THE MEXICALI EXPERIMENTAL PROJECT: AN ANALYSIS OF ITS CHANGES

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ABSTRACT

During 1975 the Architect Christopher Alexander designed and built an experimental project for low income people in the city of Mexicali, Mexico. The aim of the project was to create a beautiful place, not just of architectural beauty but in its essential spirit, in its quality of life. A number of patterns, taken from the book *A Pattern Language*, were used to design the environment. The residents played an important role in the design of their place: this, according to the author, would guarantee that the place would directly respond to their physical and spiritual needs.

Today, 20 years later, the project has undergone a lot of changes. People have continued the building process by themselves. Additions, modifications and changes in the use of spaces have blended the project with the neighborhood. This research attempts to describe the project's changes, to explain the motivating factors in its changes, and to evaluate the designer's original goals. It reveals the discrepancy between the architect's intentions and the actual needs of the residents. In this respect, the transformations observed show the incorporation of a culturally-based production process, suggesting the existence of an already inherent building practice that was neglected in the Mexicali approach.

RESUME

Durant l'anne 1975, l'architecte Christopher Alexander a conçu et realisé un projet d'habitation experimental pour personnes a faible revenu dans la ville de Mexicali, Mexique. Le but du projet était de créer non seulement une oeuvre architecturale de toute beauté, mais aussi de capturer son essence spirituelle dans sa qualité de vie. Certains systèmes tirés du livre *A Pattern Language* ont été appliqués dans la conception du projet. Les habitants ont joué un rôle important dans l'élaboration de leur logement: ceci selon l'auteur guarantirait des solutions directes à leurs besoins physiques et spirituels.

Vingt ans plut tard, le projet a subi de nombreuses modifications. Les habitants ont poursuivi le processus de construction eux-mêmes. Les changements concernant l'espace environnant se sont bien integrés dans le quartier. Cette thèse tente de décrire les évolutions dans le projet, d'expliquer les motifs de ces changements ainsi que d'evaluer les objectifs premiers de l'architecte. Celle-ci révèle aussi les différence entre les intentions de l'architecte et les besoins des résidents. Les transformations observées montrent l'incorporation d'aun processus de contruction lié à une culture donnée, suggérant l'existence d'une pratique de construction locale qui fut negligée dans la conception du projet de Mexicali.

TABLE OF CONTENTS

LIST OF FIGURES

And what did the occupants do? Instead of installing themselves in their containers, instead of adapting to them and living passively", they decided that, as far as possible, they were going to live "actively". In doing so, they showed what living in a house really is: an activity. They took what had been offered to them and worked on it, converted it, added to it. What did they add? Their needs.

Henri Lefèbvre , 1979[1]

INTRODUCTION

THE PROBLEM

The modern mass- produced housing that originated with the ideas of the *International Style*[2] had an enormous impact on the world's housing production because of the assumption that there is an advantage in producing a high volume of construction in a short period of time. Today, despite the existence of a great deal of empirical evidence demonstrating that the reality of residential environments is often different from the original plans, houses are still being built in developed and developing countries according to this practice (Jacob, 1961; Greger and Steingberg, 1988; Reimers, 1992; Habraken, 1985; Brand, 1994).

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[1] Lefèbvre, Henri. (1979) Foreword. *Lived-in Architecture, Le Corbusier's Pessac Revisited.* By P. Boudon. Cambridge, Massachusetts: MIT Press.

[2] *International Style* refers to an architectural style recognized in the early 30's by the International Congress of Modern Architecture (CIAM).

The most striking proof of the failure of mass-housing production systems, whether carried out by the public or the private sector, is perhaps the fracture in the relationship between the users and the buildings. Users become invisible during the production process to the extent that they are only perceived in terms of quantities of stereotypical human beings (Grenell, 1972:97; Habraken, 1972:8). They do not participate in the decision-making process, being selected, in most cases, only after buildings are already built (Alexander, 1985:27-29). In addition, the process of planning and design usually includes a small group of professionals who decide, with little or no contact with future users, what is best for the whole community. Consequently, this practice produces neighborhoods with buildings in standard designs that disregard particular local characteristics and lead to a rupture, and subsequent decay, of the built and social environments.

In light of this situation, it becomes important to focus current research in housing as one that relates *people and place*, or, seen from a more conceptual point of view, relating *housing to local environment*. The Mexicali Housing project, designed and built by architect Christopher Alexander has been chosen as a case study. The Mexicali project, in the city of Mexicali, was conceived in 1977 in an attempt to incorporate the importance of human feelings and the sense of place in the process of housing.

GOALS AND OBJECTIVES OF THE STUDY

The aim of this research is to re-examine the Mexicali project twenty years after its completion. As such, it attempts to describe the project's changes, to explain the motivating factors for these changes, and to evaluate the designer's original goals. Because of the limited size of the project, this case study may at first seem insubstantial. Nevertheless, it is the view of the author that it is still possible to deduce patterns of change from the examples available. The selection of patterns in this study is relevant to the concerns expressed by residents during interviews and during on-site observations.

Some possible reasons for transformations that took place are the author's personal interpretations, supported by previous studies of the project and by research into social, psychological and cultural issues. With respect to the designer's goals, the evaluation refers to elements of the theoretical framework that were actually accomplished and disregards those that were never achieved.

SCOPE AND LIMITATION OF THE STUDY

The investigation of the Mexicali project does not limit itself to a comparison between the architect's intention in carrying out the project and its results, for such a methodology of analysis would not help to elucidate the outcome of the Mexicali project. Given that only the builder's yard and five of the initially projected thirty houses were built, one could come to the hasty conclusion that the project is a failure. Yet, an analysis of the changes in reference to the architect's original goals, as well as an explanation of the reasons for changes, brings the research results into a broader perspective, clarifying the relationship between the architect's primary conception and the residents responses. Furthermore, if one assumes that transformations provide eloquent evidence of the effort made by users to cope with their social, cultural and economic needs, the study of the motives helps to illuminate the specific lifestyle characteristics of the residents of Mexicali; characteristics that were not taken into account in the original project.

METHODOLOGY AND ORGANIZATION

This research rests upon a qualitative analysis based on observations and interpretation, rather than a quantitative one with a scientific approach. It is based on both primary and secondary sources. The methodology used in the research is divided into two parts: literature review and field study. The theoretical part of this thesis regarding the present state of the project and residents opinions required a field trip to Mexicali, Baja

California State, Mexico, from March to April 1996. The research methodology used during the field trip consisted of two phases of study. The first involved observation of the area along with informal discussions with residents. Then, a structured questionnaire was developed and given to residents who were interviewed about the design process and the reasons for the changes made in their homes. The designer Christopher Alexander, architects, students and scholars on Mexican cultural issues were also interviewed.

The thesis is organized into four chapters. The first chapter presents an extensive literature review on the results of the traditional mass housing process. Attempts by scholars and professionals to bridge the gap between users and buildings are also introduced in this chapter. The second chapter provides the antecedents of the Mexicali project and an overview of both its physical context and theoretical background which are necessary to understand the issues involved in the experimental project. The third chapter gives the analysis of the project as it stands today, having undergone extensive modifications. This chapter is divided into three sections. Section one discusses changes in reference to open spaces, presenting the consequences of these changes on the original project; the second describes the changes made to the five houses as a result of the life-cycle phenomenon and the influence of the socio-cultural context; the third briefly analyses changes to the project in reference to the specific production process applied. The fourth chapter identifies the main issues emerging from the case study and reflects upon possible directions for further analysis.

CHAPTER ONE
LITERATURE REVIEW

This chapter argues that customary mass housing production, sponsored by governments or private programs, provide houses that inadequately fulfill the users' needs. This argument is based on a number of studies undertaken by researchers in the field which show how users actively modify their environment to improve congruence between their houses and their changing needs. These modifications often speak of a deficiency in the production process.

An extensive review of current mass housing literature will demonstrate that the responsibility of the mass-productions failure lies in the organization of the production system, which neglects the essential requirements of houses and their users. This chapter also introduces some examples of the user transformations, usually a self-help approach, and briefly presents a review of the attempts of professionals and scholars in this field to solve the problems of mass housing. This will introduce the theoretical framework for the hypothesis and analysis of the thesis case study.

The Mass Housing Production System

For the last fifty years, practitioners in the field of housing have overwhelmingly embraced the use of various standardized processes for housing production. This includes the design of houses, the use of technologies and the production of building components. The governments, developers and builders with vested interests who support this processes are referred to described by Nabeel Hamdi as "providers"[3]. He argues that players are governed by five principles: to produce houses; to centralize

[3] Oppose to the *providers* practice, Hamdi defines another group called *supporters*. An explanation for the latter and a graph synthesizing both groups is presented in page n 19.

production; to standardize; to build instantly; and to consolidate the building industry. Paradoxically providers aim to increase housing production, yet the number of houses produced remains inadequate and their costs are unaffordable for those for whom the houses were built (Greger and Steingber, 1988:23). Hamdi also points out that "this kind of thinking is designed to target whatever land, labor, and capital to encourage consumption rather than to satisfy human needs" (Hamdi, 1991:30).

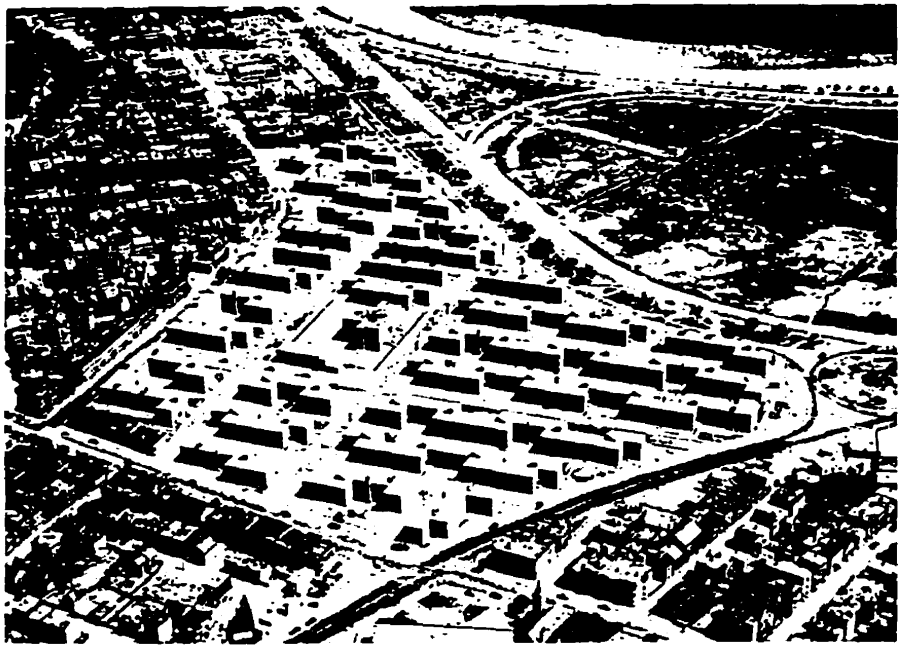

Fig.1.1 View of a mass housing project (Hamdi, 1991)

The practice of architecture, as part of the production system, also follows a set of rules that constitute requirements for those willing to participate in the system. Although rules vary according to local practices, this very well organized system is generally carried out in the same way in different contexts (Alexander, 1985:26). The following summarizes some of the features in the buildings and their consequences for users:

First - The process of planning and design usually includes a reduced number of professionals who decide with little or no contact with future users, what is best for the whole community. This produces neighborhoods of buildings with set formats disregarding particular local characteristics. The practice leads to a rupture of the social

fabric, and hence, results in vandalism, dereliction and the subsequent decay of the built and social environment (Newman, 1971:12).

Second - Users become invisible in the production process, to the extent that they are only conceived in terms of quantities of stereotypical human beings (Grenell, 1972:97; Habraken, 1972:8). They have no participation in the decision-making process, as they are selected, in most cases, only after the buildings are already built (Alexander, 1985: 27-29).

Third - House layouts offer little flexibility[4], in not providing users the freedom to change the use of spaces according to needs. The interior layout is conceptually based on rigid distribution, making modifications difficult.

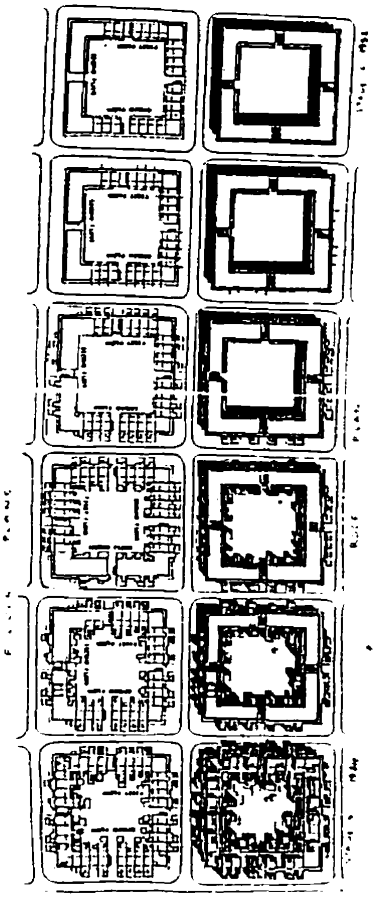

Fig. 1.2 Floor plan of a mass housing project and its transformations, Bhogal, India (Hamdi, 1991)

[4] N. Hamdi defines flexibility as "the freedom to choose among options or devise programs that fit individual needs and aspirations, whether building, finance, ownership or managment". In *Housing Without Houses, Participation, Flexibilty, Enablement* by N. Hamdi (1991). New York: Van Nostrand Reinhold. p.51

Fourth - The final product involves the repetition of units as boxes, i.e. standardized building forms and layouts. Strong economic and technological considerations take precedence over personal, cultural and climatic characteristics. Thus, the serial production can lead to a sense of despair and anonymity for users and the negation of specific local characteristics. This makes many buildings inappropriate to the places where they are built.

Fifth - Serial production, based on a strong centralized organization, reduces construction time. This practice does not allow sufficient time for buildings and for people to adapt and grow together as a whole. This results in "a colossal mismatch between the organization of the decision and control, and the needs for appropriateness and good adaptation which the biological reality of the housing system actually requires" (Alexander, 1985: 40).

In summary, the current practice of housing production is characterized by an absence of direct interaction between designer, users and site, by the standardization of building form and the consideration of house as a mere commodity. In the words of Alexander:

> If we consider the systems of housing production which exists today, we find that almost all of them lack of two fundamental necessities of any human society. First, the recognition of the fact that every family and every person is unique, and must be able to express their uniqueness, in order to express and retain human dignity. Second, recognition of the fact that every family and every person, is part of society, requires bonds of association with other people, in short, requires a place in society, in which there are relationships with others.

Users of mass housing however, do not necessarily remain passive, but actively attempt to furnish for themselves, through a process of transformation, answers for their needs, that the conventional production system is not able to provide.

Mass Housing Transformations

Mass housing transformations are reflected in house alterations, i.e. personalized facades, expansion for new activities and changes to interior layouts. In many cases users convert original buildings to such an extent that it becomes difficult to identify the original form from the added elements. In reference to buildings designed under *International Style* principles, Steward Brand ironically expressed that the credo: *form follows function* had been transformed into "function melts form" (Brand, 1994:157). Essentially, transformations can be seen as the physical expression of the residents' adaptation to their changing circumstances, expectations and priorities or simply answering their needs.

If the motivation of users is to modify their houses to suit their changing needs, then, the term *need*, in relation to housing, requires to be defined. Maslow, for instance, considers groups of basic needs that he believes are part of human nature. He divides these into physical, spiritual and intellectual needs. To him, despite the variety of human goals, values and behaviors, this division does not exclude other needs, but is rather an attempt to synthesize the "relative" similarity of needs amongst different cultures. Claire Cooper modifies this list because of her belief that all needs are "innate and omnipresent", to propose a hierarchy that includes, in decreasing importance: "shelter, security, comfort, socialization and self-expression"[5] (Lawrence, 1987:159).

Similarly to Cooper, F. Becker in *Housing Messages* explains that people who are worried about "cold, plumbing and rats" have little concern for "luxuries" such as the image of their homes (Becker, 1977:18). Other researchers, however, maintain that the relativity of meaning and importance of needs are directly related to a specific cultural context. In contrast to Cooper and Becker, Peter Kellett corroborates and illustrates this assumption. He notes that, based on research in Chile, dwellers place priority on the

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[5] Maslow (1954) and Cooper (1975) cited in *Housing, Dwellings and Homes, Design Theory, Research and Practice* by Roderick J. Lawrence (1987). New York: John Wiley & Sons. p. 157

improvement of facades over more "urgent" needs (Kellett, 1993:5). Amos Rapoport (1969) also emphasizes the relativity of this issue eloquently. He argues that basic needs are subject to judgment which in turn responds to culture, and more specifically to a "world view" (Rapoport, 1969:61). Hence, needs and their solutions may take many forms and order of importance, according to the various cultures.

Kellett, in his study of Chilean house transformations, proposes a list of motivations explaining why in similar circumstances some residents make changes while others do not. In response to these issues, he argues that this complex phenomenon has interdependent factors and many possible explanations, but essentially, changes result "from the interrelationship between the dweller and the dwelling and it is stimulated in certain circumstances according to the characteristics of either or both the dweller and the dwelling"(Kellett, 1993:5). The Kellett list reads as follows:

- The dwelling provided is incomplete, deficient or inadequate
- The dwelling provided is inappropriate for the context.
- The requirements of the dweller change
- The aspirations and expectations of the occupants change
- The responsive change in efforts to personalize the dwelling
- Changes in order to generate income

He explains houses transformations as "conscious and unconscious attempts by dwellers to make the dwelling respond more closely to a range of requirements" (Kellett, 1993:5-8). According to him, these requirements are directly related to the users, the houses and the context. In reference to the users' requirements he groups them as: the security of tenure, the resources available and the characteristics of the dwellers. The house requirements are divided into: typology of the dwelling, the technology, and the immediate surroundings of the dwelling. Finally, the context's requirement is grouped into: geographical context, climatic and seismic activities, the economic situation, the housing situation, laws and regulations and general acceptability for change.

The interrelationship between user and house and the requirement of both with the context, has been extensively documented. One example presents mass-produced houses and apartment buildings, where often the small living areas provided cause many transformations. In the case of mass-produced houses the problem lies in their distribution, for they are positioned too close to each other, without enough surrounding space for extensions or additions. Dasgupta (1990), in a research on Indian public housing, argues that where buildings are conceived as finished products, users are not allowed to undertake any modification. The official design is considered to have already contemplated future interventions, thus resident modifications are thought unnecessary and therefore undesired. Nevertheless, users take control over their own environment through a process of continuous modifications. The same research reports that, in Kalkaji, Delhi, users of two-story houses take common areas to extend to the rear, front and top of their houses with the only purpose to increase the living spaces.

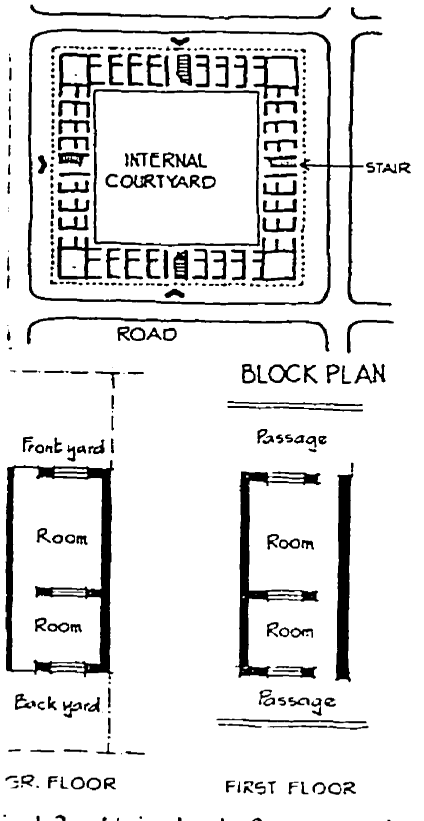

Fig.1.3 Unit plan before extensions (Dasgupta, 1990)

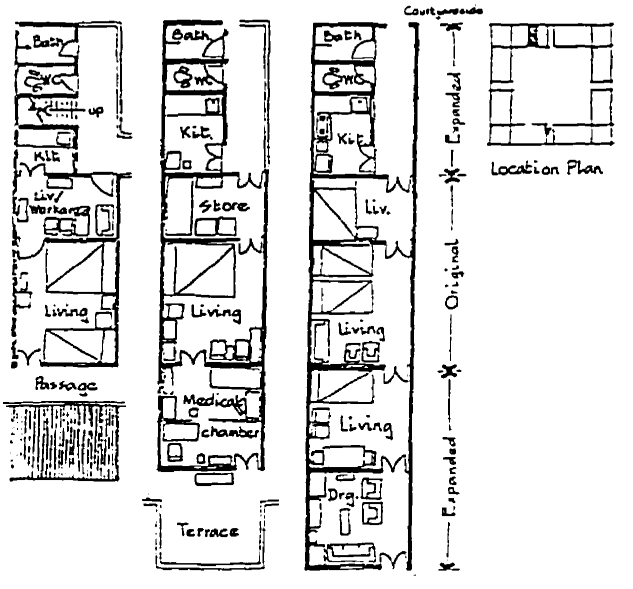

Fig.1.4 Unit plan after extensions (Dasgupta, 1990)

It concludes that with the inclusion of more interior space new activities can take place. Thus, modifications not only achieved the enlargement of dwellings but also transformed a mono-funcional neighborhood to a multi-funcional one (Dasgupta, 1990:38).

Analogously, above ground apartments provide neither extra space nor direct access to the ground, both of which could facilitate growth of the apartment units by space additions. Particularly the growth in the number of family members, created at certain stages of life, illustrates this situation. As more rooms are required, the choice of dwellers is to move into a new house which very often cannot be considered as a prospective solution (Papamarkaki, 1989:17). Krystalia Papamarkaki mentions that in the above house apartments, because of their inflexible distribution, the only real possibility of change exists within the apartments' boundaries. This includes closing in balconies, if there are any, or arrangements between neighbors to jointly extend their living areas.

With regard to the enclosing of balconies, Dluhosch explains that they are "the only way by which to add a room to an apartment by glazing in space. Simple original design of the balcony has made such an alteration relatively easy. Large openings behind balconies can be easily modified into open archways, thus, room is extended"[6]. A study undertaken by J. Wojtowicz strengthens this postulate. In *Illegal Facades* (1984), he describes that in Hong Kong where, due to the extreme density of high-rise tenement apartments, prefabricated cages mounted on the building are commonly used as extensions (Gregger, 1988:24). These exterior additions are varied in type and permanence, from temporary shading, to added balconies for greenery or for laundry, play areas for children or sleeping purposes, to the almost permanent type. The provision of external structures has been a source of income of many Hong Kong inhabitants. These are serially produced and illegally incorporated by the selling company or by the residents themselves. The potential for building caged additions depends in great measure on building's structural characteristics.

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[6] Cited in "Design for User's Interventions in Apartments: Case Studies in Athens, Greece", *Open House International*, 14, n. 4 by Friedman A. and Papamarkaki K. (1989).

Fig.1.5 Balcony additions in Hong Kong apartment buildings (Wojtowicz, 1984)

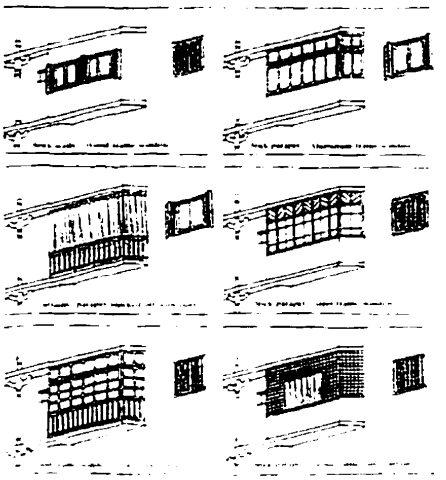

Fig.1.6 Variety of materials to enclose balconies in Egypt (Salama, 1995)

In Egypt, Rafik Salama reports the use of balconies in public housing buildings. He explains that one of the purposes for enclosing balconies is the achievement of more privacy. Balconies are screened off by using bricks or lightweight materials such as tin sheet which are often combined with curtains for extra shade (Salama 1995:49). The patterns of materials for balconies varies greatly, resulting from differences in choice of both design and materials, and thus cost.

When buildings have no possibility of balcony extensions, neighbors through a collective effort build extensions for those uses that cannot be accomodated in their small apartments. This reflects the extreme need for additional space that makes users disregard any type of restricting legislation. In some cases transgressions are tolerated by governments, such as the case of balcony additions in Hong Kong. In other situations, however, the constructions go beyond police tolerance. In Egypt for example, neighbors of walk-up buildings collaborated to build horizontal extensions within public spaces (Salama, 1995:52). Although it is an easy way to increase the dwelling area, it is also the cause of environmental deterioration. Extensions may block views of other dwelling units or obstruct access to infrastructure, and reduce natural light and ventilation (Salama, 1995:73). Whether this type of extension enhances the environment or not, will be discussed later. However, it is important to draw attention to the degree of risk residents are willing to take for the purpose of transforming their houses into a more livable place.

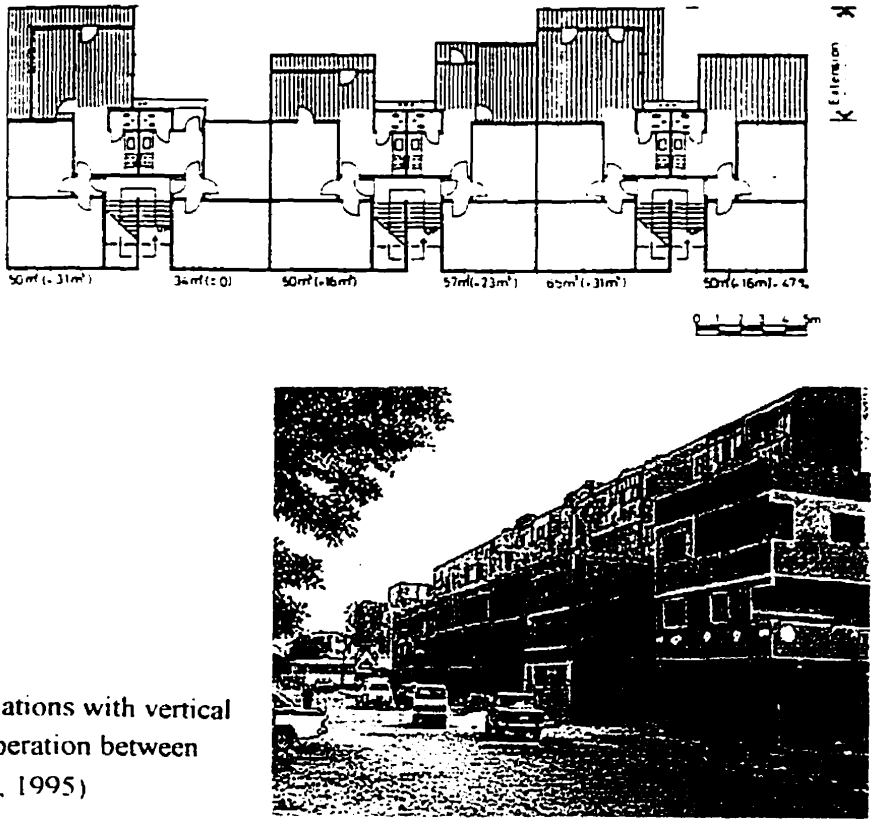

Fig. 1.7 Collective transformations with vertical and horizontal cooperation between occupants (Salama, 1995)

Undoubtedly, socio-cultural characteristics have an effect on building transformations. Several studies demonstrate that "the design, the meaning and the use of dwellings are intimately related to a range of cultural, socio-demographic and psychological dimensions[7]"(Lawrence, 1989:91). An example of this influence is seen in *Pessac*, near Bordeaux, where a well-known group of houses built in the Modern Style by Le Corbusier, best illustrates this fact. Philippe Boudon, in *Live-in Architecture*, states that after almost 40 years of the project's occupancy the "*predetermined, homogeneous and essentially cubists structures*" were transformed beyond recognition (Boudon, preface, 1969).

