed after 1969.

Early in the 1950's, government-sponsored houses/distributed mainly to working class people were built filling-in the area between Sheikh Omar Street, and the wall line to the south and near the old railway station. To the south of the cemetery of al-Sahrawardi new land uses typified by garages, private and governmental factories, slaughter houses and cattle and sheep stables.

The dominant form of the new large buildings associated with these modern fringe-belt land uses are of a covered or a courtyard type, the latter usually being adopted for garages. The area to the south-east of the new transverse street of al-Thawrah, and right through to the southern end of the old wall, has been subject to land-use development in the last two decades. The main land uses here were a burial ground, where the sizeable cemetery of al-Ghazali is located, together with expanding sarifah colonies.

The southern intramural corner, where al-Arman Camp has emerged, begun to be occupied by poor houses in 1939. The area is now filled with mainly one-storey houses developed in a gridiron pattern of streets. A considerable number of houses here, particularly near Sheikh Omar Street, have changed their function to be used as repair garages and shops selling car and machine accessories. This has naturally contributed to the consolidation phase of the IFB. The gradual alienation of residential units to other fringe-belt land uses along the IFB is a characteristic phenomenon here. The area between al-Thawrah Street and Sahat al-Tairan is owned by the al-Qailani religious endowment and has been developed by subdivision into plots of 130 to 160 sq. m each with standardized houses of one storey, three bedrooms and a hall. These houses are rented on leases for periods between 5 to 10 years, the annual rent value of each plot being between 80 and 120 I.D., while the

annual rent value per house is between 180 and 240 I.D. Almost all these houses are inhabited by poor and low or middle class Christian families. Most of these families are Armenian who had emigrated from Turkey to Iraq for political reasons. Most of the Armenian inhabitants are employed as skilled workers in the contiguous repair garages and indeed many of them own such garages.

Despite the shanty towns, industrial and other urban land use developments that had already taken place in the old intramural of Rusafah during the period 1940 to 1956, the IFB continued with its expansion phase, showing however, initial signs of consolidation by more compact development. This subsequent consolidation phase is expressed by both the new streets and the buildings emerging along them, accommodating industries, warehouses and the like. After 1956 and for the first time in its modern development, the IFB commenced its permenent extramural development on the north-east side, so long held back by the absence of flood control. Most of the developments have been proximal extramural as they are developing in close contact with Rusafah's wall and old dyke, i.e. the combined primary and secondary fixation line on this side. Among the several factors which helped such extramural expansion are the transference of the railway beyond the old dyke, the construction of transverse streets, the encouragement of the government as the major land owner here and the unattractive nature of this area for residences. Major developments here have taken the form of a governmental bakery, a large secondary school, garages of various types, sheep sheds, a large nucleation of shops selling all kinds of goods as well as a sizeable, if unhygienic open market mainly providing cheap food stuffs. This extramural represents a large, open-grained zone of irregular accretionary plot and building development. The availability of

cheap vacant land and residual desert offers greater topographical freedom more or less analogous to that observed in Alnwick.[10] This extramural of Rusafah's IFB is still in its expansion phase, undoubtedly to be followed by a consolidation phase.

In spite of the vast expansion of Baghdad, the north-western and south-eastern parts of Rusafah's IFB have maintained their character. They remain typical fringe-belt sections surrounded by built-up areas differing from them functionally and morphologically. Owing to their more central location, they are dominated by cultural land uses such as colleges, hospitals, schools, offices and also by some industrial units and shopping premises.

This institutional and industrial concentration represent a distinct functional segregation within the IFB similar to that of Newcastle upon Tyne.[11] In Baghdad's example however, the functional segregation has come about by spontaneous as well as predetermined development. Since the 1930's in fact the consolidation and renewed expansion of these two parts of the IFB the north-western and the south-eastern have absorbed or replaced considerable sections of the adjoining accretions and also transformed the vacant land and orchards. When this colonization process advanced, a kind of functional segregation took place displacing the sparse residential units and absorbing the orchards and desert residual.

This functional development has practically revolutionized the morphology of the area. Actually the morphological changes began to take place vigorously even in the proximal intramural to accommodate typical modern fringe-belt land uses such as gahwahs, repair workshops, garages, cinemas, industries and the like. However, the extramural elements are of various sizes but high building coverage comprising

modern land uses seeking peripheral location for one reason or another.

On the West Side, the same processes have been observed. Here the antecedent or primary fixation line, viz. Karkh's wall, had disappeared, being replaced by the consequent street of Sheikh Maruf. In the course of development the vacant land of the pre-1945 intramural was colonized by poor-class houses, and industrial and commercial land uses before 1956. At the inner boundary of this intramural the traditional zuqaq system suddenly stops to be substituted beyond the boundary by new broader streets running towards the consequent street of Sheikh Maruf. Along these new streets, houses developed either in the third or fourth morphological phases, presenting modified courtyard, covered courtyard or western types. Sheikh Maruf Street separates two types of fringe-belt development, the intramural with compact mostly traditional fabric on characteristically small plots, and the proximal extramural with larger plots used for land uses other than houses. This street was on the edge of the town and was separated from the extramural secondary 'fixation point' of Baghdad West Railway Station (Figs. 11.3b) and nearby cemeteries by vacant land which began to be filled by accretionary repletion, dominated mainly by poor-class houses, kukhs and sarifahs, cattle and sheep stables, garages and the like.

As a result of this urban dynamism, the cemeteries were reduced in area by the construction of new streets connecting the railway line to Turkey with Sheikh Maruf Street.

Filling up occurred in the broad extramural between the Karkh Old Town and al-Khir Canal (Fig. 11.3b) expanding the IFB south-westward while at the same time consolidation took place in the intramural. Extramural filling-up is represented by the residential growth in the

form of poor- and middle-class houses, railway works absorbing a large part of Sheikh Maruf Cemetery, and other industrial and governmental development. In the end residential intrusion into the proximal extramural between Sheikh Maruf Street and the railway amounted to fringe-belt alienation,[12] i.e. the absorption of this fringe-belt component by functionally quite different residential integuments, such process involving colonization of some palmgroves by houses. During the course of development the consequent street of Sheikh Maruf underwent rapid transoformation. Continuous demolition and replacement is taking place along this street. Many of the traditional or modified-traditional houses have been altered, particularly on their ground floors. Shops of all kind, repair workshops, garages, gahwahs, carpenters' shops, low-grade restaurants and hotels are the main new elements introduced in the last two decades.

The main sheep markets of the city are located extramurally near the Jewish cem etery on the eastern fringe belt and in Rahmaniyah to the west of Sheikh Maruf Street. Sheep merchants (suppliers) buy sheep from various local and regional sources, then they house their sheep in special brick and mud stables. The peripheral location of these markets has a two-fold advantage; it is cheap to rent and is not far from the centre, where the main retail outlets are located.

The sheep sheds are known locally as jubahs. Each shed is an open space divided into a number of small sheep pens. Each room is rented from 100 fils per night (½, regardless of the number of sheep to be housed. Originally the jubahs of al-Rahmaniyah were part of the cemeteries of Sheikh Junaid and Sheikh Maruf (Fig. 11.3c).

The people running this business have adopted their own rural life in these locations. They live beside these sheds in miserable health

and sanitary conditions. Each house has a single room, or occasionally two mud and brick rooms. There are no bathing or hygienic latrine facilities. They indeed endanger the hygienic safety of the city.

The main elements of the IFB here are the old airport, institutional buildings, the railway establishments, cemeteries, industrial development, garages, al-Zawra public park, open spaces and poor housing areas. These were added to by new fringe-belt land uses of quite different style to those examined on the East Side, and are typified by the Baghdad International Fair, playgrounds, schools, and a number of professional social clubs.

As a result of the westward expansion of the city, the old airport coming already in the fixation phase of the IFB as an element of the distal extramurally has been engulfed. Its location was now too closely to the centre of the city, and therefore dangerous to the residential areas. In the present consolidation phase of the IFB and on grounds of safety and noise a new airport 8 kms west of the centre has been constructed in 1969, inaugurating the institutive phase in the development of a new 'outer' fringe belt. The new airport has a single runway of 3,300 m in length and 45 m in width.

In 1970/71, The Old Barracks of al-Washash, just to the south-west of the old airport were demolished and their site changed to one of the best public parks in the city occupying 6 sq. kms.

Compared with Europe, where the gardens and open spaces are desired for the sake of sunlight, they are desired in Baghdad for freshness and coolness. Thus the development of al-Zawra Public Park is appreciated. Gardens in the Arab countries depend on the efforts of man, where a water supply must be provided during the periods

of drought. Arab gardens thus differ from the semi-wild park gardens of north-west European countries.

The IFB here has been further expanded by the establishment of a cluster of social and professional clubs beyond and before al-Khir canal in the al-Mansur high-class residential area. These institutions have given a new functional weight to this side of the city, particularly at night when they are in use. These developments were coupled with the building of various governmental buildings such as the Karkh Court Building, the Children's Music Library, the Fine Arts Academy, The Artificial Limb's Hospital and the like. They were accelerated by the development of the al-Mansur football ground, al-Mansur Secondary School, and the Baghdad International Fair, all easily effected because the area was owned by the state. The Baghdad International Fair, developed on an area of 250 sq. km three-quarters of which is already occupied, was established as the Baghdad Arab Fair owing to participation of all the Arab countries and in 1967 was recognized as an International Fair. The number of participating countries was 20 in 1971, with 88 foreign firms representing another 15 countries. The Fair has its own commercial importance, as many commercial contracts and business transactions are signed annually. The duration of this fair is between 1st October and the end of that month, during which the tourist industry flourishes, particularly from surrounding countries. Incidentally, the fair became a year-round centre of recreation attracting visitors from all over the city. It has its own gahwahs, children's games centre, and other facilities.

At this stage of expansion, the IFB has nearly touched the once distal, extramural racecourse of al-Mansur. However, only a patch of high-middle class and high-class residential area separates the newly emerged extramural fringebelt units from it. Al-Mansur Company was

established in 1923. It was known as the Iraqi Race Co. Ltd., as it ran the horse races in the city, originally inspired by the British.

This company has bought a considerable part of al-Mansur agricultural land and built the present race-course in 1947/48. Several splendid houses began to emerge in its vicinity early in the 1950's, followed by more high-class residential areas. Since then, al-Mansur has become one of the leading residential areas in the city.

In 1968, the 'Jockey Club' was established. Its members are drawn from the aristocracy and high ranking government officials and officers. Racing takes place three days a week, and daily customers range between 5,000 and 6,000. Not far from the race-course a new functionally integrated but physically detached element was imposed on the area, horse stables colony consisting of 100 stables owned by the club. The annual rent of each stable is between 50 and 120 I.D. Until 1956, the race-course was secluded from the town proper, but it is now enveloped by residential areas in all direction. Morphologically the race-course complex added to the disharmonious character of the area. At present, both the race-course and its stables constitute a social nuisance to nearby inhabitants and a number of the interviewees in al-Mansur asked for its removal. This is because the stable complex being used also as a place of recreation and amusement of all kinds is morally unacceptable to the traditional sentiments of Arab society in Baghdad.

As a result of the expansion of the city further to the west, and because of the regular complaints of many of the residents, a new race-course of 25 sq. km in the Abu Ghraib area, along the highway to Syria, is to be inaugurated soon as a new element in the OFB. The whole IFB of Karkh came to be an almost continuos contact zone between

the Old Town of Karkh inside the primary fixation line, i.e. the wall, and the area of modern accretions outside. This accretionary development was encouraged by the early twentieth-century emergence of the secondary fixation line, i.e. the railways which acted as a new backbone for extramural expansion.

The Middle Fringe Belt.

The contemporaneous development of the eastern dyke on the East Side and the railway on the West Side has influenced the townscape evolution of Baghdad. Since 1920 and along these two new fixation lines the MFB has evolved in a north-western and south-eastern direction on either side of the city. Only after 1956 was this longitudinal expansion parallel to the river complimented by a transverse one. In contrast to Alnwick, Baghdad's MFB does possess fixation lines dividing its 'intramural' development from its 'extramural' accretionary zone. The fixation lines as already mentioned are the city dyke in the east and the railway in the west. It means that the MFB of Baghdad is somewhat similar to the IFB, though the closely knit intramural zuqaq system of the latter is not found in the former.

In its development along the secondary fixation lines the MFB has assumed discontinuous belt around the pre-1956 city, reminiscent of the ring-like development of the IFB encircling the pre-1920 city.

The MFB came to be a major geographical component in Baghdad's modern development situated in a 'intermediate' position between the IFB and the more recent third or OFB, always provided that all fringe-belts were separated from each other more or less by zones of residential integuments. Up to 1956, the development of the MFB remained intramural in relation to the dyke on the East Side, because development outside it was impeded by the threat of floods. The longitudinal growth of the MFB followed the overall pattern of growth of the city

parallel to the Tigris and extending to as much as 20 km in length from al-Sulaikh in the north-west to the Diyala River in the south-east.

On the West Side the development of the MFB was a longitudinal one between Kadhimiyah in the north-west and al-Shalchiyah . in the south-east, as well as a transverse 'extramural' one, the latter occurring much earlier than that of the East Side owing to the physical differences already described. This extramural development beyond the secondary fixation lines of the West Side created new larger buildings different from those of the intramural and absorbing sizeable positions of open country.

After 1956 and because of the introduction of more effective flood control, the MFB on the East Side began to evolve extramurally and like that of the West Side evolved scattered or clustered patterns interspersed with desert residual* and occasional housing areas.

Owing to the extramural development, the fixation line began to be cut by new roads and squares. On the East Side twleve primary or secondary streets were built, linking the new suburban developments with the mother city, and accordingly influencing the evolution of both IFB and the MFB. The new streets normally connect two entirely different components of the city's townscape, the pre-1956 part with its distinctive historical, cultural and land-use admixture, and the new homogeneous, western-looking suburbs. There is a striking difference between the street systems of the new suburbs and the traditional central area.

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* Desert residual had formed a continuous outer position of the extramural, but in close contact with both the primary and secondary fixation line of the IFB and the fixation line of the MFB. Later many desert parcels were engulfed by development of urban-built-up areas around them analogous to the agricultural residual in Europe.[13]

Along the secondary fixation line on the East Side, starting from the south and north ends of Rusafah's wall, new land use elements of the MFB have emerged with some similarity to those found around the Old Town of Rusafah.

To start northwards from the northern end of the wall, there is firstly urban fallow as the result of Baghdad North Railway Station having been dismantled. Several colleges belonging to the University of Baghdad occupy a considerable part of this section and building operations are still proceeding. The cultural complex of the University institutions is interrupted by some industrial development. A large modern, medical-cotton factory developed intra-murally between the central library of the University and the dyke lines. To the east, beyond the dyke, a new middle-class residential area has evolved round the new, extramurally located University of al-Mustansiriyah, on Safi al-Din Street. Between the area stretching from the College of Education to the recently built Iraqi Scientific League, some fringe-belt land uses emerged. The intramural land uses to the west are interspersed with a mixture of lower middle-class houses and a few mansions. As might be expected the owners of the latter type have latterly evacuated their houses, and newcomers of lower classes and sometimes other land uses have replaced them. Some of the cow and buffalo owners occupied this strip after 1958. To the east of the dyke, i.e. extramurally, there emerged one of the most distinctive industrial areas of the city. It is now surrounded by more residential units. This industrial sector with the contiguous University of al-Mustansiriyah, extended the MFB across the dykes since there is no longer any danger from floods.

After the building of the Scientific League the dyke was traversed

by the modern highway to Kirkuk, which incidentally attracted more residential development. This road is used at the same time for linking the modern low- and lower middle-class localities to the north-east of the city along Qanat al-Jaish with the pre-1956 city.

After 1943, poor-class houses with an average plot of 150 sq. m were developed intramurally further south from the Scientific League Building. Extramurally, to the south of the industrial site, rapid residential development initiated in 1962, has been taking place.

In al-Sulaikh near the northern end of the dyke vacant land as well as some of the palmgroves began to be absorbed by dispersed residential development. Already the northern transverse stretch of the dyke has become a new consequent street extended eastwards to Qanat al-Jaish.

Residential development beyond the dyke at its northern limit is faster than that within the dyke limits, mainly because land in the former situation is owned by the state which has subdivided and distributed it to various professional co-operative housing societies. Land within the dyke on the other hand is privately owned and ranks among the most expensive residential areas in the capital. Accordingly the building process here is slower, a sizeable residual of desert and palmgroves remaining, surrounded by further development to the east and north.

Turning now to MFB development in the southern part of the East Side, several sizeable buildings were developed intramurally to the west of the dyke, mostly after the 1940's. Built by the Government, they consist of the Directorate General of Surveys, the Police Hospital, the Academy and the police force schools. Here are also three of the Christian cemeteries, viz. the British cemetery,

where a number of British soldiers were buried, the Armenian cemetery, being the largest, and the German Cemetery being the smallest. All of them developed either late in the last century or early in this century as extramural features of the IFB, but have now merged with the intramural land uses of the expanding MFB, as a characteristic example of 'fringe-belt translation.'[14] These cemeteries are better organized than the rather congested and not very pleasant-looking Moslem cemeteries. Despite the vast expansion of the city the cemeteries in Baghdad have survived as it is not possible to use these tracts for more appropriately central urban land uses because of present legislation and religious traditions. As it is these cemeteries which aggravate the unhygienic condition of the town owing to their disorderly administration.

Early in the 1960's the extramurally located old brick kilns were replaced by mainly modern residential development, new ones being erected in the OFB of the East Side. Together with the demolition of sarifah accumulations this replacement is a good example of fringe-belt alienation.

The houses developed intramurally along the dyke between the Directorate General of Surveys and Tel-Muhammad, are of poor- and middle-class nature and are interspersed with governmental buildings, small factories and schools. Extramurally, most of the land is still vacant or else covered with the debris of the pre-1963 shanty towns in the area.

The proximal extramural development has added to the expansion of the MFB in this part, exemplified by the People's International Stadium, the largest in the capital, built by the Gulbenkian Foundation in 1967/68, as well as the large Children's Playground.

They represent a large fringe-belt enclave with in the expanding residential integuments. The dyke opposite the stadium was cut by al-Muthana Street, where other peripheral urban land uses, mainly governmental institutions, such as the Passport Office and the Employment Department, have been accommodated. The main intramural developments here are a number of embassies, a police hospital, the Iraqi Engineering Society, the headquarters of the sewerage administration, the social club of the Oil Ministry employees, the Assyrian Club, the Traffic Police Department, al-Salam Hospital and others.

The area along the west side of the dyke between al-Muthana Street and the College of Technology has been colonized by various kinds of industries, warehouses and workshops.

Extramurally, on the other hand, desert residual once occupied by sarifahs is the main feature to date. The grounds of the old al-Mashtal Race Course has been colonized by industries, institutions and housing development, thus helping to consolidate the MFB.

This phenomenon commenced after 1945 and reached its zenith in the 1960's. Beyond the patches of desert residual on the East Side emerged one of the more luxurious residential areas of Baghdad, that of the eastern al-Thubbat (army officers) town.

Just before Tel Muhammad to the east, a new street was cut through the dyke, linking the new University on Karradah peninsula with the eastern suburbs and al-Mashtal Race Course in the distal extra mural. Intramurally and as a continuation of the industrial zone Baghdad's governmental bakery developed.

New middle-class housing areas have accreted beyond the dyke merging with the poor-class locality of Tel Muhammad.

The intramural strip between the University Street and the dyke at al-Rashid Barracks* is the southernmost industrial section of the city. It might be considered as a continuation of the eastern industrial areaof intramural Rusafah along Sheikh Omar Street. Here, as well as in all the other industrial sections of the city, residential units are randomly intermixed with other land uses owing to the lack of any zoning control.

Most of the housing of Tel Muhammad is now in its initial stage of deterioration. It had been developed between 1946 and 1957, when more than 2,000 houses with an average of not more than 150 sq. m each were distributed to poor communities in stages at nominal prices of less than 800 I.D. each.

On the West Side, the same processes of longitudinal and crosswise expansion have taken place, mainly after the second World War.

The new urban development leapfrogged the traditional extramural fringe-belt land uses developed along and beyond Old Karkh's town walls such as the railway lines, the old airport, the railway works, etc. As a secondary fixation line on the West Side the Mosul-Basrah railway played the role of a reinforcing backbone along which the western MFB developed in a manner analogous to what has already been discussed for the East Side.

In the area between the northern end of Old Karkh and the northern end of the built-up area of the city the main developments have been of an industrial nature, exemplified by the railway workshops and sidings, various kinds of confectionery works, mills, repair and textile industries and also by low-class housing. The fringe-belt land uses here took a more stable pattern than the other sections where functions and forms are changing continuously. In this area, and along al-Khir Canal, further

* Originally this barracks was IFB distal extramural element. At present it has been considered as a part of the MFB being a kind of fringe-belt translation noticed in Almwick.[15]

poor-class housing areas, agricultural residuals and kukh shanties have developed. Here as in other parts of the city the old palmgroves are unfortunately receding owing mainly to land speculation.

In 1945-46, the detached village of al-Washash began its urban development and transformation. Up to 1945 its inhabitants reached the city of Baghdad by animal transport and there was no permanent road.

In 1945 the land, state-owned, was subdivided and sold at 250 fils per sq. m, but the prices have increased since then to between 2,000 and 5,000 fils per sq. m, in 1971. The average size of the house lots at al-Washash is between 150 and 200 sq. m.*

The southern part of the pre-1956 city between the south-east limits of al-Karkh and the southern end of the city, is traversed by the railway as its fixation line accompanied by sizeable agricultural and desert residual by al-Zawra Park, petrol depots, several governmental offices, embassies and scattered high-class residential units. Development here is very slow because of government intervention. The Polservice Master Plan as agreed by the government, zoned this area as a cultural and recreational precinct.

It is worth noticing that both the extra- and the intramural land uses of the MFB have the modern characteristic of requiring much more land than was needed in the case of the IFB. Also Baghdad's fringe belts at any rate on the East Side, are different from those of many European towns, whether one takes the IFB or the MFB in that the development of Baghdad's extramural was held back much longer. This is

* The ownership conditions of this area are very strange. Each inhabitant having built his house owns only three-quarters of the plot, the other quarter belonging to the government. Consequently owners here are considered also as partial tenants. Originally, the land was owned by the government. The earlier fallahin of this village built their houses which in some ways still retain rural features. After a certain period of time they claimed the ownership of their lands, but the government, for unknown and perhaps unwise reasons, retained ownership in one quarter of each plot, creating thus an acute legal problem requiring an equitable solution.

natural and to be expected as here the city continued to grow up to 1956 entirely within the limits of the secondary fixation lines except for the purely temporary sarifah settlements. Thus the extramural land uses of both the IFB and the MFB because of their very recent forms contrast more sharply with the nearby intramural.

The Outer Fringe Belt.

Baghdad's OFB began its development before 1956 on the West Side and only after that on the East Side because of the hazard of floods. However, on either side, the OFB emerged along the current periphery of the built-up area. The main feature of Baghdad's OFB is that it developed as an interrupted or broken zone without antecedent fixation line. Governmental planning decisions, fringe-belt translation, and the existence of isolated 'fixation points' have helped in its development. The existence of ancient roads and earlier rural and urban elements as morphological frames have also influenced the evolution of the OFB. Many things have contributed to the fixation stage of the OFB on the West Side such as the establishment of the new race-course with 102 stables, each for the accommodation of 12 to 32 horses, and the new airport, the building of the new jail in 1970/71, costing more than one million I.D. with a capacity of 3,000 prisoners, and the construction of fringe-belt conditioned poor-class houses for both military personnel and civilians, such as the village of the buffalo owners known as Qariyat al-Dhahab al-Abiadh, built in 1964. Many garages and workshops have been transferred from the IFB , the MFB and indeed other parts of the city to the OFB. This has influenced the evolution of the OFB in its role as a morphological correlative to intra-urban changes.[16] Some of these original buildings received new functions, mainly of fringe-belt character others being knocked

down and so forming urban fallow before being replaced by new buildings to accommodate new functions.

The OFB of the East Side is less distinctive, though all the brickworks of Rusafah were transferred to the east along the Khanagin highway. The edge of the city on this side has also seen some institutional and industrial development, particularly in the south-eastern parts. These are typified by the ice and flour mill, mental and neurological hospital of al-Shammaiyah, the Youth Reformatory School of al-Rashad, and other elements. It is important to remember here that this side is less safe from flood than the West Side, hence the construction of the new dyke of al-Saddah al-Shamaliyah (Figs. 11.1, 11.4b) (see Part II) which took over the same hydrological role as the eastern dyke had done before 1956, and as yet is geographically speaking merely a new outer limit to expected urban development on this side, but not an antecedent fixation line as in the case of the IFB. Most of the housing developments are taking place within the limit of this supposedly flood-safe area. The evolution and expansion of the OFB is thus more advanced on the West Side than the East Side, despite the fact that the former has no fixation line. However, this incipient OFB like that of Alnwick is characterized by the prominence of large plots, irregularity of structure, low street density, discontinuity of street system and disjointedness outwards. Furthermore, the OFB development on both sides is conditioned by simultaneous rapid growth of residential integuments before it can consolidate as a continuous zone. On both sides of the city the OFB is characterized by its disjointedness, incompleteness and weak integration with surrounding residential areas.

The complex of the outlying Agricultural institutes at AbuGhraib and some old juss works have inaugurated the OFB on the West Side not far from the highway to Syria. Recently the belt has been expanded by the introduction of further industrial installations, garages, a customs office, schools and other elements. It has also incorporated sone new fairly large residences on either side of the city.

From the above discussion the major morphological characteristics of Baghdad's three fringe-belts may be summarized as follows:

Like the IFB and MFB the OFB shows a tendency towards expansion which will lead to gradual consolidation as a zone, but the timing of each phase of growth differs from one fringe belt to another. The IFB virtually reached its consolidation phase in the 1950's on the West Side and in the 1960's on the East Side. The MFB however, is still interrupted by desert residual and other vacant land particularly extramurally. The OFB is still in its initiation phase, with signs of incipient consolidation only along the highways to Syria on the West Side and Khanagin on the East Side.

The IFB has been the oldest and developed around the town walls as its primary fixation line which have marked the stationary edge of the city for about seven centuries. The fixation line has developed into a consequent ring-like road in Karkh, whereas in Rusafah it has been perpetuated by the establishment of the dyke close by. It is also the only fringe belt having reached full maturity and being characterized by traditional features except where replacement has taken place by way of 'site succession'.[17] It is the most compact-belt in Baghdad with a close-grained intramural and courser extramural in comparison with the development along the other two, more recent, fringe belts, where new elements have the opportunity of occupying larger plots in the open desert around Baghdad. For physical reasons the IFB has had

enormous width on the West Side with a far-flung distal extramural, sometimes disjointed.

The MFB has developed around the new secondary fixation lines on either side of the city, at a much later time, discontinuous as compared with the IFB and characterized by larger plots. Most of the MFB and the OFB units are newly formed compared with those of the IFB which are mostly inherited. The differences between the forms and patterns of Baghdad's fringe belts are the physical expression of the functional evolution inspired by the new cumulative needs of a developing metropolitan organism. The MFB and OFB enclose more vacant land compared with that of the IFB, resulting in lower average building coverage within the outer belts and giving the periphery of the city its loosely structured physiognomy.

1. M. R. G. Conzen, Alnwick, Northumberland, A Study in Town-Plan Analysis, IBG, 2nd Ed., 27 (1969); M.R.G. Conzen, The Plan Analysis of an English City Centre, printed in Knut Norborg, Proceedings of the IGU Symposium in Urban Geography, Lund, 1960, Lund (1962).
2. Conzen, op. cit. (1969) pp 116,126
3. Amanat al-Asimah, Baghdad's Map derived from an Air Photo Survey of the City taken by the R.A.F. in 1918/19 (Baghdad 1971).
4. Conzen, op. cit. (1969) pp 81 - 125.
5. Conzen, op. cit. (1969) pp 81 - 82.-125.
6. Conzen, op. cit. (1962) 406.
7. Conzen, op. cit. (1969) 127.
8. Conzen, op. cit. (1969) 125.
9. Conzen, op. cit. (1962) 406.
10. Conzen, op. cit. (1969), 59.
11. Conzen, op. cit. (1962) 408, Conzen, op. cit. (1969) 58.
12. Conzen, op. cit. (1969) pp 105-6, 125.
13. Conzen, op. cit. (1969) 123.
14. Conzen, op. cit. (1969) 126.
15. Conzen, op. cit. (1969) 126.
16. Conzen, op. cit. (1969) 127.
17. Conzen, op. cit. (1962) 396.

PART VI

Major Dynamic Aspects of Baghdad's Modern Development

CHAPTER 12.

Population Growth and Housing.

It is intended in this chapter to analyse the population growth in Baghdad city particularly in its present morphological phase. The recent population growth has been accompanied by obvious movement between the centre and the suburbs.

Traditional mahallahs have an increasing repellent effect on residential land use owing to the functional development of the city centre. Consequently the city has expanded in all directions. This was accelerated by the great waves of migration which created peripheral housing areas. This chapter deals with the residential structure in terms of density of houses, house ownership and housing problems. Associated problems resulting from the unchecked growth of the population, and physical expansion of the city urgently require comprehensive city planning within a regional and national context. Here the acoute housing needs and its solution have been briefly discussed.

As in other Middle Eastern countries, population data in Iraq are of no practical value[1]. they cover liwa, qadha and nahiyah units. Cities have been overlooked in many respects. The available details in Baghdad's case for example deal with Kadhimiyah Qadha, Tikrit Qadha, Abu Ghraib Nahiyah and so on. Each of these units has rural and urban components. There are no clear-cut dividing lines between the two. Information about rural and urban population totals are available, but without the existence of any established boundaries between them. Many urban mahallahs appeared in the censuses within nahiyahs or qadhas, which include many rural settlements. Thus it is impossible to know precisely the locational pattern of the urban population shown on any maps. This is true of almost all the administrative units of

Baghdad. Details of population data with regard to certain aspects such as sects or exact profession do not exist. There is no information about occupational structure by mahallahs. In the 1957 census, the population of Baghdad Liwa was classified by qadhas according to their sex, educational status and age-group. Each qadha comprises a number of urban and rural settlements, and perhaps some sub-qadhas (nahiyahs). The use of statistical information by qadhas is of no practical value in studying a particular town. The state of statistical information thus permits only a generalised presentation of the problem. The basic source for the study is the General Census Report of 1957 and the Preliminary Report of the 1965 Census. The complete and detailed results of 1965 Census are not yet available. Neither are the data illustrating the demographic events between the two censuses. Scientific analysis of the results are still not available even for the Master Plan of the City,[2] which contains no accurate assessment of its population.

The two census reports are not uniform in tabulation, methodology and organization. Thus the data presented in the study have their limitations.*

In 1965 the overall population density of Iraq (434,000 sq. km) was 19 persons per sq. km.

The density of population of Baghdad Liwa was 108.8 persons per sq. km. Compared to other liwas this is the highest figure, as shown in the table below.

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* It is important to point out here that even the official data are commuted and corrected in the publications on demographic problems of Iraq. (Hasib: United Nations Publication; Doxiadis Association; and Martholot)[3]

Fig.12.1 Population Density of Iraq by Liwas, 1965

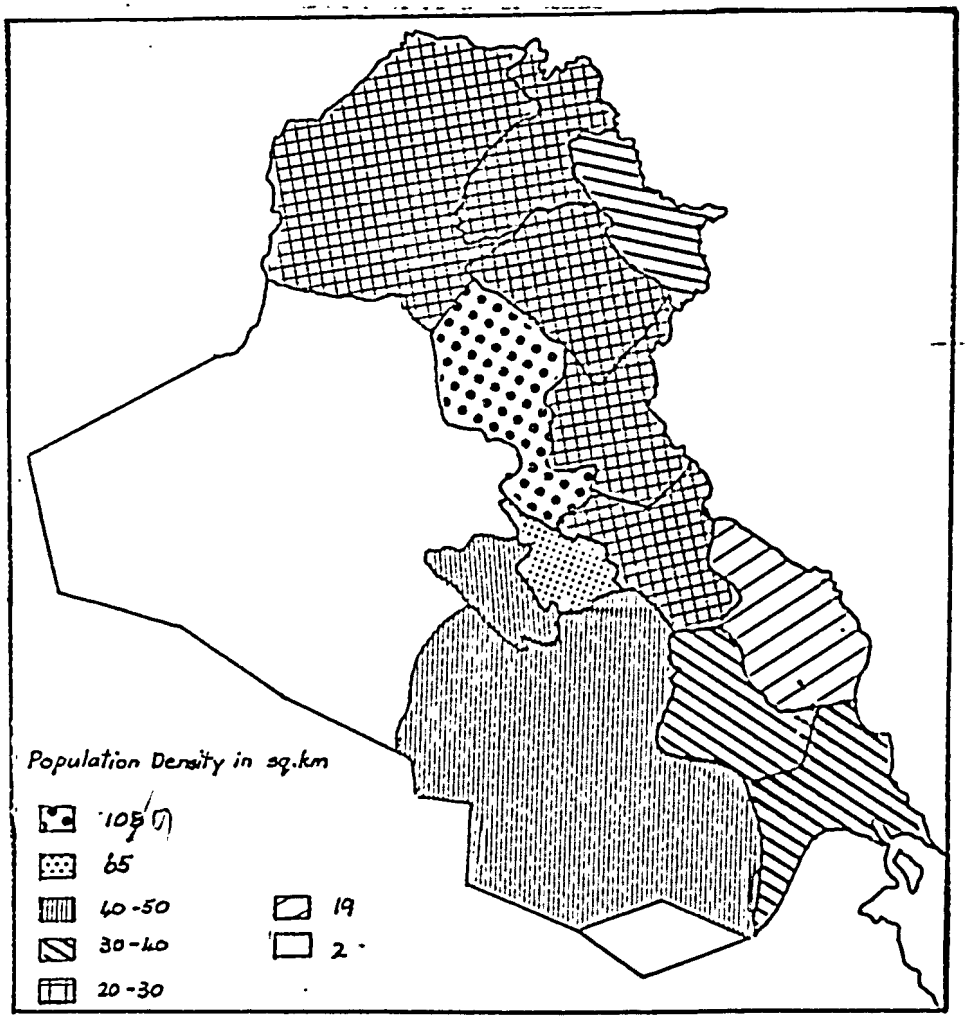


Table 12.1: Population density of Iraq by Liwas, 1965 (Fig. 12.1)

Liwas	Overall density per sq. km	% of the total Population	% of the total Area of Iraq
Mosul	20	11.4	11.6
Arbil	23.5	4.3	3.5
Kirkuk	23.6	5.5	4.5
Sulaimaniyah	34.0	4.9	2.7
Baghdad	108.8	26.2	4.5
Diyala	25.0	4.8	3.6
Ramadi	2.3	3.8	31.5
Hillah	65.0	5.2	1.6
Karbala	47.3	4.1	1.6
Kut	22.6	4.0	3.4
Amarah	18.9	4.2	4.1
Basrah	37.3	8.1	4.1
Diwaniyah	46.6	6.6	19.0
Nassiriyah	34.5	6.0	3.3

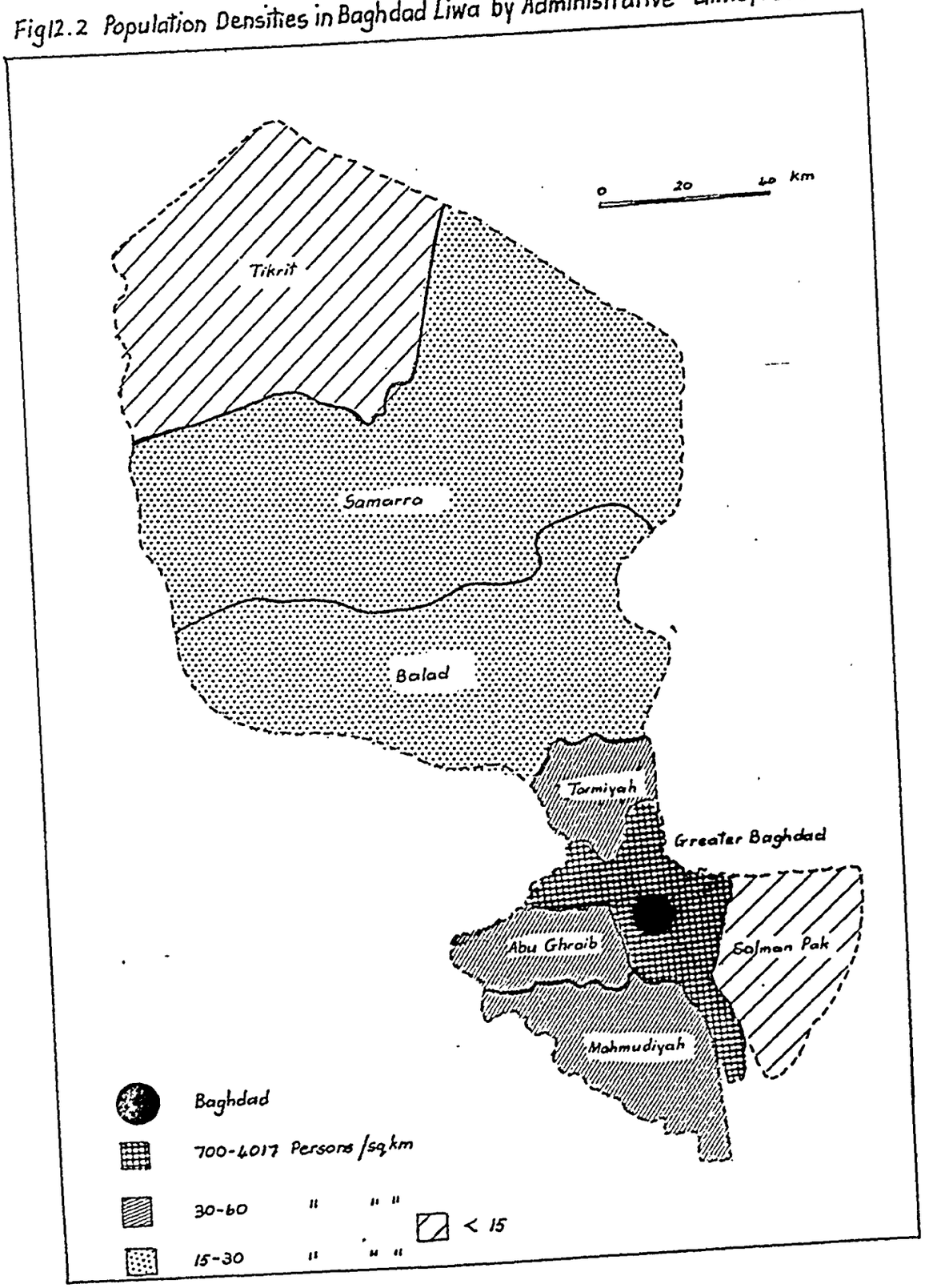
Source: Directorate General of Civil Status, Preliminary Report of the 1965 Census, Baghdad (1971).

Baghdad Liwa has the highest density because it accommodates the capital; has an efficient irrigation system and dominates the other liwas in almost all other aspects. In 1968/69 for example, Baghdad Liwa had more than 88.66% of the country's total number of industrial, agricultural, constructional, transport, commercial and insurance establishments.[4]

For Hillah and Diwaniyah Liwas the rather high density is because of the existence of relatively good irrigation systems. For Karbala Liwa it is because of religious factors. Three of the twelve Shiah Imams are buried there. This has attracted Shiahs, Arab and non-Arab from all over the Islamic world. A considerable number of people

F.P.60

Fig12.2 Population Densities in Baghdad Liwa by Administrative Units, 1965



come to this liwa to spend the evening of their life there. Basrah is the main port of the country and has very rich date groves. The Iraqi Petroleum Co. Ltd., is the main factor attracting population to Kirkuk.

In Baghdad as well as in other Liwas, the density of population varies widely between one administrative unit and the other. While the average density was 108 persons per sq. km, the highest and lowest densities were 4,017 and 4.6 persons per sq. km respectively, owing to various reasons such as distance from the capital, the availability of water and transportation (Table 12.2 and Fig. 12.2).

The density map of Baghdad Liwa does not reflect the real gradient of density, though it is based on the smallest administrative units. There is no information about the population according to the census enumeration districts, as the census considers only the administrative units. Besides, in Iraq/the smallest administrative unit has not necessarily the smallest area. For instance in Baghdad Liwa the biggest unit in area is al-Dur Nahiyah, which is the lowest administrative unit.

From the table 12.2 one can see that the rural density for each unit also varies widely. In Baghdad Liwa the rural population density was 48 persons per sq. km. Rural population represents less than 50 per cent of the total population of the liwa. When excluding the city of Baghdad, the rural density in Baghdad Liwa varied from 3 persons in al-Dur Nahiyah to 66 persons per sq. km in Mahmudiyah.

The population of both Iraq and Baghdad has increased considerably between 1947 - 1965 as shown in table 12.3.

Table 12.2: The administrative units of Baghdad Liwa; their total, urban and rural population; and the general, urban and rural density of population, 1965.

Administrative Unit	Area sq. km.	%	Total No. of Population	%	Rural Population	%	Urban Population	%	Density per sq. km. Average	Rural	Urban
(1) Rusafah Qadha:											
Rusafah Qadha centre	-	-	202,405	9.35	-	-	202,405	18.26	-	-	-
Karradah Nahiyah	168	0.84	303,397	14.28	152,636	15.30	150,761	13.60	1.806	908.5	897.5
Salman Pa k	1282	6.44	36,772	1.73	32.353	3.18	4,419	0.40	28.8	25.8	3.4
(2) Adhamiyah Qadha:											
Adhamiyah Qadha centre	54	0.27	522,217	24.50	370,150	36.44	152,067	13.72	4017.5	2847.3	1169.6
Thawrah Nahiyah	-	-	-	-	-	-	-	-	-	-	-
Rashidiyah "	165	0.83	14,344	0.60	12 ,817	1.26	1,527	0.14	86.9	37.6	9.2
(3) Karkh Qadha:											
Karkh Qadha Centre	-	-	114.622	5.40	-	-	114,622	10.34	-	-	-
Mamun Nahiyah	121	0.61	90:181	4.25	56,772	5.59	33,409	3.01	745	469.1	292.6
Mansur "	147	0.74	342,575	16.13	87,320	8.60	255,255	23.03	2330.2	513.9	1736
(4) Kadhimiyah Qadha:											
Kadhimiyah Qadha centre	70	0.35	169,931	8.00	70,845	6.97	99,086	8.97	2428	1013	1415
Tarmiyah Nahiyah	595	2.99	25,712	1.21	24,791	2.44	921	0.08	43.2	31.7	1.5
Abu Ghraib Nahiyah	560	2.81	42,953	2.02	34,434	3.39	8,519	9.77	76.9	61.4	15.2
Shulah "	225	1.13	-	-	-	-	-	-	-	-	-
(5) Mahmudiyah Qadha:											
Mahmudiyah Qadha centre	419	2.10	38,315	1.80	27,692	2.73	10,623	0.96	91.4	66	25.3
Yusifiyah Nahiyah	457	2.29	29,445	1.39	27,795	2.74	1,650	0.15	64.4	60.8	3.6
Latifiyah "	431	2.16	21,967	1.03	19,597	1.93	2,370	0.21	50.9	45.4	5.5
(6) Tikrit Qadha:											
Tikrit Qadha centre	1,289	6.47	14,628	0.69	4,707	0.46	9,921	0.89	11.8	3.7	8
Baji Nahiyah	740	3.71	19,062	0.90	12,277	1.21	6,785	0.61	25.7	17.8	9.1
'Alam "	1,600	8.03	11,950	0.56	6,806	0.67	4,144	0.37	7.4	4.8	2.7
(7) Samarra Qadha:											
Samarra Qadha centre	4,254	21.35	45,793	2.58	21,047	2.07	24,747	2.23	10.8	4.9	5.8
Dur Nahiyah	3,243	16.28	13,858	0.65	9,781	0.96	4,077	0.37	4.6	3	1.2
(8) Balalad Qadha:											
Balad Qadha centre	2,207	11.08	33,798	1.59	21,764	2.14	12,034	1.09	15.3	9.8	5.4
Dijail Nahiyah	1,389	6.97	18,439	0.87	11,901	1.17	6,538	0.59	17.3	-	4.7
Dhuluiyah "	430	2.16	11,959	0.56	9,341	0.92	2,618	0.24	27.8	21.7	6
Total	19,922	100.00	2,124,323	100.00	1,015,826	100.00	1,108,497	100.00	106.6	50.9	55.7

Source: Directorate General of Civil Status, The Preliminary Report of the 1965 Census (Unpublished) Baghdad (1971)

Table 12.3: Population growth in Baghdad City and Iraq 1947 - 1965 (in 000).

	1947	% of total	1957	% of total	1965*	% of total	% of growth 1947 - 1965
Baghdad City	503	10.33	1000	15.75	1500-1600	18-19	198 - 2[illegible]
Iraq	4820	100.00	6350	100.00	8261	100.00	71.39

Source: Polservice Consulting Engineers, Master Plan of Baghdad, , Warsaw,1(1969) pp 11- 3, 11-7.

With these figures, Baghdad City would have 10.33 per cent, 15.75 per cent and 18.15 per cent of the total population respectively at the successive dates. For Baghdad Liwa the percentages were 17 per cent, 21 per cent and 26 per cent respectively.

The available figures show that the population of Baghdad City and Baghdad Liwa continued to grow during the period 1965 - 1969 as shown below.

Table 12.4: Population growth of Baghdad City and Liwa 1965 - 1969.

	1965	1969	% of population increase
Baghdad City	1,620,000	1,956,648	20.78
Baghdad Liwa	2,124,323	2,379,297	12.00

Source: Polservice Consulting Engineers, Master Plan of Baghdad, Warsaw,1(1969) pp 11 - 7, 11 - 8; Directorate General of Civil Status, the Preliminary Report of 1965 Census, Baghdad (1971).

* Population of the city of Baghdad was estimated by the Master Plan, as there is no authority which knows the figure precisely.

Thus it appears that after 1947 Baghdad has grown more than in the whole of its history. In 1957, it joined the rank of "million cities", and it is the primate city of the country (100 - 12 - 11) in 1968[5] and with about two million inhabitants in 1970.

This was natural as Baghdad enjoys most of the public and private investments, attracting manpower and dominating the cultural pattern of the country. Baghdad is like most of the primate cities in recently independent countries[6] in this respect.

The annual increase was 41 per 1,000 between 1965 - 1969, and 31 per 1000 between 1957 - 1965; the latter was equal to the annual population increase of the country. The main reasons for such rapid increase was the exodus of fallahin migrants primarily from the southern rural area, the absorption of several rural settlements by the growing city and also to the relative improvement in economic and health conditions.*

Comparing the area and population of Baghdad city, over various periods, it would appear that while the area of the city has increased more than eight times between 1947 - 1965, the population increase was between 198 per cent to 222 per cent during the same period.

This rapid increase has resulted in the vast physical expansion of modern Baghdad.

Darwent has observed that in Mashhad literacy improved and population density decreased in the suburbs.[8] This is not so in Baghdad perhaps because population distribution in Baghdad's post-1956 suburbs was influenced by government decisions. The government

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* The annual natural rates of growth were variously estimated between 1.9 per cent to 6.3 per cent.[7]

distributed a considerable number of houses and plots to various income groups while fallahin migrants, the lowest income group and the most illiterate people, have also been housed in suburban areas by the same agency. Since the Iranian Government did not interfere with the redistribution of population of Mashhad to the same degree the higher income groups have monopolized the suburban locations in that Iranian town more than was the case in Baghdad.

The field survey has shown that the average number of persons per room at the surveyed houses in al-Thawrah suburb for example was higher than that of Aguliyah the traditional central mahallah, i.e. 3.25 as against 2.42, while the literacy rate was lower. On the other hand the percentages of literacy in Aguliyah and in the suburb of al-Washah were 54.14 and 26.66 respectively.

Baghdad City proper was divided into two qadhas; Rusafah and Karkh. Adhamiyah was promoted from nahiyah rank to qadha; alDurah Nahiyah was abolished, to be replaced by al-Mamun. A new nahiyah, that of al-Mansur, was also established.

As shown in table 12.5 the population of the East Side in 1957 was 464,780 of which 222,767 were in Rusafah, 122,968 in Adhamiyah Nahiyah and 129,045 inhabitants in Karradah al-Sharqiyah Nahiyah.

The population of the West Side on the other hand, was 328,403 persons, of which 138,396 were in Karkh, 127,224 in Kadhimiyah Qadha and 62,783 in al-Durah Nahiyah. From the same table it appears that the population of the East Side was greater than that of the West Side, Rusafah represented 58.6 per cent of the total population, while Karkh's percentage was 41.6.

Table 12.5: The distributional pattern of Baghdad's population, 1957.

Area	No. of mahallahs	No. of Population	Pop. of the East Side		Pop of the West Sd.	
			No.	%	No.	%
1. Baghdad Qadha	77	361,163	-	-	-	-
Rusafah	55	222,767	222,767	28.00	-	-
Karkh	22	138,396	-	-	138,396	17.5
2. Kadhimiyah Qadha	8	127,244	-	-	127,224	16.0
3. Adhamiyah Nahiyah	12	112,968	112,968	14.3	-	-
4. Karradah al-Sharqiyah Nahiyah	13	129,045	129,045	16.3	-	-
5. Durah Nahiyah	17	62,783	-	-	62,783	7.9
Total	127	793,183*	464,780	58.6	328.403	41.4

Source: Directorate General of Civil Status, the Detailed Results of the 1957 population census. Baghdad (1963).

Table 12.6 shows that the population of the East Side has more than doubled, increasing to 1,028,019, out of which 202,405, i.e. 19.69 per cent of the population of this side were in Rusafah Qadha. The population in Karradah Qadha and environs also has increased to 303,397 i.e. 29.5 per cent of the East Side population. Between 1957 and 1965 the percentages of population growth in Karradah and Adhamiyah Qadhas were 35.11 and 262.27 respectively.

In the same year the population of the West Side has also more than doubled. It increased to 717,304, 114,623 of whom were in Karkh Qadha.

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* This excludes the population of settlements such as Kraiat, Abu-Ghraib and others, which were included when the population of Baghdad was put at one million previously. The Kadhimiyah Qadha, Adhamiyah Nahiyah, Karradah al-Sharqiyah and Durah Nahiyah were included in this table because the census dealt only with the administrative units which cover wider areas than the built-up areas. This makes it impossible to know the population of the Greater Baghdad.

The population of Kadhimiyah and environs was 169,931, al-Mamun 90,181 and al-Mansur Nahiyah and environs had 342,575.

Although the absolute number of population has increased the relative proportion of the East Side and West Side remained almost the same as in 1957 being about 59 per cent and 41 per cent of the total population of the city respectively.

This means that the East Side continued housing the majority of the population. If one excludes the suburbs of Adhamiyah and Karradah al-Sharqiyah which are inhabited mainly by migrants, the West Side will be the more favoured residential side. The East Side, however, accommodates the majority of cultural institutions, the major bazaars, most of the modern business centre and industries. The opportunities of work on the East Side are more than those on the West Side.

The population of the post-1956 suburbs was 737, 723 i.e. 42.3 per cent of the total population of the city. The suburban population of the East Side was 522,786 i.e. 50.6 per cent of the total population of this side. On the West Side it represented about 30 per cent of the city's total population.

F.P. 613

Fig. 12.3 Baghdad's Population, 1957-1965 by Major Administrative Units

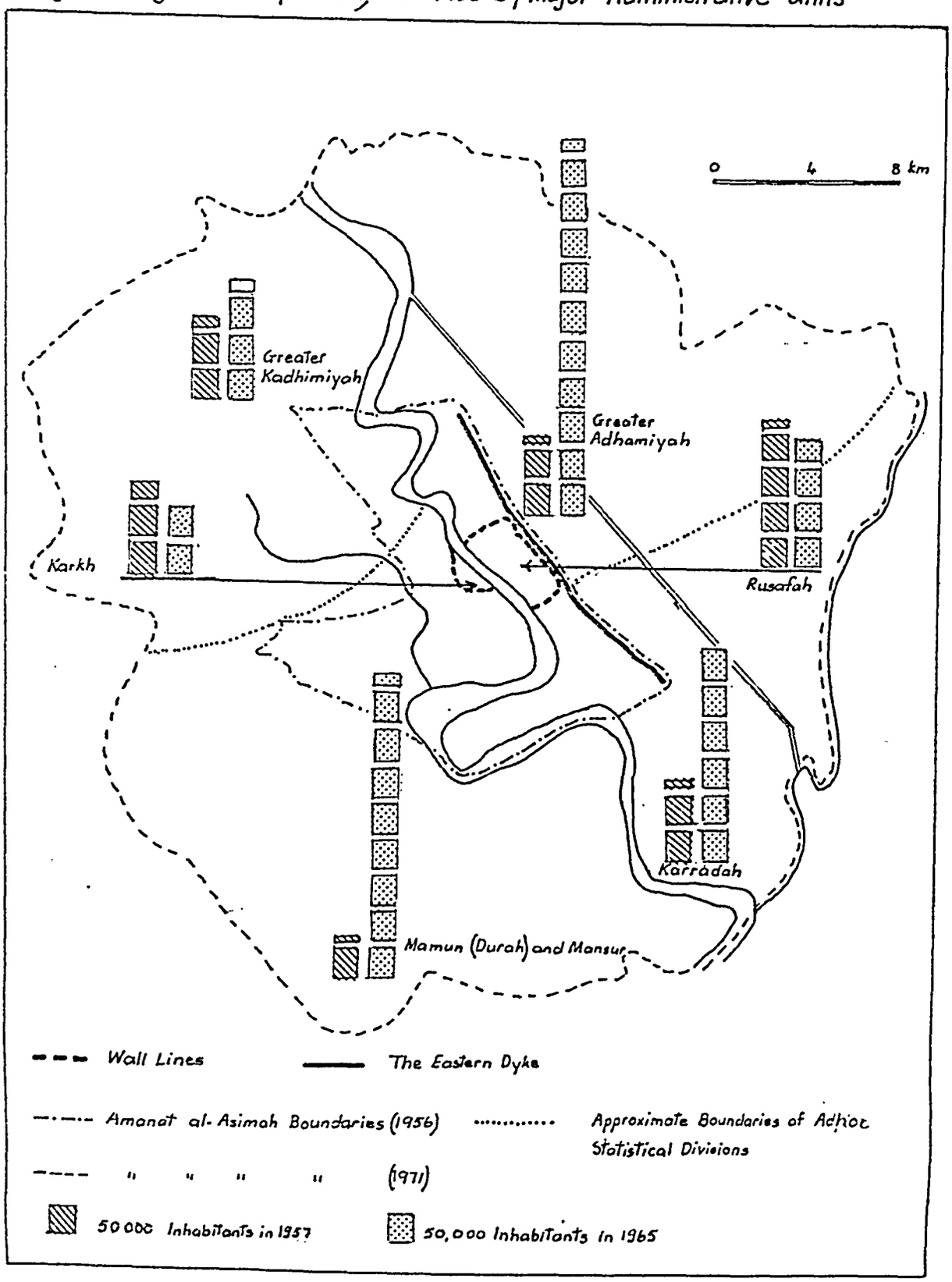


Table 12.6: The population distribution in Baghdad, 1965 (Fig. 12.3)

	Area	East Centre	East Suburb	East Total	East %	West Centre	West Suburb	West Total	West %
East Side	Rusafah Qadha	202,405	-	202,405	19.69				
	Adhamiyah "	152,067	370.150	522,217	50.80				
	Karradah al-Sharqiyah nahiyah	150,761	152,636	303,397	29.51				
West Side	Karkh Qadha					114,622	-	114,622	16.00
	Kadhimiyah Qadha					99,086	70,845	169,931	23.70
	Mamun Nahiyah					33,409	56,772	90,181	12.50
	Mansur					255,155	78,320	342,575	47,80
	TOTAL	505,233	522,786	1028,019*	59%	502,272	205937	717,309*	41%

Source: Directorate General of Civil Status, The Preliminary Report of 1965 Census, Baghdad (1971).

The high percentage of population, more than 42 per cent living in suburbs in 1965, radically influenced the morphology of the city. Unfortunately it is impossible to know the percentage of the population who came from the traditional centres of the city, and those who are simply fallahin migrants. However, because of the dominance of fallahin in several large suburbs such as al-Thawrah, al-Shulah, al-Hurriyah, al-Baiya and al-Washash, one can say that the overwhelming majority of suburbanites are fallahin migrants. Though urban in

* This includes about 125,328 population living outside the Amanat al-Asimah boundaries. The 1965 Census did not consider the municipal boundaries of the city, but dealt only with Baghdad Liwa and its administrative components.

morphology, the fallahin-dominated suburbs are still retaining socially many rural features.

According to table 12.7 the population in the Qadhas of Karkh and Rusafah decreased between 1957 and 1965. That decrease amounted to 20.362 i.e. 10 per cent in Rusafah and 23,774, i.e. 17.2 per cent in Karkh, while the population of the other centres increased as follows:

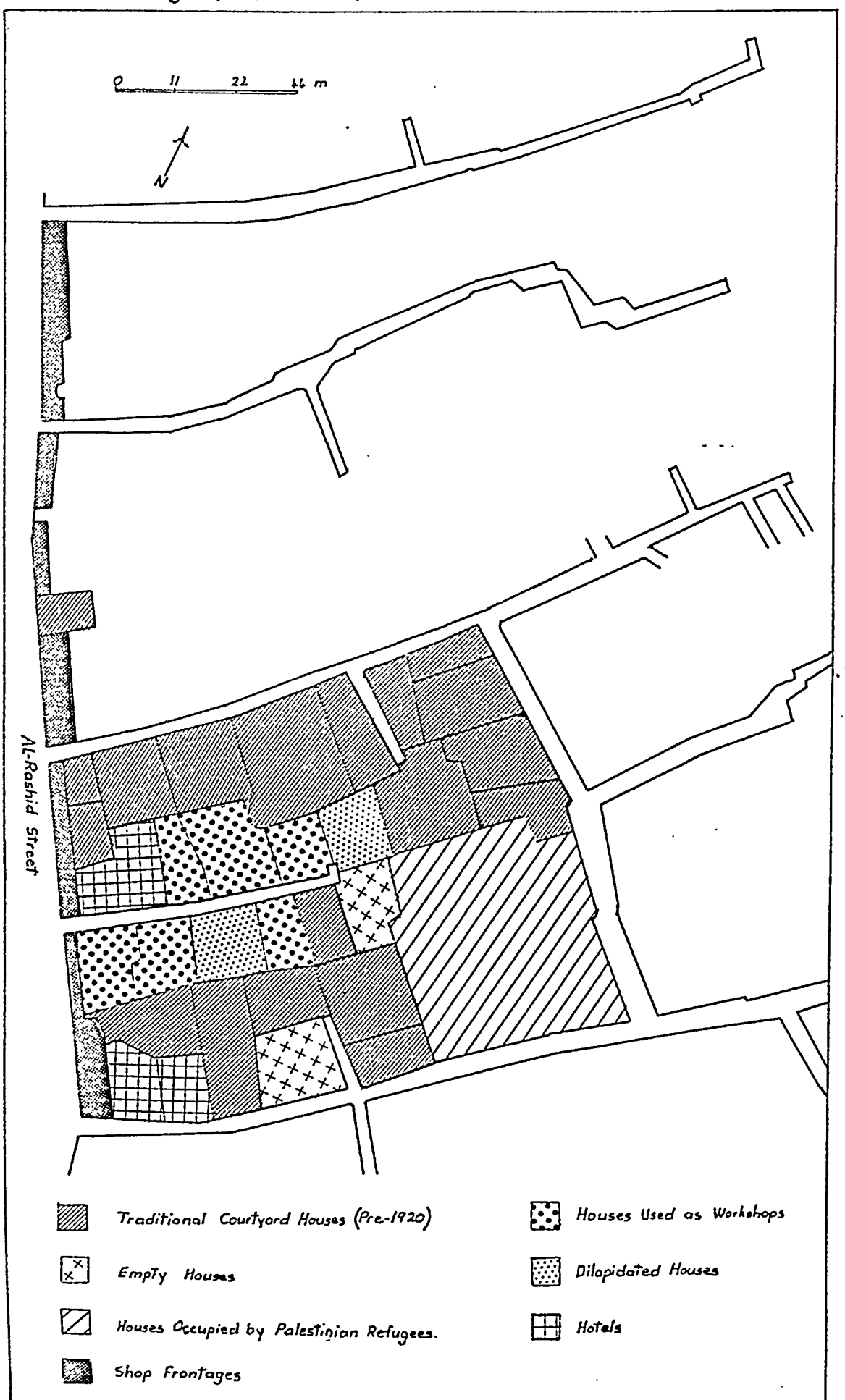
Adhamiyah Nahiyah by 36.2 per cent, Karradah al-Sharqiyah Nahiyah by 35.11 per cent, Kadhimiyah Qadha by 33.6 per cent, al-Mamun (previously al-Durah) Nahiyah by 43.6 per cent.

Table 12.7: The population fluctuation between 1957 and 1965

Administrative Unit	No. of Population		No. of gained or lost population	% of growth	No. of population of suburb	
	1957	1965			East Side	West Side
Rusafah Qadha	222,767	202,405	-20,362	-9.14	-	-
Adhamiyah "	112,968	522,217	+409,249	362.27	370.150	-
Karradah al-Sharqiyah Nahiyah	129,045	303,397	+174,352	135,11	152,636	-
Karkh Qadha	138,396	114,622	- 23,724	-17.14	-	-
Kadhimiyah Qadha	127,224	169,931	+ 42,707	133,57	-	70,845
Durah (Maman) Nahiyah	62,783	90,181	+ 27,398	143,64	-	56,772
Mansur Nahiyah	-	342,575	+342,575		-	87,330
TOTAL	793,183	1,745,328	+952,145	220.0	522,786	214,937

Source: The Directorate General of Civil Status, the Detailed Results of the 1957 Census, Baghdad, 1963 and the Preliminary Report of the 1965 Census, Baghdad, 1971.

Fig. 12.4 Building Use Development Along Some of the Agids of al-Aguliyah, a Surveyed Central Mahallah



The decrease of population of the Qadhas of Karkh and Rusafah indicates that this central area has become a proletarian quarter, and though the absolute number of the inhabitants has fallen, yet the density of population increased in proportion to the amount of living space available.*

The average number of persons per family and house in the surveyed central mahallahs in Rusafah was 7.56 and 10.63 respectively. The average block-plan in these mahallahs was 114.78 sq.m. The main factors which led to the decrease of population of Karkh and Rusafah were those of functional and physical replacement. Functional replacement in many cases has resulted in knocking down many traditional buildings to be replaced by multi-storeyed ones. The original, economically strong inhabitants have left their houses. Consequently, newcomers, mainly of lower income groups, came from various parts of the city and from the country. Some of them lived in multi-occupied property. The residents of the central mahallahs, thus became more heterogeneous socially than the original homogeneous population. The new inhabitants chose these central mahallahs because of the availability of employment compared with the original inhabitants who grouped themselves according to traditional social and tribal considerations (Fig. 12.4).

Population change in the traditional mahallahs can be examined by comparing the results of the censuses of 1957 and 1965 as shown in the table below.

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* The density of population in the central area was put at 128 persons per acre.[9]

Fig. 12.5 Population Change in the Traditional Mahallahs of Old Baghdad.

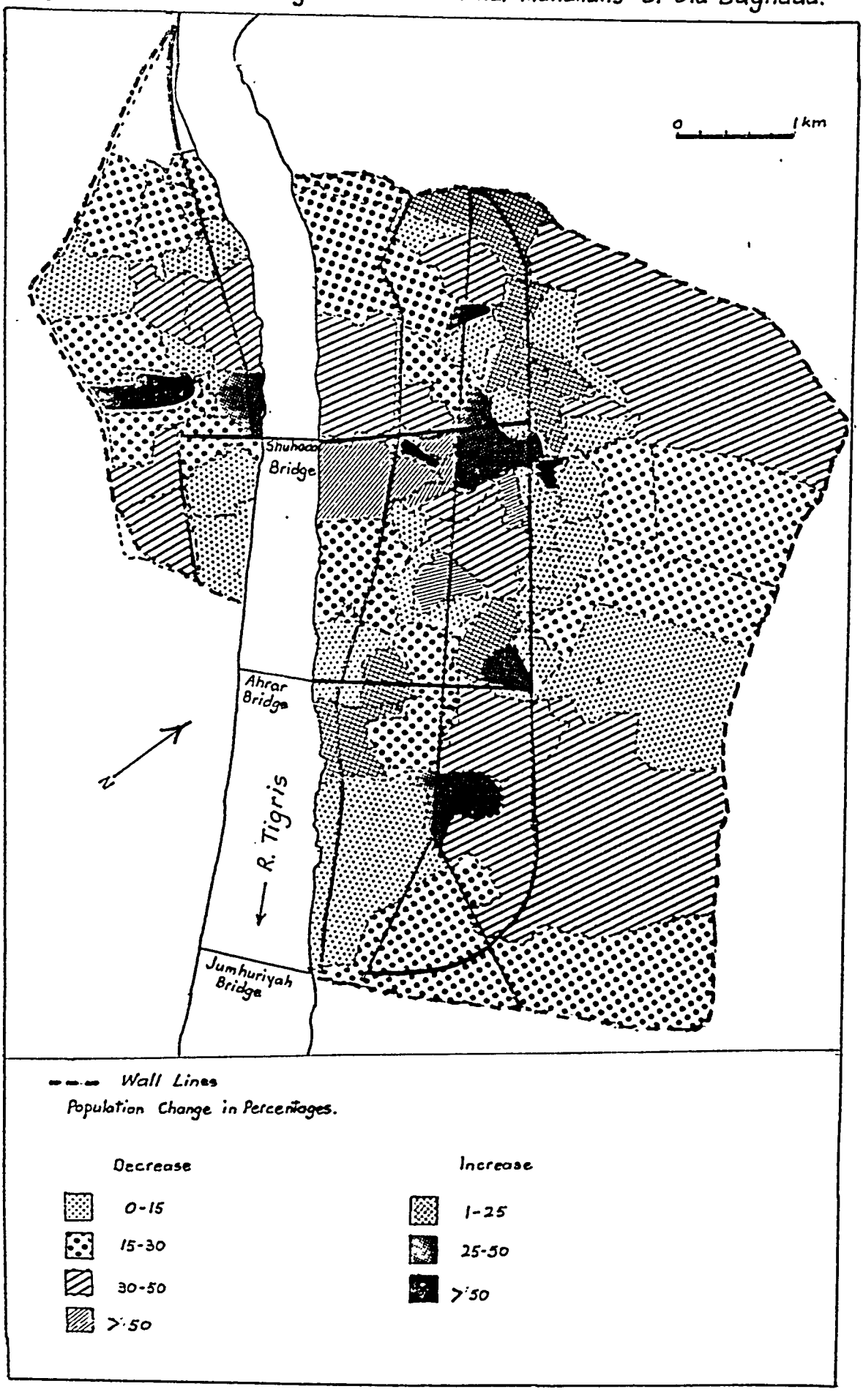


Table 12.8: The fluctuation of the population of Baghdad's traditional mahallahs between 1957 and 1965 (Fig. 12.5)

A - West Side (Karkh Qadha)

Mahallah	Total number of population		% of change	Population according to their religion			
	1957	1965		Moslems	%	Christian	%
1. Kraimat	7548	7969	+ 5.58	6120	76.80	1245	15.62
2. Sheikh Bashar	1621	2218	+ 36.83	2177	98.15	38	1.7
3. Fahamah	9066	7259	- 19.93	7255	99.94	1	0.0
4. Suq Hamadah	4777	4223	- 19.60	4222	99.98	-	-
5. Suq al-Jadid	3638	2424	- 33.37	2424	100.00	-	-
6. Ras al-Jisr	2088	1490	- 28.64	1458	97.80	4	0.2
7. Mishahdah	6758	6123	- 9.40	6111	99.80	2	0.03
8. Jaifir (a)	-	4328	-	4226	99.95	-	-
9. Duriyiin (a)	-	16992	-	15991	94.11	728	4.28
10. Falahat	4739	3945	- 16.75	3943	99.95	1	0.03
11. Shawwakah	4180	4001	- 4.28	3960	98.98	10	0.20
12. Khidhr Ilias	1235	870	- 29.55	870	100.00	-	-
13. Haasun Agha (b)	-	1537	-	1452	94.52	14	0.91
14. Tikartah	1761	1467	- 16.70	1467	100.00	-	-
15. SitNafisah	1677	1492	- 11.03	1492	100.00	-	-
16. Jami Ata	3764	2593	- 31.11	2593	100.00	-	-
17. Rahmaniyah (b)	-	21228	-	20180	95.06	126	0.95
18. Sheikh Ali	13984	10105	- 24.74	10097	99.92	6	0.06
19. Ataifiyah (Karkh) (b)	-	2123	-	2105	99.15	15	0.71
20. Alawi al-Hillah	8249	5378	- 34.74	5339	99.27	19	0.35
21. Suq Ijaimi	4217	3449	- 18.21	3413	98.96	-	-
22. Sheikh Sandal	902	784	- 13.08	784	100.00	-	-
23. Bab al-Sif	3196	2854	- 10.70	2809	98.42	16	0.56
24. Camp al-Haidari (b)	-	615	-	615	100.00	-	-

(a) the boundaries of the mahallah is not the same as that of 1957.

(b) these mahallahs did not exist in 1957.

Table 12.8 Continued

B. East Side -(Rusafah Qadha)

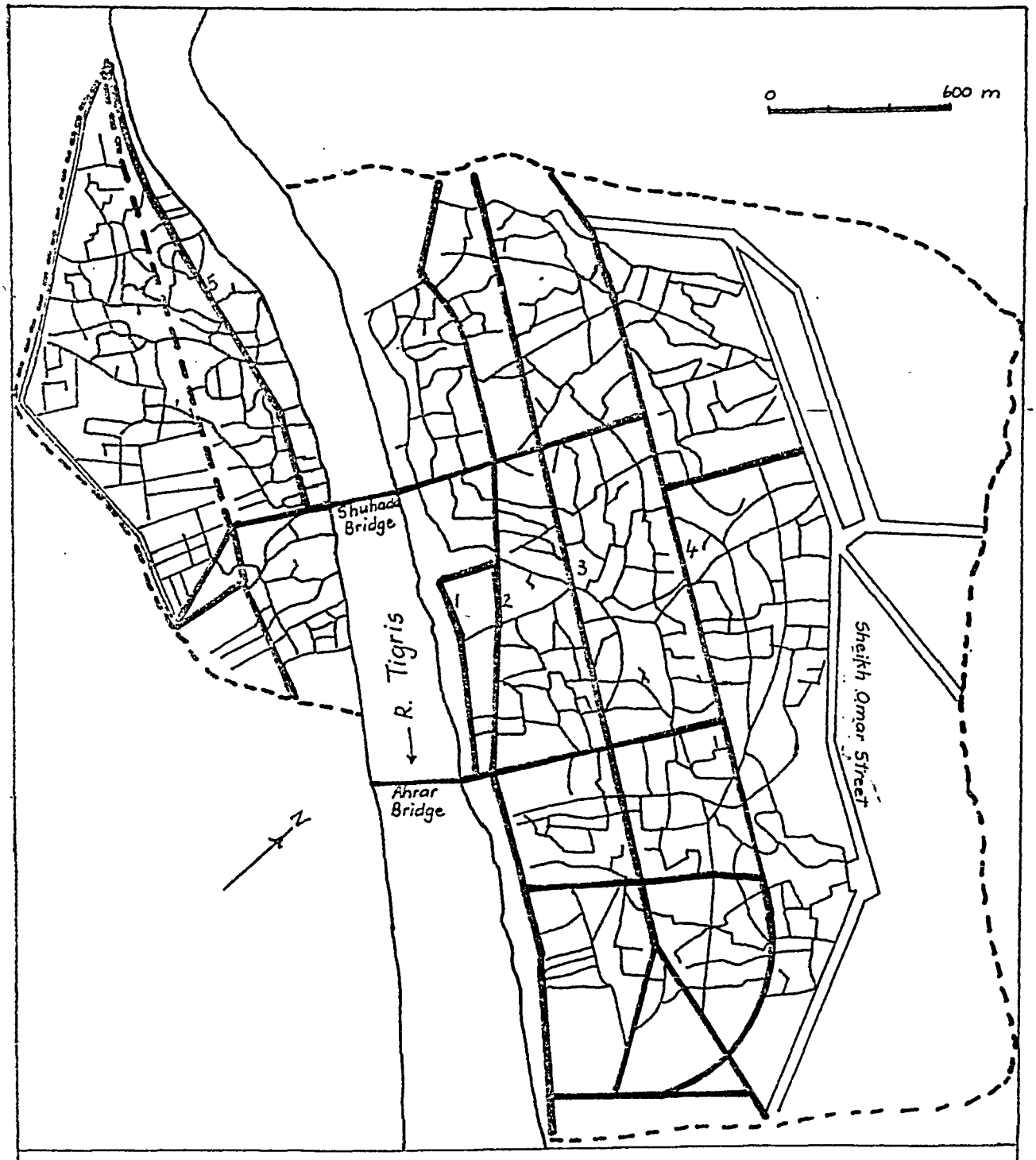
	Mahallah	Total Population		% of Change	Population according to their religion in 1965			
		1957	1965		Moslems	%	Christians	%
1	Iwadhiyah	8614	6068	- 29.56	5881	96.92	162	2.67
2	Sur	4384	4655	+ 6.18	4573	98.42	76	1.63
3	Maidan	3706	2946	- 20.51	-	-	-	-
4	Tub	2246	744	- 66.87	743	99.87	1	0.13
5	Barudiyah	4052	2748	- 32.18	2707	98.51	12	0.44
6	Fadhil	2327	2930	+ 25.91	2928	99.33	1	0.03
7	Khan Lawand	4314	4255	- 1.27	4254	99.98	1	0.02
8	Sayid Abdullah	2393	2514	+ 5.06	2514	100.00	-	-
9	Azzah	8846	5941	- 32.84	5933	99.87	3	0.05
10	Jubah	3376	1726	- 48.87	1725	99.94	1	0.06
11	Garghul	2414	2336	- 3.23	2330	99.74	-	-
12	Tabbat al-Kurd	817	1172	+ 43.45	1145	97.70	27	2.30
13	Hammun al-Malih	2090	2240	+ 7.18	2219	99.06	1	0.04
14	Haider Khanah	2254	1709	- 25.18	1701	-	4	-
15	Imam Taha	350	186	- 56.86	186	100.00	-	-
16	Dashti	319	492	+ 54.23	401	81.50	89	18.09
17	Bab al-Agha	1542	464	- 69.91	454	87.84	6	1.29
18	Jadid Hasan Pasha	3877	2287	- 41.00	2277	99.50	16	0.50
19	Ras al-Qariyah	2492	2420	- 29.70	1416	58.51	914	37.77
20	Taht ad-Takiyah	2791	1583	- 43.3	1519	95.96	-	-
21	Qambar Ali	5807	6754	+ 13.21	6417	97.61	18	0.27
22	Sit Hadiyah	1599	1367	- 14.9	1303	95.74	58	4.26
23	Izzat Tawilat	3754	3151	- 15.1	2896	91.91	246	7.81
24	Kubaisat	158	445	+181.65	429	95.96	8	1.80
25	Bu Shibil	1395	1382	- 1.2	1366	98.84	7	0.51
26	Khalidiyah	1521	1378	- 9.4	1388	97.10	-	-
27	Mahdiyah	3423	3463	+ 1.07	3348	96.68	1	0.03
28	Bu Mfarrij	1262	1342	+ 6.34	1341	99.93	1	0.07
29	Tawrat	6481	4136	- 36.18	3976	96.13	39	0.94
30	Hannun al-Kabir	1541	1376	- 10.80	1282	93.17	1	0.07
31	Hannun al-Saghir	1998	2006	+ 0.40	1965	97.96	-	-
32	Ubaid	2947	2381	- 9.3	2352	98.78	7	0.20
33	Faraj Allah	8454	7166	- 15.3	7151	99.79	7	0.10
34	Tatran	9000	7756	- 13.9	7678	98.90	12	0.10
35	Kulat	11628	10880	- 6.5	10833	99.57	28	0.25
36	Bani Said	1782	1688	- 5.3	1688	100.00	-	-
37	Hitawiin	1700	1917	+ 12.76	1888	98.49	21	1.10
38	Qushal	5379	5438	+ 1.15	5410	99.49	26	0.48
39	Dahhanah	2748	2436	- 11.4	1885	77.38	534	21.92
40	Suq al-Ghazil	1798	839	- 53.4	573	68.30	266	31.70
41	Sababigh al-Al	2926	2260	- 22.8	1624	71.85	569	25.18
42	Ammar Sabi Ibkar	2442	1679	- 11.3	1361	81.06	286	17.03
43	Qatirkhanah	2065	2174	+ 5.28	1568	72.13	597	27.46
44	Haj Fathi	6694	4240	- 16.7	2613	61.63	1913	45.12
45	Murabbah	3731	3808	+ 2.05	1832	48.11	1932	50.74
46	Ras al-Saqiyah	3144	3499	+ 11.29	3395	97.03	66	1.89
47	Siraj al-Din	13895	8554	- 39.50	8405	98.26	97	1.13
48	Hai al-Akrad	5509	3561	- 35.4	3497	98.20	-	-
49	Sinak	5788	5001	- 14.6	1093	21.86	3820	76.38
50	Qahwat Shukur	7801	6371	- 18.4	4764	74.78	1596	25.05
51	Camp al-Arman	11754	979	- 81.7	447	45.66	396	40.45
52	Bab al-Sheikh al-Ula	14122	14739	- 1.7	13972	98.94	104	0.74

Continued.....

	Mahallah	Total Population			% of Change	Population according to their religion in 1965			
		1957	1965			Moslems	%	Christians	%
53.	Babal Sheikh al-Thaniyah	9644	403	-	95.7	403	100.00	-	-
54	QarahShaban	2606	2115	-	18.9	2079	98.30	8	0.38
55	Camp al-Qailani (b)	-	10282		-	4132	40.19	6049	58.83
56	Fadhwat Arab (b)	-	7928		-	7764	97.93	146	1.84
57	Sheikh Omar	-	5178		-	5092	98.34	74	1.43
58	Aguliyah	1373	890	-	25.20	-	-	-	-

Source: Directorate General of Civil Status, the detailed result of 1957 Census, Baghdad (1963) and the Preliminary Report of the 1965 Census, Baghdad (1971).

Fig. 12.6 The Street System of Old Baghdad (Generalised)



Wall Lines

Zuqaq System

Break-Through Streets

The new Break-Through Street of al-Karkh

Modern Streets built on the edge of the traditional built-up area

1 Al-Nahr Street

2 Al-Rashid "

3 Al-Kifah "

4 Al-Jumhuriyah "

5 Al-Kadhim "

This table indicates that 89 per cent of the mahallahs in Karkh have decreased in population. This results mainly from the functional change of a large number of traditional houses and from demolition and replacement. It is obvious in the mahallahs of Suq Hamadah, Ras al-Jisr, Shawwakah, Khidhr Ilias, Tikartah, Alawi al-Hillah and Bab al-Sif.

The construction of the new break-through street in al-Karkh has resulted in the demolition of more than 450 traditional houses, 11 alwahs and a monumental hammam* (Figs. 12.6, 10.10a,b).

The attractiveness of suburban life was another reason for the shift of population from the traditional mahallahs. Most of the original inhabitants have left for distant suburbs, mainly on the West Side of the city.

In Rusafah on the other hand, 39 mahallahs i.e. 71 per cent of the total number of mahallahs have declined in population between 1957 and 1965. Some of them have lost as many as 95 per cent of their inhabitants in 1957.

Traditional mahallahs with slightly increased population are located further away from the main streets and have not been affected by the construction of the break-through streets. They maintained their residential function. More than 46 per cent of the population of the declined mahallahs have each lost more than 20 per cent of their inhabitants.

Generally Moslem as well as Christian mahallahs have declined. This is expressed by the migration of original inhabitants to the new suburbs. About 70 per cent of the declining mahallahs abut on one of the main four break-through streets. This has escalated the movement of residents where houses were either destroyed by the new break-through

* Calculated by imposing the new street on the 1918-19 map of Baghdad showing the plot boundaries at a scale of 1:880.

Fig. 12.7 Functional and Physical Change in the Central Area of Baghdad: Al-Shurjah Traditional Area.

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streets or failed to resist the economic pressure on their sites. Thus they changed their functions or were replaced by multi-storeyed buildings to perform central functions for the expanding city (Fig. 12.7).

