

# FABRICATION FOR HOPE

An Adaptive Reuse Architecture Project in the Abandoned Jose N. Batarese Warehouse

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An Honors Thesis submitted to the Gerald D. Hines  
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in partial fulfillment of the requirements for the degree of

Bachelor of Architecture

in Architecture

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University of Houston  
March 2022







# THE MAKER'S JOURNEY

## Adaptive Reuse Architecture Project of the Abandoned Jose N. Batarse Warehouse

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### Question?

How can I create an innovative community education center of manufacturing and workforce from a historical infrastructure that has been left to decay but preserving its cultural aspects of architecture?

How can I maximize the use of space using the perimeter walls as the boundary ?

The thesis reuses the idea of thicken walls like fortress and bring them into the project but not with their original use but its is through the understanding of Spanish colonial architecture to reimagine space. The internal architectural language used in the project and the external condition which is preserving the historical perimeter wall of the chosen site, provides structural stability, additional support space, and responds with awareness of the activity of the area.









# **NARRATIVE**







## SAN MIGUEL, EL SALVADOR



Buildings that  
showcase its culture



Traditional Spanish  
architecture





El Salvador is known as “The Thumb of America” because of its actual size with an area of 8,124 square miles. It is a third world country whose infrastructure is showcased as a timeless culture. The merged craftsmanship of Old Spanish and ancient civilizations that once resided in the area is reflected in the traditional arts and crafts and even in the furniture that the local people make and sell for living in their family business shops or at the local markets.

El Salvador was conquered by the Spanish Empire in the early 16th century and so major Spanish settlements were established in the country. Thus, Spanish colonial architecture characteristics still have a great influence in El Salvador’s present architecture. The typical and most common characteristics of Spanish colonial architecture found in El Salvador are terra-cotta clay tile roofs, soft arches, carved wooden doors, and interior courtyards. Unfortunately, this type of architecture is only seen within the main cities of each of the 14 states around the country.

Due to the inflation and currency changes that El Salvador has gone through the past decades, many small businesses have closed. As a result, there are a great number of abandoned buildings throughout the country that are of neither residential or commercial use for society nowadays. Thus, these abandoned buildings have no ownership and fall into despair.

Left uncared for buildings is not the only reason why the infrastructure of El Salvador is decaying over time or even faster than other developed countries. One major factor is due to the fragility of the current buildings. They are constructed of local and unspecialized labor. Often, made of lightweight materials. Most of the buildings, especially residential buildings, are made of local materials such as adobe and wood. However, only the communities from medium-high to high income class are the ones that reside in sturdy houses made of bricks and concrete. On the other hand, many residences from communities of low-income class in the rural areas are improvised houses made of adobe, aluminum sheets, and even tree branches.

El Salvador has frequent earthquakes and volcanic activity. Reason why is also known as “El Valle de las Hamacas”, “Land of Volcanoes” in English, because it has more than 100 volcanoes. Moreover, around twenty volcanoes are potentially active and at least six of them are being constantly monitored. In addition, El Salvador is rarely affected by hurricanes, though tropical storms can cause heavy rains and floods. These are other important factors that have also been known to displace families throughout the country and evident identifiers for the vast amount of abandoned buildings.

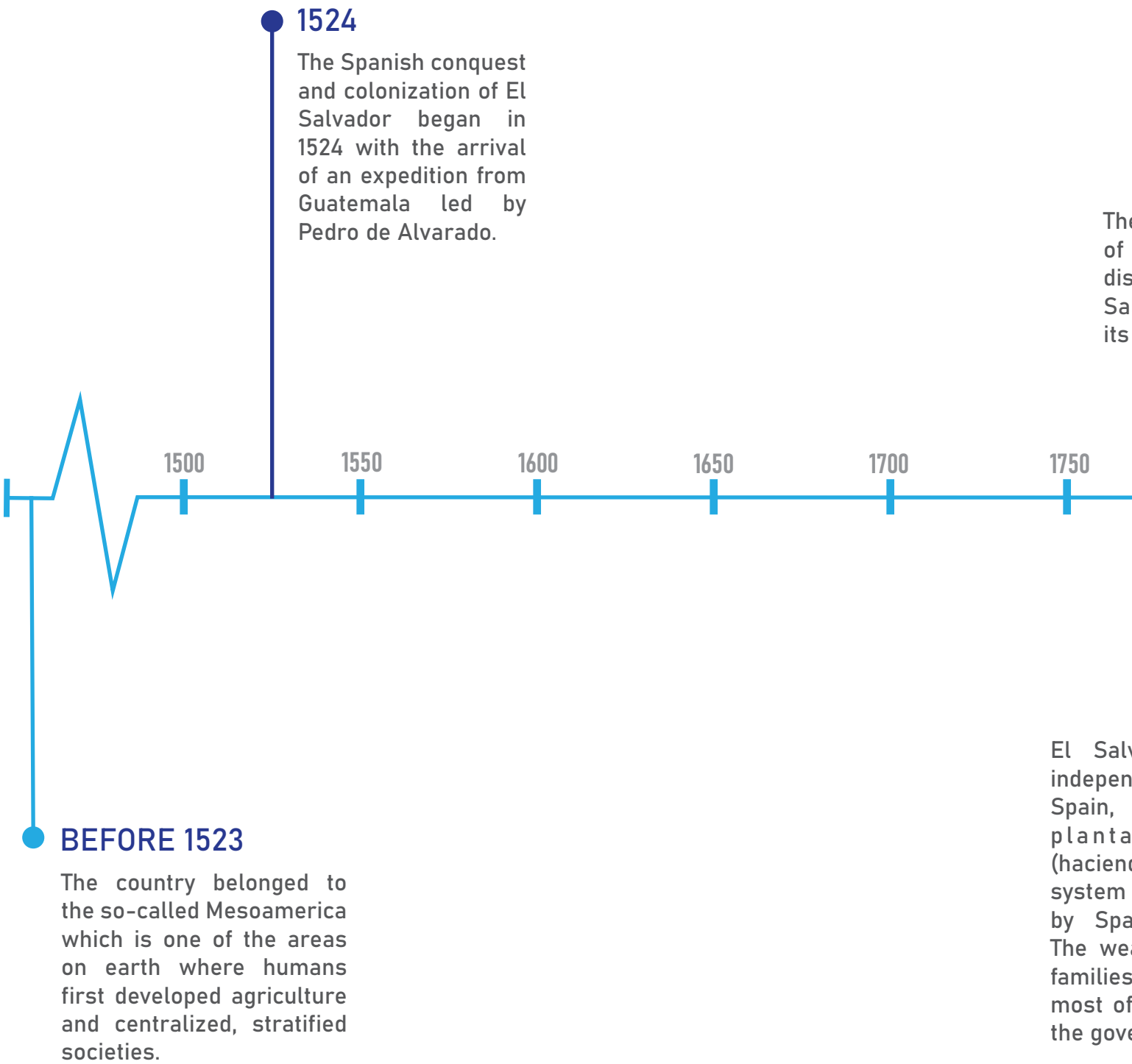




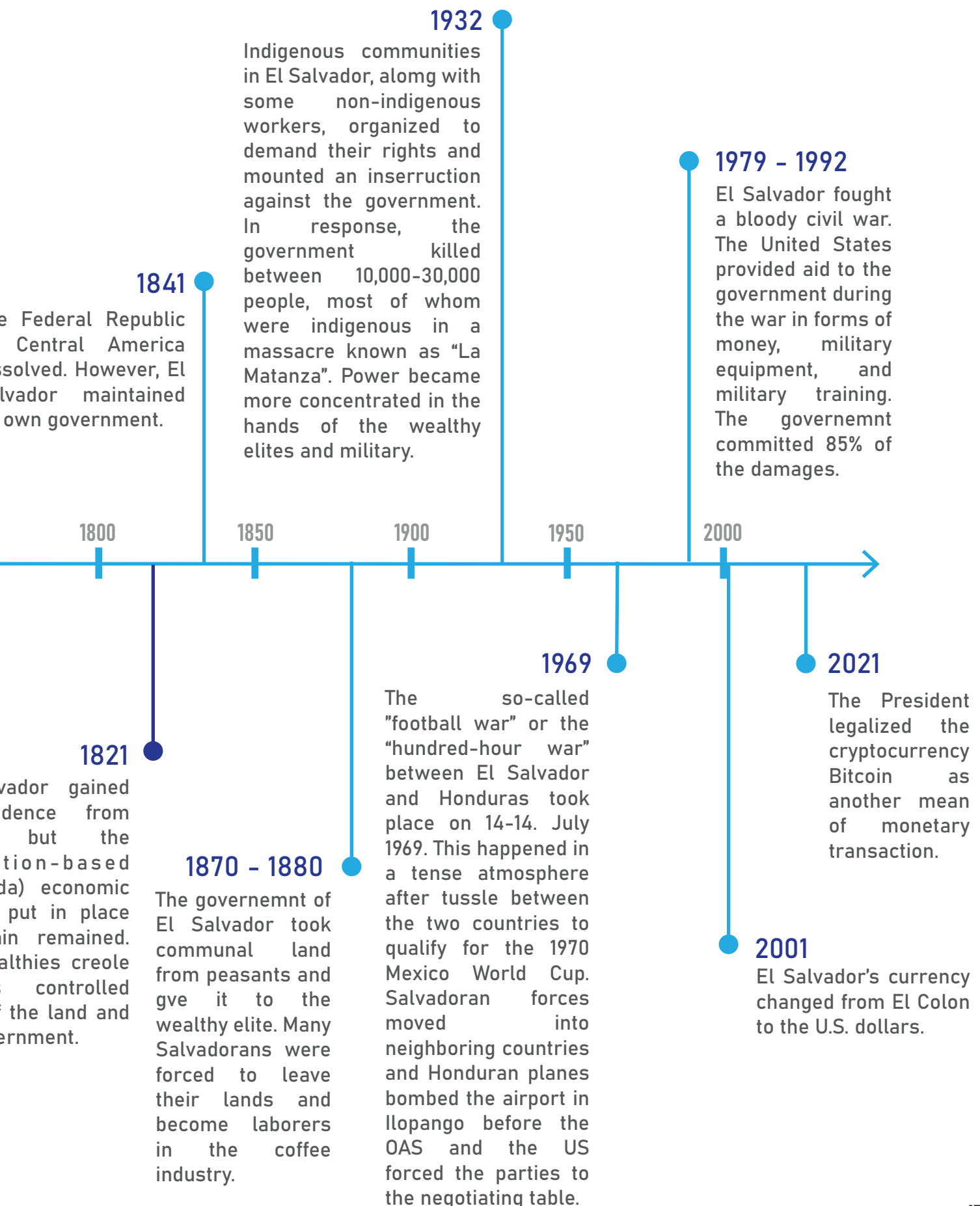
**Solitude Under a Colonnade**  
Jose N. Batarse Warehouse - Looking East



