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Mexicali Revisited: Seven Years Later

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In the fall of 1975, Christopher Alexander was asked by the government of the state of Baja California to conduct a self-help housing project near the border town of Mexicali.

We were two of thirteen students and architects from Berkeley who joined the project in January 1976. We found a city growing rapidly in all directions. A continuous flow of settlers was coming from all parts of Mexico in search of work.

The project site was on the outskirts of town. Sagebrush blew across the empty fields. The climate was hot and dry. There were a few small squatter homes, near our site, built in a temporary way to provide quick shelter. In the evening, when the air cleared and visibility increased, we would look up towards the mountains and see the neighborhood being transformed. New families arrived, children played in the streets, gardens and trees began to grow: a neighborhood was developing in front of our eyes.

We came to Mexicali to demonstrate a method of design and construction appropriate to self-help housing in this region. The "Pattern Language," developed by Christopher Alexander and others, was to be used as the basis for self-help design.

Alexander envisioned building a community, autonomous and alive, instead of isolated acts of building. He saw the connection between room and house, house and street,

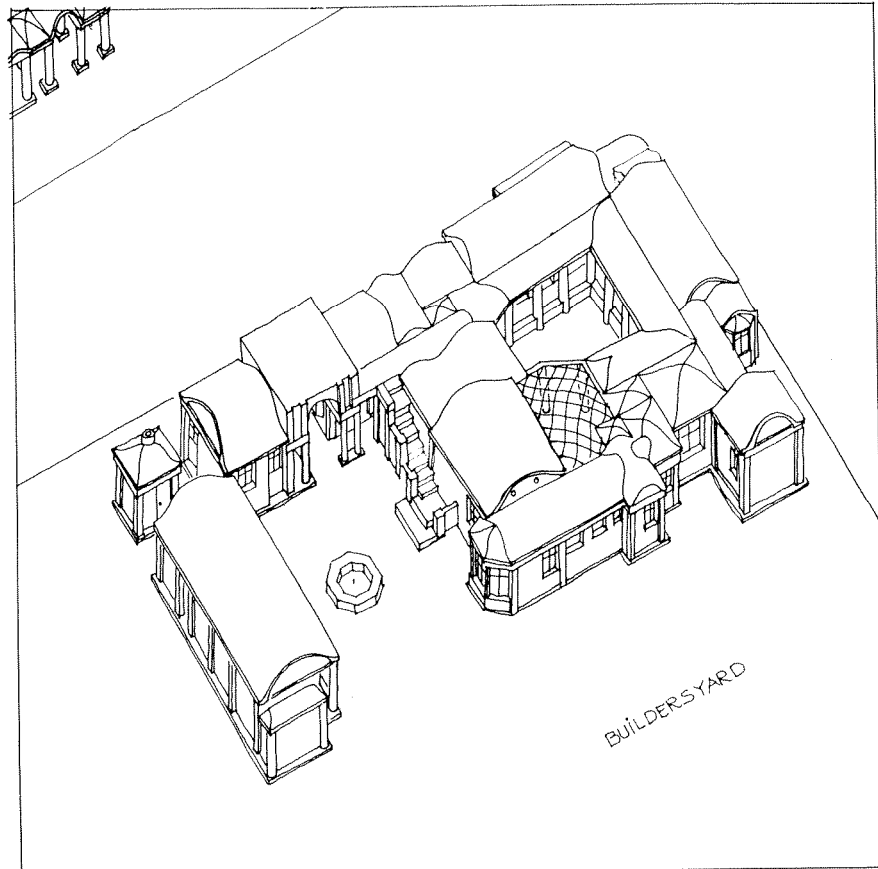
1 Drawing showing the Housing Project and Builders' Yard, 1984.

All drawings courtesy of Peter Bosselmann

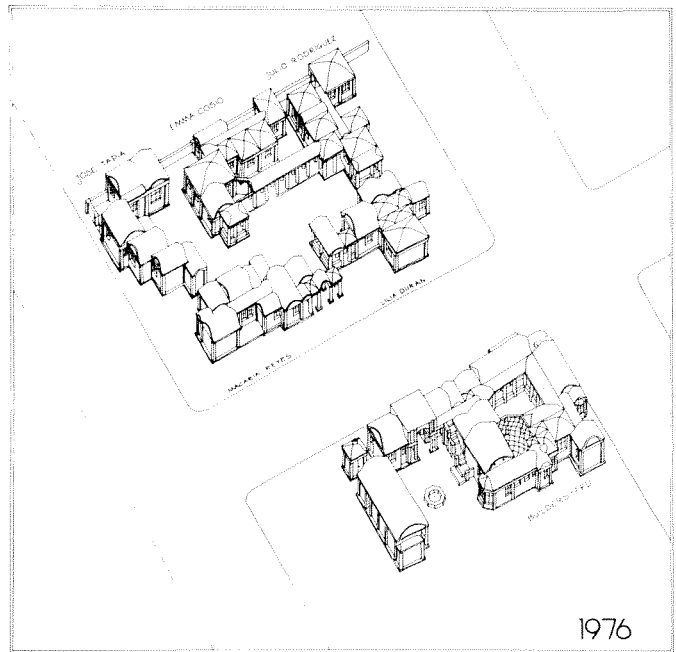
street and town, all helping to complete and support each other. These many separate acts and decisions of buildings come together as one whole in these patterns of use, so that people might share a common conception of construction and planning. Use of the Pattern Language was seen to increase those aspects of the built environment that foster individual and group autonomy and encourage community pride and identification. In this project the government had provided land, in one block, for 30 families to design their own homes using the Pattern Language.

