

Leverage of Change: Social Housing in Tijuana, México

By
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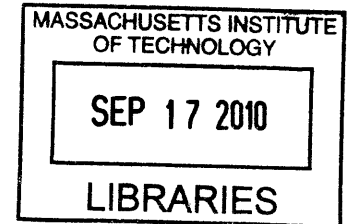


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ABSTRACT

As a town that has heavy migration, Tijuana is in constant need of social housing for its lower income families. The demands of the population have created an overload on the government, and some third parties have begun addressing the housing issues. A study was carried out on two different types of social housing organizations that have presence in México. An analysis of their policies and objectives, along with a brief statement of their purpose and creation accompanies the study. Surveys and interviews were conducted on-site with inhabitants from both projects, INFONAVIT and Habitat for Humanity. The former is government sponsored and the latter is funded by an international non-profit organization; these are factors that influence the magnitude and impact of their programs. Their relevance and pertinence to the socioeconomic group that they serve is reflected through architectural modifications that the dwellers make in their houses. An economic analysis of costs for the modifications yields a perspective of the beneficiaries' space needs and priorities.

The results from the surveys show that inhabitants modify their homes with simple upgrades; those who do not have modifications plan to carry them out in the future. They have concerns for security and aesthetics. Although these constructions are built with the economic factor in mind, the owners always upgrade their houses for the sake of comfort, and they express their willingness to pay more for the constructions, if it guarantees them improved architectural finishes. In the final part of the thesis some suggestions and proposals are made in the interest of improving design standards and living conditions in the constructions that these social organizations produce; suggestions are also made for future adaptability of the base models that are built by each of the organizations under scrutiny.

Thesis Supervisor: Reinhard K. Goethert
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I thank Félix Lozano, the administrator of Habitat for Humanity in Tijuana, for giving me access to the families that inhabit homes in the region that he oversees. I am grateful to the family members that took the time and effort to speak with me: Hilda Rocha Arias, Rosa Soto, Raquel Rodríguez, Basiliza Castañeda, and Adriana Cabezas.

I thank architect Zaín Rodríguez for giving me the necessary background information about housing in Tijuana and INFONAVIT; David Rodríguez was also a great help with this.

Finally, I am most grateful to my parents, Simón García Loza and Guadalupe Torres Castrejón, for helping me with the logistical side of the thesis, such as getting me in touch with contacts in Tijuana and accompanying me to some site visits.

Preface

I decided to focus on Tijuana as a case study due to its population increase in the last decades, and its proximity to San Diego. Being raised in San Diego, I have many contacts on both sides of the border. Some of my friends that live on the Mexican side of the border inhabit houses that were developed by my targeted organizations. Those were the first interviews that I conducted. Over my Thanksgiving vacation I flew to San Diego to be with my family and to conduct these interviews, which turned out to be lengthier than what I had initially expected because conversations sometimes got off topic. Everyone in the family seemed to have an opinion about the house, and these were incorporated into the final interview reports.

Over the fall semester I had been in contact with the administration of Habitat for Humanity México, they then referred me to the local Administrator of Habitat for Humanity in Tijuana, Roberto Morgado Quijano. I was in touch with this person over email, and after I proposed my intent to interview some Habitat owners, he offered to select a couple of families for visits. Apparently, they have chosen families that act as public relations when people want to interview or investigate the projects that Habitat undertakes. I agreed to meet with them over my winter break, in January of 2005. When I was home in San Diego, I called up the office to set up an appointment and there was new administration in Tijuana. Félix Lozano was now the Administrator of Habitat for Humanity Tijuana; he was fresh to his post and was still adjusting and learning his way around, yet he was great help. He also picked some families for me to go interview in the “colonia” 3 de Octubre.

Félix Lozano said it was rough terrain up there, so my father accompanied me for safety purposes and for transportation, and we used his pickup truck to get around. The climb up the hills was arduous considering only the main street was paved and it was rainy season. We were in a pickup, so we were able to get around the muddy uneven streets.

Contrary to what I was told to expect, the families were very eager and excited to talk to us. I interviewed the women, because the men were at work; my investigation was conducted on weekdays. My visit rejected what I had heard about the people living in that colonia. Like most Mexican families, they were receptive, and wanted to feed us at all of the time. Hilda Rocha Arias, a current beneficiary of the Habitat for Humanity program, accompanied us; she is in a committee that organizes the logistics of the program. She was very helpful and shared her opinion about the houses with us; her interview reflects this. The families were at ease knowing she was with us, and due to the fact that Félix Lozano notified them of our possible visit.

An interesting point to make is that many homeowners thought we were going to help them with their housing situation. Albeit I explained to them that I was interviewing for the purpose of my thesis, they believed I had some authority position with the local government, as an architect. They kept telling me, “Ojalá, y nos pueda ayudar.” This translates into “Hopefully you can help us.” I responded that all I could do was provide copies of my thesis to local government agencies. In one case, the owner’s old shack house had burned down adjacent to her new home. She firmly thought that we were with the government since we were asking her questions and taking photographs. I concluded these interviews on a Friday by going to the visited homes and giving the families boxes of cookies, as a token of appreciation for their time and hospitality; I purchased bags of chocolate candy for the families with young children.

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1. Introduction

1.1 Public Housing in México

For more than half of a century, México has implemented public housing in its largest urban centers. Through government funded projects and the intervention of non-profit organizations, the greater Mexican metropolitan areas have been sprawling with “housing of public interest,” as it is called by the academia and the agencies involved in the issues. The distorted urbanization in these growing metropolises is driven by the need for housing, and results in land invasion and illegal ownership (Herzog, 109). The need for housing spurs settlements that host self-built dwellings, where the families themselves do the construction labor, resulting in poor construction in 70% of the cases; carpenters or construction workers are hired sometimes when the families intend to make additions to their homes (Bazant Sánchez, 114). These irregular settlements that sprawl on the outskirts of the cities are a cry for the intervention of the government.

Over thirty years have passed since México’s state sponsored housing agency, INFONAVIT, was established. (INFONAVIT Website) This government entity has maintained the lead in social housing developments throughout the country, but other organizations, such as Habitat for Humanity have gained root in the country too. This thesis investigates these two major social housing developers. The targeted city is Tijuana, a city that is growing fast due to internal migration patterns, which is perfect for the case of both INFONAVIT and Habitat for Humanity; this border town boasts many other social housing developments. This thesis will focus on the social housing patterns and will discuss the reasons for physical

alterations of the constructions, or the lack of changes. The modifications will be a main component in this analysis, followed by conclusions and proposals for change.

The first type of social housing project that will be explored is INFONAVIT. As Mexico's only state-sponsored housing of large scale, a thorough analysis of its history and development will accompany the dissertation. Three examples of this type of housing will be presented, two in which the tenants have physically changed the construction, and one that remains unaltered. The second type of social housing to be analyzed was constructed and sponsored by Habitat for Humanity. Five examples of this type of housing will be presented, one with physical changes and one that remains architecturally intact. I will explore how this type of housing is affected by the fact that its occupants help build it from the beginning. Along with Habitat for Humanity, there is a brief discussion on squatter settlements. Squatter settlements are common at border towns between the United States and México. Due to their illegal appropriation of land and their sporadic and sudden housing developments, some tenants are hesitant to speak for fear of evictions. In Tijuana it so happens that the current owners of Habitat for Humanity homes used to be squatters and remnants of their previous settlements still remain. Interviewing them gives a greater perspective on both issues – squatters and Habitat for Humanity owners.

By preparing questionnaires for the inhabitants, I managed to get their opinions and perspectives on the pending issues of social housing. By analyzing these different social housing projects, conclusion can be made on how housing policies can be modified to accommodate for physical improvements. Changing some design aspects gives the houses leverage for easier modifications. An economic analysis of a design proposal is also made for two types of houses; one from each of the

organizations. Proposals for the future of social housing in México result from this overall investigation. Comparing and contrasting the non-profit public housing organization with a government public housing agency will evaluate the current success of the programs; documentation of the current conditions and projected reforms will accompany the thesis.

1.2 Tijuana Background

Situated on the world's most heavily crossed border, Tijuana is highly dependent on its northern neighbor city in the United States. San Diego, an economic hot spot of the U.S., provides first-class amenities and economic opportunities to its brother city. Miguel Robles, architect of a young Tijuana architecture firm called rhizoma, notes that "Psychologically, culturally, socially, we have always had the world's richest country right next to us. Not only that, we're next to the most expensive state and one of the most expensive cities in the United States" (Jarmusch 21). As a border city, Tijuana reflects in its urban growth the influence of being located next to the United States (Herzog, 110). The populations of southern Mexican states view this city as a trampoline into the land of opportunity. Although many are not able to make it through the reinforced and vigilant border, Tijuana receives them in its self-help "colonias" which hug the rugged terrain in the outskirts of the city. Tijuana is believed to be "one of the fastest growing metropolitan areas in the Americas" (Herzog, 115). For the past half century, this city has attracted migrants from the Mexican interior; the majority of the migrants are economic refugees who become low-income inhabitants that contribute to the city's constant and random expansions.

As a result of the steady influx of low-income dwellers, the battle with local and state government has been ongoing (Herzog 128). The main issue at hand has been that of land expropriation, and the politics surrounding it. The Mexican government can expropriate privately owned land in the public interest. This political power is widely used in overpopulated cities and in the case of Tijuana, has yielded problems affecting the interests of the marginalized dwellers of the outskirts (Herzog 128).

According to México's 2000 census, the estimated population of Tijuana is 1.2 million inhabitants, but other estimates argue that this figure falls short of the real population, stating that an additional 500,000 people live in the metropolitan area which grew an estimated 5-7% annually in the past 10 years (Jarmusch 22). Judging from current migration patterns, the city is projected to keep growing. As a result, the state of Baja California is planning to complete 60,000 more social housing dwellings by the end of this fiscal year (Jarmusch 22). Most of that construction is being outsourced to private developers, but is being financed through INFONAVIT or other similar federal loans. (Jarmusch 22)

In Tijuana, social interest homes are going for as low as \$15,000 USD; although they are small, they are adequate, and economically affordable to maquiladora line workers earning \$200 USD per month. With a strong housing crisis facing the city, other families keep living in shacks. Shacks can be expanded at will to accommodate extended families and growing space needs, whereas the social housing dwellings are almost unchangeable, at least during the first couple of years (Jarmusch 22)

René Peralta, a successful young architect and professor, belongs to a group of “emerging Tijuana designers, artists, and academics;” he sees the future in these new housing developments and embraces “the chaos and friction of a city exploding with migration, development, and vibrant but clashing cultures” (Jarmusch 21).

1.3 INFONAVIT

Instituto del Fondo Nacional de la Vivienda para los Trabajadores (Workers’ Housing National Fund Institute) was created under the effective reforms of the Mexican Constitution, Article 123, Part A, Section XII (INFONAVIT 3). This national housing fund was established at first by resources from the private sector that favored building deposits for their workers, allowing them to establish a system of financing and giving credit for comfortable and hygienic properties. The law also stipulates that the institute is to realize activities with policies that incorporate interests of housing and urban development; such actions require coordination with other public organizations (INFONAVIT 3)

1.3.1 Objectives

The specific objectives of this institute are to administer its government resources, and establishment of a system that allows workers to obtain credit in order to: a. acquire property, b. construct, repair, and modify current housing, c. make prompt payments on credit obtained from the institute. Most of the housing that this organization participates in is located in urban centers. This also functions in conjunction with other public sector organizations in the interest of architecturally beautifying spaces in the urban fabric. As a political and socioeconomic strategy, the institute opts to acquire and develop land

that is near industrial parks or that allows future development. Also, as policy, the institute only acquires land without previous urbanization because land with infrastructure and public utilities has a higher commercial value. (Seemann 124-148)

Adequate national and regional planning is essential in guaranteeing the continuity of the construction programs by having strict control on the allocation of resources and costs. In an effort to be progressive in the development of its own programs, INFONAVIT has taken advantage of the experience and technology of other housing programs. Once completed, housing programs generate valuable information which is used periodically to evaluate the procedures that INFONAVIT undertakes; this allows the organization to create new methodologies for approaching housing problems and yields rational community planning systems (INFONAVIT 29).

In recent years, the exodus of Mexico's rural population to the metropolises has left the institute striving to meet demographic growths. The low income levels, expenses of construction materials and equipment, and lack of private funding have also added to the stress on housing demands. Due to this latter fact, the objectives of this government agency have developed and consist of responding objectively to the basic necessities of the population and to make the costs of housing economically accessible.

1.3.2. Policies

According to the guidelines of the institute, it carries a responsibility that extends beyond simple construction of housing units. The acquisition of land is based on localization and area factors, denying any opportunity of speculation based on commercial values (INFONAVIT 10). Housing projects are situated in environmentally safe zones, adequate for hosting

inhabitants' activities and needs. As policy, INFONAVIT housing complexes promote social interaction between families of different socioeconomic levels. Also, the aspirations and input from the occupying families are taken into consideration through multidisciplinary analyses of cultural patterns. Dwellings are considered integral realizations, not individual constructions; placement in an environment that contemplates housing, recreation, transportation, education and work is critical. Starting in the design and planning phase, new housing developments contemplate strategies for future development and/or modifications; it is necessary to give flexibility as to allow a wide range of uses for the individual units – such leverage suggests a dwelling that can be modified in stages. (INFONAVIT)

1.3.3 Requirements and Procedures

INFONAVIT, as an organization, serves the purpose of giving credits, or loans, to workers. These loans can be used to purchase new homes, remodel owned property, or pay off existing mortgages. In order to be eligible for an INFONAVIT credit, you have to be either employed by the government or your employing enterprise has to participate in the program by contributing 5% of the workers' wages. These private enterprises and the Federal Government economically sustain the projects and undertakings of INFONAVIT. The organization then chooses to start new housing developments, or it outsources housing projects to third-party developers. In the latter case, the financing is still handled directly by INFONAVIT.