The traditional idea of home for the residents of Pessac was linked to images from the regional architecture; one house-type is known as a "*lean-to*", namely a single-story long dwelling with a pitched asymmetrical roof. Dwellers, seeking to identify with these images, modified their houses by adding similar type roof over the existing units, subdividing horizontal windows into small rectangular ones, adding chimneys, shutters, and porches (Rapoport, 1982:25).

Fig. 1.8 Quartiers Modernes Frugès at Pessac, before and after transformations (Boudon, 1979)

[7] Cited in Kellett, P.; A. Toro et.al. "Dweller Initiated Changes and Transformations of Social Housing: Theory and Practice in the Chilean Context", *Open House International* 18,4. pp.3-10

The motivation for the Pessac transformations has been the cause of debate amongst scholars and professionals. For instance, Ada Huxtable, a *New York Times* architectural critic, agrees with Boudon that Pessac's transformations do not mean the destruction nor the failure of what was intended for the project. On the contrary, according to them it had improved the original design. Boudon argues however, that the rigidity and the absence of local cultural characteristics in the building design was the cause for change. Huxtable on the other hand, attributes this to Le Corbusier's design characteristics of flexibility which, according to her, favor and almost encourage transformations. She declares: the "strong identity (of the houses) absorbs almost anything time and residents can inflict" (Huxtable, 1986:17). In her article, however, local traditions with regard to building form and use of space are not mentioned, as if they had no influence on the transformations.

Another example that illustrates the impact and relevance of local characteristics on housing modifications is presented in a study undertaken by Andre Casault[8] (1988). Although this example does not apply to the concept of mass housing, the strong influence of the underlying culture in space transformation makes it worth mentioning. His research focuses on cultural references to Beijing traditional courtyard modifications undertaken by residents in the last decades. He explains that because of the courtyard house's high-density use, residents are forced to share spaces. These spaces or "pavilions" were initially inhabited by single extended families. With the recent intensification of use, the compound's courtyard has been modified by dwellers who have gradually added new buildings.

The research primarily focuses on the identification and description of transformational patterns, additions and extensions observed in traditional buildings and relating them to the arrangement of contemporary buildings. In this regard, the study reveals that in both traditional and contemporary types of deployments, dwellers are in control of their living

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[8] Cited in Salama, Rafik (1995). *User Transformation of Goverment Housing Projects: Case Study, Egypt*, Master's Thesis, School of Architecture, Montreal: McGill University. pp. 32-34

environment, in both open spaces and built form. Other elements are also considered in this study such as the subtle organization of space transformations, which according to Casault, has its logic in the Chinese traditional architecture. He describes that the many families sharing the courtyard house have divided the territory controlled by each family. Symbolic appropriation of space instead of physical boundaries marked the limits between territories. This introversion, characteristic of the original courtyard house, was maintained by preserving the physical enclosure of the compound. As Casault expressed, "the social group living in the courtyard houses did not seem big enough to force people to build a small introverted living space in an already small introverted one, that is the original compound[9]".

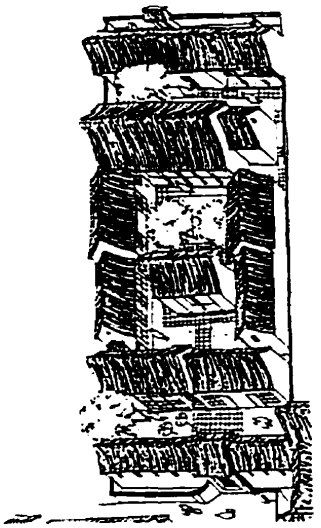
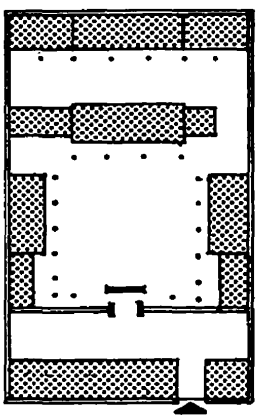
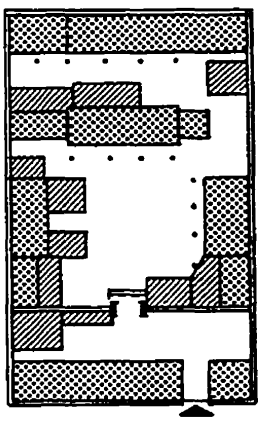


Fig. 1.9 Traditional Courtyard House (Coccato, 1994)

Fig. 1.10 Shared courtyards (Casault, 1988)





[9]Cited in Salama, Rafik (1995). *User Transformation of Goverment Housing Projects:Case Study, Egypt*, Master's Thesis, School of Architecture, Montreal: McGill University. p. 34

Changes in Mass Housing Production

The process of change, as shown, is the result of a mutual influence between people and the environment. The awareness and acceptance of this relationship, and the complex number of variables involved in the process of adaptation, shifted the theory and practice of housing in the 60's. Researchers and scholars of the "social design movement" as defined by Sommers (1983), began to understand housing as a dynamic *process* rather than the production of instant delivery objects. This new thinking lead to the search for a housing production system that could create environments displaying a new physical order as a direct response to needs. Consequently, this new concern involved not only the physical quality of buildings but also the geographical and cultural characteristics, the relationship between players, the finance system, the design methods and finally the construction.

Alexander, for example, proposed in the Mexicali project an experimental process involving the whole system of production, which differed from the usual contemporary attempts that had only involved certain aspects of the production process. J. Turner and N. Habraken, for instance, who play a crucial role and influence in the field of housing, address the problem by proposing solutions to only few specific aspects of the production process. Both Habraken and Turner re-thought the relationship between users, professionals and public authorities seeking a more flexible linkage, thereby promoting a fairer distribution of responsibilities. Hamdi (1991) defines Habraken and Turner stances as *supporters* (vs. providers as shown in the graphic below). They believe that a better approach to adequate housing is to use local stock including land, labor skills, services, utilities, material and labor (Hamdi, 1991:27). Although, the ultimate objectives of Habraken, Turner and Alexander (in the Mexicali project) seems very similar, their approach towards the problem of housing, nevertheless, differs markedly.

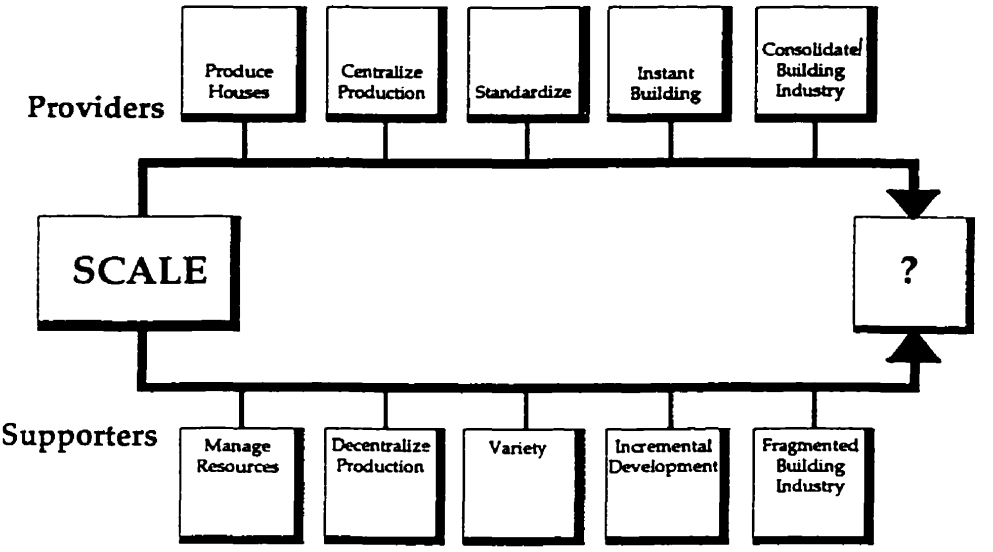


Fig.1.11 Providers and Supporters (Hamdi, 1991)

Habraken's concern is the structure of the physical environment (Habraken, 1972; 1985). His aim is not to change government or industry practices but to "organize them so that they would serve the vested interest of industrialists, government authorities, and individual consumers" (Hamdi, 1991:45). In the "infill-support" methodology, he attempts to re-create the compactness and variety of cities of the past by building frame structures (support). Those are "no more than building plots up in the air and they are of the same nature as streets in the familiar towns" (Habraken, 1972:68). Frame structures are filled (infill) with industrialized building components that, on account of their flexibility of form and function, allow users infinite possibilities according to their particular needs. In his own words: "support structure is a construction which allows the provision of dwellings which can be built, altered and taken down, independently of the others" (Habraken, 1972:59).

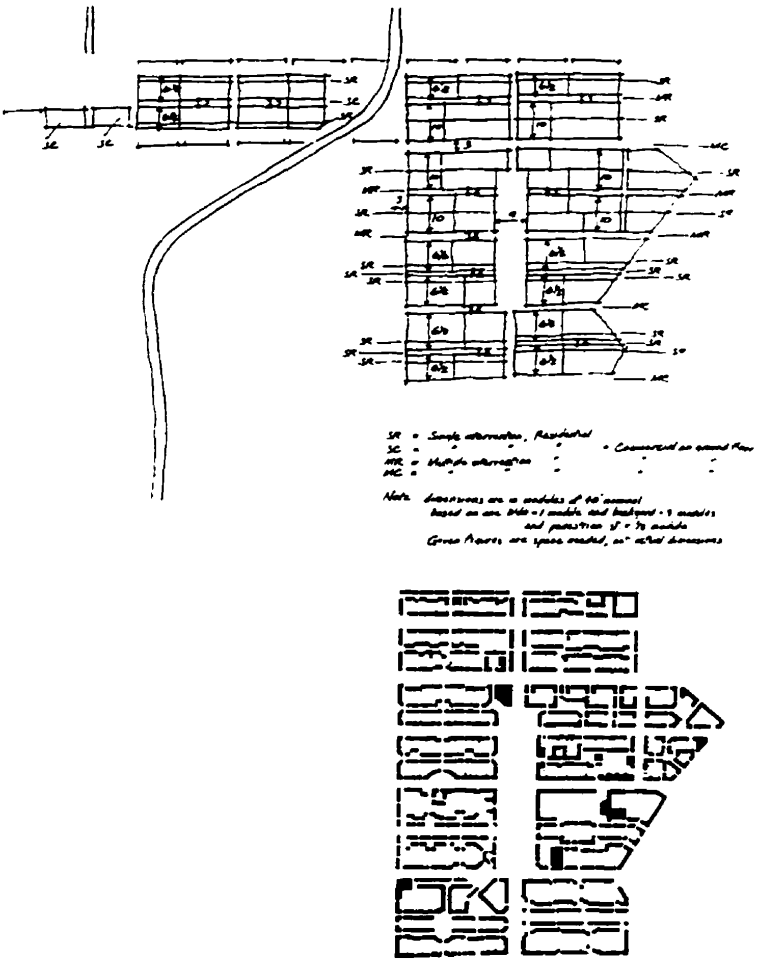


Fig.1.12 SAR Methodology (dimensional model for neighborhood planning; Hamdi, 1991)

Habraken sees housing as a flexible, dynamic and incremental activity, where the role of the designers is fundamental insofar as they lead the process. The present construction system is based on the traditional use of prefabricated elements that has the advantage of being easily produced and rapidly installed in the frame. This frame is structurally organized in such a way that it allows users to choose (within its limits), the layout for their houses that suits them best. The role of users is to make "design more efficient". Participation thus ensures a healthy physical environment. Nevertheless, as Hamdi points out, he is not concerned with the user's "spiritual and moral well-being" (Hamdi, 1991:45) as Alexander and Turner are.

While Habraken's work is based on the European context, Turner studied spontaneous settlements in the Third World, and observed, that people had achieved a degree of environmental quality that in many cases exceeded those built by mass housing means. Despite some poor characteristics with regard to construction and materials, "supportive shacks" (dwellings) provide "an admirable support for people's situation [10]" (Hamdi, 1991:39). Turner expressed that at the material level, some of the poorest dwellings were socially the best, while some (but not all) of those with the highest standard, were the most socially oppressive (Turner, 1976:52).

Turner (1985) claims that the government's direct interventions are inefficient and a great deal can be learned from observing what spontaneous settlements have achieved. He stresses the importance of incremental building, precisely as people in informal development do, and promotes self-management and self-help as valid approaches where the idea of participation is crucial to the production of more responsible environments. For him, to achieve personal fulfillment in situations where people have neither control nor responsibility for the decision-making process is counterproductive (Turner, 1972:102; Hamdi, 1991:44). Turner is concerned with the politics of housing, the system of organization, and financing. With regard to housing design, he believes it must be in the hands of users, for only they have some control over their environment.

The proposals of Turner, Habraken and Alexander differ in that Turner and Habraken propose to modify only *certain* aspects of the production process, while Alexander takes a more radical stance and proposes to modify the whole system. Habraken deals with the efficiency of design, designer and building, and Turner with people's well-being, coupled with politics and with resources. In the Mexicali project Alexander focuses on seven "variables" which he believes should be present in any housing process. These variables touch upon aspects of the production process such as design, material, construction, cost control and implementation.

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[10] Cited in N. Hamdi (1991). *Housing Without Houses, Flexibility, Participation, Enablement*. New York: Van Nostrand Reinhold. p. 39.

In summary, the mass housing production system reviewed in this chapter refers to the government practice through which it provide houses to middle and low income people. In this practice designers have little contact with clients or site, users are most often not included during the design and construction process, house layouts are very rigid, hindering interior modifications, serial repetition due to standardization produces anonymity in users with the consequent degradation of the environment, and last, the creation of instant neighborhoods which inhibit natural growth and adaptation between users and buildings. The incongruity produced between mass housing and users have led the latter to actively intervene in the environment.

Needs, such as the addition of extra space as a consequence of the constant changes in family size, personalizing and the strong influence of the context find their shortcoming in additions and transformations. Transformations reveal the mass production system's lack of concern for user needs on the one hand, and on the other the efforts undertaken by users to make their houses more appropriate. In light of this situation, a number of professionals and scholars, such as Habraken, Turner and Alexander have tried to bridge the gap between users and buildings by proposing alternatives to the conventional process of production.

CHAPTER TWO
THE MEXICALI EXPERIMENTAL PROJECT

The Mexicali project a plan for the design and construction of 30 houses following a self-help model, was initiated in 1975. In this project, Alexander proposed an alternative to the traditional system of production, aiming to build an autonomous community that would reflect the personal characteristics of the users. Such an endeavor required the involvement of the designer and the residents during the design and construction process; it also utilized a different process of production. This chapter presents the thesis' case study: the Mexicali Experimental Project and the context along with an analysis of its theoretical background. It discusses the issues concerned with architectural and related fields, which are pertinent to the project as they form an understanding and basis for the conception of the Mexicali project framework.

In the Realm of Ideas

In light of the results of the traditional housing production system, as described in chapter one, architects, planners and theorists have started to focus their attention on the cities of the past. The shift to traditional environments meant a search for the *quality* that was only found in places where no professional interventions had taken place (Alexander, 1979,1985; Rapoport 1969; Habraken, 1983). Quality refers to both an image of traditional places that reflect a sense of harmony and, more fundamentally, to livability and implies an environment of "familiar streets, squares and continuous building systems along with variation of architectural and spatial configurations" (Peponis, 1989:93; see also Gehl, 1980:49). Leon Krier defines traditional places as "true places" which are by nature complex, polyfunctional and multiform, as opposed to "non-places" which he defines as functional forms, by nature simple and uniform, without true identity and individuality (Krier, 1992:10).

Fig.2.13 Image of the ideal environment, the "Cities of the Past" (Safdie, 1980)

At the time an analogy with the biological world assumed that a strong linkage existed between people and their surroundings (Sommers, 1983:34). The similarity is found in the fact that an ecosystem is an organism whose parts are related to each other forming a whole, in the same way that cities consist of a set of richly interconnected elements which are permanently evolving (Lynch, 1981:115). Kevin Lynch points out that the use of a direct analogy between settlements and the biological world may be misleading. He explains that the ecological systems are "made up of unthinking organisms, unable to modify their habitat in any fundamental way" (Lynch, 1981:115). Hence, he proposes to use the term "learning ecology" when referring to the human settlement, arguing that in cities actors are "conscious and capable of modifying themselves." As he describes it, "a good city is one in which the continuity of this complex ecology is maintained while progressive change is permitted" (Lynch, 1981:116).

Ecological writings such as D'Arcy Thompson's *On Growth and Form* (1956), appears to have influenced many scholars at the time. Moshe Safdie, for instance, recalls elements from nature to explain how things have the ability to grow and change without losing proportion by building upon a nuclear structure (Safdie, 1980:15). Habraken similarly explains the form of the environment in terms of the biological world. When arguing against the uniformity of mass housing, he states that "nature knows no uniformity, but seeks even greater variety. Uniformity may therefore be seen as *unnatural*[11] in the sense that it is an artificial phenomenon (Habraken, 1972:22). Furthermore, he argues that current mass housing is a product of the imitation of a real housing process, for it is not the result of natural growth.

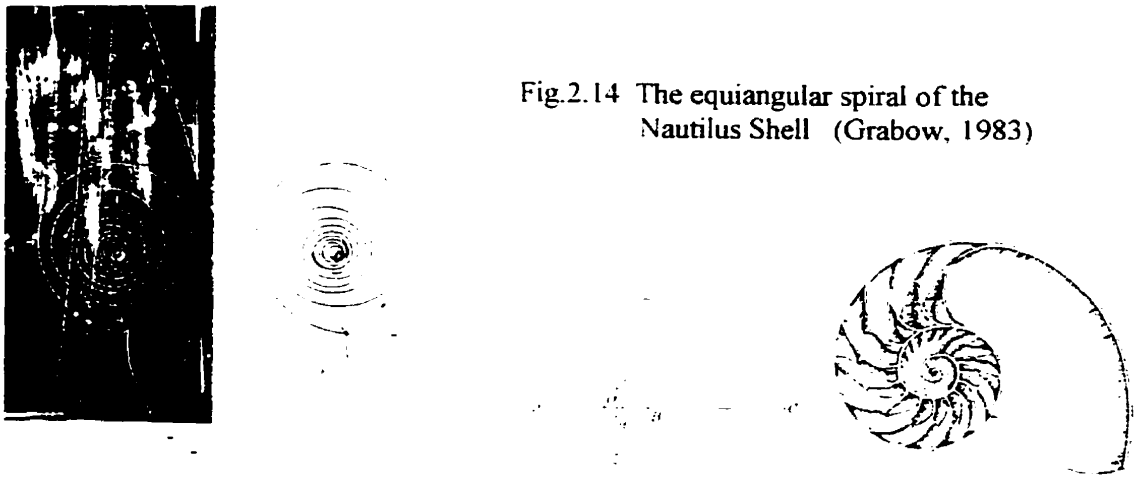

Fig.2.14 The equiangular spiral of the Nautilus Shell (Grabow, 1983)

Through an analysis of current architecture and by using traditional buildings as a reference point, Alexander sees the correlation with the biological world in the concept of *adaptation*. According to him, traditional cities are good because of their capacity for gradual adaptation. With this is mind, the Mexicali project proposed to generate a group of houses that, as in the biological world, would grow slowly and acquire a right "fit[12]".

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[11] Author's italics. Habraken, N.J. (1972) *Supports: An Alternative to Mass Housing*. London: Architectural Press.

[12] Christopher Alexander in *Notes on the Synthesis of Form* (1966), defines "fit" as the desired property of the ensemble: "form and context". Form is the solution to the problem of design, while the context defines the problem. When refering to fit between natural organisms and their physical environment, fit is described as "well adaptedness".

The careful process of adaptation ensures that "every part is properly adapted to its condition" (Alexander, 1985:33).

This discussion suggests that the cities of the past had what mass housing lacks, that is: dynamism, incremental growth and inter-connection among elements. The similarity between the biological world and mass housing brings to light the inadequacy of conventional production system to produce good environments. Furthermore, it illustrates the need for other alternatives to the existing housing production.

The Generative Process

Beyond the rich urban fabric of traditional cities, the interest of researchers involves an understanding of *what makes them beautiful*, in other words, to understand how traditional cities have grown and adapted to intimately relate people and places. Alexander, in the Mexicali project, attempted to prove that the key was in the generation process of buildings. He declared: "there is a failure among people who are concerned with making things, or who are responsible for things, to fully appreciate the extent to which what is done or what happens is a product of the processes that are governing events behind the scenes"[13] (Grabow, 1983:137).

The search for the roots of the generative process in traditional places, led Alexander to understand what had to be changed in mass housing production to re-create the beauty found in the cities of the past. The term *beauty* refers, in a broader sense, to harmony, order and proportion. However, for the purpose of clarifying its definition in the context of the Mexicali project, an analysis of other definitions in different fields will be presented.

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[13] Interview with Alexander in *Christopher Alexander, The Search for a New Paradigm in Architecture* by S. Grabow (1983). Boston: Oriel Press.

In philosophy, beauty is defined as "an aesthetic property commonly thought of as a species of aesthetic value[14]". The belief of the current called "objectivistic view of aesthetics[15]", finds beauty of objects in their formal properties, "this means *how it looks*[16] independently of the life that goes inside." Hence, beauty depends on the object itself (Grabow, 1983:56). As for functionalism[17], on the other hand, an object is beautiful only in terms of its "functional efficiency" or in other words, in terms of its structural efficiency (Tzonis, 1972:79). This relates directly to its potential utility. As Hume express: "thus, the convenience of a house, the fertility of a field, the strength of a horse, form the principal beauty of these several objects[18] ."

The idea of beauty, according to these definitions, relates mainly the physical appearance of things, though for those concerned with social movements, and especially for Alexander, the concept of beauty involves people and objects as unified components. Alexander best explains it: "For me, beauty of things is not only purely in how it looks. It has to do with how it is. Now how it *is* essentially involves a relationship between the various events that are going on there. So it is the inner life which is the thing that matters". He states that beauty is "deeply rooted in the question of what it means to be alive," it is the "the measureless depths" of feeling (Grabow, 1983:56, 66).

In the built environment, beauty is understood as a particular quality of places that cannot be created, but only generated. Alexander believes that only by indirect generation (not creation) can quality be obtained again, "just as a flower cannot be made, but only generated from a seed" (Alexander, 1979:11). In the Mexicali project, quality as the idea of being alive, of wholeness, of order, is translated in an aim which attempts to achieve

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[14] Defined by the *Cambridge Dictionary of Philosophy*. Ed: Robert Audi. Cambridge: Cambridge University Press. p.66

[15] It refers to a philosophic approach to art.

[16] Author's italics.

[17] According to A. Tzonis, *functionalism* refers to "the movement associated with the efforts to establish the functional efficiency objective as the primary goal in design. A. Tzonis, (1972) *Towards a Non-Opressive Environment*. Boston: i-Press Series on the Human Environment. p.78

[18] Alberti, L. (1955) Ibid. p.78

again, "the real meaning of beauty, the idea of houses as places which express one's life, directly and simply, the connection between the vitality of people and the shape of their houses, the connection between the force of social movements and the beauty and vigor of the places where people live" (Alexander, 1985:14).

Fig.2.15 The timeless way... (Grabow, 1983)

The question of how to recreate this quality in domestic environments finds its answer in what Alexander defines as the "timeless way of building". In the timeless way, characteristic of traditional cultures, the process of building is achieved by a collective, spontaneous and unselfconscious process of design which brings harmony to the environment. In traditional places and buildings the unselfconscious process gives architectural forms that are satisfactory responses to what it is demanded from the context. Thus, form and context are in a right "fit". Opposing this are the self-conscious contemporary buildings, wherein the designer attempts to solve a problem of design by himself. Given the complexity, architects are unable to grasp the whole, so they reduce the design problem by sacrificing functionality and hence create misfits between form and context.

The traditional practice of architecture assumes that architects create buildings, towns or parts of towns and that there are the product of their imagination. Alexander's theory claims that what architects really do is to produce particular versions of the structure implicit in the rules and it is that implicit structure which governs. Then, it is not the architects bringing order to an otherwise chaotic situation but order coming through a system of rules which exist anyway (Grabow, 1986:46). This system of rules, which is common to a certain place, is fundamentally governed by the activities, the forces and the events which happen there. Those events are decomposed in manageable parts, and then are put together creating a hierarchy of diagrams which become more and more complex. Each event with a corresponding form in space is what Alexander defines as "pattern", and the interrelation of many patterns is defined as "language of patterns" (Grabow, 1985:37). The "Pattern Language" for design developed by Alexander, Ishikawa and others, together with an attempt to redefine the production process by reorganizing the system of control, was to be used as the basis of the Mexicali experimental project.

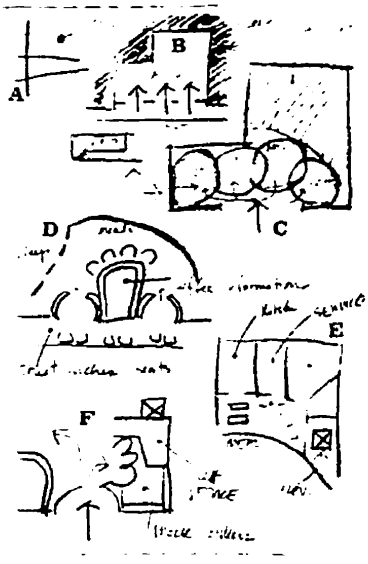

Fig.2.16 Alexander's pattern diagrams for a Multi-Service Community Center (Grabow, 1983)

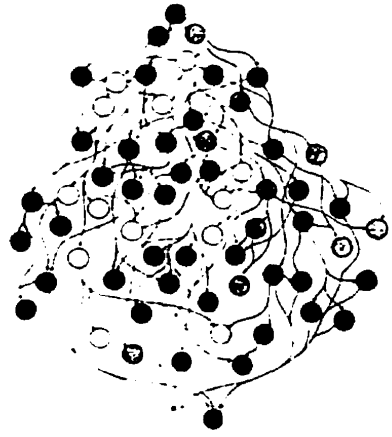

Fig.2.17 A cascade of patterns (Grabow, 1983)

The Mexicali Project Theoretical Framework

In accordance with the ecological analogy, Alexander argued that, in organic elements, the system of control is distributed throughout the entity as a whole, thereby reducing the potential for mistakes, and allowing for local adaptation and yet functioning as a part of a larger system (Alexander, 1985:34). Similarly, to allow "reasonable and careful adaptation to specific details of everyday life" (Alexander, 1985:36) the control of the production system had to be decentralized by dividing it into seven levels. These were:

First level - concerned with the principle of the **architect-builder**, attempting to revert to the traditional role of these two professionals by merging them into one. This new professional had to be in charge of the design and construction of a small number of units. Alexander believed that good adaptation depended fundamentally on the way things (buildings) were generated. Hence, if a building was not carefully designed and built, correct 'adaptation' could not be achieved (Alexander, 1985:41). This required the architect-builder to design and build houses individually, including users in early stages of the process to ensure that every house reflected individual and personal characteristics.

