

COMMUNITY DESIGN AND DEVELOPMENT BY NECESSITY



**A Design Thesis Submitted to the Department
of Architecture and Landscape Architecture
of North Dakota State University**

**By
Lynn Keszler**

In Partial Fulfillment of the Requirements for the Degree of Bachelor of Architecture



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by Necessity

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Primary Thesis Critic

Thesis Committee Chair

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Fargo, North Dakota



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Thesis Abstract

The project will entail a planned community for the poor citizens who live in the Rio Grande Valley of Texas. The development will include developing and sustaining a community through housing, public services, and connecting citizens. The thesis will examine the small colonias of south Texas to determine a new way of delivering the necessities of life, fresh air, sunlight, clean water, food, shelter, and how they are, or are not met.

The thesis is called Community Design and Development by Necessity. A community center called Casa de Amistad and a development plan will be designed for the colonia of Laureles, Texas.

Project Typology

The development is a planned community to meet the basic living and housing needs of poor citizens who live along the Texas coast. The project will involve a low-income housing development, public services, and community planning.

Theoretical Premise

The thesis will examine the colonias of the Rio Grande Valley of Texas to determine how the necessities of life are delivered to the inhabitants. The examination of the delivery methods will establish the principles of sustainability that will guide a new way of distributing the basics of life: fresh air, sunlight, fresh water, food, and shelter. Design metaphors, analogies, and/or tectonics will be developed from the examination.

Justification

It is in the poor communities of the world that we will find ways to live in and with the environment to prosper and sustain ourselves and our communities.

Narrative

A community is defined by its residents. Who lives and works there? What are their means of survival? Having a healthy and prosperous community is a necessity to the health and well being of its residents. By taking a sustainable approach in design means and materials, in consideration with the culture of an area, there can be a plan of how to evolve into a successful community.

The word community or neighborhood translates into “colonia” in Spanish. For the majority, colonias are comprised of Hispanics. Residents’ backgrounds consist of little or no education and low income families. Colonias have sprung up in the United States all along the Mexican border. Many of these unincorporated subdivisions or neighborhoods lack the use of basic services such as water, sewer, and electricity. Housing is also a great need for these communities. By living in this poverty stricken state residents are constantly plagued with disease and sickness.



By investigating what is readily available to the community a sustainable approach to a healthy life can be met. What can be done for a colonia and who can deliver the necessities of life? Awareness of the natural environment with the built environment will only yield a more productive solution.

User/Client Description

The client will be a colonia organization in the south Texas region. The project will be designed for residents of a south Texas Colonia.

Major Project Elements

The typology of the project will be a urban design development that will include housing, public and commercial services. Housing will include single family dwellings and apartment units. Each will be comprised of, but not limited to, a kitchen, living space, and sleeping quarters. Public services such as transportation, food sources and supply, and commercial business will be developed.



Site Information

The site will be located in south Texas, concentrating on the Rio Grande Valley, Cameron County area. This area is of interest because of the rich Hispanic culture and proximity to the US-Mexico border. In this area there are many programs devoted to the health and conditions of colonias. South Texas is a region that is proud of its people and proud of its many diverse cultures.



Community Design by Necessity
Thesis Manual 2005-2006 - Lynn Koszler

Lower Rio Grande Valley

Project Emphasis

The main goal of this project is to establish the use of sustainable ways of using materials and means of developing a community that thrives within its environment. The community will use natural means that will guide a new way of distributing the necessities of life: fresh air, sunlight, fresh water, food, and shelter.

Another goal is to develop a community that will encompass the rich Hispanic culture instilled in the region.

Plan for Proceeding

Research Direction:

Research and analysis will be by Mixed Method approach, combining quantitative and qualitative research. A Concurrent Transformative Strategy will be employed and guided by the theoretical premise. Integration of the data will occur at several stages in the process of the research and will depend on the requirements of the examination of the theoretical premise. Analyzing, interpreting, and reporting results will occur throughout the research process.

Quantitative data includes statistical data, gathered and analyzed locally or obtained through an archival search, and scientific data, measurements obtained through instrumentation and or experiment gathered through archival search.

Qualitative data will be gathered from archival search and direct interviews.

Design Methodology:

Graphic analysis and language methodology will be used.

Documentation of the Design Process:

Documentation will be comprised of sketches, digital drawings, and photography of models.

Schedule of Work:

October 17-October 21:
Revise Proposal

October 24-October 28:
Proposal due October 27

October 31-November 4
Work week - Meet with advisor

November 7-November 11
Work week

November 14-November 18
Work week - Meet with advisor

November 21-November 25
Program Draft due November 23

November 28-December 2
Work week

December 5-December 9
Work week

Semester Break
Visit Site January 4 - January 8

January 9-January 10
Work week

January 16-March 3
Work weeks - Meet with advisor weekly

March 6-March 10
Preliminary design presentations

March 13-March 17
Spring Break

March 20-April 21
Work weeks - Meet with advisor weekly

March 24
Project Due

Previous Studio Experience

Fall 2002

Wall Project – design inspiration taken from chosen architect's work and developed into a pavilion.

Bistro – Culinary school in downtown Fargo where students lived and worked in the restaurant.

Spring 2003

Urban Park – Park in Downtown Fargo.

Fargo Public Library – Branch library that would serve a residential and commercial community in Fargo.

Fall 2003

Shaker Barn – Use of an old barn into a musical arts school for the Shaker Community.

Pipestone Interpretation Center – New center for Pipestone National Monument Quarry's in Southwest Minnesota.

Spring 2004

Fluid Motion Center – Exercise and dance community center.

Masonry project – Masonry research and resource center.

Fall 2004

Urban Design Housing Project – Lowertown St. Paul housing development.

Spring 2005

Highrise Project – Residential tower in downtown San Francisco

Marvin Windows Competition - NDSU Downtown 2, Design school.

Fall 2005

Digital Design Studio





THEORETICAL PREMISE LITERARY RESEARCH

Economics

There is an apparent connection between poverty and the denial of basic life necessities and illness. The first observation would suggest that the world's poverty is decreasing and the wealth is increasing because wealth and technological innovations are more greatly available today than ever before. This should mean that everyone is reaping the benefits of such an innovated world. A better way of life for all is the idealization of economic growth. Unfortunately it is far from the truth.

It is true that the proportion of people in good health today is greater than it was fifty years ago. Greater healthcare is available, life expectancy rates are higher, and birth mortality rates have decreased. Despite these wonderful advancements, the absolute number of people suffering from preventable diseases with little or no access to health care has risen dramatically within the same fifty year period.

The benefits of economic growth are given unproportionally to those who are already wealthy, in fact worsening the lives of the poor. The UNDP calculated that less than four percent of the combined wealth of the 225 richest individuals in the world would achieve and maintain access to basic education, basic health care, reproductive health care, adequate food, safe water, and adequate sanitation for all of the people living on the planet.

Economic changes related to deindustrialization, the globalization of capitalism, and especially the decline of blue-collar jobs have contributed to the concentration of poverty in inner urban areas.

Social Issues

Society looks down on people of lower class in America. They appear to be bad or lazy people because they do not have

jobs. They are at fault for the poor conditions in their life and there is a belief that if they really wanted to they could change their situations.

Despite the common beliefs, they may hold no factual bearing. There are multiple factors that affect a person's lively hood. In rural areas such as the Texas border region many of the jobs that are available are seasonal or labor intensive low paying jobs in factories or as farmworkers. Often times these employment opportunities come with the discrimination on race, sex, social status, and many other contributors.

A majority of colonia residents are of Hispanic ethnicity and are living in some of the most poverty stricken conditions in the world. They are faced with the daily struggle of survival. Social stratification has placed colonia residents as a lower class system. They do not hold high paying jobs and many have not obtained a high school education, making it tremendously difficult to tend to the needs of their families and community.

Philosophy

America is known for its endless possibilities and life advancements. People come to America seeking a better way of life. Through the belief in the American dream, the United States is encountering many migrants who are entering across borders and oceans to improve their life and the life of their families.

South Texas is experiencing a rapid growth rate in the border region. So much as to not being able to provide the basic needs of its citizens.

Philosophical Aesthetics

The ideal way of life for a person living in poverty is not

measured by objects or gold. It is in the desire for a better way of life for their children that they strive to improve their conditions. For those who have so little in life, they have a great value and appreciation for the basic needs of survival, many of which they are denied.

Given the chance and resources people living in poverty are eager to help change their communities. They take great pride in their culture, possessions, and values.

Rationalism

In a realistic setting, what can actually be done for people to ensure a healthy and happy way of life? Clean water, fresh air, shelter, and food are all basic essentials for life. Action taken to achieve these necessities for some is very hard to come by. If you lack the resources to readily acquire safe drinking water and food it demotes your health and quality of life. Who then is able to provide those things?

Poor communities all across the world go without need of survival daily. There are organizations that offer aid to become a resource for shelter, food, and water. These programs and nonprofit sectors play a major role as an advocate for the development communities. They promote adequate infrastructure and safe and alternative housing options. They also provide home ownership and credit counseling, promote business development and provide other services to promote self-sufficiency and improve living conditions.

Many residences of poor communities have never had a banking account, primarily using cash or money orders for financial transactions. Financial services available aim to provide sanitary waste disposal, safe drinking water, infrastructure, and safe affordable housing. These financial institutions range from federal programs to local nonprofit organizations. Financial organizations are taking the first step in providing funding for different loan and investment

programs. They become an added resource to residents who are looking to improve their financial conditions.

