Re-imagining Design for Affordable Housing in Mexico

Kenza Fernandez Dominguez

Follow this and additional works at: https://scholarship.claremont.edu/scripps_theses

Part of the Environmental Design Commons, Environmental Studies Commons, Interdisciplinary Arts and Media Commons, Latin American Studies Commons, Modern Art and Architecture Commons, Other History of Art, Architecture, and Archaeology Commons, Urban, Community and Regional Planning Commons, and the Urban Studies and Planning Commons

Recommended Citation
Fernandez Dominguez, Kenza, "Re-imagining Design for Affordable Housing in Mexico" (2022). Scripps Senior Theses. 1906.
https://scholarship.claremont.edu/scripps_theses/1906

This Open Access Senior Thesis is brought to you for free and open access by the Scripps Student Scholarship at Scholarship @ Claremont. It has been accepted for inclusion in Scripps Senior Theses by an authorized administrator of Scholarship @ Claremont. For more information, please contact scholarship@cuc.claremont.edu.
RE-IMAGINING DESIGN FOR AFFORDABLE HOUSING IN MEXICO

Thesis Presented by

KENZA FERNANDEZ DOMINGUEZ

IN PARTIAL FULFILLMENT OF A BACHELOR OF ARTS DEGREE IN
ENVIRONMENTAL ANALYSIS

2021-2022 ACADEMIC YEAR, SCRIPPS COLLEGE, CLAREMONT, CA

Readers:

CHAR MILLER
ALY OGASIAN

DECEMBER 13, 2021
Acknowledgements

This thesis would not have been possible without the constant support of Professor Char Miller. I remember going to his office my freshman year and exploring the topics of this thesis, brainstorming different majors and classes that would later prepare me to eloquently re-define the urban design of social housing in Mexico. I cannot thank you enough for your guidance and patience throughout my four years here at Scripps. Thank you, Char.

Thank you, Professor Ogasian for your care and interest in my subject. Your expertise and advice are unmatched. I will forever admire your ability to work with interdisciplinary subjects so seamlessly.

Thank you, Professor Novy for taking on the task of helping me articulate my thoughts clearly. Thank you for believing in me and this project when I had beset all motivation. Finding you was a blessing. I gained confidence in my writing and finished to my best ability. I will forever be grateful for support.

I would also like to thank Tatiana Bilbao and Tatiana Bilbao Estudio for helping me redefine the boundaries and meaning of spatial design. Thank you for having me at your firm this summer as an intern, teaching me about different housing crises and approaching them through design. This thesis is a reflection of my time and growth since working with your firm in Mexico City.

A very special thank you to Ines Frankfurt for being so incredibly patient with me in helping me revise this thesis into its final version. You’re the best.

Gracias a mis papas por inculcarme un amor incondicional por México desde chica. Finalmente quiero agradecer a Edgar Warnholtz, Ricardo Mateos, Viola Hernández, Samuel Vilenski, Fernanda Lozano y Patricio Aguilar por su apoyo incondicional desde que di mi primer paso Claremont. Su pasión por hacer México un mejor país es contagiosa y no me cabe la menor duda de que esa pasión los va a llevar a ocupar posiciones de liderazgo en la que puedan ejercer cambio hacia un país más digno y unido. Gracias por involucrarse en el proceso de esta tesis. Los quiero mucho.
Contents

ABSTRACT ........................................................................................................................................... 5

INTRODUCTION ...................................................................................................................................... 5

What is a home? ....................................................................................................................................... 5

The Aim and Proposal of this Paper ........................................................................................................... 7

Communities, what they are/represent ........................................................................................................ 7

Imagined Communities .............................................................................................................................. 8

IDENTIFYING THE PROBLEM .............................................................................................................. 9

History of Affordable Housing in Mexico .................................................................................................... 9

INFONAVIT ............................................................................................................................................... 9

Aesthetics of INFONAVIT ......................................................................................................................... 11

Abandonment of Low-Rise Suburbs ............................................................................................................ 13

The Problem with Abandoned Houses ....................................................................................................... 15

Case in Tabasco ......................................................................................................................................... 17

Aesthetic Critique ..................................................................................................................................... 18

Alta Densidad: Project Analysis ................................................................................................................ 18

Two Million Homes for Mexico: Livia Corona Benjamin ........................................................................ 20

Tatiana Bilbao Estudio ................................................................................................................................ 22

ANALOGOUS SOLUTIONS .................................................................................................................... 24

Vertical Living ......................................................................................................................................... 24
ABSTRACT

Since the presidency of Enrique Peña Nieto, affordable housing developments in Mexico have been produced in a massive, unsustainable scale. The speed at which these developments are produced equates to the carelessness that goes into their planning. At large, the developments’ monotonous design is aesthetically dehumanizing and fails to promote a sense of community. These developments lack basic infrastructure, and their residents have abandoned them, which has incentivized increased criminal activity.

In this paper, I will be looking at successful models of affordable housing globally, exploring the histories of communal living, and function of architectural collages. Based on my findings, I will propose and present aspects which I think are critical to consider before creating a master plan for a social housing development. To gain access to the most diverse audience possible, I have displayed these considerations in collages. Each collage will highlight a specific aspect of the built environment of which I present (putting green areas at the forefront of design, communal kitchens and bathrooms, nightlights, community center/spiritual place etc.).

