

USERS' PARTICIPATION IN LOW COST HOUSING PROJECTS Post Occupancy Evaluation

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Abstract:

Provision of affordable housing for low-income groups has been the major concern of the Ministry of Development in Egypt, between the mid Seventies and the early Nineties (of the past Century). The authors were the technical consultants to the Ministry of Development & Housing, Egypt; and proposed low-cost housing design alternatives based on the concept of users' participation, in the late Nineteen Eighties. This concept is believed to be a key factor in decreasing the initial cost of dwellings.

While developing architectural designs for the housing prototypes allowing the incremental development of the dwellings within a scenario of flexibility and adaptability, the designers (present authors) stressed the necessity to monitor and assess the experiment in order to maximize its merits and potentials, and to minimize its drawbacks.

The suggested approach led to the design and implementation of the "Partially Completed Housing Projects for Low-Income Groups, Egypt". The objective of the present paper is to review and assess the experiment. The assessment will refer to samples of the implemented projects ten years after their completion and will focus on three main issues:

- The issue of users' participation in the gradual completion and finishing of their dwellings.
- The issue of affordability and the impact of the family income on the process of gradual completion.
- The issue of the organizational procedure related to the provision of tools, materials and technical assistance for the gradual completion.

This paper comprises an introduction, and three main sections closely related to the above mentioned three issues, namely:

- On the concept of users' participation, and its impact on the proposed architectural designs for affordable housing units and projects.
- The housing projects ten years later - a post occupancy evaluation with emphasis on the technical, financial and organizational aspects.
- An epilogue, on the merits and drawbacks of the approach, and its potentials for future applications.

1 Introduction

Many studies pinpointed the importance and potentials of users' participation in the development processes, comprehensive and physical. In the late 1980's the Ministry of Development, Housing and New Communities, Egypt, recognizing users' potential, adopted a new approach to low-income families' housing projects, [1]. It was based on the provision of partially completed dwellings in four to five story walk-ups. The approach has since been implemented on a relatively large scale, several hundred thousands of partially completed units were built and handed over, nation wide. This rightly deserves serious monitoring and critical assessment.

The objective of the present paper is to review and validate the experiment and the underlying approach, almost ten years after the completion of its initial projects. This is accomplished through a post occupancy survey and evaluation of a selected sample of developed low-income housing areas.

The paper recalls the conception of users' participation emphasizing the link between effective participation and affordability. It briefly presents the results of a sample survey of the implemented partially completed housing projects; focussing on the issues of gradual completion, economic affordability and organizational procedures. The positive and negative aspects of the experiment, approach and implementation are then highlighted and the prospect for the conception and products is put-forward.

2 On the concept of users' participation

Users' participation has always been a key issue in community development processes and the closely related housing projects and developments. Its recognition and realization could serve many objectives: socio-cultural, political and economic;

- On the socio-cultural level, Habraken, N.J., [2], [3], emphasized its relationship to the flexibility and adaptability of the dwelling. Users' participation allows it to meet the varied and changing needs of the users.
- On the political and economic levels, Turner, J., [4], and Correa, C., [5], also stressed the fact that participation is strongly linked to affordability. It allows the gradual and incremental completion of the dwelling according to the ability and affordability of the user.

In implemented housing projects, it has been noticed that, users are invariably interfering with the internal organization of their dwellings, whether such interference has been foreseen by the architect/designer or not. Participation is considered as a clear manifestation of the users' needs for flexibility to meet their variable and changing needs. Users' needs vary from one to the other and through time, to the same user. Such variations and changes in users' need call for inherent internal flexibility in dwellings' form and design. Design flexibility allows user direct/effective participation in changing and reorganizing the internal layout of his dwelling to meet and satisfy his ever changing needs.

Enabling users' participation as a scenario to achieve flexibility is indeed one of many positive aspects of the conception, Ettouney, S., [6]. Users' participation could also secure economic viability, which is an essential objective in housing projects for low-income groups. The incremental growth and gradual completion of the dwelling through users' participation could coincide with and secure the target of affordability. The user may not be able to obtain the dwelling suitable-most to his needs, due to his income limitations. He will however accept a dwelling of lower standards (in terms of completion and finishes) if it can be improved and upgraded with time, according to his ability and income

improvement. In other words continuous/sustainable participation allows the user to acquire an affordable dwelling that could be gradually completed and improved.

The said proposition of securing economic viability for housing development through the positive deployment of the interdependence/linkages of users' participation to affordability; could be effectively substantiated through:

- Existing conditions and manifestations in developing settings, Egypt, and the closely related,
- Shifts in government housing policies and adopted scenarios.

