

### III. PHYSICAL PLANNING



Photo 3.1 View looking north along Damanhour Street - 1977

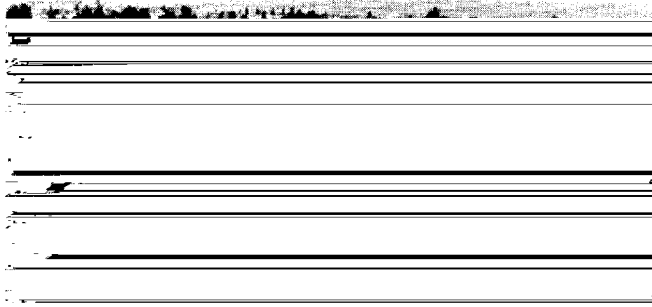
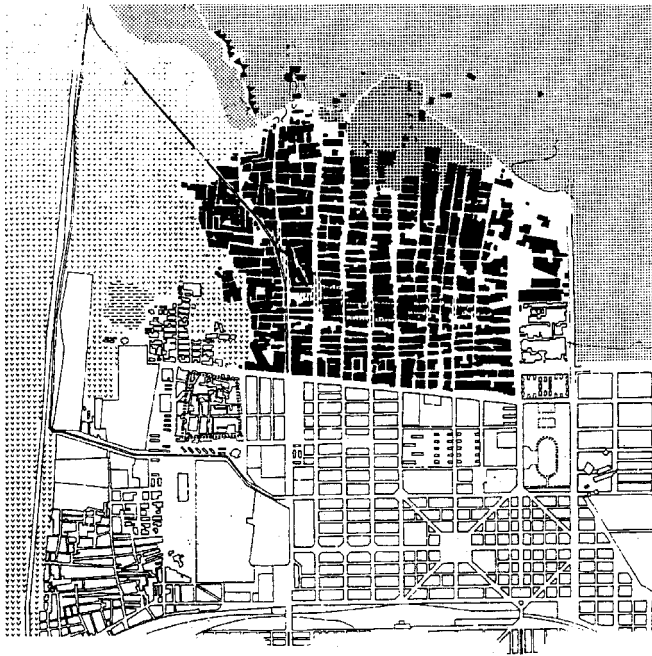











Photo 3.2 View looking north along Damanhour Street - 1992



-  Area of high water table
-  Plateau area: desert
-  Desert fringe
-  Valley area: desert
-  General urban development in study area
-  Old rubbish tip
-  Irrigated area
-  Marsh
-  Steep slope

0 1 km



Figure 3.1 Hai El Salam topography

Source: Arab Republic of Egypt, 1978: vol.1.

# COMMUNITY PLAN

## ***Existing situation in 1977***

### ***Physical basis***

The results of the survey of Hai El Salam conducted in 1977 showed that the area presented no absolute physical constraints to urban expansion, although there were a number of aspects which affected design (see figure 3.1). There were no steep slopes to constrain the development of effective internal road patterns or external links, and the general lie of the land was conducive to the eventual installation of such mains services as gravity sewerage systems.

The most adverse physical characteristic was the dominance of uncompacted surface sand, as the area was part of the northern desert fringe of Ismailia. This phenomenon was particularly noticeable in the "valley" area; it constituted a constraint on accessibility throughout the principal urban area of Hai El Salam.

The soil report, however, has shown that the entire area could carry at least four-storey structures if appropriate foundations were built. In addition the high water table in the southern portion of the site had to be taken into consideration in the foundation design.

The south-east area, which was a former refuse tip, was not included in the project area as developing it would have entailed dealing with soil instability problems.

### ***Land use***

The western quarter of the study area was predominantly agricultural, being essentially low lying ground, irrigated from the adjacent Sweetwater Canal. This area was not suitable for urban development. Equally, the south-east corner of the study area was occupied by the Suez Canal Authority nursery and an agricultural college, in addition to housing. This section of the study area had been excluded from the project area for technical and administrative reasons.

An estimated 58.4 per cent of the project area was built up and of the remainder, in the north and north-east, 20 per cent was completely undeveloped and 21.6 per cent contained scattered buildings at a very low density. Of the built-up area, 56 per cent was predominantly devoted to residential use, containing within it shop and workshop uses (see figure 3.2). These activities were concentrated along principal streets and in particular Talaatini and Tanta Streets, and further shops were scattered more or less evenly throughout the residential areas. Larger industrial or commercial uses were few in number. The area south-west of the junction of Talaatini and El Bahri Streets, just outside of the project area, contained a bus repair garage, government workshops and store. The only significant premises within the project area were a bread factory, a timber yard and a grain store in the commercial area concentrated along Talaatini Street.

General circulation took up 43.5 per cent of the built-up area. This proportion of land was more than what would have been needed for circulation in the final project. The availability of a portion of this land for open space and social facility uses underlay the improvement proposals. Public facilities took up 0.5 per cent of the built-up area, and comprised mosques, a church and a small school.