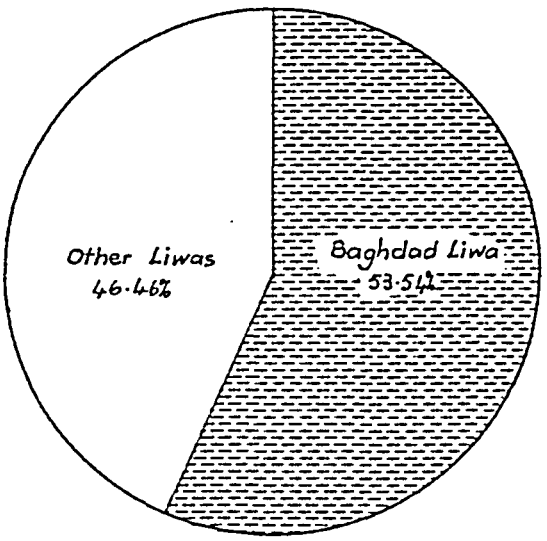
The significance of the functional pressure on the central mahallahs can be understood if one knows that in 1965 the percentages of female inhabitants were only 18.6 per cent in al-Maidan, 29.2 per cent in Hammam al-Malih, 33.41 per cent in Bab al-Agha, and 26 per cent in Jadid Hasan Pasha mahallahs. This indicates that these mahallahs became dominated by functions other than residential and houses were inhabited by males who worked in the central area. Most of them are migrants coming mainly from central and northern liwas contrary to the migrants from the southern liwas, who traditionally migrate with their families, and inhabit the outskirts of the city, where they can erect illegal sarifah constructions. From this table it appears that Christians are still segregated in central traditional mahallahs, e.g. 51 per cent of the inhabitants of al-Murabaah, 37.77 per cent of Ras al-Qariyah, 31.7 per cent of Suq al-Ghazil, 25.18 per cent of Sababigh al-Al, 27.46 per cent of Qatir Khanah, 45.12 per cent of Haj Fathi, 76.38 per cent of Sinak, 25.05 per cent of Gahwat Shukur, and 40.45 per cent of Campal-Arman Mahallahs were Christians in 1965.

As a result of the population growth described, the city has expanded greatly. Houses in the new areas are like those in the pre-1956 city, and as in all other cities, represent the most recurrent physical element in the city.

Statistical information about housing in Iraq, whether owned or rented is not reliable. The first attempt to gather such information

Fig. 12.10 Mortgages and Building Permits by Liwas, 1969

a. Percentage of Mortgages Paid in Baghdad and Other Liwas, 1967/68



b. Building Permits Issued in 1969 by Liwas.

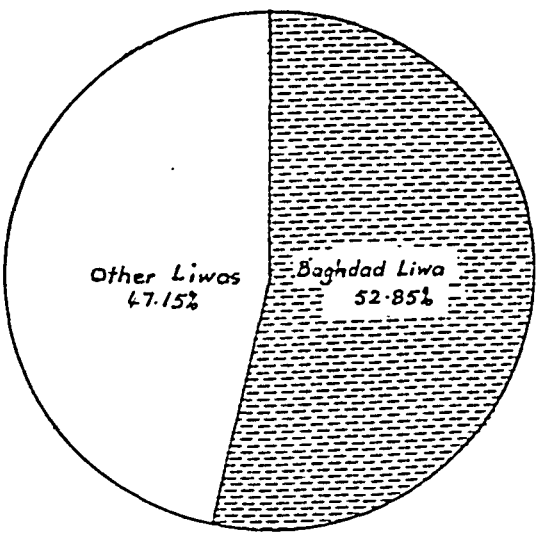


Fig. 12.9

a. Another example of the government-built houses of al-Yarmuk

b. Privately-built, middle-class western houses in Harithiyah, of a type alien to social traditions and climatic circumstances

Fig. 12.8

Two examples of the high-class government housing localities of (a) al-Yarmuk and (b) al-Thubbat, with complete disregard for the social structure, architectural tradition and climate

a.

b.

was carried out in 1956, when the central statistical organisation surveyed the houses of the country.

It is worth mentioning that since 1961 the central statistical organisation has begun to collect annual statistics on houses built in Iraq based on the number of permits provided. This is not comprehensive and not reliable, as it does not include mud houses which need no building permits but are almost the only type known in the Iraqi countryside.

Between 1956 and 1969, the government built 14,957 houses in Iraq, 6,340 of which were built in Baghdad.[10] These houses are varied in design and cost. The average cost of government-distributed houses is between 1,350 to 1,650 I.D. each (Figs.10.16a,12.8a,b,12.9a). As a result of recent housing expansion, numerous madinahs (cities) were and still are developing beyond the limits of the pre-1956 city. The vacant lands between the new suburban residential areas are gradually built-up and most of these areas have been sub-divided.*

The Estate Bank of Iraq, which has a capital of 20 millions I.D., finances the limited-income population and the homeless population to build their dwellings. Baghdad Liwa was the major beneficiary of the bank support as shown in the table below (Fig. 12.10).

Year	Baghdad Liwa			Other Liwas		Total	
	No. of beneficiaries	%	Sum I.D. %	No. of beneficiaries	Sum I.D.	No. of beneficiaries	Sum I.D.
1965/66	5,490	56.91	6,062,990 60.97	4,156	3,880,790	9,646	9943,780
1966/67	4,613	53.80	4,551,450 58,29	3,962	3,256,970	8,575	7808,420
1967/68	4.171	53,54	396,600 61.83	3,614	2,720,580	7,790	641,480

Source: The Estate Bank, The Annual Report for the year 1967-1968, Baghdad (1969)

* For instance 2,500 new houses for army officers are to be built on the East Side (Zaiunah), which will cost 15 million I.D.[11]

This table shows the significance of this side of governmental contribution for the recent residential expansion of the city. In addition to loans the bank has entered the estate market by buying tracts of land, sub-dividing them and selling plots to individuals. The average area of a plot is between 300 - 800 sq. m. The bank's activities have been observed in various parts of the city particularly on the East Side, as in Raghibah Khatun (Kurd al-Pasha), Waziriyah and Jadiriyah. Up to 1968, the bank sold 4,000 plots. The prices were fixed by free auction, which eventually excluded poor people automatically.

Wealthy people bought up large numbers of plots speculatively in order to re-sell them at a profit later. Thus indirectly the bank encouraged lands speculation which further escalated the unchecked contemporary expansion of the city.

Baghdad, as well as other urban centres, have also been affected by the agrarian reform of 1958. A big percentage of the large land holdings that came under the control of the government in the vicinity of municipalities were allotted to public housing. This factor is playing an important part in solving the housing problem, since it is by-passing the obstacle of purchasing land for public housing which in the past had involved the government in unusually high expenditure and is therefore cutting the cost of housing units almost by half. Moreover these lands are being distributed to prospective house owners from all income groups at a nominal price. Thus the housing boom of the city has been further boosted by this factor.

Because of the unfair distribution of housing plots, loans, and also because of the relatively high economic standard of the inhabitants of Baghdad compared with other liwas, Baghdad dominated the country in

both private and public buildings. This can be seen for the period 1961-1969 for which reliable figures are available.

As shown in (Table 12.10) house building permits declined in 1967. This is because the number of plots distributed to the housing societies were reduced and also because many of the wealthy people who owned more than one house switched their investment into other sectors. The government had issued new regulations decreasing the rent value of houses, as a result of which wealthy people began to invest their money in more profitable projects.[12]

From this table it appears that Baghdad had the highest percentages in the number of licences issued and the number of buildings completed in all the years from 1961 to 1969. (Fig. 12.10). The same fact emerged from the average number of employees in the public and private sectors during the same period. In 1969 the average number of employees in Baghdad was 8.422 i.e. 26.93 per cent of the total number of the country's employees, which was 31,270.

Generally building activities decline during winter, the rainy season in Iraq, while they rise during the other seasons. This can be seen in sums loaned by the Estate Bank as well as in the total number of licences issued in different months. Total loans given in July and January, 1967 were 714,000 and 30,350 I.D. respectively, while the average number of licences issued in July and January of the same year were 627 and 414 respectively.[13]

The annual average increase of houses appeared to be 783. This annual increase, however, does not depict the real situation. The 1957 census, which was published in 1963, did not include the number of houses, and thus it is not comparable with the 1947 Census in that

Table 12.10: Number of building licences issued and buildings (private sector) completed for the period 1961 - 1969.

	No. of licences	%	No. of completed buildings	%
1961				
Baghdad	8,402	47.30	7,446	47.34
Iraq	17,762	100.00	15,728	100.00
1962				
Baghdad	7,843	44.19	7,947	44.99
Iraq	17,747	100.00	17,663	100.00
1963				
Baghdad	8,741	48.99	8,355	50.90
Iraq	17,841	100.00	16,413	100.00
1964				
Baghdad	10,628	49.48	10,025	49.59
Iraq	21,479	100.00	20,216	100.00
1966*				
Baghdad	12,942	48.28	13,671	49.69
Iraq	26,807	100.00	27,515	100.00
1967				
Baghdad	9,857	44.36	9,247	44.55
Iraq	22,218	100.00	20,757	100.00
1968				
Baghdad	10,437	44.35	10,403	45.30
Iraq	23,533	100.00	22,963	100.00
1969				
Baghdad	13,883	54,42	12,181	52,85
Iraq	25,513	100.00	23,048	100.00

Source: The Central Organisation of Statistics, Ministry of Planning, The Results of the Construction Censuses for the Year 1961 - 1969, Baghdad (1963 - 1970).

* Figures for the year 1965 are not available.

respect.[14] The census gave the number of families in Greater Baghdad and Baghdad Liwa as 143,314 and 241,258 respectively.[15]

In 1956, the government of Iraq carried out a housing census by liwas which can be considered as a starting point to trace residential growth compared with 1965. In 1965 the number of houses was estimated by the Polservice Master Plan, but their details are not comparable with that of 1956. However, the general totals show that Baghdad houses have been increased from 98,019* to 175,000 houses,[16] the percentage of growth thus was 78.54.**

According to the Directorate General of Housing, Ministry of Public Work and Housing, the number and types of houses of Baghdad Liwa and Iraq was as shown in the table below.

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* This includes Greater Baghdad which incorporates the houses of both Baghdad Qadha and Kadhimiyah Qadha. The number also included the sarifahs of the city.

** In 1956, Baghdad Qadha had the highest house density with 44.5 houses per sq. km. The lowest density was in Samarra Qadha being 1.9 houses per sq. km.

Table 12.11: House type and building materials, 1956.

Liwa	Qasrs*		Brick Houses		Mud Houses	
	No.	%	No.	%	No.	%
Baghdad						
Urban	1,328	99	176,456	91	-	-
Rural	15	1	17,458	9	55,910	100
Iraq						
Urban	4,689	99	371,408	79	69,353	18
Rural	59	1	97,290	21	320,393	82
General Total	4,748	100	468,698	100	389,756	100

	Apartments		Sarifahs		Kukhs		Tents		Total**	
	No.	%	No.	%	No.	%	No.	%	No.	%
Baghdad										
Urban	2,462	98	35,818	88	890	22	-	-	216,954	72
Rural	42	2	4,836	12	3,248	78	1,508	100	83,017	28
Iraq										
Urban	2,808	98	7,256	41	6,318	11	1,015	3	522,778	47
Rural	55	2	9,861	59	39,449	89	29,567	97	581,674	53
General Total	2,863	100	17,117	100	45,767	100	30,582	100	1104,452	100

Source: Directorate General of Housing, A Study for the Housing Problem in Iraq and How to Solve it for the period 1970-1990, Baghdad (1970) Table 1; Central Bureau of Statistics, Ministry of Economics, A Report of the Housing Census of Iraq for the year 1956, Baghdad (1956).

* There is no definition of what was meant by Qasrs 'palaces'

** The total number of houses in Baghdad Liwa in 1956 was put at 128,078.

From this table it appears that Baghdad Liwa had 73 per cent of the sarifahs and kukhs found in the country, which reflects the extent of the housing problem. The urban settlements in Baghdad Liwa had 81.95 per cent of the total number of sarifahs and kukhs jointly found in the liwa. When including 'palaces' (qasrs) 81.33 per cent of the total number of the urban dwellings in Baghdad liwa were brick constructed. Only 1.13 per cent of the dwellings in the urban settlements of Baghdad Liwa were apartments because Arabs traditionally prefer houses for greater privacy. Baghdad Liwa had 21.36 per cent of the total number of dwellings of all kinds in the country, while it had in the same year 26 per cent of the country's population.

According to this census 83 per cent of the urban houses were mainly built of bricks.

The main building materials in the surveyed mahallahs are shown in (table 12.12) below, by morphological phases.

Bricks, juss and steel joists are the main building materials; for roofing the materials were steel and tiles, timber and mud, steel and bricks.

Houses developed in the second morphological phase used mud and timber more than other houses. However, a high percentage of these houses have been modified. Stone, the unavailable material in the alluvial plain of Mesopotamia has not been used. Concrete is used in more than 60 per cent of the houses developed after 1956, i.e. in the fifth morphological phase. The percentage of houses using timber as constructional material decrease as the morphological phases proceed.

Table 12.12: Building materials in the surveyed houses (1971).

Morphological Phase	% of houses using as their main building materials								Roofing materials
	bricks	concrete	mud	stones	timber	mud & mats	steel & joist	Juss	Mud
2	100.00	8.33	57.87	-	49.72	7.41	48.89	54.26	13.61
3	100.00	-	-	-	50.00	-	100.00	100.00	-
4	88.89	41.85	3.70	-	14.81	-	88.89	86.67	-
5	100.00	61.67	8.33	-	4.67	-	76.19	92.86	15.00
Average	98.10	32.09	24.02	-	26.89	2.61	71.60	78.98	10.01

Morphological Phase	Roofing materials		
	Timber & mud	Brick & Steel	Tiles & Steel
2	63.80	8.24	14.35
3	50.00	-	50.00
4	19.26	15.56	80.73
5	36.67	33.33	50.00
Average	38.27	17.42	48.72

Source: Fieldwork, 1971, See Appendix A, Table R.

The number of families in Baghdad Liwa has increased from 149,484 in 1956 to 298,632, in 1970, i.e. it has almost doubled within fifteen years, an increase much higher than that of houses. The housing problem can be judged from the following table, which reviews the house/family situation in Baghdad in 1956.

Table 12.13: House/family structure in Baghdad Liwa, 1956.

	Average Number
Persons per house	7.2
Families per house	1.2
Persons per family*	6.2
Persons per room	2.6
Rooms per house	2.8
Rooms per family	2.4

Source: Central Bureau of Statistics, Ministry of Economics, A Report of the Housing Census of Iraq for the year 1956, Baghdad (1956) 3.

Al-Midfai on the other hand had put the number of persons per room in a single-room house at 4.59, 2.96 in houses of two rooms, 2.28 in houses of three rooms and 1.68 in houses of more than four rooms. This indicates that Baghdad has an acute housing problem, which is seen in the average number of families per house, person per house and persons per room.

In 1965, the Master Plan of Baghdad estimated the number of houses in Baghdad City as follows:-

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* According to the Census of 1957, the average number of persons per family was 5.5 in 1960.K. al-Midfai put the average number of persons per family for Baghdad at 6.6 and very likely includes the sarifah dwellers, while according to the household inquiry carried out in 1961, the average number was put at 5.6. The same inquiry shows that the average number of families per house was 2.2; the Master Plan on the other hand put the average number of persons per family and house in 1965 at 6.5 and 8.6 respectively.[17]

Fig. 12.11 The Distribution of Houses in Baghdad by Planning Divisions.

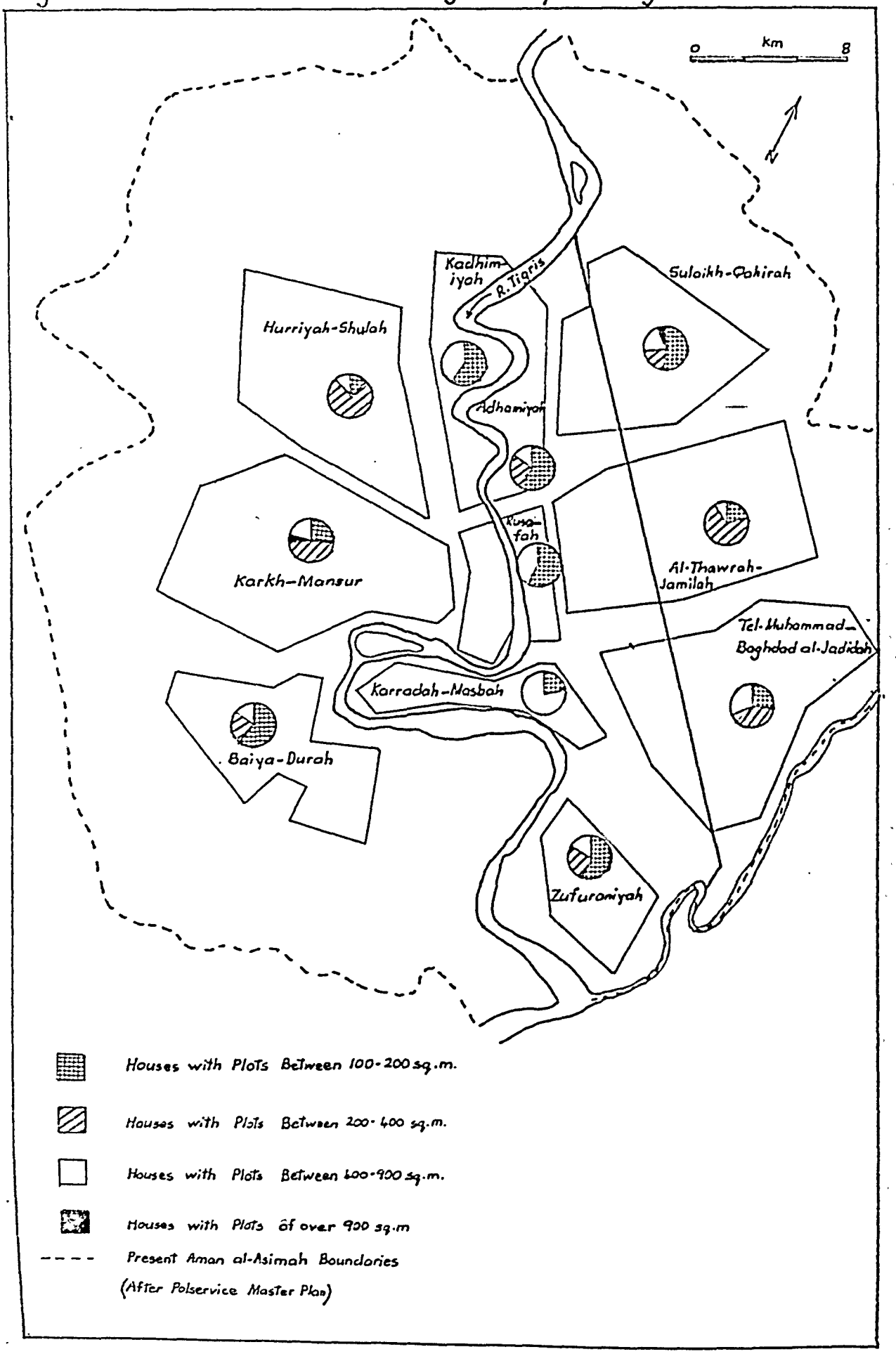

Table 12.14: Distribution of houses in Baghdad City, 1965 (Fig. 12.14)

Area	No. of houses	%	Remarks
Centre	14.000	8.00	Traditional houses
Adhamiyah	15.000	8.57	Mostly suburban houses
Qanat al-Jaish	52,500	30.00	Totally suburban houses
Baghdad al-Jadidah	10.500	6.00	Totally suburban houses
Karradah	11,500	6.57	Mostly suburban houses
Karkh	22,000	12.57	Mostly Traditional houses
Kadhimiyah	35,000	20.00	Mostly Traditional houses
Durah	14,500	8.29	Mostly suburban houses
Total	175,000	100.00	

Source: Polservice Consulting Engineers, Master Plan of Baghdad, Vol. 1 Warsaw (1969) pp. vii - 3.

The above shown discrepancy between the given figures made the field survey inevitable. The following Table 12.15 indicates the average number of persons per house, families per house, persons per family, persons per room, rooms per house and rooms per family in the surveyed mahallahs.

Table 12.15: Family/house structure of the surveyed houses

Mahallah	Morphological Phase	Person/ house	Families/ house	Persons per Family	Persons per room	Rooms per house	Rooms per family
Suq Hamadah	2	9.00	1.30	7.00	2.49	3.70	2.85
Sayid Abdullah	2	8.56	1.20	7.70	2.85	3.00	2.45
Aquliyah	2	4.60	1.60	7.20	2.42	4.80	3.00
Harah	2	8.00	1.00	8.00	2.25	3.56	3.56
Shiukh	2	11.80	1.70	6.94	3.11	3.80	2.24
Karradah	2	9.50	1.33	7.13	2.19	4.33	3.25
Average		9.74	1.36	7.25	2.51	3.87	3.06
Orfaliyah	3	17.13	2.75	6.23	2.34	7.31	2.75
Bustan al-Khas	3	10.88*	2.13	5.76	1.98	5.75	2.13
Average		14.01	2.44	5.98	2.16	6.53	2.44
Ataifiyah	4	7.00	1.00	7.00	1.49	4.70	4.70
Durah	4	7.58	1.33	7.58	2.33	4.33	3.25
Washash	4	10.13	1.93	5.24	2.53	4.00	2.07
Average		8.24	1.42	6.61	2.12	4.34	3.34
Kraiat	5	9.80	1.50	6.53	2.04	4.80	3.20
Iskan	5	9.86	1.29	7.67	3.00	3.29	2.56
Mamun	5	7.7	1.20	6.42	1.38	5.60	4.67
Thawrah	5	9.10	1.45	6.28	3.25	2.80	1.93
Hai Dragh	5	9.40	1.70	5.35	1.65	5.70	3.35
Mansur	5	4.14	1.14	3.63	0.91	6.14	5.38
Average		8.33	1.38	5.98	2.04	4.72	3.52
General Average		9.48	1.50	6.30	2.27	4.73	3.14

Source: Fieldwork 1971, See Appendix A, Tables A, O^a, P^a.

* This excludes tenant bachelors, who concentrate in the areas developed before 1936. It was reported that 5000 bachelors live in al-Battawiin and in mahallahs along al-Rashid Street.[18]

From this table it is obvious that the most crowded areas in Baghdad are the mahallahs built between 1920 - 1936. This is expressed in terms of the average number of persons per house which was more than 14, families per house which was 2.44, and rooms per family which was 2.44. These mahallahs were the well-to-do localities in Baghdad perhaps up to 1956, after which the original wealthy families left their houses for the modern suburbs and were replaced by migrant families. 90.16 per cent of the interviewed families in these mahallahs were migrants, 90.91 per cent of them being Christians from the north. They live in a miserable and unhygenic condition. Some of the surveyed houses are inhabited by more than 40 persons each. The area now has been encroached upon by the expanding commercial centre of the city. Therefore many of the migrants have been able to find jobs nearby. As the majority of the families were Christians, the average number of persons per family was less than the rest of the surveyed mahallahs. The large average number of rooms per house is not significant as there are 2.44 families per house on average.

The second group of crowded mahallahs were those built before 1920, i.e. in the central traditional parts of the city. Because the houses here are inhabited by more than one family the average number of persons per house was 9.74. This has led to the increase of the person/room ratio up to 2.51.

Mahallahs built between 1936 - 1956 are still dominated by the residential function compared with the former two areas. The average rooms per house here is lower than the houses of the former period, but more than those in the traditional houses.

Suburban mahallahs developed after 1956 show a better situation. The average number of rooms per house is the highest being 4.72, and the average number of persons per room was the lowest. However, these localities include mahallahs of migrants and other economically weak classes, otherwise the condition would be much better than what has appeared. For instance, the average number of persons per house in al-Mansur was 4.14 and the average number of persons per room was only 0.91.

House Ownership:

The Housing Census of 1956 reveals that most of the houses in Baghdad Liwa i.e. 72.46 per cent were owned by their occupants, reflecting once again the Arab's first essential target in life, i.e. to own a house. Rented houses in Baghdad Liwa represented less than 25 per cent of the total number of houses, the rest were either vacant or houses rented by the room.[19]

According to the inquiry of the Household Budget in 1961, it appeared that only 41.7 per cent of sampled families occupied houses which they own, 38.1 per cent resided in rented houses, 9.9 per cent resided in rented rooms and the remaining 11.3 per cent of the families resided in other houses.[20] *

In the surveyed mahallahs in 1971 the percentage of families owning the houses they occupied was 40.41 per cent. Field survey yielded the following data about house ownership, which reflects the housing problems suffered by a high percentage of society. The data are tabulated both according to the class of the inhabitants, and the morphological phase of the surveyed mahallahs.

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* The number of houses covered by the enquiry was 756, inhabited by 1,656 families.

Table 12.16: House ownership in percentages:

Class	Morphological Phase							
	2		3		4		5	
	owned	rented	owned	rented	owned	rented	owned	rented
High	-	-	-	-	-	-	90.00	10.00
Middle	61.11	38.89	-	-	40.00	60.00	91.90	8.10
Low	43.89	56.11	15.62	84.38	46.66	53.34	95.00	5.00

Source: Fieldwork 1971, See Appendix A, Tables J, Pa

It is a distinct phenomenon that in the higher economic class in the areas developed after 1956 the percentage of families who own their houses falls and the percentage of families living in rented houses increases. However, this finding is less distinct in the pre-1920 mahallahs because these include Adhamiyah Harah and Kadhimiyah (Shiukh) where the percentage of families owning their houses is still high, particularly among Shiah families. 55.56 per cent of the houses in Adhamiyah and 80 per cent of the houses in Kadhimiyah were owned by their occupants. However, these are outlying traditional centres.

The bulk of traditional houses in the centre of Baghdad are rented. All the surveyed houses in Aquliyah were also rented. In Karkh, on the other hand, the percentage fell to 40. A middle-class community is Kraiat, the partially urbanised settlement, where all houses were owned by their occupants. The main employment here is still related to the land, and up to now the settlement has failed to attract urban inhabitants.

The high concentration of tenant inhabitants in the central mahallahs was also shown in the Population Census of 1965. For instance, only 26.1 per cent of the inhabitants of Jadid Hasan Pasha mahallah and

18.6 per cent of the inhabitants of al-Maidan-mahallah were women. Both mahallahs are located on al-Rashid Street, the major central business street of the city. Most of the tenants here are students, soldiers, workers and minor civil servants.

From the above table it appears that more than 84 per cent of the houses of mahallahs of the third morphological phase were rented. Many migrants families rent houses, occupying one or two rooms, the rest of the rooms being re-rented by bachelors or families. Indeed, this practice became a source of income for a number of families.

The average monthly rent value per room is 3.7 I.D., depending on the size of the room, the location of the mahallah, and the type of occupants, i.e. whether a family or a bachelor. For social reasons the rent is higher for the latter than the former.

In certain central mahallahs like Haider Khanah, the rent value per room increases with the increased number of tenants per room, as it is not uncommon to find that a room is rented by more than one tenant.

Practically no governmental efforts have been made to control the everlasting rise of house rents and all the laws and regulations to reduce the rents such as Act No. 103 of 1967* have not been brought into strict practice and enforced. From the following table, it appears that the average monthly rent for houses and rooms in Iraq when including Baghdad Liwa, is about three times the rent if Baghdad Liwa is excluded. This reflects the fact that Baghdad was and is the most attractive town for people from all over the country.

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* This Act decreed that rent of both rooms and houses should be reduced by 25 per cent.

Table 12.17: Average monthly rent (in I.D.) for houses and rooms (1956)

	Including Baghdad	Excluding Baghdad
Average monthly rent value per house	8.054	2.694
Average monthly rent value per room	3.284	1.095

Source: Central Bureau of Statistics, Ministry of Economics, A Report of the Housing Census of Iraq for the year, 1956, Baghdad (1956) Table 6.

Because of the population growth the rent value per house increased in 1961 to 12.167 I.D. a month, the room rent value on the other hand has maintained its previous level.[21] In 1961 it appeared that 60.7 per cent of the houses sampled were occupied each by one family only, 16.7 per cent each by two families, and the remaining houses, i.e. 33.6 per cent were occupied by three or more families each.[22]

In 1971, the average monthly rent of house in Baghdad varied widely, depending mainly on style, location and facilities. The average rent value in the surveyed houses according to the age of the mahallah is shown in the following table:

Table 12.18: The average monthly rent value of the surveyed houses by morphological phase.

Morphological Phase	Monthly average rent value I.D.
2. Pre-1920	11.11
3. 1920-1936	22.57
4. 1936-1956	12.73
5. Post-1956	20.00
Average	14.82

Source: Fieldwork 1971, See Appendix A, Table J.

The relatively high monthly rent value in mahallahs of the third period, 1920 - 1936, is due to the generally large size of these houses, and the fact that all these houses are inhabited by more than one family, and various numbers of bachelors. This made it possible for the individual tenant or family to afford such a high rent value in the aggregate.

The low rent value for the mahallahs of the fourth period, 1936 - 1956, is attributed to the inclusion of the low-class locality of al-Washash, which has a monthly rent value of only 7.72 I.D. Al-Thawrah, the migrant locality also has lowered the average rent value of the houses of the post-1956 areas. The lowest rent values were found in Kadhimiyah with an average monthly value of only 5.5 I.D. and in Sayid Abdullah mahallah in Rusafah with a value of 7.2 I.D. This was mainly owing to the absence of many essential sanitary facilities as well as to the deterioration in the condition of these houses. For example, only 15,84 per cent of the houses of traditional Kadhimiyah were provided with bathrooms.[23] In Kadhimiyah, 60 per cent of the surveyed houses had to be reconditioned more than twice as they were in disrepair. The rent for a high percentage of Baghdadi families represents the biggest item of expenditure. It affected the budget of the middle, low middle, and low class families badly. This problem is rapidly increasing. The following table shows the percentages of rent value according to the total monthly expenditure of the interviewed families.

Table 12.19: The percentage of total monthly expenditure spent on rent among the interviewed families by classes:

Class	% spent on rent
High	20.46
Middle*	27.51
Low class	28.12

Source: Fieldwork 1971, See Appendix A, Table G.

* Hai Dragh Mahallah was excluded as there was only one family renting its house. However, the average monthly percentage of rent expenditure of this family was 49.50 of its total expenditure.

From this table it appears that the lower the economic class in Baghdad, the higher the average monthly percentage of family expenditure spent on rent. Indeed the low and low middle classes are suffering from this situation which put them always under strain. Some of the families as those in al-Orfaliyah and Thawrah, spend more than 57 per cent of their monthly expenditure on rent. Authorities should urgently intervene and deal with this problem in an overall human and economic plan.

Because of the deficiency in housing resulting from the continuous rural-to-urban migration the rent value is always rising, and only the land and property speculators are benefitting.

Bad nutrition, the high rate of illiteracy and the miserable life of the low-income families are aggravated by high rents. Unfortunately most of the housing schemes are planned for the officials and officers who perhaps are in less need for houses than the overwhelming majority of economically poor families, who possibly never dreamt of owning a permanent shelter over their heads.

When accepting the figures given by the Ministry of Planning and the Master Plan of Baghdad, it appears for the period 1965 - 1969 that while the annual percentage of population growth was 6.82 per cent the annual percentage of house increase was only 4.45 per cent.

Housing policies have always been treated in terms of isolated schemes and not as an essential part of any national planning strategy. In the absence of precise governmental data it is very difficult to know the number of substandard houses, mainly sarifahs, and the physically deteriorated, unhygienic houses in the capital.

Depending on the estimations obtained at district offices of Amanat al-Asimah the Master Plan put the present sarifahs of Baghdad between

5 per cent and 10 per cent of the total number of houses i.e. between 8,750 - 17.500 sarifahs. The percentage was not more than 5 in areas such as Qanat al-Jaish, Baghdad al-Jadidah, Durah and Karradah. In the remaining areas it reached 10. However, the proportion of sub-standard houses is very likely much higher than this.

In many developed and underdeveloped countries, governments invest no less than 5 per cent of their national income on housing. This percentage has also been suggested by the United Nations.[24] In Iraq capital invested for this purpose is far from adequate. For the period 1955 - 1959, the Development Board has a housing programme to build 200,000 houses, but up to now only 20.5 per cent of them, i.e. 1 per cent of the required houses have been built.[25]

Owing to the natural increase of population, migration, the increase in the amount of absolescent housing stock, and the suburbanization trends the acute housing problem of Baghdad, which has accelerated after 1956, needs a speedy solution by wise housing planning.

In order to determine the real housing needs, it is necessary to carry out housing surveys in the city, and it would be a good opportunity to do so at the time of the next census of population. Up to now figures for the overall size of the housing problem in Iraq have been mostly 'academic', indicating merely that there is neither the money nor the capacity within the country to meet its needs within the foreseeable future.[26]

To solve the problem adequately, each family should not have to spend more than 10 - 15 per cent of its monthly or annual income on paying the price for their new house.* Here it is important to stress that a

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* The recipients of governmentally provided houses spend between 10 and 30 per cent of their annual income as payment for their new houses,[27] and the average monthly expenditure of the interviewed families was 28 per cent of their total monthly expenditure.

housing policy should not only consider the income order of the occupant, as is the case in Iraq today. The size of each family and the social background should be taken into consideration as well. One type of house may be adequate for one family but not for others. Generally the family size of the low-class community in Baghdad is higher than that among the higher classes. The average number of persons of the lower, middle and high class interviewed families was 6.55, 6.04, and 5.28 respectively. Thus the number of rooms must be proportionate, despite the difference in income. This indeed is what should be carried out if the government really want to solve the problem of living standards and not merely the housing problem. The housing problem should be treated as part and parcel of comprehensive physical and regional planning for the country as a whole. Purely personal and ill-considered decisions, and all-too predominant type of executing 'policies' in Iraq, should be eradicated by the only reasonable alternative of a carefully studied and comprehensive housing policy within the framework of national planning.

Housing projects should be dealt with in their regional context. The treatment of the housing problems should be preceeded by a comprehensive survey to obtain reliable data about the state of existing houses, their defects together with a detailed study of population growth and desirable legislative measures. Housing projects should aim to create happy communities and not mere agglomerations of houses.

Perhaps it will be useful here to try to estimate the houses needed by the end of this century, based on data in 1965.

In that year, the Master Plan put the population of the city at 1,500,000 - 1,620,000, being housed in 175,000 houses. When trying to

estimate the needed houses one has to know the annual rate of population growth which according to the Ministry of Public Works and Housing was 3.1 per cent,[28] the average size of Baghdadi families which according to the 1957 census was 5.5 persons.[29] * The annual percentage of absolescent houses, which was put by the Ministry of Public Works and Housing at 4 per cent, and the number of substandard houses in the base year, which was put by the Master Plan at about 10 per cent of the total number of Baghdad houses.

By applying the following equation we obtain an estimate of the future population of the City.

$Xn = X\ (1 + r)^n$

Where Xn = the number of population in n year (2000)

X = the number of population in the base year (1965)

r = the percentage of annual growth of population

n = the number of years

$$X_{(2000)} = X_{(1965)}\ \left(1 + \frac{3.1}{100}\right)^{35}$$

$$X_{(2000)} = 1,620,000\ (1 + 0.031)^{35}$$

$$= 1,620,000\ (1.031)^{35}$$

$$= 1,620,000 \times 2.9 = 4,700,000$$

Next, one can calculate the number of families in the city at the year 2000. It will be 4,700,000 ÷ 5.5 = 854,545 families.

In 1965, the number of houses were put at 175,000, including 10 per cent of substandard houses. This means that Baghdad had 157,500 standard houses in 1965. By applying the following formula we obtain an estimate of the number of houses which will remain of adequate standard:

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* In the surveyed mahallahs, the average number of persons per family was 6.25.

$$Hn = H\ (1 - r)^{n}\ *$$

$$H_{2000} = 157{,}500\ \left(1 - \frac{4}{100}\right)^{35}$$

$$H_{2000} = 157{,}500\ (1 - 0.40)^{35}$$

$$H_{2000} = 157{,}500\ (0.96)^{35}$$

$$H_{2000} = 157{,}500 \times 0.238$$

H_{2000} = 37,500 i.e. only 37500 of the houses of 1965 will still be of adequate standard.

The number of houses needed to be built in the year 2000 is as follows:

854,545 - 37,500 = 817,045 houses.

Accordingly the annual rate of house building excluding obsolete houses between 1965 - 2000by applying the following formula is 5 per cent.

$$H_{2000} = H_{1965}\ (1 + 4)^{35}$$

$$854545 = 157{,}500\ (1 + r)^{35}$$

$$r = 4.98\% \cong 5\%$$

In addition since 4 per cent of the houses fall into disuse each year the total annual house demand is 9 per cent.

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* H = houses; n = number of years; r = the annual percentage of obsolescent houses

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Chapter 13

Industrial Development

This chapter deals with industrial development in Baghdad as a major factor responsible for many internal and external morphological changes in the city. The analysis will show the intimate relationship between the chronology of industrial development, locational pattern and the morphological phases in the growth of the city.

Baghdad is no better than other Arab towns in terms of statistical information. The available statistical reports and censuses about the occupational and economic structure of the population, and the locational pattern of land uses are useful for general analysis on a liwa basis but unfortunately are not suitable for urban analysis. Furthermore, one commonly finds great discrepancies and confusion in the information given by various governmental bodies about any particular aspect. For example, the Iraqi Industrial Union put the number of printing works in Baghdad at 56, the Health Engineering Department in the Health Directorate at 116, and the Republican Directory at 62.

Following the 1958 revolution, the Ministry of Industry was created to run and encourage the industrial development of the country. In 1964 the State Organisation of Industry was established to supervise and administer the industrial activities belonging to the public sector. This sector may be considered as the backbone of the country's industry. The institution emerged in 1964 following the nationalization of the main 39 industrial establishments in the country, and these industries represented a

total investment of 43 I.D. million with a labour force of 15,500 workers.

Private industrial development has been affected by the consequences of this nationalization wave. Act No.101 of 1964, has limited the maximum capital allowed to be invested in any establishment within the private sector to 70,000 I.D.

The new organization is as yet in no position to provide any detailed statistical information about the industrial establishments that have been nationalized. Nor has the Ministry of Industry any regular and comprehensive data about the industrial structure of the country in terms of urban units.

The only governmental bodies having such information are the Central Bureau of Statistics, the Ministry of Planning and the Iraqi Industrial Union. The former, unfortunately, while providing regular statistics since the 1950's*, deals only with nationwide information using liwas and saying nothing about the industrial or other aspects of individual towns. Even in their occasional studies about Baghdad they provide data on the basis of general administrative units which do not correspond with the municipal units of the city. So far the city of Baghdad has no clear-cut administrative units to be used when plotting the information available. Each relevant governmental authority uses its own criteria for its divisions and as a result Amanat al-Asimah has divided the city into particular units which are entirely different from those of the Water Supply Agency, the Electricity Agency, the Sewerage Agency, the Land Registry Department, and so on. Besides, most of these departments are not willing to supply base maps, which are usually found at

* Before 1958 this department belonged to the Ministry of Economics.

headquarters.

The second governmental body customarily issuing annual statistics, the Iraqi Industrial Union, only provides information about industrial establishments registered in the Union. So far there have been no studies about unregistered industrial establishments, whether for Baghdad or for the country as a whole. Nor has the Iraqi Industrial Union any detailed location map. Instead, on request, addresses tend to be given in the most general terms such as "on el-Rashid Street near the al-Muraba'h Gahwah" and so on. Any establishments with a capital of less than 3,000 I.D. are not registered in the union, which, of course, makes it impossible to trace their precise locations in view of their numbers.[1] Consequently, selective field study became essential in this investigation. While carrying out the field survey in 1971, most of the firms questioned did not give any kind of information about their establishments and some of them even avoided giving a clear and complete address, being frightened of taxation or nationalization, in spite of the fact that many of them consist only of small workshops. They do not trust students whom they suspect to be government inspectors. Thus even the Iraqi Industrial Union does not know the spatial distribution of these workshops, many of which habitually change their sites without informing governmental departments concerned. Many of them furthermore give obsolete addresses, the writer being unable even to trace them through their neighbours.

Industry in Baghdad plays an important role in the functional structure of the city. This is seen in the following table.

Table 13.1 : The main sources of income in Iraq and in Baghdad Liwa for the period 1956 - 1963. (Fig 13.1)

Source of income	Iraq 1956 Million I.D.	Baghdad 1956 Million I.D.	Column 2:1 in %	Index of growth 1956-63*	Iraq 1963 Million I.D.	Baghdad 1963 Million I.D.	Columns 6:5 in %
	1	2	3	4	5	6	7
1. Mining	145.00	10.00	6.90	195	282.80	19.50	6.89
2. Oil Refining	2.60	1.00	38.20	390	10.10	3.90	38.61
3. Remaining industries	26.30	16.4	63.00	194	51.20	31.8	62.10
4. Building	24.00	11.00	46.00	71	17.00	7.80	45.80
5. Water supply and electricity	2.00	1.10	60.00	335	6.70	3.80	56.71
6. Commerce	26.00	13.00	50.00	128	33.40	16.70	50.00
7. Banks and Insurance	6.20	5.30	86.00	155	9.60	8.20	85.50
8. Housing	7.80	4.30	55.20	181	14.10	7.80	55.10
9. Administration and Defence	28.10	10.60	37.80	220	61.60	23.30	37.82
10. Services	24.00	10.00	41.80	188	45.10	18.80	41.60
11. Transportation	23.20	7.80	33.50	182	42.00	14.20	33.80
12. Agriculture	88.00	11.20	12.60	92	81.50	10.30	12.70
Total	403.20	101.7	25.20	161	655.10	166.10	25.2

Source: K. Hasib Estimate of the National Income of Iraq 1953 - 1961, Beirut (1963) Table 107; Polservice Consulting Engineers, Master Plan of Baghdad, Warsaw, 1 (1969) pp. 111 - 5, 111 - 6 -8.

* Calculation is based on data from the "five years Economic Plan (1965 - 1969) in the Polservice Master Plan. Data for more recent years is not available.

This table does not give an exact picture of the economic state of the city. However, the population of Baghdad is known to account for more than 75 per cent of the inhabitants of Baghdad Liwa, and in all facets of economy except agriculture and mining the city's participation was even higher than that.

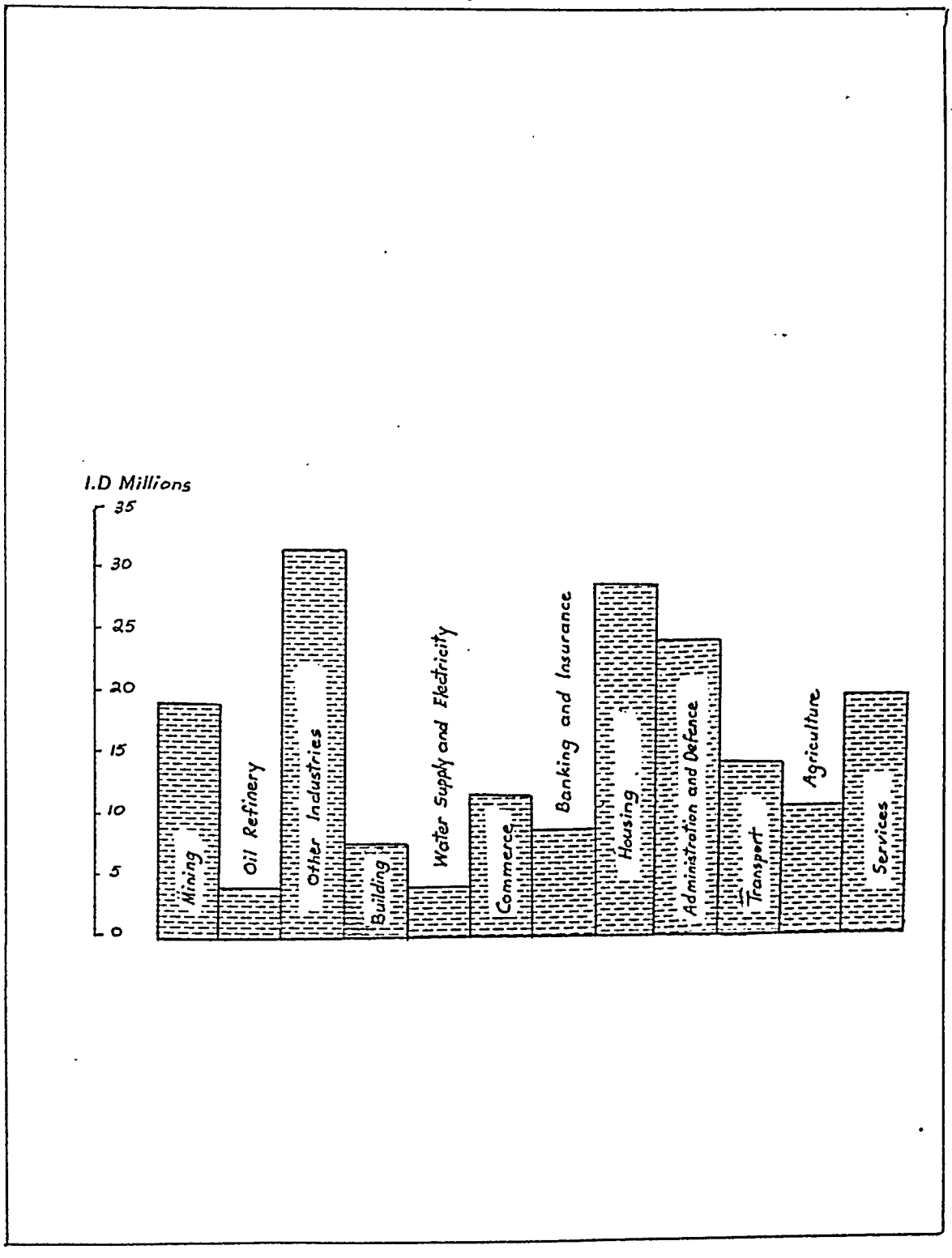
Column 3 shows the percentage participation of Baghdad Liwa in the various branches of the economy. Baghdad had 63 per cent of the country's industry (excluding oil refining). In banking and insurance, Baghdad's share was 86 per cent. Also the liwa had high percentages in other activities except for mining and agriculture.

Column 4 indicates that industry (including oil refining), water supply, administration and defence had the highest indexes of growth for the period 1956 - 1963.

Column 7 shows that Baghdad Liwa had more or less maintained the same percentage participation in the country's economy.

This table shows that the city gathers proportionally more economic, social and political activities than the rest of the country. In 1963 the town had 17.5 per cent of the country's population but produced more than 25 per cent of the national income. It should be remembered however that these liwa figure includes the income from agriculture and oilfields, which plays hardly any part in the economy of Baghdad but accounts for 346.3 million I.D. i.e. more than 55 per cent of the national income of the whole country. When the revenues from oil mining and agriculture are excluded from the comparison, Baghdad concentrates 46.5 per cent of the whole country's national income for the remaining branches of the economy. In some fields Baghdad's

Fig.13.1 Main Sources of Income in Baghdad, 1963



participation exceeds even 50 per cent. In industry Baghdad's percentage is more than 62, commorce 50, Banking and insurance 85.

In the Polservice Master Plan of Baghdad, the city's total national income was put at 131 million I.D., distributed as follows:-

Table 13.2 Main sources of Baghdad's national income in 1965

Main source	Million I.D.	%
Oil refining	3.90	2.98
Industry	30.00	22.90
Building	7.30	5.60
Water supply and electricity	3.80	2.90
Commerce	15.30	11.68
Banking and insurance	8.20	6.26
Housing	7.5	5.73
Administration and Defence	22.00	16.79
Service facilities	18.80	14.35
Transportation	14.20	10.84
Total	131	100.00

Source: Polservice Consulting Engineers, Master Plan of Baghdad, Warsaw, 1 (1969) 6.

The above table shows that out of all the functions the most important part goes to industry, including oil refining, followed by administration, services, commerce and transportation. These

five branches of the economy produce about 80 per cent of the city's contribution to the national income.

In terms of employment structure, the order of functions in the city is different. According to the statistics in the Master Plan of 1965, employment was as follows:

Table 13.3: Employment structure in Baghdad City, 1965.

Function	No. of employees	%
State administration*	75,000	27.78
Commerce and handicrafts	85,000	31.48
Industry	40,000	14.81
Transportation	25,000	9.25
Building	2,000	7.41
Education and health service**	15,000	5.56
Agriculture	10,000	3.70
	270,000	100.00

Source: Polservice Consulting Engineers, Master Plan of Baghdad, Warsaw, 1 (1969) pp. 111- 6-8.

Industry in terms of percentage of employees ranks third in importance. However, the leading functions of administration, commerce, and industry account more than 74 per cent of the fully employed labour force in the city. The table makes it clear that the character of the town's commerce and handicrafts is labour-extensive and lacks efficiency, as it employs more than 31 per cent of all the fully employed persons in the town, but produces less than 12 per cent of the town's national income. Industry on the other hand accounts for less than 15 per cent of the total fully employed labour force and produces more than 22 per cent of the town's national income.

* The term 'administration' is not precise: it covers several categories of state employees.

** The University of Baghdad is not included.

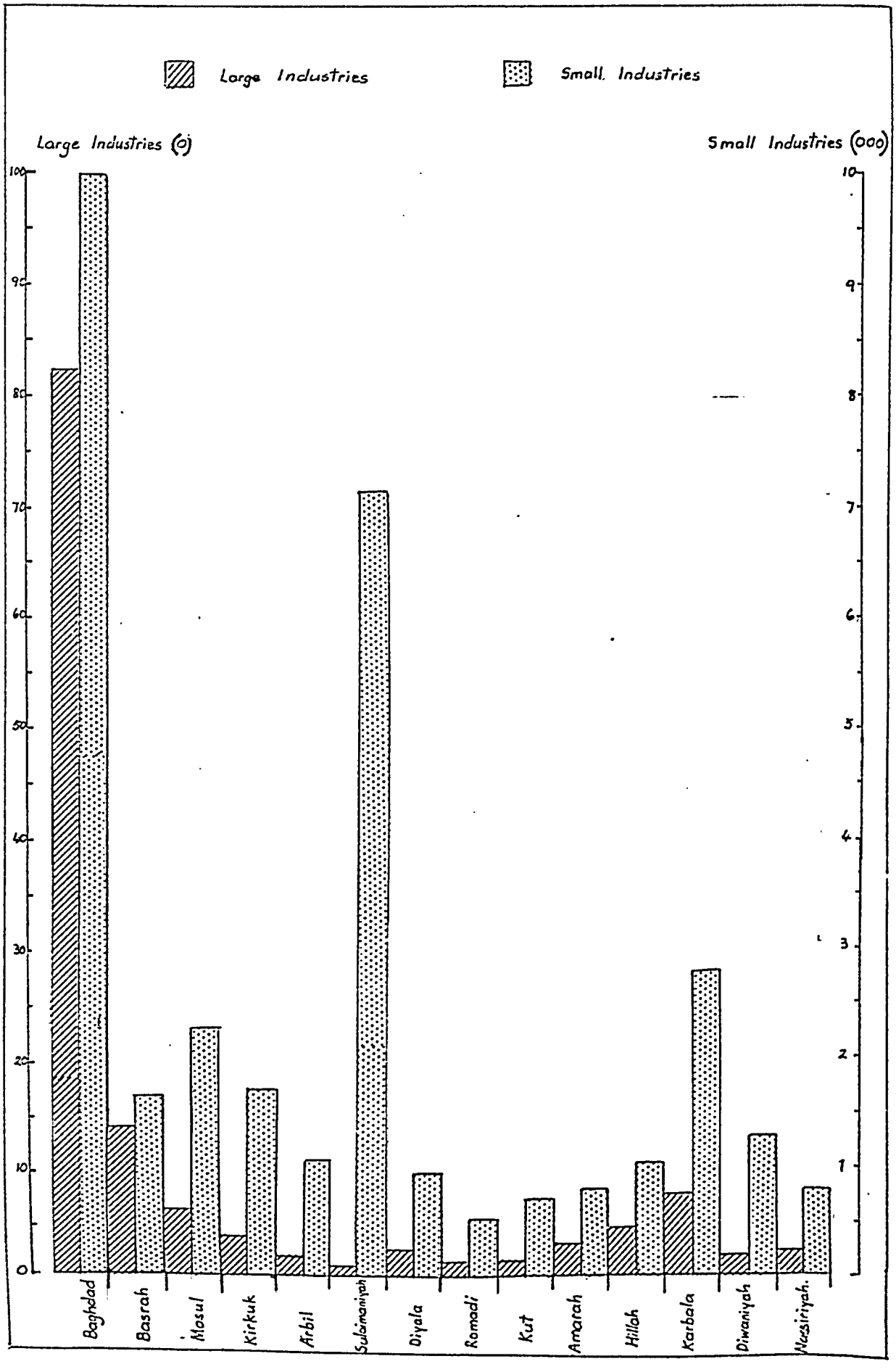
The occupational distribution of labour force has not changed significantly during the last two decades, because traditional forms of the organization of industry still prevail. Kinship ties and personal obligations between employer and worker are still of major significance in small family craft industries, which constitute the highest percentage of Baghdad's manufacturing establishments. However, modern industrial progress after the 1950's has altered the traditional pattern of labour relations to a great extent.

In industry, as in other aspects of life, Baghdad Liwa dominates the other liwas. This domination can be measured by the number of establishments, the total employed or the value of output. Baghdad is provided with several means of transportation, being the meeting point of major routes of the country. The city has always enjoyed a direct connection with foreign markets, whether in the caravan period, the era of river transportation, or at present when the railways and roads have been developed. The city has also a cheap, abundant and reliable supply of electricity, and skilled labour is available in greater numbers compared with other towns in the country. Some of the factories sell 80 per cent of their products in Baghdad alone. Since its foundation, Baghdad was either a national or a provincial capital, with a considerable market offering good opportunities for industrial development.

The existence of the Industrial Bank also encouraged industrial concentration in Baghdad where the private sector is supported more than in any other liwa, 3.5 million I.D. were invested in 1967, a figure unmatched by other liwas.

Hasib states that in 1957, 44 per cent of the industrial establishments were in Baghdad.[2] In 1958, Harris estimated that 70 per cent of the industrial force of the country was employed in the city.[3]

Fig. 13.2 The Distribution of Industries by Liwas, 1969



In 1960, the percentage of industrial establishments found in Baghdad was put at 41.3 per cent.[4] This percentage increased to 54 in 1965, when about 62 per cent of the labour force was concentrated in Baghdad.[5] In 1967, 56.3 per cent of large industrial establishments, 63.1 per cent of industrial workers and 55 per cent of the electricity consumed in industry, were found in Baghdad Liwa, which at that time had more than 26 per cent of the population of the country.[6]

According to the 1965 Industrial Census, 33.2 persons per 1,000 of the total labour force were employed in industry, compared with the ratio for Amarah and Kut Liwas which was only 21/1000.[7]

The high concentration of industry in Baghdad is very distinctive, whether large or small industrial establishments, both in private and public sectors.

In 1968, Baghdad had 46.69 per cent of the small industrial establishments found in the country employing 37.54 per cent of the total labour force and 43.02 per cent of the country's large industrial establishments employing 66.42 per cent of the labour force.[8]

According to the 1969 data Baghdad dominated the other liwas in the number of large and small industrial establishments[9] (fig 13.2).

Baghdad also dominates the industrial establishment of Baghdad Liwa as shown in the following table.

From this table it appears that about 96 per cent of establishments in the Liwa are located in Baghdad City, employing also about 97 per cent of the labour force in the liwa. The absence of female workers in the small industrial establishments located outside Greater Baghdad, reflects the traditional attitude of Arab society against the employment of women.

More than 53 per cent of the worker were self-employed reflecting

Table 13.4: Number of Small Industrial Establishments, Average Number of Employees in June 1969, in Baghdad City and Baghdad Liwa.*

	Self-employed workers		Wage paid I.D.'s				Establish-ments	
	No.	%	Female	Male	Total	%	No.	%
Greater Baghdad	12,330	96.22	2359	189,518	23,083	96.87	9,744	95.96
Baghdad excl. Greater Baghdad	484	3.78	-	4,696	747	3.13	410	4.04
Total Bahgdad	12,814	100.00	2359	194,214	23,830	100.0	10,154	100.0

Source: Central statistical Organization, Ministry of Planning, The Results of Industrial Census in Iraq for the year 1969, Baghdad (1970) 33.

the characteristic feature of the small industries in Baghdad where the owners, their sons and sometimes other members of their families, join to work in their workshops. The small-scale nature of these industries is obvious from the fact that the average number of employees per establishment is less than 3 persons.

About 70 per cent of the workers of these industrial establishments were skilled and semi-skilled and 18 per cent were juveniles. Of the latter only 0.37 per cent were female. However, Iraqi legislation forbids the employment of boys under age 15.

The City of Baghdad dominates both the liwa and the country in terms of industrial revenues. The value of Baghdad's production represents about 96 per cent of the value of the liwa production and about 40 per cent of the value of the country's production.[10]

* The figures here differ from those already mentioned, given in the annual abstract, 1970. Here the figures are an average and only for June 1969, given by the Industrial Department, Ministry of Planning.

Industrial development in Baghdad in its various patterns is a dynamic urban phenomenon, and generally occurs in particular urban areas for obvious reasons, i.e. historical, as the for traditional home industries of the centre, and economical, as for the peripheral areas of the city, where rent is lower, the sites are larger and where there is accessibility for heavy transportation. However, with the recent rapid outward growth of the city most of the once peripheral industrial sites have been left behind as morphological landmarks of the phases of urban expansion in terms of the fringe-belt concept.

In Baghdad as well as other large towns of Iraq the main regional highways attract mainly modern industrial establishments thus producing a recurrent feature in the townscape. Both the interior and exterior morphology of the city are greatly influenced by this dynamism and the growth of Baghdad has affected the industrial locational pattern as already indicated in Chapter 11.

The changing location, concentration or dispersion and evolution of industry, has aided in many ways the shaping of the present City of Baghdad. The residential structure of the city together with the social pattern have been changed considerably owing to modern industrial development. Most of the heavy or large industries in the Middle and Outer Fringe Belts of the city have attracted residents from various parts of the country, regardless of ethnic, religious or tribal considerations, thus creating heterogeneous settlement groups, an entirely new phenomenon in the life of Baghdad. This can be demonstrated by comparing the findings of the field survey carried out in al-Durah, an industrial community which grew around the largest oil refinery in Iraq, and the fully residential mahallah of Hai Dragh developed after 1959.

Table 13.9: Religious structure and place of origin of interviewed families in al-Durah and Hai Dragh.

Mahallah	% Christian	% Moslem		Number of places of origin
		Shiahs	Sunnahs	
Durah	83.33	16.67	-	6
Hai Dragh	-	-	100.00	2

Source: Field work 1971, See Appendix A, Table Nd.

This table shows that residential areas without industrial establishments tend to preserve the Baghdadi Arab tradition of being homogeneous, both in terms of religion or even sect and place of origins.

Officially, industrial establishments in Iraq are classified into three categories, based either on invested capital or on the average number of employees. Small industrial establishments are those employing less than 10 persons each and a capital investment of less than 3,000I.D. each. Intermediate establishments employ between 10 - 20 persons each, with 3,000 - 30,000 I.D. capital investment, while large establishments employ more than 20 persons each, with an invested capital of more than 30,000 I.D. However, the Ministry of Planning has classified industrial establishments into large ones employing more than 10 persons each, and small ones employing less than 10.[11] Because of the lack of the statistics in the former classification, the latter classification, i.e. the Ministry of Planning, have to be followed.

It is also possible to classify Baghdad's industries into three categories based on the raw material used on technical standards and on capital invested, viz heavy industries, light industries and craft or workshop industries. The first is typified by steel works, electrical equipment factories, cotton textile mills, mechanical repair works, woollen textile mills, rayon textile mills, the oil refinery at Al-Durah, the car repair works owned by the Baghdad Transport Organization, and

Fig. 13.3 General Distribution of Large Industries

F.P. 6 58

To al-Taji (To al-Mosul)

Tigris R.

To Baqubah

Thawrah

To Kirkuk

To Khanaqin

Jamilah

Ubaidi

Kadhamiyah

Waziriyah

Sulaikh

Kamaliyah

Shulah

Qanat al-Jaish

Diyala R.

Hurriyah

Salam

Shalchiyah

Mashtal

Al-Khir Canal

Baghdad al-Jadidah

Camp Sarah

To Syria

Abu Ghraib

Nadhimiyah

To the New Airport

Al-Durah

Baiya

To Hillah

To Basrah

Zufuraniyah

To Basrah

1 km

Wall Lines — The Eastern Dyke

Major Industrial Areas

3 Textile Factories (Wool, Cotton Rayon)

3 Vegetable Oil and Soap Factories

Dairy

3 Flour Mills and Bakeries

2 Beverage and Ice Works

2 Factories and Tanneries

5 Rubber Factories

3 Metal Works

3 Tile Works

5 Brick Works

Major Streets

Limits of the Built-Up Areas

20 Ready Made Clothes Factories

Brewery

3 Confectioneries

Animal Food Stuff Factories

2 Cigarette and Match Factories

1 Rubber Factory

2 Plastic Factories

2 Metal Works

3 Factories of Building Material

5 Pharmaceutical and Petro-Chemical Factories

10 Printing Works

Source: Iraqi Industrial Union

cement works.

The second (light) category is typified by the soup and vegetable oil factories, tanneries, shoe factories, asbestos works, factories of the cigarette industry, the liqueurs and beer industry, the match industry, motor car repair works, domestic utensil factories, metal furniture factories, flour mills and ice factories, tile and mosaic works, date packing works, machine repair works and the like.

Finally, the workshop industries are concentrated in the traditional areas of the city.

The spatial distribution of industrial establishments according to categories is broadly related to the morphological phases of the city. Industrial establishments increase in size and are more modern as one proceeds outward from the city centre. This means that modern industries have ignored accommodation in existing traditional buildings which are occupied by smaller and older workshop industries.

Baghdad has three broad general location zones of industries, (1) the pre-1920 zone (2) the pre-1956 (3) the post-1956 zone. Each of these has induced particular changed or modifications in the overall morphology of the city.

According to the Polservice Master Plan of Baghdad, the areas and percentages of industrial land use is as follows:

Table 18.6: Industrial location in Baghdad 1965 (Fig. 183)

District	ha	% area of the respective district
East Side		
Rusafah, Greater Karradah al-Sharqiyah and Qanat al-Jadish area	80.65	9.90
Adhamiyah	2.38	6.23
West Side		
Karkh	16.10	2.00
Kadhimiyah	37.70	5.00
Karradat Mariyam	17.67	3.400

Source: Polservice Consulting Engineers, Master Plan of Baghdad, Adhamiyah Central Districts, Warsaw, (1968) 11; Karkh City Centre (1968) 22.

From the above it appears that Rusafah, Adhamiyah, and Kadhimiyah had the largest industrial areas. This is owing to the concentration of most of the modern large industries in these areas, typified by textile mills, flour mills and repair works.

Although distinctive industrial locational pattern correlated with its morphological phases yet the main feature of the city's industry is its wide dispersal throughout the city. According to present practice, residential developments for pre-determined economic strata or professions, are allowed to develop their houses in scheduled industrial zones, resulting in an unsuitable mixture of development and incompatible functions. Besides, within any given industrial zone there exists at present a mixture of different types of industry, warehouses and workshops, having different characteristics and degrees of noxiousness. The traditional concentration of small industries, workshops, and warehouses in Rusafah, Kadhimiyah, Adhamiyah and Karkh where goods traffic and normal traffic collide produces serious traffic problems.

Insufficiency of space for most of the workshops and substandard accommodation not properly adopted for their use lead to the encroachments of these establishments upon the streets where repair work for example is taking place, a scene very familiar along the edge of industrial streets and many side streets in the centre and the suburbs.

In many cases the present location of industries is harmful to the inhabitants. This can be seen in the location of brickworks to the north of the city, al-Durah refinery to the south of one of the best residential areas, and development of the industrial sites of al-Waziriyah and Jamilah. Such locations give rise to atmospheric

pollution which changes moreover with the wind direction. Legislation to protect both the river and the residential atmosphere from pollution is urgently needed and this is the responsibility of Amanat al-Asimah and the central government, especially now when Baghdad is still in its incipient industrialization.

The above mentioned disadvantages are the direct result of the absence of proper zoning of functional areas, and from the very fact that so far no clear criteria for the classification of industries according to their noxiousness have been determined for purposes of control.

The locational development of Baghdad's industries seems to have been mainly based on 'policy' rather than on any full economic reasoning in a considered regional context. This is apparent particularly in the distribution of modern industries in the pre- and post-1956 areas.

Most of the traditional but partially modernized small industries require a labour force rather than raw materials or fuel. Accordingly they chose more central areas. They are highly diverse compared with the more distinctly categorized modern industries.

Gradually after the First World War, many of Baghdad's traditional workshops disappeared, simultaneously with the shift of some craftsmen, to newly introduced industrial firms which competed successfully with many of those traditional industries.

Factors influencing the present distributional pattern of Baghdad's industries are those of historical inertia as many industries are neither able nor willing to pay high rents for location, accessibility, and importance of the market, in particular the question whether an industrial firm serves mainly Baghdad inhabitants or markets further afield. Thus it is not accidental to find the bottling and the

Fig.13.4 Generalized Distribution of Surveyed Workshops

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Wall Lines
Eastern Dyke
---- Limits of the Built-up Areas

5 Textile Factories
2 Tricot Factories
4 Tailoring Factories
Dyer
Confectionery
Pickling Factories

3 Cosmetic Factories
Soap Works
Pharmaceutical Products
Rope Works
4 Asbestos Works
4 Tile Works
6 Furniture Factories
5 Metal Workshops (Including Electrical Goods)
3 Plastic Factories
Leather and Shoe Workshops
Book Printing and Binding
Car Servicing and Garages

0 1 2 Km

furniture industry for example as close as possible to the final point of delivery, and the brick works along the main highways in the Outer Fringe Belt of the city.

Workshop industries.

As in some other Middle Eastern towns, the spatial distribution of small industrial firms is very complex.[12] A considerable number of workshops have developed in khans, traditional courtyard houses and in the upper storey of buildings along the break-through streets. This is seen in the four historical centres of the city, i.e. Rusafah, Karkh, Kadhimiyah and to a lesser extent Adhamiyah. Here the ground-floor rooms are generally used as retail shops, gahwahs, and other business uses. However, in the new residential areas workshops can also be found. They occupy mostly the whole house which is western in type, or occasionally the ground floor leaving the top floors for residents.

Because of the above-mentioned difficulties, it is impossible in a study such as this to plot all these workshops, which would number about 10,000 in an industrial location map of Baghdad. However, the writer has been helped by the Iraqi Industrial Union, in tracing the location of 532 workshops, 340 i.e. 63 per cent of them being located in the areas developed before 1920, 169 workshops, or 31.8 per cent being located in the pre-1956 city while only 23 workshops or 4.32 per cent were located in the post-1956 areas. This shows that the Old Town remained an area specialized in workshops (Fig. 13.4).

These workshops were of various kinds such as confectioneries 89, leather and shoe manufacture 74, tailors 68, furniture making 64, textile 19, tile, ropes, cosmetic, medicine, soap and vegetable, metal

workshops, dairies, canning, plastic, book-binding, gold and silver smithing, joiner workshops, date packing, beverage production, matting. etc.

The major workshop area is located between al-Maidan and al-Sinak in Rusafah which incorporates the major bazaar complex, followed by Kadhimiyah and Karkh. In the pre-1956 area the workshops appeared to be concentrated along Sheikh Omar Street and Camp Sarah in Rusafah and Sheikh Maruf Street in Karkh. These workshops are accommodated in modified traditional houses, covered courtyard and western houses, which has resulted in various degrees of adaptation with enlargements of doors and windows, the latter to be used for the display of goods.

Main streets and low rents are the main factors influencing the locational pattern of these workshops, which is more scattered as many of them emerged to meet the demands of the new suburbs.

The workshops developed in the post-1956 area have emerged in various suburbs such as Hurriyah, Thawrah and Baiya, mainly inhabited by low-income groups. These workshops are less in number than in other areas and of more scattered pattern. Most of the residential areas are not developed enough to attract many of them apart from those which specialize in furniture, bakeries and the like.

The major factors in locating these workshops are historical and economical. Traditionally bazaar areas were the place for workshops, which are usually of small capital with small machines that can be accommodated in the traditional houses. These workshops do not require modern traffic lines as they can easily distribute their products in the nearby bazaars. Indeed many of them are located in the khans themselves.

Workshops located in the pre-1956 areas are more modern and have tried to be as near as possible to the main traffic arteries where new shops were established. Suburban workshops emerged to satisfy local needs, thus many of them are accommodated in western houses using their gardens or ground floor rooms with slight adaptation to house the new function.

In these traditional workshop areas one can find spatial segregation of industry, for example the furniture workshop area along the transverse roads near al-Maidan where many governmental offices are located, the textile workshop area in Kadhimiyah, the leather and shoe workshop area of al-Nahr Street, the confectionery area in al-Shurjah Bazaar etc. However, such locational workshop segregation is now less distinct than it was in the 19th century. The increasing mixture of workshops is a result of the competition of modern industries as well as other land uses that can afford the rising rents of these precincts.

Large Modern Industries:

Baghdad's modern industries numbered 779 establishments in 1969,[13] each employing more than 10 persons and with equipment valued at more than 3,000 I.D. They are widely distributed throughout the city for various technical, economical and social reasons, but can be found in three distinct zones, i.e. the pre-1920 areas, the pre-1956 areas and the post-1956 areas (Fig. 13.3). Firstly the modern industries in the Old Town (pre-1920 Baghdad), are mostly small-scale factories, and it is sometimes difficult to distinguish them from workshops. Some of them are in fact modernized workshops using petrol, electricity and larger modern machinery. These factories seek central locations

where the highest concentration of commercial and business premises is found. Most of these factories have displaced the original residents of traditional houses, particularly after 1936. Therefore it appears that they are located relatively further away from the bazaar area compared with the already discussed smaller workshops. Generally, each factory occupies one house and alterations to the courtyard houses are also negligible because the factories are relatively small.

For lack of space they encroach upon the zuqaqs or main roads where they display some of their goods or even carry on their production processes, adding to the congestion of the central area particularly during weekdays. The relatively high rents of buildings can be afforded by such factories. The main break-through streets, the major zuqaqs and proximity to the shopping areas are major factors influencing their location. However, the importance of contiguity to the bazaar area and street lining differs from one kind of factory to another.

The major factories here are those for ready-made clothes, more than 150, occuping most of the central area compared with other factories. Indeed some of them have infiltrated the bazaars and many nearby zuqaqs. They function in khans, courtyard houses and the ground or first floor of the increasingly emerging multi-storey buildings.

Most of these factories have their own wholesale and retail shops in one of the nearby bazaars. When they are excluded from the bazaar area, whether in Rusafah or Kadhimiyah, then the most frequented pedestrian road or zuqaq is their alternative. Occasionally women are employed by these factories most of whom are migrants, mainly Christians. The second important factories are those of metal and wooden furniture. There are more than 50 of them concentrated mainly along the peripheral streets such as Sheikh Omar and Sheikh Maruf as well as along the more central

break-through streets such as those in the Maidan area. Vehicular transport being very important to such factories, They are accommodated in large traditional or modified Arab houses or on the ground floor of large modern buildings. As they need a lot of space they have changed the internal layout of the houses more than other factories. A considerable number of them are found along al-Kifah Street, in the Maidan, Haiderkhanah and Camp al-Arman areas. Al-Sarai Street where the administrative centre of the city and the stationery bazaar are located, has attracted the majority of printing works as well as paper and carton factories. They are accommodated mostly in traditional houses of wealthy owners and new high-rise central buildings. However, there are some other concentrations of such firms in the Sinak and Bab al-Mudham areas. In these two localities they are accommodated primarily in newly constructed buildings.

The major area of leather and shoe factories is the bazaar area of Rusafah functioning in khans, traditional houses or ground- and first-floor rooms of the new central buildings. Proximity to the bazaar is an important factor in their locational pattern. Biscuit and confectionery factories are concentrated not far away from the leather and shoe factories. They prefer the offshoot central zuqaq and are accommodated mainly in traditional houses in Rusafah, Karkh, and Kadhimiyah. Beverage and ice factories are found in various parts of traditional Baghdad equally near to the bazaar and where food shops are concentrated as well as in houses on the edge of the pre-1920 built-up area. Other modern factories which developed on the edge of the Old Town are tileworks mainly along the main roads, pharmaceutical factories, bakeries and others.

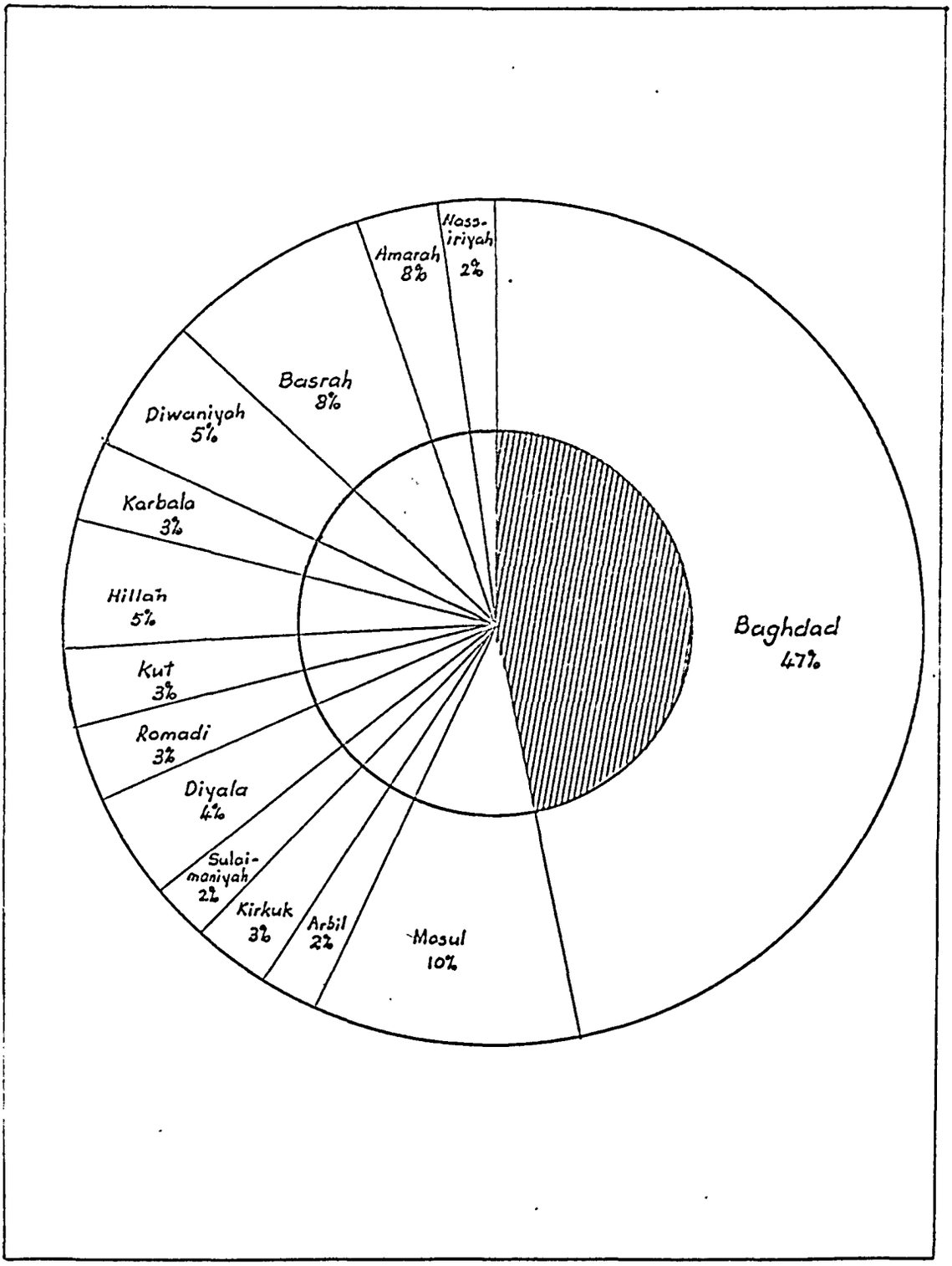
The second very important area for modern industry is that of the pre-1956 city. The distinctive industrial belts of this area have grown in several portions of the city on Sheikh Omar Street in Rusafah and on the consequent street of Sheikh Maruf in Karkh i.e. within the IFB. These recent and more modern industrial belts represent the second phase of locational specialization of Baghdad's industrial pattern. For a time they marked a main feature in the peripheral land use of the city. However, as discussed in the fringe-belt analysis (Chapter 11), these industrial belts, particularly on the East Side, have been elongated along the secondary fixation lines of what became the MFB being totally intramural to these owing to the prevailing threat of floods. These longitudinal developments indicate a mature stage in the evolution of the MFB. At present these industrial belts are undergoing expansion and consolidation, competing with the associated low-class residential use of the area.

In spite of the high degree of land-use mixture it is possible to discern several major zones of industrial areas developed before 1956. They are located between the wall-lines of the Old Town and the city's limits of 1956.

These zones are found in the al-Durah, Camp Sarah, al-Nadhimiyah, al-Sulaikh and al-Kadhimiyah areas. The major industries here are the petro-chemical, metal, furniture, concrete, pharmaceutical, milling, bakery, confectionery, plastic, carton, leather and vegetable oil factories.

The main factors influencing their location are the highways, the Tigris, availability of sufficient space and proximity to the centre. The southern sector of these modern industries is represented by al

Fig.13.5 The Consumption of the Products of al-Durah Oil Refinery by Liwas, 1968



Durah, the country's largest oil refinery on the West Side of the Tigris. It stands as a solitary gigantic industrial enterprise, with its mainly one storey employee housing colony as a main factor in the expansion of the city in a southern direction. The refinery is served by special railway access as well as by the Hillah highway and occupies a site of 113 ha. The location of this and the other factories in the area on both sides of the river is perhaps the most convenient in the city because of the prevailing north-western winds and the river flowing south, as the heavy and noxious industries concentrated here are thus less harmful to the city. This refinery, inaugurated in 1955, produces 2 million tons annually 47 per cent of which is consumed in the Baghdad area (Fig. 13.5) because Baghdad has the highest percentage of population, a greater number of cars, the best motor roads, industries and a relatively higher living standard.

With its new enlargement it costs about 18 million I.D., and produces various petro-chemical products. In 1957 the gas oil refinery was established, attached to al-Durah refinery, with an annual capacity of 250,000 tons and at a cost of about 4½ million I.D. In 1962, the refinery was linked with the Naftkhanah (in Khanagin) and Kirkuk petrol field by a pipeline. Its annual capacity is 4,000 tons. In 1966 a new grease factory was constructed producing 5,000 barrels per day. At present al-Durah refinery satisfies about 85 per cent of local needs,[14] and accounts for 75.5 per cent of the national production of oil derivatives. The refinery's average daily production is 75;000 barrels. The number of employees in this refinery is 2,600. After its establishments in 1951 the refinery began to influence the whole character of the rural area of al-Durah. The refinery employees, who have come from various parts of the country, developed their own

co-operative housing society the members of which could get loans from the refinery of about 4,000 I.D. at 2 per cent interest.[15] This was so up to 1965 since when the Mortgage Bank has carried the responsibility, reducing the given sum to 2,000 I.D. at 6 per cent interest.

Al-Durah refinery supplies the five main oil reservoirs and the city's 31 petrol stations. The former are mainly located in the IFB and MFB while the latter are related to the major traffic arteries, particularly those linking the city with other towns.

The second industrial area is found along the eastern dyke incorporating the large industrial locality of Camp Sarah, reaching as far to the south-east as al-Rashid Barracks. The zone between Camp Sarah and Rusafah has its clustered and scattered intramural of industrial establishments intermixed with other land uses.

The Camp Sarah area represents the largest industrial sector in the city, closely associated with main roads.

The City of Baghdad has expanded rapidly and extensively to the south and south-east because of these new industries, which in several cases formed the nuclei around which other urban land uses mainly warehouses and housing emerged. The major industrial zone, there, stretches from Rusafah southwards as far as al-Zafuraniyah interrupted only by large complex of al-Rashid Barracks. It incoporates a large number of establishments, viz. 35 metal works, 11 plastics, 11 building material factories, 9 pharmaceutical, 5 breweries, 5 textile mills, 3 factories for ready-made clothing, as well as cosmetics, paint and other factories.