INTRODUCTION

What is a home?

Historically, home has been a physical structure that protects human beings from environmental hazards like wind, cold temperatures, and rain. A physical home allows for privacy. Home is insulating. Yet, to have a roof over one's head is not the only component that makes up a home. Home is a place that gains more importance the longer it is inhabited. Home
as an ideology is a space that provides cultural and social safety. In such a space, we are able to express ourselves free of judgement. Home is the first place where our values and beliefs are instilled, it is where our habits and behaviors are formed. Its features are necessary to our survival, as they represent the spaces in which we recharge, decompress, eat, bathe, and sleep. A home makes us who we are. It can set us up for success as easily as it can set us up for failure.

Modernist architect Le Corbusier famously said that “the home should be the treasure chest of living.” A treasure chest represents a mission that requires years of scavenging and searching, this is the very difference between a house and a home. To build a house, you need external influences and knowledge: an architect, engineers, construction workers, plumbers, electricians. With all the right components, a house could be finished relatively quickly. To build a home though, a longer process of constant care and dedication is necessary. A home involves family and collective memories. A house serves function, a home influences emotion. The closer a house is to a home, the more gold the treasure chest has.

Home is also not a fixed term. The COVID-19 lockdown, for example, has challenged the ways society defines the home. The pandemic forced the entire world to stay inside and adapt their entire lifestyles, routines, and activities to finite / predefined squared meters. Now, instead of having designated spaces for each activity, spaces became multidisciplinary; kitchen tables became work desks and kindergartens, living rooms became gyms, and hallways became playgrounds. The first few months of confinement, when there was still a lot of uncertainty about the spread and effects of COVID-19, staying home guaranteed survival and homes were again literal shelters.
The Aim and Proposal of this Paper

By exploring different communal living models, I will argue that design is a critically influential factor for the perception of safety and overall quality of life of those who inhabit social housing developments. I believe that the most effective way to get spatial design information to the most diverse audience is by using collaging techniques. Therefore, I will be creating a series of collages that represent what should be prioritized when planning a massive housing development. These collages are meant to disrupt the typical social housing model that has permeated Mexico’s suburbs in the past decade.

I believe that there is harm in monotonous spatial design, especially when it comes to spaces where humans are supposed to engage with their daily rituals and activities. I value individuality and aesthetics as a driving force for change. If social housing were designed with its inhabitants as the main priority and target user, they would be more humane environments that encouraged connection. With this paper, I open a conversation about the importance of aesthetics and the possibility of creating beautiful, scalable, and comfortable homes at a sustainable rate, and how that can influence people to create communities. When building houses, especially social houses, at a mass scale, we must build them with the intention for them to become homes.

Communities, what they are/represent

A community exists when the results are greater than the sum of its parts. When people live in / form a part of a community, they mutually inspire each other to become better citizens,
activists, and people. The longer a community has collaborated, the more empowered they feel towards taking actions that move them in whichever direction they desire.

In an ideal community, people have mutual trust, safety, and respect. They trust one another, they feel safe, respected. The survival of a community relies on protection of their social compact. They know they are the best version of themselves, as individuals and as a group.

**Imagined Communities**

We are conventionally taught that home is familial, that, primarily, it is a space we share with family. Still, I think it important to recognize that biological family itself is, as Benedict Anderson would point out, an “imagined community”. In 1983, Anderson published his book, *Imagined Communities*, in which he challenges the idea of a nation. He claims that all communities around us are “imagined” because they are socially constructed. The comfort and safety we place on that community, because it is imagined, can extend far beyond the boundaries of a traditional family structure and household, and can merge with a larger system such as an entire neighborhood. To deconstruct the firmly held ideas of nation and national boundaries, Anderson points out:

> (2) The formal universality of nationality as a socio-cultural concept- in the modern world everyone can, should, will, ‘have’ a nationality, as he or she ‘has’ a gender - vs. the irremediable particularity of its concrete manifestations, such that, by definition, “Greek” nationality is sui generis. (3) The ‘political’ power of nationalisms vs. their philosophical poverty and even incoherence … It is *imagined* because the members, even the smallest nation will never know most of their fellow-
members, meet them, or even hear of them, yet in the minds of each lives the image of their communion. Renan referred to this imagining in his suavely backhanded way when he wrote that “Or l'essence d’une nation est que tous les individus aient beaucoup des choses en commun, et aussi que tous aient oublié bien des choses." Based on Anderson’s theories, a community is created through shared ideals. Design can help develop these ideals and create a greater sense of communal care, and care for the physical space. Affordable housing units in Mexico should be designed with built structures that promote for the creation of a greater community amongst those who inhabit these spaces. For example, this can manifest in the form implementing communal gardens in these developments, which could bring people together and encourage them to work together. Because a community can be as small as two people and as large as an entire nation, without a community there cannot be a home.

IDENTIFYING THE PROBLEM

History of Affordable Housing in Mexico

INFONAVIT

Affordable housing in developing countries is usually sponsored or created by governments. Unfortunately, these houses are tailored to the best interest of the government as opposed to meeting the needs of their residents. The acronym INFONAVIT stands for Instituto del Fondo Nacional de la Vivieda para los Trabajadores, which translates to Institute of the National Fund

---

of Housing for Workers. Established in 1972, INFONAVIT has become Mexico’s “backbone for mortgage financing.” In the year 2000, President Vicente Fox ambitiously announced he would build two million houses during his presidential term. Upon winning the elections he announced: “my presidency will be remembered as the era of public housing.”