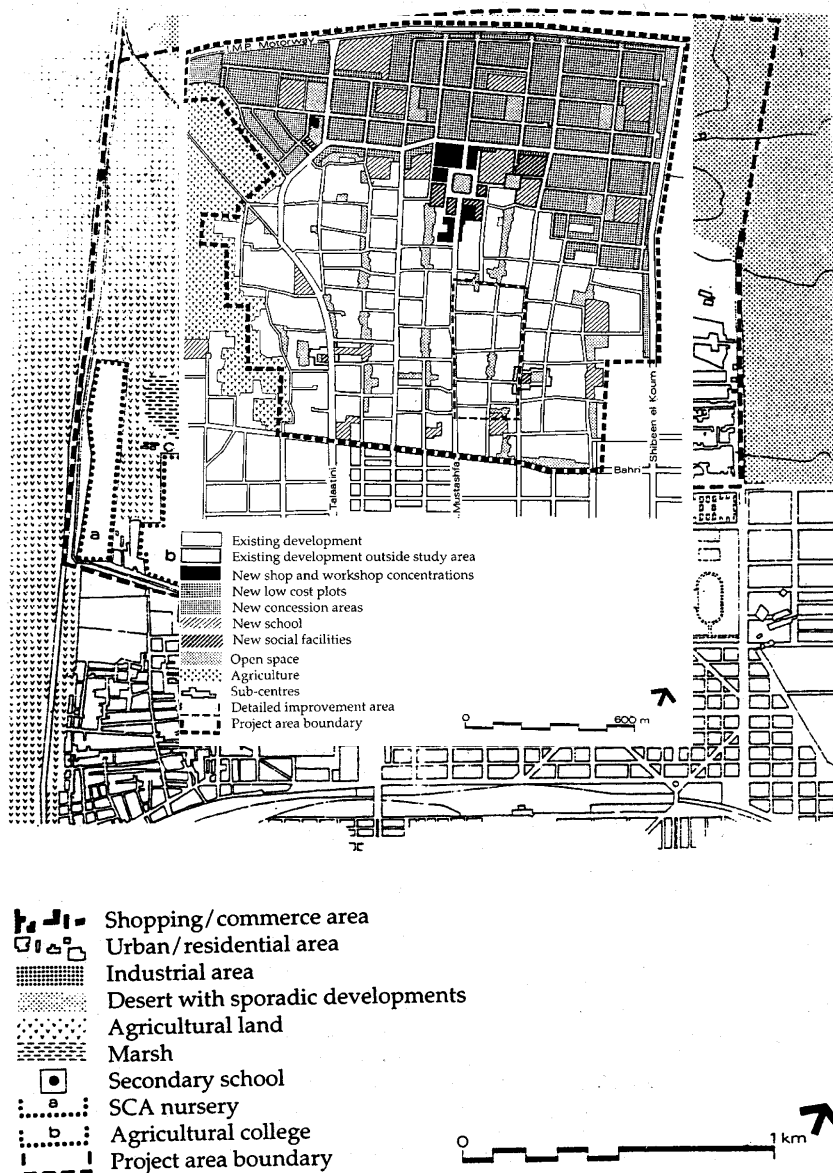
### ***Proposals***

The project area of Hai El Salam at the time of the preparation of the proposals was the principal direction and area accommodating Ismailia's expansion. According to the Master Plan, Hai El Salam was planned to occupy a relatively central location in the future city area. Its population in 1977 consisted of 37,000 people and it is expected to reach nearly 90,000 by the end of the century. Nearly 40 per cent would then live in new neighbourhoods.

The project area of the community plan covers 226 hectares (see figure 3.3). Of this, 132 hectares were classified as built-up and were designated to be the subject of an improvement programme involving layout rationalisation, street improvement, provision of utilities, services and social facilities, landscaping and support and encouragement for the improvement of individual houses. Some recommendations were also given for improvement of individual houses.

The proposals consisted of completely planned neighbourhoods with social facilities and basic utilities that were capable of being improved incrementally.

The area for new subdivisions, the community centre and for schools and other facilities was 93 hectares. Of this, only 50 hectares were completely unbuilt. On the remaining 43 hectares, there were scattered houses at low density on very large plots. Wherever possible the new subdivision layouts have been adjusted to save these existing houses, but in most cases, plot boundaries were modified.



**Figure 3.2 Hai El Salam existing land use**

*Source: Arab Republic of Egypt, 1978: vol. 1.*

One of the main objectives of the project area plan was to ensure that the Improvement area and the new subdivision was to form an integrated community. Street layout, centre structure, area spatial composition and phasing have been planned to achieve this objective.

### **Neighbourhoods**

The community plan divided the project area into 15 neighbourhoods (see figure 3.4). They range in area from 6.4 hectares to 20.9 hectares and in target population from 3850 to 8100. The initial population was to range from 3250 to 5400. The smaller neighbourhoods were designed to share social facilities initially.

Neighbourhoods were planned to be smaller in the older area of Hai El Salam, where the street network was concentrated, construction density already high, and where, because of lack of space, only smaller schools with little or no expansion potential could be provided. Larger neighbourhood areas were proposed in the new subdivision and in newer existing areas where there were no, or fewer, constraints for complete provision of the neighbourhood facilities.