Empiricism

Colonias are the only available options to many low income families in the border regions of New Mexico and Texas. An estimated nine percent of border Texans live in on of the 1,584 colonias, an estimated of 400,000 Texans. Colonias can be found in Texas, New Mexico, Arizona and California, but Texas has both the largest number of colonias and the largest colonia population.

This over crowded population is increasing rapidly and the need for safe, sanitary housing is evermore present. The Lower Valley Housing Corporation states that in El Paso alone, at least 20,000 additional units of affordable housing are needed. A report by the University of Texas estimates that by the year 2010, more than 700,000 additional people will need affordable housing if trends continue.

Colonia residents generally have very low annual incomes. In Texas, the per capita annual income is much lower than the state average of \$16,717. In border counties such as Starr, Maverick and Hidalgo, per capita annual incomes are \$5,559, \$7,631 and \$8,899. Along with low incomes, the colonias face high unemployment rates. A 1993 Texas A&M study of five lower Rio Grande Valley colonias reveals that compared to the state unemployment rate of seven percent, the colonias ranged from 20 percent to 60 percent. In addition, residents often hold seasonal occupations, not allowing them to work year round. Fieldwork represents 29.5 percent of jobs, construction work 24.4 percent, and factory work, 14.9 percent.

Access to water and sewer services is another unpleasant resource that communities lack. Due to the serious consequences for public health and its effect on quality of life the lack of wastewater infrastructure and potable water makes it one of the greatest concerns regarding colonias.

Many do not have sewer systems; instead residents must rely on alternative, often inadequate means of disposal. Colonias in El Paso and the Rio Grande Valley show that 50.7 percent of the households use septic tanks, 36.4 percent use cesspools, 7.4 percent use outhouses and 5.5 percent use other means of disposing of wastewater. A 1995 Texas Water Development Board study estimates that 428 colonias with about 81,000 people are in need of potable water facilities, and 1,195 colonias with about 232,000 people need wastewater treatment facilities. To build the water and wastewater facilities needed in the 23 counties it would cost an estimated \$424 million.

Housing in colonias is constructed by residents using available materials. Frequently they start off with tents or makeshift structures and slowly add and improve them as their financial situations allow. In areas such as Cameron County, an extensive survey was conducted in the Cameron Park colonia. Of the 1,000 units analyzed, 80 percent of the units were categorized as substandard or dilapidated. To bring those houses up to code it would cost \$20 million.

Dilapidated homes, a lack of potable water and drainage systems, and floodplain locations make many colonias more susceptible to disease and illness. Texas Department of Health shows that hepatitis A, salmonellosis, dysentery, cholera and other diseases occur at much higher rates in colonias than in the state. The colonias are underserved with the number of care providers and have difficult accessing health care.

Hidalgo County in Texas has 7,682 patients per care provider, compared to the national figure of 1,000 to one. Traveling long distances, fear of losing wages for time away from work, lack of awareness, and no health insurance hinder colonia residents from accessing the proper health care that is needed. As a result, many colonia residents' problems go unreported and untreated.

Education is a challenge in colonias because of high student

drop out rates, irregular student attendance, and the border's rapid growth. Surveys by the Texas A&M's Colonias Program, colonia residents have consistently ranked education for their children as one of the first areas they want improved.

Colonias have a need and the right to basic necessities and a healthy way of life. By addressing the issues above some of the needs can be met.

Dialectical Materialism

Colonias are rich in Hispanic culture. Residents pride themselves in self identification and values. In rural areas often homes are scarce and a sense of community might not be as strong. The only association on a regular basis is with the immediate family. Therefore, family values and cultural identity will be recognized by those outside the community.

Architectural Theory

The profession of architecture can be addressed in the manner of providing and improving the way of life for the planet's inhabitants. It is a right for people to receive the basic necessities to protect their health and well being. Architecture is a resource for those looking to improve their living conditions, both with housing and environmental issues.

TYPOLICAL RESEARCH - Case Studies

U.S. Department of Housing and Urban Development Vision/Goals

The strategic plan of HUD's programs is organized to accomplish six main goals: increasing homeownership opportunities, promoting affordable housing, strengthening communities, ensuring equal opportunity in housing, maintaining high standards of management and accountability, and promoting participation of faith-based and community organizations.

People living in colonias are especially in need of improving the responsibility of homeownership. With the lack of decent housing, complicated nature of title and property ownership, and the lack of knowledge about banking and finances colonia residents are even more vulnerable to high rates and unaffordable payments. The more residents and farmworkers know about credit and banking services the more likely they are to build up their own assets of savings and down payments on homes. HUD is also educating residents on their housing rights. Promoting public awareness of fair housing laws with help residents to exercise them without discrimination based on race, color, religion, sex, national origin, disability or status.

HUD is encouraging colleges and universities to make a difference in their communities. By working with the programs, local residents are selected to inform their communities about the daily issues they are facing with housing, education, employment, health, and many other health issues. By working together they are gaining more ground in the improvement of developmental initiatives. This also contributes participants to develop and supplement each other's programs and services.

Analysis

HUD does not only partake in the building and constructing of homes and infrastructure. A large part of what they do is working with people in the community to educate them on what they can do to help achieve self fulfillment in their lives.

The various programs offer the residents multiple resources and facets to improve their lives. They promote and offer everything from counseling to construction.

Conclusion

A strategy for delivering the basic necessities of life is to educate and inform on financing and human rights. If residents become more aware of the legal systems that they are abound in, the more likely they will be able to change and continue the change on their own.

It is just as important to learn about loans and bank accounts as it is to learn construction skills to build their own home.

Proyecto Azteca

Overview

Proyecto Azteca is a self-help housing program that helps colonia residents build their own homes. They are located in the Lower Rio Grande Valley of Texas and were created in 1991 by the United Farm Workers and Texas Rural Legal Aid. Low-income families learn how to build houses by working daily on Proyecto Azteca's site. One hundred percent of the work is done by the participating families by working in teams. Proyecto Azteca provides the materials, tools, training and financing. After completion the houses are transported to lots owned by the families in the colonias.

The success of the construction program is due to an efficient, well designed, modest house plan, construction training and professional supervision of organized groups of families, and the sharing of resources and team work of participating families.

Homes through Opportunity

The families are required to work 40 hours a week for three months completing the homes. The homeowner's property must have access to potable water and electricity, just one of the qualifications taken into consideration when selecting applicants.

The standardized floor plan currently used was developed by residents themselves along with the assistance of a qualified architect. The house is a wood-frame building type and occupies about 816 square feet. Houses have three bedrooms, one bathroom, and are modest, but well built using adequate tools and quality materials.

The cost is approximately \$15,000, monthly payments of \$125. Each home has an approved water and sewage disposal system and wired for electricity. Residents customize their homes by picking paint colors and fixture

types. After the homes are finished and moved to their final location residents must participate in counseling for lessons in the maintenance and financial duties of their home.

Analysis

The Proyecto Azteca program offers one solution to the problem of inadequate housing in colonias. Their need for safe and decent shelter is met through means of self-help. This not only gives them a decent home, but a sense of ownership and pride that will continue to grow through their community. By doing the work themselves, residents are saving construction costs and also learning new skills that make them better able for new employment opportunities. Something that is addressed here is that residents must apply for help. They are selected based a numerous amount of criteria. This is one way of regulating the program. It also is unfortunate that all that apply may not get the help they need. Proyecto Azteca currently has a waiting list in hundreds of more applicants looking for a program to help them.

Conclusion

One of the basic necessities of life is shelter, and not just something for protection, but something that can ensure safety and a decrease in financial burden. Those that are denied basic life essentials lack the resources to grow and sustain a healthy life. This program is an important part of the process that fills in the gaps between being alive and truly living.

Tierra del Sol's Anthony Project

Overview

Tierra del Sol (TdS) is an organization that is dedicated to improving the living conditions of low-income people by providing them with affordable housing and community development. It devotes special attention to farm workers, displaced workers, single parent families, the elderly, people with disabilities and residents of several designated colonias along the border.

The community of Anthony is located in Dona Ana County in New Mexico. Dona Ana County is one of the poorest and fastest growing in New Mexico, ranked as the ninth poorest county in the state. About 22 percent of the county's population lives in colonias. It is the largest of the eleven border counties and has the highest number of colonias in the state of New Mexico.

The Project

TdS has been working with the colonia community of Anthony since 1984. Their first step towards development was addressing the lack of infrastructure. Without safe drinking water and sanitary disposal systems TdS could not access rural housing programs, leading to the formation of a Water and Sanitation District to develop the water and sewer facilities.

Throughout the community housing rehabilitation efforts began, followed by developing multifamily units and single-family ownership housing through the self-help method. Approximately 400 units of decent, affordable housing have been provided to residents of Anthony. This project has taken over twenty years and several stages to succeed. A strong community based support is a key vantage point to achieving positive change.

Analysis

Supplying infrastructure will ensure the health of the residence. Infrastructure was the beginning of this multiple phase project. They knew they could not offer safe housing without first addressing what makes the place they call home now an inadequate shelter. Housing development and rehabilitation was addressed at later stages of the project.

Conclusion

There is a beginning to a solution for offering the basic necessities of life. It is an ongoing process with multiple stages of completion, and possibly with no absolute finish. There will always be someone in need, someone who has less. The goal of these programs is to produce a model for future communities with the same or similar needs.