By the end of his sexennial (six-year term), he successfully built 2,350,000 homes. At its peak production, these homes were being constructed at a rate of 2,500 per day. When Enrique Peña Nieto was elected president in 2012, INFONAVIT granted seventy percent of home loans, breaking historical records. What was astonishing about this is that sixty percent of the credits were granted to people between the ages of 14-18.

Let us think about these numbers again. 2,500 houses per day. By working at such a massive scale, architects and construction companies need to work at unrealistic speeds, which produced the outcomes and developments we see today: infinite replications of the same “shoebox” home over an inorganic grid of terrain. Those who planned these developments had no space or time to even contemplate adding a tree or two per hundredth house.

---


Aesthetics of INFONAVIT

The minimum federal requirement per social housing unit is 43 square meters. From an aerial view, it is evident that most developments stuck to that minimum requirement, because one can see the never-ending arrays of small houses that suffocate each other.

Zoom in on the suburb of any Mexican city on Google Earth’s satellite images and you will most definitely find signs of these sprawling suburbs. The process goes as follows: A plot of land is acquired and bulldozed, leaving no trace of any tree or bush. Once all plant and animal life are bulldozed and the surface is purely soil, the land is divided into equal sections. A lot of the time, the land is not leveled. If there are enough resources, houses are leveled individually. Builders might cut through hills or mountains. Once the land is clear, main roads are paved. Finally, one unit design is built repeatedly throughout the property. In attempts to maximize profit and space, developers try to squeeze in as many houses as they can per plot of land. People are quickly placed in their houses, sometimes moving in before basic infrastructure, such as electricity, water, gas, and sewer, is fully installed.

Rarely, the development will include a church or chapel, a park for kids to play in, and a community center. But some developments will consist only of monotonous houses.

---

Plot of land for INFONAVIT development with mock up home⁹

⁹ Corona Benjamin, Livia *Two Joint Houses as Model Home*. Ensenada, Mexico. 2000 - present
Abandonment of Low-Rise Suburbs

Carlos Martinez Velazquez, who is the director of INFONAVIT under current president Andres Manuel Lopez Obrador, announced that on average, eighty thousand houses funded and constructed by the INFONAVIT are abandoned every year.\textsuperscript{11}

In her article published in \textit{The Seattle Times} in 2014, Victoria Brunett interviews people who lived in a community called Zumpango, located about two hours from Mexico City. A few years after its development, Zumpango was quickly abandoned due to lack of basic

\begin{itemize}
  \item[\textsuperscript{10}] Taboada, Jorge, \textit{ALTADEN99}, 2018 https://jorgetaboada.wixsite.com/jorgetaboada/alta-densidad
  \item[\textsuperscript{11}] https://www.sinembargo.mx/06-02-2019/3532339
infrastructure. An interviewee explained that “they brought the people first, and then they built the infrastructure”\(^\text{12}\). People moved in as soon as the houses were up, yet, the sewage, electricity, water supply, had not been installed yet.

Also, public transportation organized near these developments was extremely unrealistic based on the salaries of those who occupied those homes. With four-hour round trips daily, some would spend up to one fourth of their daily income on transportation alone.

Aside from a lack of basic services, these communities may be located in unsafe areas with higher rates of violence. Based on “Estudio Diagnóstico del Derecho a la Vivienda Digna y Decorosa” (Diagnostic Study of the Right to Dignified and Decent Housing) conducted in 2018, 345,000 people fled from their homes because of violence. Also, uninhabited homes incentivize neighbors to leave, because the more abandoned homes, the more unsafe and unstable a community feels. Poorly planned communities create the inhospitable conditions they are meant to ameliorate. The very structures that are supposed to eliminate poverty keep re-creating and expanding it.

Brunett notes that “about 14 percent of Mexico’s 35 million homes are unoccupied”. As of 2019, BBC reported up to 5 million houses uninhabited in Mexico. \(^\text{13}\) Nonetheless, according to the United Nations’ publication Business Call to Action, “6 million Mexican families still need to improve their living conditions”\(^\text{14}\) and reside in inadequate housing.

---

\(^\text{12}\) https://www.seattletimes.com/nation-world/residents-abandoning-mexicorsquos-affordable-housing-sprawl/
\(^\text{13}\) https://www.bbc.com/mundo/noticias-america-latina-47263282
\(^\text{14}\) https://www.businesscalltoaction.org/news/member-spotlight-chale-a-tu-casa
The Problem with Abandoned Houses

The problem with abandoned houses is that once they have been vacated, it is usually too late, for two distinct reasons. The first reason is that by the time a house is reported as empty, the infrastructure could already be depleted or re-inhabited by plant species and animals. The second is that once a group of houses is abandoned, cartels or criminal groups can take over, forcing those remaining in the surrounding area to move out themselves. In other words, empty houses re-create the conditions they were built to solve.

