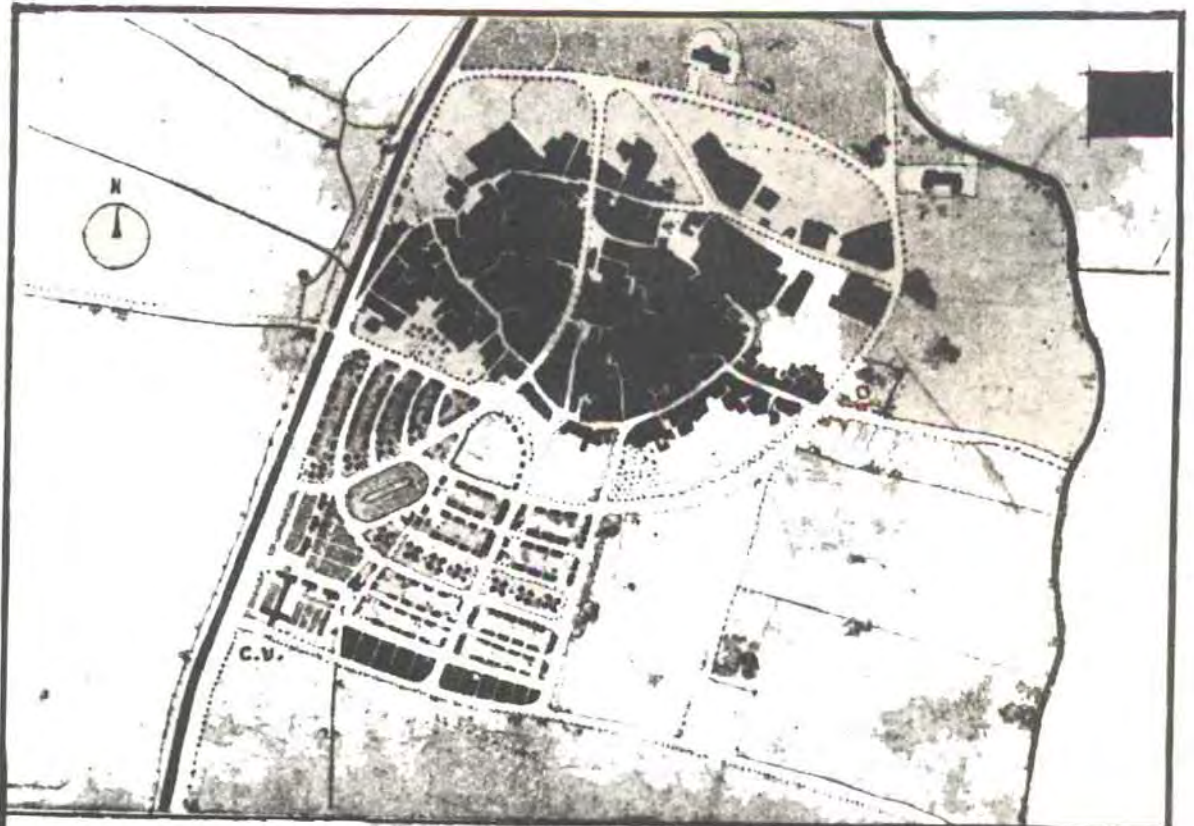


CHAPTER X

VILLAGE PLANNING PRINCIPLESIntroduction

Village replanning in Egypt has been the subject of many disputes in the past ten years. Many trial policies have been debated and a number of experiments have been carried out in this field but without any solid or well-established results. The government authority dealing with this operation is the Planning and Housing Department in the Ministry of Rural and Urban Affairs. This Department is responsible for dealing with the replanning of more than four thousand villages in the country. This is by no means an easy task especially as it has to be carried out by a single central department in Cairo. In the replanning schemes carried out so far, old villages were completely avoided and new sites were chosen for future extensions. See fig. (20). Unfortunately these schemes were put into effect without adequate surveys or consideration of the deep rooted problems of the rural structure. Moreover, we are confronted by a great shortage of trained planning personnel capable of dealing with this large number of villages and the complex problems to which their redevelopment gives rise. So far village planning has been dealt with in its narrowest sense. The village was looked upon as a problem limited to the area only of its built-up parts. Although many social surveys and much kindred research has been carried out over wide rural areas, economic and planning research, in contrast, has lagged behind. This has meant that social research has not yet been of any great practical use, except in the establishment of public and social services institutions. One great factor has been consistently ignored in village replanning in Egypt. This is the cultivated land itself which is the main source for survival not only for the rural population but of the whole country. Unless the standard of living of the population is raised as an outcome of an increase in the national income there can be little hope for any adequate plan for rural reconstruction. The problem with which Egypt is now faced is one of the land as much as it is of the people. In fact land and man are closely integrated in the case of rural Egypt, and village planning there should be based on this fact. The new plan should give a chance for progress and development not only for the community but also for science, technology and research.



BANI-HILAL
Sharqiya



TALBENT
Gharbiya

EXAMPLES OF RECENT VILLAGE EXTENTION PLANS

It is the duty of the planner to show the community with which he is dealing the facts and the consequences which may develop from the new plan. For any new plan to be carried out, this is the most difficult starting point as far as the Fellaheen are concerned. Then comes the main part for the fellaheen to play in this connection. Unless they are aware of the problem confronting the country, no concrete results can be gained. It is mentioned in the holy Koran that, 'God does not change what is in the people unless they change it themselves'.

Geddes said, ⁽¹⁾ when talking about the transition in an Indian city, that the problem of city planning, as of chess, is to improve the situation by, as far as may be, turning its very difficulties into opportunities. Results then obtained are both more economical and more interesting, even aesthetically than those that are achieved by clearing the board and resetting all the pieces.

The main object of the new plan is to be human in its character and natural in its growth. The new plan is to deal with the Fellaheen and their community as a part of nature. The village is more sensitive an organism than the town and needs more delicate treatment. Every change within it would be reflected in the daily lives of its inhabitants.

Proposed Rural Planning System

Before approaching the problem of village planning in the Nile Delta one must examine the existing pattern of rural settlements. It is obvious that settlements of different sizes came into existence in the past naturally as the result of differing functions and to satisfy different needs. A similarly logical basis must be behind any deliberate reorganisation of the settlement pattern, and the problem is to establish relationships and distribute functions among those settlements which are suitably placed, in such a way as to meet the wider and more varied range of present-day human requirements.

The present pattern of rural settlements in Ashmoun shows the existence of a distinctive grouping of settlements. Every group comprises a country town of more than 5,000 inhabitants and a number of villages with their hamlets lying in the sphere of influence of this town. This sphere of influence is in the nature of marketing or the social services of the Collective Centre of the country town.

(1) Tyrwhitt, J., Patrick Geddes in India, London 1947, P.41

The introduction of the co-operative farming system in the countryside will lead to the creation of a small number of new co-operative settlements or hamlets of a primarily residential nature, and also to the redevelopment of the existing villages and country towns to suit the new farming system. The siting of the hamlets will depend, to a great extent, on the system of land divisions (hods of 100 to 150 feddans) and the type of holdings they comprise. The siting of the new hamlets and the redevelopment of the existing villages and country towns must be, therefore, planned according to a definite system of relationship between the different types of settlement. It is, therefore, necessary to develop a system of planned relationship between the country town, the village, and the hamlet. A planning unit comprising the country town as a centre with a number of 'village clusters' round it could be the basis for a new planning system. Each 'village cluster' is made up of a large village - the mother village - and a number of hamlets round it.