### **Implementation**

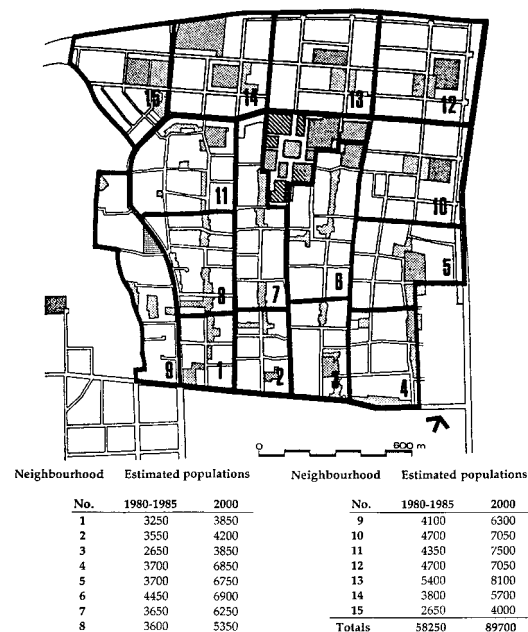
The phasing of the community improvement plan (see figure 3.5) is being implemented. The community plan is materialising as plots and facilities are being constructed. There is continuous change as time passes. The majority of the plots are now constructed. The provision of facilities is discussed in chapter IV.

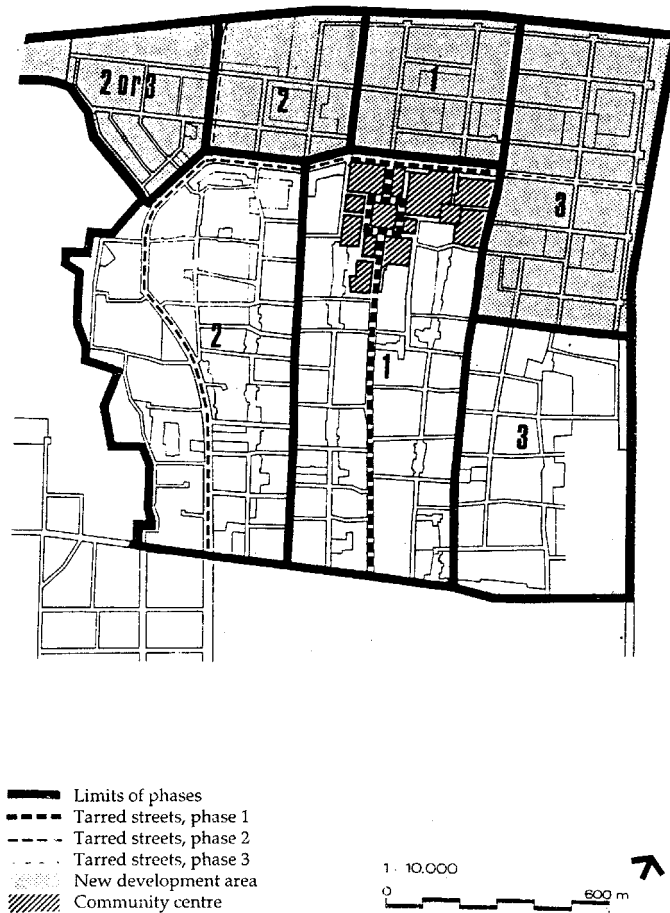
**Figure 3.3 Hai El Salam community plan**

*Source: Arab Republic of Egypt, 1978: vol.1*

Table 3.1 Community plan summary			
Existing situation	Project proposals	Implementation/ evaluation	Lessons learned
<p><b>Deficiencies</b> 58.4 per cent of the area was built-up.</p> <p><b>Potentials</b> 20 per cent of the land was undeveloped, 21.6 per cent contained scattered buildings.</p>	Existing built-up areas were to be improved and new subdivisions were to be provided, a main centre and services in the extension area.	Most of the plots are already constructed.	Upgrade urban areas in combination with new development areas to provide housing and community facilities.

**Figure 3.4 Hai El Salam population distribution**  
*Source: Arab Republic of Egypt, 1978: vol. 1*





**Figure 3.5 Hai El Salam phasing new development and initial provision**  
 Source: Arab Republic of Egypt, 1978: vol. 1

## COMMUNITY AND INDUSTRY

### *Existing situation in 1977*

#### **Deficiencies**

- Some of the workshops created undesirable noise.

#### **Potentials**

- Mixed use was common as commercial activities and workshops were opened by the landlords where heavy pedestrian traffic passes. These activities are income-generating and improve the quality of life of inhabitants.

#### **Proposals**

It was proposed that commercial and workshop activity in Hai El Salam be permitted and throughout the site; existing or new settlers may devote a portion of their plots to commercial or workshop premises provided that they obtain the necessary permits. Settler plots of commercial potential, a type found particularly in Phase One of the new development because of its proximity to the community centre, were to be assessed a surcharge on the 'price' of the plot.

It was also proposed that certain commercial and workshop plots in the Hai El Salam community centre would be reserved for future sale on the open market, and that a small number of shop units would be built by the Project Agency for rental. In addition, a covered market for fruit and vegetable vendors was proposed in the community centre. The areas for these activities are as follows:

Activity	Area (m <sup>2</sup> )
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Shops	3810
Workshops	3087
Covered market	390
<b>Total</b>	<b>7187</b>
<i>Source: Arab Republic of Egypt, 1978: vol. I.</i>	

As another component of the community centre, there were to be 3549m<sup>2</sup> of larger "concession plots" and 7542m<sup>2</sup> of "primarily residential plots reserved for future sale. These spaces were also intended to contain a certain amount of commercial activity, some of it large-scale, i.e., department stores and a cinema, and this gave the Project Agency flexibility in managing the uptake of all plots in the community centre, depending on future market demand.

