REINFORCING COMMUNITY THROUGH ARCHITECTURE:
ENCOURAGING COOPERATION THROUGH PERCEIVED BOUNDARIES

Tijuana
Mexico
INTRODUCTION
Before this year started, I had wanted to design an orphanage for my thesis. Ideally, I had wanted a real client that would help me create a realistic project. I found an orphanage in Mexico that was looking to expand and started up correspondence with them. I was all set to travel down there for site analysis and research when some trouble with the Mexican Social Agency happened. It was recommended that I not visit them, I already had the plane ticket, so I decided to still fly out and visit Juana instead. I spent 4 days there walking the town, finding a site, and getting as much first-hand information as possible.

My actual thesis evolved out of research in vernacular architecture and ideas of sustainable communities. Out of those investigations came the realization of what the fundamental issue was that interested me the most: how to foster cooperative environments. As I did more and more research on Juana and its community, I discovered how to fine-tune my ideas to more adequately fit the context of migratory families. The resultant thesis project was a combination of an issue birthed from research with my own interests in architecture.

The architectural issue found in how to encourage cooperation was how boundaries between people or groups of people (families) were perceived. It became apparent that slightly ambiguous space was needed that allowed certain people group interaction, but also permitted other people in the same space an opportunity not to be involved. This was especially important when having an intermixing of strangers. This notion of perceived boundaries extended into the neighboring community as well. To get new families into the surrounding community, there needed to be a way to draw the two entities together in such a way so they could interact informally. This would help the new families become integrated into the community and strengthen the collective social network.
Through my research of vernacular architecture, I found that social organization and social order were the most important functions architecture could play. As I researched squatter settlements and communities in general, the primacy of social networks and mutual help kept surfacing. This led me to wonder: how do I encourage cooperation through architecture? Further research and investigation pointed to the importance of perceived boundaries in the delineation of space. How do I control what is individual space versus what is conceived as group space? What makes it known that a particular space is private compared to one that is public [without a bleak and formidable wall]? And on a larger scale, how to knit community members together, especially ones from varied background.

After deciding on Mexico as a site for my thesis, I had to do a lot of cultural research. Out of that research I realized the heavy cultural dependence of families on the extended family. However, because of migration, that extended family was being broken up.

The term "parentesco" best describes what I am after. The term means the mutual help and cooperation of extended family members. However, in a time when families are splitting apart for economic reasons, people are forced to regroup in familiar social systems that mimic the extended family model. How will they restructure? A common urban model will feature 3-4 families living in an apartment building, each pooling resources together to help one another survive. This was the type of model I decided to employ in my project.
Community

Position: The summation of a people, their relationships, and their products.

Position: I incorporated these into a large scale "panorama." The shelter was a place for all three factors to interact and impact one another. This is most evident in the combined living/dining area and the outdoor courtyards.

Materials

Local materials are important because they help to bestow a specific character and flavor for an area and its people. Materials help to fasten an identity for a place.

Position: I used materials that were either produced locally or were by-products of local industries combined with found materials within community by inhabitants to construct the shelter and to shape its character.
Construction methods
How the building is constructed is important because it imparts character to the building. By using simple techniques, it allows the users to shape their environment.

Position: I used simple construction methods to allow for flexible space configurations depending on varying residence structures. Also these simple methods allow for labor [like residents] to construct their environment.

People
Tijuana has a peculiar migration situation. There are people from interior Mexico migrating there for better economic opportunity. There are people who have a father or brother working in the USA sending money back over the border. There are people who live in Tijuana but cross the border to work in San Diego.