Infrastructural Safety

The most prominent consideration surrounding social housing in Mexico is safety. Violence, threats, and insecurity do not only lead to abandonment of homes, as previously mentioned, but can also lead to chronic health effects.

In an article published in 2014, Neighborhood characteristics and leukocyte telomere length: The Multi-Ethnic Study of Atherosclerosis, Needham, et al. found that the perception of how safe a neighborhood or community seemed to adults aged 45-84, correlated to the rate at which their telomeres were shortening. Telomeres reside in the tips of chromosomes and are the most prominent indicator we have of cellular aging. The shorter someone's telomere is, the more aged their cells have become, and the more likely they are to develop chronic diseases that are linked to aging such as type 2 diabetes, Alzheimer's, and leukemia. This proves that perception

---

of safety does in fact influence physical wellbeing, and there are aspects of urban development which can influence the ways in which people can feel safer.

A key factor in contributing to a sense of safety is exposure to light. As mentioned earlier, some Mexican social housing communities are left without adequate lighting infrastructure, leaving some communities with very minimal light, and some with none. Although electricity and exposure to natural light may be taken for granted in the United States and other first world countries, it is rare for streets to be illuminated in developing countries, especially those outside big cities. Walking after sunset becomes unsafe, especially for women and children. When there is no light on sidewalks, it is easier for criminal activity to go unnoticed by the community.

Light also limits the amount of social activities that can be performed outdoors. When it gets dark, children are not able to play in parks and vendors are unable to sell their goods. This timed end to all outdoor activities forces people inside, and even with light, empty streets and neighborhoods will be perceived as unsafe.

Whether or not a town or community is connected to electricity, a simple, affordable, and sustainable solution to combat darkness involves plastic water bottles. In 2002, a Brazilian mechanic by the name of Alfredo Moser invented a technique that illuminates the interior of his house via sunlight refraction using only a plastic water bottle, water, and bleach.\(^\text{16}\)

The non-governmental organization Liter of Light adapted this same idea in 2013 and incorporated a lead acid battery and a 10-watt solar panel. Adding the battery and panel to

Moser’s design and a panel of galvanized steel makes it possible for the light to shine at night.
The batteries of their streetlamps last up to five years.

**Case in Tabasco**

In the state of Tabasco, thousands of homes were flooded due to the lack of infrastructure of low-cost public housing in Mexico. Because of the corrupt nature of the government and most construction companies commissioned to develop these communities, there is little to no research on the site or location of the development. In the case of a specific development in the state of Tabasco, a simple rainfall flooded the entire neighborhood, because it was placed upon non-permeable terrain. If you pave all roads and remove all dirt, terrain becomes non-permeable and therefore there is no filtration.

The problem here originated from the lack of research prior to constructing. Placing houses directly over flood plains is extremely risky.
Aesthetic Critique

*Alta Densidad: Project Analysis*

In 2010, a Monterrey based architectural photographer, Jorge Taboada, embarked on a project titled “Alta Densidad”, which translates to “high density”. This project would offer his audience a “silent criticism” of the repetitive monotony and lack of green spaces of INFONAVIT housing developments. What initially drew Toboada to photograph these housing developments was the beauty of their geometry and repetition from above. It did not take long for him to consider those who inhabited the houses as victims of the “depersonalization of housing and

---

https://www.gettyimages.com.mx/detail/fotografia%C3%ADa-de-noticias/an-aerial-shot-of-a-flooded-neighborhood-of-fotografia%C3%ADa-de-noticias/94984311
extinction of individuality.”18 In an article for BBC Mundo, he critiqued the houses by describing them as “time bombs” because they are “small concrete houses with have no backyard or green areas, and they are not prepared for the weathers for which they are built”.19

Taboada’s aim for his audience was for the viewer to go through two different phases. The first one is fascination. As with most aerial photographs, it takes the viewer some time to decipher what exactly they are seeing in Toboada’s pictures. Because of the infinite repetition of the same shape expanding to all four corners of each image, the conjunction of all individual units become an abstraction.

Once one unit is identified, it becomes evident that what we see as viewers are concrete structures. Without knowing about Mexican affordable housing, someone might not be able to identify the units as houses. They could be mistaken for a military base, factory, or some other large-scale industrial facility. At this point, the second phase of viewing is perceived, when the audience becomes aware of what exactly they are looking at and the inhumane conditions of its design. The audience is then able to understand what Toboada describes as “archeological remains [where] people lose their face and identity and become invisible.”20When people are visually abstracted from the built environment in which they reside, they lose their sense of self and motivation to seek community.

---

18 https://www.bbc.com/mundo/noticias-america-latina-43593810
19 https://www.bbc.com/mundo/noticias-america-latina-43593810
20 https://www.plataformaarquitectura.cl/cl/893152/paraisos-siniestros-fotografias-aereas-de-vivienda-de-interes-social-el-mexico
Two Million Homes for Mexico: Livia Corona Benjamin

Corona Benjamin is a Mexican photographer that has been capturing how humanity is represented in the built environments of social housing in Mexico since the election of Vicente Fox. Her project, Two Million Homes for Mexico, began in 2000 and is still active. In her website, Corona Benjamin says that she “aims to form the space between promise and fulfillment” through photography. She also says, “I seek to give form to how these developments affect the experience of individual residents. What exactly happens in these two million homes? How do they change over time? How do tens of thousands of lives play out against this kind of confined cultural backdrop?”

