USE OF SPACE IN A CAIREEN HOME: A CASE STUDY OF SAYEDDA ZENAB DISTRICT, CAIRO, EGYPT.

by Arc. A. P. Opoko (Mrs.)

INTRODUCTION

Different household activities require different space configurations for their performance. Often times, especially for low-income households, space is inadequate and need therefore to be judiciously rationed. Spatial distribution in buildings are determined by a variety of factors. These range from functional, socio-cultural, religious, economic to climatic considerations. Spaces which satisfy the above requirements and allow households to optimally perform their domestic activities are considered 'successful', while those which hinder optimal performance of domestic activities are regarded 'unsuccessful'.

This paper reports on a study which examined prevalent spatial organisation and utilisation patterns in residential buildings in a residential community in Cairo, Egypt. Where these patterns are found to deviate from known traditional patterns, an attempt is made in proffering reasons for such deviations.

TENURAL SYSTEM

About 90% of residential buildings in the community are occupied by tenants. These buildings comprise privately owned blocks of ready-made accommodations which are not necessarily tailored to any individual household requirements. (Fig. 1). Therefore, tenant households are compelled to adapt their spatial needs to available spatial provisions since they can neither extend it nor alter it significantly. Figs. 2 and 3 show examples of some of the floor plans existing in the site.

HOUSEHOLD ACTIVITIES AND MODE OF PERFORMANCE

The survey revealed a variety of household activities. These include sleeping, cooking, relaxation, entertaining guests, dining, storage, laundry, children playing and home-based income generation amongst others. Similarly, the places where these activities are performed were also noted as shown in fig. 4. In addition, various household gadgets and furniture were also observed, Figs. 6 and 7. From Figs. 4 - 7 it is easy to see the multipurpose nature of various spaces and furniture as they can be put into a variety of uses as the needs arise. For instance, the centre stool when not used for entertaining visitors or as a dining table is stored on top of the cupboard to create more space. In the same vein, the lounge serves as a place for entertaining visitors, sleeping and storage area. Similarly, the balcony is not only used for view and relaxation but also for drying clothes, hanging television aerials and storage purposes.

HOUSEHOLD STRUCTURE AND OCCUPANCY

Analysis of family structures in the site reveal a deep rooted extended family system, akin to what obtains in other rural settings in Cairo. Most households in the area consist of three generations, usually a widowed grand mother, a couple and their children. It is also common to have other relations sharing the same accommodation, either on temporary or permanent basis. On the average, the occupancy ratio was found to be high 4-6 persons/room and over crowding evident. Discussions with residents reveal acute space constraints. Unlike in traditional housing, additional spaces cannot be added as need arises due to non-availability of land for expansion and lack of authority to expand because of tenural status. Inspite of this inadequacy of space, several of the households interviewed feel constrained to remain in their present accommodation due to difficulties in finding affordable alternative accommodation elsewhere. Average rent in the area is Le3 per month. It is interesting to note that due to the rent edict in Cairo, rents have remained very low and the same for periods over 30 years in some cases. This has however affected the quality of housing and quantity of available housing stock.

FIG 1: View of typical buildings on site

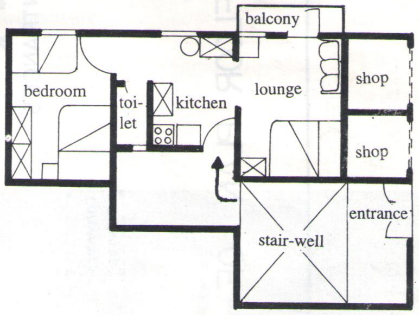

FIG 2: Floor plan A (scale 1:100)

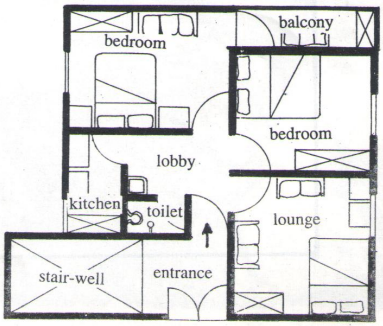

FIG 3: Floor plan B (scale 1:100)

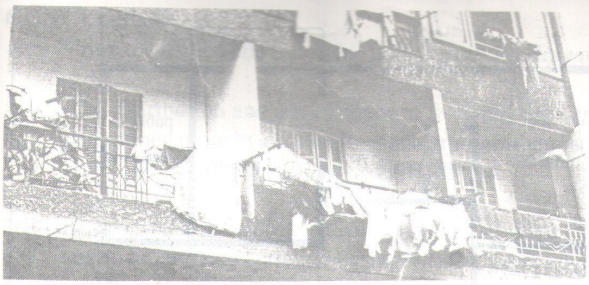

FIG. 5a

Apart from serving a sit-out and providing view, balconies are used for storage and cloth drying. Similarly, rooftops are used for storage, water collection and keeping of life-stock. Streets serve as extension of children play area in addition to accommodating human, animal and vehicular traffic.