One of the most distinct features of this industrial zone is the high land-use mixture, dominated chiefly by low-class housing. Along the main roads industries are accommodated mainly in buildings designed

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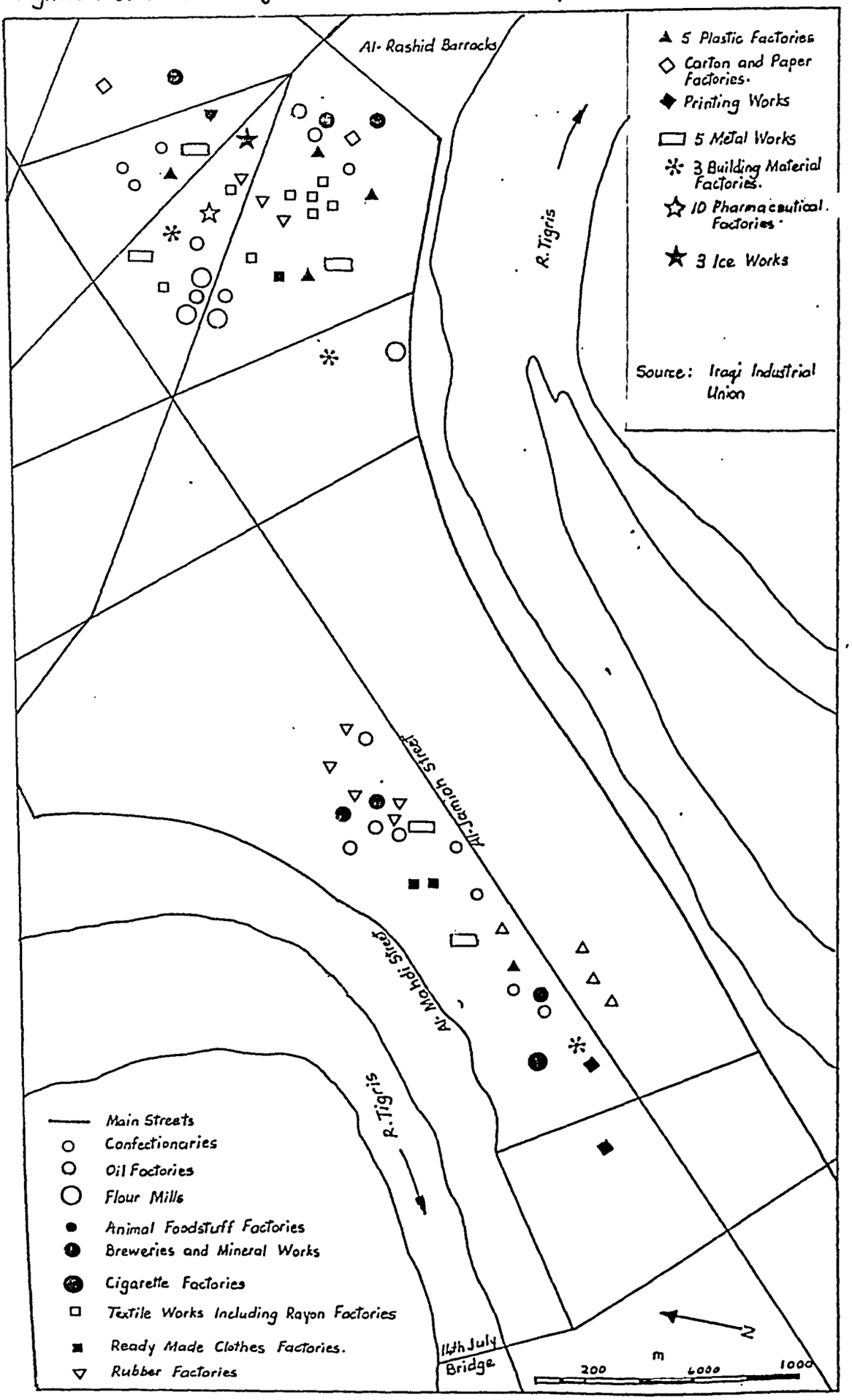
Fig. 13.6 Distribution of Major Industries in al-Nadhimiyah and Camp Sarah



as factories, while those away from the main roads occupy western houses of one to two storeys.

Al-Sulaikh is another industrial area along the eastern dyke developed before 1956, which can be considered as an integral section of the intramural/MFB. Room at the periphery, availability of efficient transport routes and security against flood were the principal factors promoting this industrial concentration. The major factories of this area are tile works, textile and flour mills, confectioneries and other establishments. This industrial agglomeration has interfered with the unitary character of one of the best residential areas in the city.

The third industrial zone is that of al-Nadhimiyah in Karradah al-Sharqiyah (Fig. 13.6) and is characterised by particular industries such as soap and vegetable oil works. All of these factories are located near the crossroads linking the major parallel streets of al-Jamiah and al-Mahdi. Plastics factories, pharmaceutical and cosmetics, leather and shoe factories, as well as biscuit factories and confectioneries are other important industries developed here. Metal furniture and rubber factories are also found.

The major reason for the development of this zone was the availability of cheap land as well as the existence of efficient transport routes linking the area with Baghdad Old Town. The confectionery and leather industries are located on the main roads, the remaining industries along secondary roads. This area ··· is inhabited by middle- and high-income groups.

The fourth pre-1956 industrial area is found in al-Shalchiyah between the streets of al-Kadhim and 14th July in Karkh and Ataifiyah area. Al-Shachiyah represents one of the major elements of the MFB on

the West Side. This area is monopolised by the state-owned railway works. Al-Shalchiyah's factories represent some of the earliest modern factories in the country established in the 1920's. Until 1956 this area was on the periphery of the city, after which more industrial and residential development took place along the new street of 14th July, but further to the west. The new industrial extensions incorporate a group of flour mills,* ice, textile and furniture factories and a tile works. All the development of this area, whether industrial or residential, has replaced a considerable area of orchards, and palm groves as a result of land speculation as a high percentage of the land was privately owned.

The fifth pre-1956 industrial zone is that of al-Kadhimiyah one of the pioneer industrial areas developed in Baghdad. The main industries here are textile and petro-chemical works, confectionery, beverage and ice factories as well as tile works. The Mosul high-road has aided the growth of this industrial area. Most of the industries are located along al-Hadi Street which links the Mosul highway to Kadhimiyah. Recently most of these industries have been surrounded by further low and middle-class residential areas. The industries here have both a clustered and a scattered distribution, though there has been a tendency towards linear development along the main high-ways.

Apart from the bazaar area in Kadhimiyah where factories function mostly in traditional houses, the remaining industries are accommodated in both western houses and on the ground floors of the two- to three-storeyed buildings. These industries, together with shops and garages lining the streets, have increased traffic congestion.

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* In 1967, Baghdad had 39 wheat and rice mills out of the 110 mills of the country.[16]

These factories supply Kadhimiyah, Baghdad and its surroundings as well as other liwas with their needs.

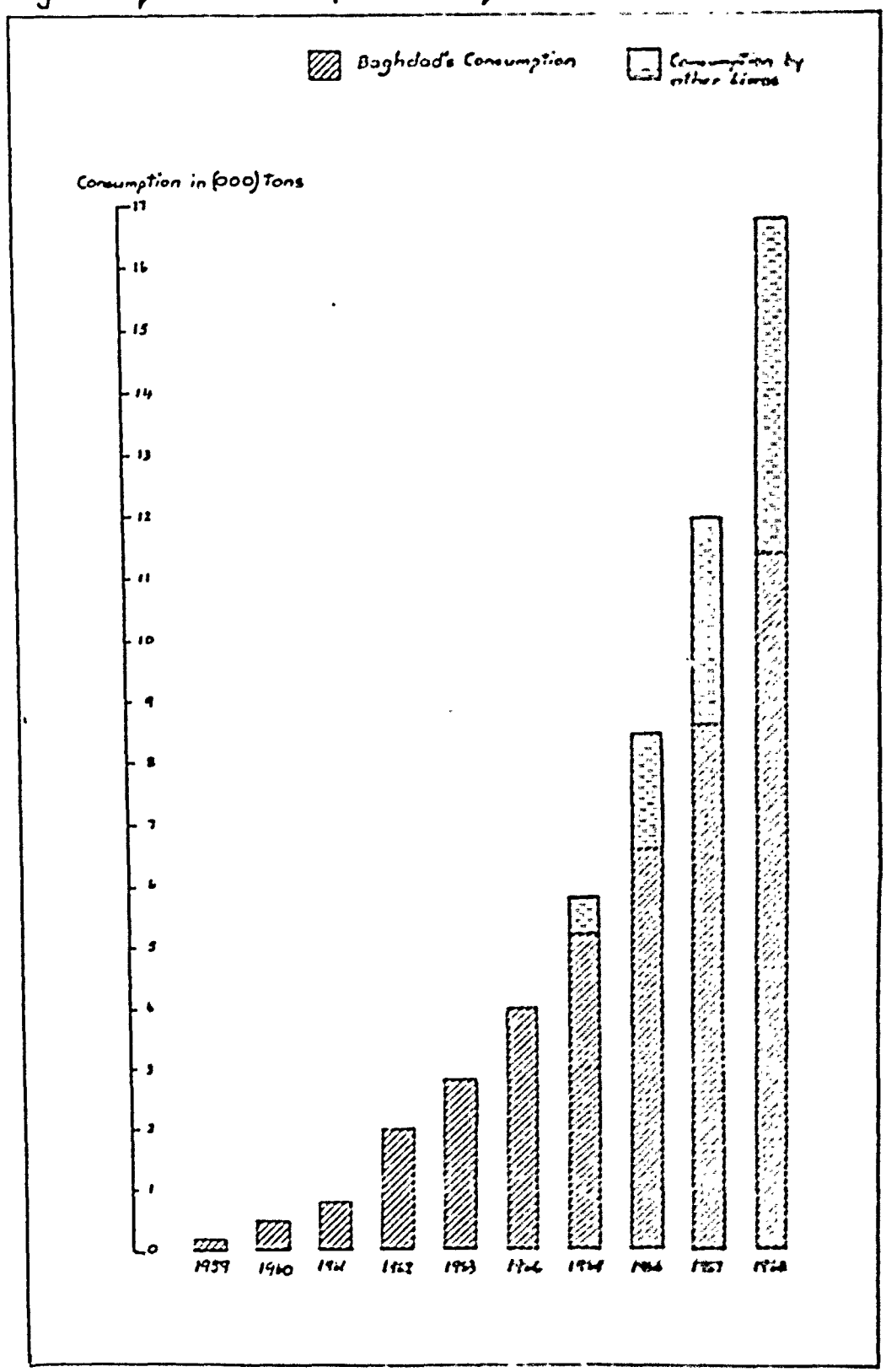
Because of their concentration to the west of Kadhimiyah they attract only low-income group houses, compared with the riverside section where high and middle-class people are segregated.

Finally, Baghdad has its modern post-1956 layer of industrial development following distinctly western lines of industrialization. Industries here are of the large factory-type with a larger labour force, higher investments, and much better transportation facilities. These types of factories are found in specific parts of the city near the Tigris and along the highways. At first these modern industrial developments had a scattered distribution pattern, but soon industries clustered together. As a direct consequence of the rapid physical expansion of the city these clusters or sometimes linear groupings of industrial development were pushed further out to new peripheral sites, importing their characteristics on the morphology of the outer city by their size and pattern in a somewhat different manner from that observed before 1956.

The fivefold radiation of Baghdad's highways has been of significance in the locational pattern of the industrial development of the post-1956 period. The highways to Mosul, to Syria, to Hillah, to Basrah and to Khanagin attracted clusters or ribbon-like industrial developments. They have freed the industrial firms from the necessity of choosing a site within the neighbourhood of its labour pool. Many of these peripheral industrial areas have been enveloped by other urban integuments, mainly residential, thus increasing the problems of traffic congestion, land-use mixture, health risks and aesthetic spoliation of the city. The multi-storey buildings accommodating the new factories

became prominent land marks in the low-even profile of the residential townscape. 90 per cent of the large industries, employing more than 100 employees each, are state-owned. Employment density within industrial areas differs according to type of production, size and locality of establishment and ranges from 70 - 110 persons per hectar.[17] The major industrial zone of the post-1956 city are on the West Side: al-Taji complex, al-Hurriyah-Salam area, al-Baiyaa, and the area along the highway to Syria, and on the East Side, the Baghdad al-Jadidah-Mashtal area, Kamaliyah, Zufuraniyah, Waziriyah and Jamilah. The first of these modern industries is that of al-Taji liquid gas-works to the north of Kadhimiyah. Although this complex has great importance for both the industrial and domestic life of the city, it failed to pull the expansion of the city northwards on anything like the same scale as that found in the case of al-Durah because this enterprise is more recent, and the Taji area has a high concentration of brickworks which accordingly has discouraged residential development, particularly of middle and high-class communities. Liquid gas is supplied to al-Taji from the Kirkuk region 190 km away by two pipelines 8 and 16 inches in diameter and built by the Ministry of Oil in 1966. The Taji liquid gas works cost 11 million I.D.,have a daily capacity of 650 tons[18] and supply the major industrial firms in the capital. Apart from the Durah power station, al-Sarrafiyah power station and the cement works to the south-east of the city, all of which are supplied with liquid gas from pipes, the rest of the city has no pipe system at all. This is so not only in Baghdad but all over Iraq although it is one of the leading oil producing countries of the world.

Fig.13.7 Liquid Gas Consumption in Iraq for the Period 1959-1963



There are 8 gas distributing centres in Baghdad, mostly located on the main roads of the new suburbs.[19] Their average daily turnover is about 1,000 cylinders per centre. Besides, many of the petrol stations retail gas cylinders for the convenience of consumers whose number has increased rapidly from 30,000 subscribers in 1960 to about 70,000 in 1968/1969. Even at the present time, in Baghdad gas is distributed in cylinders of various sizes carried by lorries and pick-ups owned by the gas corporation which was established in 1959. Sometimes consumers buy and transport their own cylinders. Each cylinder costs 650 fils. Baghdad heads the other liwas in gas consumption (Fig. 13.7) owing to the absence of such establishments in other liwas, the relatively higher living standard in the capital and the better road network. The distribution of gas consumers correlates with the economic strata of the inhabitants. This was manifest in the field survey as shown in the table below:

Table 13.7: The percentage of gas consumers in the surveyed mahallahs according to their economic order.

Class	% of gas consumers
High	100.00
Middle	37.06
Low	17.62

Source: Field work1971, Appendix A, Table G, H.

From the field study it also appears that only 18.33 per cent of the interviewees inhabiting the traditional mahallahs used gas, which indicates that the majority of the original well-to-do owners have been replaced by poorer occupants unable to afford the cost of gas.

In the above table the percentage of gas consumers among high-class interviewees is 2.7 times greater than the percentage of gas consumers among middle-class families, which in turn is only 2.1 times greater than that found among low-class families.

The second modern industrial locality is that of al-Hurriyah-Salam area representing a major land use in the MFB of the West Side. Major factors in location are the availability of cheap land and the Mosul highway and railway. This industrial complex has created an associated low-income group residential area, mostly inhabited by Palestinian refugees, migrant fallahin and civil servants.

The major industries here are establishments producing plastics, tiles, beverages and ice, biscuits and confectioneries, petro-chemicals, textiles, and flour. Some of these factories have been accommodated in western houses along the major street of al-Salam which runs towards the Mosul highway (14th July Street). These factories have added to the traffic problems of this heavily populated area. Al-Hurriyah-Salam can be considered as a continuation of the already discussed pre-1956 industrial area of Shalchiyah.

Soon after the emergence of the low middle-class locality of al Baiya along the highway to Hillah scattered industries producing mainly beverages, ice and asbestos have developed. The existence of ice works reflects the conomic standard of the community in which most people cannot afford to buy refrigerators. This industrial area is of more local significance compared with the previous ones.

The other growing industrial belt is Abu Ghraib along the highway to Syria. It has recently experienced quick linear development by the advent of light and heavy industries and is the longest industrial

zone found in the city creating a prominent linear extension of the city in this direction. This industrial ribbon development has also attracted a number of institutional and housing developments (See Chapter 11). The sector is dominated by a dairy complex which cost 1.7 million I.D., and began production in 1960,[20] employing 459 workers. A settlement of 500 houses was built near the dairy to house the owners of buffaloes and cattle most of whom are fallahin, migrants. Furthermore shelters for 13,000 milk-producing animals were constructed* thus adding appreciably to the expansion phase of the OFB.

The construction of the new highway leading to the new airport has aided industrial development in this direction. The major industries accompanying this highway, whether clustered, scattered or linear in pattern are those producing textiles, plastics, paint, soap and vegetable oil animal food stuffs and juss. Highway peripheral location and planning decisions are responsible for this locational specialization of industries. All of these factories are accommodated in buildings designed for the purpose. Therefore it is not difficult to distinguish them from the middle-income group houses expanding in this direction.

On the East Side the Baghdad al-Jadidah-Mashtal industrial area has developed along or near the highway to Khanagin. This road has also accelerated residential building activity. The major industrial concentration here consists of tile, asbestos and glass works, biscuit and confectionery factories, together with the manufacture of animal food stuffs, plastics and textiles. Tile works and

* Another 1350 stables and shelters for 25,000 milk-producing animals have been erected in al-Fudhailiyah on the East Side of the city.

building material factories group themselves along the edge of the built-up area and also in the side streets contiguous to the main highway of Khanagin. The products of these factories is mainly supplied to the East Side of the city. It is a distinctive feature that the majority of these factories are located on the south side of the street where land is cheaper and houses are more recent.

Most of these factories are accommodated in one- to two-storey buildings, in some cases replacing original residents. The area is inhabited mainly by middle-income group families.

Kamaliyah is another modern extramural industrial area still in its first stage of evolution. The major industries here produce plastics, paint, flour, biscuits and confectionery as well as animal food stuffs. Though they are in one area, the industries are still scattered but contiguous to residential complexes inhabited by low-income groups. The Khanagin highway as well as the major residential streets of the locality attract most of these industries.

Behind al-Rashid Barracks and on the Tigris a large industrial complex has developed containing cement and asbestos works and breweries. They have been attracted by the river, the highway to Basrah and the availability of ample cheap land. However, most of the land here is owned by the state.

The other industrial zones of Jamilah and Waziriyah have been developed after 1956 by zoning policy decided by the government. Al-Waziriyah industrial site has expanded the MFB further to the east, accommodating miscellaneous non-noxious industries. Both the Jamilah and Waziriyah industrial areas have been enveloped by vast residential developments and other urban land uses. This happened either before, concurrently, or after the development of these industrial sites.

Land here is mainly state-owned. The latter distributed vast tracts to the professional co-operative housing societies, which accelerated the eastern developments.

The main factories in both of these modern industrial areas produce plastics, paint, petro-chemical products, tiles and building materials pharmaceutical products, flour, confectioneries, leather and shoes as well as other commodities. Their locational pattern was influenced by the pre-existing local street system and the age of development. The earlier the factory, the nearer it is to the main road. Plots in various sizes have been sold by the government to individuals, sometimes at fairly cheap prices to encourage industrial development.

To complete the analysis of the industrial structure of the city one has to mention the brickworks bordering the inter-city highways, with their high smoke-stacks, clearly visible from the highway to Mosul to the north of Kadhimiyah, and the Khanagin highway to the east of al-Kamaliyah. They have contributed to the shaping of the peripheral morphology of the city stretching some 20 kms along either highway.

The growth of the building material industry is strongly related to the physical growth of the city.

In 1924, Baghdad had only 3 brick-works. This became 13 in 1939, 30 in 1949, 80 in 1954, 117 in 1958, and 134 in 1965. The latter figure represents 70 per cent of the brickworks of the country. 53 of Baghdad's brickworks are located along the Khanagin highway, and a similar number on the road to Mosul. The average number of workers per factory is between 130 - 200. The majority of the workers in the brickworks are unskilled peasant migrants, who are living a miserable life in kukh settlements far worse than in their primitive villages in the southern rural areas. There are no signs to tell of the

government effort to improve their standard of living. However, some of the sarifahs are outside the Amanat al-Asimah boundaries. Almost every member of the family works here, men and women, young and old. There are for example only two elementary schools in the kukh colonies along the Khanagin highway, and the secondary school pupils unable to afford the fares have to walk at least 15 kms to the nearest secondary school.

The average daily wage of workers in the brickworks is between 200 - 1,000 fils. The problem of these workers is that the Ministry of Work and Social Affairs considers them to be seasonal workers because they do not work during the rainy winter months. Accordingly many of the advantages enjoyed by permanent workers are not given to the workers of brickworks. These workers can offer no security against unemployment, nor are they able to undertake other skilled jobs because they are mainly fallahin migrants.

In 1967, 1,500,000 tons of bricks were transported to Baghdad for use in the private and public sectors of the building industry, of which 850,000 were from brick-kilns along the Mosul highway, and about 65,000 tons from East Side brickworks.[21] The average capacity of most of Baghdad's kilns is about 45,000 bricks per day, but the actual daily production is about 35,000 bricks. 5,000 bricks is the average production per hour. The average working days per year for brickworks in the Baghdad area is about 270. Most of the brickworks are not supervised, and less than 10 per cent have carried out tests on the raw material to define its properties. Most of the bricks produced are mainly of "solid" type - although the existing forming machines are suitable for the production of hollow or perforated ones. Only 4 factories produce such bricks in Baghdad. Bricks have no standards in

quality, and are generally classified by the seller in two main groups: "Yellow" to "Yellow-green" in colour, which are burnt, and "Reddish" to "red" in colour which are not baked sufficiently (Musakhrij or Mushawhib are the localnames for the two types). Good and reliable clay deposits not exceeding a depth of three metres seem to exist in Baghdad.[22] The properties and characteristics of bricks are governed by the nature of the raw material and by the method and technique of production. There is no standard size for bricks in Baghdad, though British and other standards of bricks can be found, 24 x 11.5 x 7.5 cm or $9\frac{1}{2}$ x $4\frac{1}{2}$ x 3.

The prices are different for the various groups, depending also on transport distance. Bricks are usually sold by the lorry load. The price of a lorry of bricks was 7 I.D. in 1960. It jumped to between 14 - 16 I.D. in 1971 reflecting the increasing demands on this building material during this phase of Baghdad's growth.

The drying process applied in the brickworks of Baghdad takes place in the sun on a flat area extending between the forming machine and the kiln. Thus it limits the productivity of forming machines to the periods of good weather. Furthermore the raw product is liable to damage because of rain or bad weather in general; therefore there is a waste of labour because of the frequent moving of the product. There is no instrumental control of the temperature; and the end of baking is decided by optical observation only. This method leads to failure to achieve a constant uniform quality of the product.

Baghdad's brick kilns are of the "Hoffman" type allowing continuous production and consist of an elipsoid tunnel or ring with flat roof in which the raw bricks are stacked and baked. The fuel which is used for firing is fed from the roof of each compartment and is gradually moved from one compartment, in which the bricks have been baked, to the

next one, and so on continuously. In the modified Hoffman type, fuel-feeding takes place from the sides of the kiln and not from the roof.[23]

Another famous building material used in Baghdad is juss, which is used as the stucco material (alabaster) in brick building. It is a very quick-drying material, facilitating in dome building and pavement processes. It is affected by the pressure of water and when used as external stucco, falls down in a few months in the form of flaked sheets, but when protected from rain and moisture, as in the interior of houses, becomes exceptionally hard to the extent that fitters of pipes cannot fix concealed conduits and cables but only visible ones on the wall surface. Because it hardens quickly, it presents difficulties when trying to achieve a good and smooth finish. Its raw material is crude gypsum. Most of the factories in the Baghdad area are located along the highway to Syria. The annual consumption of juss in Baghdad has been estimated as more than 800,000 tons. A factory for juss is called a koor, which is a rudimentary kiln not permanently installed, operated as need arises. However, a number of modern factories have been recently introduced to the city of Baghdad. Bricks and juss are the major local materials for building purposes, and their use involves the simplest and most direct method of building. Their use greatly harmonizes the external appearance of buildings with their surroundings. The unnecessary intrusion of unsuitable alien building materials should be actively discouraged, and in Baghdad's case this is the task of Amanat al-Asimah whose safeguards of public amenities should avoid the use of bad building material in new development.

Tiles are another main building material which is increasingly used in Baghdad. Cement and terrazzo tiles are produced in small factories, mainly in houses scattered throughout the city, with fairly rudimentary installations, which are however, capable of pro-

udcing far greater quantities than the market demands. Tiles are used on a large scale for flooring rooms and covering roofs. There are more than 90 tile works in Baghdad. The daily production is more than 112,000 tiles. Tiles are produced in varying qualities ranging from 10 x 20 to 30 x 30 cm. They can be divided into two main categories, viz. common tiles and terrazzoes. The main raw materials for tiles are cement, white cement, sand and stones.

The use of steel in wall and roof construction has been fostered and used because of the lack of supply of other building material. The greater part of Iraq's importation of steel is absorbed by construction in the form of beams, joists, and pillars, as metal windows and as pipe fittings. Pre-fabricated doors and windows, are used to a limited extent, owing to the fact that the majority of firms are carpentry workshops, seldom staffed by more than ten employees, having a daily production capacity of a few doors or windows, carrying small orders, usually less than their potential production.

Since 1956, the use of metal windows and doors has increased. In Baghdad and particularly in the suburbs it is customary in building construction to place the door or window frames first and then construct the wall. Standardization has led to repetitive forms of similar houses.

The almost universal acceptance of reinforced concrete as a modern building material should be regarded with careful consideration in the climatic conditions of Baghdad. Besides the technical difficulties involved in expansion and construction under Baghdad's heat conditions, it reduces architecture to a level of merely solving technical building problems and robs it of its regional and historical character. Reinforced concrete walls have the serious disadvantage of radiating heat and tiresome light glare under Baghdad's conditions of solar heat and

sunlight. Cement is almost exclusively used in foundations in damp-proof courses, in the exterior stucco of walls, as mortar in structures of good quality, and in the lower part of inferior plastering where cement is a substitute for skirting boards. At present 10 or the 11 concrete block factories of the country are located in Baghdad.

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PART VII

Baghdad's Commercial Structure

CHAPTER 14

Baghdad's Commercial Hierarchy

The aim of this part of the investigation is to discover whether there is a distinct commercial hierarchy in the City of Baghdad, to study the spatial distribution of the commercial centres; their patterns and degree of success; and to assess the extent to which the modernization processes have changed the pattern of the business centre, including the bazaars. The bazaars occupy an important section of their own, though they are now a part of a larger and growing business centre. Khans, the elementary functional component of bazaars, will also be analysed as a significant phenomenon.

Such a study perhaps will represent a fair picture of the overall commercial structure of the city, which presents certainly the second most important land use afterthe residential.

In Baghdad as in many other cities of the world there is an intimate relationship between the overall spatial distribution of commercial establishments and the morphological phases of the city. The locational pattern of commercial land uses is influenced by various factors such as transportation, the street system, size and type of population demands, age of the area, planning decisions and the distribution of population. This locational pattern should always be considered as a dynamic and never a static phenomenon.

Among the most striking contrasts in the commercial structure of Baghdad is that between the vast number and high intensity of commercial units in the traditional sections of the city demarcated by the primary fixation lines of the IFB on either side of the river, and the fewer less intensified commercial developments in areas developed after 1936, which have expanded outside the Old Town, both

Fig. 14.1 Baghdad's Commercial Hierarchy

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Shab

Tigris R.

Kraiat

Al-Sulaikh al-Jadidah

Sulaikh

Kadhimiyah

Raghibah Khatun

Adhamiyah

Qanat al-Jaish

Al-Thawrah

Kasrah

Waziriyah

Shulah

Hurriyah

Al-Salam

Alaiiyah

Rusafah

Karkh

Diyala R.

Mashtal

Al-Khir Canal

Washash

Mansur

Baghdad al-Jadidah

Camp Sarah

Harthiyah

Mamun

Dawoodi

Masbah

Karradah al-Sharqiyah

Baiya

Durah

0 1 2 km.

- Wall Lines
- Eastern Dyke
- Business Core Grade 1
- Pre-1956 Commercial Development
- Post-1956 Commercial Development
- Mantiqah Commercial Centre (Grade 2)
- Hai Commercial Centre (Grade 3)
- Cluster of Shops
- Major Shopping Streets
- Secondary Shopping Streets

Minor (Tertiary) Shopping Streets not Shown.

within the IFB (Fig. 14.1).

As has been seen (in part II), the traditional part of the city sheltered behind the eastern dyke was the most secure for urban development, while outside was a hazardous area, and accordingly commercial activities were fully and strongly established in the former.

After 1956, and because of flood control, the urban upsurge embraced the lands located outside the IFB in various ways. New roads preceding and sometimes following recent development escalated the accretionary pattern of growth, mainly at random, but controlled by individual planned programmes of residential subdivisions, in an area hitherto desert. At the same time commercial centres have developed in three major patterns, the nucleated, the linear, and the dispersed. These patterns have a distinct relationship to the way suburbs grew up, and to the kind of clientele to be served.

Because most of the new commercial service centres in the suburbs are recent, less than two decades old, they depend upon the traditional business centre, particularly the central bazaars. However, in the course of further residential development, suburban commercial centres will very likely reach a more advanced stage of maturity and independence.

Commercial service centres have developed to catch up with the speedy physical mainly residential expansion of the city. However, there is generally a time lag between the two processes, as they are largely in a cause-and-effect relation.

Baghdadi retail centres differ widely from the bazaar network offering numerous kinds of articles to satisfy a great variety of

demands, to the solitary shop catering for the most elementary daily needs of the local residential area, or even to a primitive local open market and the street seller.

Concurrently with this locational development of commercial activities following city growth bazaars, especially those selling textiles and metal products are redeveloping to cope with modern demands, while others have declined. The latter is seen in areas where a considerable number of people for various reasons have left their traditional areas. There are also a number of bazaars or sections of bazaars that have progressed either by greater intensification of commercial activities or by expansion into nearby side lanes as is the case with the wholesale sections of the central bazaars.

However, the continuous contemporary expansion of the city in all directions will generate many new locations for retail activities as well as affect the overall pattern of local trade.

Thus Baghdad's commercial structure is continuously undergoing internal and external modification, change, and expansion, including vertical growth. The new suburbs together with the construction of new streets in the Old Town, provide a major impetus for such dynamism. The dominant spatial retail patterns in Baghdad, as already mentioned, present three types viz. the clustered including shopping parades, the linear or arterial, and the dispersed type.

The first two are particularly important, and are found in the business core as the apex of the commercial hierarchy, and in second-rank retail centres, such as those of Kadhimiyah, Adhamiyah, Karradah al-Sharqiyah, Baghdad al-Jadidah, and recently al-Thawrah.

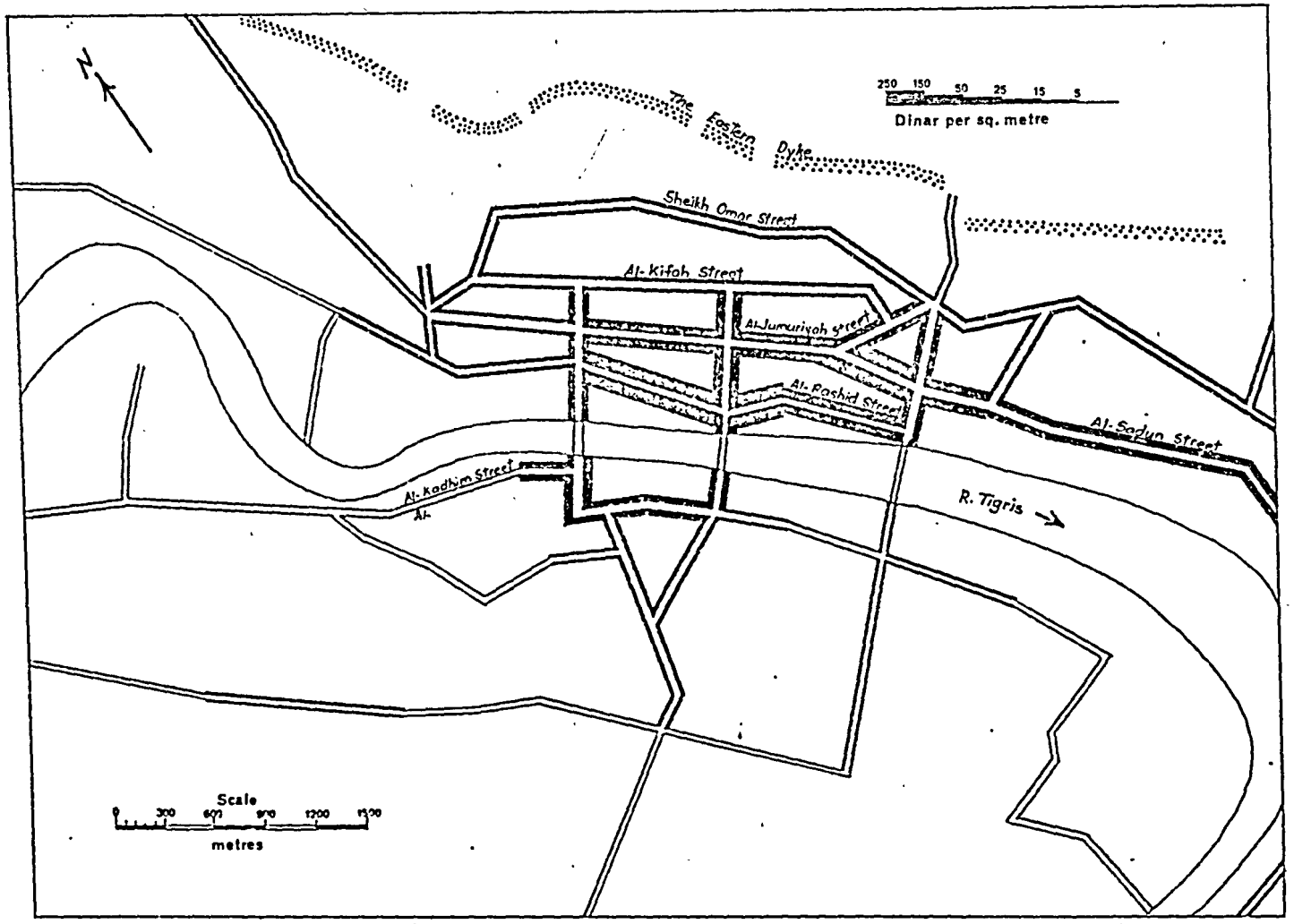

Fig. III.2 THE FRONTAL LAND VALUE OF THE MAIN CENTRAL STREETS IN BAGHDAD

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The cluster and dispersed types are widely distributed in the third and fourth component commercial ranks of the hierarchy, of which the former is found in al-Mansur, al-Hurriyah, al-Shulah, al-Baiya , and al-Durah on the West Side, and in al-Masbah, al-Kasrah., al-Sulaikh and some other suburbs on the East Side. The latter is found anywhere in the new residential areas as well as in the zuqaqs of traditional mahallahs (Fig. 14.1).

Generally, the nuclear type has developed around some antecedent point of attraction which in Baghdad may be a mosque, a shrine, a square, a street intersection or a long-standing commercial centre serving a physically secluded settlement, but later classed with the city proper. Examples are found at al-Assafi mosque, abu Hanifah shrine, al-Salam Square and the main crossroads of al-Karradah al-Sharqiyah. In functional terms the clustered type has the highest intensity in the commercial areas, is permanent in nature and offers a fairly wide variety of goods and services perhaps to a tributary area beyond the local residential district. These commercial areas have good accessibility from various directions, local and regional. Activity within the centre is often associated with buildings of greater height than those surrounding them, particularly inside the pre-1956 town. Land values here are greater than in other areas of the city (Fig. 14.2).

The linear type usually develops along new arterial roads either independently in conjuction with new residential areas or starting from an older nuclear commercial centre. The length of such development is determined by the nature of the residential area, the size of the tributary area and the traffic volume on the main road.

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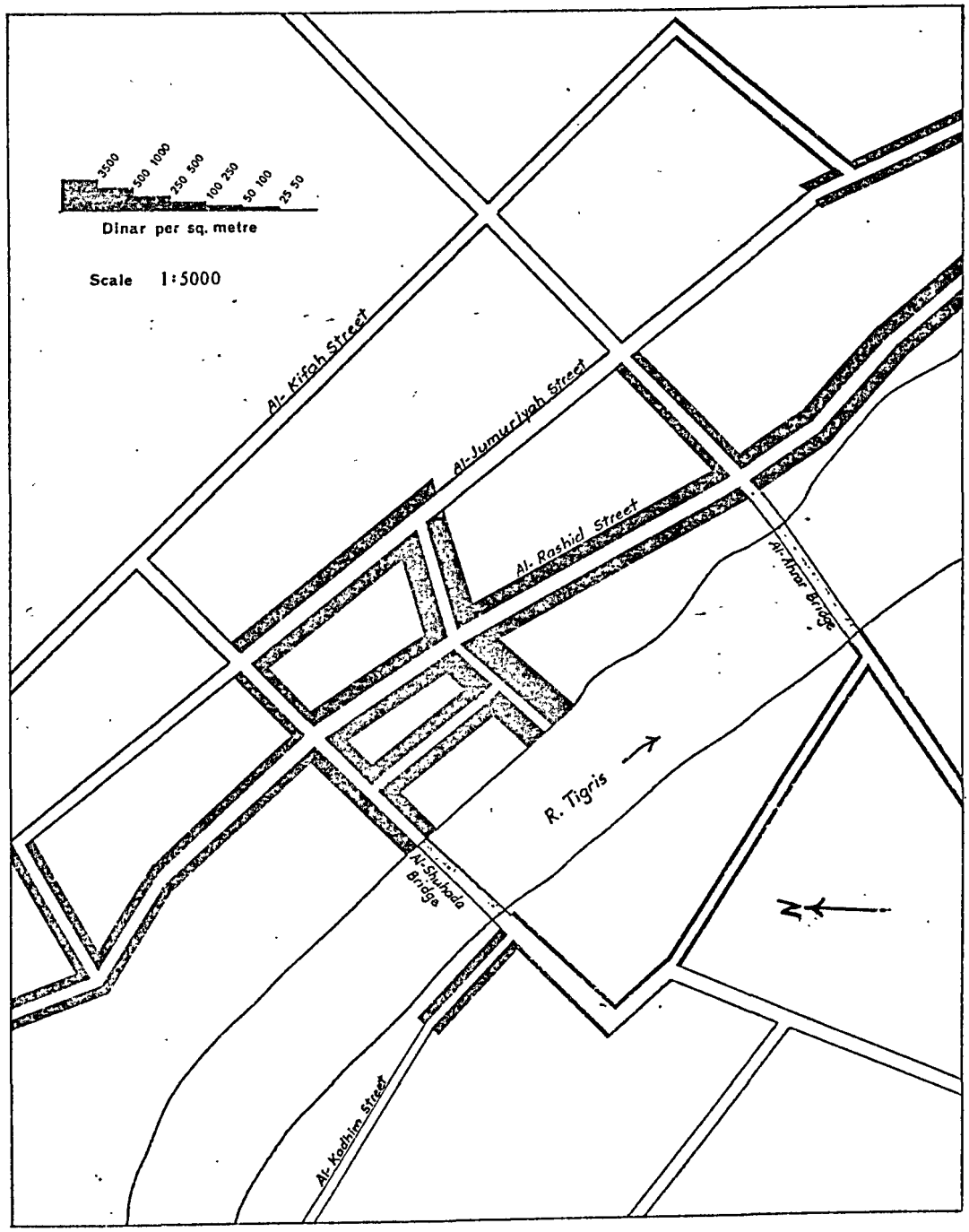

Fig. 14.3 DISTRIBUTION OF SIRGOFLY (KEY MONEY) IN THE CENTRAL AREA OF BAGHDAD

The cluster and scattered types can occur on main streeets, local streets, around street corners or at random in the less developed residential areas. However, the first two types are more frequent in Baghdad, with local differentiating features in each. All types are in various ways complementary and related to common factors affecting the overall urban growth of the city.

The four ranks of commercial centres in Baghdad may be referred to as follows: (a) the business core; (b) the mantiqah (large-district) commercial centre, serving more than one mahallah and corresponding perhaps to the outlying commercial centre; (c) the hai (small district) commercial centre, mainly serving the local area or sometimes people in transit, perhaps corresponding to neighbourhood market[1] and (d) shopping clusters.

The Business Core

The business core of Baghdad has many distinct and characteristic features in historical, locational, functional and architectural respects. Among all commercial centres the business core is distinguished by the highest land values within the city limits, highest rents the highest rates or sirgofly* and the highest concentration of multi-storey buildings or covered floor space (Fig. 14.3). The land value and sirgofly pattern of Baghdad is intimately related to the city's land use pattern, which is never static. Changes in the use of land such as change from residential to commercial activity changes

* Sirgofly = key money, i.e. the amount of money to be paid to a shopkeeper on taking over his premises. The sum paid depends on the size, location, design and negotiation between seller and buyer and is therefore a very useful comprehensive criterion to use in establishing the rank of commercial centres in the cities of the Middle East.[2]

in the overall socio-economic pattern of residential areas, and changes in accessibility interact and affect land values in Baghdad. In addition factors such as political stability, types of land ownerships (whether religious, governmental or privately-owned), and ownership policy on the part of the government are further factors.

In the business core as in other commercial centres, there is no standardized frontage of commercial premises. The frontages vary considerably from 1 to 30 m.

Gahwahs, tea and food stands are found throughout the business core, with some concentration in the bazaar and the administrative sections. Eating food or drinking soft drinks is allowed and indeed customary in government offices regardless of the time of day or the burden of office. Furthermore, friends are welcomed by officials to join them in a drink or light meal in their offices. This has affected the spatial distribution of certain kinds of central gahwahs and restaurants which are closed at night.

Historically, the business core contains some of the earliest extant urban fabric, some dating from the 10th century occupying the geographic centre of Baghdad. Consequently, its accessibility from every part of the city has always been maintained. Thus the whole development of architecture found in Baghdad, Arab and non-Arab is represented in the core reflecting the continuous functional importance of the area through history. Accordingly, the business core has the largest collection of building types, street systems, and above all functions. Commercial functions are accommodated in various types of buildings from unchanged or modified traditional buildings to new buildings replacing old ones, this pattern also repeats itself to a certain extent in the mantiqah commercial centres.

In spite of all the modifications, alterations and replacements in the course of history, it is still possible to trace an original locational pattern that owes its concept to the medieval period. It dates at least from 1095 when the city walls were constructed, perhaps even earlier, when the major bazaars of al-Thalatha were already in the same area.[3]

The main roads then running from the gates of the city, particularly the north and south gates, led to this central bazaar area. Caravans used to be housed in the numerous khans linked with the bazaar, and merchandise used to be exchanged here. The concentration of the grand mosques, the existence of the two pontoon bridges and the high residential development support such an argument.

In spite of Baghdad's long history of natural and man-made disasters the central bazaars have survived as rebuilding regularly followed the same traditional pattern that is still so clear today. As time passed many kinds of commercial developments were attracted to this advantageous location and grew as close as possible in and around the central bazaar. The latter remained the functional and morphological centre of the city, raising to record levels land values, functional intensity and the rate of development of the whole commercial network of the city.

In spite of the phenomenal urban growth outside the Old Town, the business core of Baghdad has successfully and persistently kept its traditional site. This locational stability through history explains the great diversity, intensity, and complexity of this section of Baghdad, unknown in the other ranks of the commercial hierarchy of the city. Thus one is obliged to exclude or include certain functions occupying a certain amount of space in the business core when delineating it.

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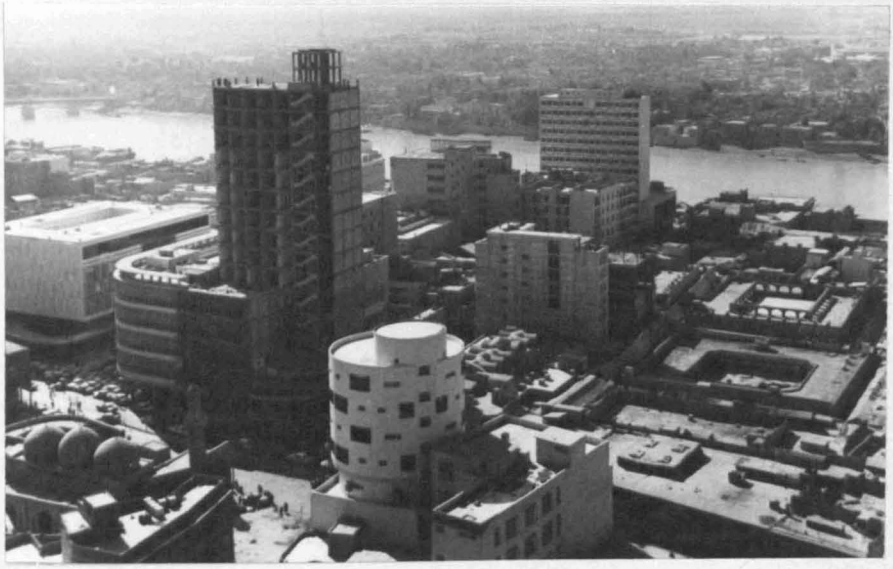
Fig. 14.4 The business core (c. 1968)

(a) The financial sector. Mosques dwarfed by modern commercial buildings. (b) Old and new in the business core. (c) The encroachment of the new upon the traditional environment, a common phenomenon in present Baghdad: the demolition swathe of a central breakthrough street in the making.

a.



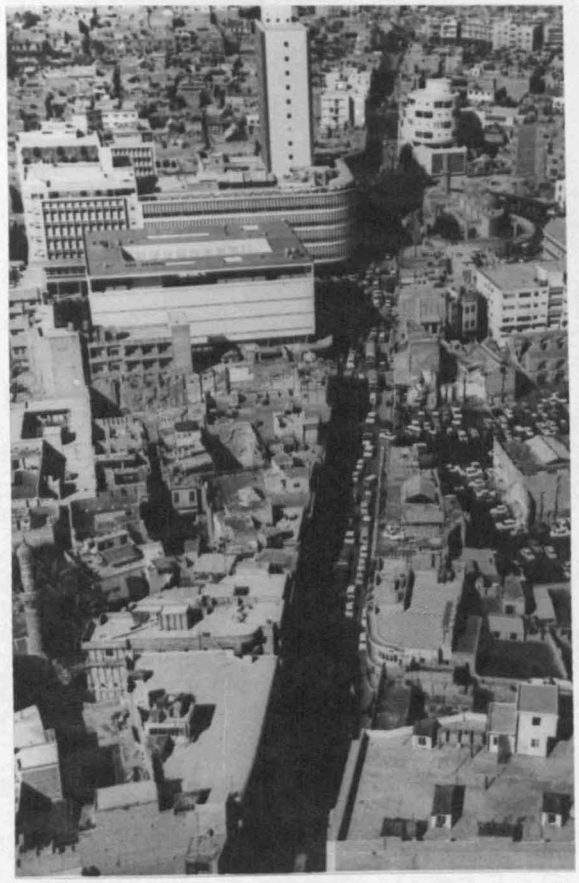
b.

c.

Morphologically and because of economic pressure exposed in the great competetion between land users seeking central location,[4] as well as the need to secure greater functional efficiency to cope with the pace of modern urbanization the business core is undergoing radical changes by adaptation, replacement and the construction of new streets. This has made the area a veritable, it jumbled, storehouse of historical forms in terms of building fabric and street patterns. Zuqaqs and agids abut on rectilinear break-through streets, the quiet atmosphere of traditional bazaars is found just behind the din of vehicles in the mixed traffic of those break-through streets.

The simplicity, beauty and fine, regionally orientated architecture of the khan or the mosque in the area is now overshadowed by the new American types of commercial building. Thus the business core has become a conglomeration of extremely diverse styles, types and heights of buildings so that its streets have been gradually changed in appearance, giving it an irregular skyline. Indeed the business centre is undergoing a rapid physical change more suited to American conditions than to Iraqi (Fig. 14.4).

The new irregular agglomerations of reinforced concrete buildings emerging anywhere in Baghdad's centre, have been built without any consideration of geographical or aesthetic requirements. There is no harmonic relation between most of the new erections and the past.[5] Most of the historic monuments in the business centre have been dwarfed by such developments. However, the fact that more than 90 per cent of the central area is built-up, has led to vertical development. This has aggravated the traffic problem of the areaas each building houses many offices or governmental departments.



a. Al-Rashid street - the most thriving street in the business core, looking north west

b. Al-Jumhuriyah street - a new break-through street of growing functional and morphological importance. Al-Tahrir, the major square of Baghdad in the foreground.

As a result of the physical modifications and functional intensification taking place in the business core, the land value pattern has also been changed considerably.

The centrality of the business core was strengthened further by planning decisions detailed in the various master plans of Baghdad. All three master plans found that in its functional and locational stability, this area was best equipped to serve the whole urban network of the city and the country. Therefore, high-rise buildings of up to 14 storeys have been allowed around the new and old break-through streets in this compact area. The financial sector of the business core on Bank Street for instance is fully occupied by modern multi-storey buildings accommodating banks, head offices and insurance companies. Newly erected buildings on the central streets have replaced many traditional ones. Along some of the central streets such as al-Jumhuriyah, the law requiring buildings to be higher than six storeys. (Fig. 14.5).

The new suburban areas have also been linked with the mother city by a number of modern highways, springing both from within and without the Old Town. The three central bridges, viz. al-Jumhuriyah, al-Ahrar and al-Shuhada, have channelled the main streets coming from the suburbs on either side of the city. This has directly aided the growth of the business core in that most of these streets are lined within the limits of the pre-1956 city with commercial services and retail shops. The destination of the new roads, i.e. whether they lead to high- or low-class localities, the date of their paving, the location of settlements, and the presence of otherwise bus routes determine the degree and mode of commercialization along them. Some of the streets have as yet failed to fill in the gaps between

commercial units, while others have long since done so.

The nature of the goods offered and the forms of buildings housing the commercial and business activities along these streets reflect the interplay of important factors such as time, economy, and to a lesser extent planning.

This being a historical nodal area, where commerce, services, administrative and recently recreational functions are concentrated, most of the city's main roads terminate in the business core. Its streets have the highest density of vehicular and pedestrian traffic, particularly during day-time. This has resulted in the construction of two pedestrian subways and in plans for others.

Great throngs of people ply the central area, particularly the bazaars, throughout the day, in all directions in an amazing confusion, which can be blamed on the shortage of commercial and business floor space. The pedestrian volume in the central section of al-Rashid Street exceeds 4,000 persons per hour. Pedestrian traffic along the central streets is also hindered by heavily congested traffic junctions, where no organized traffic control exists. With the indiscriminate expansion of the business core into the surrounding residential mahallahs, both horizontally and vertically, many of the traditional two-storey houses have changed their function to be used as offices, or warehouses, while some others have been replaced by multi-storey buildings. The rest of the houses continue to be used by more than one family each.

As a direct consequence of the political disputes that led to bloody clashes in various parts of Iraq, particularly in the Mosul area in 1959-1963, many wealthy people have migrated to Baghdad, establishing themselves mainly in the business core and other

Fig. 14.7

c. The modern part of al-Shurjah along al-Jumhuriyah Street, new forms in response to modernization processes within the traditional centre

d. A typical modern shop in a new building along al-Nidhal Street, south of Rusafah

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Fig. 14.7

a. The new south-eastern section of the business core along the northern stretch of al-Sadua Street, looking south-east

b. The demolition swathes along new break-through streets are frequently used as temporary open markets as here along al-Jumhuriyah Street in al-Iwainah.

Fig. 14.6 Al-Rashid street

(a) An old section of al-Rashid street. (b) Al-Rashid street looking south into an area of rigorous physical change. (c) A completed modern section of al-Rashid street at its southern end.

a.

b.

c.

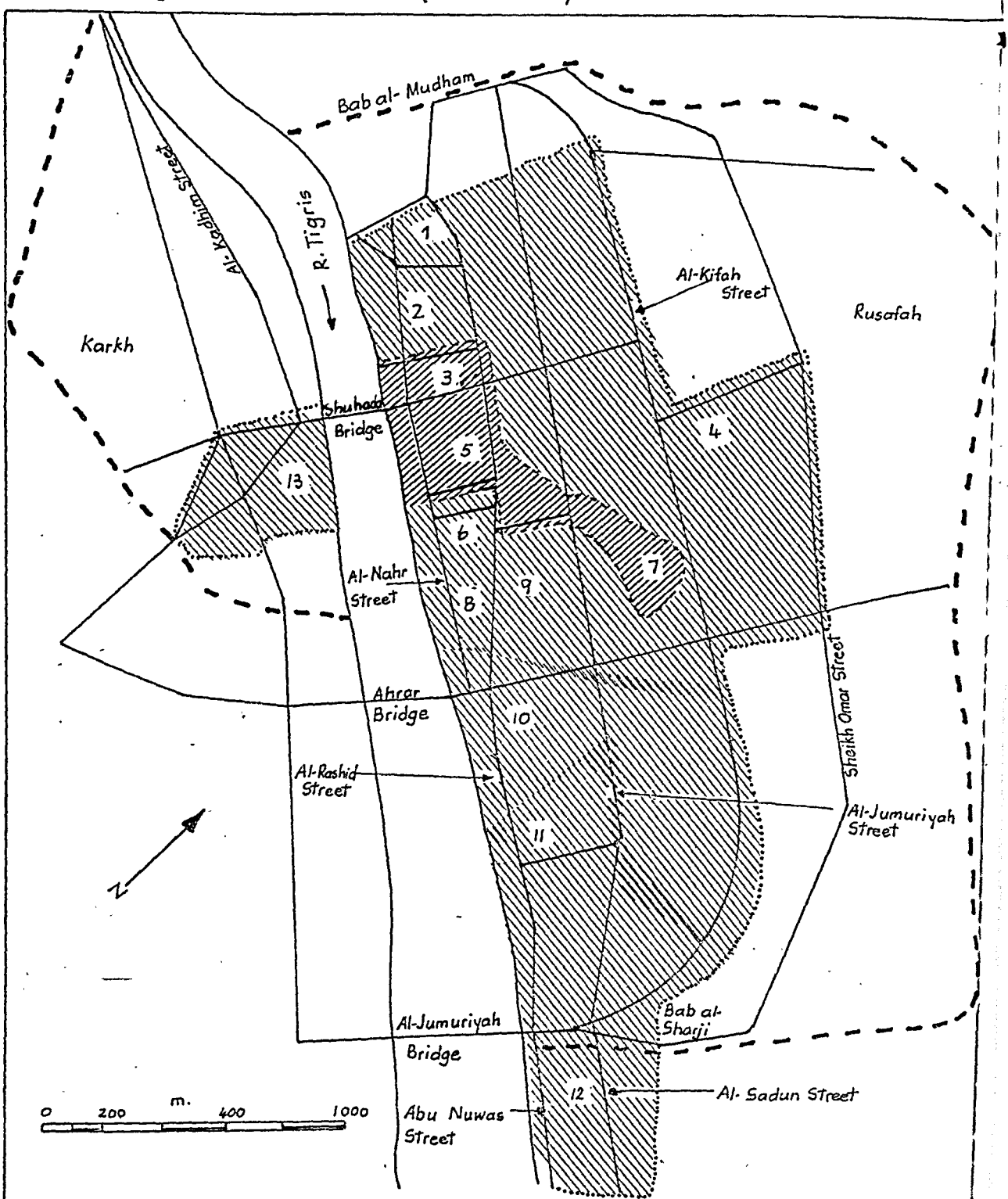
commercial centres. Well organized commercial firms emerged, intensifying the land use and increasing land values and thus accelerating the metamorphosis of the business core.

Because of the southern expansion of the core, beginning after the second world war firstly along al-Rashid Street and more recently along al-Jumhuriyah and al-Sadun Streets, a considerable number of modified Arab houses in the southern part of al-Rashid and northern part of al-Sadun have been connected to commercial and service shops or have been replaced by multi-storey buildings (3-10 storeys) in the same way as in the traditional centre (Fig. 146,14.7).The overall shift of population to the south after 1920 was accompanied by a general shift of the centre of gravity of certain activities, chiefly those related to retail business (Figs. 14.6, 14.7).

Because of the lack of relevant statistics there is as yet no study to delimit the business core according to the purchasing power of the society it serves. As is the case with most Arab towns, Baghdad's business core is quite different from the CBD of American towns and is not as easy to circumscribe within a definite line, the more so as it has also been a product of spontaneous development rather than of careful planning. It is located on both sides of the Tigris, and on neither bank does its width exceed $1\frac{1}{2}$ km. Its general pattern is sub-rectangular. This is particularly true on the East Side where it stretches for more than 4 km between Bab al-Mudham and al-Jundi al-Majhul (unknown soldier) monument. However, its width in the southern section, where it follows al-Sadun Street is very much less.

The overall pattern of the business centre is greatly influenced by the general north-west to south-east direction of the river.

Fig. 14.8 Baghdad's Business Core (Generalized)



Few indices have been considered in such an approximate delimitation, considering the lack of governmental statistics on the subject (Fig. 14.8). Land values and the diurnal population density caused by commercial, service, professional and administrative functions have concentrated in this area. It is characterised by a surprising mixture of functions and forms. There is no clear differentiation between them except for certain sections in the bazaars and certain specialized parts of the modern business centre (Fig. 14.6). Residential units for instance are found even in the bazaar area. Land uses which can avoid the central areas are also widely scattered in the by-lanes and in the maze of zuqaqs. However, the business centre delimited here includes virtually all multi-storey buildings accommodating central land uses, whether public or private. Traditional bazaars with their institutional establishments, together with lanes dominated by traditional crafts, printing works and many governmental offices are included.

The traffic flow and intensity, particularly during the rush hours, has also been considered as another index.

However, in spite of the great mixture of land uses and forms the business core of Baghdad is made up of distinct specialized commercial areas not clearly observable in other commercial centres. Each of these subsidiary areas offers a certain kind of commodity or service and all of them are mutually beneficial, drawing customers and clientele not only from Baghdad but from all parts of Iraq. The business core has a higher number of customers than any other centre. Of the interviewees in the surveyed mahallahs 71.27 per cent frequent the business centre regularly for luxury goods and 18.43 per cent for non-perishable goods.

The business core also surpassed all the other commercial centres not only in Baghdad but in all other towns in Iraq in the number of commercial transactions, turnover, services and professions offered. There are no figures of annual or daily sales available, and even Amanat al-Asimah, which issues the permits for wholesale and retail shops, knows neither their number not their exact locations.

However, in 1957/8, 3,739 merchants were of the Baghdad Chamber of Commerce and in 1956 the percentage of goods sold by Baghdad's retail and wholesale firms respectively were 46 per cent and 63 per cent of those sold in the country. The annual income from wholesaling and retailing in Baghdad for the year 1956 was put at more than 13 million I.D.[6]

In 1965, the Polservice Master Plan stated that commerce in Baghdad had contributed about 15 million I.D., i.e. more than 11 per cent of the total national income of the city, which was estimated at 131 million I.D. The number of employees in commerce and handicrafts for the same year was put at 85,000, i.e. more than 31 per cent of the total employees of the city in 1965.[7]

The business core has its own focus which performs most of the functions and thus attracts the highest number of customers, causing associated land values to be the highest in the city. This is seen in the textile bazaar, the governmental section and the banking area.

Fig. 14.8 depicts the locational pattern of the sections of the business core. The main distinct sections of the business core, based primarily on function, are the following:

Although the administrative section is not strictly speaking a part of the business core proper, it is relevant to mention its

location, just to the north of the bazaar complex, housing many governmental departments and ministries, which draw people from all over the country thus providing business opportunities from early times. All its buildings are of architecture belonging to the Ottoman and the second morphological periods, with traditional features. Administrative functions in Baghdad produced a total revenue in 1965 of 22 million I.D., i.e. more than 16 per cent of the city's total annual revenue, with about 75,000 employees or more than 27 per cent of the total employees of the city in that year.[8]

The Bank Street financial sector was among the earliest western-type land uses introduced to the expanding business core of the city, and caused the first and most radical change to the townscape of the area. This land use has developed along al-Sumawal and later along al-Bank Streets, linking al-Rashid Street, with al-Nahr Street, both of them thriving central streets, developed before 1917. The banking streets are flanked by multi-storey buildings, 4-14 storeys high, dominating the city profile. This striking juxtaposition of the old and new is the main feature of the business core. These buildings are occupied by the head offices of banks and insurance agencies, and by a few governmental and business offices. Banks in Iraq were nationalized in 1964, and since then they have been amalgamated into four major banks.[9]

The economic importance of the business centre culminates in al-Bank Street. Accordingly land values reach their peak here and sometimes exceed 500 I.D. per sq. m. In 1965 Banking and insurance in Baghdad contributed 8.2 million I.D. or more than 6 per cent of the city's annual income.[10] 55 per cent of the present buildings along al-Sumawal

and al-Bank Streets were built after 1956, reflecting the recent increase in functional importance. Only 15 per cent of the traditional buildings are still standing.

The major distinguishable sections of the growing business core of the city are: the furniture section, the printing works, various sections selling hardware, pottery, menswear, professional services, together with sections dealing with recreation, department stores and women's clothes along al-Nahr Street, and the section of al-Karkh (Fig. 14.8).

There is always however, a functional movement either between these sections or from any of them to a new area, which naturally influences the building types lining the commercial streets. Physical change in Baghdad's centre has lagged behind functional change which occurred in most of the central streets, but the change itself is inevitable and has already begun in various parts of the centre.

Street evolution in the business centre:

Both in the business core and in other commercial centres Baghdad has developed a linear commercial pattern. Morphologically these patterns express uniquely the complex changes that have taken place in the plan of the area through a period of more than ten centuries. The forms vary in commercial intensity, type of commerce, services, physical development and degree of linear arrangement. The business core has the following parallel streets; al-Nahr Street, al-Rashid Street, al-Jumhuriyah Street, al-Kifah Street and al-Sheikh Omar Street all being within the limits of traditional Rusafah; and al-Sadun Street, being the new extension of the business centre to the south of the south gate (See Chapter 10).

Al-Rashid Street, built in 1917, cut through the business centre, was the second modern break-through street after al-Nahr Street (1911) and the most important commercial artery in the city. Its functional importance was confirmed by the continuous processes of building adaptation, face-lifting and replacement. This street follows historic precepts in being sited near the major traditional wholesale bazaars and the modern towering structures of the banking sector, which has contributed to its functional stability. The street has its well-defined commercial character, drawing customers and clientele from all over the city, and offering specialized services and commodities. Thus shoe shops, departmental stores, electrical goods shops, photographers, cinemas, casinos, clinics, pharmacies, professional offices, etc. line this street.

The southern end of al-Rashid Street terminated in al-Tahrir Square which embraces numerous, large commercial establishments, offices, administrative offices, car showrooms, ready-made dress shops, pharmacies, soft-drink shops, restaurants, cinemas etc. Since the construction of al-Jumhuriyah Bridge the commercial importance and land values round the square have risen as expressed by modern multi-storey buildings. The development of this square, the establishment of the suspension bridge further south, and the general shift of population has led to the migration of some establishments to al-Sadun Street.

Architecturally and functionally, al-Rashid Street, can be considered a part of the bazaar area. Excluding short-stretches where some demolition and replacement is taking place, the whole street has been arcaded and has shaded pavements. Renovation has given more opportunity of providing the street with a few new squares, which have greatly altered its character.

Table 14.1: The number and types of commercial and service establishments along al-Rashid Street in 1971.

Type of establishment	No.	Type of establishment	No.
General Dealers	197	Printing works	8
Ready-made clothes and accessories	24	Post Offices	1
Gahwahs	31	Copper and goldsmiths shops	13
Restaurants	8	Clinics	133
Refreshment shops	28	Lawyers' offices	128
Fruit shops	94	Hotels	47
Electric goods shops	33	Photographers	25
Glassware shops	19	Hairdressers	46**
Painting materials shops	38	Shoe polishers shops	9
Shoe shops	43	Paint shops	16
Watchmakers shops	7	Dry cleaners	4
Furniture shops	35	Hammams (Baths)	2
Phamacies	31	Mosques	9
Shops selling vehicles spare parts	5	Governmental offices	23
Antique shops	47	Cinemas	7
Miscellaneous* shops	67	Newspaper Offices	3
Wholesale premises	10	Schools	8
Chemists shops	111	Houses	1
Workshops	2		
Total			1,313

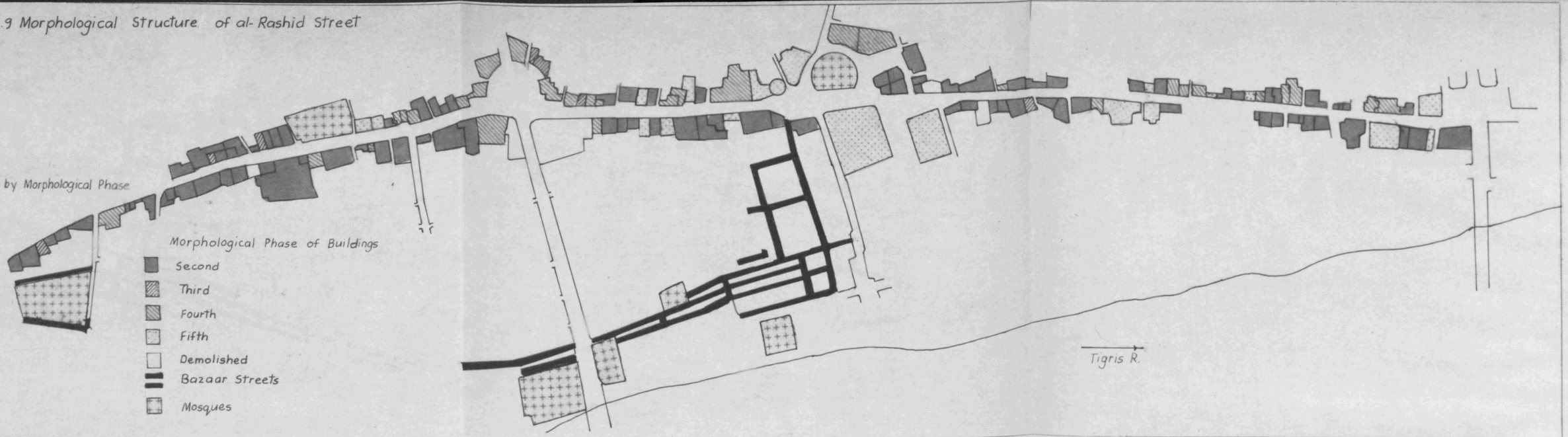
Source: Field Survey, Baghdad 1971.

Most of the original owners of the traditional houses along this and other streets have moved to the new suburbs. The only residential

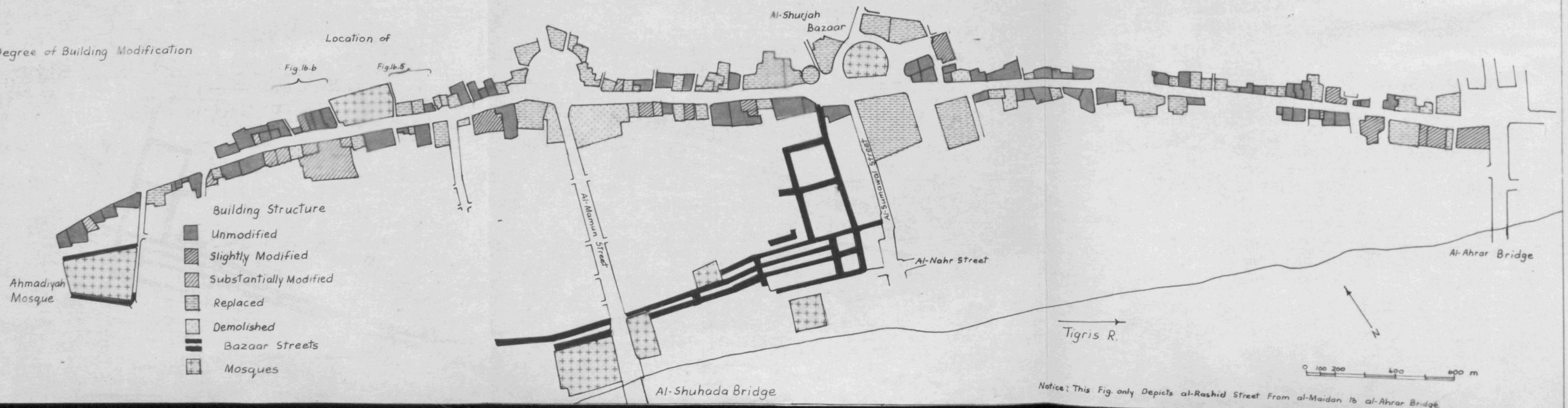
* Tobacconists, opticians, sport materials etc.
** Ten of them are for women.

Fig. 14.9 Morphological Structure of al-Rashid Street

a. Buildings by Morphological Phase



b. Degree of Building Modification



Notice: This Fig. only Depicts al-Rashid Street From al-Maidan to al-Ahrar Bridge.

unit on this street is in al-Aguliyah, the owner is old and wealthy and has rejected a suburban location in favour of his ancestors' house.

Owing to this functional development al-Rashid Street shows the greatest physical change. This is brought out by the following table compiled from the field survey (Fig. 14.9).

Table 14.2: Morphological change in the building fabric of al-Rashid Street

Buildings built before 1936						Buildings built 1936-1956				Buildings built post 1956			
U*	F	E	R a	R b	R c	U	F	E	R	U	F	E	R
106	10	22	5	48	13	13	-	1	-	17	-	-	32

Source: Field Survey, 1971.

From this table it appears that more than 38 per cent of the traditional buildings built before 1936 have been replaced. More than 9 per cent have been essentially modified, over 4 per cent slightly modified and more than 47 per cent remain unmodified. More than 92 per cent of the buildings built during the period 1936-1956 and of those built after 1956 remained unmodified in 1971. This indicates that buildings built before 1936 were those most affected by physical change, as their forms failed to meet the requirements of modern commercial or business functions. The most rapid change is taking place in the southern and central sections of the streets, near the central bazaars and the bridgeheads.

Al-Jumhuriyah Street is the most recent break-through street in Rusafah constructed between 1957 and 1961, cutting through the compact area between al-Rashid Street and the street of al-Kifah

* U = unmodified or essentially unmodified; F = fairly or slightly modified; E = essentially modified; R = replaced, or newly built; a = replaced before 1936; b = replaced between 1936 - 1956; c = replaced after 1956.

further east. At the present time, most of the street is still flanked by a demolition swathe of demolished, damaged or half-demolished houses. It truncates the celebrated bazaar of al-Shurjah and has swept away an old church and the mosque of al-Khulafa. Since its construction, the street continues to undergo a functional and physical change as the building regulations allow no building on this street to be less than 6 storeys in height. New ones are emerging here all the time as the business core is already absorbing this street. The field survey of 1971 revealed that there were 37 new multi-storeyed buildings, all built after 1960. The highest buildings occurred in the area near the central bazaars where the highest revenues are expected and in the southern section of the street to which recreational, business and administrative land uses are attracted. For many reasons however the street is still lined with vacant land owned by the government. Behind this land a high percentage of the traditional houses has been modified physically to enable them to function as gahwahs, workshops or commercial shops, mainly of a local type serving the inhabitants of the truncated mahallahs (Fig. 14.7b, h).

Al-Kifah break-through street (built 1936-1938) is another commercial street, running between the north and south gates. It has shops with narrow frontages selling all kinds of goods such as groceries, sweets, meat and service units. It is of less importance than al-Rashid Street as it is more recent and lies further away from the central bazaar area. Private houses are still to be found along this street. The average height of buildings is between 1 and 5 storeys.

Fig. 14.10 Morphological Structure of al-Sadun Street

Notice: This Fig. Only Represents al-Sadun Street From Bab al-Sharji to al-Jundi al-Majhul.

g Modification

b. Buildings by Morphological Phases

Morphological Phase of Buildings
Second 1869-1920
Third 1920-1936
Fourth 1936-1956
Fifth Post 1956
Demolished or Derelict Buildings
Mosques

Line of Tigris R.

N

0 12 24 30 m

Al-Jundi
al-Majhul

Sheikh Omar Street, as explained in Chapter 11, is not part of the business core at all but a business street of decided fringe-belt character within the ancient intramural of the IFB, specializing in all kinds of vehicle spare parts and related accessories.

Al-Sadun Street represents a specific modern section of the business core, accommodating new functions which came about to meet the modern needs of high-class society. It is therefore characterized by its high level of business and recreational activities, and the commercial importance of this street linking the Old Town with the southern integuments continues to increase. It is now lined by retail and service premises, particularly clinics, pharmacies, restaurants, first-class hotels, offices, casinos, cinemas, high-quality tailors, photographers, banks, etc..... Baghdad has 14 airline agencies all of which are located along this street as are eight of the city's 28 travel and tourist agencies. Therefore this, like the other modern streets, radiating from the Old Town represent an obvious non-Arab complex in Baghdad's townscape both as regards plan elements and shop arrangement. Most domestic accommodation here is located on the upper floors of the apartment buildings constructed during the last decade, while the ground floor is occupied by services and commercial activities. However, there are still a few inhabitants occupying the whole of their houses, particularly in the southern part of the street.

The following table shows the dynamism of al-Sadun Street when it was surveyed in 1971 (Fig. 14.10).

Table 14.3: Morphological change in the building fabric of al-Sadun Street

Buildings built before 1936				Buildings built 1936 - 1956				Buildings built after 1956			
*U	F	E	R	U	F	E	R	U	F	E	R
5	5	22	-	12	3	17	6	18	10	13	71

Source: Field Survey 1971.

* U: unmodified; F: fairly modified; E: essentially modified; R:replaced or newly built.

From this table it appears that more than 68 per cent of the pre-1936 buildings still existing were essentially modified. The majority of the buildings replaced in the period after 1956 belong to this category. More than 35 per cent of the buildings built between 1936 and 1956 were essentially modified. More than 39 per cent of the buildings were either newly built or replaced older buildings. This indicates the general trend of the southern extension of the business centre.

More than 52 per cent of the existing** buildings were essentially modified to accommodate modern land uses, all of which followed western lines in display and sales method. Only 19 per cent of the buildings along this street were unmodified. However, a good percentage of them are used for functions other than housing without change of form, such as head offices of trade unions, and some governmental offices.

The highest intensity of change is shown in the northern and central parts of the street. The former is near Tahrir Square, the major central square and one of the bridges of the city, while the latter is contiguous to the first class hotels and cinemas in the city.

Mantiqah (large district) Commercial Centre:

The spatial distribution of the mantiqah commercial centres is illustrated in Fig. 14.1. One of these centres is on the West Side while the other four are located on the East Side. Three of them, al-Kadhimiyah, al-Adhamiyah and al-Karradah, were well developed before 1956, being located within the limits of the MFB. The other two, Baghdad al-Jadidah and al-Thawrah, developed outside the secondary fixation line of the East Side, i.e. the old dyke, to serve growing residential areas in the contemporary suburbanization of the city. Kadhimiyah and Adhamiyah display more or less the same develop-

** Excluding the replaced buildings.

ment processes as the business core. They expanded around the religious nuclei to such an extent that they merged with the mother city. Thus they served particular residential areas, having almost a miniature type of main business core. Mantiqah centres have recently begun to expand, and also modernize themselves to catch up with the present needs of modern society and the new technological context.

Land values here have tended to rise in a manner reminiscent of the business core.

Kadhimiyah and Adhamiyah commercial centres, together with the comparatively younger centre of al-Karradah, acted as functional and physical nuclei for the expansion that ended with their coalescence with the mother city of Baghdad. The growth was linear along the Tigris and the major arteries of transportation. After 1956, the Baghdad al-Jadidah centre began to stride towards maturity, concurrently with the residential and road development of the area.

Al-Thawrah commercial centre, on the other hand, has grown as a result of planning decisions after 1965, when the whole of the alwahs of the business core, being in fact Baghdad's wholesale market for fruits and vegetables were required to be moved to this site. This change was followed by the corresponding shift of a bank and a number of services and related businesses.

These latter two centres are playing almost the same nuclear role as the former three centres, which predictably will lead to the merging of the so far still detached north-eastern suburbs with the city.

These outlying centres have a certain degree of self-sufficiency, and the range of articles offered by them is only surpassed by that of the business core. The same is observable with service and professional

functions which are fairly well represented. Because of the growing importance of these commercial centres many firms in the business core such as Orizidi Back department store, confectionery establishments, banks, etc. seeking more business, have set up branches in these and other centres, rather than grow still further at headquarters. However, as the population moves further into the suburbs such firms will increase the number of their branches.

The mantiqah commercial centres differ from each other in age, size, functional efficiency, physical appearance and the rate of development. Nevertheless, all of them are growing in size and intensity though those nearest to the business core are more affected by the competition of the latter. The growth of al-Kadhimiyah has local and international reasons as tens of thousands of people visit Kadhimiyah's Shiah shrines annually.

The growth of Karradah al-Sharqiyah centre is stimulated by residential development as well as by proximity to the recently built suspension bridge and the university.

Baghdad al-Jadidah and al-Thawrah are growing partly because of planning decisions but also because of expanding tributary areas and local main road improvements, the intruduction of administrative functions, and the development of grand mosques.

The trade area of these centres extends far beyond the local community so that Baghdad al-Jadidah for example serves more than $\frac{1}{4}$ million people and al-Thawrah $\frac{3}{4}$ million.

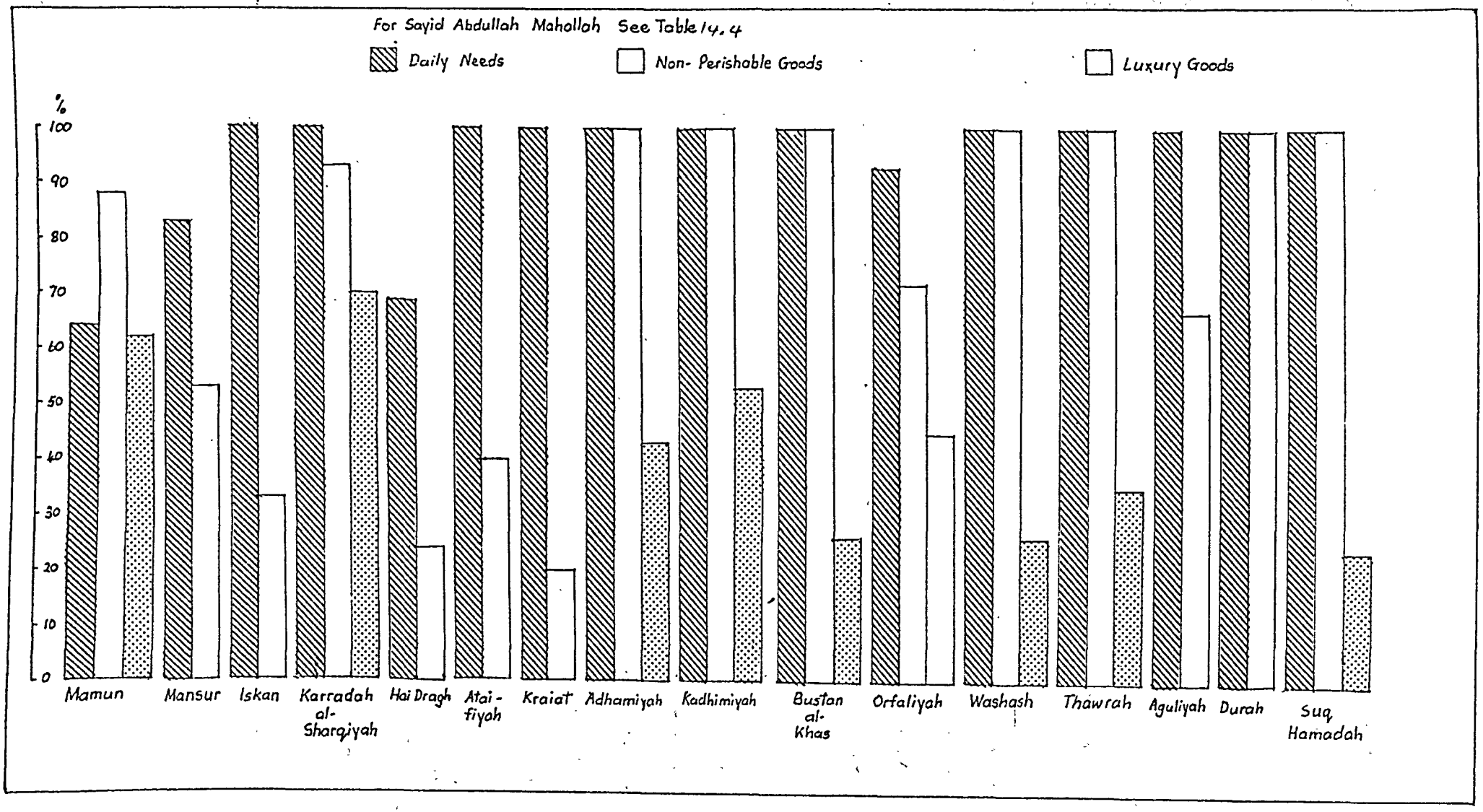
The officiency of the commercial centres in Baghdad is shown in the following table.