Second level - concerned with aspects of construction. A building called the **builders' yard** allowed for a decentralized system of construction and was intended to be a supply center for materials, equipment and information on the building process. Ideally, it was considered to be a center for instruction and discussion of the pattern language, once the neighborhood was constituted. The aim was to generate other builders' yards, scattered throughout the neighborhood, encouraging the decentralization of the production process through an organic relationship.

Fig.2.18 Photographs during the time of construction

Third level - concerned with the planning of common areas. Alexander proposed that the houses should be organized in a **cluster layout** as opposed to the traditional "grid" arrangement (Alexander, 1985:123). In his view, the grid hindered social cohesion between people and their community. In opposition to the grid, an organization in a cluster would unable families to participate in the design and layout, and to determine the location of the houses according to their particular wishes. On a larger scale, the project was aimed to encourage the spontaneous and natural reproduction of other clusters.

Fourth level - concerned with the **design of individual houses**. At this level, Alexander, with the use of the "Pattern Language", involved the residents in a participatory process in the design of their houses. This practice guaranteed that each house would reflect the specific requirements of its household. Through this process, he believed that he could promote the "...kind of spiritual attainment that occurs in human beings, by involving the families in the construction of the environment. That deep wholeness in life is more likely to occur when they are involved than when they are not" (Alexander, 1996: interview).

Fig.2.19 Participation of residents in the construction process (Alexander, 1985)

Fifth level - concerned with the construction system. The system tried to avoid the rigidity of the standardization of ready-made building components that inhibited variations in the design of dwellings. In the Mexicali project, the idea of the building system is replaced by the concept of a **step-by-step system of building operations**.

Sixth level - concerned with **cost control**. The process proposed to relate costs directly to the system of operations, and then to translate them to unit costs (per sm., per number of elements), materials, and labor per operation. This system differs from traditional standardized houses, since here houses differ from each other, and no plans were made. Hence, this system allowed for more freedom and variation in the design.

Seventh level - concerned with the **human rhythm**. It focused on the relationship formed between the people and their houses. The direct involvement of users and their spiritual well-being were also considered to be fundamental to the process. The variable that referred to the on-site construction rejected processes in which users were kept apart from the actual production of their houses.

These seven principles[19], or types of control, described above, are at the core of the Mexicali design approach. According to Alexander, these had to be incorporated into the process, functioning together as a whole, if the aim was to achieve good adaptation and organic growth. Each aspect, as in the biological world, had an independent role, but formed a part of the whole process; each one was essential if the project was to reach a successful conclusion.

The Context

Mexicali, in the State of Baja California, is located in the Northwest corner of Mexico at the border with the United States. Its landscape is characterized by long expanses of empty fields immersed in a arid, desert climate. In this physical context, in an attempt to address the local housing shortage, the government of Baja California requested the Center of Environmental Structure (CES) and the University of California in Berkeley, to apply in Mexicali their long term housing research.

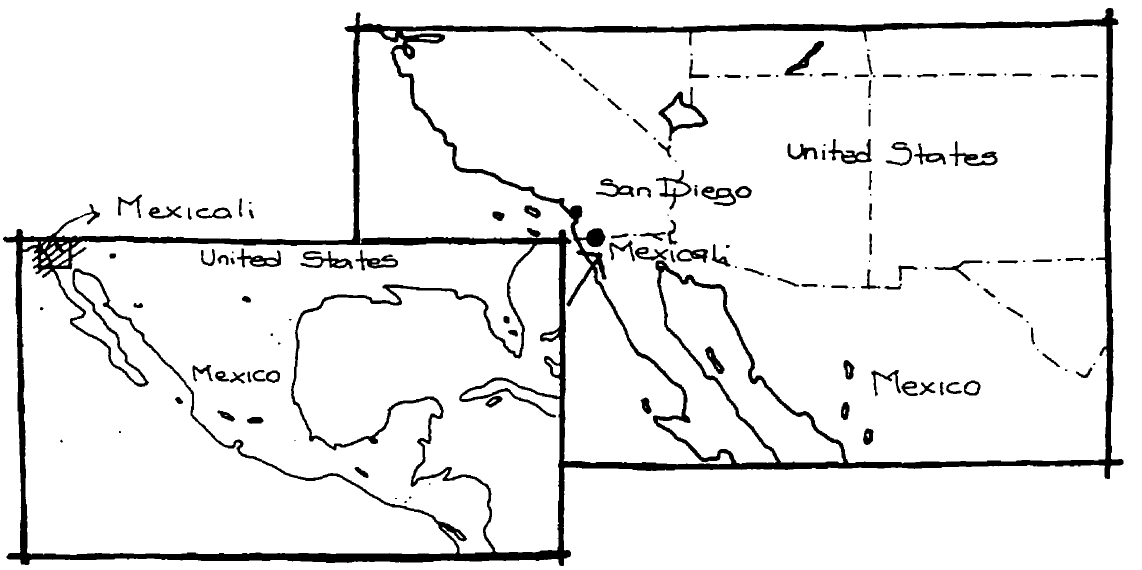

Fig.2.20 Location of the City of Mexicali in North America

[19]The seven principles, as well as most of the information in reference to the design and construction of the project was taken from: Alexander, C., Davis, H. et. al. *The Production of Houses* (1985). Cambridge: Oxford University Press. This information will only be referenced when direct quotations are made. The author recommends the reading of *The Production of Houses* for a full explanation of the project's development.

The piece of land assigned for the construction of the project was located at the outskirts of town in an area known as *Colonia Orizaba*.

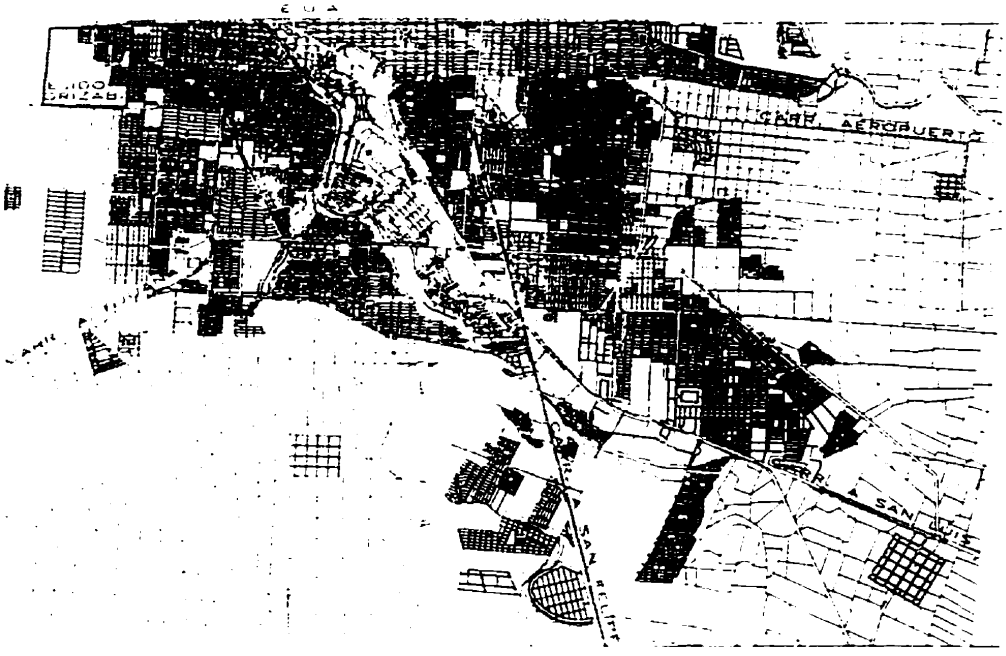

Fig.2.21 Location of Colonia Orizaba in the City of Mexicali

By 1975, year in which the project started, there were a few small squatter homes near the site, and the city center and its outskirts were under a strong migratory process. This process, which began in 1950, was a consequence of governmental agricultural policies, involving commercial agreements between United State and the Northern part of Mexico, that favored industrial production detrimental to rural peasants. Manuel Valenzuela Arce (1991) reports that in border areas[20] during the period 1950 to 1970, cities with a population of between 20.000 and 99.000 inhabitants increased by 32.53 per cent and by 31.14 per cent cities of more than 1 million inhabitants (Valenzuela Arce, 1991:30).

[20] He refers to the northen border cities such as Tijuana, Tecate and Mexicali.

The United States-Mexico agreement was based on a system known as *maquiladoras*[21], a term that refers to the international labor market. This new economic policy attracted to border areas people seeking better job opportunities. Mainly, migrants came from the South of Mexico, and China. Because of the city of Mexicali's location and its low cost of living, thousands of people (even today) travel daily from one place to another, for they have their houses in Mexicali but work in Calexico[22]. Local social and cultural characteristics have been affected by the three cultures, though only the Mexican and the North American have had a visible impact on the urban form. The cultural exchange has resulted in a heterogeneous life-style defined as the "border culture[23]".

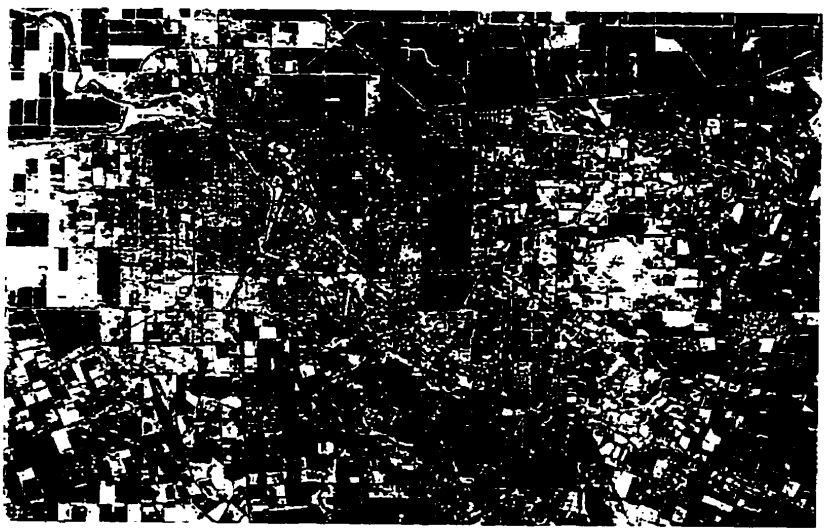

Fig.2.22 Aerial view of the border US-Mexico (INEGI, 1996)

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[21] Valenzuela Arce identifies three elements that charactarized this system, those are as follow:

1- The existence of an exterior demand of labor force from the Unites Stated that uses the exessive labor offer of legal and illegal migrants.

2- The development of transnational industries at the North border and their consequent impact on the labor charactheristics.

3- The strong influence that the border trade situation has on certain economic aspects focusing the production on the specific needs of the United States population.

In Valenzuela Arce, J. (1991) *Empapados de Sereno, Reconstrucion Testimonial del Movimiento Urbano Popular en Baja California (1928-1988)*. Tijuana: Colegio de la Frontera Norte. pp. 42-44

[22] Calexico is a city located on the U.S. side only separated from Mexicali by a wall.

[23] *Border Culture* is a translation of the Spanish term *Cultura de la Frontera*. Much research has been done on this particular issue. For instance, see: Valanzuela Arce, J. (1989) *Entre la Magia y la Historia: Tradiciones, Mitos, Leyendas de la Frontera Mexico-Estados Unidos*. Tijuana: Colegio de la Frontera.

The Institute of Historic Investigations (1991) reports that in 1980 53.5% of Mexicali inhabitants was composed of Southern Mexican migrants, North American and Chinese citizens (Ramfla, 1991:139). Particularly Mexican rural migrants, from the southern states of Jalisco, Sinaloa and Sonora, were the ones to suffer the process of rapid urban growth, for they expected to be incorporated into the new industries work force as soon as they arrived. Because of their numbers, however, industries were unable to create sufficient jobs and cities were also unable to offer proper housing, services and infrastructure. Nevertheless, rural migrants remained and settled wherever possible, waiting for opportunities to come. The result was the invasions of empty lots in the cities' outskirts and the quick formation of *favelas, campallas, barriadas and villas miserias*[24]. The resulting overcrowded conditions produced serious problems of agglomeration and insalubrity.

Many were the attempts, at the federal level, to solve the housing shortage. One example is the INFONAVIT program that in 1976 proposed to build 500,000 mass-produced houses financed by the government, in the belief that every worker could have access to a house by investing twenty per cent of his or her monthly salary over a long term loan. Other institutions also participated in this attempt, such as BNOSP (National Bank of Public Services), INDECO (National Institute for the Economic Development for the Urban and Rural Community) and FOVISSSTE (Housing Funding Destined to State Workers), however, the production process utilized did not give the expected results and only increased the already existing government debt.

In this context, the government of Mexicali saw in Alexander's proposal, given the self-help characteristics of his approach, a possibility to reduce the financial deficit and still provide houses to its population (Chavez; Hernandez & others, 1978:13-19). Thus, in conjunction with the Autonomous University of Baja California and the ISSSTECALI, Alexander started the design and construction of a group of houses. Those were destined

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[24] *Favellas, campallas, barriadas and villas miserias* are Spanish terms that similarly defined the group of shacks of poor marginal groups.

only for members of the ISSSTECALI (Institute of Social Security and Syndicate of Baja California State Workers) which also provided funding for the project.

The selection of families was made through advertisements to all ISSSTECALI members, who were invited to design their own houses and to help to build them. Five families[25] responded and this was enough to form the first cluster. The first was the family of Mr. Julio Rodriguez, a water-meter inspector with an income of 3,825 pesos per month, married with four children (10, 8, 6 and 4 years old). Ms. Lilia Duran de Guzman, a nurse with an income of 3,467 pesos per month and her husband income of 900 pesos-month constituted the second family. She had one child (5 months old). The third family was the one of Ms. Emma Cosio, a court stenographer with an income of 5,118 pesos per month, not married with ten children (17, 15, 13, 10, 9, 8, 5, 4, 3 years old and a baby of 8 months old). Mr. Jose Tapia, a clerk in the office of Tourism, and his three children (3, 2 and 2 years old) formed the fourth family. Mr. Tapia's income was of 3,752 pesos per month. The fifth family was that of Ms. Macaria Reyes, a nurse with an income of 4,048 pesos per month and her husband, whose income was 3,800 pesos per month; they had two children (2 and 1 years old).

Families were asked to deposit 200 pesos to assure that they would not drop out the project in the middle of the process. The price per square meter was established at 585,00 pesos, which was stipulated in the loan that also determined that each house would include between 60-70 square meters. Thus, after families explained their needs with regard to the houses, the total price was calculated at approximately 40,000 pesos ($3,500) each house. Although the size of the houses[26] would vary according to each family, Alexander estimated each cluster having a total area of 1,050 sq.meters.

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[25] The names used to designate the families follows the one proposed in the *Production of Houses*.
[26] The design characteristics of each house are presented in chapter three along with a description of the houses tranformations.

This included:

300 square meter for the five houses
150 square meter for common land
150 square meter for parking
450 square meter for open spaces

The total area per house included:

60 square meter for the house
30 square meter for common land
30 square meter for parking
90 square meter for open space

By 1977, five out of the thirty houses planned for the initial step of the project were built, while a second cluster was laid out but never built. As a consequence of changes in the national government the rest of the project was abandoned due to discontinued funding.

In summary, the designer's aim for the Mexicali project was the re-establishment of the environmental "quality" lost in conventional housing production. Thus, the concept of quality included a sense of "wholeness", as Alexander believed: it was the search for the sense of "beauty, the idea of houses as places which express one's life, directly and simply, the connection between the vitality of the people and the shape of their houses, the connection between the force of social movement and the beauty and vigor of the places where people live" (Alexander, 1985:14). This attempt was brought into practice in the city of Mexicali, jointly with the families, the government and the designers. The five selected families were asked to participate in the project by directly designing them. According to the Alexander, this would bridge the gap that existed between the traditional housing production and the final users.

CHAPTER THREE
THE MEXICALI PROJECT TWENTY YEARS LATER

Today, there is little about the Mexicali Experimental project that resembles the original plan. The five built houses, with their vaults and porches have all been so extensively converted that they almost disappear in the texture of the neighborhood. After twenty years, as is to be expected, the project has undergone the normal process of aging. Yet, many of the transformations undertaken by residents appear to be substantial. For instance, the common land with the cluster arrangement was subdivided into individual lots; some occupants added new rooms, while other transformed or demolished existing ones; the interior space has been adapted to activities different from those originally planned for; occupants have re-painted the exteriors of houses, added fences, and incorporated window security devices. The construction process, building materials and technology used in the conversions differ from those used originally. Although no absolute conclusions can be drawn, these modifications and the residents' responses to the project indicate a conflict between the production process as applied and the residents' *ultimate* needs.

Fig.3.23 The Mexicali project today, view of the Builders' yard and the cluster

3.1 - Changes with Reference to Open Space

This section looks at the transformation of the common land and the cluster arrangement. In terms of open space, the most significant modification was that of the subdivision of the common area. Its importance relates to its effect on other patterns, producing a chain reaction in the project's changes (Fromm, 1984:4). As mentioned, the "Pattern Language" guided the design of the common areas and the individual houses. For the Common area, the patterns: "37 - House Cluster, 67 - Common Land, 110 - Main Entrance and 103 - Small Parking Lots[27]" physically defined a layout that provided every group of houses arranged in a cluster with a central space. According to Alexander, the grid pattern of traditional planning was the product of a repetitive practice with no congruent social structure (Alexander, 1985:43). As an alternative, he proposed to substitute the grid for a cluster arrangement.

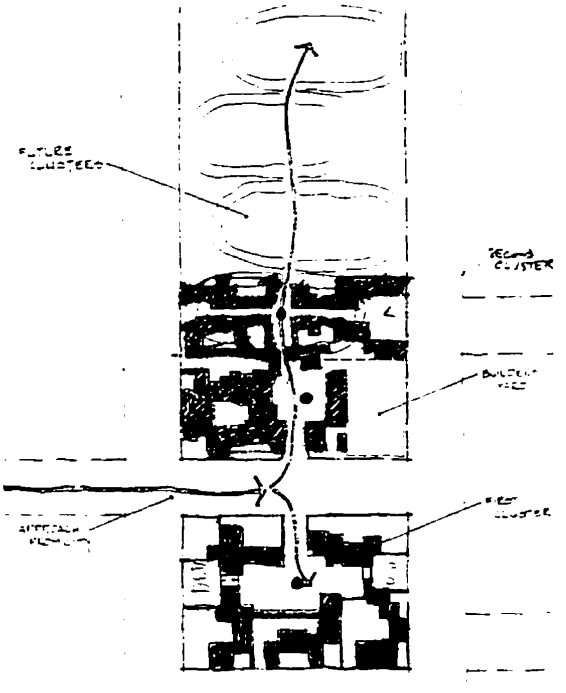

Fig.3.24 The cluster organization (Alexander, 1985)

[27]Patterns taken from *A Pattern Language*, 1977. pp. 197, 336, 540, 503.

The main purpose of the cluster arrangement was to provide a sense of community among the residents. To achieve it, a common land was created to be shared by the families. This was reinforced by a system of transitional space situated between the public and the private domains, namely the "166 - gallery surround[28]", a semi-public space attached to every house. The design of the common land was produced collectively, through discussion and with an adjustment of the architect's pattern. All families agreed on a basic house organization, and ceded part of their property to create the common area. The one family that did not agree decided to leave the project, and was later replaced by the Cosio family.

The direct participation of the residents in the planning of the common land allowed them to choose the location within the cluster that suited them best. For example, the Cosio family with their ten children wanted to be as close as possible to the center of the cluster, while Lilia Duran's husband, a barber, wanted his house at the edge of the main street, as he hoped eventually to open a shop. The Tapia family wanted their house to be situated away from the center of activity. Finally, around an area of 150 square meter destined for common land, the many preferences of the families were reconciled by defining line lots in a way that permitted a variation in the degree of publicness[29] of each house. Within this area, the Duran family decided they wanted the northeast corner, the Rodriguez family the southeast corner, the Tapia family the northwest corner, the Reyes family the southwest corner and the Cosio family the side that was farthest west from the main entrance.

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[28] Patterns taken from *A Pattern Language*, 1977. p 777

[29] The term *publicness* is taken verbatim from Alexander,C., Davis et al. *The Production of Houses*, 1985.

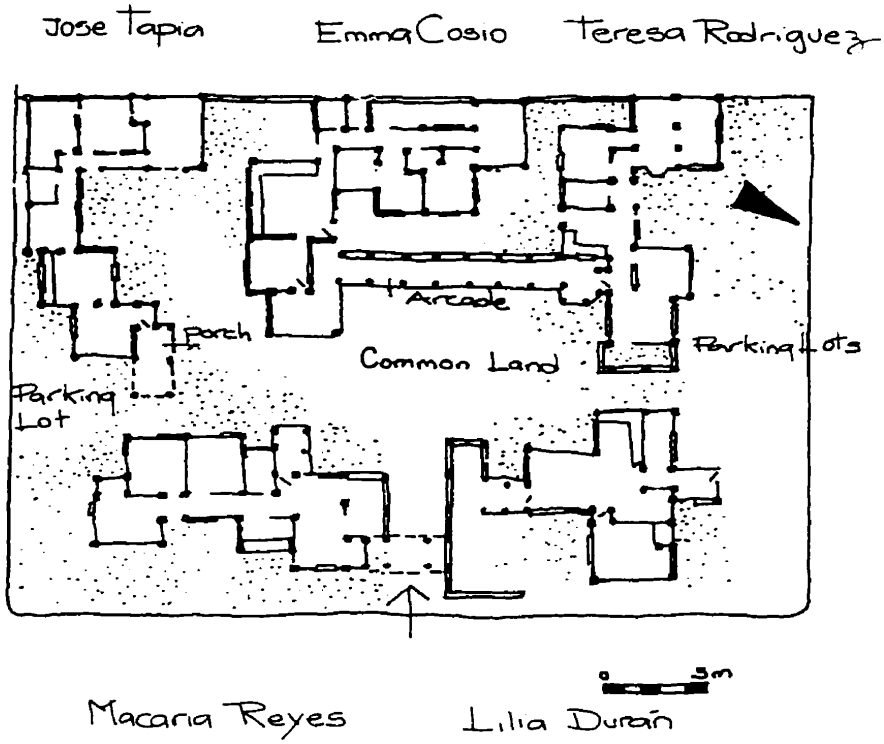


Fig.3.25 General layout of common land and location of houses (After Fromm, 1984)

It is important to highlight the difference between the approach to planning in this project and that of conventional practice. In the Mexicali project, the layout was the result of the wishes and needs of the future residents, while in customary practice, lots are fixed in advance according to municipal regulations (Alexander, 1985:143). The advantages of the process used in the Mexicali project was evident in the first years after its completion. According to interviews, families remembered it as a place to gather and talk, thus creating a strong sense of community. Yet, three years later, they questioned the validity of the "Common Land" pattern.

Problems between neighbors began when one family's children became a source of violence and fear. At the same time, families felt a loss of privacy and control when local vagrants began using the common land to sleep on overnight. Police would evict them,

but the noise of the eviction would wake the residents. The originally planned garden quickly became abandoned and the physical environment deteriorated. Fights over who should water plants and clean the area were frequent. As a result, the Reyes family built a fence around their house[30].

Although one of the main concerns for Alexander was to encourage communal interaction, the subdivision of the common land was not made as a result of common agreement. The Reyes, the most affected among the neighbors, obtained the documents from the Real Estate Office of the City of Mexicali indicating the lot line corresponding to their property. By building a brick wall three meters high, they enclosed their house, incorporating into it the parking area, but not their share of the common land. Soon after, the rest of the families did the same.

The Rodriguez and the Duran families built wire fences, while the Tapia family used brick. The Cosio family did not need to erect a fence, since they were already surrounded by their neighbors. This house incorporated the largest part of the central area, although they were left at the rear of the cluster without direct access from the street.

Fig.3.26 View towards the cluster's main entrance

Fig.3.27 View of the common land

[30]During an interview, some of the residents agreed on the fact that the Reyes family was the first to build a fence, while other residents did not remember whether this was so. A Master's thesis written by Dorit Fromm, 1984, reported that the Rodriguez family fenced in their house first. This disagreement might be the result of the impressions of residents on the issue.

a) The Break in the Chain of Patterns

The dismemberment of the common land meant the transformation of the "House Cluster" and "Positive Outdoor Space" patterns into almost *walled detached houses* with front and back yards. More importantly, the subdivision began the breaking of the chain of patterns. According to Alexander's theory, each "pattern" is connected to a particular larger pattern which comes above it in the language, and to certain smaller patterns which come below it in the language"(Fromm, 1984:54). This means that events and forms are connected to other events and forms. Therefore, if a pattern changes, the rest of the patterns connected to it will also be modified, which is precisely what happened in the Mexicali project. Once the common area was divided, the rest of the patterns were also modified, affecting the organization of the interior of the houses.

As an example, the entries to the houses were arranged around the common land, but since the subdivision now blocked these accesses, the entrances of three of the houses had to be relocated. This situation, which occurred in the dwellings belonging to the Tapia, Reyes and Rodriguez families, also involved modifications to kitchens, dining rooms and living rooms. In the Tapias' house, the front porch was converted into a kitchen and the entry was relocated so that it faced one of the streets.

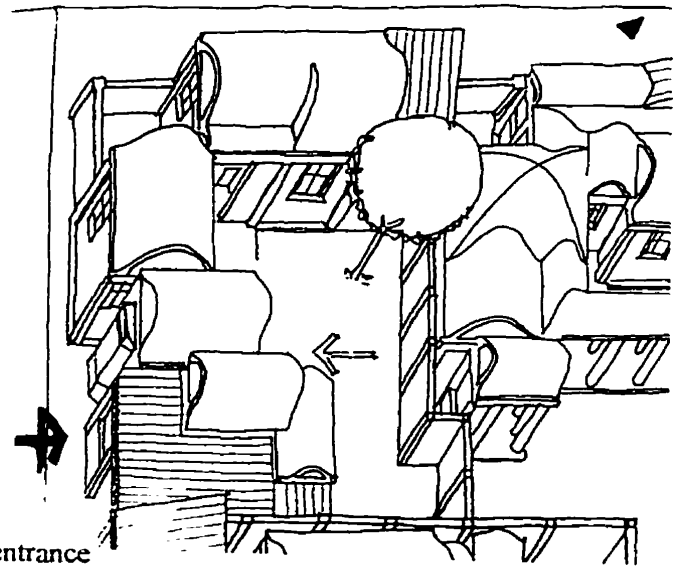
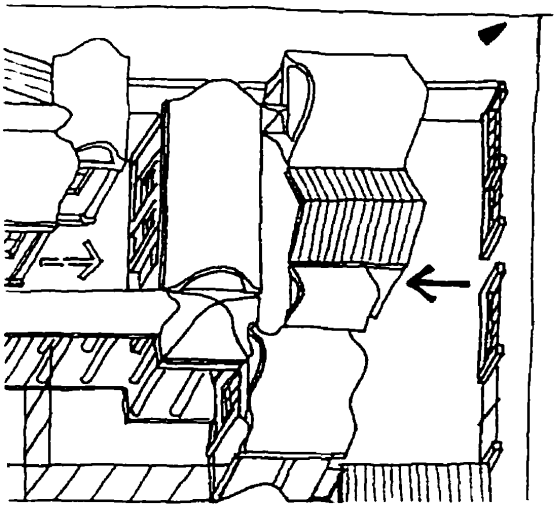


Fig.3.28 Relocation of the Tapia house entrance

The Reyes family, whose entry also faced north, relocated it, but in doing so created an access to the house that was inconvenient. The path obliged them to first go through the metal front gate, then to cross the carport in order to arrive in the hallway where the new door was located; from there, one could go to the kitchen and the living room. Later, the entry was changed once more, when three of the rooms and the hallway were torn down, leaving the entrance at the edge of the kitchen.