The 30 lots were in “colonias populares,” a district subdivided into small lots of approximately 2,500 square feet and provided with basic services of unpaved roads, water, and electricity. In these districts, no standards were imposed on what individual settlers built. However, the government had started several pilot projects to demonstrate how to build earthquake-proof structures and how to insulate against Mexicali’s desert climate. The government viewed our project similarly, that it would demonstrate easy construction techniques for this locale.

The key concept of our self-help housing project centered around a builder’s yard. The ideal was that the builder’s yard would become an institution in the life of the colonia, it would be a place where anyone could go and learn about construction and building materials. It was hoped that if the project proved



2 Builders' Yard, 1984.



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successful, other builder's yards would originate and, in this way, a decentralized housing program could spread.

Our builder's yard was a place where materials and tools were stored, where an Italian-made block machine rattled away and produced, on a good day, 400 wall blocks. Families would come together in the shade of a loggia, around a fountain, to meet, to discuss, and to get advice. The building system was tested on the construction of our builder's yard. We used a building system of soil-cement blocks with concrete roofs. Each room had an individually vaulted or domed roof that gave the group of buildings a distinctive appearance.

When completed, the builder's yard was among the first group of buildings at the edge of town. At that time it made sense to construct buildings around a courtyard, which we visualized would one day be lush and green. The façades only had a few small openings to the streets. In those early days, the builder's yard was seen as the seed of an oasis against the surrounding dust and glare.

The establishment of a community guided us in the decision to use courtyards as an organizational principle for family-house layouts. Five or six homes inverted around a center of common land formed a "cluster." We hoped building in units of clusters would create a close social bond among families who had little in common at the outset. Each of these clusters was to be linked through the shared land to the builder's yard, forming a network of groups.

In February 1976, five interested families answered a government advertisement to build the first cluster. The site for the cluster was located across the street from the builder's yard. Patterns that defined the layout of the cluster were selected, and each family laid out the design of its own house right on the site; each was different. The families began to build in March 1976, but many delays, difficulties in block production, and organizational problems plagued the project. With student help, the first five homes were finished in December 1976.

A second cluster was laid out, but it was never started. The remaining

3 Housing Project and Builders' Yard, 1976
4, 5 The Tapia House, 1976 and 1984



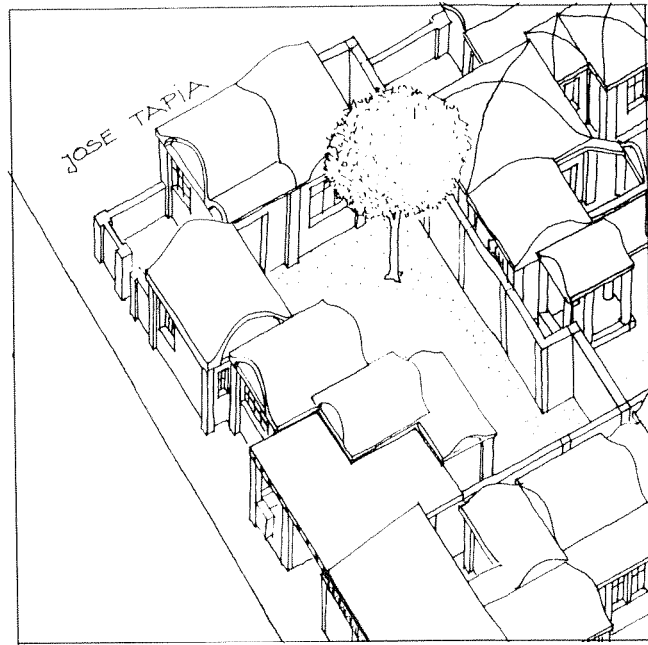
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25 homes were not built. After the first cluster, the government did not renew the contract.

The success or failure of this project can be viewed on many levels. On one level, it can be evaluated from the perspective of the first five families. On another level, it can be assessed from the viewpoint of the Mexican government: Could our process be applied to provide housing for their rapidly growing population, in this and other cities? In this regard, the project had many problems.

As a whole, the construction process was very labor intensive. It required a great deal of time, skill, and ingenuity, which students had the patience to employ; however, student help could not be relied upon forever.

This region's primary housing need was the provision of immediate shelter. Many operations in our construction process took so long that they would never have been used by those who needed shelter. Our priorities—improving the environment, creating a community, good design—were not the settlers' priorities. This should have been



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clear to us. Standing on top of the building making formwork for the roofs, we had a splendid perspective—quick and simple housing had been rapidly built all around us. Our project was no longer on the edge of town.

