Seminar Proceedings
Core Housing and Site and Services Projects for Low Income Groups

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The Joint Research Team on Housing in Egypt
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Ministry of Housing, A.R.E.
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These proceedings are a part of a series of publications which describe various activities and studies undertaken in the Technology Adaptation Program at the Massachusetts Institute of Technology.

In 1971, the United States Department of State, through the Agency for International Development, awarded the Massachusetts Institute of Technology a grant, the purpose of which was to provide support for the development of technologies and problem-solving techniques to the needs of developing countries. In conjunction with institutions in selected developing countries, the Technology Adaptation Program provides the means by which the long-term objective for which the AID grant was made can be achieved.

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المحتويات

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The joint Cairo University/Massachusetts Institute of Technology research team on housing, under the auspices and with the cooperation of the Ministry of Housing, and the Ministry of Development and New Communities, held a seminar on “Core Housing and Site and Services Projects” on January 29 - 30, 1979, in Cairo, Egypt. This report is a documentation of the projects, papers, and conclusions discussed during the two-day period.

The study, planning, and design of core housing and site and services projects is now reaching the implementation phase. Several projects are considering this approach on a large scale basis and two of the projects are in the stage of constructing prototypes.

Much experimentation has occurred in other countries but in Egypt these approaches are still being considered as a possible option for alleviating the vast housing shortage. Extensive discussion has occurred, both for and against the use of core housing and site and services projects. However, many public and private experts do not have a clear idea of the ramifications these projects would entail. Dialogue between architects, planners, engineers, and other experts has only occurred on a very limited basis with no effective interchange of information, and the need for a forum for discussion was readily apparent.

This seminar was arranged in an attempt to fill this need and to encourage the exchange of information. The goal was to make public the basic information of each of the projects to discuss issues arising from the presentations, to discuss issues arising from the presentations, and to determine the primary issues and any basic recommendations which could already be made at this point. It is hoped that this would allow the positive participation of all the parties in solving a substantial part of the numerable problems in the area of housing in Egypt.
Participants invited to the seminar were deliberately limited to only experts with direct involvement or knowledge of the issues. Ministry personnel; architects, planners, and engineers actively involved in the design and implementation of projects; and experts from Cairo University and the Massachusetts Institute of Technology participated. The goal was to allow meaningful discussion in smaller groups, particularly in workshops, to confront the issues.


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Program of Activities

MONDAY, JANUARY 29, 1979

• 9:30 - 11:15  SESSION I - OPENING

INTRODUCTION
Dr. Ahmed El-Erian
Professor and Head
Department of Structural Engineering
Cairo University

WELCOMING REMARKS
H.E. Mustafa El-Hijfawi
Minister of Housing

H.E. Mohamed Hassaballah El-Kafrawi
Minister of Development and New Communities
(presented by Engr. Soliman Abdel Hai)

OPENING ADDRESS:
THE CONCEPT OF CORE HOUSES AND SITE AND SERVICES PROJECTS

Professor N.J. Habraken
Professor N.J. Raoufan
Head
Department of Architecture
Massachusetts Institute of Technology

11:15 - 11:30  BREAK
11:30 - 13:00 SESSION II
Chairman: Dr. Ahmed El-Erian
Cairo University

PRESENTATION OF ISMAILIA DEMONSTRATION PROJECT
Forbes Davidson
Culpin and Associates

PRESENTATION OF SUEZ DEMONSTRATION PROJECT
John Calder
Robert Matthew, Johnson - Marshall and Partners

PRESENTATION OF M.O.H. - WORLD BANK PROJECTS
Architect/Planner Nesy Ghareeb, General Director
General Organization for Physical Planning

18:00 - 20:30 SESSION III
Chairman: Dr. Abdel M. Barrada
Cairo University

PRESENTATION OF SADAT CITY CORE HOUSING
Richard Hioldeberger, John Dodson, M.B.A.,
David Parker, D.A.C.P., Sadat City Development Group

PRESENTATION OF 10th OF RAMADAN CORE HOUSING
Architect Dr. Ismail Reda
Consultants for Planning and Design

PRESENTATION OF M.O.H. - U.S.A.I.D. PROJECT
Architect Salah Zaky El-Din
Ministry of Housing

PAPER: ECONOMIC EVALUATION OF THE SITES AND SERVICES APPROACH
Prof. William Wheaton
Massachusetts Institute of Technology
TUESDAY, JANUARY 30, 1979

9:30 - 11:45  SESSION IV
Chairman: Dr. Ahmed El-Erian
Cairo University

PRESENTATION OF PORT SAID DEMONSTRATION PROJECT
Tony Edwards
Shankland Cox Partnership, London

PAPER: SOME COMMENTS AND CONCLUSIONS FROM LATIN AMERICA
Reinhard Goethert
Massachusetts Institute of Technology

11:45 - 12:00  BREAK

12:00 - 15:00  SESSION V - WORKSHOPS

THE DESIGN OF CORE HOUSE UNITS
Moderator: Dr. Zakia Shafie, C.U.

SITE PLANNING AND INFRASTRUCTURE
Moderator: Reinhard Goethert, M.I.T.

ECONOMIC AND MANAGEMENT ASPECTS
Moderator: Dr. Abdel M. Barrada, C.U.
• 18:00 - 20:00  SESSION VI - CLOSING

SUMMARY OF WORKSHOP RECOMMENDATIONS

Dr. Abdel M. Barrada
Cairo University

CLOSING REMARKS

Prof. Ahmed El-Erian
Cairo University

Prof. N.J. Habraken
Massachusetts Institute of Technology

• 18:00 - 20:00 2016-2017 6th Session - Closing
Summary of Issues

The following are summaries of the major issues which arose out of the seminar by the participants.

1. PRIVATE OWNERSHIP

   Private ownership in land and housing is considered one of the most important factors that encourage individuals to invest in housing. Ownership provides an incentive for families to mobilize their own resources in building and developing their housing as well as in encouraging their continued maintenance.

2. DEVELOPMENTS IN NEW, ISOLATED AREAS

   In the preliminary stages of developments located outside of existing urban areas, small, more complete expandable houses should be provided. They should consist of at least one room and a utility core to enable residents to quickly utilize the dwelling. Since the residents of such projects are mostly new and do not know each other well, they cannot depend upon a cooperative system or other internal systems for financing, etc. Therefore, it is necessary to develop an administrative and financial system and the organizations responsible for its performance.

3. DEVELOPMENTS ADJACENT TO EXISTING CITIES

   Most participants in the workshops agreed that the best solution for housing the low-income groups in the rapidly growing cities is to only provide a building site with attendant services, dependent on available resources. Individuals should be free to build their houses, offering them all possible assistance. They build their houses, offering them all possible assistance. The growth and development of these settlements should be controlled and directed to the mutual advantage of the individuals and the cities. Developing, financing, as well as administration is possible through group and individual cooperation, particularly in the formation of cooperative societies.
4. LOCAL GOVERNORATES

The participants recommended the strengthening of local governments and creating "units" or "project teams" which give the governorates administrative and financial independence, particularly in executing site and services types of projects.

5. AFFORDABLE HOUSING

Although difficult to determine, the calculation of a family's ability to pay for housing should consider savings as well as income. As shown by studies, many of the low income population, particularly in the informal sector, own or rent houses where the expenses exceed what can be expected and explained when only considering their current income.

6. SUBSIDIES

Most of the seminar participants agreed that financial assistance for low-income housing should only be through direct subsidies, perhaps in the form of building materials on a project site, free or low-cost land, etc. The objective is to provide assistance and support directly to the people that actually require it, and, in addition, not to oblige the government to bear long-term debts.

7. COLLECTION OF PAYMENTS

The attendant expenses associated with the collection of mortgage payments should be reviewed together with the expected income. It has been found that often the overhead, nonpayment, etc., of collection greatly exceeds the intake. It is preferable not to depend on a collection mechanism and to either allow an to depend on a collection mechanism and to either allow an initial subsidy with further costs, or to develop alternative collection mechanisms through cooperative societies, etc., which group the payments and encourage compliance through social pressure, etc. In any case, prepayment should leave a wide enough margin to allow the user to expand the dwelling.
8. STANDARDS AND REGULATIONS

Building and planning regulations and by-laws need to be reassessed to allow the construction of small, economical dwelling units which can be progressively developed. In addition, planning regulations should also be evaluated to promote economical design and development of settlements. (For example: in dwellings, to evaluate the courtyard requirements, and in settlements, to consider the reduction in street widths, etc.) In all cases, obviously, basic health and safety criteria should not be compromised. In general, the government’s requirements/desire to control housing development in the form of building and planning regulations should be minimized. In many cases, control is not necessary because of “natural” development; or, control is not possible because of affordability problems.

9. LARGER LOTS

Most of the participants felt that the tendency toward smaller lots is undesirable. Careful consideration should be given to determining what constitutes the proper size, keeping in mind location of the lot, expected clients, and potential uses. The immediate savings in initial costs should be weighed in light of the longer term development of the lot and the area. A too small lot is very difficult to expand and limited in its potential development. This issue of future expected uses, including rental and commercial units, is considered more important than the relatively small savings in initial costs through offering very small lots.

10. UTILITIES

The cost of utilities does not vary from new developments skirting existing urban areas and new developments in isolated regions. The difference essentially is in the level of services provided, with a higher standard usually found in new areas.

11. EXPERIMENTAL NATURE OF PROJECTS

Projects and current suggestions concerning core housing and site and services projects should be considered as experimental and should be monitored and evaluated before application on a large scale.
The Ismailia Demonstration Projects study was set up by the Ministry of Housing and Reconstruction and the British Ministry of overseas Development to demonstrate policies and proposals of the Ismailia Master Plan.

SITE: Two areas were selected for development: El Hekr, an upgrading and expansion area on the northern outskirts of the city, and Abu Atwa, a semi-rural area rapidly becoming more urbanized. Both areas are relatively flat, with uncompacted sand cover. The El Hekr area is 226 hectares (132 Ha. improvement, 94 Ha. new development); Abu Atwa is 154 hectares (114 Ha. improvement, 40 Ha. new development). Limited public water standpipes and electricity is available in El Hekr and Abu Atwa. In Phase I, 997 plots would be allocated in El Hekr and 982 plots in Abu Atwa.