The application process can be somewhat lengthy, compared to Habitat for Humanity. Each applicant has to fulfill certain requirements. The first step in the application process asks for general information about the applicant and his/her spouse, occupations, background information, bank account information (account numbers and balances), monthly income,

extraordinary debts, references, and other property (including cars, jewelry, art pieces, furniture, electronics). The loan-granting entity then does an economic analysis of the applicants' possibilities, in which INFONAVIT takes into consideration an estimate of income and monthly living costs – i.e. food, utilities, transportation, entertainment, and education.

The cost of INFONAVIT homes varies throughout the country, especially since the housing types vary from apartments, to duplexes, to one- and two-story homes. In Tijuana, the most common type of construction is the single-family house, which costs an estimated \$15,000 USD. The most common financing that is established is for 15 or 30 years; the monthly mortgage varies from \$120 to \$230 USD monthly. Contrary to Habitat for Humanity, INFONAVIT does apply a financing charge to its beneficiaries.

1.3.4 Rules and Restrictions

For new homes, the purchaser's contract stipulates that the new owner is satisfied with the new home, and holds him/her responsible for the physical state, use, and maintenance of the building. Any taxes, new building costs, and building costs that arise thereafter are the sole responsibility of the new inhabitants. Also, in the case that the owner should be jailed, he/she still remains responsible for the mortgage payments. Since INFONAVIT strives to create communities and develop integral housing projects, their constructions shall only serve the purpose of a residence, and under no circumstances shall they establish any type of commercial or industrial use. House fronts are prohibited from selling goods and services, or setting up clothes drying lines. It is also against organizational rules to leave abandoned or wrecked cars in front of your lot. All owners are expected to participate in local neighborhood committees that serve to protect and preserve the quality of the community.

As soon as a contract is signed, and the dwelling is purchased, the owner can do anything he/she wishes as long as it stays within the rules of function and construction. Changes, additions and remodels are allowed in INFONAVIT constructions, as long as they do not interfere with neighbors. In these cases, professional supervisors evaluate the proposed modifications and authorize competent proposals. Every exterior modification shall intend to respect the overall “architectural harmony” of the housing development. Alterations have to abide by local and federal building codes.

1.3.5 Future Progress

Projected reforms for the institute include revitalizing the architectural image of public housing, minimizing construction costs, and reducing project execution time. Image revitalization refers to exterior aesthetics and functionality in layout and design. The minimizing of construction costs also entails lowering sale prices, allowing for greater production of public housing units. Reducing project execution time also helps by lowering financing costs, enabling growth in the construction sector which in turn benefits the labor market with job creations. (Seemann, 172-208)

The agency has undergone many changes from 2001 to date. Its tripartite governance system now has equal representation from the labor sector, the employers’ sector, and the Federal Government. It is striving to uphold an international social character, where transparency, efficiency, quality of service, and financial strength play a major role. INFONAVIT now intends to give workers a greater choice of homes, giving equal treatment to all of its beneficiaries,

independently of their economic level. Their renewed national campaign has been launched with the following slogan: “We make your right to live better a reality” (INFONAVIT Website).

1.4 Habitat for Humanity

The beginnings of this organization can be traced back to 1965, but their strong influence was felt when they went international in 1976. Since then, hundreds of thousands of families have benefited from the private donations that Habitat receives. In 1984, the involvement of President Jimmy Carter brought the organization to a new international limelight, allowing it to flourish and help families in need of adequate housing (Habitat for Humanity Website). The worldwide housing crisis has enabled Habitat for Humanity to reach new heights, and has now developed to become an integral part of many countries’ social housing projects. In México, this non-profit organization began working in 1987 and is now present in almost half of the states in the country (Habitat for Humanity México Website).

1.4.1 Objectives

This organization, although founded on Christian principles, is inclusive to all areas of society and interacts with people with a wide range of beliefs. Through the building and rehabilitation of homes, Habitat for Humanity brings together national and international interests to various parts of the globe. By taking into consideration that it is everyone’s fundamental right to

live in a decent home, Habitat helps communities in need by developing adequate housing, ensuring a prosperous future for the benefited families.

1.4.2 Policies

Habitat for Humanity goes into communities with the intention of influencing the locality's leadership with resources that can spur growth. As a main factor of the program, it provides everyone with access to economically cheap and decent housing. It upholds the values of communal working by inviting families and volunteers to participate in the construction process. As stipulated in its mission statement, Habitat refuses to make profit from the developments that it sponsors; its priority is to meet human needs and to develop healthy and integrated communities. The economic support that it receives from donations and the repayments that it receives from benefited families goes into the "Revolving Fund," giving way for the realization of more housing developments. As a way of reducing construction costs, the organization utilizes affordable construction materials that are readily available in the immediate area. The long-term assurance of a well-built home is the final result that the organization intends to achieve. (Habitat for Humanity Website)

1.4.3 Requirements and Procedures

As a pre-requisite to join the program, you have to be in need of a house. The interested parties must prove that they have a family, are at least single parents, or provide economically for other legal dependents. Singles and couples without

children are not admitted into the program unless they fit into the latter category. They also have to provide their own land; Habitat, unlike INFONAVIT does not provide a plot of land. The main purpose of the programs is to give loans that allow for the construction of economic and decent houses; no profit is made from such undertakings. Since Habitat grants no-interest loans, a thorough economic status analysis is done, so as to guarantee the beneficiary's ability to pay the monthly mortgage. The organization does not give away homes. The mortgage only covers the material costs of the constructions; the labor is undertaken by volunteers and the program's partner families. As part of the binding process, you have to agree to participate mutually in the building process. This mutual help allows more dwellings to go up in areas that are targeted by Habitat for Humanity. In Tijuana, the average cost of a house is approximately \$6000 USD. The repayment plans vary from 5 to 10 years (this range is 7 to 30 years at the international level). The most common repayment plan is the 10-year plan, and the usual monthly mortgage is about \$50 USD. (Félix Lozano, personal interview, 21 January 2005)

Wherever Habitat for Humanity works, it does so by interacting with local affiliates; this includes individuals, other non-profit organizations, and other local developers. These local affiliates help with fund raising, house construction, fixing mortgage plans, site selections and legal titles of land in the case of México. Although no economic support is received from the local government, Habitat works in conjunction with them in an effort to eliminate poverty and substandard living conditions in the targeted areas. The only active role that government or other partnerships play in Habitat for Humanity is the development of infrastructure, setting up utilities, and granting land titles.

1.4.4 Rules and Restrictions

Habitat for Humanity grants full ownership of the houses it constructs to the beneficiary. He/she is responsible for any extraordinary costs once the house is finished and handed over. Contrary to the dispositions and rules of INFONAVIT, Habitat prohibits the physical modifications of the dwellings; these include additions or extensive remodels. Aesthetic changes are allowed in the interior and exterior. Once the mortgage of the house has been paid in full, the owner can do what he/she pleases with the construction. While mortgage is still owed on the house, it cannot be sold, rented, or used as a commercial commodity that is geared to augmenting personal profits. According to Félix Lozano, the Administrator for Habitat for Humanity in Tijuana, modifications are prohibited for the good of the owner and the organization (personal interview, 19 January 2005). He says that if owners invest in additions or remodels, that means they have spare money. The organization would rather secure the mortgage payment than have the owners spend their money elsewhere. This also adds to the “Revolving Fund” which aids in spurring additional housing developments. The sooner they finish paying off the house, the sooner the owners can alter it, so this restriction also serves as an incentive for those eager owners who want to make modifications to their property. Once the mortgage is paid in full, the owners can then set up semi-commercial workspaces in the houses, for the purpose of economically supporting their families. (Félix Lozano, personal interview, 19 January 2005)

1.4.5 Future Progress

Habitat for Humanity is satisfied with the process and proceedings of its organization, yet it has proposed to do some minor reforms. It intends to reach out to more volunteers and positively influence economically deprived communities. In México, committees have been formed to better support the needs and logistics of the organization. Donations from the corporate sector and cash donations from private entities are also intended to rise in the coming years, through the evidence of successful completions of integral communities. Habitat for Humanity has reached rural, semi-urban and urban regions in México. The capital, México City, has been the most benefited region, but recent migration patterns and urban growth has focused attention on the towns that border the United States. A call for the dire need of housing in these areas has attracted both private and public housing developers. (Habitat for Humanity Website)

1.5 Research Methodologies

I did some field work by making several visits to communities with housing from INFONAVIT and Habitat for Humanity, as well as administration. I had a questionnaire prepared for the inhabitants and managed to get their opinions and perspectives on the pending issues of social housing. By analyzing these different social housing projects, I conclude how housing policies can be modified to accommodate for physical improvements. The three interviews with INFONAVIT

inhabitants varied in length. The average visit at the INFONAVIT houses turned out to be about three hours long, but much progress was achieved for the purpose of this investigation.

Félix Lozano, Administrator of Habitat for Humanity Tijuana, was new and was still adjusting and learning his way around, yet he was great help. He contacted some families on my behalf, and set up appointments at their homes in the “colonia” 3 de Octubre. The Habitat homes in this colonia are somewhat dispersed, but all were in similar conditions. I managed to interview with 5 families. In these interviews, I was able to take photographs of houses that were still in the stages of construction and houses that had been finished years and months back.

My interview questions consisted of occupancy information, household income, participation in the design process, general site and house settings, modifications and their explanations, use of space, residents’ suggestions, photographs of the constructions, and a quick schematic layout of the house. All of the responses were incorporated into this thesis; I have not omitted any information that was provided. Appendix A is an example of the interview form. The full forms can be seen on Appendixes C through J. Appendix B, on pages 67 through 69, shows a table with the consolidated results of the interviews.

2. INFONAVIT Analysis

The following three interviews were conducted during a holiday weekend. Each house is located in a different part of the city, but all are located on the outer ring of the Tijuana's development, meaning that they have to travel about 15 – 30 minutes in order to reach the downtown area.

2.1. Zaín Rodríguez – Fraccionamiento Villa Fontana

2.1.1. Background

Zaín, an architect by profession, occupies a two bedroom house along with his wife and young child; Lizet, his wife, is expecting a second child. The overall spatial layout and schematic plan of the construction can be seen in Figure 2.0. This family boasted the largest income out of all of my interviewees (\$8,000 USD), but they also had the biggest mortgage payment. They financed their property for a 15-year period, leaving them with average payments of about \$230 USD, although the initial mortgage

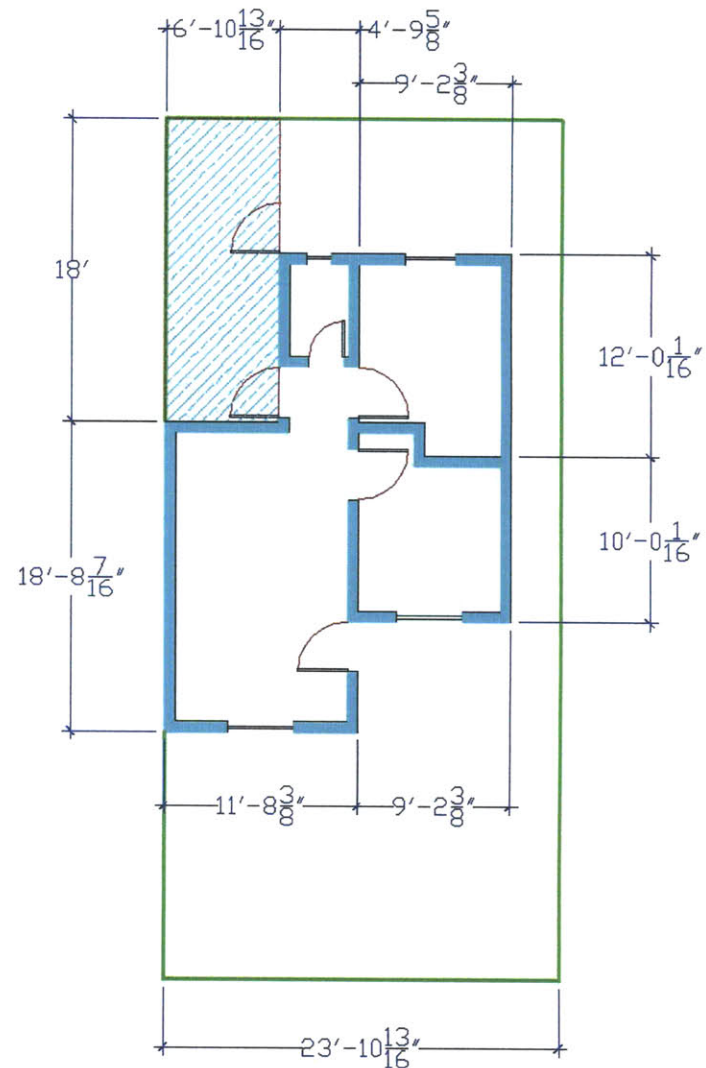


Figure 2.0 INFONAVIT Floor Plan

payments started at \$160. Zaín, head of the household, holds a professional visa, so he works in San Diego for an architecture firm; he has to commute daily between the two countries, giving him an economic burden on transportation expenses. He has lived in the house for six years, so substantial changes have taken place in the dwelling.

2.1.2 General House and Site Descriptions

The exterior of the house appears normal, but the interior is well-kept and has been significantly improved from the normal austerity of the constructions. This house is in a gated neighborhood, and even with such security measures about half of the residents have reported robberies (Figures 2.1 and 2.2). The abode is compact but decent for a young family. Construction of the house consists mainly of poured in concrete, 10 cm thick; the ceiling has been reinforced to provide for a 2nd floor option.