Position: the shelter will provide immediate intermediate housing for migrants with the opportunity to construct their own temporary shelter until more permanent housing can be secured elsewhere in Tijuana. The shelter is primarily geared towards mothers with children whose husbands are away working or have just moved to Tijuana and are in need of a home.
Cultural: Because of its proximity to the border, Tijuana tries to have American amenities to attract the American tourists (which are a significant portion of Tijuana's economy). Meanwhile, it also has its own cultural history originating from the people who live there. The center of Tijuana is the tourist district dedicated to appealing to Americans, while the surrounding areas, mainly residential, take on the character of the local people. The community is consequently disjointed. The initial gridwork was laid out, but zoning was not enforced in any recognizable form. There are unwanted land usage adjacencies (i.e.: residences intermixed within commercial area and residences next to industries with hazardous materials). On the periphery, independent from the grided tourist area, there are residential developments. Eventually, the growing, organic organization of the residential areas combined with the rapidly increasing tourist/commercial areas. This rapid growth has produced odd relationships between buildings and people. For example, the residences are stacked one upon another as they ascend the outlying hills. In commercial area, there isn't any sense of uniformity in regards to design consistency. The residential areas immediately outlying the commercial areas are typically middle-class. Typically, the further up the surrounding hills one goes, the poorer the people are (and also the less accessible they are).
Physical: The chosen site lies on the corner of one of the last planned edges in the city. Therefore, it borders the grided chaos of the tourist city with the unplanned residential development. There lies an opportunity to draw from both sectors and apply a designed synthesis. To the immediate north lies an automobile repair shop; immediately south lies a convenience store. To the west are rows of small homes with another convenience store. Across the street to the east there is a combination of small businesses and single residences. Generally, to the north and east lies the commercial district. To the west and south is mainly residential with the occasional neighborhood convenience store.
Interior spaces
The initial design exploration occurred during the winter. This was a kitchen/dining hall in Mexico. This family dinner with the...
House X - TEN Arquitectos

I studied this house for its use of materials. I liked the aesthetic of how different materials wrapped over one another. The material palette was similar to the concrete and metal.

Baragon - Louis Kahn

I tried to capture some of the warmth that I found in Casa Baragon. His forms were bold, yet soothing. The architecture is simple and elegant. The windows are intellectual and helped to make the space feel “homey”. The lack of photos published didn’t detract from the completeness of the volume.

003: Ten Arquitectos

I was impressed by the almost pre drilled pin holes, but it was the interaction of views along the line and how the materials were aesthetically employed and tried to capture and move overlapping in my forms.

004: Jagua Arquitectos

What I was impressed by in this project was the skylight detail. I liked how the smoothness of the wall turned into the skylight. The light against the wall created the impression of a wall hovering and the wall continuing. I used this element a lot in my shelter.

005: Residence

The repetition of the wood and concrete created a wonderful rhythm that I felt in my shelter. I liked how the wall came down just low enough to separate the two areas but between the two could be sensed. I used this repetition in my shelter design.
From Vernacular Architecture

Architect: specialized interpretation of cultural values and norms through built form [23].

House is developed with a sense of place, which is fluid, rather than a sense of shelter, which tends to be absolute [172].

Mutuality usually comes of direct, joint participation. The user helps design. The designer builds. The result of participation is understanding. The laborer understands the design. The designer understands the needs of the user. The result of understanding is an egalitarian ethic...[275]

The vernacular emphasizes that the most important dimensions of building lie inside...environmental modification is of less importance than social organization in shaping homes [277].

The house is designed primarily to bring people into intimate interaction and only secondarily to protect them from the mutable weather...people within the home learned to live with the mild bodily discomfort...To make their dwelling a clearer symbol of their aspirations for social order [278].

Buildings can contain people, shelter people, but they must organize human relations [279].
Before he designs, the architect must study so that his design will answer the needs and incorporate the vernacular values of the people who must use the building he creates. What matters most is the basic plan, the ordering of rooms in which domestic life transpires [283].

**From Neighborhood and Community Environments**

In many neighborhoods, especially poor ones, **reliance on neighbors may be essential** in times of need, which for some is a daily demand [3].

The connections laid down to both people and place bond both child and adult to an area that becomes more than just a place or just people but a community in which both are molded into a whole [101].

**From Human Aspects of Urban Form**

The retention of **social networks was more important than higher physical standards** [97].

They [squatter settlements] also allow for **mutual help and the support of familiar social networks**. This not only mitigates stress but also helps the transition to urban life while helping cultures to survive [101].

The development of social relationships and behavior in general were greatly affected by the **ability to actively structure the environment** [369].

The preferred pattern of resolving conflicts and **adapting** seems to be through the **participation of the inhabitants** – conscious and active, i.e., creative [369].
RESEARCH FINDINGS

From *Women and Social Change in Urban Mexico*

These mothers believe that the acquisition of a trade or profession is a young person's most important goal [163].

Shouldering almost total responsibility for the household, these young mothers received less practical support than women of the older generation claimed they had had when they were raising small children [176].

From *The Mexican Urban Household: Organizing for Self-defense*

The tests imposed by economic crisis have increased the need to form complex households of many members...preference for larger households made up of smaller families [106].