The strategy was to create a new and viable commercial area at the Hai El Salam community centre, the attraction of which would be reinforced by the many community services which were to be located there and by public transport links. From a financial point of view, it was important that the Project Agency obtain maximum revenues from the future sale of plots, but it was also important to attract, in the first years, investors who would build substantial premises; then it was proposed that 10 per cent of the shops, "concession", "primarily residential" plots be immediately sold "at cost", i.e., at a metre-square cost which only recovers the imputed infrastructure costs provisionally estimated at £E6/m<sup>2</sup> (1977, US \$8.6). For investors or settlers interested in workshop plots even more attractive terms were offered for 25 per cent of all plots, in order to attract a nucleus of workshop activities. Occupation of such plots would be required within six months of signing contracts.

The amount of shop/workshop units to be built for rental depended on the Project Agency's future perception of financial feasibility, as it was not intended that the Agency carry the burden of subsidised rents. However, to stimulate commercial activity in the first year it was proposed that the Project Office itself would contain a small number of shop units to be let at modest rents.

### **Implementation**

The landlords established their businesses in the ground floors of their dwellings and certain roads have emerged as shopping spines. These economic activities create jobs for the inhabitants as well as provide services to its community.

<b>Existing situation</b>	<b>Project proposals</b>	<b>Implementation/evaluation</b>	<b>Lessons learned</b>
<p><b>Deficiencies</b> Some workshops created noise.</p> <p><b>Potentials</b> Mixed use allows income generation.</p>	Commercial uses were permitted throughout the site. Certain plots would be reserved for sale, and a few rental shops built by the Agency.	Landlords established their businesses. Certain roads have become shopping spines providing jobs as well as services.	Treat housing as an income-generating agent as opposed to being a commodity.

## **CENTRES**

### **Existing situation in 1977**

#### **Deficiencies**

- The whole area had no urban structure: no focal points or centres existed.

#### **Potentials**

- New extension land would provide the opportunity of creating a centre for the whole community.

#### **Proposals**

In Hai El Salam one main community centre, three sub-centres and 15 neighbourhood centres were proposed.

#### **The community centre**

The centre was planned to provide social, commercial, industrial and public facilities for the current and projected populations of the new and existing areas. In order to serve both existing and new areas best, the centre was planned as near as possible to the geographical centre of the whole area, and astride principal vehicle and pedestrian routes. It was planned as an extension and termination of the main north-south spine road and to provide a hub to the whole development. The principal design concept was the recognition of Ismailia as an example of the synthesis of the Arab

traditional urban form and French town planning of the nineteenth century, with its accent on open spaces and tree-lined avenues. The main square of the proposed centre was provided immediately to the north of the shopping centre, and provided the setting for the principal mosque as a focal point viewed along Mustashfa Street. Figure 3.6 shows the layout of the centre.

The main buildings of the centre were to be grouped in their main categories as follows.

**Group one**

Shops, market, workshops, a bank, post office, implementing office and cooperative shop.

**Group two**

Police station, fire station, ambulance station, polyclinic, social unit. Land had been made available for a cinema or similar use, and the main mosque has been sited in the main square.

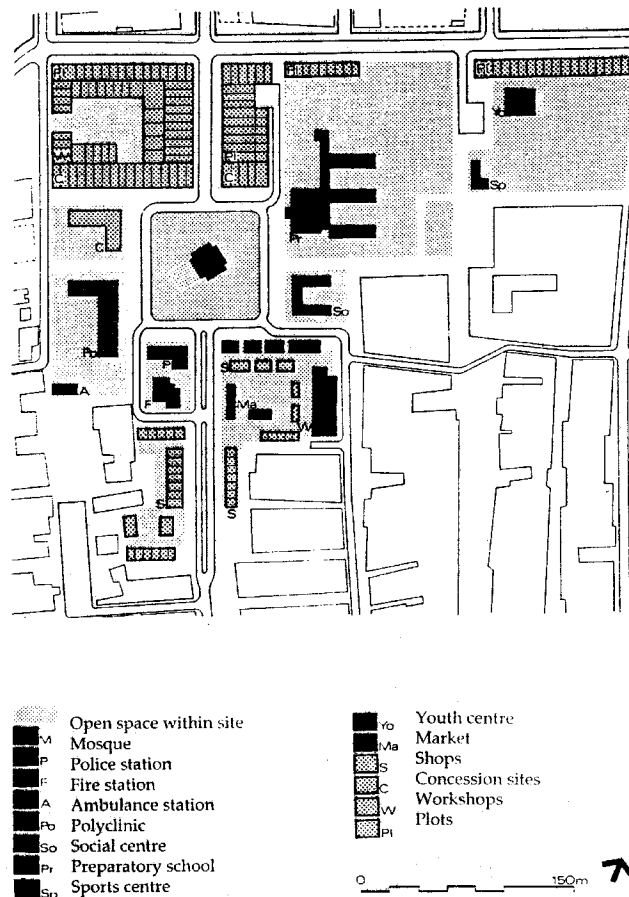
**Group three**

Preparatory school, primary school (to serve the immediate neighbourhood) youth centre, and sports club. In addition, an area has been reserved for recreational open space, car parking, bus terminus and taxi ranks.