The country town which will be the centre of the village clusters would serve as the market town, the administrative and commercial centre, the social and the cultural hub of the whole area. In this case the Collective Centre will provide most of these services.

The size of the planning unit, therefore, should be the same as that of the area served by a Collective Centre and comprising 15,000 inhabitants. This fact will give the Collective Centre more importance in the field of rural planning in the Delta.

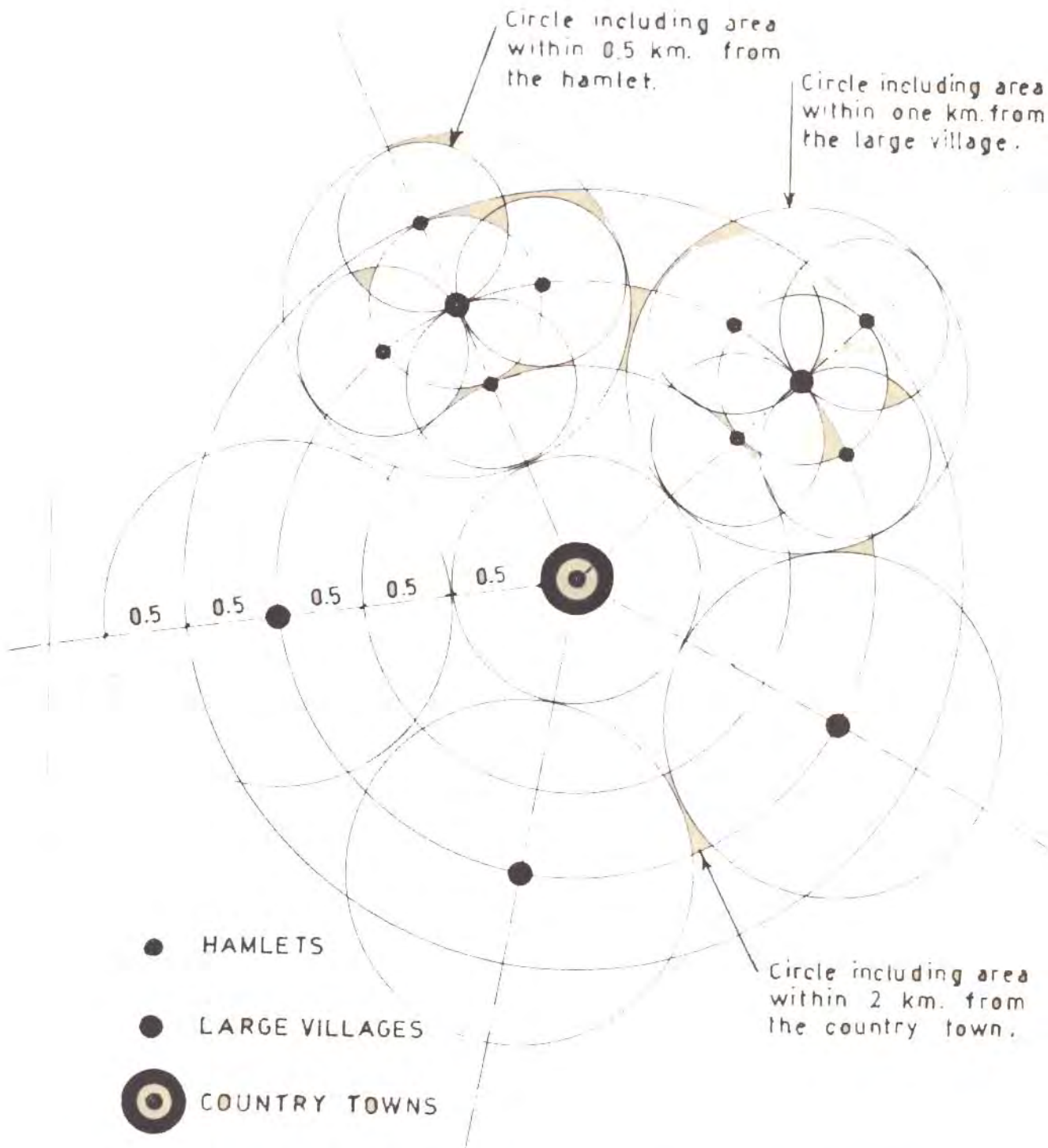
The planning unit will constitute an independent administrative division and comprise a rural industrial unit. Any scheme for rural redevelopment inside the boundaries of the planning unit could be carried out regardless of the existing village boundaries within the planning unit. The planning units' boundaries are to be considered as those of the existing areas served by the Collective Centres unless good reasons call for some alteration of the existing boundaries, having regard, for example, to the means of transport and communication. The general effectiveness of the new system will be largely dependent upon having adequate transport facilities between the large villages and the central country town and from there to areas outside.

Due to the high density of population in the Delta countryside, and its concentration in a large number of relatively well-populated centres at close intervals, the average village cluster in terms of total population is sufficiently high to support one or more primary schools on the basis of 1200 of total population per school as a general standard of provision.

The size of a cluster, (See fig. 21) in terms of physical extent, is to be based on the idea that $\frac{1}{2}$ kilometre is the maximum reasonable distance for people to have to travel to work, shops, or schools in a rural area like that of the Nile Delta where means of communications are notably poor. From the settlements forming a ring around the larger one, the whole area of the cultivated land can be reached within the suggested $\frac{1}{2}$ kilometre limit. This makes it possible for housing to be sited within, or closely related to, nucleated settlements, without making necessary an unreasonably long journey to work. It also makes it possible for a farmer to change his place of work, within a fairly wide area, without having to change his house. Moreover this system will make it possible to relieve the larger villages and country towns from the state of congestion which now characterises them.

In these proposals the idea of agriculture as the basic industry, the means of production being the farms and fields, has to be kept to the forefront. Thus the residential villages and hamlets are surrounded in each case by a 'production zone', highly developed for use by the basic industry of agriculture.

The creation of the planning unit will eliminate the difficulties which might arise if each village unit were to be redeveloped individually and treated as a separate administrative unit from the point of view of planning. In many cases a village may be situated near the administrative boundary of a neighbouring village, and farmers from the first village may well be working within the boundary of the second village. In cases like that it would be unfair to prevent the farmer from working on the land nearest to his house if he is already doing this. To achieve the co-operative farming system with the minimum difficulty the village built-up area would best be situated in a physical sense in the centre of the land cultivated by inhabitants of the particular village; this means that, wherever necessary, existing village boundaries can be ignored in seeking to achieve the primary purposes of the system.