Fig.3.29 Relocation of the Reyes house entrance



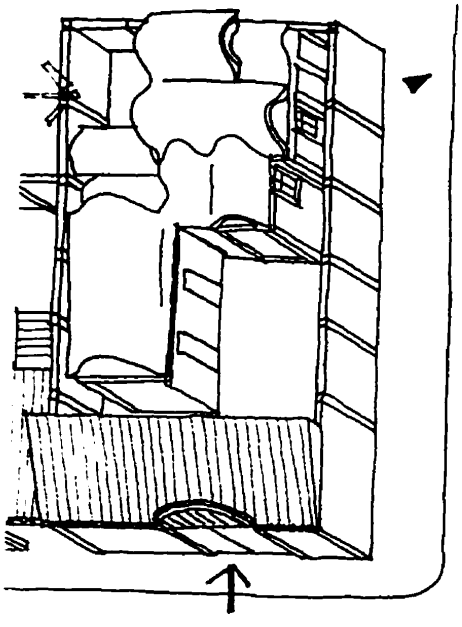
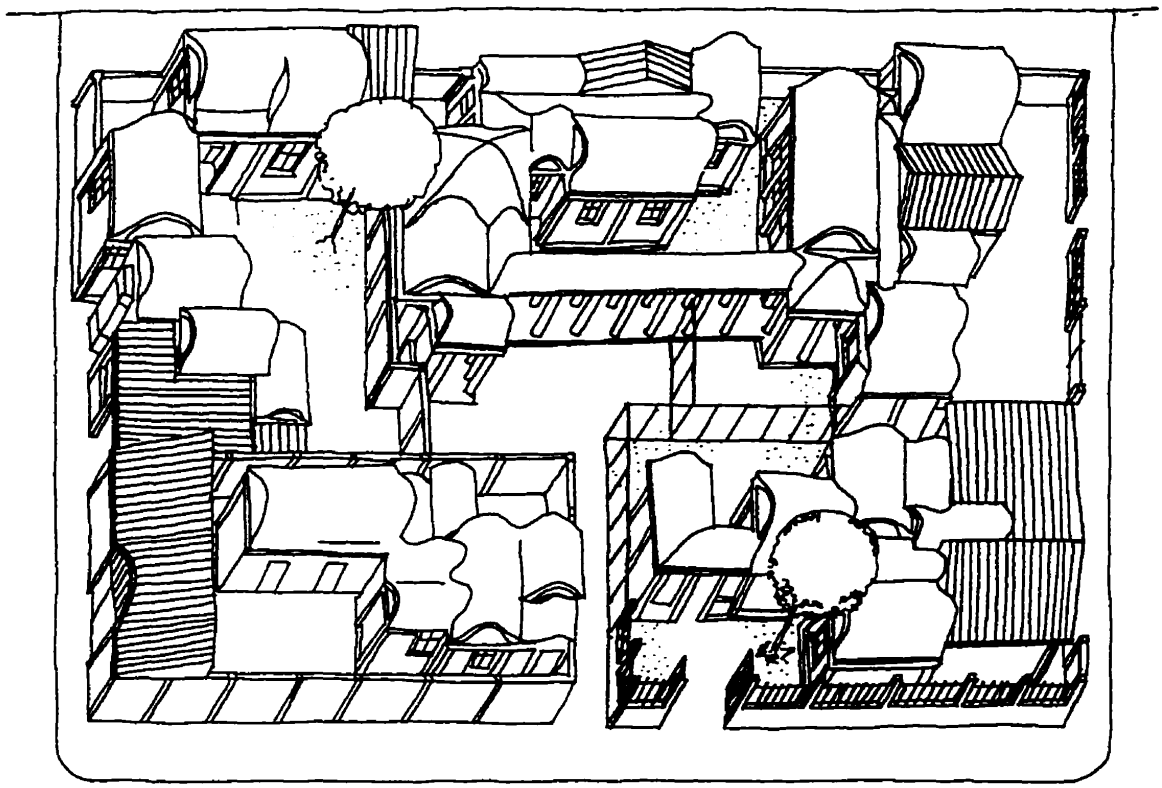
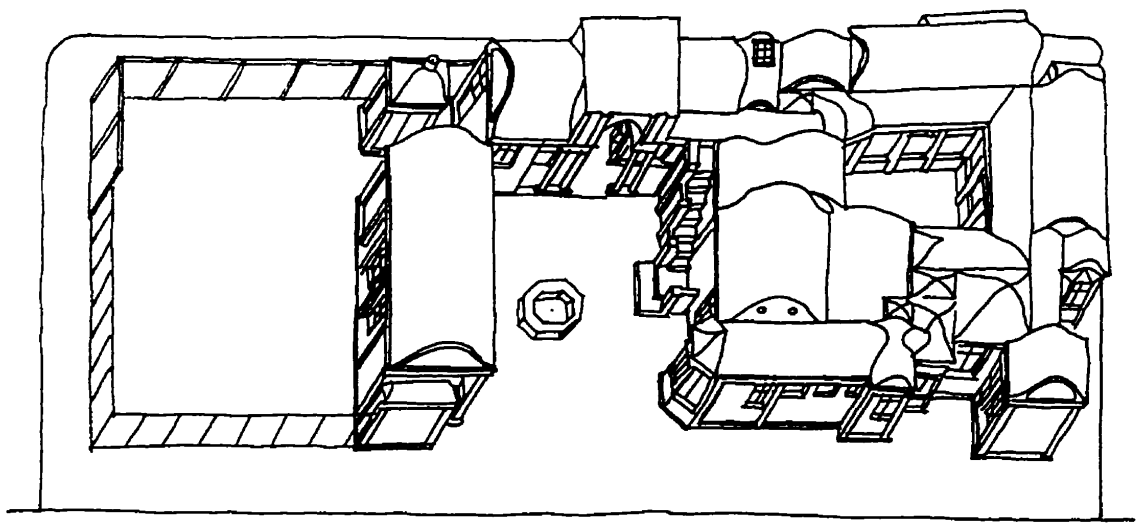


Fig.3.30 Relocation of the Rodriguez entrance

The Rodriguez' entrance, originally located at the end of the arcade connecting with the Cosio' house, was changed so that it faced the opposite side of the house, with direct access from the street. In all three cases, the front porch, proposed as a semi-public area, was either incorporated into the house, or torn down. Only the Tapia family built a porch in the new entrance, with the same shape and dimensions as the original.





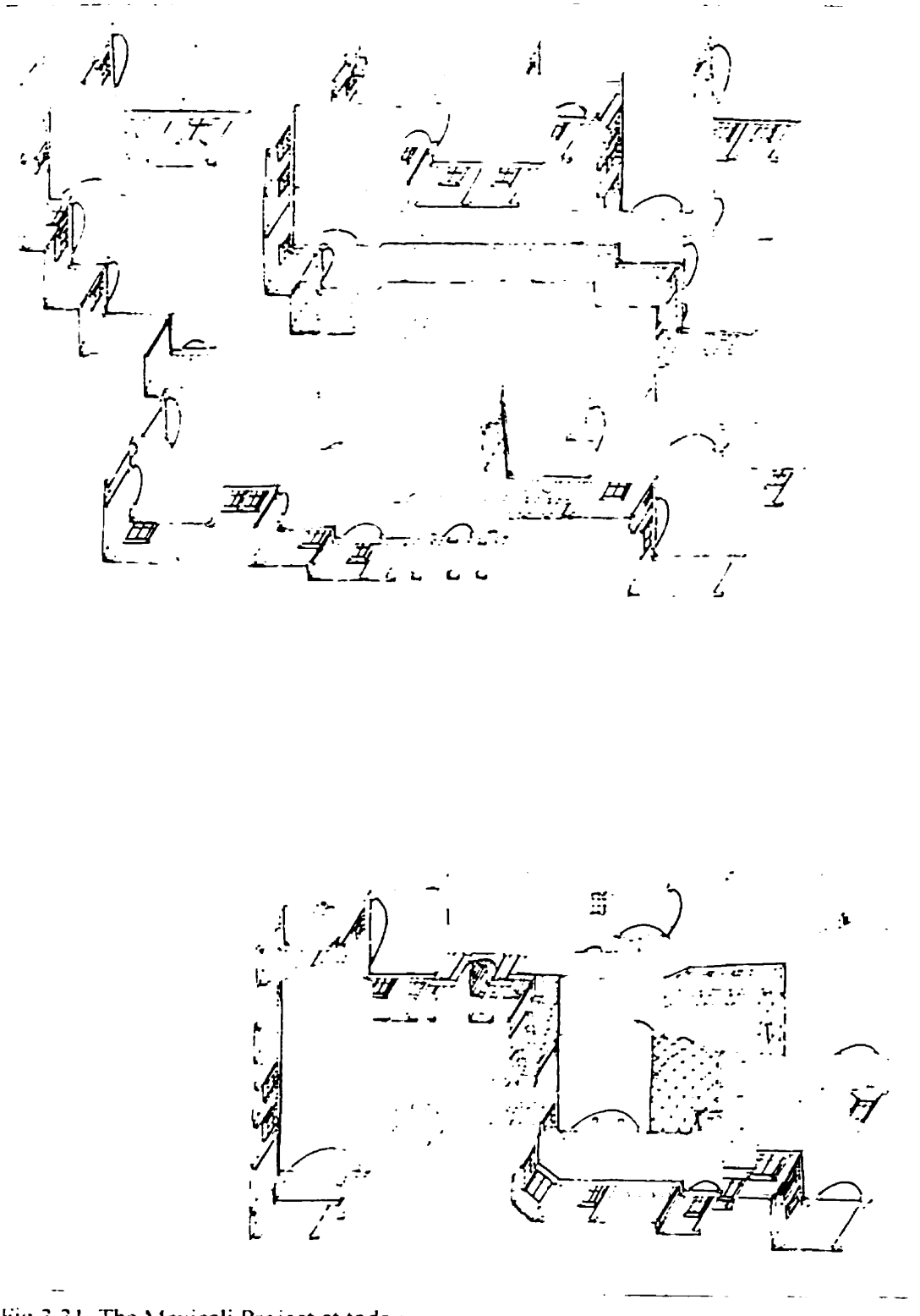


Fig.3.31 The Mexicali Project at today

Fig.3.32 The Mexicali Project original design (Alexander, 1985)

Pattern "107 - Wings of Light [31]", one of the patterns controlling the layout of individual houses, was also affected by the modification of the central area. Alexander in this pattern argued that some building, given its massive proportions, do not allow for direct sunlight access and must be avoided. In "A Pattern Language", Alexander, Ishikawa et al advise that designers should:

> Arrange each building so that it breaks down into wings which correspond approximately to the most important natural social group within the building. Make each wing long and as narrow as you can - never more than 25 feet wide.

Alexander had attempted to secure direct illumination and ventilation by shaping each house like thin, long building blocks, and grouping them according to function. With the construction of the three-meter high brick wall however, "Wings of Lights" principle was invalidated, producing a great deterioration in environmental quality.

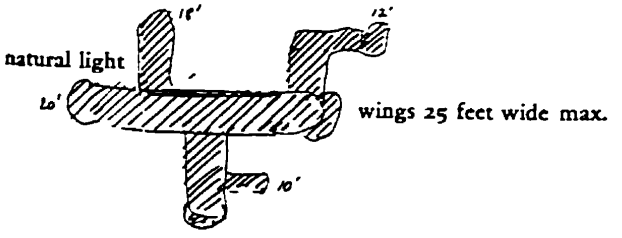


Fig.3.33 Pattern "Wings of Light" (Alexander, 1979)

The Reyes' house, for instance, suffered a considerable reduction in interior light, particularly in the two bedrooms with windows only one meter away from a brick wall. The fence that runs along the rear of the Tapias' lot projected a shadow on the back yard, so that it can no longer be used as a garden. In the Cosio residence, the same wall blocked the view as well as the illumination and ventilation for the kitchen, living room, and the hallway leading to the bedrooms.

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[31] Pattern taken from *A Pattern Language*, 1977 p 529

b) Delimitation of Individual Properties

Although this subdivision provided a solution to the problems between neighbors, it also involved an investment of resources that could have been avoided. For this reason it is necessary to understand the motivation of the families to change an organization that they had agreed upon at the beginning of the project. The explanations are twofold. One is related to the issue of control: the place was becoming dangerous for children, and it was necessary to establish physical boundaries. The other is suggested by the Mexican traditional neighborhood planning principle, namely that :people "feel a strong need for securing what is theirs from the outside world" (Fromm 1984:92). To illustrate this assumption, Dorit Fromm shows that in a survey of thirty-five houses in a different neighborhood of the city of Mexicali, as well as in the site's neighborhood, twenty homeowners had built fences for protection (Fromm, 1984:92). In the project, the use of fences to establish physically and virtual boundaries on the street edge, confirms this assumption.

Fig.3.34 View of fences in neighboring houses

Fig.3.35 The use of fences to subdivide the common land

In addition, the creation of fences has emphasized the difference between conventional lot use and the one proposed on the project. Traditionally, boundaries incorporate every piece of land to the extreme edge of the property. Within this *container* , the house delimits two areas of well-defined use, the front and the back yard. Yruegas, Quiroz, et al (1978) report that the front yard's function is to provide an open space for social use. In this *terraza*[32] people enjoy the cool trees' shade, especially during summer time, where they gather with friends and observe the activity in the neighborhood. They emphasize the importance of street life, adding that "the *terraza* is an element that even the influence of Modern Architecture has not destroyed; when architects do not provide one, people always improvise them" (Yruegas, Quiroz et. al., 1978: 154 -e). The back yard functions mainly as a place for storage. In contrast, in the case of the Mexicali project, the relevance of street life is neglected due to the inward-looking design of the houses.

c) The Process of Pattern Selection

Essentially, the subdivision speaks of the incongruency between the initial pattern proposed and the residents' ideas of the neighborhood. Although the residents agreed on the existence of a shared area, it was a pattern proposed by the designer, rather than one originated by the residents. Ms. Tapia corroborated this assumption when she asserted that:

> At that time we thought that a shared area was good..., with all the families together.... this was a pattern that existed for the design, and we had to adjust to it.

This comment reveals, on the one hand, her acceptance of the common land idea, but on the other hand shows that the pattern was not the one chosen by the residents during the design of the general layout. Alexander's opinions on the reasons and the results of the common land pattern seem very ambiguous. In an interview that took place in May 1996, during the field trip for this research, he explained that:

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[32] *Terraza* Spanish word used to designate the front area of a house. Defined by the fact that it is near the street surrounded by a fence that acts as a boundary, rather than by specific physical form.

> There were two different reasons to choose a common area. One is simply that I believe that, in the local area, access to common land is important for families to have, and secondly, also there is a particular pattern in that part of Mexico. Very often, it happens that several houses are built around the piece of land where all the families congregate..., and creates very comfortable conditions, social conditions. So I think part of the reason why it did not work, it is because of the car[33]. And so, the logic of the initial layout did not make any sense at all, and secondly Emma's (Ms. Cosio) teenage boys were terrorizing everybody. So, although it is clear that we failed, I do not think we were wrong in the way we did it.

Alexander simply assumed the presence of solid precedents of common land-organization in the local culture, but this was contrary to the opinion of one of the residents, who explained that: "Even if another family were to replace the one causing trouble in this group, this shared area wouldn't have worked, simply because every family has a different idea on how to behave. Besides, I do not know of any example around here where a common area has worked".

Chavez, Hernandez , et al (1978) expressed similar opinions of that of the residents. They observed that, for mainly economic reasons, people in the city of Mexicali live in cluster organizations. Furthermore, they assert that if they had the possibility to choose between living in a *vecindario*[34]or in a individual house they would choose the latter. They add, "this is a manifestation of an individualistic way to live in community" (Chavez, Hernandez & others, 1978:27). The most eloquent proof of the need of physical and virtual boundaries, nevertheless, is that all families agree today, that despite the loss of the common land, the subdivision had provided them with more privacy, security and an ability to make unimpeded use of their living spaces.

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[33]During the interview, Alexander made reference to the wrongly designed parking lots. In some cases, parking lots were located far from the entrance of the house.

[34]*Vecindario*: Spanish word used to define a building organization where families live around a courtyard, sharing services. It is associated with low income families.

3.2 - Changes with Reference to Houses

Buildings are permanently changing[35] by means of the constant additions and alterations occurring at all the different stages of the building's life. Lynch states that the human settlement is "indeed something changing and developing, rather than an eternal form" (Lynch, 1981:114). This section analyses the changes transformation that have occurred in the Mexicali project during the past twenty years. In this case, change in the use of space, and the physical modifications (additions and expansions) that were made, highlight the spatial shortcomings of the house, and the users' efforts to cope with their changing social, cultural and economic needs. This section concentrates on describing two of the motivating factors in the changes, assuming that changes can be provoked by one need, or more. During interview, two motivating factors were that seems most relevant to residents were the life-cycle phenomenon, and the influence of the cultural environment.

a) The Life-Cycle Phenomenon

Inevitably, needs of the users of dwellings do not remain static: families change as part of the natural cycle of birth, growth, etc. The birth of a new child, for example, may require an addition to the house, or an adjustment within the internal layout to accommodate a new need. This phenomenon is known as *life-cycle*. The analysis of the project as it stands today reveals that all five houses have added or transformed at least one room in their living area. Jason Gilliland points out that the life-cycle presents two different degrees of space requirement. One happens at the beginning of the family life, when the space requirement is low; the second occurs when the family is totally constituted, reaching its highest demand (Gilliland, 1996:54).

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[35]The term *change* means to alter the original form or state of an object. Change may lead to growth or improvement, or to decay, abandonment, and eventually, to the end of the original state (Lynch, 1972:190).

When houses in the Mexicali Project were first laid out, the number of rooms and their sizes corresponded to the number of family members in existence at the time. As families grew in age, and in numbers of children, adjustments become necessary. The original Reyes' house, for instance, had three bedrooms; one for each child, and the third for the couple. The house fulfilled the family needs at the time. The Reyes have since made a significant conversion, as Mrs. Reyes declares: "Before, we did not need more space. Today, our children have grown and the rooms are too small for all of us".

Transformation, for the Reyes family, involved tearing down the child's bedroom at the end of the house, as well as the hallway, in order to build a second floor. On this new floor, they will build a more private family room, three new bedrooms and a large bathroom. Currently, they have finished building the beam structure for the second floor, located higher than the original vaulted roofs. They plan to tear down and remove the original roofs in the future, to enable them to have a second floor over the existing building as well. When asked during the interview if they would build the vaulted roofs again, they replied that vaulted roofs were heavy and difficult to re-build. Instead, the roofs they plan will follow the shape of the neighboring houses, with a sloped wooden structure.

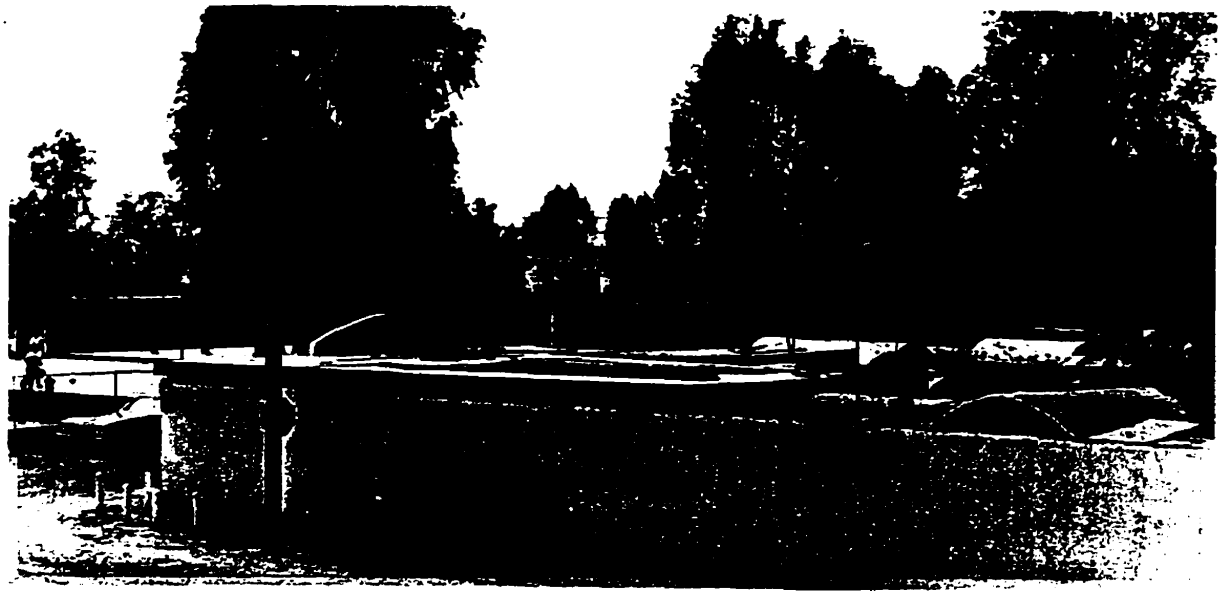

Fig.3.36 Facade of the Reyes house today

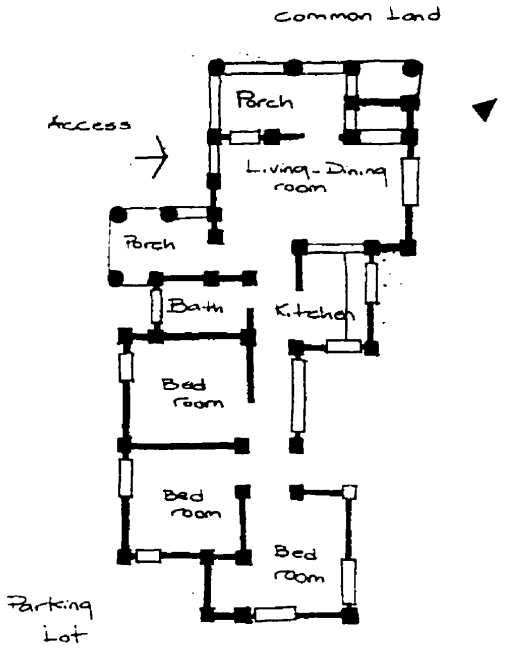

Fig.3.38 Reyes house, original floor plan

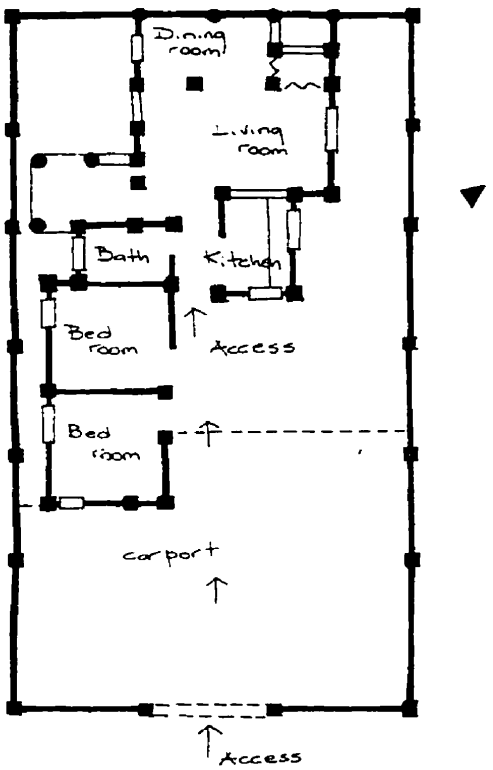

Fig.3.37 Reyes house after transformations

Another example of life-cycle change is illustrated in the Duran house. During the participatory design, they decided that one small bedroom for their baby daughter, and one master bedroom for the couple, was sufficient. Although the family had planned for two children, they did not have the means to build a third room at the time of construction. When the fourth family member was born, a room was improvised by enclosing the front porch. The daughter, now twenty years old, required more privacy than her original room provided. The house was again modified by building a bedroom *within*[36] the new living room. As was the case in the Reyes' house, the new extension did not follow the previous construction system or physical form. Ms. Duran's husband declared:

> I did not remember how to build the vaulted structures, and I would rather have this new roof because its height makes the room look bigger.

Fig.3.39 Facade of the Duran house today

[36]The living room was constructed shortly before the bedroom. The use of the word *within* is deliberate as it describes the existence of a bedroom built inside the living-room. This new room has no direct ventilation or illumination from the exterior.

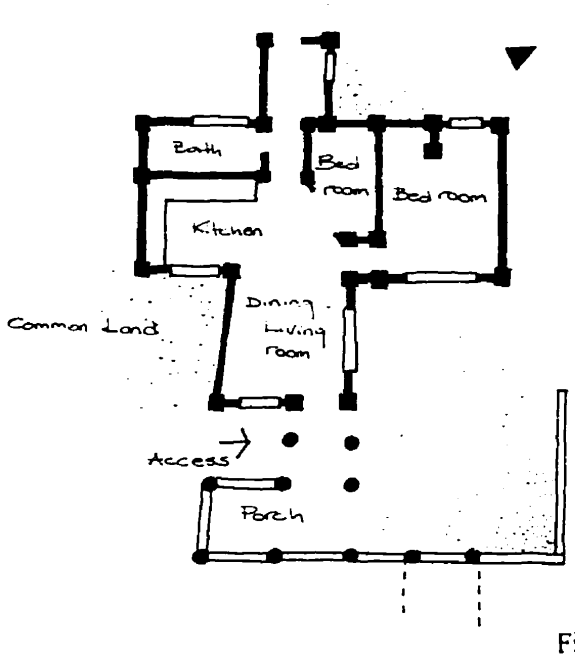

Fig.3.41 Duran house, original floor plan

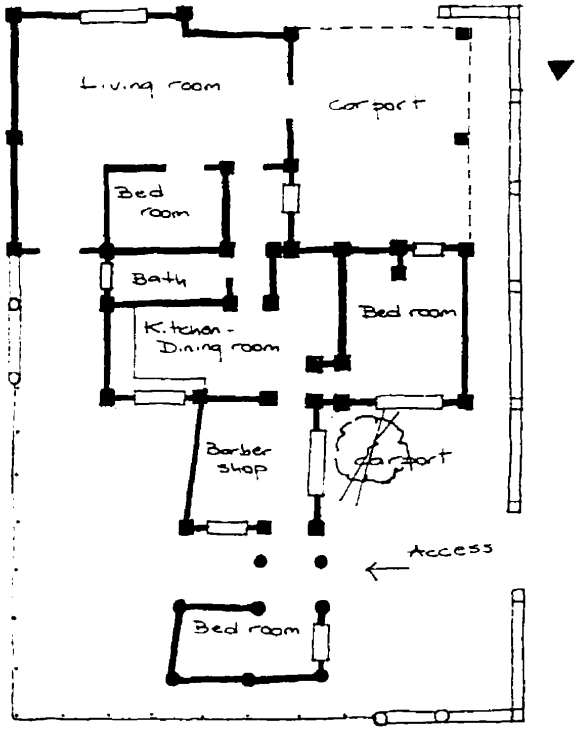

Fig.3.40 Duran house after transformations

The Rodriguez family designed a house containing one bedroom, with four alcoves, for their four children to share, and a second, more private bedroom for themselves. The emphasis was placed on the public spaces, dining room, and living room, that were quite large when compared to the private spaces (as the original floor plan shows). For the Rodriguez family, the life-cycle phenomenon did not result in many transformations, as the house was designed when the family's space requirements were at their peak. There were some internal changes, nevertheless, including the conversion of the shared room into a large, single one, by tearing down the four alcoves. A second bedroom was added, integrating the old dining room and the porch that faced the common land. These additions all incorporate an increase in roof height, imitating those of their neighbors.