Figure 2.3 New kitchen finishes and cabinets



Figure 2.4 New closets



Figure 2.5 Driveway gate

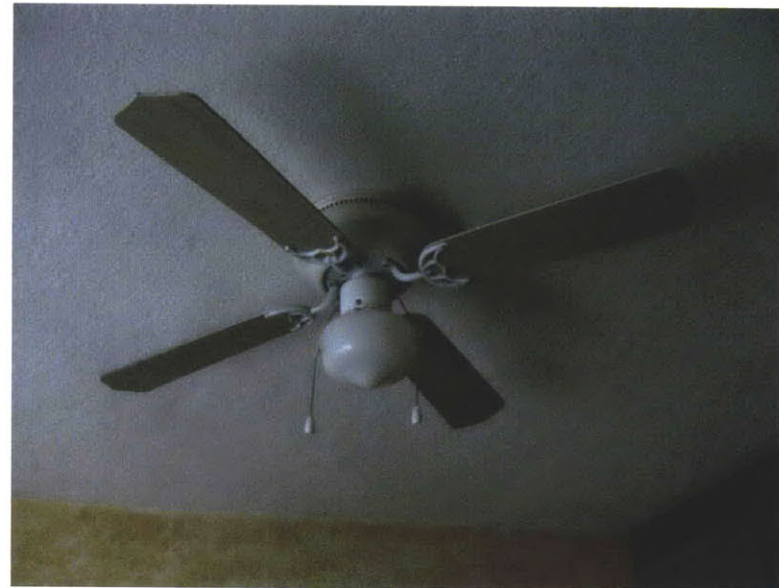


Figure 2.6 Ventilation

2.1.3 Modifications

An estimated \$10,000 USD has been spent on modifications and additions to the house. The front property line boasts gates for the driveway. As can be seen in Figure 2.7, an addition was made to the back of the house, converting the patio into a washroom and study area. The construction for this part of the house was done with drywall and metal studs, instead of the traditional concrete or CMU which is used widely in Tijuana. The addition was made in the interest of space, and professional labor was employed in its construction.

Interior modifications include floor tile, carpet, cabinets, ceiling fans, remodeling the closets and building an interior wall in the restroom. Both professional labor and self labor was employed. The reasons for such modifications are due to aesthetics as well as thermal comfort and convenience. Figures 2.3 through 2.6 show these changes which total \$5,000 USD in costs.

The only personalization alterations were wall texture and paint (\$800 USD). The tenant said that future modifications include getting a front porch with a wood roof in the front of the house. He also wants to raise his perimeter wall because his neighbor in the back is too loud and the noise easily echoes into his house. Such undertakings would be done by professionals.

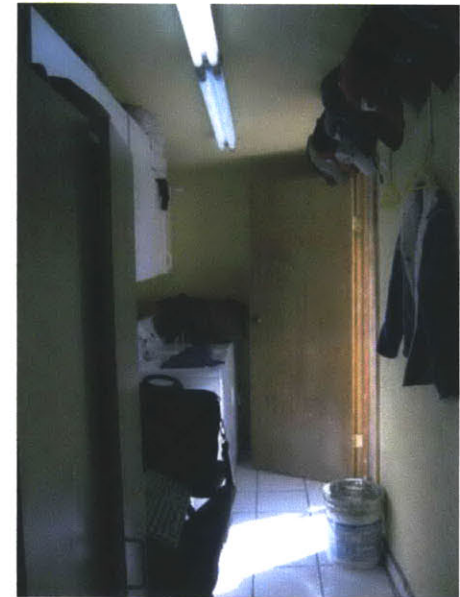


Figure 2.7 Addition

2.1.4 Owner's Suggestions

The two-bedroom house is compact, and for sake of space efficiency has no dinner table; clearly the choices were a living room or a dining area. According to the inhabitants, most of their time is spent in the living room because the TV is located there. The owner, as a professional architect, suggests creating a functional service way through a flank of the house, allowing access to the back part of the house without entering it. He recommends that wood construction is not ideal due to the flimsy walls; some of his neighbors used wood framing for their second floors and their houses were broken into easily. Another suggestion was to make a larger living room and to push the restroom further back instead of placing it so close to the bedroom and kitchen. When asked about suggestions related to the construction and the materials utilized, the owner said he would prefer CMU construction instead of poured in concrete.

2.2 Cynthia Hernández and Emilia Gámez – Fraccionamiento Del Valle

2.2.1 Background

This two-bedroom house is occupied by a single mother and her two teenage daughters. Both girls are still students and the mother works at a Beauty Parlor, bringing in about \$2000 USD every month. This INFONAVIT house was purchased 9 years ago, on a 30-year financing plan; the monthly mortgage is about \$120 USD, but including utilities makes the cost surge to \$350 USD. Although the house was purchased through the husband, after a divorce Emilia kept making the payments.

2.2.2 General House and Site Descriptions

The graffiti in the surrounding areas gives an unsafe appearance to the neighborhood. Unlike Fraccionamiento Villa Fontana, where Zaín Rodríguez lives, this community is not gated. The family talks about robberies and safety issues; the abandoned cars and the three locks on the doors seem to corroborate their statements. The house itself is compact, like most INFONAVIT housing, yet every room in the house is easily accessible. Figure 2.8 shows a plan layout of this house. A negative aspect is the poor lighting, it gives a claustrophobic appearance. Like the previous example, this house is also constructed with poured in concrete.

2.2.3 Modifications

Major exterior changes to the house include window guards for security reasons and the patio lavatory was moved from being next to the kitchen, and was placed outside. This latter change allowed the family to purchase a washer; they had space restrictions before.

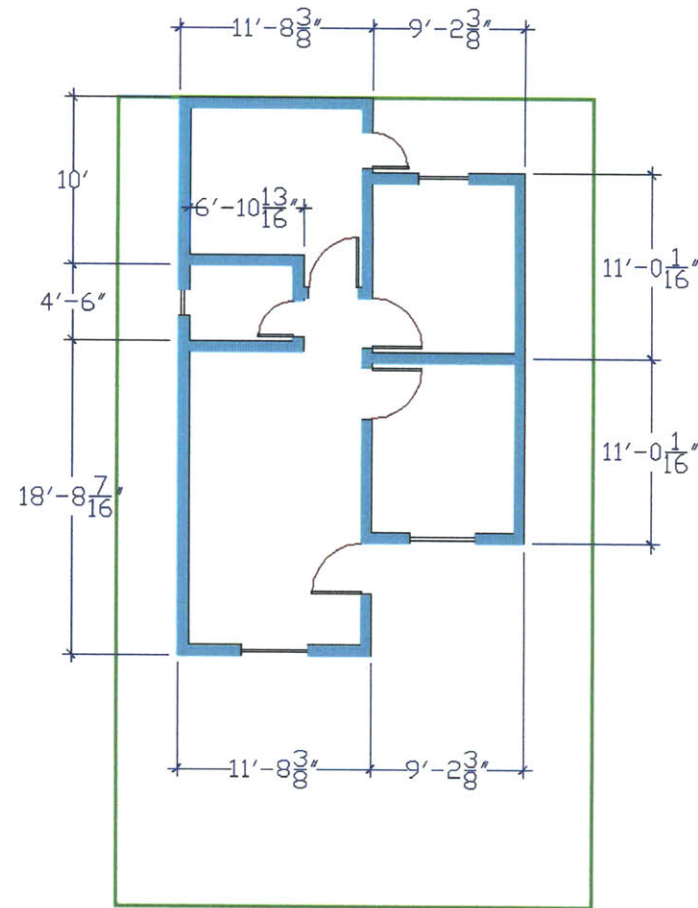


Figure 2.8 Floor Plan for INFONAVIT

The interior of the house has considerable changes. Floor tile and carpeting were among the first things to be added to the house; the previous polished concrete floor was somewhat uncomfortable. Cabinets were also replaced in the bathroom and kitchen, and new doors were purchased for the interior of the house because the original doors were cheap and hollow. According to the family, an estimated \$2,000 USD was spent on these modifications

The only personalization touch was a fresh paint job and a refinishing of the interior walls and ceiling. An estimated \$500 USD was the cost of this ordeal. As for future modifications, the owner is going to try to fit in a dryer in the back patio. If a slim enough dryer cannot be purchased, that would entail moving the sink over; this would be done professionally. A dryer is needed because clotheslines are not enough to meet the family's laundry needs.

2.2.4 Owner's Suggestions

The owner suggested that a larger back patio and a larger restroom would make her house perfect for her needs. She said if possible, INFONAVIT should consider adding a second small bathroom or a half bathroom. Another remark she made refers to the cheap cabinetry and doors that are used; the option of upgrading these components should be given. As for finishes to the house, she said all of the new houses should come with tile and carpet, even if that implies raising the cost a bit, because everybody adds this to their homes, according to her.

2.3 David Rodríguez – Fraccionamiento Lomas Verdes

2.3.1 Background

Unlike the rest of my interviews, this house is fully owned and no mortgage is being paid on it. Only utilities are paid on a monthly basis, totaling up to \$200 USD per month. The reason this house is fully paid is because it was an inheritance. David Rodríguez, the current inhabitant, inherited the property from his mother, who passed away when he was a young teenager. The two-bedroom apartment (Figure 2.9) is located in a two-story housing complex; although David has owned it for over five years, it was vacant until he moved in about a year ago. As a car salesman in San Diego, David brings in \$3,000 monthly along with the help of his uncle who also lives in the apartment. David splits his residency between San Diego and Tijuana, so he does not always reside in his apartment.

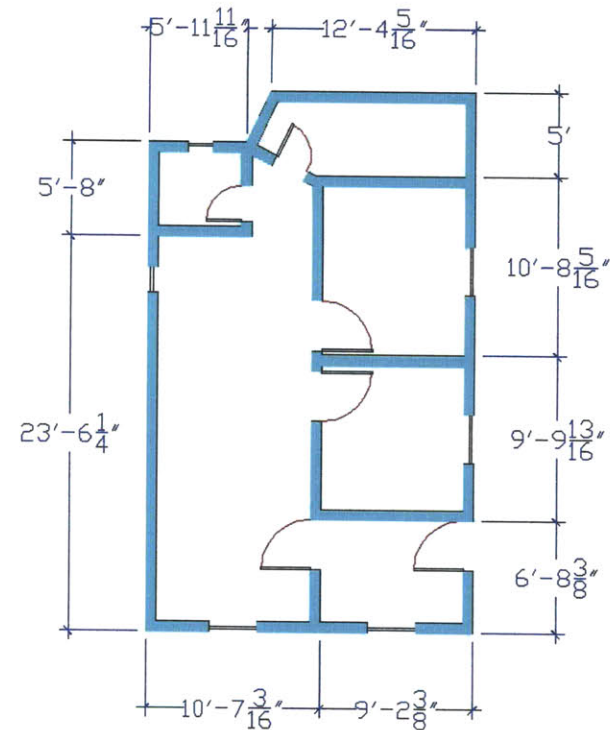


Figure 2.9 Floor Plan for INFONAVIT Apartment

2.3.2 General House and Site Descriptions

The social setting appears somewhat unsafe at night, with many homeless people lingering around in neighboring streets. Graffiti is prevalent in the area (Figure 2.10), along with some trash and abandoned cars. The door to the apartment has four locks for security purposes. For two adults, the house is small but functional. The exterior needs new stucco and paint. In construction, this housing development differs from the other two because it was built using CMU block instead of poured-in concrete.

2.3.3 Modifications

Exterior modifications include window guards for security purposes. This addition to the windows was recent, after the house was broken into due to its vacancy. \$430 USD was the cost of the guards and the installation.

At one point the house had interior upgrades, but the vacancy allowed vandals to break in and destroy and take some materials. Its recent remodel called for new tile, a new toilet, new kitchen cabinets, and a ceiling patch (the ceiling was sagging and staining due to a water pipe rupture in the neighbor's house). This brought expenses for the interior to \$600 USD.



Figure 2.10 Surrounding Community

According to David, future modifications include carpeting the concrete floors and painting the interior and exterior. The concrete floor can get rough and cold says the owner; these changes will run about \$400 USD. Wall modifications are not allowed due to structural restraints since this is the first floor of the two-story complex.

2.3.4 Owner's Suggestions

If the owner were an architect, he says he would have moved the door away from the stairwell because it creates a wind tunnel which causes the dwelling to cool down rapidly. He would also remove the door that is located between the two main rooms because it is "senseless" (See Figure 2.9). Constructionwise, he would try to employ a different kind of material that was not as cold as CMU for the walls.

2.4 Conclusions for INFONAVIT

Compiling the information from all three of the interviews, some conclusions can be reached. In all three cases the dwellings were two-bedroom homes, which is the standard size for an INFONAVIT house. The property is given to you finished, including land titles (if applicable), but to qualify for the program you have to meet an economic bracket. The inhabitants have no initial involvement in the design or construction stages of the house.

A few years after the housing projects are finished, insecurity appears to rise in the areas, notably gangs and graffiti begin to appear. All the dwellings are compact, some lack appropriate day lighting, but the space is functional for small families. The construction is resistant, but not optimal considering that the area is prone to earthquakes.

The three examples of INFONAVIT housing had window guards added, and two of the cases made some kind of addition to the backs of their homes, claiming they had space issues. All three cases modified the interiors by getting tile, carpeting, and new cabinets. Apparently the cabinetry, sinks, and closets that are included with the cost of the house are of substandard quality, so the owners opt to buy decent ones. Two cases mentioned problems with ventilation and comfort inside the house, and all of the interviewees had refinished the interior walls, or were planning on doing so. Security, space needs, and thermal comfort seemed to be the primary reasons for making big changes in the houses.

Everyone claimed that the living room was the most important part of the house because “that is where the television is.” Along those lines, most owners suggested bigger common areas (i.e. living room). If they were given the option of upgrading internal components such as cabinets, they would have all opted for it, even if that meant raising the initial cost of the house. Only the architect, Zaín Rodríguez, suggested using different construction materials for the purpose of being able to modify the houses with ease.

3. Habitat for Humanity

All of the following interviews were conducted during the same week of January, and all of the houses were located in the “colonia” 3 de Octubre. Most of this area was a squatter settlement before the government intervened and purchased the land, regularizing it in order to provide the squatters with adequate land titles. Public utilities in the area are still under development, with only 1 paved street – it was paved about a year ago; only water and electricity are available to most of the residents. The interviewees in all of the cases were the women of the household, and occasionally children that were present said something. Everyone who owns Habitat for Humanity homes in this area was originally a squatter living in self-constructed homes. The government regularized the land, giving land titles to all of the families who had established themselves there. By considering the size of the families, Habitat for Humanity gave all of the beneficiaries the option of having a 1, 2, or 3 bedroom house. All of the houses use a steel reinforced web on CMU construction walls, with rough finishes and poured-in concrete roofs and frames. Foundations are achieved by using deep piles settled on solid rock bed.