HOUSING STRATEGY: In El Hekr the primary goal is to strengthen and improve the area’s function of providing low cost land for owner - builder construction and low and moderate cost rental accommodations. Surveyed plots with various utility service levels would be provided, and existing utilities and dwellings would be improved. In Abu Atwa assistance would be given to facilitate the change in methods and forms of dwelling construction, and to facilitate the transition from a semi-rural pattern to an urbanized one. In all cases, lots would be well defined with secure tenure to give maximum incentive for investments.

LAND USE: For new areas in El Hekr: Public Responsibility (circulation and structured open space) 31%; Private Responsibility 58%; Public facilities/services 11%. For new areas in Abu Atwa: Public Responsibility 67%; Public facilities/services 3.5%.

INFRASTRUCTURE: Various lower levels of service are provided—water: public standpipes at 150 m. spacing, and individual lot connections; sewage: pit latrines and waterborne network; electricity: individual lot connections are available;
refuse collection: daily pick-ups; streets: compacted earth, gravel, and asphaltic concrete options, dependent on use/load.

LOTS: Two types are offered. Low cost lots range from 72m² to 144m², with 108m² the most common; dimensions are 6m x 12m, 15m, 18m; 9m x 12m, 15m, 18m; and 12m x 12m; with 6m x 18m the most common. Concession lots are 360m², 432m², and 576m²; 15m x 24m, 18m x 24m, 24m x 24m. Sizes are offered according to potential uses and value.

CORE HOUSING: Two basic options were considered: a services slab containing on-plot connections to public water, sewerage and electricity networks; and the service slab with a completed superstructure (24m²) with bathroom/W.C., kitchen and one habitable room, located at the front of the lots. No core unit would be offered if subsidies are not available.

CORE HOUSE DEVELOPMENT: The purchaser would have full responsibility in building the shelter. Material credits and technical assistance would be provided as needed. Repayment schemes are sufficiently low to allow residual funds for constructing the shelter.

TENURE: Delayed freehold title (10 to 30 years) to encourage investment in housing would be offered.

HOUSING SUBSIDIES: Lot sizes, core units, and utilities and services provided rely on no subsidies for implementation.

TARGET INCOME GROUP: All households are in the lowest 30% of the national urban income distribution, with a median income of 290 L.E. per year (compared to a national urban average of 625 L.E.).

FAMILY PAYMENTS: Approximately 15 - 25% of a family’s income is assumed available for shelter and infrastructure costs. Dependent on options, costs would vary from 153 L.E. total (72m² lot, minimum utilities) to 914 L.E. total (135 m² lot, core house, standard individual utilities). In realistic terms, no loans are available to purchasers.

PROJECT STATUS: Implementation of the project is underway.

SUEZ DEMONSTRATION PROJECT

The Suez Demonstration Project is a continuation of the Suez Master Plan Study which was undertaken during 1974 - 1975. The Master Plan proposed the development of a new community to accommodate approximately 40,000 people. Specific designs for a pilot project of 1,160 dwellings (approximately 5,000 people) are proposed to demonstrate in detail the layout and character of the project.

SITE: The 200 hectare area is located to the north of Cabanon Beach in the Western Sector of Suez. 40,000 people at a gross residential density of 67 dwellings per hectare are expected at full development. The site has only few slopes over 5%, and has widespread swelling clays and aggressive ground salts which require special treatment of the foundation. Water and electrical lines cross the site but sewerage is not readily available. There is no paved access.

HOUSING STRATEGY: The expansion of the existing city into the new communities is part of a regional program to reduce the pressure of population growth in Cairo, Alexandria and the Delta, without encroaching upon valuable agricultural land. The growth of employment anticipated in a new industrial area to the west justifies an adjacent residential development.

LAND USE: Private responsibility (includes public residential streets and interior open spaces) approximately 77%; Public responsibility (community facilities, open spaces) approximately 23%.

INFRASTRUCTURE: Full standard individual services are provided: water, sewerage, electricity, storm drainage, paved streets; refuse is to be collected by city trucks from communal bins.

LOT SIZES: Two basic sizes for the low income are provided: 6m x 15m (90m²) and 6m x 18m (108m²). Multiples of these sizes 6m x 15m (90m²) and 6m x 18m (108m²). Multiples of these sizes provide lots for other uses, such as the 'raba' (rental units) and workshops. Concession lots for villas and apartments are also offered for the higher income groups.

CORE HOUSING: Four options are offered: a) a minimum core unit of 20.5m² on a 90m² lot provided with water tap, squat

المشروع الإرشادي لمدينة السويس

يعتبر المشروع الإرشادي لمدينة السويس تطبيقاً لخطط الدراسة العامة لمدينة السويس التي أجريت في الفترة من 1973 - 1975. وقد أجريت هذه الدراسة العامة لتصور مجتمع جديد لأكثر من 40,000 نسمة، كما أكدت التحصيات الدورية أن المشروع الإرشادي يسع 1160 نسمة (حوالي 5000 نسمة) للتوحيد على الشروط والخطط العامة بالتفاصيل.

الموقع: تقع المنطقة التي تبلغ مساحتها ٢٠٠ هكتار في شمال شاطئ كابانو بمنطقة الشرقية لمدينة السويس. يتوقع أن يبلغ عدد السكان ٤٠٠٠ نسمة بنية شاملة تضمن تطبيقات تصل إلى ٦٧ نسمة للمساحة الواحدة عند استكمال التطور. الموقع مدعوم بمعدلات تصل إلى ٥% ويشمل الملح، القلعة ويحتوي على جميع الخدمات الأساسية. يتم تطوير الموقع، وتحقيق خروج المياه والكهرباء إذا لم يكون لمجاري.

استراتيجية المدينة: تم تجهيز المدينة الحالية بمناطق جديدة من بنايات إقليمية لخفض ضغط النمو السكاني بالطرق الأخرى والسكن السكني، والتركيز على الظروف الإقليمية. كما أن النمط المعماري المتوقف في المنطقة الصناعية الجديدة في الغربوية وساحة منطقة صغيرة.

استخدام الأرض: احتياطات المكان المخصصة (تشمل الشوارع السكنية العامة والمواقف الداخلية) حوالي ٧٧٪ من المساحة. ونسبة المساكن الإقليمية الخاصة (المراقبة العامة والمراقبةascus) تشكل حوالي ٢٣٪. المراقبة الأساسية: مياه مجاري + كهرباء + صرف صحي + مساحة العامة + عادات البلدية. مقاسات قطعة الأرض: هناك مساحات أساسية لجهة يوجد داخل ٥٠ - ١٠٠ م²، و ٥٠ - ١٠٠ م². و ٥٠ - ١٠٠ م². و ٥٠ - ١٠٠ م². هذا المقاس يتضمن الإعدادات الأخرى كال.replaceAll، وحدات للبيئات، ومحاولات لزيادة النماذج الإشارية.)

الإسكان النسائي: هناك أربع مساكن (١) قد أجريت لوحدة النماذج ٥٠ م² على قطعة أرض مساحتها ١٠٠ م²، ومجبزة...
toilet, and electricity; 1,399 L.E. in 1977; b) a minimum core similar to 'a' except additional interior partitions, total floor area 17.55m², 1,484 L.E.; c) a large core unit similar to 'a' but total area 27.75m² on a 108m² lot, 1,880 L.E.; d) a 90m² lot with only water and sewerage connections, 549 L.E.

CORE HOUSE DEVELOPMENT: The units offered are intended to facilitate the traditional pattern of continuous expansion and improvement through owner initiative. The 90m² lot is expected to develop 4 rooms per floor, up to 2 floors.

TARGET INCOME GROUP: Eleven percent of the units are intended for the 220 L.E. per year and under group; 47% for the 220 - 720 L.E. group, 26% for the 720 - 1440 L.E. group, and 16% for those over for those over 1440 L.E. per year.

FAMILY PAYMENTS: 20% of a families income is considered to be available for housing; 12% would be spent by those families buying a serviced plot with the 8% remaining to be spent on building a minimum shelter; 15% would be spent by those buying the small core unit leaving 5% for improvement and expansion of the core; 20% would be spent by those purchasing the large core unit since early extension is not essential. In each case, 10% would be required as down payment. Low interest loans are expected from the National Housing Fund, the GABHC, or the Credit Foncier.

HOUSING SUBSIDIES: Necessary subsidies for the low and medium income range from 71% to 21% of the dwelling cost, dependent on type of unit purchased and income of the family. The amount varies from 874 - 51 L.E. per year.

TERNS: Freehold or long term, minimum 60 years, leases are considered.

STATUS OF PROJECT: Development of the site has been delayed due to the lack of public utilities. Contract drawings for a pilot project of 90 core houses on a new site closer to the existing city have been prepared.


SUEZ: LOCATION OF PROJECT

PILOT PROJECT LAYOUT

CABANON NEW COMMUNITY
SUEZ DEMONSTRATION PROJECT

Robert Matthew, Johnson - Marshall and Partners
Sir William Halcrow and Partners
Economic Consultants Limited
Hamed Kaddah and Partners
M.O.H.—WORLD BANK PROJECTS

The two site and services projects to be financed from World Bank Funds are a part of a larger assistance package. The other aspects include upgrading of 4 low-income settlements, a small business assistance and manpower training program, improvements in solid waste collection and disposal, repair of water and sewerage systems and advisory services. The objectives of the project are to help develop and implement low cost solutions to Egypt's urban problems in the sectors of shelter, employment, and urban services, and particularly to make the investments responsive to the needs of the poor.

SITE: The Alexandria “South Metras” site covers 15.3 hectares, with a design population of 9,000. The “South Gharb El Balad” site in Assiut covers 24.4 hectares, with a population of 14,000. The Alexandria site is part of a swamp in Lake Maryut and requires several meters of fill before use. Water, sewerage, and electricity are available in the vicinity. The Assiut site is a part of a large flat agricultural parcel. All utilities are available in the vicinity.

LAND USE: In Alexandria: Public responsibility (circulation and open space) 27%; Private responsibility 67%; Public facilities 5.5%. In Assiut: Public 30%, Private 68%, Public facilities 2.7%.

INFRASTRUCTURE: A standard level of service would be provided to all lots—water supply: individual connection; sewage disposal: individual connection to waterborne system; electricity: individual lot connection; refuse collection: pick-up from communal refuse bins; streets: surface throughout.

LOTS: 1,822 lots would be developed in Alexandria; 2,761 in Assiut. Three sizes would be provided: 45 m², 54 m², and 72 m²; 5 m x 9 m, 6 m x 9 m, and 6 m x 12 m. The larger lots located in zones of high commercial potential would be sold at market price.

