FORBES DAVIDSON

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ISMAILIA DEMONSTRATION PROJECTS Final Report

April 1978

2

POPULATION & SOCIAL STUDIES
LAND MARKET & TENURE
INFORMAL BUILDING
HOUSING

TECHNICAL

FORBES DAVIDSON

Clifford Culpin and Partners
Dr. Aziz A. Yassin
Economic Associates Limited
Ove Arup and Partners

specialist consultants

Roger Tym and Associates
Mathew Metcalf and Partners

Preface

The format of the Ismailia Demonstration Projects final report is as follows:

Volume 1: Proposals. This volume provides an overview to the study, describes the plans and present proposals.

Volume 2: Technical. This volume provides technical background on the subjects of population and social studies, land, building and housing.

Volume 3: Technical. This volume provides technical background on the subjects of environment, social facilities and recreation, commerce, industry, centres, transportation and roads, utilities, costing, ability to pay and finance, institutional options and legal context.

The technical volumes provide the supporting information, such as survey results, on which the proposals are based and describe the development of the proposals.

The text is supported, wherever possible with small scale figures. In addition, three portfolios (A,A* and B) of large scale plans are provided. These are necessary only for detailed examination of the proposals.

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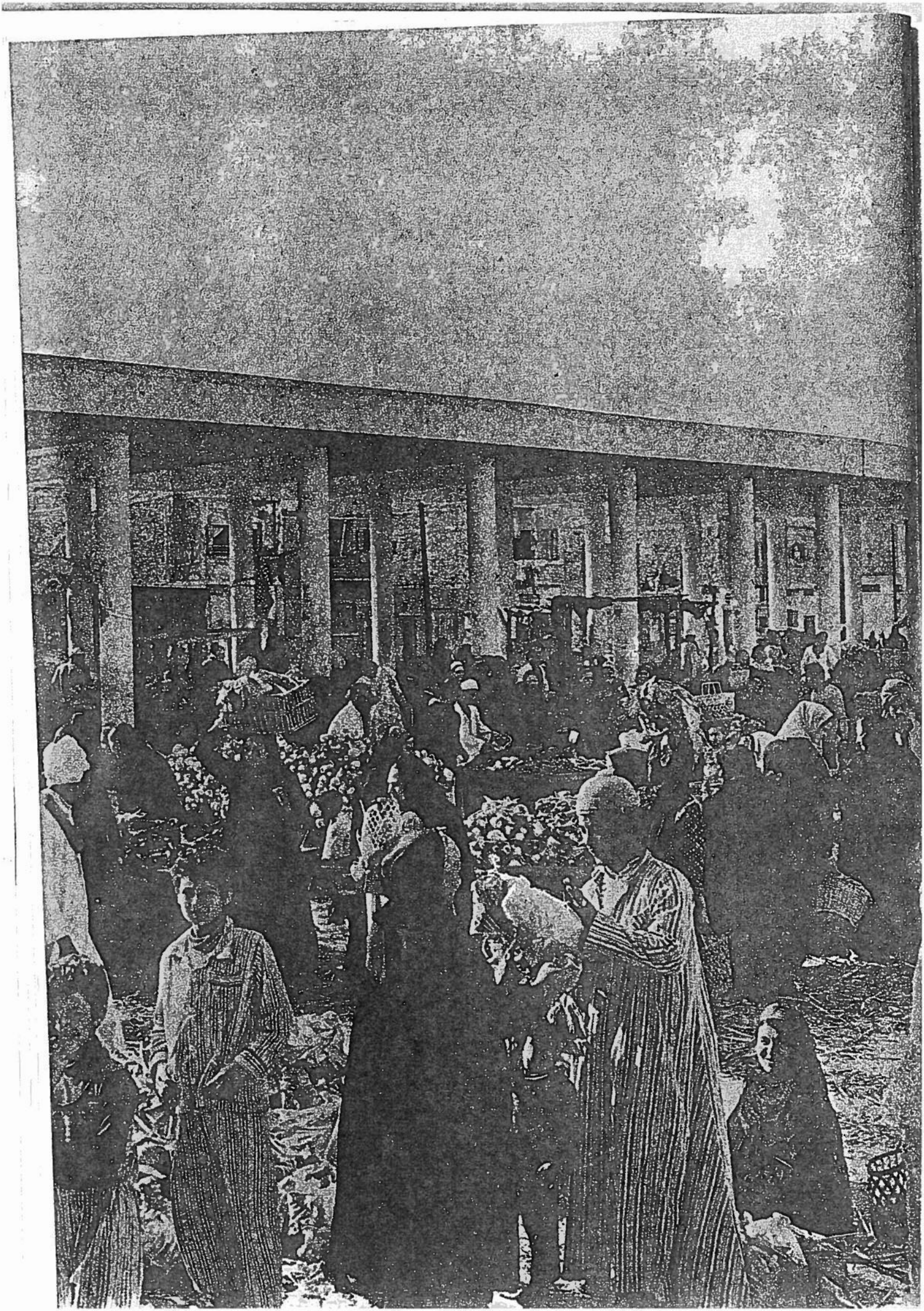
Population & Social Studies



1
Population & Social Studies

1.1 The purpose of the social and population studies is to form a sound basis of understanding for the development of the proposals. This section describes the social surveys which have been undertaken, how they were carried out, what principal information was gained from them, and how it has been used. It also describes the development of the population profiles.

1.2 The social surveys were intended to be carried out in sequence. First 'scanning surveys' were undertaken in each study area. These were based on very short questionnaires which took a few minutes to apply and which asked simple questions about family size, incomes and occupations. Next, and using the information gained in the scanning survey 30 case studies were selected. These are in-depth studies of the housing and history of individual households.

1.3 The case studies, of which 10 are reproduced in an edited form in this section, were undertaken to develop the understanding of the informal housing sector which had been gained during the Master Plan Studies, and to test assumptions which had been made. The particular value of case studies is the ability to gain an impression of the real situation, problems and aspirations of families in the study areas. They add 'flesh' to the bones of the narrower statistically significant surveys.

1.4 The Detailed Improvement Area surveys were designed to gain a thorough knowledge of social and physical conditions within example sections of the existing areas of El Hekr and Abu Atwa. The sequence of the surveys was designed to allow knowledge gained in the scanning surveys and case study surveys to be used in the design of the improvement area questionnaires. This was possible only to a limited extent because of the timing which was necessary to allow inputs to be made to the study as a whole.

1.5 The social aspects of the studies are described in this section. Information gathered on housing, utilities and transportation is described in the appropriate sections of Volumes 2 and 3.

THE POPULATIONS OF THE STUDY AREAS

THE BASE POPULATION

Estimation Method

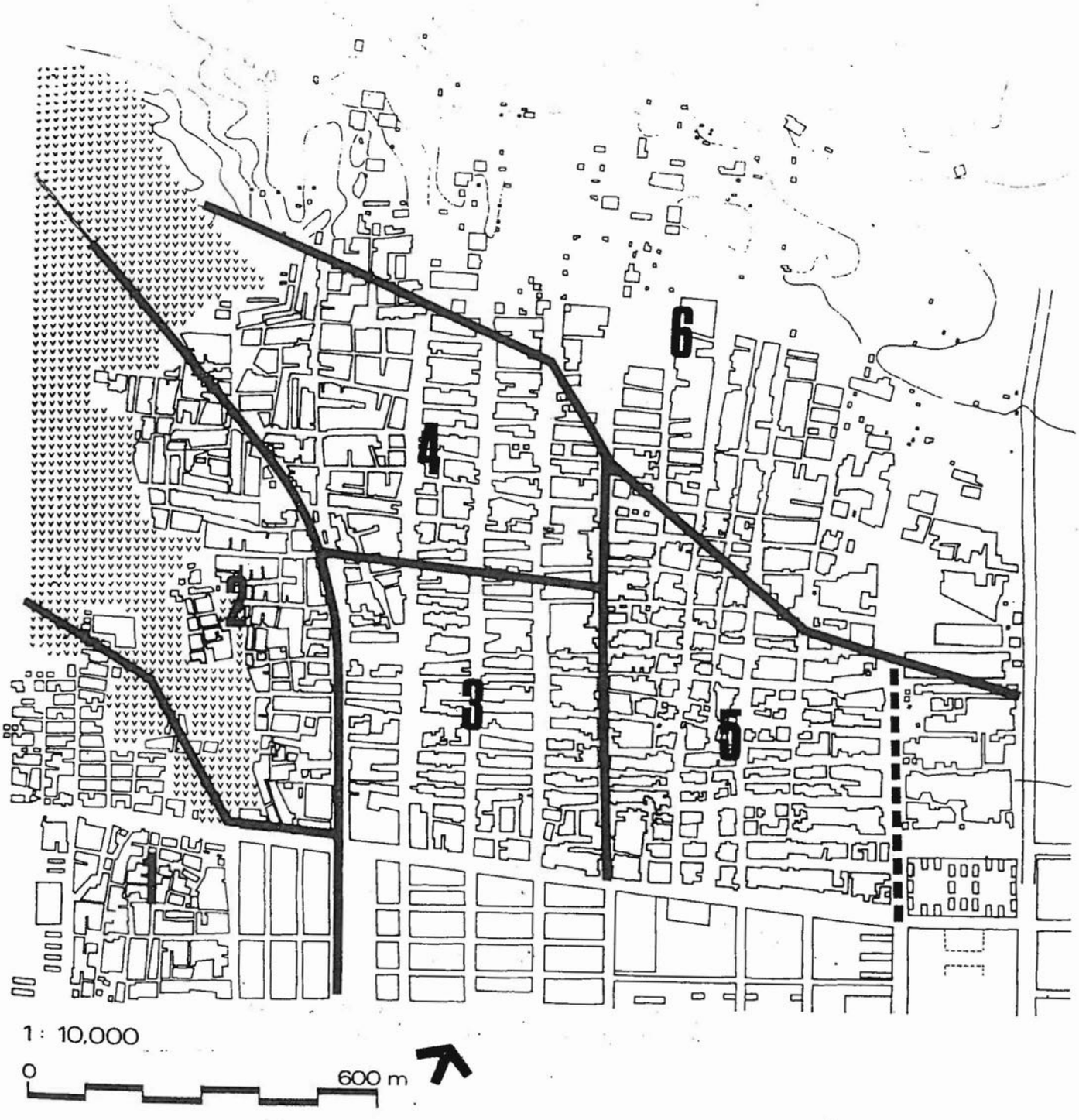
1.6 With an almost complete lack of current demographic information, an estimate of the sizes of the base populations in the two areas was made by assessing the number of dwellings in each area and multiplying this number by occupancy rates. The land-use surveys were used to define areas of differing densities within the project areas, and from these, sub-areas were selected as samples in which the number of dwellings were counted and an estimate made for the 'density areas'. The dwelling numbers obtained were multiplied by dwelling occupancy rates, derived from the household scanning surveys. The occupancy rates used were adjusted to allow for the differing proportions across the Project Areas of single and multi-household dwellings and household sizes. The original estimates of dwelling numbers were under constant review as project fieldwork continued and some downward revisions were made.

The El Hekr Base Population

1.7 The number of dwellings used as the base for the calculation of number of persons was 5710. Multiplied by the number of persons per dwelling and corrected for differing proportions of multi-household dwellings and single household dwellings in each sample area a base population estimate of 37000 was obtained for the existing area. Verification for this estimate was sought from service providers and all accepted this estimate as being reasonable.

Age Structure

1.8 Details of the age structure in El Hekr have been taken from the household scanning survey. (The information which follows in Table 1.1 and ensuing Tables has been aggregated by 'density areas'). The distribution of ages in El Hekr as a whole is close to that of the city of Ismailia, although there is a bias towards the younger age groups. Some of the 'density areas' however, have significant differences which are useful to underline in that they allow a better understanding of the areas and more sensitive growth estimates. In particular there is a low proportion of children in Area 3 with a correspondingly high proportion of older age groups, in particular over 65's. Area 6 too is of interest being the area of current sporadic new settlement (see Figure 1.1) and it appears to have the highest proportion of under 12's and of the 'fertile' age groups. This information contributes to our understanding of the type of family with which the present market is inadequately coping.



AGRICULTURE

EXISTING DEVELOPMENT

PAVED ROADS

DENSITY AREA

1 AREA NUMBER SEE TEXT

El Hekr · density areas

1.1

Table 1.1
CURRENT AGE STRUCTURE (%) BY 'DENSITY AREA' - EL HEKR

Age	Area 1	2	3	4	5	6	Total
0-4	12.3	13.7	9.3	12.7	11.6	17.0	12.8
5-9	11.7	15.1	13.6	15.7	17.7	15.4	14.0
10-14	15.2	11.7	10.6	17.2	18.6	16.2	14.9
15-19	15.2	16.3	16.8	14.5	15.6	10.4	14.8
20-24	8.0	10.1	10.8	6.3	11.2	7.8	9.0
25-44	17.0	16.9	16.8	18.1	14.8	21.2	17.5
45-54	13.0	8.1	10.4	9.6	8.8	6.5	9.4
55-64	6.4	5.6	7.9	2.7	4.0	3.7	5.0
65+	1.2	2.5	3.8	3.2	2.8	1.8	2.6

Comparisons between El Hekr and Ismailia	Total
Under 12 El Hekr	32.0
Under 12 Ismailia	27.5
12-64 El Hekr	65.3
12-64 Ismailia	70.5
65+ El Hekr	2.6
65+ Ismailia	2.0

Sources: El Hekr Scanning Survey 1977, 1976 Census (Primary Results)

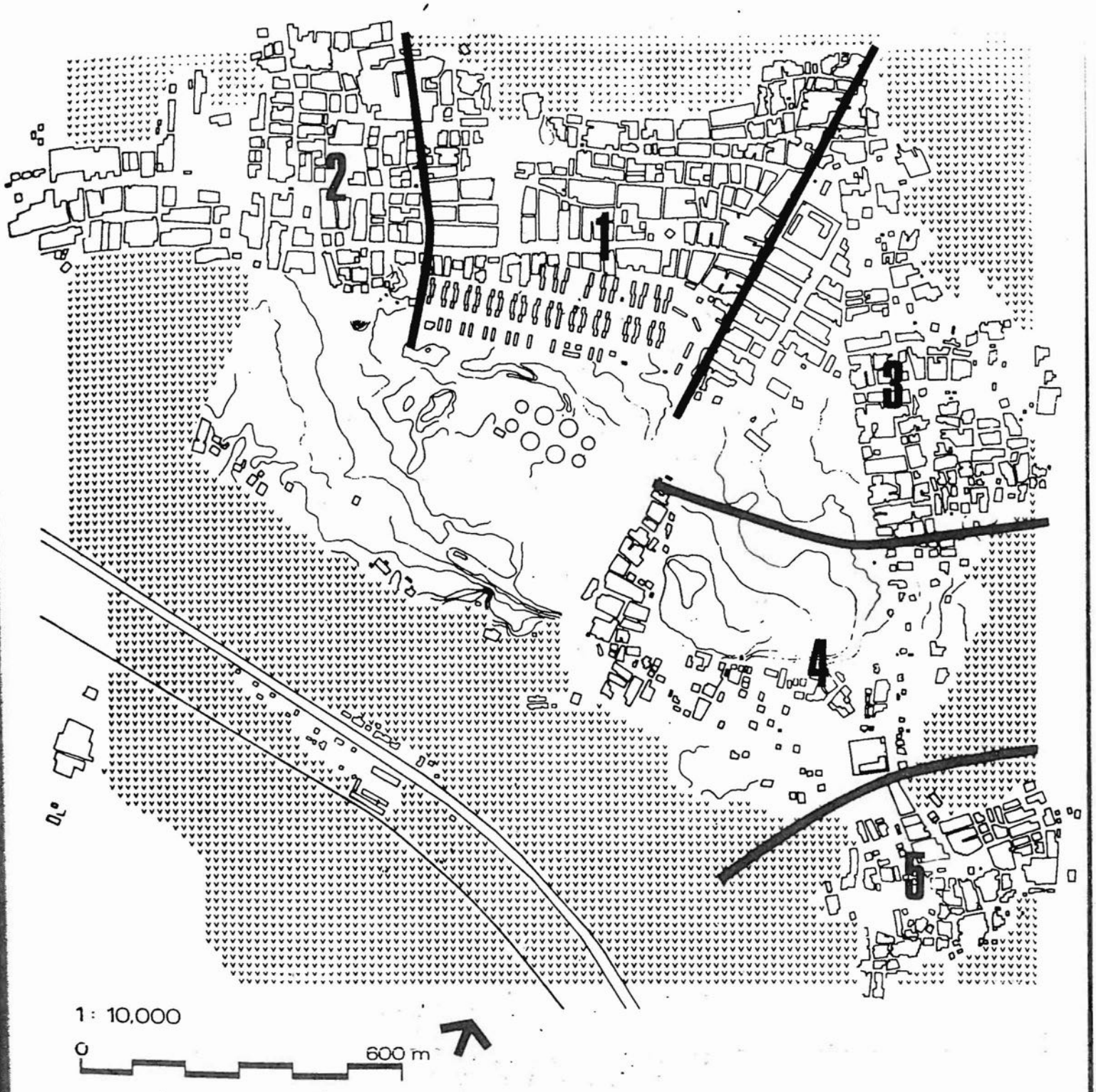
The Abu Atwa Base Population

1.9 The number of dwellings used as a base for the calculation of number of persons was 2800. Multiplied by the number of persons per dwelling and corrected for differing proportions of multi-household dwellings and single household dwellings in each sample area gave a base population estimate of 19900. The Departments of Health and of Social Affairs estimated a current population level of approximately 20000. The Department of Education has estimated that the two primary schools in Abu Atwa accommodate all children in Abu Atwa, with a total of 2837 places, which would imply a population of 20100 and a working base was taken of 20000.

Age Structure

1.10 Details of the age structure of Abu Atwa have been taken from the household scanning survey. The information which follows in Table 1.2 has been aggregated, as in El Hekr, into 'density areas'. (See Figure 1.2).

1.11 The distribution of the age structure for Abu Atwa as a whole is more biased towards the under 12 group than El Hekr. Area 2 appears to be largely composed of households which are stable or declining, whilst both areas 4 and 5 have high proportions of the under 12 age group. Area 5 appears to have a younger structure than Area 4, with expanding households which are often composed of extended families, and Area 4 appears to be beginning a period of declining households. The results for Area 5 need to be considered with some



AGRICULTURE

EXISTING DEVELOPMENT

DENSITY AREA

1 AREA NUMBER

CANAL

RAILWAY

Abu Atwa · density areas

1·2

reservation because of the small sample size in the area.

Table 1.2
CURRENT AGE STRUCTURE (%) BY 'DENSITY AREA' - ABU ATWA

Age	Area 1	2	3	4	5	Total
0-4	12.2	6.7	13.8	10.9	18.0	12.3
5-9	14.0	14.3	14.1	18.2	14.6	15.0
9-14	15.9	17.6	14.3	17.3	12.7	15.6
15-19	12.9	18.5	15.8	14.5	9.1	14.2
20-24	10.6	10.4	12.3	7.3	2.3	8.6
25-44	18.0	17.0	17.5	19.1	20.5	18.4
45-54	9.3	9.6	5.6	7.3	13.6	9.0
55-64	4.8	5.2	4.6	2.7	4.5	4.4
65+	2.3	0.7	2.0	2.7	4.7	2.5

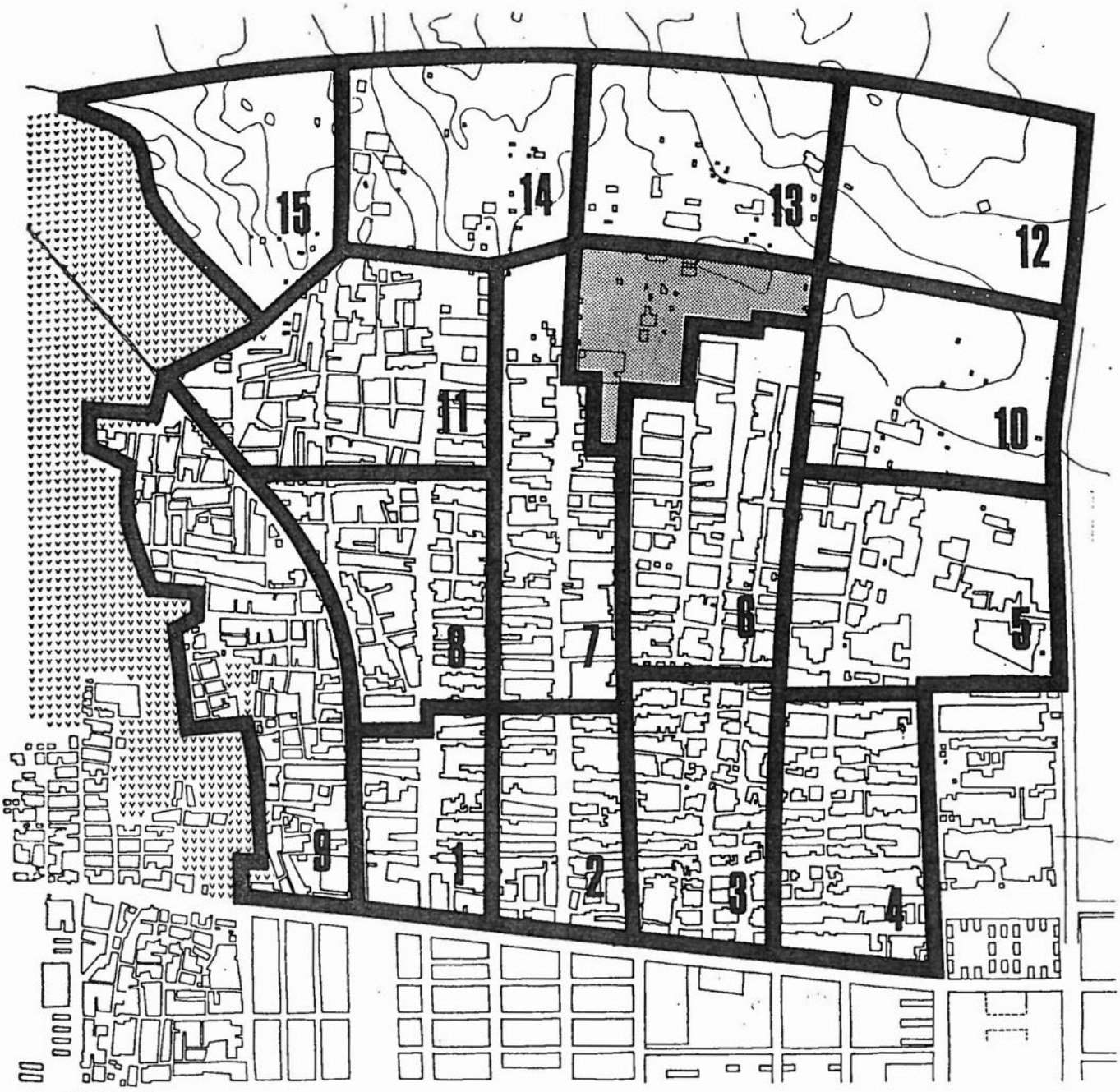
Comparisons between Abu Atwa and Ismailia	Total
Under 12 Abu Atwa	32.6
Under 12 Ismailia	27.5
12-64 Abu Atwa	67.3
12-64 Ismailia	70.5
65+ Abu Atwa	2.5
65+ Ismailia	2.0

Sources: Abu Atwa Scanning Survey 1977, 1976 Census (Primary Results)

THE PROJECTED POPULATIONS OF THE PROJECT AREAS

1.12 The information which is required for detailed population projections is not available and a number of assumptions have been utilised. Base populations have been established by the household scanning surveys. However, the required supplementary information is only partially available and does not enable a satisfactory full age specific projection to be undertaken. Current mortality rates and fertility rates have not been available in sufficient detail, and the reliability of the limited available information is uneven. Information about levels and directions of migration at project area, city and regional scales is also lacking, and very broad assumptions have had to be made. A simple growth rate approach has been utilised, and, largely adopting information used in the Master Plan projections, age specific projections have been calculated to better gauge demand for services, such as education, through time.

1.13 The simple growth rate and cohort survival calculations give a reasonable estimate of natural increase as a projection basis but estimates of the influence on this base of migration are more problematical. In the new development areas a working assumption was developed that in El Hekr all plots would be occupied by the year 1985 and that in Abu Atwa this would occur by the year 1990. The variations being due to anticipated delays in the availability of some areas of land. Initial occupancy of each plot was similarly assumed to consist of one family unit. It was further assumed that the population level would increase to about 150% of initial level



1 : 10,000

0 600 m

NEIGHBOURHOOD ESTIMATED POPULATIONS

	1980-1985	2000		1980-1985	2000		1980-1985	2000	
1	3250	3850	7	3650	6250	13	5400	8100	
2	3550	4200	8	3600	5350	14	3800	5700	
3	2650	3850	9	4100	6300	15	2650	4000	
4	3700	6850	10	4700	7050		37000	57800	EXISTING AREA
5	3700	6750	11	4350	7500		21250	31900	NEW DEVELOPMENT
6	4450	6900	12	4700	7050		58250	89700	TOTALS

NOTE: Community Centre shaded

El Hekr population distribution

1-3

within the period up to 2000, but also that this should be expected to continue to increase to at least 200% of initial levels before stabilising and that service provision standards should be tested against these levels.

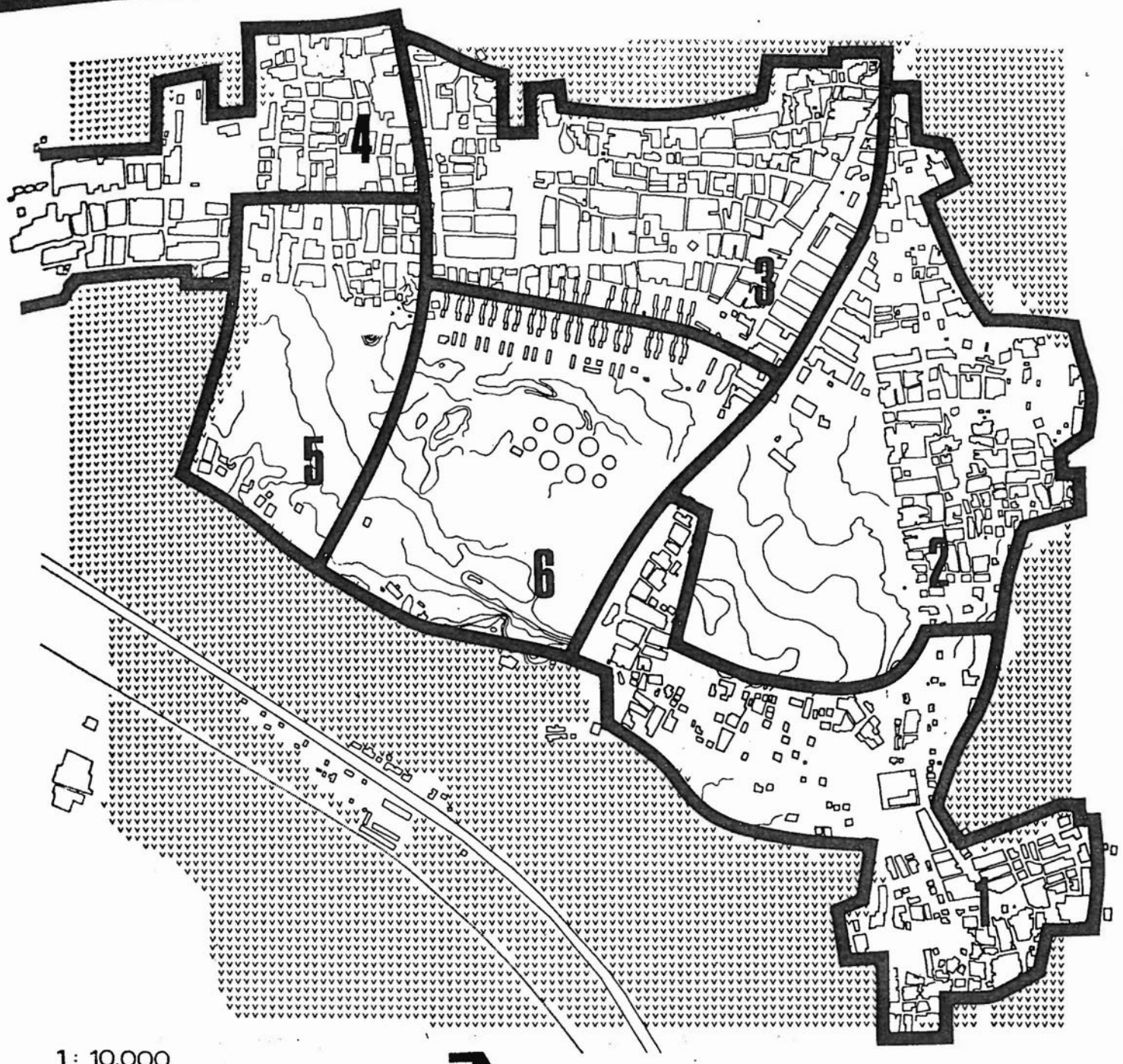
1.14 The basis for the working assumption is the pattern of consolidation in El Hekr and Arashia revealed by the case studies, scanning surveys and the Master Plan Study*. In the south of El Hekr consolidation has already reached a level of 50%.

Ismailia Master Plan, Volume 8 - 'Housing'

1.15 In the new areas the process of consolidation of this kind is expected to start very quickly with tenants and relatives (non-paying guests) from the early days building up the occupancy rates. Information about the relationship of plot size to multi-occupancy, tenure and occupancy rate gained in the Improvement Area Surveys and about the household types associated with multi-occupation, suggests that in the new development areas there will be considerable potential for consolidation. Room rentals will depend on the level of infrastructure available but on the other hand supply should be even more likely if the initial population have expenditure commitments for plot payments and superstructure costs. The demand for room rentals, already thought to be increasing throughout existing El Hekr and in Abu Atwa, would increase further if the Master Plan objective of employment growth attracted working migrants. A typical pattern is for the working household head to come alone for an initial period of establishment, before bringing his family.

1.16 In the existing areas, the level of growth up to 2000 has also been assumed to be 150% increase over the base population. This is the level indicated by the natural increase projections, although it has not, of course, been assumed that all natural increase will remain geographically static. Indeed with the introduction of services in the development areas and existing areas, an increase of 'in-area' movement can be expected. This is fairly common, within El Hekr 28% and in Abu Atwa, 41% of those having moved in the last two years being 'in-area' moves.

1.17 A proportion of the existing population and the new households forming in the existing areas will move to the new development areas, but it is unlikely that much true out-migration will occur, unless employment growth, particularly 'multiplier' employment growth does not occur. Assuming that the Master Plan targets are realised regional immigrants are likely to turn to El Hekr and Abu Atwa as economically accessible areas and rental demand as well as ownership demand can be expected to increase. Similarly in-city migrants will continue to see the Project Areas as providers of opportunities for house ownership or cheap rental and demand should be expected to further increase during implementation of improvements. The broad assumption for the existing areas is that the kind of in and out migration described here will be roughly in balance, and the natural increase level of almost 150% increase up to 2000 is the level which can be expected.



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NEIGHBOURHOOD ESTIMATED POPULATIONS

	1980	1990	2000		1980	1990	2000	
1	5400*	6450	8100	5	5000	6000	7550	
2	5550*	6650	8300	6	1100	5850*	7000	
3	4900	5750	6600		6150			NEW DEVELOPMENT
4	5300	5950	6600		21100			EXISTING DEVELOPMENT
*Including phases 1 and 2					27250	36650	44150	TOTAL

Abu Atwa population distribution

1.4

1.18 For projection purposes the occupants of the new development areas have been assumed to have similar demographic characteristics to the existing populations of the Project Areas, except that the household size for Abu Atwa is projected to decrease to 5.6 persons, similar to El Hekr.

Overall Projected Levels of Population

Table 1.3
OVERALL PROJECTED LEVELS OF POPULATION - PROJECT AREAS

Area	1977(1)	1980-1985(2)		2000
El Hekr	37000	58250		89700
	1977	1980(3)	1990(4)	2000
Abu Atwa	20000	27250	36650	44150

(1) Base population (the 'Project' Areas differs from the 'Study' Area)

(2) Assumed that all new development areas occupied at initial densities

(3) Includes Phase One

(4) Includes Phase Two

The distribution of these growth levels is indicated on Figures 1.3 and 1.4.

DETAILED SOCIAL & ECONOMIC CHARACTERISTICS OF THE AREAS

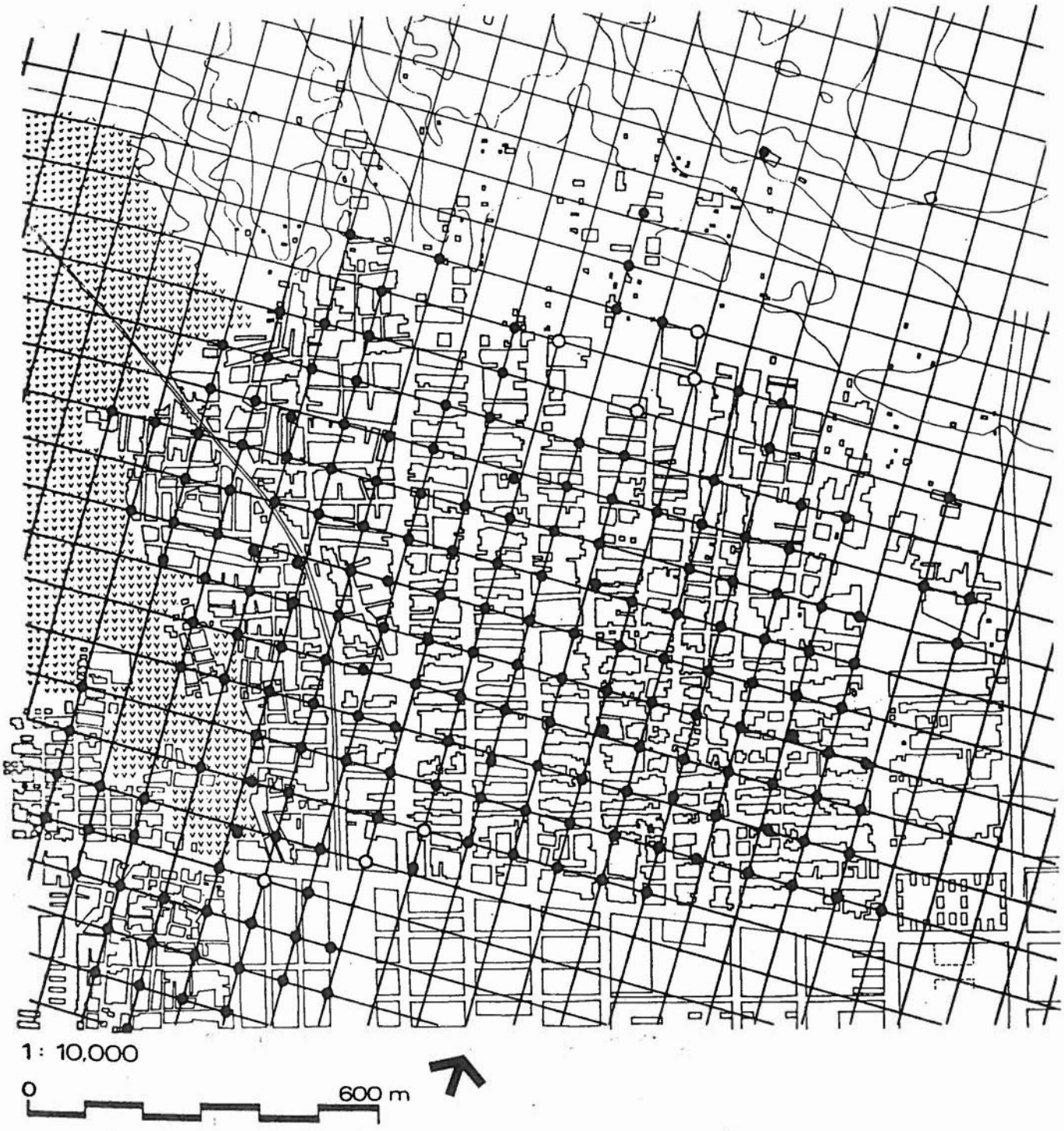
THE SOCIAL SURVEYS

Scanning Surveys

1.19 The two scanning surveys were designed to gather quickly general social, economic and demographic information about the populations of the areas. The information collected covered the following basic points*: Type of house, materials, whether being extended or improved, number of households at address, number of persons at address (both by tenure), tenure of household interviewed in detail, age structure of household interviewed, occupations, places of work and journeys to work of earners, real income, length of time in residence, address at which interview took place and location of previous address.

*See Ismailia Demonstration Projects Working Paper No. 2 'Social Survey Questionnaires and Case Study Guide'

1.20 The scanning survey in Abu Atwa, which was undertaken after the El Hekr survey, also included questions on utilities availability, rent levels and more detailed questions on income. The surveys involved 200 interviews in El Hekr and 150 in Abu Atwa. The sample frame in El Hekr was the verified base plan of the project area, with dwellings as sample units (see Figure 1.5). Being based on the verified plan the frame was up to date (although in the northern areas, where the plan was least completed, under representation occurred). No plan at all was available in time for the scanning survey of Abu Atwa and the sample frame was less satisfactory. The project area was divided into sample areas, of roughly the same numbers of dwellings (the sample unit) and an appropriate number of dwellings was then selected from each sample area on the basis of a random number system. Figure 1.5 illustrates the selection of sample units in El Hekr which was by a process of a geometric randomisation, using a North-South, East-West grid, correlated with map coordinates at 83.3m intervals. The households to be intervied were located in the buildings at the grid intersections.



AGRICULTURE

EXISTING DEVELOPMENT

PAVED ROAD

● SAMPLE POINT

○ INTERVIEW CANCELLED

El Hekr household scanning survey · sample distribution **1·5**

1.21 In both surveys the same system was used in cases of non-contact: If no building existed or if it was not residential, for example, then the nearest dwelling up to 20m was chosen in the sequence of South, West, East or North. If the household in the assigned building could not be interviewed re-calls were made three times only, and if unsuccessful the nearest residential unit was chosen, as above. In El Hekr and Abu Atwa the response rate was 100%. (Response rates throughout the surveys were extremely high, the only non-response occurring in the case studies with two refusals.)

1.22 Four interviewers were used in El Hekr, and six in Abu Atwa, all of whom were employees in the Ministry of Education, which made special arrangements for them to assist with the surveys. All of the interviewers were social workers and had some experience of social research, in addition to their relevant professional experience and all were familiar with El Hekr, although only two were very familiar with Abu Atwa. The interviewers were trained for the scanning surveys for one day on each survey, which included pilot studies. Field-work took a period of five days in El Hekr (June 13 - June 18) and a period of three days in Abu Atwa (August 9 - August 12).

Reliability

1.23 The reliability of the scanning survey samples was assessed by testing the statistical accuracy of the mean sample age. This confidence test provided the following results:

El Hekr sample - With a mean sample age of 21.5 years, it can be said with 95% confidence that the mean age of the population of El Hekr is between 21 years and 22 years, that is to say that there is an area of uncertainty at the 95% level of $\pm$ 0.5 years which is quite acceptable.

Abu Atwa sample - With a mean sample age of 25.4 years, it can be said with 95% confidence that the mean age of the population of Abu Atwa is between 25.9 years and 24.9 years, that is to say that there is an area of uncertainty at the 95% level of $\pm$ 0.5 years which is quite acceptable.

ANALYSIS AND RESULTS

1.24 The questionnaires were pre-coded facilitating the tabulation of the results. The principal information gained from the scanning surveys is set out below.

Age Structures

1.25 This subject is dealt with under Population above and the results presented in Tables 1.1 and 1.2.

HOUSEHOLD SIZES & OCCUPANCY RATES

1.26 El Hekr: The average household size for the whole of El Hekr is 5.6 persons. Single household dwellings (80% of total) have the higher average size of 6 persons while multi-occupied dwellings (20% of total)

average 4 persons per household. Occupancy rates averaged 6 persons per dwelling in single household dwellings, whilst multi-household dwellings have as an overall average 11 persons representing 2.8 households. (This gives an overall occupancy rate for El Hekr of seven persons per dwelling.)

1.27 Abu Atwa: The average household size in Abu Atwa as a whole is 6.5 persons. Single household dwellings have an overall average occupancy rate of 6.5 persons, and represents 85% of the total dwellings, whilst multi-household dwellings represent 15% of the total dwellings. This gives an overall occupancy rate in the area of 7.1 persons per dwelling.

HEADSHIP RATES

1.28 Headship rates (the ratios of households to men aged 25-64, in this case) have been calculated which has enabled assumptions about the future number of households to be made. In El Hekr an overall headship rate of 0.9:1 has been calculated, and in Abu Atwa, an overall headship rate of 1.03:1. In the development of the working assumption on the rate of consolidation some adjustment to these headship rates was made to allow for likely earlier household formation.

Table 1.4
INCOME - EL HEKR
a) % earners by income ranges and density areas

Income Range	Area 1	2	3	4	5	6	El Hekr TOTAL
< LE25	52.6	71.1	76.5	80.5	61.4	80.3	70.4
LE26-39	44.8	28.9	20.6	17.1	25.0	17.1	25.6
LE40-69	2.6	-	2.9	2.4	13.6	2.6	4.0
LE70+	-	-	-	-	-	-	-

b) % household incomes by income ranges and nos. of earners

Income Range	1 Earner	2 Earners	3 Earners	TOTAL
< LE25	57.3	-	-	57.3
LE26-39	19.5	8.5	0.5	28.5
LE40-69	3.6	8.5	0.5	12.6
LE70+	-	1.1	0.5	1.6

1.29 The most important fact is that 70% of earners in El Hekr have, according to the sample, an income of less than LE25 per month. In terms of household incomes, Area 6, the area which is currently sporadically developed, and which is occupied for the most part by recent settlers, has the highest proportion of those with less than LE25. Area 5, on the other hand, in consolidated El Hekr has the highest proportion of households with between LE40-LE69. Area 2, like Area 1 appears to be an area where people are well off relative to the other areas of El Hekr, with relatively high proportions of households having more than one earner in both the LE25 and LE26-39 categories.