SPACE / ACTIVITY	Bedroom	Kitchen	Lounge	Balcony	Hall	Toilet
Sleeping	⊠		⧸	⧸		
Cooking		⊠				
Entertaining guests	⧸		⊠	⧸	⧸	
Family relaxation	⧸		⊠	⧸		
Eating	⧸	⧸	⊠	⧸		
Laundry						⊠
Drying clothes				⊠	⧸	⧸
Storage	⊠	⊠	⊠	⧸	⧸	⧸
Reception					⊠	
Bathing						⊠
Toileting						⊠
Income-generation	⧸	⊠	⧸	⧸	⧸	
Children playing	⧸		⧸	⧸	⧸	

FIG.4: Space/activity matrix Always ⊠ Sometimes ⧸

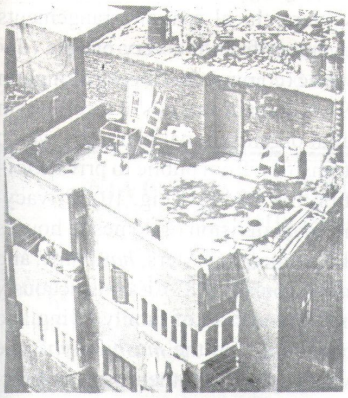

FIG.5b

FIG.5c

FIG.6: Bedroom/living room

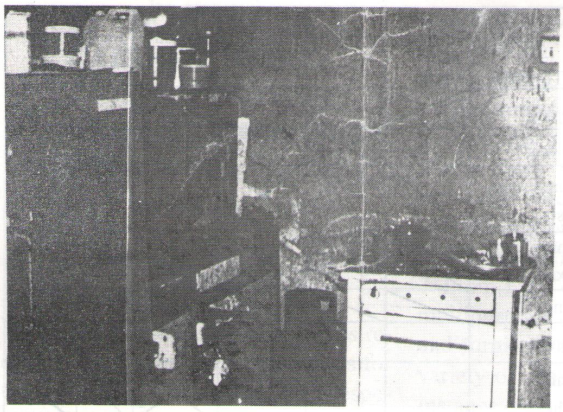

FIG.7: Kitchen

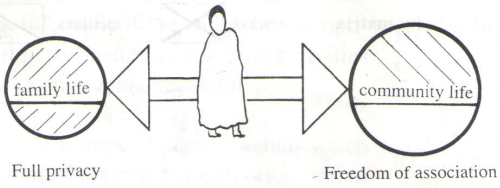

FIG.8: Design requirements in Islamic societies

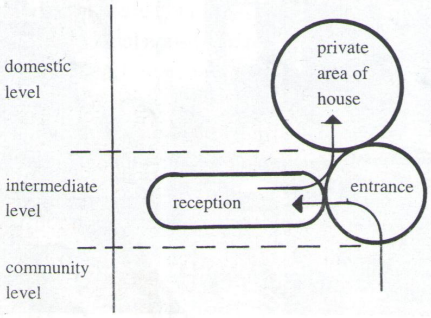

FIG.9: Spatial hierarchy in Islamic societies

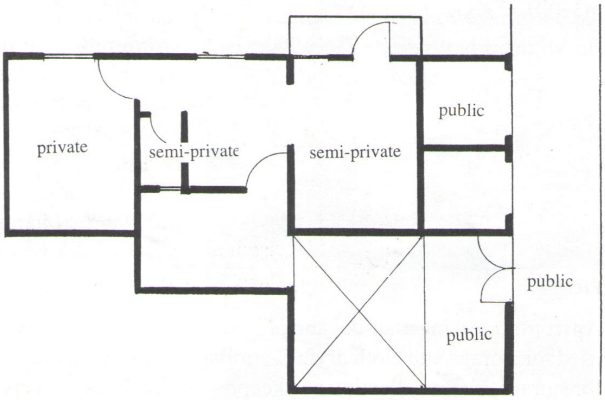

FIG. 10: Domain analysis of typical building on site (Floor plan A)