CORE HOUSING: Two options are offered: a basic perimeter wall and ablution unit with flush toilet and water tap,

وزارة الاسكان—مشروعات البنك الدولي

المشروعات اللذان يتم إتمامهما من أموال البنك الدولي هما جزء من مؤسسة أكبر، يشمل الجوائز الأخرى تسجيلاً مستخدماً

مستودعات إحباط، ودور على المنصة للصناعات الصناعية

برنامج تم تقييمها الفعلية تمكين جمعية القمامة والتدريب فيهما

وأشكاله المعايير وخدمات استثمارية، وخدمات المشروع

هي الأداء في وضع وتنفيذ حلول متنوعة الكلفية

لمشكلات البيئة في مصر في قطاعات الأسنان والعقالة

وخدمات المدن وخصائص لجذب الاستثمارات التي تستجيب

الموقع: الاسكندرية، موقع "جنوب مصرات" يغطي 150

هكتاراً، ويستخدم لسكان نحو 9,000 نسمة، موقع جنوب ضرب

في إسوتو، يغطي 244 هكتار ويستخدم لسكان عدد 14,000 نسمة، موقع الاسكندرية جزء من مستوطنات في بناء

والمياه والري والكهرباء موجودة في مقدرة منه، أما موقع إسوتو

في جزء من مسطح زراعي كبير، وكل المرافق متاحة

في جدارة

استخدام الأرض: في الأسكندرية: مسؤولية عامة

(الدوران والارف القضاء) 27%، المسؤولية الخاصة 27%.

المواقع العامة 20%، أما في إسوتو، المواقع العامة

20%، والمساحتين الخاصة 18%، والمرافق العامة 27%.

المواقع الأساسية: ستكون كافة الخدمات بما في

خدمات مصرف الري، وصلة قطرة، وصرف في المجاري،

وصلة خاصة، ونهر، وصلات خاصة، جميع القمامة من صناديق

طاقة، الحر، المشروبات مستحقة

قطار الإفراط: 1822 قطعة سيجري ت كثيرتها في الأشكال العربية 7761

قلعة في إسوتو، سيجري ت كثير ثلاثة أحجار: 0,72

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الاثنين لفترة ذات قدرة كبيرة على الاستغلال وتبادل السوقي

السكان النواة: تعرض احتياجات: جدار محيط

وحدة وفسل مع حمام وحلفية مياة، جداً ووحدة غسيل,
and a wall, ablution unit and a 9 m² room. The ablution unit would be located at the back of the lots.

CORE HOUSING DEVELOPMENT: Purchasers would be expected to construct the dwelling unit through self-help. An implementation program is being studied outlining the methods of construction; the types of assistance, both technical and financial; and those elements which may be provided as part of the core house: a surrounding fence, an ablution unit, and perhaps a room.

TARGET INCOME GROUP: The units would be affordable to 80 to 90% of the urban population. The necessary income per year ranges from 312 - 456 L.E. in Alexandria to 240 - 408 L.E. in Assiut.

FAMILY PAYMENTS: The payments are derived from 18 percent of the household income. Monthly payments range from 26 - 38 L.E. in Alexandria to 20 - 34 L.E. in Assiut.

HOUSING SUBSIDIES: No direct subsidies are considered.

TENURE: All lots would be sold with freehold title to beneficiaries, conditional upon satisfactory payments.

PROJECT STATUS: Both projects are still in the development stage.

Plot size 5 x 9 meters
Ablution Unit
Open Courtyard

Plot size 6 x 9 meters
Open Courtyard

Plot size 6 x 9 meters
Open Courtyard

Types of plots provided

Initial development by agency

Subsequent development by users

Types of plots provided
SADAT CITY CORE HOUSING PROJECT

Sadat City is a basic part of Egypt’s national development strategy of urbanization and industrialization. The City is intended to save agricultural land, to further the Nation’s economic growth, and to provide jobs and housing away from the overcrowded cities of Cairo and Alexandria by developing unused desert land in urbanizing the periphery of the Nile Delta.

SITE: The City is located 95 Kilometers north of Cairo on the Cairo-Alexandria desert road. Although the project area contains 30,000 hectares, only 5,000 will be used for the eventual population of 500,000. The site is completely desert with gentle slopes. Only electricity from an adjacent high tension line is available, although adequate water supply is expected from groundwater sources.

HOUSING STRATEGY: The goal is to draw off excess population from the major cities and to attract migrants from rural areas. A variety of house types and sizes would be provided, with emphasis on low-rise construction and dense ground coverage to provide shade and minimize unirrigated open space. Single-family units are proposed, with only a few apartments and detached houses.

LAND USE: In the final stage: Private responsibility (residential and industrial) 46%; Public responsibility (services, rights-of-way) 54%.

INFRASTRUCTURE: Full standard individual service is considered in the initial development stage.

LOTS: The typical lot proposed is 7m x 20m, 140 m².

CORE HOUSING: Various options are considered: a) a 12.25m² basic core with squat toilet, a kitchen and shower water tap, and electrical connection costing 625 L.E.; b) option “a” with additional room area for a total covered space of 24.5m², costing 910 L.E.; c) an expanded core unit with 2 rooms, 36m², costing 1,360 L.E.; and d) various expansions and finishing options of the basic core with costs reaching 7,000 L.E., dependent on provisions of space ranging from 37m² to 110m².
CORE HOUSE DEVELOPMENT: Progressive expansion through self-help methods is anticipated but primarily reliance is placed on self-management systems.

TARGET INCOME GROUPS: In the initial 5 year development, 45 percent would have incomes under 360 L.E. per year, 22 percent would have 361 - 600 L.E., 24 percent 601 - 1,200, 6 percent 1,201 - 1,800 L.E., and 3 percent over 1,800 L.E.

HOUSING SUBSIDIES: Housing “supplements” are proposed (essentially subsidies) of various kinds: equity grants, interest subsidies, equity mortgages, property tax abatements, concessionaire inducements, cross subsidies through development cooperatives, materials subsidies, and ‘gifts’ of a basic shelter core or lot.

TENURE: All individual and attached houses are to be owned by the occupant.

PROJECT STATUS: Several experimental dwellings have been completed to test construction methods, materials, and approaches.

SADAT CITY NEW TOWN
Sabbour Associates
David A. Crane and Partners
Parsons Bradenhoff International
Marcel Breuer and Associates
SMALL CORE DWELLING
نواة لمسكن صغير

MEDIUM CORE DWELLING
نواة لمسكن متوسط

LARGE CORE DWELLING
نواة لمسكن كبير

<table>
<thead>
<tr>
<th>Unit Site Area</th>
<th>Dwelling Area</th>
<th>Cost Per Sq. Meter</th>
<th>Dwelling Cost</th>
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<tr>
<td>Site and Communal Services</td>
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<tr>
<td>Basic Utility Core</td>
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<td>Core Shelter Unit</td>
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<td>140</td>
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TYPES OFFERED
النماذج المبكرة بمعايرة الهيئة

POSSIBLE EXPANSION OF CORE UNITS
الإعدادات المبنية للفناء

21 الندوة على المسكن
10th OF RAMADAN CORE HOUSING PROJECT

The new town is a part of the overall development strategy of Egypt stressing viable urban centers, decentralization, and rural development. The initial study was made in 1975, and the cornerstone was laid in 1977. At that time a bold challenge was made to develop the first stage of the new town for 150,000 people in 5 years.

SITE: The total area is approximately 5,600 hectares, and it is located 50 km east of Cairo approximately half-way on the desert road to Ismailia. By the year 2000, the city is expected to reach its maximum population of 500,000, at an overall density of 180 people/hectare. Four stages of development are anticipated, with the first stage planned for 150,000 people. The site is entirely in a desert with no vegetation. No infrastructure exists. Initially water would be from artisan wells, but later the Ismailia Canal would be the main source.

HOUSING STRATEGY: The overall goal is to relieve the urban pressure in the Greater Cairo Region, by the creation of a new city, and to create new job opportunities in the industrial and service sectors. The housing policy is oriented toward providing a large supply quickly, in utilizing both conventional and prefabricated methods, in allowing public, cooperative, and private investment, and in providing units for five cost levels, from very low to high. In Stage 1, 14 percent of the units would be simple utility cores, 23 percent would be a utility core and 1 room, and 47 percent would be blocks of flats. 60 percent of the units will be for the low income.

LAND USE: Private responsibility (includes residential, commercial, and industrial areas) 59 percent; Public responsibility (community facilities, open spaces) 41 percent.

INFRASTRUCTURE: Full, standard individual services provided: water, sewerage, electricity and paved streets. Refuse is intended to be collected 3 times a week in specially constructed trucks for transport to a sanitary landfill, with possible re-use and composting in the future.
LOTS: Areas vary from 80 m$^2$ (very low cost units) to 600 m$^2$ (medium to high cost units). The largest lots for the low income reach 120 m$^2$, with 80 m$^2$ and 95 m$^2$ also offered.

CORE HOUSING: Two types are provided: a utility core with water closet, sink, and a utility core plus a room. The utility cores are in the 80 and 95 m$^2$ lots, with built-up areas of 8.5 m$^2$ and 11 m$^2$. The units with rooms are offered in lots of 80, 95, 120 m$^2$, with built-up areas of 20 and 28 m$^2$.

CORE HOUSE DEVELOPMENT: The inhabitants have the right to extend their dwellings both horizontally and vertically by their own efforts. Several fully developed core units will be built to serve as examples in guiding the dwellers in expanding their houses.

TARGET INCOME GROUP: In the year 2000 in the final stage, 7 percent of the families will make below 200 L.E./yr.; 28 percent between 200-500; 29 percent between 500-900; 17 percent between 900-1500; and 19 percent over 1500 L.E.

FAMILY PAYMENTS: Payments for the utility core and one room unit range from 5-10 L.E. per month. The utility core alone requires payments of 4-6 L.E. The cost of the units is intended to be held to 2,100 L.E. in the first stage and rise to 3,500 L.E. for the later stages.

HOUSING SUBSIDIES: The owners are expected to pay for land preparation and infrastructure costs.

TENURE: Either 40 year leasehold or ownership is considered for both types of units.

STATUS OF PROJECT: Construction of the first stage is underway. Core house units are in the process of being completed.