This program was completed in stages. The need of housing could not be addressed until the infrastructure was up to date.

Fannie Mae

Overview

Fannie Mae is a Government sponsored enterprise. It is a national organization that is increasing the supply of affordable housing where it is needed most. Fannie Mae recognizes the need for a well developed secondary market for single family and multifamily acquisition, development, and construction mortgages to make the market efficient. They are the nation's largest investor in affordable rental housing, with investments of more than \$200 billion in multifamily housing throughout the decade.

The Initiatives

There is a focus on housing needs in rural areas and an increase commitment for lending to low and moderate income borrowers of 30 percent. Concentrated efforts are being made to improve communities in the Mississippi Delta, Alabama's Black Belt, Appalachia, the Great Plains, and the Colonias along the U.S.-Mexico border. These areas are set apart because of their severe housing and community development problems. These communities struggle with factors such as employment, poverty, homeownership, and per-capita income, in addition to the poor quality and suitability of housing.

In the current decade Fannie Mae plans to revitalize 1,000 communities delivering affordable housing financing, investments, and other activities to underserved areas including urban neighborhoods, inner ring and older suburban areas, rural communities, and tribal areas. They will increase the supply of affordable housing through a variety of financing vehicles including the various financing tools of the American Communities Fund, investments in low income housing tax credits, multifamily housing, and other targeted investments over the course of the current decade.

The 1,000 communities will be places of defined boundaries,

contain multiple Fannie Mae investments, and endure an on-going engagement with strong local partners. They will then track its investments in these communities and the impacts of these investments.

Analysis

The Fannie Mae program is primarily focused on the financial burdens and approach to solving the problems. They are supplying residents with the resources to purchase, rent, or acquire inequity loans. Fannie Mae has an understanding of who is in need. They know that poverty is not in one are or just in rural parts of the country. They are addressing communities across the country.

Conclusion

Poverty is found in all parts of the country, all kinds of different cities and communities. Fannie Mae is dedicated with helping those in needs, where ever their location may be. These different communities, urban and rural, inner city and outskirts or suburbs, have many differences involved with their redevelopment. They also will hold a lot of similarities. The communities like inner city communities could offer insight into solutions for rural communities like colonias. Investigation could go a step further to see how the needs are addressed according to the geographical area.

The Model Colonias Project: A New Mexico Success Story

Overview

There are 37 colonias in the New Mexico county of Dona Ana. The largest colonia is Vado/Del Cerro and its residents live in some of the poorest conditions. Figures gathered in 1999 show that 33 percent of the families live below the poverty line, and 77 percent over the age of 25 did not graduate from high school. Despite the negative factors facing them, Vado/Del Cerro has a very active and involved group of partners committed to community improvement.

The Project

HUD has funded a comprehensive, community-based planning process. HUD is providing funding to show other federal and private sectors how a U.S.-Mexico Border colonia can be transformed into an economically and socially viable community.

The outcomes of the Model Colonia project involves a comprehensive plan that paves the way for public and private investment, leading to substantial improvement in living conditions. The project will eliminate more communities of unplanned, unregulated growth such as the colonias developing without control. All new homes will be required to meet basic housing and infrastructure standards before they are approved. Multiple programs have partnered together with community leaders in the transforming of Vado/Del Cerro and are using it as a Model Colonia.

Analysis

A Model Colonia is another resource for other programs and residents who have a strong desire for change in their community. The needs of all the communities of the border region are very similar. There does not need to be a new strategy developed for every new community being helped.

Conclusion

Although there may not be a need to reinvent the process of development, each community will face different specific needs. The people, community, culture, and circumstances all vary according to the area of interest. An overall model can be used to address the needs. There will be varying factors that will make the project unique.

Las Milpas/South Pharr Success Story

Overview

The area of Las Milpas in the late 1980's was the largest colonia in South Texas with a population of 9,564 and 2,096 housing units. The city of Pharr annexed the two sections of an area known as Las Milpas. At that time, Las Milpas was a substandard subdivision that lacked many of the essential infrastructure improvements such as drainage, sewer, water, and paved roads.

The poverty level of the area was in a great need for social, health, and economic services. The majority of the population, 84 percent, is considered to be below the 50 percent poverty level.

Improvements and Developments

Today the Las Milpas/South Pharr area is no longer considered a colonia. It has become a growing community of a population of 14,572 with 3,300 housing units in the 2000 Census.

Infrastructure improvements were provided by the city of Pharr to upgrade the area to allow for new subdivisions. Over \$37 million was directed to this ongoing improvements project. Potable water and sewer services were provided to more than 4,450 families. In 2000, Pharr was approved for a loan to make improvement to the Las Milpas/Pharr Industrial Park.

There is a tremendous growth in both commercial and residential subdivisions. A ten acres tract of land in South Pharr was donated to the Rio Grande Habitat for Humanity. It uses fund for the infrastructure of the subdivision. Many new businesses have opened in the area creating new jobs and other goods and services.

Analysis

This success story shows that by a commitment of residents to its community they are able to change their situations to allow a better life for their children. It is proof that people no longer have to stay trapped in their poverty conditions but can allow themselves growth and prosperity. By allowing the basic necessities of life to be met, lives are changed dramatically.

Conclusion

A lot of change occurs in a success story such as this one. A new opportunity arises from what was at one point a hopeless condition.

Historical Context of the Thesis

The thesis project relates to grassroots projects and self-help strategies that have been done in small rural communities across America. Usually a mediator steps in to initiate development goals and ideas that can be done by the residents themselves. More University based design groups are encouraging design within the most undesirable living conditions.

Society has a trend of not recognizing those in need. Those with the means to help other are in need rarely take to opportunity and initiative to lend aid to a lower societal class. Raising awareness about the importance of community and community based design corporations will greatly affect the way that the lower class systems of the world are addressed.

History of the Colonias

Colonias have sprung up, undeveloped, unregulated and it has caused unlivable conditions. The people that live in these areas have no other place to go. Their income only allows them to live in areas like the colonias. As the population grows rapidly in the area, there is even more people in danger than in the past.

Many programs, local, state, and federal are continuously finding new ways to stop the developments from springing up as they did in the past. It is through these governmental programs that there is a beginning to the improvement of the harsh conditions that colonia residents are facing.

It has only been within the last ten to fifteen years that the programs have emerged to try and improve the living conditions. Programs range from federal grants to self-help programs in which home owners assist in building their home.

Organizations, such as the Border Low Income Housing

Coalition, concerned with the quality and availability of housing, Proyecto Azteca in San Juan, Texas, a self-help housing organization that works with families to build safe, decent affordable housing, and McAllen Affordable Homes provides alternative affordable housing outside the colonias, aim to help those that cannot afford to live anywhere else than the colonias.

Poor communities are found all throughout the world. The Colonias of southern Texas and New Mexico can be compared to third world countries. America is the richest country in the world, and yet it cannot find a way to feed and shelter many of its own people.

Whether the residents are denied the basic needs of survival or are just forgotten, they are living in conditions that seem unimaginable to the average person. There is no potable water, sanitary disposal systems, or adequate shelters.

The subdivisions of the U.S.-Mexico border are comprised of mostly Hispanic residents. All being low income families, yet some still have more than one job and are working more than forty hours per week. This is still leaving them as some of the poorest people in America.

This is concluded from various aspects such as unfair labor practices, lack of jobs, and the lack of an education to obtain positions.

Colonias began developing in the late 1950's. As population grew at dramatic rates people could not find housing options within city limits. Land developers sold small plots of land in unincorporated subdivisions to low income families, a deed of ownership rarely being transferred and a low amount down and low monthly payments. There only option was to buy land at low costs and build their own homes from means that they could afford.

Many times this included structures like tents or other makeshift shelters out of readable materials. Their homes could not be improved until their finances allowed. Older

colonias are in much better condition because the residents have had more time to acquire the materials and funds for improvement.

The colonia locations are often in areas that are prone to flooding. The lack of safe and sanitary disposal systems add to the problem with water becoming contaminated. Disease and sickness is a large part of colonias problem. Not only are they more prone to getting sick, they often lack the resources for accessing healthcare.

Until 1989 Texas counties did not authority to require water and sewer in new developments. In November 1989, Texas passed a State Law authorizing the Texas Water Development Board to circulate rules requiring developers to provide water and sewer infrastructure.

This was the first opportunity to stop the developments under these poor conditions. Within those thirty plus years thousand of colonias formed. These colonias hold thousands of American citizens that are struggling to survive.