Another problem of the project was making a building material available that was thermally more efficient than concrete block. We could not find the ideal mixture of cement and earth, and ended up pressing cement blocks with little or no earth, reducing their thermal value.

All in all, we wondered, how meaningful had our work been? We wondered how successful this process was in the eyes of the five families who had built their own homes with our help.

Seven years later we went back. We looked for the familiar vaulted roofs. Everything had grown so much that we wondered whether we would recognize it, but we did.

The Five Families

Solid and eight feet tall, the wall stands before us. Made of bricks reinforced by concrete columns, it

wraps its way around the house. The opening for the driveway is iron-gated. Behind the gate a dog growls and barks.

We follow the wall that runs parallel to the dirt road. To our right, a building stands vandalized. Windows are broken and graffiti appear on the walls. Finally, on our left, an arched opening leads in, flanked on one side by the brick wall and on the other by a wire fence.

Inside, the brick walls form the edges to what was once the communal area. Five houses once opened out to this area; only one does now. The others turn their backs to the space.

The five families still live in the cluster.

The Tapias

I like the house. The thing I was disappointed in was that we couldn't live as a community. Since we couldn't live as a community, I built the fence and changed the porch. But the house, the house is good.

Jose Tapia is sitting in the living

room with his wife, Rosaria, trying to make us understand the changes they have made. And much has changed about this house that sits in the northwest corner of the cluster.

The Tapia house was built in an elongated shape—the bedrooms tucked off at one end, the living and dining rooms at the other. Like the other four homes of the cluster, the shared courtyard provided the main entrance. Today the main entrance to the house is from the street, complete with covered porch and carport. Windows have been added, and a six-foot brick wall has been built to close off the shared courtyard.

In view of all these changes, it came as a surprise to hear Mrs. Tapia say: “This was a good project. I liked it because we had good materials. This house is better than the others, because it is well-made. Nothing happened during the earthquake, the roofs don’t need to be repaired, and it’s more economical.”

“But,” she adds, “the patterns we used for designing the house didn’t work. The patio was facing to the inside of the compound and the rooms stretched out in one long corridor, making the house cold. We’ve changed some of this.”

The patio, which used to face out to the shared space and served as the main entry to their house, has been enclosed and is now a kitchen. Mrs. Tapia told us it did not get enough sun in the winter. Warmth,

we gathered, was not the only reason for its conversion.

“It didn’t work because the families were not well chosen. There was a problem when company came over because of the other families. One particular family took over the communal space and there was no privacy. So we didn’t usually use the porch.”

She told us that she would have liked the communal area to have worked, but it did not. Yet there was a time when the five families got together to do things in the communal space, when they greeted each other from porch to porch. What had happened?

“It worked well for a while,” concedes Mrs. Tapia, “until we got fed up with them to here [she indicates with her palm a line just below her chin], but this one family didn’t do anything to help the situation.” For her, the next step seemed obvious: “All the families around them ended up closing themselves off.”

Mrs. Tapia gave us a short tour of her house. A solid brick wall separated the Tapias’ yard from the communal area. “It’s divided; everyone took a piece,” she explains, following my eyes across her backyard wall.

Once the brick wall was built, the entrance to their home was changed. A bricklayer has made the alterations and the Tapias have taken care of small repairs: “I could have done them all myself,” Mr. Tapia

mentions, “because I’ve gained the experience through building the house.”

Mr. Tapia appears content about his home. He believes that the original patterns from the “Pattern Language” work in the house, but not for the common area. He explains to us where there is room for expansion. They are thinking of building a room at the end of the hall to put in a bookstore, because the school is close by and it would be a good business venture.

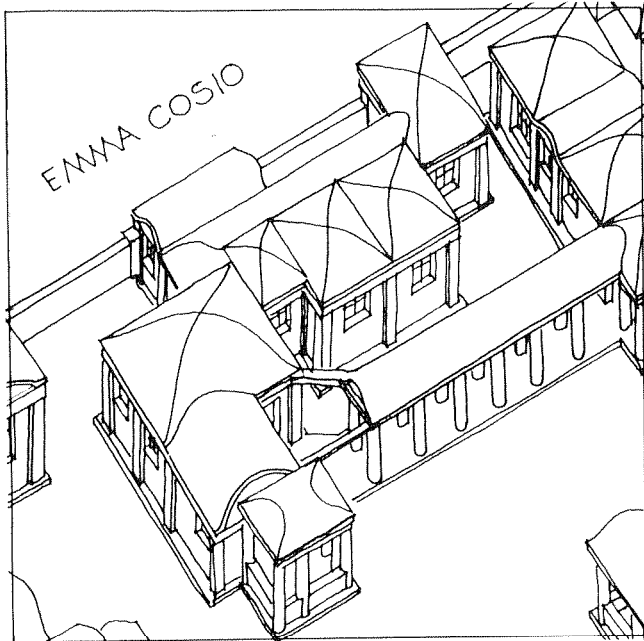
He tells us he is also thinking of building a larger dome over the existing one to insulate the house better and to give it a larger appearance from the street.