AERIAL VIEW OF NEW TOWN

SCHEMATIC PLAN OF TOWN

10th OF RAMADAN NEW TOWN
NEW INDUSTRIAL CITY

COPA
SWECO
Shawky-Zeitoun Associates
CORE HOUSE TYPE 1

CORE HOUSE TYPE 2

CORE HOUSE TYPE 3

TYPES OF PLOTS PROVIDED

POSSIBLE EXPANSION OF CORE UNITS
As part of a Ministry of Housing program, in conjunction with U.S.A.I.D., a new community would be built to demonstrate the feasibility for the development of low cost housing in adequate quantity to meet the basic requirements of safe, sanitary dwellings. In addition to the new community, 6 existing communities would be upgraded.

SITE: A 150 hectare site was selected adjacent to the southeast corner of Helwan City. The site is planned for 6,500-6,800 dwellings on 7,000 - 7,300 lots to accommodate an ultimate population of 100,000 at a net density of 1,770 persons/hectare. The topography has an overall slope of 2 percent, with several wadis of a depth of 3 meters crossing a portion of the site. No vegetation exists, sand covers the site with occasional limestone outcroppings. Only water distribution facilities exist near the site.

HOUSING STRATEGY: The project intends to demonstrate that individual family initiative, through aided self-help, can solve shelter problems and that community organization (cooperatives) can supplement community maintenance needs.

LAND USE: Public responsibility (streets and open spaces) 29%; Private responsibility (lots, commercial areas; includes recreation space in block modules) 57%; Public facilities 14%.

INFRASTRUCTURE: A standard level of services has been provided throughout—water: individual lot connection; sewage disposal: individual waterborne lot connection; electricity: individual lot connection; refuse collection: communal waste holding stations with push cart pickup from the houses.

LOTS: Three types are offered: 50, 65, and 100m²; 6.50m x 7.75m, 6.5m x 10m, and 10m x 10m. The 100m² lots will be sold at market rates for middle and upper income groups will be sold at market rates for middle and upper income groups to subsidize lower cost units.

CORE HOUSING: A standard utility core of 4.2m² is proposed for all of the lots. Six to seven options will be offered to buyers according to their mortgage payment capacity. The utility core consists of an enclosed sunken shower space and an
الندوة على المسكن

الرافق الموهوب من مكان مغفل ومحبوب من طراز شرقي وب помещения مفروشة وتكريمه لحجة رفعة وحائط مكرر يتميز بمفرد المياة وعداد أخرى، ولا يتوفر إلا رفعة الإرتفاع الأعلى المقدر بـ3
طوابق تبنى على الأساسات الموجودة اصليًا...

الوحدات السكنية المغلقة: سوف تتم التمويل النقدية أو العائدة في صورة موافقة لتوسيع وتحسين الوحدات.
سوف يتم التأسيس بـ10% في حالة القدرة على ذلك، و
الاستفادة من معايير البناء التي سوف يتم إخبارهم في قانون
مثيرات وطابعات، سوف تتم اعتماد القروض للمنشئين
الذين يرغبون في تصميم الساكنة أعدًا.

المجموعة المشتركة للمساكن: الحدود النهائية للدخل
اللازم لشراء وحدة سكنية بـ77/3600 السنوية
مصدرًا طريقية الدفع، لإنتاج متزامنة، و
مسطحها 40 مترًا مربعًا. وفرة حوالى 50 - 60 سنتيمترات، و
السنة (مصدرًا طريقية الدفع، لإنتاج متزامنة، و
لمدة 6 أشهر، وفرة حوالى 50 - 60 سنتيمترات، و
الوحدة التي ستستخدم في حالة شراء وحدات سكنية متصلة
طريقية الدفع: المبلغ الذي سيซอغ أقساط الفائدة سنويًا على مدة 7% لمدة عام، ويؤثر 1% من الكمية المعينة، وذلك
للوحدات ذات مساحة 40 مترًا مربعًا، وسوف يكون للأسعار ذات
أطراف التدفق المتزامنة، سوف يتأتى القسط الشهري بين
5% إلى 20% حسب الوحدة السكنية وحسب طريقية الدفع المحتاجة.

الذين يرغبون في استخدام الدخول المختص، سوف
تتم عن طريق بيع الوحدات وفقًا للقانون الإقليمي، وكذلك
 sistem القبول الأساسي لـ 20% أو 5% من الوحدات المختصة
للعائلات ذات الدخل المخفض، سوف يخصصه مدع العائلات.

النهائي، بـ 20%.

ال المصدر والمصادر: تقرير دراسة الجودة البلدية
"المجتمعات" للمحة الأولى مع التعبير عن جملة
العديد للمواطنين للمجمعات للمصريين ذوى الدخل
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الحدود، 30 سبتمبر 1987، "ورقة الدخل المخفض
PLAN OF PROJECT: HELWAN NEW COMMUNITY

Note: Plan shown is only a preliminary feasibility study; the design is being reviewed and will be changed as needed.

HOUSING AND COMMUNITY UPGRADE PROGRAM

Ministry of Housing
Foundation for Cooperative Housing
ES Parsons
U.S.A.I.D. Technical Assistance
Note: Shown are only preliminary feasibility studies; the designs are under review and will be changed as needed.
PORT SAID DEMONSTRATION PROJECT

In May 1977, the Egyptian Ministry of Housing and Reconstruction and the Ministry of Overseas Development of the United Kingdom, contracted with a consortium of British and Egyptian professional firms to undertake demonstration projects in Port Said. This work followed a previous Master Plan report and it is intended to precede the implementation of proposals.

SITE: The total area is 63.55 hectares, located in a reclamation area of Lake Manzala, approximately 3 kilometers to the city center. The area is stark, featureless and completely devoid of vegetation. No utilities are available. An initial pilot housing area in 15.85 hectares would be used to demonstrate principles before implementation of the full development. Final population is expected to be 35,000, with 10,250 in the pilot project.

HOUSING STRATEGY: The goal is to attract older, larger households out of the inadequate and overcrowded conditions into new housing areas, through long term, low interest loans available for the purchase of units. A site and service solution is provided with core housing based on an unfinished framed dwelling with minimum sanitary facilities on more than one level.

LAND USE: Public responsibility (streets, open spaces): 35.6%; Private responsibility (dwellings): 52%, when excluding public sector units which are the responsibility of the government, the percentage would be approximately 14.3%; Public facilities 12.6%.

INFRASTRUCTURE: Complete, standard utility services are provided—water: individual service; sewage: individual waterborne system; electricity: complete network, individual service; paved streets: no information.

LOTS: (Same as dwelling area)

CORE HOUSING: Because of the poor soil conditions, difficult and subsequently expensive foundation requirements

المشروع الإرشادي لمدينة بورسعيد

في مايو عام 1977 تعقدت وزارة الإسكان، المعمّرة العربية، وال защит مجمعًا من الشركات المعمّرة العربية والمصرية لدعم المشروع الإرشادي لمدينة بورسعيد. وقد سبق هذا العمل تقييم المخطط الرئيسي. أما من المتوقع أن تكمل تلك المشاريع التقييم المبكر.

الموقع: ساحة المنطقة الكلية هي 55 36 هكتارًا تقع في الجزء المستقل، في محيط المنزل على بعد حوالي ثلاثيلومترات من وسط المدينة، والمنطقة جيدة بالنسبة لبعض الأفضلية، في حين يشير إلى أنها ليست رائعة ساخنة. إذا كنماط تأجير السكنية الكاملة، في الموقع، يمكن أن ينطوي عدد السكان النهائي إلى 120 الف نسمة.

пخاطتيه الإسكان: المباني هو اجتدال ابحاث البيوت التقليدية والاسيوية من مساحات الخضراء والمشعمات إلى المناطق الجديدة، حيث ينظم الطواف. الخدمات والخدمات معاه للمساعدة على أساس الأطراف، ولكن إدخال الأساليب في مجال المواقع على أكثر من مستوى.

استخدام الأراضي: المستوطنات العامة (الشوارع والمناطق المفتوحة) 14.3% والمناطق الخاصة (المساكن) 51% عند استخدام وحدات البناء العام التي مستقلة. الحكمة سكون القمة حوالي 30% و 10% التسهيلات العامة آر 195.

الملاحظات الأساسية: تقدم الخدمات الوفيرة القياسية الكاملة بالنسبة للمياه ستكون هناك خدمات فردية ومباشرة. عناية لحل المياه، والقضايا نكهة ستكون هناك شبكة نكهة وتوصيات فردية 10% بالنسبة للمياه الموصوفة في كل مكان. 

النظام: الإسكان الداخلي: سيكون معا ويستثبل إشارات باحة أثناء ذلك بسبب سوء حال التزام، وفقاً لذكاء.
led to initial construction of complete 3 story unit. The three-story structure is a concrete frame composed of simple platforms and a common staircase for a grouping of 4 units. The structural concrete and infill brick will be left unfinished. Each unit will have a bathroom with pan-type flush toilet; a water tap, sink, and cold water supply. Two 220 volt electrical circuits will be provided. The dwelling area ranges from 36m$^2$ (3 rooms, 4 - 5 people) to 63m$^2$ (6 rooms, 10 people).

CORE HOUSE DEVELOPMENT: No information.

TARGET INCOME GROUPS: Lower income people will predominately live in project. From 250 L.E./yr. (dwelling cost 1100 L.E.) to 950 L.E./yr. (dwelling cost 2850 L.E.).

FAMILY PAYMENTS: No information.

HOUSING SUBSIDIES: Long term loans will be provided at low interest rates.

TENURE: Public sector units will be rental; private sector will be ownership units, and cooperatives will be cooperative type of ownership units.

PROJECT STATUS: Initially 120 dwellings are proposed to be built for testing and evaluation. A pilot project for 10,250 people is in active stages of planning.