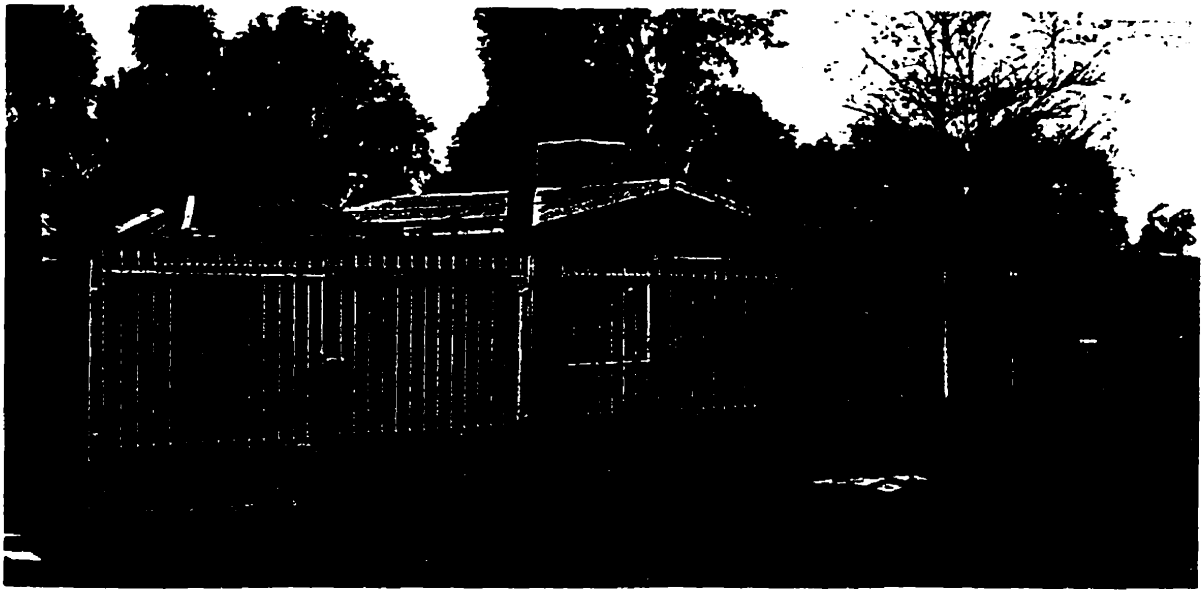

Fig.3.42 Facade of the Rodriguez house today

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The Tapia house presents an interesting case. Although some internal changes have been carried out, externally the house remains relatively unchanged, with the exception of a porch addition, and the closing of the carport. With regard to its earliest internal layout, the house consisted of a master bedroom and two smaller bedrooms for the children and a family relative, in an elongated floor plan. Years later, once the children had grown up, a new bedroom was added by enclosing the carport space. The Tapia family also constructed a front porch, facing the street, and focusing more importance on the new entrance. Interestingly, they purposely imitated the height and proportions of Alexander's porches, but they chose not to rebuild the vaulted roof.

Fig.3.45 Facade of the Tapia house today

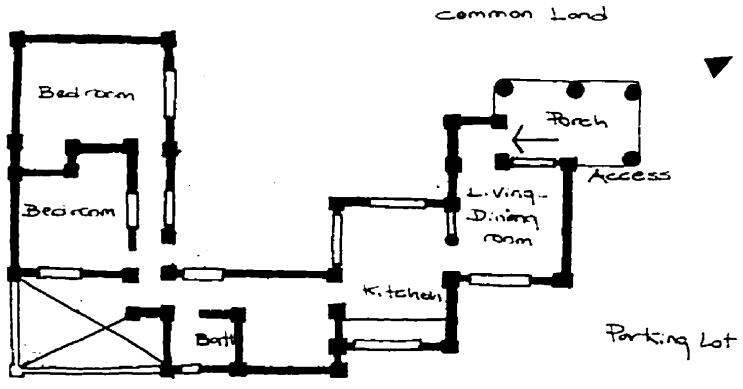

Fig.3.46 Tapia house after transformations

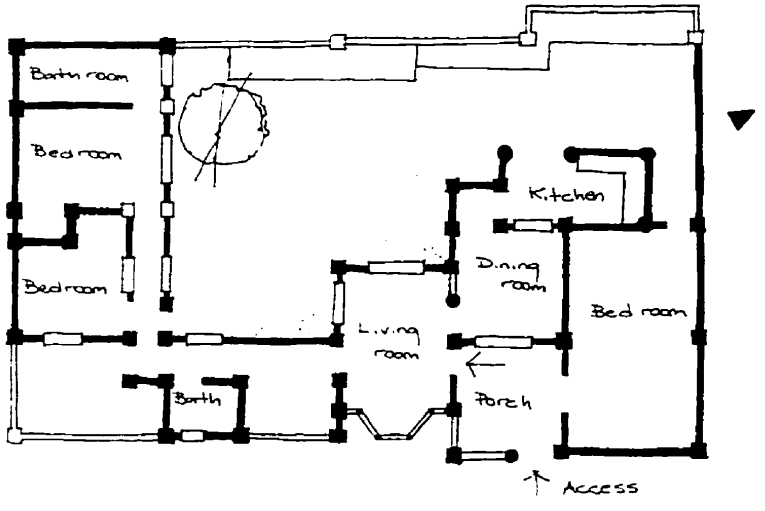

Fig.3.47 Tapia house, original floor plan

Ms. Cosio made few transformations to the original plan. The house initially had two bedrooms, one with alcoves shared by the ten children, and one master bedroom. Although the family has experienced many changes in ages and number of family members living in the house since it was first laid out, these changes were not reflected in the transformations. The only modifications corresponded to the original private open space, now converted into a laundry room and a closet, by the addition of a new roof. It could be argued that the house did not experience changes either, because of the family's financial situation, or because the original layout fulfilled the family needs adequately. In *The Production of Houses*, however, Alexander reports the lack of interest and involvement on the part of the family from the onset of the project, noting unwillingness to collaborate on a number of design decisions, or on the construction of the house itself (Alexander, 1985:170). This minimal interaction with their house, as reported by Alexander, might explain why, in twenty years it has been altered only slightly.

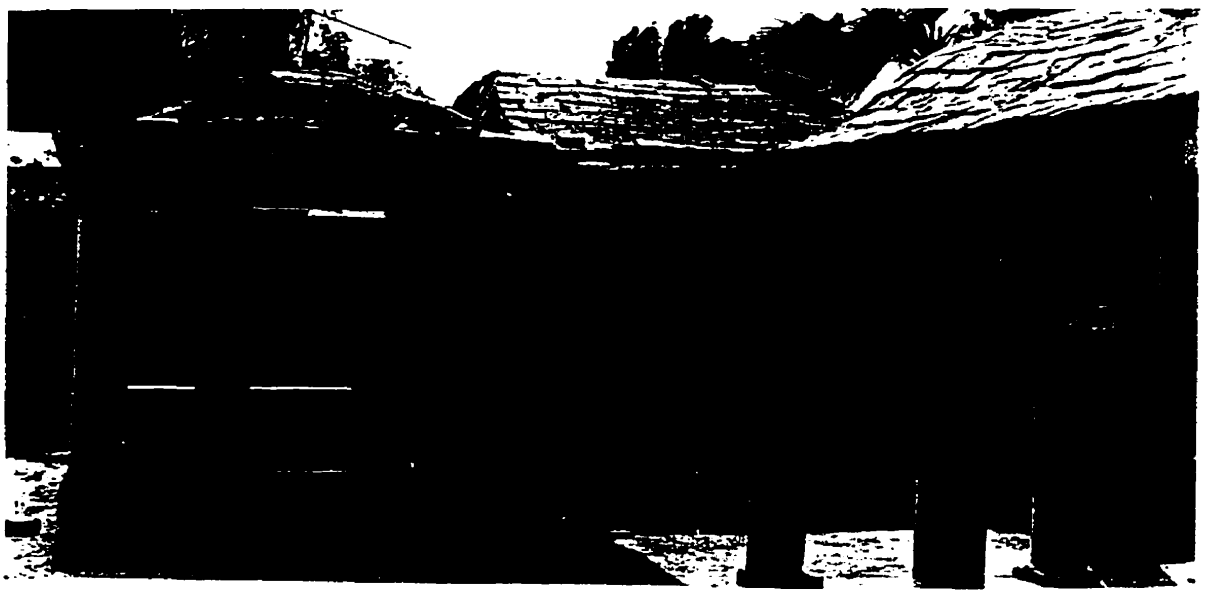

Fig.3.48 Facade of the Cosio house today

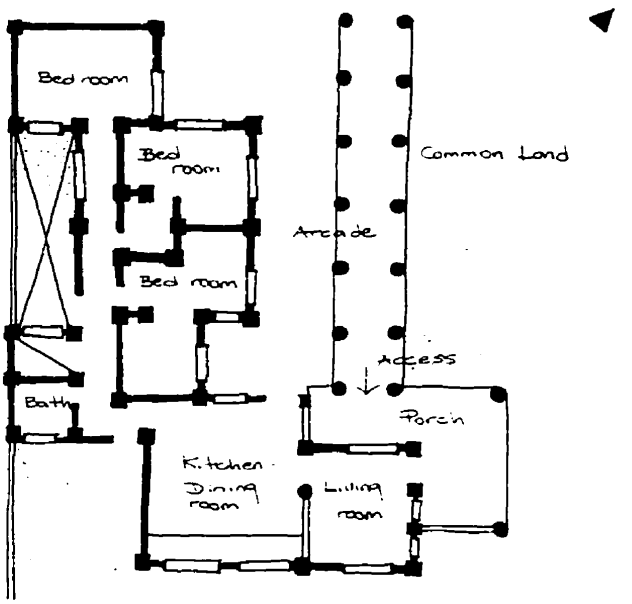

Fig.3.50 Cosio house, original floor plan

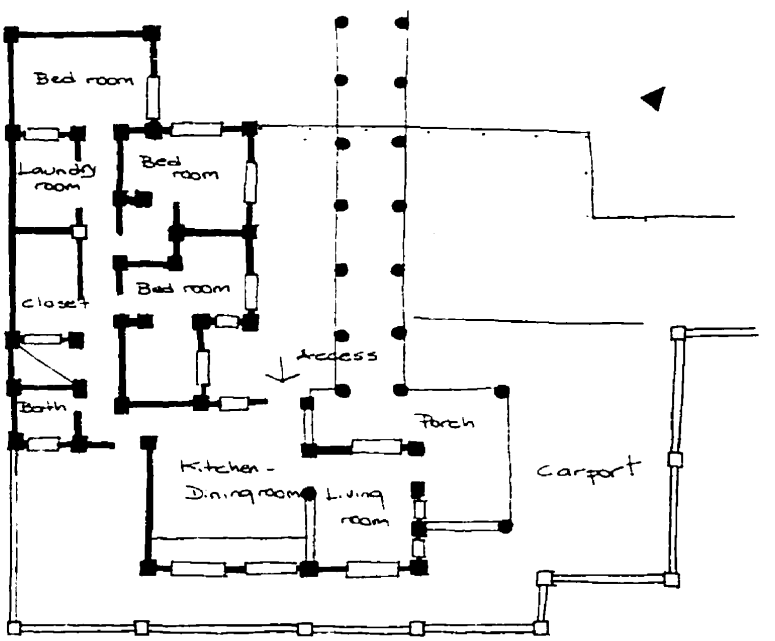

Fig.3.49 Cosio house after transformations

In the five houses, minor alterations, such as the finishing of walls, floors and ceilings, were made, as well as major transformations. In the exterior areas, the small paths crossing the common land were replaced by cement paving that served as parking spots. In many houses, floors and walls in kitchens, living rooms and bathrooms have been replaced by newer materials. In others, the bare concrete block walls were covered with plaster and were painted. When families could afford it, the original colored floors were replaced with industrial tiles. In kitchen and living rooms in particular, the exposed structure of the ceiling's vaulted wooden baskets were covered with plaster, which residents referred to as "acoustic insulation" (although it did not really accomplish such a function). In addition, window grilles, metal fences in the front of the houses, and other security-related items were added.

Transformations to the five houses, as presented, were the result of the life-cycle phenomenon. Simultaneously, the houses underwent many other changes as a result of the socio-cultural contextual influence. These were reflected in various ways, through adaptations to the facades that personalized them, or through expansion and change to interior layouts, that would allow for new activities.

b) Influence of the Socio-Cultural Context

Self-expression or personalizing houses has been identified as a basic need inherent in human nature (Cooper, 1995; Lawrence, 1987:17; Becker, 1977:2). It manifests itself in a house's elements, i.e., objects, signs and colors, and is expressed in people's interaction with the environment in their efforts to convert a *house* into a *home*[37]; it is linked to the concept of identity, since self-expression communicates to others and to the householders

[37]The distinction between the terms *house* and *home* lies in the functional nature of the former in contrast to the meaningful nature of the latter. Juhani Pallasmaa, explains that "home is not merely an object or a building, but a diffuse and complex condition, which integrates memories and images, desires and feelings, the past and the present." In *The Home: Words, Interpretations, Meanings and Environments.* (1995) Chapter 7: "Identity, Intimacy and Domicile. Notes on the Phenomenology of Home". Ed: David Benjamin, Aldershot, Brookfield, USA: Avebury. p.133.

themselves that a place is occupied by an individual; it also implies territoriality, since the owner uses the house and his personal possessions to emit (send) messages about taste, status and class (Becker, 1977:51; Lawrence, 1987:117).

According to Jacques Pezeu-Massabuau (1988), each society has its own notions of time and space, as defined by their own civilization. Each civilization teaches each person its place in time and space, surrounding him/her in a familiar network. To be part of society requires an adjustment of personal activities to the broader network. This broader network includes what is defined as *life-style*[38]. Cultural elements in diverse physical settings can be identified by observing the outcome of choices and modifications made by people to their built environment in order to achieve congruence with their life-style. Rapaport, in reference to this, asserts that:

> Buildings and settlements are the visible expression of the relative importance attached to different aspects of life and the varying ways of perceiving reality. The house, the village and the town express the fact that societies share certain generally accepted goals and life values. The forms of primitive and vernacular buildings are less the result of individuals' desires than of the aims of the unified group for an ideal environment[39].

For the residents of Mexicali, the ideal environment involves elements from the "border culture", which has been the cause of many modifications to the Mexicali project, to kitchens, dining rooms, frontage of houses and parking lots.

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[38]*Life-style* could be defined as the society's treatment of elements such as symbol, meaning, time, economy, resources and ideology. The author's definition of the term as based on the work of: Rapoport, A. (1989) Foreword. *Housing, Culture and Design: A Comparative Perspective.* Ed. Setha Low and Erve Chambers. Philadelphia: University of Philadelphia Press; and Cooper, C. (1995) *House as a Mirror of the Self.* Berkeley: Conari Press.

[39]A. Rapoport (1969), cited in Cooper, C. (1975) *House as a Symbol of the Self,* Working Paper 120, Berkeley University. p.9

- Transformations to Kitchens and Dining Rooms

Transformations to kitchens, for instance, illustrate the influence of the cultural environment in which the project is situated. The type of layout for the kitchen was a subject that had particular relevance for the families. Their concerns were related to the proposed open layout, as opposed to the traditional Mexican enclosed design. Valenzuela Arce states that,

> the kitchen is the most important part of the house, it is usually enclosed, with no direct connection to other areas, is warm and very colorful. This is the place where families gather to talk and to organize projects; it is where people concentrate and thus has a great importance, because it is symbolically the place of the original fire.

In contrast, kitchens designed in the project were defined in an open-plan layout, more pertinent to northern cultures. In *Production of Houses* (1984), Alexander stated that each of the families chose the locations and the styles (open or closed layout) for their kitchens, but evidently residents were not aware of the final shape of this room. Once the residents began to inhabit the houses, they realized that they had not achieved the *traditional* kitchen layout.

Fig.3.51 View of a traditional Mexican kitchen (Street-Porter, 1989)

In addition, the small area provided just enough space for one person to work in it at any one time. Given the difficulty involved in improving size or layout in the kitchens, most residents carried out the social activities usually associated with the kitchen in the *sala*[40]. Thus, residents built or transformed their houses to have a large living room with the addition of a dining room as a replacement for the kitchen.

This is the case in four of the five houses. For instance, the Duran family, whose *sala* was converted into a barber's shop, built a new one with an area equivalent to the kitchen, plus two rooms together, where the family now gathers. Similarly, the Tapia family enclosed the front porch facing the common land in order to convert it into a kitchen. The place occupied by the old kitchen was then transformed into a *sala*, and finally, the old living room was changed into a dining room.

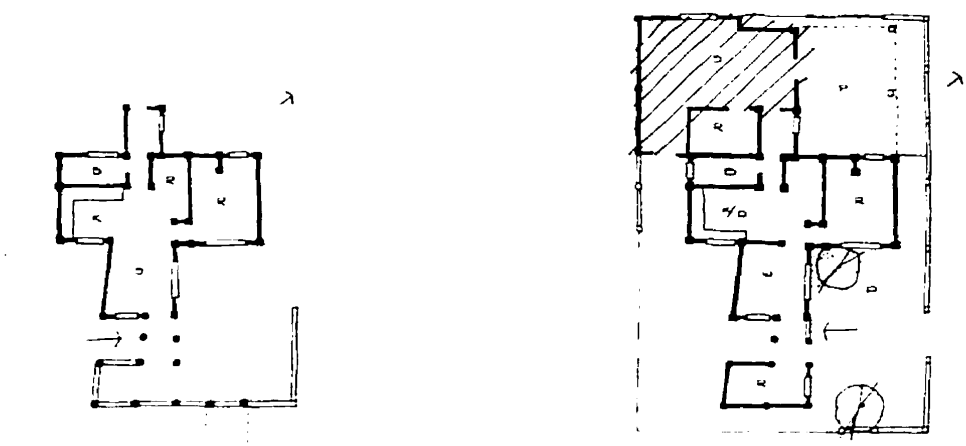

Fig.3.52 The Duran house, before and after the addition of the *sala*

[40]*Sala*: Spanish word equivalent to living room. Traditionally, it functions as a place to receive guests, and although it is usually well furnished and decorated, it is the least frequently used room in the house (Valenzuela Arce, interview, 1996).

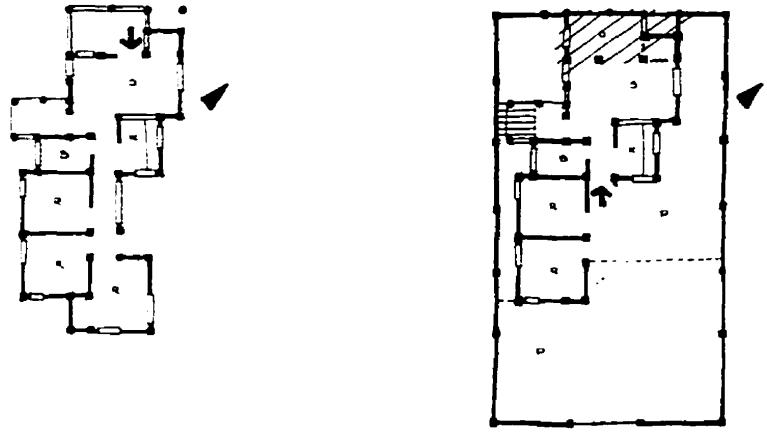

Fig.3.53 The Reyes house, before and after the addition of the front porch

The Reyes family also undertook a restructuring by enclosing the back porch for use as a dining room. Through their current changes to the house, they hope to expand the kitchen and the living room. Ms. Rodriguez, very much concerned with the appearance of her old living room, also built a new *sala* at the front of the house. At one side of it lies the dining room that once functioned as a *sala* . Both rooms have been carefully decorated and newly painted, reflecting their significance for the family.

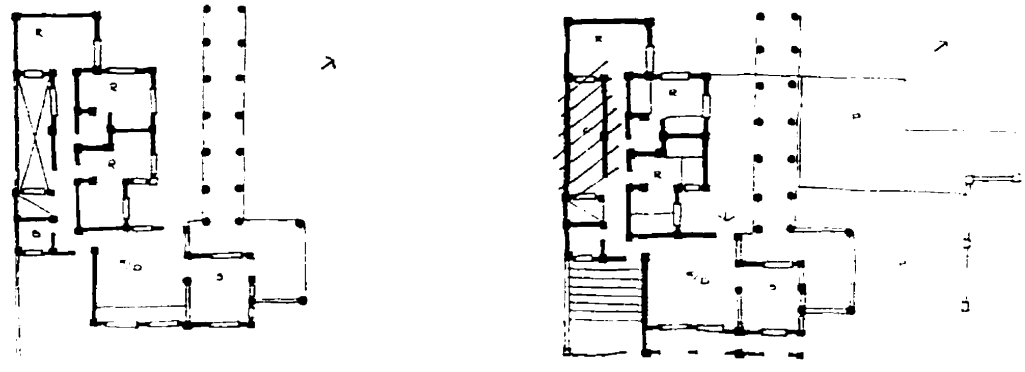

Fig.3.54 The Cosio house, before and after the enclosure of the garden

As an exception, the case of Ms. Cosio showed an interesting peculiarity. During the participatory process, Ms. Cosio expressed that she wanted a large family room capable of seating her ten children around a table. Thus, the original design included a kitchen which had the largest dimensions and the highest vault of any other house. Today, its use reflects that of the traditional Mexican kitchen, as described by Valenzuela Arce. The family spends most of their free time there, watching TV, cooking, eating, or just chatting. The *sala*, although fully decorated, is rarely used.

- Frontage of Houses

Another change undertaken by residents, reflecting the importance of the local culture, was the transformation of the frontage of the houses. Becker, in reference to mass housing projects, reminds us that "the desire to personalize the exterior of one's apartment is a logical way for residents to personally disassociate themselves from the overall image of the project" (Becker, 1977:52). In the Mexicali project, although the five houses differed from each other, their physical appearance conflicted with the residents' image of a traditional house.

Briefly, at first impression, the project's physical form resembled a group of Mediterranean dwellings, not only because of the blue and white colors chosen for the exterior painting, but also because of the inward-looking form with domed roofs. In many situations, residents complained about the houses' physical forms, saying that neighbors passing by would ask them if the project was for a future hospital or worse, if it was a bread oven (Fromm, 1984:47). In response, Alexander stated in an interview that the shape of the roofs was a response to the necessity to build a structure which was affordable and easy to re-build. Residents however would have considered it to be a wise investment of resources if they could have achieved a more traditional house form.

In reference to the significance of the *facade* in the Mexican context, Valanzuela Arce asserts that, "it is very important, not merely because of its technical use, but also for its symbolic meaning. The facade is the element which allows the family to present itself to

the world, saying *this is what I am*[41]". Even in squatter settlements, where people have no means for any type of construction, facades are always painted or decorated to make them stand out. The size of the house, and by extension, that of the frontage, is another important aspect, because even if the house is small, inhabitants will build up the facades, thus creating a fake height.

The Reyes family have, for example, built a false arch on top of the metal gate located at the entrance of the house. The arch is higher than the vaulted roofs. During the interview, they mentioned their pride at having built the arch, as they felt the house looked more important. "We wanted our house to stand out in the neighborhood!".

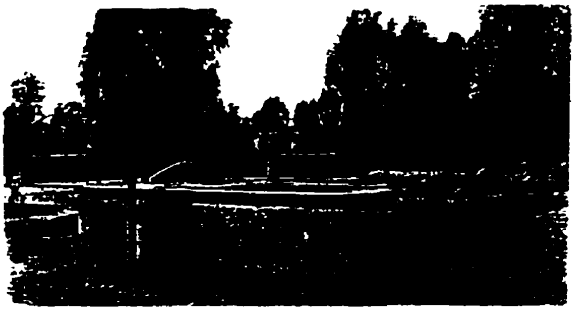

Fig.3.55 View from the street to the Reyes, Duran and Rodriguez houses

The Tapia family, unlike their neighbors, never modified the facade, although they declared they wanted to build a larger dome over the existing one to give the house a larger appearance. The Rodriguez family did build a new roof which followed the pitch structure style of a typical Mexicali roof. Ms. Rodriguez stated :

[41] Author's italics. They represent Valenzuela Arce's emphasis on this idea.

> Although I did not finish the closets of the house, I wanted to build the living-room roof first; it was more significant for me because it makes my house seem more important." She added "my friends always say that this is the *biggest* [42] and most beautiful house in the neighborhood."

In all five houses, transformations have followed the style of traditional types of roofs. In addition, facades, fences and decorative elements (symbols and family names) were painted in bright colors, in an effort to personalize the houses and to improve congruence with the traditional lifestyle.

- The Gradual Improvement of the Houses

The Mexican idea of "presentation to the world" through the appearance of the house, seen in the transformation of facades, is not only manifested through the use of space, or in the improvement of the physical form. It is also manifested through the sequence through which the changes took place. Cooper (1975; 1995), referring to the psychological theories of Carl Jung, explains that a house has two different components; its facade and its interior. The former reflects the self one chooses to display to outsiders; the latter is show only to those with more intimate connections. Hence, the houses reflect the way in which one sees oneself, through an intimate interior and a public exterior.

In the project, the importance of the exterior of the houses in contrast to the lesser degree of concern for areas where the general public is not invited, is reflected in the varying degrees of importance allotted to building materials. All five families began to make changes at the front of the houses working towards the back sections and showing a decreasing concern from the front through the living rooms, kitchens and finally, backyards. Residents applied the same sequence in their use of building materials, using the most expensive tiles and plaster at the front and less expensive materials as they worked towards the rear of the houses.

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[42] Author's italics. They represent the resident's emphasis on this word.

Fig.3.56 The Reyes' backyard

Fig.3.57 The Duran's backyard

The front of the Rodriguez family's house for example, indicates the particular emphasis and care placed on its appearance, as does the *sala* and dining room. Both rooms were completely furnished and painted recently. The kitchen, on the other hand, with its flaking paint on the walls, does not show the same degree of concern. Walls and floors in the corridor and the bedrooms are still as they were 20 years ago.

Fig.3.58 View of the front and backyard of the Rodriguez house

Similarly, Ms. Cosio had invested most of her funds in the *sala*, even though she declared that her "family never used it, since we use the kitchen even for visitors". The bathroom and bedrooms were hardly renovated at all. Another example was the house of Julio the barber, where the only room displaying new materials and a high quality of finishing was the *sala*. The rest of the house did not show any improvements, except for new paint on the walls and floors. In most cases, none of the the backyards were used as gardens. Residents used them for storage of unused objects, such as old beds, gas tanks, automobile parts and empty boxes.

- The parking area

"103 - Small Parking Lots" and "113 - Car Connection[43]" were the patterns intended to organize the parking areas. According to the "Pattern Language" they should not take more than 9% of the land in community. In the project, the corresponding physical form of these patterns was that parking was located beside each house, with exception of Ms. Cosio whose parking was located in the opposite side of the cluster.