RELATIONSHIP BETWEEN THE DIFFERENT SETTLEMENTS IN A PLANNING UNIT

THE DIAGRAM IS BASED ON 0.5 KM. UNITS

In spite of the advantages which the new settlement pattern has to offer, the theory of dispersion has, on the other hand, its defects. The main defect of the scheme is the decentralization of services instead of their centralization especially in a rural area such as that of the Nile Delta which at present has such poor public services. In England, the general rural planning policy favours centralization and the creation of larger rural settlements so as to make it easier for the local authorities to provide them with the maximum practical measures of public services. But in the case of the Delta it must be remembered that in the rural settlement pattern the distances between the settlements are considerably shorter than those in an English rural area. In this case, the public services of the larger villages, such as schools etc., will be within easy access of the few dispersed hamlets. So far as piped services are concerned, such as water supplies and sewerage, the provision of such services is not likely to be on anything like the same scale as that contemplated in England; for example, greater reliance will be placed on the use of septic tanks even in the large villages and the pump and existing public water supplies will continue to be the main source of water supplies both for villages and hamlets for many years to come.

The Site Problem

The problem which first confronts the planner is whether to choose a new site for the village and build a good one there, transferring the population as it grows or whether to impose a new layout on the existing village. It is not practical to choose a new site for the whole village, the planner will have to decide whether part of the village can be destroyed and a new village centre planned, or whether the centre can be placed on undeveloped land at the side of the existing village. The object of moving the centre would be to develop the new village around the new centre. The few buildings worth preserving are to be considered in the new plan.

So far as sites are concerned, many suggestions have been put forward for creating new villages near the old ones thus involving the evacuation and demolition of the old villages. This is the method adopted at present by the planning authorities in the Government. This is not the best solution of such a complicated problem. As Geddes put it,⁽¹⁾ the objective should be to improve the situation by, as far as may be, turning its very difficulties into opportunities. The human side of the problem as well as the economic side should be considered with respect to land uses. There is no place in this context for the imposition of a theoretically conceived 'new village' plan in the form of a new and alien intrusion alongside the old village. There must rather be a strong and active belief in the theory of natural growth and development.

In facing such acute problems one must face the facts as they are before embarking upon any radical changes.

Village planning, as well as town planning, should be regarded as a dynamic process - a form of growth and progress. The under-developed community should be treated both physically and psychologically rather like a growing child. We must realise that the Fellaah is devoted to his land and loves and worships the place where his ancestors worked, lived and died. The Fellaah cannot accept a sudden change in his life but he may well accept the logical development of a well-conceived plan as an expression of his strong belief in 'Qadar' (Fate).

(1) Tyrwhitt, J., Patrick Geddes in India, Lund Humphries, London, 1947.

The social and economic factors make it essential that the new plan of the mother village should be laid over the existing one. This is most suitable from the physical point of view where many buildings and services can be preserved to make the plan more practical and realistic, and where advantage can be taken of the existing fine trees and fruitful orchards. Moreover, a considerable quantity of building materials will be of use if the demolition of the old buildings is carried out carefully. On the other hand, the choice of a new site for a new village would involve many administrative and legal difficulties bearing in mind that new sites will cover many small holdings of very fertile land, which should be used to its maximum capacity.

In addition to these factors we find that the government has already built many social, health and cultural centres in many villages throughout the country, and plans are in being for very many others to be built. Moreover, the irrigation schemes which cover the whole country with a net-work of irrigation canals have been arranged to serve the pattern of existing villages. The same can be said of the transport and communication systems.

These factors and many others leave no doubt that the new plan of the mother village should be designed in the form of a redevelopment scheme for the existing site.

Due to the great value of the cultivated land the extent^{of} the new plan should be kept to a minimum. Upward extension - two-storey houses - is the answer. In the case of the new hamlets to be built, their areas could be deducted from those of the large villages and country towns since suitable existing built-up sites within the villages could be made productive - since the existing buildings are themselves mainly earth.

Redevelopment Methods

The starting point in the re-development procedure is the land, the source of life for the rural community. From the survey carried out in this study one can classify land holdings into three categories : (1) small holdings less than five feddans, (2) medium sized holdings between 5 and 20 feddans and (3) large holdings of more than 20 feddans. It has been noticed before that holdings of less than 5 feddans are uneconomically cultivated, especially when dispersed among different plots. In this case consolidation of the plots will not, in itself, lead to a satisfactory result unless they are combined with other holdings in some sort of co-operative farming system, in order to get the highest output from the land.

The second category of holdings between 5 and 20 feddans can be considered sufficiently economical to be left for cultivation by their owners, though some consolidation of these holdings may be necessary wherever undue fragmentation has occurred. This group of holdings will constitute, therefore, a second feature in the agriculture structure and consequently of the new plan.

The third category of holdings over 20 feddans will be considered as large holdings which need labourers with housing accommodation usually outside the village proper.

Consolidation of dispersed plots or fragmented holdings must be carried out whenever possible for the sake of achieving the maximum possible output.

This first step in re-planning will dictate the new plan of the whole village according to the division of its land into the three different types of cultivation: a. co-operative, b. individual private holdings of medium size, and c. the larger land estates. With respect to the classifications of land comes the classification of man. The population of the village will then fall into three land-owning categories, there being small landowners, medium landowners and big landowners and a fourth group in the form of labourers serving the large holdings.

The next step is to consider the structure and the character of the existing rural settlement, its housing conditions and the quarters occupied by each of the above mentioned groups. In this connection great attention must be given to the social structure of the community. From such an investigation we can decide how the classified land can best be managed and consequently establish the proper

relationship between man and place of work. In the light of this knowledge we can decide who should stay in the mother village and who would be better located on new sites for small villages or hamlets to meet the needs of the new arrangement of land holdings. The wishes of the people and their ability and readiness to move is an important factor on which the planner should be informed beforehand. As far as Ashmoun is concerned it should not be difficult to stimulate the necessary movements of population provided that these are carried out within the village boundaries on sites within easy reach of the mother village.

The planning of a new settlement outside the mother village will not be a matter of great difficulty as far as physical planning is concerned. The difficulties to be faced in this connection will be the requisition of land for the new sites, and the problem of finance and building materials for the execution of the scheme. The sites of course will be quite small, probably no more than two feddans, and therefore the difficulty of land requisition should not prove a serious obstacle. The main problem, so far as physical planning is concerned, will be that of the mother village.

The inhabitants of the new hamlets will naturally come from the large villages and the country towns. This will help in the thinning out of the larger settlements and their reorganisation into more clearly defined quarters, also in reducing the fire risk and other defects of overcrowding which at present characterize the existing congested villages, and thereby offering the opportunity to create a more healthy environment for their inhabitants.

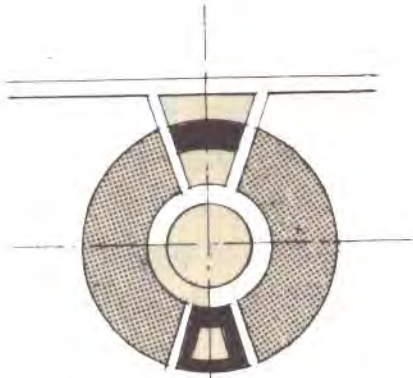
From the planning point of view the hamlets will fall under two categories. The first will be those occupied by labourers from the large farms and the second by new settlers from the large villages who adopt the co-operative farming system. The physical planning of both types will not vary much. In both types the communal buildings will be surrounded by the residential part of the hamlet.