Mahallah	Daily Needs				Essential Non-Perishable Goods				Luxury Goods			
Upper Class	Local Shopping Centre	Bazaar	Rest of Business Core	Other Centre	Local Shopping Centre	Bazaar	Rest of Business Core	Other Centre	Local Shopping Centre	Bazaar	Rest of Business Core	Other Centre
Mansur	62.50	-	-	37.5	87.50	12.50	-	-	62.50	25.00	12.50	-
Mamun	83.33	-	-	16.67	58.33	41.67	-	-	-	100.00	-	-
Average	72.92	-	-	27.09	72.92	27.09	-	-	31.25	62.50	6.25	-
Middle Class												
Iskan	100.00	-	-	-	33.33	66.67	-	-	-	-	100.00	-
Karradah	100.00	-	-	-	93.75	6.25	-	-	72.50	12.50	25.00	-
Hai Dragh	70.59	-	17.82	11.59	25.29	74.71	-	-	-	100.00	-	-
Sayid Abdullah	-	-	-	100.00	-	-	-	100.0	-	100.00	-	-
Ataifiyah	100.00	-	-	-	40.00	-	20.00	40.0	-	-	90.00	10.00
Kraiat	100.00	-	-	-	20.00	73.33	-	6.67	-	-	93.33	6.67
Average	78.43	-	2.97	18.60	35.40	36.83	3.33	24.45	12.08	35.42	51.39	2.78
Low Class												
Adhamiyah	100.00	-	-	-	100.00	-	-	-	44.44	11.11	33.33	11.11
Kadhimiyah	100.00	-	-	-	100.00	-	-	-	58.81	35.29	-	5.88
Bustan al-Khas	100.00	-	-	-	100.00	-		-	35.24	47.06	17.65	-
Orfaliyah	93.18	-	-	6.82	77.27	18.18	-	4.55	46.31	34.09	15.91	4.55
Washash	100.00	-	-	-	100.00	-	-	-	24.14	24.14	51.72	-
Thawrah	100.00	-	-	-	100.00	-	-	-	37.93	-	56.62	3.45
Aguliyah	100.00	-	-	-	67.50	-	-	37.50	-	100.00	-	-
Durah	100.00	-	-	-	100.00	-	-	50.00	-	-	41.67	8.33
Suq Hamadah	100.00	-	-	-	100.00	-	-	-	15.38	53.85	30.77	-
Average	99.24	-	-	0.76	93.86	2.02	-	10.23	29.14	33.95	27.46	3.70
General Average	88.80	-	1.05	10.15	70.76	17.25	1.18	14.04	23.37	37.83	33.44	2.94

Source: Fieldwork 1971, See Appendix A. Table J.

Table 14.4 Shopping centres used by interviewees of the surveyed mahallahs in percentages and by social classes (Fig. 14.11).

Fig. 14.11 Commercial Efficiency of the Surveyed Mahallahs

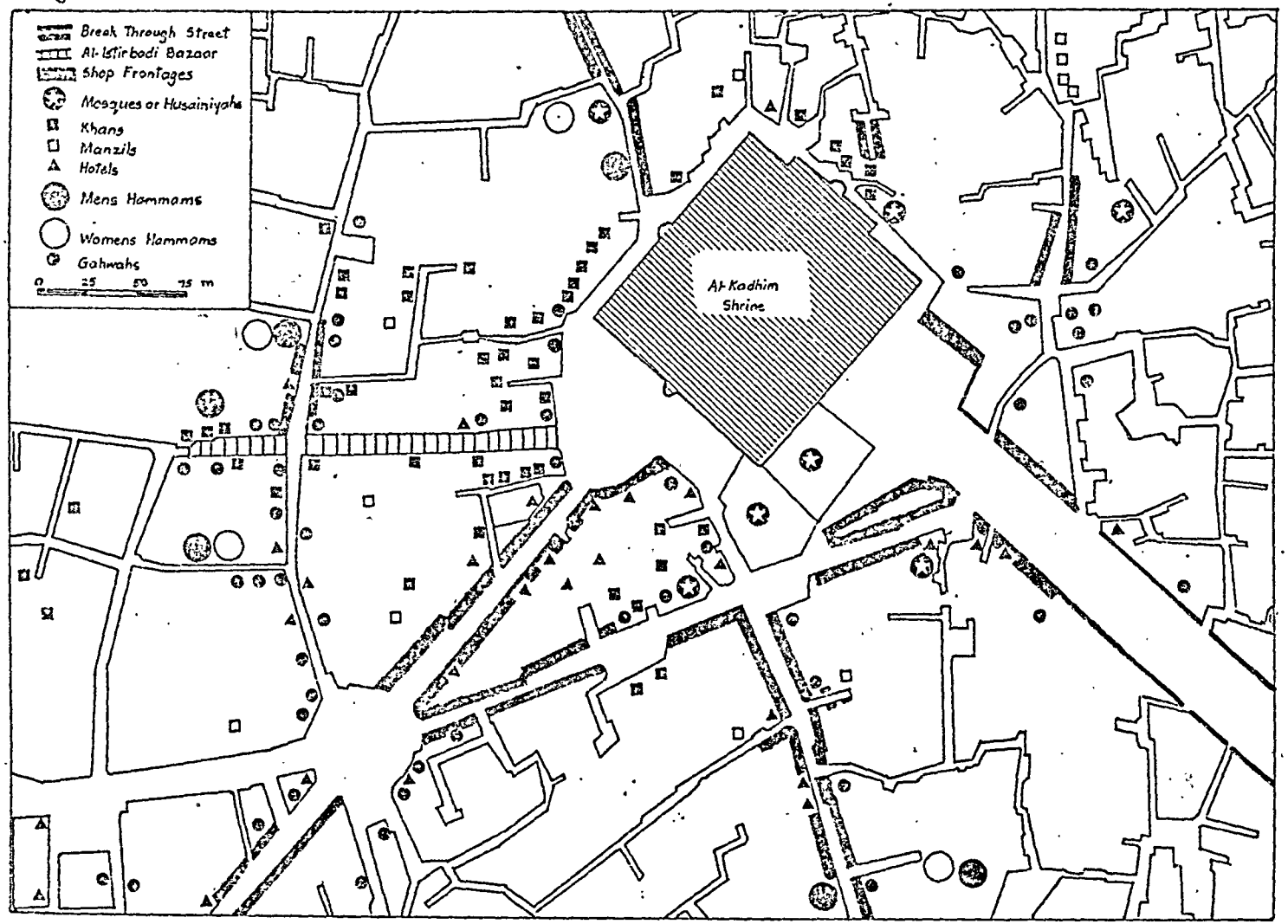


From this table it appears that 88.8 per cent of the interviewees frequent the local shopping centres for daily shopping but only 1.05 per cent use the business core. Essential non-perishable goods are also obtained in the local shopping centres and more than 70 per cent of the interviewees used to buy such materials from their local shopping centres. The percentage of people frequenting these local shopping centres for luxury goods is less than 24 per cent. This indicates that the business core which includes the bazaars, dominates this type of commerce as more than 71 per cent of the interviewees are attracted to this area. It appears that the interviewees most attracted by the business core are the middle-class followed by the high-class interviewees and then by the low-class interviewees. The reason for the relatively low percentage among the high-class interviewees is the availability of most luxury commodities in their local commercial centre, whereas the low-class can afford neither the high price of these goods nor the high transport fares to get to them.

From the table it is obvious that the percentage of people frequenting centres other than their local centres or the business core is negligible, owing to either the absence of nearby well-developed commercial centres or the lack of direct main roads between these centres.

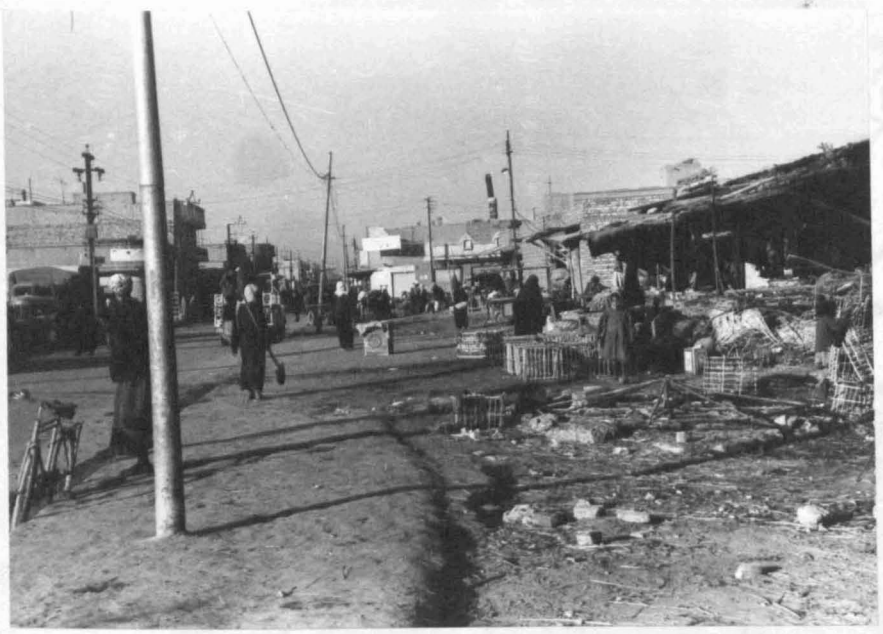
The streets built after 1956 connecting the suburbs have revolutionized the commercial spatial organization. Thus the dominant pattern of these centres is either nuclear of linear along the major streets. This has secured maximum accessibility.[11] The shrines of al-Kadhim in Kadhimiyah and Abu Hanifah in Adhamiyah, the grand mosque of al-Sammarraie in Baghdad al-Jadidah, the alwah centre in al-Thawrah, and the intersection of roads in al-Karradah, display the former pattern.

Fig. 14.13c Locational Pattern of Selected Land Uses, Kadhimiyah



F. P. 710

Fig. 14.13



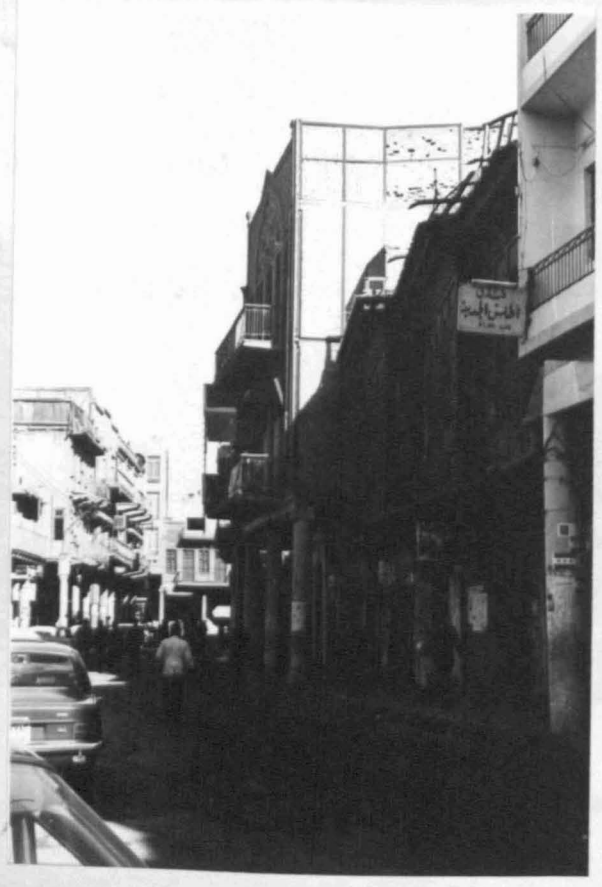
a. The major suq of al-Hurriyah

b. The major commercial street of al-Baiya

F.P 710

Fig. 14.12

a. Al-Istirbadi Bazaar, Kadhimiyah



b. The printing works section of al-Mutanabi Street

The linear pattern on the other hand is present in all of them. The arterial and other main roads always played an important part in the continuous development of the commercial function, land value pattern and physical structure of the flanking buildings. So have the bridges in recent times.

Morphologically, mantiqah centres display a high degree of functional concentration in completely changed, slightly or considerably modified buildings. Buildings of 2 or 3 storeys continue to be erected along main streets replacing older structures to cope with the economic development of these centres and reflecting the degree of interdependence between function and form. The average front width per shop here is larger than that found in the bazaar, being 3 or 4m.

All the mantiqah centres have a textile bazaar or suq, a large or small gold and silver smith section, except in al-Thawrah, meat shops, a number of grocers' shops and others supplying elementary daily requisites (Figs. 14.12[a], 14.13[c]). Contiguous to this area are fruit shops, bakeries, followed by general dealers, small restaurants, a number of gahwahs, some primitive, while others are large and well serviced.

In all those commercial centres, there are one or more branches of banks and governmental retail stores* developed between 1965-1971, indicating the growing importance of these centres. Physicians, pharmacists, midwives, electricians, photographers, hairdressers, cycle-vehicle repairers, tailors, carpenters, mattress makers, plumbers, tinsmiths, cobblers, and a host of others are to be found here. In

* In 1959, the Purchasing and Selling Organization was established, run by the government. In 1971 it monopolized the trade of 25 major items.

Baghdad al-Jadidah, for example, there are 10 pharmacies, 30 doctors, 30 tinsmith workshops and glaziers, 5 carpenters and a great number of retailing shops of all kinds.[12]

All five mantiqah commercial centres are situated in densely inhabited areas, by which a common stability is achieved.

Hai (small-district) Commercial Centre:

The spatial distribution of these commercial centres is determined by various factors, population density of the trade area, population demands, distance from the business centre, street system, motor transport development and age of the area (Figs. 14.1, 14.13a,b) These centres depend almost totally on the business core in merchandise supply and not on the mantiqah commercial centre, although a certain degree of mutual functional relationship can be seen between Hurriyah and Kadhimiyah, or Raghibah Khatun and Adhamiyah.

The relationship between the second and third ranks is weak because there is no wholesale in the second-rank centres, apart from al-Thawrah which has recently begun to supply all the other centres with vegetables and fruit, and also because of the existence of fairly good main roads for traffic. However, they are more in competition with the nearer mantiqah commercial centres, than with the business core, which is usually further away from them. Because "hai" commercial centres are serving smaller trade areas, they offer a smaller variety of goods, which sends some of the customers to either the business core or the "mantiqah" commercial centres.

Because of the growing distance between the new residential areas, mainly along the diverging arterial highways, it is logical to plan new "mantiqah" commercial centres. Predictably therefore, their

number will increase in the near future. Some of the "hai" commercial centres are located on the periphery of the tributary areas of the "mantiqah" commercial centres.

Like most of the "mantiqah" commercial centres, virtually all the "hai" commercial centres have taken root and grown at certain strategic intersections of major arteries. Some of the shops are placed around the major traffic roundabouts and thus ease of movement is made difficult for buyers, shop-keepers and cars passing through.

Sometime street intersections or mosques have caused nuclei that have spread for various distances along the major roads. The new sections of the business core and the new commercial centres reflect western influences. Abandoning the notion ofthe bazaar and ignoring dominant climatic conditions has often led to much worse solutions. This is seen in the fact that shopkeepers in modern shopping areas have been forced to use different types of improvisation such as mats, curtains, wooden blinds, tinsheets, etc. to protect their shops from intense insolation. Thus they try to replace the missing element of the covered bazaar at the expense of disfiguring the streetscape. The absence of shelter from the sun has even affected the rent value of shops according to their location on the sunny or shady side of the street. Shops on the east side of north-south streets have always lower rents in Baghdad.

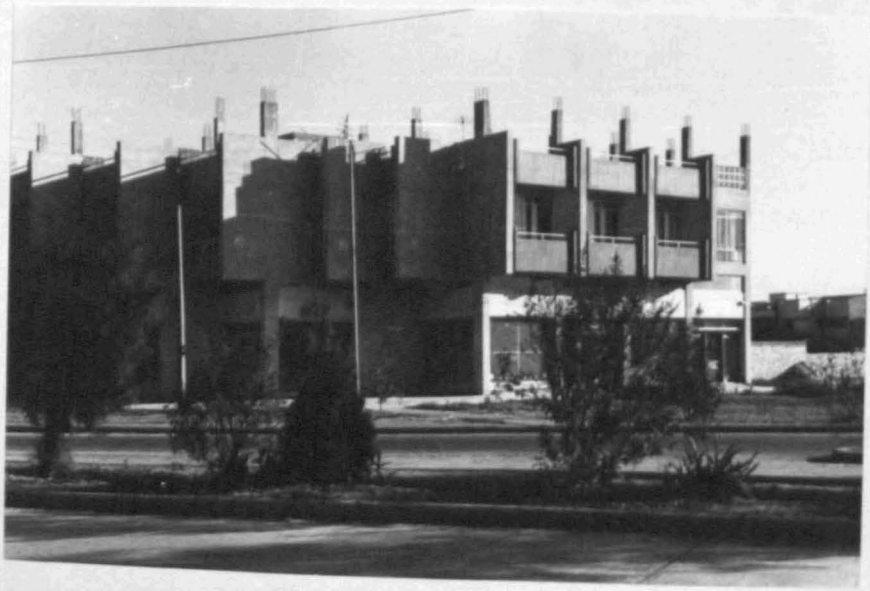
The "hai" commercial centres offer a wide but less varied choice of goods than the second-rank centres. As in second-rank centres, the meat and greengrocery shops occupy the middle, with grocers, bakeries beside them, the latter partially mechanised for the production of khubuz (flat circular bread) and loaves.

F.P. 713

Fig. 14.14 Shopping clusters in modern Baghdad

a. Within the pre-1956 limits (M.F.B.) of the city (al-Nidhal Street)

b. Outside the M.F.B. (al-Mansur)



Gahwahs are also found in many places in the area, and occasionally clinics and pharmacies. Almost every one of these centres has estate agents, tinsmiths, mattress makers, electricians, carpenters, car repair shops, and laundries.

The density of traffic, the size and social level of the residential area, the stage of its development and the commodities offered affect the size of the "hai" commercial centres.

Shopping Clusters: (Figs. 14.1, 14.14a,b)

Clusters of shops occupy a low rung on the commercial ladder of Baghdad. Usually these clusters are varied in their period of development and of functional concentration. They also vary in shape and size but have enough similarity to assign them all to the same low rank. They all display some sort of shopping parade and are to be found in all the newly-developed residential areas, with some concentration in al-Washash, al-Dawoodi, al-Salam, al-Harthiyah and Ataifiyah on the West Side, and Ugbah ibn Nafi, New Sulaikh, Mashtal and Waziriyah on the East Side.

The size of shopping clusters is directly related to the size of the residential area in which they are placed. Sometimes they serve only part of the suburbs and are a small collection of shops mainly developed on the front gardens or occupying the ground floor rooms of a corner house. When they serve the whole suburb, they are more distinct in pattern and offer a wider variety of goods. Generally, the advantages of location at the intersections of local or main streets attracts the first shops. Occasionally shops can be seen at certain points on the side streets, arranged in a short line or an 'L' shape.

Many centres of this low rank will develop in size and standard to reach perhaps a higher rank in the commercial hierarchy. Such change is usually related to the growing traffic importance of certain streets.

Low-rank shopping centres are multiplying fast in the area within and without the MFB. In the former they emerge by a process of building replacements, while the latter they are generated by the needs of new residential area. Thus the main streets of Baghdad are dotted with such low-rank centres. Most of them have butcher's and greengrocer's shops, fruit shops, bakers, grocers and perhaps a small gahwah and laundry.

Generally, distances between centres of this rank and the business core are longer than those of any other ranks sometimes exceeding 20km$. This factor increases the transport cost to the business core and accordingly encourages the development of these minor centres. So does the increase of population and purchasing power in each madinah. The process is usually started by nuclear enterprises such as a grocery and a makhbaz (bakery) beside which the number and variety of further shops will increase gradually. This has occurred around properly located shops, but as there is neither zoning control nor planned commercial development, many shops remained scattered.

The most numerous type of shop in Baghdad is the isolated shop. It serves a small residential area, thus having extremely low, rudimentary rank. Such premises are located within easy walking distance of the immediate, mostly new residential area around them. In the absence of zoning control they can be found anywhere in the newly developed and remoter residential areas.

This type of shop has not yet developed any distinct physical form as it can occupy a wide range of structures, such as a garage, a recently - constructed shop on a front garden corner or room in a house modified to make a shop.

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8. Polservice Consulting Engineers, op. cit, 1 (1969) pp. III 5 - 8.

9. Central Statistical Organization, Ministry of Planning, Annual Abstract of Statistics for the year 1966, Baghdad, (1969) p. 95, Table 132.

10. Polservice Consulting Engineers, op. cit., 1 (1969) pp. III. 5 - 8

11. Winsborough, op. cit. 37.

12. Field Survey, Baghdad (1971).

Chapter 15
Bazaars, Khans and Garages.

The Bazaars of Baghdad (Figs. 15.1, 15.2)

The bazaars link all Baghdad's economic activities. They are the expression of the integration of Arab history, economy and society and form the geographical, functional, morphological, cultural and social heart of Baghdad. They have always been intended and designed exclusively for pedestrians. Because of that and in spite of their throngs of pedestrians they are oases of tranquility compared with the din of wheeled traffic in the modernized streets and sections of the city.

Historically, the idea of bazaar buildings is as old as the city itself[1] (see Chapter 5), and according to Ismail, these buildings were probably developed from the Hellenistic arcaded avenue.[2] No doubt there is also genetic link with the well established design and advanced building practices of shopping parades (tabernae) in the cities of the Roman empire all around the Mediterranean. The appelation of Baghdad's bazaars developed from the goods sold or the main craft practiced in the various sections, though some bazaars were named after nearby mosques, or after owners or founders. Functionally, they are a ratherspecial and extraordinary phenomenon requiring a more detailed study. They link the city with its sphere of influence, i.e. the whole country. Bazaars function in a particular form strongly related to Baghdad's past. In some of them production and retail sale are still physically united and situated close together. Bazaars still attract a high percentage of shoppers, particularly those buying non-perishable and luxury goods. More than 17 per cent of the interviewees in the field survey frequent bazaars regularly to buy non-perishable goods and 37 per cent to buy luxury goods.

Morphologically, the bazaars display uniformly a traditional structure accommodating commercial activities characterized by a great number of windowless shops throughout the whole network.[3] The bazaar is one of the most characteristic features distinguishing the Arab city from Hellenistic cities as well as from the towns of medieval Europe.[4] Baghdad's bazaars still display to a certain extent, a traditional characteristic of the medieval period of Islam, each category of commodity or craft occupying either a distinct section of a particular bazaar or a complete bazaar, identifiable always by name, location and the physical form of shops.

Traditionally, the concentration of a large number of the city's tajirs (drapers) an honoured class in the Arab World*, in a small distinct area close to the central Friday mosques is a salient socio-economic characteristic of the bazaars that has directly or indirectly affected the overall policies of the state as well as of the city in the past. Modern professional organization and the disappearance of the Ahl al-Sinf (guilds), however, have certainly weakened that influence. The religious differences between different groups of tajirs also lessens their power which is now less than that observed in Iran.[5] However, the Baghdad Chamber of Commerce, which is dominated by bazaar traders, exerts a strong influence on national business life. This is because up to now Baghdad's bazaars have represented the major distribution point for the wholesale and import trade of the entire country.

* In Baghdad and other Arab towns, it has always been impossible to estimate the private wealth of Tajirs and is even more so since the 1958 - revolution because of the needless fears of nationalization.

Bazaars, where there is no formality between the buyer and seller, compared with the modern sections of the business core, are considered by many Baghdadi's as entertainment place and a centre where various news is circulated. The informality between buyer and seller (in the bazaar) can be seen by the tradition that passers-by can inspect goods and, if they wish, bargain directly from where they stand. This behavioural tradition in bazaar probably was a result of the dominance of unenclosed type of shop (no shop windows) in Baghdad's bazaars. Furthermore, the absence of any sense of obligation to buy has enabled even poor people to look closely at expensive goods without embarrassment, as they have just as much right to walk in the bazaar as anyone else. Another feature of the informality in the bazaar life is that all pedestrians can communicate freely as none are syphoned off into any enclosed shop.

Despite internal and external modifications and the recent rapid expansion of the city Baghdad's bazaars have shown characteristic specialization and stable location perhaps since the 10th century. They form two major complexes of the business core, one between the administrative precinct of al-Sarai, al-Ahrar Bridge, the River Tigris and Bab al-Sheikh Mahallah in Rusafah, and the other between Jami Sandal and Alawi al-Hillah in Karkh. The bazaar area represents the nucleus and business core of the earliest known town, where a number of historical grand mosques, schools and traditional administrative buildings are located, which contribute to its socio-economic importance, and also accommodate the demand for easy access and constant change of activities.

The main central bazaar axis in Rusafah runs in a north-west/south-east direction parallel and close to the Tigris, the old regional main

route of transportation. The main branch stretches towards al-Sheikh Abdul Qadir mosque to the south-east. On the West Side the main bazaar reaches from al-Shuhada Bridge, which forms the physical link between the two bazaar complexes, westward to the grand mosque of Sheikh Sandal in the very heart of Karkh Old Town.

Up to 1917, when al-Rashid Street was cut through Rusafah Old Town, the bazaars were the constituted broadest thoroughfares in Baghdad.

In addition to these central bazaars Baghdad has secondary bazaars in al-Sadriyah - Siraj al-Din in Rusafah, in Kadhimiyah and to a lesser extent in Adhamiyah.

It is difficult to analyse the functional structure of the bazaars of Baghdad, owing to a great lack of information, political instablity in the past and the lack of trust shown by the merchants towards any field investigator, whoever he be. Even when their trust has been gained, most of them have only vague ideas about the evolution and functional structure of the bazaars. No figures are available on the number of customers, quantities sold, or revenues. Very few of the merchants have account books, and hardly any have mechanised cash registers. An Arab tajir depends on his own knowledge and not on statistical information in running his business. He is extremely sensitive to rumour when buying and selling and makes no use of the official marketing information occasionally available to him.

Even the government has little information about such aspects. There are no price fixing regulations, neither in the bazaar nor in most of the other centres. Consequently it is difficult to apply statistical methods to measure the distribution pattern, degrees of concentration and locational specialization.[6]

The government censuses of 1947 and 1957 neither used any unified classification or definition of functions nor did they deal with the commercial sectors according to their professions, i.e. there is no information about the number of craftsmen, retailers, wholesalers etc. by urban units. The service sector in 1957 covered a wide range of undefined jobs including traders.

The absence of price-fixing cartels and of proper governmental control in the bazaars and all the other commercial centres contributed to the difficulties of tracing the revenue of individuals. At the same time, this has created a characteristically wide variation of prices even for the same commodity. The price is influenced by several factors, such as the personal relationship between shopkeeper and customer, the location of shop, the status of the client, the quality of the goods, the time of day or of the year, and the skill in bargaining. The habit of chaffering has thus maintained a lively existence in Baghdad as in all other Arab towns.*

Arab tradition, the absence of government control and the unimportance of time, have reinforced the bargaining habit. Buying and selling in Baghdad's bazaar, though interesting, is sometimes a very tedious process, particularly for Europeans unaccustomed to the modes of bargaining. When a customer appears and asks the price of any of the shop's goods - usually each shop specializes in a single commodity - the tajir usually demands more than he expects to receive. The mi'mil** (customer) in turn offers about half of the sum first named; this is followed by some lowering of the price by the tajir, and again the

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* At the present time, price fixing cartels are being introduced on goods produced by the public sector. However, bargaining is still dominant even in the modern part of the business core.

** This word is derived from Amalah meaning he bargains.

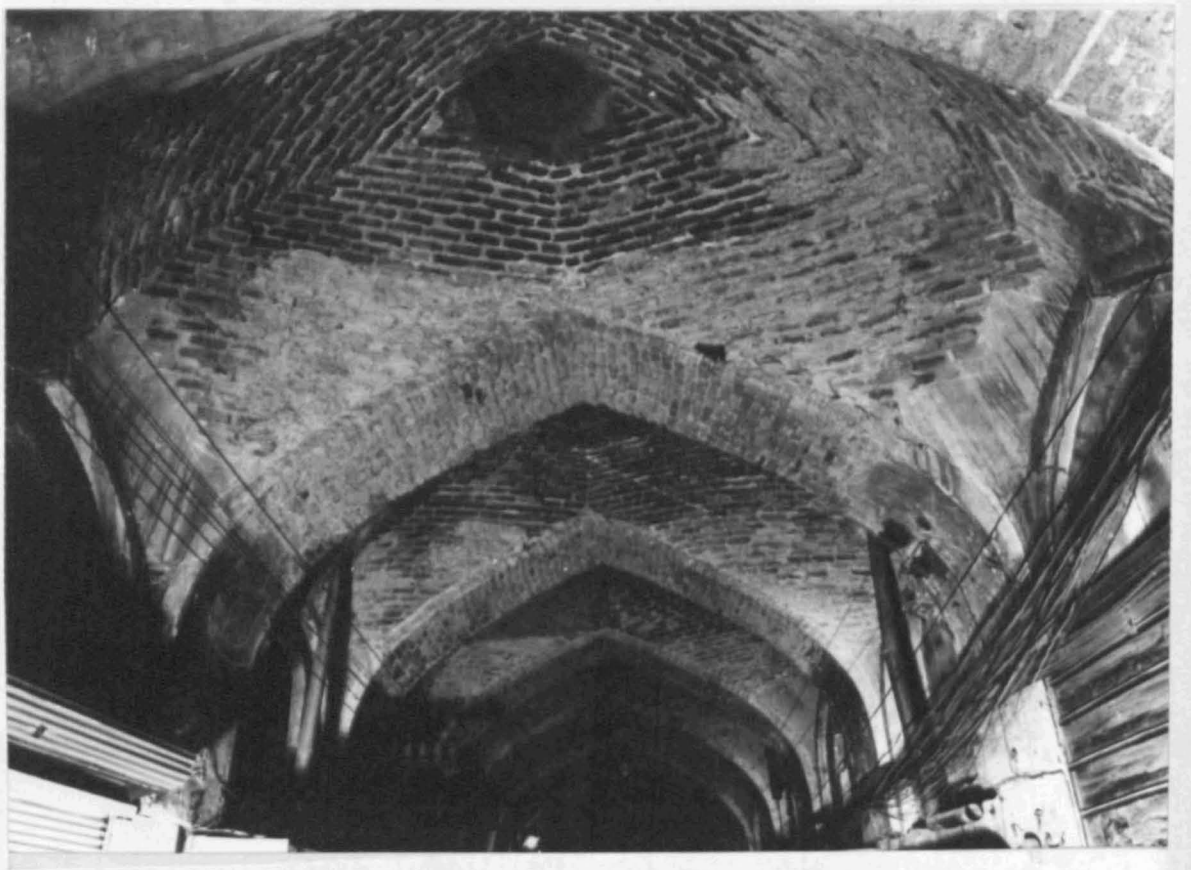
customer increases his offer, so the process goes on until they meet about half way. Neighbours, friends, and sometimes passers-by join in the bargaining process. For the tajir in Baghdad bargaining is by no means a waste of time. He hopes at any time to trap a gullible customer and in any case thoroughly enjoys bargaining.

Here it is useful to remember that Arabs tend to regard verbal commitment as sufficient. In contrast to Arab family life, moreover, privacy in these matters is not important to Arabs. Thus as already mentioned, business transactions in the bazaar proceed not just between buyer and seller.[7] Friends and regular customers generally do not bargain, though their trust may not always be justified. The tajir in Baghdad's bazaar will also show the customer several things that the latter does not want. On the other hand, if the shopkeeper has not got the commodity the customer wants, his neighbours are ready to help him, either bringing the item from their shops, or by chatting with the customer while the tajir leaves to get what is wanted from a colleague. Shopkeepers always offer tea to their regular customers or to any one who makes a considerable purchase.

Although shops open daily, except on Fridays and the main feasts, there are no time regulations governing work in bazaars. Shopkeepers and artisan or craftsman come to work and close when they please. There is no such sign in Baghdad's bazaar as "out for lunch", "back in 15 minutes". Most of the shopkeepers and craftsmen have no boss, and clocks are rarely to be seen in their shops. Opening hours are extended to late at night in Ramadahn, the fasting month, particularly in the bazaars contiguous to the religious centres. The busiest hours in bazaars are after 3 p.m. and during the months preceeding the great feasts.

F.P. 7

Fig. 15.3 The roof of al-Sarrafin Bazaar - one of the oldest bazaars in Baghdad



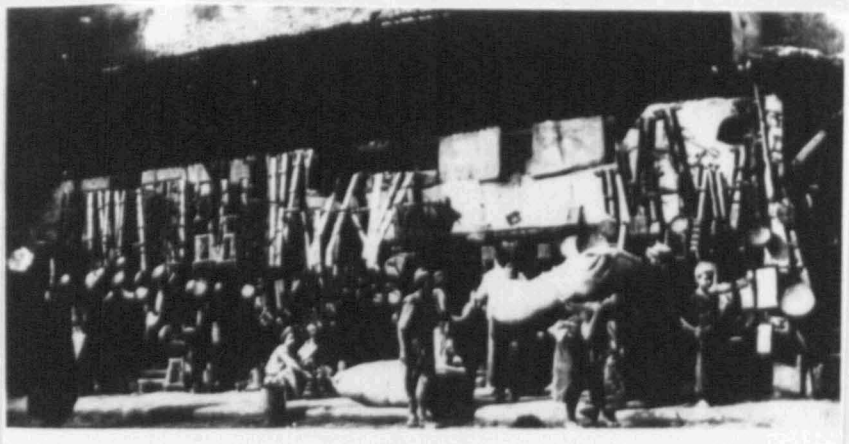
The idea of providing shade in a desert climate, is a primary element in shaping the townscape of the Arab towns, so that "neither shall the heat nor the sun smite them". The change in temperature from hot sunny places to the cooler shade can be utilised to effect movement of air currents between the two places. When sheltered places are designed without considering air movement, they are likely to result in still air and stagnation, known in Arabic as wakhmah. Thus shade alone is not sufficient to secure a cool atmosphere; the air movement in the interior must be controlled. Sun-heated air is healthy and a steady gentle breeze in the bazaar interior serves a hygienic purpose. The idea of dormer windows at regular intervals in the vaulted roof structure of the bazaar would provide indirect lighting as well as ventilation[8] (Fig. 15.3). The lofty height of the bazaar provides a volume of air which is especially necessary when electric fans (punkahs) are in use and a limited volume of air would otherwise become overheated by them.

Bazaar buildings have proved to be successful structures for marketing in Baghdad's environment.* They have several advantages. Customers, tajirs and merchandise which must be fully exposed to the view of prospective customers, are effectively sheltered from the summer sun and winter rain. Customers can move with ease without worrying about weather conditions or motor traffic. Coolness has been secured by this type of design, and it would be difficult to find a better solution. With some modification, shops can be varied, from very small to fairly large size in accordance with the size of the business, type

* The function of bazaars to serve pedestrian customers is obvious and so successful that some city planners have tried to introduce such plans into the modern business centre of the Arab city.[9]

Fig. 15.7

a. Suq al-Haraj (second hand articles) in al-Maidan



190. *A tinsmith's shop in a Baghdad bazaar*

b. Tinsmiths' shops in suq al-Safafir (Coppersmiths' Bazaar). (After Naval Intelligence Handbook)

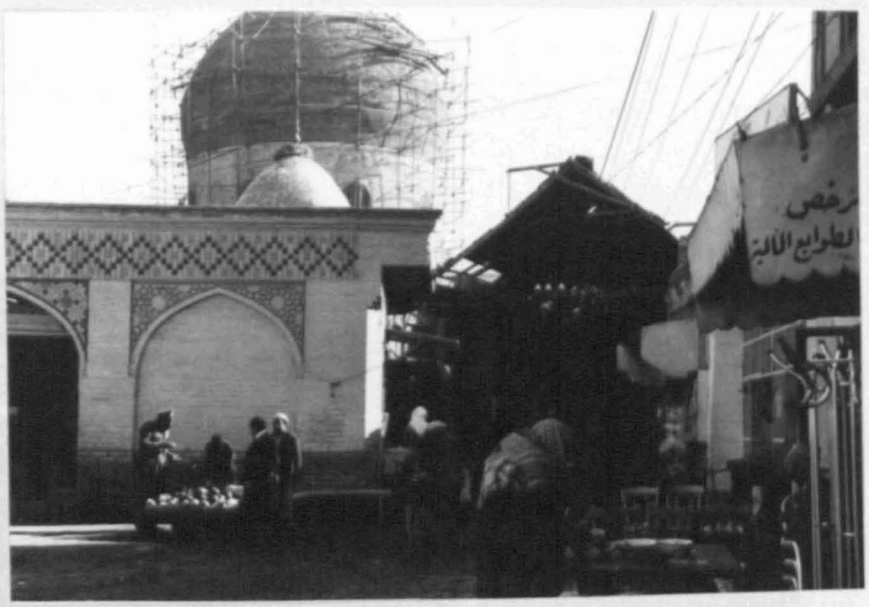
Fig. 15.6

a. Al-Alawi (grain) Bazaar in al-Shurjah

b. A suq in a traditional mahallah of Siraj al-Din

Fig. 15.5

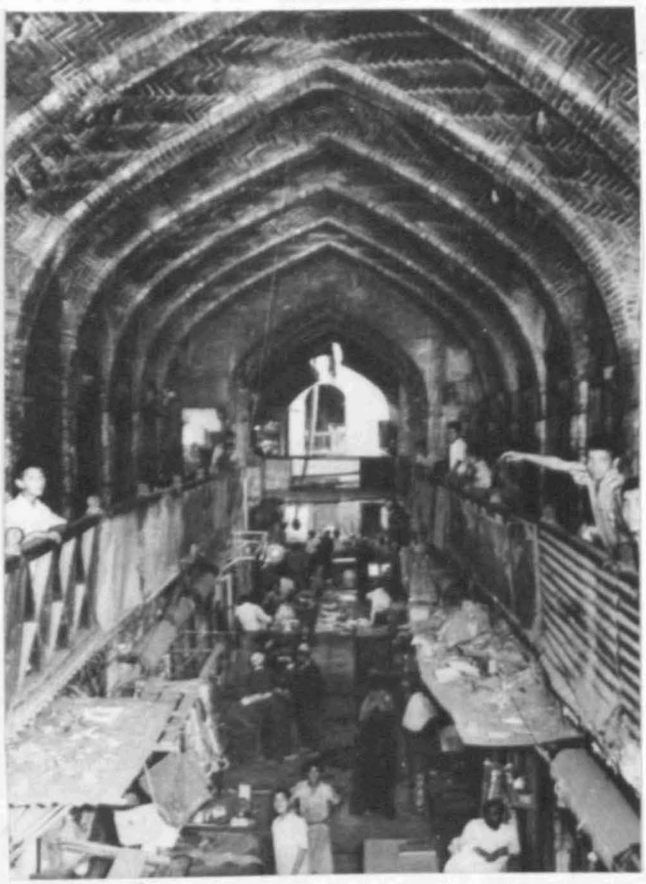
a. Suq al-Sarai (The Stationary Bazaar)



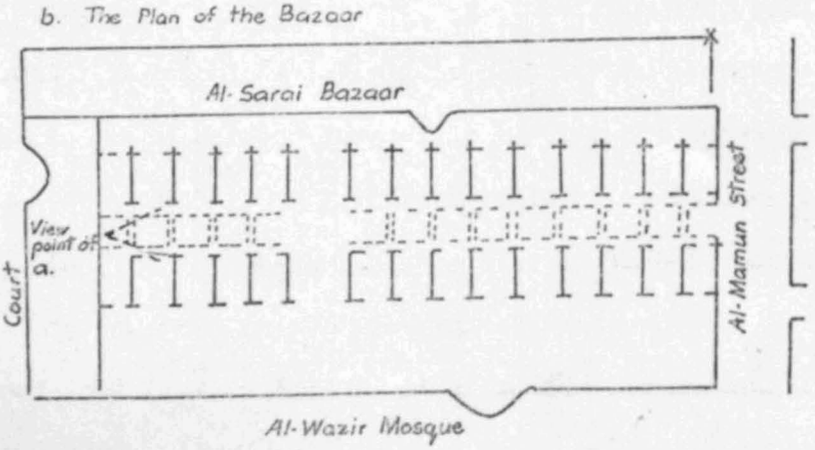
b. Al-Ahmadiyah Bazaar in al-Maidan, next to al-Ahmadiyah Mosque

Fig15. 4 Al-Sarrajin (Saddlery) One of the Oldest Baghdadi Bazaars

a.



b. The Plan of the Bazaar



of commodity and location within the bazaar. A bazaar is easily and satisfactorily organized according to specialities or professions. Safety is secured by closing the bazaar at night. At the present time, however, owing to the efficiency of police control, only a few bazaars, such as the goldsmith's bazaar (suq al-Saghah) and part of the textile bazaar (suq al-Qumash) still have their own strong doors, which are closed at night. At present, nobody is allowed to remain or live in bazaars after they close apart from al-Istrbadi Bazaar in Kadhimiyah where poor-class families inhabit the upper floor.

In spite of modernization or modification of the inner structure and external changes in Baghdad's bazaars, they still extend over an aggregate length of several kilometres and in many respects have scarcely changed for a millennium. They form a network of straight or occasionally, particularly in residential mahallahs, slightly winding and tolerably wide lanes, all roofed over with brick vaulting or wooden arches, or trapaulins supported by transverse beams resting on the flanking walls. The main axial bazaars are interconnected by small transverse bazaars. Bazaars differ in width, length, straightness and age, some such that at al-Khaffafin dating perhaps from the Abbasid period. The design of the bazaars also differs according to age, situation, building material, and cost of construction, but the main elements remain the same. Some of Baghdad's bazaars are poor in design and construction, having now a delapidated appearance usually attributed to ignorance and misuse.

Al-Sarrajin, al-Khaffafin, al-Saghah, al-Qiblaniyah, al-Sarrafin and a number of smaller cross bazaars still have very extensive roofs. They are well constructed with kiln-bricks and mortar, and shaded from the sun by lofty arcaded roofs with small domes of the same materials (Figs. 15.4, 15.5, 15.6, 15.7).

F. P. 7

Fig. 15.8 Shops in the traditional bazaars

a. Rug and carpet shop in al-Qiblaniyah Bazaar

b. Goldsmith in Suq al-Saghah

The shops on either side of the bazaar lanes are mostly uniform small recesses, originally all without back access. They may be called alcove* shops, perhaps a peculiarly appropriate term in that it suggests a genetic link with the identical rows of barrel-vaulted shops or 'tabernae' in Roman Towns. The average size of shop is between 10 - 12 sq. m. The average frontage is 2 m as compared with 3 or 4 m in other parts of the city. However, because of amalgamation, the frontages of many bazaar shops have been increased by removing partition walls. The reason for the limited size of shops might be to facilitate trading in one small field, in which buyers could easily examine a wide range of similar articles.[10] The front of the traditional bazaar shop is open somewhat similar to shops in medieval Europe, and the shopkeeper seats himself, sometimes with a fan in his hand on the floor which is usually raised less than one metre above the level of the bazaar passage (Figs. 15.8 a,b). Each shop, whether engaged in retail or in wholesale trade, has a storage or warehouse place in one of the many nearby khans.

Because of the lack of modern warehouses, storage is dominated by available khan constructions which play multifarious roles. They are the producing, storing, wholesaling and distributing base for goods, and also provide accommodation for merchants' offices. They facilitate the functions of bazaars and stabilize their location.

Owing to the limitation of transport facilities inside the bazaars the dominant methods of goods transport are porters, (hammals, mostly Kurds and Persians), hand drawn carts, mules and donkeys. Pick-ups (small lorries) have been introduced, but only very recently and in the outer areas of the bazaars, vehicular transport being very difficult.

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* 'Alcove' from Spanish and Portuguese 'alcova' from Arabic al-qubbah = vaulted.

Hammals are a very important element in Baghdad's bazaars, without which its functions would not be fulfilled properly. There are no statistics about their number, but the writer's estimate is more than 200 for the Rusafah bazaars between al-Bank Street and al-Shuhada Bridge. For all bazaars of the city together the figure may exceed 600.

Generally, bazaar shops lack any uniform grading and packing practices. Advertising, though it has been introduced by a few business firms, is still hardly feasible in the bazaar area. Moreover, the identity of most of the shops is not marked in any way and one has to enquire to find any particular shop. The lack of advertisements probably results from the fact that goods rarely carry a known brand name and the customer must see the item with his own eyes and examine it carefully before he purchases it.

In the old bazaars such as al-Khaffafin (of Abbasid age), al-Sarrajin (saddlery), al-Qumash (textile) and al-Qiblaniyah (of Ottoman age), there is in front of most of the shops a step less than one metre high and one metre wide, where the tajir and his customer, friend or neighbour can sit, and where he can also display some of his commodities.

The doors of the shops in the bazaar are either wooden shutters - once again in analogy to medieval European shops - some of which are three-leaf folding shutters or modern roller blinds introduced after the Second World War. In contrast to some Persian towns,[11] Baghdad's bazaar shops rarely have a back-door. Re-stocking takes place at any time, though it is concentrated at night, as this avoids congestion and lorries are able to park in the nearby central break-through streets of al-Rashid and al-Kifah.

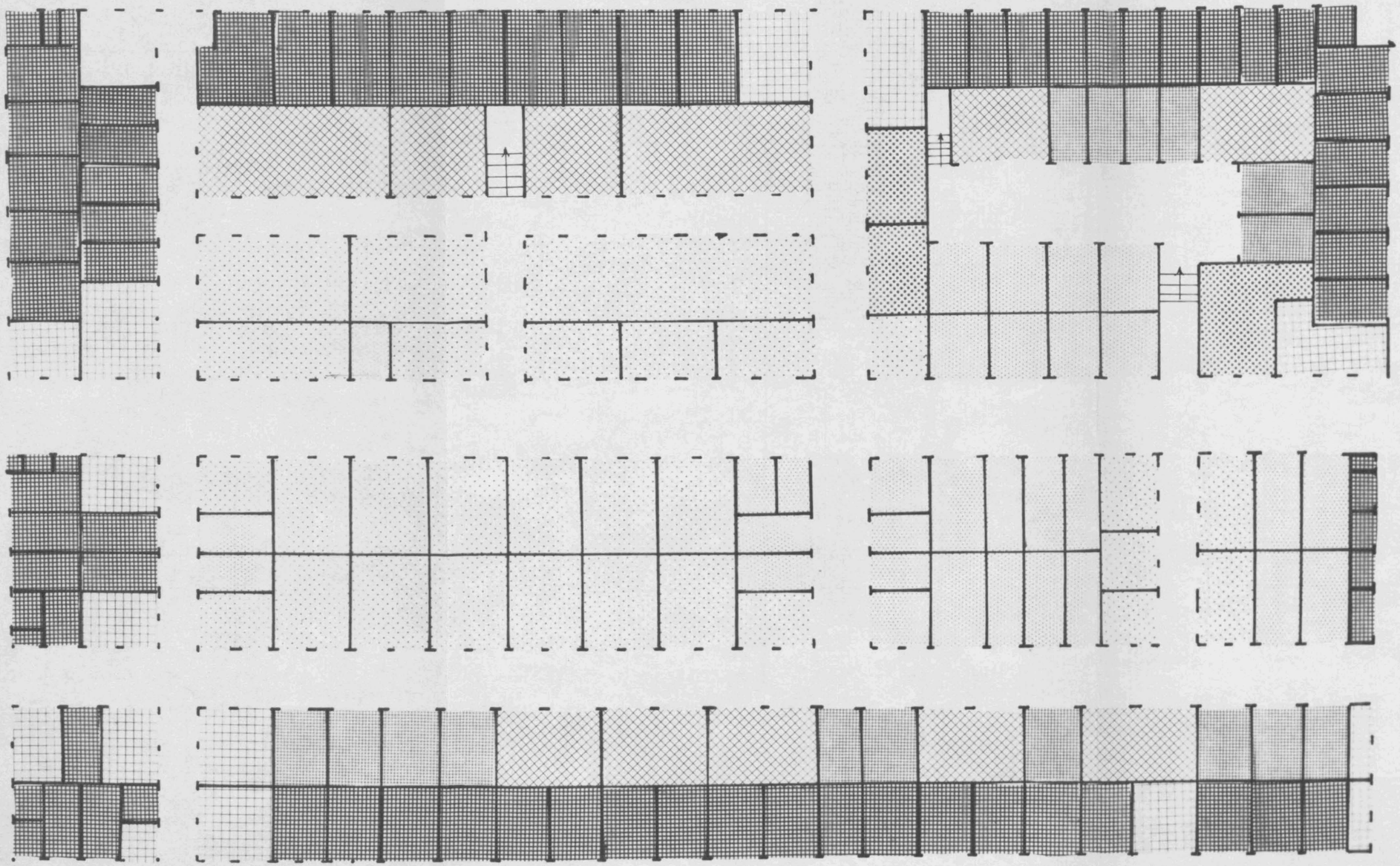
As the twentieth century progressed, the city underwent modernization by additions and internal modifications to increase its functional efficiency. Consequently, several fine bazaars such as al-Haider Khanah Bazaar in 1917, have disappeared giving way to the construction of new break-through streets, or have been truncated such as al-Qumash (the Textile) Bazaar near Mirjan Mosque in 1917 and al-Shurjah Bazaar in 1958 and Suq Hamadah Bazaar in 1970 (Fig. 15.2).

Because of neglect the roofs of some of the bazaars collapsed between 1900 and 1924 and were substituted by tin sheeting, corrugated iron, wood and other materials thereby disfiguring the bazaars. A minimum of restoration is however undertaken by the authorities responsible for the maintenance of such architectural and cultural heritage, especially as the bazaars have proved their functional success even in the modern era.

With the replacement process induced by the financial pressures on the central bazaar area and the deterioration of some of the traditional buildings, a number of high-rise buildings for offices and warehouses have infiltrated the bazaar complex.

Glass windows, decorative coloured tiles, painting and electric-light have been increasingly introduced in the bazaar to attract patrons. Prior to the age of electricity Baghdad's bazaars were poorly lit. At present, almost every shop is provided with electricity for lighting and sometimes for air cooling by fans or aircoolers. Many shops and crafts in Baghdad's bazaars have reached such a stage of modernisation. Some of the shops have recently equipped themselves with piped water supply, while the overwhelming majority are dependent on mosques, which are never far away, or gahwahs for their water

Fig. 15.9 Danial Bazaar Khan Repletion (Bazaar Metamorphosis)



Original Shops
Unmodified
Slightly Modified
Substantially Modified
Amalgamated Shops

Repletive Shops
Unmodified
Modified
Amalgamated

New Bazaar Lanes

0 2 4 6 8 m

requirements. There is no sewerage system in the bazaars, a factor which has unpleasant, and could have dangerous, consequences. Almost 90 per cent of the major shops of Baghdad's central bazaars are nowadays provided with telephones.

At present, most of the goods disposed of in Baghdad's bazaars are either imported from abroad or produced in modern factories located outside the bazaar area, whereas traditionally bazaars were supplied by workshops, situated within their confines. Recent functional and physical modifications in Baghdad's bazaars have been orientated towards attracting clients from higher income groups, who have tended to be drawn towards the modern parts of the business core.

With the increase in the functional capacity of bazaars resulting from their modernization and the improvement in the display of goods, the uniform size of the alcove shops of the old bazaars has changed to a certain extent. As already mentioned, some tajirs have amalgamated two adjoining shops by removing the party wall to create a larger shop, often with glass windows. The traditional wide step in front of the original shops has disappeared in such a modification which now provides enough room for one or more chairs or floor seats within the shop. Customers can sit either on the carpeted entrance of the shop, or on chairs, or small stools, while the tajir displays his goods and enjoys the chaffering of his customer, who is always given a small cup (stikan) of tea.

The major internal modification and modernization observed in Baghdad's central bazaars has occurred in Danial Bazaar, and in almost all the central khans. Danial bazaar is an important retail complex. Originally it was one large khan (Figs. 15.1, 15.9). The original

shops were the same as those which still exist in its outer walls. All the shops were of the brick and mortar alcove type, without windows and of 10 - 12 sq. m each. Their ceiling was and is of brick-domed type.

This bazaar had two floors, the upper one being occupied by stores, workshops, and tailors' workrooms. It owes its principal features to its restoration in 1930/1931. The present ground floor was built in 1935/1936. Formerly it was 10 steps below the nearby al-Khaffafin Bazaar but was raised three steps higher than the latter after 1931.

For historical reasons and because of the complication of ownership patterns in this bazaar, the shops looking into the courtyard of the khan belong to one authority, while the shops facing the street have a different owner.

In the course of repletion necessitated by the functional evolution of the area, the khan was provided with three parallel longitudinal bazaar streets, crossed at intervals by transverse bazaars.* These internal roads were lined by shops of standard size. Some of the inward-facing shops were later amalgamated to create larger ones. This repletion and concurrent amalgamation represents the climax of a metamorphosis preceeded by piecemeal as well as radical physical changes.

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* In the Summer 1971 the writer traced plan evolution of the khan, its ownership history and structure. The plan shown in (Fig. 15.9) has been drawn from measurements taken on the site. Furthermore, a number of old merchants who had owned shops in the bazaar since the 1930's were interviewed. The 1918 plan of Baghdad (1:880) shows that this bazaar had at that time been a large khan with a considerable uncovered court-yard.

The annual rent per shop in this and other central bazaars ranges from 50 to 400 I.D. or even more, depending on location and size. The annual rent of first-floor rooms is between 10 - 80 I.D. each. Lots are not sold as areal measured units, the buyer has to buy shops in their entirety. The average price of shops in the central bazaar is between 2,000 - 3,000 I.D.

All the entrances of Danial Bazaar are guarded by modern iron doors, closed at night. The internal shops built since the 1930's as planned elements are well designed and of greater functional efficiency than the unmodified outward facing peripheral shops.*

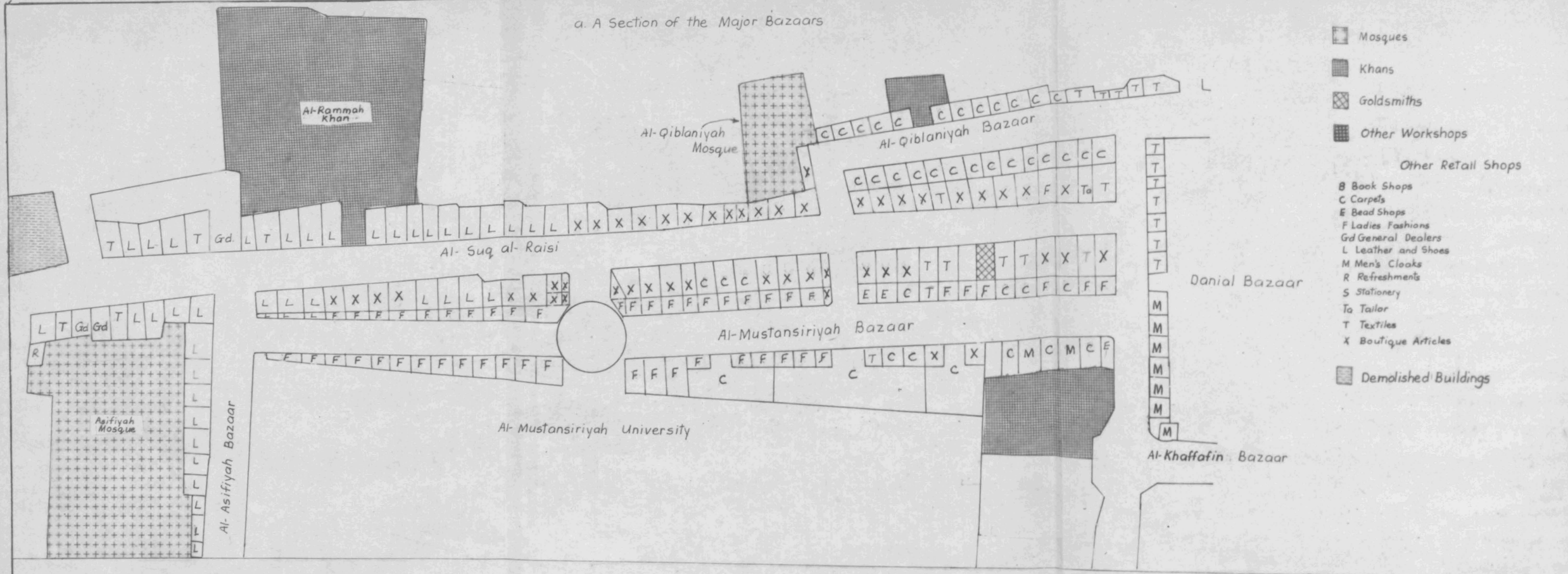
Although specialization is still surprisingly a typical feature of Baghdad's bazaars, shops of particular types congregating in a particular section of a bazaar, the successive concentric hierarchy traced in the typical Islamic city by Planhol cannot be found,[12] because of the dominant linear pattern of Baghdad's bazaars, the expansion and re-building of the old bazaars and the building of new bazaars all of which has led to repeated readjustment of the locational pattern of many individual shops which may have moved more than once following the general expansion of the city.[13]

Sellers of candles, incense and perfume are no longer necessarily found close to the grand mosque, and if they are to be found at all, are scattered in Kadhimiyah beside the shrine of al-Kadhim. Book-sellers and book-binders, however, have maintained their historic location despite the great changes in the bazaar and the penetration of other goods. This is seen in Suq al-Sarai (stationary) and al-Mutanabi Street.

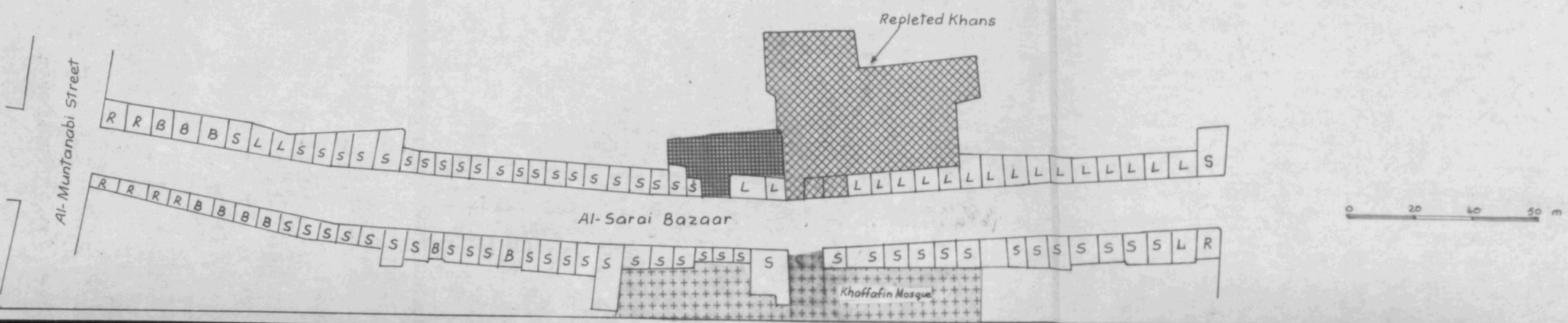
* In dating the physical changes, the writer has depended on the field survey as well as on comparison of the plans of the khan in 1918 and the present time.

Fig.15.10 Two Surveyed Samples of the Central Bazaars

a. A Section of the Major Bazaars



b. Al-Sarai Bazaar



Khans are not restricted to wholesaling activities. They are now multi-functional buildings and are changing from their traditional form of a "double row of rooms and workshops opening on a central place" to substantially or fully covered buildings. In the central bazaar, leather and shoe-makers have replaced the candle sellers, though the former still occpy a short strip of al-Bazzazin (Drapers) Bazaat near Mirjan mosque. The goldsmiths have perhaps remained on their sites without significant change but some firms have migrated to another part of the city. Butchers, of course, cannot be found in the central bazaars of Baghdad. They are concentrated to the rear of the local bazaars or scattered throughout the city serving residential mahallahs. They could not afford the high rents at the centre, which also exclude blacksmiths, carpenters, basket makers, grocers and dry cleaners from the major bazaars. Pack-saddle makers are decreasing in number and are now only to be found scattered in Kadhimiyah and Alawi al-Hillah.

Though less distinctive now, the traditional grouping of certain articles in separate quarters is still recognizable today in many of Baghdad's bazaars. This suits both consumer and seller. The customer can inspect, compare and chafferat his leisure within the same area before making the final decision to buy (Fig. 15.10).

Historically, the segregated grouping of certain guilds in certain quarters of the bazaar might be attributed to the exercise of social solidarity among 'ahl al-Sinf', the members of one craft, for a variety of practical purposes, rather than merely to any deliberate effort to promote the convenience of prosepctive purchasers. On the other hand, the creation of competitive environment when customers can

save money, time and energy, may also be another factor to be considered.[14] Chehade, however, attributed this concentration to the relatively small plot size of shops, that permits such a process.[15]

Commercial segregation in the bazaars of Baghdad turns the bazaar into an area built up of distinct functional, and to a lesser extent morphological, sub-areas. Very often the characteristic grouping in proximity of goods having some meaningful connection with each other has become an important principle of modern organization, one which allows better planning of the bazaar. Thus traders putside the bazaars selling hoop-iron and angle-iron, sanitary fittings, tin-smith's goods, tiles and other building materials, tend to concentrate in the same place. This appears to indicate the introduction of oriental principles of arrangement from the bazaar into the modern business core of the city.

Strong social emphasis is to be found in the segregation of retail shops into zones catering for different income groups.

At present 17 specialized bazaars can be distinguished in the traditional centre of the city (Figs. 15.1, 15.2). The furniture and second-hand goods bazaar which was located near al-Mustansiriyah college, but is now located around al-Ahmadiyah Friday mosque in al-Maidan (Fig. 15.7). There is a bewildering variety of goods here such as bicycles, second-hand clothes, electrical goods, second-hand furniture, hardware, stolen articles, shoes, etc. The bazaar is noted for its sellers sitting either on the ground or on a primitive type of stool. It is frequented by low-class people, and travellers to various parts of the country as many regional route terminals are located in al-Maidan. Low-grade restaurants and unhygienic coffee-

houses alternate with the shops, which are of various designs, age and frontage. Al-Ahmadiyah bazaar (Fig. 15.5) specialises in selling military uniforms and has also a number of watch repair shops. The bazaar, is in very bad structural condition and should be restored, particularly as the area already has two architectural monuments in the shape of a disused hammam and a metropolitan mosque.

The stationery bazaar (al-Sarai Bazaar) is the link between the administrative sector of the traditional city and the major bazaar complex. It serves the governmental offices (Ottoman in origin) and the whole city, and specializes in the selling of books and stationery. Its functional importance has been stabilized by the development of the printing works, and the nearby bookshop suq of al-Mutanabi. The latter suq is situated at an angle to al-Sarai Bazaar. Auctions are held by some traditional booksellers in the old Ottomanic fashion. The seller holds the books displayed for sale, and walks up and down in the bazaar announcing loudly the last sum offered, until the books are purchased at an acceptable price.

The physical condition of this bazaar is not good, though some of the shops have been modernized, particularly in their facades.This bazaar is parallel to the monumental bazaar of al-Sarrajin (the leather bazaar and near to al-Saghah bazaar.

Suq al-Saghah (goldsmiths)* and the cloth bazaars show the greatest homogeneity in their patterns of functional organisation at present. The main Saghah Bazaar is hidden away to the east of al-Sarai Bazaar, inside a great maze of intersecting covered bazaars. Some

* The singular of goldsmiths is saigh.

of these have developed as a result of khan repletion (Fig. 15.1). The individual shop here is perhaps the smallest unit in the whole bazaar network after that of al-Sarrafin (the money changers and lenders). Although the space required by gold, silversmiths and jewellers' shops, is very small, the value of turnover per sq. m of these shops is extremely high. Nevertheless, shops are big enough for all the decorating, inlaying and finishing purposes as well as for selling the goods. Though small these shops have a turnover of thousands of dinars, raw materials not being bulky, and articles produced being characterised by quality and individual specialism of manufacture, so that grouping in the bazaar itself is convenient.

Sabeans from Amarah and other southern areas traditionally monopolise gold and silver craft in Baghdad and other towns. They still cling together in special bazaars and produce gold and silver objects decorated in al-Mina (enamel). In addition to this central Saghah Bazaar, there are saghah areas elsewhere within the central bazaars and mahallah bazaars. Some of the goldsmiths have moved southward but not very far from this site. Amanat al-Asimah has recently built a bazaar on a modified traditional plan for goldsmiths, located at the eastern bridge-head of al-Shuhada which has proved successful under the climate conditions of Baghdad. Other saghah have moved to al-Nahr Street, a main part of the business core specializing in women's articles. The physical condition of this bazaar is fairly good, and it is protected by strong iron gates at its eastern and western entrances. One of the main characteristics here is the phenomenon of bargaining. The goldsmith is vulnerable not because of any need to sell his complete stock daily like the vendor of fruit for example, but because the demand for his goods is unpredictable and changes in taste threaten him if he holds his

stock too long. He must try his best to allow no customer to leave his premises without having made a purchase.[16]

Leather and shoe workshops occupy a large area of the bazaars, as for instance near al-Mustansiriyah, at the entrances of al-Qumash Bazaar (Textile) and of al-Sarrajin Bazaar (saddlery), built during the reign of Dawood Pasha (1816 - 1831)* as well as of the numerous narrow back streets. Usually each shop has another room directly above with a ladder in one corner. Though they are next to each other, the women's and the men's shoe bazaars form separate sections.

The carpet dealers are clustered in a particular section inside the bazaar, and their shops are always frequented by fat prosperous customers drinking tea or soft drinks and inspecting the articles in a leisurely manner. Carpets in Baghdad come from Persia and Turkey. Recently they have begun to be manufactured in Iraq but are also imported from all over Europe. Most of the rug and carpet sellers are in al-Qiblaniyah Bazaar which has begun to offer some rugs and carpets for tourists, in al-Mustansiriyah Bazaar, where their shops are mixed with those selling second-hand clothes and in the al-Qumash section of Danial Bazaar. The shops in the latter are the most spacious, well lit and well designed. Some of the modern shops selling carpets and similar articles have emerged along the edge of the bazaar and tend to attract high-class clientele compared with some central bazaars which are declining in importance.

The watch and abayah (men's shawl) bazaar of al-Khaffafin is another fine bazaar and belongs to al-Khaffafin central mosque. It is flanked also with a few large khans and needs partial restoration. Some of its shops are occupied now by leather goods and clothes menders.

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* Now fortunately in process of restoration.

The cloth bazaar occupies Danial Bazaar, the core of Baghdad's bazaars, and also a large number of other bazaar thoroughfares. The cloth merchants in fact occupy the largest section of the bazaar system of Baghdad. Materials come from Iraq, other Arab countries and the outside world. It is the richest and most popular bazaar, frequented particularly by women, who are preferred as customers by most of the interviewed tajirs.

Tailors are located not far from these bazaars, though recently the fashionable tailors have moved to the modern sections of Baghdad, particularly to the banking area on the southern edge of the bazaar district and along al-Nahr and al-Rashid Streets. Each shop has a ground floor with large glass windows and a mezzanine floor for assistants. In the textile shops whose owners were interviewed, the average number of regular customers was between 100 - 300; 60 - 70 per cent of whom came from Baghdad.

Regular customers generally do not bargain as rightly or wrongly, they trust their retailers. Friendships develop between customers and shopkeepers, sometimes growing into family relationships. However, friendships between tajirs themselves are more common and often lead to marriages between their families.

Cloth wholesaling takes place in the bazaars confined by al-Safafir Bazaar to the north, al-Bazzazin Bazaar to the south, al-Rashid Street to the east and al-Qiblaniyah and Danial Bazaars to the west. Basrah, Mosul, Hillah, Karbala and Najaf are secondary wholesaling centres.

All the wholesalers interviewed declared that neither the development of the new commercial sub-centres nor the modern extension of the business core has affected their function, because bazaars have remained

the only centre of textile wholesaling in the city. The eastern and southern extension of the business core has affected some of its sections such as al-Rashid Street. This was because many of the al-Rashid merchants have moved to the new and more thriving sections of the business core. Though the modern business quarters differ quite essentially from the traditional bazaars, neither type fall into any serious competition with one another but combine to form a meaningful whole functioning through their co-operation.

Shops in textile wholesaling bazaars are less affected by modern methods of decoration and improvement than retailing shops, However, all these shops have been electrified and supplied with electric fans, while about 50 per cent have introduced air coolers.

The average number of regular customers for each wholesaler is between 200 and 500, drawn from all over the country. As in the retail bazaars, bargaining is a characteristic feature. Many of the whole-salers sell on credit, thus attracting more customers. The sources of customers for interviewed tajirs were in descending order: Baghdad, Basrah, Mosul, Hillah, Karbala, Nassiriyah, Diwaniyah, Kirkuk, Arbil, Amarah, Kut, Diyala and Ramadi. Baghdad buys about 25 per cent of the wholesale goods and Basrah about 10 per cent.

In spite of 20 th century banking institutions in the central area of the city, a number of sarrafin(money lenders) are licensed to deal in banking. They are located in one particular ancient bazaar, constructed of bricks and mortar. Its roofs are vaulted, with small circular skylights. Like the jewellers' and goldsmiths' shops, sarraf shops are very small (2 x 2 m) and without windows, having a rolling door which is locked at night by several locks. A heavy safe is an essential element in the shop. The number of sarrafs has declined

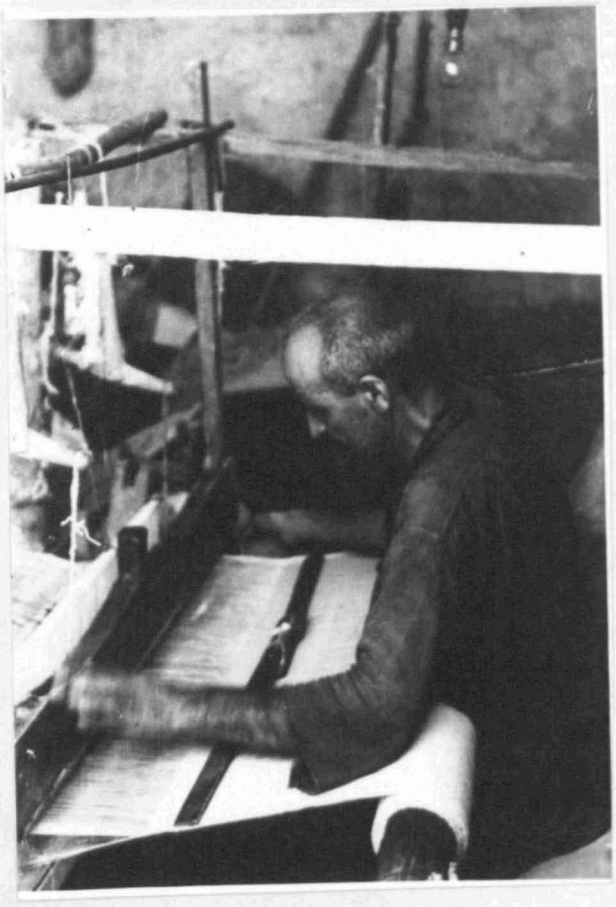
considerably since the Second World War, partly because of the migration of Jewish sarrafs who had dominated the profession to Palestine after 1948. Traditionally the religious injunction against the taking of interest worked against the growth of credit institutions in Baghdad as well as other Moslem settlements. Further causes of the decline in the number of sarrafs were the failure to meet the requirements of the severe controlling regulations issued by al-Rafidain Bank and the Central Bank and also by the nationalization of the private banks in 1964. The number of sarrafs at present is not more than 30 most of whom deal in money changing, both legal and illegal.

Nearly all tobacco warehouses, wholesale shops and khans are concentrated in the bazaar area near the bridgehead of al-Shuhada and on the side zuqaqs, because until recently the main transport route was the Tigris. The location of the customs office in the area has also helped this concentration, al-Mustansiriyah college being used as the main customs office of Baghdad until 1954.

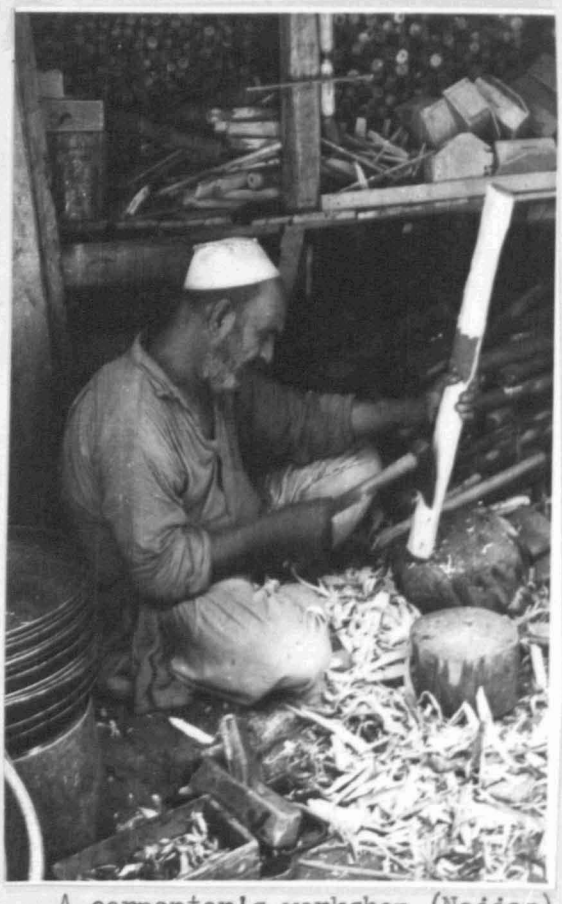
Baghdad was once a very flourishing manufacturing centre especially in the production of calico printing, leather and tanning, pottery, jewellery and other artifacts. The disastrous history of the city and the subsequent influx of European machine goods following the Anglo-Turkish commercial convention of 1838, encouraged the decline of the crafts of the city, most of the craftsmen migrating to Syria, Egypt and Persia after the collapse of the Abbasid Caliphate, owing to the general state of insecurity.[17] By the end of the First World War for example, most of the family weaving industry had disappeared as a result of the competition from imported commodities, and in 1936 Baghdad had only 130 looms of the 3,500 looms existing in 1868.[18] Before the Second World War almost all the industry of Baghdad was of the craft type and most of it

Fig. 15.11

F.P. 740



a. A weaver's workshop in a traditional house (Kadhimiyah)



b. A carpenter's workshop (Najjar) in Suq Hamadah (Karkh)

was carried on in small shops or khans mainly in the bazaar areas. Thus the relationship between trade and the manufacturing industry has been traditionally strong as both are placed in these shops. From the field observation at the present time Baghdadi craftsmen may be divided into two categories. The first works inside the compound walls of their own houses, selling their products in the nearby bazaars and suqs. The second has small handicraft shops completely unrelated to their own home, mainly in certain bazaars or parts of bazaars (Fig. 15.11). However, there is a general trend for most of the Baghdadi craftshops to change their function in a more exclusively commercial direction.

The main handicraft workshop areas are the bazaars along the main streets of the traditional city, particularly the peripheral ones, and parts of various residential suburbs. In the major traffic streets of the modern areas workshops occupy the second floor, with shops, restaurants, gahwahs and other premises below. Elsewhere in the suburbs, ground-floor shops are occupied by workshops (See Chapter 13).

Although craftsmen have managed to maintain a high level of skill for hundreds of years with the minimum of equipment, their working conditions have deteriorated. Most of the shops in the bazaar area need better lighting and ventilation. In carrying out improvements, preservation should be a major goal. The need for cool working conditions in the workshop bazaars is of primary importance in the summer heat of Baghdad. The present covering of the coppersmiths' bazaar (suq al-Safafir) is not complete and not enough to be a barrier against the penetration of the sun's heat (Fig 15.7b).

The old forms of production are gradually giving way to new ones, and old guilds have inevitably disintegrated. In many instances artisans have sufficient basic skills to switch quickly to mechanized work to

fulfil the demands of a more developed economy. New trade unions (Nagabat) on European lines have begun to emerge particularly since the 1950's.[19]

Among the distinctive elements in Baghdad's bazaars is the survival of some crafts.[20] The coppersmiths' bazaar is one of the most romantic and celebrated of Baghdad's bazaars. The smith sits beside his furnace, with a small boy blowing the bellows, and beats a large flat sheet to produce large copper basins or huge round trays, or applies silvering to coffee pots and long-spouted jugs. The air in this bazaar, in contrast to other bazaars, is filled with noise. Each shop has the dual function of manufacturing and selling goods. Like the shopkeepers in other bazaars, the smiths bear no grudge when no sale is forthcoming, and are sometimes even generous enough to join in bargaining if a customer goes to the man next door. Until now crafts have usually been hereditary. Each family specialized in a certain industry, knowledge of which was handed down from generation to generation.[21]

For copper-smithing as well as for other industries such as carpentry, more space is required than for goldsmithing. The raw materials are bulkier and thus it has become a phenomenon of Baghdad's bazaar to see coppersmiths occupying spaces in front of their shops as extra working areas thus adding to congestion.

The coppersmiths' and goldsmiths' crafts as well as other bazaar industries should be preserved more for their cultural and artistic values than as viable economic enterprises. The establishment of an art and craft college in Baghdad would be invaluable in helping to retain Baghdadi crafts.

Until the First World War, there were coppersmiths' bazaars in several other areas of Baghdad apart from the central one, i.e. in

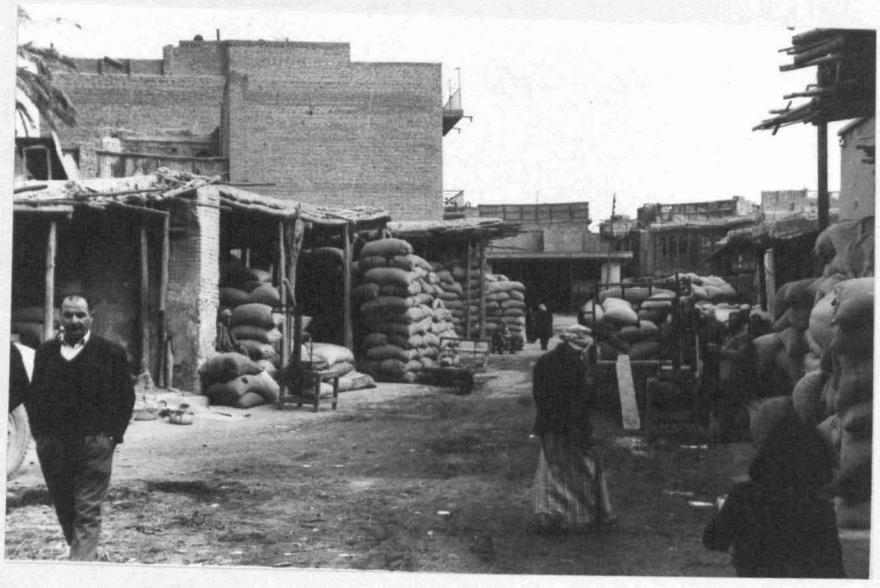
Suq al-Ghazil (thread market) area near al-Shurjah Bazaar, in Alawi al-Hillah and in Kadhimiyah. Competition from factory industries has contributed to the gradual decline of the crafts in the central bazaars.

In the course of the present century the kind of customer buying from the coppersmiths' bazaar has changed considerably. Once Bedouins and countrymen were the main customers. Now wealthy and educated Iraqis as well as European tourists constitute the major section of customers. This indicates the tendency of this industry gradually to become a luxury one, whereas it used to be essential for the poor masses.

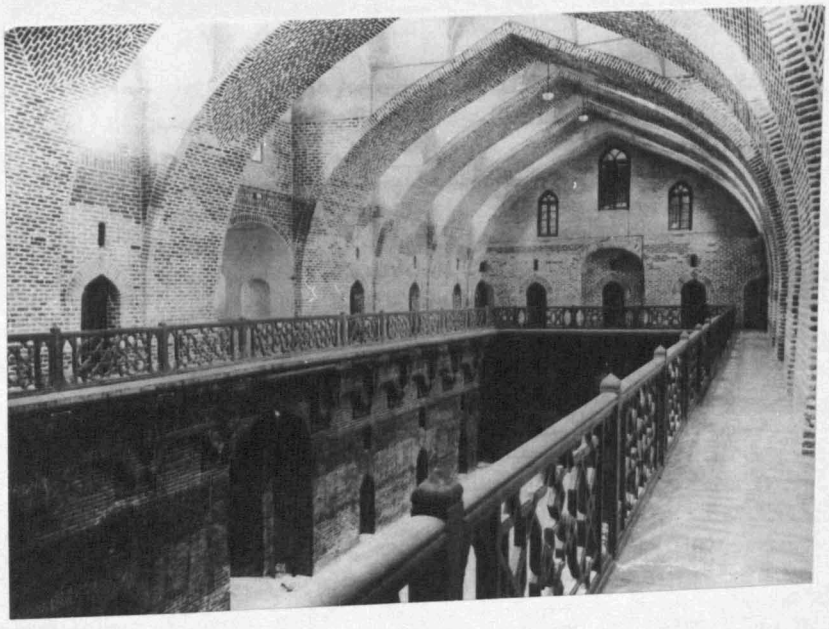
At present the textile bazaars, expanding eastwards, are taking over coppersmith's shops thus emphasizing the latter's decline. As the coppersmith's craft has no government protection, the present generation of smiths is not training its sons in the craft. The encroaching textile sellers from the west and hardware dealers from the east require different selling facilities and so the physical structure of individual shops and the whole bazaar is changing as the coppersmiths are squeezed out. This process is also taking place in other bazaars such as the leather bazaar, the general provisions bazaar and so on. Consequently handicrafts have largely disappeared from the bazaars. Multi-storey buildings have also begun to spread from the north and south sides of al-Rashid Street, changing the overall physical pattern of the area. In their basic idea these buildings betray a western influence for they were erected on the lines of European administrative buildings. Until 1950, al-Safafir Bazaar had two gates, one on al-Rashid Street, and the other on al-Chukhachiyah Bazaar, one of the cloth bazaars. Increasing security under modern government is the main reason behind the neglect of these gates.