She titles several photographs “overnight city”, articulating the inhospitality of these structures and what the creation of these cities represent: a hurried ideation and construction.

This photography project differs from Toboada’s because aside from including aerial shots of the developments, it also opens a new perspective to the audience: the human perspective. By adding photographs of children and people interacting with these spaces, they become more tangible for the audience to grapple with. It is easier to put oneself into the shoes of the people Corona Benjamin photographs.

Included below is a portrait which best communicates the realities of the non-human centered design that social housing communities. This image she titled Student at Neighborhood Park. Fraccionamiento Cuatro Vientos, Ixtapaluca Mexico. In it, we can see a child sitting at the bottom of a slide placed over a mound of dirt. In the background we can see land which was clearly bulldozed with the exception of one tree. To the right of the image, we can see four of the

21 https://liviacorona.com
same houses. The child has his backpack next to him, telling the audience that he is on his way or returning to school.

One of Corona Benjamin’s portraits in social housing community playground

In her work, Corona Benjamin beautifully plays with proportion and composition. Although we know the photo essay focuses on the “Two Million Homes,” the photographer seeks to investigate, positioning the child as the same size as the housing units in the background shifts our focus from the objective problem, unsustainable infrastructure, to the harsh realities that it forges. This 1:1 proportion encourages both issues to be treated with equal consideration and thought. One cannot exist without the other. What is evidently missing in this image is any green communal space, such as a park or other outdoor infrastructure. The design of these housing communities excludes a children (which are a significant proportion of the population).

---

If there are no built, structural resources that encourage community, how can a space feel like a home and how is it sustainable?

*Tatiana Bilbao Estudio*

In 2015, Tatiana Bilbao Estudio presented the Chicago Architecture Biennial with a social housing proposal for “Mexico’s poorest inhabitants.” Bilbao’s proposed model was flexible enough that if the families that inhabited each unit ever grew, the houses could be easily adapted to accommodate the larger number of occupants. Her goals were to “develop a model that could allow people to have more space for the same [amount of] money.” The layout of these housing units can also be altered to fit each user’s best needs. This means that despite having uniformity in materials, color, and base design, each housing unit is different from one another. She emphasized that materials can also be interchanged based on location and weather, meaning the model can be adapted for anywhere in Mexico. She divided the construction process of each house into phases, allowing opportunity for expansion only when each phase had been completed. The Chicago Architecture Biennial notes that “the first phase of the house includes two bedrooms, one bathroom, one kitchen, and a 16 ft. (5 m) high dining and living room. When completed, the third phase will provide space for five separate bedrooms.” The total construction cost is under $8,000 USD.

For this design, Bilbao interviewed 2,000 current social housing residents. This approach is crucial because it places the user at the center of the design process. This is a practice found in

---


24 [https://www.youtube.com/watch?time_continue=23&v=RAkraYELlnE&feature=emb_logo](https://www.youtube.com/watch?time_continue=23&v=RAkraYELlnE&feature=emb_logo)

human centered design. By focusing on the user and considering their experience empathetically (understanding the “why” as opposed to the “how”) one can focus on the problem and allow it to guide the design.

Her main takeaway from these interviews is that "nobody wants a flat roof anymore, they want a house that looks like a house." She explains that "the whole of Mexico is full of these grey houses with steel bars left out on the flat roof … In the past this meant that you were showing prosperity, you were showing that you were looking forward to growing. But right now, it's a sign of failure."26

By designing with the prospective inhabitant as the customer instead of the government, Bilbao was able to give her residents a home. Not only was the construction cheaper, but it also had a larger surface area and harmonized with the natural environment.

TBE Design for the Chicago Arch Biennial implemented in state of Chiapas

---

ANALOGOUS SOLUTIONS

**Vertical Living**

With population growth and city expansion, the easiest solution to prevent housing abandonment is vertical living. What this means is expanding vertically rather than horizontally. Instead of building individual homes, townhouses or buildings take precedent. This way, space is optimized and transportation time to and from suburbs to downtown areas is quicker and cheaper.

Globally, the trend towards vertical living is being pursued to combat “increasing populations, rising house prices and growing environmental pressure.” Vertical living is the best way to avoid suburban sprawl.

Although vertical living interferes with the Latin American idea of a conventional home (single story, open, surrounded by green area), so does the current concrete sprawl expansion of affordable housing developments. Scrapping down a plot of land completely before beginning a project limits exposure to nature in the same way apartment home or building might.

In fact, vertical housing allows for more green areas in each development. These green areas can allow for the transformation from house to home, therefore building community.

---

**Garden Cities**

During the Industrial Revolution, in 1898, Ebenzer Howard wrote a book called *To-Morrow: A Peaceful Path to Real Reform*, in which he imagines cities that are “of limited size, planned in advance, and surrounded by a permanent belt of agricultural land.” Ideally, a garden city would need 6,000 acres of agricultural land to be able to thrive properly and house 30,000 people total.

The land is plotted in circles. The center would be dedicated to culture: “city hall, a concert hall, museum, theatre, library, and hospital….Concentric to this urban core would be a park, a combination shopping centre and conservatory, a residential area, and then, at the outer edge, industry. Traffic would move along avenues extending along the radii and concentric boulevards.”