It was anticipated that existing commercial uses in the south of Hai El Salam would extend northwards naturally over time along Mustashfa Street, and the southern part of the centre was planned to take account of this. In the eastern section 61 shops and a covered market were planned. Forty-one shops were provided west of Mustashfa Street, together with six workshops with an area for further subdivision. The main square provides the setting for the service and social buildings with some concession sites in prominent positions. The schools and recreational buildings were planned on the fairly open and more level land extending to the east. Space schedules and costs were based on examples of similar buildings in use nearby.

**Figure 3.6 Hai El Salam community center**

Source: Arab republic of Egypt, 1978: vol. 1.



**Sub-centres**

Three sub-centres were planned for the whole area, one in the new development area in the north, and two in the

existing area (see figure 3.3). They were planned to provide an intermediate level of service between the main and neighbourhood centres, and at the intermediate level health centres and minor social units were planned. The sub-centre in the new development area contains a number of concession plots which were to encourage commercial provision, and each sub-centre in new and existing areas were planned to contain a large mosque and more open space than was planned for in a neighbourhood centre. The sub-centres in the new development area and on Talaatini Street were also associated with neighbourhood primary schools. The two sub-centres in the existing area were developments of existing social and commercial areas, and their establishment was assured. Sub-centres would become more important as consolidation and development continued.

### **Neighbourhood centres**

Each of the neighbourhood centres was planned to serve a population of 4000-7000. They included a primary school on whose catchment areas the neighbourhood was based, a mosque and public open space. In the existing areas it has not been possible to accommodate all of the land uses on one site because of the lack of available land and the policy of minimising demolition. In these cases the neighbourhood facilities were provided on disaggregated sites. With the mosque and school as the main visual element, each centre was expected to provide an identity focus for the population of the neighbourhood.

### **Implementation**

The land for the centres was set aside and they are developing in different stages depending upon the rate of urbanization. Some of the services are currently being implemented (see Chapter IV).

<b>Existing situation</b>	<b>Project proposals</b>	<b>Implementation/evaluation</b>	<b>Lessons learned</b>
<p><b>Deficiencies</b> The area had no urban structure or centres.</p> <p><b>Potentials</b> Extension could provide a centre.</p>	<p>A community centre, 3 sub-centres and 15 neighbour-hood centres were proposed to provide different levels of services.</p>	<p>Land was allocated for the centres that are developing according to the rate of urbanization.</p>	<p>Utilise vacant land to restructure the area and to provide centres.</p>

## **HOUSING**

### **Existing situation in 1977**

#### **Deficiencies: factors affecting construction**

##### **Ground conditions**

Three features of the existing ground conditions affected the installation of utilities and have been borne in mind when preparing cost estimates:

- Sulphate attack on concrete, mainly in the, southern half of the project area
- High water table, mainly in the southern half of the project area
- Loose or soft ground

All concrete located below the upper level of capillary rise would require sulphate-resisting cement. In areas of loose or soft ground, trench sides would require adequate support and in excavations below the water table, dewatering methods would need to be employed. In parts of the south and west of the area well-pointing has been necessary.

##### **Existing buildings**

Houses undergo incremental improvement and consolidation over time. All the two-, three- and four-storey houses were concentrated in the oldest southern portion of Hai El Salam. The proportion of modern materials is also highest in the older areas gradually decreasing in the newer areas of Hai El Salam (see figure 3.7).

The highest quality buildings were almost all multi-storey, and/or of modern materials and built by the use of more sophisticated structural systems such as reinforced concrete frame construction. The quality of structures made from traditional materials and with traditional techniques was generally good.

Poor-quality buildings tend to predominate in the fringe areas of the western part of the project area. These areas appeared to have originally been agricultural settlements of greater age than the urban settlement that has begun to



encompass them.

Particular care was necessary when excavating trenches near existing buildings -especially where dewatering was proposed. Settlement of the underlying ground had been feared to cause structural damage leading, in extreme cases, to building collapse. In practice this was a significant problem only in areas of multi- storey development -generally single-storey mud-wall buildings would tolerate some degree of settlement without causing undue problems. Building behaviour was carefully monitored as work progressed.

### **Access**

The low level of vehicular activity would enable temporary street closures to be made without difficulty during the installation of utilities. Pedestrian access was maintained at all times. Precautions were necessary to ensure the safety of the public, particularly at night.

### **Potentials**

Hai El Salam provided in 1977 the main supply of low-cost land for owner-builder construction and a large proportion of new low- and moderate-cost rental accommodation. The land was, however, mainly in insecure tenure and was unserviced. The low-cost rental accommodations were scarce, of poor quality and remotely located. The moderate cost units were scarce too, and their services were deficient and rents were rapidly rising.