F.P.743

Fig. 15.12



a. Al-Sadriyah at the end of al-Shurjah Bazaar.
A cluster of grain alwahs



b. Khan Mirjan in the central bazaar area

Until recently dwellings were to be found in this bazaar, mainly occupied by coppersmiths and also by some Turkish families. The bazaar strcuture needs either restoration or replacement as it is in a state of deterioration.

The bazaars selling basic provisions such as food, glasswares, soap, spices, etc., grain, fruits,vegetables, thread and poultry constitute the large and complex metropolitan bazaar network of al-Shurjah, where both the retail and the wholesale trades are practiced. Commercial activities in these bazaars take place in various types of shops and alwahs. Besides this concentration in al-Shurjah such shops are also found in a number of mahallah bazaars in Rusafah such as al-Sadriyah, in Karkh, in Kadhimiyah, in Adhamiyah and most of the modern commercial centres, particularly along the main arteries and near the bus and taxi terminals (Fig. 15.12). Until 1910, the main axis of al-Shurjah Bazaar was very narrow but was widened later. In 1957, however, the bazaar was physically disrupted by the construction of al-Jumhuriyah break-through street, which has undoubtedly affected its functional efficiency.

There are no statistics on the retail and wholesale trade of any of the Iraqi cities. However, in 1956 Harris estimated the number of wholesale businesses in Iraq as 1,600 employing 5,000 people. 600 of these businesses were located in Baghdad and employed 2,200 persons. The value of sales was estimated at 54 million I.D. for the whole country and 33 million I.D. for Baghdad.[22]

Wholesale trade in Baghdad takes place in particular bazaars, khans and alwahs, most of which are located in the Old Town. Wholesale trade provides the link between the producer until recently located in the bazaar, and the retailer.

Wholesalers are tajirs who either import directly from other countries or are supplied by the national factories as well as the surrounding workshops. There are various wholesale types according to the commodity supplied, whether local or foreign-produced, cloth, fruit or cereals. Most of the wholesalers tend to specialize in one commodity or in a group of similar products.

Some of them, particularly those specializing in cloth and fruit, are also involved in retail trade. In Baghdad, the largest group of wholesalers deal in cloth as already mentioned in the analysis of the cloth bazaar. The next in importance is that of groceries. As the grain trade has become a government monopoly, the number of grain wholesalers has fallen and many alwahs (a special type of khans for corn , particularly those along Suq Hamadah) have been closed.

The distribution of fruit and vegetables in Baghdad takes place in three stages, viz. the transfer of fruit and vegetables from their producing areas to alwahs, marketing inside the alwahs, and sale in retail shops to consumers.* The main wholesale fruit and vegetable markets (alwahs) are those of Sheikh Omar alwah for vegetables and Shurjah for fruit. The latter with some other alwahs such as of Sheikh Maruf Street have been transferred recently to Jamilah locality of al-Thawrah. The shift of most of these alwahs from their central or IFB intramural location was a deliberate central decongestion measure on the part of Amanat al-Asimah influencing both the central and fringe-belt development (See Chapter 11).

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* No marketing survey has been carried out of fruit and vegetables in Baghdad, the material was obtained by field observations and personal interviews in each of the above mentioned stages in the Baghdad area, and also from information supplied by the Organization for the Marketing of Fresh Fruit and Vegetables and the Department of Agricultural Marketing.

The other alwahs are in Karradah al-Sharqiyah, and Adhamiyah for vegetables, and a few shops in al-Shuhada Square for fruit. Some of these establishments are owned by Amanat al-Asimah, such as those of Sheikh Omar, Karradah, Kadhimiyah and Sheikh Maruf. These alwahs were constructed more than 20 years ago and are in the form of rectangles with rooms for commission agents and an open or partly-shaded space in front for stacking the produce.[23] Amanat al-Asimah sells the right of collecting fees from alwah occupants for a lump sum to a contractor who is expected to keep the alwah neat and clean and in hygienic condition. But the fact is that the conditions are very far from satisfactory.* There are no facilities for keeping the produce under cover to protect it from the hot sun in summer and from rain in Winter.

216 Commission agents viz. 61 in Sheikh Omar, 5 in Karradah, 18 in Kadhimiyah, 4 in Adhamiyah, 16 in Sheikh Maruf, 100 in Shurjah and 12 in Ras al-Jisr (Shuhada Bridge) hire or own shops in the alwah. Each has his own clientele among producers and retailers. Almost all the producers are indebted to the commission agents who advance loans without interest, in cash and in the form of seeds, insecticides, manure, etc.... on condition that the borrower will sell his produce through the lender only. On the other hand, retailers who are persons of limited means, purchase on credit and repay the money after they have been able to dispose of the produce. It is interesting to note that there are very few bad debts, and litigation among the parties is rare.

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* There are, for example, no proper urinals or lavatories for the use of people visiting alwahs. Those that exist are very dirty and fertile breeding grounds for bacteria. This not only affects the quality of produce but is also a great danger to the health of the city.

Khan Buildings: (Figs. 15.1, 15.2)

What is designated in Iraq by Arabic term 'khan' (inn, caravanserai) is known in those Arab countries once part of the Roman and later Byzantine Empire as 'qaisariyeh', from the Latin 'caesarea'*

Khans are to be found in and between cities frequented by caravans, their location, whether inside the cities or outside, being intimately related to caravan routes. However, there are other factors also influencing the locational pattern of khans along main routes such as the availability of water and grazing land, and the spatial distribution of the major urban settlements, particularly religious centres.

As most of the cities were walled like Baghdad, the khans were located at an appropriate point in central areas and near the gates, because caravans used to ply along recognised routes where the surface became hardened by frequent usage.

Most of Baghdad's khans and alwahs date back structurally to the Ottoman period, but design perhaps to the Round City itself. However, there are some who consider khans as a medieval legacy.[24] Historical references frequently mention khans built on the same functional principle and in the same form as those found later.

Khans are either built privately for business purposes or by religious bodies for chartitable purposes. The latter khans are bound to be along the caravan highroads linking the main religious centres at regular intervals, where pilgrims and travellers can rest. The average speed of a loaded camel is about 6 km per hour. Caravans usually travelled during the hours of daylight only.

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* This was the name given to the three great provencial capitals of Cappadocia (eastern Anatolia), Palestine, and Mauritania (Algeria) in honour of Augustus who had adopted the official title of 'Caesar'. The term "qaisariyeh" may well allude to Roman basilicas in these places as the functional and architectural ancestors of the khan.

The merchandise transported by caravans was packed in a special fashion suitable for carriage by beasts, each load weighing about 70 kg.[25] Merchants, pilgrims and travellers habitually travelled together to protect themselves from robbers. A caravan was usually formed of about 400 camels, horses and donkeys, but sometimes it might include a total number of between 3,000 and 5,000 camels and 1,000 men with 40 tents. Usually each member of the caravan supplies himself with victuals and perhaps a tent. Cradles were sometimes used in travel. The cradle (Hawdaj) is about 54 inches long and 30 inches wide with an arched cover and screened in such a way as to protect a man from sun, cold and rain. This is carried on the camel's back. A particular man was responsible for the caravan, the caravan-bachi, who presumably knew all details of the road. Sometimes, to safeguard the caravan movements, certain quantities of money would be paid to a particular Sheikh who either ordered his tribesmen not to attack the caravan or provided it with protection.[26]

Khans in Baghdad have been variously evaluated by European travellers visiting the city during the Ottoman period. Some of them described them as meeting places for caravans and as great centres of commerce for the surrounding countries.[27] The Abbasid caliphs had built khans at various times and in various forms. In the 13th century, for instance Caliph al-Mustansir built several of them as prominent public buildings.[28] Olia Ghulam, when travelling through Baghdad in 1655, described the khans of the city as notable buildings.[29] In 1689, when Tavernier visited Baghdad he mentioned 10 khans.[30] In the 18th century, Niebuhr found that there were 22 khans in Baghdad, some of which were in the suburbs. The number, however, had increased to 30 when Buckingham described them all as inferior in construction.[31] In

the same century Lane had put the number of Cairo khans at 200, three quarters of them within the old city.[32] In 1971, excluding the replaced khans, there were 118 major khans in central Baghdad, 80 of which were in Rusafah and 38 in Karkh (See Appendix D). Some of them were built as khans, while other were converted from Arab courtyard houses, because of the economic development of the city (Figs. 15.1, 15.2).

As in all other Arab caravan towns, khans are concentrated mainly in the central bazaars. Locationally, they are usually in proximity to each other, and are functionally integrated in the nearby bazaars. Chains of khans either follow the bazaar system or are built behind them in the by-lanes.

In Baghdad, the distribution of khans is closely related to the river axis, the whole bazaar complex, and the street system. As mentioned before the main axes of bazaars run parallel to the Tigris and are connected by transverse bazaars, and this central rectangular system has attracted most of the khans in Rusafah. Until recently the river was the main transport route, and so most of the commercial and business establishments competed for location as near as possible to the Tigris, those establishments best able to afford it occupying the most advantageous sites. As seen previously, al-Shuhada Bridge is the link between the bazaar networks on either side of the river, and the khans of Rusafah and Karkh follow the general axis running from the shrine of Sheikh al-Qailani in Rusafah to the grand mosque of Sheikh Sandal in Karkh. The khans and alwahs of Karkh serve mainly the West Side of the city and the western part of the country, whereas the khans of Rusafah serve the whole of Iraq.

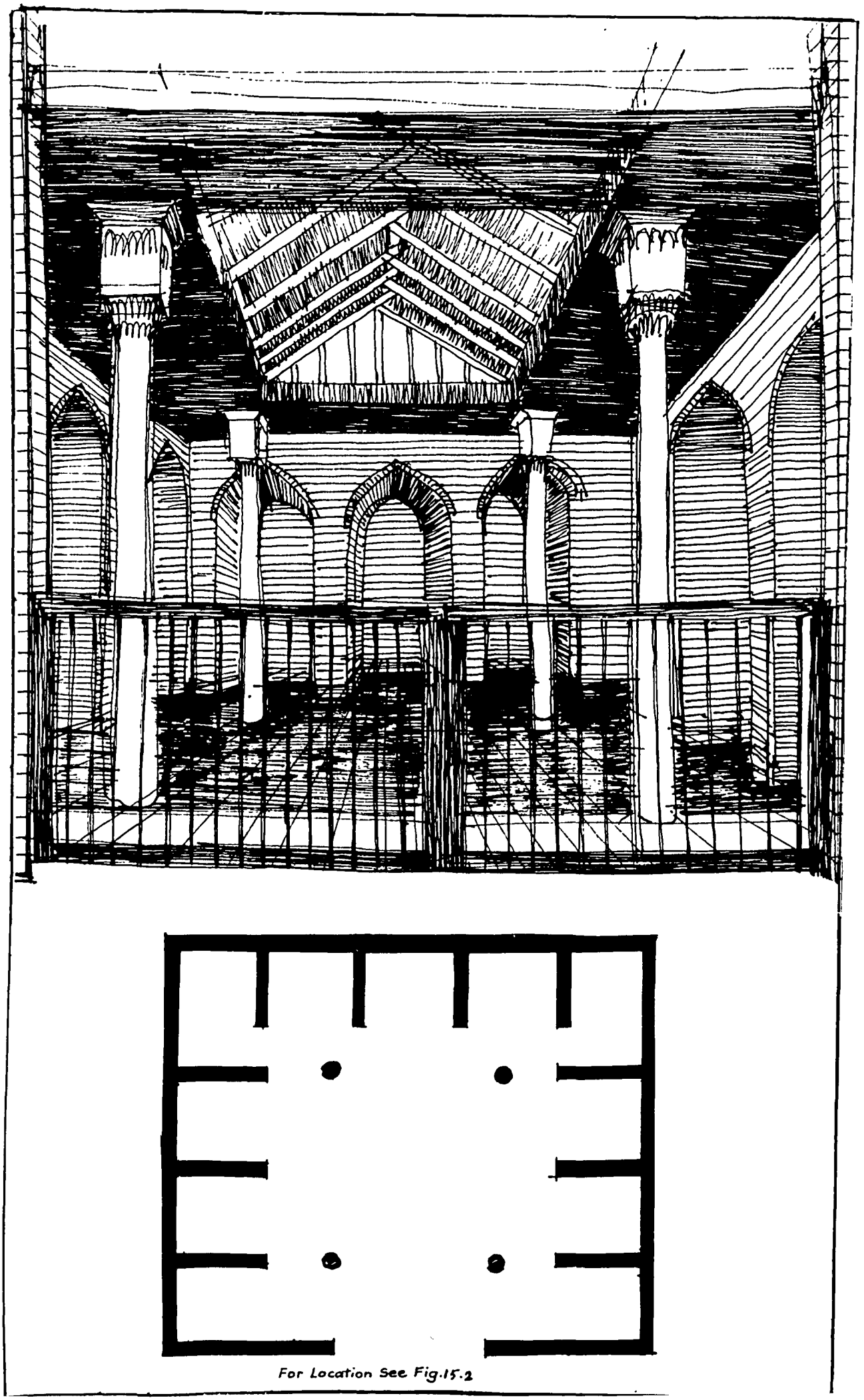
Khans in Baghdad may be classified according to function, size and location. One functional type is represented by travellers' (pilgrims') khans, travellers until the 1920's coming to Baghdad on horses, mules, donkeys and camels. In 1920's and 1930's horse-drawn carriages became the main transport media followed in the 1930's by motor vehicles as the dominant form of transport. Travellers were lodged in certain khans known as manzils, that were purposely designed to house travellers of all sorts, i.e. merchants and pilgrims. Generally they were of two floors constructed around rectangular courtyard. Iwans (vaulted rooms) occupy the ground floor to lodge animals, while the first-floor rooms are used for lodging the travellers.

Merchandise khans are of three sub-types, viz. grain khans, commonly known as alwahs a recently adopted term, vegetable and fruit khans also known as alwahs, and khans for other merchandise. While the last type is found mainly in the business core, the first two types can be located in various parts of the city.

As merchandise khans are functionally and physically integrated with the bazaars, their entrances are interspersed with those of shops throughout the bazaar and are sometimes difficult to distinguish. The khan facade is lined with many shops of uniform size, which in fact constitute a considerable proportion of the shops of the bazaar (Fig. 15.9).

Merchandise stored in khans is charged by units regardless of its contents or size. It may be a sack of tobacco, a bale of cloth, a box of fruit, etc. The charge for each unit is 200 - 300 fils (20 - 30 pence). There is no time limit for storing. The unit will be kept in the khan until it is purchased or taken away by its owner.

Fig. 15.14 Sketch and Plan of a Typical Alwah in Suq Hamadah



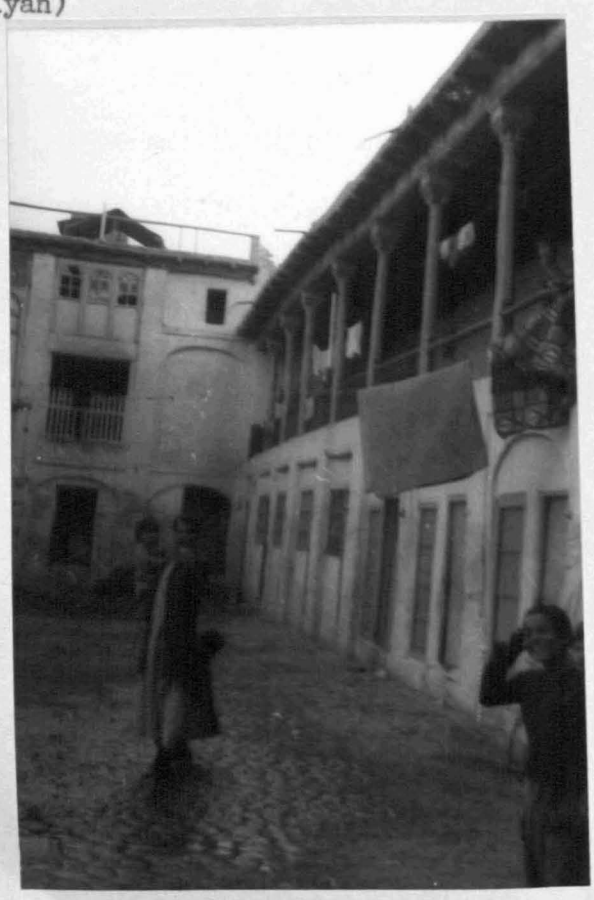
For Location See Fig. 15.2

F. P. 750

Fig. 15.13

a. A manzil (travellers' khan) in Kadhimiyah

b. An example of a khan which has changed its function (Kadhimiyah)



Recently a number of khans have begun to charge for a fixed period of time (6 months). Porters (hammals) form the main means of goods transportation between khans and bazaars.

The average annual rent per room in Baghdad's khans varies widely depending on the location of the khan. In the central area the average annual rent is between 100 - 400 I.D. As to size a khan with more than 25 rooms is considered a large khan. However, many traditional houses have lately been changed into khans of various sizes.

Khan locations are primary and secondary, the primary khans being located along the major bazaar thoroughfares, while secondary khans follow the side bazaars and zuqaqs leading to the main bazaars.

The present central khans are used as warehouses for miscellaneous goods by crafts, as well as by commercial retailing shops and business offices. Since the Second World War merchants and travellers have been using hotels for their accommodation.

However, Kadhimiyah is exceptional in this respect. A large number of its khans are still used only to accommodate travellers, mostly Shiah pilgrims (Fig. 15.13). It is a distinct feature that grain alwahs are located on the edges of the business core as they cannot afford the higher rent of more central sites. In Karkh, alwahs occur mainly in Suq Hamadah bazaar (Figs. 15.2, 15.14) and in Rusafah at the end of the Shurjah Bazaar complex and in al-Sadriyah. The grain, particularly wheat, alwahs have declined considerably since 1958 because the wheat trade has become a government monopoly. The Government imports or collects wheat from various parts of the country and then retails it at cheaper prices than the merchants of the private sector could have done, who are not allowed to import such an item. Accordingly a large number of grain alwahs are now disused.

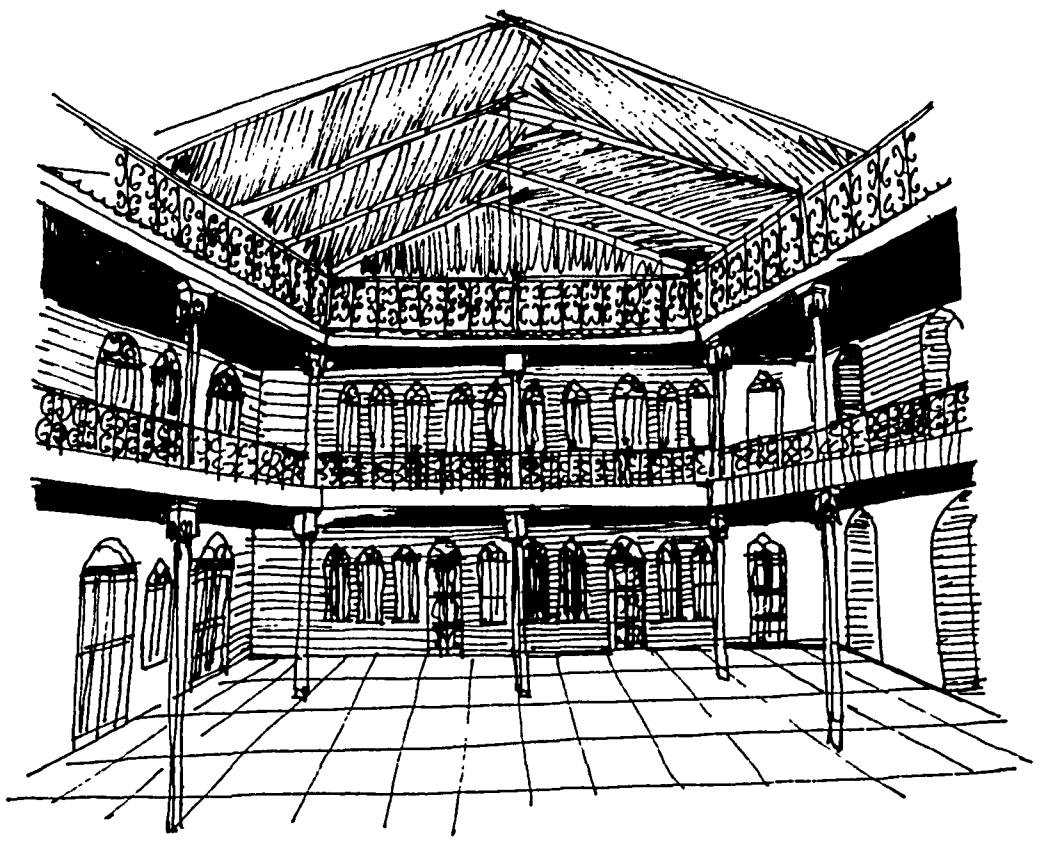
From Appendix D[33] it appears that 22.4 per cent of the khans have been slightly modified and continue mostly to have the same functions as before. 30.4 per cent were considerably modified as they have changed their functions to new ones which necessitated physical adjustments. 5.6 per cent of the khans were replaced either because of the construction of new break-through streets and squares or because the original buildings deteriorated. This low percentage would seem to indicate that the central bazaars still require traditional forms to accommodate their commercial activities in almost the same way as centuries before. 36 per cent of the khans remain unmodified indicating the success of this form of structure in the commercial life of the bazaars. The percentage of demolished or delapidated khans was only 5.6 per cent. The deterioration results either from neglect or the functional decline of the area following the readjustment of the internal locational pattern of the bazaars.

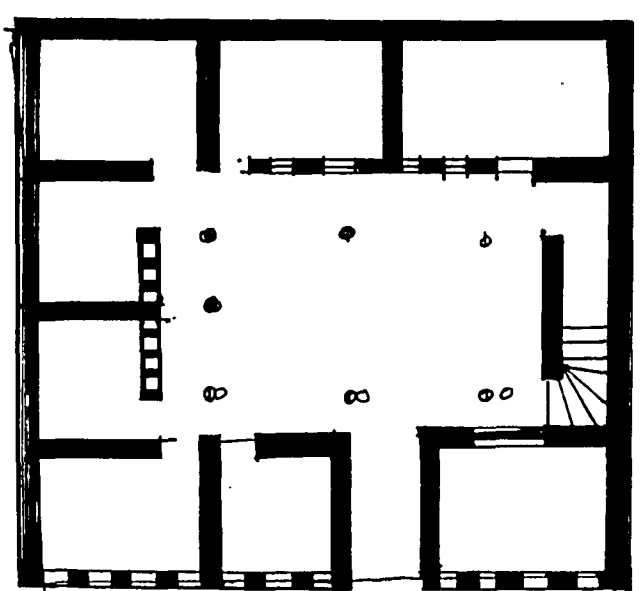
More than 75 per cent of the surveyed khans were built before 1920 and are characterized by their sizeable central atriums or court spaces. 12 per cent of the khans were built between 1920 and 1936, maintaining the courtyard principle but with improved design. The rest were built after 1936. Thus it is the houses of the fourth and fifth morphological phases which have abandoned the courtyard element.

This indicates that the overall physical change in the core of the central bazaar is still negligible. The stability of the bazaar function in modern Baghdad, and the very central position of the area results in a high rate of land prices. Therefore other functions are not able to enter the bazaars and replace the traditional retail land use.

F. P.

Fig. 15.15 Sketch and Plan of a Khan, Recently Covered in al-Sarai Bazaar





For Location See Fig. 15.1

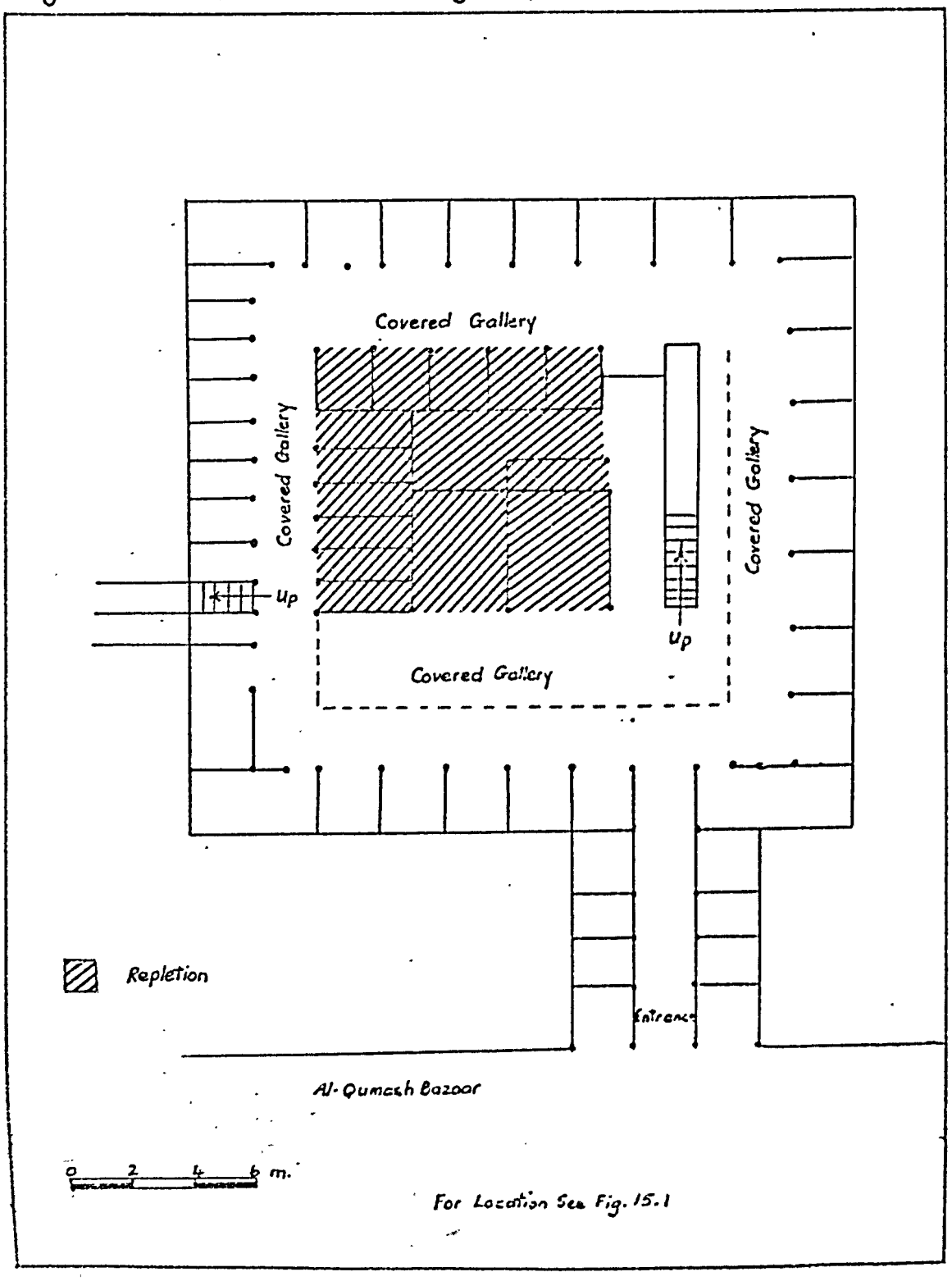
Although size, function, number of storeys, age, and proximity to the main bazaar axis vary, the khans of Baghdad havedeveloped almost a uniform standard shape, viz a rectangle. This form facilitates the functional and spatial integration of bazaars and khans, where commodities can be stored and merchants or commercial agents accommodated. Like the traditional Arab House, the key element in the khan is the courtyard around which structures of one or two storeys were developed, (Figs. 15.14, 15.15).

The ground-floor rooms or stores for goods are separated from the courtyard by brick-vaulted porticoes with wooden pillars supporting the roof.

Most of the khans have a gallery extending all round the courtyard. The first floor is usually constructed of lighter materials. The rooms on this floor are used for lodging, being vaulted in the same manner as the ground floor. Khans have openings to the bazaars or streets and are protected by strong gates kept closed at night. Until the second decade of this century they were considered as the safest places for merchandise.

Some of Baghdad's khans such as Khan Mirjan are of great historical and architectural importance. Khan Mirjan built in 1459 is the only historical /covered khan in Baghdad reminiscent of the bold Basilica principles of the Romans. It has a series of transverse vaulted arches supporting the modified barrel roof. The entrance façade has an elegant decorative inscription. It comprises two floors, the ground floor consisting of 22 rooms, whilst the first floor has 23. A wonderful chevron moulding marks the separation line between the two. Lighting in the main vaulting is introduced by small dormer windows, a particularly interesting feature (Fig. 15.12b).

Fig. 15.16 Khan Repletion in Central Baghdad, Dallah Khan



As a direct result of the functional development of the city particularly in its central area, khans among other traditional forms have undergone substantial physical changes required by the new functions introduced into the khans and also because of the intensification of original functions.

This functional pressure is demonstrated most impressively in the atrium space, reduced in size by building repletion which occurred gradually. Small rooms were developed around a central rectangular building until this growth occupied a considerable part of the former courtyard. These rooms came to be merchants' offices as well as wholesale shops and stores for merchants in the nearby bazaars. Khans indeed provide almost all thewarehousing for the present bazaars of the city centre.

Repletion is a term taken from European research where it has a specific meaning in the case study of Alnwick.[34] Owing to the fact that there are differences of context between building repletion in European towns and that in Baghdad, the phenomenon discussed here is termed khan repletion (Fig. 15.9, 15.16).

The climax of the repletion process was achieved in a number of the central khans after 1960. Needless to say, this sort of process did not take place in outlying khans let along desert khans, where economic development was negligible.

To protect the new repletive buildings against the summer sun and the winter rain some of the khans have been covered over by light roofing materials such as corrugated iron.

When khans were converted to hotels, the resulting modification was different from the physical changes caused by the introduction of new industries, or change to a complex of commercial shops.

Commercial Garages:

Khans designed for animals cannot be used by cars as the traditional street system has evolved to serve pedestrians and pack animals, therefore garages have become necessary in modern times as facilities for wheeled transport outside that traditional system. Garages are one of the 20th century functional and morphological advents introduced to Baghdad and other Iraqi towns. Functionally and morphologically they are in many ways analogous to the pre-1920 khans, in that they are places accommodating the commercial processes of collection and distribution. In Baghdad, then garages emerged in response to the technological development of the modern era, where vehicular traffic is increasingly used. Though they perform various functions, garages are developed for vehicle servicing and repairing. Consequently they failed to infiltrate the central area proper where corresponding forms remain traditional the available space is more restricted and ground rents are high. Therefore garages are typical of fringe-belt elements. For the same reason they have failed to deprive khans of their central functions as the peripheral location of garages is too inconvenient for bazaars. In contrast to Kermanshah,[35] Baghdad's bazaars and associated khan establishments are still dominating the bulk trading and associated office accommodation.

The garages in Baghdad have developed either in ribbon or cluster patterns along Sheikh Omar Street on the East Side and the consequent street of Sheikh Marnf on the West Side as well as along their side streets (see Chapter 11). In turn they have attracted many repair 'workshops',low-standard restaurants and hotels frequented primarily by low-income and rural travellers from other liwas. Recently car sales

have been nationalised in Iraq, in Baghdad therefore private garages are not used by merchants as their depots in the same way as observed in Kermanshah,[36] though the garages are used as forwarding premises for many local and imported goods to other liwas.

After 1956 new ribbon growth of garages developed along the 14th July Street close to the secondary fixation line of the IFB on the West Side. During 1970 - 1971, these garages were transferred to the Abu Ghraib area thus contributing to the incipient OFB (See Chapter 11). These garages are used exclusively as servicing and repair depots. In addition a few scattered garages have emerged in the new suburbs, mainly along arterial roads attracting commercial shops and coffee houses of purely local nature.

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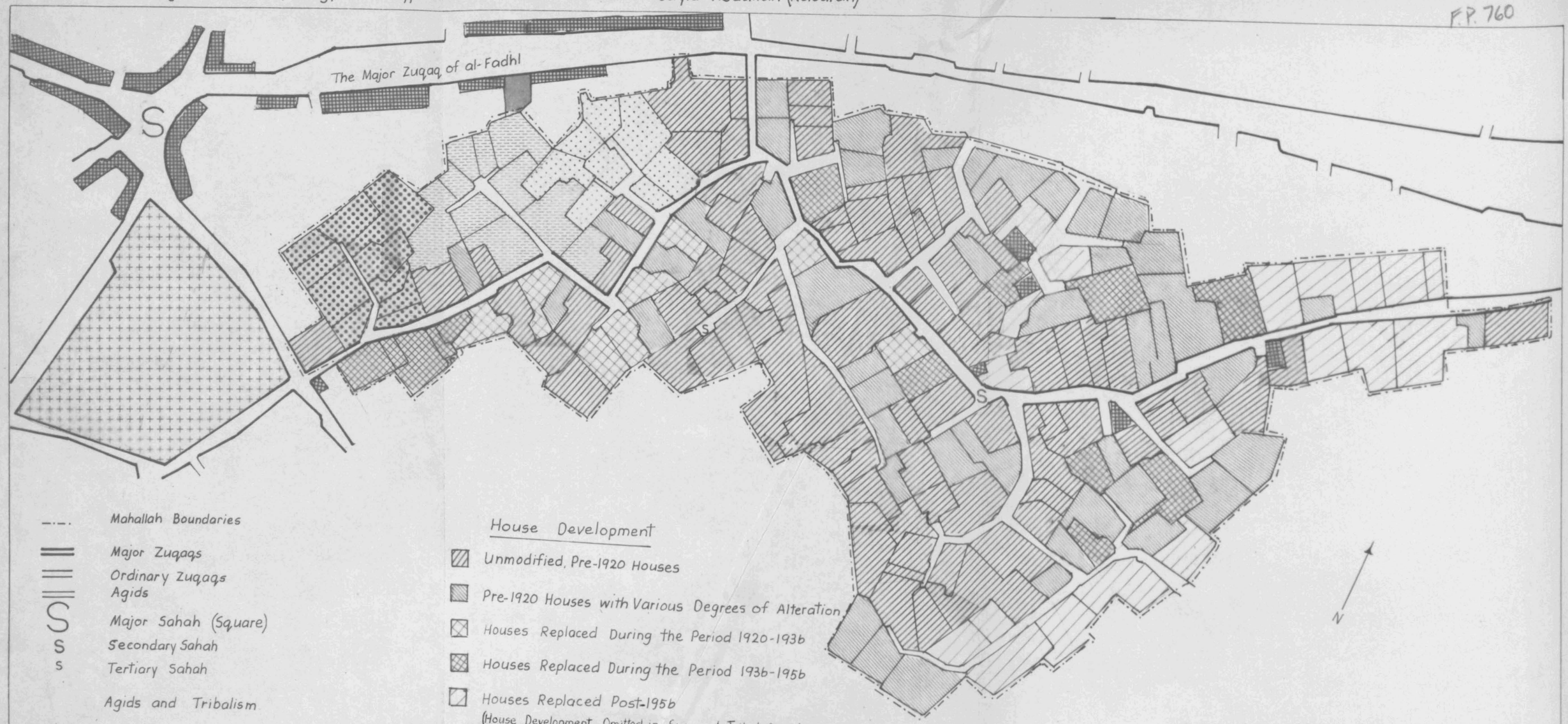
PART VII

Mahallahs and Their Social Equipment

Fig. 16.1 The Morphology of a Typical Traditional Mahallah: Sayid Abdullah (Rusafah)

F.P. 760



Mahallah Boundaries

Major Zuqaqs

Ordinary Zuqaqs
Agids

S Major Sahah (Square)

S Secondary Sahah

s Tertiary Sahah

Agids and Tribalism

Occupied by Families Belonging to al-Bu Amir (Sheikh Dhari) Clan

Occupied by Families Belonging to al-Baiat Clan

Occupied by Various Families Including Three Belonging to al-Ubaid

House Development

Unmodified, Pre-1920 Houses

Pre-1920 Houses with Various Degrees of Alteration

Houses Replaced During the Period 1920-1936

Houses Replaced During the Period 1936-1956

Houses Replaced Post-1956
(House Development Omitted in Surveyed Tribal Agids)

Non-Residential Land Uses

A Mosque

Retail Shops

A Gahwah

For Location See Fig. 6.11

Chapter 16.

The Mahallah Concept and its Morphological Significance

It is intended in this part to survey a fundamental social, economic, physical and cultural legacy of Baghdad, viz. the traditional mahallah.* Until recently, mahallahs were the only type of residential component of the city which incorporated the whole complexity of religious, commercial, industrial and cultural functions. They represent a distinct urban system by which traditional Arab cities have grown. Human behaviour and social relationships, which are wider than family ties, promoted the sense of mahallah. Although traditional Baghdad was externally unified by its walls and also internally by its grand mosques and central bazaar, it was physically and even more so socially sub-divided into a large number of mahallahs (Fig. 6.11). Some of these were, and indeed still are, self-sufficient with their communal institutions such as a local bazaar or suq, jami or masjed, hammam and may have a religious school attached to the mosque. In most of Baghdad's mahallahs, a network of zuqaqs,** of various grades, and agids reach out from the main zuqaq to the interior (Fig. 16.1). When pressed for more exact location, the Baghdadi inhabitant will pin-point his house within his mahallah by naming the zuqaq or agid. However, it is an obvious feature that, while the main zuqaq of the mahallah is spatially defined, the perimeter is often indistinct. Boundaries between mahallahs are further confused by the

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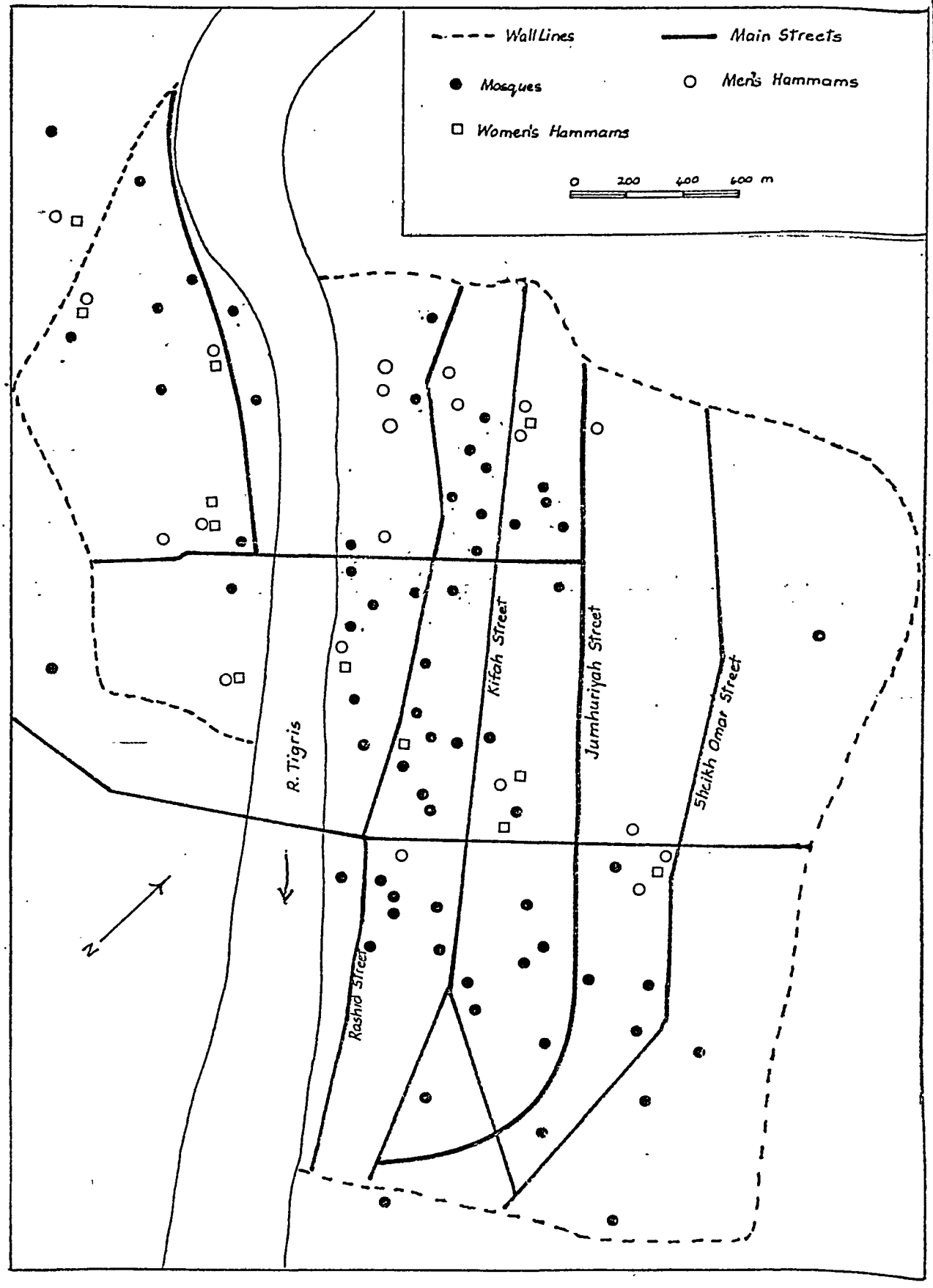
* Mahallah is an Arab word for the place where one settles. It is derived from 'yahillu' i.e. 'to inhabit'. In the current study the term mahallah means 'town quarter' the sense in which it has been used by almost all non-Arab countries influenced by Arab culture.

** Zuqaq is an Arab word for the through lane or alleyway. Agid also is an Arab word meaning arch. It is used in some urban mahallahs in Iraq to indicate cul-de-sac zuqaq of lower order, and in this sense has been used in the current study. However, some of the Iraqis used the word agid as synonymous with mahallah.

Islamic ownership status, where it is possible to find that the sirdab of one house is approached from one mahallah, while the ground floor access is from another. The Arab culture is indeed expressed in the form and pattern of the traditional mahallah, which has been developed through the contribution of hundreds of generations and it is brutal to erase it in the name of planning or modernization. Most of the criticisms levelled by professionals at the traditional mahallahs of Baghdad are derived from that sweeping judgement that describes them as congested, filthy, deteriorated, non-functional zones, without green areas, and having a maze of impenetrable zuqaqs. Here it would be wiser to realise that the deterioration of some mahallahs is the result of centuries of ignorance and neglect and not because they have been developed by the indigenous communities. It is very easy to bulldoze and destroy, but it is desirable in this case to conserve a hard task which will be appreciated. When Baghdad was built in the eighth century, Arabs settled in mahallahs, each being inhabited by a particular tribe (See Part III). This meant the introduction of early nomadic Arab social values into urban life. This was characteristic of almost all Arab-founded towns regardless of their location.[1] However, the present mahallahs of Baghdad perhaps go back to the Middle Ages in their distinct patterns, when it was not only tribal affiliations but religious sects and places of origin which were major factors influencing their development. Consequently, mahallah became closely-knit and homogeneous communities, each with a special character of its own. An inhabitant of old Baghdad traditionally and proudly relates himself to his mahallah. Even, now many Baghdadis still say that they live in 'al-Harah' or 'al-Kubaisat' mahallah. If a man's religious sect, or geographical origin is known

F. D. 78

Fig. 16.2 Distribution of Mosques and Hammams in the Old Town



usually his mahllah can be deduced. Likewise, mahallahs indicate the geographical origin, and belief of the inhabitants. However, it is no longer as easy as it once was to distinguish a man's occupation by his mahallah of residence because of the increasing social mobility in the present century.

The traditional mahallahs are found at the present in Karkh, Rusafah, Kadhimiyah, Adhamiyah and Karradah al-Sharqiyah. In a prolonged development, Islam, Arab society, and its needs have evolved the mahallah concept among other urban elements. It is a substitution for kinship as a rationale of social organization.[2]

In Baghdad the concept of neighbourhood or 'natural area' takes the form of the mahallah, which in many cases was self-contained. In some of the small mahallahs there are no efficient community facilities or services. In all mahallahs, as will be discussed presently, a street or zuqaq system and a type of public square, known as 'sahah' has developed (Fig. 16.1).

Though some of the mahallahs are deficient in some basic community facilities, mahallahs surprisingly succeeded in propogating lively, local communities such as has not been achieved in the new 'modern' suburban neighbourhoods. Each traditional mahallah has developed a set of socio-economic rules governing group and individual behaviour.

Communal facilities, on a local level are provided within most of the mahallahs and are developed at a major zuqaq or the main square. Early in this century half of Rusafah's traditional mahallahs had hammams (Fig. 16.2). Mosques and hammams were supplied with water derived either from their own wells or transported by water carriers (saggas). As self-contained units some of the mahallahs could be

described as towns within towns. There is a well developed and distinct functional and service system in the traditional mahallah. Almost every mahallah has its own retail premises, whether bazaar, suq (uncovered market) or a few number of shops, a mosque, whether masjid (ordinary) or jami (main) and perhaps a hammam. The insulation of the mahallah community is broken in the central bazaar, grand mosques and during religious occasions where people of various mahallahs meet and interchange views and interests. The mosque has reinforced the coherence of the mahallah community as being the place where people congregate under one roof and express faith in one religion and one idea of living. The mosque binds the community together and brings harmony into the life of its members. About 59 per cent of the mahallahs in Rusafah have one mosque each (See Chapter 17). Wherever a mosque is located some commercial activities emerge nearby. Many of the shops are attracted to the mosque along its street walls. The pathway leading to the mosque attracts commercial and craft shops. Because these access routes are frequented by both influential and ordinary inhabitants, the major ones have become ceremonial malls. The pattern of commercial activity in the mahallah is related to the distribution of population, the location of mosques and the zuqaq system. Generally, the greatest land-use mixture is to be found not far from the mosque. Street system, mosque and economic activities are intimately related in mahallahs. Main retail and wholesale activities are concentrating on the primary zuqaqs, sometimes even expanding into the feeders, with a scattered or a clustered pattern. On the other hand, the actual craft industries and the storage of their products takes place in the traditional courtyard houses, mainly on tertiary alleyways. Pro-

Fig. 16.3 The Traditional Pattern of Rusafah

F.P. 764

- Major Zuqaqs
- Secondary Zuqaqs
- Tertiary Zuqaqs
- Agids
- Major Sahah
- Secondary Sahah
- Tertiary Sahah
- Local Sahah
- Break Through Street

Plot Size in sq.m

1 1-50

2 51-100

3 101-200

4 201-500

Land Use

- Residential Courtyard Houses
- Mosques
- Schools
- Government Offices
- Buildings with Shops on the Ground Floor
- Retail Shops in Courtyard Houses
- Workshops
- Demolished Areas

0 20 40 60 80 m

duction, storing and retailing takes place in physical proximity, all spatially influenced by the location of the central bazaar, the mosque and the distribution of population. From the workshops in traditional houses the flow of goods moves down the zuqaqs mainly on the back of porters (hammals), who mostly come from the mountainous areas of Iraq or from Iran. Generally these commercial and business units are physically separated from the central city bazaars, as they have developed on a local level to serve only the inhabitants of their mahallahs.[3] Gahwahs have developed along the main zuqaqs as well as on the sahahs (Figs. 16.1, 16.3) and about 74 per cent of Baghdad's mahallahs had one or more gahwahs each (See Chapter 19). The land use of the block of traditional built-up area bounded by al-Kifah Street to the north-east, al-Jumhuriyah Street to the south-west, al-Amin Street to the south-east and al-Jihad Street in Bab al-Mudham area to the north-west was surveyed by the writer in 1971 (Fig. 16.3), as Amanat al-Asimah has no plan showing land utilization in the old part of the city. The 1918 plan of Baghdad, supplied by Amanat al-Asimah, was the only available plan to define plot boundaries for the purpose. The area shown affected by the construction of the above mentioned break-through streets. It amounts to 198,000 sq. m with a population of 9,529, 51.55 per cent of whom were males. The land use structure of this area is still fairly well maintained as traditional because most of the people here are poorer than those living along al-Rashid Street who were the first to leave their mahallahs. Another reason is the fact that these areas continued mainly as residential, surrounded by central business-users to the south-east and south-west and a workshop-type of industry, and houses to the east. Individual plot areas within this traditional sector were calculated either by ordinary

mathematical methods for geometrically regular plots or by planimeter measurements. The plots were then classified into five classes of size: 1 - 50 sq. m, 51 - 100 sq. m, 101 - 200 sq. m, 201 - 500 sq. m and more than 500 sq. m. It appeared that 35 per cent of the plots were within the first and second groups, i.e. of average area lower than 100 sq. m. Zuqaqs and sahahs occupy 8 per cent, the remaining plots are distributed between the other three groups.

The area has been subject to physical change. Some of its houses have become slums or delapidated owing to neglect, misuse and the absence of a sewage system. Others have changed their function, and some plots have been amalgamated with others to accommodate new buildings in various parts of the area. However, this area is still dominated by the traditional courtyard house (See Chapter 6), inhabited by the poor masses, mostly newcomers replacing the original owners who have left for better areas. The street system is still the traditional one connecting the main service units with the various residential sections. Three Friday mosques are located in the area. Two of these are in a state of disrepair at the present time. The area has four premises adapted for school purposes and accommodating 3,060 pupils in eight schools, two of the buildings containing three schools each, by accommodating the three different age groups at different periods of the day, viz. infant girls and boys using the building separately in the morning and a secondary age-group in the afternoon. This puts the average number of pupils per school in this crowded area at 437. The schools are newcomers to the area, two of them being accommodated in two large courtyard houses.

Vacant land is situated mainly along al-Jumhuriyah Street, being urban fallows[4] in the wake of break-through street planning (Fig. 16.3). Commercial activities and gahwahs occupy either separate buildings or the ground floor rooms of traditional houses facing main zuqaqs or zuqaq intersections.

Workshops are found in traditional houses mainly in the southern part near the central wholesale and retail bazaar areas of the city. Finally governmental buildings, mainly offices, are located on the south-eastern and north-western periphery of the area.

The traditional mahallah provides safe and easy pedestrian access to all service centres, man originally determining the human scale of the settlement. Under the assumption that a person can walk comfortably for up to 30 minutes under proper conditions each of Baghdad's mahallahs appears to be well attuned to that scale.

This dimension, then, is dominant in the traditional Baghdadi mahallahs which were developed as human communities of different, but integrated, categories of income, varying from very low to rich classes. The large houses of wealthy people are intermixed with the humble houses of the poorer folk. As in Amman and other Arab towns, prosperous members of the class are obliged morally and socially to help their needy relatives. Thus this traditional system effected its own form of social security, whereas modern western forms of social security have perhaps indirectly promoted the breakdown of family links in developed countries. Horizontal class divisions were non-existent or at any rate indistinct as was noticed in Mashhad.[5] Table 16.1 shows this fact in the surveyed traditional mahallahs.

From the table it is obvious that the majority of families living in traditional mahallahs' support their relatives. The major reason

according to these families, was social and religious tradition, followed by the poverty of their relatives and finally because of the absence of governmental aid. However, a high percentage of the interviewees did not know exactly what was meant by social security as the country has not yet got such a system. Most of the families were supporting their needy relatives at irregular intervals. They are ready to support them whenever necessary, usually at intervals longer than one year.

Even at the present time, after the construction of several break-through streets, traditional mahallahs in the Old Town of Baghdad have continued as self-sufficient entities in many aspects of social life. Children can go to the recently introduced schools, replacing the quranic school (mullah), within walking distance and walking time (Fig. 16.3). A mother can do her shopping within walking distance and the main road for mass transport is also within walking distance. Thus the mahallah with its zuqaq system has a customary, homely atmosphere. To preserve this socio-morphological element the mahallah pattern should receive scholarly study, which could also improve the design and development of new residential localities within the Baghdad environment. Unfortunately planners, both Arab and foreign, have not only ignored this traditional asset of Baghdad's mahallahs but have swept it away in various parts of the city. Some of these actions can be justified, but others certainly cannot. It is only too true, as Anderson found, that in many of Baghdad's modern neighbourhoods, such as al-Yarmuk, any local social coherence has been lost. Such new neighbourhoods may be occupied by people who may have no wish for neighbourliness.[6] By way of contrast inhabitants of traditional mahallahs have enjoyed intimate and lasting bounds of friendship, kinship, creed and calling.

Table 16.1 Economic co-operation among interviewed families

Mahallah	% of families who support their relatives financially	% of interviewees giving as a reason			Time intervals of financial support		
		Poverty	Absence of social security	Social and religious tradition	Monthly	Annually	Occasionally
Suq Hamadah	100.00	46.15	23.08	76.92	7.69	-	86.62
Sayid Abdullah	63.64	45.45	18.18	45.45	27.27	-	36.36
Aguliyah	75.00	-	-	100.00	-	12.50	62.50
Harah (Adhamiyah)	66.67	55.56	-	55.56	-	11.11	44.44
Shiukh (Kadhimiyah)	58.82	29.41	35.29	23.53	-	-	58.82
Karradah al-Sharqiyah	100.00	81.25	25.00	68.75	6.25	-	93.75
Average	77.36	42.97	16.93	61.70	6.87	2.08	63.42

Source: Fieldwork 1971. See Appendix A. Table C.

People in traditional mahallahs know each other, even when they are not relatives. They develop friendships with mahallah inhabitants. In many mahallahs today one can find people belonging to certain clans, tribes* or certain regions, as evidenced by the names of many traditional mahallahs which can be used for the inhabitants' identification of kinship, religion and geographical place of residence. There are at the present twelve mahallahs in Rusafah and Karkh clearly having clan names. In China, Chang found that it is possible to estimate the origin of certain quarters by studying their names.[7] This phenomenon has certainly been confirmed by the field investigation of selected mahallahs. More than 55 per cent of the interviewed families in the surveyed traditional mahallahs (table 16.2) have at least three other families of their relatives living in the same mahallah. It is interesting that this social legacy has continued in spite of the social levelling following the modern expansion of the city. Most of the original owners of these mahallahs have moved to a suburban mahallah, following again their relatives or at least choosing mahallahs dominated by their sect or religion. In al-Washash, the post-1956 suburb for example, 75 per cent of the interviewed families were Shiahs. But here more than 51 per cent of the families were Shiah migrants coming from the southern liwas. On the other hand, 100 per cent of the interviewed families in Hai Dragh were Sunnahs, all of whom came from traditional Sunnah mahallahs in Karkh, whether being original Baghdadis or migrants from central liwas. This

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* The social structure of the Arab community is comprised by the tribe (qabilah) which is composed of several clans (ashirah). The clan is then divided into several sub-clans (fukhuth) and this in turn contains several families.

Table 16.2 The importance of kinship in chosing the mahallah of residence among interviewed families.

Mahallah	% of families that have:		
	1 - 3 related families living in the same mahallah	3 - 6 related families	6 related families
Suq Hamadah	38.46	30.77	30.77
Sayid Abdullah	45.45	36.36	-
Aguliyah	37.50	37.50	25.00
Harah (Adhamiyah)	44.44	22.22	33.33
Shiukh (KADHIMIYAH)	41.18	52.94	5.88
Karradah al-Sharqiyah	37.50	18.75	43.75
Average	40.76	33.09	23.12

Source: Field Work 1971, See Appendix A, Tables C, M.

perhaps indicates the importance of the religious affiliation in the social pattern of the city. The sectarian grouping was the outcome of deliberate decisions of land owners who at first preferred certain people more than others when selling plots. In 1952 there were 76 traditional mahallahs in the Old Town, 8 in Adhamiyah and 7 in Kadhimiyah with an average population of 4,500. In 1965 the average population of the traditional mahallahs included in the field survey was 7,041. The population fluctuation of these mahallahs during the period 1952 - 1965 is shown below.

Table 16.3: Population change in the surveyed traditional mahallahs, 1952 - 1965.

Mahallah	Area in sq. m.	1952	1957	1965	% of growth between 1957 - 1965
Suq Hamadah	70,000	4370	4777	4223	- 11.60
Sayid Abdullah	35,000	2256	2393	2514	+ 5.06
Aguliyah	37,500	1406	1373	1709	+ 24.47
Harah (Adhamiyah)	52,500	1214	1958	1452	- 25.84
Shiukh(Kadhimiyah)	410,000	13949	19729	17718	-10. 19
Karradah al-Sharqiyah	1,240,000	4660	9770	14631	+ 49.75
Average		4642	6666	7041	+ 5.63

Source: A. Susa, Baghdad Atlas, Baghdad (1952) pp. 21 - 25, Commander J. Felix Jonss, Memoir on the Province of Baghdad, Selected from the Records of the Bombay Government, No. XXLIII - New Series, Bombay (1857) pp. 312 - 339; The Directorate General of Civil Affairs, The Results of the 1957 Census, Baghdad (1963) and the Preliminary Results of the 1965 Census, Baghdad (1971).

The decrease of the population of Suq Hammadah and Harah is mainly a result of the construction of new streets and sahahs where most of the original owners, had moved as a consequence of the demolition of their houses.

The increase in the population of Aguliyah and Sayid Abdullah mahallahs is because of the fact that most of their houses became multi-family units. Shiukh mahallah has decreased in population because of a considerable number of its houses have deteriorated which has led to a shift of the population to new areas within Kadhimiyah.

The increase of the population of Karradah al-Sharqiyah is a result of the steady but rapid suburbanization taking place in the area after 1956. The large area of palmgroves and orchards has been replaced by housing, and the traditional section thus became a consolidated nucleus around which houses and other urban developments have mushroomed.

In 1952, the average number of houses per mahallah in central Baghdad was 420, in Kadhimiyah, 609, and in Adhamiyah 416.[8] This put the average inhabitants per house at more than 10, 9.39 and 7.22 respectively. The change in persons/house structure in the surveyed mahallahs during the period 1952 - 1971 is shown in the table below.

Table 16.4: The average number of persons per house in the surveyed mahallahs in 1952 and 1971.

Mahallah	Average no. of persons per house in 1952.		Average No. of persons per house in 1971
	No. of houses	Persons/house	
Suq Hammadah	526	8.27	9.00
Sayid Abdullah	267	8.43	8.56
Aguliyah	187	7.17	11.60
Harah (Adhamiyah)	129	9.40	8.00
Shiukh (Kadhimiyah)	1572	9.29	11.80
Karradah al-Sharqiyah	416	7.64	9.50
Average	516.17	8.37	9.74

Source: A. Susa, Baghdad's Atlas, 1955, Baghdad (1952) pp. 21 - 25; Field work 1971. See Appendix A, Table A.

From this table it appears that the average number of persons per house has declined only in Harah (Adhamiyah), mainly because of the extensive demolitions around the Shrine of Abu Hanifah in the 1960's. In the remaining mahallahs the average number of persons per house has increased, mainly because most houses have become multi-family units. In 1971, the average number of families per house in the surveyed areas was 1.36. However, the average population size and the areas of mahallahs vary widely from one mahallah to another.

In 1965, the new mahallahs were defined by law as containing 1,000 houses each being represented either by an elected or an appointed mukhtar.* Thus in its new concept, the mahallah is used more clearly as an elementary unit of administration. When a mahallah expanded to such an extent that the mukhtar was unable to exercise his duties, the citizens usually applied for the institution of a new mahallah. This application is mostly met by the authorities, which appoint new mukhtar. In the past, the Land Registry Office (al-Tabu), was responsible for defining the boundaries of mahallahs, but since the 1960's the Engineering Department of Amanat al-Asimah carries this responsibility.[10] The new mahallah, however, is quite different from the traditional one in evolution, physical structure and social composition.

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* The first mukhtar was elected in 1835. Mukhtar is the Arab word for 'chosen'. It came from the verb Yakhtaru to choose. The recent duties of the mukhtar were formulated by Municipal Law No. 84 of 1931. The mukhtar is the responsible person speaking on behalf of his mahallah. He informs the authorities about the affairs and security in his mahallah. He also co-operates with various governmental departments to secure increased sanitary and social amenities for his mahallah. He has a social and administrative responsibility, reinforcing the mahallah solidarity as mostly he is a well-known man belongs to an influential family.[9]

One of the most characteristic features in Baghdad's mahallahs was the fighting between them as a result of 'asabiyah' or solidarity. This was as old as urban tribalism and sect development. Like other Arab cities Baghdad has been the milieu for tribal renewal since its foundation.[11] As mentioned before, each mahallah was dominated by one tribe, or people from related tribes or derived from one region, or people belonging to one sect, thus giving each mahallah a characteristic homogeneity. The loyalty of a mahallah inhabitant lies with his family group or with the ethnic or denominational units which share his mahallah. Until recently, the inhabitants of the traditional mahallahs suspected the government's decisions. Mahallah solidarity is a very distinctive social feature, and disputes involving members of two mahallahs will rely upon the unquestioning support of the members of their mahallahs. However, since the second world war, the ordinary Arab citizen has begun to be more loyal to the state. This tendency reflects a change in the socio-economic setting of their society, while increasing the freedom of the individual.

Fighting between mahallahs probably increased after the collapse of the Abbasid Caliphate. During the long politically unstable Ottoman occupation, tribal and ethno-religious disputes were intensified to enable the Ottomans to maintain supremacy. Accordingly, members of each tribe or sect gathered themselves as far as possible in particular mahallahs, to secure their safety either against internal threats by other tribes, i.e. mahallahs, or by external danger, i.e. Bedouin tribal raids (See Part III).

Tribalism was thus introduced into the urban society of Baghdad on almost the same basis as that found in their original tribes in the desert. During the Ottoman occupation the Bedouin component of the

population of Iraq rose to as much as 35 per cent in 1867.[12]

Iraq became a country of three solidarities: Tribalism within and without the cities; Sectarianism, which might overlap various tribes; and religious groups. In many cases Baghdadi tribal mahallahs made agreements with Bedouin tribes in the desert so as not to be attacked by them at a time when almost all cities were frequently attacked by Bedouin warriors.[13]

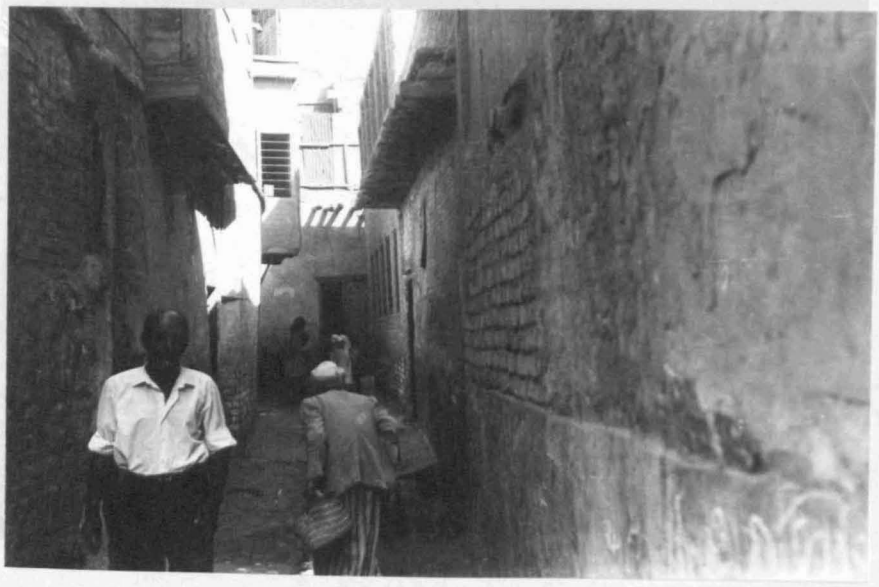
Relatives in one mahallah may quarrel, but in the face of an outside threat they display fundamental cohesion. Furthermore, it was not uncommon to find several mahallahs united under one leadership, as for example al-Azzah, Khan Lawand, Sayid Abdullah and Fadhil mahallahs which were under the leadership of al-Nagib in the 19th century.[14]

Until the 1950's when the government was able to maintain security, jealousies, hatreds and blood feuds were prominent features in Baghdad's life, though since the 1930's the traditional residence pattern gradually disintegrated. In the 1940's, quarells between certain groups inhabiting certain mahallahs extended individuals in the bazaars belonging to the quarelling mahallahs. This turbulent state of the city had influenced the overall pattern of mahallahs in various ways as seen especially in the high density of the use of the ground in the Old Town where crowding together minimized the defensive perimeter.

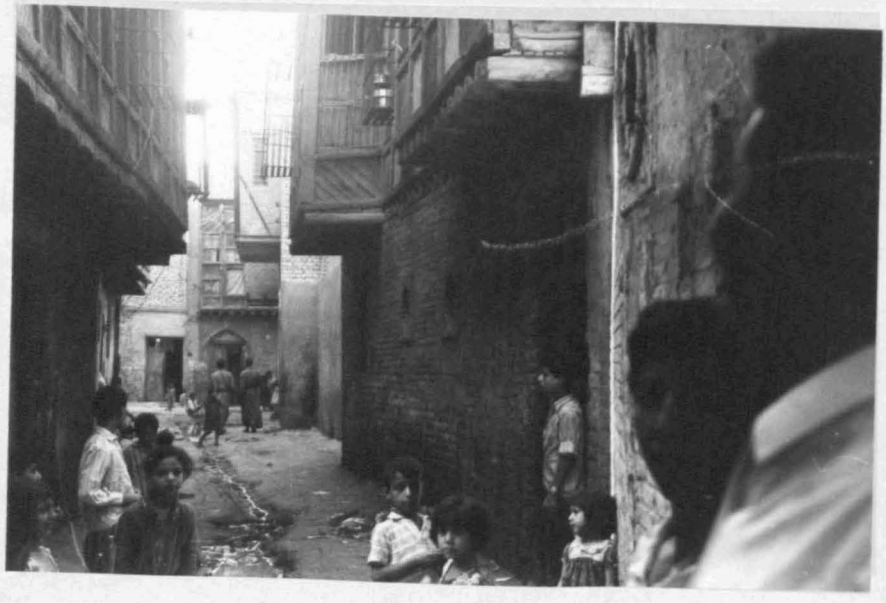
It led also the fortification of some mahallahs by strong gates as well as the agids. The tendency of people to group themselves according to tribe or sect was to protect themselves in a world where no man was truly safe except among his kin.[15] This pattern of grouping was the main reason for the development of agids

Fig. 16.8 Various types of agids in:

(a) Sayid Abdullah Mahallah. (b), (c) Sirajal-Din Mahallah



a.



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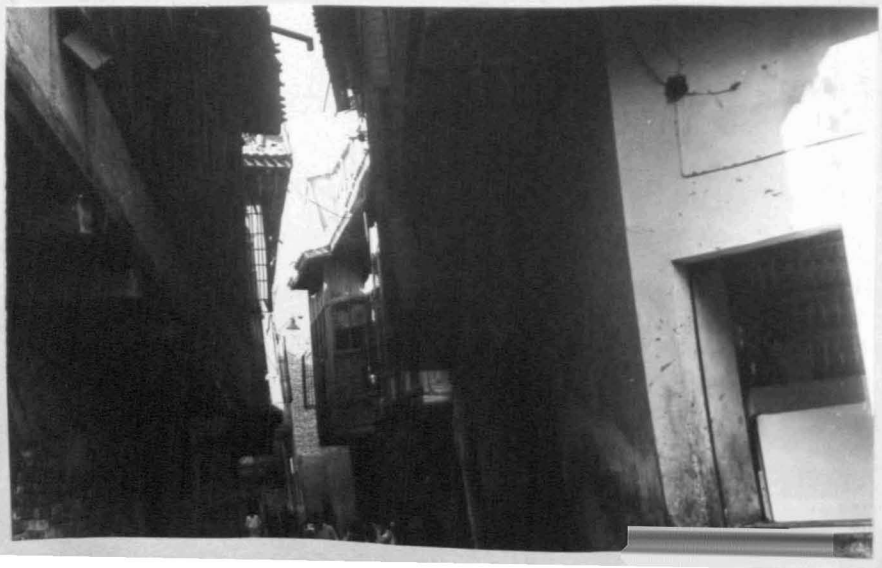
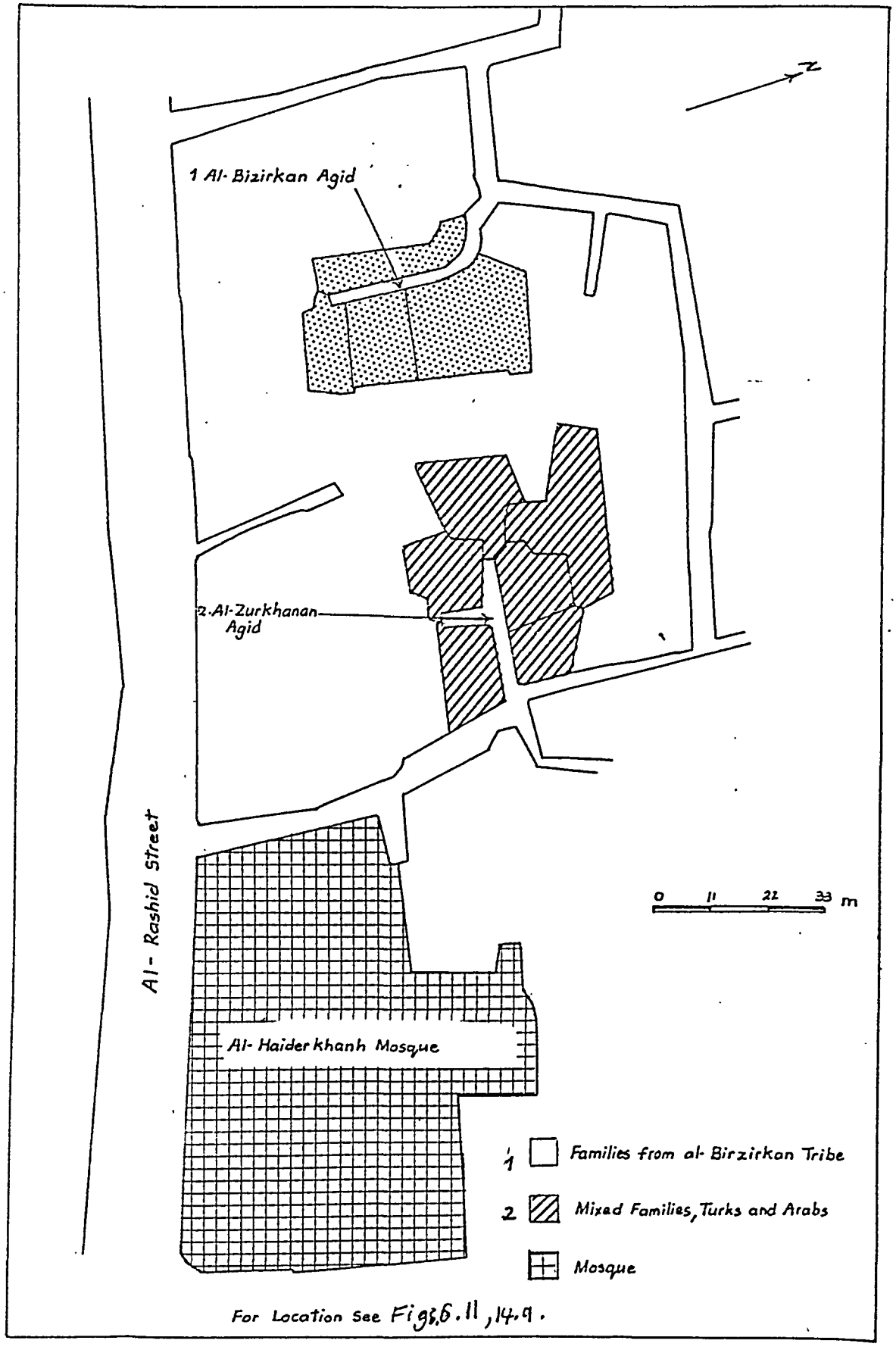


c.

Fig. 16.6 Two Surveyed Agids in al-Haiderkhanah Mahallah (Rusafah)



For Location see Figs. 6.11, 14.9.

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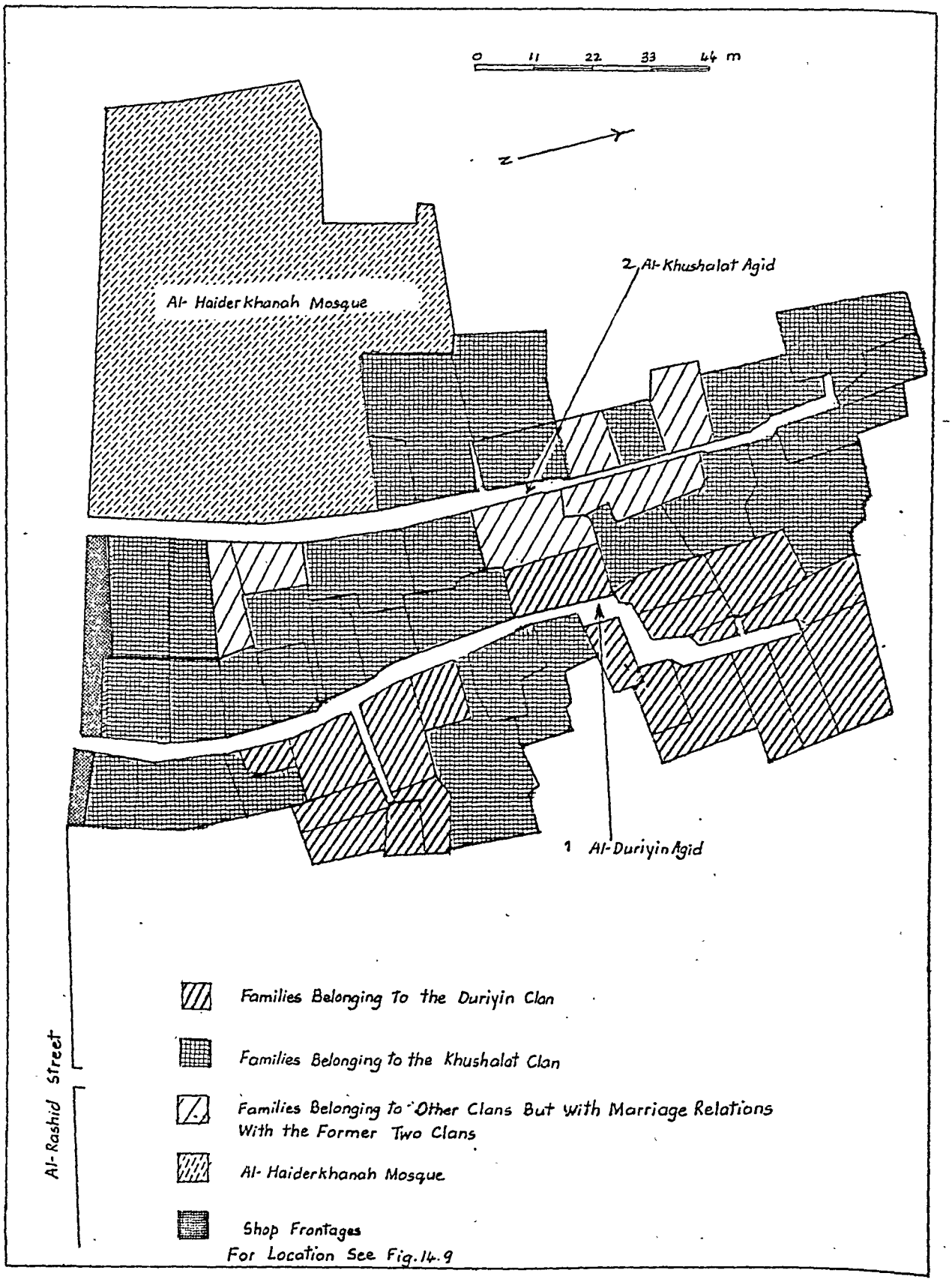
Fig. 16.5 Two Surveyed Agids in the Central Mahallah of Aguliyah (Rusafah)



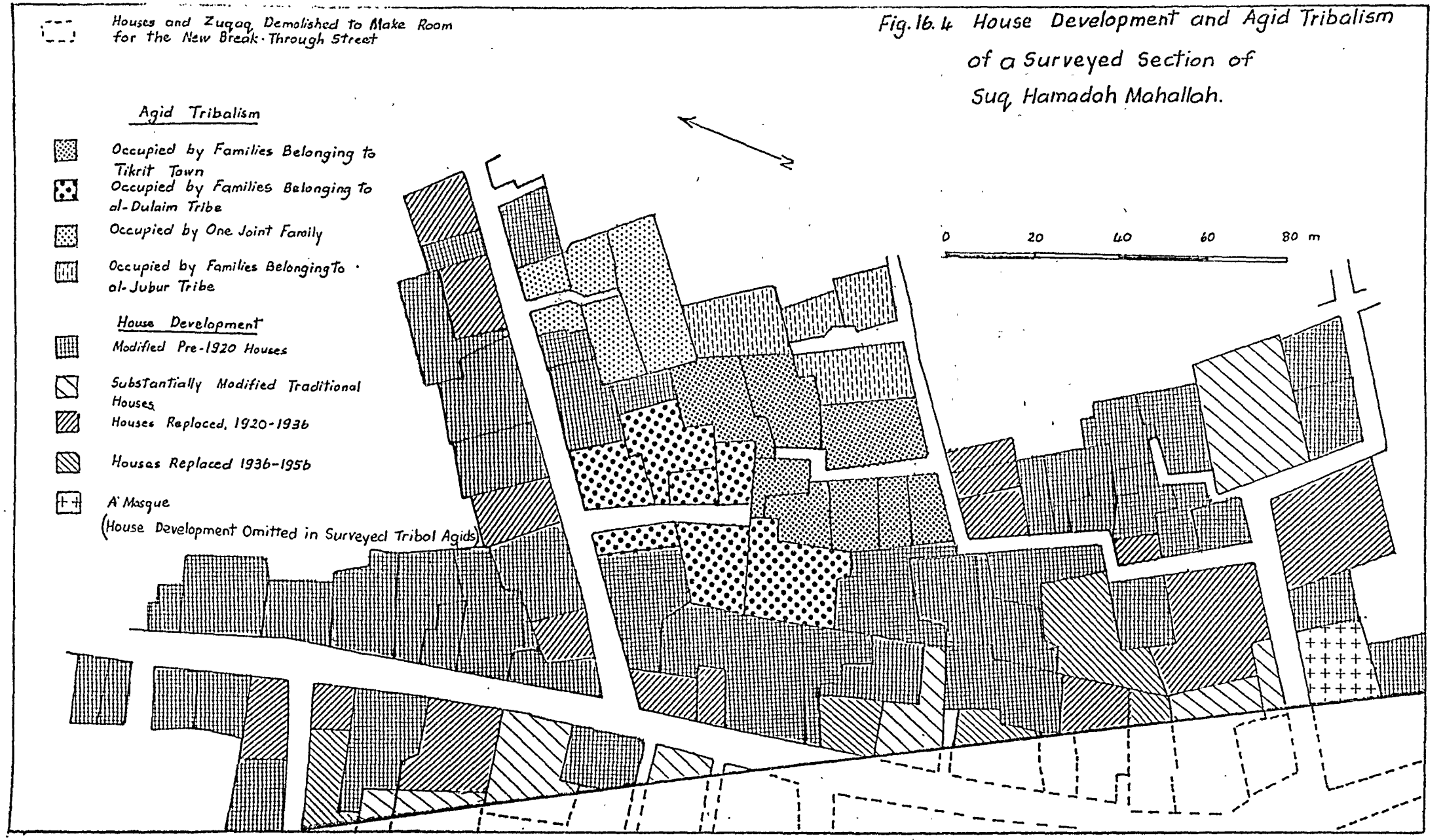


Fig. 16.4 House Development and Agid Tribalism of a Surveyed Section of Suq Hamadah Mahallah.

(blind alleyways) in Baghdad's mahallahs. Agids have developed as one of the most characteristic plan elements in the morphology of the Old Town of Baghdad as indeed of Arab towns in general (Figs. 16.1, 16.3, 16.4, 16.5, 16.6, 16.7, 16.8).

There is no agreement as to how the agid, which is the most recurrent form of access way found in the street system of the traditional mahallahs, originated. For Baghdad agids are as old as the city itself (See Part III). Al-Mansur himself, the founder of the city, ordered the shops to be organized along particular agids and zuqaqs.

Travellers always mention the agids of Baghdad. Niebuhr (1733 - 1815), coming through Baghdad as a member of a Danish scientific delegation, stated that many of Baghdad's side streets were culs-de-sac and closed at night, as was the case in Cairo.[16] However, Baghdad's agids went through a prolonged spontaneous development until they reached their present pattern.

As has been seen in the historical part, Baghdad together with the rest of the country passed through a long turbulent period from 1258 onward, full of social disturbance. The city was frequently taken over by foreigners who were interested neither in the development of the country nor the welfare of its people.

Arab Society has developed the agid as the most characteristic plan element of the Arab towns, and this feature spread to all areas dominated or at least influenced by the Arab and Moslem culture. It is found in areas as Spain and northern India or Turkestan and North Africa.