3.1 Hilda Rocha Arias and Roberto Corona

3.1.1 Background

Hilda is a housewife, while her husband is a construction worker. She is also an active member in the Habitat for Humanity program, and presently serves as a delegate to the

Figure 3.1 View of surrounding community



committee that deals with logistics in her “colonia.” She has four children living at home, ranging from young teenagers to college students. Although her monthly mortgage is only about \$50 USD, her family’s monthly income is barely \$800 USD. She financed her home for 10 years, and says anyone can join Habitat for Humanity, but at first it is difficult to believe in the program. Originally, her family was squatting on the land but they obtained property titles and later joined Habitat. This family waited three years to receive a home from the Habitat program, and has been living in their new home for over a year. Due to the size of the family, they were given the option of having a two or three bedroom house; they chose the latter.

3.1.2 General House and Site Descriptions

According to Hilda, the area is high-risk, but the neighbors still manage to maintain a strong sense of community and they have established a rudimentary neighborhood watch program. The house



is situated on a corner with neither streets paved (see Figure 3.1) and the only public utilities in the area are water and electricity. No phone or sewer service has been established yet. The owner has a good setup of furniture, yielding optimal space and comfort (Figure 3.2). Although the space is well inhabited, Hilda says she would not mind some extra space. An overall plan layout of this house can be seen in Figure 3.4.

3.3.3 Modifications

The owners have recycled some materials from their previous abode, to create some of the external modifications. They set up a washer and sink area, additional storage space (Figure 3.3), attached an overhang to the front of the house (Figure 3.7), and set up a perimeter fence (Figure 3.8). These changes only added up to \$100 USD because the materials were mostly reused. Interior modifications only include tile for the restroom and plastering two bedrooms (Figures 3.5 to 3.6). This was done by the family for aesthetics, costing them \$150 in material. Projected modifications include purchasing interior doors, plastering the rest of the house, and installing kitchen

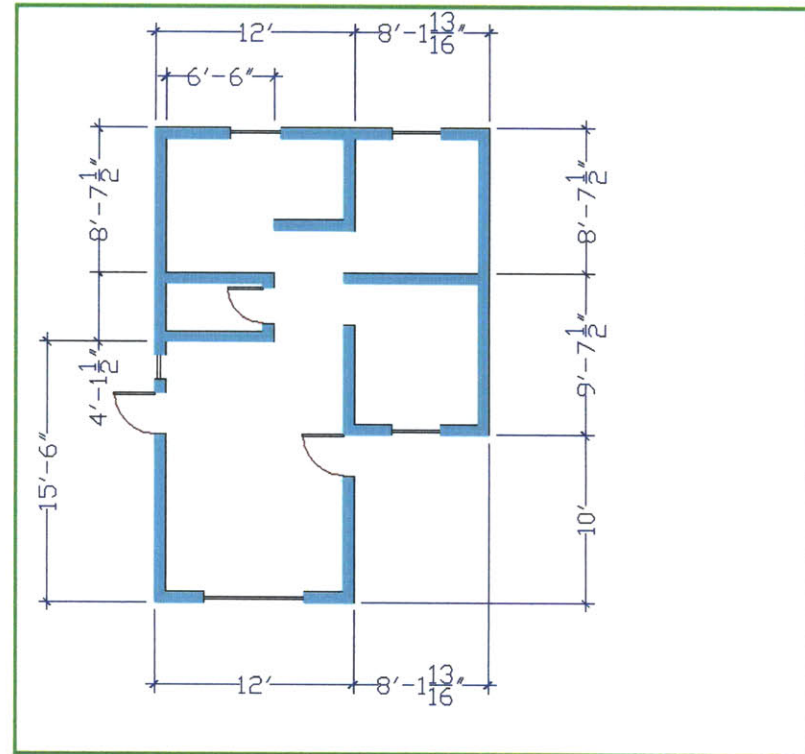


Figure 3.4 Habitat for Humanity 3BR Floor Plan

cabinets. Privacy has become an issue now that the children are older. Hilda calculates that she will spend about \$250 USD on those projects. The dining/kitchen/living area is especially important because that is the place where her children study and watch television.

3.3.4 Owner's Suggestions

Although she has no negative critique of the program, Hilda suggests that Habitat give land or help with land proprietorship as part of their program. In future designs, she would also like to see overhangs in front of the houses. The owner had no complaints whatsoever on the quality of the construction because she got to see the house go up, and helped with the physical building of it.



Figure 3.5 Bedroom with wall finishes



Figure 3.6 Bedroom view



Figure 3.7 Entrance, porch overhang detail



Figure 3.8 Exterior view

3.2 Rosa Soto and Félix Cutiño

3.2.1 Background

This house is located about 150 feet from Hilda's house, on the street called 20 de Noviembre. Like the previous interviewed family, this one subsides on an \$800 USD per month income. They also have the same structure of payments and financed their home for 10 years. After a waiting time of approximately one and a half years, Rosa finally got her home; they have occupied the new dwelling for almost 9 months. Her decision to join Habitat for Humanity came after attending a few of their workshops; she now teaches other interested parties how the program works. As an original squatter, she had to get rid of her old home as a requirement.

3.2.2 General House and Site Descriptions

This family owns a three bedroom house (Figure 3.10). Being Hilda's neighbor, Rosa also participates in the neighborhood watch program, and she too only has basic utilities. Her previous home was a one room dwelling, so this is much better for the family's needs. Her input on the construction consisted of choosing to place a larger window in the living room (Figure 3.9), allowing more light to penetrate the northwest facing living room. Some

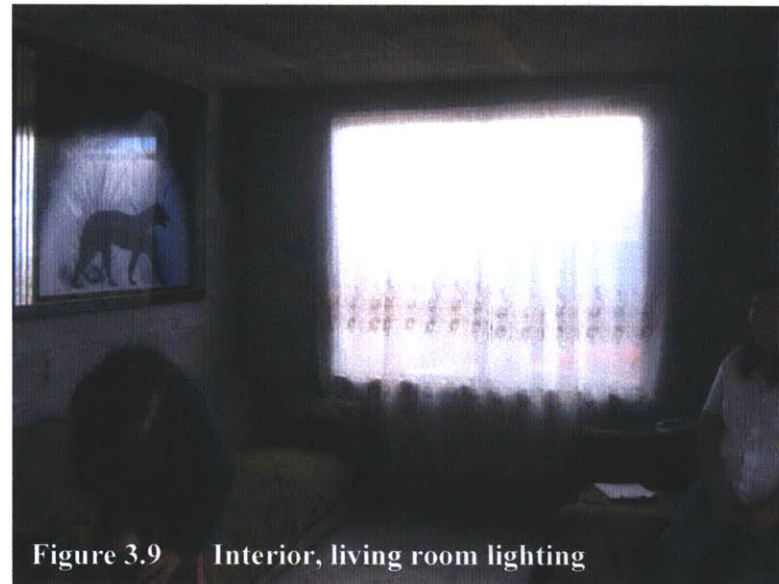


Figure 3.9 Interior, living room lighting

furniture is present throughout the house, and part of the restroom has not been finished, but she is content with the current results.

3.3.3 Modifications

The only significant changes are a washer and sink setup on the outside of the house. Since the house was just bought, money has been tight lately. \$100 USD were spent on that change. However, the family plans to place interior doors (none were provided), plaster the walls, and add floor tiles to the whole house. The reasons they need to do this is for room privacy, aesthetics, and comfort when walking around the house. They think these alterations will cost them about \$200-\$300 USD.

3.3.4 Owner's Suggestions

Rosa Soto agrees with every part of the Habitat for Humanity policy, from owning land, to communal work and the financing options. She says the program should only be applicable to families or people with financial dependents. As far as

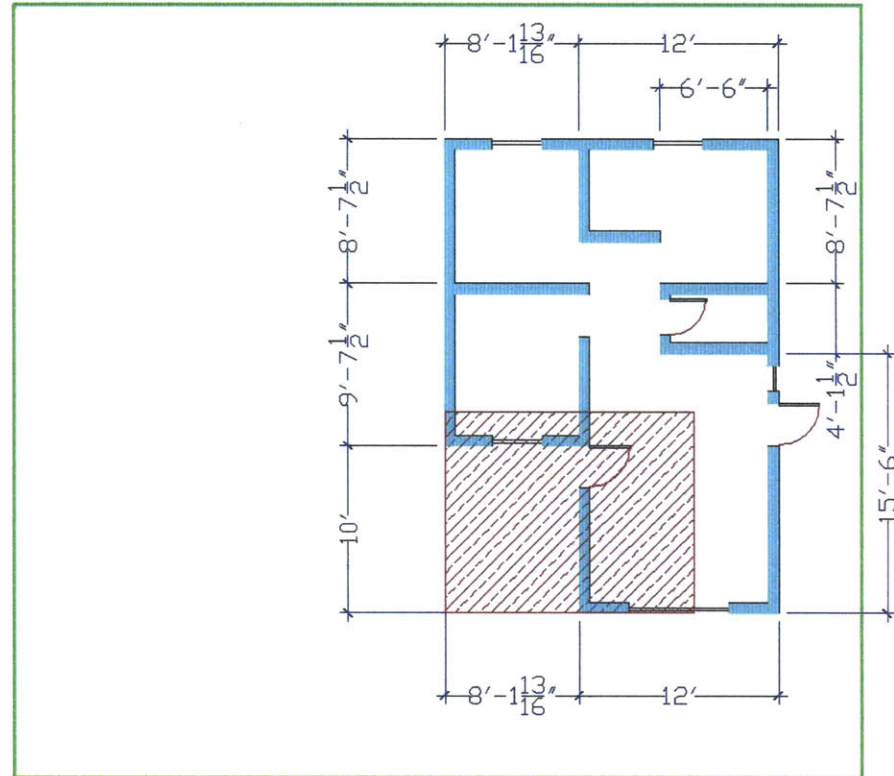


Figure 3.10 Habitat for Humanity 3BR Floor Plan

the design, she would have liked more interior space. Separating the kitchen and the living room along with adding an overhang to the front of the house were points that she emphasized. If possible, in future designs she believes there should be an option of adding gates to property fronts. She has no complains about the quality of the construction.

3.3 Raquel Rodríguez and Francisco Cabezas

3.3.1 Background

This family is living in a two bedroom house, and has the same financing and mortgage payments as the two previous cases. Raquel was able to obtain a two bedroom house for her family, since now only her husband and a 26 year-old son live in the house. Her husband, owner of a small pharmacy, supports the family to date. His profits vary from \$375-\$1100 USD per month. This couple is among the oldest in the group of interviewees, so most of their children have moved away. Raquel and her family waited 2 years to

get a home, and in January 2005 had not moved in yet. She stated that Habitat for Humanity is a functional program and is good for people who own land.

3.3.2 General House and Site Descriptions



Figure 3.11 Hill slide, terrain collapse detail

The area appears to be high-risk in terms of mudslides and hill collapses; evidence can be seen in figure 3.11. The lot has minimal services and is a block away from the only paved road, the main street of the colonia. Although the house is spatially reduced, she claims it is better than her old wood house, and since her family is small the space is great. Choosing a two bedroom house (Figure 3.20) gave her almost the same square footage, making all areas of the house somewhat larger. The house was still under construction when I visited; figures 3.12 through 3.16 show the house under construction, and a few details. Part of the old house is still located adjacent to the new construction, and remnants can be seen in figures 3.17 through 3.19. The old out house is still functioning as the family's latrine (Figure 3.19).

3.3.3 Modifications

Due to its stage in construction, the only modification that has occurred is an extra window in the living room, which was placed there during the construction phase. The monthly mortgage payment went up less than \$5 USD due to this modification. Future alterations include a 2nd floor addition to become a small commercial shop, interior doors throughout the house, a division between the kitchen and the living room, plastering the walls, floor tile, and bathroom finishes. Although most proposed changes are solely based on aesthetics, the addition of a 2nd story would allow the family to operate their pharmaceutical shop from home. Such modifications are projected to cost between \$2500-\$3000 USD.