Table 1.5
INCOME - ABU ATWA
a) % earners by income ranges and density areas

Income Range	Area 1	2	3	4	5	Abu Atwa TOTAL
< LE15	29.6	22.2	21.8	44.4	54.5	34.5
LE15-25	40.7	48.0	50.9	55.6	45.5	48.2
LE26-39	16.6	18.5	23.7	-	-	11.7
LE40-69	11.2	11.1	3.6	-	-	5.2
LE70+	1.9	-	-	-	-	0.4

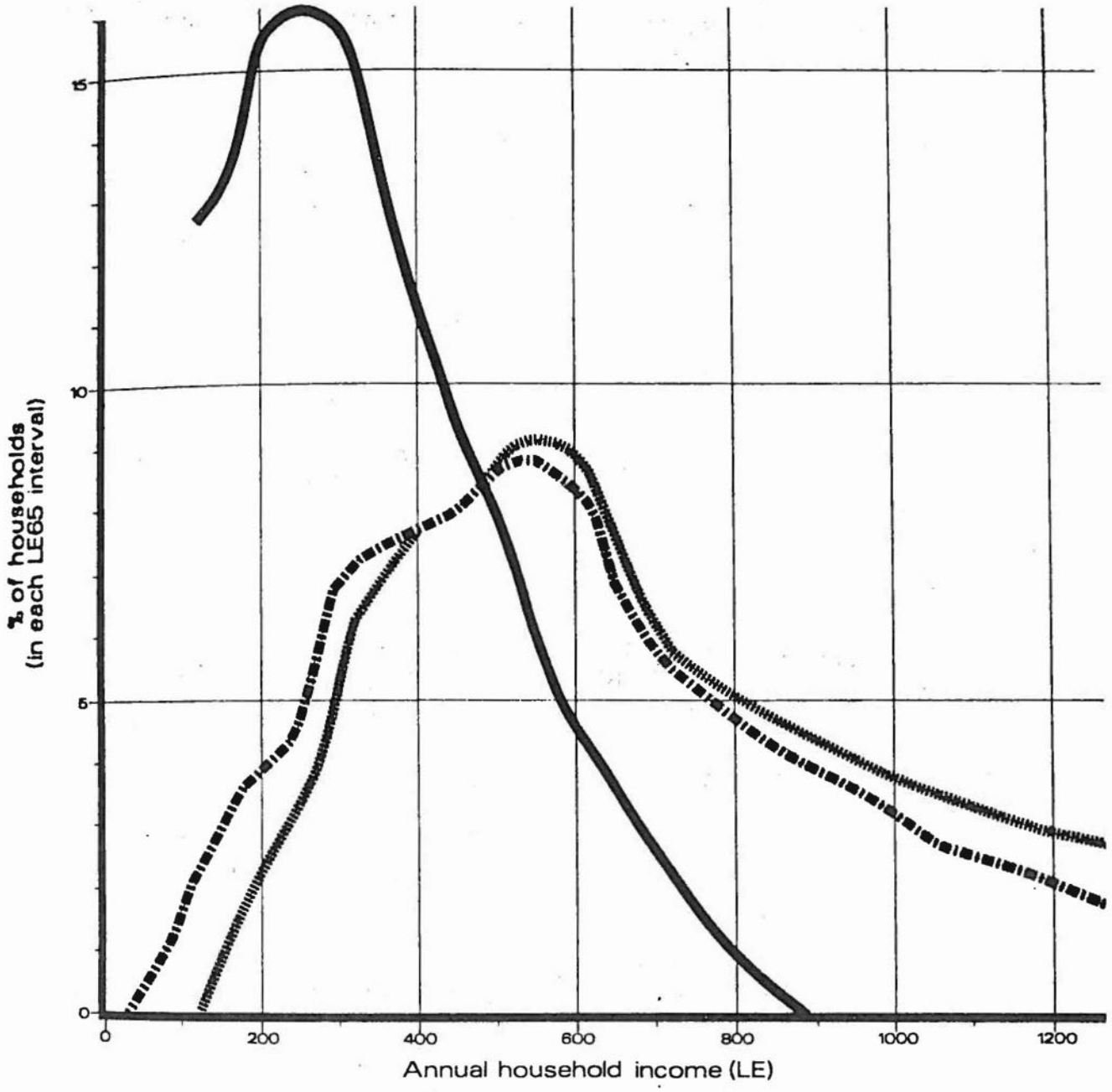
b) % household incomes by income ranges and nos. of earners

Income Range	1 earner	2 earners	3 earners	TOTAL
< LE15	24.8	-	-	24.8
LE15-25	45.0	1.3	-	46.3
LE26-39	16.3	3.4	-	19.7
LE40-69	5.2	2.6	-	7.8
LE70+	0.7	-	0.7	1.4

1.30 As in El Hekr, the most important fact is the high proportion of very low income earners, here 82% earn less than LE25, with nearly 35% of that proportion earning less than LE15. In terms of household incomes Area 5 is particularly poor, as is the village area of Sahara which has a high proportion of agricultural workers. Area 4 is only slightly better off with a higher proportion in the LE15-25 income band, although all incomes are below LE25.

1.31 Information on incomes is one of the principal bases for formulation of the proposals and care has been taken to verify and refine the information gained in the scanning surveys. The collection of information about income in low income areas poses a number of special problems. For example, many respondents were not in regular employment and amounts earned were uncertain, as were lengths of time employed, and although the questionnaires attempted to separate permanent and temporary employees, and those with regular or irregular incomes, the information collected was not complete. However, the problems are such that underestimates are more likely than overestimates, and as the intention is to determine the amount that can be afforded for housing, underestimates allow 'safe' margins for error.

1.32 Apart from the collection of at least partial information on the regularity of income, in Abu Atwa real values for income were collected rather than as in El Hekr where the income ranges were used exclusively. It was considered originally that it would be difficult to elicit precise responses, but it proved to be that most respondents would, if they were able, give precise answers. The case studies and Improvement Area Surveys were used to further verify the income data and with the reservation that the household income estimates in the whole areas could tend to be conservative, the data is considered to be reliable.



ISMAILIA TARGET POPULATION

NATIONAL URBAN (ALL HOUSEHOLDS)

NATIONAL URBAN (HOUSEHOLDS OF 3 OR MORE PERSONS)

Household income distribution (1977)

1.33 Figure 1.6 shows the verified values obtained and the corresponding national urban income distribution figures.

EMPLOYMENT

1.34 Table 1.6 shows that El Hekr as a whole has a significant proportion of permanent government and public sector employees, the most secure type of employment. Areas 3 and 4 have the highest proportions of secure employees with regular incomes and Areas 1 and 2 the lowest. It has to be remembered that security of employment does not mean well paid employment, and Areas 1 and 2 which are according to the sample, relatively well off, have in fact less secure employees, and Area 1 in particular has, according to the sample, the highest proportion of unskilled workers. It is worth noting in addition that Area 6, the area which is currently being settled, has the unexpected employment characteristic of 44% of earners being in government and public sector permanent posts.

1.35 Table 1.7 shows that Abu Atwa as a whole is less urban than El Hekr, but there is also a high proportion of government employees, and the agricultural sector only accounts for 21.0% of total occupations. The density areas h striking differences. Area 2 has a higher proportion of government employees and public sector employees, and a higher proportion of agricultural workers. The latter reflects the proximity of the area to agricultural land, both of these factors being compensated for by lower proportions of craftsmen and, overall, of traders. Area 3 is striking because although it is some distance from the central area of Ismailia, 67.3% of the

Table 1.6
EMPLOYMENT - EL HEKR
% earners in employment categories, by 'density areas'

Employment Category		Area 1	2	3	4	5	6	TOTAL El Hekr	
Government Employee	Permanent	22.5	30.9	40.6	3.5	3.4	22.2	30.9	Total public formal
	Temporary	-	-	-	-	-	2.2	0.4	
Public Sector Employee	Permanent	12.9	7.7	25.0	28.7	22.7	22.2	19.7	51.4
	Temporary	-	-	-	-	-	2.2	0.4	
Private Sector Formal	Permanent	7.4	5.1	4.4	20.7	-	6.7	7.4	7.8
	Temporary	-	-	-	-	-	2.2	0.4	
Private Sector Informal	Permanent	41.4	43.7	8.1	7.7	15.9	33.4	25.0	30.3
	Temporary	4.8	6.4	9.4	-	11.2	-	5.3	
Unspecified	Permanent	8.6	6.4	12.5	7.9	9.4	6.7	8.6	10.5
	Temporary	2.4	-	-	-	6.8	2.2	1.9	

Table 1.7
EMPLOYMENT - ABU ATWA
% earners in employment categories, by 'density areas'

Employment Category	Area 1	2	3	4	5	TOTAL Abu Atwa	
Government Employee	25.8	30.8	33.9	13.6	20.0	24.8)	
Public Sector	8.1	11.5	14.2	9.1	-	8.8)	) 33.6
Priv.Sect. formal	7.6	7.7	7.1	18.2	10.0	10.1)	10.1
Priv.Sect. informal	30.3	15.4	21.6	22.6	40.0	26.0)	26.0
Agriculture	19.3	23.1	10.7	31.8	20.0	21.0)	21.0
Unspecified	8.1	11.5	12.5	4.5	10.0	9.3)	9.3

working population travel there or to other parts of the city and a total of 48.1% of the working population are in government or public sector employment. More striking than this is the extremely low proportion (10.7%) with agricultural employment. The proportion of trades is also high reflecting the distance from the commercial centre of Abu Atwa. Finally, Area 4, the area of sporadic development south of the cemetery has a higher proportion of agricultural employees, and lower of public sector and government employees, but the level of commuting is still high.

Place of Work

Table 1.8
PLACE OF WORK - EL HEKR
% earners by 'density areas'

Area	Local	Ismailia Centre	Ismailia Other	Other
1	29.0	50.0	6.5	14.5
2	8.0	64.0	18.0	10.0
3	3.3	80.0	6.7	10.0
4	4.9	75.6	12.2	7.3
5	-	78.0	7.4	14.6
6	16.3	44.2	18.6	20.9
TOTAL	10.3	65.3	11.6	12.8

1.36 By far the greatest number of those employed (or employing) are working in Ismailia centre. However, it must be pointed out that the definition of Ismailia centre includes Arashia which, of course, adjoins El Hekr. It is possible that a proportion of El Hekr income earners are employed in Arashia which is really more 'local' than 'central'. There is limited evidence of the use of bicycles due, no doubt, to the prevalence of unsurfaced roads.

Table 1.9
PLACE OF WORK - ABU ATWA
% earners by 'density area'

Area	Local	Ismailia Centre	Ismailia Other	Other
1	32.7	48.0	4.0	15.3
2	45.5	48.5	-	6.0
3	21.2	50.0	17.3	11.5
4	23.5	23.5	41.2	11.8
5	Insufficient data			
TOTAL	30.7	42.5	15.6	11.2

1.37 Despite the distance to Ismailia centre and the cost (10 piastres each way by taxi or 3 piastres by bus) 58.3% of earners commute, indicating a closer relationship to the city for the area as a whole than anticipated. It is an indication amongst other things of the process of urbanisation which is occurring in Abu Atwa. There is little evidence of the use of bicycles by commuters.

Underemployment

1.38 In both areas a comparison of the numbers of respondents of economically active age with the numbers actually economically active reveals a potential for employment.

Table 1.10
POTENTIAL FOR EMPLOYMENT GROWTH - EL HEKR & ABU ATWA

	Household Characteristics	EH %	AA %
1A	Households with more than man + wife + children of school age only. (Extended families excluded.)	59.0	61.0
2A	Households with only man + wife + children of school age only. (Extended families excluded.)	41.0	39.0
1B	Households with 2nd and 3rd earners	19.6	7.8
2B	Households without 2nd or 3rd earners	80.4	92.2

The impression given by this information is further borne out by the low proportions of 'informal' sector employment. In low income areas like Abu Atwa and El Hekr marginal sources of employment - very small businesses, street traders, fool and taamia shops, for example, are usually more significant. This is particularly relevant, as in low income areas marginal employment allows the households the benefit of more than one earner. It is recommended that such employment is encouraged.

MOBILITY

1.39 Patterns of mobility are confused because of the continuing influence of the 1967-1974 evacuation of the city. However the following Tables 1.11 and 1.12 show that 'in-area' mobility is fairly high in both areas, particularly recently, whilst migration from Ismailia

Table 1.11
LENGTH OF RESIDENCE & PLACE OF ORIGIN (%) - EL HEKR

Period	Place of origin Ismailia city	Outside Ismailia	El Hekr	TOTAL
2yrs	10.6	8.1	7.0	26.1
3-5yrs	5.1	4.0	4.5	13.6
5-10yrs	2.0	2.0	2.5	6.5

Table 1.12
LENGTH OF RESIDENCE & PLACE OF ORIGIN (%) - ABU ATWA

Period	Place of origin Ismailia city	Outside Ismailia	Abu Atwa	TOTAL
2yrs	4.0	7.3	8.0	19.3
3-5yrs	4.7	1.3	8.7	14.7
5-10yrs	1.3	0.6	5.3	7.2

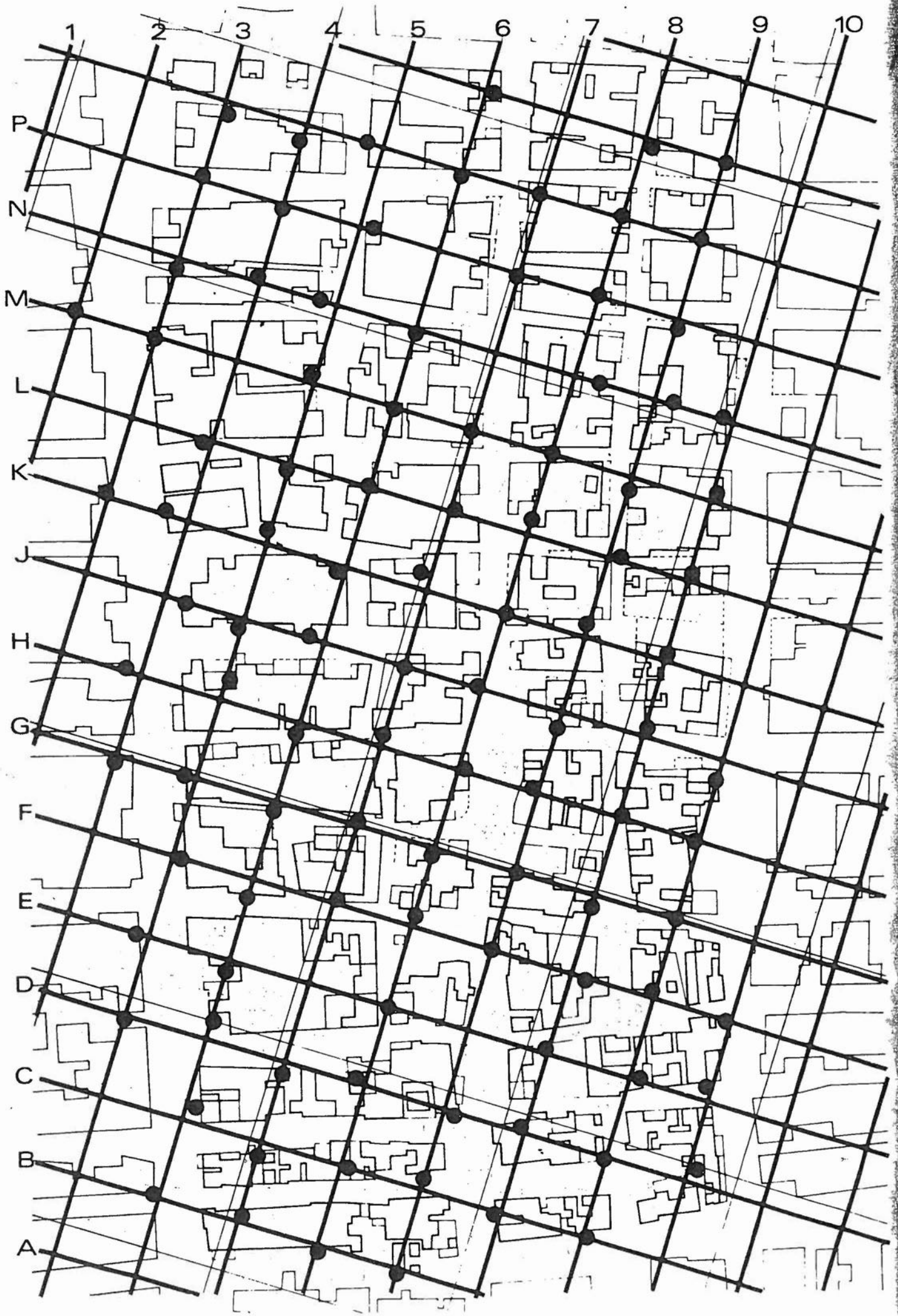
city has increased recently in El Hekr, although in the same period is restrained in Abu Atwa.

SOCIAL CHARACTERISTICS OF THE DETAILED IMPROVEMENT AREAS

METHOD

1.40 The two improvement area surveys were designed to gather information from the small 'detailed improvement areas', which would provide a basis for determining policies not only for the physical upgrading of housing, utilities and environment (including administrative and financial policies), but also contribute further information about the current use and management of housing generally to the development of policies for the new development areas. The improvement area surveys have been particularly useful, for example, in deciding on plot sizes for the new development areas. Information collected focused on demographic characteristics, tenure arrangements, occupations, the functioning of the area (in terms of accessibility to facilities), a detailed physical survey of each interviewed householder's dwelling (including the drawing up of a plan), a detailed survey of utilities and, for these last two, priorities for change were also discussed. Questions were asked about the process of extending the dwelling and of undertaking improvements and repairs, and an attempt was made to gather information about the costs of these. Income and expenditure were also considered in detail both for the purposes of this particular survey and also to contribute to the verification of the income information in the scanning surveys.

1.41 The surveys involved 150 interviews, 100 in El Hekr and 50 in Abu Atwa and were intended to be 10% samples as a minimum. The sample frame in El Hekr was again the verified base plan, this time at 1:1000 scale, and again with dwellings as the sample unit (see Figure 1.7). Sample units were selected in El Hekr by a further process of geometric randomisation using a North-South, East-West grid, correlated with map coordinates at 83.3m intervals. At the time of undertaking the Abu Atwa improvement area survey there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was no base plan for the area, and the sample frame was made up of two parts, a base plan drawn up by pacing out the area and a perspective grid drawn over an 'aerial' photograph of the improvement area (taken from the TV-Mast in the centre of the area). On production of the base plan the plan used as a sample frame proved to be quite satisfactorily accurate. The same arrangements for non contact were made for these surveys as for the scanning surveys. In El Hekr two substitutions were required with no cancellations and a response rate of 100% was achieved yielding 100 interviews. In Abu Atwa six substitutions were required with one cancellation and 100% response rate, yielding 49 interviews. Six interviewers were used, and were the same team used for the Abu Atwa scanning survey; the timing of the surveys was such that the interviewers had a continuous run of work which kept re-training time to a minimum and for the improvement area surveys fieldwork pilots and training took a period of 4 days in El Hekr (30 July - 2 August) and a period of 4 days in Abu Atwa (6 - 10 August).

Reliability

1.42 The reliability of the improvement area samples was assessed by testing the statistical accuracy of the mean sample age, this confidence test provided the following results:

El Hekr sample: With a mean sample age of 22.32 years it can be said with 99% confidence that the mean age of the population of the improvement area is between 23.16 years and 21.48 years, that is to say that there is an area of uncertainty at the 99% level of ± 0.16 years which is acceptable.

Abu Atwa sample: With a mean sample age of 21.27 years it can be said with 99% confidence that the mean age of the population of the improvement area is between 22.57 years and 19.97 years, that is to say that there is an area of uncertainty at the 99% level of ± 0.30 years which is acceptable.

ANALYSIS AND RESULTS

The questionnaires were pre-coded as far as possible in view of the number of questions being asked but there were many 'open' questions and the manual retrieval of the information encountered a number of difficulties. The principal information gained from the improvement area surveys is set out below.

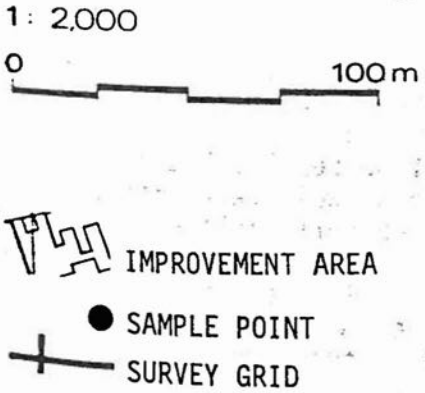
BASIC SOCIAL CHARACTERISTICS—EL HEKR IMPROVEMENT AREA

POPULATION

The detailed area contains 510 plots, estimated to contain 745 households and 3000 people.

HOUSEHOLD DETAILS

The average size of all households is 5.2 persons which is lower than that for El Hekr as a whole (5.6). This difference, however, is not as significant as the



Improvement area survey sample distribution 1·7

apparent difference between the occupancy rate in the Detailed Improvement Area and El Hekr as a whole; the occupancy rates are 5.9 persons per plot against an El Hekr average of 7 persons per plot. The explanation for this difference is most likely to be that the overall El Hekr figure includes the more consolidated southern sections of El Hekr which contains a large number of 'aimaras'.* Comparison with the predominantly single storey areas in El Hekr confirms that the Detailed Improvement Area is fairly typical. Evidence from the case studies does emphasise, however, that a number of its extended families may be temporary formations, with relatives or friends, on arrival in Ismailia, looking for their own accommodation and possibly employment. The case studies frequently give examples of people who, if they are not related, come originally from the same village or area and who support each other in this way. This floating figure in occupancy rate calculations has been taken into account in developing policies for rehabilitation and for new development areas.

*These are small blocks of flats from three to five storeys. For a full description, see Volume 2, Section 4.

1.46

Principal households in plots are predominantly of one type - married couples with children at least one of whom is under 15 years. This type of household is also most likely to take in renters, possibly a result, considering the low incomes, of household expenditure being at its greatest; space too, however, is most in demand at this time. (See discussion of plot sizes below.) Households in the second largest category are those which are late in the household development cycle, married couples with children all of whom are over 15 years. Extended families are the most likely to have other relatives with them, as separate households, and, as might be expected, the proportions of single adults and childless couples are very small. Table 1.13 shows the composition of principal households and the frequency with which households of different types have extra households on plot. The discussion of plot size which follows includes further comment on this table. It is estimated that the population of the area could grow to approximately 4500 by the year 2000, with an estimated 300 new households formed.

Table 1.13
PRINCIPAL HOUSEHOLDS & FREQUENCY OF EXTRA HOUSEHOLDS BY TYPE (%) EL HEKR

Household Type	%
Single person	2.0
Married couple	2.0
+ renters	1.0
Married couple + children <15	45.4
+ renters	8.3
+ non paying guests	1.0
Extended family	17.5
+ renters	1.0
+ non paying guests	5.0
Others	16.8

Source: El Hekr Improvement Area Survey 1977

INCOMES & ECONOMIC ACTIVITY

Household incomes are higher than for El Hekr as a whole with the median household income in the LE26-LE39 range. However, 44% of households in the area have incomes below LE25 per month. Only 4% of households had no earners and were relying on pensions, welfare payments and relatives. The proportion of earners employed in the public sector was higher than for El Hekr as a whole consisting 56% in government employment and 16% in the non governmental public sector.* 23% of earners were employed in the informal private sector. 12% of the households supplemented this cash income by keeping poultry for food.

*This includes such employers as the Suez Canal Authority and associated organisations.

Expenditure

1.48

Household expenditure was estimated by asking households to break down their current monthly budgets into the key categories of expenditure on food, housing and utilities,

Table 1.14
HOUSEHOLD INCOMES (%)
EL HEKR

Income Range (LE)	%	
0-15	13.0	44
16-25	31.0	
26-39	38.0	
40-69	17.0	
70+	1.0	

Source: El Hekr Improvement Area Survey 1977

*CAPMAS: Central Agency for Public Mobilisation and Statistics, Household Budget Survey 1974-75, Document No.0819, AA176

1.49

Table 1.15
CATEGORIES OF OCCUPATIONS (%) EL HEKR

Occupation	%
Government	56.0
Public Sector	16.0
Priv. Sector formal	-
Priv. Sector informal	-
Retailers	-
Pedlars	7.0
Skilled	3.0
Unskilled	5.0
Retired	11.0
Other	2.0

Source: El Hekr Improvement Area Survey 1977

Table 1.16
TENURE - EL HEKR

Tenure	%
Owner Occupier	56.0
Renters	26.0
Owner Occ. + Renters	12.0
Owner Occ. + Renters + non pay. guests	2.0
Owner Occ. + non paying guests	3.0
Renters + non paying guests	1.0

transport and 'other'. The information gained is not precise, but does indicate that the lowest income group spends up to 15% on housing whilst the proportion for food expenditure is lower than for other groups apart from LE40-LE69 groups and above. This is a further example of the unexpected expenditure pattern revealed in the CAPMAS* survey of household incomes and expenditures, that the lower the value of the household income, the higher the proportion spent on housing. The explanation that at the lowest level of incomes, the average household size diminishes is not fully borne out by the evidence in El Hekr and Abu Atwa; see this Volume, Section 4, Tables 4.2a, 4.2b. However, the most probable explanation is that it is a function of rent restrictions benefitting higher income groups more than the very lowest. Comparisons with the CAPMAS survey suggest that the proportions obtained in the survey are low but for the lowest income group. Here 15% is spent on shelter in the detailed improvement area in the < LE15 per month category, 11.75 in the CAPMAS survey. In the higher income categories, however, the relative difference is reversed, 11.75 in the CAPMAS survey and 8.1 in El Hekr, in the LE26-LE39 group.

The information gained in the survey does need to be verified and before final decisions are made about the levels and costs of improvements, they should be tested by consultations with local people, and in particular tenants, as this group has special problems. The conclusion is that most of the residents of the area have potential for improvements both in terms of ability to pay and willingness. The very lowest income group is however already heavily committed to housing expenditure.

Tenure and Rents

The area has a very large proportion of rented houses 26%, occupied by single households. This level is high and poses particular problems in the implementation of improvement policies. From the information available, the average rent for a two-room apartment or whole house in El Hekr is in the order of LE5 per month. As this represents 21% of the median household income there appears to be little latitutude for undertaking additional outlays for improvements, as rental outgoings are near to the maximum that could be sustained. A further 16% of households rent out rooms or have 'non paying' guests in separate households but on the same plot. The occupation of plots by a number of households is fundamental to an understanding of plot use and is discussed later in this section. But already the information has shown that it is expanding families and extended families which tend to take on renters and 'non paying' guests respectively.

MOBILITY

El Hekr as a whole has several functions in the housing market but principally it provides low income people with the opportunity of home ownership and also increasingly, low rental accommodation (rooms alone are still LE1-LE1.50 per month in traditional houses) giving an opportunity for saving and later owning. With such

Table 1.17
LENGTH OF TIME HOUSEHOLDS RESIDENT IN AREA (%)

Length of time in area	%
Less than 1 year	19.0
1-2 years	7.0
3-4 years	14.0
5-10 years	4.0
11+ years	56.0

Source: El Hekr Improvement Survey 1977

functions it is not surprising that there is high demand in the area, and this demand is reflected in the mobility of the detailed area. Whilst 56% of the households had been in the area for 11 years or more (excluding the evacuation period) 19% had been in the area for less than a year. The tenure characteristics of the 19% are 10% renter and 9 % owner occupiers and in the main they come from within El Hekr . Clearly the area is not stable, with the high proportion of recent new settlers and with a further 21% resident for less than 4 years. Moving out of the area is much less common, and this fits the view of El Hekr being an area in which people improve their dwellings once ownership has been secured rather than move from house to house in order to improve living conditions. This is illustrated by the case studies. Renters are however a very different case, and of those asked about their attitudes to the area and housing conditions, it was renters who complained most about the conditions and stated their intentions to move. All respondents saw advantages in the area, but equally most had some complaints.

The principal advantages of the area and dwellings were, for those who owned, ownership of the house, space (30%), quietness (41%) and having a yard for use. Among the disadvantages cited were lack of running water in the house (80%), the poor condition of the ground and roads (65%), lack of sewerage (50%), lack of schools and facilities (18%) and lack of on plot electricity (14%). Of all the households interviewed 81% were clear that they preferred work to be carried out on utilities rather than housing, and did not feel that the houses themselves were so much of a problem.

Table 1.18
PRINCIPAL HOUSEHOLDS & FREQUENCY OF EXTRA HOUSEHOLDS BY TYPE (%) ABU ATWA

Household Type	%
Single Person	-
Renter	-
Non paying guest	-
Married couple	3.8
+ renters	-
+ non paying guests	1.9
Married couple + children < 15	54.8
+ renters	6.7
+ non paying guests	3.8
Married couple + children < 15	8.2
+ renters	1.9
+ non paying guests	-
Extended family	15.1
+ renters	1.9
+ non paying guests	1.9

Source: Abu Atwa Improvement Area Survey 1977

BASIC SOCIAL CHARACTERISTICS—ABU ATWA IMPROVEMENT AREA

POPULATION

The Detailed Improvement Area contains 335 plots, estimated to contain 400 households and 2345 people.

HOUSEHOLD DETAILS

The average size of all households in the area is 6.7 persons, which is very slightly higher than in Abu Atwa as a whole, at 6.5; overall plot occupancy rate is fairly typical with a detailed improvement area level of 7 persons per plot with an Abu Atwa average of 7.1. There are fewer renters in Abu Atwa than in El Hekr which lessens the effect of temporary occupants of dwellings, but it is equally a factor to consider, as a number of the Abu Atwa case studies demonstrate. Principal householders on plots differ partially from those found in El Hekr. The principal household type is again the married couple with at least one child under 15, and again it is demonstrated that it is this kind of household which is liable to have extra households attached. In the sample area 57.6% were in this category with a further 5.8% having renting households attached, and a further 3.8% having 'non paying' guest households attached. There were no single person households in the sample.

1.55

Table 1.19
HOUSEHOLD INCOMES (%)
ABU ATWA

Income Range (LE)	%
0-15	11.0
16-25	38.0
26-39	42.0
40-69	8.0
70+	1.0

Source: Abu Atwa Improvement Area Survey 1977

The distribution of household types indicates a young population in the area which is confirmed in the scanning survey results. As in El Hekr it is extended families which are the next most likely to have extra households, with 1.9% 'non paying' guests and 1.9% renter households in the sample. It is estimated that the population of the area could grow to approximately 3500 by the year 2000 with an estimated 200 new households formed (see Population Section.)

INCOMES & ECONOMIC ACTIVITY

Household incomes in the area are rather higher than in Abu Atwa as a whole with the median in the LE26-LE39 range. However 49% of households in the area have incomes below LE25 per month, although there are fewer in the < LE15 per month category (11%) than in Abu Atwa generally (24.8%). The detailed improvement area is one of the more closely developed and more 'urban' parts of Abu Atwa; even so 51% had space for poultry and animals, the livestock being used for non-cash income. 4 households had no other income but pensions and welfare payments, with no earner. The area is considerably more urban than Abu Atwa as a whole and this is reflected in the occupations of the residents, 45.2% being in some kind of government employment, 22.6% in public sector employment, and 22.7% employed in the informal private sector. A very similar pattern to that found in El Hekr. The informal private sector occupations were principally retailing (including street traders) 7.8%, skilled workers 1.8%, and unskilled, the largest proportion, 13.2%. The sample studies included no agricultural workers although 21% of the total employed population of Abu Atwa is employed in agriculture.

1.57

Table 1.20
CATEGORIES OF OCCUPATIONS (%) ABU ATWA

Occupation	%
Government	45.2
Public Sector	22.6
Priv. Sector formal	1.8
Priv. Sector informal	-
Retailers	3.8
Pedlars	4.0
Skilled	1.8
Unskilled	13.3
Retired	7.5

Source: Abu Atwa Improvement Area Survey 1977

Expenditure

As with El Hekr, household expenditure was estimated by asking households to break down their current monthly budgets into key categories. The information in Abu Atwa is not precise but gives a general impression of spending patterns. The < LE15 group have the highest proportional expenditure on housing, with the next income group spending proportionally more on food, but less on housing. As with El Hekr the evidence reverses the conventional pattern of spending by the lowest income groups. This area of Abu Atwa has renters on 41% of plots, with 25% being single household occupiers, and this latter high proportion is most probably the principal factor in explaining the evidence, as in El Hekr. Verification of the information gained is essential before implementation. Gathering detailed information on spending patterns is not a simple research task, but 'ability to pay' could be gauged relatively simply by testing a series of 'costed utilities options' with the residents. The conclusion is that most of the residents of the area have potential for improvements both in terms of ability to pay and willingness. The very lowest income group is however already heavily committed to housing expenditure.

1.58

Table 1.21
TENURE - ABU ATWA

Tenure	%
Owner Occupier	59.0
Renters	25.0
Owner Occ. + Renters	8.4
Owner Occ. + Renters + non pay. guests	7.6
Owner Occ. + non paying guests	-
Renters + non paying guests	-

Source: Abu Atwa Improvement Area Survey 1976

Tenure and Rents

The area has a large number of rented houses (25%) and a further 16.0% of households have extra households attached. This proportion of renters is high and the implementation of improvement policies is made more complex. The pattern of tenure differs from El Hekr only in relatively small proportional changes in the distribution. In Abu Atwa there is a higher frequency of the owner occupier + renter + non paying guest group whilst in El Hekr the tendency is not for the extra household types to mix. The more precise information available on rent levels in Abu Atwa indicates an average rent level of LE3.90, for two rooms and W.C., and this is less than in El Hekr, reflecting probably the better relative renting market potential which accessibility to the centre of Ismailia gives to El Hekr. There are no examples of key money being paid. This lesser amount in Abu Atwa does give greater latitude for undertaking additional outlays for improvements, but essential outgoings are on average at 17% of the median income and the extra latitude is really quite marginal.

MOBILITY

1.59

Abu Atwa is almost certainly in the process of changing its function in the city, from being an autonomous rural area, to being one of the two principal areas of low income house ownership in the city, and of being one of the suppliers of labour for the city. The proportion of agricultural workers (currently almost 20%) in the area as a whole is giving way to urban occupations, most of which (58% - currently) require commuting to the city.

1.60

In the detailed improvement area the length of tenure of the occupying households reflects a higher overall degree of mobility in terms of in-migration than in El Hekr detailed area, although the El Hekr area has absorbed a higher proportion in the past year. 26.9% of households in the Abu Atwa area have been in occupation for less than 2 years, with 11.5% coming from Ismailia and 13.6% from outside the city. The tenure of the 26.9% are 14.9% owner occupiers and 12% renters. 30% of all households bought the house but of those buying 37% have been less than 5 years in the area, another 38% built the house in which the household is living. Moving out of the area is much less common, although evidence from the case studies suggests that more moving to improve housing conditions takes place than in El Hekr. Whilst no respondents could describe advantages of the area (although those interviewed in the case studies all describe advantages) equally complaints about the area were less forcefully expressed than in El Hekr. The principal disadvantages cited were no sewerage system (28%), no running water in the house (38%), no improved roads (21%), poor transport (12%) and no preparatory school (6%). The choices between improving the dwelling and improving utilities gave a less clear indication of residents priorities than in El Hekr, with 19% putting dwellings first and 32% utilities.

Table 1.22
LENGTH OF TIME HOUSEHOLDS RESIDENT IN AREA (%)

Length of time in area	%
Less than 1 year	19.0
1-2 years	7.9
3-4 years	14.1
5-10 years	3.0
11+ years	56.0

Source: Abu Atwa Improvement Area Survey 1976

CASE STUDIES

1.61 A number of case studies were undertaken, 15 in El Hekr and 15 in Abu Atwa. These follow on from the case studies used in the preparation of the Master Plan (see IMP Volume 8, Housing). The objective of the current case studies is the demonstration of the role of the project areas in the Ismailia housing market, and the illustration of the process of housing, considering in full detail the housing histories of selected households. The case studies are also used to gain information which is difficult to gain by other means, in particular information about local social organisations.

1.62 The advantage of the case study approach is that the interaction of all the components of social and economic life in the project areas is illustrated rather than any individual component, and a comprehensive view, provided by even a small number of the case studies enables the more specialised studies to be seen in better perspective.

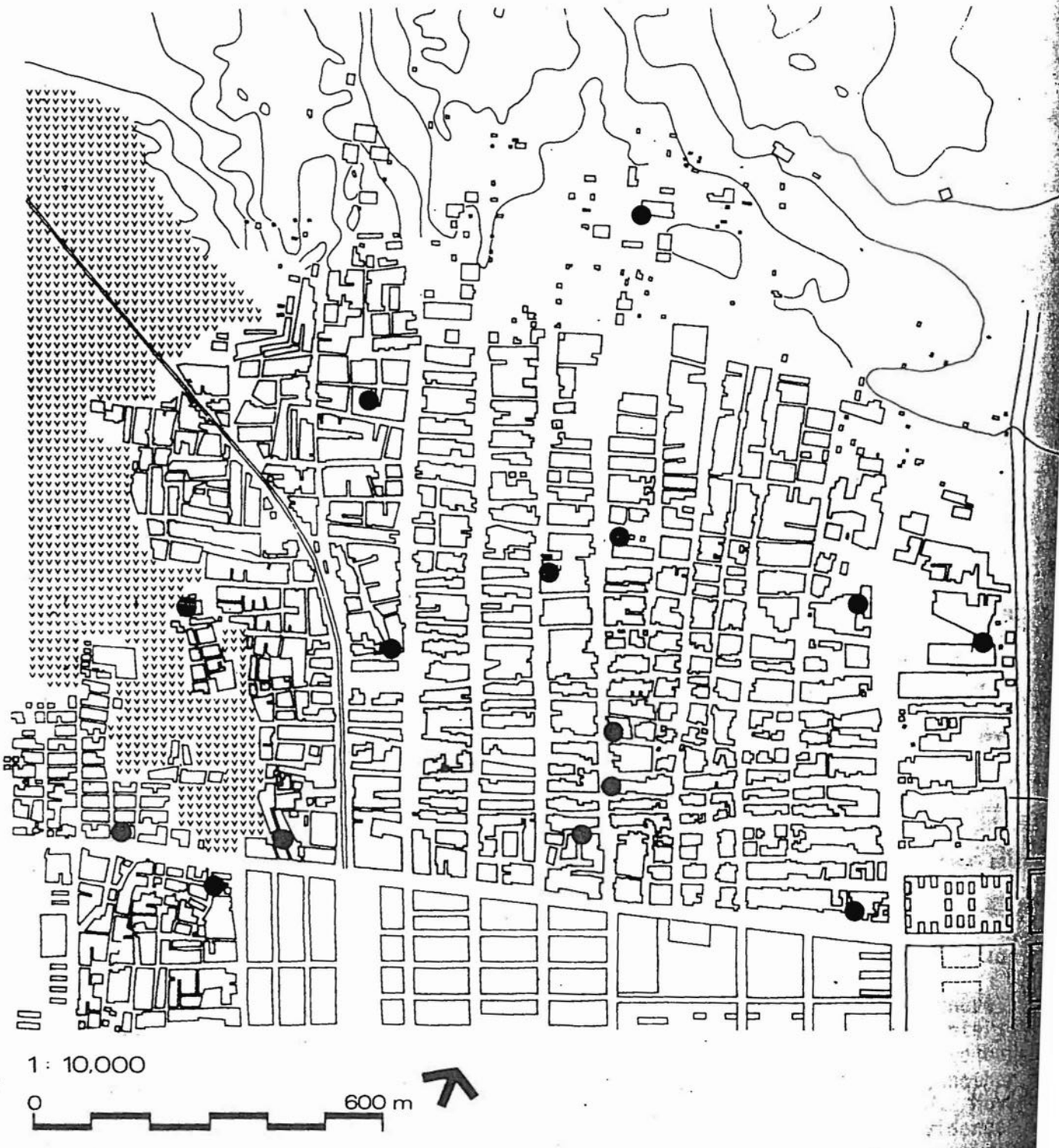
1.63 Information from the case studies has been extremely valuable in the development of all of the policy proposals, and one of the principal methods of putting the information to use was the circulation of translated case studies around the Team throughout the Study period, a simple but very effective method of utilising information of this kind. A selection of the edited case studies are included in this volume as examples.

METHOD

1.64 As a basis for the case studies a guide* was prepared for the interviewers. The studies consist of three parts; the first is a summary section with basic personal information, present housing and a brief family history; the second part, for families with origins outside Ismailia covers briefly socio-economic and housing conditions outside Ismailia, with more detail on circumstances on arrival including employment and housing. The third section, for all householders, covers all houses lived in in Ismailia, with greater detail for houses in Abu Atwa and El Hekr. This last section is subdivided to investigate (a) socio-economic conditions of the family, (b) housing situation, (c) community organisations and (d) household priorities and expectations.

*See Ismailia Demonstration Projects Working Paper No. 2 'Social Survey Questionnaires and Case Study Guide'

1.65 In El Hekr the households were selected for in-depth case studies from the sample of the scanning survey and 15 households were selected from the total sample of 200 (see Figure 1.8). The main criteria was not proportional distribution but rather the inclusion of all of the main variants represented in the sample of case studies. Selection was completed in two stages and with the aid of 'overview' tables of the preliminary analysis of the scanning survey. The tables were based on sub-divisions of the El Hekr total area into six identified homogeneous areas (see Figure 1.8). Each area included between 26 and 40 households interviewed in the scanning survey, and from each area 5 potential case studies were selected on a number of criteria. The characteristics of the 30 households selected are presented in Table 3.1 of the Status Report. The cri-



El Hekr · case study distribution

teria of selection in decreasing order of importance were:

(1) The composite of occupation, age and income of head of household as an approximation of present socio-economic position and likely future changes.

(2) The kind of housing tenure and the presence or absence of extensions and improvements to the dwelling.

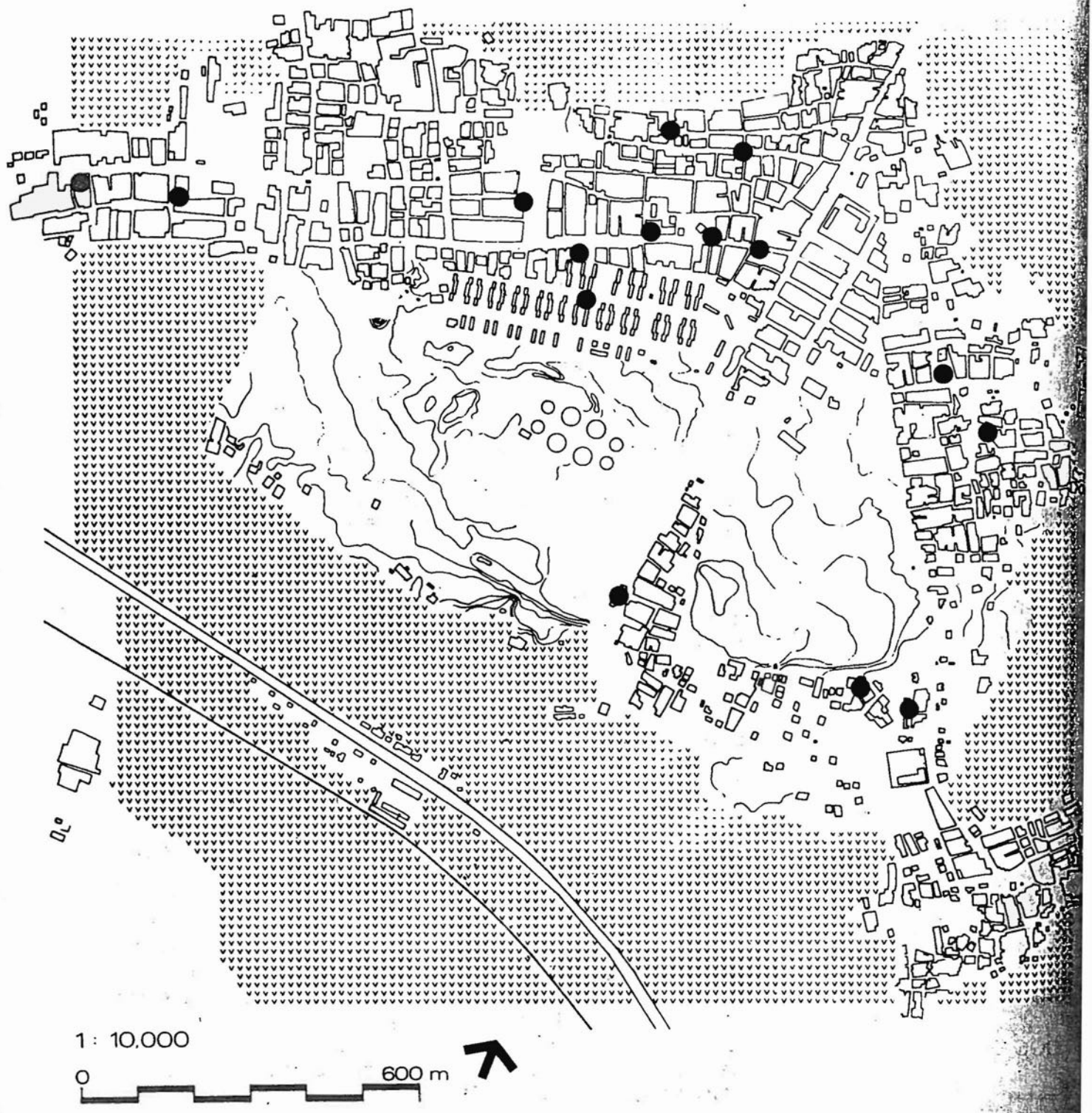
(3) Age of household (stage in household development cycle.

(4) House type and materials.

1.66 In Abu Atwa the selection process was less precise because of difficulties with timetabling. The scanning survey was delayed because of the lack of an adequate sample frame (mapping had not yet been carried out) and in order not to delay the whole programme, the Abu Atwa case studies were brought forward and preceded the scanning survey. Selection, therefore, had to be based on observable factors. The sub-divisions of the area described in the scanning survey section had been possible from observations made in physical surveys, and case study numbers were allocated to those areas (see Figure 1.9). Within the areas building types were looked for which would give examples of different stages of development, including poor and good condition traditional materials, mixed materials and modern materials. Size of plot was also considered. This shortage of time was unfortunate as it limited the effectiveness of the technique of brief scanning survey allowing the selection of case studies, followed by case studies which develop insights into the process of housing and which then facilitate the production of surveys.

1.67 The case studies were undertaken by very experienced staff, but even so, the case study guide has proved a difficult instrument to use, both in El Hekr, and despite refinements, also in Abu Atwa. Each case took an average of six hours of fieldwork and ten hours of editing and writing up. The survey period in El Hekr was for 11 days using three interviewers and in Abu Atwa for eight days, also using three staff.