This proposed solution by Howard was very controversial because although it resolves the issues of sprawl and does provide lasting, green infrastructure for the suburbs, it fails to promote the further creation of community.

In theory, Howard’s ideas create community, but in practice they did not. Howard might have assumed that by constructing cultural infrastructure in the literal center of their design it would incentivize community members to interact with each other. Placing the roads in the extremities of the circles allows pedestrians to move around safely within their respective circles.

While probably successful, all other aspects of the urban plan led to minimal interaction between its members. Hindering the capacity of garden cities to sustain community across time.

---

29 https://www.britannica.com/topic/garden-city-urban-planning
30 https://www.britannica.com/topic/garden-city-urban-planning
is reflected in the segregation plotted in the land. Since the houses are at the extremities of the circular diameters, the plotted land lacks connectivity. Another problem produced by this design is the strict separation of housing, industry, agriculture, and culture, which was a driving force towards an increased communal separation. The circular design and designated separation of the land separates people and reduces the opportunity for encounters.

Howard’s Garden Cities were successful because they put nature in the forefront of design allowing people to engage with a more harmonious way of living. An important takeaway to consider when building massive social housing structures is that all aspects of life should be distributed uniformly and merge throughout, as opposed to strictly separating infrastructure based on function.
Garden cities in Europe

TECHO: Affordable Prefabricated Living

TECHO, or Un Techo Para Mi País, was founded in Chile in 1997 with the aim to recognize popular settlements and provide them with dignified housing and a zip code. A popular settlement is a housing community that is not recognized by its respective government. These communities usually have no registered names, street names or house numbers. Two widely known examples of popular settlements are favelas in Brazil and ejidos in Mexico. Providing people with a formal domicile and registering their houses provides community members with basic infrastructural needs. Once registered, they have access to water, gas, electricity, sewage, jobs, and academic resources for their children.

The process of TECHO’s implementation into a community works as follows: First, a group of volunteers is recruited. In 2014, I signed up through my school along with another 150 students. The total number of volunteers is divided into groups of 7-10 people and from there they can decide how many houses they’re able to help a community build. A few people from each team travel to the community and interview its inhabitants to decide who qualifies for a house. Volunteer groups are each in charge of fundraising the total cost of materials. Houses are prefabricated and are only $8,000 USD total. Finally, along with the inhabitants of the houses

31 Google Earth Capture, Brøndby Garden City
https://earth.google.com/web/@55.63699597,12.39853881,9.721690998,853.18643806d,35y,0.000000003h,0.27750265t,0v/data=ClkavxRClUwvDQ2NTI1NjhiMiMjMjNWU2N2Q6MHgxZTk3ZjA1M2E0NTM3NjdmgZfTr77L0UtAJTeOs0TCxihAKhZCcsO4bRieSBiYXZIYmkgQWZkLiA3GAqAQ

32 https://us.techo.org
and community members, volunteers spend an entire weekend helping construct these prefabricated houses.

TECHO has a sustainability program in charge of making sure that inhabitants are empowered to maintain their community growth and improvement.

Prefabricated houses are a reliable and immediate solution for ejidos and slums to gain governmental recognition and transform them into dignified living environments. Since a lot of these communities already rely on each other’s assistance and shared resources for survival, building roofs helps to establish housing in an already fortified social community.
In 1974, American architect Ken Issacs published a book titled *How to Build Your Own Living Structures*. It is a recipe book that describes how to build different modular houses. His proposed houses range in price from $185 USD - $1,800 USD. The book begins by providing the most basic instructions on buying and selecting proper wood panels, knowing what hand tools are needed and how they are each used.

By publishing of this manual, Issacs created a counter movement that democratized the architectural process. He provides people with the proper toolkit and skills for them to build their own houses and approaches construction in the most simplified terms.

When we think about the incorporation of his concept in affordable housing in developing countries, we can imagine a situation in which there is no architect, and no construction companies. People would build for their specific needs. This would be the ultimate individualized and humane process. The approach that the government would take would be completely different because they would only have to provide people with land and basic infrastructure, cutting corners and ignoring the needs of residents to conserve financial resources.

The two main concerns with allowing people to build their own houses would be the longevity of these structures and horizontal expansion. If the structures are not durable, then even the smallest earthquake, rainfall or other natural disaster could destroy someone’s only reliable living structure. Issacs designs are typically one to two stories, which correlate to horizontal expansion of sprawl instead of a vertical one. As such, his structures would increase
transportation time to and from jobs in cities, making it difficult for people to move there in the first place.

Regulations surrounding the size and materials of these spaces should be seriously considered by the government. By encouraging the use of specific materials over others, housing communities would be uniform in design and differ from the stereotypical look of a slum (which are also self-made houses but constructed with scavenged materials).

Letting people choose what their housing priorities are and allowing them the liberty to build based on these needs is the ultimate human-centered design. This idea opposes the current INFONAVIT structures aesthetically because it allows for individualized exploration and execution. If people design and build their own living structures with the help of their neighbors, the community may become more cohesive and spaces may begin to feel more like a home, in the spiritual and emotional sense.