The strong North American influence is evidenced in the excessive number of cars per family. During the layout of the open spaces the area for parking was planned for only one car per family. The increase in the number of cars was the cause of several changes and investments. It could be argued that the reason for it is practical. However, if one compares the number of cars in relation to the number of members per family, one clearly sees that the cars are not indispensable. As Alexander also observed:

> The Mexican relationship with the automobile is very interesting. The car is, in an almost deep sense, a necessity of life in a city like Mexicali. It is not easy, even the nature of that city, to live without a lot of wheels. So it is kind of natural and it is quite indigenous, even though it happens to be American.

The number of cars has made residents of the Mexicali project spend money on new parking areas when other improvements to the house could have been made. For

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[43] Pattern taken from *A Pattern Language*, 1977 pp. 503, 553.

example, the Reyes family built a new roof for the carport. The Duran have built a new shed to park one car at the back of the house, a second car is parked at the front; a third car is part of their plans for this year and there are only three members in the family. Ms. Cosio has torn down the main entrance arch to make the passage wider and pass the three family cars. The Tapia have also invested in a new carport for their car, now this area has been closed for one of their children.

In summary, the socio-cultural environment had an undeniable influence on the houses. The disparity between the physical form of the houses and the patterns selected for the interior layout has been shown to be incongruent with traditional Mexicali design. Alexander explains the reasons as follows:

> When we were building a project in Peru for the United Nations, I went with four people and we lived in Peruvian households at the beginning of the project. Each of us lived somewhere in the barriadas, around Lima, and only after we had been there for several weeks did we begin to understand the nature of the Peruvian house. In the Mexicali case, I just did not have the opportunity to do the same. The practical problem was, in a sense, more urgent. In other words, it is not something I would want to defend and say "I did it on purpose." So the truth is, of all the things I have built in different parts of the world, I think I probably knew less about the real nature of the Mexican culture, in the Mexicali project, than in the things I have done in India, Japan or Europe.

Furthermore, he states that because of the urgency involved in the construction, he did not take local culture into account in his patterns. But, he adds,

> There were some exceptions; for instance, the idea of cluster was taken from an ancient Mexican custom. So was the compulsory construction of porches intended to create a cool gathering place in an extreme climate.

With reference to this last statement, it can be questioned whether the inclusion of porches in the design implies a response to Mexican cultural characteristics, or are the enclosed porches with the inclusion of air conditioned units in the windows considered more culturally appropriate? In order to answer this question, perhaps it is necessary to make a distinction between what is really a part of the Mexican tradition and what is

imported from the United States, and by extension, to define what is the true culture of Mexicali. It is the author's belief that to arrive at a definition, it would be necessary to discuss socio-cultural aspects, however that goes beyond the scope of this research.

3.3 - Changes with Reference to the Production Process

In the Mexicali project, the production process was intended to closely connect houses with the residents by involving the latter in the design and construction process. The expectations were twofold: the first was to generate a house that would physically respond to the particular needs of each family; the second was to increase the spiritual sense of home (identification and belonging), an aspect which was lacking in traditional mass housing projects. This experimental process was based on the belief that the generation of houses had to be seen according to a scheme of piecemeal growth, where each aspect was independent in itself, but formed a part of the whole. To achieve such an endeavor, a "builder's yard" would function as a basic center in charge of the manufacture of building components, where a "step-by-step" construction system would be taught and where finances would be controlled. Residents would receive help solving technical and design problems through the direct involvement of the "architect-builder". These changes to the traditional system of production would allow each house to be adapted to the particular needs of the families.

Although the builder's yard accomplished its purpose during the design and construction of the project, its function was discontinued shortly after the houses were completed[44]. An analysis of the design and construction of the projects' transformations revealed that residents continued the process themselves, despite the yard's closure. There were no architects involved, nor was the builder's yard functioning as an information or help

[44]Today, the builder's yard remains partially empty, and houses a university professor. The abandoned part of the building shows evidence of decay. The builder's yard functions only as a gathering place for teenagers linked to drugs and violence.

center for the families undertaking house renovations. This section discusses the production process employed by residents with reference to the seven principles laid out by Alexander. Given the scope of this research, however, these cannot be analyzed in depth, for each of them constitutes a topic of research in itself. This section briefly shows that for modifications, the residents used a process changes that was already inherent in existing building practices.

a) The Participatory Process

The most eloquent proof of an existing building practice was the common cultural language used by the inhabitants in the project changes. In this regard, the validity of the participatory process through which residents laid out their houses could be questioned. Students from the University of Berkeley and the Autonomous University of Baja California, were in charge of teaching residents the use of the "Pattern Language", which Alexander hoped would be used by residents in future transformation projects. The discontinuation of the functions performed at the builder's yard however, led to the absence of the "architect-builder" who would have helped in the house renovations. Consequently, residents designed additions and transformations without using the "Pattern Language", following instead patterns of design based on the local lifestyle.

The motivation to transform their houses and to respond to contextual influences implies an uncertainty in the validity of the participatory process. When Alexander was asked about the degree of the residents' involvement in the design process, he replied that "the houses were totally laid out by them. They did not participate, however, in either the definition of physical form or the specific construction system used".

Students reported however, that the patterns were selected before the design started and were submitted to the residents only for modifications and adjustments. This contradicts the "Pattern Language" theory, which states that the process of pattern selection should

be undertaken by the users, as they are the ones who understand their specific needs. In the project however, residents were never consulted on the selection of patterns, nor was the surrounding environment analyzed to gather information on the real needs[45] of users. Hence, the participatory process was reduced to the residents' simple acceptance or rejection of the designer's ideas.

Other problems, according to a group of students who collaborated on the design process, were difficulties experienced by the families in the interpretation of the proposed patterns, and in simply expressing their ideas (Chavez, Hernandez, et al, 1978:12). In addition, Yruegas; Quoroz et al (1978:154) observed that the absence of design elements reflecting the truly cultural nature of users in the final outcome of the project, as transformations suggested, was caused by:

> - the inadequate design experience of residents, compared to that of the designer and helpers (students), which forced the residents to depend on them for advice on every decision.
>
> -the difficulty experienced by residents in imagining the house spatially, meaning that they required a lot of help in solving design problems.
>
> -the difficulty in understanding the proposed patterns, meaning that helpers made decisions for residents in order to satisfactorily conclude the experimental process.

Residents also agreed that the process of design was a difficult experience, leading them to relegate their decision-making power to students and architects. Ms. Reyes, for instance, mentioned that:

> "Students asked me what I wanted for my house and honestly, I had no images; all I wanted was my own home."

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[45]The term *need* includes elements other than those necessary for survival, i.e. shelter, security, such as comfort, socialization and self-expression. C. Cooper, in Lawrence, R.J. (1987) *Housing, Dwellings and Homes: Design Theory, Research and Practice.* New York: John Wiley. p.159

Although most of the residents seemed to have addressed the design process as a fleeting exercise, through making renovations and structural adjustments, they have demonstrated the value of their learning experience. Their descriptions of changes already undertaken, as well as of their future plans, reveal a clear ability to identify their needs and the various ways to carry out these plans. More specifically, this was demonstrated in the selection (conscious or unconscious) of contextual patterns. This, in the author's opinion, has to be credited to the participatory process to which they made an important contribution.

The project's changes, along with the students' and residents' opinions, indicate a conflict between the design process and the use of the Pattern Language. Nevertheless, it is important to highlight the fact that the houses and the created environment, albeit foreign to Mexicali, were beautiful, and the project was, indeed, humane.

c) Construction of Transformation

Local construction practices characterized renovations undertaken on the houses. These practices are a process of trial and error, where skills are quickly learned and transferred to others in practice. The technology of these practices is extremely simple, allowing residents with no experience in construction to apply them without expert help. Thus, a number of operations such as Alexander's 'step-by-step operation system' are carried out almost mechanically. A study of construction customs in Mexicali reports that "ninety percent of the houses in the *colonia*[46] surrounding the project were built by the inhabitants themselves with some aid from local masons" (Fromm, 1985:56).

[46]*Colonia*: Spanish word equivalent to neighborhood.

For the vast majority of residents, the house completion process is a lengthy one, due to the fact that building is done in stages. Most often, the process begins by inhabitants building a shack made of metal sheeting or cardboard, with the purpose of creating a basic shelter. A second step involves the addition of a new room to the original shack, or the upgrading of materials. Fromm identified four steps of growth that, according to her, can take as long as ten years. These steps are clear-cut, despite the fact that they appear to be intermixed. Fromm divides them into: shelter, growth, comfort and appearance (Fromm, 1985:53).

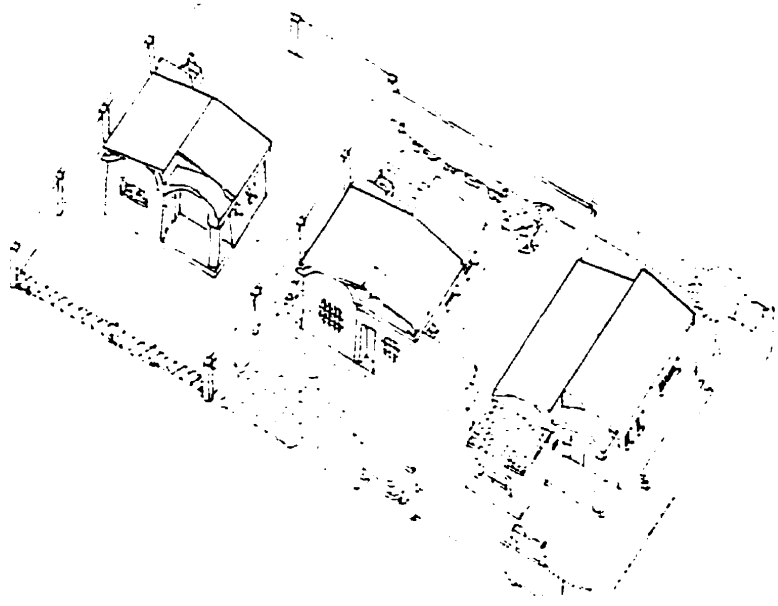

Fig.3.59 Process of growth in traditional Mexicali houses (Fromm, 1984)

In contrast to the Mexicali way of building, Alexander's step-by-step system of operations describes the house construction in only one stage. To achieve a harmonious adaptation of houses, the process essentially proposed an incremental sequence of operations to be completed within a *short* period of time. The innovative construction system was based on technology that used local materials and resisted the frequent earthquakes and the harshness of the desert climate. Each operation was directly related to the patterns selected and these could be changed during the building process. Alexander comments on this issue in the following way:

> In the newly invented technology we introduced in Mexicali, our emphasis was not on using more indigenous materials, but on finding techniques that would lend themselves to an entirely different way of building in which the building becomes whole as it evolves, and in which subtle and harmonious adaptations can be made during construction and after.

The structural system itself consisted of a floating slab foundation, round and square concrete columns made on-site, and a beam system linking them. Walls were made of adobe block infill, with wooden frame windows. The two-layer roof permitted the removal of one of the layers to build a second story. The interior layer was made of woven wooden baskets in a diamond lattice; the exterior layer, on top of it, was made of a light concrete mix and a coat of finishing.

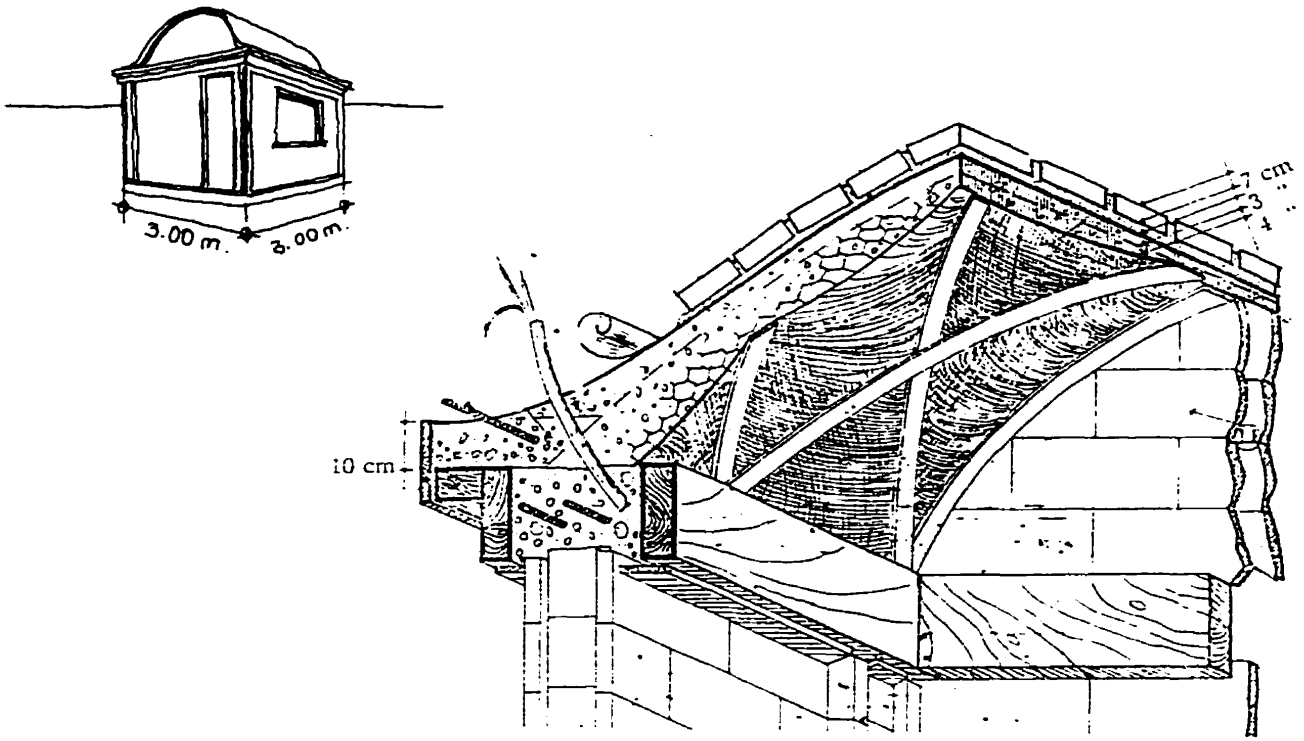

Fig.3.60 Roof structure of the Mexicali project houses (Yruegas, 1978)

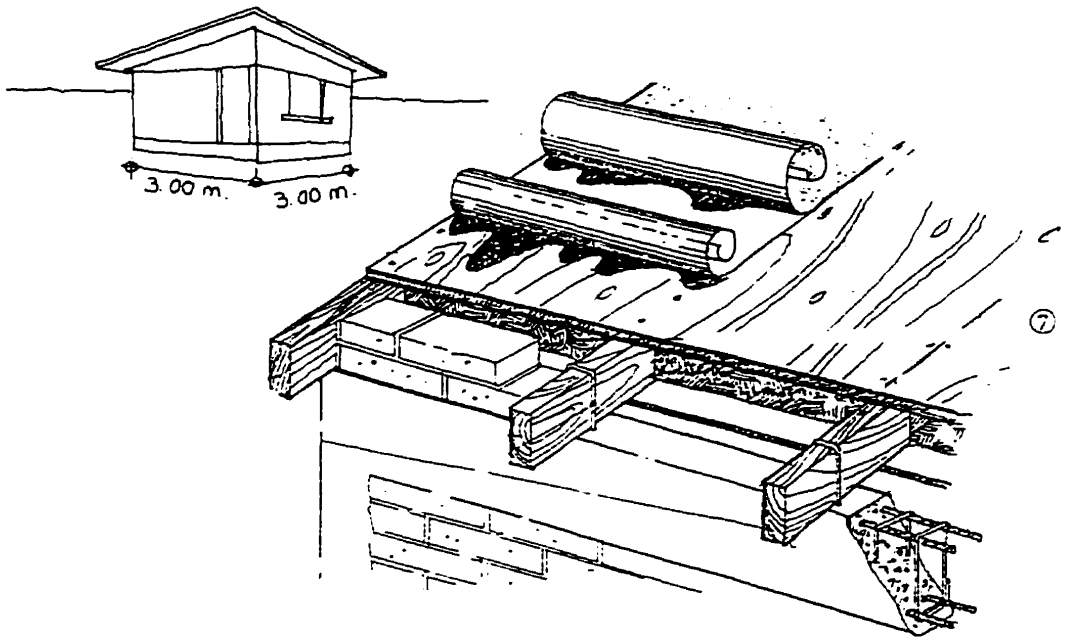

Fig.3.61 Traditional roof structure (Yruegas, 1978)

In the project's transformations, the on-site fabricated concrete blocks for walls were replaced by commercial bricks, and in some cases, by wooden panels[47]. Likewise, vaulted roofs were substituted for roofs made of a pitch-type wooden structure covered with metal sheeting. Building materials were not produced by residents, but instead were obtained at local dealers, allowing for their easy replacement at low cost. Thus, the builder's yard was replaced by a far more practical way of obtaining *locally -produced* building materials. In addition, inhabitants did not directly participate in the construction process, as they could afford help from the local builders. Thus, transformation continued a traditional, piecemeal growth pattern in direct relation to the families' financial circumstances.

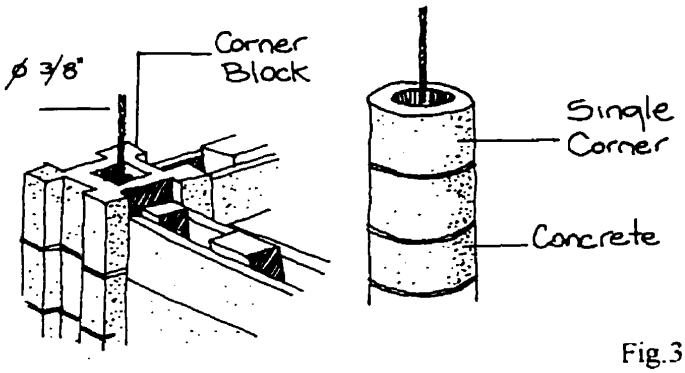

Fig.3.61 Detail of houses' corner and single columns (After Yruegas, 1978)

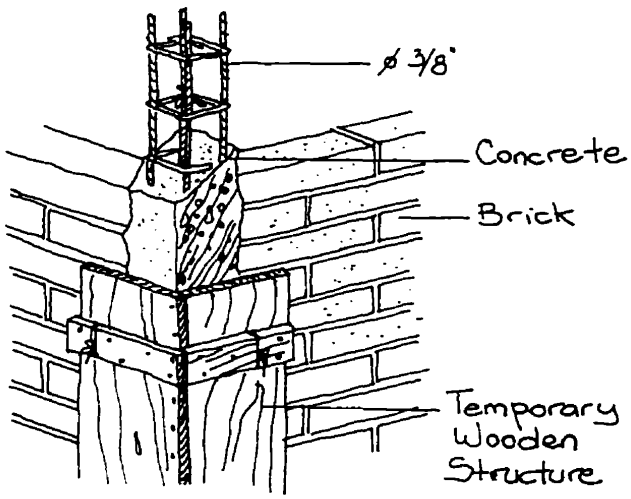

Fig.3.62 Traditional corner columns (After Yruegas, 1978)

[47]During an interview, Alexander argued for the authenticity of the wooden panels as part of the Mexican construction custom. The author agrees with his observation, recognizing these as an established North American influence.

c) Environmental Quality Today

Undoubtedly, original construction in the project is of better quality than that of today, particularly in the finishing and the details. At the structural level, residents expressed satisfaction with the old construction, saying "we have lived through three earthquakes and the houses stand intact". Ms. Cosio's house also went through a fire and she only had to replace the ceiling and the wooden window frame. However, despite the fact that the transformations followed local patterns, they have produced extensive environmental deterioration. For instance, the windows of Ms. Cosio's house were blocked by air-conditioning units installed in them. The transformation of the small backyard located in the middle of the house into a new closet, has obstructed the only daylight access to the interior.

Fig.3.63 The enclosing of the garden in the Cosio house

In the case of the Rodriguez's house, the closing-up of windows and the addition of the front porch has considerably reduced the amount of interior light and ventilation. Walking down the corridor that leads to the bedrooms, one experiences darkness and a feeling of isolation .

Fig.3.64 Addition of a living room in Rodriguez house

An extreme case is the bedroom built for the Durand's teenage daughter. This room, built inside the living room, completely lacks direct ventilation and illumination.

Fig.3.65 Addition of a room *within* the living room in Duran house

The question of environmental improvement through "harmonious growth" as the aim of the designer must be addressed. Looking at the five houses today, it is doubtful that it was ever achieved where physical transformation is concerned. Although residents made the necessary transformations to suit their changing needs, in many cases, they were not the optimum choices. Alexander, when asked for his opinion on what kind of transformations he imagined, and if he had planned how these would take place, answered:

> I imagined the project blending more and more into the general environment. What I hope is that, with every passing year, they are taking possession more and more profoundly. We assumed that they would change the project, but we did not plan how it will change. I think that the idea of 'flexible design' is complete nonsense, because it is a very rigid way of trying to control something that is inherently much more organic. So, in other words, buildings will change inevitably, no matter what you plan.

Alexander reacted negatively to changes made to the Reyes' residence, with regard to its environmental quality. When questioned about how he would evaluate the manner in which the changes enhanced or diminished the quality of the environment, he replied:

" I evaluate everything according to *if*[48] it has a living character. Does it have more or less living character than before?" Hence, by observing the transformation and additions, and in reference to Alexander's measure of physical transformation, it can be assumed that the quality of the environment has been considerably lowered.

An explanation for this failure may be derived on the one hand, from the fact that the project was discontinued, and with its end, the idea of implementing a new production process, creating a community and consequently improving the environment also came to an end. On the other hand, the design and building system of the renovations undertaken by the residents had to accommodate an existing and completely different production system. Houses in the neighborhood that had followed the traditional production process showed evidence of a congruent adaptation within the house itself, and with the environment. Perhaps if the Mexicali project's transformations had followed the exact initial production process, these problems would not have occurred.

[48]Author's italics. It represents Alexander's emphasis on this word.

SUMMARY AND CONCLUSIONS

The principal goal of the Mexicali project was to demonstrate an alternative to the traditional construction method used for mass housing. It attempted to re-organize the system of control of the production process, revising the role of the those involved in it. To do so, a close relationship had to be established between the residents and the architect-builder, and their joint participation in the process, that would ensure that houses would reflect the different spiritual and physical needs of each resident. This, as opposed to traditional mass housing, would enhance residents' sense of identity and of belonging. Although only five houses were built for the project, it was hoped that the community would grow spontaneously as time passed.

The result, after twenty years of occupancy, has shown a significant amount of renovations and transformations to the houses, indicating a mismatch between what the intentions of the architect and the needs of residents. The present study shows that the production process as applied, despite the unquestionable value of the experiment, was alien as a building process for the residents of Mexicali. A brief critical analysis of the seven principles follows.

The principle of the **architect builder** proved to be an effective method of personalizing the houses. In the Mexicali project, it certainly had the effect of including details that in other mass-housing situations would have not been taken into consideration. However, the participation of the architect-builder as a permanent factor during the design and construction of houses may not be realistic, since this would significantly increase the final cost. As a means of producing large quantities of houses in order to compete with the traditional mass housing market, the inclusion of a professional with such high degree of involvement becomes unthinkable. Residents in the project did not seek expert help when designing their renovations, but asked only the advice of local masons and relied mainly on their own capacity to identify what was needed.

The principle of the **builder's yard** can not be *properly* analyzed since its functions ceased once the initial building process was completed. However, the extent of the renovations that took place suggest that the builder's yard may not have been useful with regard to the manufacture of building materials, since residents knowledgeable of the process opted to obtain them from local dealers. With regard to the design and construction, residents employed a self-help system, using the expertise of those from outside the community. This resembles the builder's yard ideal, with residents replacing the assistance of the builder's yard for that of neighbors or friends.

The principle of the **house cluster** have accomplished an important change as to the principle of participatory design. Residents had the opportunity to choose the location of their houses on the site, an opportunity seldom available in traditional mass housing. However, the cluster arrangement has been a failure, as only three years after completion of the project, the land was subdivided. This pattern could perhaps have worked in perhaps in a European society, but in the Mexicali context, a common land organization would have required an idealistic input from the community.

The principle of the **individual house design** has shown, through the renovations undertaken on the houses, that the participatory process was highly controlled, and thus the families' input on the design was restricted. The patterns selected for the interiors, compared to those that resulted from the inhabitant's transformations, were evidently foreign to the local reality. In transformations residents have exercised freedom of choice, with the result that the patterns selected show a direct reflection of the local culture. The residents' design process presented similarities to the proposed use of the "Pattern Language".

The principle **system of operations** resulted in an effective alternative to the concept of standardization of houses. Structurally, it accomplished its goals, allowing for adjustments during the process of construction and providing resistance to earthquakes and heat. To re-apply the process, however, would be difficult without continuous expert

help, since the steps are extremely complicated for a lay person to follow and carry out. In addition, the principle cannot be achieved if any or all of the other principles do not work properly. In houses transformations, they were not used by residents; instead, a much simpler set of operations, based on the utilization of local materials, labor and time-construction replaced it.

The principle of **cost control** allowed each budget to be fixed on an individual basis. When dealing with a small number of units to be build at a time, it is possible for each house to be designed exactly as it should be. But, when the number of houses increases, the application of this principle becomes extremely time-consuming and expensive. The project's transformations have shown that, as part of the self-help approach, a similar piecemeal process has been carried out by the residents, with changes made gradually, over a long period of time, according to the family's income.

The principle of the **human rhythm** of the initial participatory process certainly had a positive effect on the residents' relationship with their houses and the environment. This assumption is confirmed when one observes their interaction with the houses through the adaptations that were made as needed, and through the fact that the same five families still remain in the project, even though they all had the opportunity to leave it.

This research revealed that while incorporating locally inherent production processes, the transformations observed utilized similar principles as those proposed by Alexander. This implies that a set of local principles were already present in existing building practices. If one compares Alexander's seven levels of control to those utilized by the residents, it would be possible to trace significant similarities between them. This does not imply that principles were carried out in the same way since their difference lay in the fact that those of the Mexicali residents' process followed local traditions.

Essentially, this leads one to assume that the incongruency between the architect's intentions and the residents' needs resulted from the fact that existing local building

processes were ignored by the designer. In this regard, it is important to highlight the fact that the intrinsic principles proposed by Alexander have been proven to be useful and valid as housing theory. It is fundamental, however, for these principles to be adapted to the context in which they are to be used.

The findings in this study may be helpful in provinding ground work to be based upon. Perhaps a continuation of Alexander's theory could find its path by initiating studies to create a set of rules or principles which incorporate the local lifestyle and aspirations of future users. The urgent need to find viable solutions to current mass housing problems indicate that further research to successfully integrate the essence of the local people and the process of production, is essential.

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APPENDIX I

Sample of Questionnaire and Field Survey

Interview with the Tapia Family

Donde vivia UD antes de vivir aqui?

Era una casa donde vivia mucha gente, como un vecindad, yo rentaba. Tenia una recamara una sala cocina y un baño y habia dos niñas eramos cuatro.

Como se entero del projecto?

Por mi marido que trabajaba en el Isstecali.

Que le dijeron sobre el projecto?

Pues, nosotros lo que queriamos era una casa, y ya. No le hacia la forma.
Nos parecio que estaba bien el projecto. El precio, como lo ibamos a pagar, como iba a estar la casa...

Ud estaba de acuerdo en venir a construir?

Si.

Se acuerda como fue el diseño? Que imagen tenia Ud de casa, que se habia imaginado?

Como la casa donde yo vivia era muy oscura, yo queria que tuviese muchas ventanas. Por eso esta casa tiene un monton de ventanas, casi 11. Primero diseñamos la casa, como iban a estar los lugares.Ud se imagino donde iba a estar la cocina, la sala, etc?
Junto con ellos pensamos como iba a ser todo, pero juntos. Con los asesores, ellos nos dician: Ud piense donde quiere una ventana un comedor, un pasillo.