DOMAIN ANALYSIS

Toulan, (1983) and Moughtin and Shalaby, (1986) have identified two main design variables which determine the design of spaces in Islamic societies. These are the apparently conflicting need of privacy for the womenfolk and freedom or interaction for the men folk, (Fig. 8). In traditional settlements, these needs were met by hierarchical spatial arrangements which permit gradual movement from the very private (domestic) level to the very public (community) level. (Moughtin and Shalaby, 1986). (Fig. 9). A domain analysis of dwellings in the study site show a spatial organisational hierarchy which creates a rather dramatic transition from public to private levels, with little consideration for privacy. (Fig. 10). Privacy-enhancing devices like the usual division of domestic houses into two distinct areas - the women's quarters, *haramlek*, and the male's quarters, *salamlek*, (Toulan, 1983), is conspicuously absent. Equally absent are the location of family living and sleeping quarters on upper floors and the *mashrabiyas*, the wooden lattice screens which apart from their privacy function served to cool building interiors and drinking water. Due to modern design techniques employed for housing in the site and economic constraints, households in the site are restricted to a floor or part of a building.

To augment household income, more women in the site are now working, mostly outside the home. For example, 85% of the female labour force in the district, (Sayeda Zenab), belong to the active work force, (NEF, 1994). Besides, interaction with other cultures appear to have mellowed down previously strongly held religious and socio-cultural values, especially as regards privacy and spatial distribution in domestic buildings. The diminished relevance of privacy and changing cultural values though permitting an outflow of indoor activities, have also weakened social relationships. For instance, although women can now chat with friends and neighbours across balconies and on the streets, there are suggestions that these interactions are only superficial as the locations do not provide adequate privacy for in-depth interaction which the privacy of the *haramlek* provided.

CONCLUSION

From the survey, the following conclusions are drawn:

1. The distribution and use of space in the study area are determined more by economic considerations than religious, socio-cultural or even climatic factors.

2. The impact of western contact on lifestyles, social values and technology, are increasingly reflected in housing design and construction as is the case in other parts of the country.

3. Tenural system, land scarcity and compact apartments in multistorey buildings hamper future expansion and certain home-based economic activities like life-stock keeping and farming.

4. In order to reduce cost and keep pace with western influence, some valuable traditional architectural spatial features like the *mashrabiya* and courtyard which aided circulation, modified climate and provided private outdoor space for family activities are eliminated.

5. Space constraints has brought about ingenuity in the flexible use of both space and household furniture.

NIA CANVASSES FOR STUDENT MEMBERSHIP

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THE COMPUTER AS AN ARCHITECTURAL DESIGN TOOL

- Joseph M. Igwe

INTRODUCTION

The past few years have witnessed the computers revolutionary impact on modern society which Donald Fullenwider[1] ranks with the industrial revolution except that it is happening ten times faster (Architectural Record, May 1983). In the field of architecture the use of computer aided design and drafting systems has introduced a new dimension to the practice and business of the profession. The computer has come to replace the drawing board, T-square and Set-square in drawing offices. As designers all over the developed world are making the transition from traditional drafting board to the computer screen and the mouse, many of their Nigerian counterparts are still reluctant to venture into this new technology.

This general reluctance to change over to computerisation of design work can be attributed to misconceptions about the usefulness of computers. Some architects have the erroneous impression that the computer limits the creative process by restricting design to geometric abstractions, while others perceive the computer simply as a drafting tool. Contrary to prevailing myths, Hoyt and Stockdale (1988) showed that the computer is to the designer what the typewriter is to the writer: a tool to explore and develop creative ideas.

In today's world of information technology it is doubtful if any profession can be effectively practised without the use of the computer. The practice of Architecture relies heavily on access to correct information and extensive database and, to that extent, it is unlikely that the business of architecture will survive without computerisation in the near future. At the moment, a large majority of Nigerian architects are still doing design work manually. Preliminary survey indicates that a substantial percentage of the few firms that have acquired computer aided design systems use them primarily for drafting purpose.

This paper will attempt to elaborate the full benefits of the computerisation of the design profession with the hope that architects will take full advantage of the limitless possibilities of computer systems to device better solutions to design problems.

HISTORICAL EVOLUTION OF COMPUTER AIDED DESIGN AND DRAFTING SYSTEMS

In the 1950's when computers were first introduced they were intended for scientific calculations and for large-scale business uses such as payroll production. Within the first decade of its introduction, the possibilities of the computer in various fields, including architecture, were vigorously explored.

In 1963, Ivan Sutherland developed the first computer aided