NARRATIVE  
Country Timeline



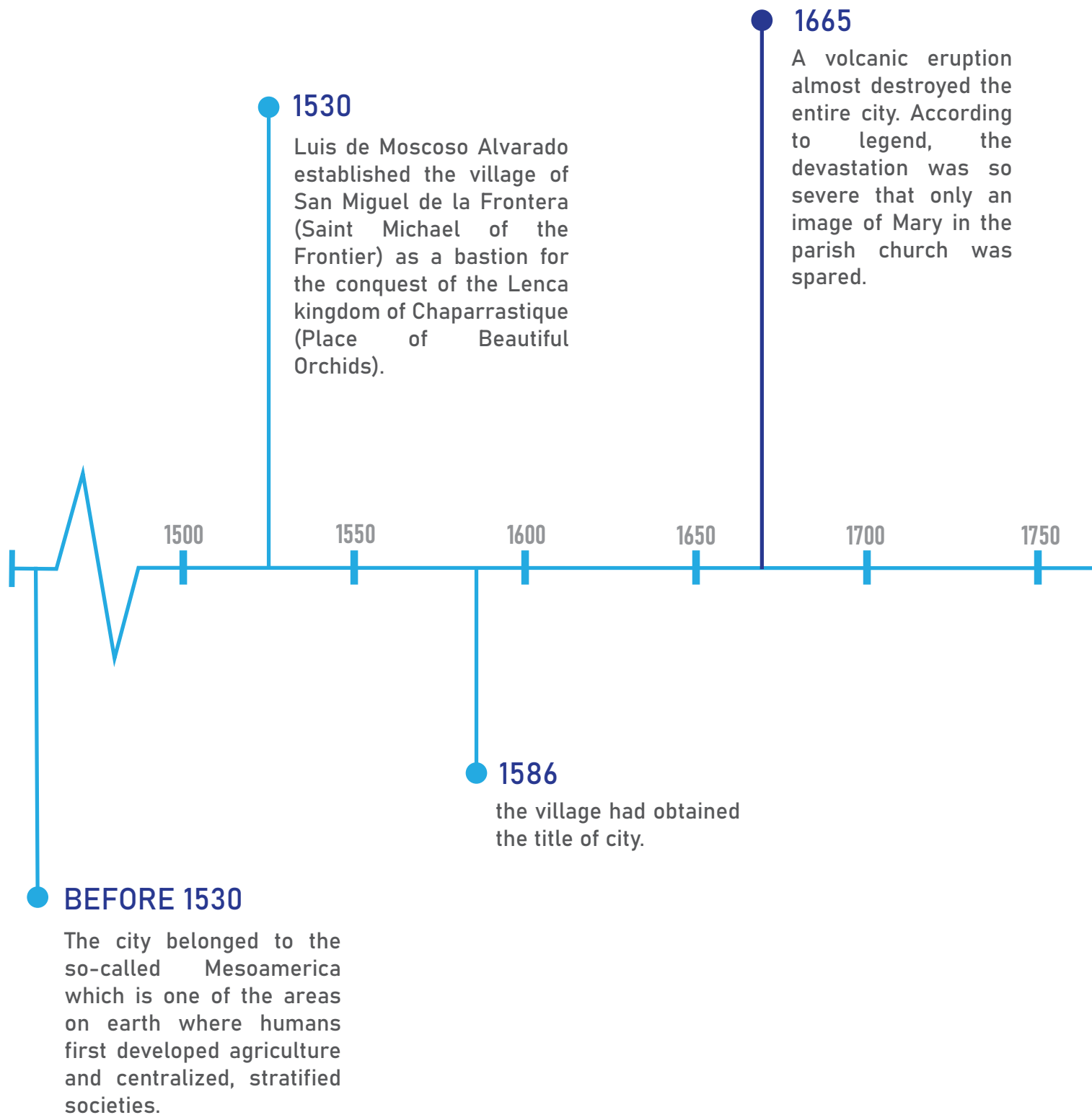






## NARRATIVE

### City Timeline







**1962**

Completion of the construction of the cathedral in San Miguel called "Our Queen of Peace".



Oldest building in San Miguel and second largest building in the country.

Main material used: volcanic stone from the San Miguel volcano

Style: eclectic

Roof metal structure and ceiling from Belgium

Bells from Germany

Stained glass windows from Mexico

Marble high altar from Italy

Facade: Spanish colonial architecture style

1800

1850

1900

1950

2000

**1862**

Demolition of the parish church that survived the volcanic eruption in 1665 and beginning of the construction of the cathedral in San Miguel called "Our Queen of Peace"

**2012**

New economic proposal plan to increase new jobs and businesses with the development of Puerto La Union was executed.



## PROPOSAL

As a first step to address El Salvador infrastructure concerns, a new architectural economic relief proposal has been created that would help the nearby suburban communities in the city of San Miguel, El Salvador. Especially to those low-income communities whose housing has been constructed of low-cost local materials and unspecialized labor.

The city of San Miguel in the state of San Miguel was chosen as the main location for this project in specific since it is the second major city of El Salvador and third most important city for its economic influences in the country. The city is close to the main port of the country and has access to the Pacific ocean itself. This city along with the capital had a great number of important Spanish settlements of Central America in the 16th century. In addition, San Miguel has many rivers and creeks among which stands out the Rio Grande de San Miguel, "San Miguel's Great river" in English, as one of the most important ones of the country. It is also close to the Chaparrastique volcano, one of the most frequently monitored volcanoes of El Salvador. Furthermore, as stated before, earthquakes, volcanic activity, and floods are important factors in the case of abandoned buildings within the country. Thus, the city of San Miguel is considered an ideal city to carry out the proposal.

The proposal consists in creating an innovative community education center of manufacturing and workforce with the mission to restore and or build new affordable residences for the lower class communities by implementing the adaptive reuse strategies and preserving the cultural architecture found in the site. This new public space would allow the communities to learn the basic skills of building construction, how to safely handle construction tools, and to acquire the basic knowledge of passive strategies in architecture that could be useful in the type of climate the city of San Miguel and the country in general has.

Adaptive reuse refers to the process of reusing an existing building for a purpose other than which it was originally built or designed for. It is also known as recycling and conversion. Adaptive reuse is an effective strategy for optimizing the operational and commercial performance of built assets. Adaptive reuse of buildings can be an attractive alternative to new construction in terms of sustainability and a circular economy. It has prevented thousands of buildings' demolition and has allowed them to become critical components of urban regeneration.

To carry out this proposal, a specific site in the city of San Miguel has been selected. It is located in a moderate transit area of downtown. The site is close to some of the main manufacturers of the city and it is easy to access for the citizens with public transportation. The place chosen is an existing building that once was known as a warehouse for Jose N. Batarse textile store. The warehouse was relocated somewhere else leaving behind three empty localities that were bought for use for storage only. The site is one of the oldest infrastructures of the city resembling the Spanish colonial architecture that was established as the cultural architecture in the country. Its exterior facade is a colonnade that covers the main sidewalk in front of the building. The perimeter wall made of adobe has multiple entrances along the main elevation since it was considered three different localities in the beginning. Its numerous tall windows are covered with vertical metal bars to allow for natural ventilation inside the site. Three large courtyards are found along the main axis allowing for more natural ventilation and natural light to enter the building.





**Abandoned Over the Years**  
Jose N. Batarese Warehouse - Looking West



How to create an innovative community education center of manufacturing and workforce from a historical infrastructure that has been left to decay but preserving its cultural aspects of architecture?