Le fue sencillo la tecnica, se imagino como iban a quedar los lugares?

Un poquito dificil. Yo cerraba los ojos y no me imaginaba nada, hasta que poco a poco entre los dos, y entre todos...

UD estuvo en la construccion?

Si, yo traia mi niña chiquita en portabebe.

No se canso?

Como duro casi un año la construccion, si me desesperaba, entonces cunado yo no venia le preguntaba a mi marido: cuanto han avanzado, etc.

Se hizo algo que Ud. no quisiese?

No, lo chiquito de la sala. Ademas que esta al raz de la tierra, porque asi se mete mas igual la lluvia.

Ud estuvo de acuerdo que se hiciese el area comun?

Si.

Que le veia de bueno o malo?

Si tuvieramos un patio comun.

Ud cree que hubiera sido igual si hubiese tenido su casa con su propio patio?

En ese tiempo pensaba que era mejor asi, que todas las familias estuvieran juntas..., y era un patron que ellos tenian, y teniamos que ajustarnos al patron.

Ninguno se opuso a que se hiciese?

No.

Cuanto tiempo paso desde que se hizo el primer cambio de la casa?

Como 10 años. Lo primero fue la barda. Antes habiamos puesto piso de tales, las paredes estaban mas rusticas, pintamos.

Despues de la barda Ud nota que su casa cambio?

Antes no podiamos salir al exterior porque habia muchos vagos grandes y aqui habia dos niñas... entonces ya no se podia usar con tranquilidad. entonces despues de la barda teniamos mas privacidad. Cambiamos la puerta de lugar.

Cuanto usaba el patio?

Si lo usaban mucho.

Cuando cerraron donde jugaban?

Aqui en el patio que nos quedo.

Cuando diseño, llamo un arquitecto?

No, nosotros mismos pagando mano de obra.

El arquitecto le sugirio algunos cambios?

No ellos no nos dijeron que no podiamos cambiar, cuando ellos se fueron cada uno podia hacer lo que quisiera con sus casas.

Esta conforme como se siente con los cambios?

Bien, esta mas amplia. Antes lo que ahora es el estar era la cocina junto con el comedor. Despues hicimos el comedor, el actual comedor era la sala y la actual cocina era el porche. Despues de contruir la barda seguimos con esto, como dos años despues. Cambiamos la cocina y despues hicimos el porche.

Porque no siguio el mismo sistema de la casa?

Porque ya no habia materiales, los ladrillos eran hechos especialmente aqui para las casas.

Porque no construyo Ud.?

Por que no tenia tiempo por mi trabajo.

Si tuviera la oportunidad de volverla hacer, la haria como esta, la cambiaria haria otra completamente distinta?

Si, la dejaria mas grande. El problema es que esta muy reducida, por eso vamos a ampliarla mas para atras.

Esta satisfecha con la apariencia de su casa? Como se ve?

Si.

Que dicen sus amigos?

No les gusta.

Si ud. tuviera alguien que le comprara la casa la venderia?

Si, yo creo que si. Para comprar otra mas grande.

Distinta?

Si hubiera modo de hacerla igual la haria.

Y si no hubiese, la venderia?

Si.

Que opina de su barrio?

Que esta muy bien. Como tengo las dos escuelas es muy tranquilo, mas que si yo tuviera vecinos aqui el frente. Nunca me robaron...

Su barda es en ladrillo? Porque no uso alambre?

Para que no se viera.

No le quedo la casa mas oscura?

No creo, lo que si es que no se dan plantas en el jardin, no da mucho sol atras.

Cuando se hizo la division de terreno de atras, fue de comun acuerdo?

Si preguntamos. Nosotros fuimos los primeros en bardear.

Que opina sobre las viviendas del Infonavit?

Que estan bien chiquitas. No creo que una familia pueda durar mucho.

Que diferencia ve UD.?

Que estan muy chiquitas, apenas entra una cama en las recamaras. Bueno en la mia tambien, pero es una cama grande. Yo pienso que las recamaras de las viviendas del Infonavit estan como el tamaño de la recamara de mi hija. La cocina tambien esta mas chiquitita que la mia.

Se iria a vivir ahi?

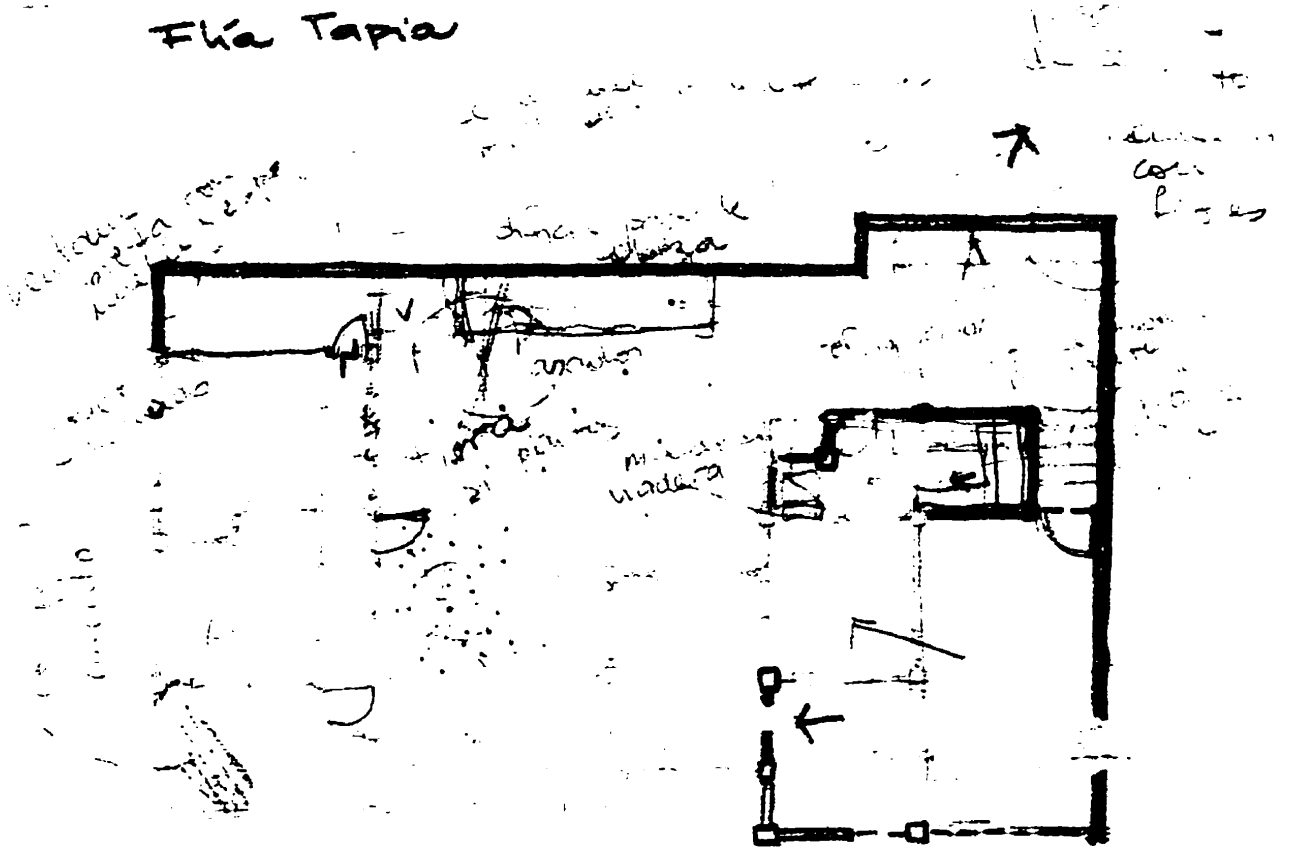
Unicamente si tuviera necesidad.

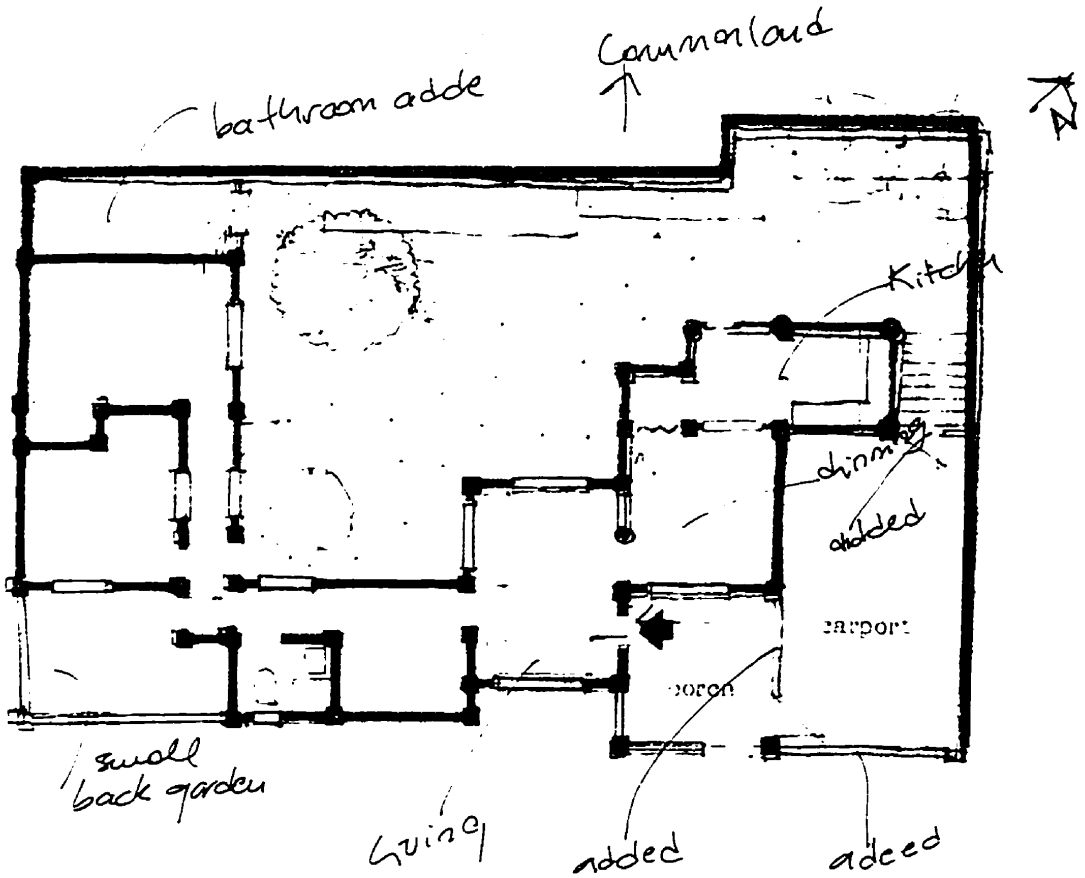
La casa y la temperatura?

Esta mal, es muy fria en el invierno.

Cuantas personas vivien en esta casa?

Cuatro. Cuando vinimos habia dos niñas, despues vino otro niño y ahora una de mis niñas se caso.

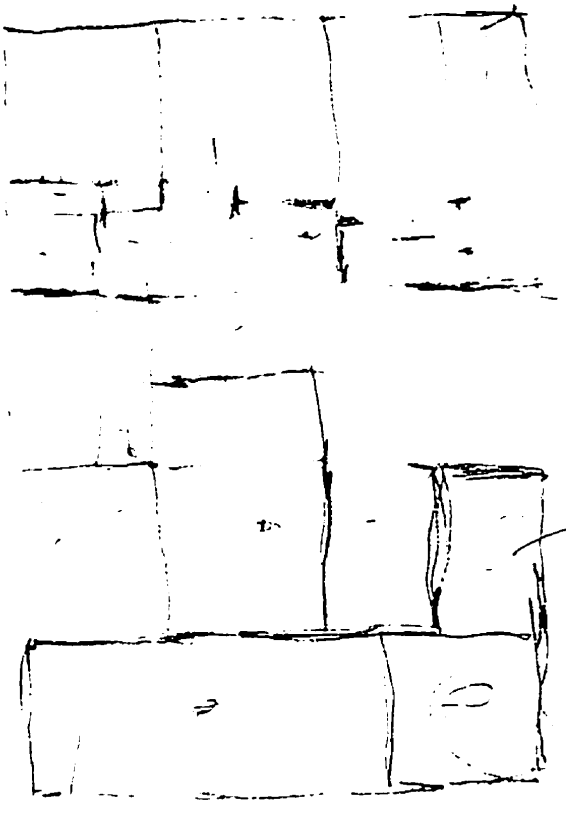

Fila Tapia
1984



1984

Entrance changed, new porch and carport

16.A



- what first comes to mind when you describe your home?
- Would you sketch it?

great emphasis placed in Ktchen and dining areas

house drawn as it is today

Sketch 2
Ms. Tapia (45 years old)
March, 1996

Interview with the Duran Family

Donde vivia antes de mudarse aca, como era su casa?

Como rentaba no tenia casa propia.

Como era de grande?

Era mas chica, tenia cuatro habitaciones. Sala comedor, la cocina y una recamara. Viviamos mi esposa y yo.

No era suficiente el espacio?

Si, para mi esposa y yo, eramos solo dos.

Y cuando se mudaron aca cuantos personas eran?

Nosotros y un niño, hoy somos tres porque mi esposa fallecio. Aca tengo sala, comedor, cocina, dos recamaras, y el porche. Pero ya lo agrandamos, aca donde estamos era la sala. Esta fue siempre la entrada.

Hizo Ud. alguna ampliacion en la otra casa?

No, vivi solo un año.

Como se entero del projecto?

Porque mi esposa trabajaba para el gobierno del estado, entonces ahi le dijeron si queria una casa habia ese projecto de hacer 55 casa para trabajar desde ahi, y para entrar al projecto habia que trabajar (construir). O sea no se las iban a dar asi hechas. Entonces le dije a mi esposa, yo trabajo, yo trabajaba alla en el pueblo y construyo asi no pagamos mano de obra. Entonces el estado les presto para el material, catastro nos facilito el terreno, entonces nos pusimos a trabajar para no tener que pagar mano de obra. Los dos trabajabamos, yo trabajaba medio dia y ella todo el dia en el gobierno.

Cuando vino, se acuerda como fue el proceso de diseño? Quien tenia las ideas, el arquitecto Ud.?

El arquitecto era Christopher que trajo arquitectos de otros lado y estudiantes de aqui, nos ayudaron todos ellos, nos pusieron dos estudiantes en cada casa y nosostros dos. Dos estudiantes para cada casa. pero primero hicimos el otro edificio de alla, pero alla eran ellos nomas.

Cuando vinieron los estudiantes le traian los planos listos?
No se si ellos los traian o Christopher se los dio.

El plano estaba hecho?
Si.

Y ellos le preguntaban donde quiere la sala y despues ellos lo cambiaban como Ud lo queria?
Si, por ejemplo ellos decian: quiere la sala aca, o la cocina cerrada...Pero pues, no nos imaginabamos como iba a ser la casa, verdad?. Por ejemplo estabamos aqui, y nos decian vamos a suponer que este cuartito, dibujaban un cuadrito, y decian que Ud. despues dobla y asi. Yo de plano no me lo imaginaba, entonces le dije, sabe que? Ud son los que saben mejor le damos la oportunidad de que ustedes hagan todo a su modo. Y ellos decian: no, Ud son los dueños. Y yo decia: Si, pero no tengo ida como va a quedar la casa y asi...*Y continua* ...Y esta va a ser la sala, la cocina, la recamara y el baño y un pasillo asi para alla..., pero casi casi le debemos la idea a ellos.

Ellos dibujan en el piso y despues le hacian recorrerla?
Si, exactamente.

Y cuando se hizo el patio del medio Ud estaba aca, Ud opino como iba a ser?
Si, yo estaba, ahi en el medio es el area comun. En ese tiempo habia mucho chiquillo y a mi me parecio bien. Pero empezaron a crecer, pero la verdad la verdad, la señora esta de aqui del fondo tenia mucha familia. Era la mayoria de ella, fueron muy desastrozos. Y despues la idea de mejor cercarse uno... porque ya no aguantabamos.

Que paso? Quien empezo a cercarse?

El primero fue la familia Tapia. Tuvo problemas con los de atras, ya se moria. El ultimo fui yo.

Cuando empezaron a dividirse, se reunieron todos y dijeron vamos a dividir o fue pos si soslo que comenzaron?

El primero no dijo nada. No lo comento con todos, me lo comento a mi y me dijo:
No me interesa el area comun ni nada, yo voy a cerrar aqui para que no haya paseadera, y el no agarro nada del area comun. No nos reunimos todos para hablarlo.

Y Ud. agarro algo del area comun? Alguien discutio de cuanto iba a agarrar?

No, porque aqui teneneos en la parte de atras que era un estacionamiento para tres carros, el de la viuda el de nosotros y el de esta señora. Ella me dijo yo para que quiero el pedazito ese, agarralo para ti ese. Entonces respetando el de la otra señora, y le deje toda la entrada para ella. Ya no me interesaba mas, para estar a gusto sentado darle todo el area comun que se quede con ella.

Ahora se siente mas seguro?

Si.

Antes usaba el espacio comun?

No, casi no. como lo le digo, la familia de ella era muy problematica.

Porque Ud. uso para cercarse solo un alambre y no uso tapia o ladrillo?

No use ladrillo porque yo quiero que este ventilado, y si uso ladrillo me va a tapar, va a quedar muy encerrado.

Ud. se opuso a que hicieran el area comun, se le pregunto si Ud. queria? Ud estaba cuando se la diseño?

Si, como le vuelvo a repetir estando los chamaquitos creiamos que iba a esta padre pero no funciono.

Ud cree que es un problema de este grupo si poniendo otra familia funcionaria? Porque cree que hubo problemas?

Pues no creo y o creo que hubiera sido igual, porque habiendo muchas familias proque siempre hay diferencia en el trato de las personas. Cada quien tiene sus idea, no no creo que hubiera funcionada de todas maneras con esta o con otra familia.

Conoce Ud. un caso donde haya funcionado?

Pues no, siempre lo que he oido nunca ha funcionado. Por ejemplo ahi, decian quiero que mis hijos esten ahi o alla y no podemos decir nada porque a ellos les gusta eso y ahi comienzan los problemas. En todas partes lo que he oido no ha funcionado.

Del diseño de la casa se hizo algo que Ud. no quisiera?

No, no hubo problemas porque estaba bien diseñado. No pusimos ninguna resistencia.

Tenian Ud alguna idea antes de venir aca de como querian la casa?

No. Porque lo unico que queriamos era tener una casa propia, nosotros no sabiamos de eso de poner esto aqui o alla.

Y ahora que la tiene le cambiaria algo? Le hubiera gustado que fuese de otra manera ahora que vive los espacios? Funcionan bien?

Si, le agrandamos nomas, no por que no funcionara bien. Porque hubo necesidad de emplear, pero sinceramente esta muy bien estamos muy a gusto, estamos muy contento.

Alguna vez tuvo la posibilidad de venderla? O alguien se la quizo comprar?

No, estoy muy comodo.

Que es lo que mas le gusta de la casa?

La fisonomia, el material, la construcion muy fuerte, y otra cosa es que de estas no hay, no mas estas hay.

Que encuentra diferente con las otras casas del barrio?

Pues diferente completamente...,el material, la forma en que estan hechas...

Que dice la gente de su barrio de su casa?

Les gusta mucho.

Han venido a preguntale sobre su casa?

Si pero yo no les digo nada, ...como hiciste aca? me decian y yo respondia: yo no la hice yo trabaje, pero no la hice.

Porque no les cuenta?

Porque no quiero que tengan una igual. Hay una por ahi que me copiaron, pero no es lo mismo porque no es el mismo material y no esta bien por dentro. Pues la hicieron mas o menos.

A donde fue eso?

Aca, tres cuadras mas adelante, despues del gigante. Pero no esta igual, es la unica que he visto asi.

Cuanto tiempo paso desde que hizo el primer cambio de la casa?

En el 93 amplie porque me hacia falta una recamara mas para mi hija, y aqui como la use como barberia, aqui era la sala antes. Donde era el dormitorio de mi hija lo usamos ahora para guardar cosas. El que era porche lo hice cuarto para mi hijo en 1992.

Usaba el porche antes?

Si, para sentarnos ahi para platicar un rato, ahora platicamos abajo de los arbolitos.

Cuando hizo los cambios quien los contruyo?

Contrate mano de obra.

Porque no lo hizo Ud.?

Porque no se me dio por aprender, no me interesaba aprender. Lo hicimos yo y mi esposa, pero no aprendi.

No se le ocurrio que quizas despues iba a hacer ampliaciones e iba a utilizarlo para que saliera igual? En ese momento no penso que iba a agrandar la casa?

No porque nosostros ya habiamos planificado la familia...

Y el arquitecto le dio algunas ideas de como cambiarlo, o le dijo que no lo cambiase?

No, no me acuerdo, pero yo tampoco pensaba cambiarlo.

Piensa cambiar algo?

No, los muchachos ya estan estudiando y yo estoy viejo.

Cuantos hijos tiene?

Dos uno de 19 y otro de 21.

Tiene en planes otros cambios?

No pienso cambiarle nada, estoy bien a gusto asi, ademas no hay dinero para cambiarle nada.

Y si tuviera el dinero lo cambiaria?

No.

Cuenteme sobre su barrio...

Es un barrio bastante tranquilo, no tenemos problemas.

Alguna vez le robaron la casa?

Si, me han robado.

Por la gente o por la casa era insegura?

No, la casa no es insegura.

Despues de que se dividio el patio, Ud. siente que cambio la forma en que se la usaba?

Si cambio, cambio bastante. Hay mas seguridad, porque la ampliacion que le hize es de lado a lado y ya no hay entrada por ahi.

Y en el uso de los espacios?

Antes de ampliar me sentia mas a gusto porque tenia mas espacio, florea, arboles..., se estaba bien a gusto.

Y el patio de atras?

Si lo extraño.

Tenia plantas?

Si tenia jardin, tambien al frente tenia agarrado pero como tenia que meter el carro... *(el carro iba antes atras ahora va uno atras y el otro adelante).*

Si tuviera que mudarse le gustaria otra casa como esta?

Si, quisiera otra igual, de veras estoy bien a gusto, por ejemplo los temblores que hubo no le han hecho nada. Parece que el sistema de los hierros pegados con el piso son bueno, pues necesita voltearse la casa para que se caiga.

Que opina de las casas del gobierno de Infonavit?

Estan bonitas pero me parecen un poco incomodas, porque estan muy chicas, los baños muy reducidos, y ademas la hacen muy rapido. El albañil dice que en un ratito la hacen y luego al primer temblor se rajan.

Y la gente que vive ahi esta contenta con su casa?

No, y dicen que que no es seguro estar ahi, estan por la necesidad de estar ahi. La verdad es que de todas las casa que han hecho, estan son las mas seguras. La gente pasa y se queda mirando y se bajan y preguntan como la hice pero no les digo como la hice. Les hecho mas mentiras que nada, (esa que hicieron copiando esta se ve muy aspera muy toscona.

Y el color?

Pues lo hemos cambiado de color muchas veces, nosotros elejimos el color blanco porque se ven bonitas blancas, contrastan con el ladrillo de arriba.

Y las bandas azules?

Yo le dije a Christopher que le pusiera azul y le puso nomas. Nosotros le ayudamos a construir la casa del frente.

...El piso le pusimos loseta al piso de la entrada y al piso de la casa lo pintamos de rojo pero no prendio, se perdio. No le pusimos piso por falta de dinero. La ampliacion del carport es mi estar ahora mi sala con techo de madera y contrate mano de obra. El cuarto de mi hija esta aca. (cerramiento de madera)

Continuacion del questionario con Lidia Duran de 19 años

Tu que viviste toda tu vida en la casa, cual es tu impresion, te gusta?

Si me gusta mucho.

Le cambiarias algo, crees que le falta algo?

A lo que fue la casa en el projecto original no, a la que la que conoci desde niña no. A la de ahora me gustaria tenerla como estaba cuando recien la hicieron, porque por ejemplo le falta luz, hicieron el cuarto y taparon la luz de la ventana, en el cuarto de mi papa

taparon la ventana para el cooler, en el pasillo pusieron el tocador. Entonces es como que falta luz, entonces me gustaria acomodarla con al misma luz que tenia antes. El cuarto tiene este con las cosas asi tiene como tres años, a mi me gustaria dejar las cosas en otro lado

Tu que usabas la parte de atras, sientes alguna diferencia ahora que no lo tienes?
Si, porque antes salia porque todo el patio y tenias algo que hacer, habia una banqueta de ladrillos que yo usaba y luego con el paso del tiempo se fue quitando para poner otras cosas. Por ejemplo habia patio donde yo tomaba sol ahora ya no.

Habia una fuente?
No, hicieron una para mojar la estructura nomas luego la quitaron.

Si te fueses te llevarias algunas ideas de esta casa?
Si, por ejemplo esta parte de la casa es fresca en verano y caliente en invierno, entonces me llama mucho la atencion que la casa es muy modesta. Hay casa que son calientes pero porque tienen alfombra, cortinas, muebles. Pero esta es una casa muy normal, por ejemplo no tiene cortinas, si hay, estan siempre corridas. No se necesitan.

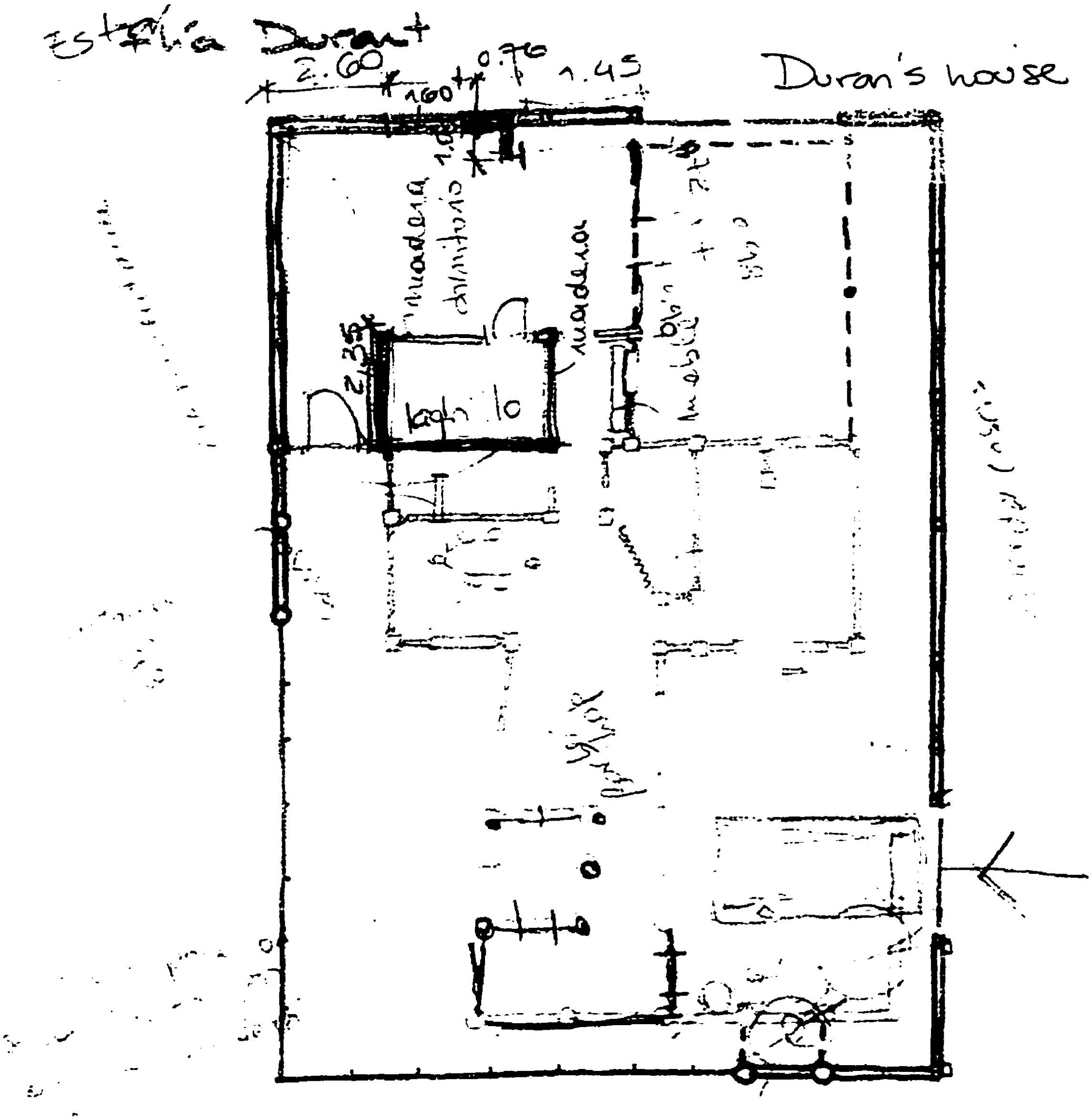
Y con el uso de la casa?
Esta era la sala, quedaria muy bonita como sala pero ahora lo usan para trabajar. Otra cosa es el cuarto de mi hermano, que era el chiquito pero ya no cabia y apareci yo entonces lo tuvieron que mandar para alla, donde era un porche. Ahi yo jugaba mucho, eso tampoco tiene mucho tiempo, nos poniamos a platicar, quedaba como un jardin como un quiosko. Esas ideas originales son las que me llaman mucho la atencion, me gustan mucho. Pero ahora ya no se pueden llevar a cabo, lo tuvieron que modificar y cambiaron todo esto.