Lower Rio Grande Valley	
Weaknesses	Strengths
High unemployment and lack of sustainable wages	Strategic geographic location
Lack of diversified economy	Availability of land for development
Raw water quality and quantity	Human resources; trainable, young workforce
Minimal resources for economic development and physical infrastructure	Infrastructure; ports of entry, shipping ports, rail, airports, highway systems, public transportation
Minimal resources to support an effective network between industry, training and educational institutions	Natural resources
Minimal health care access	Quality of life
Minimal resources to support border needs due to federal and state mandates for undocumented immigrants	Recreation
Lack of affordable/standard housing	Tourism
High rate of poverty	Intergovernmental cooperation
High drop-out rate including low attainment of postsecondary degrees	Health care facilities
Need for increased bilingual communication English/Spanish	Cultural Diversity (large Hispanic population)
Excessive lawsuit abuse	Climate
High juvenile crime rate and lack of juvenile detention facility	Availability of educational institutions
High crime rate and lack of investigative resources	Positive labor management relationships
Lack of adequate health care insurance	Growing education infrastructure
Lack of mental health services	Growing manufacturing and business sector
Lack of access to quality and affordable care to the economically disadvantaged	Multi Commodity international agricultural industry
Lack of continuum of care	Single point access for information
Lack of rural transportation and adequate point of access	Community involvement in faith based organizations
Lack of follow through and oversight on flood zone areas	
Accelerated population growth outstripping infrastructure	
Lack of substance abuse services	
Barriers and lack of resources to improve substandard housing	
Barrier to job training, education and child care services	
Lack of mental health care and substance abuse facilities	
Lack of youth emergency shelters	
Lack of services for abused women and families	

Goals of the Thesis Project

- Provide the essentials of life
- Provide a sustainable way of life
- Safe and Adequate Housing/Shelter
- Promote Community Development
- Enhance Self-help Strategies
- Response to Nature and Site Conditions
- Use of Vernacular Building Materials
- Exploration of Culture and Practices
- Provide a Long-Term Solution
- Flexible Design and Process to Allow Adaptation to Change.
- Capture the Essence of Place, People, and Culture



Laureles, Texas

Laureles, Texas is a colonia located in Cameron County, the poorest county in Texas, approximately 15 miles north of Brownsville, Texas. Of the 3,285 people in the colonia 98.1% are of Hispanic or Latino descent. Most of the residents are United States citizens, and a large number of them have no education beyond the ninth grade.

Laureles is a community that does have access to water, but lacks essential waste water disposal systems. It is also a more secluded community, the nearest health facility being 13 miles away.

Communities like colonias have no design or layout. The homes are built along roadways, stretching sometimes for miles, other times only a few houses make up a colonia. Driving through a colonia demands you to drive into a place where you are known of as an outsider. The communities know who lives there and who does not, and they are places where caution is taken because you are an outsider. This





communities, where neighbors look out for each other because many times all they have are their families.

Environmental Conditions

The southern part of Texas is bounded by the south and west by Mexico and the Rio Grande River, and on the east by the gulf of Mexico. Between these two major bodies of water is the Texas Lower Rio Grande Valley, an important agricultural region. The region produces fruit, vegetables, sugarcane, grain, cotton, and beef. Environmental resources include native Tamaulipan brushlands, the seagrasses and tidal flats of Laguna Madre, and the Rio Grande.

Many human caused components have led to a change in the environment. Over the last 30 years, water diversion and flood control, burshland clearing, population increases, contaminants, and continued dredging of the Intracoastal Waterway in Laguna Madre are the most important causes of these environmental changes. Along with these human forces, parts of the Rio Grande watershed have been in a severe drought since 1993, adding to the problems of water quantity and quality.



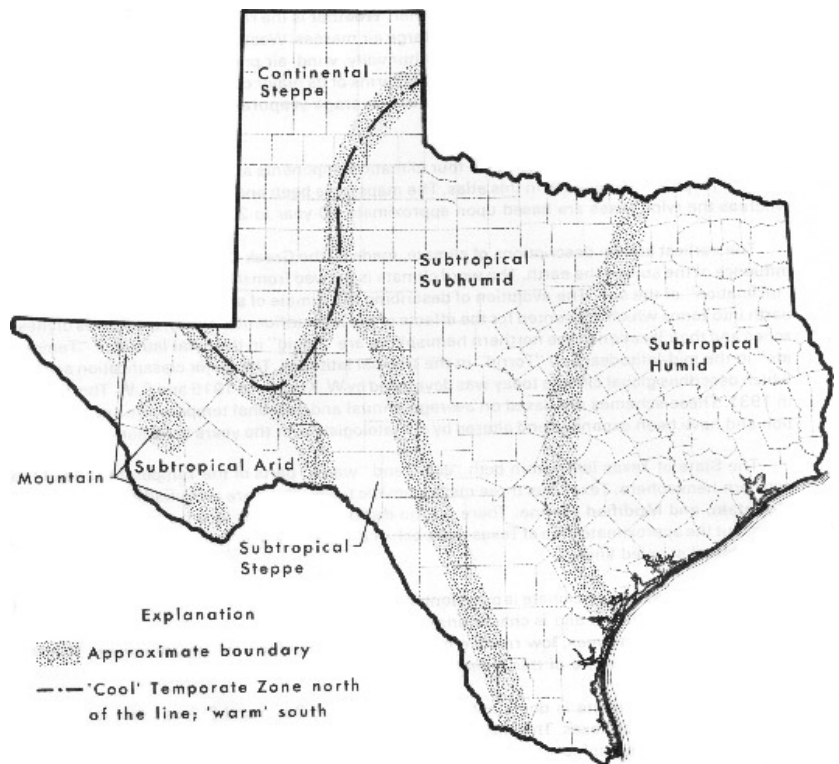
The need for design that will foster environmental changes and adaptation is very important in the region. With depleting resources, the design fields must incorporate techniques that will preserve, protect, and grow the natural environment.

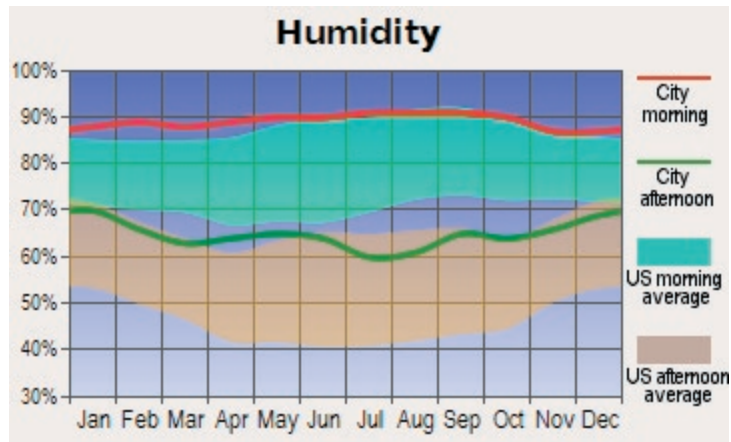
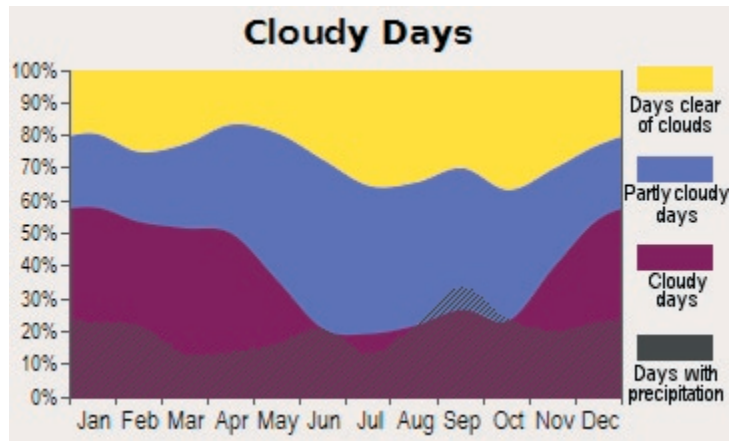
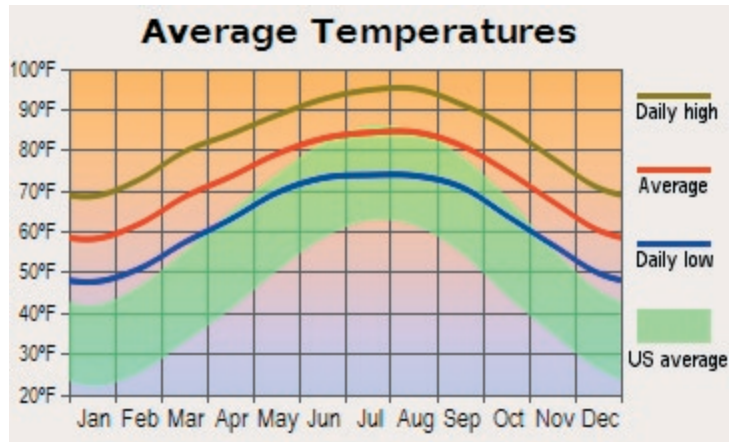
Climate Conditions