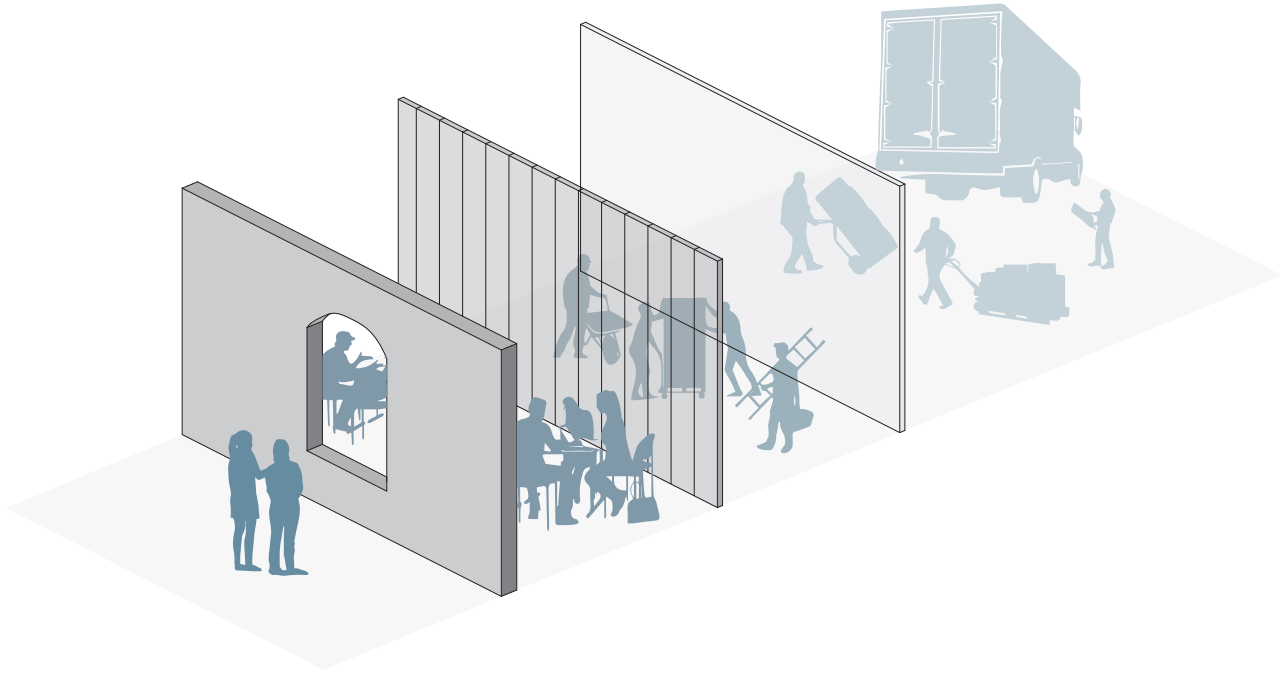
How to maximize the use of space using the perimeter walls as the boundary ?

The thesis reuses the idea of thicken walls like fortress and bring them into the project but not with their original use but its is through the understanding of Spanish colonial architecture to reimagine space. The internal architectural language used in the project and the external condition which is preserving the historical perimeter wall of the chosen site, provides structural stability, additional support space, and responds with awareness of the activity of the area.

The objective of the proposal is to keep the predominant architectural feature of the building which is the perimeter walls while the interior is being completely remodeled and re-design to accommodate the new programs for the new community education center of manufacturing and workforce project. The main concept of the project is to use wall thicknesses to recreate interior courtyards to keep celebrating the Spanish colonial architecture of the site.

The purpose of the interior courtyards is to house the workshops and fabrication areas of the project allowing for more space to safely handle use of machinery and pre-assembly of the panelized walls to later be loaded and transported when they are ready to finalize the assembly process at the communities in need of reconstruction. The educational and administrative programs will surround the interior courtyards serving as a translucent layer between the exterior public domain and the inner workshops of the project.





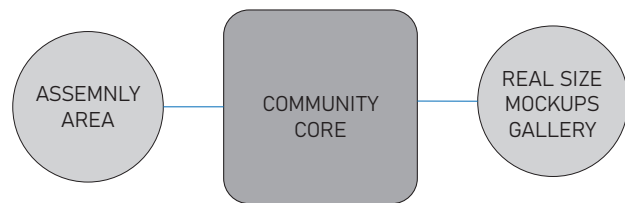
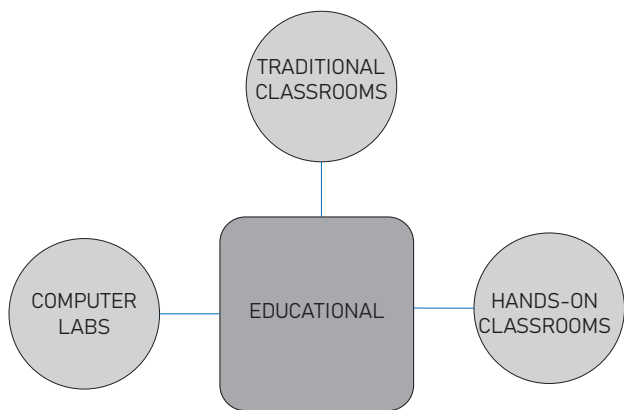
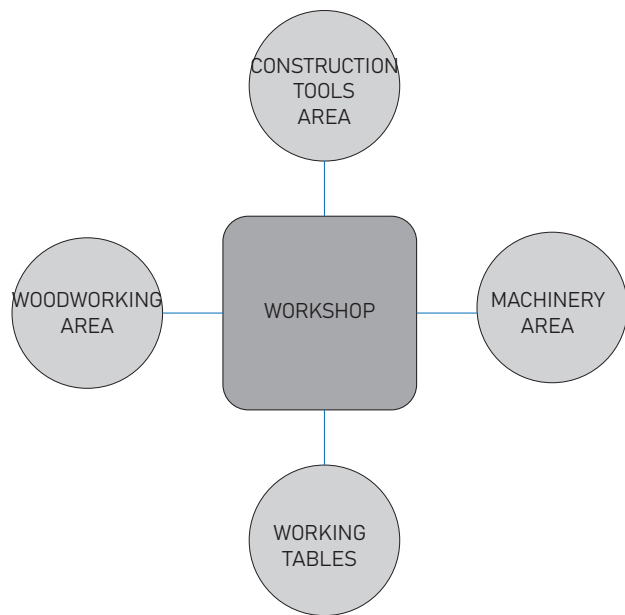
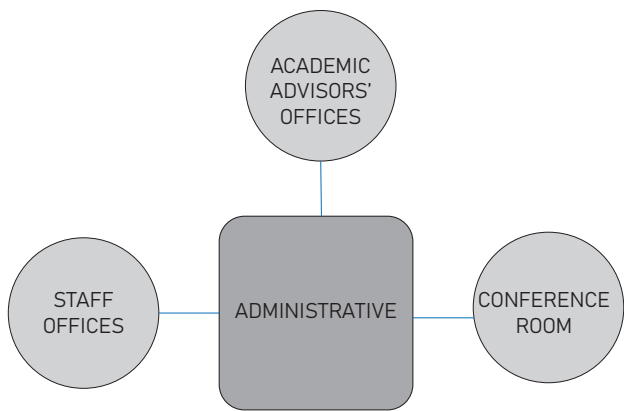
Conceptual Diagram: Wall Layering



Conceptual Diagram: Workshop Community



**PROGRAM**  
Proposed

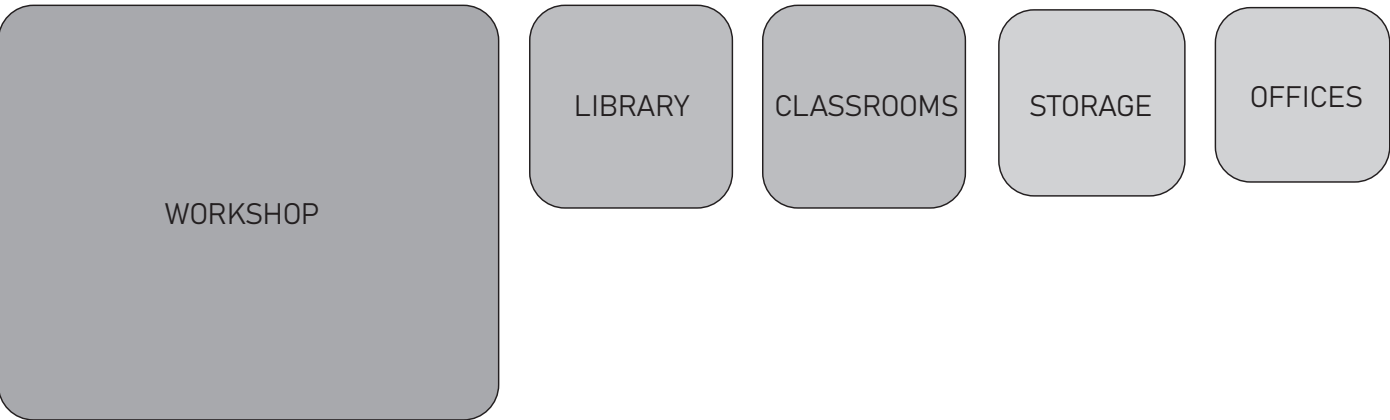




**PROGRAM**  
Proposed

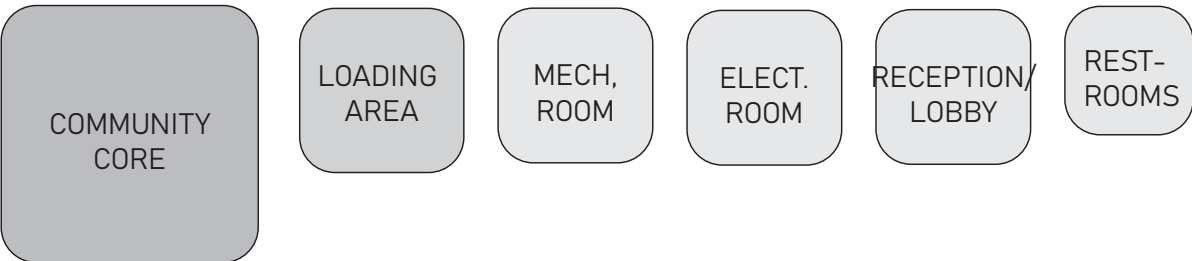
**MAIN PROGRAMS:**

Essential programs within the new Community Housing Maker Space building to accomodate its occupants to perform their activities.