1.68 The studies which follow have been selected to demonstrate the main themes of all of the studies undertaken. In both areas households of different sizes, with different income levels, and at different stages of the family cycle were all improving their housing according to their abilities. In the case of the highest income example here a tailor and his wife with LE50-LE60 per month, the shop adjacent to the house is already built in modern materials and the house will be soon. In the case of the lowest income examples, the major step of house ownership has been achieved and although currently the housing is limited, aspirations are high for incremental improvement. The basic criteria for selection have been, household income level, age of household, type of tenure and stage in incremental development, location, house type and materials. Names have been changed to protect the confidentiality of the interviews.



Abu Atwa · case study distribution

CASE STUDY 1 : ABU ATWA

Ahmed was born and brought up in Abu Atwa. His grandfather was one of the earliest settlers in the area, having come from Syria to Egypt during the digging of the Suez Canal. Because of this background Ahmed is a respected and prominent member of the community. His family, consisting of his wife, two daughters and three sons, live together in two adjoining houses which have been linked by opening one onto the other.

PROFESSION & EDUCATION

Both husband and wife are in the tailoring business. He works from 8am to 9pm in his shop next to the house while his wife works at home. Ahmed considers himself well educated since he can read and write. Although he received tuition in the Koran when he was young, he is self-taught, reads the newspapers, listens to local and world news on the radio and wants to give his children a good education. He makes no distinction between the daughters and sons where education is concerned.

PRESENT INCOME

His income ranges from between LE35 to 45 per month while his wife's monthly earnings are approximately LE10. In addition to this he receives LE5 a month as rent for a house they own. The couple's combined income is doubled on special occasions and feast days when they are swamped with orders.

PERSONAL HISTORY

The sons and grandsons of Ahmed's grandfather claimed pieces of land in the area and set themselves up as farmers. His own father had been a farmer too, owning eight feddans from the proceeds of which he supported two wives and sixteen children (five of whom died). When Ahmed left his father's home after his marriage, only his mother and one sister remained there, the other children having married and moved into their own homes. After his father's death Ahmed, with his mother and sister, inherited one and a half feddans of land. His 85 year-old mother now insists on living on her own in a seperate house nearby. His father-in-law is a policeman on the railways in Sharkeia Governorate, but his wife left her family home to come to Abu Atwa after her marriage.

Ahmed's father had been very well off financially. He employed six farm labourers and had regular and good crops and fruit from the orchards that he also owned (plums, grapes, and mango). He had owned cattle too. Ahmed, however is handicapped with a permanent limp and can only walk with the help of a stick and because of his disability he decided that it would be easier for him to enter a profession like tailoring.

He started as a tailor's apprentice at 14 specialising in Arabic and traditional designs. From this he graduated to working for other tailors for the next ten years until he was able to open his own shop.

During this time he lived with his mother and sister in the family house and was therefore able to save half his

income towards opening his own shop. He opened one in 1965 with his savings, with which he paid the rent and bought a sewing machine and other equipment.

FIRST HOUSE

In 1964 Ahmed claimed roughly 300 m2 of land and built his own house using hired labourers. The completed house consisted of four rooms, a hall, a large yard, a w.c. and space for cattle in the yard. The roof was of wood with beams he took from the family house, the floor was cemented and the doors and windows like the roof were also of wood. Once it was built he made no further improvements and lived there with his mother. Although the area in which it was located was quiet and in fresh open country, the house itself had no water or electricity and was far from public services. Ahmed therefore decided to try and buy another house which would be closer to the main street and public services and in which he could also open a shop, saving him from making inconvenient journeys with his bad leg.

SECOND & THIRD HOUSE

Because of the evacuation of Ismailia during the war, people were selling off their houses very cheaply and Ahmed bought a house in 1973. This consisted of three rooms, a w.c. and a small yard, built of mud and plastered. But he found it too small for his needs so he bought the adjoining house, registering both with the authorities who were responsible for transferring ownership to the new buyer of a house. He also paid 'Tahkier'* after paying off the debt which the previous owner owed the government. Ahmed moved into this house in the same year and stayed in it throughout the war, although he sent his family to Tanta for four months. He rented out his former house for LE5.

*This is the hekr rent paid by settlers for use rights to Government land.

IMPROVEMENTS

He made gradual improvements to the houses in subsequent years. In 1974 he demolished the old w.c. replacing it with a new one with a large reservoir. He built the shop in 1975 by separating one room from the rest of the house. It was constructed of red brick, roofed with concrete and the floor tiled. He fixed a door and introduced electricity. In 1976 he introduced water and also added a tap in the shop all of which cost him LE100. The present house consists of four rooms, a yard and a w.c. which is built of mud and plastered with a sandy floor.

Although the house is located on the main street and near public transport, schools, market etc., Ahmed is dissatisfied with its construction and would like to demolish and rebuild it entirely in a modern style. Apart from this his other complaint is about the location of the public tap immediately in front of his entrance. It leaks permanently, creating a stagnant pool with a foul smell which has become a breeding ground for mosquitoes.

DISADVANTAGES OF THE AREA

Although he lives in what is considered to be one of the best areas in Abu Atwa, Ahmed complains that it is not well planned. He says there are many problems arising from the lack of basic services like an ambulance centre, fire station and telegraphic facilities. They also need a telephone which is available at all times. The

locality too is congested as a result of the housing crisis after the war. There is an urgent need for a primary school and a co-operative shop selling meat, fish and vegetables. There are several grocery and fruit and vegetable shops in the main street very close to his house plus a weekly market but Ahmed prefers to buy his daily provisions from Ismailia where prices are lower. There are no material or haberdashery shops in the area either.

EXPENDITURE

The only source of savings for the houses he has bought was his work. He pays LE3 every year 'Tahkier' for his first house which he is renting out. He still does not pay for the water in his present house, although it was introduced a year ago. Having poultry of their own saves on the buying of meat and the family's general expenditure on food is roughly LE20 a month. He gives his mother LE4 a month and spends another LE4 on transport as he has to go into town to buy materials and equipment for his work every other day. The family spends about LE70 a year on clothes, but do not need to spend on education since the children are still young and attend primary school which is free. They need only buy clothes and books for them. He does not spend much on personal items since he does not smoke or drink tea or coffee. About once a fortnight he visits the cinema in Ismailia which costs about 50 piastres a time including transport. He budgets for medical treatment which comes to about LE2 per month. He pays 180 piastres a month in social insurance tax for a temporary employee in his shop.

TRANSPORT

There is a regular bus service into Ismailia and taxis charge 10 piastres per person from his village to Ismailia which takes about seven minutes. The buses tend to be overcrowded and Ahmed always uses a taxi because of his handicapped leg. He finds transport particularly expensive as each trip to Ismailia sets him back 20 piastres, which is a large sum when compared with the general level of income in the area.

FURNITURE

Ahmed does not possess much furniture apart from four wooden beds, two cupboards and two couches all of which are very old. He wants to buy new furniture when he builds the new house. They also have a TV, a radio-cassette, an electric fan and a sewing machine.

RECREATION

He does not have much time for recreation since he spends all his time in the shop with only an hour's break for lunch at home. Listening to the radio and his cassette are his only diversions at work and a visit to the cinema with his friends some evenings. The wife passes the day working, sewing and watching television in the evenings, when she often invites a few neighbours to join her. She only goes into town about three times a month to see a doctor if necessary or to buy materials for the children.

COMMUNITY RELATIONS

There are no formal organisations in the area apart from a unit of the Arab Socialist Union which also covers the interests of all the neighbouring villages. The members are elected from each area but Ahmed considers the union to have only a superficial function without

solving any real problems. There is also a village council in Nifisha whose present chief is from Abu Atwa. There is also a system of 'Sheikha'. The village Sheikh is elected by the government and considered the link between the public and government authorities. He is responsible for obtaining official documents and recruiting for the army.

Ahmed personally prefers informal organisations which he feels play a more active role and solve more problems. There is, for example, 'The Council of Arab Judges' which plays an important role in solving disputes and even government authorities support it. The Arab Judges are the respected senior men who understand the traditional rules recognised by the community. In the case of a major dispute, both sides appear before these men who make a special visit for a vast meeting which is attended by prominent persons in the area concerned and other local residents. There are other projects in the area which are the results of contributions and general effort like the mosque and cemetery. Ahmed himself plays an active part in community projects. He and a few of his neighbours were responsible for introducing electricity into the village by having prolonged discussions and negotiations with the appropriate government authorities. He collected 50 piastres from every family in his neighbourhood to pay for repairs to the public tap. He says, "Before the war we thought of ourselves as one big family but now with a growing population everyone is on his own".

FUTURE EXPECTATIONS

As far as his personal hopes for the future are concerned he says, "The most important thing I would like to accomplish is to demolish and rebuild this house in a modern style, with red brick, concrete and consisting of four rooms with all services and comforts". In the next ten years he would like to see Abu Atwa become a part of Ismailia City with all facilities and public services. "That would reassure me about my childrens' future, that they will not face the same problems as ourselves". He considers owning one's own house is of vital importance in securing the future of one's children. If possible he would add more floors to his house so that he could get a stable income from the rent. He would prefer a clean modern flat with a yard in which to raise chickens. "We are villagers and used to depending on fowl". Given the choice of introducing improvements to the house or providing services in the area he would pick the first alternative. He expressed a particular wish that the government would help in the provision of building materials since he had to buy steel and cement at double the official rates through the black market to enable him to build his shop. This is why he has not gone forward with his plans to build a new house.

CASE STUDY 2 : ABU ATWA

For the last seventeen years Osman has been haunted by the fear that he might be evicted from his house. He built it on what was then a piece of empty desert land but has now become the centre of a village on the outskirts of Ismailia. There are seven family members sharing the one house: Osman, his two wives, three sons and a daughter-in-law. His eldest son married for the second time because his first wife had no children. She moved out when he remarried six months ago. As his two younger sons are only eight and six years old Osman and the eldest son share the responsibility of supporting the family.

PROFESSION & EDUCATION

Except for the two younger sons attending primary school, none of the other family members have had any education. Osman used to be a carpenter with the army until he was forced to retire two months ago because of an eye injury. At the moment he buys and sells fruit from a shop which is situated in the house itself. The son is an unskilled labourer who takes up any work that is available.

INCOME

The family's present income is approximately LE40.00 a month. Osman's salary before he retired used to be LE31.00 a month but his pension has not been fixed yet. The wives raise poultry and sheep but for home consumption only.

PERSONAL HISTORY & FIRST HOUSE

Osman was born and brought up in a neighbouring village. His father was a farmer. The family house was mud built with a cement floor and consisted of six rooms. Like the rest of his brothers he was married from here but was forced to leave because of the constant quarrels between his wives and those of his brothers.

PRESENT HOUSE

He moved to the village now named Ezbet El Dabbabat or 'The Tanks' in Arabic to commemorate the three Israeli tanks that were destroyed there during the 1973 war. While living in a hut built with rolls of cane he hired a builder to construct a house for him. He chose the particular area because it was close to the army camp where he worked. He started with two rooms, one for his son and the other for himself with a thick wall between the two. It was completed in stages and now has seven rooms, a shop, a front yard which is used as a living room and converted to a sitting room in summer. There is also a back yard for raising chickens and sheep. He has a special room for storing the oven. When he first arrived in the area it was just an empty desert and people were free to build where they liked. The house is now in the main street on a bus route but, unfortunately, there is no stop. There are still no services or street lighting. The public tap is one kilometre away and always surrounded by a large crowd struggling to gain access. The locality, however, is not too densely populated. There is a pit latrine which is drained every six months and costs 50 piastres each time this is done.

IMPROVEMENTS

All the improvements to the house were made after the war damage. They lost all the doors and windows and even the wooden ceiling all of which had to be bought again and then the house was plastered. They only received one third of the total cost in compensation towards repairs. Since all the furniture was stolen they have no beds and have to lie on straw mats.

ADVANTAGES & DISADVANTAGES OF AREA

The principal disadvantage of the area is the absence of public services and facilities. There are no preparatory or secondary schools the nearest being three and a half kilometres away in Nifisha. The health unit is also a long distance away and there is no lighting in the streets. There are garbage dumps in front of the house which are foul-smelling and a constant health hazard and where a few people actually rear pigs. The government made one attempt to clear the area but the landowners paid money to prevent this and the local residents have no idea when or if the rubbish will be cleared eventually. Osman sees only two advantages in living where he is; he owns his own house and is close to his place of work.

EXPENDITURE

The family spends about 80 piastres a day on food. They also spend LE2.25 once a week on meat. They buy clothes twice a year. They do not have a fixed budget and education does not feature yet as the children are still young. Osman and his second wife go into Ismailia every day for their daily supplies for the house and shop. Since there is no bus stop in their area they walk to Abu Atwa and take a bus from there paying 7 piastres each for the return journey.

RECREATION

Since there are no cafes and the roads are unlighted their only recreation is exchanging visits with the neighbours. Fortunately community relations are good. They are free to use each other's water pumps and help a neighbour in need by organising a savings pool or lending money if necessary.

COMMUNITY RELATIONS

There are no formal or informal organisations in the village apart from a few members of the Arab Socialist Union in Abu Atwa who are generally not trusted in the neighbourhood since they are suspected of serving only the areas from which they were elected. The only time Osman and the other local residents ever asked the Union for assistance was for the introduction of electricity. They were told that if each family paid LE5.00 it would be installed informally, but the people declined. At the time of the interview there was a man present who claimed to be one of the leaders of the neighbourhood. He described how he collected LE50.00 from local people to build a mosque in the neighbourhood. After the war he collected LE150.00 to repair and rebuild parts of it damaged during the fighting.

PRIORITIES & PREFERENCES

As far as Osman's immediate priorities in expenditure are concerned he says, "the most important thing for me is to buy furniture and beds to replace what was stolen. I do not think we need any other household

gadgets since we have an oven and a kerosene cooker." Food, is of course on top of their list. If his income decreased he would cut down first on clothes and then food. If his income increased by LE4.00 he would spend the extra income on food and if it increased by 50% he would invest in furniture (beds and cupboards). If it increased by LE100.00 he would buy cattle.

He hopes to buy the land from the government on a long term mortgage or pay tax ('Tahkier'). They are also afraid that if the government demands the tax after a long gap they will not be able to afford the accumulated sum, particularly since they have not paid anything since 1967. Never having rented a house Osman cannot imagine ever being a tenant. He says owning a house gives an unequalled sense of security and he would give house ownership priority over location. He thinks it is of prime importance to have some roofed rooms and an unroofed yard for raising fowl and for ventilation. He values privacy. Apart from introducing water and electricity he does not feel the house needs any improvements.

There are no services, schools, market, etc. in his area so he would obviously like to live where these are available. At the same time he is pleased that the locality is not overcrowded. He would also prefer to see the land used in different ways: for accommodation, agricultural and commercial purposes. He feels the cultivated parts would add a fresh and healthy atmosphere and a market nearby would save him from making the daily trip to Ismailia. He believes, too, that in a rural area the community feeling is stronger than in the centre of a town or city.

Apart from these preferences Osman is content with his house as it stands. He does not consider it essential to have a modern house although he would appreciate running water and electricity inside the house. He thinks it would be good to have a general drainage system, but first choice would be water and electricity. He would be prepared to contribute and work one or two days a week towards acquiring these services. The residents would pay for the cost of installation into their homes but the introduction into the area itself, he feels, must be sponsored by the government. The essential improvements needed in the area are the provision of electricity, clearance of the garbage, building of a preparatory school, health unit and a bus-stop, since the bus route goes through the village anyway. These he considers are the government's responsibility.

Osman's overwhelming wish is that the threat of being driven out of his house will be removed. There are daily rumours that the government is going to destroy their houses. People arrive at times to measure the land and houses which adds to his feeling of insecurity. He hopes that eventually the government will decide to sell him the land and he can feel secure and at peace.

CASE STUDY 3 : EL HEKR

During the 1973 war Ismail's family received formal notice declaring that he had been killed in action. Much to their surprise and delight he turned up on their doorstep six month's later! Ismail, who is now 30, lives with his wife, three daughters aged 7, 5 and 1½ and his mother-in-law in a two-roomed house in Ismailia.

PROFESSION & PRESENT INCOME

Ismail was in school for only two years after which he helped his father on their rented farm. He now has a permanent position as a stores guard with the Arab Contractors Company earning LE20.00 a month. His constant salary is LE15.00 plus a bonus of LE5.00. Other benefits from his job are social insurance, free medical care for himself and free transport to and from work.

PERSONAL HISTORY & FIRST HOUSE

Both Ismail and his wife were brought up in Sharkeia Governorate and came from farming families. Ismail moved out of the family house after his marriage in 1969 and rented a house with his wife in the same area. This consisted of 2 rooms, a yard and a bathroom and was built of mud brick. There was no water or electricity. He lived here until he joined the army in 1970 for five years. During holidays he would help his father on the farm. His wife in the meantime lived with her mother. In addition to his pay from the army Ismail also received some money from the farm. The greater part of his income was spent on food and clothes.

After his discharge from the army in 1975 he worked with his father for two months, but by now his economic situation was so bad that he decided to look for an alternative means of livelihood. By selling his wife's jewellery he was able to put together a small amount towards setting himself up as a vegetable seller in his village. This venture, too, proved unprofitable, so after six months he was totally frustrated and bored and decided to try his luck in Ismailia.

His army service had involved moving around Port Said, Suez and Ismailia and he found the latter the most comfortable city offering the best job opportunities.

SECOND HOUSE

He arrived in the city without any contacts, friends or relatives and only a small amount of money he had saved. He spent the first two nights in a hotel while looking for a house in the cheaper section of the city. He eventually found a house in El Hekr shared by three other families and rented a room here. The house was located in El Talaatini street and consisted of a small yard surrounded by four rooms. It was built of mud brick and the ceiling was covered with reeds and branches of trees but there was no water or electricity. He lived in this house for three months while looking for a job. He applied to his present company and was accepted as a guard in February last year.

THIRD HOUSE

He now considered bringing his wife and children out to Ismailia but the house was not suitable. He shared a house with a colleague splitting the rent and each paid LE4.00 a month. The house consisted of two rooms, a bathroom and a kitchen, the ceiling was made of reeds and cement and the whole house was built in blocks with bricks and cement. He lived here for eight months after which the landlord tried to force them to leave. Ismail and his colleague had no defence since there was no written contract to prove that they were tenants. Ismail was of the view that most landlords in El Hekr rented out their apartments without contracts so that they would be able to control the tenant and raise the rent if they wanted to. He discovered that this was his landlord's intention. After their departure the new tenant had to pay a certain sum and guarantee to make improvements to the house.

FOURTH HOUSE

Ismail moved to another rented house in El Hekr sharing it once again with his colleague each paying LE3.00 a month. He lived here for four months. The house consisted of two rooms and a bathroom, was built with blocks and cement, and the floor was tiled. There was still no electricity but there was a water pump inside the house.

The major advantage of his accommodation at this stage was the low rent in El Hekr compared with other parts of Ismailia. Ismail believes that in this part of town it is possible for anyone to rent a house at a rate suited to his income, as low as LE1.00 a month. The disadvantage was that one room was not enough for his family since his mother-in-law lived with them for most of the time. Besides, the house was too small for two families. Because of the absence of any legal contract with the landlord their position was always insecure, since they could be evicted at any time. The major advantage was that the house was very close to the market, the school, the hospital and a source of drinking water.

With all his experience as a tenant, Ismail decided to build his own house. Apart from the insecurity of being dependent on the whim of a landlord who could evict him even if he paid the rent regularly, the constant shifts from one house to another led to the damage of his furniture; broken cupboards and beds had to be repaired and replaced, all of which added to the expense of moving. Apart from these factors, not being able to afford to rent on his own he was forced to share with another family, a situation which brought its own problems.

FIFTH HOUSE

Eventually in August 1976 Ismail, with the help of a colleague claimed a piece of land in El Hekr and built a fence around roughly 160 m2 of land. He started on the construction of the house in the same month. After finishing work every day he worked for another four hours making bricks near the piece of land he had claimed.

According to Ismail all people who want to build houses go to the railway station where one can find hundreds of

brick workers and masons. It is in the station that they negotiate with the builders about the design of the house and the rates etc. The reasons behind the builders gathering at the station is that most had skipped military service and were therefore not able to work at a permanent job with the government or a private company. Nowadays the daily worker charges LE1.50 in addition to the extra costs of tea, food and cigarettes.

Ismail, his wife and two daily workers made the bricks by mixing sand and mud. Ismail would knead the mud and his wife would add the water. A room and a fence were built with 2000 bricks and the ceiling was covered with reeds. They moved into their own house in January 1977 but they only completed the house last month. To pay for the house Ismail had to sell a lot of their possessions. He sold three sofas for LE21.00, his wife's golden earrings and wedding ring for LE50.00, a cupboard for LE40.00 and some cattle for LE350.00. He decided to make his own bricks because it was cheaper. The mason who built the house with help from Ismail charged LE10.00 per room. The fence cost LE15.00. Ismail bought all the building materials himself. He got as much information as he could from other people building houses in the area and found out how and where to buy the best materials.

The last stage of completion involved the coating of the walls, which was done in the last month. First the hired labourer covered the walls with mud, charging LE2.00 per room. Ismail then bought a pound's worth of lime and coated the walls with it. He put a lot of effort into the construction. He rested for two hours every day after work and then worked on the house for four hours. This is how he succeeded in completing the house in different stages from August 1976 till June 1977. First he made the bricks, second, he built a room and the fence, in the third stage he constructed the hall and another room and in the fourth and final stage he added the kitchen and bathroom. The house as it stands now is built of mud bricks coated with lime and has two rooms, a hall, a yard, a bathroom and kitchen. The ceiling is made of reeds and the floors covered with sand. It is of average size and covers an area of 120 metres.

FURNITURE

The furniture consists of a bed, a sofa, a table and a gas stove. As the area is still new Ismail does not pay any tax. The pit barrel for the W.C. is emptied every two months at a cost of LE1.00.

ADVANTAGES & DISADVANTAGES OF PRESENT HOUSE

The principal advantage of his present house is obviously the fact that he owns it and feels secure at last. The house is spacious and comfortable and, of course, he saves on rent. Other compensations of the area are the fact that it is quiet and all the neighbours are on good terms with one another.

The major disadvantages are the unpaved main street and lack of transport (even taxis refuse to come to the area). Ismail says he is particularly concerned when one of his family is sick. When his wife was ill

recently he had to carry her until they reached the paved road at the end of El Hekr. The area is very far from public services like drinking water, the market, school and sewers and there is no electricity.

The long distance from El Hekr to the centre of town is a big problem for the local people. It is particularly difficult to get to the market; it takes three hours to make a return trip. In order to solve this problem the neighbours decided to take it in turn during the week to buy the necessary items. There are a few stalls selling vegetables, fruit and grocery in El Hekr but Ismail prefers to do his shopping from the market since he can be sure that the goods are fresh. Sometimes fruit and vegetable sellers call at the house with their carts but their goods are quite often of an inferior quality and sold at very high prices. Ismail himself has no serious transport problems since he travels to work on the company bus, but the rest of the family do not go into town very often because of the expense and distance, except for important occasions when they walk; this takes at least 1¼ hours.

SOCIAL LIFE

The only means of entertainment is visiting neighbours. There are no formal organisations but although most of the local people come from different parts of the country, the community feeling is very strong and they try to solve common problems through combined effort, like taking it in turns to do the shopping.

FUTURE EXPECTATIONS

Ismail's main wish in the next five years is to enjoy good health. When he first arrived in Ismailia he felt that he was at the worst stage of his life, poor and without a job. He now considers himself to be on an average level in housing and general standard of living and hopes his fortunes will improve in the next ten years. He hopes his daughter will be a doctor. If his salary is raised he will buy a radio because their present one is broken and his wife and daughters want another. If he receives a big increase he will improve the house. If his salary is decreased by 10% he will be unable to save at all. If he receives a very large sum he says, "I will go back to my homeland and build a house there." Among his immediate needs he lists a radio, a cupboard, a bed, two sofas, a table and other furniture to replace those he sold to pay for his house. He would primarily like to improve the house before spending on anything else.

"The only way that gives security to a family" he adds, "is not the ownership of the land but also that people will not be forced to sell if they do not want to. For example, I would never like to sell my house and be taken advantage of." He would prefer to live in a spacious place so that over an extended period he can gradually add water, a sewer and electricity.

As far as location is concerned he would like to be closer to the centre of town and to the markets. He would like to have all utilities inside the house and most important the streets must be paved: "I am ready to pay any amount of money to have the streets paved."

There should also be schools provided nearby. There must be drinking water in the area and street lighting since at night we live in a total blackout". The most important improvements needed in the house are water and electricity but he has no idea how long it will take.

CASE STUDY 4 : EL HEKR

Ali's is an extended family household consisting of himself, his mother-in-law, two brothers and sister-in-law with her two sons. They all live in the same house in Ismailia except for the married brother who works in Sinai, leaving his wife and two sons with the rest of the family. All three men in the household are employed by the Arab Contractors Company. Ali and the brother in Sinai are trained drivers and mechanics while the third works as a labourer.

EDUCATION & INCOME

Only the two older brothers are literate: Ali has obtained his Primary School Certificate and the married brother can read and write. Ali's salary is LE20 a month plus free transport and medical attention. His brother sends LE20 per month from Sinai but the youngest brother who only collects daily wages earns just enough for his own needs. Occasionally every two or three months he is able to contribute about LE5.

PERSONAL HISTORY

Ali and his family were born and brought up in a village in Sharkeia Governorate in a traditional farmer's house. Their father, who did not have any land of his own, used to cultivate another farmer's fields and collect half his share from the crops. Ali completed his primary school in the village and then trained for two years as a mechanic in a private workshop.

During this stage Ali was a driver with the Agricultural Improvement Authority and was responsible for supporting the whole family. In spite of his many responsibilities he says life was much easier at that time. He continued to live in the family house after his marriage in 1964. Like the other villagers his mother used to raise poultry for their own consumption.

Ali was then transferred by his firm to a town just outside Ismailia. He lived there in company accommodation leaving his family behind in the village. He lived in the company flat for one month while looking around Ismailia for a suitable house. Since he did not know anyone in the city, he used to wander around on his own. He found a detached house in the older part of El Hekr with two rooms, a kitchen, w.c. and a yard. It was made of mud bricks like the other houses in the area. Transport was no problem since it was close to the city centre, but they had no water or electricity or formal contract with the landlord. He lived here with his wife from 1965 to 1967 while the rest of the family remained in the village. He used to visit them once a month using company transport. He and his wife did not have to spend on food since his mother used to send chicken, eggs and butter and they received free vegetables from the Agricultural Authority. Ali paid the company a small sum towards a card which enabled him to buy clothes and materials at reduced prices.

He divorced his first wife after seven years since they did not have any children and he remarried two years ago. He had no choice in choosing his first home and had to

take what was available. During the war he returned to his village and lived with the family while working in a neighbouring village until 1974.

One year before returning to Ismailia, Ali left his position with the Agricultural Improvement Authority because his salary did not increase with rising costs. He worked as a tractor driver for three months and subsequently found a job with the Arab Contractors in Cairo where he lived with an aunt. When he was offered an opportunity to take a transfer to Ismailia he accepted immediately. He returned to Ismailia on his own and stayed in company accommodation again while hunting for a house. This time his old neighbours helped him and introduced him to people who found a house for him in El Hekr. This was a detached house with two rooms a kitchen, w.c. and yard. It was built of mud brick and had no water or electricity but the rent was lower than that for his previous house in Ismailia. Accommodation was generally cheap at this time because people who had been evacuated from the city during the war had not yet returned. But the house had its disadvantages: It was far from the centre of town and water was an acute problem since the public tap was not close. He now brought all his family and lived in this house for six months before moving to their present one.

THIRD HOUSE

Their main reason for leaving the previous house was that it was too far from the city centre and, even more important, they did not own it. Other disadvantages were the untarred roads, lack of transport and services, (Ali had to walk a long way to catch the company bus), and the hospital, post office, station, schools, etc., were far from the house.

While working for the company near El Hekr he found his present house lying empty. It had one unroofed room and a yard. He claimed it and completed the room in a month after which he brought the rest of the family. (Subsequently Ali's neighbour mentioned that the owner of the house appeared and sold the house to Ali charging the standard price of 15PT per metre. Ali himself refused to discuss this during the interview).

They added two more rooms using mud bricks, roofed the first room with wooden beams and plastered the walls while the third room is still unroofed. Each room is approximately 4 x 4 metres. They are now building a kitchen and w.c. inside the house as the old toilet is outside in the yard and will demolish the old one when the new one is complete. Ali did not want to discuss how he built the house either but his wife and neighbours gave details. The family apparently employed a builder but made the bricks themselves. Ali bought wood for the doors from his village and had them made up in Ismailia. He built the house in stages whenever they were able to save some money; so far the house has cost LE400. The whole area measures roughly 500 metres. He borrowed some money from friends and neighbours towards the construction and they have been building continuously for the last eighteen months. The house as it stands is well built and consists of three large rooms two of which are unroofed. Only one room is plastered and they plan to do the rest when the house is complete.

FURNITURE

They have very little furniture, only a bed, a couch and mats but they do have a TV set although they do not have a cooker. The house is clean and well organised.

ADVANTAGES & DISADVANTAGES OF HOUSE

"The main advantage" says the wife, "is that we have found a place to build on." (Although they own the house the land belongs to the Government at the moment and the ownership has not been given to the people as yet. Ali refused to say much about his position since he was afraid the interview was about this and his house would be demolished)* Ali had wanted above all to find a permanent house for himself and his family. He says the site of his present house is conveniently close to the town centre, they can either walk or take a bus for 2 piastres or spend 5 piastres on a taxi and the journey only takes ten minutes. The house is close to the hospital, police station and post office and they are not far from the main road. Although there is no water or electricity the public tap is quite close. Since there is no garbage collection they bury their rubbish in the sand. The main disadvantages are the lack of water and electricity and a primary school closer to the house. As far as the house is concerned they do not see any major disadvantages and say there will be no faults once the house is complete.

*Ali's fears proved to be fully justified. His house was demolished in January 1978, together with many others in the locality.

EXPENDITURE

The wives take it in turns to go to the market every other day and usually walk. On these days they spend LE1-LE1.20. They buy bread once or twice a day from a nearby shop. They very rarely buy meat depending mostly on their poultry which they breed at home for meat and eggs. LE3.00 a month is spent on medical treatment for Ali's mother and LE5.00 a month goes towards a joint savings fund for the household which is used for the house construction and buying clothes once a year. LE5.00 is sent to Ali's brother who is training to be a tailor in Facous and LE2.00 is set aside for unexpected expenses and emergencies. Whenever the mother visits the village she returns with butter, cheese and rice as gifts from relatives but these visits are rare.

RECREATION

There are no facilities for recreation in the area. They had no entertainment before they bought the TV, since the cinema is too expensive. Ali and his wife explained why they bought the television before the house was complete and when they did not have a cooker. The wife said she had no diversion. She used to watch their neighbour's set but they made it obvious that she was not welcome so she asked her husband to buy one in partnership with his brother. Although they would have preferred to complete the house they felt the TV was a social need and had become a matter of pride since the wife felt very insulted by the neighbour's behaviour over their set.

SOCIAL LIFE AND COMMUNITY RELATIONS

Apart from that particular incident over the TV they say general community relations are good particularly with those who are Ali's neighbours as well as colleagues. There are also some people from Ali's village with whom they are close. Everyone helped when Ali was building the house and lent money without interest. Sometimes close friends drop in to watch films or football matches on TV. They also allow their neighbours to have free use of their pump in the yard. Bonds with the village are also strong and they often visit relatives there particularly on feast days.

There are no formal or informal social organisations in the area. Once when some officials from the Society of Housing for Teachers approached the local residents saying that the land belonged to them and that they were going to demolish all the houses, the local people were very upset and angry and formed a group to visit the Governorate. They talked to an official there and the incident was not repeated.

HOUSING PRIORITIES & PREFERENCES

As far as a house is concerned Ali would naturally prefer his own house to a rented apartment. He says he would prefer to own a house like his present one than have a better quality flat. He would also prefer a house he had designed himself. With regard to the room sizes with a yard which he considers essential, since they depend on it for breeding poultry. He does not care too much about the general standards of the house apart from wanting electricity inside. He would prefer the location to be closer to the city centre than to his place of work since transport is provided by his firm. He would like all services to be close to the house and most important there should be water, electricity and a primary school. He would ideally like to have four roofed rooms and a yard for hens and an unroofed backyard which is preferably private. He would prefer to have water taps inside the house or if this is not possible the tap should be in the street and not in a neighbour's house where it can cause problems. He would prefer a general sewerage system to the local one which he now has. He wants electricity to be introduced legally so that the Government will not cut it abruptly. He would be willing to work on Fridays to help towards its installation.

FUTURE EXPECTATIONS

Ali's strongest hope this year is the assurance of land ownership. He is prepared to pay rates to the Government or buy the land at a reasonable price. Within the next five years he hopes to complete the house and build it with concrete provided ownership is guaranteed. In the next ten years he would like to make a pilgrimage to Mecca. One dream is that he will have his own car some day but he admits, "I believe this will never happen, I am only dreaming." If the Government demolishes his house he hopes to rent a house in El Hekr because it is the cheapest area he can find. The wife's priority is a cooker, which she says is really all she needs. She insists she has no regrets about buying the TV first because she felt she had to vindicate herself before her neighbour and a TV is as important for her as a cooker. After this she would like to

complete the house, then introduce water and electricity, improve the standard of food and finally buy better clothes. "The house is most important for security," she concludes, "then the food to enjoy good health. Clothes are not important - what is important is to look clean".

CASE STUDY 5 : EL HEKR

Abdullah was only four when his father died and has had to work for his living from the age of ten to support his mother and sister. He now lives in his own house in Ismailia with his wife, three-year-old son, daughter aged one and his mother.

EDUCATION & INCOME

None of the family members have had any education. Abdullah works in a bakery in the centre of town from 7 a.m. to 9 p.m. every day earning LE1.00 daily. He does not get paid if he is absent for any reason. Since his work is physically very demanding and he needs the occasional rest, particularly in summer, he allows himself four to five free days a month. He does not receive any benefits from his work apart from social insurance, and the only supplement to his income is the LE4.00 a month he receives by renting out two rooms in his house.

PERSONAL HISTORY

He first came to Ismailia from his village in Upper Egypt when he was ten years old. His father was a farmer and his mother used to spin and weave carpets. His maternal uncles supported him after his father's death, but when he reached the age of ten his mother was anxious for him to find work. He came to Ismailia because he had several uncles here who were bakers and he started with them as a delivery boy. He used to live with them in a house in Arashia in a room built with mud brick, but unpainted and without water or electricity. They paid for his immediate needs and he sent what he could from his meagre income to his mother. Once a year he visited his village for the Bairam feast.

FIRST HOUSE

At eighteen he married a relative from his village who lived with his mother there for two months after which they both joined him in Ismailia. He rented a two-roomed apartment in Arashia-El-Abeed. He chose the particular area because he was close to his uncles and place of work, the rent was low and since he was brought up here he had many friends who helped him to find the house. It was made of mud brick and had no water at all. He lived here for eight months. The furniture consisted of a bed, a cupboard, a gas stove and a few pots and pans. The greater part of their income went on food leaving very little for clothes. They were able to save on transport, however, since the house was close to Abdullah's place of work.

The main disadvantages were the problems in getting water and the absence of electricity. In fact, water was an acute problem in Arashia at this time and the local residents had to walk a long way to the bottom of a hill to get their supply.

SECOND HOUSE

Abdullah divorced his wife after eight years because she had no children and he later remarried. During this time, too, friends and relatives from his village bought land in El Hekr which made him also decide to buy a

house here. It consisted of a yard, a room with a ceiling covered with reeds and a bathroom.

IMPROVEMENTS

He made improvements to the house in stages from 1966 to 1967. First, they built two rooms. His mother and wife helped in the construction by making the bricks and carrying the mud in carts. The house now consists of five completed rooms with the sixth still unfinished. Three of the rooms are paved with cement and there is a pump in the yard. Abdullah was able to buy the building materials from specialised shops at El Gomaa which sold doors and windows. The gate is made of tin. They want to improve the house and rebuild it in concrete and tile the floors, but cannot afford to at the moment. Abdullah estimates that the present value of the house is LE1000.00.

During the war the family left for their village and their house in Ismailia was used as an ammunition store by the army. When Abdullah returned in 1975 he found that the whole house had been robbed and badly damaged; only the walls remained. He had to bring his wife to help him rebuild. He had to sell a cow and a calf that belonged to his mother and his wife's silver anklets to pay for the repairs. He also added two more rooms.

There are no construction permits in this area, so everyone buys the land and builds in any way that suits them. The only security is that neighbours acknowledge ownership of each other's houses. They still do not pay any taxes. The main reason for not completing the house is shortage of money, although Abdullah did his best to try and finish the sixth room. The income he receives from rent is very irregular, since his tenants do not stay for more than four months. His only security as a landlord is collecting the rent in advance, but he is responsible for the repairs which he cannot make because of the shortage of funds.

ADVANTAGES & DISADVANTAGES OF PRESENT HOUSE

The most important advantage of the present house is the peace of mind Abdullah enjoys in owning it. The wife says living as a tenant can cause endless problems with the landlord and they now feel free. The house is large, comfortable and well ventilated and they save at least LE4.00 a month in rent. The area, too, is quiet and most neighbours like themselves are from Upper Egypt. As far as the house is concerned the major drawback is the barrel pit which has to be cleaned every two months by labourers who charge LE2.00 a time. It would have been easier if they had a water borne sewerage system. They have a few problems with neighbours whose buildings can block the entrance to their house and they may be forced to use the back entrance instead which would be very inconvenient.

Abdullah has no transport problem since he travels to work on his bicycle which only takes ten minutes each way. The wife usually goes to the market by bus paying 4 piastres for a return journey. Buses run every quarter of an hour, but if she misses one she takes a seat in a taxi for 10 piastres. Carts are available, too, for transport into town but it is considered unsuitable for women from Upper Egypt to ride in these

with their legs dangling over the side!

The wife does her shopping every other day in the market in Ismailia since there are no vegetables or food shops close to the house. On these trips she usually spends 50 piastres and up to LE1.50 if she buys meat as well. Abdullah spends 25 piastres a day as pocket money for himself spending the rest of his daily income on household items. The greatest part of their income goes on food since Abdullah needs to be physically fit for his job which involves standing in front of a hot oven all day. "I rear poultry at home because meat is becoming very expensive," says his wife. "Our income is just enough to cover our food costs. Clothing isn't too important since two galabiyas for summer and two for winter are more than enough." They try and keep a little money aside in case one of the children falls ill; one visit to a private doctor costs LE5.00. "I wish my husband was the type of man who saves so that we could at least have completed the sixth room," she adds.

RECREATION

The area does not offer many recreational facilities. Abdullah and his wife listen to their radio all day and in the evenings usually, if he is free, Abdullah goes to the coffee house to meet his friends.

SOCIAL LIFE

The family is in constant touch with their relatives in the village. Abdullah returns there for weddings, feasts and to see his sister. Since he left the village when he was ten, all his friends are in Ismailia, either colleagues in the bakery business or those like himself who left the village to come to Ismailia. They help each other out if they are in need of money. He does not associate much with his neighbours who keep to themselves because they have all come from different parts of Upper Egypt.

There are no formal or informal organisations in the locality. Abdullah, however, lets his neighbours use the water pump in his yard free of charge. There are disputes at times over house construction. The width of roads has been fixed by common agreement and everyone leaves a small piece of their land for the road but sometimes one neighbour will encroach on another's land and quarrels follow. Older members of the community are called upon to solve the disputes. If things get out of hand the police are called in too.

PRIORITIES & PREFERENCES

Abdullah's immediate objective is to complete the sixth room as soon as he can afford it. He definitely wants to own his house. His wife shares this opinion. "I would like to live in a house which is my own irrespective of its standard and location because I can always make improvements to the house later. We like spacious houses since we are not used to living in small ones and we like to have an oven and a yard." She also says she would prefer to have a house with running water, electricity and a sewerage system than one of concrete without utilities.

They would ideally like a large house in the centre of

town close to transport, cooperative shops, a post office and police station. At the same time they would like a quiet area where people are conservative, since the wife believes that too much fraternising with neighbours can cause problems.

She sums up her priorities: "I prefer to improve the house first, then add utilities and then have public services provided. We may contribute a small sum towards the introduction of water and electricity." She would then like to buy a cupboard, bed, mattresses, sheets, bedspreads and upholstery. She would like to hire a builder for future construction and she and her mother-in-law would be prepared to help. If the husband became involved he would have to be absent from work which would not be desirable.

FUTURE EXPECTATIONS

In the next five years the wife hopes to open a grocery store in the house and within the next ten years she would like to build the house in concrete and have two floors. They hope their son will become a doctor when he grows up and live in the second floor which will be built of concrete and decorated mosaic with tiled floors, running water and electricity. "The most important thing for me," she says, "is to buy materials to upholster my couch since it is covered now with an old blanket. I would also like to buy some copper pans and a wash basin to replace what was stolen during the war." Abdullah's biggest ambition is to open his own bakery one day.

CASE STUDY 6 : ABU ATWA

Said is the head of a household which comprises thirteen members: his children, wife, mother-in-law, married daughter, son-in-law and grandchildren. They share one house in Abu Atwa and he is particularly proud of the fact that he is the owner.

EDUCATION & INCOME

He owns a cafe, too, which he runs but does not work in all the time because he is not strong enough. He is helped by his nephew, who is also his son-in-law. He claims that he cannot give any figures about his income but seems to be fairly well off. Because he has not received any formal education himself, he is extremely concerned about the education of his sons and has high hopes for their future.

PERSONAL HISTORY

He has reached his present position after a life of considerable hardship. Both his parents died when he was only six years old, leaving him and two sisters, one was two years older and the other was very young. They lived in a village in Kena Governorate. After their parents' death the children were brought up by their uncle who was a farmer and owned a small piece of land (less than one feddan).

When he reached the age of eight Said felt he could no longer stand the strenuous work his uncle forced him to do in his fields, and decided to escape. He chose Ismailia because he knew that he had several uncles here and thought they would be able to help him. He subsequently found employment as a kitchen boy with the British army and worked with them for six years until his contract expired.

He married a girl he had known in his village. His older sister was married too, and lived in Cairo but he brought his younger sister to live with him until she married her cousin and moved to a village outside Ismailia.

FIRST HOUSE

From 1953 to 1956 Said earned his living by selling vegetables from house to house. He lived with his wife in a mud house in Abu Atwa. He claimed a large piece of land and built a wall around it. He then constructed four houses one after the other and lived in one while renting out the others. He hired a builder who was paid by the cubic metre. The house was built of mud in layers. The builder would put up a layer of mud around the circumference of the room building it up to a height of 50-75 cm. He would leave this to dry and then erect a similar one above it until the wall took the shape of these layers. This method is called 'Eltoaf'. Inside the boundary wall Said built four houses with a common yard. Each house consisted of three rooms and a W.C.

Their first house had several disadvantages, the biggest of which was that it lacked all the services. Said had to buy everything he needed from Ismailia. He used to

walk as there was no public transport at that time and there was no water, electricity, street lighting or public services such as schools, health units etc. The land was hekr. He eventually sold this house because he wanted to build a cafe.

Before he built this he rented another one from his cousin. He constructed his own in phases from 1954 to 1956 when he left the vegetable trade and worked in the cafe until 1961; then he completed the construction in red brick and covered it with a concrete roof.

SECOND HOUSE

In order to pay for the construction of the cafe, Said was forced to sell his four houses, half a feddan of land and two houses in his village which he had inherited from his father. His first house was sold in 1962. As soon as the roof of the cafe became dry he built a room of tin plates and wood on top of it so that the family could live there after leaving the previous house. He decided to choose the particular location because he knew that his cousin's cafe was due to be removed when the road was tarred, (in fact this has now happened) so he selected a site parallel to the main street to ensure that his own cafe would not meet the same fate. He did not buy the land since at that time people were free to build where they liked and claim the land. Said hired a builder but supervised the construction, brought the water when it was needed and bought all the necessary materials from a dealer in Ismailia. He was able to buy the materials at official prices since there was no blackmarketeering during this time.

He started building the flat above the cafe in 1963 and completed it in the same year; he then built two rooms on the roof which were unfinished. The building was damaged during the 1973 war but he did not receive any compensation for the repairs.

The flat as it stands now consists of four rooms, a hall, a kitchen and two W.C.'s. Said had originally designed the place as two connected flats hoping to rent one to relatives; this is why he included two W.C.'s, one inside and the other outside, but eventually they lived here on their own. Now the children are older and the eldest daughter has been given a separate room with her husband. The flat is tiled and the walls plastered although the plastering is very old. The windows are made of metal and compressed wood but according to Said the maintenance is not adequate. They have very little furniture and no modern household equipment like a refrigerator or cooker. They do, however, have water and electricity.