The Tapias’ freedom in conceptualizing spaces and moving walls as though they were pieces of furniture is impressive. The qualities they wanted from each room were clear to them. They are involved in attaining the kinds of spaces and rooms that fit their intended use. The house has not been altered, but is in a process of growth and change.

Emma Cosio

I haven’t changed any of the spaces. The property was very small and the house fits well into the lot. It has enough spaces for the children, but the lot is too small for them all.

Emma and her ten children have the largest house in the cluster, with a very large family room, from



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which the many rooms and alcoves are reached. Her house is the least changed, looking very much as it did seven years ago. She has alterations in mind.

Mrs. Cosio's house is the only one that can be approached from the original entrance off the communal area. Its front completes the walls of brick that now form the edges of the communal space.

We talked to her in the living room, which overlooked the large domed dining area. Eight kids were sitting around the table talking, two younger ones were playing on the floor.

She told us about a fire that had occurred in the house two years ago.

"The fire started here. The TV had a short circuit. There was smoke everywhere in the house. Two rooms were burned [living and dining]. What didn't burn, blackened."

She points to the ceiling where the burlap and wood strips have been burned away, exposing the concrete. It is the only indication that

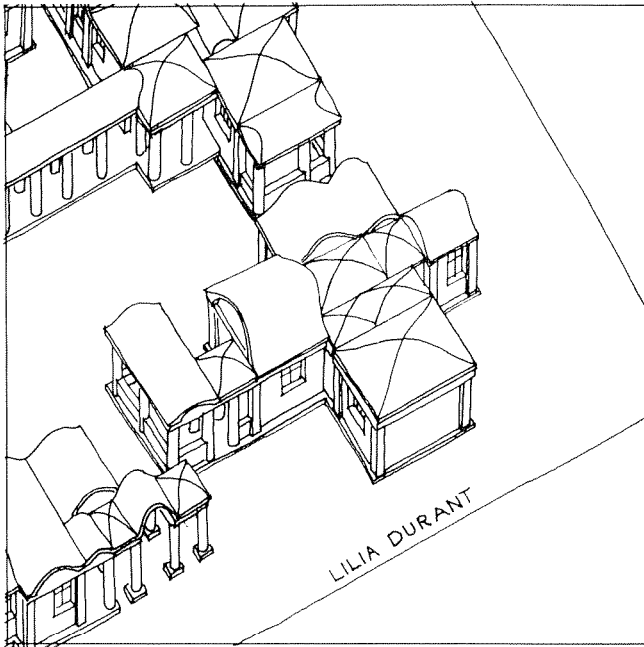
there has been a fire; everything else has been repaired or repainted.

Emma felt that at the beginning the communal space worked out. But as the area developed, more people walked through the communal areas and created problems. The space was then divided. She feels no one person tried to take it over, but that there were some problems with parking spaces. When asked if she minded the fact that hers was the only house without easy street access for parking, she responded philosophically: "No, I take the bus."

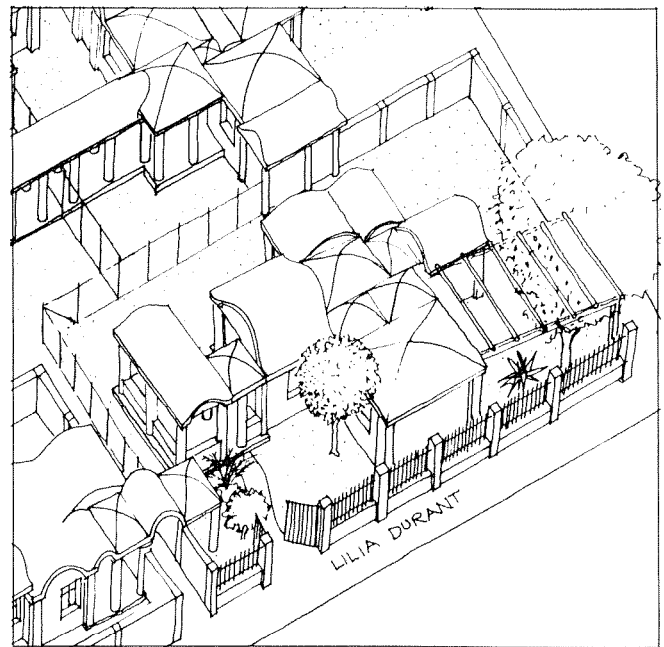
She would like to expand the living room by combining it with her porch. She also would like to expand from the back of the house. "But I am worried about the roof. How am I going to build another roof like that?"

She took us around her house. Mr. Tapia's six-foot backyard wall had cut off the sun from her living and dining room windows. The walls built by the other families define her front yard. Walls surround her yard in the back as effectively as in the front.

6, 7 The Cosio House, 1976 and 1984



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The Durans

When we had three entrances, we had a problem with transients. The police would chase them and they would hide in the common area. It was a real problem and also dangerous to the families.