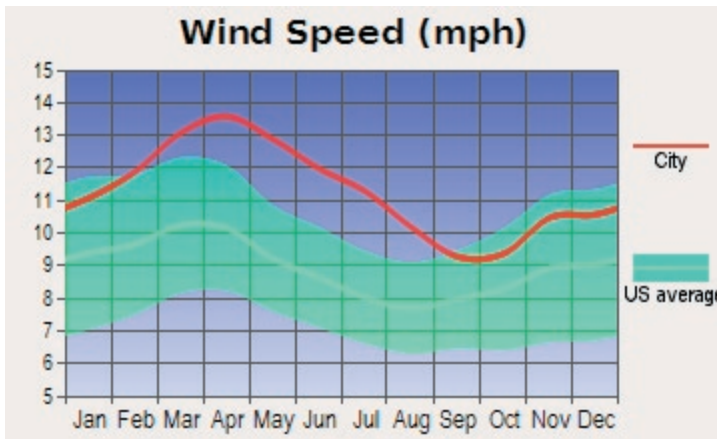
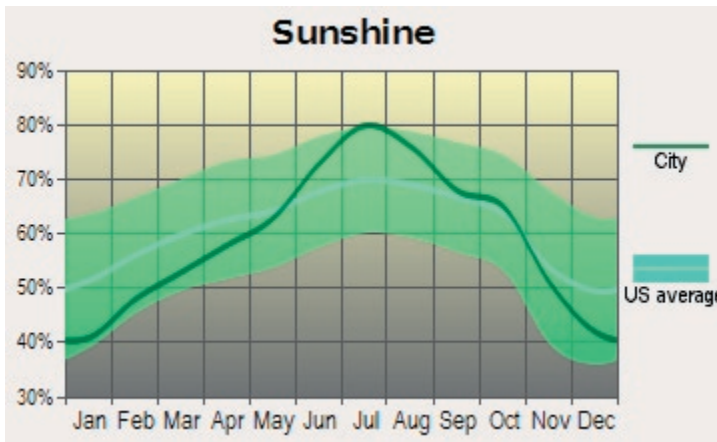
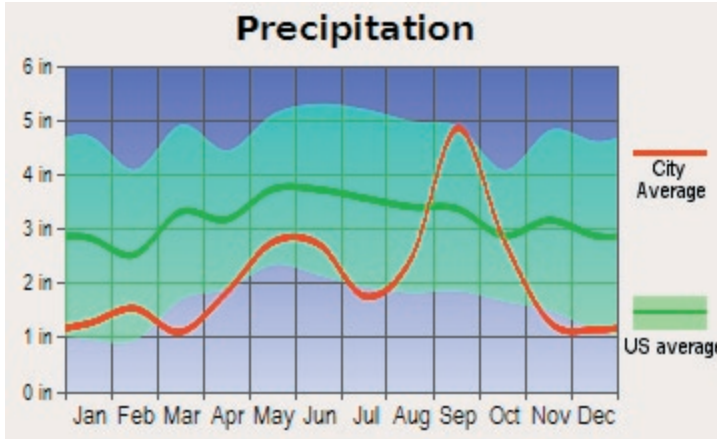
Texas lies within both cool and warm parts of the Temperate Zone with three major climatic types; Continental, Mountain and Modified Marine. The map below shows the approximate area of the climate types.

The warm part of the state, Modified Marine, is called “Subtropical” with four subheadings. A marine climate is caused by the predominant onshore flow of tropical maritime air from the Gulf of Mexico. The flow is modified by a decrease in moisture content from east to west and by intermittent seasonal intrusions of continental air. The subheadings - Humid, Subhumid, Semi-arid, and Arid = account for the changes in moisture content of the northward flow of Gulf air.

Cameron County lies within the Subtropical Subhumid climate and is characterized by hot summers and dry winters. Winds are predominantly from the southeast.









Major Program Elements:

Central Plaza and gathering space

Skills and Technology Training

Classroom/Conference Rooms

Library/Information Center

Outdoor reading room

Offices

Public Restrooms

Healthcare Facility

Lobby

Office

Patient rooms

Pharmacy

Construction/Building Zone

Workshop

Outdoor work space

Storage Rooms

Retail/Market and Dining

Shop Space

Cafeteria Space

Kitchen/Prep Area

Outdoor dining courtyard

Mechanical Room

Recreation/Youth

Daycare/After school program

Playground

Nursery Rooms

Basketball court

Soccer Field

Park



Process Documentation

The poor conditions of the colonias and their lack in the basic essentials of life will be the focus to redeveloping the community to promote thriving and sustainable living.

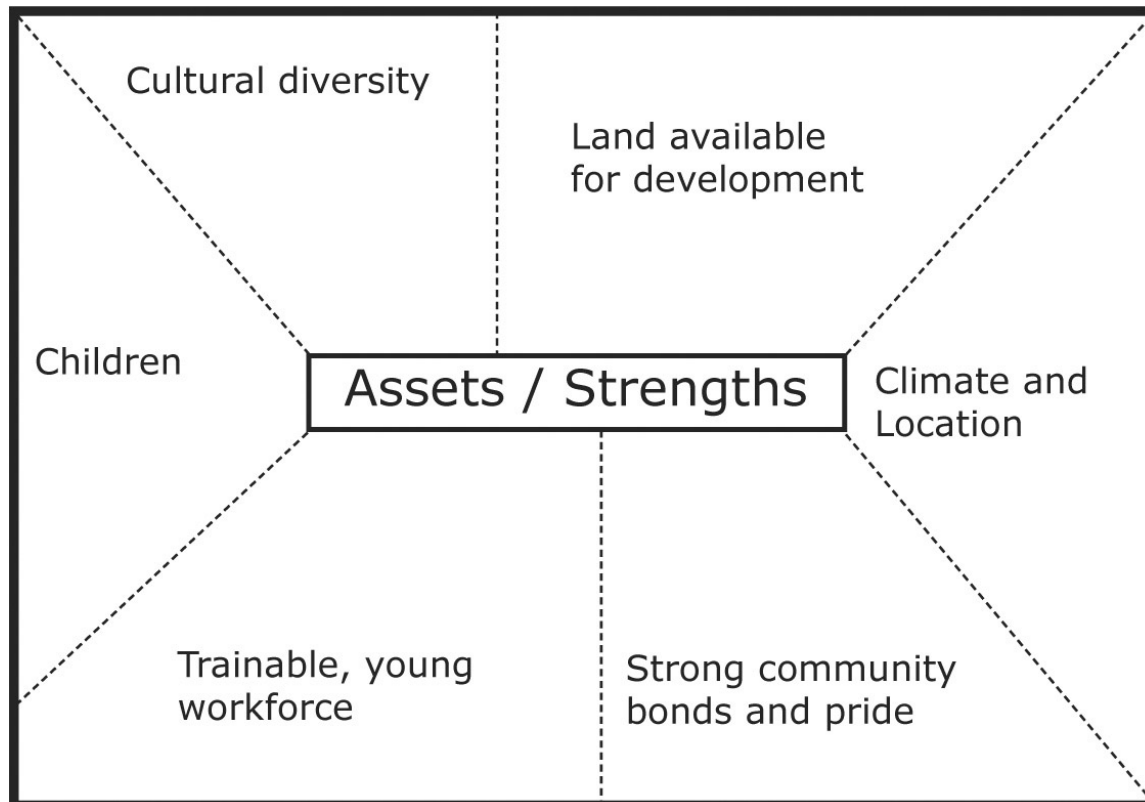
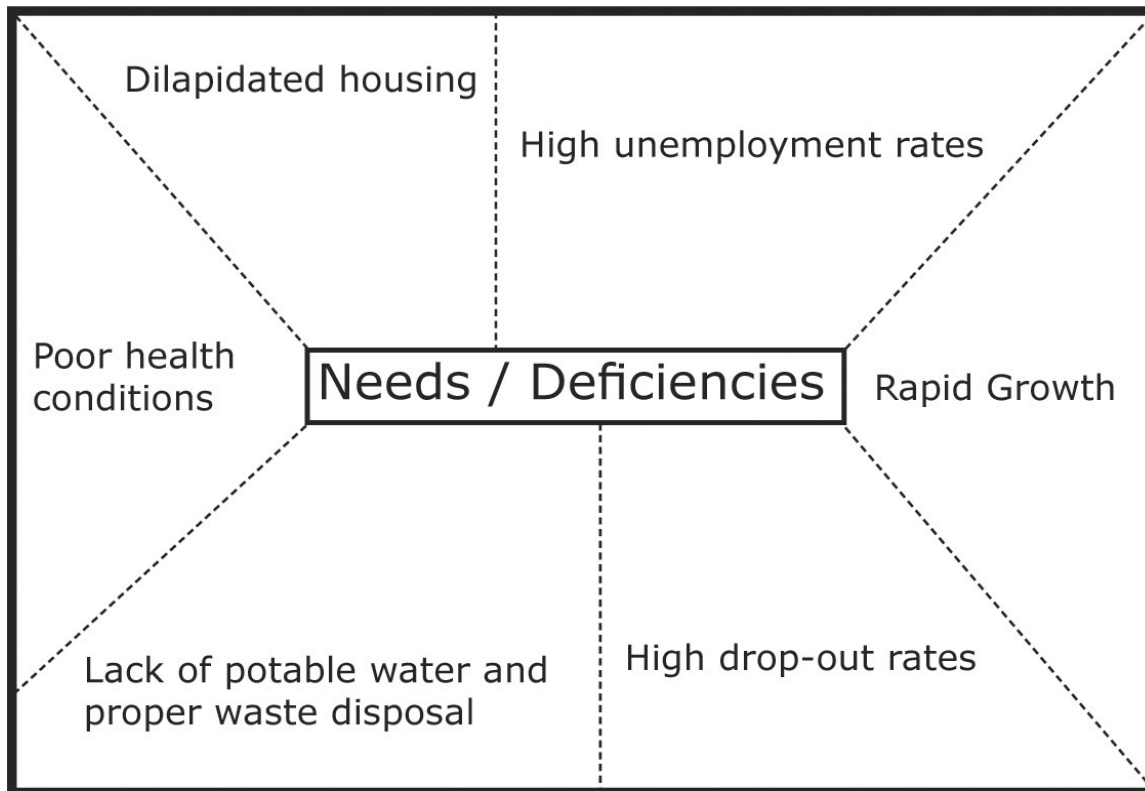
A development plan for the community will be coordinated. It will consist of multiple projects over an extended period of time, some projects or activities being done continuously by generations of families. All of the work will be completed by the citizens of the community, with occasional leadership from outside sources. Through self-help development the citizens will learn knowledgeable skills that will advance them in the workforce while improving their own conditions.