ADVANTAGES & DISADVANTAGES OF HOUSE

The location of the flat is considered to be one of the best in the area: on a main street close to the shops where they buy their daily provisions. Transport is no problem, the road is good and lighted and there is water and electricity in the area. He was asked for a hekr receipt for which he had to pay a small sum before the water was actually introduced. "This is the best area in Abu Atwa," says Said, "it will be like Talaatini in the future because the road is clean and of good quality."

The basic disadvantage is the absence of preparatory or secondary schools. His son has to travel on a bicycle which his father feels is dangerous. There are no services such as a police centre, fire station or telephone and telegraph office. The services offered by the health unit are not considered adequate either as according to Said there is not enough free treatment to meet the local demand. As far as the house itself is concerned he is completely satisfied.

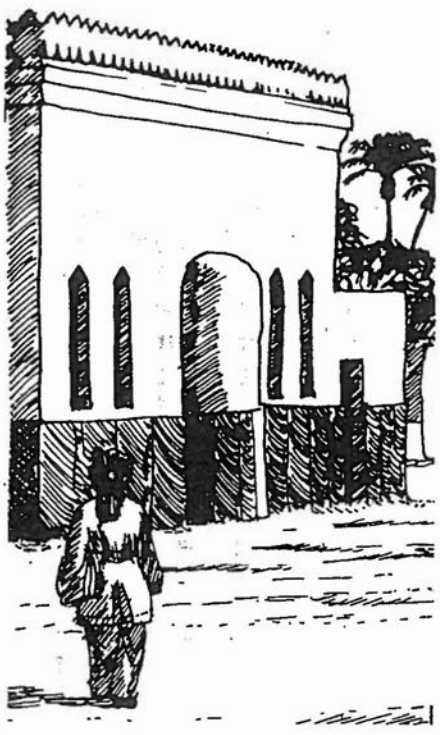
EXPENDITURE

Said is the sole supporter of the family. Apart from giving him free accommodation and food he pays his son-in-law LE12.00 per month for his work in the cafe. His wife raises poultry on the roof for their own consumption. The average cost of food per day ranges from LE1.00 - LE5.00 depending on whether or not they buy meat. (Meat is only sold three days a week.) On the days when meat is available Said buys two kilos at a time. He keeps 50 piastres for himself as pocket money. He has his tea in the cafe and the children spend about LE1.00 a day. Said goes to Ismailia to buy provisions for his cafe every day and spends LE6.00 a month on transport. The electricity bill for the flat is LE8.00 a month, as there is a television and a refrigerator in the cafe. He pays LE2.00 for water every three months. No special part of the income is set aside for medical treatment and clothes; he spends on these when he needs to. He often buys new clothes for the family before a feast day.

Education absorbs a high proportion of his income since his eldest son goes to a private school as he was not able to get the necessary marks to qualify for a government one. The fees at the private school are LE36.00 a year. He also pays LE12.00 for private tuition for the other children.

COMMUNITY RELATIONS

Community relations are generally good in the area. Everyone helps each other out at weddings or in times of need. They have a system in which neighbours pool their contributions towards a present for a couple about to get married. The couple or their relatives remember who contributed what and reciprocate when they get the opportunity. There are no restrictions on using private property like water pumps etc. Said has water in his flat and a tap at the entrance which he installed especially for his neighbours. He pays the bill himself.



There are no formal organisations in the area but people coming from his original village have formed an informal society through which they help others from the same place. Should anyone arrive fresh from there and have difficulty in finding work, they might decide to collect money to pay for his journey back to the village or help him to find suitable employment. At one time they collected a substantial sum towards a mosque they intended to build naming it after their village, but the government built one instead. They decided to spend part of this money on a cemetery for their compatriots, another portion was given in compensation for a man who was killed in a quarrel in the market place. The heads of the village held a meeting for peace and since it was suspected that the man responsible for the murder was

from their village they decided to pay compensation to the murdered man's family. The rest of money has been saved for projects to help other villagers who might need it.

PRIORITIES & PREFERENCES

As far as his personal expenditure is concerned Said does not see the need for purchasing any more household tools, furniture or equipment. He does not want to buy a gas cooker because he thinks it is dangerous. He does not have a refrigerator in the house because he does not feel they need it either. He says they like fresh food and cook and eat the meat on the same day irrespective of the amount they buy. He bought the television for the cafe as it brings in customers, but says one is not necessary at home because his wife is too busy to watch and the children can watch films and football matches in the cafe if they want to. He does not believe in buying new furniture or upholstery until the older ones are worn out or damaged. Their most important items of expenditure are food and education with food taking up the biggest share since they are such a large family.

FUTURE EXPECTATIONS

Said claims that none of his wishes can be fulfilled within a year. In the next five years he hopes to save enough money to start building a house in the street behind his present flat, in an area of roughly 200 metres. He has put up the walls but the roof has not been placed. He hopes to complete this and rent it out so that he can depend on this for his future income when he is too old to run the cafe. When this stage is reached he is also considering renting out the cafe as well. Within the next ten years he hopes to build another two floors and either rent out the second floor or leave it for his children. The work in the cafe is so demanding that he does not expect to be able to continue after ten years. He is now 44. He hopes that his eldest son will graduate from University but is realistic enough not to expect this,since he acknowledges that the son is not particularly bright. He feels, however, that his second son may succeed in this. He hopes that this son will become an engineer. Said does not expect to achieve anything more in his own life and thinks he is at his peak. He is concentrating now on securing his own future financially. "None of my children will help me. Everyone will go to his own home and nobody will spend money on me," he declares philosophically.

CASE STUDY 7 : ABU ATWA

Anwar was born and brought up in his present house in Ismailia. Although the whole house is shared by his parents and married brother with his family of eight, Anwar lives in an independent section consisting of four rooms. He counts this part as his own house and lives here with his wife, son aged six and one year old daughter.

EDUCATION & INCOME

He works as a bailiff at the court in Ismailia with a net monthly income of LE19. Since he has not progressed beyond obtaining his primary school certificate himself he has high hopes for his children and considers their education to be of prime importance. His son has just started attending school.

Anwar began working at the age of sixteen in a carpenter's shop, remaining here for three years until he became a skilled craftsman. But in 1967 he was called up for his military service and stayed in the army until the end of the war. After completing his military service he was assigned as bailiff to the Ismailia Court.

He still has a few regrets about leaving his trade as a carpenter, believing that his financial position would have been much better had he remained in it. At the same time he does see the practical advantages of his present situation. Although his salary is low he has a guaranteed future with a pension when he retires and even more important, the government will look after his family if anything happens to him. The principal disadvantage about working for the government, he says, is that he earns just enough to make ends meet. He regrets not being able to further his education, particularly when he sees that the children of illiterate relatives have become engineers and doctors, but economic pressures forced his brother and himself to abandon their studies and work for a living at an early age. His biggest ambition is to see his children well educated.

PERSONAL HISTORY

His 75 year old father was born in a village in Upper Egypt where he worked as an agricultural worker, since he did not own any land himself. He migrated to Ismailia 45 years ago in search of better employment and worked on a daily basis with contractors. He claimed some land in Abu Atwa and built his present house. He has lived in the same place since his first arrival in the city. He has only one other son besides Anwar. Although he shares the same house with his sons they lead very independent lives. His financial position has always been tolerable since he has had enough to meet his basic needs and the cost of living was much cheaper in the early days of his arrival.

According to Anwar's father there are at least 400 families from his original village now living in and around Abu Atwa. Many have come from prominent families and most work as masons, vegetable sellers or farmers. Anwar's father-in-law came from the village 40 years ago.

Anwar moved into his own part of the house in 1973 because of the constant quarrels between his wife and sister-in-law. His father described how they built the house.

FIRST HOUSE

He claimed a large piece of land in Abu Atwa when he first arrived in Ismailia. He constructed two rooms of mud and enclosed the area with a high fence. The ceiling was made of reeds and branches of trees. In those days a single branch cost only 5 piastres but the price has now risen to LE6. There was no w.c. in the house, or water tap or pump and they collected their water from the river which was one kilometer away. In 1963 they demolished two rooms and built three rooms of mud with the ceiling made of reeds and wood which Anwar's father constructed with help from the sons. The father and sons also carried the building materials on a donkey. In 1966 they added four more rooms but because the sons were busy and the father was too old the construction was done by a mason and his assistant. The house did not have any water or electricity or w.c. and their combined income was the same as it is now.

When in 1973 Anwar decided to move into a separate section he constructed this with financial help from his father, his own savings and a loan. He built four rooms and a w.c. He employed a mason and the materials were transported on carts. He made a considerable saving when it came to the ceiling since there were two camphor trees in the yard and he used branches from these for the construction.

At present the house consists of eleven rooms with a very large yard and is surrounded by a fence with a gate opening onto the road. There is a large hall through the entrance which is shared by all the family for receiving guests. Both Anwar and his brother have four rooms while his parents only have one. Another room is used as a stable and the remaining one serves as a guest room. The yard like the w.c. is shared by all the family.

ADVANTAGES & DISADVANTAGES OF THE HOUSE

The major disadvantage in the location of the house is the distance from all utilities and services: The family have to travel a long distance to get water and the schools, market and the medical centre are all a long way off. Electricity was installed two months ago but the current is very weak. Since the market is far from the house vegetable sellers take advantage of the situation and call at the houses charging very high prices. The chief advantage of the location is the clean air, since they are surrounded by open fields and gardens and the area is quiet.

The house itself is a convenient size and is built along the same lines as a traditional village house in Upper Egypt. It is comfortable and they can raise poultry and cattle which keeps the cost of food down. Since they own the place they save on rent, too. The main disadvantage is that they can't afford to buy cement for the ceiling, as a result of which rain water pours down on them in winter.

EXPENDITURE

When Anwar was single and lived with the rest of the

family, his father and elder brother, who is a police corporal, shared the responsibility of supporting the household. Most of their income went on food but they were able to save a small amount towards the construction of extra rooms. At the moment out of Anwar's LE19 which he receives in a month, LE3 goes on cigarettes and LE2 is his contribution to his parents. He manages to save about LE1.50 a month towards continuing the construction of the house or for medical treatment. On the whole his income is just enough to cover their food bills and to pay for their clothes. (Each member of his family is given two pieces of material for summer and another two for winter). Anwar's father owns a donkey which is his only means of transport and the rest of the family walk when they need to make a journey into town. On special occasions like seeing a doctor or buying clothes they may go by bus which costs 3 piastres.

RECREATION

Their only means of entertainment is listening to the radio since women from Upper Egypt are not allowed to go out to the cinema or show themselves in public gardens or on the beach.

SOCIAL LIFE

Anwar has a timid nature and is afraid to interfere in other people's affairs and generally keeps to himself. On very special occasions such as weddings, illness or death among the neighbours he may help if assistance is required since there is a code of co-operation among people whose original homes were in Upper Egypt. Anwar does not have much to do with his colleagues either.

COMMUNITY RELATIONS

There are a few members of the Arab Socialist Union in Abu Atwa but most of the local people have acknowledged community leaders whom they respect and approach for advice and help. For serious crimes and disputes there are the Arab Judges, a council of Bedouin elders who are called in to arbitrate. There are, however, several projects in the area which were the result of direct co-operation among the residents. There was an agreement in which the wealthier people paid LE10 to LE15 for the extension of electricity from Abu Atwa to the more isolated parts of the area. Two other successful community projects are the mosque and cemetery which were built with local contributions. They did have trouble over water on one occasion when an owner of a water pump refused to let his neighbours use it in case it was damaged and he felt he had gone to considerable expense to get it installed. Fortunately a public tap was installed in the street outside Anwar's house making life much easier for them all. Planning aspects can also cause problems in the area. There is a standard agreement that everyone leaves a small part of their land for the road but most people refuse to keep to the arrangement.

FUTURE EXPECTATIONS

Anwar's most important goal at the moment is to complete the construction of the two rooms and cover them with a ceiling. In the next few years he would like to buy a TV, a butagas stove and a fridge but says, "I can't plan for the future as it is God's wish. We only hope that our position will improve and we will have a higher standard of living." If the household income increases

by LE5 he says he will become a member of a savings pool and use the money to put a ceiling over the two rooms. If it increases by LE10 he will save to buy a TV and if it increases by LE20 he'll save to enable his father to go on a pilgrimage to Mecca. He would obviously prefer to be a landlord rather than a tenant. As far as utilities are concerned he says: "I prefer to repair the house and then provide all the utilities such as water and electricity. There are many people living in cages where they have electricity and a TV but I do not think this is proper or right". When it comes to considering improvements in the area Anwar says the most important requirement is to strengthen the electric current and then to have the main road in the area paved. He also thinks there should be a cooperative society for those who are not so well off.

CASE STUDY 8 : EL HEKR

The most significant event in 32 year old Hussein's life was his pilgrimage to Mecca. He now lives in a small house in Ismailia with his young wife and newly born daughter, not altogether happy with his present position as a self-employed plumber.

EDUCATION & INCOME

He started as a plumber only a year ago after spending a few years in the army and running his own grocery shop. His monthly income at present varies between LE30-LE40. Opportunities for better jobs are limited because of his lack of education; he did not manage to get very far in primary school although his wife succeeded in reaching sixth grade.

Looking back on the days when he had his grocery shop, he says: "I was much better off when I was trading, one can make bigger profits. I had a registered telephone and my wife was able to dress up with jewellery." He complains that he can hardly make ends meet with the money he now earns.

PERSONAL

Both his parents died when he was very young and he spent most of his life in El Hekr with his older brother who is married with seven children. The brother works in a store and lives in a one storey apartment consisting of three rooms but Hussein decided to live on his own after his marriage in 1975 because of the shortage of space.

FIRST HOUSE

Their first house in Ismailia consisted of four rooms plus a large dining room and was built of mud brick and cement. They shared with the landlord, each having two rooms and Hussein made sure he paid the rent in advance, every month. But he did not enjoy sharing accommodation and decided to buy his own piece of land and build a house.

SECOND HOUSE

Several people were selling land in El Hekr and when Hussein heard of an available plot he made an immediate bid. The landowner refused to be paid in installments and Hussein had to pay LE230 in cash without being given a receipt to prove his ownership. Not having any formal proof of land ownership he feels doubly vulnerable and built the complete house in one stage instead of phasing it over a period so that officials would have no chance of using the excuse that the house was incomplete.

Buying the land and paying for the construction proved extremely expensive and Hussein was forced to sell his TV, recorder, his wife's jewellery and use up all his savings from the income he earned in Saudi Arabia when he went on the pilgrimage for three months.

He bought all the materials himself but hired a labourer with three assistants for the construction. He was charged LE5 per thousand bricks and the house was completed in five days using in all 7000 bricks.

FURNITURE

The house as it now stands consists of a medium sized room which serves as a bedroom, a smaller room (which doubles as living room, dining room and kitchen) and a bathroom. The wife is unhappy about not having a separate kitchen. The dining room contains a butagaz stove, two tables and a few wooden chairs. The bathroom is separated from the kitchen by a nylon curtain and a wooden door connects the dining room to the bedroom and also leads out onto the road.

ADVANTAGES & DISADVANTAGES

The chief advantage of the locality is that it is quiet and not overcrowded like other parts of El Hekr. But the distance from the centre of town and all essential services makes life difficult. There is a general lack of services; no post office, police station, market or mosque. There is a particular need for a police station since the rate of burglaries in the area has risen dramatically.

The distance also affects their transport costs. If a particular assignment is close to his house Hussein either goes on foot or pays 2 piastres for a bus. If he has to travel a longer distance he takes a taxi which costs about 5 piastres.

The lack of water, electricity and a proper sewerage system are also missed. There is a tap near their house and water pipes pass in front but Hussein has to wait till the appropriate authorities visit him and give him the necessary permit to instal water inside. He says sewerage pipes are also connected to the commercial building next door to him and believes it should be simple to extend the pipes into his own house.

But all these drawbacks do not detract from the basic satisfaction he gets from owning his property. "I am happy that I am tied to this house. Here I am free to do as I please. I chose this place, and constructed the house the way I wanted it."

He estimates the present value of his property at LE400 and hopes to rent it out if he can build a separate modern house in concrete with all amenities. If he does rent it out he is firm about not taking key money: "I believe that taking key money is a sin, because the person who pays will have to cut down on his food and clothing expenses to save for it and that is not fair." He has not made any improvements to the house because he considers it only temporary until he can rebuild it in concrete.

EXPENDITURE

They do not have a fixed budget for household expenditure but buy according to their needs trying at the same time to have a little money saved at the end of the month. Hussein's wife buys the vegetables, meat etc., from the Friday market, travelling by taxi for 5 piastres and spends from 75 piastres to one pound. She also goes to the general market four times a week. The couple only go into Ismailia on Fridays usually to visit the public gardens, taking a taxi for the twenty minute journey.

RECREATION

"Our visit to the public gardens is considered the only way to add happiness to our life" says Hussein. During the rest of the week their other diversion is exchanging visits with relatives.

COMMUNITY RELATIONS

There are no formal organisations in the area though Hussein was a member of a youth organisation in 1967 until he left to join the army. This group used to organise activities in El Hekr such as collecting and burning garbage from the streets. They first started a camp in a dyer's factory where they were taught public speaking and how to help those who came to them with problems. He has lost touch with the group now and does not know if they still exist. He did not leave Ismailia during the evacuation in the 1973 war but joined the home guards. According to Hussein general community relations are very good and the neighbours are allowed to use each other's private property such as water pumps and ovens.

PRIORITIES & PREFERENCES

Among his immediate priorities Hussein lists a bicycle first to make transport much easier for his work, then household furniture, electrical appliances and domestic utensils. Regarding expenditure they concentrate first on food and improvements to the house, then health and medical treatment followed by education and finally clothes.

In housing he has no doubt that he would rather be a landlord than a tenant. He adds: "Given a choice I would like to live in the same area with the same conditions as far as location and population are concerned." But he would very much like to have utilities inside the house; particularly a waterborne sewerage system in place of the pit barrel he now has. He finds the task of emptying it regularly both tiring and disgusting. "To tell you the truth," he says, "the three items of location, standard and ownership cannot be separated when it comes to determining ideal housing conditions."

FUTURE EXPECTATIONS

He would like to rebuild his house in concrete and open one of the rooms onto the street and turn it into a grocery shop which he will run.

"As for my children, when they grow up I would love to build a separate house for each of them with electricity, running water and sewerage inside. I hope the area will be improved and completely changed; the streets paved, lighted and lined with trees. I would like the area to look like heaven. I want all this so that when my children grow up and reach high positions they will be living in a suitable area."

CASE STUDY 9 : ABU ATWA

Both Mokhtar and his wife were born in Upper Egypt but now live in their own house in Ismailia with their four children aged fourteen, eleven, ten and four. Nahed, the eldest daughter and the two boys Khaled and Waled attend schools in Ismailia but Hanan the youngest daughter stays at home with her mother.

INCOME & EDUCATION

Mokhtar earns LE26 a month as a policeman in Ismailia while his wife sometimes manages to make LE2 by selling beans and taamia. She is illiterate but her husband reached the final year in secondary school failing, however, to obtain his certificate.

PERSONAL HISTORY

He lost his mother when he was only four. His father, who used to be a milkman, died at the end of 1961 with the satisfaction of knowing that his son was building his own house. One of Mokhtar's brothers died, too, leaving him responsible for his five children. The second brother is a labourer with the city council in Ismailia.

The family were brought up in a traditional village house in Upper Egypt consisting of six rooms and built of mud bricks and cane. There was no water, and electricity was only introduced into the village two years ago.

His wife's mother was divorced by her husband and has married another man. Mokhtar's father-in-law used to be a handy man with the British army but is now too old to work. He moved from Abu Atwa into the country during the war but still comes up to Ismailia regularly to collect his pension.

Mokhtar was eighteen when he first came to Ismailia. His father had been so upset at his son's failure to obtain his final certificate at school that Mokhtar decided to leave home and come to Abu Atwa where his uncle and brother worked. He lived with his uncle in a house consisting of four rooms, a big hall and with a cement floor and services provided.

He looked around for a job without much success until a neighbour introduced him to a man who owned a school. Mokhtar worked there as a teacher for three years until he was called up to serve his national service.

FIRST HOUSE

It was usual at that time for those who were discharged from the army to join the police force and Mokhtar was fortunate enough to be posted in Ismailia as a policeman. He rented a flat before completing his military service, married in it and brought his father to live with him and his wife.

He decided to settle in Ismailia because his uncles and brother lived there but felt his first objective was to obtain a job suited to his abilities.

They lived in the flat for six months, during which time they claimed a piece of land in Abu Atwa. People started moving into the area about 15 years ago but at that time it was not very crowded.

The only drawback with their first flat was the fact that it was shared and they found this awkward and embarrassing. The advantage was the water pump in front of the house. Their relationship with the neighbours was good although they preferred to keep to themselves. Mokhtar says everything was cheap and available at the time and life was much easier than it is today.

SECOND HOUSE

They built their present house in two stages. The first was gradual and extended over four months since they had financial difficulties. In this stage they built four rooms, an entrance and a hall. This was in the last few months of 1961. They bought the building materials themselves and hired a builder who stopped work whenever they ran short of money. The second stage of construction was carried out in 1976. The walls were cemented and plastered, the floors cemented, and they built a W.C. and kitchen, added a sewage reservoir and constructed a mud wall around the house. The whole process took one year. He says, "we bought most of the building materials ourselves from Ismailia except the mud and sand. We heard about dealers from others who had built houses in our area before us. We brought the mud from Ezbet Abu Shehata and had to pay the nightwatchman to allow the builders to take sand." They moved into the house early in 1962.

"One reason why we chose this piece of land," he explains, "was that it was empty. We used to see it whenever we passed by so we claimed it. A man arrived some time later saying that he had claimed the land earlier but went away satisfied when we paid him LE2 to drop his claim." The house at present stands on one floor and has an entrance and small garden. There is a backyard where it will be possible for them to build another flat for rent which would be a financial help. They now raise poultry in the yard and are pleased that they do not share the house with another family. The area of the house is 90 m2. The family sold all their possessions to pay for the construction. Mokhtar sold a piece of land he inherited from his father; the wife sold her jewellery, some copper tools and poultry.

ADVANTAGES & DISADVANTAGES OF HOUSE

The main advantage of their present house they say is that they own it. The land is 'hekr' and the wife says that some people came to measure the land and fixed a tax ('Tahkier') but she did not go to the authorities to find out the value in case she discovered that they owed a large sum and would not be able to pay. She would rather put off payment until they are able to collect their share through a community savings group.

Mokhtar lists several disadvantages; although there is electricity inside and outside the house the water tap is half a kilometer away; there is a sewage reservoir which needs to be drained every six months or once a year; the streets are not lighted or surfaced; all other services are far from the area such as the ambulance

centre, police station and post office. There is no official refuse disposal system either and the garbage is dumped in a hole some distance away from the houses. When this is full local residents look for another suitable place in which to bury their rubbish.

EXPENDITURE

Talking about his financial situation Mokhtar says, "some time ago it was difficult to make a balance between the essential needs of life and our income. We had to cut down on food and clothes. We are in a much better position now and are able to get some money through a community savings group."

He also says they do not have a fixed budget and their expenditure varies. Very roughly he calculated that they spend in a month LE13.5 on food, LE2 on clothes, LE4 on the children's education, Mokhtar spends LE1.5 on himself as pocket money and LE2 on miscellaneous items. Their electricity bill works out at about LE1.3 a month.

There is a Friday market in the area but if they need anything during the week they usually go to Abu Atwa. They only go into Ismailia when they need to buy fish, clothes and things that are not available locally.

TRANSPORT

There is a bus which goes from Abu Atwa to Ismailia quarter of an hour and costs 3 piastres. If they need to go into town they sometimes go on foot, preferring this to travelling by cart which they find tiring and which costs 5 piastres.

COMMUNITY RELATIONS & SOCIAL LIFE

The family left for their family village during the evacuation period between 1967 and 1973. When they returned to Ismailia they found that water pipes reached their area and everyone wanted to instal taps. A local resident who worked for the Suez Canal Authority collected money from the other residents and applied to special authorities to fix a tap which was installed in ten days. They organised electricity in the same way. One of the neighbours collected money, he then bought wooden columns and wires and introduced electricity without informing the proper authorities who, when they discovered this, changed the columns and wires. All the families requested that electricity be introduced and this was achieved two years ago.

There are no formal social organisations in the area but occasionally, respected older members of the community take on the role of acting as advisors and mediators if local residents have problems. At the moment there is an old man who used to be a milkman before he gave up work and now advises people in the neighbourhood who come to him for help.

Access to water depends on those who have a pump or water tap inside their house. Mokhtar gives the example of a rich neighbour who has taps in his house but "no one would dare ask him for a cup of water."

PRIORITIES & PREFERENCES

As far as immediate purchases are concerned the family would like to buy a cooker first in place of the kerosene cooker they now use. They have a TV and when asked why

they gave priority to this over the cooker they explained that their children were driven out of a neighbour's house when they wanted to watch their set. The wife felt this was an insult. Besides she says that by letting the children watch television at home she can keep an eye on them and they do not go out anywhere else. Buying the set, she admits, did upset their budget since they pay LE5 a month for it.

Their most important requirement is the introduction of water into the house. Next in priority is education for the children. "If our income is decreased we would cut down on everything else before education."

He also says, "Owning a house is the best security. We were brought up in a traditional village environment and are used to living in a house which we own." He would prefer to have a wide open space behind the house for raising fowl and perhaps even a cow, "which would enable us to have our own milk, butter and cheese." He would prefer to have all facilities inside the house and feels that improving services is better than improving the house. He says the distance from his house to his place of work does not bother him; what is important is the availability of transport. He would also like a proper system of refuse disposal and the city council is responsible for this. He also wants to see a preparatory and secondary school built in his area to save his children from the cost and effort of going to school in Ismailia.

FUTURE EXPECTATIONS

In the future he would like to complete the whole house in one stage. If he could rent out two rooms he estimates that he would receive LE2.25. But the family have no immediate goals for the next five or ten years. Mokhtar says realistically: "We will never be able to build a house of red brick since our income will be the same if it does not actually decrease in the future." He also has no illusions about his son's prospects. "I expect him to be of an average standard. I would not be able to send him to University but it would be good if I can send him to an industrial school. Thank God we live comfortably, enjoy good health and our children are successful."

CASE STUDY 10 : EL HEKR

Sixty-nine year-old Sabri is a retired guard who used to work with the City Council. His children, now grown up, have left home leaving him and his wife as the sole occupants of their house in El Hekr.

EDUCATION & INCOME

The couple's regular total monthly income is LE25 per month. Apart from his pension of LE15 he receives LE10 by renting out two flats, and occasionally receives LE5 from a shared business in breeding cattle in his village. Sabri and his wife, who is also his cousin, were both born in Sharkeia Governorate and have not had any formal education.

PERSONAL HISTORY

He left his village and came to Ismailia after the death of his father because he found it impossible to cope with the pressures of looking after his family and his dead brother's children. At the same time he suffered, too, from the persecutions of their landlord for whom his father used to work.

He first arrived in Ismailia leaving his wife and two sons behind in the village. He chose to come here because he had a cousin who had settled in the city. He sold some of his cattle and putting his faith in God, joined his cousin who found him a job with the British army and he remained there for a year.

FIRST HOUSE

He was very happy in his work, the pay was good and he was able to send a regular part of his income to his family in the village. He lived with his cousin who had a flat on the second floor of an apartment block which was constructed with red bricks and concrete. The flat consisted of three rooms with utilities and according to Sabri it was very clean and well organised.

SECOND HOUSE

In 1948 he moved into a three roomed, rented flat in Arashia which was on the first floor of a three-storey building of concrete and red brick and he brought his family to join him. They lived here for a year after

THIRD HOUSE

which they moved to another flat in the same area. This had three rooms, too, with utilities but he felt that the location was better, less crowded and the rent was the same as that for his previous flat. After two years he

FOURTH HOUSE

moved once more to a flat with three rooms and utilities. The building consisted of two floors and they lived on the first with their older son, daughter-in-law and their six children. They lived here until 1965.

He found all his flats through friends, colleagues and his own efforts. During this time he was still employed by the British army and was responsible for guarding stores in the barracks, but the position was only temporary.

He says: "In those days life was wonderful. Thanks to God, the money was sufficient and I had a business breeding cattle in my village".

When he saw the advertisement for a guard with the City Council he sent in his application because the position

was permanent with a pension.

FIFTH HOUSE

After several years of renting he bought some land and constructed his own house. The land was surrounded by a wall of mud bricks. He received a sales contract from the owner and had it formally stamped at a local notary public office to prove his ownership. He still pays regular taxes and Municipal fees. He found the land through his son since the owner was his neighbour. He paid for it by selling some of his cattle and his wife and daughter-in-law sold their jewellery. With this money he was also able to build his house in two stages.

In the first he completed two flats each consisting of two rooms, a living room two bathrooms and a kitchen. He built the second bathroom because he felt that only one between two flats could cause problems. (He then built the rest of the house which consisted of a two-roomed flat and a second flat consisting of two separate rooms and a third bathroom).

Sabri bought all the building materials himself from the owner of a factory who used to sell his bricks in El Hekr. Sabri bought the cement through the black market, deciding not to go through official channels in case it delayed the construction. The man who sold him the cement used to deliver it at night in bags and rush off immediately fearing he might be stopped and questioned by some official. Sand was no problem and the wood was bought through a specialist merchant.

He hired a mason and assistants who were paid a daily rate and it took a year to complete the first stage after which Sabri moved in with his family. At that time the family consisted of his wife, son, daughter-in-law, grandchildren and an orphaned nephew. Sabri lived in one flat with his nephew and his son and the other family members lived in the second. They started on the construction of the second stage after two years.

In the second stage which covered one year they built two flats, one consisting of two rooms and a living room and the other with two separate rooms and a bathroom. They also added a pit barrel with an inspection chamber. The doors and windows were only painted a month ago for which the painter was paid LE8.

At the moment Sabri rents out two flats and raises the rent in stages when a tenant moves out. He claims he does this to keep up with the sharp rise in the cost of living.

ADVANTAGES & DISADVANTAGES OF THE HOUSE

He chose this particular location for his house because it was close to the centre of town, market and hospital. Most services can be reached on foot since the hospital, school and maintenance factory belonging to the Municipality are at the end of their street. There is also a mail box near the house, However, the main disadvantage is the absence of a refuse disposal system. There is no way of getting rid of their rubbish apart from dumping it in a pit some distance away from the house. The road in front is unlevelled, full of bumps and very dusty. He says that the area outside his front door is also very noisy since the public tap is located

there and women who come to collect water are constantly squabbling and leave the tap running. Sabri apparently is often obliged to sit in front of his house to mediate in the quarrels and turn off the tap.

As far as the house itself is concerned the couple feel it is above average in standard. Electricity was installed inside within a year of its completion and the roads are lighted.

The family suffered severely during the wars in 1967 and 1973. Finding it difficult to face living in Ismailia they left for their village in 1967. Sabri himself was injured in 1973 and stayed in the village until the evacuation period was over. He used to return to Ismailia to make sure his house was safe and he and his son took it in turns to guard it.

EXPENDITURE

He complains that LE25 a month is not sufficient to cover their needs especially since he still has financial obligations towards his sisters and nephews in the village. "I also help my son who lives apart with his children who are in different stages of their education. He has a son who goes to the Faculty of Engineering in Cairo University and another son who is studying medicine. My son is poor and his income barely covers his expenses, I am trying to help him so that his children can complete their studies".

Sabri and his wife do not have a fixed budget but he tries to ensure that he has enough money left over in the month to send some to his relatives in the village. The market is close to their house and they can walk there. If he wants to visit people in El-Sheikh Zayed he takes a taxi which costs 30 piastres one way. They go to the market every day and spend according to their needs. On days when they only need lentils, tomatoes, cucumbers and other vegetables they spend about 50 piastres.

COMMUNITY RELATIONS

Sabri is very close to his cousin and has made strong friendships with several colleagues who live nearby. He is also in regular contact with family members in the village and still co-operates with friends there in breeding cattle.

He says he has never heard of any social organisations or met any of their representatives. Regarding the land, he says there is a code in El Hekr in which all those who claimed a piece of land first are accepted as the owners and nobody dares to take a part without prior agreement. He then recounts his own personal experience: "When I first came to Ismailia I usurped a piece of land. Some of the local people resented this and reported me to the Government saying that I took advantage of my job to acquire the land. My boss gave me an ultimatum, either I would have to give up my job or the land. Since I am a peaceful man with a family to support and in need of a salary I chose my job".

Generous neighbours share their personal property such as water pumps, taps and ovens.

PRIORITIES & PREFERENCES

House ownership is considered very important for Sabri since he believes that in owning one's own property one gets rest, security, freedom and "you can gather up all the family members under your own roof". He would prefer to have utilities inside the house. He also wants a proper refuse disposal system in preference to having a post office or police station near the house. He also emphasises the need for several schools for different stages of education which he insists is more important than having a market in the area.

In services, he says: "I first prefer to instal the water in my house to sharing the public tap in front. Second comes the need for a sewerage system. The most important requirement for the house is water, it is the vital thing for me and there is no second or third thing more important.

Personally he would like to buy a radio and butagaz stove.

Regarding building he feels there is a need for engineers to advise on soil types and the number of floors a house should have. Even more important, according to him, is the cost of cement and wood which he feels should be priced within the means of most people who want to build a house.

FUTURE EXPECTATIONS

Sabri's most important wish in the next five years is to make a pilgrimage to Mecca. "I hope that God will give me life until my grandchildren graduate from university to find good jobs and then I will die peacefully".

STUDY OF SOCIAL ORGANISATIONS

1.69 The study was intended to identify the formal and informal organisations which exist in the area, particularly those concerning themselves with environmental, housing and related matters, and to find out how the organisations work in order to involve them in the work of the project. The study was undertaken in two ways, by direct contact with those who represent the area or official bodies and by including a section on social organisations in the case studies and improvement area studies. The case studies were the most fruitful, but the results were such that proposals for methods of implementation have had to be designed independently as no adequate informal organisational structures exist in either area. Formal organisations with which liaison should continue are at local council level and above.

1.70 In El Hekr there are isolated examples of groups of neighbours pooling resources and labour to improve, for example, the condition of a street. In particular, in El Hekr there is a community development association which organises a kindergarten but this too is in a limited area. Between neighbours local 'development control' occurs on an ad hoc basis which controls the amount of land left for streets, as does witnessing of contracts and sales, and housing loans. The latter operate principally through the gamaya system previously described. Social organisation is limited to this level and the proposals for public involvement in implementation recognise this.

1.71 In Abu Atwa, whilst the same local basis exists, there is a stronger area level to the organisations. There is an active Arab Socialist Union, though this is apparently not involved in housing or environmental matters, a council of Arab Judges, and a number of strong informal small area leaders. These are largely a result of the relatively recent disparate agricultural origins of Abu Atwa.

1.72 Again, the organisational level is considered to be strongest locally, and the proposals for El Hekr apply also to Abu Atwa.

PUBLIC CONSULTATIONS ON IMPLEMENTATION

1.73 From information gained in the surveys, public consultation on implementation is considered to be essential. There is a need for verification of certain information, in particular, the ability and willingness to pay for improvements, which can be more easily obtained when tangible costs for utilities can be presented to residents.

2
Land Market & Tenure

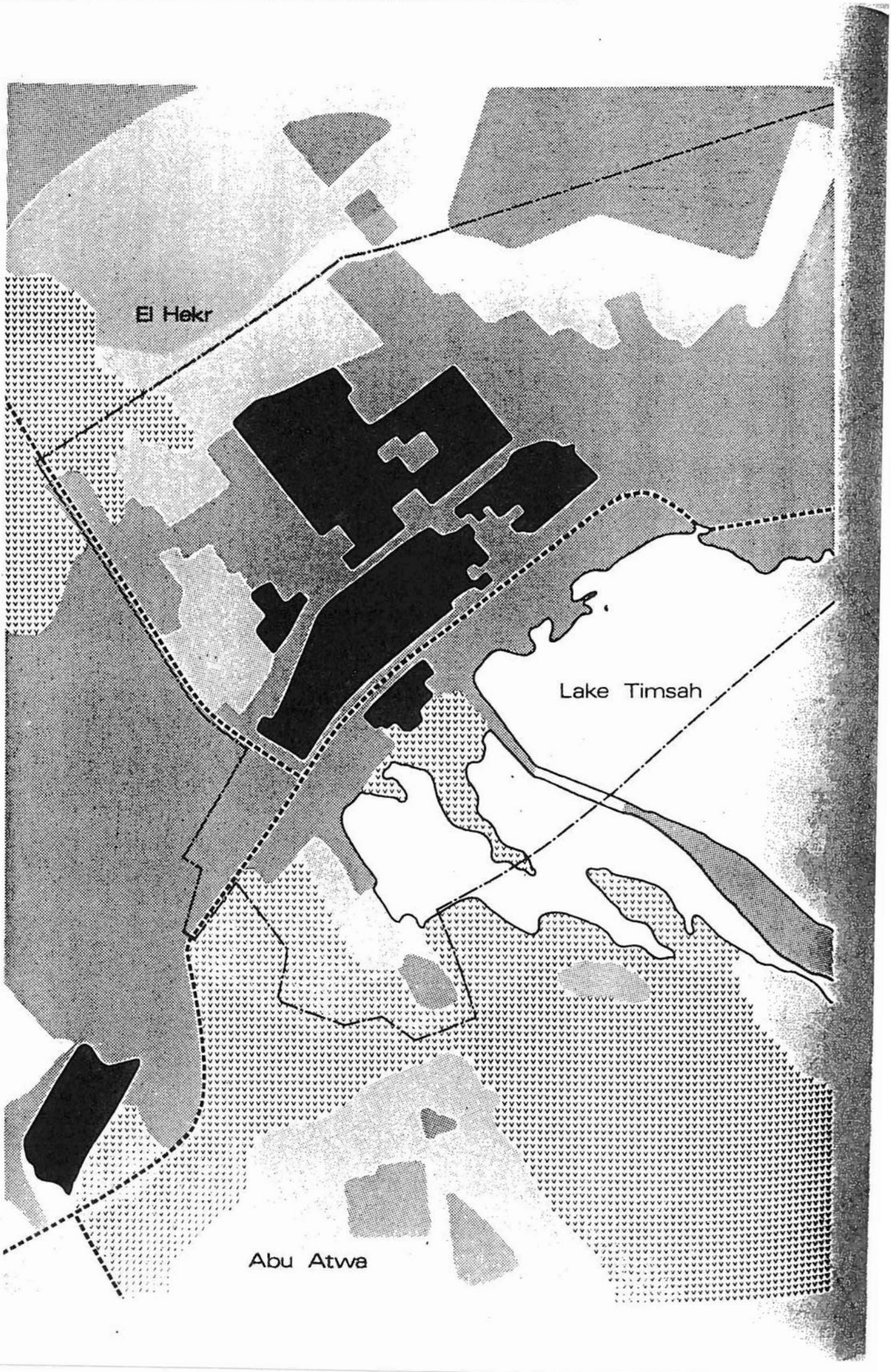
REASONS FOR LAND ANALYSIS

2.1 It has been necessary for the Consultants to analyse the land market in Ismailia because the three Demonstration Projects will all involve the entry, in one form or another, into the land market. The current and future value of land in the Study Areas depends, above all, on the context of the city-wide land market and the likely trends in land development and speculation. In particular, since proposals involve the formalised creation of urban land, (and in some cases the future sale of that land at market prices) it is necessary to estimate market prices and to identify the factors (the balance of supply and demand, land tenure, location and services) which are likely to influence these prices in the future.

2.2 In this section the results of the Consultants' analyses are presented, first with a breakdown of types of land in Ismailia according to their characteristics as goods in the land market, second with a profile of current land prices in the city, third with a discussion of expected trends, fourth with a look at the process of entry of new lands into the market, fifth a discussion of land values in El Hekr and Abu Atwa, sixth an estimation of the Government base-price for empty unserviced land, and lastly a description of the land tenure status of the three Study Areas.

DEFINITION OF TYPES OF LAND IN ISMAILIA

2.3 In and around the present city of Ismailia there is a varied mix of different types of land, only a fraction of which is actually free to vary in price according to market forces. The majority of the land is under government and institutional controls which make it, to a greater or lesser extent, outside the market. The following classifications describe these types of land and their degree of 'marketability'. The possibilities of conversion of certain lands into and out of the free market are described below.


El Hekr
Lake Timsah
Abu Atwa

(i) Private Freehold Land

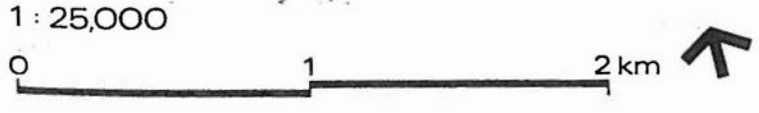
This land type makes up most of the 'free market' in Ismailia. It is composed of freehold land within the city boundaries, on the one hand, and agricultural and certain urban lands outside these boundaries (see Figure 2.1). As is explained below, there are legal mechanisms which can convert non-freehold to freehold land, thus increasing supply. To a much lesser degree the process of eminent domain can take freehold land out of the market.

Agricultural freehold land can be considered separate from urban freehold; while it may also be bought and sold, tenancy rights are inviolate and, in theory, building on agricultural land is illegal. Thus although agricultural land in practice is converted to buildable urban land, this conversion is not automatic.

(ii) Institutional Land

As the Governorate capital and headquarters of the Suez Canal Authority, the city of Ismailia contains large areas of land which are owned by either the military, the SCA, ministries, or local government agencies (see Figure 2.1). Although most of this land is used, certain parcels are empty but nevertheless 'owned'. The land of public sector companies and semi-public institutions (factories, religious buildings etc.) can also be considered institutional, since most of this land is leased or acquired from public authorities and is only transferred with difficulty. For all practical purposes this and all institutional land can be considered outside the city's land market, and since in Ismailia institutional land represents a majority of the surface area, it has caused and continues to cause severe distortions in the city's land price gradients.