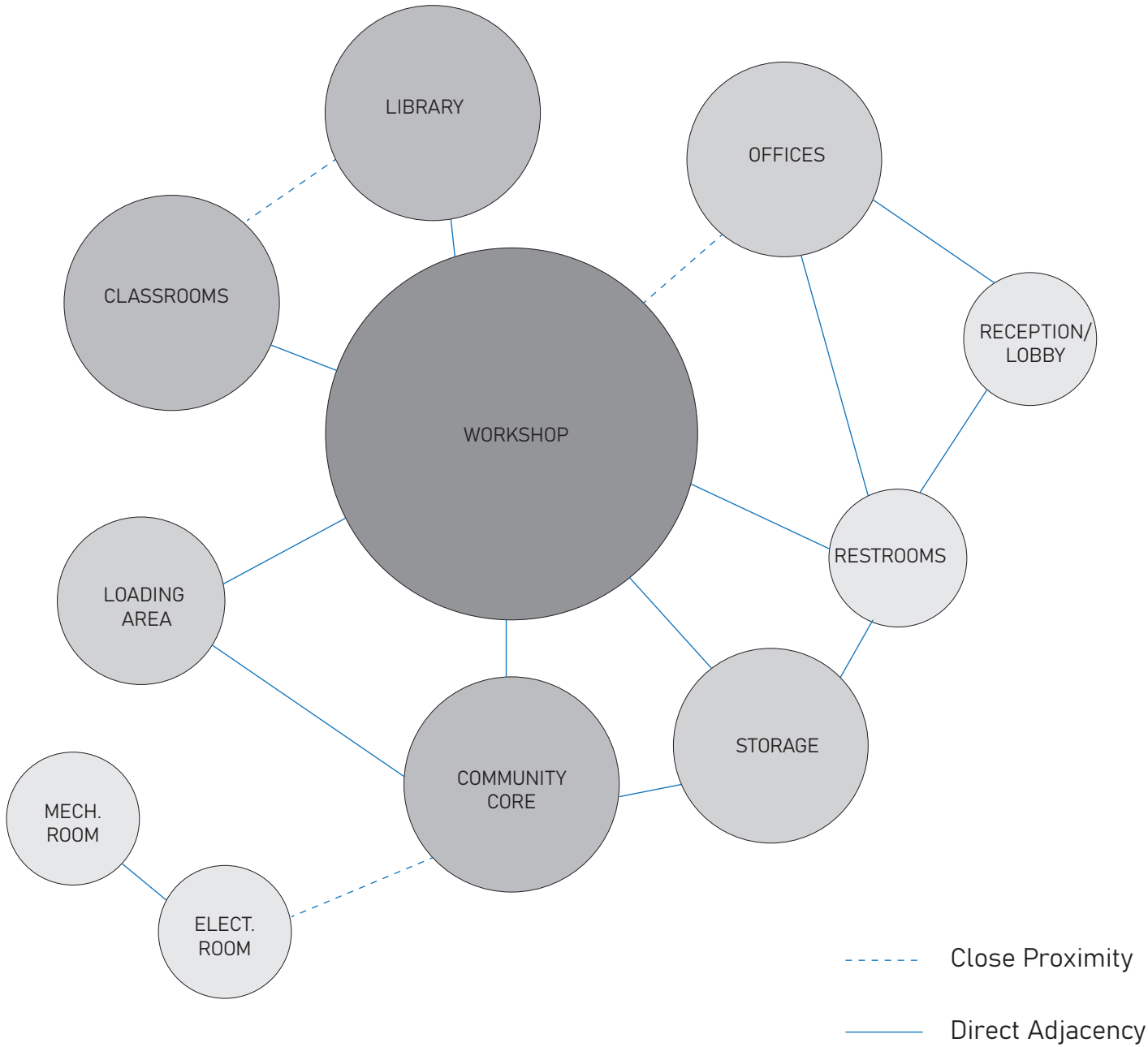
**SUPPLEMENTARY PROGRAMS:**

Supplemental programs within the new Community Housing Maker Space building to perform on a daily basis.