The most important part to this area of the project is the participation and dedication of the community. The assets the community has will be utilized to improve the essential needs of a thriving community.

The community center will be a vehicle utilized to make connections in the community to improve the quality of life through means planning and production by the citizens themselves. The different ways in which the community center will begin to improve conditions is through education and training, offering a site and materials for building their own homes, while providing information and technology, and being a model design of multiple vernacular and sustainable building techniques.

The design will consist of vernacular building materials and designed with different sustainable techniques to respond to the climate conditions. The different styles and techniques will produce an eclectic design solution that can act as an example citizens can resource when building their own homes.

Other activities that the center will offer is meeting places, recreation for youth and families, shop space for food markets and retail space, a kitchen and dining area.



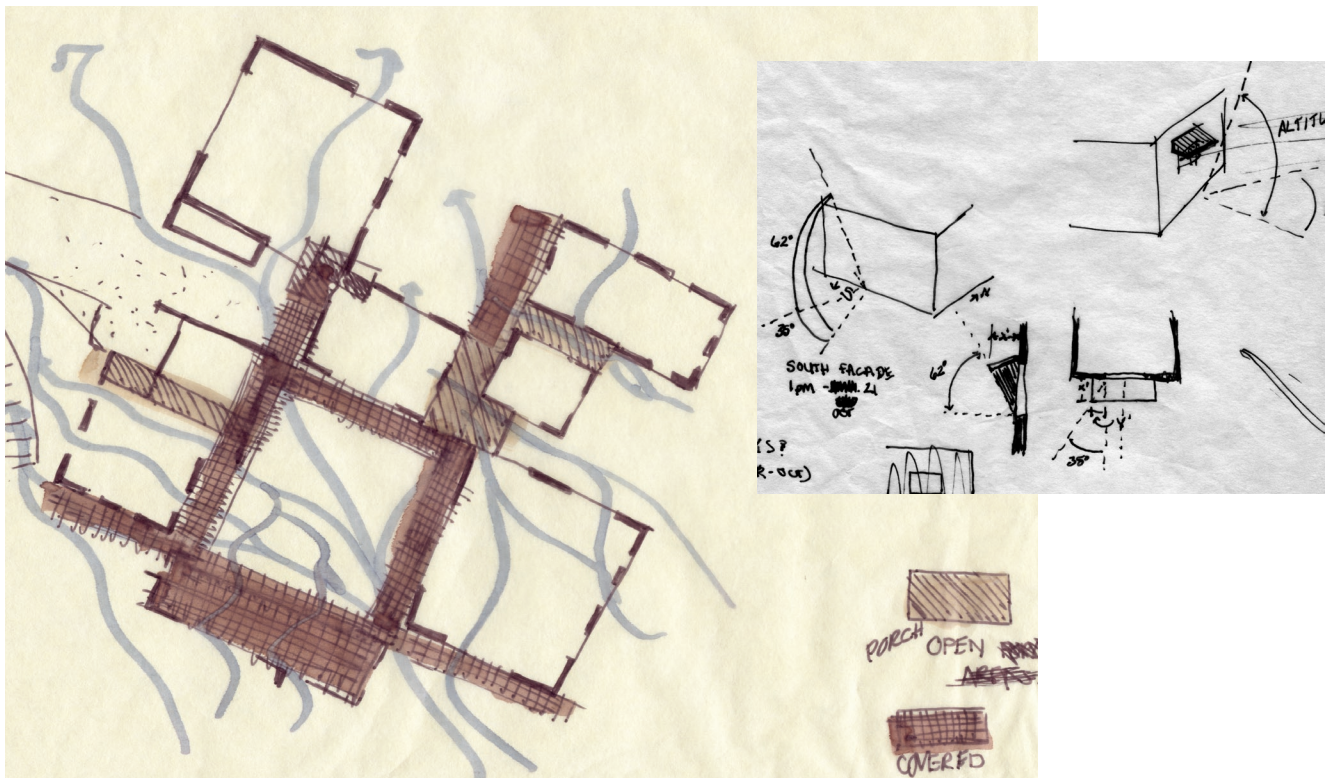
Community Development Research

Research of the community involved researching the history, demographics, site characteristics, climate conditions, cultural study, and many other areas of research. These areas of research were important to discover the needs and assets of the community. By turning their deficiencies into resources a development plan could begin to take shape.

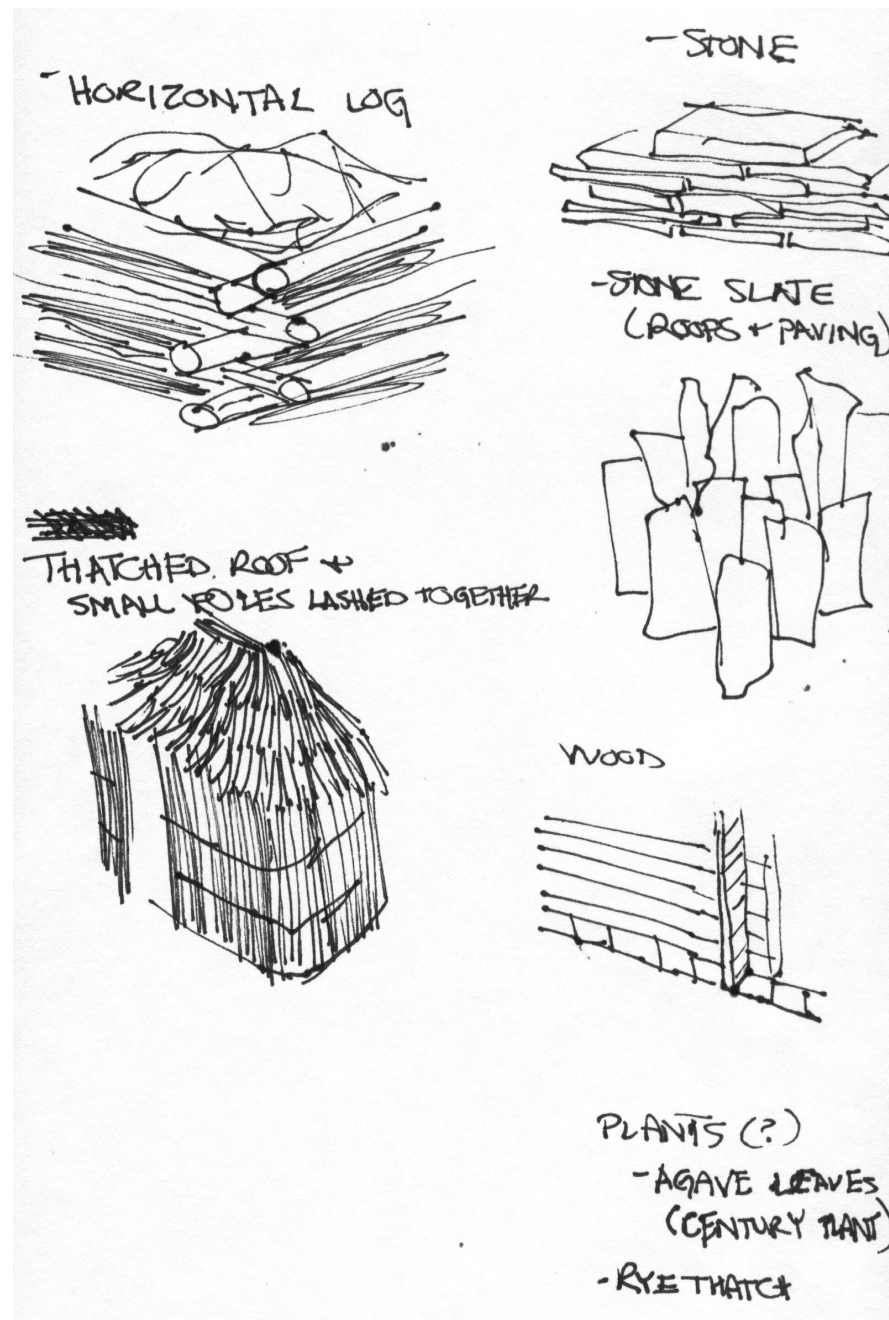
Major Design Elements

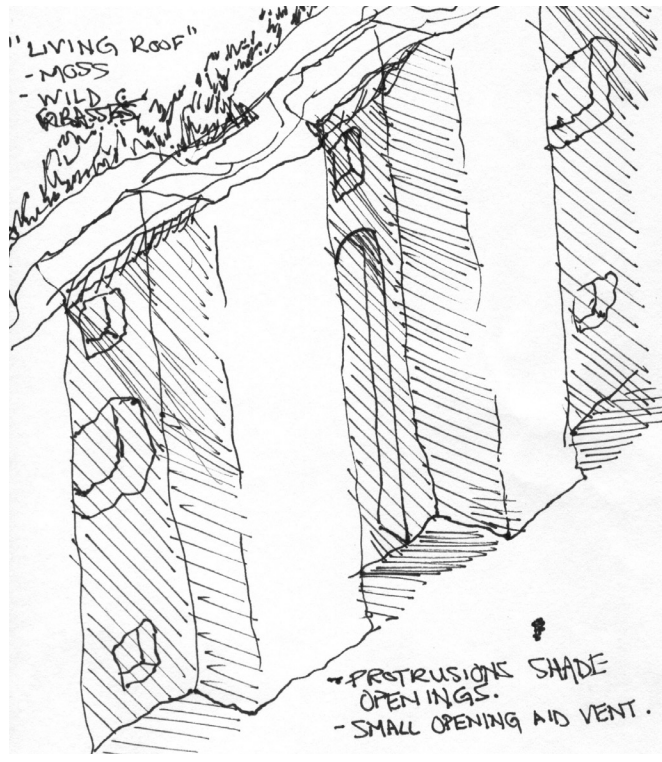
Sustainability and community development were the essential elements throughout the thesis. Not only was it important to incorporate the climate into the design, but also discover ways for the people to continue to live and begin to thrive within their community for generations to come.