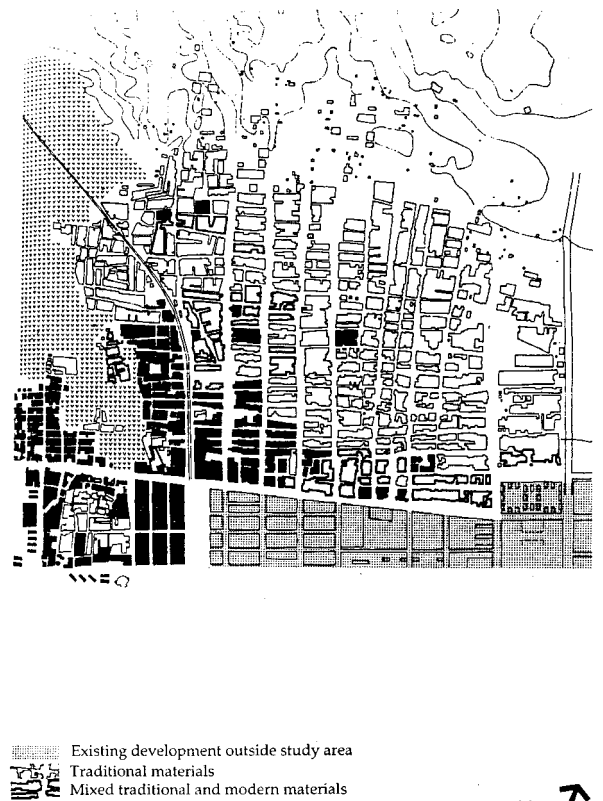
### **Project proposals**

The project proposals were to strengthen and improve the role of Hai El Salam in the Ismailia housing market by providing surveyed plots, both partially and completely serviced, by improving levels of services in the existing areas, and by facilitating and supporting construction, improvement and expansion of houses in existing and new areas for own-family use and for rental.

**Figure 3.7 Hai El Salaam building materials**

*Source: Arab Republic of Egypt, 1978: vol. 1*

Policies of support were discussed separately. They included land tenure regularization, simplification of plans and permit requirements, improvement of supply of building materials, availability of credit for low-income owner-builders, and provision of services on terms affordable by the population. No direct construction by the Project Agency



was proposed.

## ***New development area***

### ***Low-cost plots***

In areas of new low-cost subdivisions the plots range from 72m<sup>2</sup> to 162m<sup>2</sup> (see table 3.4). Modular sizes of plots, blocks and clusters permit broad adjustments of proportions of plots of different sizes offered in the subdivisions without the need to redesign the area. Monitoring of the effective demand during the implementation of the first phase showed the nature and extent of adjustments which would be needed.

The subdivision consists of about 50 per cent of plots of 108m<sup>2</sup>, 30 per cent under 108m<sup>2</sup>, and 20 per cent over 108m<sup>2</sup> (see figure 3.8). The average plot size is 107m<sup>2</sup>. 65 per cent of the plots were planned with 6m frontages and 35 per cent with 9m frontages. In total 3527 low cost plots were planned in five neighbourhoods. 55 of these included existing houses that were incorporated in the layout design. In 28 cases this has required provision of plots larger than those in the planned range.

The first phase of new subdivision consisted of 977 plots, 25 of these included existing houses, 13 of which are on the large-size plots. Larger plots are located mainly in the areas of commercial or rental potential such as in main streets, on corners, near the community centre and community sub-centres, or near the public open spaces. Smaller plots were mainly within the clusters and further away from the centres of activity.

No attempt was made, however, to follow these guidelines rigidly and some plots of different sizes were provided throughout the area to enable social mix and spatial variety and to increase the available choice.

The orientation of plots and clusters was designed mainly as a function of the topographic characteristics of the area to lower costs and to reduce the technical problems of sewerage mains and to facilitate a better use of public spaces.

### ***Concession plots***

Besides the low-cost plots, the new subdivision offers at commercial prices 169 plot ranging from 15x24m to 24x24m. In two concession areas, 59 in north-western and 110 in the eastern portions of the project area. These plots were planned to be sold fully serviced. An additional 2 hectares in the north-west of the area could not be surveyed because of military use. Due to its attractive location, they would provide additional concession land as a continuation of the north-western concession area when developed.

The entire northern strip of the new subdivision immediately south of the proposed university was subdivided into plots of 6x18m and 9x18. This was based on the assumption that if demand for market-price concession plots would be high and demand for low-cost plots lower, they could be converted into concession plots of 18x18m.

### ***Improvement area***

Improvement proposals for rationalisation of the layout of streets and for creation of plot clusters around the communal spaces were meant to result in changes of the boundaries of some plots and enable provision of new infill plots in the sporadically developed areas. Detailed design of the layout of infill plots in these areas required a complete survey of all existing houses, including positions of all doors and windows on outside walls. This example of infill design was provided in the neighbourhoods adjacent to the new development area (see figure 3.7). The first kind of infill plots were those with attractive, potentially commercial frontages created by the construction or rationalisation of main distributor streets. 49 such plots were planned in Neighbourhood No.11 along the new east-west distributor street and the extension of Talaatini Street.

The second kind, infill plots around a cluster, are shown in Neighbourhood No.5. There were 67 low-cost infill plots planned in the northern section of this neighbourhood, 25 of which have frontages towards the communal space within the cluster, 14 concession plots (18x24m) facing Shibeen El Koum Street, were also planned as a part of the infill of this neighbourhood, bringing the total of residential concession plots in the project area to 183.