Certain institutional land, in particular Al Galaa' Military Camp, are identified in the IMP as scheduled for conversion to various urban functions. To date no agreement has been reached with military authorities, but



FREEHOLD URBAN LAND

INSTITUTIONAL LAND

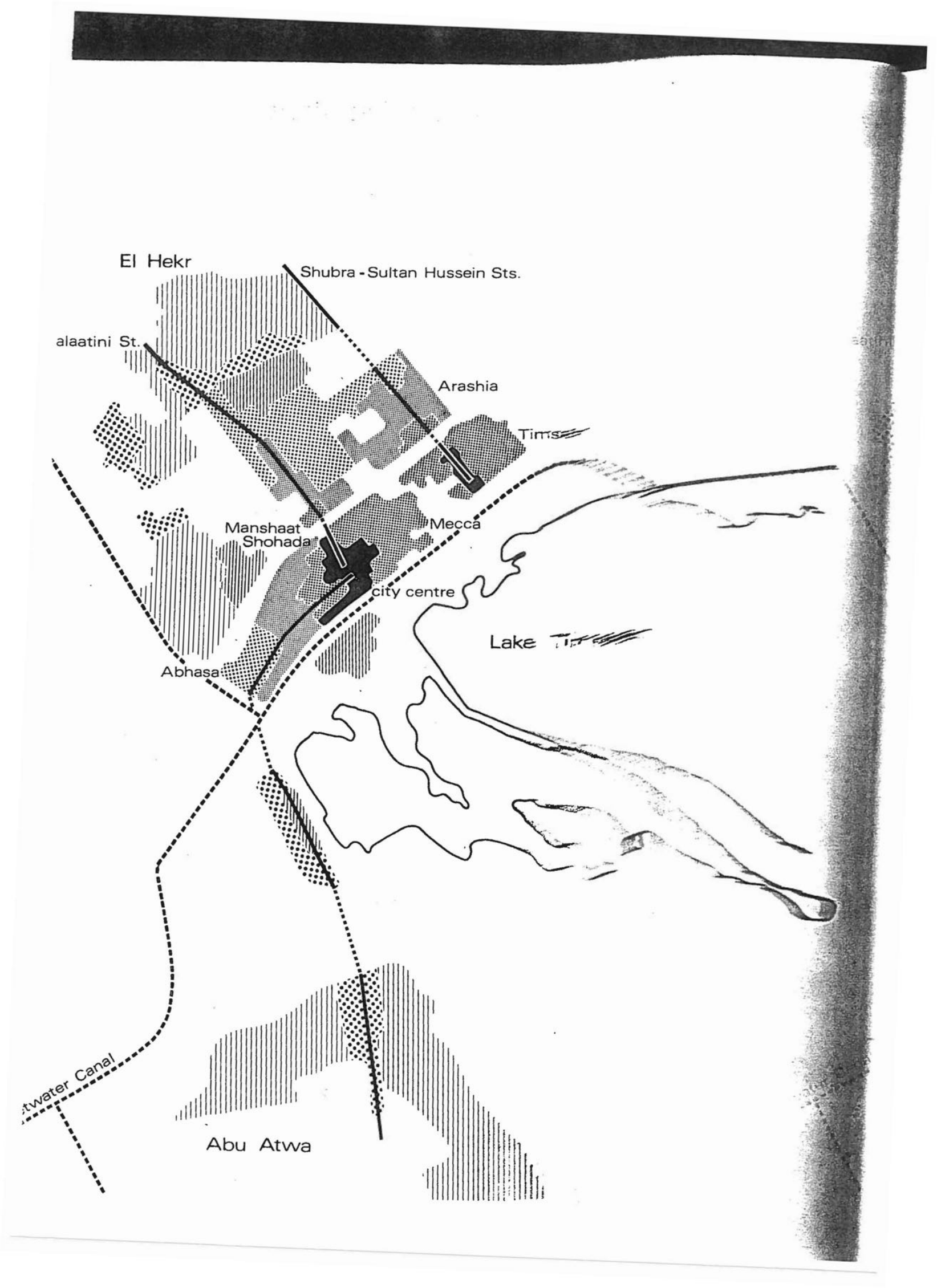
GOVERNMENT PUBLIC DOMAIN LAND - BOTH EMPTY AND SETTLED

AGRICULTURAL LAND

PRESENT CITY COUNCIL BOUNDARY

SWEETWATER CANAL

Land status in Ismailia City (1977) **2.1**


El Hekr
Shubra - Sultan Hussein Sts.
alaatini St.
Arashia
Tims
Manshaat
Shohada
Mecca
city centre
Lake
Abhasa
twater Canal
Abu Atwa

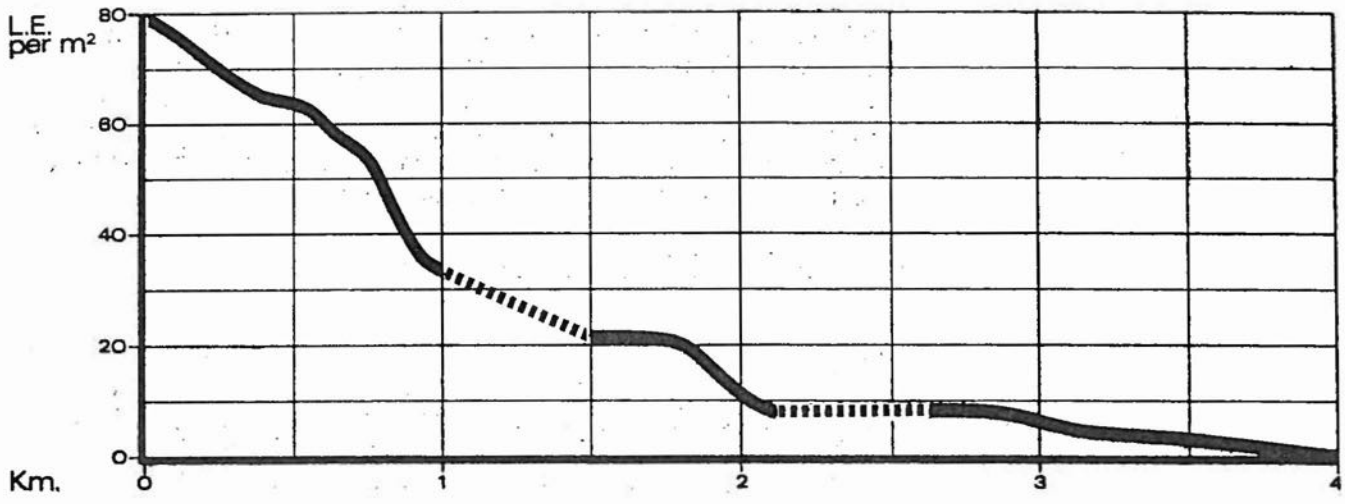
1 : 25,000

0 1 2 km

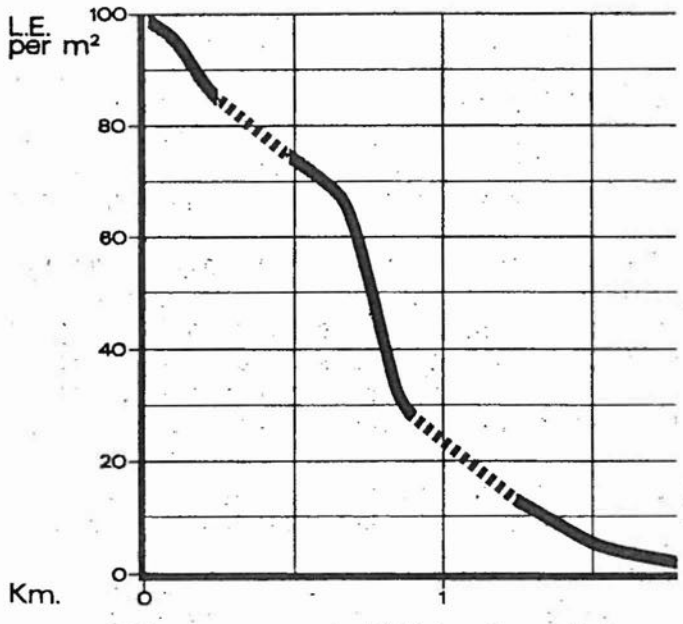
LAND VALUES PER M2

- OVER 80 L.E.
- 60-80 L.E.
- 30-60 L.E.
- 15-30 L.E.
- 8-15 L.E.
- 3-8 L.E.
- 1-3 L.E.
- LINE OF LAND VALUE PROFILE

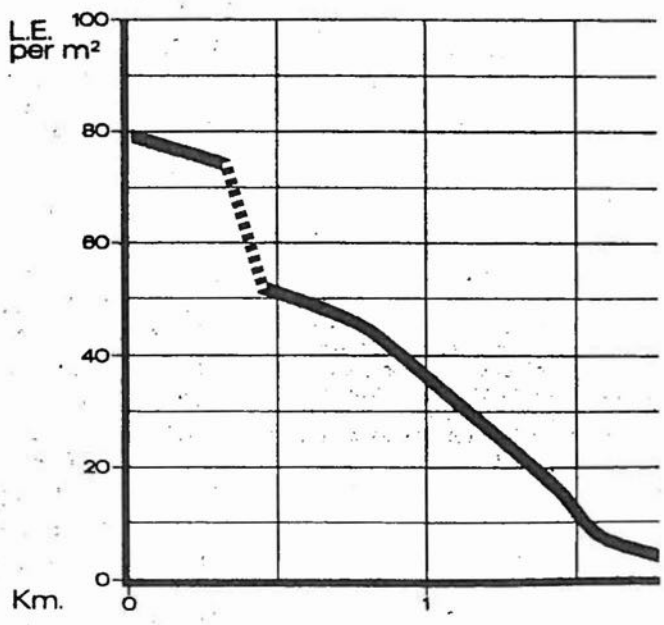
Ismailia City land market (1977): extrapolated land values 2.2



Town centre to Abu Atwa



Town centre to El Hekr along Sultan Hussein - Shubra Sts.



Town centre to El Hekr along Talaatini

Land value profiles 2.3

even if this conversion takes place it will be a managed or planned conversion to various urban functions, with only a portion of the land ending up in the private land market.

(iii) Land in the Public Domain

This land, most of which is outside City boundaries, is for the most part vacant desert land or agricultural land recently reclaimed from the desert. It is administered by the Amlak Department (muslahat al amlak al miri) and is considered to be 'owned' by the Government. The mechanism of squatter claim (wada' yed) and hekr rent allows the free use of this land for either agricultural reclamation or habitation and, through custom, quasi-title. As indicated in Figure 2.1, there are large tracts of this land in the outskirts of Ismailia, including the majority of the Study Areas of El Hekr and Abu Atwa. There is a mechanism for the conversion of this land to freehold title (see below), but even without freehold status occupied lands of this type are part of the city's land market and have a known market value which, as with freehold urban land, depends on supply and demand, location, and the availability of services. However, since this land does not enjoy the same tenure guarantees as freehold land, its market prices tend to be deflated compared to similar freehold parcels.

(iv) Lands for Public Benefit

This category comprises all land used for public benefit and includes roads, parks, public recreation areas, etc.. It is administered either by the City Council or the Governorate. This type of land averages 15 to 50% of the total in any urban area, but for obvious graphical reasons it cannot be shown in Figure 2.1.

THE CURRENT LAND MARKET IN ISMAILIA

2.4 This subsection presents the results of a land value survey carried out in Ismailia in October-November 1977. It is a 'point-in-time' survey which attempts to give a complete picture of the private land market; no rigorous study was made of time trends but such indicators as were available have been presented in the following subsection.

2.5 Land prices obtained in this survey refer only to empty freehold or hekr leasehold*plots. Obviously, occupied sites have varying lesser prices depending on the rights of existing tenants, demolition costs, etc. All the land values are expressed in square metre prices, the recognised unit in land deals. The prices given here are the net of commissions, fees and taxes. Sources of information have been three different land agents, the Ismailia Properties Tax Office (shahr al 'aqari), and spot interviews.

*Hekr tenure is the purchase of rights to publicly owned land either direct from the public authorities or from another leaseholder. 'Hekr' is the word for a small land tax paid by such a leaseholder.

2.6 Figure 2.2 represents a generalised, 1977 city-wide view of prices per square metre for all freehold and leasehold land. It has been constructed by extrapolating between 27 known recent transfers and is also based on the neighbourhood-by-neighbourhood opinions of land agents. Figure 2.3 gives generalised land value profiles for three

base lines, shown in Figure 2.2.

2.7 The significant results of this survey can be summarised as follows:

(i) It should first of all be noted that there is a remarkable consistency in the recognised price of land in a particular location, whatever the source of information. In conducting the survey it was very rare that opinions about the price of land varied by more than 10%.

(ii) The range of current prices varies from a high of 110 LE/m2 at a prime corner site near Sultan Hussein Street to virtually nil on the outer fringe of El Hekr. Where private land extends continuously out from the city centre one can see a continuous and rapid drop in the price gradient from the highest to lowest values, with the town centre (south of the rail line) having a more or less level plateau of high values. The inference is that distance from place of work and major commercial and service activity is the single most important factor influencing land prices.

(iii) Commercial potential is a major determinant of land values in any particular area. Highest values in the town centre were directly related to favourable locations along and on both sides of Talaatini Street, and highest prices were found along Sultan Hussein Street, the newer, 'western' commercial area. In all areas corner plots fetched higher prices than the neighbourhood average, and plots fronting on major thoroughfares (whether vehicular or pedestrian) usually cost 50 to 75% more than interior plots.

(iv) The existence and quality of infrastructure services directly determines the value of marginal land. Without services (ie., paved roads, water and sewerage) the price of plots rarely exceeds 3 LE/m2. And among unserviced, marginal lands the proximity to existing infrastructure services and the likelihood of provision in the near future is the major determinent of price variations. Since roads, sewerage and water extensions are the obligation of Government authorities, speculation in these marginal freehold lands is very dependent on perceived future Government projects.

(v) Tenure status has a direct influence on the price of marginal land. In general (although examples are too few to be certain) a clear freehold plot will cost 50 to 75% more than a similar long-held and registered hekr leasehold plot.

(vi) The level of social services and status of residential neighbourhoods seem to have only secondary influences on land prices. Prices in a well-served residential area will mostly depend on distance from the centre and commercial potential, as pointed out above. Certainly the Foreign Quarter of Timsah, whose prices do not drop below 60 LE/m2, has a greater status than the western end of the Arab Quarter (al mahata al gadida) whose empty plots average 25-35 LE/m2, but this can be as much attributed to the deteriorated infrastructure services in this latter area as to pure

'status'. Perhaps price differentiation by neighbourhood status will increase with the growth of the city and with the increasing use of motor transport by upper income families.

TRENDS IN LAND PRICES

2.8 It has been very difficult to establish regular trends in the land market, and thus nearly impossible to make any realistic projections, either for overall average price increases or increases at particular locations. The following presents what indications are available and discusses what influences are likely to dominate in the future.

2.9 Before 1967 the highest prices paid for land in Ismailia were lower than 35 LE/m2, and during the evacuation of 1967 to 1974 there was virtually no land market operating. Like Cairo*, Ismailia has experienced an explosion in land prices since early 1974, and also like Cairo speculative inflation has prevailed for two years. Unlike Cairo, Ismailia has a significant number of vacant plots throughout the city, a result of demolition of war damaged buildings (estimated by the IMPS at 10% of the housing stock). Thus there has been a much freer exchange of infill land properties, which has actually fuelled speculative dealings. And since there has been until now virtually no new serviced areas created since the war, additional freehold plots have not entered the market.

*C.F. Urban Land Use in Egypt, Appendix 6, MOHR/USAID, August 1977

2.10 In the last year a slight slowing down of inflation is said to have occurred, though there is insufficient data to back this up. Certainly as long as economic activity in Ismailia continues to grow, and unless new serviced areas are opened up, the pressure on vacant and underutilised plots will increase and price rises of as much as 20 to 40% per year will continue in the formal, freehold market. One factor has caused a jump in certain land parcels, and this is the foreign presence (UNEF, Japanese and French construction companies, and various foreign contracting and industrial concerns). It is for this reason that the Sultan Hussein Street sector now exhibits the highest land prices in the city, even causing the demolition of lower value structures on prime plots.

2.11 The future of the land market in Ismailia will depend on many factors; some such as the rate of economic development, are external, but whatever the overall demand for private land, the location and quantity of additions of new land to the private market will have a prime influence on the price structure. For this reason the form and likelihood of conversion of non-freehold to freehold land on the fringes of Ismailia is discussed in the following subsection.

2.12 It should be noted that the IMPS envisaged the controlled development of all new urban land through an administrative mechanism which would have sufficient authority to regulate and manipulate the land market, and thus amass for itself the majority land price increases due to development in new areas, to be used

for further expansion*. This proposal has not yet been implemented in any form, and the negative effects are already being felt in speculative action on outlying areas.

*C.F. IMPS, Volume 3, Section 10, March 1976

CONVERSION OF NON-FREEHOLD LAND INTO THE PRIVATE LAND MARKET

2.13 Possibilities of conversion can be classfied as 'formal' or 'informal'.

2.14 Formal conversion occurs through the subdivision and servicing of new areas for sale, carried out either by a private developer or municipal authorities. In Ismailia there have been no private efforts since the war (with the exception of a quasi-legal, unserviced private project of 2½ hectares on hekr land in the south-west corner of El Hekr), but the City Council has revived two of its pre-war subdivision plans which have been given the active encouragement of the Governorate and are to be started in January 1978**. These subdivision plans are on two sites:

**As reported in Al Qanah Newspaper, 3 December 1977

(a) Near Sheik Zeid City, lying between the Port Said railway line and Sheik Zeid Road; a total of 200 plots, each averaging 375m2, on a total site of 16.2 hectares, (percentage of marketable area to total - 46.3%).

(b) Along upper Talaatini Street; a total of 24 plots each averaging 310m2, on a total site of 1.35 hectares, (percentage of marketable area to total - 55.2%).

2.15 The details of costs, servicing, sale and conditions of contract are as yet undecided, but the proceeds from land sales are meant to recoup land and servicing costs. Both sites lie within City Council boundaries, and are practically the only areas within this boundary which are empty or not already committed. Since the City Council can only develop land within this boundary, they have few other potential sites; if the new City Council boundaries are approved in the near future significant new developments become a possibility. However, it remains to be seen whether the City Council has the capacity to actually organise, develop, and execute large scale subdivisions; they may not have the capacity to manage the two projects proposed for 1978.

2.16 Informal conversion of land into the freehold market can take place through the regularization of long-standing hekr leasehold plots to freehold status. The hekr leasee must petition the Amlak Department, and if he is within a subdivided area and his plot complies with the street lines, then a sales price is set by the Higher Committee for Price Fixing, a Cairo body which is part of the General Agency for Land Reclamation of which the Lands Department is a part. The price is supposedly set according to prevailing market rates through a competitive bidding system, though normally it is far less. The terms of purchase are 10% down payment and regular payments of the balance at 3% compound interest over 20 years. Approximately 300 plots in the southern portion of El Hekr have been sold under this system.

FUTURE LAND VALUES IN EL HEKR AND ABU ATWA

2.17 Hekr land, upon which almost all of the Study Areas of El Hekr and Abu Atwa are situated, has begun to take on recognised land values since the war. These prices have been described in paragraphs 2.8-2.13. It is a phenomenon which is assuming greater importance in the land market, symptomatic of the pressures on fringe lands in Ismailia on the one hand and, on the other, of the difficulties of the formal freehold conversion system. Without approved subdivision plans or building permits and to avoid cumbersome administrative routines small developers and individuals can enter the hekr land market and deal on the 'shadow' prices of this land. Some lands which had an official hekr base price of 0.40 LE/m2 in 1974 are now being sold at 3.50 LE/m2, and the highest known prices for hekr land at prime locations both in El Hekr and Abu Atwa have reached the 5 to 7 LE/m2 range. Buyers have no security of tenure other than a transfer declaration at the Amlak Department; they cannot even show their purchase contracts to substantiate their claims should the need arise since such sale of hekr land (Government land) is illegal. Yet they are taking the risks. Not only does this situation create confusion and uncertainty, but it also makes development control almost impossible.

2.18 The values of land in El Hekr and Abu Atwa in fifteen, ten, or even five years are impossible to estimate. It is safe to assume though, that within five years all registered, long held hekr leasehold plots will exceed 3 LE/m2, if trends continue, and many of these plots will be in the 5-10 LE/m2 range. This means that, even without Government intervention of the type and scale proposed in this report, land will assume a large share of the total housing cost in the Study Areas. And if project proposals are promptly implemented, the provision of secure tenure, neighbourhood plans, and infrastructure facilities will vastly increase the real value of these lands. This future situation has been fully recognised in the financial, legal and administrative proposals of this report.

INFERRED GOVERNMENT BASE-PRICE FOR EMPTY, UNSERVICED LAND

2.19 Land always has a value in economic terms, and to ascertain the base price of empty, unserviced land an analysis has been undertaken of the minimum prices of land on the desert fringe of Ismailia. These prices are almost inevitably Government prices or rents since such land is in the public domain. The following are three examples of inferred land values based on Government rates:

(i) In the recently established Ring Road Industrial Estate the Governorate, through the Amlak Department, has been selling unserviced, unmarked plots at LE200 per feddan or 0.476 LE/m2. Since there is virtually no investment in this land (other than the administrative costs of establishing the zone), this can be considered a 'base price'. It is understood that rates will be increased in the near future.

(ii) The hekr rent rate for vacant lands outside the City Council boundary is 0.03 LE/m2 per year. Since freehold title has sometimes in the past been given after 15 years, this rent can be translated into a price (discounted at 7%) of 0.273 LE/m2. If it is assumed that the hekr rent represents the discounted rate for purchase of hekr land under official conditions (3% interest for 20 years as described above), then the effective purchase price would be 0.446 LE/m2.

(iii) In the new subdivision projects of the City Council (described above), the City Council expects to have to pay, to the Lands Department, a rate of 0.25 LE/m2. This,it is understood, is the purchase rate for public institutions acquiring empty land.

2.20 Taking these three examples together, there appears to be a convergence on 0.35 - 0.40 LE/m2 as the Government base price for land. Of course for an individual project the actual price will depend on negotiations with the relevant authorities and the deliberations of the price fixing committee.

REVIEW OF LAND TENURE STATUS IN THE THREE STUDY AREAS

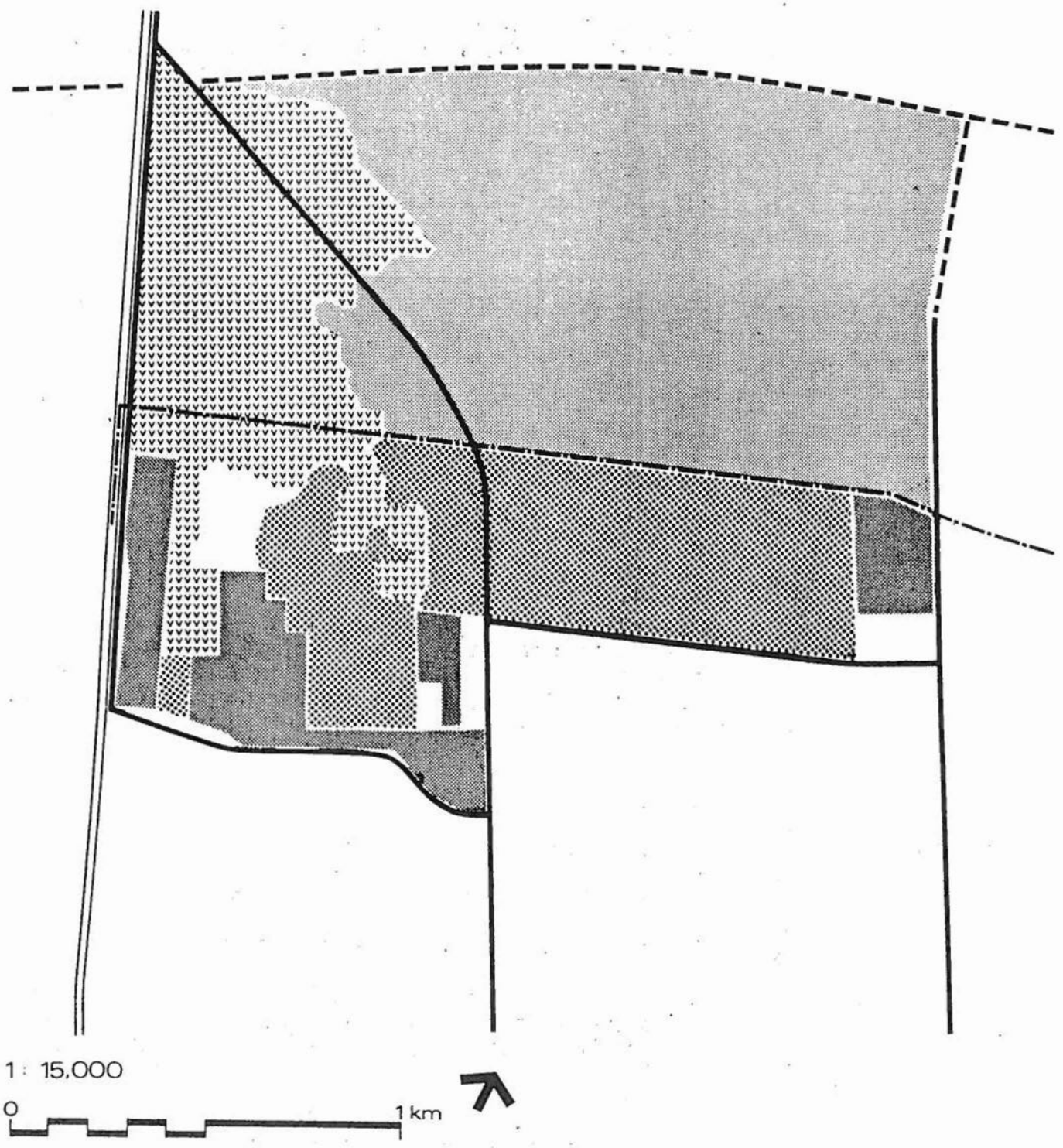
2.21 The following is a description of the tenure status of lands within the Study Areas. Information has been collected from various sources in Ismailia - the Lands Department (Amlak), the Housing Directorate of Ismailia, the City Council, private companies and private individuals.

EL HEKR

2.22 The study area of El Hekr can be subdivided into four different zones, each with more or less common tenure status. These four zones are shown in Figure 2.4.

2.23 In Zone A, all of which is inside the present City boundary, all land parcels are private, held either under freehold or hekr leasehold. Each parcel is registered at the Housing Directorate. This land was originally for the most part empty desert, which was settled by hekr squatting, and by 1962 almost all was occupied. Some leasees have purchased their plots from the Government; of the roughly 2000 parcels registered at the Housing Directorate, some 300 have been sold. Most of these are clustered along El Bahri Street on the southern edge of the study area and on the low-lying land directly north of the Agricultural College.

2.24 Zone B, the largest in the area, is a mixture of hekr leasehold, unregistered encroachment, and empty Government land. This zone is outside the City boundary and thus registration of hekr leasehold is at the Lands Department. Since location is not indicated on the rolls, it is impossible to say how many plots are registered; local officials estimate that less than 50% of the houses are registered. The remaining built-up area is made up of parcels which have been physically grabbed and built upon, and this process is continuing. The rest of Zone B, north up to the boundary of the proposed University, is empty Government land under control of the



EXISTING PAVED ROAD
IMP MOTORWAY
ZONE A*
ZONE B*
ZONE C*
ZONE D*
PRESENT CITY BOUNDARY
*See text for explanation of tenure status

El Hekr land tenure status

2.4

Lands Department.

2.25 Zone C is land under cultivation, a mixture of hekr leasehold and freehold plots. All plots inside the City boundary and most of those outside it are under hekr leasehold. Leasehold parcels are registered and administered much as those in zone A except that, because they are cultivated, the rents are one tenth those of Zone A and construction is prohibited.

2.26 Zone D is institutional land owned by various Government, cooperative and public sector agencies. All is presently under use except for the section at the southeast corner of the study area. This land is composed of two plots, one owned since before the war by the Government Employees Housing Cooperative and the other by the Teachers Union. Both are intended for cooperative housing blocks, but since the war they have been encroached upon by settlers. As a result of a case presented before the District Court, a number of houses on and around the land intended for the Teachers Union were demolished in January 1978.

ABU ATWA

2.27 The study area of Abu Atwa can be subdivided into five zones of more or less common tenure status. These five zones are shown in Figure 2.5.

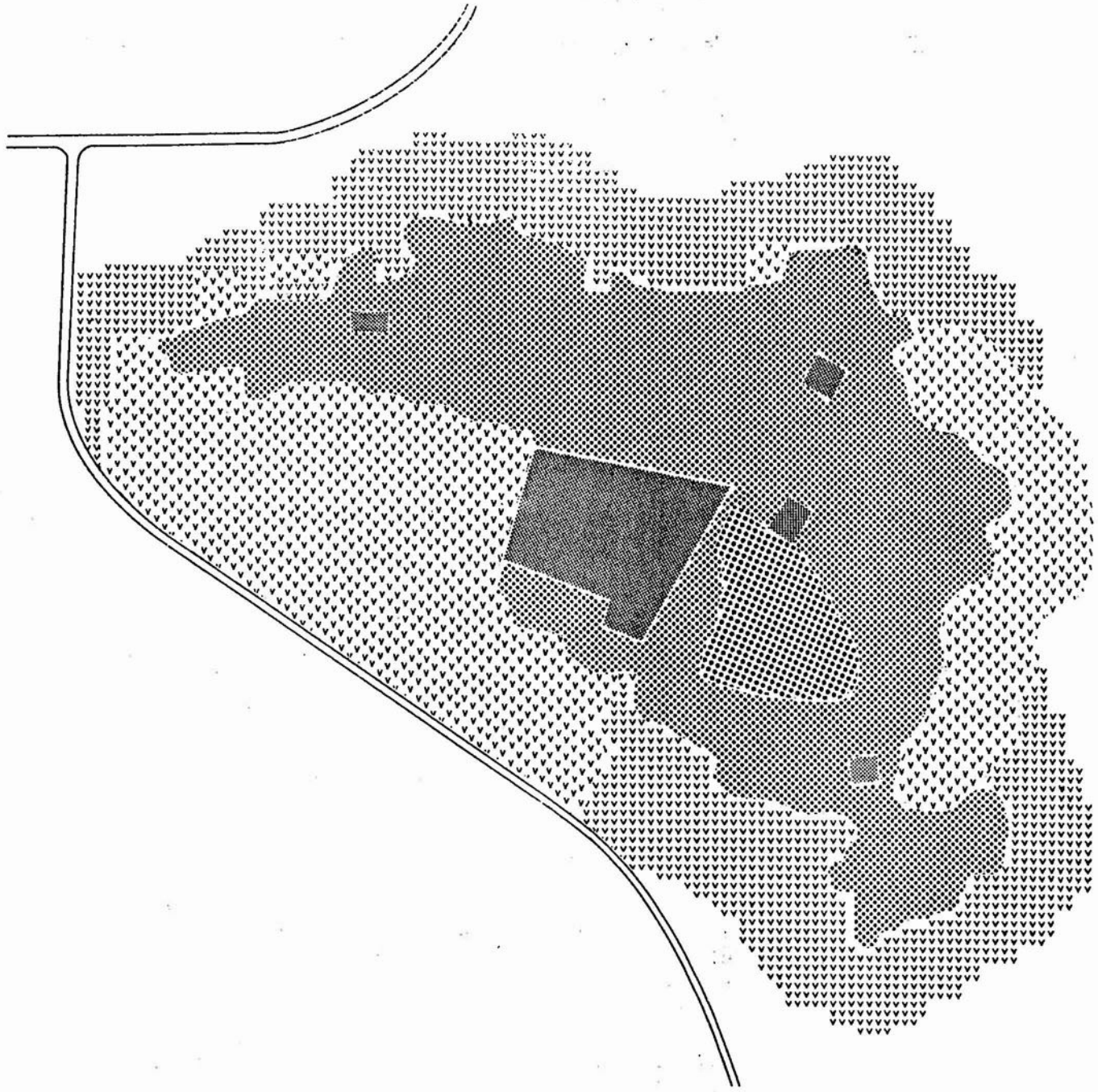
2.28 Zone A is all cultivated land under freehold title, most of it since 1910. (In many cases the landowner rents his fields to a tenant farmer who, under the Land Reform Laws, has perpetual tenancy rights). This land cannot be built upon except to house farm families.

2.29 Zone B is mostly cultivated, either in freehold or hekr leasehold parcel. This area was originally empty Government land and has been subdivided and controlled by the Lands Department. The Lands Department registers all parcels on its section maps and collects rents from the leasees; it also sells parcels. Some of Zone B, although subdivided, is still empty land which has not been either rented or sold. Some small portions of Zone B are built upon, but these are not registered.

2.30 Zone C contains almost all of the existing built-up area of Abu Atwa; built-on plots are either registered hekr leasehold (registered on the rolls of the Land Department but not indicated on the section maps) or unregistered encroachment. Local officials state that, unlike most of El Hekr, a majority of parcels are registered. Zone C also contains some Government land, but only in isolated strips.

2.31 Zone D is all institutional land - the sewerage works, a military installation, schools, mosques, play areas, supply depots, etc..

2.32 Zone E is the cemetery, whose status is defined by law (see Legal Section).



1 : 15,000

0 1 km

ZONE A*

ZONE B*

ZONE C*

ZONE D*

ZONE E*

* see text for explanation of tenure status

Abu Atwa land tenure status

2.5

THE NIFISHA LIGHT INDUSTRIAL AREA

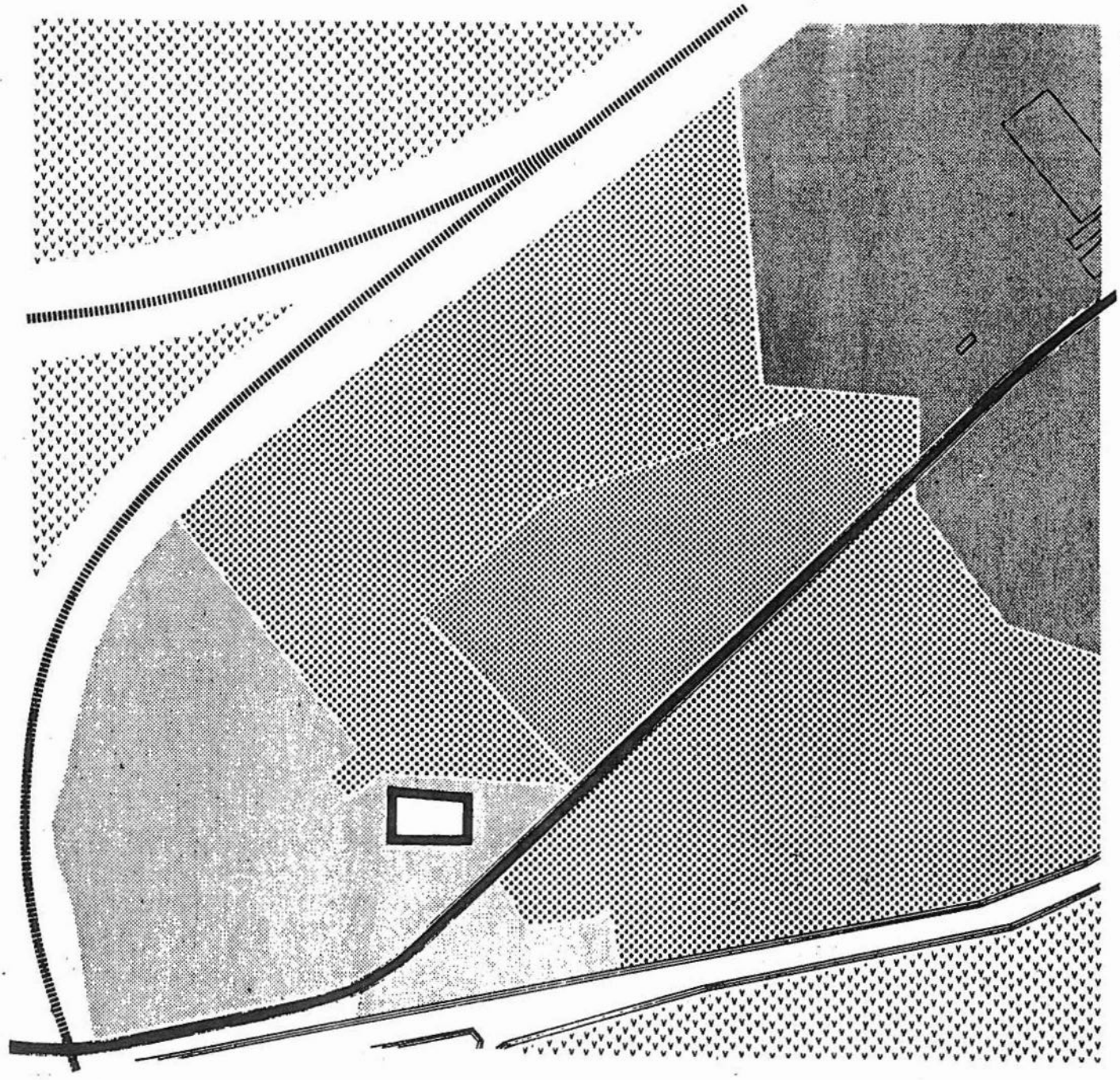
2.33 The Nifisha Light Industrial study area was, prior to the war, irrigated agricultural land. It is now waste-land due to the high water table and accumulated salts in the soil. The study area can be subdivided into four distinct zones of similar tenure status. These zones are shown in Figure 2.6.

2.34 Zone A, the majority of the study area, is under private freehold title. This zone (including zone A1) was sold by the Lands Department as a single block in 1956 (sales no. 1978) to 12 citizens whose names are registered and available. In 1976 the Ismailia Company for Transport purchased a part of this land, some 13 feddans, from these citizens. This parcel is indicated in Figure 4.3 as zone A1. The original intention of the Company was to set up their truck and transport servicing centre. Due to the limited area available and to objections as to the amount of traffic congestion which would result, the Company also purchased some 30 feddans in the Ring Road Industrial Area, and it is understood that this larger site will be their main centre, with some functions located at the Nifisha site. Company officials state that a general service station (also open to the public) and administrative offices might be located at Nifisha, but no final decisions have been made.

2.35 The Consultants were unable to ascertain what, if any, were the intentions of the owners of the remaining private land. It appears that they are holding the land for sale to the highest bidders. Whereas in 1976 the Ismailia Company for Transport was able to purchase their site for LE 1000 per feddan, owners of adjacent land are now asking for 4000 to 5000 LE per feddan.

2.36 Zone B, at the western extremity of the study area, is under Government (Lands Department) control, as it is an extension of the built-up area of Nifisha village. Most of this land is empty, but a school has been built on a small parcel. A long rectangular section (shown as a dotted line in Figure 4.3) has been designated as the site for the 'Irrigation Club' but it is understood that this project is no longer being considered.

2.37 Zone C, at the eastern end of the study area, is under military control as it is an extension of Al Galaa Camp. It is presently only used as a football field.



1 : 5,000

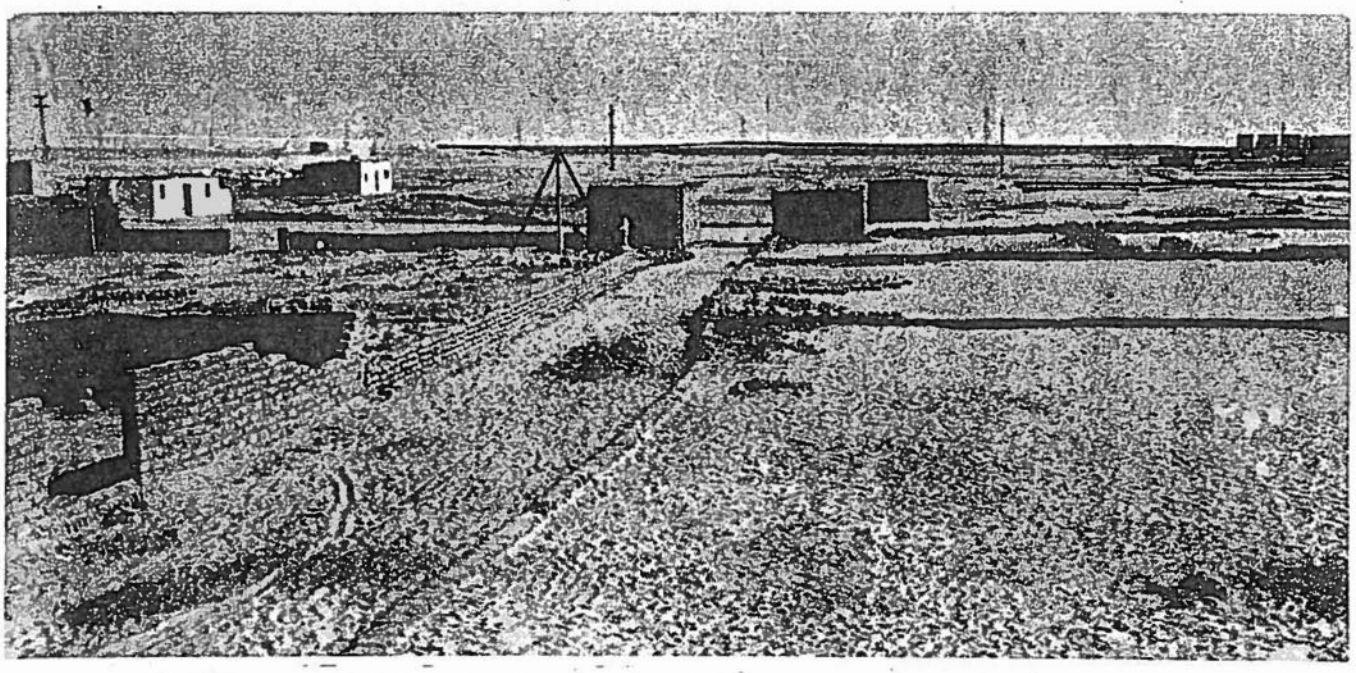
0 300 m

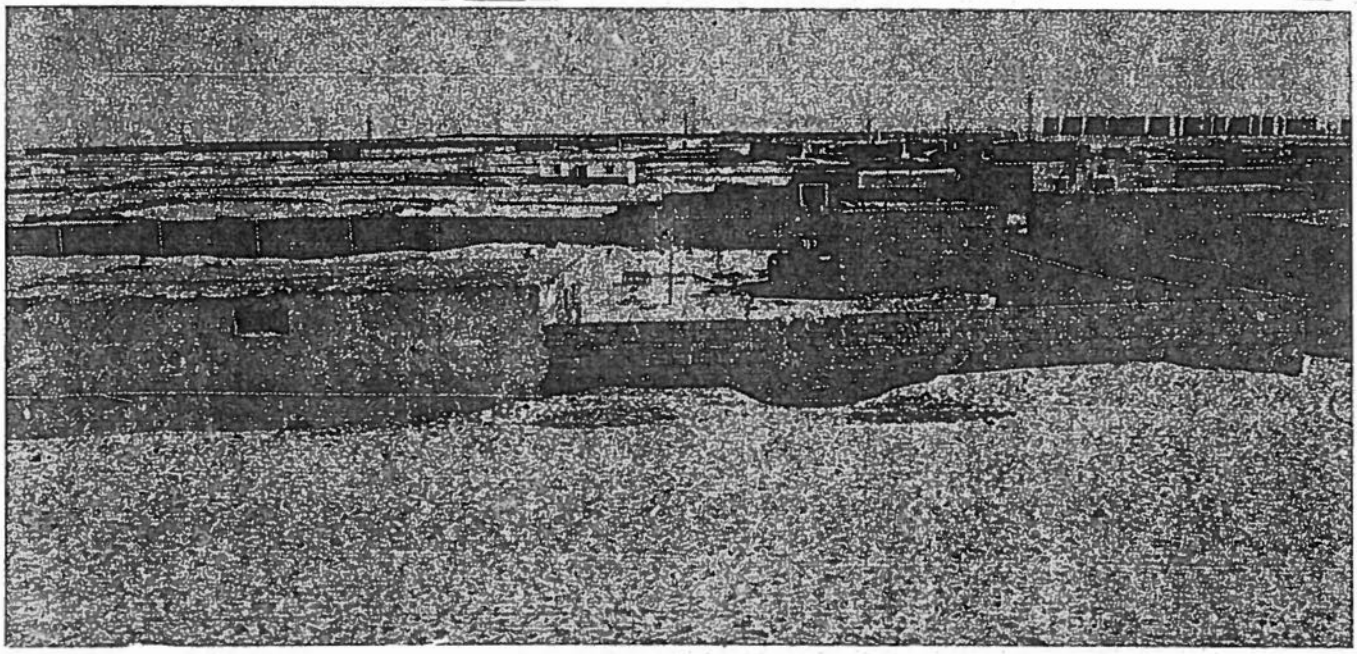
ZONE A*
ZONE A1*
ZONE B*
ZONE C*
SCHOOL

* see text for explanation of tenure status

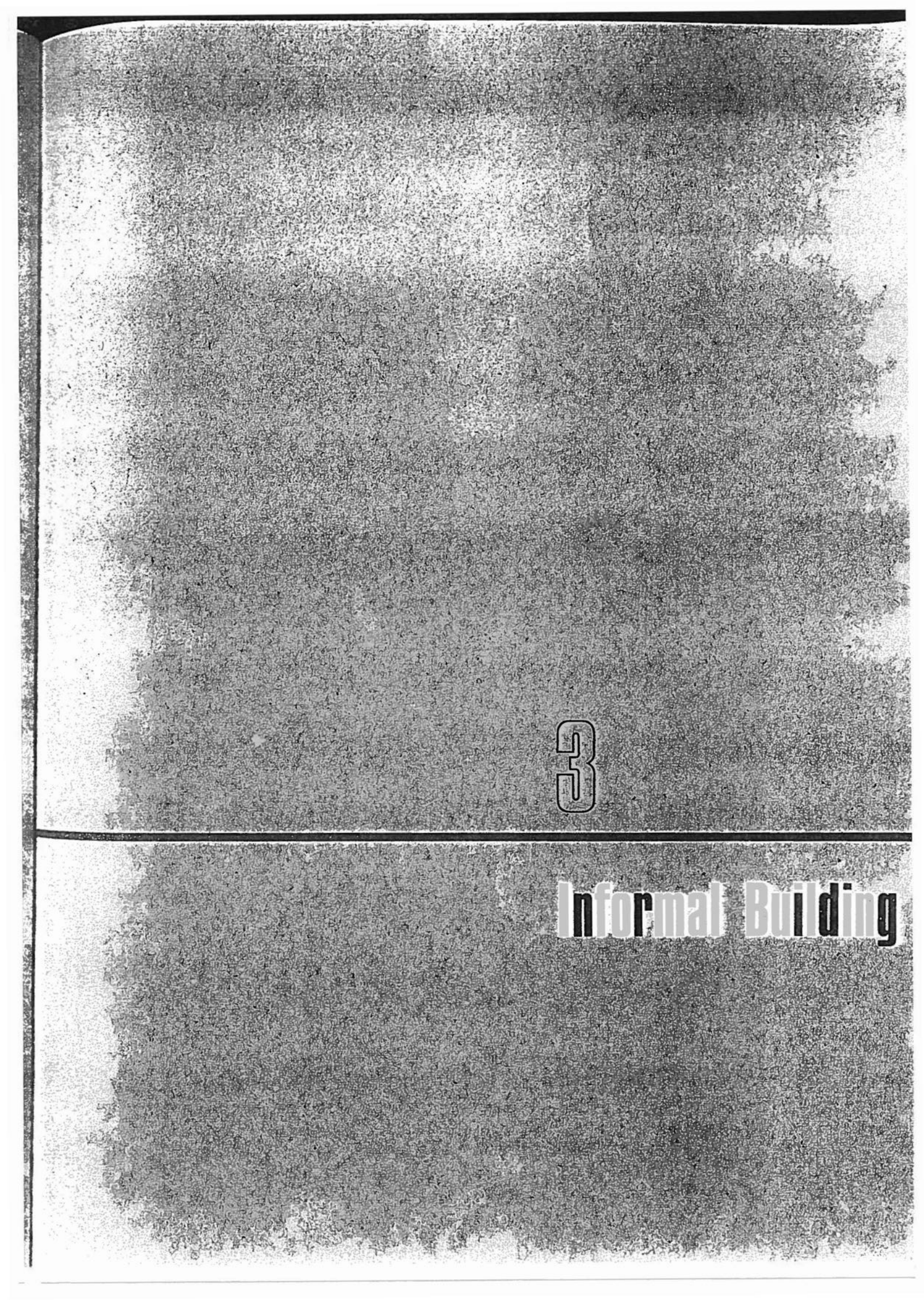
Nifisha light industrial area land tenure status

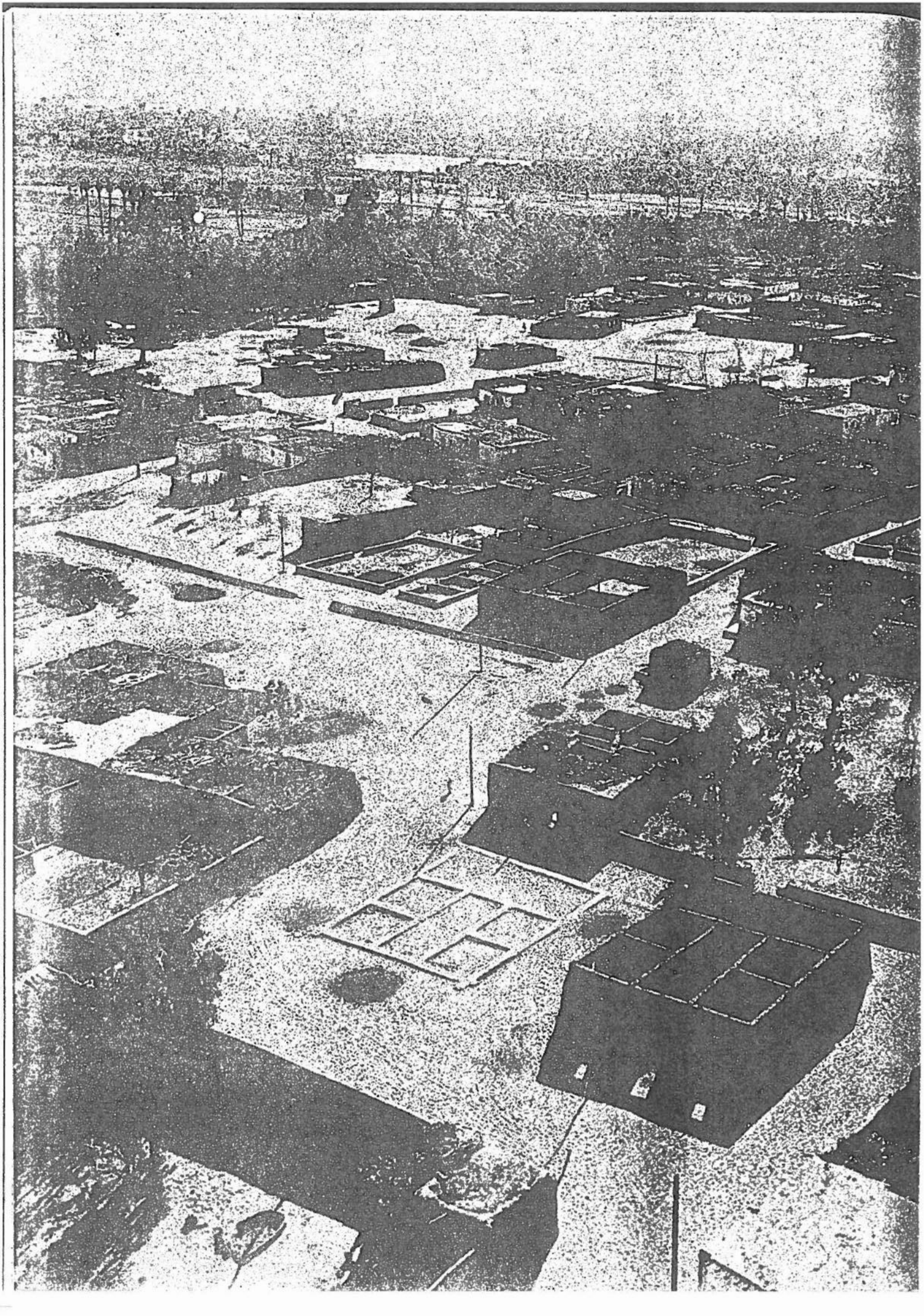
2·6





TOP: Land claims on northern fringe
MIDDLE: Scattered development
BOTTOM: Full development


3
Informal Building



3
Informal Building

3.1 This section provides background information on the informal building system in the Study Areas. Informal building can be defined as all that which takes place outside the formal construction industry. Informal building will normally be carried out by a tradesman/ entrepreneur - with little or no regular staff but using a labour team, or by self help. For some items, such as a concrete roof, the formal industry may be used. Informal building has provided the majority of accommodation in Egypt outside the middle and upper income areas of the main cities, and public housing programmes. It has provided practically all accommodation in El Hekr and Abu Atwa, and is likely to continue to do so. A major advantage of informal building is its flexibility and ability to respond to small scale, incremental demands. This suits a low income client's sporadic ability to pay.