Techniques of ventilation and shading were studied to create a building that would function with a minimal impact on the environment and maximize its cooling ability.

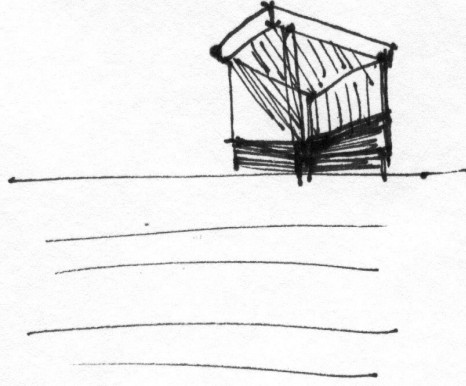


Other major elements of the design was that the building materials were to be found in the area and be easy to build. Many buildings in the Lower Rio Grande Valley are predominantly built from stone and wood found locally. Other techniques such as sod roofs, wind catchers, thatch roofing, earthen walls, and straw bale were studied and utilized.

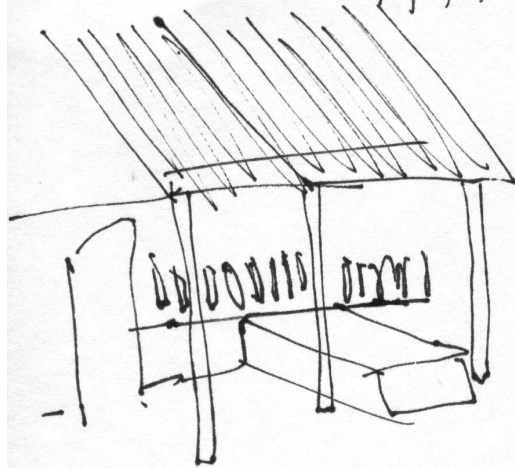
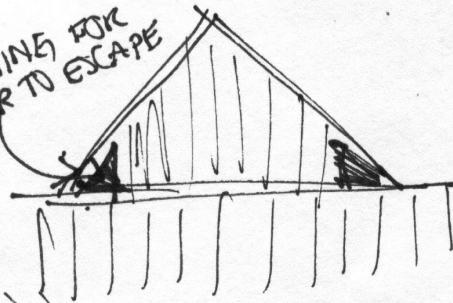




WIND CATCHERS



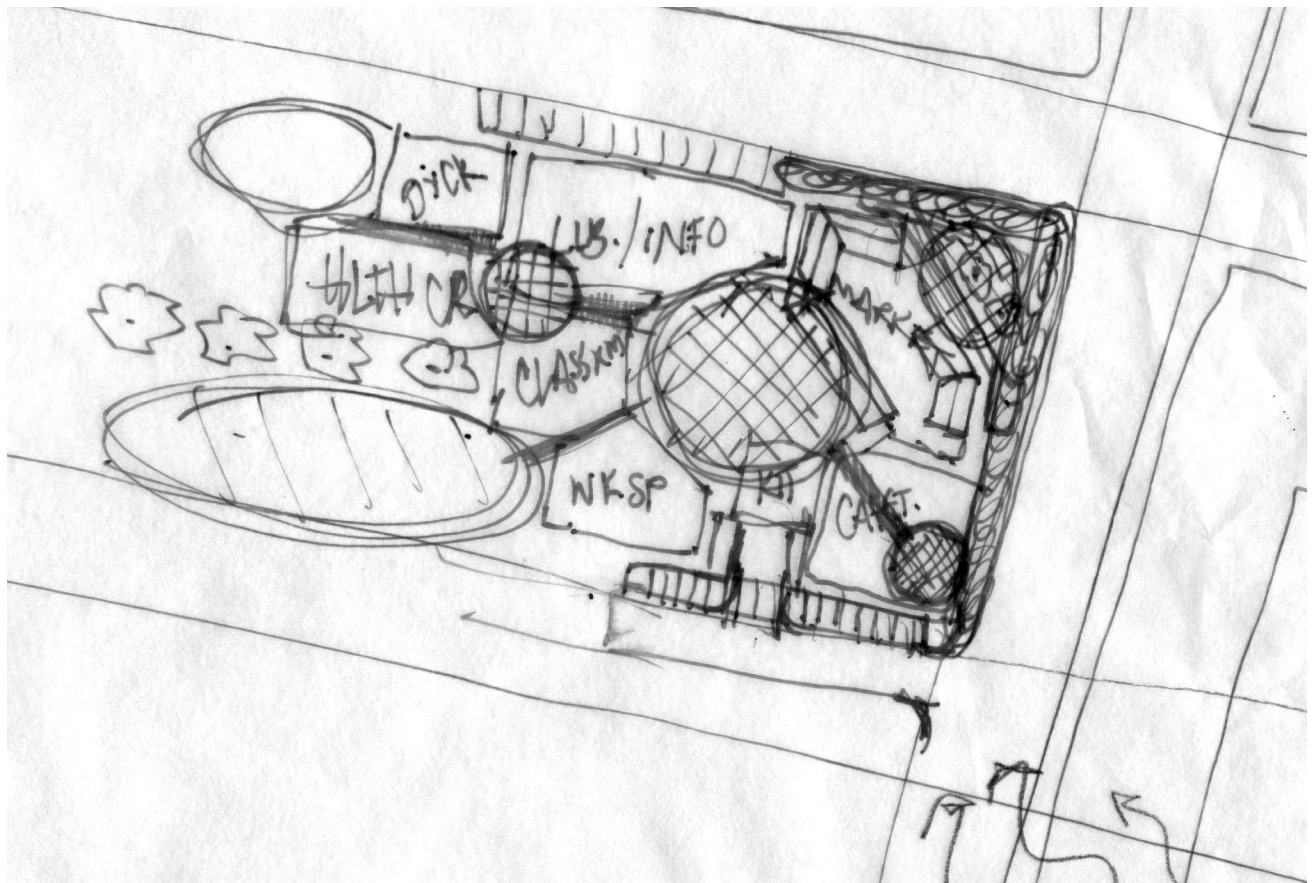
OPENING FOR
HOT AIR TO ESCAPE



- OVERTHANGS.
- SMALL OPENINGS FOR VENTILATIONS.

Schematic design of the complex began after the study of the historical Spanish city planning and layouts. They had a city center or plaza that was a centralized place to meeting and doing business. Surrounding the central space was everything that included retail, business, and commerce. The plaza had four roads leading out that were linked to more courtyards and green spaces.

Beyond the city center and business areas was the residential, that again had more courtyards and axial roadways. This was the beginning of the complex design. Focussing the design inward to the city center and protruding all of the functions from that point. Development of the individual buildings became structure by circulation, ventilation, and buildability, producing small structures, spaces proportionally to allow maximized wind flow.



Delivering the Necessities of Life

Colonias of the Lower Rio Grande Valley

Historical Background

Colonias have sprung up undeveloped and unregulated since the late 1950s, causing unlivable conditions. The people that live in these areas have no other place to go. Their income only allows them to live in areas like the colonias. As the population grows rapidly in the area, there is even more people in danger than in the past.



Land developers sold small plots of land in unincorporated subdivisions to low income families, a deed of ownership rarely being transferred and a low amount down and low monthly payments. There only option was to buy land at low costs and build their own homes from means that they could afford.

Many times this included structures like tents or other makeshift shelters out of readily available materials. Their homes could not be improved until their finances allowed. Older colonias are in much better condition because the residents have had more time to acquire the materials and funds for improvement.



Poor communities are found all throughout the world. The Colonias of southern Texas and New Mexico can be compared to third world countries. Whether the residents are denied the basic needs of survival or are just forgotten, they are living in conditions that seem unimaginable to the average person. There is no potable water, sanitary disposal systems, or adequate shelters.

The subdivisions of the U.S.-Mexico border are comprised of mostly Hispanic residents. All being low income families, yet some still have more than one job and are working more than forty hours per week. This is still leaving them as some of the poorest people in America. This is concluded from various aspects such as unfair labor practices, lack of jobs, and the lack of an education to obtain positions.



The colonia locations are often in areas that are prone to flooding. The lack of safe and sanitary disposal systems add to the problem with water becoming contaminated. Disease and sickness is a large part of colonias problem. Not only are they more prone to getting sick, they often lack the resources for accessing health care.



Until 1989 Texas counties did not require water and sewer in new developments. In 1989, Texas passed a State Law authorizing the Texas Water Development Board to circulate rules requiring developers to provide water and sewer infrastructure.



This was the first opportunity to stop the developments under these poor conditions. Within those thirty plus years thousand of colonias formed. These colonias hold thousands of American citizens that are struggling to survive.