The larger village is to undergo a different process of development. The existing ring road will remain as the chain linking the different clans or quarters centred together. Every quarter or sector will be divided into three parts; one part outside the ring road and two parts inside the ring road. (See fig. 22) The method of development will pass through three stages. The first is to develop

a new built-up area adjacent to the outer part of the village sector so as to accommodate overflow from this part. The area of the first part will then be redeveloped to accommodate people from the second part of the sector. The area of the second part of the sector will also be redeveloped to replace the third part which will eventually be left as an open space to comprise the new communal establishments which ultimately should be transferred from the outskirts of the village to its new centre. All the radial streets will consequently lead to the new central area. This means shifting the existing village's sectors one step to the outside of the built up area without very much change in the relationship between the clan centres and their corresponding built-up areas.

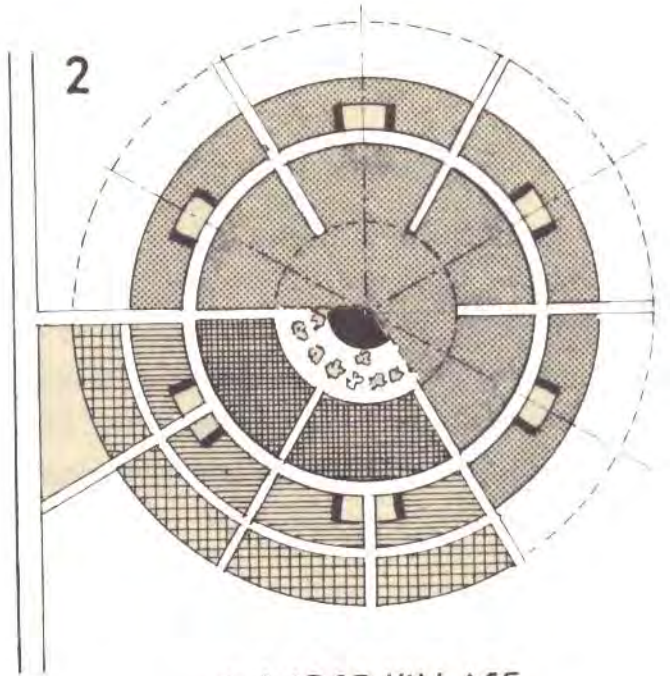
In the case of the country towns, the same steps could be adopted. But in this case the open space replacing the inner part of the village residential sector will create a belt of open space round a larger centre comprising the commercial, the administrative and the communal buildings. (See fig. 22) This belt of open space could be cultivated with fruit trees or vegetables to satisfy the needs both of the community and of certain types of the new industries to be introduced into the country town.

1



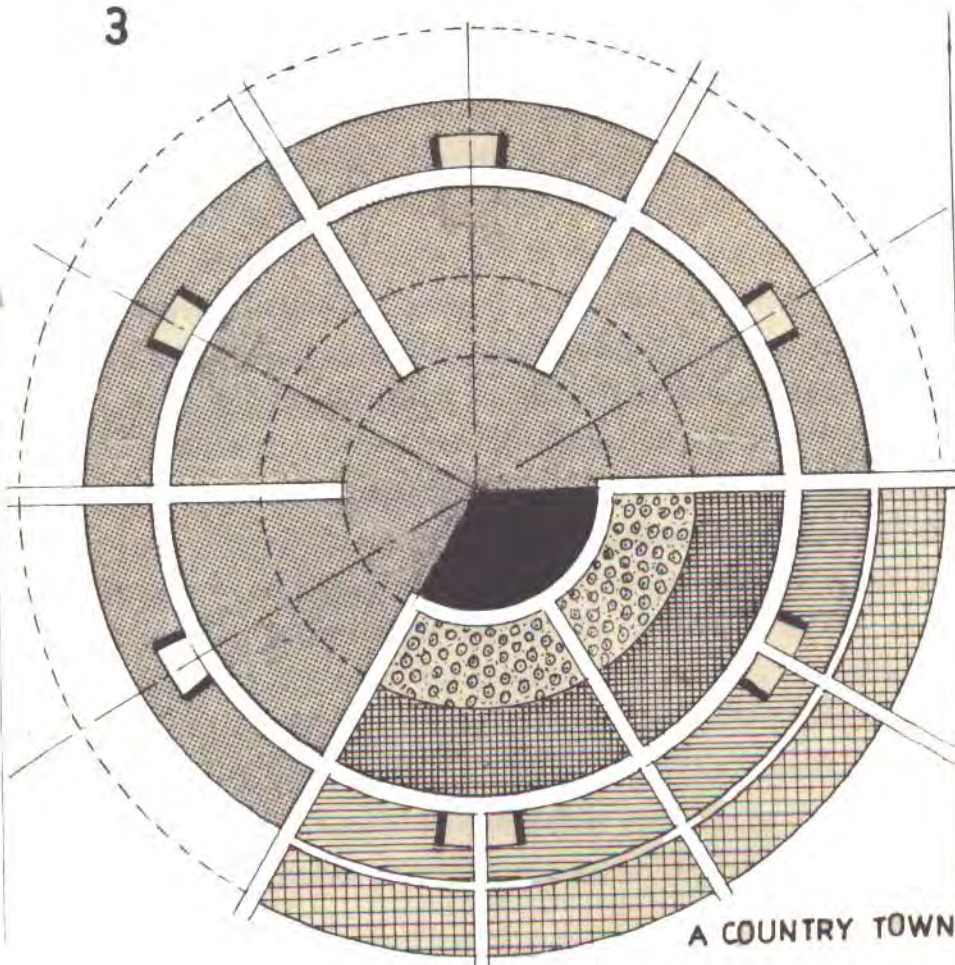
A HAMLET

2










A LARGE VILLAGE

3



A COUNTRY TOWN

KEY

-  Clan's centre
-  Existing built-up area
-  Orchards & Veg.
-  First stage
-  Second stage
-  Third stage
-  Central area

REDEVELOPMENT METHODS

The Character of the New Plan

The classification according to land tenure and consequent population grouping will dictate the type of housing required as well as its appropriate grouping which, in turn will determine the form of settlement plan. The character of the new plan will also depend on the type of settlement according to the system adopted in the planning unit, i.e. 1. The country town (in our case it will be the village of Shatanouf) 2. The large (or mother village) and 3. The hamlet or ezba.

1. The Hamlet

As far as the new hamlets and farm buildings are concerned these will fall into two types according to the nature of farm holdings in the area concerned. Where a single large ownership is involved they will assume basically these present forms as already described. They would, however, be run on lines similar to those adopted in the areas under control of the Land Reform Department which have been discussed under the heading of 'Land Reform' in Chapter II. and will house the agricultural labourers on large estates. The new type of hamlet which is to be created in cases where small landowners adopt the collective farming system by investing their small holdings in a large estate of about 150 feddans controlled and governed co-operatively, will be expressive of the communal life of its inhabitants. In this type the family - as a component of the new social structure - will, nevertheless, be able to enjoy a semi-independent life. While it provides the necessary labour for the co-operative farming, it enjoys the right of using its share in the general output of land. Every family can, within its capacity, practise any other activities for raising its standard of living. In other words the family should not feel wholly dependent on the land which is cultivated co-operatively but will be able to engage in other types of farming, such as raising poultry, breeding livestock, or working in any rural industry. Every family, in this case, can benefit from the different services rendered by the local-co-operative society in the sphere of monetary help, by getting loans, cheaper manure and seeds, or in the marketing of its own share of the farm products.