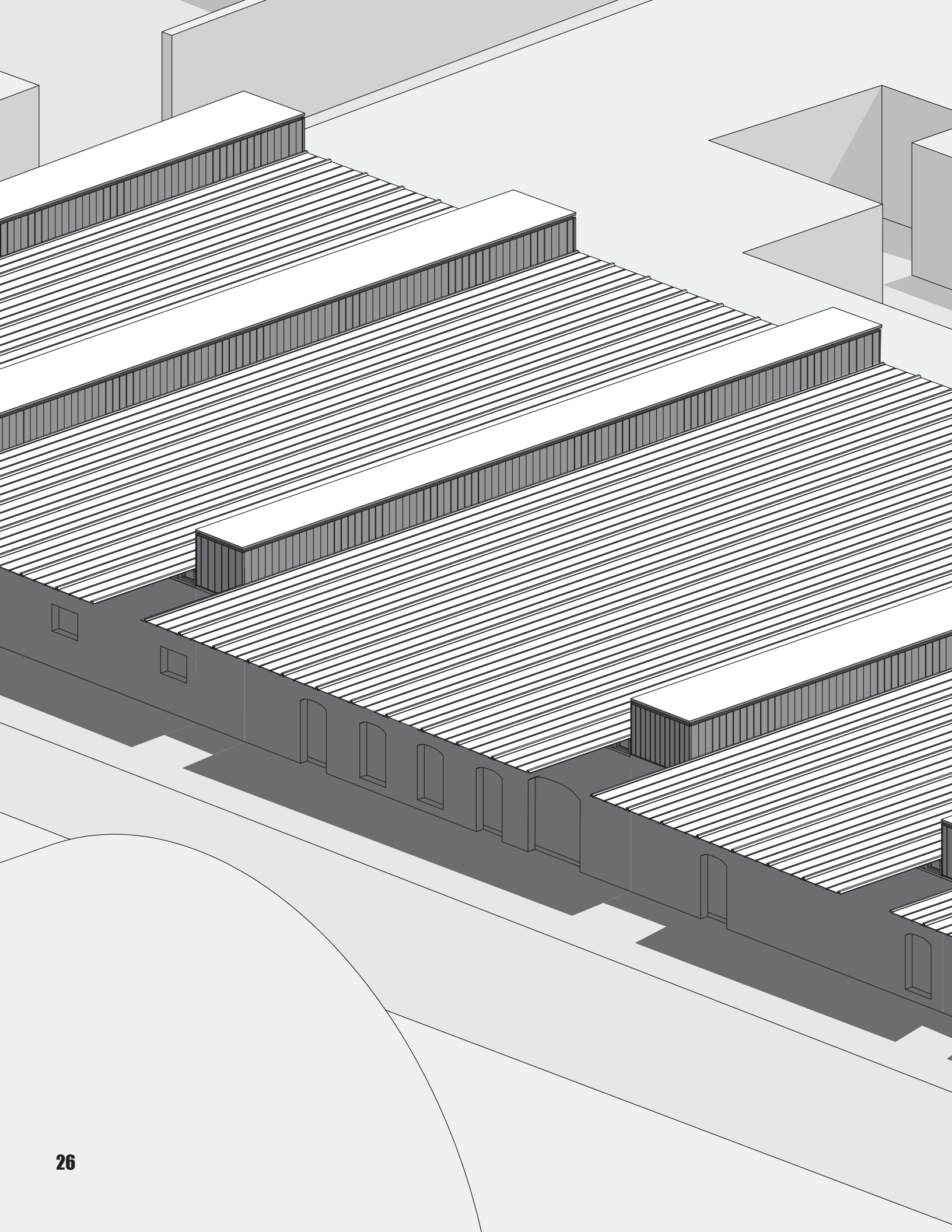
**PROGRAM**  
Proposed











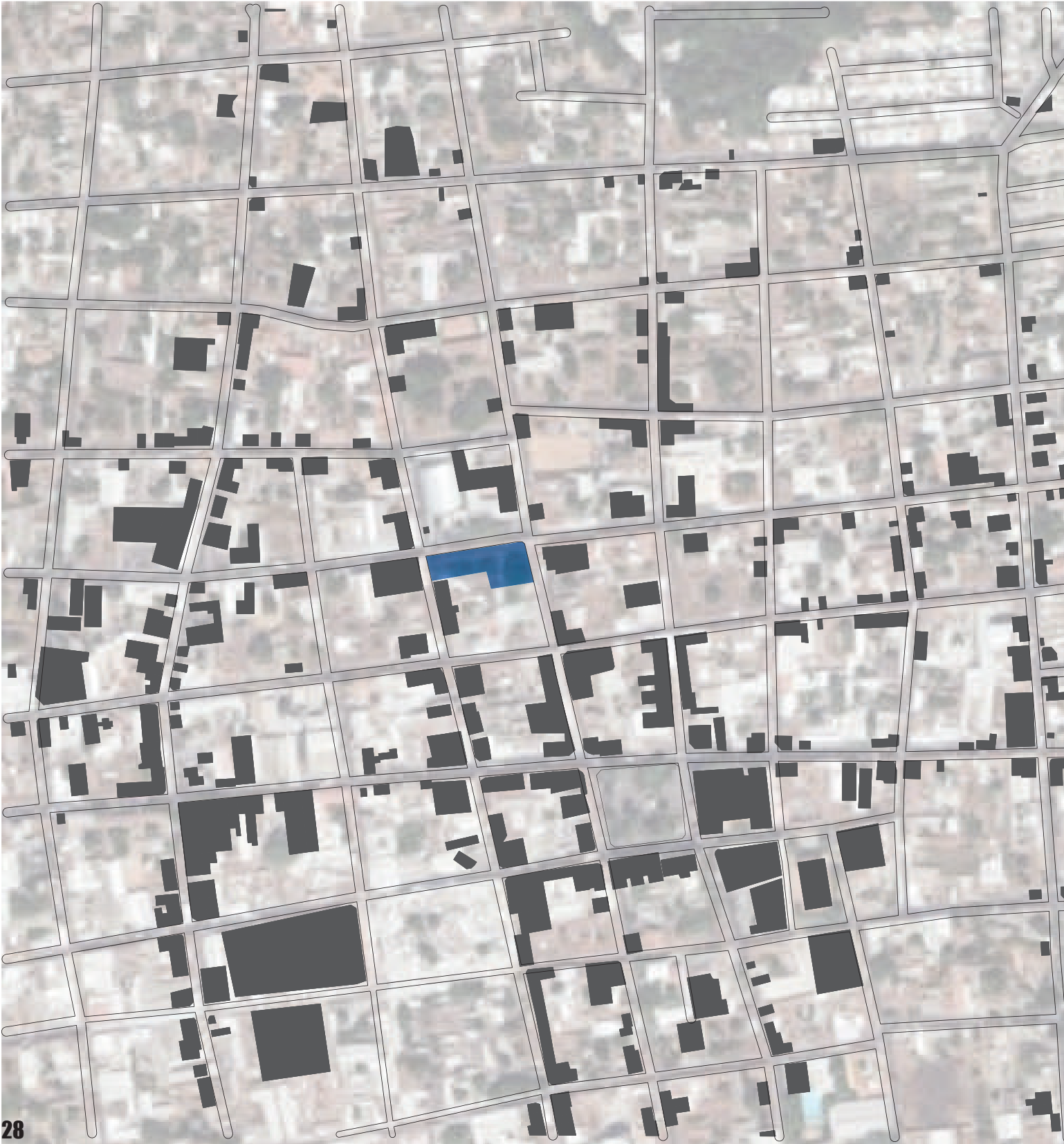




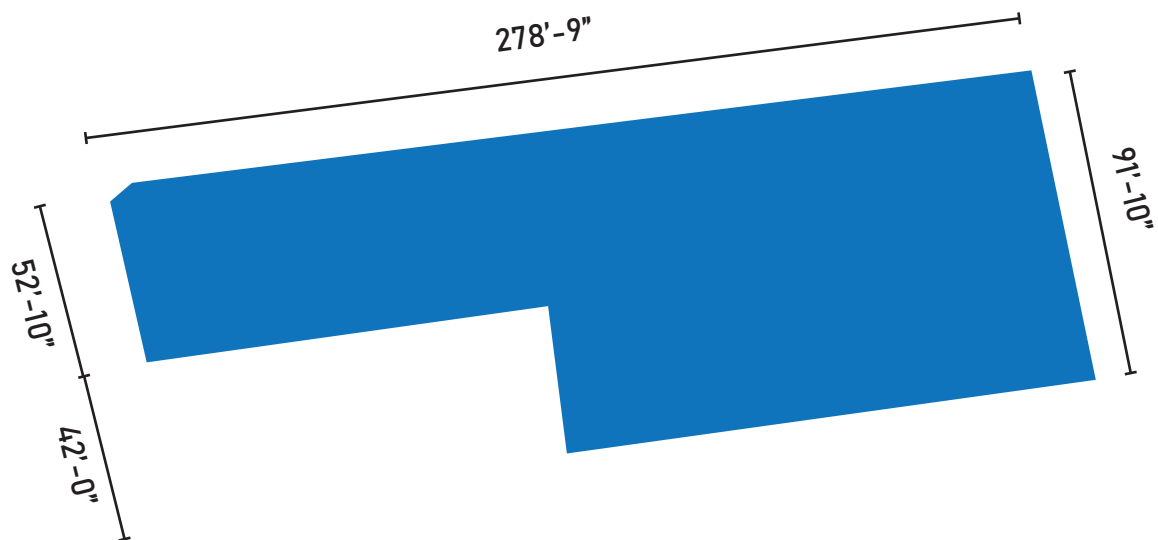
# PROJECT



SITE CONTEXT  
Figure Ground





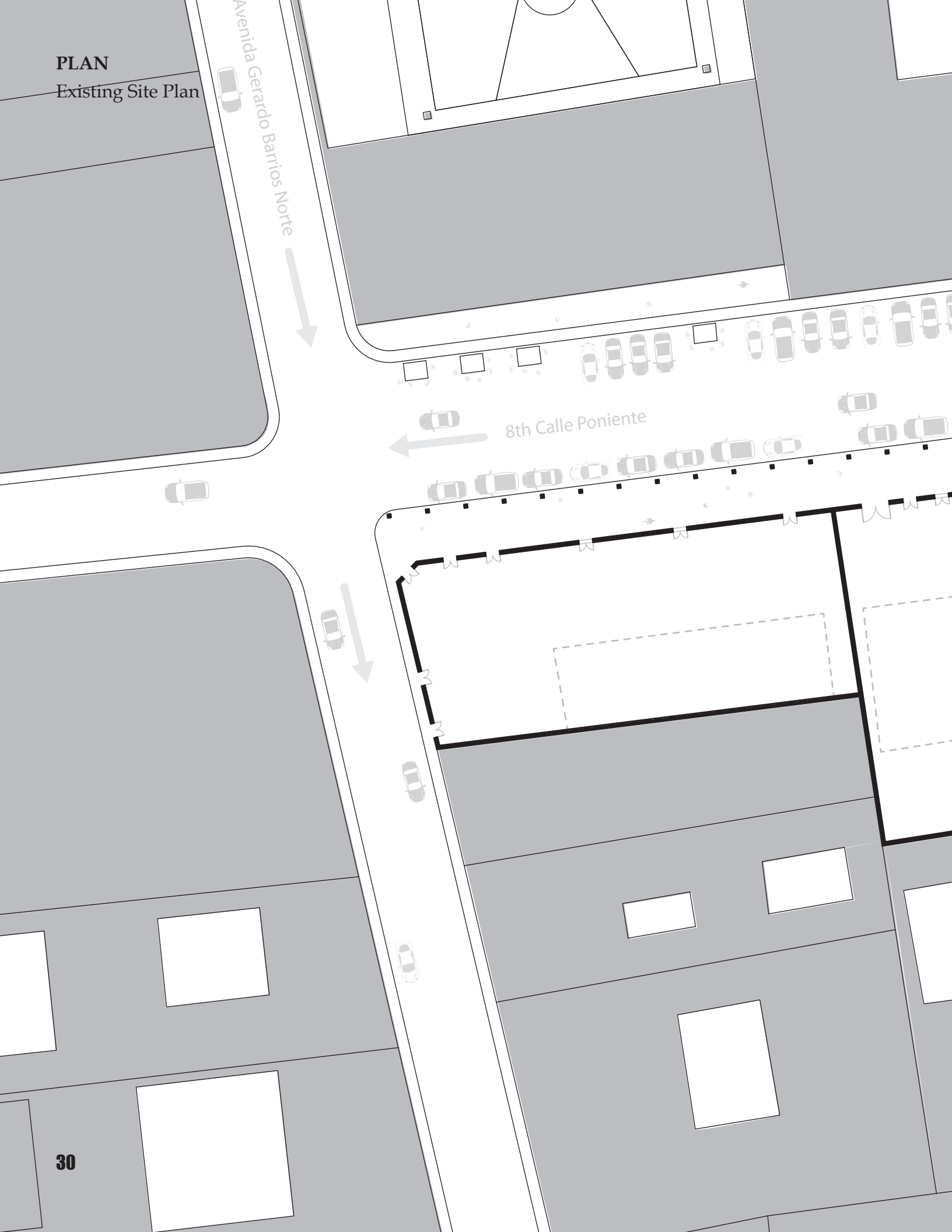


TOTAL AREA = 20833 sf

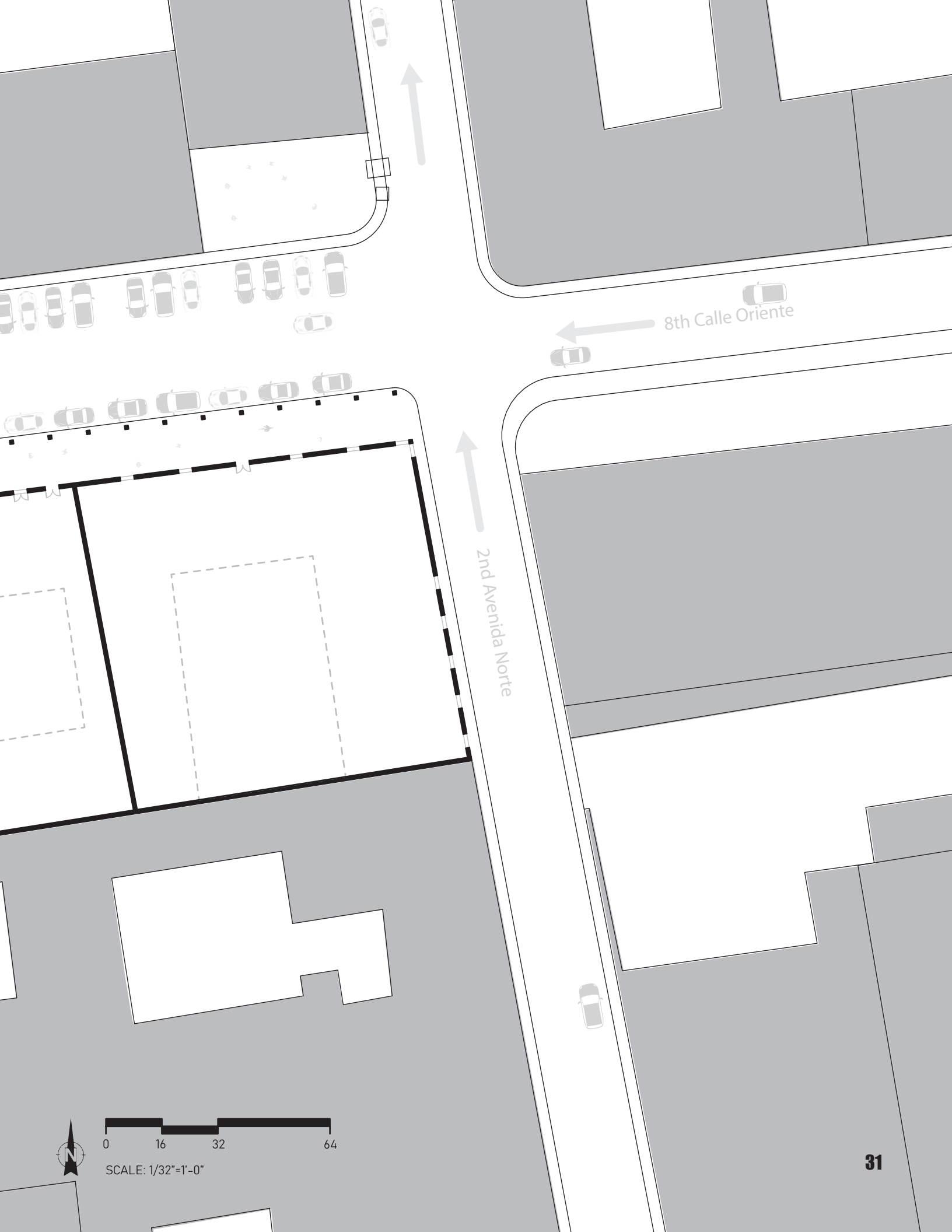
The abandoned Jose N. Batarse Warehouse site is made up of multiple continuous buildings along the 8th Orient Street in the city of San Miguel, El Salvador.