The simultaneous existence of agids and Arab cultural influence shows that agids did not come by accident. It is true that there was

no preconceived planning idea from which such a pattern evolved,[17] but certainly the prevailing social organization, modes, traditions and needs were the factors responsible for the emergence of such an element.

The clan relationship, as a common connecting point between families inhabiting the houses fronting the agid, is more important than that found in the mahallah as a whole. All families around the same agid or at any rate the majority of them, come from one tribe as proved by the field survey of several agids in various parts of traditional Baghdad (Figs. 16.4 to 16.7). Agids are closed communication systems as they offer only one way in or out at ground level, i.e. access only to one zuqaq.

Until recently agids have attracted the most conservative and wealthy people because of their privacy. As it was unwise to display one's wealth in elaborate and expensive entrance ways most agids had simple gates.

When Arabs occupied such Hellenistic towns as Damascus, a new feature developed in their regular town plans by the consequence of agids, not found in the preceding plans. Thus Damascus today shows three distinctive characteristics: the gridiron Hellenistic town, which has passed through some modification; the Arab town, which also underwent some modernization, but which still retains its Arab flavour; and the modern hybrid Arab-European town outside the former. Karradah al-Sharqiyah (Dakhil) is another old nucleus within Greater Baghdad characterized by agids. The fact that it originated during the later part of the Ottoman occupation shows how recently agids develop in the Baghdad Area. Relative by clan or tribe have grouped themselves as far as possible in particular mahallahs regardless of their occupational structure or income order. Some tribal branches have

segregated further along agids which came to be the courtyard of such a close community, increased seclusion affording more privacy and security. Traditionally strangers cannot very well enter such private spaces and when they do even the children of the agid will stop him and ask his reason for entering. The names of many of these agids suggest the tribal and kinship reason for their development. Since the 1940's however, most of the original dwellers of these agids have scattered throughout the city and have been replaced by people from various origins and of different occupations. With difficulties in tracing the original occupants of selected agids throughout Baghdad, it appeared that it was an absolute rule (except for some central mahallahs) that occupants of each agid should be of one origin, from one tribe, or relatives. The information for this was collected from the Land Registry Office (Tapu), by interviewing some of the original owners who were still alive, and by interviewing some of the old inhabitants of Baghdad, most of whom live at the present time in distant suburbs.

Unfortunately the Tapu land registration usually does not mention the tribe and clan title of the owners, particularly during the Ottoman occupation.

A number of agids were surveyed in the following mahallahs: Aguliyah (Fig. 16.5), Sayid Abdullah (Fig. 16.1), Bu-Mfarrij (Fig. 16.7), Haiderkhanah (Fig. 16.6), Suq al-Jadid, Suq Hamadah (Fig. 16.4), Alawi al-Hillah and Adhamiyah. Aguliyah agid No. 1 (Fig. 16.5) was occupied until the 1930's by Duriyiin (20 families) and Khashalat (15 families.) They had marriage relationships. Agid No. 2 has 24 families of which 18 families were Khushalat.

The gate of this agid was dismantled early in the 1920's. The interviewed persons, some of whom are still living here while the others reside 10 kms oft the west, stated that until the first world war none of the families used to lock their house doors as the main gate of the agid was closed, which shows that each of the residents would trust his relation and neighbour.

In Sayid Abdullah (Figs. 16.1, 16.8a) it was found that originally all the families of agid No. 1 were from al-Bu-Amir tribe. They began to move from the area as late as 1958. In agid No. 2 all the families belonged originally to al-Baiat tribe, but from the early 1930's on some of them have sold their properties, so that now only two of the houses are still inhabited by families from al-Baiat. Agid No. 3 on the other hand, was occupied by families from various tribes and a third of their number came from the tribe of al-Ubaid. Although tribal structure was clearly evident in al-Bu-Mfarrij mahallah (Fig. 16.7) there were here also various ethno-religious minorities, for example agid No. 1 with Jews and families from the Kirwiyah tribe, and agid No. 5 with Jews and families from Mishahdah. This example also shows how Jewish families preferred secluded, remote sites for security. Agids No. 3 and 4 were still completely occupied by families belonging to the tribe of Shammar Tukah, while the houses of agid No. 6 were inhabited by families from Banu-Qais (al-Qaisiyah) sometimes known as Kirwiyah.

In al-Haider Khanah agids were not necessarily inhabited by families of a particular origin, because this central mahallah was chosen by wealthy people of various faiths and also by Turkish officers and officials, as the mahallah lies near the government headquarters. According to the field survey (Fig. 16.6) agid No. 1 was occupied by

families of al-Bizirkan and agid No. 2 by miscellaneous families. The former of these is known as al-Bizirkan after the family of the same name, the latter as al-Zurkhanah (i.e. place where people develop their strength through physical exercises). Three agids were surveyed in Suq al-Jadid mahallah (not illustrated by a plan). They were exclusively occupied by al-Aniyin (from one town, Anah) in agid No. 1, al-Swamrah families (from Samarra) in agid No. 2, and families from al-Ubaid (belonging to Inizah tribe) agid No. 3.

In Suq Hamadah several agids were surveyed (Figs. 16.4). Agid No. 1 was occupied until recently by families from one town (Tikrit), agid No. 2 was originally one property, but now has become 7 plots, the original land having been divided between heirs some of whom are still living in the area. The same process has taken place in agid No. 3. In agid No. 4 all the houses were inhabited by families from al-Jubur tribe. Originally there were just three houses, but with the subsequent growth of the families the houses have more than trebled.

In Alawi al-Hillah (not illustrated by a plan) certain agids were found lined wholly with houses inhabited by families from one tribe, for example the agids of al-Ubaid, al-Mishahdah, Bani Tamim, al-Battah, al-Bu-Akkash etc. However, most of the original inhabitants have moved in recent years from this area which has been enveloped by the commercial centre of Karkh since 1936.

From this survey evidence it appears that there has been an intimate relationship between the social traditions including in particular tribalism and the need for security on one hand, and the development of agids as a ubiquitous plan element on the other. Agids, indeed, were the outcome of social and security needs in a period where technology was primitive and the evolution of cities was unguided. In traditional

mahallahs one can find religious minorities, such as Christians, Sabeans and Jews who have shielded themselves in their own mahallahs regardless of their tribal or national background. In Baghdad these religious minorities traditionally occupied some of the central mahallahs to maximize protection. Agid al-Nassara, the 'Christian Quarter' and Mahallat al-Yahud, the 'Jewish Quarter' thus are well-defined mahallahs (See Chapter 12). Also some mahallahs developed along ethnic or racial lines. Thus we find Agid al-Kurd (the Kurdish Quarter) and Agid al-Fwailiyah, the 'Persian' or 'Persian Kurds' Quarter.

Only in few central mahallahs near al-Sarai, did tribal, ethnic or religious factors form the underlying principle of the inhabitants spatial grouping. Collectively governors (walis), some influential families, Arabs, Turks, and Jews were inhabitants of these mahallahs, maintaining their safety by proximity to government headquarters. From above it is clear that Baghdad's traditional mahallahs have distinctive social types according to the particular social grouping in individual agids, e.g. monophyletic (single-tribe) agids, polyethnic (Arab, Christian and Jews) agids, agids with dominant regional characteristics etc. The very existence and distribution pattern of such types do in fact tell the story of change to which the Old Town has become subject, and merit a careful study in the field as a major and important topic to uncover the close relationship between the social organizations and the resulting typical morphological features of the Arab town.

At the present time, and in spite of the vast physical expansion of the city in the last two decades, the population growth and the rehabilitation of the inhabitants, Baghdad is still a city with distinct homogeneous residential areas, bearing in mind that as Iraq's

capital Baghdad is the city with the highest degree of social and cultural heterogeneity. Unfortunately, the censuses of Iraq do not indicate the religious affiliation of the inhabitants, thus it is impossible to trace the spatial pattern of the inhabitants according to denominations. But generally speaking and on the evidence of field observation Arab Sunnahs concentrate mainly in particular parts of the West Side and Adhamiyah, and Shiahs in certain mahallahs of old Baghdad, Karradah al-Sharqiyah, al-Shulah, al-Thawrah, Kadhimiyah, Baiya , Kraiat, and others. Christians and Jews are concentrated in particular parts of Rusafah, Camp al-Arman, Karradat Mariyam, Durah Tel-Muhammad and others, In 1957, more than 50 per cent of the 67,287 Christians i.e. 8 per cent of the total population of Baghdad, were living in these areas. In 1965, the total number of Christians was 169,634, of whom 20.634 or12.25 per cent lived in Karkh, and 148,850 or 87.75 per cent in Rusafah. 50.92 per cent of the Christians in Rusafah were living in 9 distinct mahallahs, whereas 40.89 per cent of the Christians in al-Karkh were concentrated in five particular mahallahs. Al-Battawiin alone houses 30.5 per cent of all the Christians in the city.

Jews, on the other hand left the city and the country after 1948 altogether, following the international exodus of Jews to Palestine. Their houses were soon occupied by migrants, mainly Christians from the north and Shiahs from the south. By 1957 only 3,614 Jews i.e. o,4 per cent of the population, remained in Baghdad. Of these, more than 75 per cent lived in the Christian-dominated mahallahs on the East Side. By 1965, the number of Jews had fallen to 2,644 persons, 91.57 per cent of them living on the East Side.

Since the medieval period Rusafah has been the favourite side for both Christians and Jews. At present, the traditional central mahallahs of Christians are preferred by the new Christian migrants from the north. The most heterogeneous part in Baghdad is thus the area located between al-Ahrar Bridge and al-Jundi al-Majhul (the Unknown Soldier monument). The wealthy Christian families in the central area were some of the first to leave their central mahallahs to the south of Rusafah as evidenced by the 1957 and 1965 censuses as well as by the field survey. In 1957, 49 per cent of the Christians were in Battawiin, whereas by 1965 the percentage had dropped to 30.5. However, although the percentage has decreased, the absolute number has increased from 32,970 to 52,643. Most of them are living in sub-divided houses.[18]

It is interesting to note that fighting, if at all, occurred rarely between Christian mahallahs, compared with Moslem mahallahs. Details of fighting between Moslem Mahallahs has been recorded by historians as far back as the Abbasid period.

A considerable number of marriages still take place between inhabitants of each mahallah. Endogamy is still important not only in the traditional mahallahs but also in the modern suburbs.

46.08 per cent of the interviewees in traditional mahallahs married relatives, 18.6 per cent of them from the same mahallah and 35.2 per cent married non-relatives. On the other hand 49.3% of the total number of interviewees in all the surveyed mahallahs married relatives, 12.3% from the same mahallah and 38.4% married non-relatives[19] (See Chapter 10)

The rather small percentage of people married to women from the same mahallah results perhaps from the fact that a high percentage of

the original inhabitants have moved to the new suburbs, therefore possibly new residents have not had enough time to get to know each other very well to establish marital relationships. The percentage fell considerably in mahallahs of the second morphological phase, because the majority of the interviewed families were Christians for most of whom the tribal or kindship tradition is less important. None of the Christians had married spouses from their own mahallah because the majority of them (82.76 per cent) had settled in these mahallahs less than five years ago. They do not yet know each other, although they deliberately chose these mahallahs. The high percentage (more than 63per cent) of marriages between related families in the suburbs which developed after 1956, and also in the suburbs of the third morphological phase, suggests a strong influence of social tradition and kinship and indicates also that, although the new suburbs came into being as western patterns, the society living in them differs from the west.

Customary Arab practice in the choice of marriage partners, then, is still of great importance in the life of the Baghdadi inhabitant, in the modern European-style suburbs as much as in the traditional mahallahs. So far the economic ranking of the population in the modern suburbs seems to have been unable to break the Arab tradition of lineage. However, the post-1956 suburbs include al-Thawrah, a settlement almost wholly of migrants. 96.55 per cent of its interviewed families were fallahin migrants who of course brought their rural and tribal traditions with them. The new suburbs of Baghdad are thus not necessarily the best or the most expensive. They are, in many cases, the slum equivalent of the central areas.

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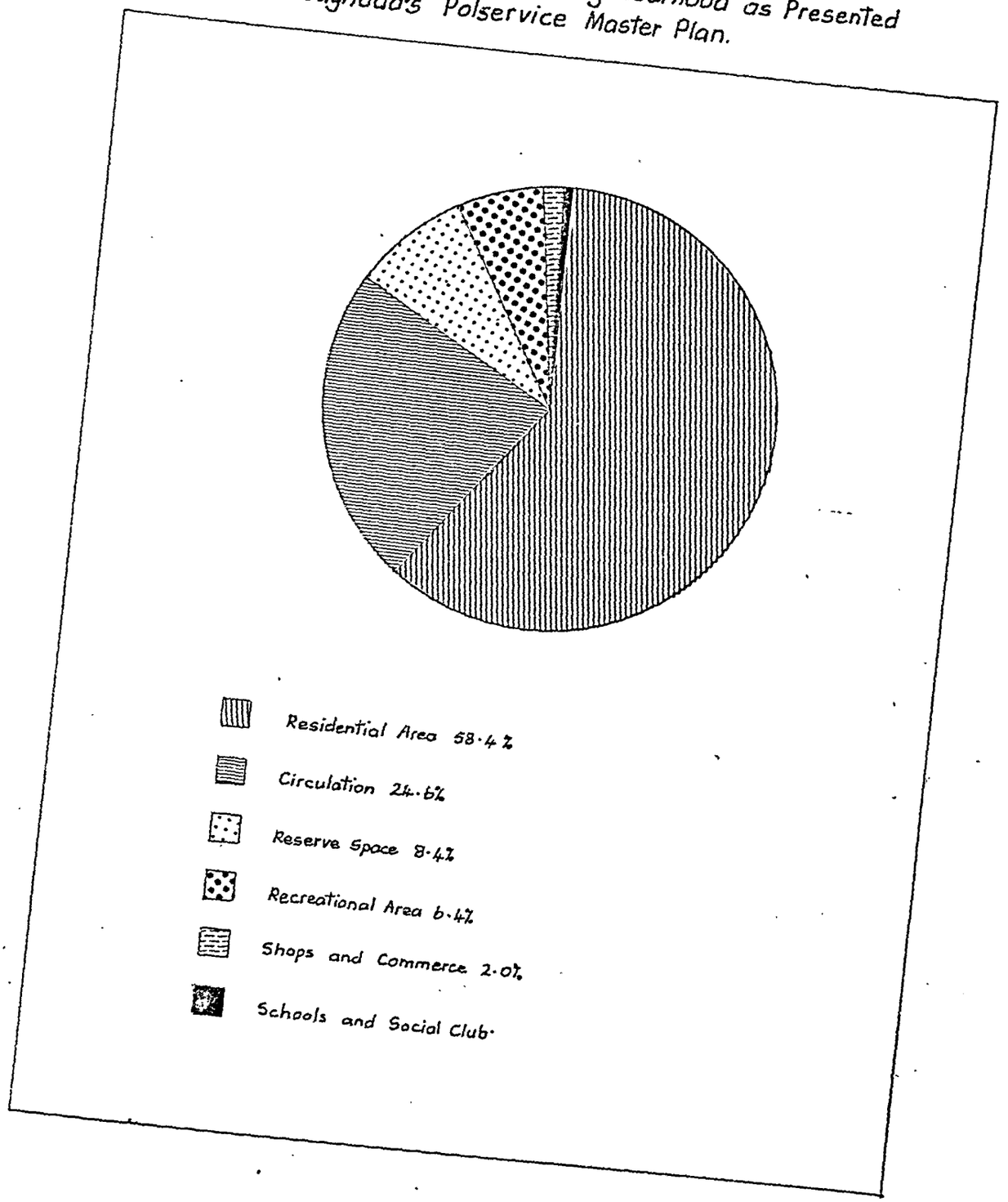
Fig. 16.9 Space Standards For Neighbourhood as Presented in Baghdad's Polservice Master Plan.



As already seen, defence was one of the main considerations promoting the compactness of the traditional mahallahs. This together with the encroachment of individuals, the absence of town planning, the prevailing modes of transport, the social tradition of family privacy, and the climate, had led to the narrowing and twisting of the streets in Baghdad's traditional mahallahs. The widest streets were the bazaars.

Movement on foot in the case of low-income people, on donkeys and camel in the case of middle class riders and bulk goods, or horses in the case of wealthy individuals, necessitated neither wide streets nor elaborate traffic separation. Accordingly, relatively, narrow access ways or pathways between buildings was all that was needed for circulation in the traditional mahallahs. Zuqaqs thus had a limited function compared with the modern multi-functional streets and in the traditional Baghdadi mahallahs occupy less than 12 per cent of the total mahallah area, compared with the courtyards of the traditional houses which occupy at least 24 per cent. The space standards for modern neighbourhoods suggested by the Polservice Master Plan of Baghdad are shown in Fig. 16.9.

A distinct morphological element in the street system of the traditional mahallah is the sahah (square). Most of Baghdad's mahallahs have one or more such squares. Just as zuqaqs have their own hierarchy so sahahs have theirs. Starting from the lowest grade, they are the courtyard of the traditional house, the agid or tertiary sahah, the sub-mahallah or secondary sahah, and the main or primary sahah of the mahallah (Figs. 16.1, 16.3). The inhabitants of a traditional mahallah passes through various views. In the first two, his courtyard and the tertiary zuqaq or shah, he is protected by two structural envelopes before

he penetrates to the public world of the main zuqaq, the primary sahah, the mosque or the bazaar. The behaviour of inhabitants is very much related to the particular stretch of the spatial continuum he happens to be, in accordance with the hierarchy of zuqaqs and sahahs and its differential degrees of privacy.

Sahahs in Baghdad traditional mahallahs are part of the living space of the surrounding families. Not only do they satisfy man's material comfort but should give him a spiritual and aesthetic satisfaction derived from living among them. Sahahs of various sizes invariably interrupt the track of a zuqaq, relieving the narrowness of the latter at particular points.

The agid or tertiary sahah representing the second degree of privacy is mainly used by old persons and women carrying children not yet able to go and play themselves. These women meet in these agids to talk and gossip. Naturally most if not all of the inhabitants on such a minor sahah or agid belong to one clan either by consanguinity or by affinity. From this type of place strangersare wholly excluded.

Agids act as private open spaces in the traditional mahallahs where are no public parks. This plan element shows a strongly in-built kinship and ethno-religious significance accordant with the needs of traditional society. A striking feature is its intimate human scale. Agids were spaces between buildings left for the purpose of access to houses. In their narrowness they show introvert planning suiting needs of the resident group.

Secondly sahahs have developed mostly where either two winding zuqaqs meet, or where a zuqaq widens. A stranger could hardly predict the position of such a sahah when walking along a zuqaq. He could

pass through the main zuqaq and under shanashil, with several twists and turns and emerge suddenly into a brightly-lit sahah filled with youngesters, children and men, mostly old, sitting in the sun in winter and under shanashil in summer, or people spinning wool.

The primary sahah serves the whole mahallah or district and occupies a strategic site where several zuqaqs meet. It is the common meeting place on social occasions and religious festivals, and a recreational space, too, for all the members of the mahallah.

Celebration of the birth of a son is restricted to women only. The function takes place within the small groups of mahallah families and is a major festive occasion for women of low class. It takes place within the private intimate space of the community, either in the secondary or the primary sahah. A wedding procession is one of the intimate sahah functions, an occasion of enjoyment not only for the family but for the community as a whole. In the 20th century, these sahahs have been favourite spaces for political gatherings and uprisings against the authorities. Also, the primary sahahs in the Shiah mahallahs were the places where the Shiah commemorate al-Husain, the Martyr Imam.

The importance of sahahs in Baghdad is expressed by the fact that, although they came into being without planning procedure, no inhabitant has encroached upon them since the whole town is making use of them. In addition migrants, whether from the north or the south, have not tried to squat in these sahahs. Like zuqaqs sahahs have residential functions, but for the primary and, to a less extent, the secondary sahahs, service and commercial activities are also evident as shown by the presence of gahwahs, public baths, joiner's shops, general retail shops, grocers and perhaps goldsmiths. Street-

vendors frequent such spaces, where they can lure passers-by with tempting displays of fruit, ice-cream, soft drinks, nuts, etc.

It is worth remembering when planning modern squares that mahallah sahahs have necessary human functions. Open spaces in the modern areas of Baghdad are void of any collective function as their imported formality belongs to an alien climate and social context. The modern sahahs have greatly contributed to the unnecessary physical expansion of the city. Their horizontal scale is not related to any associated vertical elements, and the feeling of enclosure is lost. People were simply not considered, as these squares were laid out mainly for the sake of motor vehicles and commercial buildings.

As in the past, zuqaq traffic in those traditional mahallahs of Baghdad that have not been affected by modern break-through streets has continued to be exclusively pedestrian. Only very recently cars can be seen passing through some of these mahallahs following newly-built roads, whereas the modern suburbs have been designed to consider only vehicular traffic and ignoring the human scale in the details of their street layout.

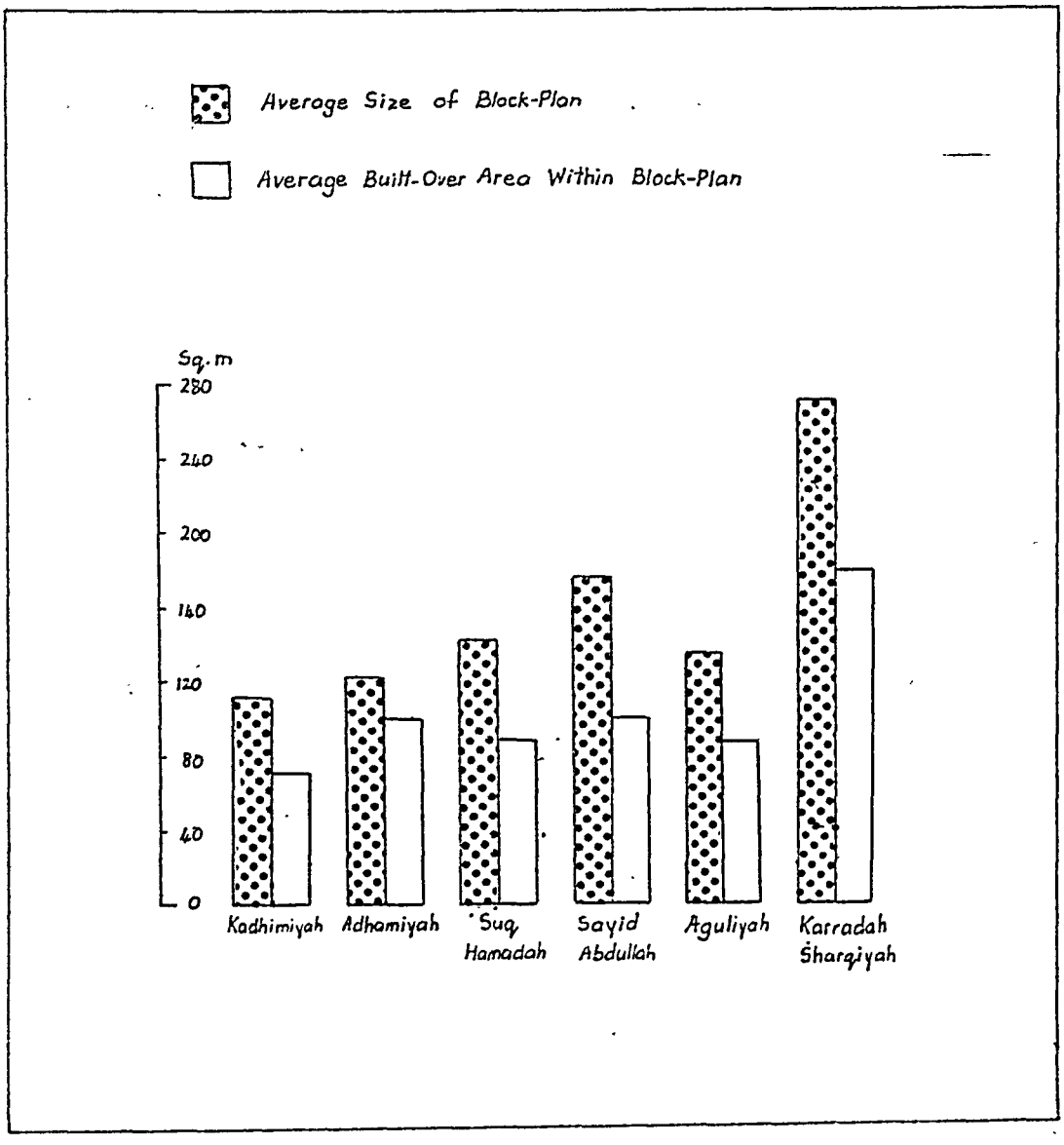
One of the most characteristic features in the plan of the traditional mahallah is the irregularity of the zuqaqs and house plots (Fig. 16.1) (See Chapter 6). It is rare to find Baghdadi houses built on regular rectangular plots of land. The continuous encroachment of owners upon the street spaces together with the effect of the Islamic law of inheritance have precipitated this distinctive morphological feature throughout all Arab towns. Many houses or plots were subsequently subdivided between heirs. According to Moslem law men have the right to inherit twice as much as women. The original plot thus has been changed in the majority of cases,

resulting in the juxtaposition of [illegible]plots of very different sizes.

It is almost impossible to find two contiguous geometrically regular plots. This gave the traditional mahallah its spontaneously informal character and in the end has influenced the overall pattern of the city. As in most Arab towns it is difficult to find five houses on a straight line in Baghdad's zuqaqs. Commonly, any continuation of the straight line of a zuqaq is found to be suddenly and frequently interrupted by encroaching houses, usually those owned by influential inhabitants. This gives the zuqaqs of the Old Town the characteristic feature which most of them have, namely varied width. Up to 1934, there were no by laws controlling the arrangement of houses, minimum street widths, maximum house frontages and structural dimensions, and this has led to the spontaneous evolution of the traditional part of the city.

During the long Ottoman occupation, owners retained the preferential right to the zuqaq, which they were free to exercise so long as they did not completely block traffic. As a subject for legal treatment this was a matter for ex-post-facto legal opinion, not of prior legal specification, in great contrast to the situation in European towns. Islamic law would not interfere except when the encroachments affected the right of others.[20] Several old Baghdadis have stated that the wali, his friends and other influential inhabitants were among the first to encroach upon the public way. Wealthy influential people as well as individuals from strong tribes were habitually encroaching upon the zuqaqs. Though theoretically it was illegal, no objection was raised against such encroachment. People did not object as long as they could pass each other. At the same time the government had no objection as there were no complaints from the inhabitants. Here it has to be remembered that an individual can claim the ownership of any piece of

Fig.16.10 The Average Size of Block-Plan and Building Coverage of Houses in the Traditional Mahallahs



land as long as he can ensure its usage for a particular period of time. This is applicable in both rural and urban areas. Consequently the zuqaqs were always undergoing processes of narrowing and twisting.

One of the most characteristic features in the traditional mahallah is the limited size of the plots of houses. This was obvious in the surveyed areas, as shown in the table below.

Table 16.5: The average size of block-plan and building coverage within each block-plan (Fig. 16.10)

Mahallah	Average size of block-plan (sq. m.)	Average building coverage within each block-plan (sq. m.)
Suq Hamadah	154.20	88.50
Sayid Abdullah	172.00	95.56
Aguliyah	134.00	88.00
Harah (Adhamiyah)	126.67	102.78
Shiukh (Kadhimiyah)	112.80	77.00
Karradah al-Sharqiyah	259.58	176.67
Average	159.88	104.75

Source: Fieldwork 1971, Tables A, O^a, O^c.

If one excludes Karradah al-Sharqiyah, which has various types of houses other than traditional, then the average size of the building coverage of the traditional house will be 90.3 sq. m. This puts the average size of the rooms at 23.95 sq. m. Therefore the average size of building coverage per person, is 2.58 sq. m. The average area of the block-plan per person is 16.44 sq. m. This is much lower than the average area per person in the advanced countries, which may exceed 25 sq. m.

Central Mahallah Development:

Almost all traditional Baghdadi mahallahs, in the Old Town, have undergone, or are still undergoing, a process of social and physical change which is cyclic in nature. Its results have been more obvious socially than physically. As a morphological complex the mahallah has survived in its pattern, while its inhabitants have changed radically. This has been one of the findings of the field survey in six of the traditional mahallahs.

About 50 per cent of the surveyed families in these mahallahs were low-income newcomers, replacing the original families. Complete social replacement has in fact taken place in Aguliyah, which is located within the business core of the city. Most of its houses have failed to retain the residential use for which they were designed, workshops, warehousing and other businesses becoming their major functions. The form of the houses has undergone slight internal modification to meet the new requirements. In Kadhimiyah the bw percentage of rented houses (17.65) indicates two facts, viz. that most of these families are poor, and that they are Shiahs who prefer not to be far from al-Kadhim Shrine. The newcomers, especially in the central mahallahs, have a highly diverse socio-cultural background in contrast to the former social homogeneity of these mahallahs.

Traditional mahallahs have passed through three phases of devebpment. Firstly there is a long historical phase of stability in the sense that during this period ending with the Second World War mahallahs kept essentially the social and physical characteristics of traditional Arab urban society. In this phase the mahallah was homogeneous in terms of ethno-social characteristics, but heterogeneous in terms of income and class. Secondly, there came a

very short degradation phase lasting from the Second World War to 1956. During this period, signs of physical and social blight appeared. Landowners and some others of the original inhabitants began to move out, stimulated by the increased security of the open country after the Bedouin tribes had been brought under control by the government. Consequently lower income groups started to move to the central mahallahs, and this complementary movement correlated the incipient suburbanization phase of the city. A simultaneous filtering process by middle-class families began to take place in some of the high-class housing areas, though less in volume than the movement of poor-class families to the central mahallahs. This can be seen in Ataifiyah, a middle-class locality, in which 60 per cent of the original families have left for better, more peripherally located localities.

Thirdly, there has been a replacement or economically social levelling phase coming after the relative economic advancement of Iraq in the post-war period, mainly owing to the increase in oil royalties, the socio-economic progress of society, the flood control of al-Rafidain, and the improvement in transportation facilities.

During this phase the mahallah inhabitants became heterogeneous in ethno-social respects but homogeneous with respect to income.

A huge number of migrants flocked to the city during this period, housing themselves round the central area in miserable health and sanitary conditions. Many of the original owners in the traditional mahallahs sold their properties, mostly to speculators who have since begun to play havoc with the development of the city. Speculators let traditional houses as tenements, each to be occupied by more than one family thus increasing the population density of some of the old mahallahs.

Fig. 16.4 shows the result of building modification, restoration and replacement in some samples of primary and secondary zuqaqs in Suq Hamadah Mahallah in Karkh. The total number of the surveyed houses was 75. 7 of them, i.e. 9.3 per cent were substantially modified, 16 or 21.3 per cent were replaced by new houses before 1936, 5 or 6.7 per cent were replaced by new houses between 1936 and 1956, and the remaining 47 or 62.7 per cent continued without essential alteration as traditional Arab courtyard houses.
Fig. 16.1 on the other hand shows that 86 i.e. 50.2 per cent of the 171 houses surveyed in Sayid Abdullah Mahallah in Rusafah were of the traditional Arab courtyard type, 12 houses i.e. 7.02 per cent were replacements of the third morphological phase (1920 - 1936), 8 i.e. 4.68 per cent were built in the fourth morphological phase (1936 - 1956) and 19 houses i.e. 11.11 per cent were built after 1956 again replacing deteriorated traditional courtyard houses, the remaining houses are modified traditional houses. Furthermore, the surveyed houses in the traditional mahallahs indicate that most houses had deteriorated or required some restoration. This is shown in table 16.6.

Table 16.6: House restoration in traditional mahallahs.

Mahallah	% of houses restored:		
	once	twice	three times
Suq Hamadah	10.00	10.00	10.00
Sayid Abdullah	11.11	33.33	33.33
Aguliyah	20.00	40.00	40.00
Harah (Adhamiyah)	33.33	22.22	44.44
Shiukh (Kadhimiyah)	-	20.00	40.00
Karradah al-Sharqiyah	27.27	18.18	63.64
Average	26.95	23.96	38.57

Source: Fieldwork 1971, See Appendix A, Table T.

More than 62 per cent of the surveyed houses had to be restored two or three times, reflecting their physical state. The authorities should complete the sewage system in these traditional areas, as the absence of a sewage system has helped to accelerate the process of physical degradation.

The impact of westernization mainly in the present century has added to the weakening of the mahallah concept, among other traditional elements, such as guilds. This came through the introduction of modern industry and the expansion of commerce and banking. Earlier this century Europeans developed new quarters outside the compact Old Town, attracting wealthy Christians and the more progressive Arab families. In addition, Europeans tried to modernize some of the old streets. Several modern streets and public transport systems were driven through the traditional centres of Baghdad, disrupting the cohesion of some mahallahs. The exodus of the original inhabitants from many of Baghdad's old mahallahs, population growth and the increase of job opportunities in the centre have disrupted the homogeneity of some of the central mahallahs.[21] Further, the recent wave of suburbanization has affected the traditional mahallah more than the tearing down of the traditional building fabric. The construction of the break-through streets was achieved by 'fiat and tremendous cost', both financially and in terms of unnecessary cultural damage. Creating enough room for greatly increased mechanical transport it has accelerated the residential movement to the new suburbs, a phenomenon also observed in Mosul, Alleppo, Shiraz and most Arab towns.[22]

Since the Second World War, the Arab individual has begun to be at variance with the long standing principles of his traditional

society and the sudden emergence of the new morphological forms introduced for his use. Indeed most Arabs in Baghdad do not know yet whether they should admire or despise the western forms. However, they feel the indispensibility of having foreign assistance to reach a better technological standard, but they are, justly, afraid of losing their cultural and social legacy and principles.

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CHAPTER 17

The Mosque as a Functional, Architectural and Morphological Element in Baghdad's Townscape.

In a typical Arab city, the influence of Islam is everywhere in evidence. This is observed in the old and modern parts of the city although it is more distinct in the former. The importance of Islam in the socio-cultural life of the Arab city can be seen in the large number of mosques in any city throughout the centuries.

Islam as well as other religions, is of great importance in the function as well as the physical structure of urban settlement, as expressed in the variety of religious buildings that have greatly influenced the morphology of Arab towns. These prominent buildings have symbolized the spiritual life of the inhabitants in arches, minarets, domes and spacious courtyards. Islam being a religion with urban orientation, the Friday mosque must be built in a permanent settlement. The development of Friday Mosques required permanent settlement with a community of at least forty legally responsible men to be present, so as to make the ceremony of community prayer at noon on Fridays valid;[1] though Islam considers the prayer of an individual on any undefiled piece of land also valid.

During the Caliphate, after the death of al-Nabi, the prophet, the consensus of opinion of religious leaders was that a permanent construction with roof and walls was the only place where Friday noon prayers should be held. Thus the new religion proclaimed by Muhammad, himself born into the important urban community of Mecca, remained intimately connected with urban life and urban settlements. Since then the physiognomy of Arab urban settlements has been dominated by religious land use elements mainly represented by mosques. Baghdad's religious buildings fall into a number of categories - Jamis, (Friday mosques),

Fig. 17.3 Al-Kadhim Shrine (Kadhimiyah)

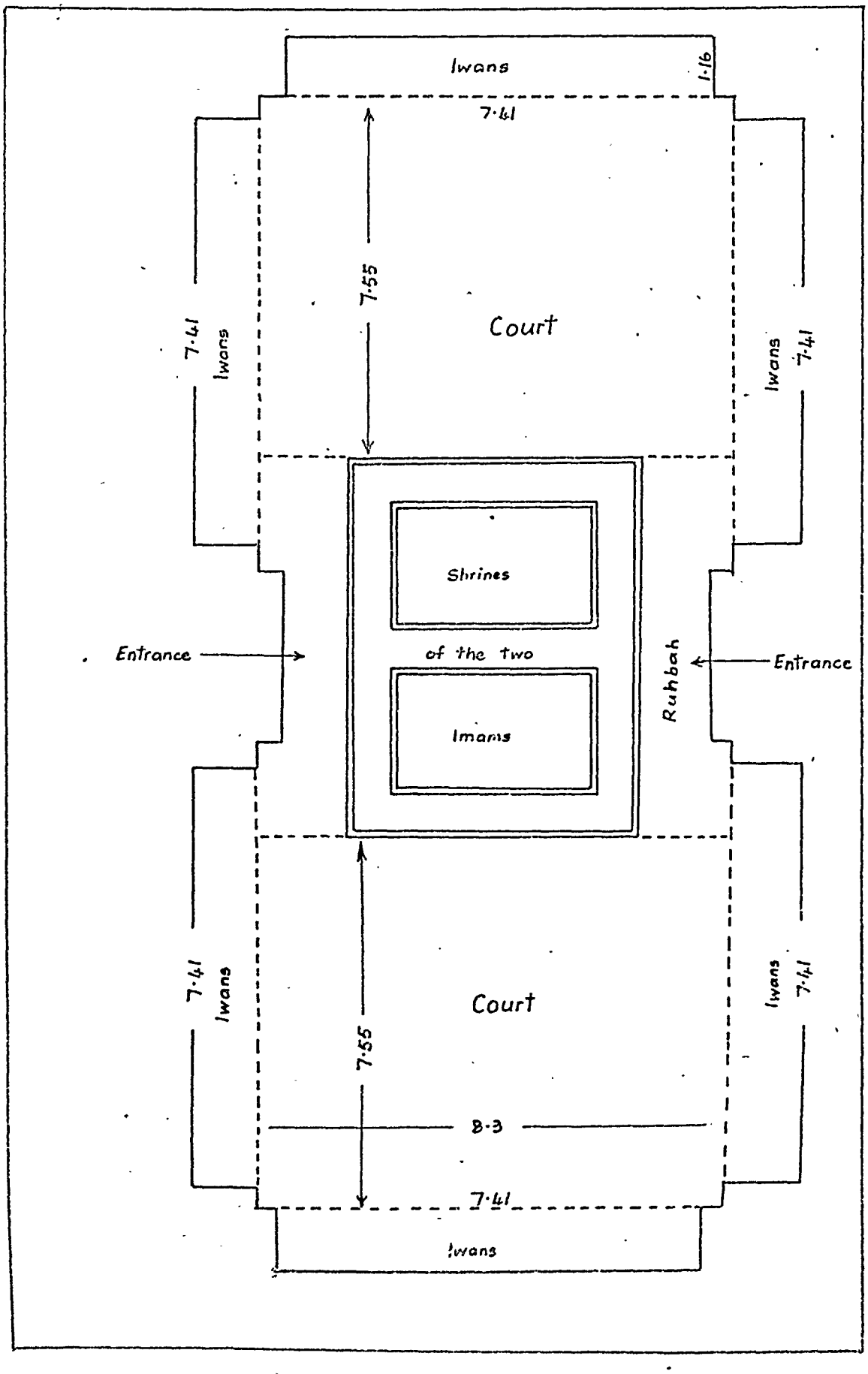

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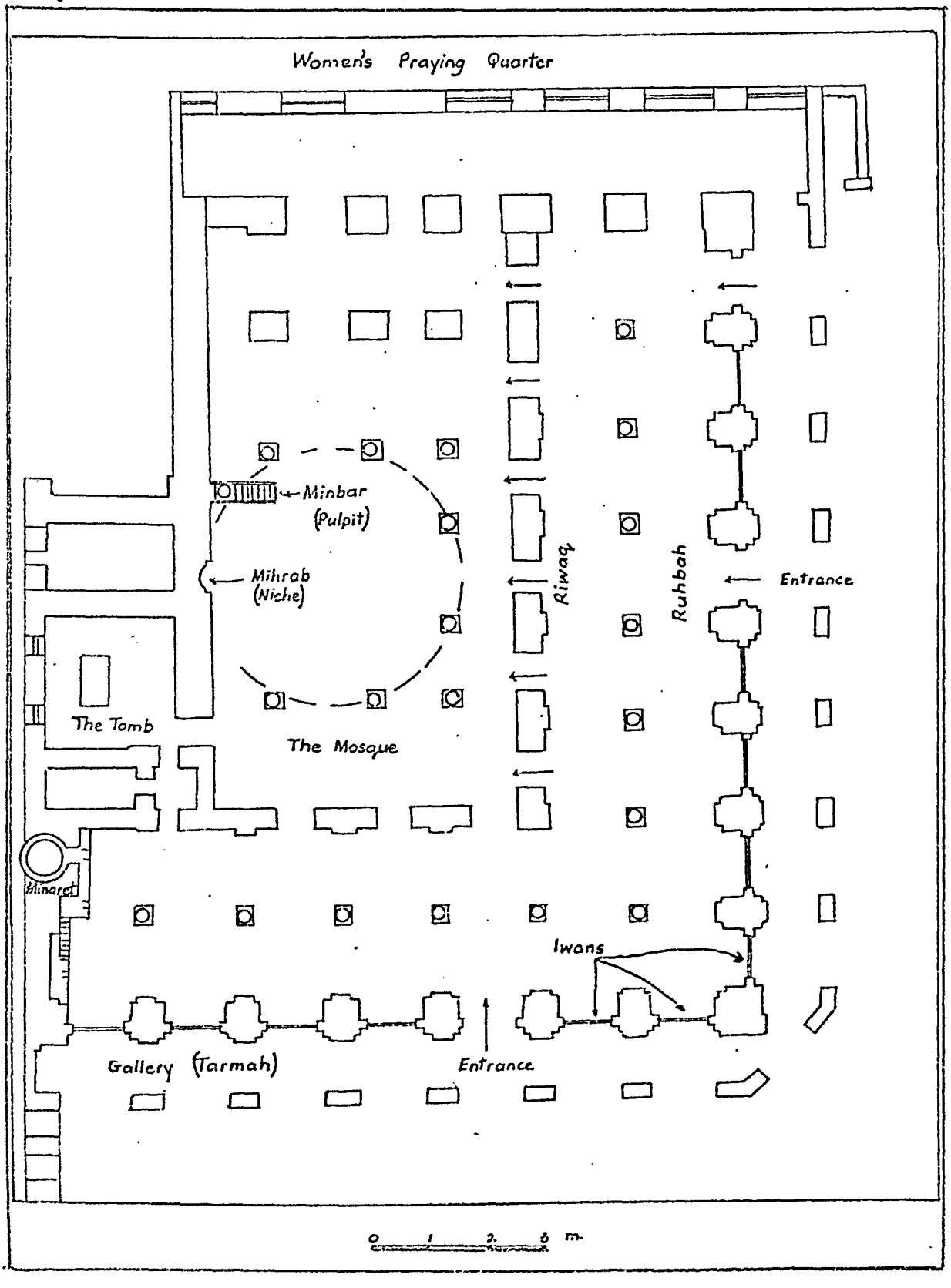
Fig17.2 Abu Hanifah Shrine (Tomb and Mosque)



masjids (ordinary mosques), husainiyahs (Shiah mosques), madrasahs (religious schools), tombs, shrines and recently, various types of buildings built by al-Awqaf (The Religious Endowment), the main religious authority in the city. The mosque (Bait Allah), (the House of God) is the most recurrent form of religious building in Baghdad.

Al-Awqaf Department distinguishes three categories of mosques, primary, secondary and tertiary, based on functional and administrative considerations. The first is the Friday mosque (Jami) serving perhaps the whole city and having therefore always a distinctly central location as a key feature of the moslem town.[2]

A Friday mosque has an imam (a religious teacher) a muadhin (caller to prayer), mumajid (exalter) chanting the Quran before sun rise, a Quran reader and a servant. This means that each grand mosque should employ at least six persons. However, there are mosques such as al-Qailani, Abu Hanifah and al-Kadhim which employ more than that (Figs. 17.1, 17.2, 17.3, 5.11b). These mosques are used for ordinary prayer as well as being a congregational place for Friday midday prayer, feasts and other religious festivals.

The secondary mosque (masjid) is used for ordinary prayers, and may serve a wider area than its own mahallah. Each secondary mosque has an imam, a muadhin and a servant, i.e. not less than three employees.

Finally the tertiary mosques (small masjids) are in fact small chapels, oratories and tombs venerated by the immediately surrounding mahallah. It just has an imam. People from the local area co-operate in cleaning and sometimes even furnishing it. An imam is required for any group of worshippers greater than two.

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Fig. 17.4

a. Mosques are always civic and physical focal points (al-Ahmadiyah Mosque)

b. Al-Khulafa Mosque. The minaret is original but the rest of the mosque has been rebuilt recently.

The number of jamis and masjids is determined by the size of settlement and the number of pious wealthy people, though the number of mosques in an area might be indicative only of the existence of many generous, pious men rather than of the density of population.[3] In Baghdad there are several cases where mosques emerged in non-residential areas merely because of the will of their builder. During the times of the Prophet, it seems that it was preferable to restrict to one jami as far as possible to group the people in one area, in which al-khatib (the preacher) could discharge the political, administrative, social and religious functions. This perhaps was one of the reasons behind the characteristic compactness of the traditional Arab town. However, with the physical expansion of urban settlements and the growth in numbers of moslems, an increase in the number of mosques became inevitable.

The mosque is the focal point of the civic, socio-religious and architectural layout of the Islamic town (Fig. 17.4). Central grand mosques have always played a major part in the orientation of both the city gates and the roads leading from them. Mosques can thus indicate the growth trend of the city and its overall population distribution.

The centrality of the mosque was ensured by the Quran and Tradition (Hadith) which suggest that it is desirable not to build mosques inside cemeteries which are peripherally located.[4] This perhaps was to strengthen the link between God and man because a man's thought could easily be cut off from God whilst praying beside a grave.

Baghdad has specific religious importance in the Islamic world because of the existence of several tombs and shrines associated with both Shiahs and Sunnah religious leaders. Devotees from all over the

Moslem world frequently visit Kadhimiyah, Adhamiyah, the Old Town of Baghdad and Samarra in Baghdad Liwa. These places are centres of pilgrimage for Sunnahs and Shiahs from all over the world.

The importance of Baghdad and other holy towns for Persians is obvious. On religious occasions there is an average pilgrim traffic of 5,000 to 7,000 visitors per day along the highway between Baghdad and Tehran. However, pilgrimage from Persia is closely related to political relations between the two countries.[5]

The important religious occasions during the Moslem year are the visit (ziarat) of 15 Shaban (a lunar month) of Id al-Adhha (the Great Feast), of Marad al-Ras (the finding of the head of Husain) and Ziarat Ashrat Ashura (the first ten days of the lunar month Muharram). During Muharram there are processions of men and women celebrating with doleful songs the passion of Ali's son, al-Husain. For more than 13 centuries they have performed plays depicting the story of Husain slain at the battle of the Plain of Karbala, in that month. Behind many windows women could be heard weeping as they intoned the female chants and in many husainiyahs and squares in their mahallah they tear their hair and beat their breasts, sometimes even with chains of iron or swords. Through their tears they listened to the story of the holy man's martyrdom. In Muharram most of the Shiahs, particularly the lower classes, dress in black clothes to display their sorrow for the martyrdom of Husain.

The position of Baghdad as a starting point for Mecca added markedly to its religious importance, which affects the city as a whole. Traditionally, mosques have manifold functions, religious, educational, political, administrative and social. Since its foundation in the eight century and up to the beginning of the twentieth century Baghdad's

mosques were administrative centres, courts of justice and places of education where students were trained to recite the Quran and older youths were trained as mullahs (Quranic teachers).

The number of schools attached to the mosques have been cut down gradually and in 1958, there were only 30 religious schools left. Furthermore the mosque has until now been used as a place of mourning the dead for three continuous days. At present, the religious schools function by Act no. 44, 1967, which obliged them to teach almost the same subjects taught in the official schools, with more periods for religious teaching.[6] This indicates that the mosque is losing its intellectual importance, turning to more religious functions. All the religious schools were gathered into groups of four. Each group became one large school known as ma'had (institute) instead of madrasah (school). At present there are seven ma'hads in Baghdad as shown in Appendix E (Fig. 17.1).

As for administrative functions, until 1920 the mosque was the place from which official proclamations of the rulers used to be made. A governor could judge his popularity in the mosque, though moslems do not debate or vote inside it. The wishes of worshippers, whether political or otherwise could be sensed by their erratic attendance or more effectively by their absence.

In almost every mosque in Baghdad there is a siqaiyah (a water supply for travellers and passers by), being open all day. The importance of this function has declined recently, owing to the development of hotels, restaurants and coffee houses.

Sometimes beggars, crippled people and orphans find refuge in mosques particularly those which house the tombs of holy men. Further- occasional visits to the shrines, for many, particularly low-class

families, proved to be a common form of recreation. Although mosques are considered as public institutional buildings, they are constructed mainly by private initiative, sometimes by collecting money from either local citizens or from a nationwide contribution. It is desirable that co-ordination should be maintained between Amanat al-Asimah and benefactors to assure proper location and design of mosques. Individuals are encouraged both by Quran and tradition to build jamis or masjids. It is believed that anyone who builds a mosque will be granted a house in paradise (the second life). The Quran also indicates that people who spend money for the sake of God will be living in God's blessing.[7]

There is no precise information about the number of mosques in the country or in individual towns, nor are there statistics about the number of mosques in Baghdad according to its various historical periods. Al-Awqaf has neither a catalogue nor a guide book with such information although this should be one of their primary functions. All available information about mosques has been prepared by historians or other writers depending on historical references. The main resources of al-Awqaf are the revenues from its buildings and agricultural land, from revenues of the land properties expropriated by the government, particularly in the centre, from loans to Aman at al-Asimah and other bodies, from the endowments of wealthy individuals both from Iraq and other Islamic countries, and from burial taxes.

Al-Awqaf contributes to the physical development of the city by investing large sums of money in building mosques and other buildings. During the period 1964 - 1968 for example the department spent about 1.25 million I.D. in erecting or rebuilding many buildings in the city. At present it owns more than 20 modern multi-storey buildings, located mainly on break-through streets. A new unhealthy trend in the policy of

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Fig. 17.6 The Distribution of Mosques in Baghdad.

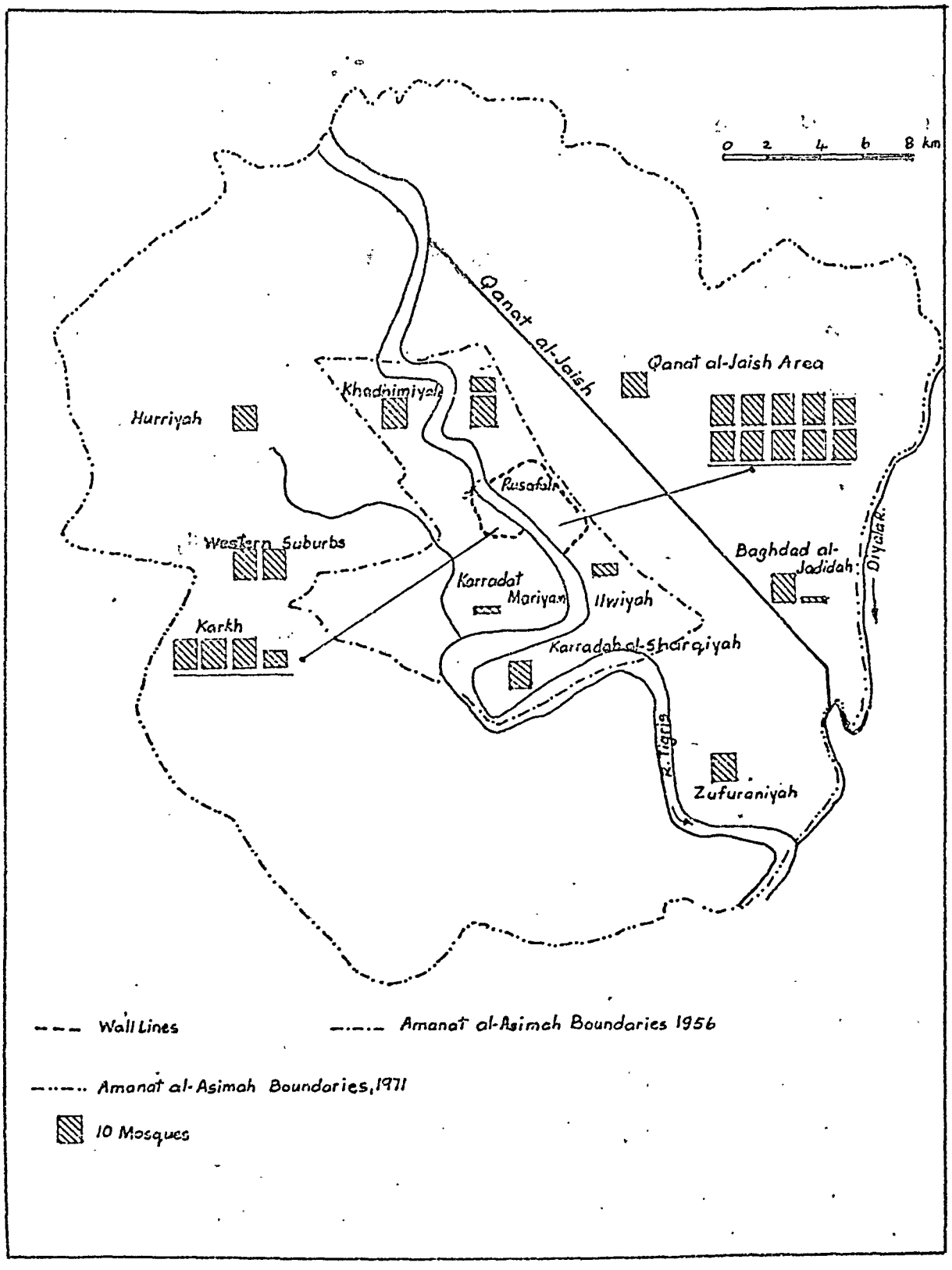
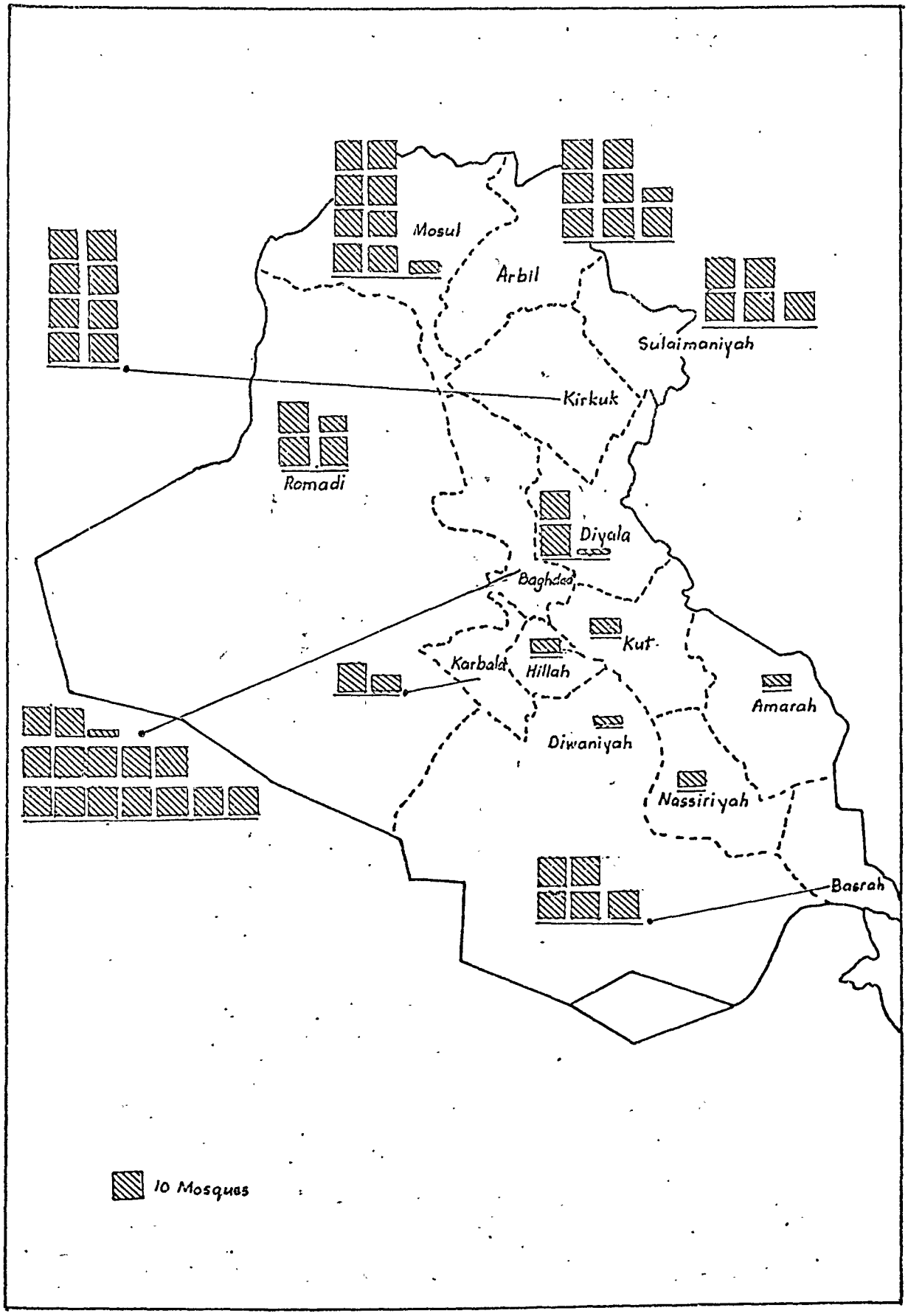


Fig.17.5 The Mosques of Iraq by Liwas



of al-Awqaf has been its recent entry into the property market in various parts of the city. By buying up buildings, al-Awqaf has done nothing towards any solution of the unemployment problem.[8] The number of Baghdad's mosques has been variously estimated at between 20 and 200 since the 19th century.[9] In 1971, the total number of masjids and jamis was 117 according to the writer's information[10] (Fig. 17.1 and Appendix E).

Fig. 17.5 shows the distribution of mosques in Iraq by liwa in 1971. The number of mosques for 100,000 people for Baghdad Liwa is less than 7. In 1971, the ratio of people to employee in mosques in Baghdad Liwa was 4,548 to one.

Table 17.1 and Figs. 17.1, 17.6 show the locational pattern of mosques in Baghdad City.

From the table it appears that the Old Town contains more than 57 per cent of the mosques of the city, as was to be expected since Baghdad consisted of Rusafah and Karkh until the First World War. The average distance between mosques is less than 800 m in the Old Town, but more than 8 kms in the new suburbs. Some of the central mosques date as far back as the Abbasid period.

Obviously the number of mosques decreases considerably in the Christian and Shiah-dominated areas, as along Qanat al-Jaish, Ilwiyah, Battawiin and Karradat Mariyam.

Compared with other land uses, religious land use is more static in nature. This is seen in the central areas, where the mosques are no longer residential foci. As has been discussed in earlier chapters a considerable number of families have moved to the suburbs, leaving the central mosques in areas catering mostly for business and service activities. However, because of transport improvements these mosques

Table 17.1: The Distribution of mosques and their services in Baghdad City 1971.

Locality	No. of Mosques	% of all Mosques	Population	No. of population per mosque	No. of mosques per 100,000 people
East Side:					
Adhamiyah	8	6.84	123,486	15,435	6.48
Rusafah	49	41.88	199,082	4,062	24.61
Battawiin and Illwiyah	2	1.71	108,463	54,231	1.84
Karradah al-Sharqiyah	5	4.27	41,342	8,268	12.09
Qanat al-Jaish area	4	3.42	405,101	101,275	0.99
Baghdad al-Jadidah and suburb along Khanagin high road	6	5.13	76,930	12,821	7.80
Zufuraniyah	5	4.27	2,523*	504	198.18
Total	79	68.52			
West Side:					
Kadhimiyah and Ataifiyah	5	4.27	63,427	12,685	7.88
Hurriyah and Shulah	4	2.42	101,666	25,416	3.93
Karkh	18	15.38	55,371	3,076	32.51
Karradat Mariyam	1	0.85	4,945	4,945	20.22
Western Suburbs (west of the railway line)	10	8.55	248,491	24,849	4.02
Total	38	31.47			
General Total**	117	100	1,430,827	1,229,929	8.18

Source: Field Survey 1971; The Preliminary Results of 1965 Census.

* There is no available information about the exact number of population of Zufuraniyah. The figure does not cover the whole population.

** This excludes some small suburbs not included in the above areas.

became metropolitan mosques, as they attract worshippers not only from the local mahallahs but from wider areas, sometimes from a distance of more than 20 kms, particularly for the Friday midday prayer.

The traditional attitude of inhabiting a house close to the mosque has been weakened by vehicular transportation following the recent waves of suburbanization. Now the personal choice, the standard of khatib (preacher) and the availability of transport affect the degree of success of any particular mosque and its popularity. Until the 1950's several mosques were on the edge of the built-up area, such as the intramural al-Sahrawardi and the extramural Sheikh Maruf mosques. With the recent physical expansion of Baghdad these peripheral elements have been engulfed by suburban development.

Although land in the new suburbs is cheaper than in the central area, the number of mosques here is much lower than in the areas built-up before 1956, representing less than 30 per cent of the total number of mosques, while the percentage of their population is 58.34 per cent of the total population of the city. Most of the mosques here were built by individual benefactors. The Government usually provides free land for such purposes. The new mosques in the suburbs mark a stable urban use attracting more urban land uses to serve the growing surrounding community, and in the end they will be the centres of these localities. In many cases they also mark a point of road nodality.

From the above table it appears that the lowest ratio of population to mosque is in Karkh and Rusafah. For every mosque in central Karkh there are 3,076 people; the number is 4,062 in Rusafah indicating that these central areas have been deserted by most of their inhabitants

owing to economic pressure on the centre and the transportation improvement which encouraged suburbanization.

Qanat al-Jaish areas, the Shiah areas such as Hurriyah and Shulah have the lowest number of mosques, and the lowest ratio of mosques per 100,000 people. More than 101,000 people for each mosque was found in Qanat al-Jaish, the ratio of mosques per 100,000 people was as low as 0.99. In Shiah areas the average number of people per mosque, and the ratio of mosques per 100,000 population were 25,416 and 3.93 respectively. These figures are also low in the Christian areas, as there were 54,231 people per mosque on average, and the ratio of mosques per 100,000 inhabitants was 1.84. This means that most of the post 1956 suburbs have emerged not around important central institutions such as mosques. In the majority of cases mosques have been late comers to the new suburbs.

The field survey showed that most of the interviewed Moslems in the modern suburbs, and the Christian and Shiah areas frequent grand mosques located outside their mahallahs for the Friday midday prayer. This indicates either the absence of mosques or an inability of the existing mosques to meet the increasing number of worshippers.

From this table (Table 17.2) it appears that the traditional mahallahs are the most efficient mahallahs in religious service provision. All their worshippers frequent mosques either within their mahallah or in other central mahallahs but within walking distance. All the worshippers living in the post-1936 areas frequent the central mosques using vehicles because of their distant locations. None of the Shiah worshippers frequent the central mosques as these cater for the Sunnah creed. Thus all Shiahs in Shiah-dominated areas frequent mosques in their own areas. All the worshippers frequenting central

Table 17.2: Use of Religious Service Provision in the surveyed mahallahs in terms of mosque.

Mahallah	% of worshippers frequenting mosques in:			
	the same mahallah	Central mosques in traditional Baghdad		outside the mahallah but not central mosque
		on foot	by vehicle	
Developed before 1920:				
Suq Hamadah*	16.67	83.33	-	-
Sayid Abdullah*	-	100.00	-	-
Aguliyah**	16.67	83.33	-	-
Harah (Adhamiyah)*	100.00	-	-	-
Shiukh (Kadhimiyah)**	100.00	-	-	-
Karradah al-Sharqiyah**	100.00	-	-	-
Developed 1920-1936:				
Orfaliyah***	-	-	-	100.00
Bustan al-Khas***(a)	-	-	-	-
Developed 1936 - 1956:				
Ataifiyah*	-	-	85.71	14.29
Durah***(b)	-	-	-	-
Washash**	91.67	-	-	8.33
Developed post 1956:				
Kraiat**	-	-	-	100.00
Iskan**	100.00	-	-	-
Mamun*	66.67	-	33.33	-
Thawrah**	100.00	-	-	-
Hai Dragh*	71.43	-	28.57	-
Mansur*	60.00	-	40.00	-
Average	54.87	17.78	12.51	14.84

Source: Fieldwork 1971, See Appendix A, Table N[b].

* Dominated by Sunnahs

** Dominated by Shiahs

*** Dominated by Christians

(a) there are no Moslems in this mahallah

(b) Moslems in this mahallah do not frequent mosques (do not pray).

mosques were Sunnahs belonging either to the upper or the middle classes. Moslem prayers are held five times a day. The muadhin calls to prayer from the minaret or the roof of the minaret-less mosque. At present calling in many mosques, particularly those of grade one is carried on inside the building as outside amplifiers are increasingly used, particularly in Baghdad's mosques. Amplifiers installed in Baghdad's minarets have become a familier feature on the skyline of the city. Apart from their disturbing influence, they disfigure the appearance of minarets.

It is difficult to reach a full appreciation of the architectural character of mosques through the medium of photographs and measured drawings. The typical character of the mosque is the outcome of climate, religious requirements and academic study. Mosques and the monumental tombs of saints are considered among the noblest houses of worship in the world, and frequently are unsurpassed for richness of colour and decoration.[11] In spite of the seeming similarity of mosques for Baghdadis, each mosque and minaret has its own characteristics, which can be easily distinguished. Forms of mosques in fact vary widely, from very decorative to very simple, from light to very heavy. Even the minarets can be either very dèlicate or ungraceful. Mosques vary also considerably in size, from the very small local to the large metropolitan mosque.

The two forms, dome and flat roof, combine to give a definite character to the Baghdad townscape and almost all the other Arab towns, forming a unified composition.

Open squares were not favoured in Arab towns, as they were in Europe, and indeed the mosque, like the traditional courtyard house, is an open space enclosed within its own walls rather than within a group

F.P.810

Fig. 17.7

Mosques have been dwarfed by modern buildings particularly in the centre. (Ras al-Qrayah)

of buildings as in classical and later European quarters. It was not until the 1930's that open squares were regularly built in Baghdad.

In the past in traditional Baghdad as well as in other Arab towns, mosques with their minarets have formed focal points and guiding centres. Minarets on the skyline arrested the attention and pointed the way to the mosque not only for citizens of the city but also for the distant travellers, especially in the otherwise uninterrupted skyline of Baghdad. Until the end of the 1940's in the centre, and until now in the other parts of Baghdad, minarets have welcomed the first and last rays of the morning and evening sun.

At the present time, however, most monumental mosques in the Old Town have been dwarfed by the erection of modern high rise buildings[12] (Figs. 17.7,14.4a).

The gateways leading to the mosques are often covered with green, blue and white tiles, with here and there a splash of red set in minute and intricate designs. In Baghdad, mosques may have one or more entrances (Figs. 17.2). These entrances lead firstly to al-Ruhbah (Court), a rectangular space, being a principal element in the mosque design. The open nature of this enclosure, bears an intrinsic relationship to climate where the outdoor function of the mosque can take place. People can enter the ruhbah, and sit for hours freely discussing secular and religious welfare. Food is brought and distributed free to those in need.

Within the ruhbah of many grand mosques there is shelter from summer heat to be found as well as an open air square for outdoor prayer and gatherings. The surrounding piers (niches or cloisters)

form rooms and shelters, small iwans, during the period of winter rain or summer heat as well as room for gatherings, living places for foreign pilgrims, and reading rooms.

The riwaq (cloister) (Figs. 17.2, 17.3) functions as a shelter during bad weather for those who enter the mosque and wish to make their way to the sanctuary.

Although worshippers can pray in the ruhbah, the riwaq or inside the domed area of the mosque, it is preferable to worship in the latter.

Ablutions preceding any of the five prayers are a ritual essential. Accordingly water basins are needed for ritual cleaning, and these indeed became decorative features in the ruhbah of the mosque, signifying the importance of water use as well as an aesthetic contribution to mosque design.

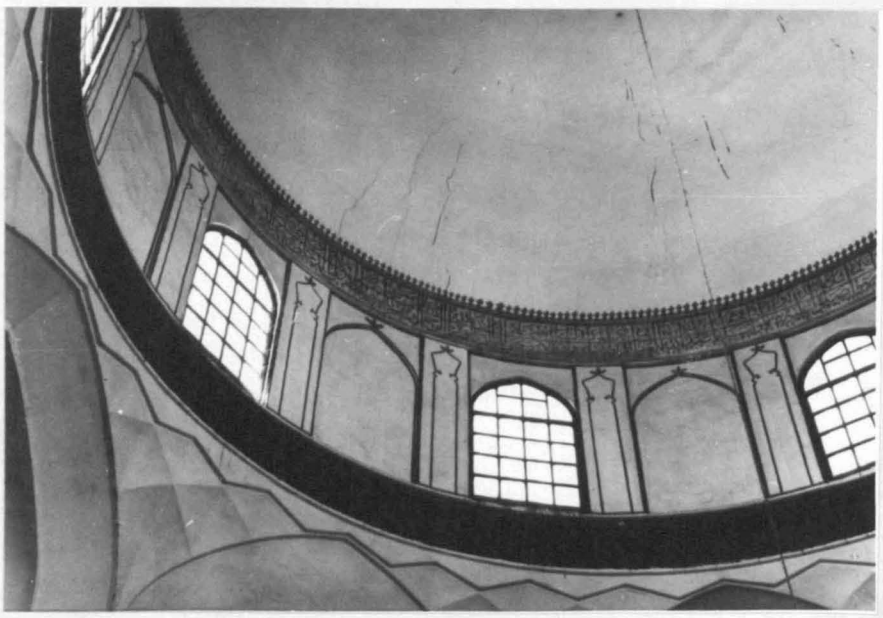
The covered roof-space enclosure forms the interior of the mosque that lies on one side of the ruhbah. An extension of this shelter, in sufficient depth is referred to as al-mughatta (covered part).

In the large mosques, rows of colonnades and arcades with walls support the roof, forming a series of avenues or aisles. The primary significance of the sanctuary is to provide a protected space for prayer which must be on a floor level, never on a raised platform. Inside the sanctuary, a mihrab (niche) shows the direction towards Mecca, indicated by a stone built into the wall. The square plan of the mihrab was changed to a circular one at a height equal to the length of the side of the square. The qiblah (direction towards Mecca) which in Baghdad's case is the south west, where al-Ka'bah is placed gives a social feeling of unity, unity in spiritual feeling and unity in physical orientation.

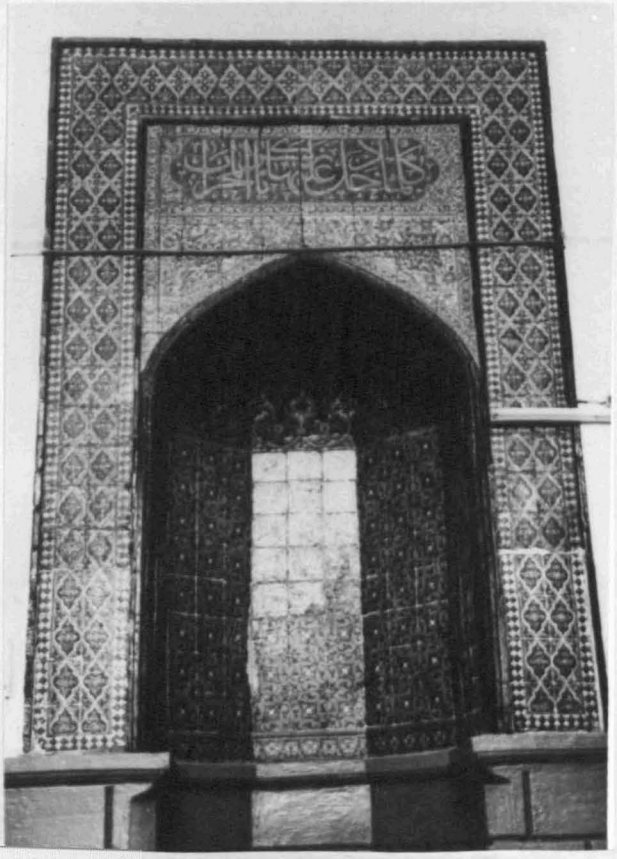
F. P. 812

Fig. 17.9

a. The dome of al-Wazir Mosque



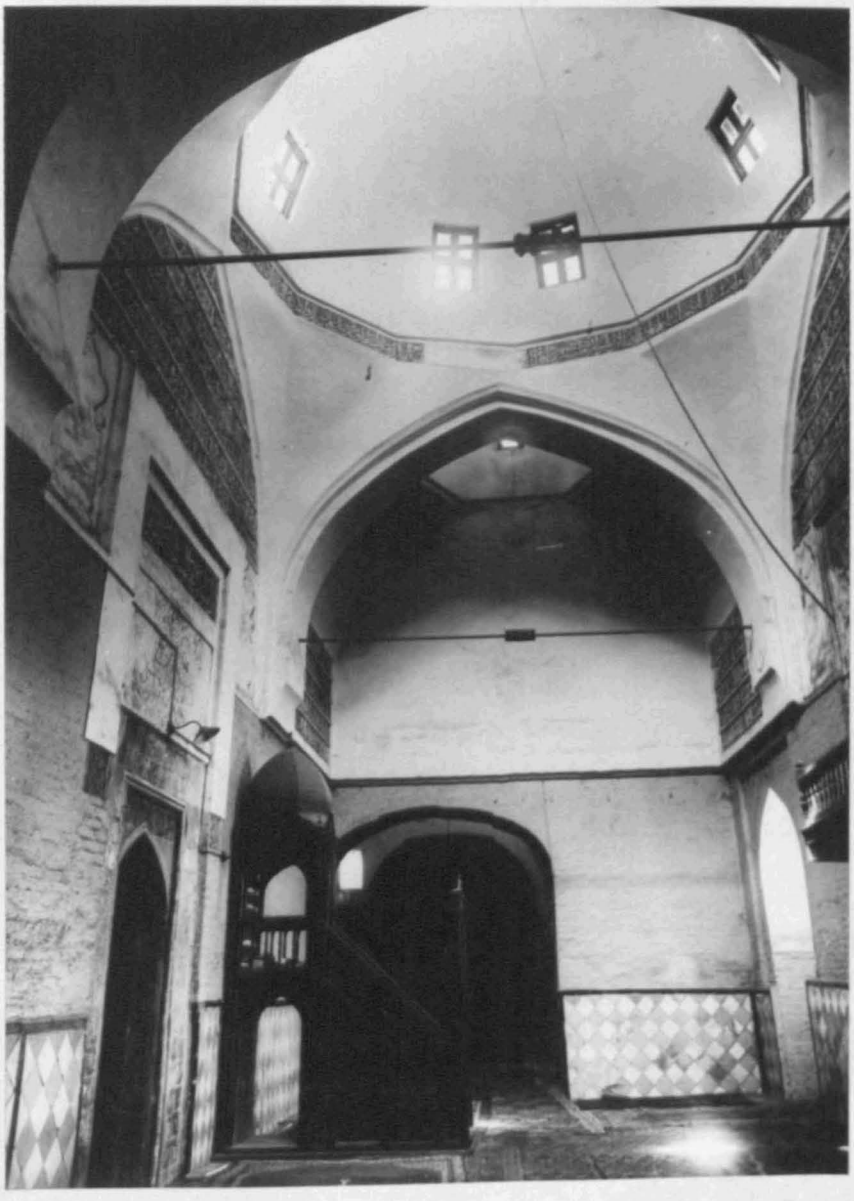
b. A typical niche of Baghdadi mosques



F. P. 812

Fig. 17.8

Abu Hanifah Mosque. The niche, the pulpit, Quranic writing and some of the domes are shown.



The first mihrab in mosques was developed during the Umayyad dynasty, when Caliph Omar bin Abdul Aziz adopted it in al-Nabi mosque at al-Madinah.[13]

On the right side of al-Mihrab, al-Minbar (pulpit) is placed (Figs. 17.2, 17.3, 17.8, 17.9). It is a stand used by al-Khatib and the first minbar was executed in simple style in the mosque of al-Nabi in al-Madinah during the Prophets life. It is used also for reciting the services of the imam.

The main inside space for prayer, including the mihrab and the minbar, is sheltered by a dome. The Dome is usually erected in front of the mihrab and has no Byzantine influences on its architecture. The spherical or spheroidal vault of the dome generally rests upon a circular wall which, if raised upon another construction, is called a drum. However, a dome as well as its drum, may stand over a polygonal or rectangular area, in which case the base of the drum is connected with the lines of the main wall by corbelling or by pendentives.[14] *

The earliest Islamic dome known in Baghdad was that of the green dome of al-Mansur mosque in the Round City. (See Part Three).

In the 12th century Baghdad knew a new type of dome, the conical dome, built mainly as canopies for tombs. Now Baghdad has two of these pineapple-like domes, viz. that of Zummurud Khatun in al-Karkh and that of al-Sahrawardi in al-Rusafah.

Some of Baghdad's domes are of double construction mainly to withstand the hot weather.** The outer domes in Baghdad's mosques were at

---

* It is one of the means by which a circular dome is supported over a square or polygonal compartment.

** The first double dome construction emerged in Mosul on the mosque of al-Nuri. Perhaps this type of dome was developed even before that of Sta. Maria del Fiore at Florence.[15]

first semi-circular in vertical cross-section and not pointed. They were usually supported on brick walls built on the inner decorated dome.

The outer domes are decorated in various ways with beautiful ornaments. Coloured tiles are laid on them using a wooden arc. The builders use gypsum mortar (juss) and small nails which are hammered into the outer dome to hold the tiles. The same tiles can be used on the internal surface of the inner dome to produce an effect of grandeur. On the base of the dome there are coloured tiles with Arabic-Kufic inscriptions.

Light is usually provided by special small windows, generally at the base of the dome. The dry weather of Baghdad enabled the architect to leave such openings in the dome which produced a magnificent atmosphere inside (Figs. 17.8, 17.9).

Reinforced concrete has begun to be used in mosque building. In fact the tiles, which were used in covering domes, could not be fixed to the 'modern' concrete domes which recently began to appear in the Baghdad urban scene. The moisture-absorbing characteristics of concrete dries the mortar and tiles fall off as has happened in several modern mosques in Baghdad.

The evolution of the minaret (manarah)* introduced a new and graceful form to the Arab urban landscape. They are towers for the call to prayer and serve a useful purpose in architectural composition.

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* Three words so far have been employed to denote minarets: midhanah, saumah and manarah. The first originated from adhan, the call to prayer, and simply means the platform where the adhan is pronounced. Also it means a guide towards the light of virtue. Saumah means to tower. The third term, manarah, so common in Baghdad, originally can only have meant 'an object that gives height.'16

Emphasizing the perpendicular, they punctuate the corners of mosque buildings and help to achieve a composite transition from one side-elevation to another in a pleasing way.

During the time of Muhammad, minarets were unknown. The first mosques built in Iraq were those at Kufah in 638 and Basrah in the 7th century, more than one century before Baghdad's foundation. They have no minarets. The towers of the Ummayyad mosque at Damascus, no doubt were the first minarets. Baghdad's minarets often have one gallery, each, though a few of them have two. The gallery affords the highest attainable point from whence the adhan is chanted. The sullam (ladder), by means of which the mudhin mounted, was outside the minaret, but later was built inside it. Minarets in Baghdad are covered with enamelled tiles* or mosaic in monochrome and polychrome patterns.

Moslems have highly valued the art of calligraphy. The professional calligrapher held a position of honour and dignity because he was copying the Quran. Islamic calligraphic art served a religious and a decorative purpose. Islamic sculptural treatment in architecture is a carving process as opposed to the plastic forms and moulding conception of the Greeks and Romans. This attitude is expressed in preparing clay slabs and applying decorative carved treatments in panels.

Almost all the congregational mosques and the tombs of saints in Baghdad are adorned with Quranic sayings executed in elegant Arabic characters after the manner of a tesselated pavement. 'Arabesque' architecture is well developed in Baghdad. It is a philosophical device by which a man frees his spiritual feeling from its restrictions, through linguistic means translated into shapes. "The very word,

* Kashani (porcelain) are coloured tiles used widely in central and southern Iraq.

Arabesque, which has passed into most of the languages of Europe, bears testimony of the characteristic mobility of the moslem ornament.[17]"

In Islam, both the use of extravagent materials and the presentation of living creatures is prohibited especially in religious buildings. Simplicity is the main characteristic of mosques. Orthodox religious sentiment has always been active in the destruction of pictorial representation of human beings wherever such destruction has been possible.[18]

In the churches of Baghdad, on the other hand, one finds pictorial representations of many historical religious events. Many of these pictures serve as a medium to illustrate the life of Christ and the Apostles.

There are 24 churches in Baghdad. Their distribution is shown in the following table.

Table 17.3: The Distribution of Baghdad's Churches

Area	No.
East Side	
Rusafah included Camp al-Qailani	8
Ilwiyah, Bathawiin and al-Nidhal Street	3
Baghdad al-Jadidah and Qanat al-Jaish area	4
Karradah al-Sharqiyah	4
West Side	
Karradat Mariyam	22
The western suburbs (Mansur and Zira'h)	3
Total	24

Source: Field Survey 1971.