As for the current housing conditions as a manifestation of users' participation; the informal developments on agricultural land surrounding existing cities and urban areas provide a clear demonstration, Ettouney, S.M. and Abdel-Kader, Nasamat, [7], [8]. In Egypt, due to the acute shortage in housing units for low-income groups, the informal sprawl over agriculture land represents a colossal problem. The said phenomenon is characterized by a chain of drawbacks including; encroachment of scarce agricultural resources, provision of low-standard dwellings and housing areas, lack of community facilities and infrastructure. It does however clearly demonstrate the efficiency of the low-income users (communities) and their ability to self-shelter and to gradually develop housing areas. Their participation endeavors cover all aspects of the development process, i.e. financing, management, construction, implementation and running of their projects. The efficient participation of low-income users (communities) forced the government to recognize (and resentfully) accept the potential and seek means of its deployment in housing plans and scenarios.

The housing policies adopted by the government (agencies and institutions), were influenced by the said phenomenon of informal housing. Together with the findings and proposals of several housing studies, completed between the mid Nineteen Seventies and the late Nineteen Eighties, as part of the development plans for Egyptian New Cities, see for example Ettouney, S.M. and Abdel-Kader, Nasamat, [9]. The studies recommended the adoption of core housing and site and services schemes for low-income families in the newly developed communities.

Pilot projects in the Egyptian new settlements implemented core houses proposals. The government was not convinced of the appearance and image of core-houses projects. In fact, the pilot projects treated the built core-houses concept as a final/completed product, not as an ongoing process that needs supervision and management. Core-houses were left to their owners to incrementally complete with no help, control or guidance. The outcome was in a way a replica of the informal developments. Instead of assessing the experiment to understand the reason behind its drawbacks (which is mainly the lack of management), the government abandoned the concept.

In the mid Nineteen Eighties, the Ministry of Development, Egypt, attempted a new housing scenario, i.e. the provision of partially completed flats within externally finished medium rise apartment blocks, [1]. The new scenario recognized the potential of users' participation and abandoned the horizontally stretched concept of core housing. The Ministry's officials labeled the new scenario: "vertical core-houses". The concept was welcomed as it combined; the external appearance of a complete project and allowed the users to gradually complete and finish the interiors of their dwellings.

The authors were the technical (architecture and planning) consultants to the Ministry of Development, and developed design alternatives for the partially completed housing prototypes. Almost half a million dwellings have been implemented using those prototypes all over Egypt. A joint research project between Cairo University, Egypt and Florida International University, U.S.A., [10], emphasized the necessity to monitor and assess the approach and its implementation. Many of the completed projects have been occupied for some ten to twelve years, which allows a rational analysis

and evaluation of the approach and related products. A limited post occupancy evaluation study was recently carried-out, focussing on the issues of effective participation, affordability and organizational procedures. Highlights of its findings are presented in the following section.

3 The partially completed housing projects, ten years later.

The partially completed housing prototypes comprised five story apartment walk-ups, providing a variety of flat areas, namely: 45, 60, 75 and 90 square meters (see Fig. 1). Each flat was conceived as a minimal shelter, comprising; a finished bathroom, all sanitary connections and electrical installations. Internal partitions as well as walls and floor finishing were left, to be gradually completed by the user according to his needs and affordability, [1], [10], [11].

A limited survey and investigation of a number of partially completed housing developments at Sheikh Zayed New City, West of Greater Cairo, Egypt, where the prototypes were deployed in four residential areas, was carried-out by postgraduate research students, Department of Architecture, Cairo university, under the authors' supervision. The surveyed flats have been allocated and handed over to their users/owners, who moved in and occupied them for nearly ten years. The survey covered a selected sample of the flats with areas of 60 and 90 square meters. Interviews and questionnaires were undertaken to clarify three main issues, namely:

- The issue of gradual completion (steps/phases, rate of progress, duration/time needed)
- The issue of affordability (target groups, eligibility, terms of loans, interest rates, installments)
- The issue of organization procedure (involved actors (individuals, institutions and others), type and scale of operations, distribution of roles)



Figure 1: External features of the five story walk-ups.

In order to address these issues, the proposed policies and actions will be outlined first, then followed by a review of the implemented policies and actions as well as the present conditions as revealed by the field survey; in each case.

3.1 The issue of gradual completion

The original concept assumed that the users would come up with different solutions for the internal layouts of their dwellings, reflecting the variety of needs. Moreover, it was expected that the gradual completion of the unit would reflect the priority of needs for each user. For instance, to some users the final finishing of the internal walls and floors could be more important than adding partitions, while adding partitions and providing closed rooms/compartments could be more vital to others, in order to satisfy the need for visual and acoustic privacy for family members.