PLAN  
Existing Site Plan







8th Calle Oriente

2nd Avenida Norte

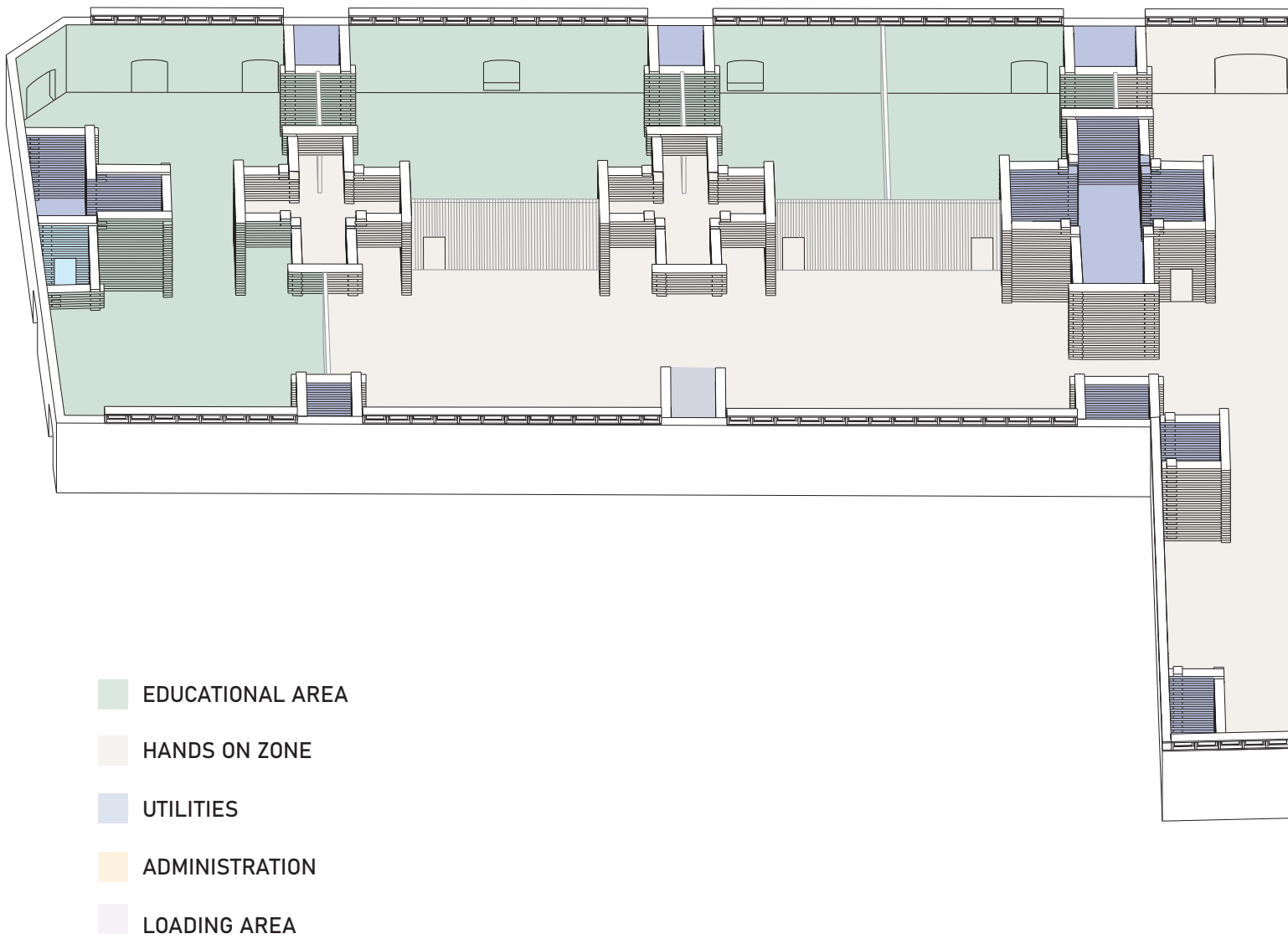


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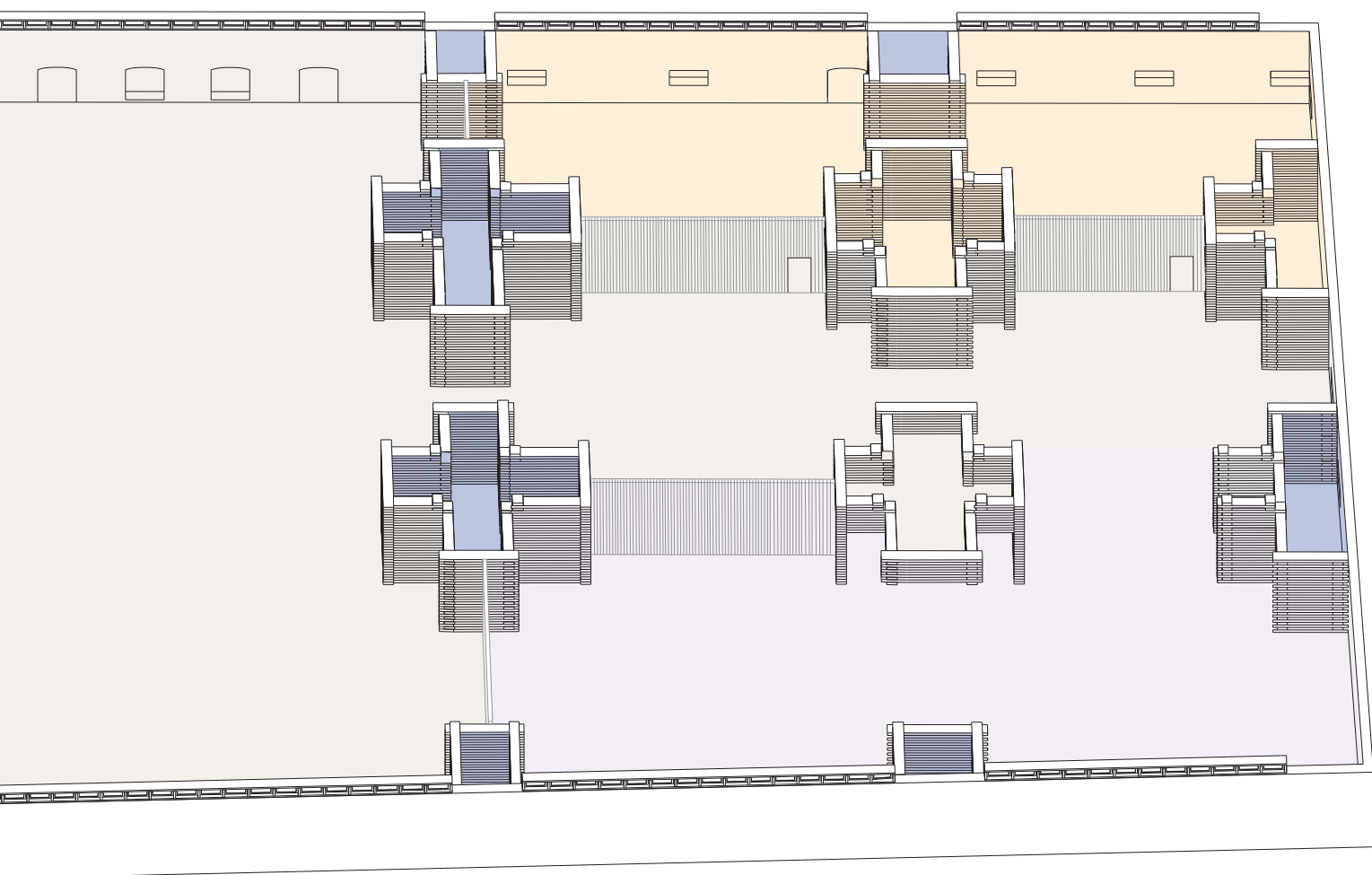