All openings to the cluster, except the main entrance, have been blocked. The entrance arcade is now neatly divided lengthwise by a wire fence. The wire fence runs straight alongside half of the Duran house. A brick wall protects the other half. Red, white, and blue candystripes wind their way around two of the columns on the arcade. By the entrance, a wooden sign reads “Barberia” [barber shop].

We walk through a gate, past the front door, into what was once the living room. In the center, a mother sits in the barber chair distracting her baby while Jesus shaves its head.

Jesus, a barber, can no longer find work downtown, so he moved his barber shop into the house.

The Durans are outgrowing the original layout of their house. Another child has added to the

space crunch. Although walls have not been altered greatly, spaces in the house now serve multiple uses.

Lilia Duran talks about the house to us; her husband adds comments as he works.

“We’re really happy with the house because we designed and built it ourselves. It’s a good house, warm in winter and cold in summer because of the walls and roofs. Oh, it has changed from what we built originally.”

“We originally thought it was functional for five families to live together as a community. There were some problems. We put the fence up because of the problems we’ve had with the families.”

Lilia Duran is a quick-spirited lady. She talks quickly and gestures as she explains. She wants it understood that she was the last to put up a fence—only a year ago. When Julio Rodriguez died (NE house), his wife put up the first wire fence. In fact, Lilia tells us that she had problems with her because she didn’t like the fence.

“At least I don’t have the problems I used to have. When it wasn’t

fenced in, the other families’ kids used my porch, which I felt was my private space. I asked them why they came over, because I didn’t use theirs. I told them to go away. [Sighs] It never worked.”

Another point of friction occurred when the family without street access wanted to change the entry so that they could bring in a car.

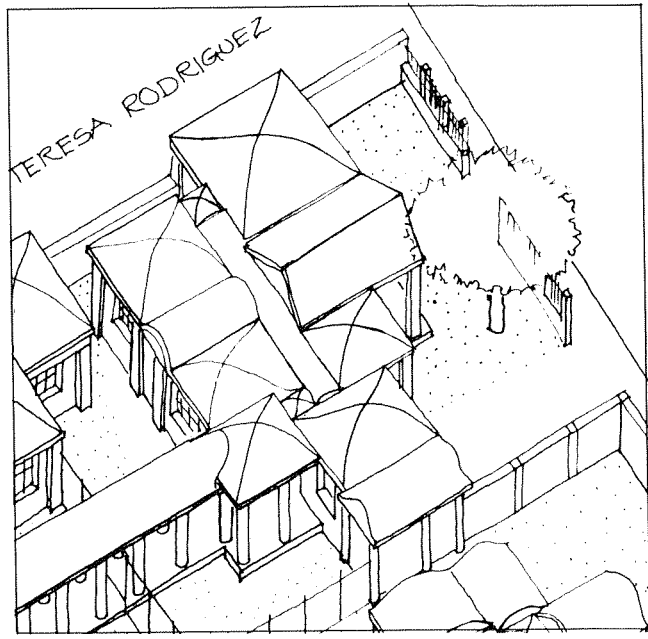
“I fought against it” Mrs. Duran says. “I convinced them. I didn’t want the entrance arch taken down, because I built it and it was hard work. I said to them, ‘you don’t even have a car.’”

“I would have liked the original design to have worked because that’s the way to live in a community with other people. I could talk to other families from patio to patio. But it only takes one family to bring their problems over to my house. . . .”

The Durans have extensive plans for the future, including extending the kitchen and building a two-story addition—one room for the new child and the other, above, for the barber shop. “The rents downtown are so high, we decided to



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open a shop here. Instead of making it as large as was needed, we make do with this size for now until we'll build the new room." She insists that the roofs for these structures will be domed, just like her existing rooms.

Mrs. Duran would like to see more houses built in the same way. She mentions that a house on a side street caught on fire and burned down, but when Emma's house caught on fire, nothing burned extensively.

She does not want to change any of the original patterns or materials. In parting, she says, "I really appreciate everything Chris [Alexander] did. I am very fond of him. Give him a hug."

Mrs. Rodriguez

Will you be coming back to build more houses? I just wanted to know—because some people have asked me about the houses, they like the way they look but don't know how to build them. We would like people from the university to come and help us.

Mr. Rodriguez was one of the strongest proponents for the

communal nature of the project. He was a strong cohesive force in the cluster. During the construction he played the guitar when everybody sat together in the evening.

When Julio died, a large positive force disappeared. His wife has had to adjust to living on her own while raising five children.

Walking up to the front door, we pass through an iron gate and red brick entrance porch with gabled roof. The house is well cared for and has the appearance of great permanence.

Mrs. Rodriguez sits us down and brings out a bowl of tangerines. Her living/dining area is large, partly because Julio loved to entertain. The children all share a bedroom. Now her needs have changed. A high priority is having a well-tended, safe home. Her house was the first to be enclosed with a wire fence running through the communal area.