7 Introducing the fellah to the co-operative farming system must come gradually through well examined stages and in careful steps till he appreciates his new status and feels the material results of the new system. The change in the fellah's life must be evolutionary rather than revolutionary, if the new system or type of life is to be well-established and to avoid unexpected setbacks as have happened in some socialist countries. The will of the fellah must be sought first.

This type of 'hamlet' could be situated in the middle of the land which its inhabitants cultivate or it could be attached to a large village or even to a country town as an ^{an} integral part of its structure. In this latter case the hamlet would be regarded as a district of 'hail' in the large village with its inhabitants sharing the public services, activities and life of the larger village or country town.

The hamlet should have a village hall, a small mosque or church, a social club a small shop and a post office, and common stables, stores and threshing area according to the requirements of new type of farming. This is in addition to the administrative and residential building required.

In any new plan whether for the redevelopment of an existing ezba or the creation of a new hamlet consideration must be given to the prevailing northern winds. The communal stables and barns have to be situated in the southern part of the plan, while giving opportunity for the residential buildings to be adequately ventilated. This is a common factor in any planning scheme. On the other hand the factor of security must be adequately considered, as well as suitable arrangements for the prevention of the spreading of any fire which might break out in any part of the settlement.

b. The Large (Mother) Village

Most of the present villages lie under this category of rural settlements. The size of the large or mother village is something between 500 and 5,000 inhabitants. As they comprise the main bulk of the rural habitat, they must receive special consideration in the new planning system.

The present plan of the Egyptian village, in general, has been determined by

the factors mentioned before ; security, water, social structure and communications. These factors have influenced the shape of the village plan, both that of the circular compact type of village as well as that of the roadside type. The fellah built the village and lived in it for thousands of years. It became part of his life. The fellaheen grouped themselves in clans or districts sharing the sorrows and happiness of life. This was an instinctive, natural human behaviour which cannot, by any method, be readily converted into an open independent individual life. No more easily in fact than could the village ring road be stretched into a straight line. Similarly the social structure which has existed for so many generations cannot dissolve overnight.

Although the past must continue to influence the basic lines of any new village plan, modern techniques can be used to give it expression and in a form which looks forward to the future.

The new plan must reflect the life both of the individual villager and of the community as a whole. The fellah spends most of his life in the open air in his field. It is essential, therefore, to provide him also with a contrast which he can enjoy, and which he gains from the propinquity of home life and life in a closely-knit village both in terms of social contacts and actual physical arrangement of the village structure.

Simplicity and order are very clear in the fellah's life, and so it is in his village which is a part of his life. In the new plan there must be an orderly relationship of the parts, but the parts themselves should be simple, and then the total result will have the simplicity of character that belongs to the genuine village.

The new plan, on the other hand, must reflect the new economic and social structure according to the three different types of farming classified before. The size of these villages will be reduced due to the creation of the new settlements, the hamlets which will attract inhabitants from the existing villages. The clan or the neighbourhood divisions of the village will be the basis for the new structure of the community in plan. These divisions, on the other hand, will be the focus for the co-operative farming system as they already possess the character of communal life, by using a common village hall, a mosque, a threshing field (gorn) and in many cases, a pump. These elements will be the

focal points in the different quarters of the new plan. From this social sector most of the small landowners will come. Middle class landowners, owning between 5 and 20 acres will be also found as the leading figures in these neighbourhood units or clans. However in recent years there has been a tendency for these more influential villagers to detach themselves physically from the clan agglomeration by building new houses on the outskirts of the village; but they still do not detach themselves from the social life of the clans to which they belong. Large landowners, who own more than 20 acres, usually build their residential and farm buildings outside the village built-up area nearer to their cultivated lands.

In many cases the farmers of a particular clan or district usually work on fields on the same side as their quarters from the village area. This fact will reduce the difficulties of intermingling of ^{among} different shareholders in the new co-operative farms.

Nevertheless, one must be prepared to encounter difficulties in putting the new plan into effect in some cases where the factor of location and ownership of land is not so convenient. Cases may well arise where holdings within a certain area may affect farmers belonging to different quarters or clans. This might, however, have the virtue of cutting, to some extent, across the clan organisation and focusing attention more on the co-operative farming organisation, possibly to the benefit of both, because a little competition could be a stimulus to each, provided it does not reach disruptive proportions.

Consideration must be given to the economy of the plan as far as the cultivated land is concerned. Every inch of the cultivated land must be protected and preserved by keeping the built-up area to the minimum. Comparative studies must be carried out between the cost of land, ^{and that of} the construction of an additional floor for the newly designed houses and public buildings. The growth of the plan can be directed upward by adding an additional floor in the case of an increase in the family size, as for example, as often happens, a son marries and brings his bride to the family home and does not really change his social status.

The large village should have one elementary or primary school or more according to its size. The village should also have a health centre, playing

fields associated with ^{the} community centre, one mosque or more according to the size of the village, and the village halls required by the different quarters of the village. The village should also be provided with agricultural services, a co-operative society and a water-works, in addition to the necessary administrative, commercial and residential buildings.

Finally it must be remembered that a village is a living organism, not a static thing, and is continuously subject to change. Any new plan, must therefore, take proper account of this basic fact and be flexible and dynamic rather than rigid and static in its conceptions.

c. The Country Town

The third rural settlement in the new planning system is the Country Town which comprises the main social, commercial and cultural institutions of the planning unit. The size of these settlements or market centres lies between 5,000 and 10,000 inhabitants. Most of them lie in the category of 'villages', as far as the administration of the Nile Delta is concerned. But, on the other hand the majority of these settlements have already attained the character of towns to such an extent that the inhabitants of some of them have asked the authorities concerned to grant their villages the status of the 'Markaz' or a district town; as in the case of 'Shatanouf'. This fact confirms their status in the new planning system as Country Towns.

The main feature of this type of settlement is the greater importance of the centre as it comprises the commercial, social and cultural institutions of the planning unit. It will also comprise the main centres of rural industries and administrative activities. The focus of the plan will be the Collective Centre as already mentioned. The Country Town will develop a commercial centre different from that of the other villages which have their own shops distributed between the different quarters.

As any new plan must reflect the social and economic structure, a new type of people, other than the farmers will feature in the new plan. These are the people engaged in commerce, industries, business, cultural and social activities. They will naturally concentrate in the town centre. The farming population will be living in similar social and economic conditions as are to be found in the

case of the large villages. The different quarters or clans could be extended to the outer parts of the town leaving a considerable open area between them and the centre. The open area might then be cultivated with orchards or vegetables to provide the raw materials for the new rural industries to be introduced to the town.