3.2 The contracting industry is described briefly, followed by an analysis of the building material arrays, constraints to their supply, and the means of removing these constraints. Costs of informal construction are, by their nature, difficult to assess accurately, but sufficient information has been collected to give a reasonable basis.

CONTRACTING SYSTEMS IN THE STUDY AREAS

3.3 Two types of contracting system are used in El Hekr and Abu Atwa. These correspond to the types of housing being built and are described briefly below.

SMALL CONTRACTING COMPANIES

3.4 The first system consists of small local contracting companies capable of undertaking the complete construction of buildings. Contracting arrangements usually involve the contractor taking responsibility for all aspects of design and construction for an agreed sum, on completion of which the key is given to the owner and the account is finalised. Contracting companies are

also commonly involved where construction of critical elements, such as concrete roofs, are concerned.

3.5 This system is used for building aimaraas, shops or occasionally houses. Since these only exist in the southern part of El Hekr and in isolated cases in Abu Atwa, it does not at present make a substantial contribution to total building activity, though it may well increase in the future. The type of building involved requires the use of high quality materials and skilled labour, both of which are in generally short supply and therefore expensive. The advantage of this type is its almost unlimited life span given adequate maintenance.

LABOUR TEAMS

3.6 The second and most common system in the Project Areas consists of loosely organised labour teams which are recruited locally. These consist of mostly unskilled labourers employed on a labour only basis to help a family construct or extend its own house. A team will usually be led and organised by a skilled and experienced tradesman. Contracting can be arranged in a number of ways but the most common is at an agreed sum according to the volume of wall to be constructed.

3.7 Labour teams are used to construct traditional mud-brick or rammed earth buildings, though they are occasionally employed to construct modern structures. The ability of labour teams to respond effectively to the demands of small scale operations and to provide employment for local unskilled labourers in addition to their relative low cost, all help to explain their popularity. Whilst they satisfy a different section of demand from the more organised contracting companies and are considerably cheaper, they can nonetheless be affected by periodic shortages of labour and materials causing increased costs. In Ismailia, such buildings may last years if carefully maintained.

BUILDING MATERIALS USED IN THE INFORMAL BUILDING SECTOR

3.8 Building materials used in El Hekr and Abu Atwa and throughout the informal building sector in Ismailia can be classified by arrays or mixes which range from the cheapest building solution to one which approximates the higher standards of the formal sector. The following three array classifications give an idea of this range, but an individual building may be built with a mix of materials from different arrays, and since most building is incremental, different rooms or sections of a house may represent different arrays (the variety of building materials used in existing buildings of El Hekr and Abu Atwa can be seen from Figures 1.10 and 1.11 in Volume 3).

1. MUD BRICK ARRAY (Normally One Storey Maximum)

Foundations: Large mud bricks in excavated trench.
Walls: Mud brick (6x12x25cm) with earth mortar, 30-40cm thick.
Roofing: Split palm or other local wood beams, overlaid with one or two layers of woven matting and topped with 10-15cm layer of mud and straw.
Floors: Beaten sand or cement/sand screed.
Rendering: Mud plaster with whitewash inside and out.

Doors and Windows: Wood, usually recycled, little use of glass.

2. INTERMEDIATE ARRAY (Normally One Storey Maximum)

Foundations: Same as above or red brick chips and cement.
Walls: Cement and sand block made on site, mud or cement mortar; some use of red brick with cement mortar for thin (12 or 24cm) walls.
Roofing: Imported wood beams, with same overlays as above.
Floors: Concrete floor with topping of cement screed, usually 25cm thick overall.
Rendering: As above, but with more use of cement-sand mortar.
Doors and Windows: Wood, either recycled or new.

3. RED-BRICK ARRAY (Normally Three Storey Maximum)

Foundations: Salvaged red brick and cement or limestone.
Walls: Red brick (6x12x25cm) with cement mortar, usually 40cm thick depending on bearing load.
Roofing: As above until additional floor added; then reinforced concrete @ 40kg/m3 of steel.
Floors: Concrete floor with sand topping and cement tiles.
Rendering: Gypsum or lime plaster and whitewash or oil paint inside; outside usually given a brown coat or left bare.
Doors and Windows: Imported wood, some use of iron frames, and glass.

3.9 What should be apparent, as one progresses from the cheapest to most expensive array, is the sharply increasing use of cement and red brick, and a decreasing use of purely local materials such as mud, sand, wood beams and woven mats. Also, as one progresses towards the full red-brick array there is an increasing need of local contracting and building skill. In all arrays the building process is incremental, thus only small quantities of materials are required at any one time.

PRESENT CONSTRAINTS IN THE SUPPLY OF BUILDING MATERIALS IN ISMAILIA

3.10 The main constraint on informal construction is the adequate supply of building materials, this is exacerbated for informal construction by Government control and rationing of cement, steel, wood and glass. Without a building permit (which is impossible without freehold title to the land and in any event requires a level of design and documentation which is extremely difficult for the informal, incremental builder) these items cannot be obtained except through the black market, which presently runs up to 200% higher than the official price for cement, 25% higher for steel, and 25% higher for wood. Small amounts may be obtained at official prices under the 'repair' routine, but this too requires documentation and delays and, not infrequently, favouritism.

3.11 Controlled materials are distributed at the Governorate level by the Housing Directorate, which divides its monthly allotment (decided at the national level by the

MHR) proportionately to licensed distributors. Obtaining a license to distribute is difficult, and the licensed distributor can only sell a controlled material to designated buyers who have completed all the necessary bureaucratic steps.

3.12 Although the Government is making efforts to expand production of controlled materials, in the short term there will be a permanent shortage at the national level, thus informal builders in Ismailia will continue to be severely disadvantaged, particularly with regard to cement.

3.13 With non-controlled materials, and specifically with red brick (which, along with cement, is a key item), Ismailia is disadvantaged by not having any significant local production. Thus transport (and the unavoidable breakage) is a heavy cost. Furthermore, this means that Ismailia must compete in the Delta region market for red bricks, and this is a market under severe pressures due to the enormous requirements of Cairo. The price per thousand bricks is reported to have risen, in the last year, from 17 to 21 LE.

3.14 At the local or city level there are indications that the price of mud (taken from canal banks, fields and certain clay deposits in the desert) is rising, making full price of mud bricks rise to 8 LE per thousand (including transport and labour). Certainly the transport and labour costs have risen, inflating the price of mud bricks made by contractors. Transport costs (for mud and sand, at 1.25 LE per m3) are a significant element of total costs in Abu Atwa, and lesser so in El Hekr where sand is plentiful and some clay deposits are found on site.

POSSIBLE PRACTICAL APPROACHES TOWARDS REMOVING CONSTRAINTS IN THE SUPPLY OF BUILDING MATERIALS

3.15 The development programmes for Abu Atwa and El Hekr are likely to increase sharply the level of building activities in the informal sector in Ismailia, particularly during the next five years. Thus the sources of materials are going to come under even greater pressure than at present, and this could lead to inflationary trends which might put the cost of building out of reach of a significant proportion of the existing and target populations of El Hekr and Abu Atwa. Thus it is important to investigate possible ways of increasing availability and freeing distribution. This is done in the following paragraphs; the results of this excercise form part of the proposals presented in Volume 1, Section 8, Implementation and in the subsections of Volume 1, concerned with industry.

3.16 For controlled materials, particularly cement, only an administrative solution will help in the short term since national/regional production is not able to expand enough to overcome shortages (the cement factory in Suez will not reach full production before 1980, and even then it is doubtful that it will positively affect supply in Ismailia). The most practical approach is for the Project Agency (see Volume 1, Section 8) in El Hekr

and Abu Atwa, as a government body, to liaise with the MHR and the Housing Directorate of Ismailia and promote the following arrangements, at least for cement.

a) The licensing of three official distributors in each area.
b) The upping of the monthly quota for Ismailia, with specified amounts earmarked for the projects.
c) The institution of a programme whereby settlers holding contracts in the project be allowed to buy a specified annual quantity (say, for cement 1000 kg) at official prices under a modified 'repair' application routine.
d) That this routine be simplified by the project agency so that necessary documentation is kept to a minimum; specifically, the agency may issue and endorse a booklet, upon which the Housing Directorate can record the purchases of the settler, so that it is clear whether or not he has claimed his annual allotment.
e) Such a system will require the approval and co-operation of the MHR and the Housing Directorate; the main difficulty will be acceptance of the idea that materials are being distributed for construction which is not 'up to standard', ie., not fully under the building regulations. It is hoped that this objection can be overcome by showing that the conditions of contract specify an acceptable standard of building, and that the Project Agency engineers are actively assisting the settlers.

3.17 Under a dual market system with widely differing prices it is practically impossible to avoid 'leakage' of officially obtained materials into the black market, for instant profits are to be had. A settler who, wishing to sell his cement acquired under the system proposed above rather than build with it, cannot be stopped. However, since all cement on the black market is leaked from official projects (it is estimated that a contractor can sell off one to two tons of cement per economic flat unit built*), one can say that this is a practice which, if not condoned is tolerated.

*MOHR/USAID Joint Report Draft, May 1977, P.49

3.18 A variant of the system proposed above can be applied to those producers of building materials (cement block, cement tile, and windows and doors) which require inputs of controlled materials. As is discussed in Volume 3, Section 4, it is proposed to allocate space in El Hekr and Abu Atwa for these enterprises, and the proprietors could, with Project Agency endorsement, be alloted monthly quotas of the necessary inputs.

3.19 With uncontrolled materials, the greatest need is for a greater supply of red brick or red brick substitutes. It can be expected that more and more settlers will be choosing red brick over mud brick for its many advantages. What is needed is the establishment of a large capacity red brick or sand brick factory in or near Ismailia (necessary inputs for both products are found in abundance locally), coupled with a system of transport which uses idle truck capacity during slack agriculture periods. Unfortunately these projects require efforts which are beyond the scope of the Demonstration Projects themselves and can only be

suggested. What is possible is for the Project Agency in El Hekr and Abu Atwa to set aside relatively remote areas of the sites for the temporary operations of rural brick kilns. These kilns require practically no investment and can produce bricks at competitive prices which, because they would be on site, would minimise transport costs and breakage. One firing of these kilns produces between 15000 and 25000 bricks and can be operated by 2 to 3 persons. If necessary the project agency could contact and sponsor experienced farmers (most of whom are in Upper Egypt) to set up in Ismailia.

3.20 On a more general level, there are many opportunities for improving the technologies of production and use of building materials in the informal sector. Roofing, in particular, could be improved and made cheaper by the introduction of precast, vibrated concrete panels and beams. The use of hollow and serrated red brick, or various asbestos cement blocks could lighten structures and reduce costs. However, these innovations must be experimented with and sponsored at the national level; the scale of the Demonstration Projects in Ismailia unfortunately is insufficient to initiate these operations. Yet the Demonstration Projects, once underway, would be appropriate places to introduce and monitor, on an experimental basis, any innovations under testing by national authorities.

COSTS OF INFORMAL CONSTRUCTION

3.21 The costs of informal construction vary widely depending on the home builder's approach (the degree to which he uses contracting services and his sources of labour), the transport cost element in obtaining building materials, site constraints, and the standards of construction chosen. Thus accurate estimates of costs in the informal sector are unattainable; nevertheless the following ranges, expressed per square metre of net usable space and related to the three building materials arrays described above, have been calculated.

Table 3.1
COSTS /M2 FOR INFORMAL CONSTRUCTION

Type	Cost /net m2 (1977 LE)
Mud brick array	5-8
Intermediate array	10-14*
Red brick array	17-21*

*These arrays occasionally include an allowance for the installation of utilities such as electrical wiring and water piping

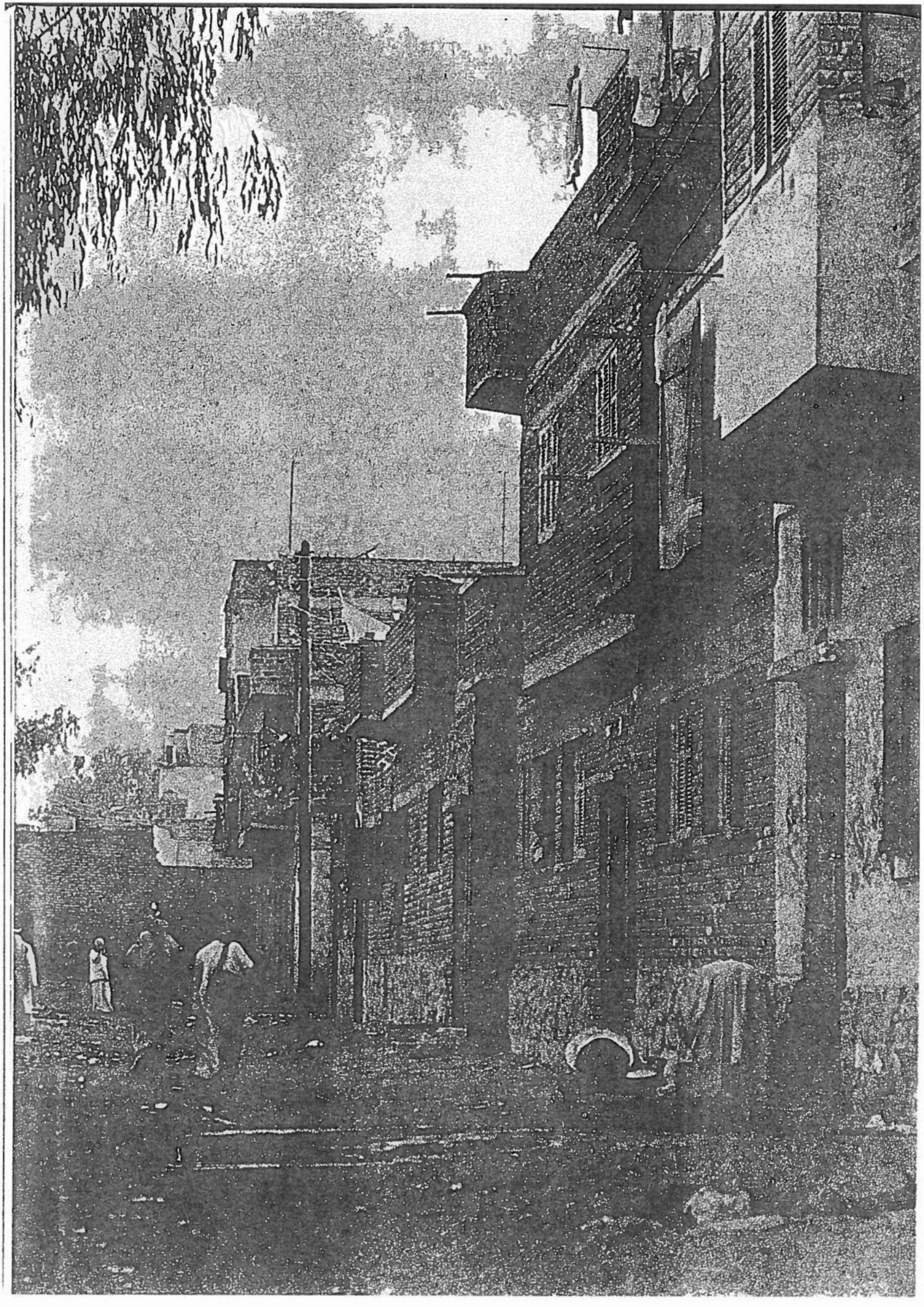
These figures have been based on (1) element costs and charges quoted by contractors in the informal sector and (2) actual completed costs as expressed by home builders in the social surveys and case studies in El Hekr and Abu Atwa, with emphasis on recently completed units. The estimates have been used in the analysis of affordability presented in Volume 3, Section 9.

Formal contractors in the local private sector indicate a minimum rate per square metre of 40 LE, but for popular five storey walk up housing complete with finishes and services a rate of 55-65 LE m2 is more usual; public sector contractors rates for this type of work could be 15-20% higher. Thus, though a higher quality product would be expected from the formal sector, the informal sector has the ability to provide shelter at considerably lower costs.

3.23

4

Housing



4
Housing

4.1 In the Master Plan proposals for housing in Ismailia, the Consultants placed considerable emphasis upon the need to support, strengthen and rationalise the city's existing systems of housing provision. These were shown to have developed a range of housing types to meet different patterns of demand in ways which were economically efficient, socially acceptable and responsive to changes over time. This section therefore contains evidence on existing housing types, localities and demand patterns which are of particular relevance to the Demonstration Projects. This is followed by a brief analysis of the most effective basis for detailed proposals.

HOUSING SYSTEMS AND MARKETS

4.2 Information on the nature of existing housing systems and markets in Ismailia has been obtained from four principal sources as follows:-

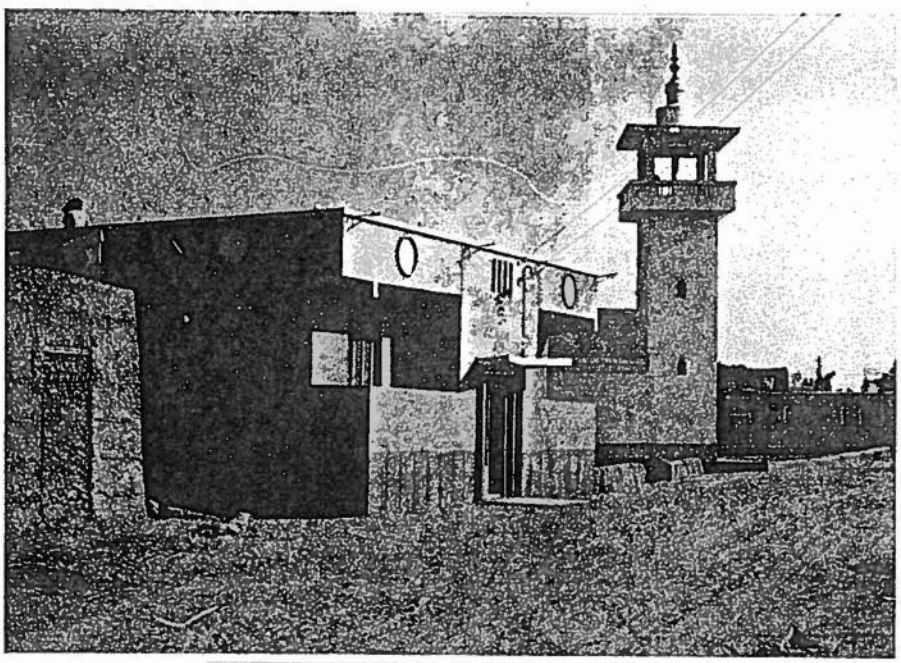
i) The Master Plan Study of 1975.
ii) The scanning survey of Abu Atwa and El Hekr undertaken in 1977.
iii) The detailed improvement area survey in Abu Atwa and El Hekr, also completed in 1977.
iv) Individual case studies in both study areas undertaken during 1977.

HOUSING TYPES

4.3 The Master Plan study identified four basic housing types; individual houses, rabaas, aimaras and public rental housing. In order to assess the contribution of housing supply made by each type, a brief description of their physical and user characteristics is necessary. The contribution of each type to total housing supply is then indicated.

Individual, Mainly Single Family Houses

4.4 These are the most common form of housing in Ismailia and are found in all residential sections of the city,



Modern single family house in Abu Atwa

though not always in the same proportion. They range from incipient dwellings of two rooms in outer areas to large houses in the more established parts of the city. Building materials are predominantly of mud-brick or rammed earth, though more durable materials such as concrete blocks, red brick and reinforced concrete frame structures are also common. Examples of this type can be seen in Figure 4.1.

4.5

Construction of houses is usually incremental with extensions and improvements being made as household resources permit. Analysis of user characteristics for this type of housing has shown that a high proportion of household heads are first generation immigrants to Ismailia. Average household size is 6.15 for owner-occupiers and 6.4 for renter-occupants in the Project Areas. Analysis of occupational patterns revealed an equal division of government and private sector employment in the former group and a predominance of public employees in the latter.

Rabaa with courtyard in Abu Atwa

4.6 Evidence from a number of sources indicate that insecure tenure and the lack of cheap building materials and accessible sites act as a severe restriction on the efficient supply of this type of housing.

Rabaas

4.7 These are a self financing form of housing offering low-cost, low-standard accommodation for a relatively transient population. They are located in different sections of the city, with the strongest concentration in Manshaat Shohada and other poorly serviced areas. Building materials range from mud-brick or rammed earth to brick and concrete and are generally similar to other buildings in their locality. An example of this type is shown in Figure 4.1.

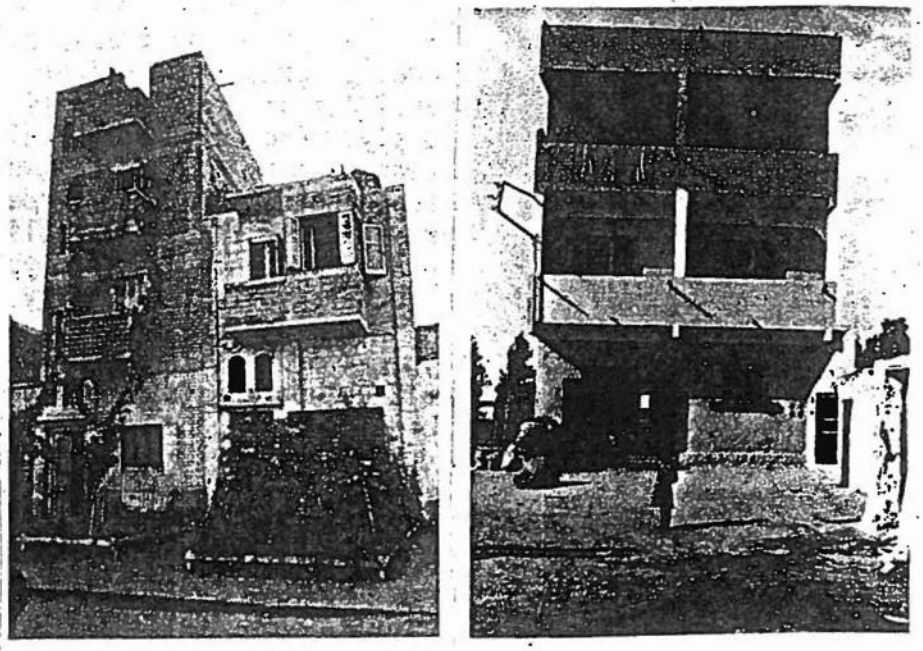
4.8 The dwellings themselves are usually arranged around a courtyard or along a passageway in which utilities are provided for common use. They consist most commonly of only one room, but some two or three roomed units are found, giving an average of 1.7 rooms per dwelling.

4.9 Analysis of user characteristics showed that family heads had either been born in the city, or had lived there for at least thirty years. Occupations of rabaa tenants showed a lower level of skill and job security than observed in households occupying individual houses, and household incomes were lower, ranging between LE11 and LE50 per month with an average of LE27. A marked distinction existed, however, between income levels for rabaa owners and tenants; data for the former showed an average of LE42, whilst those for tenants averaged LE21.

4.10 Evidence from a number of survey sources indicated that the supply of this type of housing is being restricted by insecure tenure status of owners and the difficulty of obtaining cheap building materials.

Aimaras

4.11 These comprise small blocks of flats, from three to five



Aimara development in El Hekr

storeys, and with one or two self-contained units on each floor. They are located in the urbanised private residential parts of the city particularly Abhasa, Mecca and Arashia. In recent years, they have also developed in El Hekr, El Batini and the rural towns near Ismailia. As a more developed form of self-financed housing than rabaas, they are well suited to high density urban development characterised by mixed land use. They therefore also offer good access to public and commercial facilities. Construction materials are invariably load-bearing brick walls or reinforced concrete frame with brick infill; no examples have been found with more traditional materials. An example is illustrated in Figure 4.1.

4.12 Utilities provision is generally of a higher standard than that found in either rabaas or low-income individual houses, and the majority of aimaras have a private water supply and water closet connected to the city sewerage system. Construction methods commonly involve a number of building stages as additional floors are built.

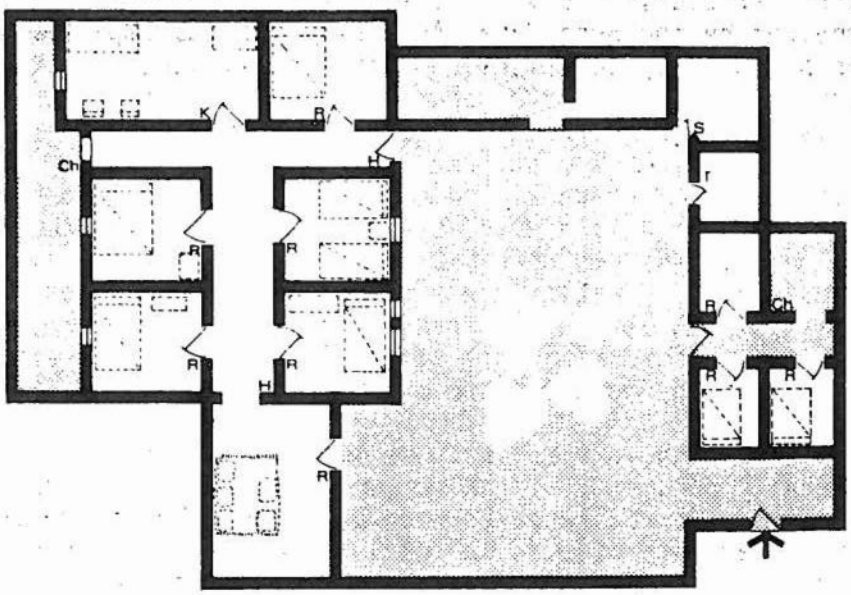
4.13 Analysis of user characteristics indicated a similar length of residence in the city to that found in rabaas, whilst average household size averaged 6.6 with an observed range between four and eleven. Occupational patterns revealed a distinction between aimara owners and renters with the former equally distributed between non-manual skilled and unskilled categories, and the latter between skilled manual and professional categories. Tenant incomes averaged LE46 per month and were higher for owners, though this gap was reduced in more developed localities.

4.14 The application of rent control legislation has served to discourage further construction of this type of housing and reduce residential mobility out of it into other housing types, therefore severely restricting its supply.

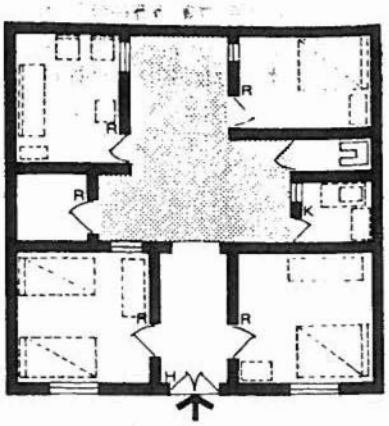
Public Rental Housing

4.15 This type of housing is provided in Ismailia either by local government itself or by agencies such as the Suez Canal Authority. It constitutes 10% of total housing supply. Projects are normally located in outer urban areas such as Abu Rackham where they occupy large land areas and exclude other types of housing. As such they provide poor access to public and commercial facilities and are the only housing type to exclude the existence of others in their locality.

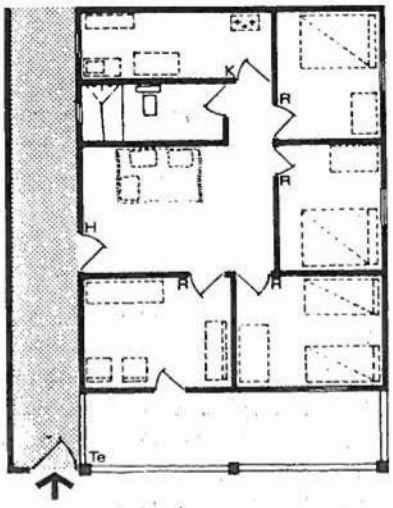
4.16 Typical schemes involve four to five storey blocks of walk-up apartments, usually built with a reinforced concrete frame and with brick or stone infill. Individual apartments are of two or three rooms and frequently include private or shared use of an outdoor balcony. Dwelling sizes commonly range from 30 to 50 square metres. Standards of utilities provision are uniformly high throughout and all dwellings have a domestic supply of water and electricity as well as a direct connection to the city's sewerage system.



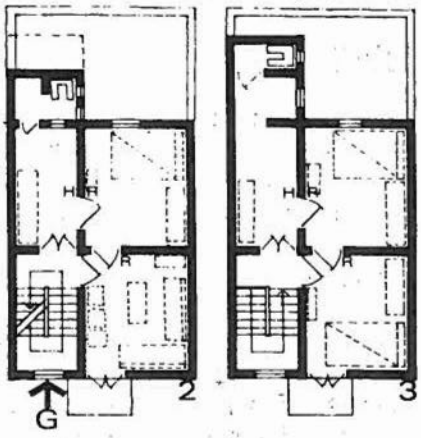
Rural traditional



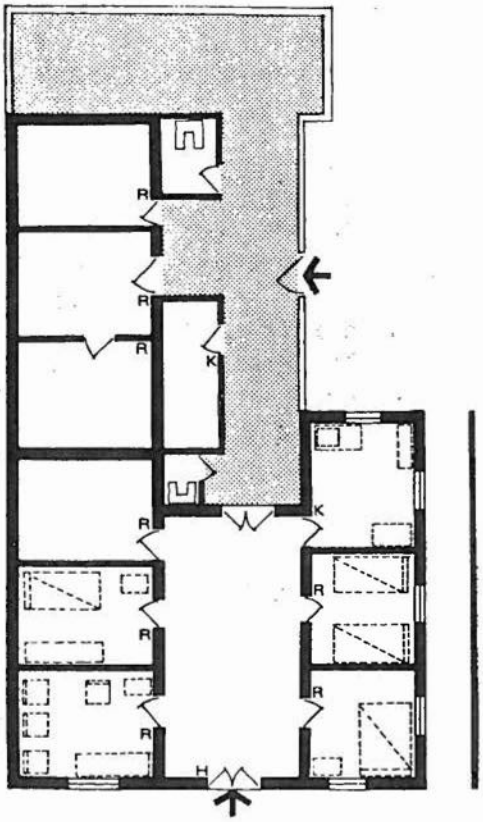
Single family traditional



Single family modern



Aimara (apartment block)



Rabaa (tenement)

1:200

0 10 m

OPEN AREA COURTYARD

H HALL

R ROOM

K KITCHEN

Te TERRACE

Ch CHICKENS

T TOOL STORE

S SEED STORE

ACCESS POINT

Housing types

4.17 User characteristics vary to some extent between housing provided by the Suez Canal Authority for its employees and by the City Council for general public use. In the former, housing is regarded as a fringe benefit, and rents ranging from LE1.30 to LE4.40, are tied to conditions of employment and taken into account in settling wage and salary levels. In other public schemes, rents are slightly higher, but tenure is not tied to employment, so that once assigned it is secure and even transferable. The low rents and high standards provided makes this an attractive form of provision for users. Competition for it has not surprisingly led to illicit payments being made to obtain tenancy.

4.18 Average household size in those surveyed was 5.8 and generally consisted of nuclear units. Incomes covered a relatively narrow range between LE50 and LE80 per month with an average of LE70, a level higher than even house-owners average incomes in the other types studied. Although public housing is officially accessible to any household with long residence in Ismailia and evidence of housing need, all those surveyed were public-sector employees. The high costs and extensive subsidies involved in this type of housing ensure that its supply is extremely limited.

Comments

4.19 In understanding the contribution to housing supply made by the above types, an important distinction needs to be made in terms of tenure status; ie., owner (whether of freehold or hekr leasehold), and renter.

4.20 The cheapest form of entry into the house ownership category is through the incremental construction of an individual house unit on unserviced and cheap land near the edge of the city. The opportunity which this type provides of enabling occupants to relate their expenditure to their economic resources and other priorities, together with its de facto security of tenure, make it an attractive option for many households. It has also enabled them to improve and expand their houses over time, so that they are gradually transformed into rabaas or aimaras, providing a supplement to household incomes and a valuable increase to the stock of rental accommodation. It also explains why this is the most common type of housing in the city. In the more developed parts of the city, in which improved access to public and commercial facilities is matched by higher levels of utilities provision, the costs of entry into ownership status are significantly higher and access for low-income housholds is correspondingly more difficult.

4.21 Rental accommodation is found within all four housing types and can be divided into five categories, as follows:-

a) Housing of very low cost and quality in unserviced, outlying areas of the city. These are normally rooms made available within individual family houses, but are occasionally rabaas. This provides one of the cheapest forms of rental and also forms a first stage in the

gradual transformation of houses into rabaas or aimaras.

b) Housing of low cost and lower standards located in the central or inner areas of the city. The availability of good access to public and commercial facilities gives this type an advantage over the previous one, but this is balanced by the low-level of hygiene and high density. Housing of this type is almost exclusively in rabaas. Key money is sometimes required by outgoing tenants.

c) Housing of moderate cost and standard on the edge of the central city. This usually consists of aimaras in the more urbanised localities, complete individual houses in more outlying locations or apartments added to single family houses. Utilities standards range from poor to moderate according to the degree of development of the area, but dwelling space standards provide a marked improvement over the previous types. Key money is often required by outgoing tenants.

d) Housing of moderate to good quality in the urbanised residential areas. This generally consists of aimaras with full utilities provision to individual dwellings. Since this type of housing is commonly registered, it is subject to rent control legislation, thereby making it even more attractive to potential tenants. As a result, key money is commonly paid to obtain a tenancy and, once assigned, is rarely made available again. The supply of this type of housing is therefore limited.

e) Public housing apartments form the final group. As discussed previously, their high utilities standards combined with substantially subsidised rents, makes this an attractive option for long term residents of the city or public sector employees. Its high cost, however, has made it impossible for this type to contribute more than approximately 10% of housing supply in the city, and make it unlikely to be a significant future source.

HOUSING LOCALITIES

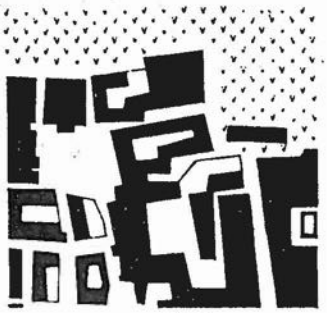
4.22 The Master Plan study identified six locality types within Ismailia. (See IMP Volume 8, Pp. 26-27). These were as follows:-

i) Customary rural settlements.
ii) Planned rural settlements.
iii) Customary urban settlements.
iv) Unplanned progressive urban settlements.
v) Planned progressive urban settlements.
vi) Public housing schemes.

The types relevant to the Demonstration Projects are described below:-

Customary Rural Settlements

4.23 Abu Atwa is an example of this locality type in transition. Located on an island of higher ground surrounded by fertile agricultural land, it originally consisted of three settlements which have now become physically integrated. The majority of agricultural land is under freehold tenure whilst plots for housing are pre-



4 Hectares

dominantly hekr leasehold. Buildings are almost completely traditional in form and built of mud-brick or rammed earth. Densities are generally low except in the central area where buildings are close together.

The area is linked to the city centre by taxis and a regular bus service. This, and the availability of land for house construction or of completed houses for purchase or rent, has attracted many new settlers to the area in recent years. As a result, Abu Atwa is in transition between a customary rural settlement and an unplanned progressive urban settlement. Since it lacks any existing clearly defined street layout for new development to relate to, there is a danger that further unplanned growth could lead to an inefficient use of land and the inability to be further improved towards the status of a planned progressive settlement. Lack of careful planning could also lead to speculative pressure on the adjacent agricultural areas. The aim is to develop Abu Atwa to become a combination of types ii) and v).

Unplanned Progressive Urban Settlements

4 Hectares

El Hekr is a good example of this type and is the cheapest place in Ismailia for obtaining one's own house. Although much of the northern part of the area is not transitable by vehicles because of the soft sand, the opportunity for house ownership has attracted settlers ever since 1937. The layout adopted by local residents provided wide and fairly regular routes for future streets. As the area has expanded northwards, however, this pattern has become less clear. Levels of utilities provision are low and water supply is limited to public taps in the south of the area. Sewage disposal is by pit latrines on house plots.

4.26 The older part of El Hekr to the south contains a majority of single family houses, but there are a large number of plots on which these have been gradually transformed into aimaras or to rabaas. This area has become as fully developed and urbanised as the adjacent locality of Arashia. A similar process can be observed along some of the main local roads going northwards and these contain houses in earlier stages of development towards rabaas. Many of these are houses containing rooms for rent. Further north, however, dwellings consist of single family houses at early stages of development and these are usually mud-brick structures built at low density.

4.27 The range of housing types which El Hekr provides, enables it to respond to the varied needs of low-income households, though there is an increasing shortage of cheap rental accommodation and land for new housing is either at a great distance from the city centre or is relatively expensive. The lack of security, credit and a supply of cheap building materials, make it increasingly difficult for the area to absorb population increases at low cost levels.

4.28 The contribution which they were already making in housing provision for low income households and the chances for successful improvement which they offered, led to El Hekr

on building in several stages. They can generally afford full utilities provision.

4.34 (iv) Low to moderate income households experiencing or expecting an improvement in their status. These constitute approximately 4% of the population in El Hekr and 2% in Abu Atwa. They are generally the owners of consolidated houses, rabaas or even aimaras or are capable of achieving this status. Such households normally employ either a group of skilled workers or a contractor and possess or can pay for all main utilities.

4.35 (v) Moderate to high income households. No examples of this category were found in the Project Areas and it is not anticipated that they represent a section of future demand except in specially designated 'concession' areas. Such households are able to employ an architect or contractor to design and build a fully serviced house of high quality. As a category it represents a small proportion of existing and future demands.

Comments

4.36 As the scanning surveys and case studies have shown, most families have represented different types of demand at different stages of their family history. Except for some established families in customary rural settlements like Abu Atwa, all households who are now owner-occupiers have gone through the stage of renting low-cost accommodation.

4.37 This initial type of housing, although of poor quality, has been extremely important for all such households as it has permitted them to establish themselves in the city and acquire the necessary capital to obtain a house of their own. On crossing this threshold, most households have then gradually improved and expanded their dwelling until such time as they were able to provide rental accommodation themselves. As discussed previously, the first stage in this process usually involves additional rooms in the family house, but some eventually progress to constructing rabaas or even aimaras. In the absence of external distortions, and assuming a continued supply of cheap land and rental housing, this self-regulating process of matching supply to variations in demand has served the city well and permitted households to move from rental to ownership housing as their needs and resources permitted.