PLAN

Proposed Programs





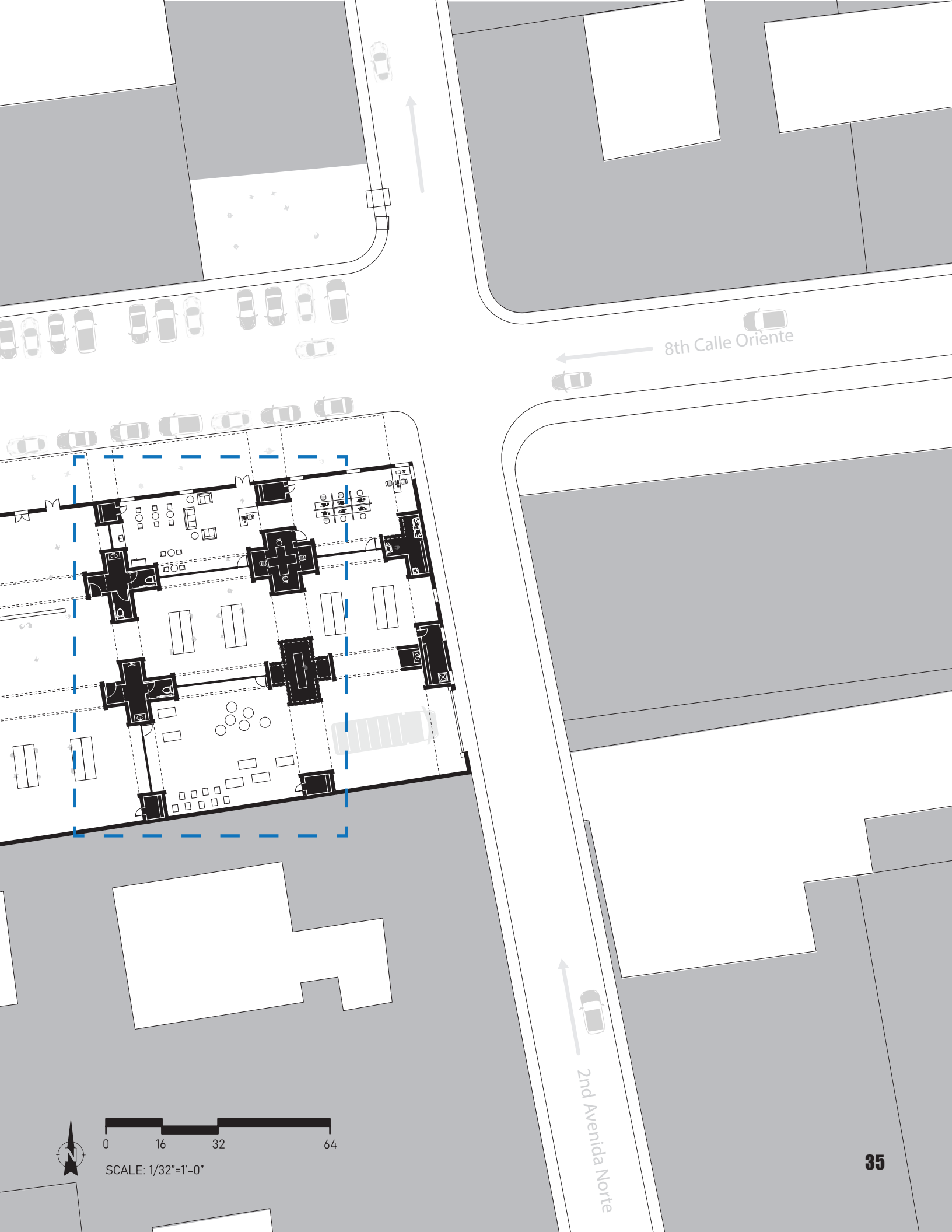




PLAN  
Proposed Site Plan







8th Calle Oriente

2nd Avenida Norte

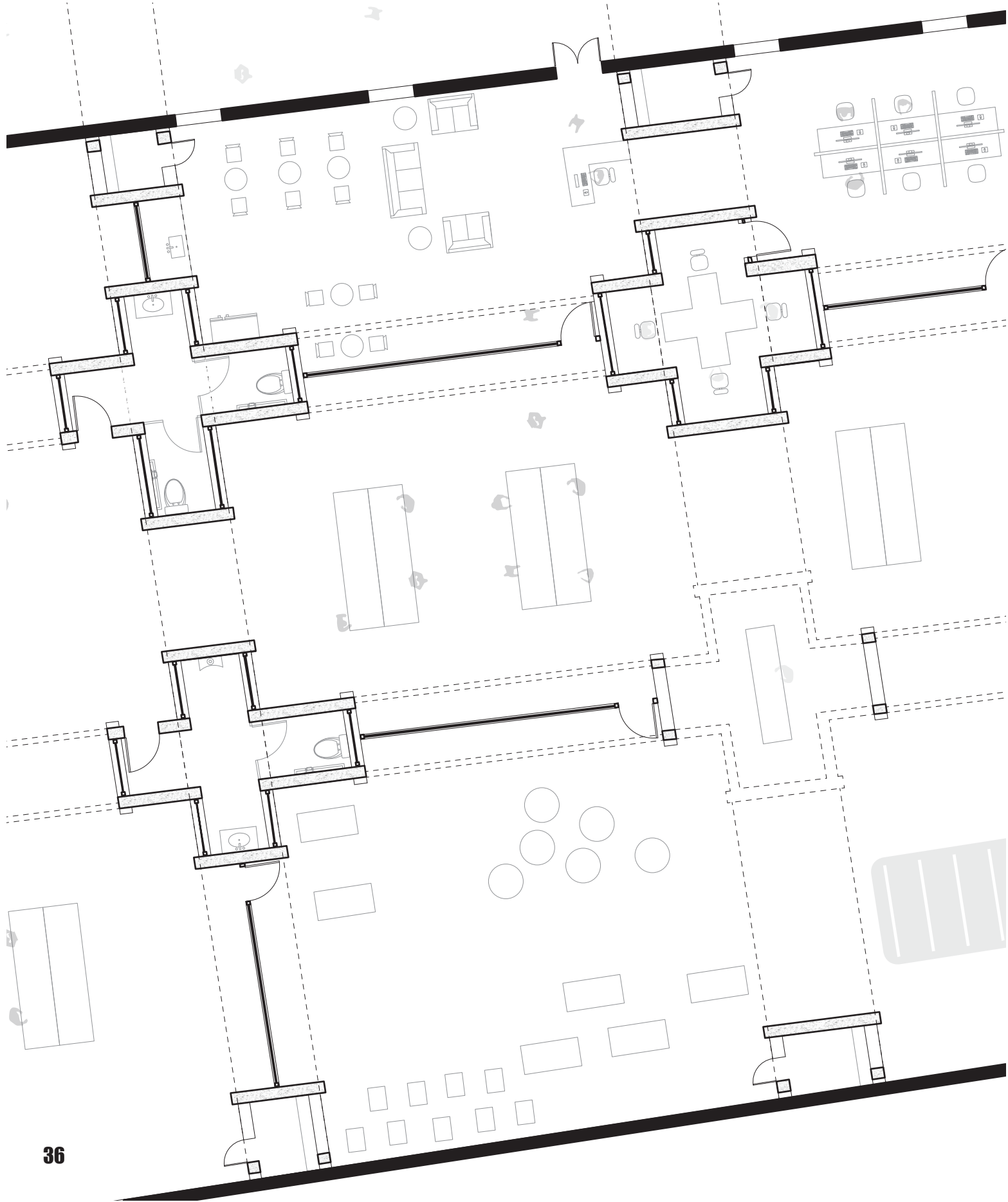


0 16 32 64

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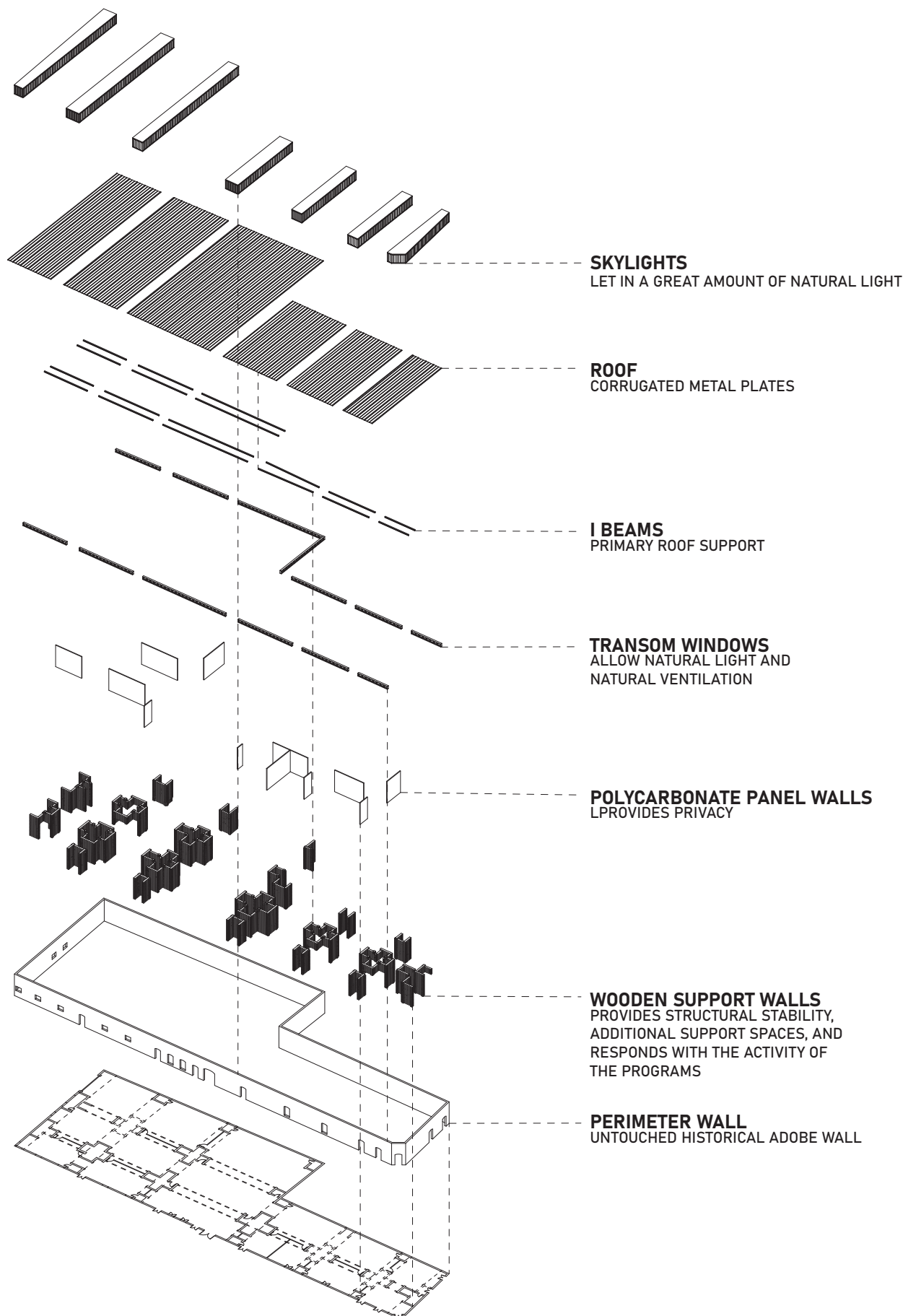