Figure 3.12 Construction detail





Figure 3.13 Construction progress, exterior

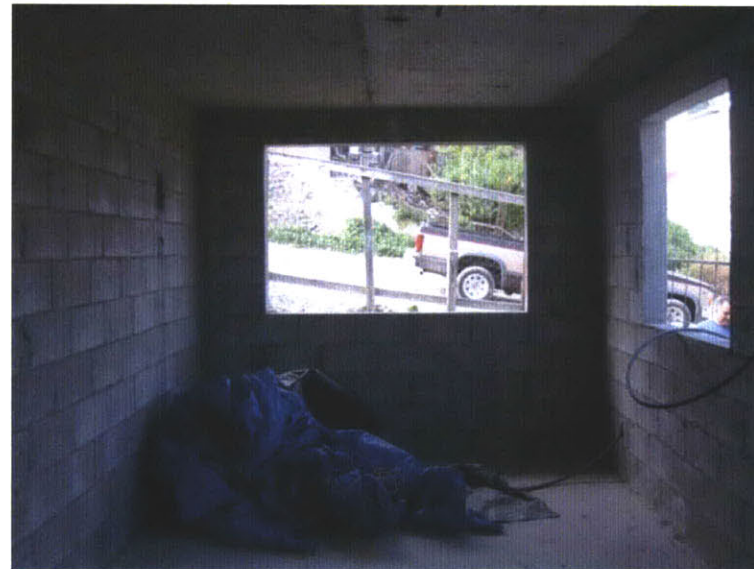


Figure 3.14 Interior, living room in construction



Figure 3.15 Exterior

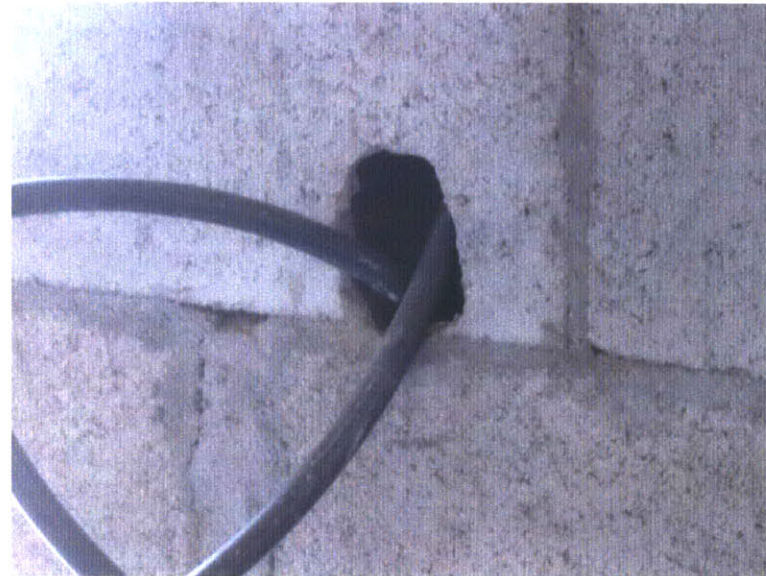


Figure 3.16 Construction details



Figure 3.17 Old squatter home



Figure 3.18 Remnants of old construction

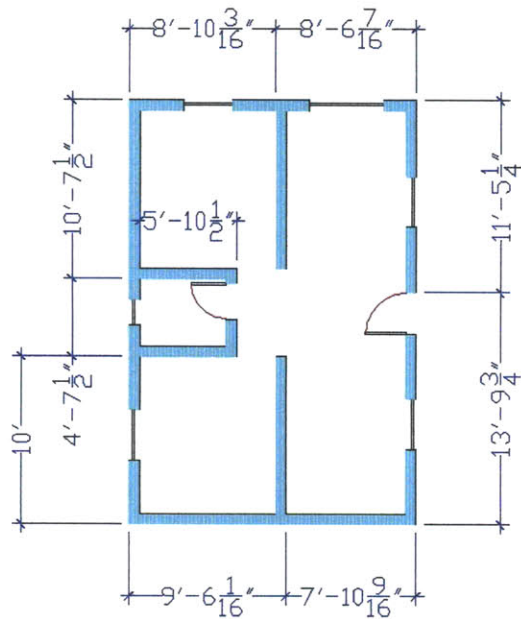


Figure 3.20 Habitat for Humanity 2BR Floor Plan

3.3.4 Owner’s Suggestions

Regarding the policies of Habitat for Humanity, Raquel said that her family could not dedicate as much time as was required for communal building. Also, she and her husband are well into their fifties, so they provide as much help as they can physically afford. As for design,

she would have liked to see the kitchen physically separated from the living room, and wall finishes as part of the final cost of the house. No negative comment was made of the construction quality, and in her opinion, the materials used on her house are “much better than wood.”

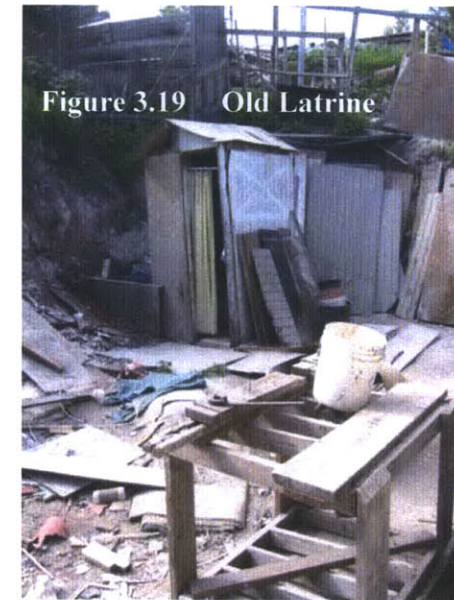


Figure 3.19 Old Latrine

3.4 Basiliza Castañeda

3.4.1 Background

This woman was originally a squatter also, but after four years of waiting, she managed to get a hold of a home through Habitat for Humanity and has now been occupying it for almost 9 months (Figure 3.20). She also financed her home for 10 years, leaving her with \$50 USD monthly payments. Her old dwelling was adjacent to her new home, and her son's family was living there, but a tragic fire brought the construction to the floor the day before my visit (Figures 3.31 and 3.32). She said that her son was going to move in with her for a short period of time. According to her story, she originally squatted because houses were too expensive in Tijuana, and she had to put a roof over her family. The most difficult part of the process in her opinion was having acquiring her own land.

3.4.2 General House and Site Descriptions

The area surrounding her house is located appears to be unsafe, and insecure in terms of hills and slopes, as can be seen in figures 3.21 to 3.23. Electricity is the only service that she is currently receiving. She feels her home is small, especially since her family has moved in with her, due to the fire. Basiliza works from home as a seamstress, so she set up her shop in the living room, making the space look

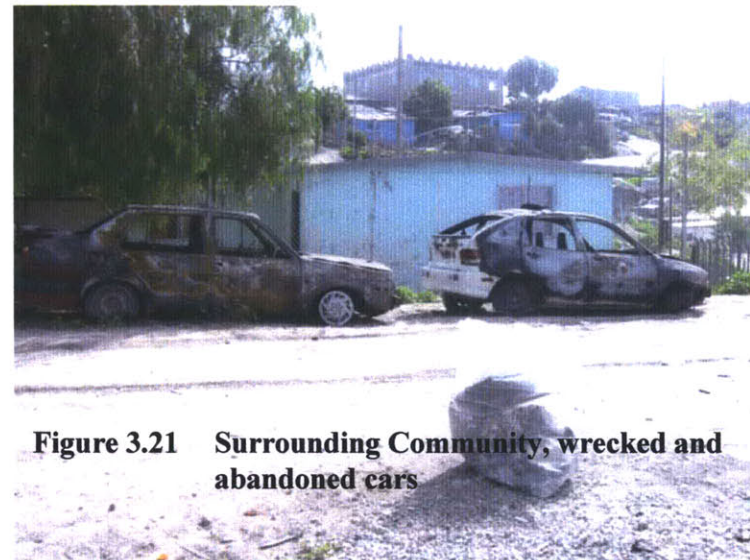


Figure 3.21 Surrounding Community, wrecked and abandoned cars

overcrowded (Figures 3.25 and 3.26). The house is lacking storage furnishings of any kind, so it adds to the encroaching feeling. The need for interior storage furnishings can be seen in figures 3.27 and 3.28.

3.4.3 Modifications

There is an area outside where water is apparently stored, and where dishes get washed. A perimeter fence was also erected. The inside only boasts minimal rough cabinetry. According to the owner, there are plans under way for purchasing interior doors, tile and kitchen cabinets. She also wants to plaster the walls, finish the restroom, set up a water connection and add a 2nd floor. Judging from the current condition of the house, it will take a long time to realize all of those modifications.



Figure 3.22 Surrounding community, view



Figure 3.23 View of crossroads

3.4.4 Owner's Suggestions

The owner is complacent with the workings of Habitat for Humanity, she only suggests that land should be sold with the house or land proprietorship should be an option when purchasing the house. Also, for purposes of lighting and adequate ventilation, she would like to have 7 operable windows, instead of 6. She has no complaints about the quality of the construction or the materials used therein.



Figure 3.24 Grandchild of Basiliza



Figure 3.25 Living room, interior



Figure 3.26 Seamstress workshop



Figure 3.27 Bedroom, interior



Figure 3.28 Bedroom, closet space



Figure 3.29 Old house



Figure 3.30 Front facade



Figure 3.31 Remnants of burnt house



Figure 3.32 Remnants of burnt house, detail

3.5 Adriana Cabezas and Pedro Mendoza

3.5.1 Background

As a housewife, Adriana is around the house during most of the day. Her husband, Pedro Mendoza, is a construction worker in San Diego and only goes back home on the weekends. The husband's situation puts this family as the top income earners in the Habitat for Humanity projects, bringing in over \$2000 USD per month. With three school-age children and another one on the way, the three-bedroom house was her best option (Figure 3.4). Adriana waited one year for her house, and has now lived in it for over a year and a half. She believes that the program is adequate for young families because rents are too high in the city. Unlike the rest of the Habitat beneficiaries, Adriana was not an original squatter, her house is somewhat distant from the main concentration of homes, and her family always held legal ownership to the plot of land.

3.5.2 General House and Site Descriptions

The area seems to be calm and a bit more secure than the locations of the other houses. She says robberies are seldom heard of in the area. The zone is still high-risk in regards to mudslides and hill collapses. Being rainy season, we got to see two hillsides freshly collapsed when we visited this house. Her area boasts nicer homes and a newly established neighborhood watch program. Adriana stated that her home was small but adequate. This house was the nicest out of all the houses that were visited.

3.5.3 Modifications

Exterior changes include a metal screen door and window guards for security purposes. The house was broken into at one point, prior to the installation of the window guards. Luckily nobody was home and the only items stolen were sundries and soaps. The cost for the security upgrades was \$250 USD. Interior modifications include 3 skylights installed in select spaces – hallway, dining area, and bathroom. The skylights allow better lighting into the dark CMU walls, and they eliminate the need for lights during the day and having the windows exposed all the time. These were professionally installed when the house was being constructed, costing an additional \$60 USD. Interior changes consist of new cabinetry and decorations. Plans for future modifications include interior doors, an addition to the house that is to become the living room, and plastering the walls. Both professional and self labor will be employed in these stages of modifications. The reasoning behind such changes includes space needs, privacy, and aesthetics. According to the husband's estimates, that should cost them between \$800 and \$1000 USD.

3.5.4 Owner's Suggestions

Adriana was very satisfied with the requirements and policies of the organization. When asked about future design suggestions, she said that more room should be given to the living room/kitchen area, or have complete separation between these two spaces. As part of the final cost of the house, she suggested including window guards and wall finishes. Due to her participation in the construction process, she is confident and self-conscious of the quality of the house.

3.6 Conclusions for Habitat for Humanity

Judging from the five interviews that I conducted with Habitat beneficiaries, some deductions can be made about the overall program, policies, and trends in the alterations of the houses. Although the program offers 1, 2, or 3 bedroom houses as their options, everyone lived in either 2 or 3 bedroom houses. Everyone had the same mortgage payments and identical financing options. Income did vary from \$200 to \$2000 USD per month. Such a range was also reflected in the maintenance and care of the dwelling. Upgrades and modifications also varied directly with the length of residency.

The overall social setting of Colonia 3 de Octubre is discreet, but always alert and defensive. From what everyone mentioned, rule of law is lacking in this region, and that influence was directly reflected in the fact that window guards were a priority for most of the families. Most houses only had water and electricity, if at all. The imminent threat of mudslides and hill collapses turns many away, especially during the rainy season. Some parts of the colonia are inaccessible with normal sedans, due to the lack of pavement. All of the homeowners stated that their homes were small but adequate, alluding to the

fact that more space would be ideal. The constructions were exactly the same, and so were the floor plans, they only varied from 2 to 3 bedrooms.

Exterior wash/sink areas are a recurring modification. Security upgrades such as metal screen doors and window guards followed. The majority of these changes were achieved by self-labor. Their reason for going through these changes was the need of extra space. The most common type of interior changes dealt with cabinetry and lighting issues, which were resolved by varying window sizes and installing skylights; professional and self installations achieved these alterations. The only personalization touches in these abodes came through home decorations.

In every case, the owner is planning to install interior doors and plaster the walls. Most of the Habitat beneficiaries also mentioned either separating the kitchen/living room area or making an addition and designating it as the living room. Professional and self work will yield these changes, due to privacy needs, aesthetics, and required finishing touches. Although all of the families wish they could build a 2nd floor, only Raquel mentioned the serious possibility of going through with her clear idea. The families' lives revolve around the living room, especially since the television set is usually located there; in the cases where the bedrooms were mentioned as the most important areas, this was so because the homes lacked living room furniture.

As far as suggestions for modifications in Habitat for Humanity policy, a few families mentioned the possibility of including land purchase as an option when entering in the housing program. Regarding design, all of them wanted something else in front of the house, either an overhang or another space that was to become the living room. Some residents also

mentioned including the costs of interior finishes (i.e. doors, plaster, and paint) and security upgrades (i.e. window guards) in the total cost of the house. More windows were also suggested, stating the need for better lighting, which some beneficiaries already achieved through standing modifications. No suggestions on construction techniques or materials were made. The only recurring remark was that CMU construction was better than their old wood homes.

4. Suggestions and Recommendations for Modifications

4.1 Policies

Recommendations for changes in policies of INFONAVIT are to create a more inclusive target group. Their high interests seem to drive many away. As an organization, INFONAVIT should consider adopting some policies from Habitat for Humanity, such as helping the people with irregular land titles establish secure ownership and provide loans for construction of homes, independent of their location. Also, INFONAVIT should secure private donations; understandably this is a governmental entity, but such private contributions would substantially subsidize financing for homeowners.

Habitat for Humanity, in turn, should try to reduce the wait time for the deliveries of homes once a person has shown interest. The waiting period should be reduced to a maximum of a year, instead of a couple of years. Their advertising and exposure in Tijuana is lacking due to the size of their current program, but with recommendations by current homeowners the reputation of their program can spread.

4.2 Sites

INFONAVIT, being the strongest housing organizations in México, should also attempt to redevelop areas near the city's center with public housing. As of now, the INFONAVIT communities are confined to the outer city core, although not at the edge. By bringing some communities into the center, the organization can achieve what it proposes in its governmental pamphlet: social interaction between all socioeconomic sectors.

Although Habitat does concentrate on working in one general region, such as a colonia, the houses are too separated to create communal harmony; they are hundreds of feet apart at times. In Tijuana, the owner has to approach with will to enter the program, creating a random construction pattern, so Habitat should definitely consider small scale tract housing in the interest of grouping their beneficiaries and creating a community with equal interests. At the time of developing houses, Habitat should also attempt to establish basic public utilities before going through with the construction of the houses; many of the current homeowners still lack water and/or sewer services.