The survey showed that the final internal layouts of the flats were rather similar/comparable; the observed variations were limited to colour selection and finishing materials. It also pointed-out that the

users greatly benefited from the possibilities of gradual completion. The erection of internal partitions invariably came first, to be followed by the final finishing of internal surfaces (walls and floors), (see Figure 2). In most cases flat completion was carried out over a period of two to three years and did not start immediately after handing over, as it might be expected. The speed of action was very much dependent on, financial ability and affordability.

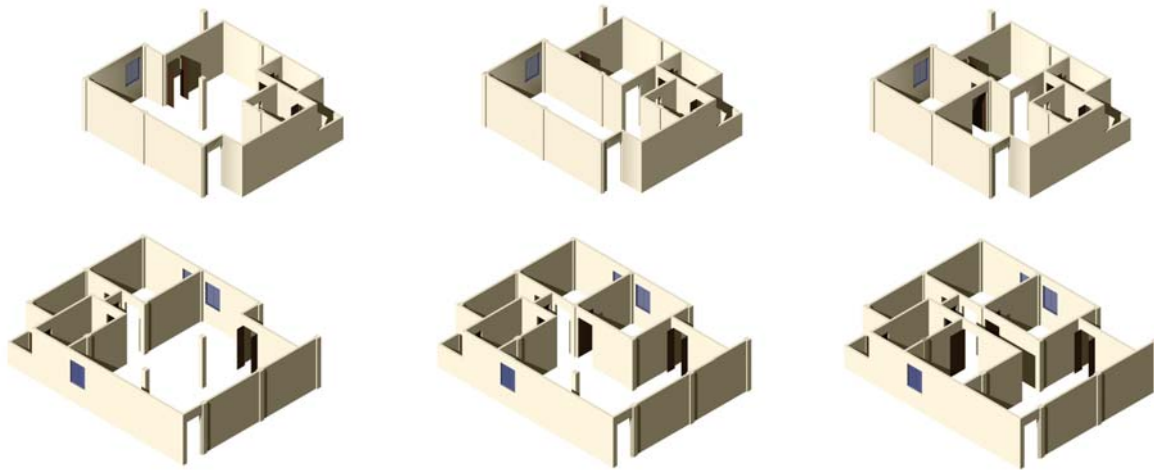


Figure 2: Gradual completion of the internal layout (the 60 and 90 square meters flats)

3.2 The issue of affordability

Earlier studies by the authors formulated the economic guidelines for the suggested conception; see for example, Ettouney [12] and Ettouney and Abdel-Kader, Nasamat, [9]. The cost of the partially completed flats was estimated to represent about 30% less than those of finished flats of the same area. The reduction in cost was enough to make those flats affordable to targeted low-income groups. The assumptions were based on providing loans to the prospective users/dwellers equivalent to four times the family income. According to Wakeley, T., [13], if the duration of the loan is forty years and the subsidized interest rate is of the order of 6%, the monthly installments would then represent about 25% of the family income (which is reasonably affordable). In order to provide such a loan, the Ministry of Development at the early stages of application, insisted on dealing only with users/dwellers having a formal occupation and a steady income. The steady salary represented an asset and a guarantee for the loan. The Housing & Development Bank (directly affiliated to the Ministry of Development) was entitled to automatically deduct the monthly installments from the user's salary. The said restriction obstructed the partially completed units from reaching most of the target demand group, i.e. families without formal occupation and steady income; yet able to pay the required installments. A positive change in the Housing & Development Bank policy was shortly enforced; which considered the dwelling unit itself as the physical asset that guarantees the loan.

However, the survey showed that one of the loan terms was modified, namely; the proposed loan (settlement) duration of forty years, was reduced to twenty-five years. The interest rate stayed at the suggested 6% as well as the monthly installment ratio to family income at 25%. The new terms collectively meant that, the dwelling cost would represent about three times the family annual income; accordingly slightly higher income families could afford the new terms, (see Figure 3). The partially

completed dwellings instead of going to the target low-income groups; were directed to lower-middle income groups.