Laureles, Texas
Cameron County

Population 3,285
Land Area 4.9 square miles
98.1% Hispanic

Laureles Needs and Assets	
Needs	Assets
High Unemployment	Climate/Location
High drop-out rates	Land available for development
Rapid growth	Cultural diversity
Poor housing conditions	Trainable, young workforce
Lack of potable water and proper waste disposal	Strong community bonds/pride
Poor health conditions	

Lower Rio Grande Valley

Project Typology

The development is a planned community to meet the basic living and housing needs of poor citizens who live along the Texas coast. The project will involve a low-income housing development, public services, and community planning.

Theoretical Premise

The thesis will examine the colonias of the Rio Grande Valley of Texas to determine how the necessities of life are delivered to the inhabitants. The examination of the delivery methods will establish the principles of sustainability that will guide a new way of distributing the basics of life: fresh air, sunlight, fresh water, food, and shelter. Design metaphors, analogies, and/or tectonics will be developed from the examination.

Justification

It is in the poor communities of the world that we will find ways to live in and with the environment to prosper and sustain ourselves and our communities.

Project Goals

- Provide the essentials of life
- Provide a sustainable way of life
- Safe and Adequate Housing/Shelter
- Promote Community Development
- Enhance Self-help Strategies
- Response to Nature and Site Conditions
- Use of Vernacular Building Materials
- Exploration of Culture and Practices
- Provide a Long-Term Solution
- Flexible Design and Process to Allow Adaptation to Change.
- Capture the Essence of Place, People, and Culture

Facts about Colonias

- Located along the US-Mexico border. Mostly within 150 miles of the border. More recently with rapid population growth, colonias are developing much farther north outside of major Texas cities, such as Austin and San Antonio.
- 1,600 colonias are home to an estimated 500,000 Texans, as of 2000.
- Texas has both the largest number of colonias and the largest colonia population.
- The average annual income in the colonias is \$7,000 to \$11,000.
- Compared to the state unemployment rate of seven percent, the colonias ranged from 20 percent to 60 percent.
- Colonias in El Paso and the Rio Grande Valley show that 50.7 percent of the households use septic tanks, 36.4 percent use cesspools, 7.4 percent use outhouses and 5.5 percent use other means of disposing of wastewater.
- Of 1,000 units analyzed in the Cameron Park colonia, 80 percent of the units were categorized as substandard or dilapidated.

People choose to live in the colonias because everyone is the same. They are a very tight community. The reason some homes are nice is because they worked for some money. But the land is cheap or has been in the family for years and years. No one locks the door because they look out for each other. No outsider is going to come in and stand out and try to rob a home. Life is cheap for them. It is almost like if you just keep your mouth shut no one will bother you. As long as they just do what they have to survive each day, they are content. Some are poor, some are middle class, living there has taught them to appreciate small things and that money is not everything.
-Patty Martinez, who grew up in a colonia

Colonia Community Development Plan

Building Sustainable Communities

Visioning Process

A community meeting will be held to bring citizens together to envision what they would like their community to be in the future. This process is crucial in gaining all the participation from the residents. The more the community is involved and willing to improve their conditions, the more successful the projects will be. Brainstorming sessions will be held following the visioning process. Residents will be able to voice their ideas and concerns regarding the future of their community.



Leadership Development and Training

Leadership roles must be assigned to residents of the community. They will be trained in the tasks needed to communicate, plan, and proceed with projects.



Community Clean Up

An organized clean up throughout the community will strengthen citizens' relationships and will increase community pride.

Education and Information

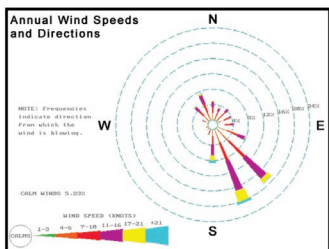
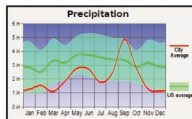
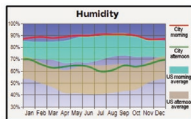
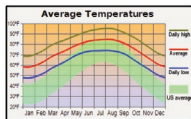
Citizens will educate themselves through self help programs of way to improve their situations. The library and information center at Casa de Amistad will address this need

Creating Sustainable Communities

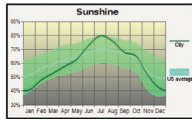
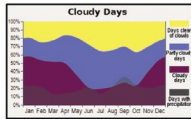
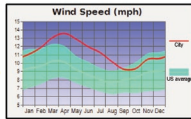
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The most important part to this area of the project is the participation and dedication of the community. The assets the community has will be utilized to improve the essential needs for a thriving community.



Climatic Conditions:
South Texas is a hot humid climate, with above average humidity, temperature, high summer sun angles, and summer wind speed. Annual precipitation is considerable low for the area. Winds are primarily from the southeast, getting mostly coastal winds.



For sustainability goals, design elements will be to block the sun and allow cross ventilation.

Proposed Wastewater Collection

The Laureles community is supplied with adequate drinking water. What lacks is a proper way of disposing of wastewater. This will aid in the problem of the water becoming contaminated by wastewater that frequently gets backed up every year due to flooding.



Inclusive Processes

Processes must be looked at again when completed, and evaluated throughout. Success is seen when a project is visited while in progress and again after completion to record the successes or failures. This will ensure that the efforts of the residents are not being lost when a program is completed.

Food Production

Located in an already rich agricultural area, Laureles citizens will be able to grow crops, herbs, spices, and other products in the community garden and sell them at the farmers market at Casa de Amistad.



Casa de Amistad will also house a health care facility for those in need. Most will not have access to facilities or insurance. Disease among children are extremely high in these communities, a problem stemming from wastewater treatment.

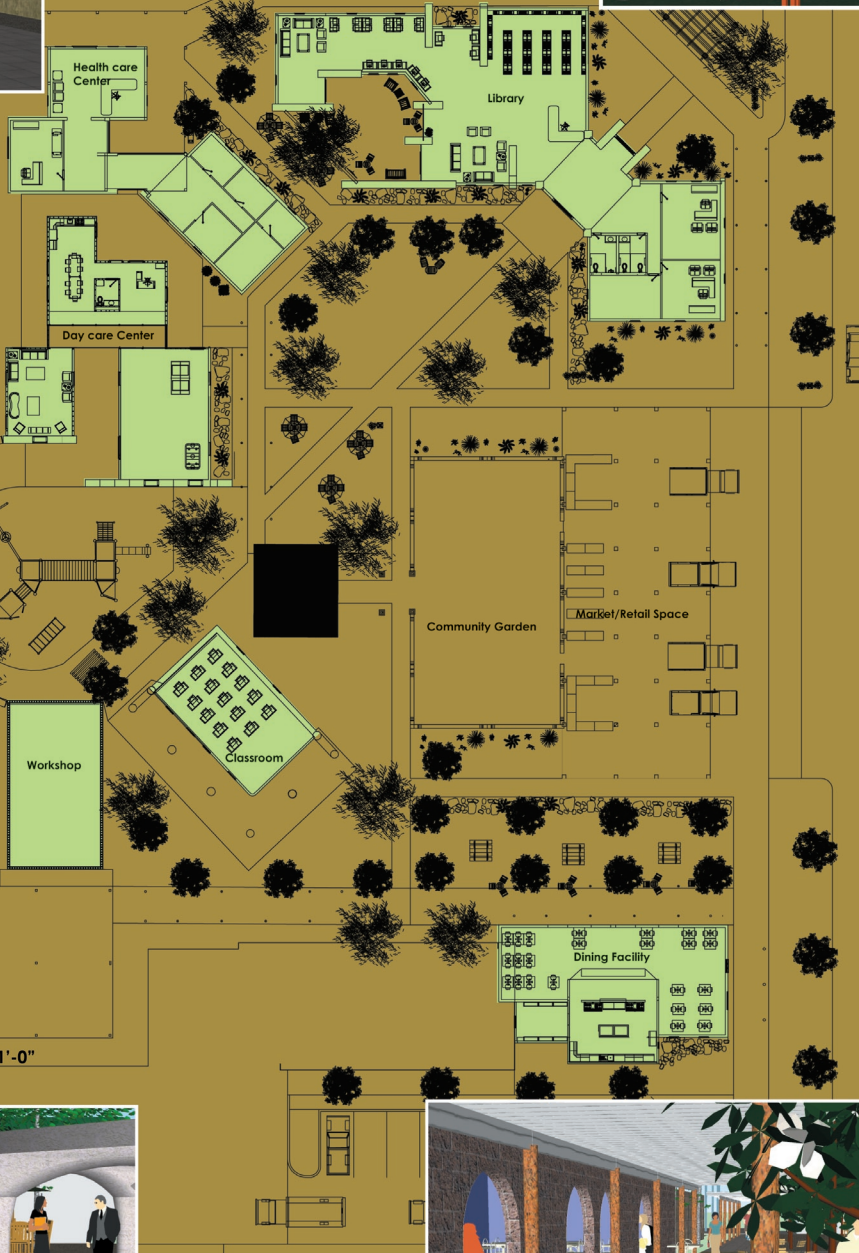
Health care Facility

Casa de Amistad

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Other activities that the center will offer is meeting places, recreation for youth and families, shop space for food markets and retail space, a kitchen and dining area.



Scale: 1/16"=1'-0"











"Finding the light in the darkness and strength in weakness."

LYNN KESZLER



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