4.3 Construction and Materials

Both housing agencies should consider building with more flexible materials. Although the building materials they use are readily available in Tijuana, transportation costs and taxes are saved, but such materials restrict the changes that can be made to the constructions. CMU block and poured in concrete cannot be easily modified, although second floor additions can be made. For structural stability, changes in the load bearing walls are not recommended, due to the reinforcing that is inlaid in the walls. As an alternative inexpensive method of construction, wood-framing is recommended. The materials utilized in wood constructions are cheap, easy to transport, and readily available in San Diego, if not already available in Tijuana. For the sake of easy modifications, wood construction is fairly flexible and easy to demolish/alter. It can be transported easily as new material and as rubbish, eliminating the need for special equipment. Tijuana is located in a seismic zone, so further technical advice would have to be sought before building.

4.4 Future Modifications

Additions can be made to the existing house prototypes for minimal costs if only the material is taken into consideration. In the case of Habitat for Humanity, a system of communal work is already in place, right away eliminating any costs in labor. Besides construction materials, costs of permits have to be considered, but they are minimal compared to the total expense of additions. It would be inexpensive and easy to build a wood-framed 2nd floor addition. According to Simón García Loza, of KD Development in San Diego, a simple 2nd floor addition could be achieved for \$3.02 to \$3.61 USD per square foot, depending on the wall finishes. This being the case, a 2nd story addition of dimensions 12' by 15' would only cost an estimated \$650 USD in materials. Such dimensions add 180 effective square feet to the house; it results in a 40% increase of floor area. An example of the floor increase for typical cases can be seen in Figure 4.1 for the case of INFONAVIT

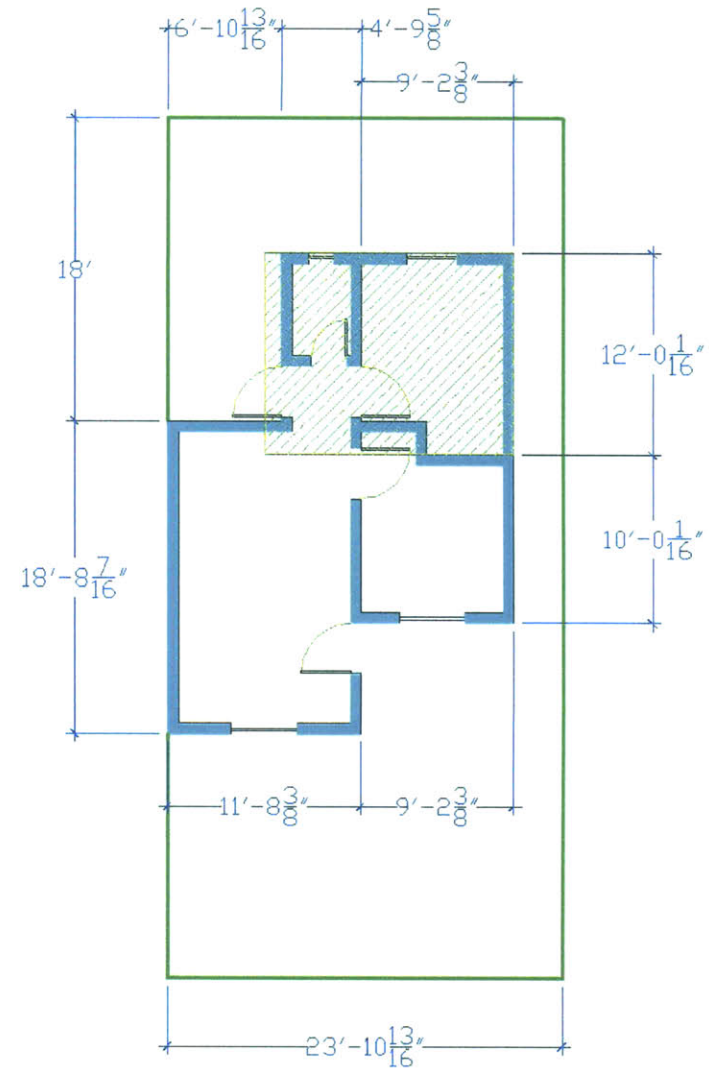


Figure 4.1 INFONAVIT Floor Plan with Proposed Footage Addition in Red

and Figure 4.2 for Habitat for Humanity. That's almost half of the house for a sliver of the cost of the house. Some expertise would be required in construction details, and in the case of INFONAVIT the labor expense would have to be considered if the owners are not able to secure communal labor. These additions include framing members, drywall, plywood, roof finishes, insulation, and interior/exterior wall finishes.

The rest of the space on the second floor could serve the purpose of a deck, or a 2nd floor patio. The owners could also set up lines for drying clothes, or even use the space to set up a roof garden.

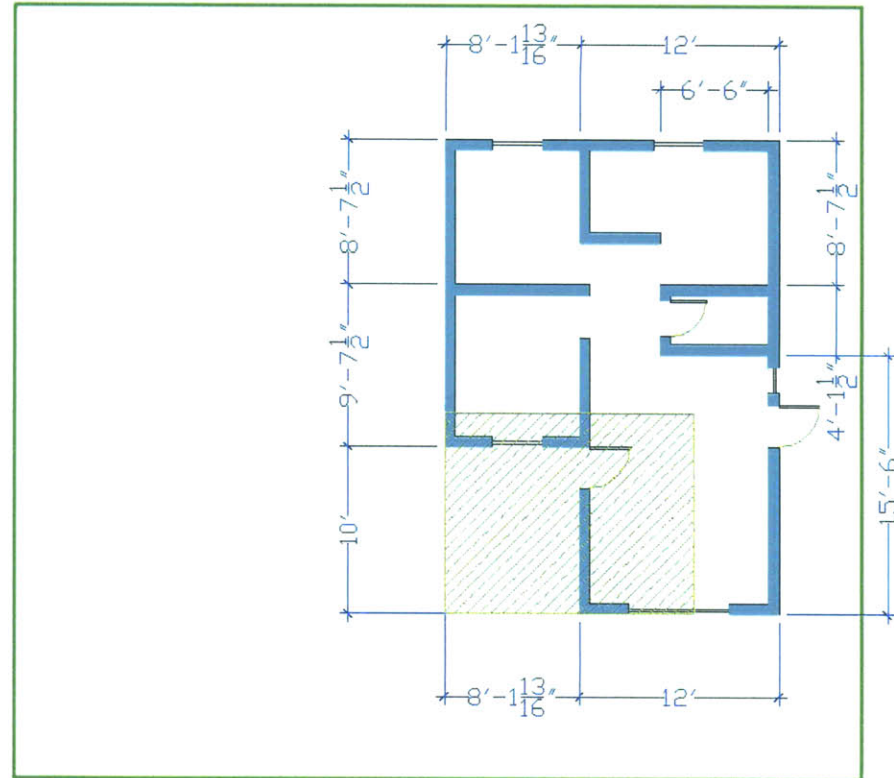


Figure 4.2 Habitat for Humanity Floor Plan with Proposed Footage Addition in Red

5. Conclusions

Some generalizations can be made about both of the housing organizations. They target very different socioeconomic groups; INFONAVIT, the government-sponsored agency, tailors to working families and some of the lower middle income families; Habitat for Humanity, a non-profit organization, tailors to the lower bracket of society that does not necessarily have secure jobs. The incomes are much higher for the inhabitants of INFONAVIT than for the beneficiaries of Habitat for Humanity.

As for satisfaction, the people of Habitat for Humanity expressed much more enthusiasm in explaining their choice and their homes. They said they preferred this program over INFONAVIT because of the costs and the ability in joining the program. When people take part in constructing their own homes, they seem to care about them and cherish them more. Such factor builds confidence in them when it comes to structural soundness and future modifications of their houses. The sense of community also ties the beneficiaries together through the building of each other's homes; it is also a step in getting the neighborhood to meet each other with a common project.

Due to the fact that both of these organizations provide public housing, they deal with the lower income earners and the majority of the projects they develop tend to be in poor or marginalized areas. This in turn increases security risks for the beneficiaries. In fact all of the interviewees from both programs claimed they were in a high risk area or felt insecure in the

surrounding neighborhoods. As an upgrade to future constructions, both programs should consider adding such security amenities as window guards and metal screen doors.

Judging from what all the inhabitants have done or plan to do to the interiors of their houses, the programs should consider offering an upgrade package that consists of better finishes. Everyone wants to finish the house with tile and carpet, nicer cabinetry, and wall finishes. Due to space restraints, everyone seemed to want an additional room as a living room, instead sharing it with the dining area. Skylights should be a viable option because they function well inside the opaque gray CMU houses. Every resident expressed their willingness in paying more for the house if it guaranteed them better finishes, leading to comfort and less worries in the future for them. The security and finishes upgrades are especially attractive to the homeowners if they are included in their mortgage payment. Logically Habitat for Humanity would only charge the cost of the materials, but for the residents of INFONAVIT those costs could turn out inconvenient in the mortgage due to the structure of their financing.

Both housing programs should consider offering land purchase as an option because security of tenure seems to be a big issue. As of now, INFONAVIT sells the property with land plot included, and Habitat for Humanity only builds on your previously acquired plot. If both programs have developments that give land proprietorship as an option, more competition would be created, allowing the buyer to have more viable options. This would yield a higher output of public housing projects, benefiting all sides and lowering the costs of purchase.

With this thesis, I documented the current conditions of INFONAVIT and Habitat for Humanity in Tijuana, I and recorded each organization's projected changes for the future. Through the analysis of current constructions, I was able to assess the success of the two organizations with presence in Tijuana. Nevertheless, the thesis compared and contrasted a non-profit public housing organization with a government-backed public housing agency. Suggestions for changes in policies, designs, and construction were reached after some of the factors that affect social housing in Tijuana were analyzed.

Appendix

Appendix A – Questionnaire Template

General Questions and Issues to Review at the site visits:

1. Number of Occupants for Space Adequacy
 - a. Adults
 - 1) Occupation
 - 2) Ages
 - b. Children
2. Household Income (Ask about neighbors)
 - a. Monthly Payments
 - 1) Structure of Payments & Financing
 - 2) Total to live w/ Utilities
 - 3) How difficult to get into program?
3. Length of Residency
4. Involvement in Initial Design and/or Construction
 - a. Reasons for Purchase or Acquisition
 - 1) Habitat for Humanity
 - 2) Squatters
5. General House Descriptions
 - a. Site and Social Setting
 - b. Surrounding Community and Neighborhood
 - c. Spatial Layout and Functionality
 - d. Overall Appearance
 - e. Construction
6. Alterations, Changes, Adaptations
 - a. Exterior - Observe
 - 1) Types
 - 2) Self or Professional?
 - 3) Reasons
 - 4) Economic implication
 - b. Interior - Observe
 - 1) Types
 - 2) Self or Professional?
 - 3) Reasons
 - 4) Economic Implication
 - c. Personalization - Observe
 - 1) Unique touches
 - 2) Economic implications?
 - 3) Anything attempting to differentiate it from other houses?
 - d. Future Modifications
 - 1) Types
 - 2) Self or Professional?
 - 3) Reasons
 - 4) Economic implications?
7. Use of Space
 - a. Living and Common areas
 - b. Bedrooms
8. Approximate Time Spent in each area
 - a. Importance
9. Residents' Suggestions, Comments, and Feedback
 - a. Policy
 - b. Future Design Suggestions, if you were an architect.
 - c. Quality of the Construction
 - d. Materials
10. Photograph Checklist
 - a. Front Elevation
 - b. ¾ front edge
 - c. Construction Details
 - d. Shots of Modifications
 - e. Interior shots
 - f. Appliances
 - g. Lot Uses

Appendix B – Survey Results

	# of Residents	# of Bedrooms	Monthly Household Income (\$USD)	Monthly Payments	Cost	Financing	Total w/ Utilities (\$USD)	Difficult to get into Program?	Length of Residency (in years)	Involvement in Initial Design or Construction	Surrounding Community	Functionality and Appearance	Construction
INFONAVIT								YES		NONE			
Zain Rodriguez	3	2	8000	230	15000	Monthly Payments; 15 year plan			6		Insecure	Good finishes; compact	Cemento Colado; Poured Concrete
Cynthia Hernandez	3	2	2000	120	15000	Monthly Payments; 30 year plan	350		9		Insecure; empty lots; 3 locks on door; trash	Claustrophobic; lacks natural lighting	Cemento Colado; Poured Concrete
David Rodriguez	2	2	3000	Paid - Inherited	Paid - Inherited	Paid - Inherited	200		Owned for 5 years, lived for 1 year		Door has 4 locks, insecure, abandoned cars	Small but functional; exterior needs painting; graffiti on exterior	Low-cost; CMU block and poured concrete
Habitat for Humanity								NO		YES			
Hilda Rocha Arias	6	3	800	45	5900	Monthly Payments; 10 year plan	75	3 years on waiting list	1	Choice of 2-3 Bedrooms	High risk; insecurity; neighborhood watch	Small but adequate, well inhabited, restrained from rearranging furniture	Steel reinforced web on CMU construction; rough finishes; deep foundations
Rosa Soto	5	3	800	45	5900	Monthly Payments; 10 year plan	80-90		6 months	Choice of 2-3 Bedrooms	No pavement; only water and electricity	Just moved in, small but adequate	Steel reinforced web on CMU construction; rough finishes; deep foundations
Raquel Rodriguez	3	2	375-1100	45	5900	Monthly Payments; 10 year plan		2 years on waiting list	not yet moved in	Choice of 1-2 Bedrooms	High risk; mudslides; no sewers; no pavement	Enough room; still under construction	Steel reinforced web on CMU construction; rough finishes; deep foundations
Basiliza Castañeda	2 to 7	2	200-700	45	5900	Monthly Payments; 10 year plan	65	4 years on waiting list	6 months	Choice of 1, 2 or 3 Bedrooms	High risk; mudslides; no sewers; no pavement; only electricity	Space is overcrowded; lacks storage furnishings	Steel reinforced web on CMU construction; rough finishes; deep foundations
Adriana Cabezas	5	3	2000	45	5900	Monthly Payments; 10 year plan	70	1 year on waiting list	1.5	Choice of 2-3 Bedrooms	High risk; mudslides; no pavement; new neighborhood watch program; nicer homes of the colonia are situated here	Nicest home visited; small but adequate, overcrowded living/kitchen	Steel reinforced web on CMU construction; rough finishes; deep foundations