**The Farmhouse by Precht**

Upon relocating their offices from urban Beijing to suburban Austria, the architecture firm Precht thought of ways in which they could bring aspects of their new location that embodied nature back to the metropolis. So, in 2019, they finally created a design which very adequately combined both vertical farming with modular housing. This idea brings people's relationship with food to the forefront and rethinks the relationship between shelter and food from an architectural perspective.

In their creation process, Precht tried to make the most use of what the buildings already offer: “buildings create already a large amount of heat, which can be reused for plants like
potatoes, nuts or beans to grow. A water-treatment system filters rain- and greywater, enriches it with nutrients and cycles it back to the greenhouses. The food waste can be locally collected in the building’s basement, turned into compost and reused to grow more food.\textsuperscript{33}

The entire building is prefabricated and flat-packed, ready for delivery. Each module is designed as a polygon with three sides, so if it is a single person residence, that one triangle could be enough for them to live there. As a family size grows, more modules are added per unit, and the conjunction of many modules vertically creates the entirety of the building. The intersection of these modules creates upside-down triangles, generating spaces which are used for gardening. What is more, each individual module has a balcony or outdoor area that is meant to be used for food production.

Prescht’s vertical farming and living model provides valuable insight for exploring affordable housing projects in Latin America, as it demonstrates a realistic possibility of a self-sustaining lifestyle in a vertical landscape.

Farmhouse’s design requires collaboration for it to collectively sustain and survive. This collaboration creates a sense of community that ultimately allows for the creation of a home.

Farmhouse project. Modules and building. 34

34 Precht, *Farmhouse renders*, 2019
Communal Living

Architects Helen & Hard define co-living as “"based on participation and sharing." The pair built a 1:1 model of what they imagine to be an ideal co-living home, aiming to "tackle various environmental issues, increase residential security and combat loneliness."

Privatization of Spaces

Some spaces that we interpret as extremely private have been historically used as places of communal ritual. The best example I can offer is the bathroom. Although restrooms in public spaces are shared areas divided only by stall walls, in households, bathrooms are usually private and individual. The typical idealized western model of a household has more than one bathroom. Unless a building is very old there will be no communal bathroom. However, models of shared bathing have been successful in the past.

A Hammam is a great historical example of a shared and successful bathing area. This bathing practice was utilized by the Greeks and Romans and gained its popularity in the Ottoman Empire, which is why it is now also referred to as Turkish Bath. Its purpose was to purify. In the present day, they are fundamentals for public health in Turkey, it is not only used for self-care, but also to heal ailments.

---

Other examples of communal bathing include Native American sweat lounges, Japanese Sentōs, Russian banyas and Finnish saunas.

Although bathing is not very ceremonial in modern society, its ritual aspects remain. It is a place where repetition is practiced daily, often in a quiet space where one may find peace.

When designing social housing communities, there is an opportunity to revive aspects of private space and make them communal. The benefits of this are not only spatial (maximization), but also social, because people can come together to practice rituals in conjunction.

American college dormitories display the success of communal living practices. Groups of students get to know each other by having to practice hygiene in shared spaces. Bathrooms become safe spaces through a collective vulnerability that residents experience daily. By the end of the semester, an imagined community forms among those who share bathrooms, and even if students have never spoken to each other, they may feel more comfortable with their roommates than classmates. Sharing resources and spaces forces interactions that may have been unlikely to occur otherwise. This builds trust, and thus, community.

Parks

Under the umbrella of communal living, one must consider areas that are historically designed for communal interactions. These areas include parks and green spaces, which are undervalued and underfunded in current models of affordable housing in Mexico.

---

Like communal bathing spaces, parks are designed to encourage interaction among neighbors. They allow people of all ages and socioeconomic backgrounds to spend time together and interact through several activities: children playing in playgrounds, teenagers playing soccer, and elderly people playing chess. Additionally, if the park has a communal garden, it creates a shared urge to work together towards the success of this project.

City parks and communal gardens allow access. They are direct exits to nature outside vertical infrastructure and direct pathways to emotional recharging and relaxation. Psychologically, parks have a crucial role in changing people's moods and emotions. In 2018, the Psychological Studies journal published an article that “presents people’s perception of the relationship between space quality of urban park and mood state after visiting urban parks.” Researchers found that urban parks reduce stress and are benefit overall health. The moods of female participants differed from the mood change of males after each group spent time in the green spaces. What is more, males and females even had different attitudes towards interacting with the green spaces.  

**Avant Garde and Architecture**

Founded in Italy in the 1960s by Gian Piero Frassinelli and Adolfo Nataline, Superstudio is an innovative and well-known studio that spearheaded the use of collage in spatial design. It gave way to the art of visualizing utopian worlds through collage. They offered a new perspective to architects and urban planners in reimagining the representation of the built environment.

---

environment. Initially, their work was extremely radical and controversial. *The New York Times* noted that “the starting point of everything Superstudio did was dissatisfaction with the uniformity of modern architecture, which its left-wing members saw as an instrument of capitalism that disempowered the masses, robbing them of their individuality and freedom. Sometimes, they made fun of the status quo, or took it to absurd conclusions; other times, they imagined utopian futures”.