PORT SAID REGION

PORT SAID NEW COMMUNITY PROJECT
Bullen and Partners
Shankland Cox Partnership
Binnie and Partners
Peat Marwick, Mitchell and Company
Hanna and Partners

PORT SAID: LOCATION OF PROJECT
TYPICAL PUBLIC HOUSING BLOCK: TYPE B2(a)

TYPICAL UNITS IN BLOCK

HOUSING CLUSTER

Covered area
Sanitary core
Public right-of-way

Room 36m²
Room 36m²

Room 36m²
Room 36m²

LIGHT WELL

COVERED AREA

BOUNDARY OF HABITABLE DWELLING AREA

Section

- roof/second floor dwelling
- first floor dwelling
- ground floor dwelling or shop
- filled ground

Isometric

27m³ uncovered space
9m² covered space
TOTAL 36m² habitable space
kitchen sink
lavatory

6m
water/sewage/electricity connections
2m bounding wall
3m party wall

Isometric

42
ندوة على المسكن

نموذج نموذج لعمارة أسكان حكومي نموذج ب 2 (1)
Papers

البحوث

الندوة على المساكن
ECONOMIC EVALUATION OF THE SITES AND SERVICES APPROACH

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This paper briefly outlines some of the important economic issues in applying the sites and services approach in housing in Egypt. The general goal of sites and services is to make some form of “minimal” or “socially acceptable” housing affordable to the poor without significant government subsidy. To do this, sites and services proposes three strategies. First, housing should be primarily owner occupied and realistic interest rates must be used to provide long-term mortgage financing. Secondly, the housing constructed should be extremely modest, and only partially completed. Thirdly, the bulk of much of the construction should be left up to the owner, who presumably will complete the unit in his free time.

In evaluating this approach, it is important, first, to discuss the validity and consequences of these three strategies, and then, second, to examine the role or place that sites and services might play in the Egyptian housing market.

THE ISSUE OF FINANCING: The question of what interest rates to use in annualizing a capital investment, on the surface, appears critical to assessing the affordability of a proposed project. The current practice in Egypt is to issue mortgages in the 7-9 percent range, while the IBRD (The World Bank) suggests that 10 percent is more realistic. The actual rate of inflation in Egypt over the last two years, however, has been estimated by MIT consultants to be in the 15-20 percent range. With real economic growth occurring (around 5 percent), the actual shadow price of short run capital should be around 20-25 percent (the real rate short run capital stock be around 20-25 /100 or 20-25 percent of growth plus the inflation rate). A realistic long run rate would depend on what one expects inflation to continue at, plus the long run trend in growth. There are few developing countries that do not have double digit inflation, thus perhaps 12-15 percent should be the minimum realistic long term rate for housing finance.
The problem is that if one uses interest rates in this range, or even higher, housing appears to become prohibitively expensive in relation to current income. With an interest rate of 15 percent, a flat costing L.E. 4000 requires monthly payments of close to L.E. 50. This roughly equals the total income of the average Egyptian household, and, in fact, represents a liability affordable by only the wealthiest 5 percent of Egyptians, if the standard burden of 20 percent is used.

What this approach totally ignores, however, is that housing, by being a long term investment, should really be evaluated with reference to lifetime income and inflation. If an interest rate of 15 percent is used, because economic growth is 5 percent and inflation 10 percent, then the income of Egyptians will be doubling every six years, and the value of their houses every eight years. This has two effects. First, it means that after six years, the L.E. 50 per month will be only half of the average household's income and only a quarter in twelve years. Thus it is not quite as awesome a burden as thought---except in the first few years. Secondly, since the value of the house is appreciating, a substantial capital yield is being earned. Were the household to sell the unit after only six years, it would reap more than L.E. 4000 in capital gains. In certain cases, the impact of these gains is enough to offset inflation altogether. Thus the annual effective cost of housing if economic growth is 5 percent and inflation 10 percent, is not 15 percent, but perhaps only 5 percent of its value.

The point of this discussion is to suggest that the charging of higher, more realistic, interest rates, in countries with high inflation, may not be so burdensome as policy-makers fear. It is likely that housing demand and consumption would not fall that much if a large scale housing finance bank were established which borrowed money from savers and lent to homeowners at the higher rates which seem to be justified by inflation.

THE ISSUES OF CONSTRUCTION AND SELF-HELP:
The approach of sites and services is normally based on the assumption that the government will supply only the site, utilities, and perhaps a core plumbing unit or single room. The remaining walls, roof and rooms are built later by the owner. The rationale for this procedure is that the completion of the unit by the owner can be done more "cheaply" than by government contractors. This in
turn is based on the notion that the owner is a reasonably skilled but un— or underemployed worker. Thus labor costs will be much less with this “self-help” approach.

This idea runs into several problems, however, in a growing country with little unemployment. Egypt is just such a nation, and, in fact, it is quite common for lower income workers to have two jobs (a morning and an evening one). Thus it might be the case, as it has been in some Latin American countries, that the opportunity cost of the owners’ time is greater than the price of semi-skilled construction workers. In this case, the owner will clearly hire someone to finish the building and nothing will be saved over complete construction initially. Thus it is questionable whether labor costs are really being saved with sites and services. It depends strongly on the economic conditions prevailing in the labor market, and the owner’s own skills.

Another possible advantage suggested by this approach is that the owners’ completion of the unit will better suit his own needs. This argument has some merit, especially if one believes that architects and planners tend to over-design housing or adopt standards higher than the poor can really afford. On the other hand, giving the owner freedom to finish his unit may mean that he simply acts as a developer. If his income is low, but the market tight, he may well opt for living in temporary arrangements and completing the unit to much higher standards. The dwelling will then be sold to a wealthier buyer and the original owner will have become a “developer” — earning the income which is more important to him than the house. While this will certainly work to the benefit of both the wealthier buyer and the original owner, it will not insure that certain “targeted” groups receive housing.

THE ROLE OF SITES AND SERVICES IN EGYPT: It is suggested that the real role of sites and services in Egypt should be for the provision of just that — land and services — and not housing. An examination of the proposed IBRD project (June 1978) helps to make this clear. In this document, the IBRD discusses two sites and services strategies. The first is called “upgrading” and involves the installation of public water and pit latrines in the poorest areas which already have housing. The total cost of this (L.E. 100-150 per house) adds only L.E. 1 per month
to the L.E. 3 or so paid by the current occupants for a room. As has been noted before, the price of water privately delivered in cans is more than this, and since public water is both more dependable and cleaner, there is no doubt that the benefits exceed the costs of such "upgrading".

The second strategy provides a site, individual utility connections, and an actual plumbing "core". The cost of this ranges from L.E. 700 to 1200 depending on density, land prices and the size of the core. The L.E. 7 to 12 per month that such "plots" cost is already beyond the reach of the lower third or so of the household population. More importantly, much remains to be done on such units before they are really habitable. In fact, the IBRD expects that L.E. 1000-1500 worth of "structure" will be gradually added to the original foundation. The result is a unit costing not less than what is called "informal" housing in the C.U./M.I.T. project. Much housing in Egypt turns out to be built without permits, and our surveys suggest that these structures are typically 3 story walk-ups, with utilities, but little finishing and only 50m\(^2\) per floor. The units cost L.E. 2000-2500, which is comparable to the completed IBRD plots. The total monthly costs of around L.E. 20 (using 8 percent) require an annual household income of L.E. 1000 if "normal" affordability criteria are used. This would make them "affordable" by only the top quartile of the household income distribution in Egypt.

Thus the main advantage of sites and services in Egypt is that it offers the opportunity to subdivide plots and provide utilities in a planned manner — in advance of construction. This may well have considerable advantages over the way current informal housing is constructed — by building first and then illegally tapping into utility lines or having the local governorate provide them ex-post. In either case, however, the housing constructed should be similar and affordable by only the wealthiest 25 percent of households. There is so much informal construction occurring now that it is difficult to believe that only the wealthiest quartile lives in them. Rather, it is suspected that many households with less income are willing to severely stretch their budgets now in anticipation of future inflation in both income and housing values. At the same time, the ability to sublet rooms to the

وهذا فان النوعية الأساسية للمواقع والخدمات في مصر هو

منقطة كبيرة، وانها تحكم الفصول الصيفية والشتاء بما يحملها، بسياسته، بناءً على المرحلة الحالية حيث يتم تجهيز المواقع بطريقة تلبي متطلباتها. الهدف من ذلك هو أن تكون المواقع السكنية في كلاً من الأماكن السكنية، وعلاً من المساطر المحلية التي تتفوق ١٠٪ من الفيضية، في كل الأماكن السكنية. إن عدد السكان الغير الرسمي قد أصبح كبيرة بدرجة لا تجدر به تجعل من الصعب تفسير رقم السكان الحقيقي؛ فقط، لأننا لا نستطيع تحقيق

ان هناك موقع رئيسي قد أصبح كبيراً بدرجة تجعل من الصعب تفسير رقم السكان الحقيقي، فقط، لأننا لا نستطيع تحقيق

من نفسي الوقت فان ايجار بعض الحجرات من الباطن لمن

لا يوجد بالمياه الصرفية الفردية بالصرف. ينفث أطرافاً اذكر فيما لا شك فيه فقد

"الوصول المستمر" ستكون أكبر بتنية من الكثافة .

أما الاستراتيجية الثانية فيتضح أن توفير المواقع والخدمات

الفردية للمواطن يناسب يعرف ويبيل ويشمل وينظم في ذلك إن الأنواع.

الذي من(Flahaven) هو في النهاية إلى الشؤون التي تضمن ويسقى القليل لا

من تتناول ١٠٪ أكثر من رسوم السكن الأول الذي لا يقل عن ذلك عدد

الوحدات تحق مقدار قليل من تسهيلات السكن، واتباعاً لمثل هذه

تقرير البنك الدولي أو التبرير يتوقع أن تتراوح كلفة النماذج

التي تضمن إلى الحجم، والثالث، والثاني، والثالث. كلما أقترب

والنتيجة هي أن تتضمن كلفة ما يسوي ٣٠٪ من أسعار في مشرعة

جهة المعيشة، وعند مساعدة ماستيرس لتقنية، والجهة التي ينصح

البانير في مصر بعد على أن معظم

له مساحة الطابق به ٥٠ مترًا بمساحة. وتترافق كلفة الوحدة بين

كل المواقع التي يتضمنها الأقسام الأولى للأنشطة والمعايير في هذه

البحث. حيث تمثل الكثافة الشارعية وهو ٣٠٪ لمساحته؟، إذا

سيتم في متناول ١٠٪ الاسترداد الزراعي الأول من الدخل في مصر.

وفي نفس الوقت فان ايجار بعض الحجرات من الباطن لمن

لـ: (٢٤) هو دخل سنوي يسوي على حوالي ١٠٠٠٠ جمل
poorest people can provide a temporary source of income to ease the immediate burden. Such behavior is both prudent and wise, given the likely economic future. Public policy should acknowledge such market behavior and try to assist and plan for it.