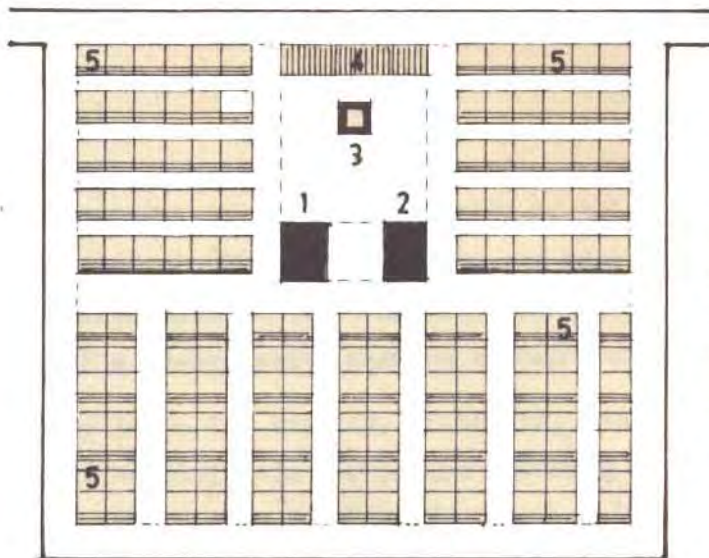
Housing and Size of New Settlements

As the new planning system and village replanning will involve the question of limited dispersion from existing settlements into new hamlets, the sizes of the existing villages will be consequently affected and reduced by the displacement of a portion of their inhabitants to the new settlements or hamlets. The question of the new sites will naturally come up as well as the question of the size of the new settlements and the areas they should occupy. In most cases these areas will have to be taken from the cultivated land from which losses must be kept to the lowest possible minimum. This factor on the other hand, will be affected by the type of housing to be adopted to suit the new farming systems and the new rural communities.

The house of the fellah in the new hamlets will be smaller in size than that of his colleague in the large village. The same will be true, even in parts of the large village, when some section of its inhabitants are to adopt the co-operative farming system but remain within the village proper. The provision for storage will be reduced to the minimum in the new co-operative houses whilst the stables will be apart from the house and run co-operatively as well as much of the storage space. In recent designs for normal village houses storage and stables occupy about 18 square metres in a house of 120 square metres, or 16 square metres in a house of 100 square metres.⁽¹⁾ (See figure 23) The co-operative farming system will, therefore, help the reduction of the residential built up area by about 15%.

A newly designed village neighbourhood (hail) of 800 people of 200 families occupying 154 houses at 1.3 families per house, would cover an area of about 30,000 square metres (i.e. about 7.5 feddans) This area includes a mosque of 300 square metres, a washing place of 100 square metres, five shops of 150 square metres, and about 13% (4,000 square metres) of the total area will be open space. It should be mentioned here that this village neighbourhood's plan is based on a 'terrace' house arrangement with streets of 8 to 10 metres wide, as this is the cheapest solution, as the author has found from previous research.

(1) These figures are derived from house types recently designed by the author. Similar houses have also been designed by the Fellah Department of the Gov. (See fig. 33) The first type has a second floor of 32 square metres and the second has a second floor of 40 square metres. The conception of the second floor in the 2 types was adopted to accommodate large families, or as future vertical extension in the house plan.



VILLAGE NEIGHBOURHOOD

scale 1:2500

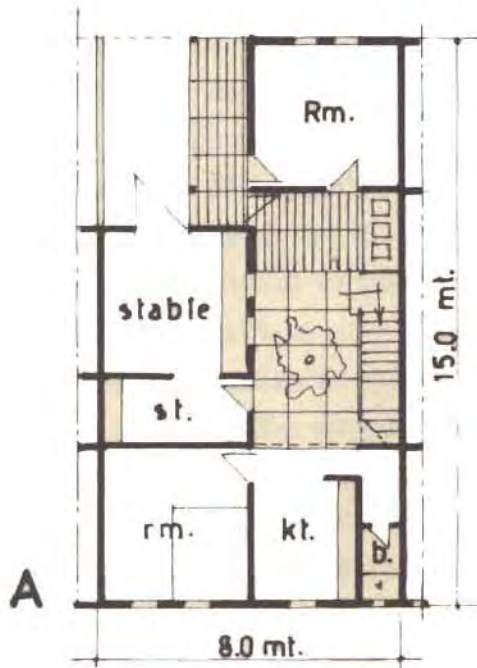
1. Mosque
2. Village hall
3. Washing place
4. Shops
5. Houses

Gross area = 7.5 feddans

Number of inhabitants: 800

Number of houses = 151

TYPES OF RURAL HOUSES



- Type A of 120 square metres
- Type B of 110 square metres
- Type C of 56.3 square metres used in the Liberation Province, Om-Saber.
- Type D of 95 square metres

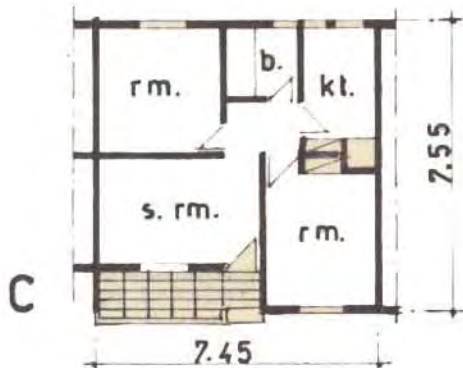
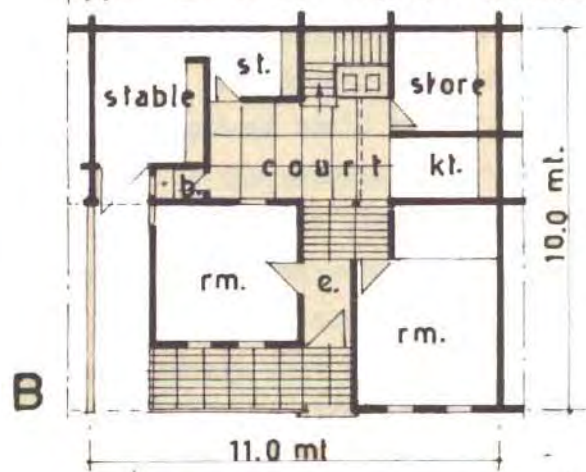


FIG. 23

(See fig 33)⁽¹⁾

The built-up area of the housing group of this kind will be reduced from 16,940 square metres (100 square metres per house) to 14,399 square metres, bringing the reduction in the whole housing group of the village neighbourhood to about 5% if a co-operative farming system were to be adopted.

The country town, for example, Shatanouf, has a population of 5,300 persons in 1,327 families living in 900 houses covering an area of 45 feddans at a gross density of 1 person to every 35.66 sq. m.⁽²⁾ This brings the density of the built-up area to 118 persons per feddan, with 5.9 persons (i.e. 1.5 families) per house. Due to the social characteristics of the rural community, 50% of the houses accommodate two families.