	Exterior Changes				Interior Changes				Personalization	
	Types	Self or Professional?	Reasons	Economic Implication	Types	Self or Professional?	Reasons	Economic Implication	Types	Economic Implication
INFONAVIT										
Zain Rodriguez	Gates, Window Guards, Addition	Professional	Need More Space	2000	Tile, Carpet, Cabinets, Ceiling fans, extruded wall, closets	Self and Pro	Comfort, ventilation	5000	Paint, plaster	800
Cynthia Hernandez	Window Guards; Moved patio lavatory	Professional	Security; Need of own washer	-	Tile, Carpet, sink, cabinets, doors	Professional	Comfort, space, previous hardware was cheap	2000	Paint, refinish walls and ceiling	500
David Rodriguez	Window Guards	Professional	Security	430	Tile, cabinets, toilet, patched roof (neighbor had water pipe rupture)	Professional	Renovations, theft, reparations	600	-	-
Habitat for Humanity										
Hilda Rocha Arias	Wash and sink area; storage space; front overhang; perimeter fence	Self	Need of extra space	100	Tiled restroom; two rooms plastered	Self	Commodity, aesthetics	150	Home decorations	
Rosa Soto	metal screen door; washer and sink area	Self	Laundry reasons	100	-	-	-	-	Home decorations	-
Raquel Rodriguez	-	-	-	-	Extra window in Living room	Professional	Ventilation and lighting	Expense added to mortgage payment: \$5	-	-
Basiliza Castañeda	Storage space, area for water storage, perimeter fence	Self	Laundry reasons, need of extra space	-	Rough cabinetry	Self	Storage Needs	30	-	-
Adriana Cabezas	metal screen door; window guards	Self and Pro	security, prior break-in	250	Skylights; cabinetry	Professional	No need to expose windows; lighted during the day	120	Home decorations	-

	Future Modifications				Residents' Suggestions				
	Types	Self or Professional?	Reasons	Economic Implication	Most important area	Policy	Design	Construction	Materials
INFONAVIT									
Zain Rodriguez	Front Porch, extend walls	Professional	Noise Pollution		Living room occupied during the evenings because of the TV		Larger living room, service alley, restroom to back		Use CMU block instead of concrete
Cynthia Hernandez	Dryer space in back patio	Professional	Commodity	600	Bedrooms - kids study; living room because of TV		Larger back patio, larger restroom or 2nd restroom	Do not use cheap cabinets, option of upgrading	Furnish new houses with carpet/tile
David Rodriguez	Carpet, Paint (Not allowed to modify Walls)	Professional and Self	Rough and cold concrete floors	400	Only living room has TV: most time spent there		Move door away from stairwell (wind tunnel); remove door between common rooms		
Habitat for Humanity									
Hilda Rocha Arias	Interior doors; finish plastering house; kitchen cabinets	Professional and Self	Room Privacy; aesthetics; finishing touches	250	Living room occupied constantly because of TV	Good as it is; Provide land or land proprietorship as an option	Overhang in the front of the house		
Rosa Soto	Interior doors; plaster walls; tiles	Professional and Self	Room Privacy; aesthetics; finishing touches	200-300	Children spend time in their bedrooms; due to lack of a TV	Give credit; only for families or singles with dependents	More space; separate living room and kitchen area; overhang in front of the house; include gate		
Raquel Rodriguez	Possible 2nd floor; interior doors; divide kitchen and living; plastering; window guards; tile	Professional and Self	Room Privacy; aesthetics; finishing touches	2500-3000	Old house not yet vacan; share lot	Some people can't dedicate time to construction due to jobs	Separate kitchen and living; wall finishes in the cost of the house		Keep using CMU over wood
Basiliza Castañeda	Interior doors; plaster walls; finish restroom; water service connection; cabinets; tile; 2nd floor	Professional and Self	Room Privacy; aesthetics; finishing touches; space needs	Unknown	Living room occupied constantly because of TV and set-up workspace there	Good as it is; Provide land or land proprietorship as an option	7 operable windows for ventilation and lighting		
Adriana Cabezas	Interior doors; additional room to be living room; plaster walls	Professional and Self	Room Privacy; aesthetics; finishing touches; space needs	800-1000	Bedrooms, due to lack of living room		More space between living and kitchen; include window guards and wall finishes in final cost		

Appendix C – Interview with Zaín Rodríguez

Fraccionamiento Villa Fontana

9A Sección

Aran Juez 2779

Cond. A U-2-4W

1. Number of Occupants for Space Adequacy - 3

a. Adults - Zaín Rodríguez Mejía and Lizet González Montoya

1) Occupation - Architect; Psychologist

2) Ages - 32; 33

b. Children - Misael: 4 years old

2. Household Income (Ask about neighbors) - \$8,000 USD

a. Monthly Payments - \$230 USD

1) Structure of Payments & Financing - Cost \$15,000 USD; monthly payments started @ \$160 USD; 15 year plan

2) Total to live w/ Utilities

3) How difficult to get into program? Minimum Income requirement; different income brackets for different dwellings; required to have bank accounts for some time w/ a solid balance; Credito Inmobiliario through work (INFONAVIT)

3. Length of Residency - 6 years

4. Involvement in Initial Design and/or Construction

a. Reasons for Purchase or Acquisition

1) Habitat for Humanity

2) Squatters

5. General House Descriptions - Weathered exterior, nice interior

a. Site and Social Setting - Window guards on all of the houses

b. Surrounding Community and Neighborhood - Private entrance and gate to the street; about half of the residents have reported robberies

c. Spatial Layout and Functionality - Kitchen is too small

d. Overall Appearance - Compact, decent finishes

e. Construction - "Concrete Colado" 10 in thick reinforced concrete

6. Alterations, Changes, Adaptations - \$10,000 USD so far

a. Exterior - Observe

- 1) **Types** - Gates/garage grounds door, exterior patio converted into a washroom/study, drywall construction (\$1,200 USD)
- 2) **Self or Professional?** Professional
- 3) **Reasons** - Need for extra space
- 4) **Economic implication** - \$2,000 USD

b. Interior - Observe

- 1) **Types** - Floor tile (\$300); carpet; cabinets (\$2,500); fans (ceiling); remodel closets (\$300); bath wall
- 2) **Self or Professional?** Self and pro
- 3) **Reasons** - Cold floors; comfort; small cheap cabinets; dwelling warms up fast; inconvenient closets; stall and shower had small division
- 4) **Economic Implication** - \$5,000 total

c. Personalization - Observe

- 1) **Unique touches** - Wall texture; paint
- 2) **Economic implications?** - \$800
- 3) **Anything attempting to differentiate it from other houses?** - Car gate

d. Future Modifications

- 1) **Types** - Front porch/wood roof, raise wall between house and backdoor neighbor
- 2) **Self or Professional?** - Professional
- 3) **Reasons** - Sound echoing problems with neighbors, looks
- 4) **Economic implications?**

7. Use of Space

- a. **Living and Common areas** - No Dinner table
- b. **Bedrooms** - 2 BR

8. Approximate Time Spent in each area - Evening spent in the living room because of the TV

a. Importance

9. Residents' Suggestions, Comments, and Feedback

a. Policy

- b. **Future Design Suggestions, if you were an architect.** - Owner is an architect. Make a functional service way outside the house, so that you can go to the back w/o entering the dwelling; larger living room; push restroom back even more

c. Quality of the Construction

- d. **Materials** - Use CMU block instead of concrete

Appendix D – Interview with Cynthia Hernández

Fraccionamiento Del Valle

1. Number of Occupants for Space Adequacy - 3

a. Adults - Cynthia Hernández; Marisela Hernández; Emilia Gámez

1) **Occupation** - Student; Student; Stylist/Beauty Parlor

2) **Ages**-18; 18; 42

b. Children - 0

2. Household Income (Ask about neighbors)

a. Monthly Payments \$120 USD

1) **Structure of Payments & Financing**

2) **Total to live w/ Utilities** - \$350 USD

3) **How difficult to get into program?** Purchased house through husband

3. Length of Residency - 9 years

4. Involvement in Initial Design and/or Construction

a. Reasons for Purchase or Acquisition

1) **Habitat for Humanity**

2) **Squatters**

5. General House Descriptions

a. Site and Social Setting - Appears to be many gangs around, unsafe

b. Surrounding Community and Neighborhood - Graffiti, robberies, some empty lots, trash, abandoned cars, 3 locks on door, metal screen with lock

c. Spatial Layout and Functionality - Compact, easy flow from one room to the next

d. Overall Appearance - Needs more natural lighting, too claustrophobic

e. Construction - Concrete

6. Alterations, Changes, Adaptations

a. Exterior - Observe

1) **Types** - Window Guards, moved patio lavatory

2) **Self or Professional?** - Pro

3) **Reasons** - Security; fit in a washer

4) **Economic implication** - Can't remember, many years ago

b. Interior - Observe

- 1) **Types** - Floor tile, Carpet, Sink, Some kitchen cabinets, bathroom cabinets, shower tile, doors to bedrooms
- 2) **Self or Professional?** - Professional
- 3) **Reasons** - Comfort; looks; needed larger sink; cheap cabinets; small cabinets; slippery/cheap tiles; cheap hollow doors
- 4) **Economic Implication** - Around \$2,000

c. Personalization - Observe

- 1) **Unique touches** - Paint, Refinish interior walls and ceiling
- 2) **Economic implications?** \$500
- 3) **Anything attempting to differentiate it from other houses?**

d. Future Modifications

- 1) **Types** - Try to fit in a dryer in the back patio
- 2) **Self or Professional?** – Pro
- 3) **Reasons** - Need a dryer, clotheslines not enough
- 4) **Economic implications?** - \$600

7. Use of Space

- a. **Living and Common areas** - Relatives/visitors sleep on couch
- b. **Bedrooms** - 2 BR

8. Approximate Time Spent in each area

- a. **Importance** - Girls mostly in their room/phone, evening watching TV

9. Residents' Suggestions, Comments, and Feedback

- a. **Policy**
- b. **Future Design Suggestions, if you were an architect.** - Give a larger space to the back patio, somewhat larger restroom, or second small restroom.
- c. **Quality of the Construction** - Refrain from using cheap cabinets/doors - Give the option of upgrading these components
- d. **Materials** - Furnish new houses with tile or carpet

Appendix E – Interview with David Rodríguez

Lomas Verdes

1. Number of Occupants for Space Adequacy

a. Adults - David Rodríguez and Gilberto Gámez

1) **Occupation** - Marketing Rep and Print Shop

2) **Ages**-21 and 44

b. Children-0

2. Household Income (Ask about neighbors) - \$3,000

a. Monthly Payments - Inheritance

1) **Structure of Payments & Financing**

2) **Total to live w/ Utilities** - \$200

3) **How difficult to get into program?**

3. Length of Residency - Owned for 5 years; lived for past year

4. Involvement in Initial Design and/or Construction - N/A

a. Reasons for Purchase or Acquisition

1) **Habitat for Humanity**

2) **Squatters**

5. General House Descriptions

a. Site and Social Setting - Unsafe, many bums

b. Surrounding Community and Neighborhood - Abandoned cars, trash, graffiti, and door has 4 locks

c. Spatial Layout and Functionality - Small but functional

d. Overall Appearance - Exterior needs paint, re-plaster, graffiti on exterior

e. Construction - Low-cost, CMU block

6. Alterations, Changes, Adaptations

a. Exterior - Observe

1) **Types** - Window guards

2) **Self or Professional?** Professional

3) **Reasons** - Security

4) **Economic implication** - \$430

b. Interior - Observe

- 1) **Types** - Tile, kitchen cabinets, restroom tile, toilet, hole in the roof due to water pipe rupture of neighbor above
- 2) **Self or Professional?** - Professional
- 3) **Reasons** - Renovations, theft, reparations
- 4) **Economic Implication** - \$600

c. Personalization - Observe

- 1) **Unique touches**
- 2) **Economic implications?**
- 3) **Anything attempting to differentiate it from other houses?**

d. Future Modifications

- 1) **Types** - Carpet over the concrete floors, paint - Not allowed to modify the walls
- 2) **Self or Professional?** Professional and self
- 3) **Reasons** - Rough and cold concrete floor
- 4) **Economic implications?** - \$400

7. Use of Space

- a. Living and Common areas**
- b. Bedrooms**-2 BR

8. Approximate Time Spent in each area

- a. Importance** - Only living room has TV, most time spent there

9. Residents' Suggestions, Comments, and Feedback

- a. Policy**
- b. Future Design Suggestions, if you were an architect.** - Move the door away from the stairwell because it creates a wind tunnel, and the dwelling chills fast. Remove the door between the two common rooms because it is senseless.
- c. Quality of the Construction**
- d. Materials** - Impossible to move or modify walls, very cold.