From “Mixteco Women on the Migration Route”

In this venture [migration] women play a notable role. By preserving the home, whether in their Mixteca towns or in intermediate destinations, they make it possible for other members of the family, men and women, to achieve the mobility necessary for travel on old routes or new ones.

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From “Mixteca Presence”

Many families continue to preserve their culture while...most insist on the community basis of Mixtecan culture, but now also recognize the existence of individualism. The necessities and opportunities they encounter in the city oblige them to adopt this other kind of identity...Confronted with the returning to the extreme poverty of the Mixteca, the majority seems ready to remain in Tijuana. The cost is a change in identity, never being the same again. The benefit is survival.

From the San Diego State University Institute for Regional Studies of the Californias

65% of these [northbound] crossers were Mexicans [roughly 30.5 million in 1994].
The city has a large “floating” population of people recently arrived or in transit to the United States [at least 50,000 people].Although growing rapidly, Internet connections are still expensive in Tijuana and adequate data transmission lines are still in short supply.
Tourism accounts for 28% of Tijuana’s gross regional product.
Maquiladora industry accounted for 15% of the gross regional product.
63% [of economically active people] were part of the social security system.
The minimum wage in Tijuana was approximately $100 per month.
Commuter workers would be classified as middle class [5 minimum salaries].
One motive for residents of Tijuana to cross the border illegally is for health care access.
There is currently a shortfall of 36,830 housing units in Tijuana, while many newer units are substandard, self-constructed units.
As a warm-up exercise for our thesis project, this project gave us a chance to practice with the ideas we were going to use in our thesis. This allowed me to investigate Mexican architecture and climate. It also got me to look into indigenous building techniques and materials.

Mostly what I gleaned from this project were modes of investigation [researching culture, large scale models, and vignettes]. It also showed me areas that I needed to correct for my thesis: thorough site analysis and more iterations of formal investigation.

This was a kitchen/dining hall extension for the Rancho de los Ninos orphanage near Ensenada, Mexico. I had been communicating with the orphanage and was going to do my thesis there, but they had some trouble with the Mexican Social Agency and couldn't visit them. That turned out to be a good thing, because I feel that my thesis really evolved from my research as opposed to a preconceived idea.
STUDY MODELS

These sessions of explorations revealed to me the importance of investigation through the rapid process of model building. Usually I do lots of drawings, then save models for last, but this time I tried establishing a better dialectical relationship between what I was drawing and the 3D realization. It enabled me to view my ideas from different angles or completely upside-down. Plus I believe it allowed me to get better critiques and forced me to clarify my ideas to a degree that I wasn't used to.

001 study model
This initial study explored a layered wall system to help in reducing thermal overheating. It also examined the formal and functional consequences of the courtyard. I kept the idea of the layered wall and courtyard form for the shelter.

002 study model
This version looked at differing ceiling heights and the addition of photovoltaics. The circular form is introduced as well as more flexible patio space [left hand corner].

003 study model
Here the properties of using a double wall system are explored for light, ventilation, and thermal protection. There is also further formal refinement and addressing how the roof was to be used for evening activities.
Kitchen
Vertical fins were used to limit the amount of direct sunlight in the mornings. The fins also created dynamic shadow play as the sun moved into the afternoon. For my thesis, I used the repetitious shadow play to indicated movement through the space.
Winter [morning]
Deep light penetration allows the thermal mass to heat up in the morning when the outdoor air is still cool.

Summer [noon]
Maximum shadows are sought after during this part of the day for relief from the heat. Not much activity is done these hours, so if this building is in use, the dining areas could be cleared for siestas or just for socialization.

Spring [noon]
The sun angle is about 60 degrees, so there is some direct light. During this part of the day, the northern patio would be utilized to stay cool and out of the sun.
COURTYARD ORGANIZATION

The fundamental ordering system used for the shelter was a series of courtyard spaces. This was used to promote the individual-group dynamic. As much as possible, I tried to bring portions of the exterior courtyards into the building. This was done to encourage interaction, but also to develop another boundary between complete private space and complete public space. This created more boundaries, and thus increased the chance that people would find a place they would feel comfortable in [and if they’re comfortable, they are more likely to cooperatively interact with one another].
This is a more refined plan indicating exterior group spaces. It shows how the context gives form to the courtyard and how parts of those courtyards come into the building at different points [where group interaction is most wanted: communication center and dining].

This depicts the interior courtyards. These are not courtyards per se, but are based on that model [group space in center, with individual spaces ringing it]. This shows how the individual spaces are linked and how they provide a buffer between group spaces.
001: this initial study enabled me to see how I wanted to group the massing. It was also my first attempt at see what types of materials were going to be used.