"I live very comfortably here. There are a few changes I am thinking of. This sala [living room] is too big. I'm going to make it into the dining room and the kitchen will be over

8, 9 The Duran House, 1976 and 1984
10, 11 The Rodriguez House, 1976 and 1984

there. I'll turn the kitchen into the bedroom for the little boy."

Her eyes appear to grasp each room as she talks and pull it to another location. She tells us the patterns work well and make sense. Yet there are always adjustments to make.

"Over here was a wall which we knocked down to make the room larger. I got someone to put in a slab and a roof for the porch. I also put up a brick wall and a wire fence because some of the other people who lived here did not know how to behave themselves. They used to come into this house through the windows and also this door, but I changed the door, and I put iron bars on the windows. At night people used to wander through the communal area."

"We used to enter over there [she points toward the communal area] and we changed it to there [street side]. We used to take food and eat outside, but not now."

There is a sadness in her voice as she says this and so I ask her why she closed off the porch.

"My husband died five years ago. My friend and I used to sit outside [in the communal area]. We were both without husbands. People would hang out around here. They used to walk through, and sometimes even throw stones at us. So we closed the opening."

"Who did the change?"

"I did myself. I didn't have the

blocks we used so I went out and bought materials. For the new changes I'm going to bring in a handyman, because I work and can't do it."

"Well, suppose there was a change and things became quieter in the cluster, people stopped wandering through; would you want the dividing wall removed from the back?"

"No, I'd rather live by myself alone."

Mrs. Rodriguez would like to see the bond renewed between the families and the university. Right now her roof has a small leak and she is not sure how to fix it. The original concept of a builder's yard, an ongoing repair and building center, still remains a hope to some of the families. Mrs. Rodriguez wanted to know if something like this project will start again, so that other families may benefit.

"Friends have come to my house and looked around and said: 'This is like Cinderella's house.'"

Macaria Reyes

When I tried to build my own house, and could do it, I saw that I was capable. I saw that my ideas could be realized.

Compared to the other cluster homes, the Reyes' is the most enclosed. Tall walls surround the entire house. Dogs guard the gate. Eight-foot-high metal gates cover the only opening.

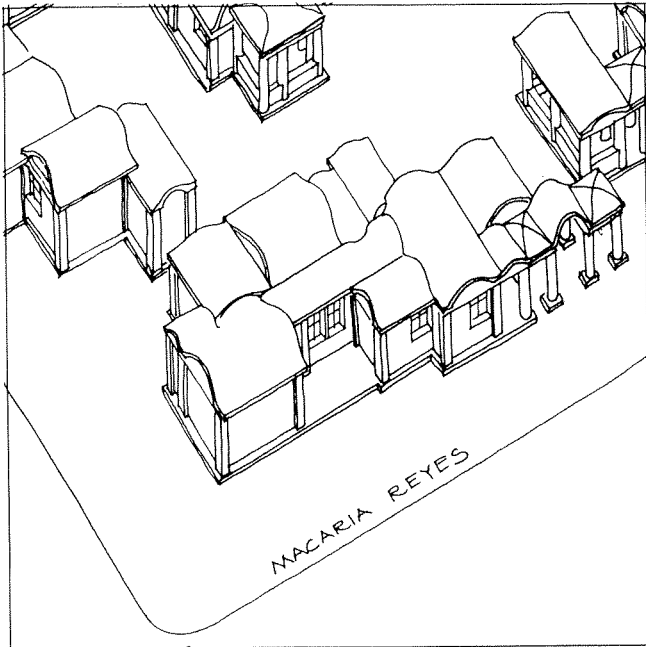
Luckily Mrs. Reyes met us at the gate to show us in. The entrance had worked well when the common area provided access; now it was in the least obvious place.

Walking past the cold forbidding façade, we are led through a cloister of walls to the side entrance and into the living/dining area. The interior is quite a contrast to the exterior. Macaria and her daughter are busy in the kitchen. The room is carefully decorated with tiles and cabinets.

The lack of sunlight in the room is not surprising, with walls enclosing the entire house. And the roof of the new carport reduces the light penetration even further into the house.

The interior spaces all have a finished professional appearance missing in the other four homes. The walls have been stuccoed, and closet openings are framed in wood and all have doors. Mrs. Reyes built the house herself with some help from her uncle. "I didn't have, at first, the correct idea of what I wanted, but using the patterns made me aware of my house." She worked extra hours on her job as a nurse so that she could afford to fix up the interior.

"I was very happy with the house and felt comfortable here. It's well built, cool in summer, warm in the winter. To begin with I didn't dislike anything. But we began to have community disputes. Some families did not behave. All the children would come to my porch to make noise and trouble because



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there was no fence. So that made me decide to build a wall.”

Maintenance of the common area was also a problem. Some families did not contribute enough time to its upkeep, causing more friction among themselves.

Mrs. Reyes would have liked the communal space to have worked out. She is still friendly with some of the families, but feels that people from different backgrounds should not be thrown together. She thinks greater care in choosing compatible families—perhaps through testing—would help.