4.38 In a society characterised by large income differentials it is, however, a system with limitations, inequities and malfunctions. Under strong urbanisation pressure, shortages of building materials, lack of surveyed plots with secure tenure, complex and costly permit procedures and disincentives against investment in rental housing, the system has begun to break down. This has given, as a result, the present shortages in the low-income housing markets, of both ownership and rental housing.

4.39 Just as the availability of both major options provided a positive basis for this self-regulating system, so shortages have become mutually reinforcing. The lack of appropriate plots and facilities for constructing

new housing has prevented renters of low-cost dwellings from moving to their own housing and vacating their accommodation for new households. At the same time, the costs and difficulties of constructing new low cost rental dwellings and the disincentive of rent controls combine to keep supply limited, whilst demand increases rapidly. The consequence is a rapid increase in prices of unregistered rental units and key money payments in the rent controlled ones. Both are expensive for low-income renters and delay the growth of savings necessary to initiate the construction of their own dwellings. Similarly the slower rate of construction and improvement of new areas is in turn delaying their potential to supply new rental accommodation.

4.40 One response to the lack of secure building plots is the development of unplanned new settlements which are often in conflict with the planned land uses. The lack of secure tenure and long distances from services in these areas has resulted in slow rates of improvement.

4.41 The Governments' construction of public housing was partly an attempt to compensate for the breakdown of this traditional system, but it has only proved capable of meeting a small fraction of demand and to do this at excessively high cost.

4.42 The alternative strategy proposed by the Master Plan is to base housing policy on strengthening, supporting and rationalising the traditional housing supply system. By establishing a framework within which surveyed land can be provided to keep pace with demand, the Demonstration Projects are proposed to form the first step in this direction.

ECONOMIC CONSTRAINTS

4.43 The analysis of economic constraints affecting the Demonstration Projects has been based upon the identification and evaluation of supply and demand factors. This section therefore discusses these in turn.

SUPPLY FACTORS

Land

4.44 This is discussed in detail in Volume 2, Section 2. In the present context, it is sufficient to note that unlike most cities, where there is a shortage of cheap sites for low-income house building, Ismailia is fortunate in having large undeveloped areas on the urban periphery which are available for new development. The majority of these areas are presently held in hekr leasehold or are unclaimed. They are, however, unserviced and provide poor accessibility to public services or the city centre. Serviced and more accessible sites are in relatively short supply and are consequently more expensive, putting them generally out of the reach of low-income households.

4.45 The Demonstration Projects are intended primarily to facilitate the provision of surveyed, secure plots in sufficient quantities to prevent increased costs or

speculation. In addition, by providing transitable roads in new areas, accessibility will be also increased, so that outer urban areas can be expected to become more attractive. To ensure that plots are available to low-income households and do not enter a speculative market, the Consultants propose a form of tenure which provides the opportunity of freehold at a future date calculated to discourage higher income group participation.

Building Materials

4.46 The Master Plan study identified two main categories of dwelling construction; the 'mud-brick array', and the'red brick array'. These together with a third category called the 'intermediate array' are described in detail in Sec. 3.

4.47 The first of these, almost exclusively, uses local materials, such as mud, sand and timber, all of which are readily available, relatively cheap and less subject to inflationary costs. Only door and window joinery and cement for renderings require non-local resources. The red-brick array, however, usually employs a range of more expensive non-local resources such as cement, reinforcing steel and non-local timber. It is used increasingly by households intending to improve their house or add a second storey. The 'intermediate array' also uses a number of non local materials such as red bricks, cement and glass.

4.48 The last two categories use materials which are in generally short supply and are subject to government rationing in the form of permits. To obtain a permit, applicants are required to submit an approved construction plan including a detailed specification of materials prepared by a qualified engineer. Both the plan preparation and submission require cash payments and involve a wait of up to two years to obtain approval. Applicants are then placed on a waiting list for between two and four years, after which 'tickets' are used to purchase materials direct from the producers; small quantities cannot normally be purchased in this way.

4.49 The combination of delays, costs and the need to buy in bulk all militate against the small contractor or low-income builder. Consequently, a flourishing 'black market' has evolved which can respond quickly to a variety of small orders, though at costs from 25% to 250% higher than those required with permits. Whilst this does not seriously affect the poorest households since they use mud-brick and other local materials, it impedes households attempting to improve their dwelling or build in more durable materials. Evidence from the two study areas indicates that this is a major barrier to housing improvement. In view of this, the Consultants recommend that in addition to measures necessary to increase supply the permit system be simplified and rationalised to enable small-scale builders to obtain materials more cheaply and quickly. This would at least serve to reduce the disparity between controlled and black market costs.

Labour

4.50 The situation prevailing in building materials supply has its parallel in terms of labour. With the majority of

low-income housing employing local materials and traditional techniques, a large proportion of new construction is done by families themselves or by semi-skilled labourers. Surveys and case studies in the Project Areas do not indicate any shortage of labour in this category or any significant inflation in costs. Those intending to build in more durable non-local materials, however, are more dependent upon the availability of skilled workers for the various stages of work involved and this places them in a different labour market in which costs are significantly higher. The main reason for this is the increased volume of demand for major construction work in other sectors and also abroad, both of which have tended to attract skilled labour and generate an inflationary effect in the housing sector.

4.51 It is unlikely that a short term solution can be found to resolve this difficulty and make it easier for low-income households to cross the threshold from the mud-brick to the red-brick array. The introduction of training schemes, particularly for trades such as carpentry, plumbing and electrical installations, would make a valuable contribution to a longer term solution and would be applicable in all construction categories, especially as improvements are initiated and utilities networks installed. Some of the increased skilled labour may, of course, be diverted into other sectors later or be attracted abroad, but this would not be detrimental, since even in the latter case workers earnings could be expected to be returned to local areas for further investment.

4.52 The scale of new construction required in the Project Areas for the remainder of the century is considerable and will provide employment for a substantial labour force. Construction will not however, be predictable in its nature or extent, since it will depend primarily upon the resources of individual households at any given time. This 'fine grained' process has two major consequences; first, it is likely to generate a more stable pattern of employment opportunity than would be possible through a number of conventional housing projects and second, it is more likely that small-scale contractors and labour teams can respond to variations in demand more efficiently than would be possible for a small number of large contractors. The smaller units have additional merits in that they are labour intensive (and therefore generate relatively more employment than larger contractors) and are usually located in their area of operations, so that their profits are reinvested locally.

4.53 The potential role of such small local units in both the Study Areas is estimated to be considerable and the Consultants therefore recommend that training and other forms of support, such as low-interest loans, be extended to them so that this potential can be realised.

Credit

4.54 At present, there are no formal credit facilities available to low-income households for house construction

or improvement and survey data have indicated that after the shortage of building materials, this is the most serious constraint upon housing improvement in Ismailia. The main sources of housing finance are from the sale of rural land, jewellery, furniture or other possessions, as well as loans raised from relatives.

4.55 Whilst the demand for large long-term loans was found to be small, it was sufficient to justify a relaxation of collateral requirements to enable at least moderate income households to become eligible. Of even more importance, however, is the need to provide a system of small, short-term loans to enable households to expand or improve their house or install utilities. To cross the threshold to a higher standard, for example in adding a room or installing water, usually involves a capital sum of between LE50-500 and the Consultants strongly recommend that a means of making such loans available at low interest rates be provided.

DEMAND FACTORS

4.56 Of all the economic constraints which affect demand for housing and utilities, by far the most significant is that of household incomes and their regularity. The claims of other expenditure categories such as health or education and changes in household structure and priorities are also important though their impact upon policy formulation is more difficult to quantify.

4.57 Details* of this analysis can be found in Volume 3, Section 9. At this point, it is sufficient to state that analysis of the data produced by social surveys and case studies revealed that existing household incomes in the two Project Areas represent the lowest 30% of the national urban household income distribution. The median variance from this was limited.

*For a full discussion of the vital subject of affordability, refer to Volume 3, Section 9

4.58 Low incomes are partly mitigated by the large proportion of earners in government service who therefore have regular and secure incomes, but clearly the population to be served by the Demonstration Projects is unable to raise substantial funds to pay for housing and utilities. Tenants are particularly vulnerable in this respect, since they are among the poorest group and are already paying a large proportion of income on rent. Any improvements directly to their housing or indirectly to the locality (in the form of infrastructure of facilities provision) would place this group in an even more vulnerable position in that property owners could be expected to pass on costs in the form of higher rents.

4.59 Since many potential applicants for the new development areas can be expected to come from existing low-cost rental accommodation, this combination of low incomes and high outgoings provides little opportunity to accumulate savings towards new housing. Estimates of the amount which households can afford to pay have therefore been based upon existing household income levels. Analysis of housing expenditure patterns has then been used to calculate the proportion of income which households are considered to be able to bear without detriment to other essentials such as food. In

doing this, it was also acknowledged that household structures, needs and resources tend to fluctuate over time indicating that estimates of housing affordability had to be flexible as well as low, so that households whose resources were temporarily fully stretched could also be eligible.

4.60 In order to adequately relate what households are able to afford with what they are willing to pay, however, it is necessary also to take account of some of the non-quantifiable aspects of housing demand. The survey and case study evidence indicated that the overwhelming majority of households in the study areas stated some form of house ownership as their first preference. All placed a high priority on the sense of long term security this provided, as well as the opportunity it gave to obtain a decent home. The combination of this evidence with the data on levels of affordability indicates that the provision of a range of cheap plots with options to obtain utilities and to construct a house of the occupants choice, provides both the most economic and the most flexible approach. It is also important that, through adequate plot sizes, the cheap rental market can also be satisfied, and this is often the first step before households enter the ownership market.

FUNCTIONAL USE OF PLOTS

4.61 Detailed analysis of existing plots, and the ways in which they had been developed, was concentrated within the Project Areas of El Hekr and Abu Atwa. Information was obtained from a variety of sources such as the scanning and improvement area surveys, case studies and physical surveys. Particular attention was paid to aspects such as plot size and shape, spatial organisation and types of users.

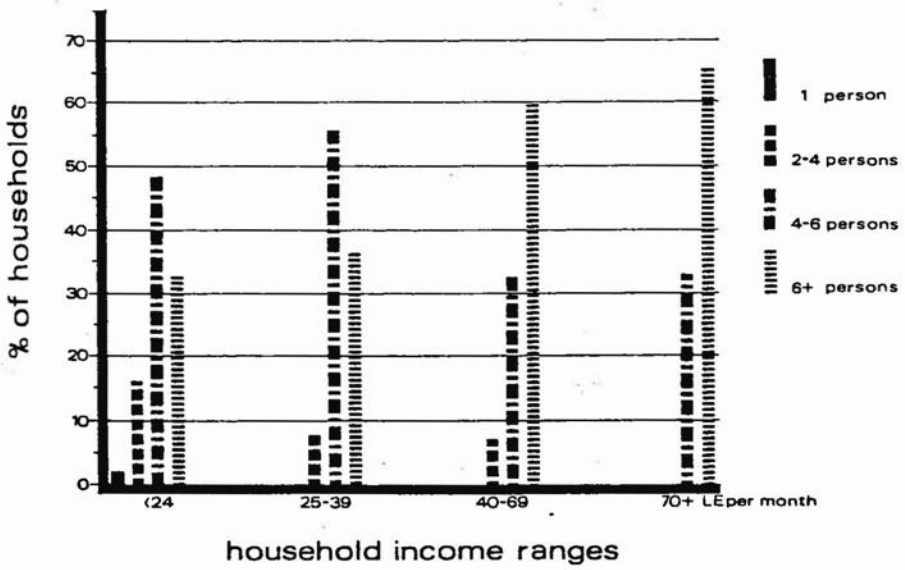
PLOT SIZE AND OCCUPANCY

4.62 The evidence revealed a wide range of plot sizes in both areas. In El Hekr, plots of 40m2 - 308m2 were found and in Abu Atwa the range was even larger at 31m2 - 329m2. The median plot size in El Hekr was 114m2 with the upper quartile of the sample containing the range 154m2 - 308m2 and the lower quartile 40m2 - 88m2. In Abu Atwa, the median was lower at 96m2, with the upper quartile containing the range 143m2 - 329m2 and the lower ranging from 31m2 - 63m2. The full range for each area can be seen in Table 4.1.

Table 4.1
PLOT SIZES EXISTING - EL HEKR & ABU ATWA

Plot Size Range	El Hekr %	Abu Atwa %
0 - 50m2	4.3	9.3
50 - 100m2	33.3	44.4
100 - 150m2	34.4	29.6
150 - 200m2	13.9	13.0
200 - 250m2	8.6	-
250 - 300m2	4.3	-
300 - 350m2	1.2	3.7

El Hekr household size by income group 4.2a

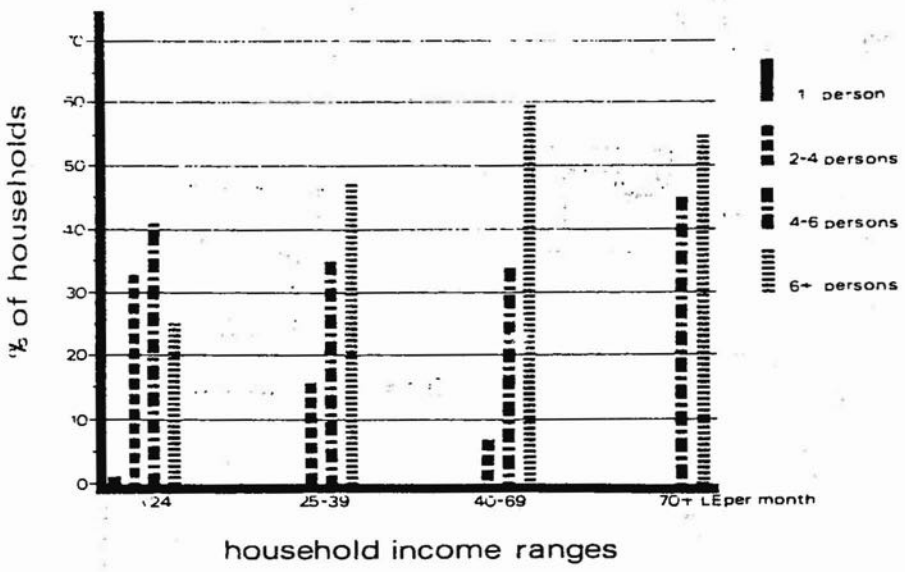


4.63 No correlation was found to exist between plot size and either household size or income, though this was not the case when total occupancy was considered. The distribution of household sizes by income (see Figures 4.2A and 4.2B) indicates that the proportion of larger families (>6) increases with income, but even so, one third of families in the lowest income group have more than six persons, indicating that they have a need for a proportion of larger plots.

4.64 Over 65% of plots on both areas were occupied solely by the principal household, of which 26% of plots in El Hekr and 24.5% in Abu Atwa were renters. Evidence from the case studies indicates that this relatively high proportion may be due to original occupants moving into new houses and keeping their old ones as a source of supplementary income. In general, rented houses were on smaller plots with 20% in the upper quartile and 40% in the lower quartile in El Hekr. In Abu Atwa, this situation was even more pronounced with 8% in the upper quartile and 62% in the lower quartile.

4.65 The occupation of plots by more than one household ie., owner occupied with non-paying guests or renters, was found to occur on 17% of plots in El Hekr and 14% of those in Abu Atwa. The sample size of this category was too small to permit detailed analysis, but it was found that in El Hekr, 40% of multi-occupied plots were in the upper quartile, that is, largest plots, compared to only 7% in the lower quartile. The smallest plot on which multi-occupancy occured was 81m2, though only 13% of such plots were below the median of plot sizes. In Abu Atwa, the smallest multi-occupied plot was 59m2 and multi-occupancy was more evenly distributed across the range of plot sizes, with 28% in the lower quartile and 58% in the upper quartile. It is nonetheless clear that in both areas, multi-occupancy is found most frequently on the larger plots and this is indicated by the median size of 136m2 in El Hekr and 126m2 in Abu Atwa. In both areas occupancy levels were also generally higher on plots containing more than one household.

Abu Atwa household size by income group 4.2b



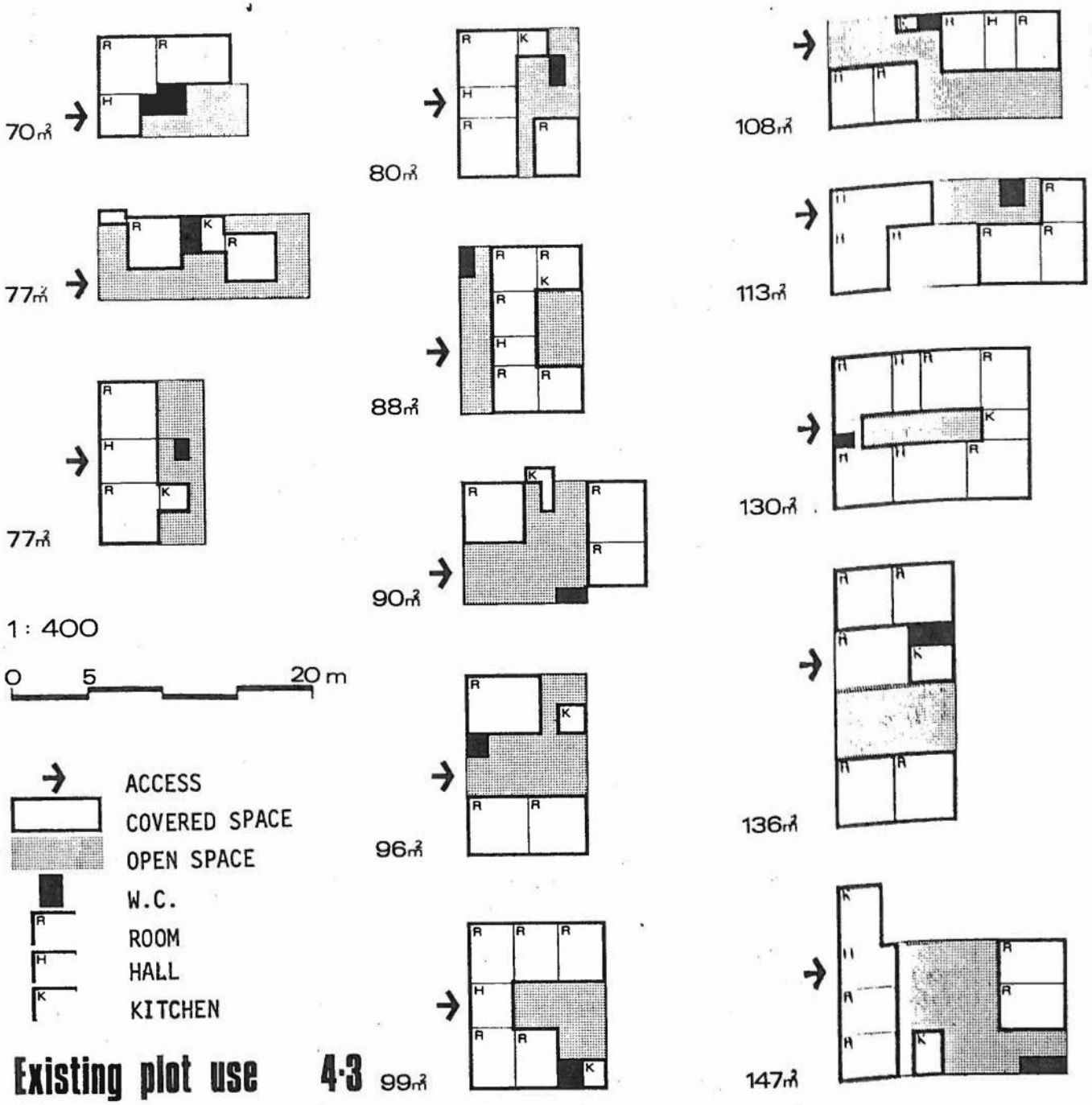
4.66 Plot coverage varied widely on all plots according to the level of development achieved. On those larger than 150m2, however, it was generally at 30-35% and on smaller plots was generally higher.

4.67 The wide range observed in plot sizes was also found in analysing frontages. Data obtained from the two improvement area surveys showed that these ranged from 5-16m in the detailed improvement area of El Hekr and 4.5-15m in that of Abu Atwa. In the former area, the median frontage was 10m and in the latter 9m, with a frontage of 7m being the smallest dimension used on a large scale. In El Hekr, 41% of plots had frontages of 11m or more and in Abu Atwa this included 49% of plots.

INTERNAL ORGANISATION

4.68 Typical examples of the functional use of plots in the improvement areas of both El Hekr and Abu Atwa are shown in Figure 4.3. Almost all plots possessed some private open space and this usually contains the toilet and kitchen. The high proportion of plots with wide frontages has made possible the inward looking courtyard house plan which has a long tradition throughout Egypt, particularly in rural areas. In this type of layout, the house focusses onto an internal yard which is used for all domestic purposes and is usually furnished with reed mats and a low table. This space is particularly important in the layout of most plots; in the Abu Atwa sample, for example, 27% of yards contain an oven and 52% are used to keep poultry. They are also used for cooking, washing and as a living space. Access to other rooms* is usually obtained direct from the central space. The only room orientated towards the street is a guest room or salon, which is reserved for visitors or special occasions and is therefore well furnished and formally organised. According to convention, this is the only part of the house to which non-household members are generally admitted. The number of rooms per plot varied across the sample range. In the El Hekr improvement area, the average (including kitchen) was 4.7 and the median 6.0; in the Abu Atwa sample, the average was 4.6 and the median 5.5. The total distribution is shown in Table 4.2.

*A room is defined as any enclosed habitable space other than a kitchen, bathroom, toilet or store.

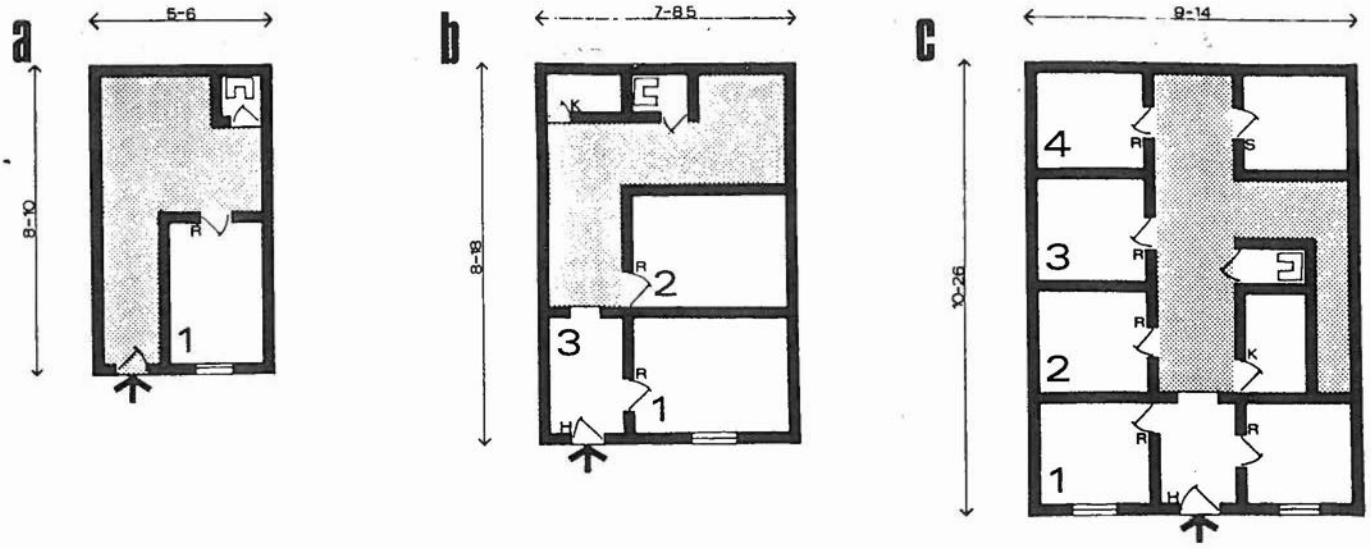


Existing plot use **4·3**

Table 4.2
ROOMS PER DWELLING - EL HEKR & ABU ATWA

Number of Rooms in Dwelling	El Hekr %	Abu Atwa %
2	5	3.5
3	10	7.5
4	23	27.0
5	30	36.5
6	23	15.0
7	8	7.5
8	1	3.8
9+	-	-

4.69 Rooms were generally large in both areas, with the most frequent sizes being 4x3.5m or 3.5x3.5m. In the



1 : 200

0 10m

2 STAGE OF DEV'T.

OPEN AREA

H HALL

R ROOM

K KITCHEN

S STORE

ACCESS POINT

	a	b	c
PLOT SIZE RANGE	40-60m2	60-90m2	90-200m2
NO. OF PEOPLE/PLOT	2-6	4-6	6-9
ROOM NUMBER RANGE*	1-2	2-4	6-9 or more
ROOM SIZE RANGE	3x3-4x4	3x3-4x4	3x3-4x4

*kitchen, w.c., hall and others excluded

Typical plot development

4.4

improvement area survey of El Hekr only 5% of rooms were found to be less than 3x3m. Average room occupancy, however, was found to be high at 1.26, which would be even higher if kitchens were excluded. It also disguises the fact that some larger households occupy small dwellings. In the Abu Atwa sample, average occupancy per room was lower at 0.82, but as in El Hekr this disguised high rates in many cases.

4.70 These data do not indicate the incremental stages by which the vast majority of plots are developed in both the Project Areas. Figure 4.4 illustrates typical examples of plot development as it was found to have occured on different plot sizes. These include information on typical numbers of rooms and people per plot, the location of open spaces and the provision of facilities such as toilets. It can be seen that the larger plots are able to provide more rooms of normal size and that these can be grouped around a central open space. In addition, rooms can be provided

in the front of the plot for extended family, rental accommodation or commercial use. This is not possible on the smaller plots unless more than one storey is built, which requires normally more expensive materials and construction techniques. These are not easily available to low-income households.

Comments

4.71 The data revealed a sufficiently wide range of plot sizes and shapes in both project areas to make generalisations dangerous. A number of conclusions can, however, be drawn.

4.72 It is clear that the majority of plots are occupied by single households living on plots which permit them to have a traditional courtyard layout. This is possible for two reasons; the lack of roads or other utilities, (the minimisation of costs of which require reduced frontages) and second, the availability of free or cheap land which enables households to meet their long-term needs without constraint.

4.73 Accommodation for tenants and non-paying guests was found in both areas. Whilst it was distributed across the range of plot sizes, it was more frequently found on larger plots where additional rooms could be provided on the ground floor.

PLOT SIZES

4.74 In preparing detailed proposals for new housing, the Consultants have been guided by the policy objectives contained in the Master Plan and the need for solutions to be within reach of low income households. The Master Plan recommended that the support and strengthening of existing systems of housing provision was more appropriate than the direct construction of government built housing, with its high levels of cost and limited replicability. Analysis of the social surveys and case studies conducted during 1977 has reinforced the relevance of this approach and indicated that the most urgent need is to facilitate access to basic resources such as surveyed plots, utilities and cheap materials. Since the last two of these elements are discussed elsewhere in the report, this sub-section presents the proposals on plot sizes and the methods by which they were developed.

CRITERIA

4.75 The distribution of plot sizes currently found in the Project Areas, together with evidence concerning variations in household needs and resources, indicated that it was necessary to provide a wide range of plot sizes for new housing. A number of criteria were therefore developed in order to formulate an appropriate range. These were as follows:

1) That the minimum plot should be able to accommodate a household of six persons in a dwelling satisfying minimum space, ventilation and daylighting standards.

2) The range of sizes should be capable of accommod-

ating the range of users identified.

3) That space be provided on all plots for an open yard as part of the dwelling.

4) That wherever possible, space should be available for the construction at ground level of rooms for extended family or other non paying guests, rental accommodation or commercial activity, and that access to such rooms should be direct from the street or yard.

5) That suitable arrangements be made for the installation and servicing of pit latrines where necessary.

6) That construction of at least a second floor be possible.

7) That within the financial arrangements proposed, plots should be affordable by the target income groups.

8) Plot size and shape should be designed so that both private and public costs are minimised.

4.76 Two sources of information were used in applying these criteria to alternative options; first the analysis of existing plots and their patterns of use and second, an analysis of the possibilities of different plot sizes in terms of design flexibility and efficiency. The analysis of existing plots has been presented above and the following section therefore presents the analysis of design considerations.

4.77 Major factors affecting the size of individual plots are the cost of land and infrastructure. To ensure that the full economic costs of these within the Project Areas were acceptable to low-income households, it was therefore necessary to assess the relative costs of both elements.

4.78 Costs for comparison purposes were developed at a range of plot sizes and infrastructure levels. These are summarised in Table 4.3. The table shows that the cost increases for infrastructure are relatively small with increasing plot size. Land is the most important factor.

4.79 Fortunately, land for new housing development in Ismailia is in abundant supply and is relatively inexpensive. It does not therefore, provide a major restriction on plot size. In calculating utilities costs, however, it is generally true that small and narrow plots are more economic than large and wide ones.

4.80 In balancing standards of provision of these two elements to meet different cost levels, a degree of flexibility was achieved by noting that these constraints are not of the same order, since it is possible to increase the level of utilities provision at a subsequent date, but this does not apply to plot sizes which, once established, are more difficult to modify. It was therefore decided that in the event of a choice being necessary between small plots with high levels of utilities provision or larger plots with lower initial

utilities, the latter represents a more desirable option.

Table 4.3
NETWORK COST INDEX RELATED TO PLOT SIZES

Type of Provision	Indices	Plot Area (m) 6x9	6x12	6x15	6x18	9x18
Minimum provision (land, pit latrines, standpipes, minimum road standards & electricity)	Cost index/ plot (inc. land)	100	108	118	129	142
	Cost index/ m2 (inc. land)	100	81	70	65	49
	Cost index/ m2 (less land)	100	74	65	55	39
Maximum provision (land, sewerage, mains water improved road standards, electricity & service core) (and including on and off site allocation)	Cost index/ plot (inc. land)	100	103	111	121	133
	Cost index/ m2 (inc. land)	100	78	66	60	45
	Cost index/ m2 (less land)	100	75	65	58	43

Design Module

4.81 The first stage in formulating a range of plot sizes was then undertaken. The starting point for this was the creation of a basic design module suitable for either enclosed or open spaces. A number of considerations influenced the selection of the dimensions:

i) It should be large enough to accommodate a wide variety of domestic functions, yet small enough to provide a reasonable range of increments.

ii) It should comprise a whole metric number to facilitate setting out and multiplication.

iii) It should be the same dimension in both directions, so that modules could be added on either side.

4.82 Analysis of the functional characteristics of rooms and spaces in existing houses and of the costs of spanning for roofs, both indicated that a module of 3mx3m formed a suitable basis for design. This module size also satisfied the other criteria listed above and it was therefore adopted.

Frontage

4.83 The next stage was to establish an appropriate size for the minimum plot to be offered and the range of larger plots. Before this could be done it was considered necessary

to define an acceptable minimum plot frontage. This was also required to satisfy a number of criteria; it should be sufficient to provide space for an entrance hall and a room at the front for guests, tenants or commerce, yet not so large that the provision of an efficient utilities network was prejudiced. Different plot frontages were tested for their effects on infrastructure costs and efficiency of internal layout of plots. A 6 metre frontage is the minimum, it is the most efficient, but does constrain internal layout of the plots. The 9 metre frontage increases infrastructure costs by about 5% and is less efficient in land use, but does allow more efficient internal layouts. A 12 metre frontage is inefficient in terms of public costs, but attractive, with a 12 metre depth, from the internal layout point of view. It was decided to adopt a range of frontages, 65% - 6 metres, 30% - 9 metres and 5% - 12 metres. This combines economy with flexibility of design and allows monitoring of user preference.

Plot Depth

4.84 Proposals on plot depth (and therefore plot size) were based upon the number of 3m increments required to provide adequate minimum dwelling and private open space as discussed above. To do this, it was necessary to formulate space standards for different types of room. It should be noted, however, that the degree of functional differentiation in existing houses is generally low and apart from the 'salon', most habitable rooms are used for many purposes, including sleeping.

Space Standards

4.85 Analysis of space standards observed in the detailed improvement area of El Hekr provided a valuable source of information for future proposals. Whilst sizes obviously varied considerably, the most common were as follows:

Kitchen with dining space for family	8m2
Living room/'salon'	12-14m2
Room (to accommodate double bed)	12-14m2
Bath and w.c.	4m2
Hall	6m2
Open space	10m2

4.86 This information was then compared to the requirements of Law Number 106 of 1976, which established standards and methods of enforcement for housing to obtain a building permit. The relevant standards laid down in Article 13 are as follows:

1) Inner courtyards; the minimum width is determined by the height of adjoining property (.25xheight) 2.5 metres is adequate adjacent to 3 storey buildings.

2) Outer court (one side open); minimum dimension - 2.5m.

3) Courtyard with adjacent kitchen or w.c.; minimum area - 7.5m2, minimum dimension - 2.5m.

4.87 A further source of information in establishing standards for the Demonstration Projects was the proposed

Building Regulations for Egypt at present under consideration. These lay down the following minimum sizes:

Habitable rooms	10m2
Kitchen	3m2
Bathroom/w.c.	2m2

Pit Latrines

4.88 A final consideration in establishing minimum space standards applies where pit latrines are used for sewage disposal. As discussed in Volume 3, Section 7, the area required by a standard pit latrine is 1.5mx1.5m. In addition to this, it is necessary to provide open space immediately adjacent to the latrine in order to ensure that adequate ventilation can be obtained and that building walls do not cause pressure on the side of the latrine and threaten either its structural stability or its impermeability.

4.89 Variations in ground condition in both the Project Areas have been taken into account in calculating appropriate standards to which buildings near pit latrines should conform. In Abu Atwa, the prevalence of cemented sands and gravels provides relatively few problems for building layouts or foundation design, but this is not the case in El Hekr where there are extensive area of windblown sand*, which affect the depth of foundations necessary near pit latrines. The Consultants therefore recommend that two angles be used in order to calculate the appropriate minimum depth of building foundations and their distance from the nearest wall of a pit latrine. In areas of good ground condition, the angle of 45^{0} is adequate for this purpose, though in areas where ground is unstable an angle of 26^{0} is required.

*Volume 3, Section 1, Soil Survey

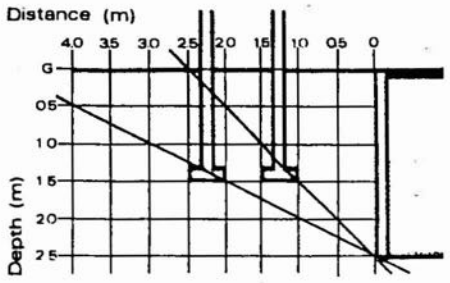
Table 4.4
PIT LATRINE RESTRAINTS

Distance from pit (m)	Depth of Req'd Foundation (m) Good Ground	Poor Ground
1.0	1.5	2.0
1.5	1 0	1.75
2.0	0.5	1.5
2.5		1.25
3.0		1.0
3.5		0.75
4.0		0.5

Assuming a standard depth of 2.50m for a pit latrine, the projection of these angles defines both the minimum depth of foundations and the distance from the pit latrine, to which all building foundations should conform. Thus, in areas of good ground condition, a building could be built within 1.00m of a pit latrine provided its footings were 1.50m deep, or 2.00m away, if footings were 0.50m. In areas with bad ground condition less flexibility is available and a building 1.00m from a pit latrine would require footings 2.00m deep, whilst one 2.00m would require footings of 1.50m. Other options are illustrated in Figure 4.5 and Table 4.4.

4.91 In Abu Atwa, standards for good ground conditions can be applied throughout. In El Hekr, however, there is considerable variation and further tests would be necessary in order to specify the standard applicable to any specific location. In the absence of such tests, the Consultants recommend that standards within areas of 30cm+ of windblown sand be based on the 26^{0} angle. Where verification is required, the use of a simple probe at the time of survey is advised.

4.92 The location of the latrine determines the size of space to be allocated for it. If it is placed in the corner of the plot, an area of 2.7mx2.7m is required, whereas if it is located mid-way on one side, an area of



RELATIONSHIP: 4·5
FOUNDATIONS / PIT LATRINE

3.9m x 2.7m is necessary. Because of the substantial area this involves, it is therefore necessary to locate latrines in the private courtyards, whether these are in the front of the plot or further back. It is also necessary for the locations of the latrine to be handed so that structures on adjoining plots are not adversely affected.

Minimum Space Standards

As a result of comparing the information listed above, the following minimum space standards are proposed for application in the Demonstration Projects:

Habitable rooms	10m2
Kitchen	3m2
Bathroom/w.c	2m2
Courtyard (for maximum 3 storey building) containing minimum area for pit latrine	12.25m2

4.94 In addition to the above, it was considered necessary to reserve a small space for domestic storage. Analysis of existing layouts in the Project Areas indicated that an area of 2.5m2 minimum was appropriate for this, though more was desirable wherever possible.

4.95 In applying these standards to calculations regarding a minimum plot size a number of other considerations also applied. These were as follows:

i) That allowance be made for the area occupied by structural walls. Whilst this naturally varies according to the type of wall used, the nature of room layouts and the number of rooms provided, it is unlikely that this can be reduced below 15% of total area.

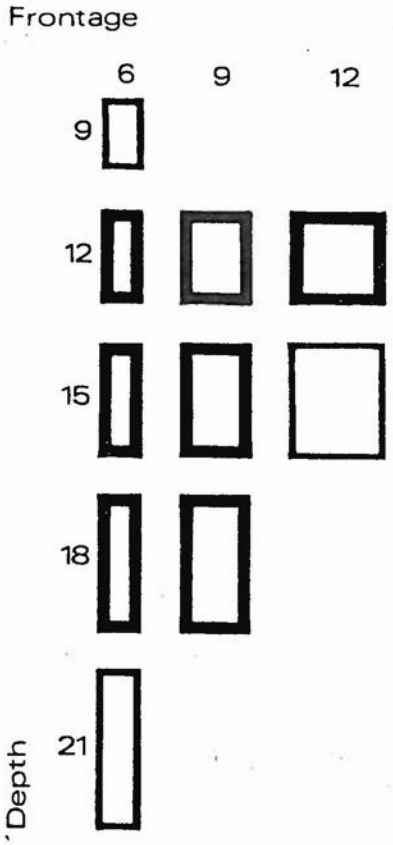
ii) That allocation be made for general circulation and the possible installation of staircases to upper floors. Circulation in most existing houses in the Project Areas is a relatively small proportion of the total area in that it is absorbed within the yard or central room. In calculating minimum plot sizes, however, an area of 10% was considered necessary for circulation alone.

iii) That the areas mentioned above were not sufficient in themselves to ensure that useful and adequate spaces were provided. As mentioned previously, studies of space use have indicated that minimum room dimensions are as important as areas in determining the uses to which space can be put and a dimension of 2.7m was considered to form an appropriate minimum.

4.96 In using the above material to calculate an appropriate minimum plot size for a household of six persons it was considered necessary to allow for three habitable rooms on the ground floor and the provision of a yard containing a pit latrine.

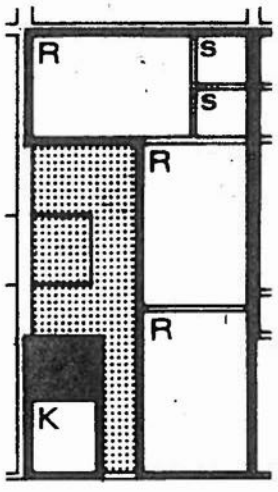
INTERNAL LAYOUT OF PLOTS

4.97 In relating these space standards to a range of possible plot sizes within the 3m module proposed, tests were conducted on plots ranging from 54m2 to 162m2 with frontages of 6m, 9m and 12m. These options are shown in Figure 4.6.



PLOT SIZES TESTED 4.6

4.100



4.102

The tests involved the preparation of internal layouts of plots capable of accommodating a dwelling and open space adequate for a household of up to six persons in an economic and efficient way. In addition the spatial requirements for the installation of either water-borne sewerage or an on-plot pit latrine were to be observed. For the former, this involved the location of the bathroom and w.c. at the front of the plot. For the latter, two options were tested, first the location of the pit latrine at the front of the plot to provide easy access for servicing and second, its location in a courtyard 4.0 metres from the front of the plot to enable the w.c. and kitchen to be placed in the front for later connection to mains sewerage. Following current practice in both the Project Areas, it was also required that full potential development of the plot should be possible by stages and that each stage should represent an efficient layout.

54m2 Plots (6mx9m)

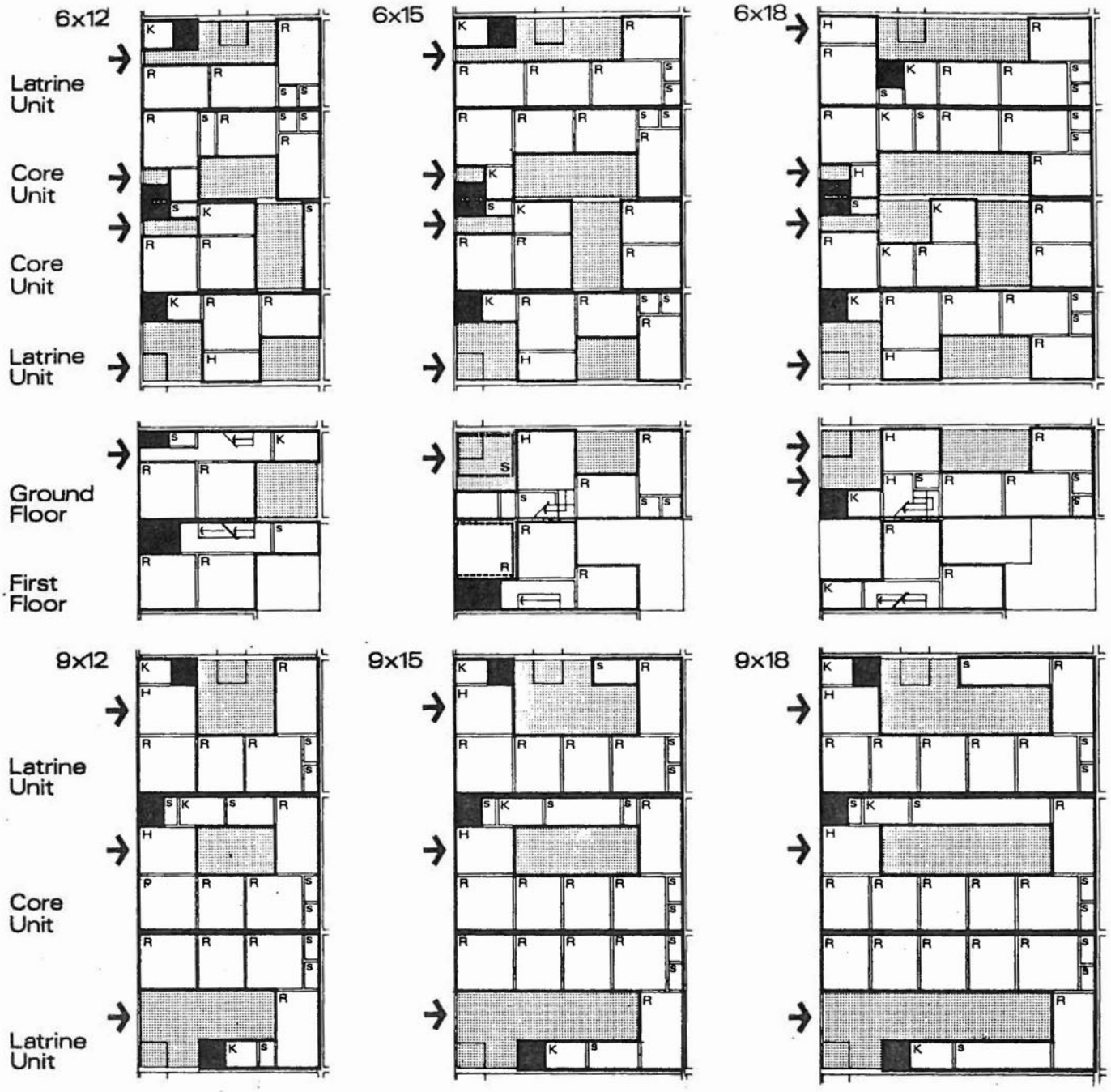
The smallest plot of 54m2 was predictably found to be incapable of providing a dwelling of an adequate size for households of 6 persons even if space for the pit latrine was omitted. It also prevented the subsequent construction of additional rooms and restricted the scope for building upper floors. This option was therefore abandoned.

72m2 Plots (6mx12m)

Tests conducted on the 72m2 plot, showed that this enabled the required accommodation to be incorporated, although with minimum room standards, using either water-borne sewerage or pit latrines. Each of the layouts illustrated could be efficiently achieved by incremental construction. Examples of the full development of this plot size on ground level only are shown in Figure 4.7.