### ***Implementation***

By the year 1990, most of the plots in the older area had been rationalised and deeds are still being given out, usually in official ceremonies. Nearly all the plots in the new area were sold except some concession plots that were still reserved in prime areas.

The philosophy advocating that "people should be allowed to build for themselves", if applied to a project, should be

supported with building regulations that are designed to avoid abuse of such rights. In this case study there were no stringent guidelines. In addition, it was assumed that lower income people would be building low-rise buildings. In fact, as parts of the new extension were developed by the middle class they tended to build higher apartment buildings. This resulted in many cases in poorly-lit rooms, particularly on the lower floors in areas that were fully built. Small light wells in four- to five-storey buildings are common. In recent interviews with some of the inhabitants living in such apartments, it was indicated that if they had a chance to move out of the area to better illuminated apartments they would.

Plot size	6x12	6x15	6x18	9x12	9x15	9x18	12x12	Larger	Total
	72m <sup>2</sup>	90m <sup>2</sup>	108m <sup>2</sup>	108m <sup>2</sup>	135m <sup>2</sup>	162m <sup>2</sup>	144m <sup>2</sup>		
Total number of plots	517	600	1276	433	360	180	133	28	3527
Percentage	14.7	17	36.2	12.3	10.2	5.1	3.8	0.8	100
1st Phase: number of plots	135	144	363	108	125	51	38	13	977
Percentage	13.8	14.7	37.2	11.1	12.8	5.2	3.9	1.3	100

*Source: Arab Republic of Egypt, 1987: Vol.1*

Existing situation	Project proposals	Implementation/evaluation	Lessons learned
<p><b>Deficiencies</b> Location of existing buildings, poor ground conditions and access.</p> <p><b>Potentials</b> Provision of low cost housing plots and rental units.</p>	Strengthen area's role in the housing market by tenure regularization, improvement of materials' supply, credit, and affordable services to low income builders.	By 1990, most of the plots had been rationalised and nearly all the new plots were sold except some concession plots reserved in prime areas.	Provide a variety of plot sizes to meet the demands of different income groups.

## URBAN DESIGN

### **Existing situation in 1977**

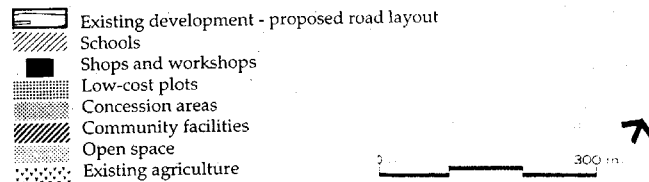
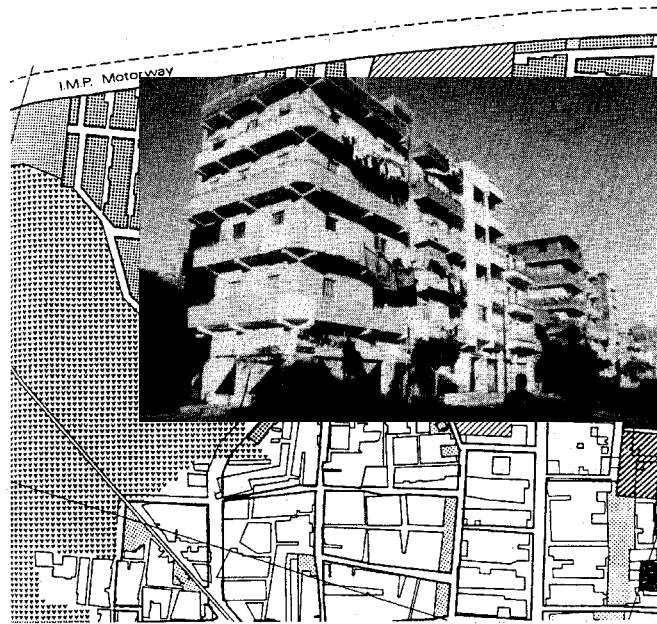
#### **Deficiencies**

- The very nature of informal development is that it occurs as a result of individual efforts. As individual plots are identified and buildings are constructed the result is usually chaotic in terms of urban design.

#### **Proposals**

The urban design of the community plan is if dominated by the community centre and its central plaza, with the main mosque of Hai El Salam having its minaret on the axis of Mustashfa Street.

At the other main junction the new community sub-centre is located with its mosque visible in the perspective of three main streets.



**Figure 3.8 Hai El Salam Development Area (north-west of the development)**

Source: Arab Republic of Egypt, 1978: vol.1.

Neighbourhood mosques occupy, wherever possible, the highest points in the area and visually express the perspectives of the streets or of the main pedestrian axes.

In the neighbourhood centres, the design, concept was to create a concentration of activities around a public place, between mosque and space for a small market, with the school and a "kick-about" area opposite or next to it. With the mosque and the school as main visual dominants, each centre was expected to provide an identity focus for the population of the neighbourhood.