002: These are sections cut through the above elevation. I wanted to create pockets of light and shadow that would indicate where the more public/group spaces were and where the private/

003: Here is my second attempt at shaping the form of the shelter. I was also further refining how the materials were going to be used and how best to show the layering that was happening on the inside.

004: These sections illustrate how the various group and individual spaces overlapped. It also looks at how light and scale create perceived boundaries.
The final model was built out of basswood, with the base being constructed of foam core that was then plastered over and spray-painted. I wanted a rough texture for the base to contrast the smooth quality of the wood model. The roughness was also indicative of the true context.
The south elevation shows the density of the final resolution. This fits within the dense urban fabric of Tijuana.

The eastern elevation demonstrates how the massing relates to the surrounding heights found on the hill. I wanted the shelter to fit into the chaotic development like a puzzle piece. The unique characteristic of a puzzle is there rarely are two pieces that are identical and very little inherent order, but they fit together to form a complete picture.

The close-up of the eastern façade shows the entrance overhang. This was one layer that differentiated purely public space with the shelter's public realm.
At this time, it is amazing to see a year's worth of work compiled into a mere 39 pages. If only I could capture the hours worth of frustrated thinking, contemplating solutions and innovative ideas, and researching, this book would be more entertaining (and considerably longer).

It is very satisfying to know that at last, I am done; never to touch that stupid purple model again or care if my form Z file mysteriously erases (again). And I am proud to know that I tried my best to end up with a complete project. I only hope that I communicated it well enough during my presentation and through this book.

While I may never deal with this project again, I hope to revisit the ideas that I developed. If nothing else, my research has made me a lot more compassionate for the people in Tijuana and only confirmed what I feel my life's passion is: to be involved in an organization that tries to meet the physical, spiritual, and emotional needs of economically depressed people [hopefully in another country, but I'm not picky].
REFLECTING ON

thesis

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Bibliography

Architecture Sources
A residence done on the coast of Baja using mainly local materials, but using a different take on the traditional roof.

A comparison of various homeless shelters across the US. Used to gather program information (spaces and qualities).

House X, House O, Jaguar Dealership; material usage my prominent Mexican architects.

An orphanage design in Amsterdam; also thinking of the house as a city and the city as a house.

Examples of modern interpretations of traditional Mexican architecture

Ways and means of physical exploration of the architectural design process.

A cross section of architecture in Latin America. Used mainly for comparison in six week project, though not extensively for actual thesis project.

Used to research traditional Mexican materials, techniques, and forms.

Examples from Baragon and more rural architecture. Broken down into headings based on materials, textures, colors, and the like.

wwwaisaloparchitects.com
Used to research methods of design.

Community
Description of community; how parts are connected.

Materials
A short anthology on essays about vernacular architecture. Very helpful in pinning down definition used for "vernacular architecture." Also revealed how the social implications involved in architecture (both internally and in the general community).

www.tijuana-edc.com/locatoin.html
Full of facts concerning Tijuana's economy and construction possibilities. Also describes types of industries and demographics of labor pool.
Methods

The benefit of allowing users to physical manipulate their environment

People/Users

Describes the modern life of women in urban cities. Also addresses what the contemporary view of how the urban Mexican family is conceived.

www-rohan.sdsu.edu/~irsc/tireport/tij.html

Basic information on Tijuana: transportation, population, telecommunications, economy, employment and income, maquiladora industry, housing, urban development, and education.

http://educate.si.edu/migrations/bord/women.html

Women on the migration route. Some anecdotes from women combined with author’s analysis and supplementary statistics.


Women’s education in Mexico.

Social Relationships

Description of community; how parts are connected.


Identifies aspects of Mexican family values and culture.


Commentary on the lives of women working in maquiladoras and the effects on their families.


Describes how the immigration process has been viewed through popular culture. Also mentions some of the impacts of immigration on the immigrants.


Discusses slum and squatter settlement organization; primacy of social networks.


Conclusions drawn from surveys conducted of Mexicans living in cities. Also, lots of stats.

www.folklife.si.edu/vfest/frontera/valenz.htm

Cultural identities on the Mexico-US border: transculturation, el cholismo, and collective identities.

www.folklife.si.edu/vfest/frontera/moreno.htm

Mixteco presence in Tijuana: migration, language, social distinctions, and cultural transformation.