We wondered how she felt about the house interior. When Mrs. Reyes designed her house she put a great deal of her space into three bedrooms and combined her living and dining rooms. Did she regret this design decision?

“No—I need three bedrooms. One for us and one for each child. All these spaces are used the way I planned, but I had to exchange the living room with the dining room when we built the walls.” But she says that the layout of rooms does not optimize her available space.

She is now thinking of expanding her living room by breaking the wall between that room and the porch. She is also thinking of enlarging her kitchen. This will happen next year, this year they are busy painting the house.

Perhaps they will fix the exterior also. “When my friends see the house from the outside, they say it looks small. When they see it from the inside, they think it looks fine.”

Mrs. Reyes told us that given a choice between different kinds of houses, she would choose to build her own house in this way. “There are so many beautiful houses . . . but this is my home.”

Yet the outside makes us wonder. Why did the Reyes wall themselves in? She explains: “We’ve had two robberies in here and with the walls I now feel safe in this house.” Her husband, a policeman, also felt the lack of security. Because the house is located closest to the builder’s yard, the Reyes felt the need for barriers against both the common land and the street.

After seven years we can see that many of our concepts have not been realized.

12, 13 The Reyes House, 1976 and 1984.

We wanted to create a process that enables settlers to build and design their own homes, a process that created environments that were beautiful and whole. We tried to create a community through the builder's yard and the cluster—and both did not work.

Interviews reveal that seven years later family priorities are different than they were at the outset of the project. Based on frequency of statements and order of appearance in these and subsequent interviews, security and privacy seem uppermost in the families' minds.

The common land we pictured with group gatherings created security problems because ownership was ambiguous. The three entrances to what became a common "street" made it difficult to supervise or question people who wandered through. Installation of heavier doors and bars on windows began.

The abandonment of the builder's yard added to security problems. Our concept for running a builder's yard required an idealism on the part of the Mexican students that was unfair to expect without government or university support. So the builder's yard stood empty, open to vandalism and destruction. Mrs. Reyes, whose house is closest to the builder's yard, said: "We've had two robberies here, and now that we've put up the brick walls all around, no one bothers us."

Obviously, security is not the only reason for the many walls and fences that have been erected over the last four years. The interviews

persuade us that cluster housing is not everyone's ideal. Four families felt acutely the lack of privacy, specifically the intrusions by other families' children. The problem, though, is not simply one of numbers. One family, the Reyes, believes: "It's not so much the noise and the numbers, as the kind of people." They wanted the right to choose the people with whom they would socialize.

One reason for this lack of privacy may be that in the early stage of the cluster design not enough attention was given to the way the entrances and the private areas around each house were buffered from the communal space. Or perhaps the cluster concept is altogether too novel for Mexicali. Mrs. Reyes said, "The idea comes from a place where people live comfortably without fences, but it is not the same here."

As a consequence social relationships suffered. They are not as strong as they were seven years ago. While some families remain in contact, others have started to quarrel. We can only hypothesize that better territorial definition between private outdoor space and common land would have helped relationships between families.

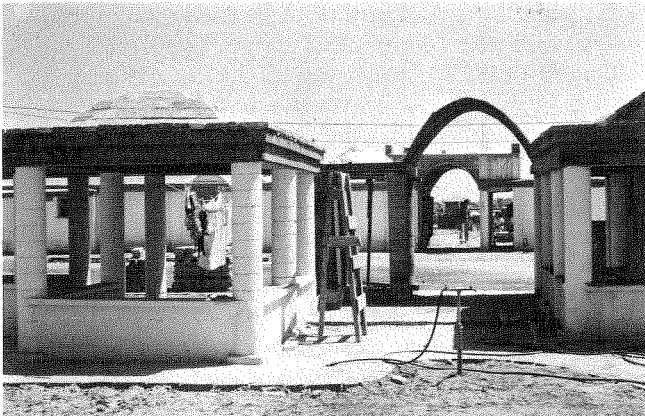
Today the entrances of four homes face the street. The walls, fences, and new entrances give each family privacy at the expense of the social interaction initially valued in the design of the communal area.

With the cluster no longer functioning, all those patterns designed

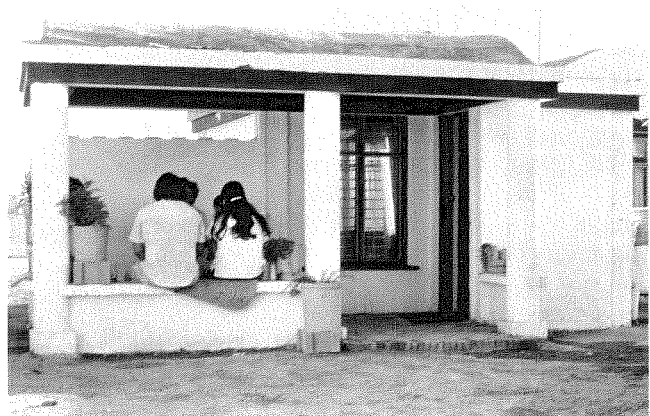
to support the cluster idea, such as elongated floor plans as well as the connecting arcade, have, of course, lost their meaning. Families see these, today, as a shortcoming of their house design.