In any new plan this percentage can be reduced to 33% as to meet the tendency towards the independence of the small families from the larger ones. This brings the average number of families per house to 1.3 as mentioned before. A gross density of 37.6 square metres per person in regard to the total built up area would be achieved in the newly-designed village neighbourhood and this figure could be reduced to 35.7 square metres in the co-operative settlement. The residential built-up area in the new neighbourhood would be about 32.8 sq. metres per person which is quite close to that of the existing village (31.7 sq. metres per person). The area covered by streets in the new plan of the village neighbourhood is 8,470 square metres. Streets in the existing villages do not cover anything like this amount of land and only occupy about 15% of the residential built-up area. This means that the average area of the house in the existing villages very much exceeds the area of 110 or 120 square metres of the two types of houses designed by the author and the Fellah Department.

As the average number of occupants per house is about 5.9 persons, and as every person occupies 31.7 square metres of the residential built-up area, with about 15% covered by streets; this means that every person occupies 27.2 sq. metres of the actual built-up residential area. This gives the average area of the existing house to be about 180.5 square metres, i.e. one and a half times that of the size designed by the author and the Fellah Department, despite the

⁽¹⁾Research carried on in co-operation with the Building Research Centre, Cairo '55

⁽²⁾Allowing 5 acres for public building, the net residential density would be 31.7 sq. m. per person

fact that 1.5 families occupy a house in the existing village while this figure would be reduced to 1.3 families under the new plan. This is naturally due to the lack of proper design and planning.

A large village's centre would occupy about 12,500 square metres, 3 f. acres (or 5 feddans including open space) and would comprise the following:-

- a. A School and its playgrounds of 8,400 square metre (i.e. 2 feddans)
- b. A community centre of 600 square metres
- c. A village hall (madiyahafa) of 600 square metres
- d. A village mosque of 600 square metres
- e. A mayor's (Omda) office with a police station and a telephone and post office of 700 square metres.
- f. An agricultural department of 400 square metres
- g. A water works of 400 square metres
- h. 10 shops on 200 square metres
- i. A co-operative society of 600 square metres
- j. 10 houses for employees of 1500 square metres.

As a conclusion to these figures and calculations, we can say that the new development plans or the areas of the new hamlets will not cover more land than those already existing and probably less in the case of the co-operative settlement. This means that the area of the cultivated land as a whole will not be reduced, although disturbed, by the new planning system which involves the building the building of new hamlets, whose area, however, will eventually be deducted from those of the existing settlements.

Population growth has not been taken into account in this analysis since the rate of growth in the case of Ashmoun, is, in fact, negative. But in other areas where an increase in population is likely it can be met by a vertical expansion in the village plan as already suggested.

Finance and Labour

The improvement of housing conditions for people engaged in agriculture can be best achieved if people learn to help themselves. The basic approach to this achievement - and it can be reached with a moderate outlay of public funds - is to teach people how to improve their houses by applying their own labour to native materials.

Full co-operation of educational, labour, commercial and welfare agencies would seem to be required to handle such cases effectively. Technical guidance, loans and grants are all combined to give the new settlers their impetus towards financial competence. Loans are to be given to the Fellaheen on a very low interest and spread over a period of thirty years. The Co-operative Bank, the Agricultural Bank and other co-operative companies could finance the scheme.

Programmes to improve housing obviously need to be related to the local type of agriculture, and the local pattern of tenure. The improvement of the Fellaah's annual income must be carried out first. A campaign for the better farming methods extension of irrigation, building of roads, encouragement of domestic industries as supplementary occupations, better enforcement of tenancy laws, and improved rural credit facilities should be combined with land reform.

The Indian Planning Commission, which deal with problems similar to those in Egypt, has recommended a co-operative village management of farm land.⁽¹⁾ All the land in a village would be treated as a single farm. Although individual ownership would be retained, the benefits of large-scale operations would be obtained. Were such a programme to include co-operative self-help for the improvement of village houses, it could improve standards of both production and consumption.

If the scheme is to take ten to twenty years to be completed, according to the size of the village and the efficiency of the programme, the rebuilding of each district of a village of five districts would take between two to four years.

If the number of the Fellaheen in the whole country is 16,000,000, the average

(1) Radhakamal Mukerjee, Planning the Countryside, Hind Kitabs. Bombay 1946

population per village will be 4,000 or 1,000 families of four persons per family. (The number of villages in the whole country is about 4,000)

The need for building 1,000 houses per village in twenty years give the figure of fifty houses per village, per year.

These figures illustrate the size of the problem from the labour and the financial point of view.

Building Materials

It is obvious that using local building materials is of great importance especially from the point of view of economy and labour. About 75% of the building materials will come from the old villages. The other 25% will come from outside.

The main material is mud or mud-bricks (See fig. 24) The material which has been used for thousands of years and which come from the soil like almost everything else, ^{which} affects the Fellaah's life. It is a good insulation material against the intense heat of summer and the bitter cold of winter.

The use of mud as building material is, therefore, very important, but in a new form either mixed with other material or treated by another external process like burning or pressure, or any other process which proves practicable and cheap, bearing in mind that processes can take place on the site and are easily carried out by the Fellaheen themselves and are to be preferred.

It is not suitable to use the mud in its natural form as building material. It is quite impossible for the Fellaah to enjoy a clean residence with dust dropping continuously from roof and walls on to the clay floor.

Mud as a building material is very poor as a support or in cohering with any other material. This fact has a bad effect on roofing materials, doors, windows or other fittings.

It is very difficult to escape the fact that we need new building materials which can be produced from mud. Research is essential in this field, to produce the cheapest and most accessible building material.

Suggestions and experiments have to be carried out to produce a new material by the addition of certain proportions of asphalt, sand or cement to the mud. In



Drying out the mud bricks

Delivery of the mud bricks



Building
operation

Egypt, experiments have succeeded and proved that there is a kind of brick which, if the straw in its mud is removed and replaced by ^acertain petroleum compound, will prove the best for the purpose. Added to this is the fact that the manufacture of this type of brick and the building of houses with it is comparatively easy and the Fellah will be able to build his own house with it at a low cost.

Stabilized earth is another experiment which may prove to be adequate for rural construction. Usually stabilized earth mixtures are made into blocks which are laid in mortar consisting of a weak (1 : 10) cement-sand or cement-lime-sand mixture, occasionally with some of the earth added. The mixture is rammed into moulds either by hand or mechanically. Portland cement is generally used as a stabilizer, in proportions of from about five to ten percent by volume.

In traditional construction which is generally used for self-help housing, the improvement and better understanding of existing techniques is necessary. Floors and roofs may be of earth, or the roof may be thatched. The walls may be of monolithic or blockwork and finished with ^{colour} local washes or weak plasters.

The advantages of earth-cement work are :-

1. Most of the materials are already on, or close to the site
2. Compared with concrete blocks, less cement is used and no pallets for carrying the blocks are needed.
3. Compared with burnt clay bricks, no fuel is required.

Despite these advantages, the durability of earth cement is still doubted by some, and there is a tendency to look upon it as a temporary or experimental material. Good quality earth cement blocks are likely to weather as well as many of the wood-fired bricks and sand cement blocks being used.

External finishes still present something of a problem. The finish used should be equal in strength to, or preferably a little weaker than the block so as to avoid cracking.