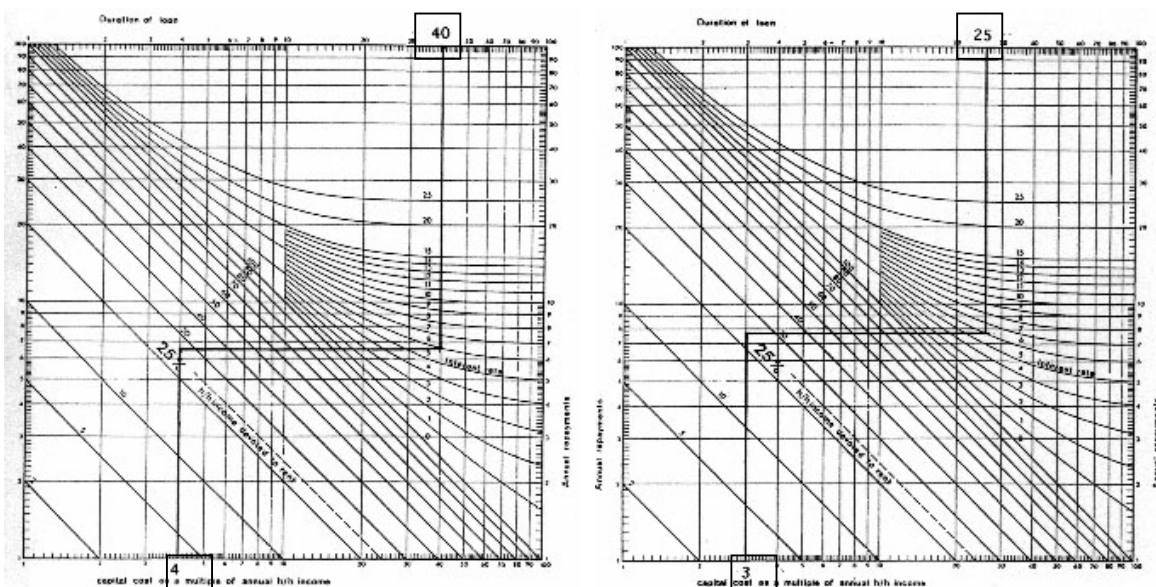


Figure 3: Change in loan terms leading to a change in the target users' group.

3.3 The issue of organizational procedures

The initial study proposed flexible scenarios for the management and organizational procedures depending on the type of operations to be implemented. Different actors were proposed for the different actions and operations. The main steps of completion were expected to be; the erection of additional internal walls and partitions, wall and floor finishing. The actors were thought to include the users themselves, skilled laborers and tradesmen, small and general contractors offering services to the housing projects. The survey showed that small contractors executed most of the gradual operations. The users preferred to hire them since they did not have the time or the (do-it-yourself) experience to carryout the completion tasks (see Figure 4). The survey also monitored rising complaints regarding the lack of mechanisms for ongoing maintenance of the dwellings, the blocks (e.g. sanitary connections and technical installations) and the immediate setting and landscape elements. Most of the users suggested that overcoming those problems is a role to be entrusted to community based organizations (CBOs).

Actors \ Actions	Proposed / Planned				Actors \ Actions	Actual / Current			
	Users	Tradesmen	Small Contractors	General Contractors		Users	Tradesmen	Small Contractors	General Contractors
Wall Construction		●	●	●	Wall Construction			●	
Wall Finishing	●	●	●		Wall Finishing		●	●	
Floor Finishing	●	●	●		Floor Finishing		●	●	

Figure 4: Proposed versus actual roles for the actors in the gradual completion process.

4 Epilogue - On the merits and drawbacks of the approach

The partially completed flats approach and its implementation provided a real test for the conception of users' participation. The assessment of the selected samples of related large-scale developments emphasized the linkage and interdependence between participation and affordability. The undertaken post occupancy evaluation pointed-out the merits of the approach and its application, as well as the shortcomings and drawbacks; that need to be seriously addressed, (see also in this respect, the set of recommended guidelines for the transformation of walk-up apartment blocks, Ettouney, S. and Abdel-Kader, Nasamat [14])

The partially completed dwellings allowed low-income groups to gain access to dwellings they could not afford if they were completely finished. With their limited income, they were both able to pay the loan installments and gradually complete their dwellings over an extended period of time. They were also free to determine and manage their priorities; e.g. starting by adding new partitions before finally finishing the walls and floors of their flats, or vice versa.

Few drawbacks were clearly noticed. The recommended low-income target group was denied access to the housing units. Policy shifts allocated the partially completed flats instead, to a different group of higher income. The adherence to the initial objectives was essential in order to reach and answer the needy user's demand. Moreover, on the organizational level, the management of the partially completed dwellings, blocks and external settings was (and still is) evidently lacking. Sustainable management and maintenance provided by NGOs or CBOs. may indeed be the answer.

It is reasonable to conclude that, if the highlighted shortcomings are compromised, the partially completed flats approach could prove to be among the appropriate-most housing solutions to urban low-income families in developing contexts.

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