Families were more pleased with the physical qualities of their individual homes. Family responses to the comfort of their homes were positive. Although minor complaints surfaced about the homes, most families felt them to be comfortable, fire resistant, and earthquake proof. The only substantial complaint came from Mrs. Tapia, who liked the way the house was constructed but felt the elongated room arrangement made it cold inside. All liked the vaulted ceilings, saying that they gave an expansive and large appearance to the interior spaces.

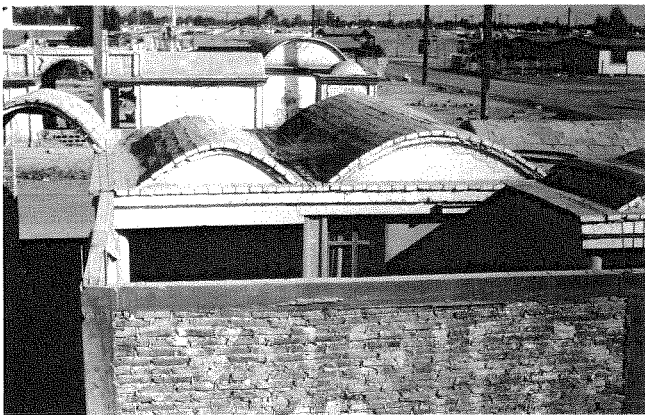
But families mentioned the street appearance of the houses as looking "so little, so small and uncomfortable." Indeed, the neighbors make fun of their appearance, saying they look like bread ovens. Instead of the project reading as a "whole" they expressed a need for a more impressive street appearance for their houses. Mrs. Rodriguez had made her roof appear larger and more conventional by the addition of a gabled roof above her new entrance. Mr. Tapia mentioned he was considering building a larger vault over his existing one: "All my friends say, 'Ooh, your house is so little' when they see it from the outside. But when they are inside, they say, 'Oh, your house is so big, so comfortable, so beautiful.'"



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14 The main entrance into the common land from the street. The builder's yard entrance is located across the street, 1976.

15 Entrance porches in 1976 were oriented towards the common land.

16 Porch and backyard are walled off from the common land, 1984.

17 Teresa's new main entrance, 1984.

Families regret that the original building materials are no longer available. They had changes made with readily available materials using local builders, although they know how to do it themselves. Many changes were made, from simple low walls to altering whole sequences of rooms.

In this aspect, we can feel we accomplished something. While community making floundered, individual autonomy grew. The changes the families made to their homes are remarkable. Jose Tapia's new porch towards the street has the same qualities as the original entrance pattern: "I tried to build it the same way, with a bench, and porch and columns in the corners. To do the same thing, to continue the pattern of the house." Lilia Duran's entrance to the barber shop is a colorful and delightful sequence of spaces. The same is true for the entrance Mrs. Rodriguez designed; her approach is more formal.

The families know how to help themselves. Through designing and building their homes they have developed an awareness of how they like to live. It shows when Lilia Duran takes us to her kitchen. "I am sorry it's messy. This kitchen is too small and I want to expand it out." Palm out, she sweeps her hand across the dishes and cupboards. "I am just going to remove this wall and push it out."

"How will you build the roof?"

"The same way; I want it the same way it was built. I don't know who's going to build it. If the

contractors don't build it [she shakes her fist and smiles], I'll build the dome myself." Judging from the other changes Lilia has made, she will do it.

Postscript

Returning to Mexicali has helped to satisfy our curiosity about the turn life has taken for the families. At the same time, revisiting has opened up one new question about architecture and creation of places that we cannot fully answer, and this question is so important and pressing it deserves more work and thought which goes beyond this article.

Christopher Alexander, in the introduction to this article, says that "the families are changed through the process, both in their feelings of power and in their attitudes. In the way they were liberated and able to feel responsible and completely in charge of *their* own future, their own lives." We discovered this to be true. But why?

Our study alone does not give conclusive evidence that the use of the pattern language is responsible for the new power the families felt in their lives. A visit to an Ifonavid public housing project that was started at the same time shows that families there have also made changes to their homes and street. The same is true for a conventional site and service project, where people have built their own homes and continuously changed their environment.

There are differences too in this comparison. Our five families had a sureness about the way they improved their homes. More so than others, their houses have become an integral part of their lives.

It is time to do an assessment of other pattern language projects to find more evidence whether the power felt by our five families is indeed present in all the users that have created with this method of design.

The first set of interviews with four of the five families occurred in January of 1983. Corina Rodriguez assisted in interpreting the answers. On our second visit, in December 1983, we interviewed the Reyes family, who had been away during our previous visit. We also reinterviewed Jose Tapia and Lilia Duran. Gloria Hernandez, architect, assisted. A third set of interviews with each family occurred in March 1984, conducted by Rebecca Leon. At that time the authors added follow-up questions.