La gente que dice de tu casa?

Que es muy graciosa, que se parecen a los "Pitufos" con las cupulas. La mayoria me ha dicho que esta bonita. Lo que pasa es que esta muy descuidada, pero la idea original me hubiera gustado que quedara, que no hubieramos tenido que tapar las ventanas, que quedara el patio como estaba.

El porche lo usan ?

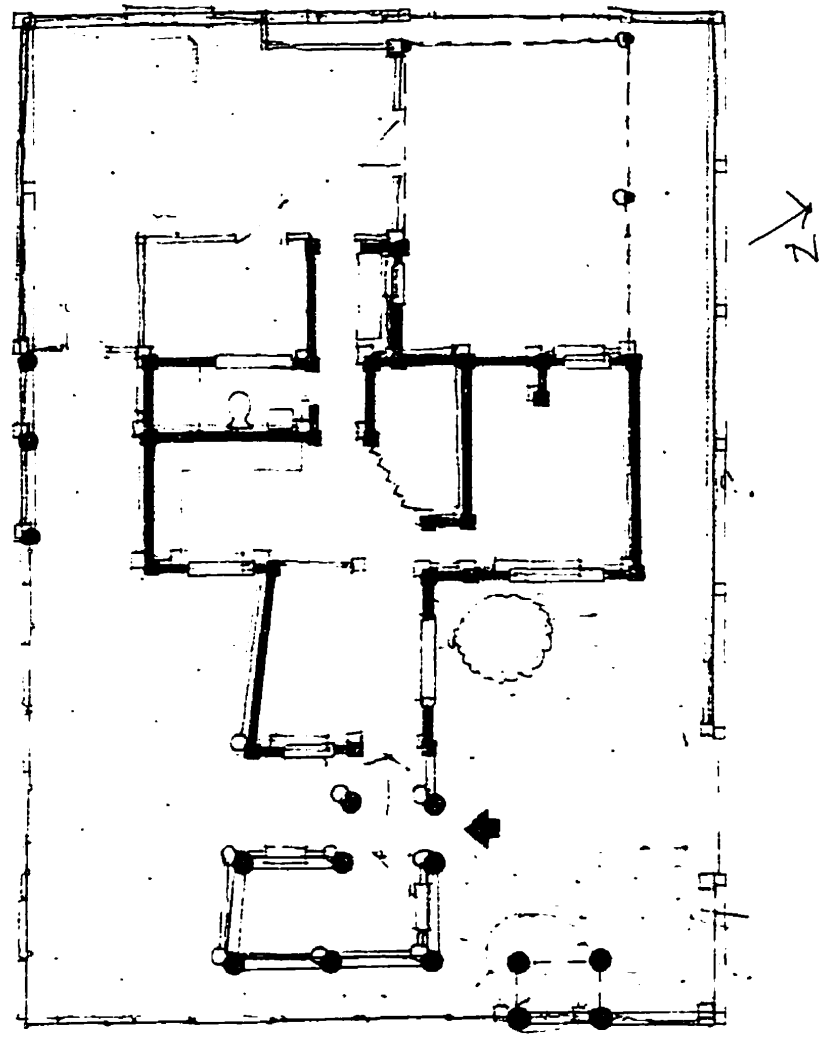
Si para sentarse, antes eran mas larga y era mas divertido ponerte a jugar ahi, por ejemplo antes quedaba mas resguardo. Cuando eramos chiquitos yo y mi hermano jugabamos ahi y habia una barda que luego tiraron cuando modificaron *(la de la vereda)*, pues no saliamos de ahi, no como ahora que un niño ve la puerta abierta y sale a la casa, nosotros no. Nosotros veiamos la calle sabiamos que habia carros pero jugabamos adentro. Esa es una de las ventajas que yo le miro, en ves de abocarte a jugar en la calle, te abocabas a jugar con los vecinos en el patio, o en el porche este, o en el de la vecina. Sino jugabamos en la secundaria del frente que se hizo que estuvo desde que yo me acuerdo.



1985 piso interior sin terminación

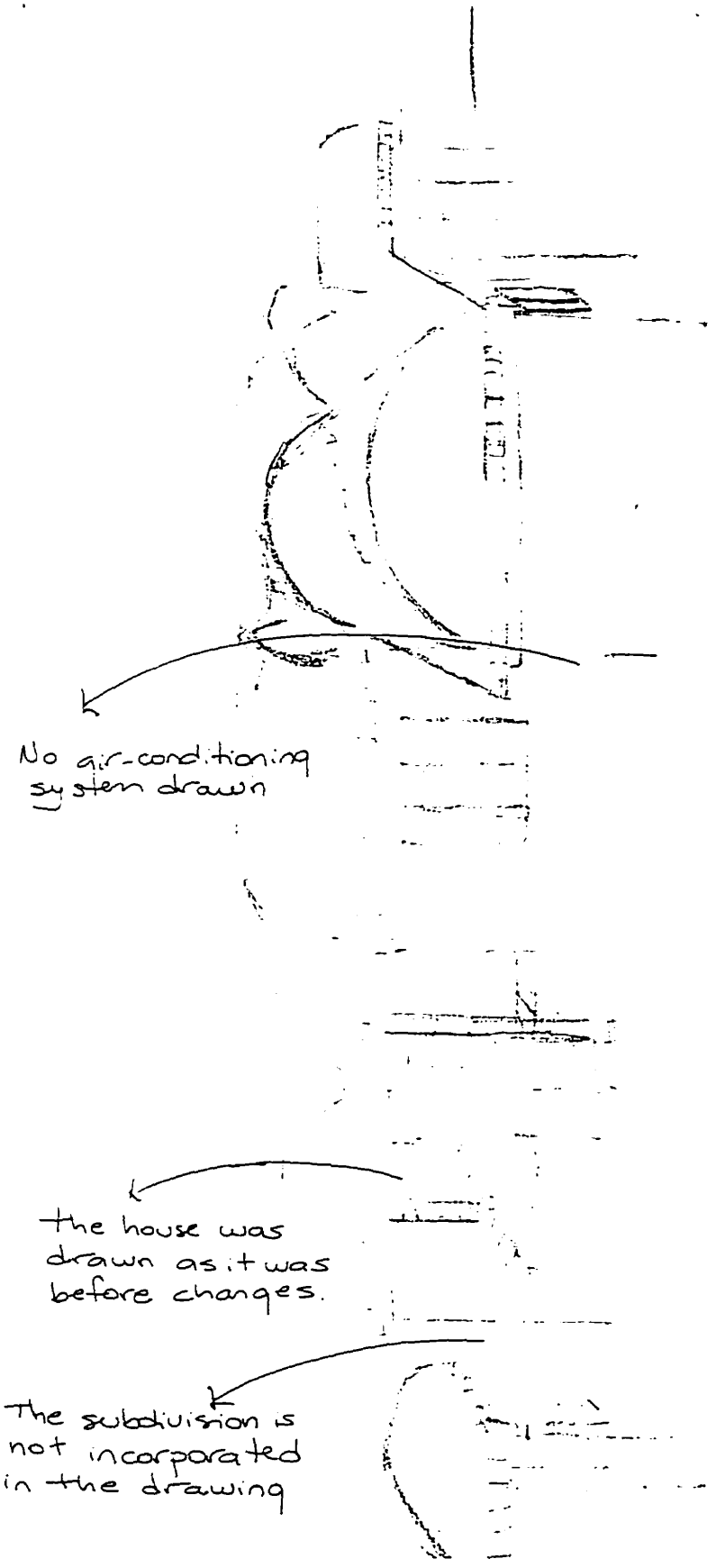
- solo piso baño con "tales" de plástico

- She wants:
- to paint the house white again as it was before
- to open and clean all the windows that were there before
- to put the wood frames in good condition again
- lots of children which involves the use of the pasillo as a playground.



1984

A carport and a fence



Q - what first comes to mind when you describe your home?
Q - Would you sketch it?

sketch ↑ (20 years old)
Ms. Duran daughter
March, 1996

APPENDIX II

Interview with Christopher Alexander - Brief excerpt

How do you imagine the place today after almost 20 years?

Well, I went to the site six or seven years ago, so I imagine the process I saw is probably continuing. I imagine the project blending more and more into the general situation. The last time I was there, the common land was already divided by walls, which did not please me as I realized I had made a mistake. Now I am curious to know how the families are getting along..., I hope they are all still there. I think the problem was that at one point some tensions existed with Emma and her children because they terrified everybody. That is probably why all this happened in the middle.

Would you be able to answer my question in terms of patterns?

No really, but I could tell you what I hope. What I hope is that, with every passing year, they are taking possession more and more profoundly. So I would expect that each house then has becomes more what the family is and what they want in life, how they are and so forth. I think the main thing I would like is that the project becomes as ordinary as possible. I hope that it does not stay separate.

If this is what you hope now, why did you place so much emphasis an the physical form of the project?

Because we thought it was a better way to build, it was very cheap, and it was made in a way that families could repeat, even with the vaults and all these different things, where everything could be done step by step. And partly in answer to what you were saying (it

is not in such good shape that people would use it in some way to make use of it. I have no idea what is happening now. In fact that area is more ordinary than the other part. What I mean by that is (I am just talking about its architecture), with the five houses, there is a funny way in which the domes work with the shape of the landscape..., this was really unexpected to me. I mean, of course we did it, but I didn't grasp the consequences of the rules of the game that we set. I think that is disturbing and that one point is reasonable criticism. You can say, well if we were to do it again, it would be better using something less formal, but it was just a product of a very simple way of building. As I said, the common buildings are less idiosyncratic in a way, but you know...

Why didn't you use the local way of building with wooden timber construction? Wouldn't this be more "ordinary"?

I actually do not think that building with wood is a good thing to do anywhere. This type of resource in the world is disappearing and the level of wood construction is getting worse all the time. I mean, the actual solidity of the buildings, because the various system are used to speed up construction so wood is becoming more and more like cardboard and I rarely build buildings like that anywhere. There are certain ways of making a building that actually give a certain life and is not just making junk. So I can not see any more reason to build more junk in Mexicali that I can see to build it in Canada. This is my feeling about that.

Did you plan that the project's process of growth was going to be accompanied by change in the sense of *discontinuity* of the physical form of the initial houses?

Yes, we assumed that they would change it. I assumed this is through whatever means and for whatever type of construction. I don't think, though, that one can make

provisions for how a building will change because they always change, in fact I think that, to try to anticipate how something is going to change is just silly architecture.

What do you think about the concept of "flexible design"?

I think it is complete non-sense, because it is a very rigid way of trying to control something that is inherently much more organic. So in other words, buildings will change inevitably, no matter what you plan. In most forms of construction, it is not necessary to take care of this, only in the kind of super-rigid, panelized twentieth-century construction. In most forms of construction you just do what you want, knock down walls, make up things, add, change roofs, it is not a very big problem..., most of the historical buildings of the world change all the time anyway... and not necessarily with a consisting technology either.

What is the relevance, then, for professionals to design a house, in regards to the physical form, that will conform to certain characteristics and will change afterwards?

Well I think the whole approach to housing is all wrong in that regard. I have a more informal relaxed attitude towards that problem. Look at how many people are in the world..., it is absurd..., I am very surprised that architects take the approach they do; and this mainly comes from a particular form of social mass-housing. In the Mexicali project I let go of those houses, I think, a little too much.

Why do you think you let the design process go "too" much?

Because, those houses where laid out totally by the families using the pattern language we had set for them at that time. There were some things about the nature of these living spaces which should have been solved by one person. So I think some mistakes were made, and in a way I was irresponsible to let it go on to that extent. But only to an extent, because in general that idea of "letting it go"... I can say from another point of view " it was not let go enough."

Why do you think there were mistakes made?

Just about the nature of the living space, in other words, some rooms are good, some others are not so good. Mistakes of that kind.

Regarding the involvement of users, how would you measure the effectiveness of the approach?

That is very complicated and a very profound question. I would evaluate that according to the internal freedom of the people living in those buildings. The real psychological is spiritual freedom and the extent to which they realize their own nature, as opposed to the extent to which they feel prisoners of a machine. Of course you can say, "OK how would you measure it", but actually this is not so difficult and can be done. It is sophisticated to settle, but there is no question that you can measure that. That is what I think the issue is. That is the main problem with our housing production, that it doesn't actually make people free it makes them prisoners of their own psycho. In other words, in one kind of world people have more opportunity to be liberated, and in another kind of world, they do not. It is not just the physical world which is responsible for that, obviously there are many other factors, for example, the social aspects, education, money, family, life and so

on. There are many things that play a role in that, but the structure of the environment is a big one.

Taking your question a little more generally and forgetting about involvement for a moment, the thing I am looking for, if I want to evaluate part of the environment is to look at the degree of freedom and development that is attained by the people living in this particular part of the environment. I am talking about inner freedom, this kind of successfulness of the deep part of their life. So I am not talking about physical achievements but about a particular kind of spiritual attainment that occurs in human beings. That is why I believe in involving families, or in general people, in the construction of the environment. In mass-housing projects, the fact that people are changing their environment, does not prove anything. The question is, how do they feel inside? Are they nourished? Are they wholesome in themselves? Do they feel that they belong to the world? Do they feel that they own part of the world in the successful and realistic sense, not in the monetary sense, in a emotional sense? Are they part of it or do they feel alienated from it? I mean all of those kind of questions are all part of what I am talking about.

In many of the houses I have built, I do not know in respect to Mexicali, I find people saying: I am more of a person, I understand more what it means to be a person being at this place, I have my family and we have a deeper growth. That, does not happen every time but it happens quite often to a very surprising extent. So I know that to some degree I have had some success in that, but of course it is always mixed... In the Mexicali project, I believe, all five families grew into some state while they were doing the house. They were conscious of that and we were conscious of it. It was not something I predicted at the beginning, but they definitely felt that. I am not talking that they got some possession, but an inner thing happens to them, and... that I think is absolutely wonderful.

Going back to the conception of the project, why did you choose to use a "common land" for the central area layout?

I suppose there were two different reasons. One is simply, that I believe that in the local area common land is important for families to have. Secondly, there is a particular pattern in that part of Mexico where it happens very often that several houses are built around a piece of land which all the families use together, and creates very comfortable conditions..., social conditions. So I think part of the reason why it did not work is because of the car. So the logic of how we laid out first of all did not make any sense and second Emma's teenager boys were terrorizing everybody. So although it is clear that we felt in that, and I don't feel that we were wrong with how we did it.

How would you evaluate if a change made to the project enhances or not its surrounding environment?

I evaluate everything according to what I was telling you before, so I don't make a distinction in evaluating change and evaluating a little bit of the environment in the first place. About this business of what criteria it is too complicated. I mean, the issue is whether it has a living character or not (this is actually an empirical answer and is not something somebody said) so the way I would evaluate it is to say simply: *if* does it have a living character. Does it have a more living character than before? or does it not have a living character with what has been done? In this regard, what worries me is the front addition you show me from the Reyes' house.

You seem to believe that the Reyes' transformations do not enhance the environment, but how do explain the family's feeling of achievement?

The fact that they decided to transform their houses is different than whether they are happy with it. They may say that this is what they wanted, but after they have done it, they may not be so happy. They can not admit it to themselves after spending some money on it.

What are the conditions needed to create a beautiful place that after having been changed, is still good, in terms of "sense of place"?

First of all, by relaxing the conditions the people succeed in making life. They have to relax to a quite an extant. The architect has to relax, the city construction sector has to relax in their own mind (they are very uptight about some things). So it is almost something like Zen, it has to have the ability to be free enough just to do things that do make life. It is the old story of what it means to be a human being. My advise to you is to categorically reject to make something flexible so it can be changed, this is just an architect trying to apologize to herself. It is just trying to control the thing by controlling the system, and that is crazy! The involvement of people is very important, although, sometimes the changes that need to be made are not necessarily made by them. I mean, anybody can see what it is needed, and Latin America has a lot to teach to the world about this, with the whole history of barrios and barriadas. I met plenty of people that appreciate John Turner's work, and said: look, this is great! Why do we have to worry? Why do we have to control it? It is quite happy when it is uncontrolled!. Though, it is only great up to some point, really.

My attitude to the environment is..., for example..., I have a picture of my two daughters playing with ducks in the garden, there is stuff all over the place, but it is just kind of all bottled up. The two children are holding these ducks, each of them have a duck, and you

can see complete bliss on their faces, just if they where in heaven. And yet, the physical environment was just a complete can of garbage. But it is not that it didn't matter but it is only because the environment was like that to make them actually experience that joy. Because they could not have that relationship with these two animals in a place that was nice, a post modern house for instance, they experienced that joy in that place, it could have not happen in another place.

I have built some beautiful buildings and some very shaky ones; and also very formal ones. But, what matters most is the "blissfulness", in other words, if I ask myself have I succeeded? Have I failed? Where I have built something and have not looked at what happened, I see how they live or how they are experiencing their existence. If I get any kind of glimpse of that bliss, then I feel that at least I succeeded slightly. If I do not, I would feel that might look nice but I did not do anything. So I have a very straight forward attitude about that. What I am trying to say is that I do not feel so obsessed with the question of how can I tell if it is any good, because it is very, very difficult to tell. I am not saying it is simple, but at least I know what I am looking for. What it takes to live your life is that you can actually get some things happening in the world, it is a totally different story from what they taught you in architecture.

How much does it matters what architects do as makers of the environment?

I think it matters a great deal. If one seriously want to help what exist, it is just a different process from the one they taught you in architecture school. That is a very big problem, because you go to school to learn something and then gradually you find out that what one has been taught can hardly accomplish that, and then you face a very uncomfortable problem about whether you have the courage to step to one side and take your own path. Or whether it is just too scary...

Why did you not incorporate the local culture in the design of the Mexicali project?

I think you are quite right with your observation. In Peru, for example, at the beginning of that project I went with four other people and we lived with Peruvian families. Each one of us lived with a different family, somewhere in the barriadas around Lima and only when we where there for several weeks did we began to understand what a Peruvian was. The result was that we did incredibly well in that project from cultural point of view. On the other hand, in the Mexican case, I just did not have the opportunity. The practical problem was in a way more urgent. In other words it is not something I will want to defend, and say: well I did it on purpose. So the truth is, of all the things I have built in different parts of the world, I think I probably knew less about the real nature of the Mexican culture, for the project in Mexicali than in the things I have done in India or Japan or Europe. In Mexicali there was no time to do it thus we did not understand it. And it is true I did discover it while we were already building, because I came to know several Mexican families.

In reference to the patterns, the condition within which we began the project we essentially took any pattern language we could patch together, gave it to the families and say, "is this about right to you"? It would takes several month to really look seriously and find out what the true Mexican patterns were. This was something we did not have the time or the opportunity.

How much did residents participate in choosing the patterns and the physical form of the houses?

The houses were totally defined by the residents but not the physical form. You have to remember, I mean this is a very complicated business, in fact if I talk about the Peruvian case this was a very strange experience. In that case I really did end up knowing a tremendous amount about Peruvian families, in fact, more than Peruvian architects.

In that competition there were fifteen international competitors, and at least the opinion of many people was that we really understood more about the Peruvian family than the Peruvian architects.

I don't know how much of those things have changed, but if you were to sit down with a Peruvian family and ask them what kind of house they would like, specially the people from the "barriadas", because those are the ones I knew, they will then show you a plan. But this plan was actually a government plan, because the government have a Ministry for Popular housing. The Ministry for Popular Housing was issuing these plans which were originated in the United State, I believe. So, already the families themselves were getting into this kind of stuff, in a very strange way. Just to give you an example, in Peru at the time there was a very tiny sitting room, right near the front door, and then there was a larger dining or living room at the back of the house.

Every traditional house you went to was organized like that, but then you say: how do you like your house and they say: Oh! we want a family room, and then I say: "sketch it for me" or "show me some drawing". Then they will draw a thing that does not have these basic element of the Peruvian culture. So what I am telling you here is, that even the people themselves, that are carrying the culture needs or cultural desired in them, are contaminated by cultural export or cultural imports.

It is phenomenally complicated; so as I said when you asked me about the families in Mexico, did they really control the plan, I said yes they did, 100%. There were no constrains whatsoever put on them, but it does not mean they were doing something good for themselves. I mean there are extremely close to the border, may be they were mixing thing up with god knows what. When I was working with the Japanese, in a funny sense we became more Japanese, than the Japanese. We actually kind of got down under the surface of this stuff, but in that case it was a very big project and we have the reliability to control it. We said this is what we are going to do, and so we worked out the pattern language (this was a high school and a college) and we said, we being asked by you to

work out not only this building but your whole way of life in the future. Today people are incredible happy in this project, I mean they really feel that their essence has been manifested. But this does not came by just saying what you want, of course, but I think you are absolutely right, I thing the really and truly, in the Mexicali case we did that very badly. We didn't do it at all, the thing that we did that was partly response, was involving the families, giving them the freedom, building the houses with them and creating this very positive situation and feelings, but we didn't do that thing. It would have been much better if we had.

IMAGE EVALUATION
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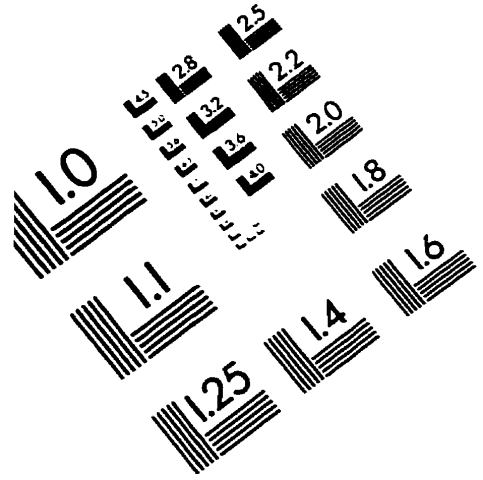

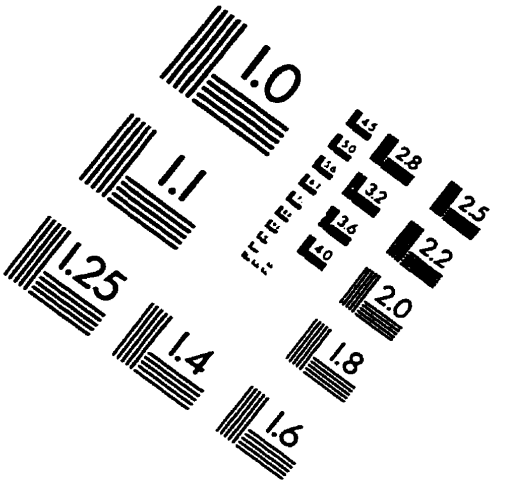

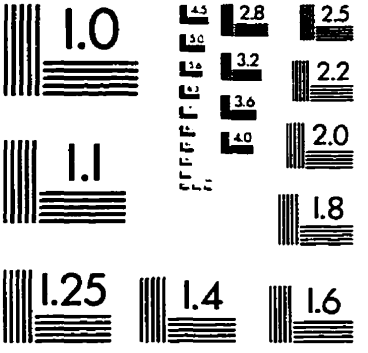

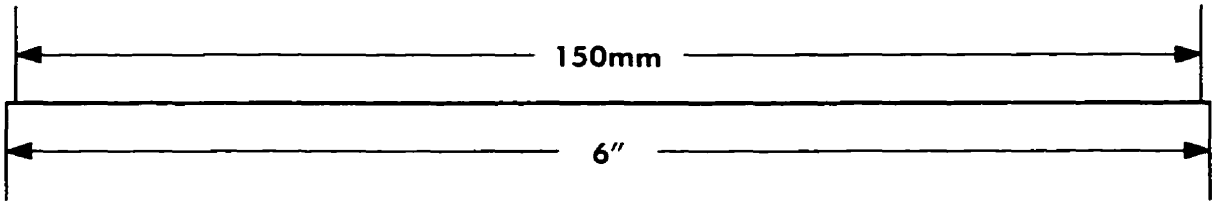

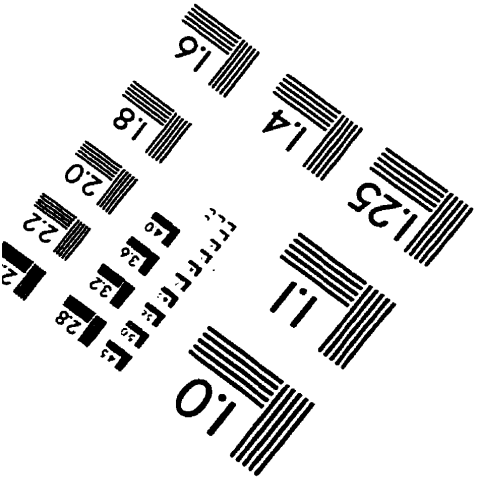

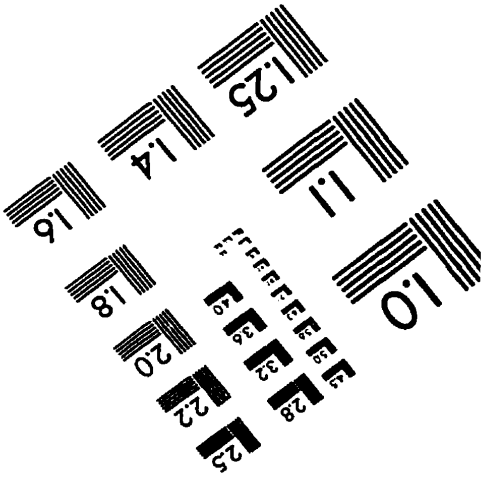

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