79 per cent of the churches are on the East Side, indicating the high concentration of Christians on this side. Most of the Christians

living in the western suburbs obtained their houses or plots through co-operative housing societies. They were mostly living on the East Side in the mahallahs traditionally dominated by Christians.

1. R. Hassan, Islam and Urbanization in the Medieval Middle East, Ekistics, 33, 95 (1972) 108, G. E. Von Grunebaum, Islam, Essays in the Nature and Growth of Cultural Tradition, London (1961) 142.

2. Xavier de Planhol, The World of Islam, Le Monde Islamique Essai de Géographie Religieuse, Ithaca, New York (1959) 7.

3. S. A. el-Ali, The Foundation of Baghdad, reprinted in: A. H. Houranı and S. Stern, The Islamic City, Oxford (1970) pp. 87 - 103

4. Quran, Araf - 29 and Jin - 18.

5. C. M. Langley, Iraq Industrialization, Translated into Arabic by M. H. al-Tai and K. al-Ani, Baghdad (1963) 43; A. H. al-Samarraie, Transportation in Iraq, Ph.D. Thesis, submitted to Reading University (1968) pp. 145 - 146.

6. Al-Awqaf Department, Al-Awqaf Report, Baghdad (1958) pp. 25 - 26; Personal interview with the Directorate of Religious schools of al-Awqaf, M. al-Muddaris, Baghdad (1971).

7. Hadith (Tradition), S. al-Badri, Dalil al-Abid Ila Nidham al-Ma'bid, (The Guide to Worshippers) Baghdad (1970) 29, Quran, al-Baqarah, 2/261.

8. A. Hasan, A Report about the development of al-Awqaf Architecture, Baghdad (1970) pp. 2 - 5 (mimeographed).

9. Travels of Niebahr to Iraq in the 18th century, translated into Arabic by M. N. al-Amin, Baghdad (1969) 44. Itinerary of al-Munshi al-Baghdadi, written in 1822, translated from the Persian original by A. al-Azawi, Baghdad (1948), J. S. Buckingham, Travels in Mesopotamia, 2 vols. London, 2 (1827) 188, J. R. Wellstead, Travels to the City of the Caliphs along the Shores of the Persian Gulf and Mediterranean London, 1 (1840) 64, T. al-Rawi, Baghdad Madinat al-Salam (Baghdad, The City of Peace) Iqra Series, 27 Cairo, 27 (1944) 86, M. F. Darwish and I. Dinkur, The Directory of Iraq, Baghdad

(1936), Doxiadis Association, Housing, Problems, Policies, Programmes in Iraq, Vol. 2, Athens (1956) p. 182., M. Jawad and A. Susa, Directory of the Map of Old and Present Baghdad, Baghdad,(1958) pp. 296 - 311, M. Darwish and M. Jawad, The Directory of the Republic of Iraq, Baghdad,(1380/1960) pp. 276 - 283.

10. Field Survey and personal interviews with several Imams, particularly al-Samarrie of Baghdad al-Jadidah (1971); Doxiadis, op. cit. 182.

11. Sir Thomas W. Arnold, Painting in Islam, A Study of the Place of Pictorial Art in Muslim Culture, Oxford(1928) 1.

12. S. Shiber, The Architecture and Housing in the Arab World, a paper submitted to the eighth Arab Engineering Conference, Alexandria, 1962, Cairo, 1962, pp. 34 - 35.

13. Al-Badri, op. cit., 69.

14. M. Makia, The Development of Architecture in Baghdad, printed in: The Iraqi Engineering Society, Baghdad, An Illustrated Historical Survey, Baghdad (1969) 230.

15. G. Rivoira, Roman Architecture (1925) 280.

16. K. A. C. Creswell, The Evolution of the Minaret, with special reference to Egypt, 48, Burlington Magazine (1926) pp.134-140.

17. Arnold, op. cit. pp. 4,91.

18. Quran, al-Tawbah - 108; Arnold, op. cit. pp. 4, 91.

Chapter 18

Hammams: A Typical Morphological Feature of the Arab Urban Mahallah.

It is intended in this Chapter to study one of Baghdad's, as yet uninvestigated, morphological elements, viz. hammams or public baths. The evolution, form and distribution characteristics of hammams reflect some of the community needs, traditions and religious aspects of Baghdadi life.

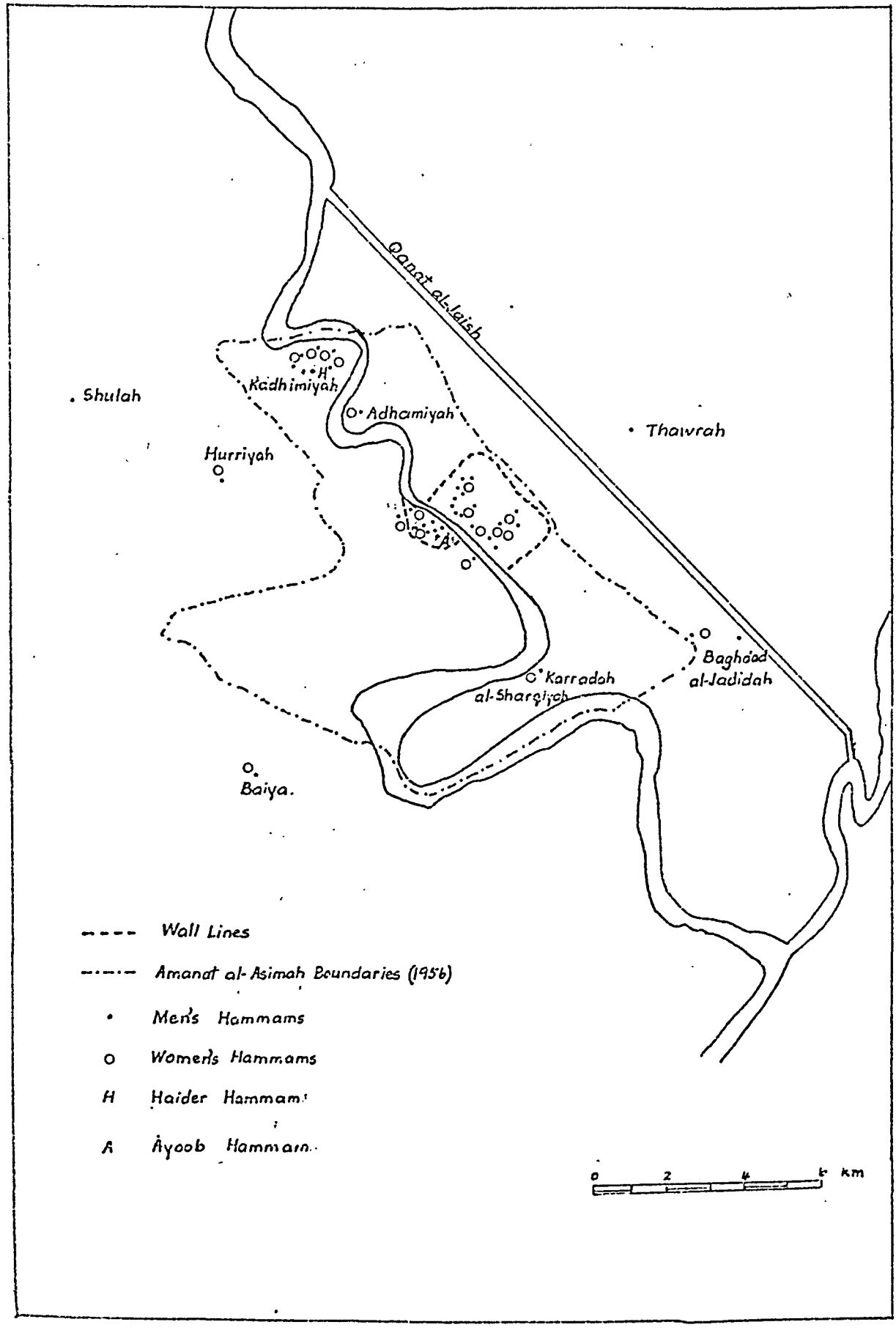
The hammam is an ancient urban feature which has been borrowed by Islam and Sassanid Persia alike from the ancient Mediterranean civilizations of Rome and Byzantium, and refers to steam baths. Arabia had no baths before Muhammad. At first hammams were not encouraged by Islam for moral reasons, but they have since been developed in all Moslem urban settlements, and archaeological remains bear witness to their existence as early as the Ummayyad period.[1]

In Baghdad hammams have been recorded since its foundation. During the Abbasid period, 762 - 1258 A.D., the number has been variously estimated at between 4,000 and 6,000 or more (See Part III). Records tell that each hammam served about 200 houses.[2] Thus if the average number of people per house was five, then the number of people using each hammam was 1,000 during that era, as compared with 23,847 persons per hammam in present-day Baghdad. Consequently the number of hammams could be used as a basis for estimating population in mediaeval times. However, it is almost impossible to find the real number of hammams before this century.

In 1882 and 1884 the number of hammams was estimated at 21 and 39 respectively. There were three for men and three for women in Karkh, whilst in Rusafah the total number was 18.[3] Adhamiyah and Kadhimiyah also had five hammams each. In 1948, 14 were mentioned in Baghdad by the translator of the works of al-Munshi, 11 being in Rusafah and 3 in Karkh.[4]

F. P. 820

Fig. 18.16 Baghdad's Hammams, 1971 (General Distribution)



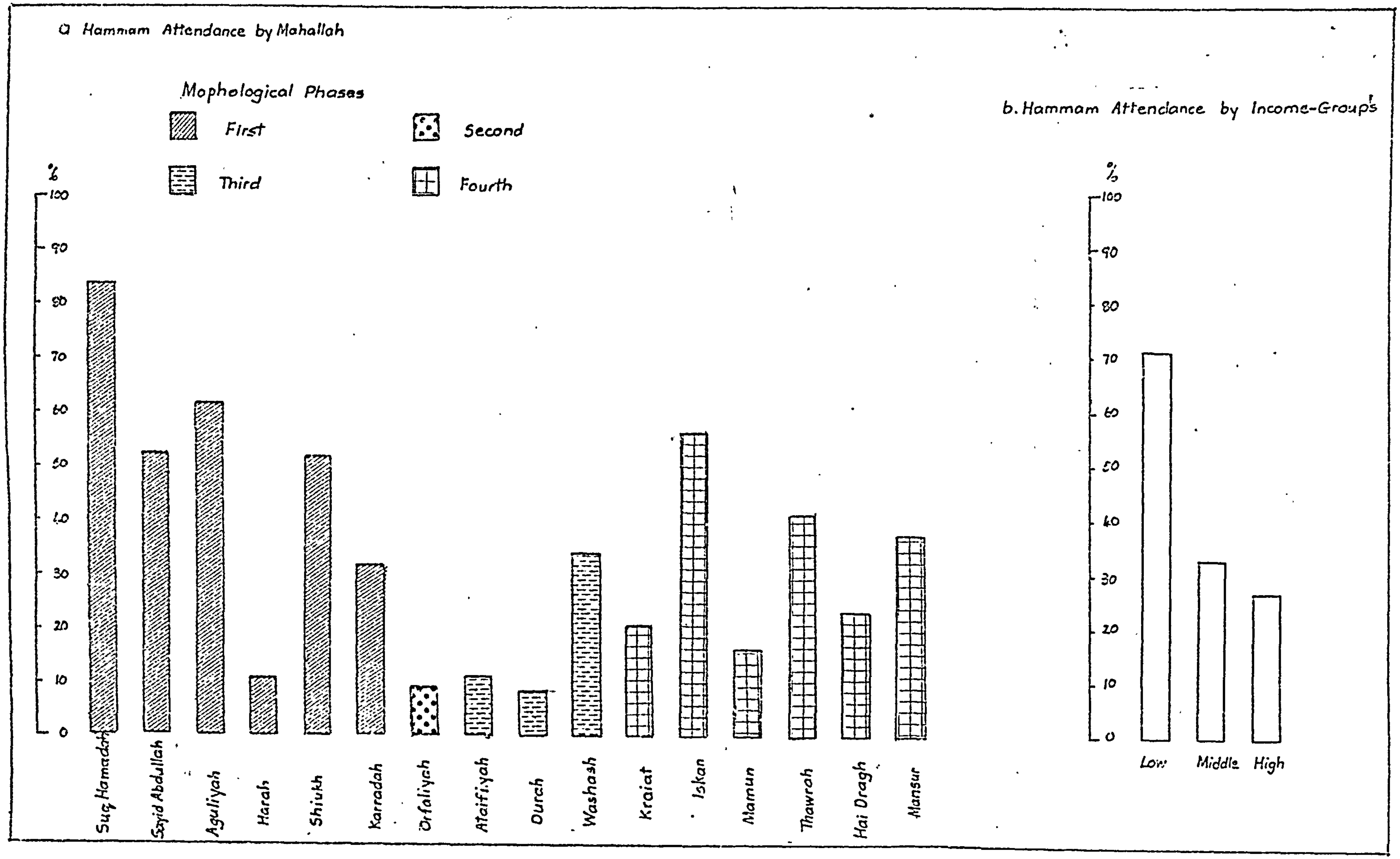
Although the number of Baghdad's hammams increased to 60 in 1971[5] (Fig. 18.1) their significance in both the social life and the morphology of Baghdad has declined as it has done in most other Arab towns owing to housing improvements and the economic advance of society.

However, its importance is still high in the poor as well as in the traditional mahallahs of Baghdad. About 50 per cent of those interviewed living in the traditional mahallahs frequent hammams regularly, mainly for health reasons, or through social tradition and because of the absence of baths in their houses. Only 27 per cent of the wealthy interviewees frequent them and then mainly for health reasons.

The development of hotels with baths and the increased number of private baths have affected the importance of hammams considerably. Most of the new private hammams have adopted western architecture. More than 95 per cent of the surveyed houses built after 1920 have baths when compared with less than 70 per cent of the houses built before that date (Table 18.1). This improvement in domestic facilities naturally affects the popularity of public baths.

A number of hammams, particularly in the central area, have changed their functions becoming workshops, warehouses, or shops, these new functions proving more profitable. This is exemplified by the hammams of al-Zahawi near al-Sarai and al-Halidari on al-Nahr Street, where the reason for the change was failure to maintain the rent value of the buildings. Change of function has not essentially changed the external form of the hammam although the internal plan has changed considerably within the main framework, so that distinctive external features have remained intact. Some of the hammams have been divided into rooms now used as shops and offices, the main domes here becoming

Fig. 18.2 Hammam Frequentation by Interviewees in Surveyed Mahallahs



F. P. 821

Table 18.1: Frequency and purpose of Hammam usage in the surveyed mahallahs (Fig. 18.2).

Mahallah	% of houses with baths	% of interviewees frequenting hammams	Reason		
			Absence of bath-room in house	Social trad.	Health reasons
Dev. before 1920					
Suq Hamadah	60.00	84.62	60.00	9.09	30.91
Sayid Abdullah	33.33	52.94	22.22	-	78.16
Aguliyah	80.00	62.50	20.00	20.00	60.00
Harah(Adhamiyah)	100.00	11.11	-	-	100.00
Shiukh (Kadhimiyah)	50.00	52.94	11.11	44.44	44.44
Karradah al-Sharqiyah	91.67	31.25	20.00	20.00	60.00
Average	69.17	49.23	22.31	15.59	62.25
Dev. 1920-36					
Orfaliyah	100.00	9.09	-	25.00	75.00
Bustan al-Khas	100.00	-	-	-	-
Average	100.00	4.55	-	12.50	37.50
Dev. 1936-1956					
Ataifiyah	100.00	10.00	-	-	100.00
Durah	88.89	8.33	100.00	-	-
Washash	86.67	34.48	10.00	90.00	-
Average	91.85	17.60	36.67	30.00	33.33
Dev. since 1956					
Kraiat	100.00	20.00	-	50.00	50.00
Iskan	100.00	55.56	-	40.00	60.00
Mamun	100.00	16.67	-	50.00	50.00
Thawrah	75.00	41.38	16.67	33.33	58.33
Hai Dragh	100.00	23.53	-	50.00	50.00
Mansur	100.00	37.50	-	-	100.00
Average	95.83	32.44	2.08	37.02	61.09
General Average	86.21	32.46	16.34	26.98	57.21

Source: Field Work 1971, See Appendix A, Table Nb.

the roofs of several separate establishments.

Table 18.1 shows in percentages the number of surveyed houses with baths and the number of people interviewed who frequent hammams, with their main reasons for doing so.

In the traditional mahallahs the presence of baths in private houses is usually the result of recent extensions or improvements to property. This is seen in table 18.2, which in conjunction with Table 18.1 shows that there is a close relationship between the availability of baths in the surveyed houses and the percentage of hammam frequentation.

Table 18.2: Number of extensions or improvements in three of the surveyed mahallahs in percentages.

Mahallah	House improvements occurred:		
	once	twice	three times
Karradah al-Sharqiyah	27.27	18.18	63.64
Aguliyah	20.00	40.00	40.00
Harah	33.33	22.22	44.44

Source: Field Work 1971, See Appendix A, Table T.

The lowest percentage of frequentation was in the mahallahs with houses having baths. Also, it appears that people living in the traditional mahallahs show the highest percentage of frequentation. The economic order of those interviewed seems to have its significance in hammam frequentation. The lower the class the higher the percentage of persons frequenting hammams. If one excludes the Christian-dominated mahallahs in the low-class category, the percentages of hammam frequentation by class will be as shown in the table below.

Table 18.3: Frequentation of hammams in the surveyed mahallahs by class (Fig. 18.2)

Class	% of interviewees frequenting hammams
High Class	27.09
Middle Class	32.31
Low Class	71.42

Source: Field Work 1971, See Appendix A, Tables, E, N[b].

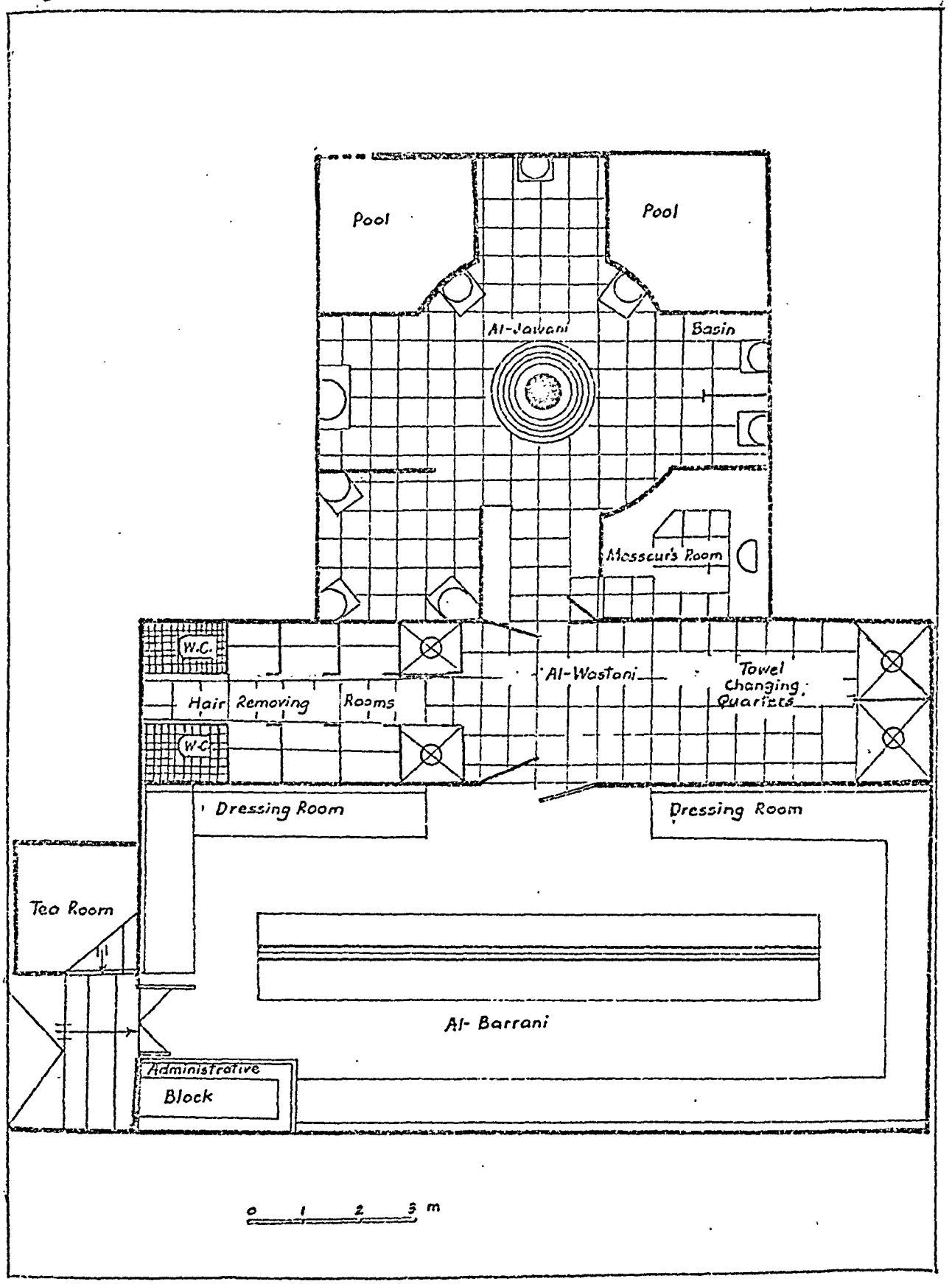
The percentage of hammam frequentation would be 50.74 if the three Christian mahallahs of Orfaliyah, Bustan al-Khas and Durah were included. Only 5.8 per cent of the interviewees in these three mahallahs frequent hammams.

The age of the mahallah also correlates with the ratio of hammam frequentation generally the older the mahallah the higher the percentage of hammam frequentation. While about 50 per cent of the interviewed people in the traditional mahallahs regularly frequent hammams, the percentage falls to 26.27 in the mahallahs developed after 1920. The very low percentage in mahallahs developed between 1920 and 1936 is because they are dominated by Christians and because of the availability of baths in the houses of these areas. All the surveyed houses here have baths.

Among mahallahs developed after 1956 Iskan and Thawrah mahallahs show a higher percentage of frequentation because the former has only recently been accepted into middle-class society while the latter is still dominated by low-class fallahin migrants. The primary motive for hammam frequentation was health representing more than 57 per cent among interviewees, followed by the lack of baths in houses, while in the areas developed between 1936 - 1956 the lack of private

F. P. 824

Fig 18.3 Ayoob Hammam in al-Karkh, a Typical Traditional Hammam.

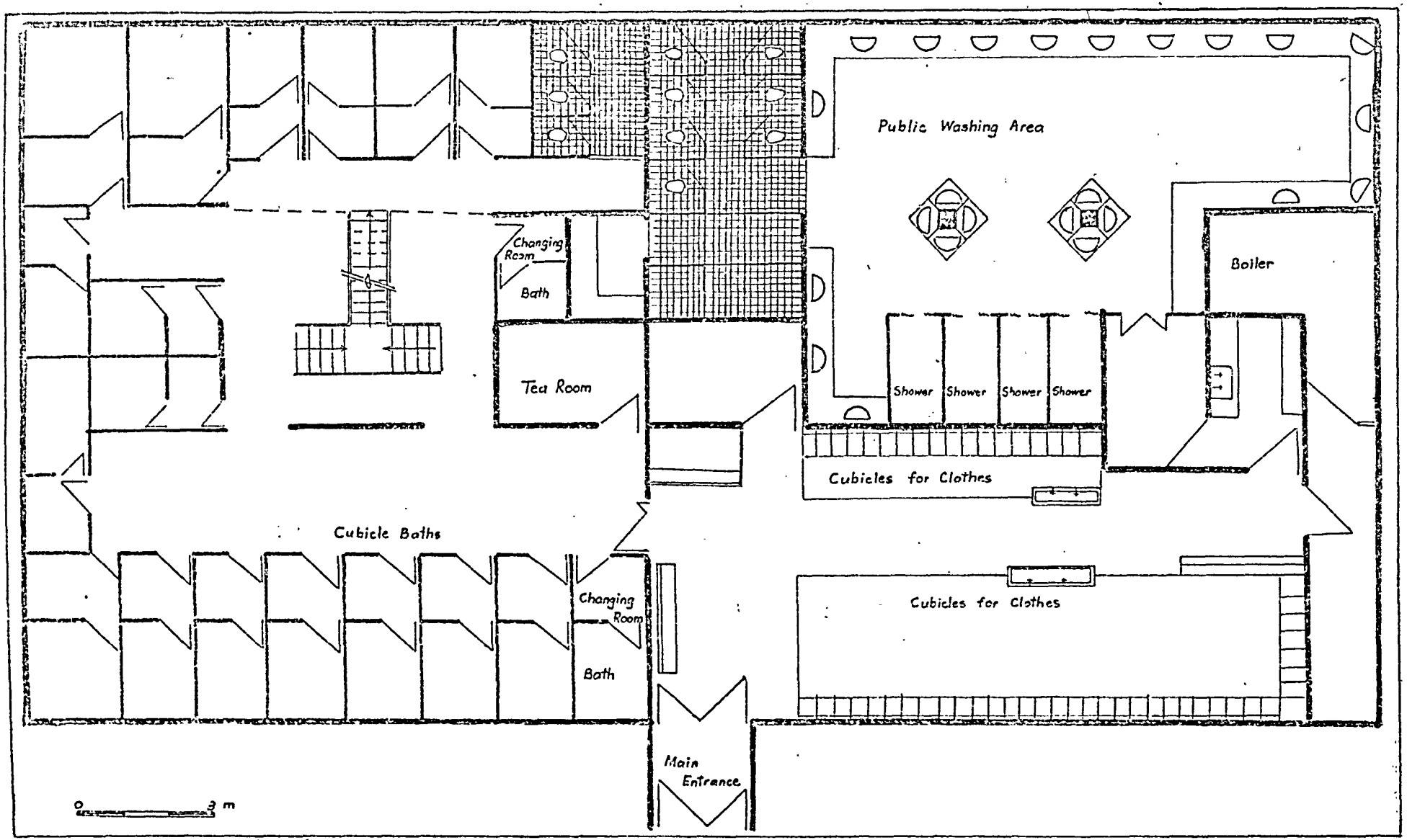


baths was the major reason. These mahallahs included al-Washash, a very poor-class locality. At present Baghdad has 60 hammams (Fig. 18.1), some of them are probably more than seven centuries old, such as al-Murthadha (or al-Dirwazah) Hammam in Kadhimiyah, and al-Sayid Hammam in Rusafah. Hammam Ayoob in Karkh is believed to date back to the 16th century (Fig..18.3). Appendix E lists Greater Baghdad's Hammams with geographical, architectural and management details, and shows that the earliest hammams are found near the oldest religious institutions, mosques and shrines in the Old Town and date back to the late Abbasid period. Almost all the hammams built before 1936 were built in brick and mud, compared with the later ones which are built in brick and juss or brick and concrete. The greatest number of employees were found in the central hammams located beside the shrines and also near the terminals of long-distance traffic. They had also the greatest average number of visitors per day. Generally men represent the highest percentage of the clientele. The number of hammams for women was 19, for men 41. The catchment area of most hammams is the immediate neighbourhood except for those central hammams attracting visitors from all over the city as well as from other cities and particularly pilgrims.

The average number of daily visitors was 3,525 or 0.24 per cent of the total population. This puts the average number of visitors per hammam per day at about 59. Only five of these 60 hammams were government-owned.

At the present time hammams continue to occupy a very important position in the daily life of Baghdad. Generally, they operate from 4 a.m. to 9 or sometimes 11 p.m., depending on their location.

Fig.18.4 The Modern Haider Hammam, Kadhimiyah



F.P. 829

The establishment of new hammams has affected the tributary areas of traditional ones. This can be seen in residential areas where some patrons of longstanding have been attracted away from the old hammams to new modern ones. For example, 65 per cent of the patrons of Hammam al-Imamain in Kadhimiyah have changed to Hammam al-Dijaili after 1963, and another 15 per cent were attracted to Haider Hammam built in 1969 (Fig. 18.4), one of the most modern hammams in Baghdad.

The distribution of hammams (Fig. 18.1) is determined by that of the residential mahallahs. Like mosques hammams can be used to trace the physical growth of the Arab town. The central concentration of hammams is explained by their importance to the mosque and to the city, for both local inhabitants and visitors. In the previous chapter, it was found that 67 mosques or 57.26 per cent of the mosques of Baghdad, were in Karkh and Rusafah. The number of hammams in these two parts of the Old Town is 37 or 61.67 per cent of the total in the city. The close relationship of mosques and hammams accounts for their physical proximity. The longest distance between any of Baghdad's grand mosques and hammams is less than 500 m. Even the modern hammams such as that of Baghdad al-Jadidah are close to the recently established suburban mosque and could be considered as an annexe to it. Analogous to Hellenistic culture, Islam gives hammams a recognized position among the central institutions of the town as it encourages personal cleanliness both in the Holy Quran and in accordance with the tradition expressed in the maxim "cleanliness is a part of faith!"[6] Hammams thus came to be a characteristic Moslem urban institution, serving hygienic religious, social and recreational purposes. Baghdad's climate also adds to their impor-

tance, summers being hot, dry and sometimes dusty (See Chapter 4.).

The ritual use of the hammam in the performance of the major ablution explains why it has always been considered one of the highly respected amenities of the Moslem city. Moslems are obliged to pray five times a day. Before each prayer a ceremonial washing must take place. Also the Moslem cannot enter the mosque or touch the Quran if he has had intercourse with his wife, unless he has had a complete ceremonial bathing.

As shown in Fig. 18.1 and Table 18.4 the West Side has only 27 hammams or 45 per cent of the hammams of the city, the average population served by each hammam being much less than that found on the East Side. The average number of people per hammam is 17,551 on the West Side and 28,997 on the East Side, the total population being 956,927 on the East Side and 473,906 on the West Side. 41.67 per cent of the hammams are found in Rusafah and 20 per cent in Karkh.

The lowest concentration in hammams appears in the suburbs developed outside the limits of the pre-1956 city, i.e. outside the Inner Fringe Belt. Many of the post-1956 suburbs are without hammams, and today this absence indicates something of the economic status of the locality. All wealthy suburban areas lack hammams. The most efficient hammam services are found in Karkh, Kadhimiyah and Rusafah, where the average number of persons per hammam is 5,026, 5,766 and 7,963 respectively, the corresponding figure for the eastern suburbs developed after 1956 being 202,550. For comparison the average number of population per hammam employee was 773 in Karkh, 1,336 in Rusafah and 8,688 in Kadhimiyah, all of which were traditional mahallahs, but 40,510 in the eastern suburbs, which have only two hammams. From table 18.4, it appears that the highest number of hammams per 100,000

people is found in Karkh with 19.9, followed by Kadhimiyah with 17.34, and Rusafah with 12.56. The eastern suburbs again have the lowest ratio with 0.49. This also applied to mosques emphasizing the functional and physical relationship between mosques and hammams in Baghdad as an Islamic city.

The busiest days for hammams in Baghdad are closely related to religious occasions.

Visitors from all over the Islamic world, especially from Persia, flock to the country during certain seasons as pilgrims and stay in the religious areas either in traditional houses or in khans (manzils) without hammams, or in low-grade hotels likewise without baths. Consequently they attend near-by hammams as e.g. al-Amir to the shrines of al-Qailani, which in certain seasons is dominated by Afghanistani and Pakistani pilgrims, and in Kadhimiyah, where the hammams are dominated by Persians and clientele from other Shiah areas. The main religious festivals take place during the lunar months of Muharram and Thi al-Hijah and at Id al-Adha, and Id al-Fitr the two main feasts in Islam, and also on Fridays.

The average number of hammam users in an ordinary day is not more than 300 but may reach 700 in such hammams as al-Dijaili, and al-Milooki in Kadhimiyah.

Hammams are also frequented more in winter than in summer. On summer days some hammams have less than 10 users a day.

At present Baghdad's hammams are authorized and supervised by the Capital's Directorate of Health. The routine observed in hammams has remained almost unchanged since the Abbasid period or perhaps even before as clients and employees preserve the traditional procedures of the bathing process. When using the hammam, one has to follow

Table 18.4: Number of hammams, population per hammam and hammam per 100,000 population in Baghdad.

Area	Population	No. of Hammams	No. of Pop. per Hammam	No. of employees	No. of Pop. per employee	No. of Hammams per 100,000
East Side						
Adhamiyah	123,486	2	61,743	12	10,290	1.62
Rusafah	199,082	25	7,963	149	1,336	12.56
Karradah al-Sharqiyah *	149,805	2	74,902	14	10,700	1.34
Qarat al-Jaish area	405,101	2	202,550	10	40,510	0.49
Baghdad al-Jadidah area **	79,453	2	39,726	14	5,675	2.52
Total	956,927	33	289,997	199	28,997	3.45
West Side						
Kadhimiyah & Ataifiyah	63,427	11	5,766	73	8,688	17.34
Hurriyah & Shulah	101,666	2	50,833	14	7,261	1.97
Karkh(incl. Karradat Mariyam)	60,316	12	5,026	78	773	19.90
Western suburb(west of railway line)	248,491	2	124,245	18	13,805	0.80
Total	473,900	27	17,551	103	17,551	5.70
General Total	1,430,827	60	23,847	302	4,737	4.19

Source: 1965 Census, Field Survey 1971.

* Including Battawiin and Ilwiyah.

** Including suburbs along the highway to Khanagin with Zufuraniyah.

certain well-established regulations, which have developed socially rather than legally.

The hammam is rented or owned by a bath keeper (hammamchi) the annual rent per hammam ranging from 200 to 1200 I.D., depending on the location, design and size of the hammam. The hammamchi has several employees who light the fire, prepare soft drinks, wash and massage the patrons, cut their hair and sometimes their nails, and until recently, as in Persia, performed circumcision as well. As in Persia, hammam workers in Baghdad generally belong to a lower social order.[7]

A professional hierarchy is found among them and most of them inherit their occupation from their fathers who has in turn inherited it from theirs. Thus it is a common phenomenon in Baghdad to find more than one hammam owned or run by one family or person, in various parts of the city.

It is also true that in the past workers were keener and more skilled in their job than they are today, perhaps because there has been a fall in the number of wealthy clients, who used to tip employees liberally compared with the poor patrons of today.

Staff members, whether male or female, are trained to perform specialized jobs, which can be categorized as shown in Table 18.5.

Every employee has his own job supervised by al-Muallim who welcomes the patrons as he occupies a strategic position in the entrance of the hammam. He takes charge of all money and valuables which are kept in a wall cupboard at his side.

The hairdresser and the tea waiter who have their own stalls, usually in al-Manzaa (the first part of the hammam) are not included with the staff. They are tenants of the hammam, who charge the patrons and give a certain share to the muallim.

Table 18.5: Types of hammam employees:

Title	No. of Employees	Wage per day (fils)*
Muallim (master or manager)	1	1,500
Qubadar (manager's deputy)	1	1,000
Rais (Foreman)	1	1,000
Huah Dar (waiter)	1	750
Mutalachi (towel body drier) (usually beardless boy)	2 - 5	600
Mudallik (massager)	1	**
Abgir (scraper)	1	250
Shaul (fireman)	1	500
	9 - 12	

On an average, the charge for bathing ranges between 50 and 150 fils, depending on whether it is performed in a private room or in the communal inner chamber. There is no time limit for bathing. For tea, massage, hair cutting, soap, loofah, and arsenic to remove the hair from certain parts of the body, there are extra charges ranging from 10 to 100 fils.

Like gahwahs, hammams are places where gossip and the leisurely passing of time takes place. It is the place where all classes of society come into contact with each other. The hammam is frequented equally by the poor who have no bathing facilities and the wealthy, though the latter have steadily decreased in modern times.

* 10 fils equals one new penny.

** The mudallik's payment varies with the number of patrons he has. The average number is 30.

For men it is sometimes a place for informal business conversation and for women it provides an opportunity to exchange housekeeping ideas. When the hammam is not hired for the females of one family, women of the general public are admitted. Usually they are accompanied by their children. A wealthy lady may take her girl servant with her for massage and hair dressing.

The hammam also gives an opportunity for women to display their jewels and finest clothes. As in the case in Cairo, Baghdadi mothers frequently choose brides for their sons from the female clientele of the hammam,[8] following a well-tried procedure whereby after a period of discussion they find out the girl's name then describe her to the son, who after the usual conventional enquiries may ask for the girl's hand, very often even without seeing her. This used to happen among the poor classes.

The hammam is a place frequented two days before marriage by poor-class girls. The bride is joined by a number of her friends and relatives, when attending the hammam, and dancing and singing takes place on such occasions. Another occasion when women use the hammam is the seventh day after childbirth, followed by the 40th day after the birth. On both occasions, friends and relatives join the mother.

The number of hammams for women (nisa) in Baghdad is 19. Sometimes there are hammams for both sexes, for men during the morning and women in the afternoons. A veil stretched across the front of the entrance is used to indicate that it is the women's turn. Generally hammam assistants prefer male patrons to female, perhaps because of their misuse of water or because they bring their children, who are usually admitted free of charge. They also bring with them various kinds of food, leaving litter in the hammams and they are often noisy in their mirth.

Even now many Baghdadis consider the hammam a place for relaxation, medical treatment and massage, which takes place in a ceremonial manner.

The hammam represents a characteristic type of building in Arab towns. The functions of the hammam, and the way these are performed has determined its design which in turn reflects the architectural and technical propensities of the builders. Almost all Baghdadi hammams are vaulted structures to which the principle of a rectangular court and liwan (patio)system has been applied (Figs. 18.3, 18.4). Thus al-Jawani (the inner chamber) is kept closed with only small windows for the admission of light to maintain an even, high temperature in this section. Accordingly, the walls here are the thickest, and the ceiling is domed. In this section too, several staggered passage-ways were developed, to avoid draughts and to give privacy.

Today as in the past the hammam in Baghdad consists of several apartments, all of which are paved with marble, tiles, mosaic or bricks, sometimes in a mixture of various colours.

Although the 60 hammams of Baghdad differ in size and in the comforts they offer to their patrons, there is an overall similarity in their plans presenting two types as seen in(Fig. 18.3, 18.4). The first is represented by Hammam Ayoob in traditional Kark which is one of the oldest hammams in Baghdad probably dating as far back as the 16th century. The second represents the most modern hammam in Baghdad, being built in 1969, in Kadhimiyah.

The traditional Baghdadi hammam consists of covered apartments: al-Barrani (outer) al-Wastani (middle) and al-Jawani (inner.) Only with this type of structural arrangement can the bathing process be performed properly. Heat and humidity rise as the patron proceeds in his clogs towards al-Jawani.

Al-Barrani ("Frigidarium")

The exterior loungeis used for undressing, drinking tea, lemon tea, or darscen (a kind of hot drink) or sometimes even for eating a light meal although this usually takes place after bathing. The temperature here in spite of the name is higher than in the street. Here as well as in the inner chamber (al-Jawani) are a number of closets which are used by the wealthier patrons. The number of these closets (Qamarahs) varies, but may be as many as 28, as in Hammam al-Milooki in Kadhimiyah. Annexed to this or in one corner of this rectangular chamber are located the gahwachi (tea-sellers' stalls) and the reception, or manager's rooms (al-Muallim). In recent hammams there is a gallery usually used for changing projecting over the court where there may be a fountain. From this quarter communication with al-Wastani is maintained by either a corridor or passage, or directly through a door that must be kept closed. This is the most luxurious part of the hammam. It is furnished with wooden or brick seats covered with carpets, and large mirrors are hung around the walls.

Al-Wastani ("Tepidarium")

Here there are a number of small rooms designed for toilets, showers and removal of body-hair using an arsenic preparation. The temperature here is higher than in al-Barrani, owing to its proximity to the heated inner quarter. Al-Wastani has either a domed or a flat roof.

Al-Jawani ("Caldarium")

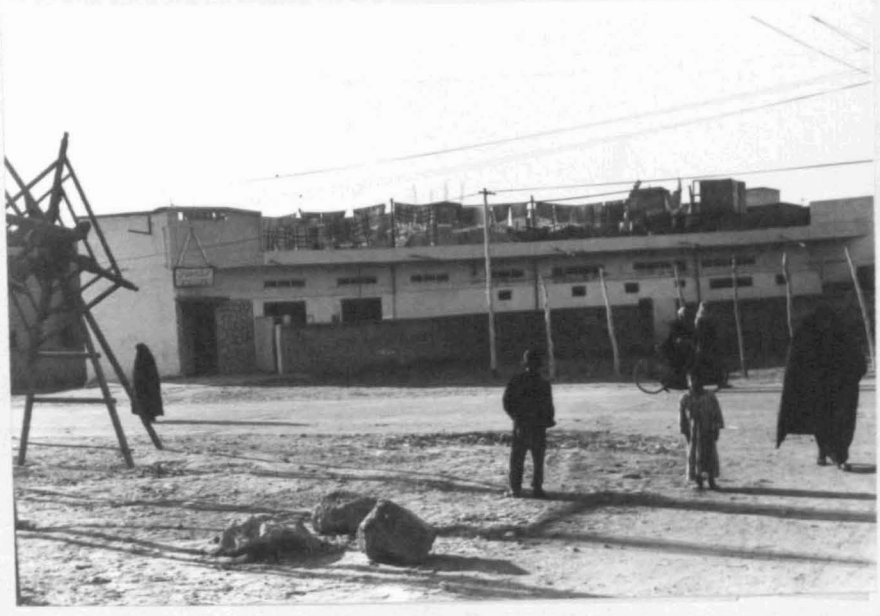
This is the main quarter of the hammam. It is the hottest part, being heated by steam from a central jet of water in the middle of a basin. The main construction materials are bricks and juss (plaster) which frequently cracks and falls, owing to temperature variation.

F. P. 834

Fig. 18.6

Examples of modern hammams:

a. Al-Baiya Hammam



b. Al-Rahmaniyah Hammam

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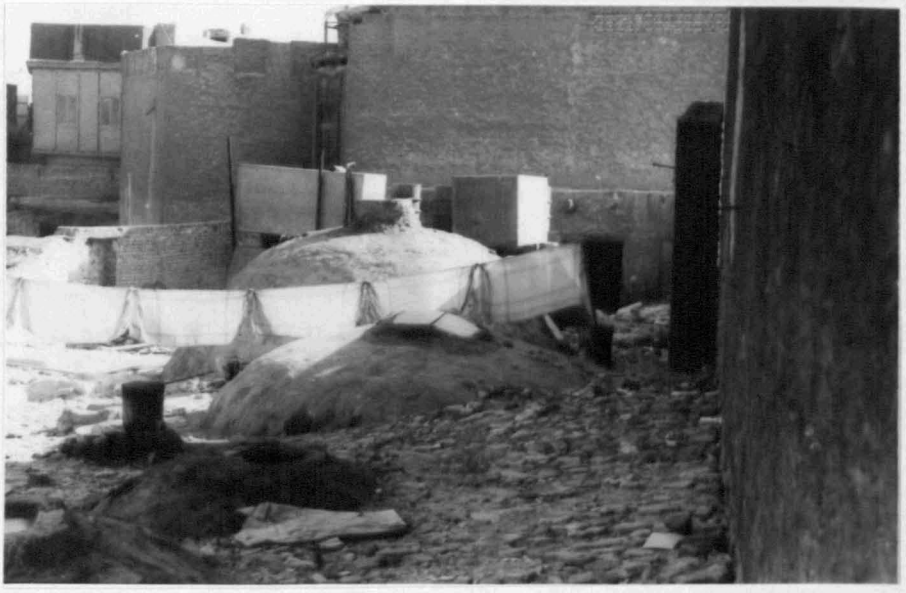
Fig. 18.5

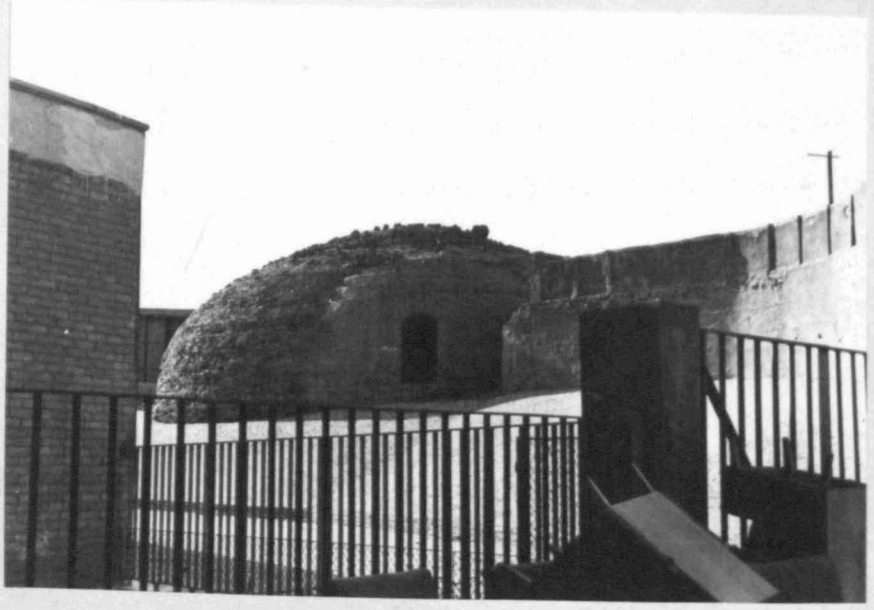
Examples of traditional hammams:

a. - Al-Murtadha Hammam in Kadhimiyah
b. - Othman or Abbas Hammam in al-Maidan (now a furniture shop)

a.



b.



Al-Jawani generally has 4 - 8 liwans, lining the thick wall, around either a circular, rectangular or octagonal platform, constructed over the source of the heat. This platform is usually covered with coloured tiles, mainly white or a mixture of black and white, and is used during the perspiration phase for relaxation. With its apartments al-Jawani constitutes a virtually square-shaped area. There are certain closets or alcoves, let to patrons of a higher order, who have their own towels kept in the hammam. One or two corners of al-Jawani are occupied by "mughtas" or tanks of warm water, approached by ascending a few steps. Some of the small chambers within al-Jawani are covered with domes and also have small windows for lighting. A number of small marble (or, recently, concrete) water basins are appropriately spaced, lining al-Jawani, and are also found in the small main chambers. In front of each of these basins are stone or marble seats. Each basin has taps for cold and hot water.

Some of the government-owned hammams have abandoned the domed plan. The roofs of such hammams are flat causing some inconvenience to the bathers, since condensation drips off them, whereas in the traditional dommed hammams it runs down the walls.

The domes which are usually lined with tar vary in size and number (Figs. 18.5, 18.6) from 3 to 12. Usually the three major sections of the hammams are those with large domes, while the other divisions are with smaller domes or cupolas. There is an opening in the middle of the dome of al-Barrani, through which dry napkin towels are passed. Some of the old hammams have stables annexed to them as the main forms of transport used to be horses, mules, donkeys or camels.

Baghdadis consider hammams to be of considerable importance. Some of the old hammams have their own wells, from which they obtain water, these being worked either by animals or men. Most of the hammams built before 1936 are some 3 to 5 steps below the level of the zuqaqs or bazaar lines.

Some of the hammams have decorated fronts, similar to those of mosques, while some of the modern hammams have more elaborate facades.

A water tank is placed at a higher level, to facilitate the supply of water to all quarters of the hammam.

The furnace room (mishal or qamin), where the fire is situated, is located to the rear of the hammam and is separated from al-Jawani by a partition wall which is pierced by several holes, through which the steam passes. Hot water is circulated in the interior of the hammam, while cold water complements this circulation by a system of ventilation from the stove and by a circuit evacuating the waste water.

Al-Shaul (the fireman) sometimes lives in a special section, annexed to the furnace room, which has its own exit into the zuqaq or street.

The modern hammams have improved both structurally and hygienically when compared with some of the old ones, which were sometimes the source of diseases owing to poor standards of hygiene.

Concrete has been adopted in hammam construction for walls, domes and floors. Petrol and crude oil are now used increasingly for heating, this replacing wood and twigs. Electricity has also been introduced into all hammams in Baghdad for lighting and heating. Electric bells began to be used in many of Baghdad's hammams for calling waiters,

replacing the old manner of knocking a brass cup on the basin or the ground.

As a result of recent improvements in bathing services, charges for have increased fifteen-fold, from 10 fils in 1930 to 150 fils in some of the modern hammams. With all the modification and improvement that has taken place in today's hammams in Baghdad, there is a great simplicity in conception and execution, with very limited endeavour at architectural decoration, except in the facade and al-Barrani.

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Chapter 19

Gahwahs and Certain other Social Facilities

Gahwahs or coffee-houses have been one of the most characteristic elements of Baghdad and other Iraqi towns since the 17th century. Although they influence the social life and morphology of the city and are numerically the dominant places of recreation in Baghdad, they have never been studied in detail.

Unfortunately there are no statistical data about the number of gahwahs, the number of their clients, or their date of establishment and cost of construction. Even Amanat al-Asimah has no record about this significant social and morphological element of Baghdad. Recently, the Health Directorate of the Capital has begun to supervise such establishments, but health inspectors are few in number, and unable to supervise the huge number of Baghdadi gahwahs. Although the names of gahwahs, mainly a list of owners or assistants, have been recorded their addresses remain unknown so there is still confusion regarding their locations. Presumably, these inspectors are supposed to visit all Baghdadi gahwahs to find out whether they conform to the requirements of sanitary standards laid down by the Health Directorate, but this has never been efficiently maintained. Less than half the gahwahs might be inspected in a year, therefore many abominable side-street or zuqaq gahwahs develop every year about which the authorities responsible know nothing. Clearly this makes it more difficult to locate them (Fig. 18.1). In addition the records of the Health Directorate are written by hand as they have only two or three type-writers which are fully occupied with routine correspondence. The absence of effective legislation has encouraged the establishment of gahwahs all over the city, thus adding to the difficulty of recording their numbers.

F.1.839

Fig. 19.1

a. Hasan Adjmi Gahwah on al-Rashid street is one of the oldest modern metropolitan gahwahs

b. Gahwahs in Baghdad frequently encroached upon streets as they lack the veranda element. A local gahwah in al-Hurriyah.

The word "gahwah"literally means "coffee" which however is not served by most of Baghdad's gahwahs. They mainly serve tea, lemon tea and cold drinks. Chaikhanah, a Persian word means "tea house" and is thus more correct. There are few traditional metropolitan gahwahs which offer Arabic coffee, and it is usually served strong without sugar or milk, but a few cardamom seeds are often added to it, giving the coffee a pleasant flavour. Coffee is served free, as only the other drinks have set prices which are fixed by custom rather than by law. Patrons usually tip the gahwachi (attendant of the shop) for the coffee, which is frequently offered to customers more than once.

The first gahwah introduced into Baghdad was in 1590.[1]* They were mentioned and described by travellers from the 17th to the 19th centuries. In 1774 Parson put the number in Baghdad at 955.[2] In 1882 it was 184 and the figure increased to 285 in 1903.[3]

In the 19th century gahwahs were the scenes of execution, criminals being exposed for the day as a warning to evildoers.[4]

Until the 1920's it was impossible for a moustacheless man or less than 20 years old to enter a gahwah. This social custom is still operative in certain parts of the city.

The most celebrated metropolitan gahwahs have emerged in the centre of the Old Town, i.e. Rusafah and Karkh. Gahwahs here are intimately related to the location of bazaars, grand central mosques, the major zuqaqs, to rent value and since the first world war to the modern break-through streets.

Among others, the best respected traditional gahwahs of our century are al-Baladiyah, Hasan Adjmi (Fig. 19.1a), al-Barlaman, al-Azzawi, Khalil and Haj Najim in Rusafah, mostly along al-Rashid the

* The prices of coffee were mentioned by earlier historians but this did not refer to coffee-houses.

first break-through street in Baghdad, In the bazaar area of Rusafah are also the merchants' gahwahs of al-Shatt, Sayid Muhammad and al-Khaffafin. On the West Side, al-Bairuti of the bridgehead of al-Shuhada, and al-Shuk at the bridgehead of al-Ahrar are the most famous gahwahs.

The number of gahwahs is increasing enormously. This phenomenon has become more apparent in the last two decades, owing to rural-urban migration. With each wave of migration numerous rudimentary gahwahs have sprung up, many of them of a temporary nature as they are constructed of light materials.

Many houses, particularly along the major traffic and business streets, have changed their functions to become gahwahs. This dynamic phenomenon inspired by the technological and economic development of the city, commenced as early as the beginning of this century. Hasan Adjmi, on al-Rashid Street, replaced a traditional house, occupying the ground floor, while the upper floor became a low-grade hotel. This occurred in 1924, indicating how this central business street flourished at that time. Many other gahwahs in other parts of the city followed suit, leaving the upper storeys for residential or professional use, or for conversion into hotels. Some other buildings, such as garages in central areas, have also been replaced by gahwahs with some modification to the internal design. This is exemplified by al-Barlaman metropolitan gahwah on al-Rashid Street.

When a traditional house has been altered to a gahwah in the central area, the courtyard has to be covered with a roof which may be used as sleeping quarters in summer by the residents of the hotel. The partition walls between the rooms are also removed to

create a large inner space which is filled with long wooden benches.

Some of the central metropolitan gahwahs have completed their life cycle by changing in turn their own function. For example al-Azzawi gahwah, beside al-Ahmadiyah Grand Mosque, was one of the most celebrated gahwahs in Baghdad before 1950 when it became a carpet and furniture shop. Here again the physical structure underwent alteration and modification to suit the new function. Some of the central gahwahs were also replaced either by break-through streets or by new buildings, mostly multi-storeyed to provide accommodation for central and more profitable functions.

With new technological development every gahwah has a radio and a considerable number of them possess tape recorders and television sets, to attract those who have no television at home. These new attractions encourage people to stay longer particularly in the evenings when patrons sit down to drink their tea, playing various kinds of table games and enjoying these modern facilities.

From the field survey it appeared that in many of the surveyed mahallahs there is a relationship between private television ownership and gahwah frequentation. The higher the percentage of television owning families the lower the percentage of people frequenting gahwahs. For example, only 20 per cent of the interviewed families in al-Washash and 20 per cent in Kraiat own television sets, the percentages of gahwah frequentation for the former was 75.86 and 100 for the latter. Conversely while all the interviewed families in al-Mansur possess television sets, the gahwah frequentation was as low as 37.5 per cent.

Gahwahs are the key element in the day-to-day social and recreational life in the City of Baghdad. Men of all classes usually meet in gahwahs, gossiping, debating or playing endless table games.

Socially, gahwahs complete the daily life of the Baghdadi citizens, which usually starts in the mahallahs and bazaar. Gahwahs here resemble the social club or traditional English "public house".

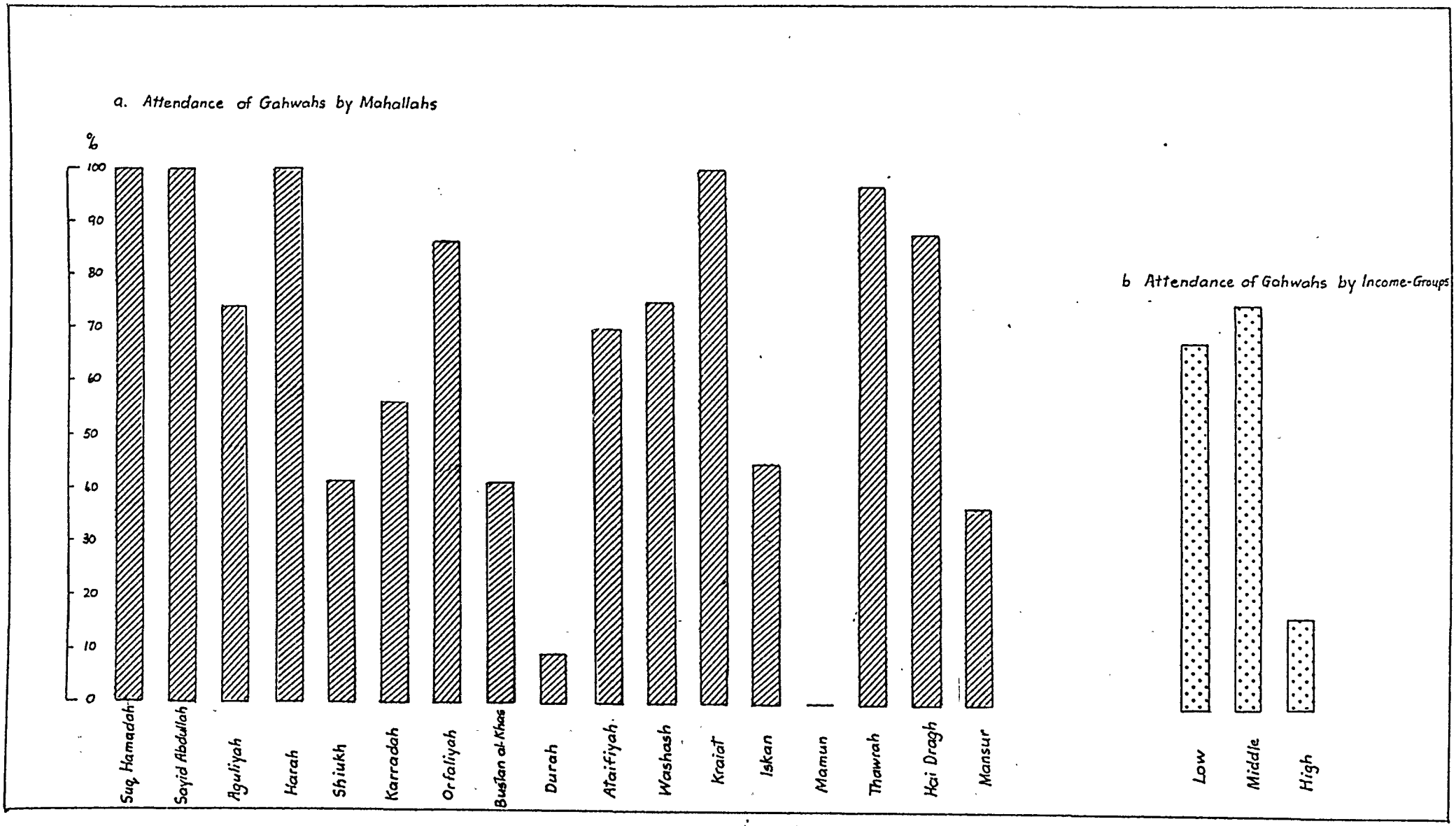
For religious reasons there were no theatres in Baghdad until 1916 when the first one was established in al-Shat Gahwah in the bazaar area. Until the 1940's some of the Baghdadi gahwahs such as al-Azzawi in al-Maidan and al-Mumaiz at the bridgehead were used at night where in summer dancing took place on the gahwahs roofs.[5] Until recently, many gahwahs had their own rubabah (a primitive one-stringed violin) player and qissakhun (story teller), who has now been largely superseded by the radio. The reputation of qissahkhun and his art of story-telling affects the number of customers who might be attracted from distant parts of the city. At present, gahwahs are very popular places of entertainment. This fact is still a characteristic feature of the city's life despite the increasing number of cinemas, theatres, social and sports clubs. Billiards have been introduced into several gahwahs, especially those located in the recreational section of the city, where illegal gambling takes place. The field survey (Table 19.1) shows that gahwahs are favourite places of amusement attracting regular patrons from all the 17 surveyed mahallsh, regardless of their location and period of development. There are a few exceptions: in three mahallahs, cinemas attracted higher percentages of customers than gahwahs, viz. in the high-class mahallahs of al-Mansur and al-Mamun and the predominantly Christian mahallah of al-Durah. In the other mahallahs, i.e. 82.35 per cent of the surveyed areas, the majority of those interviewed frequent gahwahs as the favourite place of entertainment. About 66 per cent of the interviewees from all mahallahs frequent gahwahs in their

Table 19.1 Frequentation of Places of Entertainment in the Surveyed Mahallahs in percentages: (Fig. 19.2).

Mahallah	% of Interviewees frequenting particular places of entertainment during their leisure hours.								Morpho-logical phase
	Gahwahs		Cinema		Public Library		Social Club		
	M.	F.	M.	F.	M.	F.	M.	F.	
Suq Hamadah	100.00	-	38.46	-	-	-	23.08	-	2
Sayid Abdull-ah	100.00	-	54.55	-	-	-	45.45	-	2
Aguliyah	75.00	-	62.50	50.00	-	-	12.50	-	2
Harah (Adhamiyah)	100.00	-	55.56	44.44	-	-	22.22	-	2
Shiukh (Kadhimiyah)	4118	-	11.76	-	-	-	-	-	2
Karradah al-Sharqiyah	56.25	-	56.25	6.25	25.0	-	25.00	-	2
Average	78.74	-	46.51	17.62	4.17	-	21.38	-	
Orfaliyah	86.36	-	27.27	13.64	-	-	2.27	-	3
Bustan al-Khas	41.18	-	11.76	-	-	-	29.41	5.88	3
Average	63.77	-	19.47	6.82	-	-	15.84	2.94	
Durah	8.33	-	58.33	33.33	-	-	58.33	-	4
Ataifiyah	70.00	-	60.00	40.00	-	-	30.00	-	4
Washash	75.86	-	34.48	-	-	-	17.24	-	4
Average	51.40	-	50.94	25.78	-	-	35.19	-	
Kraiat	100.00	-	6.67	-	-	-	33.33	-	5
Iskan	44.44	-	22.22	-	33.33	-	66.67	-	5
Mamun	-	-	75.00	75.00	33.33	-	25.00	-	5
Thawrah	96.60	-	37.93	-	6.90	-	17.20	-	5
Hai Dragh	88.24	-	25.53	11.76	17.65	-	29.41	11.76	5
Mansur	37.50	-	50.00	50.00	-	-	71.43	57.14	5
Average	61.13	-	35.89	22.79	15.20	-	40.51	-	
General Average	65.94	-	40.36	10.61	6.84	-	29.91	11.47	

Source: Fieldwork 1971, See Appendix A, Table Nc.
M: Men; F: women.

Fig. 19.2 Gahwah Attendance of Male Interviewees



leisure hours, both on weekdays and weekends.

If one excludes al-Durah, an interesting phenomenon will be apparent. There is an obvious relationship between the morphological phase of the area and the percentage of gahwah frequentation. The older the area, the higher the percentage of the population who regularly visit gahwahs. The percentage of gahwah frequentation according to the four morphological phases are respectively: 78.74 per cent, 63.77 per cent, 72.93 per cent (excluding al-Durah) and 61.13 per cent. The percentage was lower in the areas developed in the third morphological phase (1920 - 1936) than that of areas of the third phase (1936 - 1956) because these mahallahs are dominated by Christians, who traditionally prefer other places of entertainment.

None of the women interviewed frequent gahwahs. In the foreseeable future and owing to social tradition, this is likely to continue though the number of wealthy and progressive families who frequent casinos is increasing. Casinos are the most developed form of gahwah and are more appropriately located.

Less than 7 per cent of the interviewed males and none of the females frequent public libraries in their spare time. This sad phenomenon is marked in all mahallahs regardless of sect, location, period of development or economic stratum.

The importance of gahwahs to the Baghdadis can also be tabulated, according to the economic order of society. Table 19.2 reveals that the higher the class of the surveyed localities, the lower the frequentation of gahwahs. If one excludes al-Durah, the mahallah dominated by Christians, the percentages of those interviewed frequenting gahwahs in the upper, middle and low classes are respectively 18.75 per cent, 76.44 per cent and 77.02 per cent. None of the females of the three classes frequent gahwahs, reflecting the great influence of social

F.P. 846

Fig. 19.5

a. A mantiqah (district) gahwah in Kadhimiyah

b. A metropolitan gahwah in al-Murabah along al-Rashid street

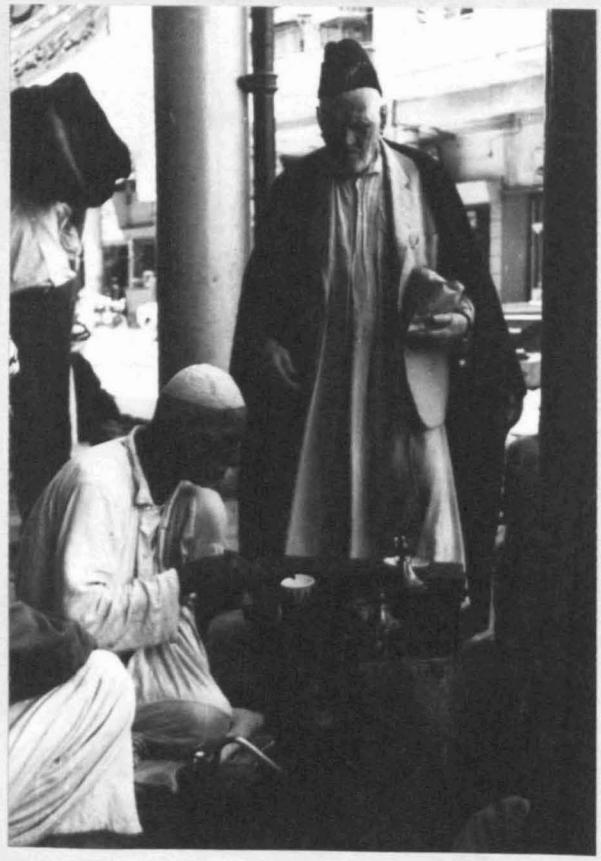
F.P. 84b

Fig. 19.4

a. A mahallah gahwah in al-Washash (closed on a Friday)

b. A typical mahallah gahwah in lower middle and low class suburbs. (Al-Baiya)

Fig. 19.3



a. A street vendor in tea and coffee

b. A sub-mahallah (taraf) gahwah in Siraj al-Din Mahallah

traditions on individual behaviour.

Table 19.2: Frequentation of places of entertainment by classes (Fig. 19.2)

Class	% of interviewees frequenting particular places of entertainment during their leisure time							
	Gahwah		Cinema		Public Library		Social and Sports Clubs	
	M.	F.	M.	F.	M.	F.	M.	F.
High	18.75	-	62.50	62.50	16.67	-	48.22	28.57
Middle	76.44*	-	37.21**	9.55	12.68	-	38.31	1.95
Low	69.33	-	37.54	15.71	0.77	-	20.21	0.65

Source: Field Work 1971, See Appendix A, Tables D, Nc.

A hierarchical distribution of gahwahs in Baghdad can be determined, based on the size of the catchment area, type of clientele, or architectural design of each gahwah.

The lack of statistical information makes it impossible to carry out a statistical analysis which would be very interesting, as gahwahs are so intimately related to the daily life of Baghdadi society.

Baghdadi gahwahs fall into four categories according to their catchment areas, namely; the sub-mahallsh (taraf) gahwah, the mahallah gahwah, the district (mantiqah) gahwah and the metropolitan gahwah (Figs. 19.1, 19.3, 19.4, 19.5).

The first category of gahwah caters for the immediate community living in the nearby agids, zuqaqs or streets, and is known in Baghdad, particularly in the traditional sections as gahwat al-taraf. These generally occupy a site at a street corner, or zuqaq intersection or

* Including al-Durah, the Christian locality.

** Including the rural settlement of al-Kraiat.

near the shops, which are mainly bakers, grocers, butchers, and general stores.

Here patrons know each other and the atmosphere is informal. The customers visit frequently, sometimes even wearing pyjamas, or native dress. They do not have to pay in advance: weekly, monthly or even quarterly payments are accepted. Prices here are very low, being 10 fils for tea and 15 fils for cold drinks. Gahwahs of this order pay very low rents usually on a monthly basis, and are furnished with a number of benches, tables, radio, various types of dominoes and dice, and occasionally television.

These correspond to al-agid, strangers hardly ever visit them, and those who do, usually know some of the local people. Hours of opening are decided at the discretion of the staff, though like other gahwahs, they are generally open between 9 o'clock and 12 midnight. The catchment of this category is limited, as in the clientele. Numerically, this category accounts for the highest percentage of gahwahs. In the traditional mahallahs they occupy the ground floors of traditional houses, while in the suburbs they are in garages, ground floors of residential units, or parts of the ground floors of multi-storey buildings.

The next order is the mahallah gahwah introduced to support a community life atmosphere to which, the mahallah inhabitants had been accustomed for centuries.

The inhabitant retains this important element in his life because here, near to his house, he is able to meet his friends and enjoy the evening talk much as he is accustomed to in the courtyard of his own traditional house.

Mahallah gahwahs may be closed at any time depending on the season of the year and their location. They are frequented by people from a wider area than those in the first category, although these people still tend to know each other. Because of this relatively wider circle of clientele however, they are not so informal.

Whether in the traditional or modern parts of the city, the inhabitants, always males, visit their mahallah gahwahs at least once a day. Gahwahs in this category usually have radios, and sometimes a television and tape recorder and the local table games, as well as hot and cold drinks and in some cases light food as well.

Prices here are the same as in the first category, though sometimes the cold drinks are slightly dearer. These gahwahs usually seek more strategic and central sites in the mahallah, to make them more accessible since all customers come on foot. The mahallah square and suq thus is their favourite site. The monthly rent is higher than that for the first category, as there is more competition here.

The third category, the district gahwahs, are exclusively located in areas developed after 1945, i.e. in suburban areas, with a distinctive concentration in suburbs emerging after 1956. This kind of gahwah is more roomy, better furnished, housed in a modern building, perhaps built for the purpose, on a higher rent scale, so the prices are higher.

These gahwahs are associated with the recent sprawl of the city inspired by the improvement of transportation. The district gahwah derives its patrons from a wider catchment area, perhaps comprising more than five mahallahs. Transport is thus needed by its clientele unlike that of the former two grades of gahwah (Fig. 19.5a).

Strategically placed in major streets, on the Tigris, on main streets intersections, near mosques and not far from the commercial centres of the tributary area, these gahwahs are separate from the residential units, in contrast to those found in the former two grades. Accordingly their clientele is drawn from various parts of the city, and they are prevented from interfering with the domestic life of the inhabitants. All these gahwahs are provided with television, radio, record music, table games, small temporary or permanent restaurants, open and covered apartments, shoe cleaners, and refrigerators. Some of them are supplied with air cooling systems whereas the other two grades only have electric fans. Also, the number of customers and accordingly the number of employees of these gahwahs is higher than those found in the former categories.

Kadhimiyah, Adhamiyah, Karradah al-Sharqiyah, Mansur, Baghdad al-Jadidah, and Salihiyah are famous districts for gahwahs. Students here represent a high percentage of the clientele, particularly before the mid-year and final examinations when they use the gahwah for reading. This reflects both the lack of public libraries in the city and the fact that student accommodation is not conducive to studying.

Almost all the clientele of these gahwahs is drawn from Baghdad alone, compared with the highest order of gahwahs, i.e. the metropolitan, which derives its clientele from all over the country as well as from the city of Baghdad itself. This can be explained by the fact that almost none of the suburbs developed after 1956 has a hotel, because of the residential nature of the suburbs.

Finally, there is the metropolitan gahwah (Figs. 19.1a, 19.5b). This category offers better services than the other three categories to almost all the inhabitants of the various parts of the city, as well

as from other parts of Iraq. These gahwahs are placed exclusively either in the business centre or in the recreational areas. In the former case the patrons are mostly businessmen, traders, and people who flock to the centre to complete their business, such gahwahs being crowded during the morning, while the latter type are frequented by people primarily drawn from the middle and upper classes, many of them owning cars or able to pay transport costs. The charge made in these gahwahs, some of which are called casinos, is usually higher than in the others, being as much as ten times the price in the first category. Young people tend to look for establishments in this category and so travel outside their places of residence. Also, the feeling of belonging to a higher income group pleases the middle classes.

Most of these gahwas or casinos are located along the Tigris on Abu-Nuwas promenade and many of them are opened only during the summer season. These are therefore seasonal compared with the casinos, which however are better designed and permanent. Each casino comprises a covered, brick-built structure located on the eastern or city side of Abu-Nuwas Street and functioning throughout the year, and a temporary building on the river side, used seasonally when the river is at its lowest level.

Here, as well as in the case of many district gahwahs, tree gardens attract patronage.

In many of the Abu Nuwas casinos, alcoholic drinks are served and meals of various kinds are available. These gahwahs have the best in interior decoration and services, are most easily accessible, and are therefore the most lively in the city, show the finest design and pay the highest rent.

Closing time may be as late as 2 o'clock in the morning, as there are no fixed opening hours. As long as there are customers the gahwahs remain open, so that if the last client stays until 3 o'clock in the morning the gahwah stays open accordingly. This applies equally to most of the bars in the area.

This recreational centre of the city replaced the older one, located in the al-Maidan near the north gate of Rusafah. Since the 1940's the Bab al-Sharji (south Gate) and Abu-Nuwas areas have attracted the recreational centres of the city, whether in the form of gahwahs, cinemas, theatres or bars.

The high concentration of gahwahs and casinos in the Abu-Nuwas and Sadun areas affects the overall pattern of city traffic, particularly in summer when customers congregate from various parts of the city and disperse again at certain hours of the day or night.

Another classification could be adopted according to the type of clientele of each gahwah. Accordingly in Baghdad there are gahwahs for students, and for traders, gahwahs for young people, and those which cater for the various social strata. However, any one may visit any type of gahwahs although each is dominated by one particular type of customer.

Furthermore, concentrations of certain gahwahs occur in certain parts of the city, mainly near the terminals of long-distance transport routes, which gives them a regional character. Each gahwah is dominated almost exclusively by people from certain areas of the country. The names of such gahwahs also suggest this regional orientation, so that in Baghdad it is common to find a gahwah for people who come from Ramadi Liwa, or Nassiriyah Liwa, or even from small towns as :for example the gahwahs of al-Aniyin, al-Tikartah, after

Anah and Tikrit, the small gadha centres. Here again most of the clientele know each other and there is a homely atmosphere.

Baghdad is also characterized by its own open-air roof gahwahs. In many cases roofs are utilized where there is insufficient space for a courtyard, and where the gahwahs consist only of an enclosure with windows which can be opened in hot weather. The open air roof gahwahs are concentrated along al-Rashid Street and in the recreational area.

As regards the quality of design and architectural features there is a great number of categories ranging from the very small and primitive in structure like those on the roadside or the sub-mahallah gahwahs, to the very large and costly buildings which are both well designed and decorated and situated in the bazaar and recrational areas.

In spite of the lack of any unified architectural pattern, the typical Baghdadi gahwah is a roomly covered space which can house a number of clients, for the purpose of relaxing and taking tea, or bitter Arab coffee, or enjoying a traditional nargeelah (water pipe). This completely enclosed space forms the actual building of the gahwah; the second component is the tarmah (verandah) located in front of the enclosed part. Finally there is the open space in front of the verandah. The need for all this space is demonstrated by the fact that in many cases the street infront of the verandah is used if the third element, i.e. the courtyard is missing (Fig. 19.1b). The verandah is used throughout the year, thus it has in many cases become the most well decorated and carefully planned part of the building. On the verandah as well as in other parts of the gahwah most seats are "takhits" or raised wooden seats with arms, two or

three feet high and about the same in width, and covered with matting or carpets.

In spite of all the various gahwahs, Baghdad and all other Iraqi towns, particularly the large ones, have a great number of tea sellers, who are mainly concentrated near the bazaar areas, close to the government offices, adjacent to the religious centres and near the traffic terminals (Figs. 19-3a) . . .. The stands of these tea sellers vary considerably in size, mode of construction and decoration. But most commonly there is a small stove, a china teapot and small glasses. Usually the tea seller has one or two friends, often unemployed, who squat by him and drink the strong sweet tea, while his little boy, swinging a beaten brass tray on a wire hook, waits to carry the glasses ordered by passers-by or local shopkeepers who are entertaining potentially profitable customers. However, many of the tea sellers now have special stands equipped to hold ice for keeping various soft drinks cold, since these are rapidly becoming the most popular drinks in Baghdad. It is not known how many tea sellers there are.

Another site associated with the gahwahs in Baghdad is that of the shoe polisher: In most of the district and metropolitan gahwahs, as well as in some of the mahallah ones, there is a shoe polisher. Hasib estimated that there was one for each five gahwahs in Baghdad.[6] It seems from field observation that most gahwahs in the more central areas have a permanent shoe-shine boy, and perhaps another temporary one, who work all the time the gahwahs are open. There is no effective legislation to regulate the age limit of these workers who are mostly young Kurds and Persians. Traditionally hardly any Arabs clean their own shoes themselves; accordingly there is never any shortage of shoe cleaners in the city.

In almost every gahwah in Baghdad there are several small boys and old men with trays of miscellaneous articles for sale, from socks and combs to razors and watches. Before 1948, most of these pedlars were Jews, but many of these are now being replaced by boys and men of immigrant families who live mostly in al-Thawrah and al-Shulah.

The locational pattern of the Baghdadi gahwahs is intimately related to the age of development of the area, the commercial core of the city, the distribution of mosques, the street system, the River Tigris, the recreational areas, the distribution of governmental offices, the land value and rent pattern and the population distribution of the city. All these factors interdependently affect the movement and concentration of population and through it the distribution pattern of Baghdad's gahwahs.

The number of gahwahs depends very much on the political and economic situation of the country. When there is political stability, the number of gahwahs increases as there is no danger in public meeting. On the other hand, if the country is in a politically unstable period, the gahwahs decrease owing to the potential danger of people gathering together. Waves of migration also affect the number of Baghdadi gahwahs. After 1956, gahwahs of all descriptions multiplied, most of them being run and frequented by unemployed fallahin migrants.[7] The high number of gahwahs in Baghdad also reflects the economic situation of the city as a high percentage of the gahwah clientele are jobless, particularly during the day.

In 1971, the number of Baghdadi's gahwahs was 1,392.[8] The distribution of gahwahs in relation to population is shwon in table 19.3 below (cf. also Fig. 18.1).

Table 19.3: Gahwah distribution in Baghdad 1971 - in relation to population.

Area	Pop.	No. of Gahwahs	No. of Pop. per Gahwah	No. of Employees	No. of Pop. per Employee	No. of Gahwahs per 100,000
East Side						
Adhamiyah	123,486	163	757.58	343	360.02	132.00
Rusafah	199,082	199	1000.41	453	439.47	99.96
Karradah al-Sharqiyah*	149,805	123	1217.93	293	511.28	82.11
Qanat al-Jaish	405,101	91	4451.66	171	2369.01	22.46
Baghdad al-Jadidah area**	79,453	56	1418.80	131	606.51	70.48
Total	956,927	632	1514.13	1391	687,94	66.04
West Side						
Kadhimiyah & Ataifiyah	63,427	222	222.00	612	103.64	350.01
Harriyah & Shulah	101,666	136	747.54	223	455.90	133.77
Karkh, incl. Karradat & Harriyan	60,316	282	213.89	560	107.71	467.54
Western Suburbs W. of Railway Line	248,491	120	2070.76	202	1230.15	48.29
Total	473,900	760	623.55	1597	296.74	160.37
Gen. Total	1,430,827	1392	1027.89	2988	478.86	97.29

Source: The 1965 Census, Health Directorate of the Capital, Unpublished Records, Baghdad (1971).

The above table reveals that although the population of the East Side is more than that of the West Side, the total number of gahwahs in the

* Including Battawiin and Ilwiyah

** and suburbs along the Khanagin highway.

latter was more than in the former. This can be explained by the existence of the shrines of al-Immain in al-Kadhimiyah and by the fact that Karkh is part of the central area where most of the long-distance transport routes terminate. These two facts have turned this area into a major business and religious centre attracting people from various parts of Baghdad as well as from all over the country, which consequently encouraged the establishment of more gahwahs. The highest concentration of gahwahs appears in the traditional parts of the city, viz. Karkh, Rusafah, Kadhimiyah and Adhamiyah where the religious centres, bazaars, business and recreational centres are concentrated. They have 62.21 per cent of all gahwahs of Baghdad and the lowest average number of people per gahwah.

Karkh has one gahwah for every 213 people, a ratio which indicates the nature of this centre. Kadhimiyah has one gahwah for every 222 people. The suburbs on the other hand are predominantly residential thus the average number of people per gahwah is 4451 in the eastern suburbs along Qanat al-Jaish, and 2070 in the western suburbs. The average number of persons per gahwah in Baghdad as a whole was 1,027, a phenomenon indicating many unhealthy features in the structure of the city and its society. The huge number of unnecessary gahwahs also reflects the lax policy of the municipal authorities regarding this aspect of life. Legal controls should be adopted to create a balance between the city's population growth and the most appropriate use of land. The rise in opportunities for the unemployed, an increase in the taxation on such institutions as gahwahs and the issue of more stringent health regulations for new gahwahs may curtail and control both developments' and distribution. The numerical dominance of gahwahs in comparison to other services can be seen in the table below.

Table 19.4: The standard of main services available in Baghdad 1971.

	No.	No. of Pop. per Institution	No. of Institutions per 100,000
Mosques	117	12,299.29	8.18
Hammams	60	23,847.12	4.19
Gahwahs	1392	1,027.89	97.29
Schools	834	1,715.62	58.29
Hospitals	34	42,083.15	2.38

Source: The 1965 census, Statistical Department, Ministry of Education Baghdad (1971) and Field Work 1971.