هَـنَـم افتقِرِنَّكَان يَـشْـكِل دَخَـلَ مَوْقِعًا يَـسَـعِد الْعَـيْـن إِلَى تخْـفِيْـف الْعَـيْـنِ الْحَالِيَـنَّ. وَهَـذَا الْبَـعْـرِ يَـضِـمّ الْحَـكَـمَة وَالْبَـعْـرِ بِالْنَـسْـبَة لِلْمُسْتَـقِبِ الْإِقْـتَـصَـدِيَّ وَيَـلْـقِي الْسَـيْـسَاـةَ الْعَـامَةَ أَنْ تَـدْرُكَهَّ هَـذَا الْبَـعْـرِ الْعَـيْـنِ عَلَى حَالِ الْسَـوْقِ وَأَنْ تَـحَـاَوَّلَْ أَنْ تَـسَـعِدَ وَتَـخْـطُّطَ لَهَّ.
SOME COMMENTS AND CONCLUSIONS FROM EXPERIENCES IN LATIN AMERICA

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This paper attempts to give a brief overview of site and services projects in Latin America. The following topics are covered: a short background and context, various government responses which led to site and services approaches, some examples of the types being built, and trends/conclusions which may already be inferred.

CONTEXT: It is difficult to generalize among the large number of countries of Latin America. It would be the same if Egypt were taken as a typical example of Africa. Nevertheless, general comments may readily apply.

The total area of the South American continent parallels that of Africa. The climate varies from hot, humid, tropical rain forests to cold, barren, high altitude plains. The countries vary greatly in size, from extremely large as Brazil, to extremely tiny as the many small Central American republics: El Salvador, Costa Rica, etc. Some are very wealthy: Venezuela, Argentina; and some are among the poorest of the world: Bolivia and Paraguay. Essentially, however, they all rank in the middle income range of the countries of the world with a Gross Net Product (GNP) of US$200-500 per capita.

Despite their differences, most if not all of the countries experienced a rapid urban migration of surplus rural population starting in the 1940’s and 1950’s. These rural migrants flooded the outskirts of the largest central cities and built extensive areas of illegal or “squatter” settlements. Vast sections may take over 60% of the land of illegal or “squatter” settlements. Vast sections may take over 60% of the land of illegal or “squatter” settlements. Vast sections may take over 60% of the land of illegal or “squatter” settlements.

This sudden immigration of the surplus population was the
result of many mutually reinforcing factors: improved health care which resulted in fewer early deaths and better survival rates for infants, better education in the rural areas which led to the search for better jobs and opportunities essentially outside of the rural areas, as well as the lure of the cities with their better education, health and employment possibilities.

SQUATTER CHARACTERISTICS: The characteristics of the migrants has tended to be very similar: relatively unskilled in marketable urban skills, essentially illiterate, very limited resources, and rural in outlook and attitude. The areas in which they lived probably are familiar to most people today already, whether they were called “favelas”, “turgurios”, “pueblos jovenes”, “barrios populares”, or “parachutistas”.

The pattern of settlement has been surprisingly uniform. The initial entrance point of the migrants into the urban areas tends to be in the center city “slums”: in single room tenements, poorly maintained, with shared (if any) utilities. This is the result of requiring a location accessible to casual, marginal employment and minimal cost housing. Given time and luck, the families secure better, more stable employment; some savings are realized, “traditional” rural ways are steadily replaced by more “liberal” (urban) attitudes, and the desire for better, more permanent housing becomes important. Here the migrants typically undergo an internal migration, most often to the squat areas on the periphery of the cities. This stage results in the vast squat sections which is the most visible result of the migration, and thus becomes the focus of most of the government efforts.

In several countries of the Latin America, the squatter developments were highly organized endeavors. In Peru, particularly, thousands of families would band together, secretly have the land subdivided into lots at night by engineering students, and then invade at a pre-arranged time, usually in the middle of the night. In other cases, growth would occur by a steady stream of night. In other cases, growth would occur by a steady stream of people rapidly settling an area by acretion. Frequently, farmers illegally sell their land surrounding the cities to the migrants, or oftentimes, people invade and take unused land, usually land owned by the government or land with an absentee owner, or otherwise uncontrollable.
GUATEMALA CITY, GUATEMALA (top) Core unit before occupation.

GUATEMALA CITY, GUATEMALA (bottom) A low income site and services project after several years of occupation and development. The central plaza was built by the surrounding lot owners.

LIMA, PERU (left) One of the many squatter settlements on the outskirts.

مدينة جواتيمالا، جواتيمالا (فوق) نواه المسكن حجرة واحدة قبل السكن.

ليما، بيرو (يسار) واحدة من عدة جمعيات سكنية غير قانونية على الحافر.
GOVERNMENT REACTION: The responses to this rapid, extralegal growth have resulted in clear patterns:

The first reaction was to ignore their existence. Whole areas with houses and people were simply considered not to exist. Plans were made, studies were undertaken, with no hint of the thousands of people already settled and established.

Eventually, the sheer force of numbers became too great to deny their existence and the squatters became a source of irritation, particularly when valuable land was pre-empted. At this stage the response was removal by force: burning, use of bulldozers, removal by police and army. However, removal in one place only resulted in reappearance of the same squatters in another, perhaps even less desirable area. Again, because of the number of squatters to be removed, this approach also failed. Squatters became organized: highly structured communities sprang up overnight. Politically, it became unwise to remove these areas because of the voting power which these areas represented.

The next response was to attempt to provide houses for these people, to direct their lives: a highly paternalistic, production approach. In this phase, one sees vast, usually four to five story public housing projects springing up everywhere. Prefabrication becomes the hope. This, too, failed for several reasons: it was impossible to build the necessary number of units within the resource limits of the countries, and the units would have to be so small as to be unlivable in order for them to be affordable. Furthermore, many times the intended tenants were rural migrants who were not yet sufficiently aculturated to live in walkup apartments. Questions arose like “How do you use a toilet? Where do you keep the chickens?”

How do you cook on an open fire in a four story building?” In some Latin America countries, for example, the inhabitants sold all of the fixtures of the house and then abandoned the units.

There are also examples of resettled squatters selling their new, deluxe, middle-class apartments and returning to another squatter area, more content and perhaps better suited to their needs. However, the primary cause of failure was the lack of resources: financial, technical, and material.

The phase now found in many countries is a result of the
frustration of governments in their inability to cope with the squatters. This is very much as expressed in the slang expression used in the United States "if you can't win them over, you might as well join them". The primary goal of governments now is to restore formal planning control over squatter areas in the form of zoning, building and subdivision standards. The guidelines for development are derived from the self-help activities of the informal sector itself. The physical response is partially completed dwellings or empty lots with the expectation that the users themselves will complete and expand the core or shell units (or whatever is provided) into a complete dwelling. These programs became called "site and services". It is (1) an attempt to institutionalize the informal development process, and (2) to provide shelter at an affordable cost to the low income families. The progressive nature of the process is recognized, and overall, this type of program is tailored to the resources of the country. The key element of these programs is the provision of a secure form of tenure, and emphasis on land subdivision and the basic utility infrastructure, instead of the construction of the units themselves.

CHARACTERISTICS OF PROJECTS: Various types of minimum units were experimented with in order to meet acceptable cost and use criteria. The lowest in cost, and simplest, was the provision of only a bare lot, with either utility service lines already installed or communal shared services. The next step up was a lot with the foundations and part of the perimeter walls offered to the users. A utility core, comprised of a wc, and an outdoor sink for cooking and washing was the next higher level. Then a room was added to the utility core, and finally, a complete "shell" unit was offered: the outside walls, roof, and utility core, but an unfinished interior with no partitions. Examples of these and many variations can be found throughout Latin America, dependent on the target income group, the climate, and the competition from the existing informal sector. In each case, the family is expected to build, improve, and to expand the units, as the resources and needs of the family warrant.

Various methods are being used and supported in the construction and expansion of the units, however, self-help is still considered to be the basis by most of the governments. It has
been found, however, that "self-managed" or "self-contracted" is more correct, for the families tend to contract their work to neighbors skilled in masonry, carpentry, or whatever other special skill is needed. In several countries, the "mutual aid" approach is used. Here families are grouped together to form work teams, with each person trained in a specific skill. Often, whole families participate: father, mother, and children. The administration costs of mutual aid are high, but if goals other than just providing a shelter are the objective, it may be justified. "Aided" self-help is the most common form, with agencies providing various forms of assistance; technical, financial, and through materials themselves.

The projects in Latin America provide lots in 2 general groupings: 60-70-80m² for projects in central locations and which are relatively new, and 140-150m², for projects further out of the city, or in older projects where speculation costs were still low. The largest lots offered were around 250m², but this size tends to be exceptional. The costs ranged from 50 to 450 L.E., dependent on the type of core unit provided, the lot size, and the cost of the land. Usually, schools and medical clinics are included with the projects, provided by the governments. The goal in most of the projects has been to provide individual utility services, but because of costs, communal facilities have been provided in several cases. Despite the lower standards and the provision of minimal units, the projects still did not reach the lowest 10 percent of the population.

**PROBLEM AREAS:** As a result of the 20 years or so of experience, several types of problems have emerged, which are only now being addressed.

1) Official governmental approval and acceptance has been slow; much hesitation and reluctance is still apparent. The "image" of the projects with its unfinished construction site appearance during its first years of occupation is difficult for governments to accept. The undercurrent is still strong for providing complete houses, "befitting the people," despite their unaffordable costs to both the "befitting the people," despite their unaffordable costs to both the user and the country.

2) The establishment of implementation units consisting of architects, engineers, and sociologists has been difficult, both in finding appropriately qualified personnel as well as in maintaining...
stability in the organization. Professionals are somewhat reluctant to enter the low cost projects field because of the lack of prestige and lack of "showcase" construction. The low salary scale offered by governments is also a problem in attracting and holding staff. Younger, idealistic professionals do tend to gravitate toward these projects but usually a higher salary than what governments offer is required, but it still is lower than what is offered in private professional practice.

3) The technical and design skills required are generally not found in available personnel. Because of the different approaches demanded in government sponsored site and services projects, local expertise is generally not available and must be trained. Although much emphasis has been on site and service projects within the last 10 years, there are still few training programs. The idea persists that these projects can be looked at in the traditional ways, which insures repeated mistakes and failures in the final designs.

4) In cities where projects have been built already, the most pressing need is in finding land which is affordable, buildable, and sufficiently close to the city to provide employment opportunities for the dwellers. Land speculation is fueled by the entrance of the government housing agencies into the market, and the resultant high costs have prevented the purchase of previously affordable and well located parcels.