Superstudio’s work inspired a new way of interpreting and expressing spatial ideas visually. The power of their work is in its literacy. Their collages inform my work as someone

---


42 Superstudio, *Supersuperficie*, 1972 Archivo Superstudio
focused on re-imagining affordable housing in Latin America, but their work reaches a wider audience as well. The collages may speak to individuals who work in completely different fields, including those in positions of power, like politicians, business CEOs and lawyers who may be integral in creating the future of social housing.

Superstudio created a counterculture that questioned the field of urban planning. In 1971, Natalini noted: "if design is merely an inducement to consume, then we must reject design; if architecture is merely the codifying of bourgeois model of ownership and society, then we must reject architecture; if architecture and town planning is merely the formalization of present unjust social divisions, then we must reject town planning and its cities." This quote challenges the very essence of building. His words reflect the realities of the predisposition that building and designing spatially creates socioeconomically, racially, and socially. Based on this argument, we could counter Anderson’s ideas about "imagined communities” and say that in fact communities are not imagined but created and curated based on physical infrastructure.

Legibility and accessibility are also particularly important to me, as I seek to include those who inhabit affordable housing communities. Affordable housing serves various socio-economic groups, but it is designed for lower classes, which are typically classes with the least education and lowest rates of literacy. Through my work, I wish to inspire hope for those who currently live in these monotonous communities, pushing towards a better and tangible alternative. If they realize the potential housing alternatives, they can demand change and aspire for better living conditions within their communities.

---

The last group I wish to include in my audience is children. These collaging techniques, aside from being legible to those who are illiterate, are attractive to their eye because of their use of colors, shapes, and compositions. Their informality and playfulness might not be taken seriously by adults, but it is most approachable for children. Children represent the future and I hope that through my collages they can imagine themselves in new and different spaces and envision ways in which their own communities could be improved.

My Collages

Why Collages

Now, I will propose two collages that communicate the building blocks for what imagining and planning sustainable communities. I chose to communicate these issues in the form of collages because they are most legible, thus catering to a wider audience. A blueprint is only legible to an architect, a legal document is only legible to government officials, but collages are digestible to everyone. One does not need to be literate to understand these collages.

This summer (2021), I spent three months working with Tatiana Bilbao Esutido and understanding their ideation process which stems from collaging. A few years ago, the firm decided they would be presenting all their work through collages instead of renders, and the new visual mode would become a crucial first step in their design process. The practice of collaging erases the limits of what we conventionally imagine when we consider a built structure, allowing architects to think beyond what is possible and tangible. At Tatiana Bilbao Estudio, collaging is like brainstorming. The architects visualize all the conceptual functions a space should encourage, including community building, fostering peace and relaxation, and inspiring education. Next, they imagine all visual possibilities that go beyond physical realistic
constrictions. Once they have established their concept, they focus on how they can build a physical space that correlates with their more abstract goals.

I want my collages to inspire conversations about how affordable housing developments should feel. Visuals are a great way to convey emotion, and I do not want them to be a literal representation of what a space should look like. (As mentioned earlier, they should be dignified houses). I want my audience to be persuaded by pathos and feel empowered to seek change in their own homes.

Fernandez Dominguez, Kenza. *Sketch of Collage 1*. 2021
In this sketch, I placed the children and outdoor activities in the foreground to symbolize that their needs should be prioritized. There is also a bicycle because I imagine these places to be as pedestrian friendly as possible. Additionally, I included a shared communal garden. Behind the trees (I included trees to show that my idealized social housing community does not wipe them entirely before construction) in pink, are the houses.

Fernandez Dominguez, Kenza. Collage 1. 2021
Conclusion

Upon reading this project, I hope people understand that we are a long way away from achieving any major change in social housing construction in Mexico. I am surprised how small the conversation is regarding the aesthetic design of these spaces as dehumanizing.
Affordable housing in Mexico should be human centered. The needs of potential inhabitants, rather than government finances, should dictate the design of these spaces. Dignified social housing should involve infrastructure that promotes the creation of a community. If this is achieved, then the houses will feel like homes.
Bibliography


Presidencia de la República EPN. “Infonavit Prensa.” *Gobierno De Mexico*,


Block, India. “Superstudio Co-Founder and Radical Architect Adolfo Natalini Dies at 78.” *Dezeen*, 22 Nov. 2021,


Corona Benjamin, Livia. “Two Million Homes for Mexico.” *MAS CONTEXT*, 2014,


Image Sources


https://www.gettyimages.com.mx/detail/fotografia%C3%ADa-de-noticias/an-aerial-shot-of-a-flooded-neighborhood-of-fotografia%C3%ADa-de-noticias/94984311


Corona Benjamin, Livia Two Joint Houses as Model Home. Ensenada, Mexico. 2000 - present

Taboada, Jorge, ALTADEN99, 2018 https://jorgetaboada.wixsite.com/jorgetaboada/alta-densidad

Google Earth Capture, Brøndby Garden City

https://earth.google.com/web/@55.63699597,12.39853881,9.72169099a,853.18643806d,35y,0.00000003h,0.27750265t,0r/data=ClkaVxJRCiUweDQ2NTI1NjhiMiJmJyNWU2N2Q6MHgxZTk3ZjA1M2E0NTM3NjdGZjTr77L0UtAITeOtsTCxihAKhZCcsO4bmRicSB1YXZIYnggQWZkLiA3GAEGAQ

Superstudio, Supersuperficie, 1972 Archivo Superstudio