Appendix F – Interview with Hilda Rocha Arias

Calle 20 de Noviembre
Colonia 3 de Octubre
Tijuana, B.C., México

1. Number of Occupants for Space Adequacy

- a. **Adults** – Hilda Rocha Arias and Roberto Corona
 - 1) **Occupation** – Housewife, H4H delegate; construction
 - 2) **Ages** –
- b. **Children** – four children living at home

2. Household Income (Ask about neighbors) - \$200 USD weekly

- a. **Monthly Payments** - \$500 MN beginning
 - 1) **Structure of Payments** – monthly for 10 yrs., cost of house is \$65,000 MN
 - 2) **Total to live w/ Utilities** - \$800 MN
 - 3) **How difficult to get into program?** – Being able to believe in the program; patience

3. Length of Residency – 3 yrs. on the waiting list; 1yr of residency.

4. Involvement in Initial Design and/or Construction – Pre-fab designs, choice of 1, 2, 3 BR

- a. **Reasons for Purchase or Acquisition**
 - 1) **Habitat for Humanity** – Functional Program, had set up homes already
 - 2) **Squatters** – An original squatter

5. General House Descriptions

- a. **Site and Social Setting** – High-risk area but sense of community; insecurity; rudimentary neighborhood watch program
- b. **Surrounding Community and Neighborhood** – no pavement, only utilities: water and electricity
- c. **Spatial Layout and Functionality** – small but adequate to owner, still needs more space
- d. **Overall Appearance** – Space is well inhabited, furnishings see no room for rearranging
- e. **Construction** – steel reinforced web on the CMU construction, rough finishes, deep pile foundations settled on solid rock bed

6. Alterations, Changes, Adaptations

- a. **Exterior - Observe**
 - 1) **Types** – metal screen door, washer and sink area, storage space, front overhang, perimeter fence
 - 2) **Self or Professional?** self
 - 3) **Reasons** – laundry reasons, need of extra space
 - 4) **Economic implication** - \$100 USD
- b. **Interior - Observe**
 - 1) **Types** – Tiled restroom, two rooms plastered

- 2) **Self or Professional?** Self
- 3) **Reasons** – Commodity, aesthetics
- 4) **Economic Implication** - \$150 USD

c. Personalization - Observe

- 1) **Unique touches** –home decorations
- 2) **Economic implications?**
- 3) **Anything attempting to differentiate it from other houses?**

d. Future Modifications

- 1) **Types** – Interior doors, finish plastering walls, kitchen cabinets
- 2) **Self or Professional?** both
- 3) **Reasons** – room privacy; aesthetics, finishing touches
- 4) **Economic implications?** \$250 USD

7. Use of Space

- a. **Living and Common areas** – Used as dining/kitchen/living
- b. **Bedrooms** – Place of study for the schoolchildren

8. Approximate Time Spent in each area

- a. **Importance** – Living occupied constantly because of TV

9. Residents' Suggestions, Comments, and Feedback

- a. **Policy** – Program is good as it is; Give land or land proprietorship as an option
- b. **Future Design Suggestions, if you were an architect.** – Concrete overhang in the front of the house
- c. **Quality of the Construction** – Good construction
- d. **Materials** – Good, reinforced CMU walls with poured in roof and frames.

Appendix G – Interview with Rosa Soto

Calle 20 de Noviembre
Colonia 3 de Octubre
Tijuana, B.C., México

1. Number of Occupants for Space Adequacy

- a. **Adults** – Rosa Soto and Felix Cutiño
 - 1) **Occupation** – Factory worker; peon, construction
 - 2) **Ages** – 48; 53
- b. **Children** – 11; 7; 24

2. Household Income (Ask about neighbors) - \$200 USD weekly

- a. **Monthly Payments** - \$500 MN beginning
 - 1) **Structure of Payments** – monthly for 10 yrs., cost of house is \$65,000 MN
 - 2) **Total to live w/ Utilities** - \$80-\$90 USD
 - 3) **How difficult to get into program?** – Waiting time of approx 1.5 yrs.; Habitat workshops, teaching others how it works

3. Length of Residency – 6 mos.

4. Involvement in Initial Design and/or Construction – Pre-fab designs, choice of 1, 2, 3 BR

- a. **Reasons for Purchase or Acquisition**
 - 1) **Habitat for Humanity** – Functional Program, had set up homes already
 - 2) **Squatters** – An original squatter

5. General House Descriptions

- a. **Site and Social Setting** – High-risk area but sense of community
- b. **Surrounding Community and Neighborhood** – no pavement, only utilities: water and electricity
- c. **Spatial Layout and Functionality** – small but adequate to owner, better than a one room dwelling
- d. **Overall Appearance** – moved in some months ago. Most furnishings in.
- e. **Construction** – steel reinforced web on the CMU construction, rough finishes, deep pile foundations settled on solid rock

6. Alterations, Changes, Adaptations

- a. **Exterior - Observe**
 - 1) **Types** – metal screen door, washer and sink setup
 - 2) **Self or Professional?** self
 - 3) **Reasons** – laundry reasons
 - 4) **Economic implication** - \$100 USD
- b. **Interior - Observe**
 - 1) **Types** –

- 2) **Self or Professional?**
 - 3) **Reasons**
 - 4) **Economic Implication -**
 - c. **Personalization - Observe**
 - 1) **Unique touches** –home decorations
 - 2) **Economic implications?**
 - 3) **Anything attempting to differentiate it from other houses?**
 - d. **Future Modifications**
 - 1) **Types** – Interior doors, plaster walls, floor and restroom tiles
 - 2) **Self or Professional?** both
 - 3) **Reasons** – room privacy; aesthetics, finishing touches
 - 4) **Economic implications?** \$200-\$300 USD
7. **Use of Space**
- a. **Living and Common areas** – Used as dining area
 - b. **Bedrooms** – when at home, children spend time here due to lack of living room
8. **Approximate Time Spent in each area**
- a. **Importance**
9. **Residents' Suggestions, Comments, and Feedback**
- a. **Policy** – Have your own lot; have free time to work; give credit as it does. Keep it only for families or single people with financial dependents.
 - b. **Future Design Suggestions, if you were an architect.** – More space; separate living room and kitchen. Overhang in the front of the house. Maybe include some type of fence or front lot gate.
 - c. **Quality of the Construction** – Sure of the quality because owners work on the house
 - d. **Materials** – Good, reinforced CMU walls with poured in roof and frames.

Appendix H – Interview with Raquel Rodríguez

1. Number of Occupants for Space Adequacy

- a. **Adults** – Raquel Rodríguez and Francisco Cabezas
 - 1) **Occupation** – Housewife; owns a small pharmacy
 - 2) **Ages** – 58; 59
- b. **Children** – 26 y.o. living with parents

2. Household Income (Ask about neighbors) – varies from ~ \$1000 - \$3000 MN weekly

- a. **Monthly Payments** - \$500 MN beginning
 - 1) **Structure of Payments** – monthly for 10 yrs., cost of house is \$65,000 MN
 - 2) **Total to live w/ Utilities** – just got her home
 - 3) **How difficult to get into program?** – Time wait of approx 2 yrs.

3. Length of Residency – not yet moved in

4. Involvement in Initial Design and/or Construction – Obligated involvement and still finishing construction

- a. **Reasons for Purchase or Acquisition** – 2BR house; of choice
 - 1) **Habitat for Humanity** – Functional Program, owned land through squatting
 - 2) **Squatters** – An original squatter

5. General House Descriptions

- a. **Site and Social Setting** – High-risk area, mudslides, hill collapses
- b. **Surrounding Community and Neighborhood** – no pavements, no sewers, cross-street with the only paved road in the “colonia;”
- c. **Spatial Layout and Functionality** – Enough room for the small family
- d. **Overall Appearance** – Still under construction
- e. **Construction** – steel reinforced web on the CMU construction; removal of old home

6. Alterations, Changes, Adaptations

- a. **Exterior - Observe**
 - 1) **Types** – N/A
 - 2) **Self or Professional?**
 - 3) **Reasons** –
 - 4) **Economic implication** -
- b. **Interior - Observe**
 - 1) **Types** – Extra window in living room
 - 2) **Self or Professional?** professional
 - 3) **Reasons** –
 - 4) **Economic Implication** – additional expense added to mortgage payment: \$50 MN
- c. **Personalization - Observe**

- 1) **Unique touches –**
- 2) **Economic implications?**
- 3) **Anything attempting to differentiate it from other houses?**

d. Future Modifications

- 1) **Types –** A possible 2nd floor to be a shop; interior doors, division between kitchen and living space, plaster walls; window guards; floor tile; bathroom finishes
- 2) **Self or Professional?** both
- 3) **Reasons –** room privacy; space needs; aesthetics, finishing touches
- 4) **Economic implications?** \$2500-\$3000 USD

7. Use of Space

- a. **Living and Common areas –**
- b. **Bedrooms –** Old home still on lot, used as kitchen/sleeping quarters

8. Approximate Time Spent in each area

- a. **Importance**

9. Residents' Suggestions, Comments, and Feedback

- a. **Policy –** Can't dedicate much time to construction due to occupation
- b. **Future Design Suggestions, if you were an architect. –** Separate kitchen and living room; wall finishes in the final cost of the house.
- c. **Quality of the Construction –** Sure of the quality because owners work on the house
- d. **Materials –** It's much better than wood in resident's opinion

Appendix I – Interview with Basiliza Castañeda

Colonia 3 de Octubre
Tijuana, B.C., México

1. Number of Occupants for Space Adequacy

a. Adults – Basiliza Castañeda

- 1) **Occupation** – Seamstress
- 2) **Ages** – 63

b. Children – her son’s family is temporarily living there

2. Household Income (Ask about neighbors) - \$50-\$150 USD weekly

a. Monthly Payments - \$500 MN beginning

- 1) **Structure of Payments** – monthly for 10 yrs., cost of house is \$65,000 MN
- 2) **Total to live w/ Utilities** - \$700 MN
- 3) **How difficult to get into program?** – Having your own piece of land.

3. Length of Residency – 4 yrs. on the waiting list; 6 mos. of residency.

4. Involvement in Initial Design and/or Construction – Pre-fab designs, choice of 1, 2, 3 BR

a. Reasons for Purchase or Acquisition

- 1) **Habitat for Humanity** – Functional Program, wanted her own home
- 2) **Squatters** – An original squatter

5. General House Descriptions

a. Site and Social Setting – High-risk area; slopes and hills look insecure; insecurity

b. Surrounding Community and Neighborhood – no pavement, only electricity

c. Spatial Layout and Functionality – small, still needs more space now that family moved in

d. Overall Appearance – Space is overcrowded; lacks storage furnishings

e. Construction – steel reinforced web on the CMU construction, rough finishes, deep pile foundations settled on solid rock bed

6. Alterations, Changes, Adaptations

a. Exterior - Observe

- 1) **Types** – storage space, area where water is stored, perimeter fence
- 2) **Self or Professional?** self
- 3) **Reasons** – laundry reasons, need of extra space
- 4) **Economic implication**

b. Interior - Observe

- 1) **Types** – Rough cabinetry
- 2) **Self or Professional?** Self

- 3) **Reasons** – storage needs
 - 4) **Economic Implication** - \$30 USD
 - c. **Personalization - Observe**
 - 1) **Unique touches** –
 - 2) **Economic implications?**
 - 3) **Anything attempting to differentiate it from other houses?**
 - d. **Future Modifications**
 - 1) **Types** – Interior doors, plaster walls, finish restroom, water connection, kitchen cabinets, tile, 2nd floor
 - 2) **Self or Professional?** both
 - 3) **Reasons** – room privacy; aesthetics, finishing touches, space needs/necessity
 - 4) **Economic implications?** \$Unknown
7. **Use of Space**
- a. **Living and Common areas** – Used as dining/kitchen/living
 - b. **Bedrooms** – storage and sleeping, overcrowded
8. **Approximate Time Spent in each area**
- a. **Importance** – Living occupied constantly because of TV and set-up workspace
9. **Residents' Suggestions, Comments, and Feedback**
- a. **Policy** – Program is good as it is; Give land or land proprietorship as an option
 - b. **Future Design Suggestions, if you were an architect.** – 7 operable windows for ventilation and light
 - c. **Quality of the Construction** – Good construction
 - d. **Materials** – Good, reinforced CMU walls with poured in roof and frames.

Appendix J – Interview with Adriana Cabezas

1. Number of Occupants for Space Adequacy

- a. **Adults** – Adriana Cabezas and Pedro Mendoza
 - 1) **Occupation** – Housewife; Construction worker in L.A.
 - 2) **Ages** – 34; 36
- b. **Children** – 5; 10; 12

2. Household Income (Ask about neighbors) - \$500 USD weekly

- a. **Monthly Payments** - \$500 MN beginning
 - 1) **Structure of Payments** – monthly for 10 yrs., cost of house is \$65,000 MN
 - 2) **Total to live w/ Utilities** - \$70 USD
 - 3) **How difficult to get into program?** – Time wait of approx 1 yr.

3. Length of Residency – 1.5 yrs

4. Involvement in Initial Design and/or Construction – Obligated involvement

- a. **Reasons for Purchase or Acquisition**
 - 1) **Habitat for Humanity** – Functional Program, owned land, rents too high
 - 2) **Squatters** – Not an original squatter

5. General House Descriptions

- a. **Site and Social Setting** – High-risk area, mudslides, hill collapses
- b. **Surrounding Community and Neighborhood** – no pavements, nicer homes in the area, new neighborhood watch program
- c. **Spatial Layout and Functionality** – small but adequate to owner, overly crowded kitchen/living area
- d. **Overall Appearance** – nicer of the homes that were visited
- e. **Construction** – steel reinforced web on the CMU construction, rough finishes

6. Alterations, Changes, Adaptations

- a. **Exterior - Observe**
 - 1) **Types** – metal screen door; window guards
 - 2) **Self or Professional?** both
 - 3) **Reasons** – security reasons, was broken into once (items stolen: shampoos and body soaps)
 - 4) **Economic implication** - \$250 USD
- b. **Interior - Observe**
 - 1) **Types** – 3 skylights installed in select spaces
 - 2) **Self or Professional?** professional
 - 3) **Reasons** – No need to expose windows and to have lights on at day.
 - 4) **Economic Implication** - \$60 USD
- c. **Personalization - Observe**

- 1) **Unique touches** – Cabinetry, home decorations
 - 2) **Economic implications?**
 - 3) **Anything attempting to differentiate it from other houses?**
 - d. **Future Modifications**
 - 1) **Types** – Interior doors, additional room to be living space, plaster walls
 - 2) **Self or Professional?** both
 - 3) **Reasons** – room privacy; space needs; aesthetics, finishing touches
 - 4) **Economic implications?** \$800-\$1000 USD
7. **Use of Space**
- a. **Living and Common areas** – Used as dining area
 - b. **Bedrooms** – when at home, children spend time here due to lack of living room
8. **Approximate Time Spent in each area**
- a. **Importance**
9. **Residents' Suggestions, Comments, and Feedback**
- a. **Policy** – Requirements for Habitat are good
 - b. **Future Design Suggestions, if you were an architect.** – More space between living room and kitchen, or complete separation. Include window guards and wall finishes in the final cost of the house.
 - c. **Quality of the Construction** – Sure of the quality because owners work on the house
 - d. **Materials** - Good

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