CONCLUSIONS: Despite the limited experience, several basic design conclusions can already be made.

1) Contrary to intent, the lowest cost bare lot with only utility connections has been sought after by the higher income people, and the minimal shelter option was the most purchased by the lowest income user. In explanation, the lowest income group could not afford to make payments in the two places at once, and could not afford to construct a minimal room in order to move in while still making their monthly payments which is in order to move to more buildable lots. The "higher" low income group, on the other hand, had surplus resources and desired the flexibility of a bare lot which allows them to build without restrictions or interference.

2) Above all, the initially provided units should be extremely simple and it should be expected that they will change slowly over time. The units will be used by the initial occupants and then passed on to others. The units require flexibility that will accommodate the needs of the next occupants. The units are not designed for immediate occupancy but are to be used in stages. The units are not designed to be built in one step but are to be developed over time. The units are not designed to be permanent but are to be adaptable to future changes. The units are not designed to be expensive but are to be affordable.
in all aspects. Walls should be low cost and built of easily removable material. A column and beam system with a simple infill method may be the best solution. Roofs should be low cost and be able to be handled by hand, to allow vertical expansion. Toilets should not be placed permanently, particularly at the front of the lots even if the lower initial service line length and costs point to this solution. In almost all cases of examples with toilets in the front, the user moved them to the back of the lot.

3) Communal toilet facilities should be avoided in all cases. Water could be provided communally, but not toilets. Because of the maintenance problems and the inconvenience which leads to defecation in the lots and in open public areas, individual toilets should be used, even if only simple pit latrines can be provided.

4) The quality of construction tends to be equal or even better than that found in standard constructor built dwellings. Better supervision by the owner by being on the site and more careful selection of laborers results in superior unit construction.

TRENDS: The government agencies in Latin America are now heading into several clear directions:

1) There is more official acceptance in many countries of the site and services and progressive development concepts. In large part, the agencies are being encouraged through funding by various international agencies, particularly the World Bank.

2) In the development of projects, more reliance is being placed on community organization to build needed facilities: schools, community centers, etc. The primary goal is to lower costs, but this mechanism also encourages and strengthens community organization.

3) There is a clear recognition that the design problems of core housing are not irrelevant issues. Since the unit is and does change completely in most cases, the initial structure provided a simple resemblance to the final dwelling. It is recognized that the “problem” is perhaps artificially contrived by architects who attach undue importance to their designs.

4) The rising costs are forcing the initial provision of even more minimal units, and less than standard utility services. In
In Latin America, the shift to core houses and site and services projects has succeeded in offering an effective framework for housing the low income. Looking at the many examples, it is clear that these strategies could be effectively applied to other areas of the world with similar successes.

5) There is now a recognition of other types and varieties of dwellings to be provided in projects. No longer do many project agencies specify solely a simple 1 room core unit throughout. Now included are varied sizes of units according to location/desirability, from a simple core, to more complete 2 room units. Also some projects now include single-room tenements, addressed to the need for short term tenancy units.

6) Although there is still much reliance on “self-help”, “self-management” or “self-contracting” is now seen as the most accurate approximation of what actually occurs in the development of the units. Mutual-aid arrangements are being de-emphasized because of the high administration costs. Training programs for families now are oriented toward management principles instead of toward technical skills.

7) The concept of progressive development and up-gradable standards is now affecting the utilities themselves. For example, pit latrines are allowed initially, with only a piped disposal system for the public facilities and higher use/value areas, with the understanding that in a period of time all dwellings would connect to the water-borne system.

8) Small-scale employment generation now has become a goal in many of the newer projects. Small industrial lots are now set aside intended for 5-12 men operations.
C.U./M.I.T. STUDIES ON ANALYSIS AND DESIGN OF INFORMAL HOUSING IN CAIRO

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INTRODUCTION: The joint C.U./M.I.T. research started nearly two years ago in April of 1977. It is entitled “Housing for the low income and informal sector”, which focuses on the vast, growing areas of the low income surrounding Cairo. This is only one of many projects under the broader research project “The Housing and Construction Industry in Egypt”. When the research was begun, it was decided that the solution would not be reached by locking ourselves in our offices, having intransigent debates, and then reaching what is thought to be the best hypothetical design of dwellings and layouts. Acting in that way would be like doctors writing the best hypothetical treatment for a disease without directly examining the patient. Solutions should reflect what people need and demand, and not what architects and planners usually think people ought to have.

USER NEEDS: Before specifying standards and norms, an idea of the user needs would be required. It was felt that appropriate standards would not be internationally applicable, especially during a “crisis” period, as perhaps the housing situation could be characterized at this time in Cairo. People obviously differ in their social and psychological behavior. What is important in normal circumstances might not be essential in a crisis.

In order to reach an appropriate solution, two important questions must first be answered: Housing for whom? and, What type of house is needed?

DATA GATHERING: The United States Agency for International Development (USAID) report “Immediate Action Proposals for Housing” in 1977 proved a firm basis for starting the research. From the surveys and analytical studies the magnitude of the problem was quite apparent. In addition, it was clear that the housing shortage covered all categories of income. But it also showed that...
a very large percentage of low income categories can and do afford to pay for housing. Subsequent studies further refined the definitions and magnitudes of the housing problem. (See CU/MIT Interim Reports for 1977 and 1978: “The Housing and Construction Industry in Egypt”.)

A decision was made then to proceed in two parallel lines for gathering data: a “non-systematic” and a “systematic” approach.

a) The non-systematic included the following: 1. Meetings with different ministry personnel to record their experiences in public housing and to discuss with them their ideas about the current housing situation. 2. Visits to early public housing projects built in the 1960’s. 3. Visits to residential areas in the older sections of Cairo. 
b) The systematic approach consisted of a survey carried out in July 1977. The survey was done by 24 fourth-year architectural students with three teaching assistants, each supervising a group of approximately seven students. Two residential areas were allocated to each group. Of the total areas surveyed, three were formal, and three were informal (informal areas are those built outside of the legal structure; i.e., without building permits, etc.) The groups were further broken down into a team of two, one would ask the questions while the other drew the plan of the dwelling. The detailed plans proved to be of particular benefit in determining conclusions of the survey.

The informal areas surveyed are located outside of Cairo’s regular building zones. It was decided to focus on these areas because of the magnitude of the existing and future problems caused by this group. It is estimated that up to 70 percent of the new construction is carried out by the informal sector. The large housing areas taken from the agriculture land at the periphery of Cairo clearly indicates the scale of the problem.

DATA ANALYSIS: A comparison was undertaken between the different low income residential areas. Table 1 demonstrates a summary of the six areas. 

The difference in density is not striking but the land utilization is. The area left between buildings in the public housing project is badly kept. In fact, it is a derelict, “no man’s land” where garbage is left to rot, etc. Egypt, being a hot dry country, requires irrigation at a high cost in order to cultivate green areas,
<table>
<thead>
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<th>Name</th>
<th>Type</th>
<th>Net Density p/Ha.</th>
<th>Land Utilization private %</th>
<th>Land Utilization public %</th>
<th>Unit Street Length m/Ha.</th>
</tr>
</thead>
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<td>26</td>
<td>74</td>
<td>610</td>
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<td>88</td>
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<td>El Haram</td>
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<tr>
<td>Shoubra</td>
<td>Formal</td>
<td>1132</td>
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<td>33</td>
<td>330</td>
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</tbody>
</table>

**TABLE 1: Physical Characteristics of Areas Surveyed**
(Source: "Interim Report 1977")

Unlike similar housing in more temperate climatic zones where the space between the building is normally planted with grass and trees all grown without much effort. In Egypt these areas become dust and dirt in most cases, as no one has the responsibility to take care of it, and no budget is allocated for the upkeep of the space. It is neither public nor private. The result is the same, whether in the older projects or in the newer projects.

**DEMOGRAPHIC STUDIES:** The information collected in the surveys was analyzed in order to determine indicators of existing trends. The following were the main points:

- Annual family income (figure 1): In the informal sector the majority range from 300 pounds/year in Mataria to 500 pounds/year in El Haram. In the formal sector 800 pounds/year was the most common income level.

- Size of family: Five persons per dwelling is the most common.

- Employment: The people were mostly employees of the government.

- Place of origin: Dividing Egypt into three main zones: Cairo, Upper Egypt, and Lower Egypt, the families generally came from Lower Egypt.

- Length of stay in dwelling: Most people moved to the informal areas six to 15 years ago.
EVALUATION OF PHYSICAL ASPECTS: Various indicators are selected here to illustrate the main trends determined as a result of the surveys.

-Plots: The plot areas and proportions were analyzed with the following results: In 70% of the cases the width ranges from 6.30m to 8.40m; in 50% of the cases the depth ranges from 12 to 14.40m.

-Dwellings: The design of the dwellings was evaluated, and it became apparent that there is a prevalent type of design in all three informal residential areas, a type which is not-existent in the formal areas (See figure 2 and 4). Further analysis was carried out to ascertain if this was due to any of the previous demographic characteristics, and the result was negative. Neither the economic category of the occupants, the length of stay in the dwellings, nor their origin had any bearing on the type being built.

-Functional use of built space: The various plans were analyzed and spaces were differentiated into types according to their uses: rooms (used as bedrooms, living, or both); kitchen/bath areas; balconies; and entrance areas. For each space, the dimensions and the location (i.e., the distance from facade) was determined. (See figure 3.)

CHARACTERISTICS AND MAIN TRENDS: The following are the main conclusions:

-The prevalent type of dwelling (50 percent in the informal areas) indicates an intensive use of the lots. In most cases, the lot is completely used, and no space is wasted. Only 5 to 14 percent of the plot is open space. No back or front open gardens are found; no spaces are left at the sides between the lots as required by building regulations. Ventilation and light into the interior spaces (back rooms and kitchen/bath areas) are provided by shafts whose width is in the range of 80-100cm and length is 1.5-2.5 meters.

-Dwellings tend to occupy only one floor, rarely extending to other floors.

-The complete house is usually 3 stories high, with each floor usually occupied by one dwelling, but sometimes with two.

-Rooms always occupy the front of the house. The staircase and kitchen/bath areas tend to be located centrally. The average number of rooms per dwelling is usually three, with a hall.
Figure 1: DISTRIBUTION OF INCOME (from case studies)

Figure 2: TYPES OF DWELLINGS (from case studies)

Figure 3: SIZES OF SPACES (from case studies)

Figure 4: SCHEMATIC LAYOUT OF DWELLINGS (from case studies)
CONCLUSIONS: Two proposals for housing low income people were developed as a result of the analysis: A) a core house and, B) a modified 4 story walk-up apartment. The proposals are in accordance with, and the outcome of the study on the informal sector housing. In both cases, the lot is intensively used.