It can be seen from the plans that the number and layout of rooms varies according to the type and location of sewage disposal facilities. Where the plot is connected to public mains sewerage, it is possible to provide a yard and three habitable rooms at ground level and for one of these to be located on the plot frontage, where it can be used as a salon or for more economic purposes if the family is very small. The kitchen can be located either on the plot frontage or adjacent to the courtyard.

In the case of a pit latrine being used, its location in a courtyard set back 4.0m from the plot frontage permits the provision of three habitable rooms at ground level, including one at the front. The kitchen can also be located at the front, with the bathroom/w.c. adjacent to the courtyard containing the pit latrine. In the event of subsequent connection to public mains sewerage the w.c. is conveniently located only 2.5m from the front of the plot. The location of the pit latrine on the plot frontage makes it impossible to locate any room near the plot



1: 400

0 25 m

COVERED SPACE

OPEN SPACE

PIT LATRINE

W.C./BATHROOM

ROOM

HALL

KITCHEN

STORAGE

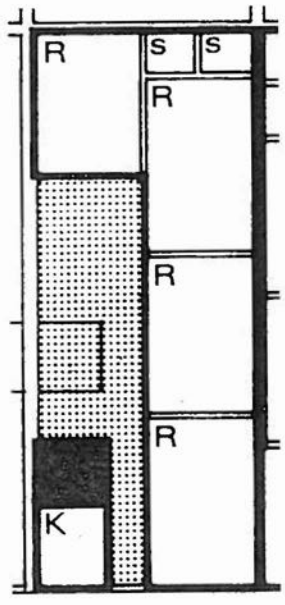
SHOP OR ROOM WITH OFF-SITE SEWAGE DISPOSAL

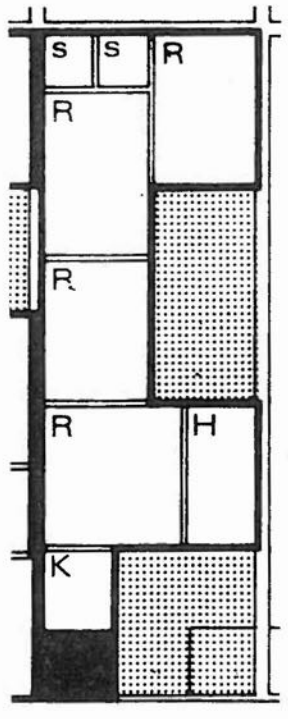
Possible use of proposed plots

frontage. The kitchen and w.c. are, however, well located for the subsequent provision of public mains sewerage.

4.104 In assessing the design potentialities of the 72m2 plot, it was evident that the layouts provided the minimum acceptable accommodation for an average size household. This plot size and shape was therefore adopted as the minimum recommended for the Demonstration Projects, subject to its being affordable by low income households This was found to be the case. It was however, considered that on this size of plot it was undesirable to locate the pit latrine at the front, unless factors such as unstable ground conditions compelled it.

4.105 Having established the minimum plot size, design tests were then conducted on the larger plots. Predictably, it was found that the extent of accommodation and the design options increased in proportion to plot size. The options layouts illustrated in Figure 4.7 are therefore only examples of possible solutions which use the plot to full advantage.





90m2 Plot (6mx15m)

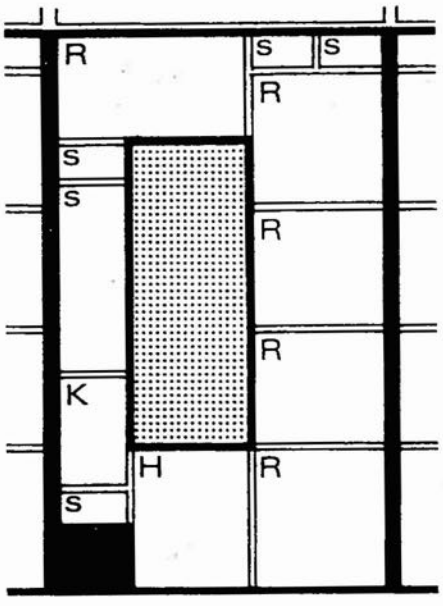
The optimal layout illustrated provides four habitable rooms, kitchen, bathroom/w.c., storage and a courtyard. The latter contains the pit latrine where this is required. One of the rooms is located on the plot frontage for possible use as a salon, non-paying guest, rental accommodation or commerce. The plot adapts easily to incremental development or the construction of a second floor. Accommodation is still limited, for an average sized family.

108m2 Plot (6mx18m)

In its fully developed form, this plot can provide four habitable rooms, at least one courtyard and ancilliary accommodation. Where the yard is set back from the plot frontage, a large room can be provided on the front. Incremental construction on either ground or upper floors can be achieved without difficulty. At this size the normal use patterns observed in the study area become possible. Design tests were also conducted on a plot size of 6mx21m (126m2). It was found however, that the additional depth of plot did not result in an increase in habitable rooms, because of difficulty in achieving adequate access, daylighting and ventilation. This plot type was therefore abandoned. A range of plots with a 9m frontage was then tested, these had depths of 12m, 15m and 18m respectively and examples of possible layouts on these are shown in Figure 4.7.

108m2 Plot (9mx12m)

This plot was found capable of providing five habitable rooms grouped around a central courtyard which contained the pit latrine where this was used. Ancillary accommodation was located between the plot frontage and the courtyard, permitting an easy connection to public mains sewerage initially or at a later date. One of the habitable rooms is located on the front of the plot



for use as a salon for non-paying guests, as a rental unit shop or workshop. This plot type permits the incremental construction of a rural type house similar to those commonly found at present in the Project Areas.

135m2 Plot (9mx15m)

An optimal layout was found to provide six habitable rooms, five of which opened onto a large central courtyard with the remaining one orientated towards the street. Kitchen and bathroom/w.c. were, as in the previous example, located between the front of the plot and the courtyard, facilitating initial or subsequent connection to public mains sewerage.

162m2 Plot (9mx18m)

Where the courtyard containing the pit latrine was located on the plot frontage, this size was found capable of providing up to six habitable rooms on one side of a long open yard. Where the main courtyard was set back, however, an additional room was possible on the plot frontage. In the former case, kitchen and bathroom/w.c. were set back from the front, whereas in the latter they were between the front and the courtyard, facilitating connection to public mains sewerage. The size of this plot and the room layout it provides also makes it appropriate for use as a rabaa accommodating several households. Whilst plots of this size and larger were found in both the Project Areas and frequently contained accommodation of this type, the low plot ratios observed in larger plots indicated that this plot size should be regarded as the largest to be offered in the Demonstration Projects and no larger plots with this frontage were therefore tested.

144m2 Plot (12mx12m)

4.111 Finally,tests were conducted on plots with a 12m frontage. With a depth of 12m (giving an area of 144m2), it was found that by locating the pit latrine in the front of the plot, seven habitable rooms and ancillary accommodation could be provided. When the pit latrine was located in the centre of the plot, or when the dwelling was connected to public mains sewerage, eight rooms could be constructed, three of which were orientated towards the street.

4.112 This plot type is currently found in several parts of the Project Areas. It was therefore considered desirable to provide a number of such plots, though the relatively higher costs of public utilities networks which they involve suggested that the number should be restricted.

Plot Size Proportions

4.113 Having selected appropriate plot sizes and dimensions it was necessary to determine the proportions of each type to be incorporated in the proposed design. The factors determining the proportions were affordability at the lowest infrastructure provision level*; the costs of infrastructure provision; the proportions of

*Volume 3, Section 9

different household sizes and the need to accommodate important aspects of the housing system such as the prevalence of the extended family (17.3% of El Hekr improvement area households) provision of free temporary accommodation to friends and relatives (7.6%) and provision of cheap rental accommodation (9.6%). In certain locations the possibility of partial use for shop or workshop is also important. It was considered essential to provide a range of plot sizes which could be monitored as regards their acceptability.

4.114 With regard to the above criteria the proportions of plot sizes shown in Table 4.5 were adopted.

Table 4.5
PLOT SIZES, DIMENSIONS AND PROPORTIONS

Plot area m2	Plot frontage	Plot depth	%
72	6	12	15
90	6	15	15
108	6	18	35
108	9	12	15
135	9	15	10
162	9	18	5
144	12	12	5

CORE UNITS

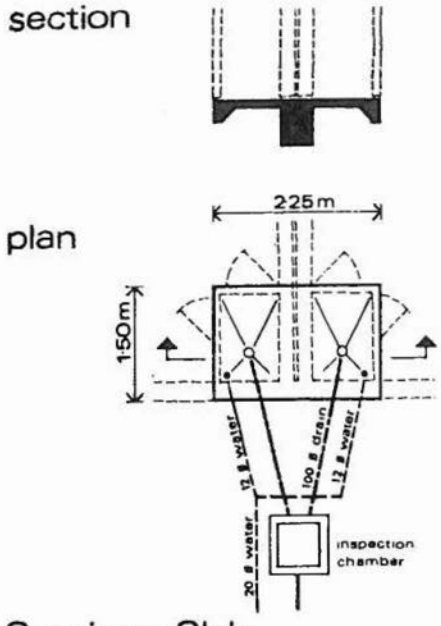
4.115 As discussed in the introduction to this section, proposals for the Demonstration Projects consist of a range of plot sizes with varying levels of utilities provision. Design tests were, however, conducted in a range of service and shelter units in order to assess the possibility of providing basic, serviced accommodation for immediate occupation.

4.116 The core units consist of two basic options; a services slab containing on-plot connections to public water, sewerage and electricity mains on which a superstructure can be erected by the household and a shelter unit which provides in addition a completed superstructure. The latter option includes a bathroom/w.c., kitchen and one habitable room. These units are located at the front of the plot as shown in Figures 4.7 and 4.8 to minimise the costs of utilities connections and release land at the rear for later expansion. The total external area of the shelter unit is 24m2.

4.117 The advantages of immediate occupation which these options provide have to be offset, however, against their cost. Analysis of the services slab unit if located on a 72m2 plot indicates a cost of LE561 whilst those for the shelter unit on a similar size plot require an additional LE592, making a total cost of LE1098. Costs for both these options increase with plot sizes as shown in Table 4.6.

4.118 It can be seen that costs preclude these options on a large scale without subsidy. Comparison to the data on housing affordability* indicates that the services slab unit on the smallest plot size can be afforded by only a small percentage of the population. The shelter unit,

*See Volume 3, Section 9.



Services Slab

1:100

0 5m

UNROOFED SPACE

A CONCRETE FOOTINGS

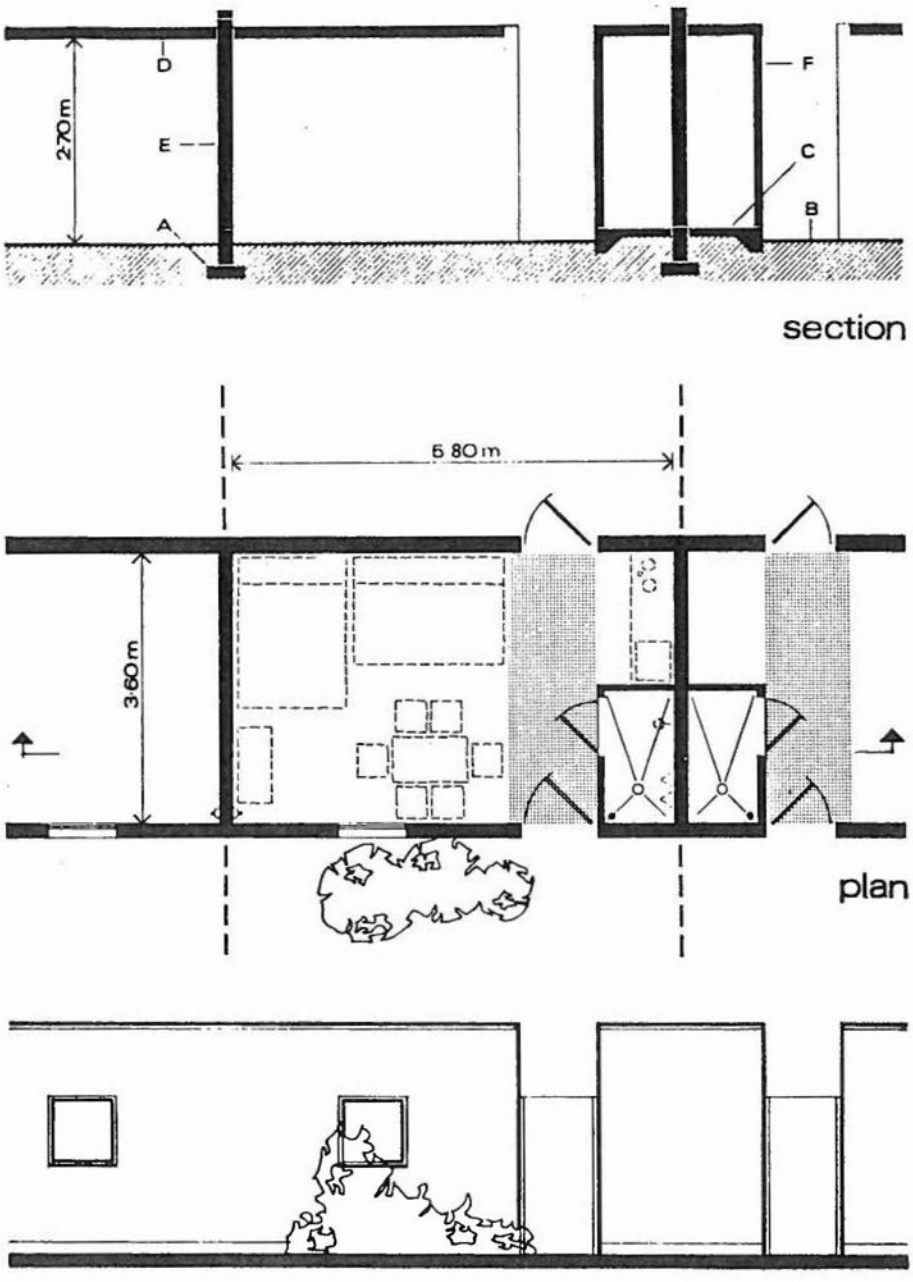
B COMPACTED EARTH

C 100MM. CONCRETE

D TIMBER ROOF

E 100MM. BLOCKWORK

F 200MM. BLOCKWORK



Core units

4·8 Shelter Core

Table 4.6
CORE UNIT TYPES: COST ESTIMATES

Unit Type	Unit Cost LE	Unit and Infrastructure Cost LE 72m2		90m2		108m2	
		Cost	Aff' bility	Cost	Aff' bility	Cost	Aff' bility
Services Slab	55	561	39%	605	33%	661	24%
Shelter Core	592	1098	127*	1142	172*	1198	227*

NOTES: Affordability percentage based upon payment over 30 years.

*Indicates subsidy or savings required to reach 5% of target population.

however, would require a subsidy equivalent to LE127 per unit in order to reach 5% of the target population on the same size of plot; on plots of 108m2, this unit subsidy increases to LE227. As no subsidy can be assumed, core units are not proposed.

LAYOUT PRINCIPLES

4.119 Proposals for the layout of new housing areas have been governed by the need for flexibility. This is needed at both general and detailed design levels for a number of reasons. These are outlined below.

i) At a general level three main reasons exist. First, because of the constrained market situation in Ismailia over the past 11 years, demand can not be accurately assessed at this stage, and modification must be possible in future. Second, layouts must be adaptable to varied site conditions such as existing buildings, topography or cultivation. Third, the degree of research and design development that has been possible within the Demonstration Projects is unlikely to be possible in the future.

ii) At a local level, the main reasons are first, the need to accommodate other land uses such as small mosques, open spaces, markets and social facilities into new housing areas and second the need to accommodate changes in the number or proportion of any given plot types based on the experience of letting first stage plots.

4.120 Flexibility was not, of course, the only criterion used in formulating layouts. Of equal importance was the need for a simple design framework which could accommodate these changes.

4.121 Finally, it was considered essential that layouts make the most socially appropriate and efficient use of land. Analysis of existing layout patterns and land use in the Project Areas indicates a number of features which are of particular significance in this respect. These include:

i) The existence of a communal area, or semi-private space, immediately adjacent to most plots in which people can meet friends and neighbours, cultivate plants and in which vehicular movement is restricted mainly to access.

ii) A well developed pattern of local roads to accommodate vehicular traffic and provide accessibility to the semi-public areas and narrow pedestrian paths.

iii) A pattern of mixed land uses in which some plots on main roads are transformed into rabaas, aimaras, shops or workshops where demand in the area justifies it.

4.122 This layout system does not, however, function in an efficient manner. Insecurity by settlers regarding future road alignments, results in areas considerably wider than necessary being provided for roads and these

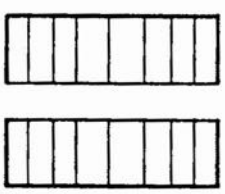
are occasionally so great that later settlers have built inside the reservation area and severely restricted its width for a short distance. Similarly, sand in some of the open courtyards has been used as a source of building material and resulted in large borrow pits, which has led in turn to the land being partly unusable. Nonetheless, the principles observed in existing layouts form a valuable source of material for design proposals.

4.123 The selection of the 3mx3m plot module greatly assists in the satisfaction of these requirements. It permits a wide range of plot sizes to be provided in different combinations and also enables layouts to be prepared in a modular basis depending on which range of plot sizes is used.

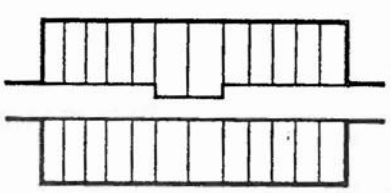
4.124 A range of design options were tested against functional criteria and the cost of infrastructure provision. As a result of these tests, a basic design layout is proposed.

Clusters

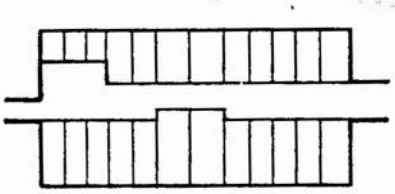
4.125 This consists of a cluster of plots containing a communal or semi-private space, the size of which is calculated to provide an area reasonable for social use but small enough for households to take personal responsibility, for its maintenance. In view of the costs and time required to plant and maintain public spaces even in areas with fertile top soil and abundant rainfall, the creation of such spaces has advantages for both users and local government. In areas similar to those covered by the Demonstration Projects where both water and fertile soil are at a premium, this approach is even more justified. Analysis of existing layouts and of research in other countries has indicated that communal spaces serving between 12-30 plots provide an appropriate size for these purposes. Using the 3mx3m module, it is considered that a width of 9m (three modules) provides an adequate dimension including an allowance of 1.5m in front of each plot for a garden. Where local conditions permit only 12-20 plots, this communal space is most appropriately treated as a single unit (see Figure 4.9) with a length of between 36m-60m assuming 6m wide plots; where more plots are required spaces totalling between 60m-90m with some plots projecting out into the space by one 3m module (see Figure 4.10). This reduces the width to 6m for a short distance, but this is still adequate to allow vehicular movement and land for small gardens at each side. Evidence from the studies of existing development in the Project Areas suggests that such communal spaces are respected by residents and encroachment is not considered likely



BASIC CLUSTER 4.9



LARGER CLUSTER 4.10

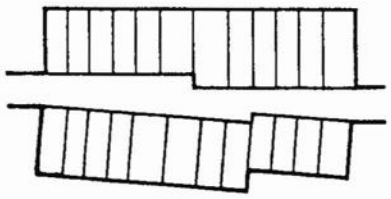


CUL-DE-SAC CLUSTER 4.11

Entry to the communal spaces is to provide access for cars, taxis and sludge removal tankers to individual plots, rather than as a means of dispersing local traffic over a larger number of routes. Limited parking would be possible but this is generally intended to occur on local roads where reservations allow for it. Other movement will be largely pedestrian. To cater for both, an access width of 6m (ie, 2 modules) is considered adequate. To improve design flexibility for utilities and to provide an exit point for vehicles, a second opening in the form of an alley 3m width is provided. Where these exist, opening onto a main local street (such as a primary distributor) a hammerhead turning area of 12m width is provided. No plots would front onto the 3m

width alleys (see Figure 4.11).

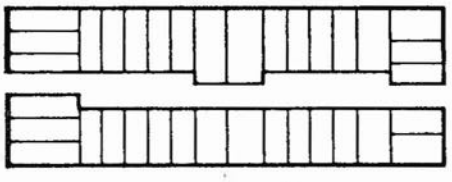
4.127 The basic element in developing housing plot layouts is therefore the size and nature of the communal spaces, within the clusters of plots. Assuming an average 9m width and length of between 40m-110m, this provides a basic element which accommodates plots of either 6m, 9m or 12m frontage and any of the proposed depths. In addition, it is possible for any existing buildings to be accommodated into new housing areas to the nearest 3m increment. Finally, irregularities or changes of alignment required by site conditions, can be absorbed within the communal space, permitting house plots to be generally regular. A typical example of this condition is shown in Figure 4.12. The process of designing a basic layout system is completed by locating further plots at each end of the communal spaces. Access to such plots is obtained direct from a local or district road as appropriate.



IRREGULAR CLUSTER 4·12

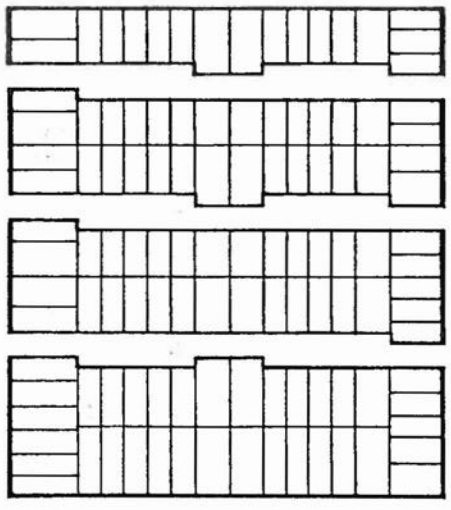
Blocks

4.128 By placing the clusters next to each other, the layout system can be extended indefinitely to suit general planning considerations. As shown in Figure 4.13, each of these layout units can, of course contain the same or a wide range of plot sizes as necessary and the same applies to plots fronting onto the roads. Estimates of likely vehicular traffic indicate that if the length of these units averaged 100m (including the depth of plots fronting onto roads), then the optimum total of units should be such that their combined widths are between 120m-150m. A dimension of 30m for the double banked plots facing thecommunal spaces provides a flexible layout in that either two 15m or one 12m and one 18m deep plots can be provided. By varying the frontages the full range of proposed plot sizes can therefore be incorporated.



COMPLETE CLUSTER 4·13

4.129 Variations in one dimension of the layout blocks is possible within a wide range provided that appropriate modifications are made to the other dimension. Examples of these layout blocks incorporating a range of plots sizes are shown in Figure 4.14. It can be seen that to achieve maximum efficiency in land use double banked plots are located along roads at the end of the layout units. As with other plots, these can vary in frontage and depth to suit local requirements.



BASIC LAYOUT BLOCK 4·14

LAYOUT APPLICATION

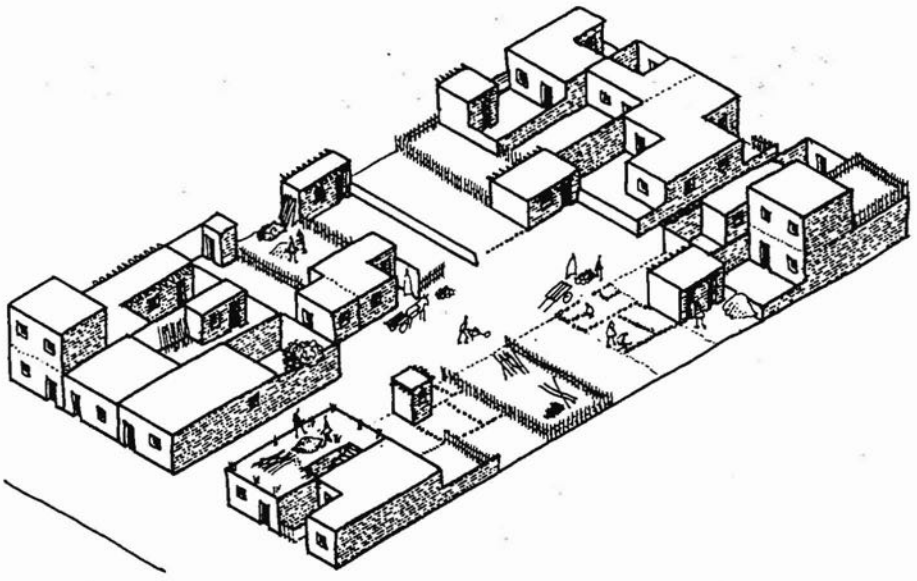
The application of this layout system to areas of new development involves the incorporation of a number of factors, as follows:

i) Climatic factors influencing orientation are described in Volume 3, Section 1. Briefly, the main factors, sun and wind interact in such a way that no particular orientation is uniquely advantageous, and individual building design is the most important factor.

ii) The larger the plot size, the more likely it is to develop into a rabaa or aimara or have a commercial function see Fig 4.15. Large plots are therefore located along local distributors, other main roads or near the centres where

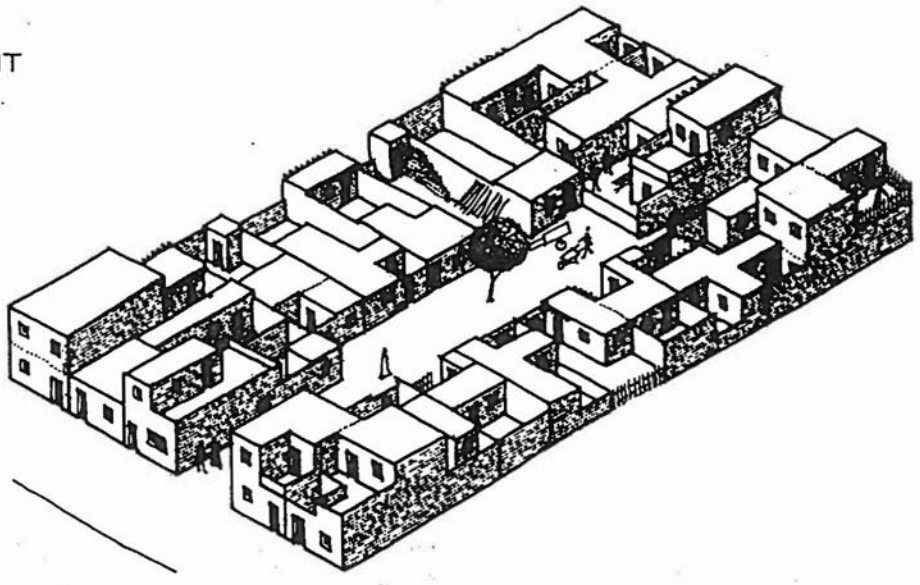
INITIAL DEVELOPMENT

During this period, households put up their initial shelter. Those who can afford the generally larger plots on the roads can also construct a larger and more durable house. Those in the clusters may take more time and use cheaper materials.



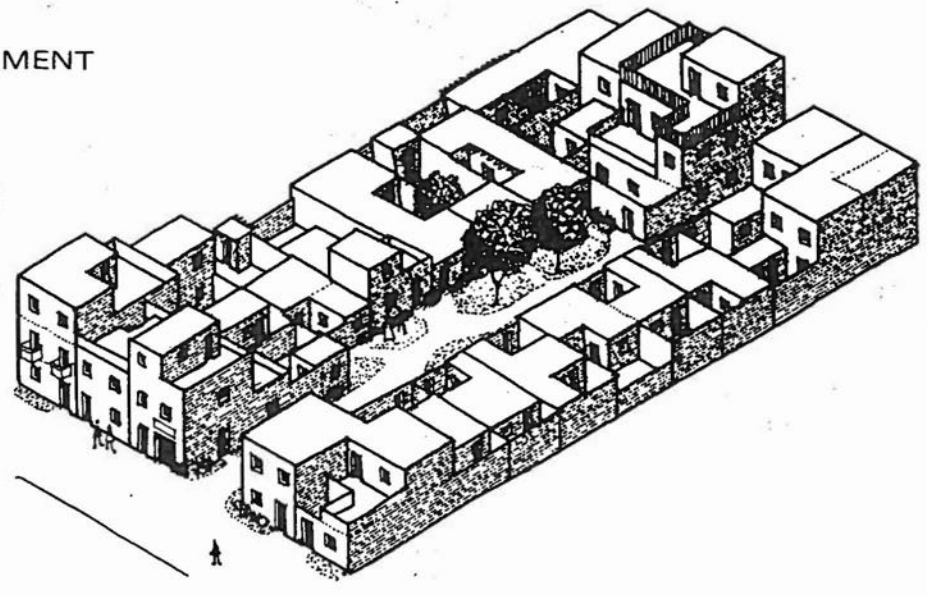
INTERMEDIATE DEVELOPMENT

By this time almost all households are now living in a house adequate for their short-term needs. Many are planning extensions and some on the road are building second floors or replacing temporary with permanent structures. Landscaping is underway.



CONSOLIDATED DEVELOPMENT

Almost all households have now built extensive, durable houses. The smaller plots in the communal space are fully developed and some larger ones on the road have become rabaas or aimaras. Landscaping is well established.



Possible block development

Table 4.7
STRUCTURAL CONDITION, EL HEKR IMPROVEMENT AREA

Condition		%
Walls:	Very good	12
	Good	62
	Average	11
	Poor	13
	Very poor	2
Floor:	Very good	10
	Good	55
	Average	27
	Poor	7
	Very poor	1
Roof:	Very good	1
	Good	17
	Average	35
	Poor	32
	Very poor	15

Source: El Hekr Improvement Area Survey 1977

4.132

Table 4.8
COSTS OF REPAIRS/EXTENSIONS & IMPROVEMENTS DURING PAST 12 MONTHS

Improvements/ Extensions/ Repairs	%
Below LE50	24.4
LE50-90	24.4
LE90-150	9.0
LE150 and above	42.2

Source: El Hekr Improvement Area Survey 1977

4.134

such development is most likely to occur, and the smaller plots, where one or two storey single household dwellings are expected to predominate, are located in the clusters.

iii) There is a hierarchy of plot, cluster, block and neighbourhood. Plots are arranged in clusters of normally 20-30. These are grouped into blocks, each containing 4 or 5 clusters, surrounded by local access streets. Approximately six blocks are grouped to form a neighbourhood, comprising 700 to 900 house plots or about 5000 people.

The application of this layout system in the two Project Areas requires adaptation to a wide range of conditions which require design flexibility. The underdeveloped parts of the sites were relatively simple to design though in Abu Atwa the regular geometric form had to be adapted to make optimum use of the area. In the areas of sporadic existing development, modifications were made in order to incorporate buildings, though not total plots, into the modules. In the improvement areas the basic principles described are adopted, but specific solutions rather than the application of modular layouts are necessary. This is described fully in the following sub-section.

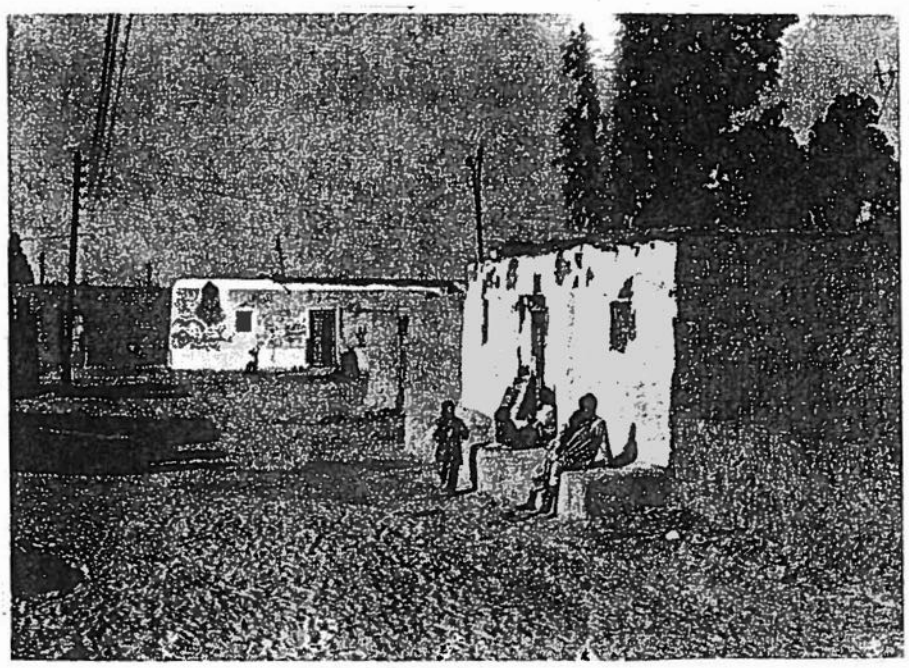
IMPROVEMENT

Improvement of housing is inseparable form the improvement of tenure status, utilities roads and facilities. Basically, the social studies undertaken show that improvement of the house is the householders highest priority after basic food and clothing, but many aspects of improvement are outside the householders control, such as tenure status or utilities networks. It is important to analyse the improvements required and obstacles to this, in order to be able to propose effective action. The basic thesis is that house owners who live on their own plots wish to improve, but are inhibited by lack of security, low and/or irregular income, poor or no infrastructure provision and a lack of local facilities such as schools. These constraints operate basically outside the level of individual plots, and it is only at this level that a government sponsored programme can operate. To become involved at individual building level would be to invite certain failure as neither technical nor administrative capacity could cope.

Before considering the constraints in detail, the results of the surveys of the detailed improvement areas as regards condition of buildings, and the types and costs of improvements and repairs undertaken is examined.

EL HEKR DETAILED IMPROVEMENT AREA (FOR LOCATION SEE VOLUME 1, FIGURE 3.2)

72% of all buildings in the area are of traditional materials, 28% have red brick as a material, 18% as the exclusive material, 10% are mixed modern and traditional materials. There are no framed buildings, which could immediately accommodate a second floor. Of all buildings 65% had concrete foundations with 13% compacted earth



Typical mud brick houses in Abu Atwa

or masonry fill, with the remainder unspecified.

4.135 An assessment of the structural condition of walls, floors and roofs was made using the criteria set out in Volume 3, Section 1, 'Land Use and Condition'.

4.136 There were few (15%) of buildings with walls which were categorised poor or very poor (only 2% very poor), the majority (62%) being categorised 'good'. The same proportion that were categorised good or average were also categorised as having good or average roofs. However, in general, the condition of roofs is poorer than for walls, with only 17% as good, 35% as average, 32% as poor and 15% as very poor.

Table 4.9
BUILDING WORK UNDERTAKEN

Kind of work undertaken	%
Roof repairs	20.4
New doors & windows	13.0
New floors	20.4
Plaster work (internal/ external)	31.5
Repairs to w.c.	6.4
Others	8.6

Source: El Hekr Improvement Area Survey 1977

The general conclusion is one which supports the view of the householders, that the condition of the buildings in the area is such that rehabilitation efforts can be concentrated on utilities provision. There is no question of re-development being necessary.

The general condition of the housing relies, however, on constant maintenance and repair, just as the continued general improvement of the characteristics of the housing stock relies on constant progressive development.

In the detailed area in the 12 months before the survey was made, 2 new houses had been built, 49% of dwellings had been repaired in some way and 10% had been extended, with 2 rooms being added. Indications of the costs and type of work undertaken are given in Tables 4.8 and 4.9.

4.140 The distribution of repairs, improvements and extensions by cost is similar in the two areas, with approximately half of repairs undertaken being below LE90 in cost and approximately 40% in El Hekr and 30% in Abu Atwa being above LE150 in cost.

4.141 In both areas the bulk of work has been undertaken by the owner alone, although there are examples of the owner and contractor doing the work jointly. In no case

has a contractor been employed to undertake the work exclusively. It is the owner who usually buys the materials.

No ground condition problems have been encountered in the building work in either area, and this should generally be the case for all of Abu Atwa and for most of El Hekr.

Financing repairs, extensions and improvements is a constraint however and in both El Hekr and Abu Atwa, 30% of respondents said that they would have done more to the dwellings with more money available.

ABU ATWA DETAILED IMPROVEMENT AREA (FOR LOCATION SEE VOLUME 1, FIGURE 5.2)

Traditional materials are used almost exclusively in the area, with 94% of all buildings being built of mud; 6.0% are of modern materials but this includes only 1.9% with a frame suitable for vertical extension. 13.4% of the buildings have concrete foundations, 17.3% masonry infill and 50% rammed earth. 15.4% of dwellings had no foundations at all.

Table 4.10
STRUCTURAL CONDITION, ABU ATWA IMPROVEMENT AREA

Condition		%
Walls:	Very good	17
	Good	44
	Average	36
	Poor	3
	Very poor	-
Floor:	Very good	6
	Good	40
	Average	29
	Poor	19
	Very poor	6
Roof:	Very good	4
	Good	29
	Average	33
	Poor	31
	Very poor	3

Source: Abu Atwa Improvement Area Survey 1977

The structural conditions of the dwellings were assessed using the same definitions as for El Hekr (see Vol.3). The average general condition of the dwellings is better than that in El Hekr and the survey results are set out in Table 4.10.

4.146 As in El Hekr the general condition of the buildings in the area is sufficiently good for the principal rehabilitation effort to be placed on the provision of utilities.

4.147 In the Detailed Area in the 12 months before the survey was made, 2 new houses had been built, 71% of dwellings had been repaired in some way and of these 5.7% had been extended, with 1 or 2 rooms being added. Tables 4.11 and 4.12 show the costs and kind of work being undertaken.

Conclusions from Surveys (4.148)

The case studies provided valuable additional information, particularly on people's priorities. Satisfaction with houses themselves was generally high, though it was the aim of most households with mud-brick houses to eventually build in red-brick and concrete. The most common desire was to have running water, sewerage and improved roads. This was echoed in the El Hekr Improvement Area survey where 81% of those interviewed wanted improvements to utilities rather than to housing.

Table 4.11
COSTS OF REPAIRS/ EXTENSIONS AND IMPROVEMENTS

Improvements/ Extensions/ Repairs	%
Below LE50	24
LE50-90	30
LE90-150	10
LE150 and above	36

Source: Abu Atwa Improvement Area Survey 1977

It should be emphasised that the majority of plots in the study areas have been, or are being developed progressively, that is by the addition of a room or a roof, for example, as the householders can afford the cost. Thus 'improvement' is a natural on-going process which is already taking place, and is not, in the El Hekr and Abu Atwa a 'rescue' operation for decaying areas. The important point is that for the areas to be able to continue to improve they must cross the

Table 4.12
BUILDING WORK UNDERTAKEN

Kind of work undertaken	%
Roof repairs	17
New doors & windows	10
New floors	20
Plaster work (internal/ external)	37
Repairs to w.c.	10
Others	6

Source: Abu Atwa Improvement Area Survey 1977

threshold of water, sewerage system and surfaced roads provision. All of these require public action.

CONSTRAINTS

The major constraints to improvement and the means of removing them are discussed below.

Security of Tenure

Without security of tenure there is a natural reluctance to invest heavily in a building (assuming money exists to invest). It is also difficult to raise money in the form of loans, as no collateral can be provided. Provision of clear title is necessary, but must be linked with clear future planning for the area. It must be defined where housing can continue to develop and where individual houses must be demolished to allow road or facility improvements.

Finance

4.152 Lack of money is an obvious constraint, though it may not always be the prime one. For example, lack of secure tenure or utilities connections may inhibit improvement which can be afforded. Payment of loans over long periods is not common and the case studies revealed a suspicion of long term mortgage loans because of the high and regular outgoings they involved. Tradition and irregular incomes have meant that saving and selling of possessions are the main means of raising money. However, the proportion of government employees (56% in El Hekr) with low but steady incomes suggests that loan schemes may work for at least a proportion of the population.

Building Regulations/Building Materials

4.153 The effects of these are discussed fully elsewhere*, but briefly, in order to comply with regulations the householder has to meet stringent conditions and have professionaly prepared designs which are generally beyond the means of low income people. As a result very little of the development in the study areas is in any way controlled. The main negative effects are a) that by demanding high standards, no control at all exists and b) low income people have to pay black market prices for building materials as they cannot buy at official prices without a permit.

*See Volume 2, Section 3 'Informal Building'.

Technical Assistance

4.154 Technical knowledge of building is either traditional or obtained by using small local builders; it is thus not an absolute constraint. The application of new or improved methods and more efficient layouts requires access to a source of information. Experienced tradesmen could supply this and help householders build better and cheaper buildings. A source of technical advice was often mentioned as a need during the case studies. The availability of a range of standard plans for different plot sizes and shapes could also be of assistance. This is discussed in Volume 1, Section 8, Implementation.

Utilities

4.155 The discussion* of the needs for water and improved sewerage systems in the project areas does not have to be repeated here. It is sufficient to say that the utilities networks cannot, obviously, be provided by individual households, but are the items which are most often described as the main items lacking in the existing areas. Provision will have major benefits for the community as a whole due to improved public health, and will help encourage improvement of housing on individual plots.

*Volume 3, Section 7

Roads

4.156 Roads* may seem to some extent a luxury, but upgraded surfaces, especially in El Hekr, would do much to improve accessibility within the area, and allow building materials to be delivered to plots. At present in the soft sand areas, this is a major problem. Public transport routes will only be able to penetrate the area when the main streets are paved, and this is important to improve access to employment. Improved roads would also do much to permit use of bicycles which are a common form of transport.

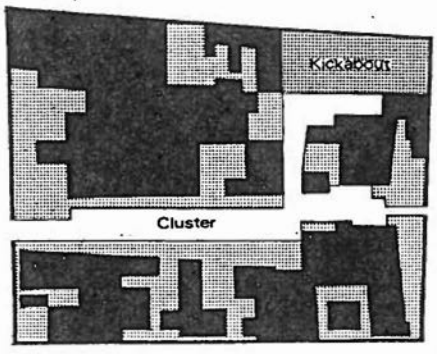
*Volume 3, Section 6

Facilities

4.157 The local provision of facilities such as schools and health centres will do much to improve the quality of life in the areas for improvement. This, in turn will help encourage local investment, as confidence in the area increases. This does not all need to be supplied externally. In Abu Atwa for example a new mosque is in the process of completion, half the cost of which was paid by locally raised subscription.

IMPROVEMENT AREA: LAYOUT PRINCIPLES

4.158 Layout principles and intended standards are basically similar to those for new areas but the policy of minimising demolition makes a number of modifications necessary.



4.16
IMPROVEMENT PROPOSAL

The areas are divided into neighbourhoods, separated from each other by the distributor streets. These in turn consist of blocks separated from each other by local access streets. Wherever possible the widths of the streets are maintained the same as in the new areas. In many cases, however, they have to be reduced to 6m and in order to avoid demolition, some streets remain less than 6 metres. Within the blocks the community spaces are designated for communal use and to give access to individual plots following the plot cluster principle used to design the new areas (see Layouts sub-section above). An example of such rationalisation of the plot layout is shown in Figure 4.16. The important aspect of implementing such approaches is discussed in Volume 1, Section 8.

4.160 One of the major principles is the clear definition of the limits of communal space. The remaining portion of present open space are to be sold as individual plots or for enlargement of adjacent plots for house extensions, commercial uses, gardens, etc. Whenever the width will permit, frontage gardens will also be allowed in communal spaces (within the clusters). Kick-about areas

and neighbourhood parks are proposed within the blocks, as shown in Figure 4.15 or by the use of excess street space made available after the layout rationalisation. Examples of this are shown in Volume 1, Section 4.

BENEFITS

4.161 In addition to the obvious benefits of providing a healthy, pleasant environment and releasing the maximum potential of families to improve their own housing, there are further benefits to the operation of the housing system. It is stated earlier in this section that the availability of cheap rental rooms is very important for single persons or families at the stage when they are looking for, or saving for their own plot or house. This accommodation will only be cheap if there is a plentiful supply and encouragement of improvement in existing areas will help to ensure a supply. In addition, accommodation in the older part of El Hekr is best located for proximity to work opportunities.

4.162 In conclusion, housing improvement will take place provided the policy of providing security of tenure, a clear planning framework, a modified administrative and legal framework and infrastructure provision is implemented. The Consultants consider that the project areas have the attributes, particularly a high proportion of owner occupied housing, to become successfully integrated as healthy, attractive, well developed sections of the city of Ismailia.

Clifford Culpin and Partners
Dr. Aziz A. Yassin
Economic Associates Limited
Ove Arup and Partners

specialist consultants
Roger Tym and Associates
Matthew Metcalf and Partners