### **Implementation**

Some of the buildings of the main community centre have been implemented. The main mosque, the Project Agency building, and police and fire stations have all been implemented. Some of the land reserved for facilities such as the school have been sold off to raise funds to implement some of other necessary aspects of the project. Unfortunately, no really good examples of urban design could be witnessed in Hai El Salam, both old and new areas. Because of too much *laissez faire* the result today seems chaotic and the consequences of individual efforts are obvious.

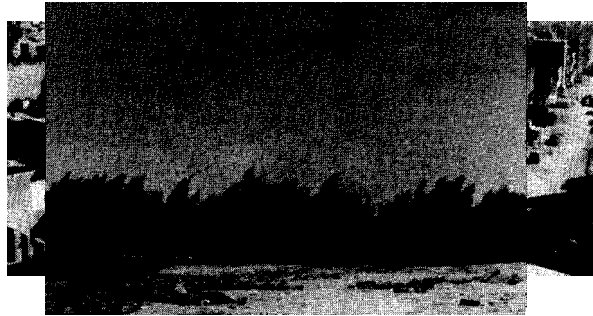
Probably the least successful aspect of the Ismailia project is the relatively unattractive environment it has produced. This results from too much *laissez faire* from the point of view of urban design and development of the public spaces. The older parts of Hai El Salam had already been developed before the project started and thus it had no appropriate urban design models to guide its development. Likewise, the new extensions do not exhibit strong urban design. Consequently, the area is regarded by some critics as a somewhat unorganised urban extension of the city. This is mostly due to the continuous construction, a healthy sign from the housing-production perspective.

This, however, should not overshadow other aspects of the project. There are ways and means to overcome such shortcomings; for example, more urban design studies could produce appropriate public buildings and spaces resulting in a more coherent urban image. Implementation and supervision of designs for public buildings are even more important to ensure attractive results. Public urban areas such as main streets, squares and the like should all be well-designed and implemented. The commercial facilities and workshops built by the Project Agency for revenue generation could be used as a medium for creating interesting public spaces. Other public facilities, considered as utilitarian structures, could also be used to produce some exemplifying architectural and urban features.

**Photo 3.3. Apartment buildings built on concession plots – along Shebeen El Kom Street - 1992**

**Photo 3.4 Consolidated area in older portion of project – 1990**

<b>Table 3.6 Urban design summary</b>			
<b>Existing situation</b>	<b>Project proposals</b>	<b>Implementation/evaluation</b>	<b>Lessons learned</b>
<p><b>Deficiencies</b> As plots are identified and buildings constructed individually the result is seen as a chaotic urban fabric to many.</p>	<p>Use the community centre as a dominant element. Use neighbourhood mosques to visually punctuate the perspectives of the main axes.</p>	<p>Due to <i>laisser faire</i> attitude, the area today lacks a cohesive urban structure and image resulting from individual efforts.</p>	<p>Undertake rigorous urban design and administer its implementation by a responsible authority to ensure good results.</p>



**LAND SCAPING**

***Existing situation in 1977***

***Deficiencies***

- The whole area lacked public landscaped areas.

***Potentials***

- Landscaping in existing Hai El Salam consists mainly of private gardens, some very small, mostly at the fronts of the houses.

***Proposals***

Despite difficult soil conditions, private gardens develop very well due to the care and attention of the owners. This form of landscaping would be encouraged by the free provision of space for private front gardens within the right-of-way of the streets and in the community spaces within the cluster. Purchase of trees and seedlings for these gardens was proposed, at a low cost, with technical advice made available.

Two other levels of landscaping included the enhancement of the community spaces within the clusters and of the public spaces of parks and “kick-about” areas. The first level would be a subject of joint care by the residents of the cluster while the latter would be planted and maintained by the Project Agency. Tree planting will also take place on the district streets with 20m rights-of-way.

Continuous planting with trees was proposed along the main north-south district streets. In other streets trees planted in gardens would supply shade to the sidewalks. Informal groupings of shade trees together with some seating, and sometimes children's play equipment, were suggested for the small *midans* (squares) and in the predominantly pedestrian access streets and footpaths.

***Implementation***

The Project Agency played an important role in landscaping the project area and providing green spaces within it. A forest of about 100,000m<sup>2</sup>, along the ring road surrounding the site, was planted by the aid of school and university youths during school vacations. The Project Agency co-ordinated with the Youth and Sports Department to create summer camps for youths from the Governorate and from the project and other governorates to plant the forest and create a nursery. Project Agency Funds for landscaping were £E 671,262 (1980, US\$ 958,945).

Evidence is seen in several places of landlords who have planted attractive decorative plants, and are taking good care

of them.

**Photo 3.5 Forest planted by community youths – north of project extension**

**Photo 3.6 Trees planted in front of buildings by owners**

<b>Table 3.7 Landscaping summary</b>			
<b>Existing situation</b>	<b>Project proposals</b>	<b>Implementation/evaluation</b>	<b>Lessons learned</b>
<p><b>Deficiencies</b> No public landscaped areas.</p> <p><b>Potentials</b> Landscaping consists mainly of private gardens.</p>	<p>Provide space for front gardens within streets' right-of-way. Plant tree along district streets. Group shade trees informally with seating for small squares.</p>	<p>A forest was planted by community participation. Landlords have planted vegetation in front of their plots.</p>	<p>Utilise community youth to cultivate green spaces. Provide incentives for cultivating trees in front of lots.</p>