A) In the core house proposal, the following parameters were considered: a) Designs are developed for the most prevalent lot dimensions. b) Designs can be either composed of one room and kitchen/bath areas, or one room and entrance hall and kitchen/bath. The front of the unit is always occupied by rooms. c) The finished design comprised one or two small courts of varying dimensions in order to light and ventilate the back rooms, kitchen/bath areas, and staircase. (An environmental study of the open courts was also undertaken by Dr. S. Ettouney, see “Interim Report 1978”) d) The number of rooms per dwelling could be 3 to 5. The staircase should be so placed as to maintain privacy of each dwelling per floor. e) The house could be increased to 3 or 4 stories in addition to the ground floor.

B) In the modified 4 story walk-up apartments proposal, some of the shortcomings of the public housing in the sixties can be avoided by designing buildings which have the following characteristics: a) The derelict wasted land between the blocks is avoided by combining the shallow slab blocks and ventilating the back rooms and kitchen/bath areas from the inner courts as in the core house designs. b) A flexible deep plan offers the possibility of having dwellings of a varied number of rooms. Thus, apartments can range from 3 to 5, or even up to 7 rooms. c) There is a substantial gain in material as columns are better utilized, i.e., by avoiding corner columns and also by combining the staircase to serve two instead of one dwelling per floor. d) The cost of the building could perhaps be substantially decreased if the government builds only the structural elements, kitchen/bath, and the facade. Thus each owner has the freedom of using different finishing materials according to his budget, and eventually upgrading the unit in accordance with his income.
Workshops
Workshop:
THE DESIGN OF CORE HOUSE UNITS

Moderator:
Dr. Zakia Shafie
Professor of Architecture
Cairo University

Topics:

1. COMPONENTS
What is provided on the lot: a complete room or just provide utility services? What are the options in shelter and services: room, utility core, empty lot, roof? Where is the core unit to be located on the lot? What are the advantages of their use in various situations? Under what conditions are core houses necessary?

2. ADVANTAGES OVER TRADITIONAL PUBLIC APPROACHES
Are there demonstrated cost, time, acceptability advantages of the use of core units for the low income sector of the population?

3. CORE HOUSE EXPANSION
How is the house anticipated to be expanded? What control mechanisms, if any, should be used to assure desired results?

4. MATERIALS
What is the difference in materials for projects in: a) new towns, and, b) areas adjacent to existing towns. What choice of technology and labor intensity is appropriate to core houses?
Workshop:
SITE PLANNING AND INFRASTRUCTURE

Moderator:
Reinhard Goethert
Research Associate
Massachusetts Institute of Technology

Topics:

1. STANDARDS
What are the acceptable service levels appropriate to low income housing?  Water: standard individual service or communal taps?
Sewage: waterborne network or pit latrines or cesspools?
Streets: paving or no paving; maintenance.  Electricity: street lighting and individual service?

2. SITE PLANNING
What planning strategies can be followed to minimize costs?
Does there exist a generalizable answer or must each case be handled uniquely?

3. PUBLIC OPEN SPACE
How is responsibility assigned?  How can the control/maintenance be handled?

4. COMMUNITY FACILITIES
What should be provided?  How does one coordinate their provision with the staging of a project?  What facilities can/should be left to private provision?

5. SOLID WASTE
How is the problem of refuse handled?  Who (public or private) can/should pick up/dispose of waste?

المواضيع:

1- المعدلات الفياسية
ما هي مستويات الخدمة المقبولة والملائمة لسكان ذوي الدخل المنخفض؟  المياه: توصيل غاية لكل بناة ام مطابقة جماعية الصعبيات الصغيرة: شبكة مغابيرة عمومية ام استخدام بياضات صرف وخلائات تحليلية؟
التوزيع: هل تغطي ام لا 9 كيفية صيانتها؟  الكهرباء: هل تغطي كل المنازل؟

2 - تخطيط الموقع
ما هي استراتيجيات التخطيط التي قد تتيح لخفض التكلفة؟  هل هناك أجهزة شاملة وغامضة ام يجب أن تدرس كل حالات وتحلل على حدى؟

3 - الفوائد العامة المفتوحة
كيف تحدد المسؤولية ؟  كيف يتم السيطرة عليها؟

4 - الخدمات الاجتماعية
ما الذي يجب توفيره؟  كيف يتم تفسيرها ومراحل التنفيذ المتاحة لخدمات الاختصاص؟  ما هي الخدمات التي يجب اور يكون تقاساً للقطاع الخاص؟

5 - القيادة
كيف يعنى موضوع جمع القمامة والتحلل منها؟  من في القطاع العام والقطاع الخاص) يستطيع أو يجب أن يقوم بجمع القمامة والتحلل منها؟
Workshop:
ECONOMIC AND MANAGEMENT ASPECTS

Moderator:
Dr. Abdel M. Barrada
Assistant Professor of Architecture
Cairo University

Topics:

1. ROLE OF EACH LEVEL OF GOVERNMENT
What are the responsibilities at the various stages of a project: conception, development/design, and implementation? What types of technical assistance should be provided? What is the role of cooperatives?

2. AFFORDABILITY
What can people really afford to pay? What are the types and amounts of subsidies required?

3. SUBSIDIES
At what income level should subsidies apply, in what form: land, building materials, or interest?

4. TENURE
What is more appropriate? rental or ownership? Under what conditions does each have an advantage?

5. REPAYMENT SCHEMES
What are the methods of repayment?
Appendix
TECHNOLOGY ADAPTATION PROGRAM (TAP)
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

The Technology Adaptation Program is a major program at M.I.T. concerned with the technological issues involved in the transfer and adaptation of technology to the conditions prevailing in other countries. TAP was initiated eight years ago under a grant from the Office of Science and Technology of the U.S. Agency for International Development. Its objectives are to develop an understanding of the characteristics of technologies that are appropriate to countries in various stages of development; to identify criteria for the selection and adaptation of appropriate technologies; and to develop an understanding of the processes by which technological knowledge and skills can be effectively introduced, disseminated, and used in developing nations. The program is concerned with promoting an awareness of and expertise in the technological problems facing developing countries on the part of both faculty and students at M.I.T. as well as foreign students and scholars who attend M.I.T. TAP's activities thus lie in three interacting areas: development of institutional ties between M.I.T. and educational and governmental organizations in various countries; collaborative research; and educational opportunities at M.I.T.

The TAP Program Director, Professor Fred Moavenzadeh, is responsible for the coordination of program personnel, scheduling, and funding. The Executive Committee, composed of Professors Nazli Choucri, Richard Eckaus, and Fred Moavenzadeh, is responsible for the implementation of the Program at M.I.T.
TECHNOLOGICAL PLANNING PROGRAM (TPP)
CAIRO UNIVERSITY/M.I.T.

Under the auspices of TAP, the Cairo University/M.I.T. Technological Planning Program, funded on an interim basis by the U.S.A.I.D. Mission in Egypt, began two years ago with a focus on improved planning of development projects in Egypt. The overall objective of the program is to expand the capabilities of Egyptian ministries and other government agencies to formulate and implement technical programs designed to achieve national development goals. The research projects focus on a broad range of engineering, economic, and social service topics. The key element in each of these efforts is the interdisciplinary team drawn from faculty and staff of M.I.T., Cairo University, and government projects in the topic area. Effective utilization and cooperation of the Egyptian academic and government resources has been one of the principal reasons for the success of the program to date. In addition to the specific research projects, emphasis has been placed on the training of in-country personnel in the techniques of project identification, evaluation, and management, and the development and maintenance of the data necessary to design and monitor their projects. To provide a channel for continuous, convenient communication between government agencies and the academic expertise involved in this program, a permanent Institute for Technological Planning is being established at Cairo University. This Institute will eventually organize a centralized body of technological, economic, and social science expertise both internal and external to Egypt in the general area of development planning.

At Cairo University, the program is being administered under the guidance of the Vice Rector for Research and Graduate Studies, Dr. Hassan Hamdy. The Executive Committee, composed of Professors Yehia Kabil, Zaki Shafei and Salah Shabhender, is responsible for the implementation of the program at Cairo University.
THE HOUSING AND CONSTRUCTION INDUSTRY
CAIRO UNIVERSITY/M.I.T. PROJECT

The overall objective of the research is to develop the technical and economic basis for a national housing policy. Specific recommendations are intended to be developed with focus on investment policies, controls and regulations, provision of services, and other instruments of government intervention in housing. The goal is to assist the Egyptian government in developing a housing policy which better enables the various supply institutions to meet the country's housing needs.

Three specific problem areas were identified during the initial research in which the efforts are directed: 1) Study of Public Policy and the Economics of Housing, with focus on investigating policy options affecting housing, and the institutional/organizational framework of the construction industry; 2) Study of Housing Construction Systems and Design Norms, with focus on modifications of the new prefabrication systems required to reach lower income groups and to make better use of the elements; 3) Study of Housing for Low Income and Informal Sectors, with focus on site and services planning approaches and compact physical development models as an alternative to existing public housing models. Personnel with expertise in various fields were combined in teams to provide an interdisciplinary and comprehensive approach in each of the three areas.

وفي التعرف خلال البحث الأول على ثلاث مشاكل رئوية حيث البداية الهيود هي: 1) دراسة السياسة العامة للاسكان واقتصاديات الإسكان مع التركيز في البحث على السياسات الدبلية التي تؤثر على الإسكان وعلى البيئة التنظيمي لصناعة البناء 2) دراسة نظام تقديم المباني السكنية وقواعد التصميم مع التركيز على تعديل نظري البناء المبين التجبيبي حتى يمكن استخدامها لبناء لذي الدخل المتوسط واستخدام الاموال المتاحة بطريقة أفضل 3) دراسة الإسكان لدوى الدخل المحدود والقطاعات الغير رسمية مع التركيز على استخدام أسلوب تخطيط الموقع والخدمات ونماذج التطور الجماعي المكلف كدليل لنتائج الإسكان العامة المطلوبة.

وقد جمع خبراء في مجالات مختلفة في شكل فريق لتنفيذ الملاحظات في أفضل الطرق التنظيمية الوسيطة والشاملة في كل من هذة المجالات الثلاث.
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