From this table it appears that gahwahs predominate; while only 2.38 hospitals, 58.29 schools, 8.18 mosques and 4.19 hammams, are found per 100,000 population; there are more than 97 gahwahs. For each gahwah, there were 1,027 people, while the number is as high as 42,083 hospitals. Therefore a comprehensive survey for the services required is urgently needed as part of a physical plan for the city in the context of a wider regional plan. If one examines the figures given in Table 19.3 for the average number of population per employee, the traditional centres again contain the most. While each 103 and 107 persons in Kadhimiyah and Karkh respectively are served by one employee, the figures rise to 1,230 and 2,369 persons per employee in the eastern and western suburbs. For the whole of Baghdad, the average number of population per employee was 478 and the average number of gahwahs per 100,000 population 97. This average decreases in the new suburbs, being only 22 in the eastern and 48 in the western suburbs. Kadhimiyah, and Adhamiyah, the religious centres, and Hurriyah and Shulah, the poor, migrant-dominated localities, have the highest ratios.

To complete the survey of recreational facilities in Baghdad, social clubs, cinemas and theatres must be mentioned (Fig. 18.1). Recently, Baghdad has produced numerous professional and social clubs. The practice began after the Second World War and spread in the 1960's. These new establishments are primarily located in the proximal and distal extramural of the Inner Fringe Belt or in certain parts of the post-1956 suburbs, mainly on the West Side of the city. They compete with gahwahs functionally rather than locationally, the social clubs seeking peripheral sites, whereas the gahwahs prefer central or already well established recreational areas. Functionally, however, the clubs have deprived the gahwahs of some of their clientele, viz. that belonging to the economically privileged classes. Such people have been drawn away by the apparent attractions of the new social clubs. Club life has expanded to include exclusive social clubs of the wealthy and middle-classes and the professional clubs of lawyers, physicians, teachers etc. As shown in Table 19.1 and 19.2 the percentage of those interviewed who frequent the sports and social clubs reflect fairly well the socio-economic structure of Baghdadi society. The wealthier the class, the higher the percentage of its members frequenting such modern establishments, and this applies equally to men and women. The percentage of women of the wealthy class frequenting social or sports clubs is more than 43 times that of women in the lower classes. About 30 per cent of the interviewed men and 11 per cent of the interviewed women have joined either social or sports clubs, which indicates a new post-war trend. The highest percentage appeared in the localities of the fifth morphological phase with their high-class population and some other upper middle-class localities.

It appears also that most of the women frequenting cinemas, social or sports clubs are from localities dominated by either Christians or Sunnah Arabs, but this did not apply to the lower classes.

As shown in Tables 19.1 and 19.2 cinemas as centres for entertainment occupy the second most important place after coffee-houses and are playing an increasingly important part in the recreational aspect of Baghdadi life. Baghdad has 29 cinemas with a total of 21,055 seats,[9] mainly concentrated in Bab al-Sharji area because of the southward extension of the business core and the existence of the recreational streets of Abu Nuwas and al-Sadun. More than 40 per cent of the male interviewees and about 20 per cent of the female interviewees frequent cinemas. The relatively low percentage of cinema-going in the areas developed after 1956 is explained by the inclusion of al-Kraiat, which is a rural settlement dominated by religious Shiah people. The low percentage of cinema frequentation in the areas developed between 1920 and 1936 and dominated by Christians, results from the fact that all the families here belong to economically low classes, who cannot afford the admission charges of cinemas.

The percentage of cinema goers is positively correlated to the economic structure of the population. When excluding Kraiat, the religious rural settlement, the percentage of cinema going men are 62.5 for the upper class, 43.31 for the middle-class and 37.54 for the lower class. The percentages of cinema goers in upper-class areas is the same for women as for men and decline considerably in the other classes. The relatively high percentage of women visiting cinemas in the lower classes is caused by the fact that they incorporate the

two Christian mahallahs of al-Orfaliyah and Bustan al-Khas. A new tendency of cinema building along al-Sadun Street has been observed where wealthier people regularly walk along this most westernized thoroughfare. Some of the distant suburbs such as Baghdad al-Jadidah and al-Baiya have developed cinemas of a local character (Fig. 18.1).

For traditional social reasons Baghdad still lacks theatres and cabarets. Recently two theatres have been built in Karradat Mariyam by the government. In many cases, the theatre groups act their plays in temporary theatres established in rented houses.

Cabarets on the other hand are few in number and located at Bab al-Sharji, al-Sadun Street, al-Masbah and in the Qanat al-Jaish area. They are mainly of eastern type. None of the women in the interviewed families frequent these places, because it is socially unacceptable, particularly among the poorer classes. None of the men interviewed indicated that they frequented such places.

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Chapter 20.

Conclusion

This study has attempted to present a geographical portrait of Greater Baghdad, and it remains to summarize its findings in a final presentation of the regional structure of the city (Map 20.1).

Out of Baghdad's varied processes of functional growth and the associated morphological development there emerges a spatial structure best understood in terms of a hierarchy of regions on the basis of an individualized array of major and minor characteristics. In this hierarchy the largest units or major intraurban regions are the Old Town, the Inner Residential Accretions, the Outer Residential Accretions and the Fringe Belts. Each of these units is composed of subsidiary regions of intermediate rank and these in turn of those of lower order.

The major regions express Baghdad's salient character as a hybrid city of the Arab World by the great contrast between the Old Town with its profuse incidence of traditional forms, its great internal heterogeneity of functions and forms and its very close "spatial grain" on the one hand and the modern residential accretions with their greater general uniformity, their homogeneity of almost exclusively modern forms over relatively larger areas and their coarser "spatial grain".

In this pattern of major contrasting complexes the Inner, Middle and Outer Fringe Belts form important separating zones constituting in fact major regions on their own right through their manifest differentiation from the Old Town as well as the two great groups of residential accretions by reason of their origin and mode of development as well as by their peculiar array of forms. These major regional units are further differentiated internally into intermediate and minor regions by the varying interaction of function, development and

form, from one locality to another. The result is a diversity of spatial character traits producing altogether no less than 135 subsidiary regions. The geographical contents of this diversity and the hierarchical arrangement of regions is presented in the explanation of Map 20.1 as follows.*

The Regional Structure of Greater Baghdad

I The Old Town

A Bazaar Areas:

1. Rusafah's Central Bazaars: Abbasid in layout with partially Abbasid and post-Abbasid Structure (mainly Ottoman).
2. Al-Ahmadiyah Bazaar: Ottoman in layout and structure.
3. Suq Hamadah Bazaar: Ottoman in layout and structure.
4. Al-Istirbadi Bazaar: Developed in the second morphological phase.

B Modern Business Core: Shops and offices of all kinds along the twentieth-century break-through streets in great mixture of commercial buildings of third, fourth and fifth morphological phases.

5. Rusafah's Business Core.
6. Karkh's Business Core.

C Traditional Mahallah Residual: Unaltered traditional mahallah layout with zuqaq street system and occupied by low-income class families of heterogeneous origin.

7. Al-Maidan.
8. Al-Haider Khanah
9. Ras al-Qariyah
10. Al-Fadhil
11. Al-Sadriyah

* In a few instances of generally very peripheral areas the boundaries shown on the map are diagrammatic rather than topographically correct because of the absence of any reliable cartographic basic.

12. Agd al-Nassara

13. Suq al-Jadid

14. Al-Mishahdah

15. Al-Tal

16. Al-Sifinah

17. Inner Karradah al-Sharqiyah

D Modified Central Mahallahs: Early Modern gridiron street system with one to two storey modified courtyard houses developed during the third morphological phase on formerly waste intramural, inhabited by homogeneous low-class communities.

18. Inner Sinak

19. Outer Sinak

20. Bab al-Sheikh

21. Sheikh Maruf

22. Inner Rahmaniyah

23. Al-Nassah-Shiukh mallahs

24. Al-Qattanah

E 25. Al-Sarai: Traditional administrative centre with mainly traditional public buildings of the Abbasid and Ottoman period with two storeys and central courts.

II Fringe Belts.

A The Inner Fringe Belt: The earliest fringe belt of the city surrounding the Old Town (Rusafah and Karkh) commencing its growth in the second morphological phase, irregularly arranged around Rusafah's medieval wall and Karkh's nineteenth-century wall with morphologically different intra-and extramural.

26. Health and cultural institutions with modern street system and multi-storey buildings developed during the third, fourth and fifth morphological phases.
27. Health institutions, governmental buildings, hotels and colleges along the consequent street of al-Jihad and buildingsof two to seven storeys, developed in the fourth and fifth morphological phases.
28. Al-Sahrawardi Tomb and Cemetery: Abbasid in layout, and partially Abbasid in structure, with twentieth-century additional mosque.
29. Working Class one-storey western houses along modern gridiron street system developed in the fourth morphological phase.
30. Sheikh Omar Workshop Area, with workshops of all kinds, garages, a slaughterhouse, governmental offices, alwahs, associated low-class houses, low-grade coffee-houses and restaurants, along Sheikh Omar Street, with buildings of one to four storeys, developed during the third, fourth and fifth morphological phases.
31. Magbarat al-Yahud Area of sheep pens, a governmental bakery, a secondary school, garages, warehouses, low-grade market along post-1956 arterial road mainly of one-storey buildings, developed in the fifth morphological phase.
32. Al-Ghazali Cemetery and Sarifah Settlement. The former developed intramurally, the latter intra-and extramurally. The cemetery is Abbasid in layout with Ottoman and modern graves, the sarifah settlement is of the fifth morphological phase.

33. Baghdad-East Railway Station serving the recently transferred Kirkuk Railway, built in the fifth morphological phaseand Police Institutions.
34. Christian Cemeteries in proximal extramural location along the consequent street of Port Said, developed late in the Ottoman period.
35. Bab al-Shariji Area of garages, workshops, governmental land uses, gardens, coffee-houses, cinemas, car showrooms, restaurants etc. along modern streets such as the fringe-belts ends of the central break-through streets and of arterial roads, developed during the third, fourth and fifth morphological phases.
36. Al-Shalchiyah Railway Workshop and Industrial Area, along the Basrah railway, Mosul highway and al-Kadhim Street, with buildings of one to two storeys, developed in the second, third and fourth morphological phases.
37. Sheikh Maruf Tomb and Cemetery complex, Abbasid in layout and partially Abbasid in structure, developed extramurally along Karkh's nineteenth-century wall.
38. The Old Airport, sizeable extramural complex with buildings of two to three storeys, developed in the third morphological phase.
39. Al-Khir Sarifah Area, single room reed-mat huts, inhabited by southern fallahin migrants along al-Khir Canal, developed in the fifth morphological phase.
40. Baghdad West Central Railway Station, along the Old Damascus highwah with buildings of three storeys, developed in the fourth morphological phase.

41. Al-Mansur Social Clubs Complex and Baghdad International Fair along the Damascus highway and al-Mansur Street, of one to three storeyed western buildings developed in the fifth morphological phase.

42. Al-Mansur Race Course along al-Mansur Street, developed in the third and fourth morphological phases.

43. Al-Zawra Park, site successor to al-Washash Barracks built in the third morphological phase, and the Directorate General of Plant Nurseries, along the Damascus highway, developed in the fifth morphological phase.

44. Outer Salihiyah, Duriyin and Shawwakah Complex of governmental institutions, garages, workshops, coffee-houses, health institutions, trade union premises etc. along Jamal Abdul Nasir Street with buildings of one to five storeys, developed during the second, third, fourth and fifth morphological phases.

45. Karradat Mariyam Administrative Complex along Haifa Street with buildings of two to four and Neo-Arab architecture developed in the fourth and fifth morphological phases.

B <u>The Middle Fringe Belt</u>: The second fringe belt not yet closed originated mainly in the third morphological phase along the edge of the pre-1956 city, with the eastern dyke, and the Baghdad-Mosul railway as its fixation lines.

46. Al-Sulaikh Industrial Area with a mixture of modern industries and middle-class houses in a modern gridiron street system and mainly of buildings with two storeys, developed in the fourth and fifth morphological phases.

47. Al-Madinah al-Sinaiyah with a mixture of modern industries accommodated buildings of two to four storeys within a gridiron street system developed in the fifth morphological phase under zoning control.

48. Al-Mustansiriyah University Complex associated with arterial road and developed in the fifth morphological phase.

49. Al-Waziriyah University Complex superimposed on and absorbing a high-class inner residential accretion of the colleges and other institutions of Baghdad University, including students' halls in adapted large single-family houses, in a radial and gridiron estate layout and developed during the third, fourth and fifth morphological phases.

50. Jamilah Modern Industrial Area, with mixed modern industries controlled by zoning in a typical gridiron street system and with buildings of one to two storeys developed in the fifth morphological phase.

51. Sahat al-Tairan Area of mixed governmental institutions (Directorate General of Surveys, Police Hospital and other institutions) garages, industries and a football ground in a gridiron street system with buildings of one to two storeys developed in the third, fourth and fifth morphological phases.

52. Madinat al-Alab Fun Fair developed along Qanat al-Jaish under zoning control in the fifth morphological phase.

53. Al-Shab International Stadium constructed along arterial road in the fifth morphological phase.

54. Al-Sinah Industrial Area, workshops, garages and warehouses intermixed with governmental institutions and middle- and low-middle-class houses within gridiron street system, developed in the fourth and fifth morphological phases.

55. Camp Sarah Industrial Area with small modern industries, garages and warehouses intermixed with sports grounds, governmental institutions, and low to low-middle-class houses within a gridiron street system, developed in the fourth and fifth morphological phases.

56. Al-Rashid Modern Heavy Industrial Complex developed on the Tigris during the fourth and fifth morphological phases.

57. Al-Rashid Barracks, on Basrah highwah originating as a distal extramural element of the Inner Fringe Belt in the second morphological phase, later translated to the Middle Fringe Belt.

58. Al-Zufuraniyah Industrial Area, modern light industries accommodated in buildings of one to two storeys, within gridiron street system, developed during the fourth and fifth morphological phases.

59. Kadhimiyah Industrial Area, of light industries and garages, intermixed with low-class houses along Mosul railway and Mosul highway, developed in the fourth and fifth morphological phases.

60. Al-Salam and Topchi Modern Industrial Area, of light industries, intermixed with low-class houses, mainly for Palestinian migrants, of buildings with one to two storeys within gridiron street system, developed mainly in the fifth morphological phase.

C The Outer Fringe Belt, the third still very open fringe belt at the present edge of the built-up area of Baghdad, its elements distinctly associated with arterial roads with spatious accommodation (site and buildings) for modern peripheral uses such as industries, institutions, garages and the new airport mainly developed in the fifth morphological phase.

61. Khanagin-highway Brickworks of scatered and clustered pattern developed in the fifth morphological phase with associated Kukh-type houses for labourers of fallahin migrant origin.

62. Al-Rashad Boys Reformatory School and its annexes along Khanagin highway with mainly two-storeyed buildings developed in the fifth morphological phase.

63. Al-Shammaiyah Mental Hospital and associated low-class houses for employees with buildings [illegible] of one to two storeys, developed in the fifth morphological phase.

64. Kamaliyah Industrial Area with light industries in buildings of one to two storeys within a gridiron street system developed in the fifth morphological phase.

65. Al-Ubaidi Complex of mixed light industries, a modern mosque, a school, low- and low middle-class house developed on the Khanagin highway in the fifth morphological phase.

66. Al-Fudhailiyah Complex of Kukh-type houses and associated buffalo shelters, a police station and a prison on the Tigris, developed in the fifth morphological phase.

67. The New Christian Cemetery of Baghdad al-Jadidah, developed in the fifth morphological phase.

68. Al-Mushtal Race Course on Khanagin highway dating from the fourth morphological phase, but used only in the fifth.

69. Mosul-highway Brickworks in a scattered and clustered pattern with associated Kukh-type houses, developed in the fourth and fifth morphological phases.

70. Kadhimiyah Alwah, i.e. wholesale vegetable market on the Mosul highway with a central court, developed in the fifth morphological phase.

71. Kadhimiyah Railway Station, developed as a distal extramural element of the Inner Fringe Belt in the second morphological phase and translated successively to the Middle and then to the Outer Fringe Belt.

72. Abu Ghraib Complex of mixed garages, light industries, governmental institutions including a new large prison, along the Damascus highway with buildings of one to four storeys, originating in the third but developing mainly in the fifth morphological phases.

73. Zubaidah Complex of garages, modern industries, customs office and warehouses along the Damascus highway with buildings of one to two storeys, developed during the fifth morphological phase.

74. Baghdad Airport with its associated multi-storey buildings, developed in the fifth morphological phase.

75. Al-Durah Oil Refinery, on the Tigris and with its own railway access built in the fourth and fifth morphological phases.

III The Inner Residential Accretions covering most of the former riverside agricultural zone inside the Middle Fringe Belt and up to the 1956 limits of built-up area including al-Karradah Peninsula, developed during the third and fourth morphological phases, with rectilinear street systems mostly tending towards the gridiron pattern, and with privately built modified traditional covered traditional and western house types, with average height of one to two and occasionally three storeys and inhabited by different income groups.

A Areas of Modified Traditional Houses developed during the third morphological phase and inhabited bu the low-income class by way of multi-family tenancies.

76. Battawiin Mahallah, dominated by Christian in immigrants.
77. Alawi al-Hillah.
78. Eastern Rahmaniyah.
79. Duriyin.
80. Western Kadhimiyah.

B Areas of Covered Courtyard Houses developed during the first sub-period of the fourth morphological phase with large detached houses of one to three storeys, originally inhabited by wealthy families but now by low-class and lower middle-class tenents.

81. Haibat Khatun.
82. Iwadhiyah.
83. Al-Sadun.
84. Al-Shalchiyah.
85. Northern Salihiyah.
86. Inner Karradat Mariyam.
87. South Kadhimiyah.

C Areas of Western Houses developed during the second sub-period of the fourth morphological phase and during the fifth morphological phase, with privately built detached, semi-detached or row houses of varying size and one to two storeys, inhabited by various income groups.

88. Sulaikh and South Adhamiyah, with middle and high middle-class detached houses.

89. Waziriyah Residential Area, with middle and high middle-class detached houses.

90. Najib Pasha Residential Area, with middle- and high middle-class detached houses.

91. Ilwiyah, with middle-class detached houses.

92. South Ilwiyah, with high-class detached houses.

93. Al-Masbah, with high-class detached houses.

94. Outer Karradah al-Sharqiyah, with middle-class detached houses.

95. Outer Kadhimiyah and Ataifiyah, with middle-and high-middle-class detached houses.

96. Al-Nuwab, with low middle-class terraced and semi-detached houses.

97. Outer Karradat Mariyam, with high and high middle-class detached houses.

98. Al-Khuld.

IV The Outer Residential Accretions situated outside the Inner and Middle Fringe Belts of the East Side and West Side of Greater Baghdad, developed in the fifth morphological phase with estate layouts differing in the degree of standardization of street systems, plot patterns and building designs depending on whether developed by co-operative housing societies, or private

individuals, occupied by detached and semi-detached Western Houses of one to two storeys and inhabited by a wide range of income and occupational groups but with marked segregation of these in terms of individual estate layouts.

A Privately developed Areas

(a) Areas of small houses of one to two storeys and block-plans ranging from 120 - 300 sq. m., and inhabited by low-income groups of different occupations.

99. Al-Washash.

100. Al-Hurriyah

101. Sommer

102. New Orfaliyah locality with mainly one-storey houses.

(b) Areas of Low and Low Middle-Class Houses of one to two storeys and block-plans from 150 - 600 sq. m. intermixed with various kinds of light industries.

103. Al-Sha'b.

104. Al-Kamaliyah.

105. Al-Mashtal.

106. Al-Baiya.

107. Rabi Bin Ziad.

(c) Areas of Middle-class Houses of one to two storeys and block-plans from 300 to 800 sq. m., inhabited by middle-income groups of various occupation.

108. Hai Dragh

109. Al-Ubaidi.

110. Baghdad al-Jadidah.

111. Al-Sulaikh al-Jadidah.

112. Al-Qahirah.

113 Al-Kraiat Village, partially transformed by urbanisation with detached houses of one to three storeys.

(d) 114. Al-Mansur High-Class Estate with street system of freer garden suburb design and with large detached houses of one to three storeys and block-plans from 600 - 2,000 sq. m.

B Areas developed by Co-Operative Building Societies for particular occupational groups.

(a) Areas of Low-Class Houses of one storey and block-plans of less than 300 sq. m, inhabited by workers and minor governmental officials.

115. Al-Quds

116 Al-Saidiyah

117. Al-Ummal

(b) Middle-Class Areas of detached houses of one to two storeys and block-plans from 600 to 800 sq. m.

118. Al-Ani and al-Mutasim localities

119. Al-Urubah

120. Arbat Ashar Ramadhan and al-Iskan.

121. Al-Dawoodi-Zubaidah.

122 Philastine.

123. Arbat Ashar Tammuz

124. Al-Farabi

125. Al-Zufuraniyah

C Middle-and High-Middle-Class Areas developed privately and through co-operative building societies with one to two storeyed houses and block-plans of not less than 600 sq. m.

126. Al-Zirah

127. Al-Qadisiyah

D Residential Areas developed by Governmental Agencies

(a) Low-Class Areas generally of single-storey houses with block-plans from 140 to 300 sq. m.

128. Al-Durah

129. Nuwab al-Dhubbat

130. Al-Fudhailiyah buffalo owners settlement.

(b) Areas of Low-Class (Fallahin)immigrants with one-storey houses and block-plans of 144 sq. m.

131. Al-Thawrah

132. Al-Shulah

(c) High-Class Residential Areas inhabited by army officers and high governmental officials with detached western houses of one to two storeys and block-plans of more than 500 sq. m.

133. Al-Mamun

134. Al-Yarmuk

135 Al-Dhubbat

This study is an attempt to understand Greater Baghdad as a spatial individual or region which represents a specific functional system has a characteristic, individualized townscape, and has been subject to changes during the long period of historical development. The investigation has endeavoured to cover all three of these aspects, i.e. the functional, the morphological, and the historico-geographical one, in order to give a general presentation of Greater Baghdad as a geographical phenomenon. However, the limited existing knowledge about the city have necessitated the introduction of specific field-work. This and the aim to present the city as a structured whole has resulted in an intended emphasis of urban morphology. In this way it is hoped that a conceptual framework has been introduced which can be applied with appropriate modifications to other Arab towns.

Both in its overall evolution and in the development of plan elements, functional requirements of the city's society in each particular period were the major impulses in shaping the physical form of the city.

By following the relationship between society, its history and needs, and changing economic and technological standards through successive periods of development, it has been possible to discover distinct morphological phases that helped greatly to understand the modern structure of the city and will perhaps be applicable to many other Arab towns.

In its rather spontaneous evolution and in each of its morphological phases the historic layering expressed by residual townscape elements and morphological frames, has played a great part in shaping the final forms and patterns of the city. Many of these frames have been changed in various ways to go with what has been imposed or added

on the same sites particularly after 1945, i.e. in the fourth and fifth morphological phases, mainly because of the increasing influence of westernization, reflected in societal organization and the morphology of the city.

In Baghdad's case the cumulative morphological changes have been of the complex transformative kind in the traditional nuclei of the Old Town and its surrounding countryside. They were mostly forcibly introduced as shown by recent development of the street system with its numerous break-through streets, or the building fabric as the result of replacement. These changes were done for 'modernization' purposes and to accommodate the change of land uses in these parts of the city to cater for the greater diversity of needs in the modern life of an economically progressing society.

Outside the traditional nuclei on the other hand, morphological changes have been of the simpler additive kind, i.e. outward growth in two varieties. The first, particularly after 1956, was dominated by building estates, alien in conception and design and designed for specific occupational and income groups of society. They formed the great new zones of residential accretions. The second variety considered of interposed fringe belt development.

Compared with some European towns such as the regional capital of Newcastle upon Tyne, Baghdad's central development has so far failed to complete the cyclic change of its inherited forms. Careful field investigation and the observed changes of certain inherited forms suggests that the cyclic development may be completed, i.e. closed in the not too distant future. This is already seen in some of the khans, bazaars and mahallahs. The time incidence of such development depends on functional impulses, on planning measures and on the proper

grasp on the part of responsible planning agencies of the relevance and appropriateness of newly introduced forms to Baghdad's society and urban life.

In tracing the development of the city in its natural, historical, social, economic and technological aspects making the fullest possible use of the morphological approach an attempt has been made to conceptualize findings that have not been previously recognized in Arab towns, and so to contribute to a general morphological theory to aid the investigation of other Arab towns. As a large city with a long and complicated history, Baghdad presents great diversity in plan elements and patterns and building forms which are to be found in many other Arab towns. The very size of the city has stimulated the use of several new concepts which need however further research in a variety of Arab towns to establish their range of validity and to improve their validity. Such research should include thorough field investigation as one of its indispensible pre-requisites if it is to penetrate the complexity and variety of Arab towns.

In its general framework and in particular details, the case study of Baghdad has followed broadly the conceptual approach and methodology elaborated in Conzen's town plan analyses of the English cases of Alnwick and Newcastle upon Tyne. Needless to say, historically and culturally the Arab city of Baghdad is very different from the former two towns. Nevertheless, the applicability of morphological conceptualization and theory of city growth initiated in the English cases and introduced here in Chapter 1 has been variously tested and found workable in the following chapters particularly those dealing with the city's four modern morphological phases and its modern fringe belt development. In this, the fieldwork

in its various forms yielded the most useful evidence. To the writer's knowledge such an attempt has not been made so far in Arab urban studies.

In its morphological development Baghdad can claim to possess distinct morphological phases (Chapters 6, 7, 8, 10) each having its own characteristic suite of forms not repeated in the next phase. It is very interesting to find that almost all the functional and societal developments that have taken place in the city, can be correlated with one or other of the city's morphological phases. This means that Baghdad, represents a historically layered town, a fact that can be equally well demonstrated in fringe-belt development (Chapter 11), the development of house types and street types (Chapters 6 to 10), in khan repletion, or in the various forms of commercial (Chapters 14, 15), and industrial development (Chapter 13.) Even the story of the city's population fluctuation (Chapter 12), and of rural-to-urban migration (Chapter 9) supports this period scheme and its geographical manifestation. It is obvious from this study that Baghdad's size and evolution were always related to the city's sphere of influence (Chapter 2). Accordingly, Baghdad flourished functionally and revolutionized itself morphologically whenever it established wider international relationships. Conversely, it declined to a mere provincial capital or less whenever the vicissitudes of history deprived it of its international context and restricted its life to a smaller regional or local frame of orientation. This variation in development has been closely related to changes in the political position of the country and types of transportation. In their unprecedented modern wave of urbanization (Chapter 3) the city and the whole of Iraq, rural and urban are confronted with the most serious new social, economic and development-

problems including those of a specifically environmental, morphological kind (Chapters 9, 10). Baghdad and many other Arab capitals have achieved their present excessive size not because they fulfil the function of the capitals and primate cities of their respective countries, but because the lack of spatial planning of any kind has allowed them to grow to their present unnatural size. Chapter 4 shows that the physical context of the city must not be overlooked in any planning undertaking, whether it concerns the physical expansion of the city or the introduction of new forms, particularly those related to the family life of the inhabitants.

Baghdad's earlier urban history during the long first morphological phase (Chapter 5) is of great significance as almost all the traditional forms and patterns, public and private, social and physical, have originated in it. However, because of the nature of Mesopotamia's natural building materials relatively few direct physical representatives have survived the catastrophe-ridden history of the city, as 'historical monuments' indicating that earlier times in this area 'live on' more in locational dispositions, patterns and form traditions than in the actual survival of form individuals.

Notwithstanding Baghdad's uncontrolled modern growth which has resulted in various kinds of social and physical metamorphosis, particularly in the Old Town, much of the traditional fabric has proved very successful and tenacious in meeting the demands of current life, particularly when adapted judiciously to meet the requirements of new functions. The comparative success of traditional forms and patterns together with the morphogenetic development that has taken place in the traditional sections of the city within and without the Inner Fringe Belt have been major factors in recent development.

However, usually there is a time lag between the relatively traditionally orientated and therefore slower Arab social development and the accelerated morphological one driven on by new functional requirements (Chapters 10 - 19).

The social and physical problems of modern Baghdad have all been analysed in various chapters particularly 9, 10, 12 and 14. They compromise migration and its associated problems, problems resulting from the present unjustified physical expansion and the impact of westernization. All these show up the fact that today Iraq is a country without any effective environmental planning agency or any comprehensive urban, regional and national plan and that the isolated treatments of specific planning problems out of their context is doomed to failure.

In the present phase, Baghdad, like many other Arab towns, has become a hybrid city. It is undergoing a dramatic change engendering a characteristic social and morphological dualism. This confronts all the authorities concerned, and academics and citizens with these urgent and critical questions: how is that which is good in Arab urban society to be maintained while the advantages of a western way of life and technology are adopted, and how can the costly and unecessary repetition of western mistakes with some of its disadvantages such as the former neglect of the safety of pedestrian traffic in the centre be avoided? These questions have to be answered in terms of the considered opinion of informed minds and not by the ill-considered decisions imposed by individual policy makers at the top. To effect the creation of such informed opinion there is an urgent need of a wide variety of trained Iraqi specialists able to translate desirable modern innovations into the environmental and societal context of the country of which they form personally a past. To this end, as this study will

have indicated, a great deal of investigation remains to be carried out in order to achieve a more convenient and purposeful future development. The case study of Baghdad has shown that intensive field survey for almost every aspect of life in the city is still very much needed as the only way to start and understand the present situation and to achieve a proper background for a type of urban planning that is not brought from outside by doubtless sincere, yet by no means wholly committed specialists, but is deeply rooted in the environmental space and the society which planning is to serve. However, such urban planning should form an integral part of a wider regional and indeed a national plan of which there is as yet no sign in Iraq.

In any future planning undertaking, at any level, citizens should participate, particularly in those policies dealing with environmental problems of their daily lives such as housing and associated urban facilities. In various parts of this work, and supported by the results of the family inquiry, a very distinctive Baghdadi feature has emerged in the fact that there exists no balanced spatial distribution of virtually any urban elements in the city, thus decreasing its functional efficiency and adding to its problems on top of those created by the uncontrolled spate of urbanization.

Appendix A

Writer's Fieldwork

An understanding of the developmental processes taking place in the city of Baghdad in general and in its townscape in particular would have been impossible without field work. The absence of previous urban studies and the great deficiency of documental and statistical information has increased its necessity. The field work for this study of Baghdad is of three types, all carried out during the period 1968 - 1971.

Firstly, there were interviews with various public bodies, mainly governmental. This work has been carried out during the two periods 1968 - 1970 and 1971. During the first period the material collected was of a general nature and proved useful to a limited extent. During the second period covering the summer and autumn of 1971, rather more useful material was collected on specific topics.

Secondly, there was field work of specifically morphological orientation concerned with tracing the successive phases of the cities growth. The formative processes inspired by functional developments, the general land uses and the distribution characteristics and functions of particular townscape elements such as selected mahallahs, agids (culs-de-sac), khans, commercial buildings, streets, fringe-belts, traditional workshops, mosques, coffee houses, hammams, kukh and sarifah settlements etc. This took place during the summer and autumn of 1971.

The third kind of enquiry was a house to house investigation, carried out in person by the author during the same period, i.e. the summer and autumn of 1971. 276 families living in 177 houses were interviewed. They were distributed over 17 mahallahs representing the various morphological phases of the city.

Questionnaires in Arabic, covering various important items concerning the structure of the family and the house were distributed. Besides these, 40 families were interviewed in the sarifah area of al-Ghazali and 20 families in that of al-Shulah. The questionnaires aimed at information on many socio-economic and morphological characteristic of the city. Those distributed to the families are included within this appendix. To save space they are presented in a table of questionnaires by title and colomnar headings only (in English translation). The surveyed mahallahs are shown on the accompanying map.

Each of these three types of fieldwork presented its own difficulties. In the case of the first type it was not uncommon for some of the authorities to be surprised that a geographer should be dealing with these aspects. Some of them indeed were so surprised that it affected the standard of the material they supplied. Some authorities were not ready to supply information covering ordinary matters believing that no one has the right to pry into their administration though they themselves did not make use of the material. Another difficulty was that many departments lack a statistical section to record necessary information properly.

In the case of the morphological fieldwork, various difficulties presented themselves, for example in most Arab countries it is unusual, to say the least, to hold an opened map in one's hand while walking in the street. Therefore there were frequent interruptions of the field work, the writer being asked by various individuals and representatives of governmental bodies about his reason for plotting or writing on the map or even for using it at all. Furthermore, photographing in many cases was difficult as it meant to many people

recording only the undesirable aspects of their town.

Again the house-to-house survey proved physically, socially and politically difficult. Unlike the case in Britain, the researcher in Baghdad and other Iraqi towns cannot get the information by posting questionnaires because most Arab families are not accustomed to such inquiries and are reluctant to answer them. Therefore it was necessary for the writer to interview each family, which took much time and energy. Worse still, most families considered questionnaires as intruding into their private lives which traditionally should not be subject to public inquiry. The writer failed to enter many houses at the first attempt to carry out his interview, often because men were not present in these houses at the time. Accordingly, he had to call again when the master of the house was expected to be in. Some families did not allow the interview to take place at all, therefore the writer was unable to follow his programme of choosing particular houses to apply the statistical random samples.

Many families hesitated to answer certain questions for social or political reasons. They failed to appreciate the difference between scholarly and political interests on the part of the investigator. For example none of the migrant families whether urban or rural would give any political reasons for moving.

Several questions had to be approached indirectly, such as those concerning membership of religious sects. An indirect way had to be adopted by asking for example: Where do you worship? or where do you bury your dead?

The reliability of the information was satisfactory in most aspects except those relating to the women folk and to family economy, i.e. income and expenditure. The former aspects presented difficulties

owing to social considerations and the latter because interviewees suspected the inquiry to be used for taxation purposes. Thus in some cases the expenditure appeared to be more than the declared income of the family, a most unlikely situation. In such cases the writer tried to repeat the question in a different way later on in order to clarify such discrepancies. Place of origin was another difficult question to ask particularly to fallahin migrants, because they thought that the government might want to send them back to their rural area of origin.

Some of the families failed to understand some of the questions and therefore did not answer until it was explained to them what was required. Other families did not ask for their mahallah or housing standards to be improved as they could not conceive that this was possible or even desirable.

References to personal house-to-house inquiry will be referred in the text as '(Field work 1971. See Appendix A, Table A, B or C)' and to the writer's direct observation as 'Field Survey, 1971'. Inquiries with public bodies are referred to in the usual way by naming the authorities concerned.

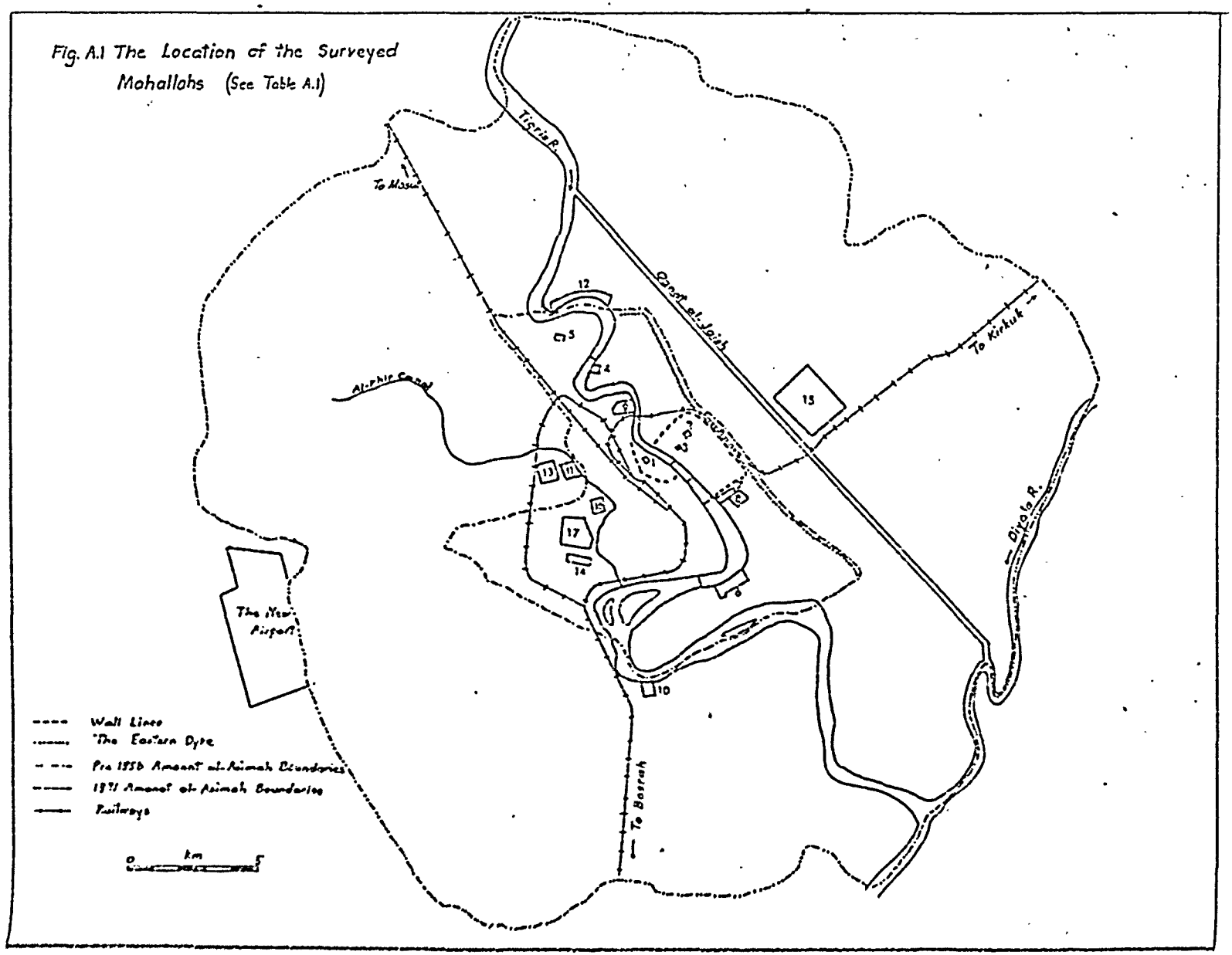
Fig. A.1 The Location of the Surveyed Mohallahs (See Table A.1)
Tigris R.
To Mosul
Qanat el Jaish
To Kirkuk
Al-Khir Canal
Diyala R.
The New Airport
To Basrah
Wall Lines
The Eastern Dyke
Pre 1958 Amanat al-Asimah Boundaries
1971 Amanat al-Asimah Boundaries
Railways
0 km 5

Number of surveyed houses and interviewed families by mahallah (Fig. A.1)

Mahallah	No. of Houses	No. of families	Morphological Phase	Type of Development
1. Suq Hamadah (Karkh)	10	13	Pre-1920	Non-governmental locality
2. Sayid Abdullah (Rusafah)	9	11	Pre-1920	" " "
3. Aguliyah (Rusafah)	5	8	Pre-1920	" " "
4. Harah (Adhamiyah)	9	9	Pre-1920	" " "
5. Shiukh (Kadhimiyah)	10	17	Pre-1920	" " "
6. Al-Bu-Shuja (Karradah al-Sharqiyah)	12	16	Pre-1920	" " "
7. Orfaliyah	16	44	1920-36	" " "
8. Bustan al-Khas	8	17	1920-36	" " "
9. Ataifiyah	10	10	1936-56	" " "
10. Al-Durah (al-Mahdi)	9	12	1936-56	Governmental and non-governmental built by (Public and Private sectors).
11. Al-Washash	15	29	1936-56	
12. Kraiat	10	15	Post 1956	Non-governmental locality
13. Al-Iskan	7	9	Post 1956	Purely governmental locality
14. Al-Mamun	10	12	Post 1956	" " "
15. Al-Thawrah	20	29	Post 1956	Mostly governmental locality
16. Hai Dragh	10	17	Post 1956	Non-governmental locality
17. Al-Mansur	7	8	Post 1956	" " "
Total	177	276		

Table of questionnaires A - U.

N.B. Each questionnaire is headed by the Mahallah name as indicated in the 'A'.

MAHALLAH

A. Age, Sex Structure and Fertility Index

House No. No. of Families	Sex			Age														
	M	F	Total	5		5 - 14		15 - 24		25 - 34		35 - 44		45 - 54		>54		
				M	F	M	F	M	F	M	F	M	F	M	F	M	F	M F

B. Marriage - Status and Preference

Marriage Status						Marriage Preference			
Bachelor	Divorced	Married with one	Married with two	Married with three	Married with four	Relation		City	
						Relative	Non-Relative	Mahallah	Elsewhere

C. Family Ties and Social Traditions

JOINT FAMILY					Accommodation for visiting relatives			Reason for FINANCIAL SUPPORT			
TYPE			REASON FOR COHABITATION								
Married Son	Married Brother	Other Relations	Social	Economic	Home	Hotel	Others	Poverty	Temporary Need	Absence of State aid	Social & Religious Tradition

TIME INTERVAL			KINSHIP (No. of related families living in same mahallah		
Monthly	Annually	Occasionally	3 families	3 - 6 families	>6 families

D. Social Traditions and the House Type.

Is the design of your house influenced by your last house style.		Height of the Garden Wall			Privacy owing to				Roof Parapet	
YES	NO	2m	> 2m	Open	Height	Side Window	Open garage	Same Level	< 1.5m	> 1.5m

E. Number of Family members and employment structure.

Number in Family	Number of active Members in the Family		Profession (employment) and monthly income							
	Male	Female	Type	Income	Type	Income	Type	Income	Unemployed	Income

F. Question F. is not included. The question was whether the interviewees possessed domesticated animals both in their original settlements and in Baghdad.

G. EXPENDITURE (in Iraqi Dinar I.D.)

Food	Rent	Medical Treatment	Clothing	Furniture	Transport	Fuel Gas, Electricity, Paraffin	Recreation	Water

H FURNITURE AND HOUSEHOLD EQUIPMENT

Television	Radio	Gas Cooker	Paraffin Cooker	Refrigerator	Air Cooler	Fan	Sewing Machine	Suite	Bedding

I. Shopping

Who does Shopping		Shopping Interval			Payment			Place of shopping			Intervals			Relationship		
Male	Female	Daily	Weekly	Monthly	Cash	Instal-ments	Cash & Instal-ments	Bazaar	Public Market	Modern Market	Daily	Weekly	Monthly	Rela-tive	*P.M.	No Re-la-tive

* P.M. Person from the same mahallah

J. MIGRATION

Place of birth		Number of Migrations before settling in Baghdad	Period of residence in Baghdad (in years)						Frequency of visits to home area				Return preference reasons	
Settle-ment	Liwa		5	5-9	10-14	15-19	20-24	24	Monthly	Quarterly	Annually	Longer Intervals	Social	Economic

K. MOTIVES FOR MIGRATION

Social			Administrative			Economic			Other Motives	
Better Situa-tion	Family Ties	For Marriage	Governmental decisions	Private firms decisions	Other reasons	Higher Income	Wider work opportunities	To establish private busi-ness	Recreation	Better education & Health services

L. MAHALLAH CHOICE

Number of moves	Previous Mahallahs					Did you inquire about your neighbour before the present move	
	1	2	3	4	5	YES	NO

M. REASONS DETERMINING MAHALLAH CHOICE

Land Value	Governmental Housing	Increase of Living Standard	Cheap Rent	Availability of Transport	Nearness to Relatives	Quietness and Distance from the Centre	Dispute with Former Neighbour	Religious	Deterioration of Former House	Near to the Place of Work	Climatic Convenience	Near to the Market	Public Services

N.[a] SPATIAL RELATIONSHIP WITH OTHER CENTRES

Distance from place of work				Means of transport to work								Frequency and place of shopping		
Less than 5 km	5-10 km	10-15 km	15-20 km	Walk	Private Car	Taxis	Bus	Public Bus	Employ-ers' car	Train	Others	Daily needs	Non-perishable goods	Luxury goods

N.[b]

MEDICAL SERVICE			Religion	EDUCATIONAL SERVICES			HAMMAM and BATHING REASONS		
Private Clinic in the Mahallah	Private clinic outside the Mahallah	Public Health Centre	The name of the Church or the Mosque	0 - 3 km	4 - 6 km	>7 km	Absence of bathroom in house	Social tradition	Health reasons

N.[c] SPATIAL RELATIONS WITH OTHER FUNCTIONAL CENTRES

Recreational Centres

WEEK-END										LEISURE TIME					
At Home	Abu-Nuwas	Army Canal	Public Garden Park	Salaman	Abu-Ghraib	Habban-iyah	Babylon	Sama-rra	Other places	Home		Public Library		Social & Sport Club	
										Male	Female	Male	Female	Male	Female

Coffee House		Cinema		Visiting Relatives	
Male	Female	Male	Female	Male	Female

N.d SPATIAL RELATIONS WITH OTHER FUNCTIONAL CENTRES

Cemeteries						
Al-Ghazali	Sheikh Maruf	Abu Hanifah	Baratha	Najaf	Karbala	Others

C.a HOUSE CHARACTERISTICS

Type of House				Number and function of rooms													Floors		
T.A.C.H.+	M.A.C.H.*	Covered Courtyard House	Western House	Number									Function						
				1	2	3	4	5	6	7	8	> 8	Bedrooms	Guestrooms	Dining room	1	2	3	Rooms on Ground Floor	Rooms on First Floor	Rooms on Second Floor

+ Traditional Arab Courtyard House * Modified Arab Courtyard House.

C.b

Area (sq. m.)				Location of Garden				Type of House			Utility Services					
Of building	Block-plan	Gardens	Courtyard	Side	Back	Front	Internal	Semi-detached	Terraced	Detached and similar	Water		Electricity	Central Heating	Air Conditioning	Sewerage.
											Hot	Cold				

C.c HOUSE CHARACTERISTICS

Parapet Wall				Characteristics of window				Protective iron grid			Window canopy			Style of the roof	
Corrugated	Bricks	Mats & Wood	Concrete	Sash	Double Casement	Metal Multi Flaps with ventilator	Metal Multi Flaps without ventilator	Yes		No	Bricks	Concrete	Others	Flat	Others
								decorative	Safety						

P.[a] HOUSE OWNERSHIP

Whole House Owned	Part of House Owned	Rented House		Rented Room		Number of families in rented accommodation					Monthly rent paid I.D.									
		From Government	Private	From Government	Private	1	2	3	4	5	Less than 3	3-6	7-10	11-13	14-17	18-21	22-25	26-29	30-33	33

P.[b] HOUSE OWNERSHIP

House Ownership										Instalment		Date of ownership
By Inheritance	Privately built without aid	Government Aid			Support from houseing societies				Bank Support	Plot Cost	Construction Cost	Monthly I.D.	Annually I.D.	
		Whole House	Plot	Financial aid	Free Plot	Very Cheap Plot	Whole House	Financial Support						

Q AGE OF HCUSE

Pre 1920	1920-36	1936-45	1945-56	Post 1956

R. BUILDING MATERIALS

Main building materials of the House								Roofing Materials			
Brick	Stone	Concrete	Mud	Timber	Mud and bricks	Steel & Joist	Juss	Timber and mud	Brick & Steel	Cement	Tiles & steels

S. UTILITY FACILITIES

Kitchen		Toilet in the bathroom		Separate Toilet		Separate Bathroom		Without Bathroom		Store		Garage		Cattle Section		Tannur (Earth Oven)			
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes in the garden	Yes in the courtyard	Yes on the roof	No

T. HOUSE MODIFICATION

Shop on the premises		Number of improvements			
Yes	No	Once	Twice	Three times	More than three times

U. REQUIRED FACILITIES

EDUCATIONAL	HEALTH	SOCIAL	OTHERS

Appendix B.

Urban hierarchy of Mesopotamia. Classification of centres by administrative status - 1965 Census - See Fig. 3.15.

	Liwa	Centre	Grade
A	Baghdad	Baghdad	1
B	Basrah	Basrah	2
	Mosul	Mosul	2
	Kirkuk	Kirkuk	2
	Arbil	Arbil	3a
	Karbala	Karbala	3a
	Sulaiymaniyah	Sulaimaniyah	3a
	Hillah	Hillah	3a
	Amarah	Amarah	3b
	Diwaniyah	Diwaniyah	3b
	Nassiriyah	Nassiriyah	3b
	Kut	Kut	4
	Diyala	Bagubah	4
	Ramadi	Ramadi	4

Total 14

C	Qadaha centre	Grade	Qadaha Centre	Grade
	Najaf	2	Halabchah	5
	Fallujah	4	Makhmur	5
	Samarra	4	Shamiyah	5
	Zubair	4	Rumaithah	5
	Kufuh	4	Sug al-Shiyukh	5
	Samawah	4	Shatrah	5
	Khanagin	4	Abu al-Khasib	5
	Tuz	5	Fao	5
	Shahraban	5	Shatt al-Arab	5
	Khalis	5	Sinjar	6a
	Mandali	5	'Ainsifni	6a
	Rutbah	5	'Agrah	6a
	Balad	5	Banjawin	6a
	Har	5	Qalah Dizah	6a
	Hashimiyah	5	Rawanduz	6a
	Hindiyah	5	Shaglawah	6a
	Musaiyab	5	Suwairah	6a
	Duhuk	5	Kifri	6a

continued...

C	Qadha centre	Grade	Qadha centre	Grade
	Zakhu	5	Tikrit	6a
	Jamjamal	6a	Tel Afer	6b
	Ifak	6a	Shirgat	6b
	Rifai	6a	Jwartah	6b
	Ali al-Gharbi	6a	Raniyah	6b
	Hit	6a	Abu Skhair	6b
	Hadithah	6a	Qalah Salih	6b
	'Anah	6a	Maimunah	6b
	Rutbah	6a	Qurnah	6b
	Badrah	6b	Makhmur	6b
	'Imadiyah	6b	Hawijah	6b
	Mahawil	6b	Husaibah	6b

Total 60.

D	Nahiyah Centre	Grade	Nahiyah Centre	Grade
	Jalawla	5	Mijar al-Kabir	6a
	Habbaniyah	5	Harithah	6a
	Qarah Qush	6a	Bashigah	6b
	Tilkaif	6a	Sinuni (Shamal)	6b
	Dibis	6a	Qaiyarah	6b
	Buhruz	6a	Al-Qush	6b
	Sadiyah	6a	Badush	6b
	Rawah	6a	Shahrazur	6b
	Abu Ghraib	6a	Darbandi Khan	6b
	Baiji	6a	'Ain Qawah	6b
	Dijail	6a	Daibakah (Kaninawah)	6b
	'Aziziyah	6a	Harir	6b
	Al-Qasim	6a	Tazah Khurmatu	6b
	Madhatiyah	6a	Altunnkubri	6b
	Saddatal-Hindiyah	6a	Qarah Tabbah	6b
	Iskandariyah	6a	Daguk	6b
	Hamzah	6a	Abu Saida	6b
	Dagharah	6a	Hibhib	6b
	Mishkhab	6a	Balad Ruz	6b
	Shinafiyah	6a	Karmah	6b
	Ghammas	6a	Barwanah	6b

continued....

D	Nahiyah Centre	Grade	Nahiyah Centre	Grade
	Qalat Sukar	6a	SalmanPak	6b
	Fuhud	6a	Latifiyah	6b
	Al-'Alam	6b	Nasir	6b
	Dur	6b	Fajr	6b
	Dhuluiyah	6b	Gharraf	6b
	Muwafagiyah	6b	Hammar	6b
	Jissan	6b	Musharrah	6b
	Zubaidiyah	6b	Kumait	6b
	Ahrar	6b	Shaikh Sad	6b
	Kifil	6b	'Izair	6b
	Mussaiyab	6b	Kahla	6b
	Shithathah	6b	Sibah	6b
	Bidair	6b	Mudainah	6b
	Hirah	6b	Nashwah	6b
	Khidhir	6b		

Total 71.

Appendix C.

Urban Hierarchy of Mesopotamia. Classification by size. (Source: Preliminary results of the Census of 1965).

Population of urban places, i.e. over 2,000: Grade 1 - 5 include all those over 10,000. Fig. 3.14.

Grade (1)	Town	Population	% of the Total
	Baghdad*	1620,000*	19.61%
Grade (2) = 4			
(over 100,000)	Basrah*	313,327*	
	Mosul	243,313*	
	Kirkuk	167,413*	
	Najaf	128,096	
	Total	852,147	10.31%
Grade (3) a) = 7			
(70000-10,000)	Arbil	90,329*	
	Karbala	88,301*	
	Sulaimaniyah	86,822*	
	Hillah	84,717*	
(50000-70,000)b) = 3			
	Amarah	64,847*	
	Diwaniyah	60,553*	
	Nasiriyah	60,405*	
	Total	530,065	6.4%
Grade (4) = 10			
(20,000-50,000)	Kut	42,116*	
	Zubair	41,408	
	Samawah	39,018	
	Fallujah	38,072	
	Tel Afar	36,837	
	Bagubab	34,575*	
	Kufah	30,862	
	Ramadi	28,723*	
	Samarra	24,747	
	Khanagin	23,522	
	Total	339,880	4.1%
Grade (5) = 23			
(10,000-20,000)	Shatrah	18,822	
	Duhuk	16,998	
	Hai	16,988	
	Suq al-Shiukh	16,465	
	Hindiyah	16,436	
	Musaiyab	15,955	
	Fao	15,399	
	Zakhu	14,790	
	Habbaniyah	14,405	
	Shatt al-Arab	14,245	
	Tuz	13,860	
	Shamiyah	13,334	
	Jalawla	12,298	
	Abu al-Khasib	12,194	
	Shahraban	12,181	
	Balad	12,034	

* Liwa centre.

continued...

Grade (5) = 23 (10,000-20,000)	Town	Population	% of the Total
	Numaniyah	11,943	
	Khalis	11,877	
	Mandali	11,262	
	Halabchah	11,206	
	Mahmudiyah	10,623	
	Koisanjak	10,338	
	Kumaithah	10,222	
	Total	313,875	3.55%
Grade (6) = 100 a) = 42 (5,000-10,000	Tikrit	9,921	
	Hamzah	9,611	
	Hit	9,131	
	Suwairah	9,108	
	Mijar al-Kabir	8,907	
	Agrah	8,659	
	Abu Ghraib	8,519	
	Kifri	8,500	
	Saddat al-Hindiyah	8,213	
	Harithah	7,946	
	Sinjar	7,942	
	Rifai	7,681	
	Qara Qush	7,526	
	Tilkaif	7,482	
	Qasim	7,476	
	Aziziyah	7,450	
	Jamchamal	7,416	
	Qalat Sukar	7,365	
	Ghammas	7,310	
	Mishkhab	7,172	
	Anah	6,884	
	Hadithah	6,870	
	Shaglawah	6,814	
	Baiji	6,785	
	Ain Sifni	6,583	
	Dijail	6,538	
	Shinafiyah	6,483	
	Buhruz	6,441	
	Iskandariyah	6,419	
	Qalat Dizah	6,250	
	Madhatiyah	6,247	
	Fuhud	5,854	
	Rawanduz	5,807	
	Ali al-Gharbi	5,735	
	Qurnah	5,638	
	Sadiyah	5,285	
	'Ifak	5,390	
	Dagharah	5,369	
	Banjawin	5,309	
	Rawah	5,133	
	Dibis	5,128	
	Rutbah	5,091	
	Total	295,383	3.3%

continued....

Grade (6) b)-58 2,000 - 5,000	Town	Population	% of the Total
	Baladruz	4,850	
	Qalat Salih	4,812	
	Hashimiyah	4,619	
	Altun Kubri	4,581	
	Khidhr	4,425	
	Salman Pak	4,419	
	Abu Sukhair	4,206	
	'Alam	4,144	
	Raniyah	4,090	
	Dur	4,077	
	'Ain Qawah	3,976	
	Fajr	3,881	
	Alqush	3,863	
	Hirah	3,730	
	Bashikah	3,728	
	Badrah	3,564	
	Sibah	3,538	
	Nashwah	3,529	
	Kahla	3,467	
	Abusaida	3,443	
	Jurf al-Sakhar	3,429	
	Mahawil	3,170	
	Hammar	3,168	
	Qaiyarah	3,060	
	Kifil	2,961	
	Shaikh Sad	2,958	
	Qarah Tabbah	2,914	
	Musharrah	2,839	
	Husawiat	2,806	
	Shahrazur (Said Sadiy)	2,700	
	Barwahah	2,689	
	Tuzahkhurmata	2,681	
	Dibkah	2,626	
	Dhuluiyah	2,618	
	Bidair	2,597	
	Imadiyah	2,578	
	Shamal (Sinuni)	2,567	
	Makhmur	2,556	
	Darbandi Khan	2,505	
	Jissan	2,495	
	Daguk	2,463	
	Shirgat	2,434	
	Husaibah Latifiyah	2,374	
	Hawijah	2,356	
	Maimunah	2,343	
	Shithathah	2,326	
	Jwartah	2,326	
	Hibhib	2,275	
	'Izair	2,255	
	Harir	2,252	
	Gharraf	2,244	
	Kumait	2,225	
	Mudainah	2,218	
	Mawafaqiyah	2,203	

continued...

continued...

	Town	Population	% of the Total
Grade (6) b)			
	Nasr	2,153	
	Ahrar (Husainiyah)	2,097	
	Zubaidiyah	2,081	
	Total	177,849	2.15%

Grade (7) = 88 urban-type settlements below 2,000. They are distributed according to liwas as follows:

Liwa	Number of Settlements	
Mosul	20	
Sulaimaniyah	13	
Arbil	9	
Kirkuk	8	
Diyala	7	
Ramadi	1	
Baghdad	3	
Kut	3	
Hillah	3	
Kerbala	3	
Diwaniyah	8	
Nassiriyah	6	
Amarah	2	
Basrah	2	
Total	88	1.02%

Appendix D

Baghdad's Khans in 1971 (Source: Field Survey 1970) (Figs. 15.1, 15.2).

Khan. No.	Name	Present Function	Previous Function	Morphological Phase	Structural State*
1	Khan al-Arabat (Horse-drawn Carriageways Khan)	Hotel and Shops	Khan for horse-drawn carriages	2(1869-1920)	S
2	-	Tobacco Khan	Dwelling	2(1869-1920)	U
3	-	Hotel & Shops	Dwelling and beverage factory	2(1869-1920)	C
4	Khan al-Titin	Tobacco and carton khan	Tobacco khan	2(1869-1920)	S
5	-	Stores and Offices	House, afterward leather khan	2(1869-1920)	C
6	-	Tobacco Khan	Tobacco khan	2(1869-1920)	U
7	-	Tobacco Khan	Dwelling	2(1869-1920)	U
8	-	Tobacco Khan	Dwelling	2(1869-1920)	U
9	-	Khan for second-hand clothes	Dwelling	2(1869-1920)	U
10	-	Tobacco Khan	Dwelling	2(1869-1920)	U
11	-	Tobacco Khan	Tobacco Khan	2(1869-1920)	U
12	Khan al-Titin	Tobacco Khan	Tobacco Khan	2(1869-1920)	S
13	-	Shops	Tobacco Khan	2(1869-1920)	C
14	Khan al-Zuwali	Tobacco Khan	Carpet Khan	2(1869-1920)	C
15	-	Tobacco Khan	Tobacco Khan	2(1869-1920)	C
16	-	Tobacco Khan	Dwelling	2(1869-1920)	S
17	-	Miscellaneous goods Khan	Dwelling	2(1869-1920)	U
18	-	Miscellaneous goods Khan	Dwelling	2(1869-1920)	U
19	-	-	Tobacco Khan	2(186901920)	D
20	-	Miscellaneous goods Khan	Dwelling	2(1869-1920)	S
21	-	Two shoe factories	General Khan	2(1869-1920)	C
22	-	Leather Khan	General Khan	2(1869-1920)	S
23	-	Textile Khan	General Khan	2(1869-1920)	S
24	Khan al-Qumash	Two plastic factories	Textile Khan	2(1869-1920)	S
25	-	Textile Khan	Textile Khan	2(1869-1920)	S
26	-	Textile and Second-hand clothes Khan	Textile and second-hand clothes Khan	2(1869-1920)	U

* U = unmodified; S = Slightly modified; C = considerably modified; D = Derelict or demolished; R = replaced.
Large khan are underlined.

Khan No.	Name	Present Function	Previous Function	Morphological Phase	Structural State
27	Khan al-Qumash	Textile Khan	Dwelling	2(1869-1920)	S
28	Khan al-Qumash	Miscellaneous goods Khan	Miscellaneous Goods Khan	2(1869-1920)	S
29	-	Miscellaneous goods Khan	Miscellaneous Goods Khan	2(1869-1920)	U
30	-	Miscellaneous goods Khan	Miscellaneous Goods Khan	2(1869-1920)	U
31	-	Miscellaneous Goods Khan	High-class dwelling	2(1869-1920)	U
32	-	Miscellaneous Goods Khan	Dwelling	2(1869-1920)	U
33	-	Miscellaneous Goods Khan	Dwelling	2(1869-1920)	U
34	-	Sanitaryware Khan	Dwelling	2(1869-1920)	U
35	-	Miscellaneous and building-materials Khan	Dwelling	2(1869-1920)	S
36	-	Textile Khan	Dwelling	2(1869-1920)	S
37	-	Textile Khan	Miscellaneous goods Khan	2(1869-1920)	C
38	-	Painting-materials Khan	Miscellaneous goods Khan	2(1869-1920)	C
39	-	Shops	Miscellaneous goods Khan	2(1869-1920)	C
40	-	Textile Khan	Miscellaneous goods Khan	2(1869-1920)	U
41	Khan al-Zuwali	Carpet Khan	Miscellaneous goods Khan	2(1869-1920)	C
42	Al-Mustansiriyah	Historic monument	College, Khan, Customs Office	1(Pre-1869)	U
43	-	Miscellaneous goods Khan	Miscellaneous goods Khan	2(1869-1920)	U
44	Khan Dallah	Goods Khan, shops, and offices	Chapel, prison during the British occupation	2(1869-1920)	C
45	-	Shops and Offices	Miscellaneous Goods Khan	-	R
46	-	Carpet Khan	Carpet Khan	2(1869-1920)	U
47	-	Miscellaneous goods Khan	Dwelling	2(1869-1920)	U
48	-	Departmental Stores	Building-materials Khan	2(1869-1920)	C
49	-	Miscellaneous goods Khan	Miscellaneous goods Khan	2(1869-1920)	U
50	-	-	Miscellaneous goods Khan	-	D
51	-	Clothes bales Khan	Dwelling	2(1869-1920)	U
52	-	"	"	2(1869-1920)	U
53	-	"	"	2(1869-1920)	U
54	-	Miscellaneous goods Khan	Dwelling	2(1869-1920)	S

Khan No.	Name	Present Function	Previous Function	Morphological Phase	Structural State
55	-	Miscellaneous Goods Khan	Miscellaneous Goods Khan	2(1869-1920)	C
56	-	Soap Factory	" "	2(1869-1920)	S
57	Khan al-Baharat	Spices Khan	Spices Khan	2(1869-1920)	U
58	-	Miscellaneous Goods Khan	Miscellaneous Goods Khan	2(1869-1920)	C
59	-	Foodstuffs Khan	" "	2(1869-1920)	U
60	-	Printing Press	" "	2(1869-1920)	C
61	-	Shops and merchant offices	" "	2(1869-1920)	C
62	-	Miscellaneous goods Khan	" "	3(1920-1936)	C
63	-	Shops and merchant Offices	" "	3(1920-1936)	C
64	-	" "	" "	3(1920-1936)	C
65	-	Ropes Khan	Dwelling	3(1920-1936)	S
66	-	" "	"	3(1920-1936)	S
67	-	Shops and Offices	"	3(1920-1936)	C
68	-	-	Miscellaneous Goods Khan	3(1920-1936)	D
69	-	Miscellaneous Goods Khan	" "	3(1920-1936)	C
70	-	Tobacco Khan	Dwelling	3(1920-1936)	S
71	-	" "	"	3(1920-1936)	S
72	-	Blankets Khan	Miscellaneous Goods Khan	3(1920-1936)	U
73	-	Stationary and Confectionary	" "	3(1920-1936)	C
74	-	Khan for Baled Second-hand Clothes	Dwelling	4(1936-1956)	C
75	-	Soap Khan and offices	Miscellaneous goods Khan	4(1936-1956)	C
76	-	" " "	" "	4(1936-1956)	C
77	-	Textile Khan	Dwelling	4(1936-1956)	C
78	-	-	Miscellaneous Goods Khan	4(1936-1956)	D
79	-	Khan for plastics and glass	" "	4(1936-1956)	U
80	-	Shops and Offices	" "	5(post-1956)	R
81	-	" " "	Dwelling, then Khan	5(post-1956)	R
82	-	" " "	" "	5(post-1956)	R
83	-	Khan for baled clothes	" "	5(post-1956)	U
84	-	Shops and Offices	" "	5(post-1956)	R
85	-	Shops and merchant offices	Tobacco Khan	5(post-1956)	C

Khan No.	Name	Present Function	Previous Function	Morphological Phase	Structural Phase
86 Karkh	-	Shops and Offices	Tobacco Khan	5(post-1956)	R
87	-	Shops	Rice and animal oils	2(1869-1920)	C
88	-	Disused	Grain alwah	2(1869-1920)	D
89	-	Grain alwah	" "	2(1869-1920)	U
90	-	" "	" "	2(1869-1920)	S
91	-	Wheat-flour alwah	" "	2(1869-1920)	S
92	-	Vegetable alwah	" "	2(1869-1920)	U
93	-	Shops and bakery	" "	2(1869-1920)	C
94	-	Disused	" "	2(1869-1920)	U
95	-	"	" "	2(1869-1920)	U
96	-	Wheat-flour alwah	" "	2(1869-1920)	U
97	-	Wheat-flour and onion alwah	" "	2(1869-1920)	U
98	-	Disused	" "	2(1869-1920)	U
99	-	"	" "	2(1869-1920)	D
100	-	Gahwah	Grain alwah	2(1869-1920)	C
101	-	Wheat-flour alwah	" "	2(1869-1920)	S
102	-	Disused	" "	2(1869-1920)	U
103	-	"	" "	2(1869-1920)	U
104	-	Wheat alwah	" "	2(1869-1920)	U
105	-	Disused	" "	2(1869-1920)	U
106	-	"	" "	2(1869-1920)	S
107	-	Grain and salt alwah	" "	2(1869-1920)	S
108	-	-	Corn alwah	2(1869-1920)	D
109	-	Gahwah	" "	2(1869-1920)	C
110	-	Disused	" "	2(1869-1920)	S
111	-	Miscellaneous goods Khan	" "	2(1869-1920)	C
112	-	Disused	" "	2(1869-1920)	S
113	-	Tinsmiths Shop	Miscellaneous Goods alwah	2(1869-1920)	C
114	-	Disused	" "	2(1869-1920)	C
115	-	Timberware House	Dwelling afterwards alwah	2(1869-1920)	C
116	-	-	Miscellaneous goods Khan	-	R
117	-	Dates Khan	Dates Khan	2(1869-1920)	U
118	-	" "	" "	3(1920-1936)	S
119	-	" "	Fruit Khan	4(1936-1956)	C
120	-	Wool Khan	Corn Khan	2(1869-1920)	C
121	-	Dates Khan	Corn Khan	4(1936-1956)	U
122	-	Textile Khan	Miscallaneous Goods Khan	2(1869-1920)	C
123	-	Dates Khan	" "	3(1920-1936)	U
124	-	Corn and dates Khan	" "	3(1920-1936)	U
125	-	Miscellaneous Goods Khan	" "	2(1869-1920)	S

Appendix E (Fig. 18.1).

The mosques of Baghdad as classified by al-Awqaf Department, and by morphological phase. (Source: Field Survey 1971) (Fig. 17.1).

	Name	Location	Morphological Phase
1.	Al-Assafi*	Raghibah Khatun	Post 1956
2	Al-Rawas	Qahirah	Post 1956
3	Al-Dahhan	Waziriyah	Post 1956
4	Al-Umari	Waziriyah	Post 1956
5	Al-Ani	Waziriyah	Post 1956
6	Abu-Ghazi	Adhamiyah	Post 1956
7	Sabi Ibkar	Sabi Ibkar	Post 1956
8	Kadhim Pasha	Adhamiyah	Pre 1920
9	14th July	Qanat al-Jaish	Post 1956
10	Al-Imam al-Adham (Abu-Hanifah)*	Adhamiyah	Pre 1920
11	Sayid Sultan Ali	Al-Rashid	Pre 1920
12	Haider Khanah*	Al-Rashid	Pre 1920
13	Al-Muradiyah	Al-Maidan	Pre 1920
14	Al-Fadhil*	Al-Fadhil	Pre 1920
15	Munnawrah Khatun	al-Jumhuriyah	Pre 1920
16	Al-Asifiyah	Central Bazaars	Pre 1920
17	Husain Pasha	Haider Khanah	Pre 1920
18	Al-Sahrawrdi	Rusafah	Pre 1920
19	Al-Sarai	Al-Sarai	Pre 1920
20	Al-Sur	North-east Rusafah	Pre 1920
21	Al-Wazir	Centra; Bazaars	Pre 1920
22	Bushnaq	Hammam al-Malih	Pre 1920
23	Adilah Khatun	Iwadhiyah	Pre 1920
24	Al-Ahmadiyah*	Al-Maidan	Pre 1920
25	Al-Azback	Bab al-Mudham	Pre 1920
26	Mirjan	Central Bazaars	Pre 1920
27	Salman Pak	Salman Pack	Pre 1920
28	Al-Qazzazah	Army Officer town (Rusafah)	Post 1956
29	Al-Khaffafin	Central Bazaars	Pre 1920
30	Al-Khasaki	Ras al-Qraiyah	Pre 1920
31	Al-Khulafa	Central Bazaar	Pre 1920
32	Al-Qailani*	Al-Kifah	Pre-1920
33	Al-Khullani		
34	14th Ramadhan	Al-Jundi al-Majhul	Post 1956
35	Baghdad West	Al-Iskan	Post 1956
36	Hannan	Sahat al-Shuhada	1936-1956
37	Musa al-Juburi	Mishahdah	Pre 1920
38	Sheikh Sandal	Sheikh Sandal	Pre 1920
39	Khidhir Ilias	Karkh	Pre 1920
40	Sheikh Dhari	Abu Ghraib	Post 1956
41	Alawi al-Hillah	Alawi al-Hillah	Post 1956
42	Al-Harthiyah[a]	Al-Harthiyah	Post 1956
43	Al-Harthiyah	al-Harthiyah	Post 1956
44	Sheikh Maruf	Sheikh Maruf	Pre 1920
45	Um al-Tubal (al-Shahada)	Qadisiyah	Post 1956

* Mosque with religious school.

	Name	Location	Morphological Phase
46	Al-Washash	Al-Washash	Post 1956
47	Buniyah	Near Baghdad West Railway Station	Post 1956
48	Dragh	Hai Dragh	Post 1956
49	Baratha	Ataifiyah	Pre 1920
50	Al-Kadhim	Kadhimiyah	Pre 1920
51	Abu-Yousif*	Kadhimiyah	Pre 1920
52	Sheikh Jalal	Raghibah Khatun	1920 - 1936
53	Sheikh Rawi	Raghibah Khatun	Post 1956
54	Al-Hurriyah	Hurriyah	Post 1956
55	Kanan	Bab al-Sheikh	Pre 1920
56	Ali Afandi	Al-Jumhuriyah Street	Pre 1920
57	Al-Sulaimaniyah	Al-Sarai	Pre 1920
58	Mulla Muhammad	Central Bazaars	Pre 1920
59	Sadat	Bab al-Sheikh	Pre 1920
60	Safafir	Central Bazaars	Pre 1920
61	Othoman Afandi	Goldsmith Bazaar	Pre 1920
62	Al-Numaniyah	al-Sarai	Pre 1920
63	Numan al-Pachachi	Al-Nahr Street	Pre 1920
64	Al-Ansari	Siraj at Din	Pre 1920
65	Al-Jubah	Fadhil	Pre 1920
66	Bishr al-Hafi	Adhamiyah	Post 1956
67	Sadr al-Din	Rusafah	Pre 1920
68	Khidhir Beg	Qamber Ali	Pre 1920
69	Al-Masraf	Al-Maidan	Pre 1920
70	Bier Dawood	Al-Maidan	Pre 1920
71	Munawarah Khatun	Al-Maidan	Pre 1920
72	Al-Abarigi	Sinak	Pre 1920
73	Sulaikh	Sulaikh	Post 1956
74	Badriyah al-Rawaf	Igari	Post 1956
75	Al-Jihad	al-Shaab	Post 1956
76	Palestine	Palestine Street	Post 1956
77	al-Thawrah	Thawrah	Post 1956
78	Adiliyah al-Kabir	al-Nahr Street	Pre 1920
79	Al-Numani	Bab al-Sheikh	Pre 1920
80	Al-Aguli	Rusafah	Pre 1920
81	Haj Fathi	Al-Jumhuriyah Street	Pre 1920
82	Al-Qiblaniyah	Central Bazaars	Post 1956
83	Al-Zufuraniyah the first	Zufuraniyah	Post 1956
84	Al-Zufuraniyah the second	Zufuraniyah	Post 1956
85	Siraj al-Din	Siraj al-Din	Post 1956
86	Banat al-Hasan	Abu Saifain	Pre 1920
87	Ismail al-Nuh	Adhamiyah	Pre 1920
88	Shah Bandar	Adhamiyah	Post 1956
89	Al-Thuraiyah	Sit Nafisah	Pre 1920
90	Ata	Sheikh Ata	Pre 1920
91	Al-Qaimariyah	Karkh	Pre 1920
92	Habib al-Adjmi	Karkh	Pre 1920
93	The National Assembly	Karradat Mariyam	Post 1956
94	Al-Madani	Suq Hamadah	Pre 1920
95	Al-Shawi	Salihiyah	Post 1956
96	Sit Nafisah	Sit Nafisah	Pre 1920

	Name	Location	Morphological Phase
97	Sheikh Bashar	Sheikh Bashar	Pre 1920
	Mosques of the Third Category		
98	Al-Khaiyah	Al-Maidan	Pre 1920
99	Baba Kurkur	Al-Maidan	Pre 1920
100	Sheikh Wasil	Bab al-Sheikh	Pre 1920
101	Al-Dasabil	Bab al-Sheikh	Pre 1920
102	Sheikh Maki	Bab al-Sheikh	Pre 1920
103	Al-Mahdiyah	Al-Mahdiyah	Pre 1920
104	Qarah Bier	Al-Mahdiyah	Pre 1920
105	Naimah al-Chipachi	Al-Mahdiyah	Pre 1920
106	Al-Khanini	Karkh	Pre 1920
107	Saiyd Irbrahim	Karkh	Pre 1920
108	Adwan	Fahamah	Pre 1920
109	Tikartah	Tikartah	Pre 1920
110	Sheikh Ali	Sheikh Ali	Pre 1920
111	Al-Qtar	Rahmaniyah	Pre 1920
112	Al-Shami	Karkh	Pre 1920
113	Al-Swaidi	Sug Hamadah	Pre 1920
114	Sheikh Dhari the Old	Abu-Ghraib	1920-1936
115	Al-Dawlai	Suq Hamadah	Pre 1920
116	Haibat Khatun	Adhamiyah	Pre 1920
117	Nashmiyah	Adhamiyah	1920-1936
118	Haj Irzuqi	Adhamiyah	1936-1956

Appendix F

The Hammams of Greater Baghdad, their Geographical Significance and Details of Architecture and Management (Source: Field Survey 1971) (Fig. 18.1).

Name and Location	Tributary Area	Kind	Average No. of Daily Visitors	No. of Employees	Date	Building Material
Kadhimiyah						
1. Al-Murtadha (al-Dirwazah)	Kadhimiyah Karkh	M.*	60	7	Perhaps late Abbasid	bricks/ mud
2. Al-Jawadin	Kadhimiyah & Visitors	M.	60	7	1800	" "
3. Al-Imamain	Kadhimiyah, Adhamiyah	M.	60	6	1929	bricks/ mortar
4. Al-Imamain	Kadhimiyah	F.	60	6	1929	" "
5. Musa al-Kadhim	Kadhimiyah & Villagers	M.	80	8	1954	" "
6. Musa al-Kadhim	Kadhimiyah & Villagers	F.	80	8	1958	" "
7. Al-Mustafa**	Kadhimiyah & Hurriyah	M.	60	4	1958	Concrete /bricks
8. Al-Milooki	Mainly Visitors	M.	70	8	1961	bricks/ mortar
9. Al-Dijaili	Villagers & Pilgrims	M.	80	10	1963	" "
10. Al-Dijaili	Kadhimiyah	F.	60	8	1963	" "
11. Haider	Kadhimiyah, Karkh	M.	80	10	1969	bricks/ concrete
Adhamiyah						
12. Al-Adhamiyah	Adhamiyah	M.	60	6	1970	bricks/ concrete
13. Al-Adhamiyah	Adhamiyah	F.	60	6	1970	" "
Rusafah						
14. Al-Saiyd	The same area	M.	40	6	Medieval perhaps late Abbasid	bricks/ mud
15. Al-Pasha**	The same area	M.	60	8	Late Ottoman	bricks/ mud
16. Al-Malih	The same area	M.	70	7	1848	bricks/ mud
17. Said Rauf	The same area	M.	60	8	1874	" "
18. Al-Shafa	The same area	M.	60	6	1920's	" "
19. Sheikh Ali	-	M.	Demolished by the construction of al-Jumhuriyah St.		1930	-

* M = Men F = Female

** Governmental

Name and Location	Tributary Area	Kind	Average No. of Daily Visitors	No. of Employees	Date	Building Material
20. Al-Shurjah	-	M.	Demolished by the construction of al-Jumhuriyah St.		1930's	-
21. Al-Zahawi	The same area	M.	60	6	1920-30	bricks/ mortar
22. Al-Rashid	Various parts of Iraq	M.	80	10	1938	bricks/ mortar
23. Al-Tella-khanah		M.	Recently abandoned		1930's	
24. Al-Amir	Pilgrims & from the same area	M.	60	6	1942	bricks/ mortar
25. Al-Rafi-dain	Various parts of the country	M.	60	6	1944	bricks/ mortar
26. Al-Kifah	Metropditan	M.	70	8	1945	bricks/ mortar
27. Al-Kifah	The same area	F.	60	6	1945	" "
28. Al-Haidari	Metropolitan	M.	80	10	1948	" "
29. Al-Haidari*	Metropolitan	F.	60	6	1948	" "
30. Al-Hadi	Local	M.	80	8	1950	" "
31. Al-Hadi	Local	F.	60	6	1950	" "
32. Al-Timimi	Local	M.	35	6	1953	" "
33. Al-Timimi	Local	F.	15	4	1953	" "
34. Al-Jumhuri-ya	Metropolitan	M.	90	10	1956	" "
35. Al-Kulat**	Local	M.	35	6	1956	Bricks/con
36. Al-Sudah	Local	M.	70	6	1958	Bricks/mor
37. Baghdad	Metropolitan	M.	80	8	1961	Bricks/ mortar
38. Baghdad al-Hadidah	Local	M.	80	8	1965	" "
Tel. Muhammad						
39. Tel-Muham-mad	Local	M.	70	8	1950's	Bricks/ mortar
40. Tel Muham-mad	Local	F.	50	6	1950's	Bricks/ mortar
Al-Thawrah						
41. Al-Thawrah	Local	M.	90	10	1966	Bricks/ mortar
Al-Baiya						
42. Al-Baiya	Local	M.	80	10	1966	Bricks/ concrete
43. Al-Baiya	Local	F.	60	8	1966	Bricks/ concrete

* Changed its function recently to furniture workshop and warehouse.

Name and Location	Tributary Area	Kind	Average No. of Daily Visitors	No. of Employees	Date	Building Material
Al-Hurriyah						
44. Al-Hurriyah	Local	M.	90	8	1964	Bricks/ concrete
45. Al-Hurriyah	Local	F.	60	6	1971	" "
Karradah al-Sharqiyah						
47. Faiz	Local	M.	70	8	1951	Bricks/ mortar
48. Faiz	Local	F.	50	6	1971	Bricks/ concrete
Karkh						
49. Aiyoob	Local	F.	60	6	16thC.	Mud / bricks
50. Aiyoob	Metropolitan	M.	70	8	16thC.	Mud/ bricks
51. Al-Jaifir	Local	M.	60	6	1938	Bricks/ mortar
52. Al-Jaifir	Local	F.	40	6	1938	Bricks/ mortar
53. Al-Maruf	Local	M.	80	8	1958	" "
54. Al-Maruf	Local	F.	60	6	1958	" "
55. Al-Timimi	Metropolitan	M.	100	10	1951	" "
56. Al-Timimi	Local	F.	80	8	1951	" "
57. Al-Safa	Local	M.	60	6	1958	" "
58. Al-Jazair	Metropolitan	M.	60	6	1960	Bricks/ concrete
59. Al-Rahmaniyah	Local	M.	80	8	1960	" "
60. " "	Local	M.	60	6	1960	" "

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