In the case of roofing, it is very difficult in a country like Egypt without much in the way of trees or metal production to provide a good roofing material. Prefabricated concrete blocks can be used if they are easy to manufacture locally, and they offer more protection against fire.

A programme to foster the use of local materials can be far-ranging and might

include better use of existing local building materials, use of waste products⁽¹⁾, cultivation of local block making machines under the supervision of the co-operative societies, and possibly the erection of a cement plant in every province or local kilns, to provide the new building programme with red bricks made by the local inhabitants.

In Egypt the dried thatch of maize can probably be useful as well as cotton sticks, in producing a local building material if added to earth or cement. This combination material which can be called 'fibre concrete', is very light, and can be cast into very large blocks or panel slabs by hand work. If co-operative groups of families are formed, and the appropriate equipment and designs are available the work can be laid out on a simple mass production basis with the blocks and slabs for several dwellings produced at a central site.

An effective survey of all available vegetable and mineral ingredients as well as of sources of the chief inorganic or mineral binders, should be undertaken.

The importance of measures of apparently minor importance should not be underestimated. The use of white-wash for outside walls with some primitive equipment inside the house may be instrumental in enhancing the comfort^{and} as well as the aesthetic quality of the house.

Much can be done in the field of research. But as far as the Fellah is concerned he might be able to benefit economically if a building industry were established locally, and the cultivated land relieved of the excess labour which exists.

Producing new building materials in the rural settlement will have a psychological and sociological effect on the Fellaheen themselves. It will help to break the great bond between the Fellah and the soil, the mud and the water which is deeply rooted in his life, his house, his body and his soul.

Their houses will become cleaner, healthier, and of a quite different visual quality and dust and dirt in the village will be reduced to a minimum by using waste building materials in the paving of village streets.

(1) For example the residue of sugar-cane, has been used to make a walling material known as ampasite.

Housing and Economic Progress

It has been mentioned in the report of 'Low Cost Housing in South and South-east Asia'⁽¹⁾ that, as economic activity and real purchasing power increases for low-income families, better living conditions are made possible, including better housing and community development. In the long run, this is the only basis for such improvement.

Furthermore, economic development as such may make housing conditions worse unless it is accompanied by social development such as in health and social security and education.

Housing and community development constitute a major economic activity in themselves, 'when the mason is busy everthing is busy' as an old age adage goes.

The mission includes in the report some proposals to be taken for improving village housing. These proposals are :-

- a. Education and training in self-help housing.
- b. Improving the system of making houses and community facilities.
- c. The public agencies to make available the necessary materials.
- d. Providing trained personnel
- e. The establishment of appropriate regulations.

This work must be planned and programmed and carried forward by the government with the participation of the co-operative and other local groups, all as part of a national policy.

Aided Self-Help

Aided self-help can be understood as a method whereby a family, or families improve or build houses or communities largely with their own labour, in the ancient tradition but with governmental assistance for things which the family itself cannot provide.

The government helps to provide the technique, skills, materials and equipment and perhaps the money needed to meet the degree of improvement considered necessary.

The aided self-help principle has been applied in various forms to the improvement or building of homes in many places throughout the world.

(1) UNO Report of Mission of Experts of Low Cost Housing in South and South-east Asia, (1950-51) Housing and Townand Country Planning UNO Bulletin 6 1952

Standardised parts or elements provided, whenever possible through governmental or co-operative arrangements, constitute an excellent form of aid to any self-help scheme.

This system could be carried out by the Fellaheen in their spare time, the under-employment period which is about five months of the year.

The United Nations Report on 'Low Cost Housing in South and South-East Asia',⁽¹⁾ concludes that aided self-help represents a stage in the transition from houses built solely through self-help which are no longer very useful, to houses provided wholly by a building industry, which still cost too much for most families.

'Aided self help on a large scale is very difficult, as it requires great organizing ability, the most skilful human engineering, the greatest ingenuity, and much practice. Nevertheless it opens greater opportunities for providing more and better houses and communities than any other method and at far less money cost.'

The Agragami project in India is an example where aided self-help has succeeded⁽²⁾

The main principle of the scheme is that the villagers should participate in it, and of it, and that they should pay their share of the costs. The government is nursing the project in the pioneer stages, but it is hoped that it will run itself on a co-operative basis in time.

The success of aided self help schemes depend on the following factors:-

- a. Advance preparation of a comprehensive but flexible administrative and technical procedure.
- b. Good public relations to ensure that (i) families understand and accept the scheme, and that objections are discussed, explained and overcome; and (ii) the local community approves and co-operates.
- c. The careful selection of families
- d. Technical and administrative leadership.

The procedure of how aided self-help schemes are carried out are dealt with fully in the U.N. Housing and Town and Country Planning Bulletin 6 - 1952.

{1} U.N.O. Housing and Town and Country Planning Bulletin 6 1952
 {2} UNO Housing and Town and Country Planning Bulletin 6 1952

Research

There is almost no limit to the field of research. Research is needed into a variety of materials and construction methods, as well as into the economic and social aspects of housing. Floors, walls, roofs, ventilation, light, noise, sanitation, cooking, cooling, initial cost, annual cost, public services, all require further investigation in order to determine the best and most economical methods.

Management and Programming

This is the most complicated problem which the scheme involves, especially in a country like Egypt where 200,000 houses need to be built every year if the scheme is to be completed in twenty years. The main objects are to provide :-

1. Trained field workers, two for every unit of villages according to the divisions of the Planning Units in the country.
2. To find how many houses the community can build.
3. To find how much the families can afford to pay and co-operate
4. To find how much the community can afford in loans and subsidies. Key problems have to be identified; what is possible and what is not possible.
5. Propaganda and guidance in the communities, so as to prepare public opinion for the new scheme.
6. The co-operation of the social and health centres in the village in the new scheme.

Families must be selected and registered, plots and occupation agreements signed, the loan of money, materials and tools recorded and repayment accounts opened.

The machinery of housing management has to be created so that repayments, rents, rates, etc., are collected, the transfer of houses between families registered, sub-letting and overcrowding control etc.

When the families have been selected and plots allocated a technical staff must be organised to guide or train them.

These steps are to be taken after the survey and new plans have been laid down.

The Planner and the Community

The planner's part is to produce the seeds for the planting of the new community; to undertake a full survey of the old village and put forward plans for the new one by applying his theories and technique.

The village council will then take charge of the scheme, assisted by the planner, the surveyor, the builder, the social officer, the doctor and the agricultural officer, who should take part from the very beginning as members in the planning committee of every planning unit.

If the planning is to be truly democratic, as Cecil Stewart⁽¹⁾ says, it is patently the duty of the planner to interpret as best he can the wishes of those who are to be planned. It would be bad policy to produce a plan that dictates how people are to live no matter what they think themselves. But it is a sound policy to make people understand that only if they plan co-operatively will they live better. Just as they plan their individual lives, so they must take an active part in the planning of their own community.

The planner on the other hand, will be always behind the scenes. Therefore, he should live in the community for which he is to plan and lay the foundation stone of its new life, in order to study the human behaviour of the community in its environment.

(1) Stewart, C. 'The Village Surveyed,' Edward Arnold and Co. London 1948.