PLAN  
Enlarged Proposed Plan





ISONOMETRIC  
Structural Diagram

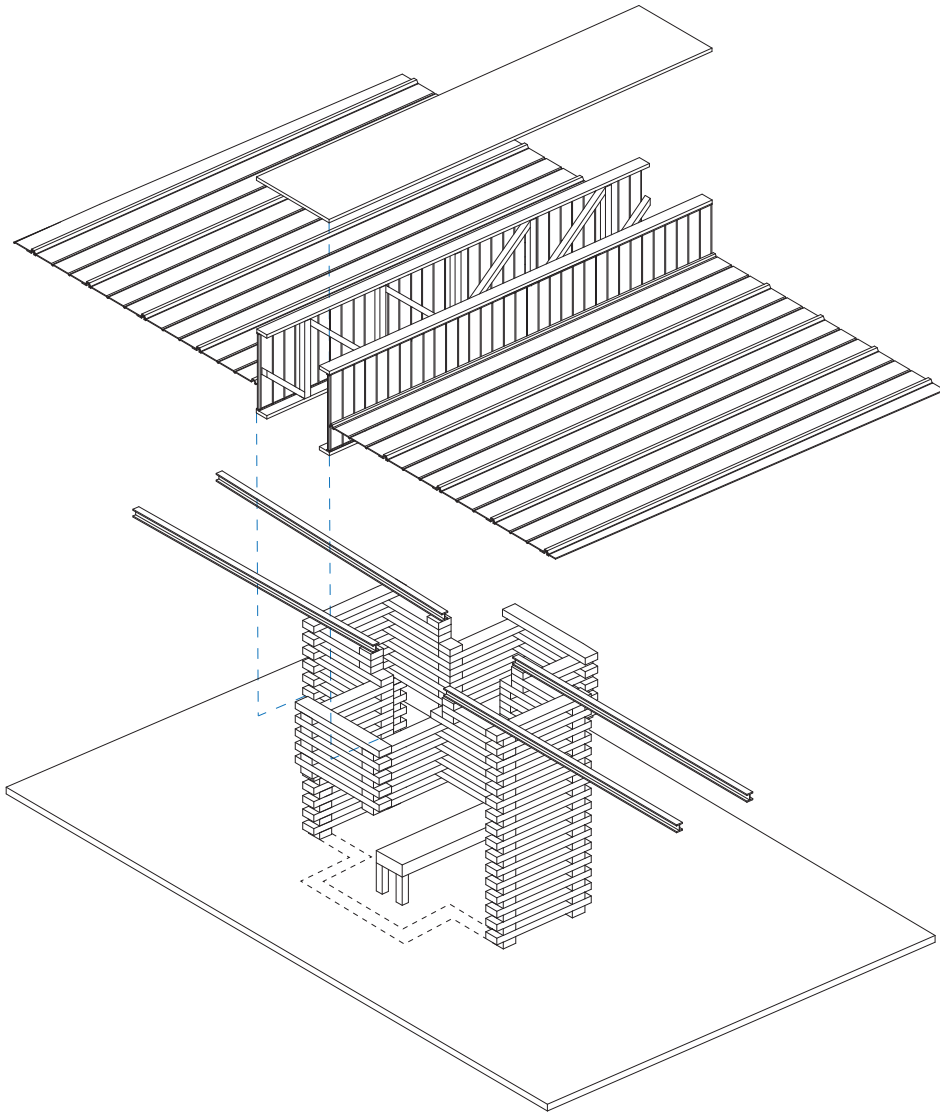




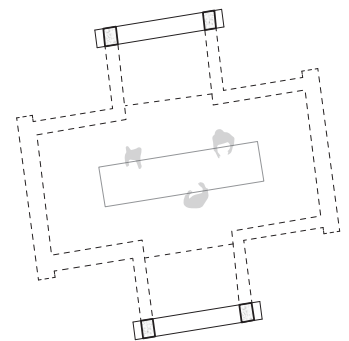
# ISONOMETRIC

## Interior Spaces

Provide structural stability,  
Additional support spaces, and  
lit responds with the activities performed in the area

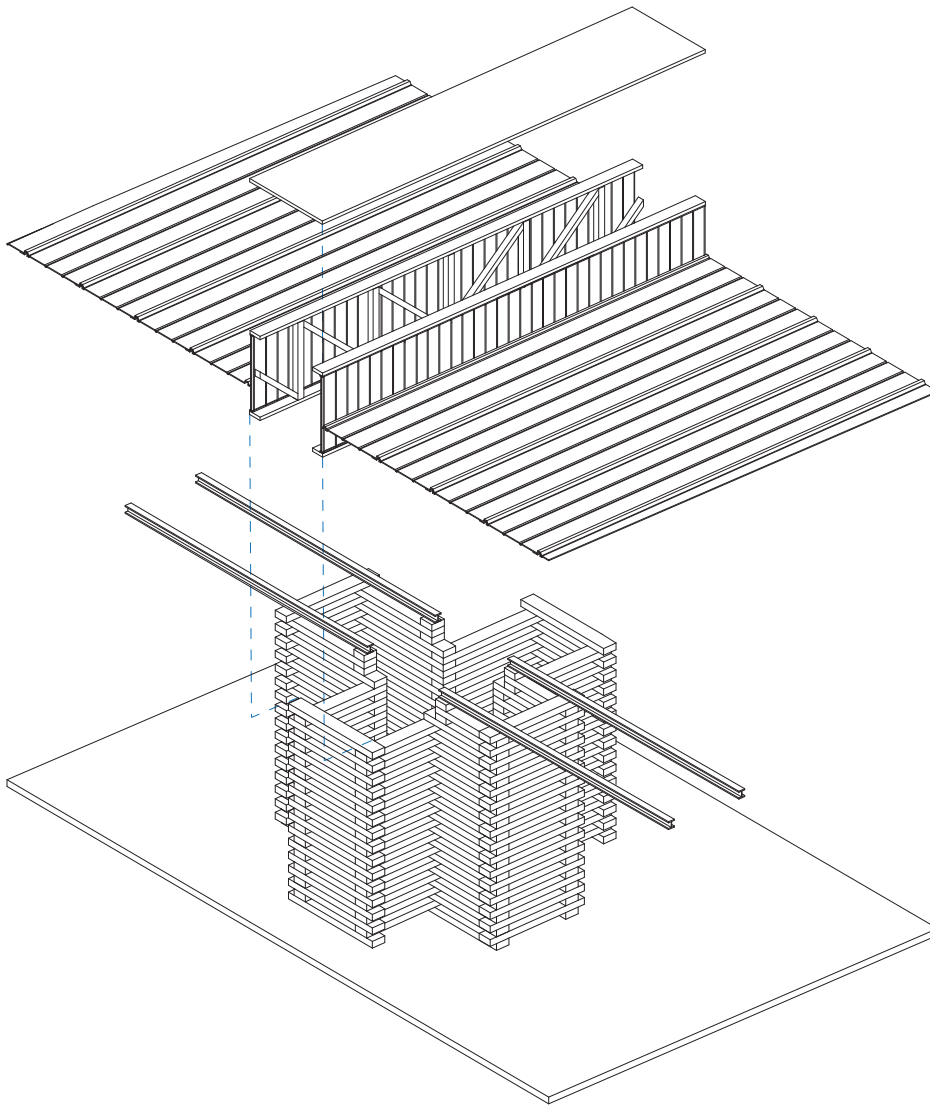


SEMI-PRIVATE SPACES

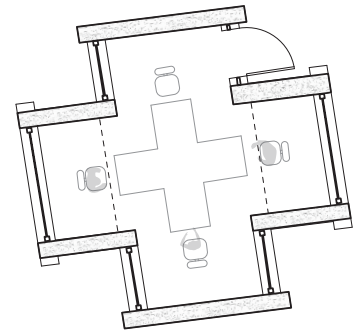


WORKSHOP AREA

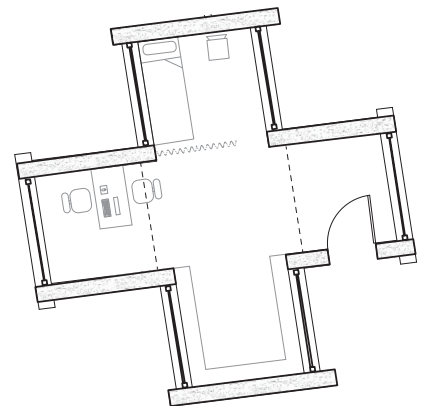




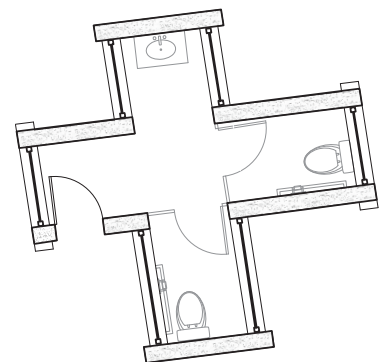
PRIVATE SPACES



CONFERENCE ROOM



INFIRMARY

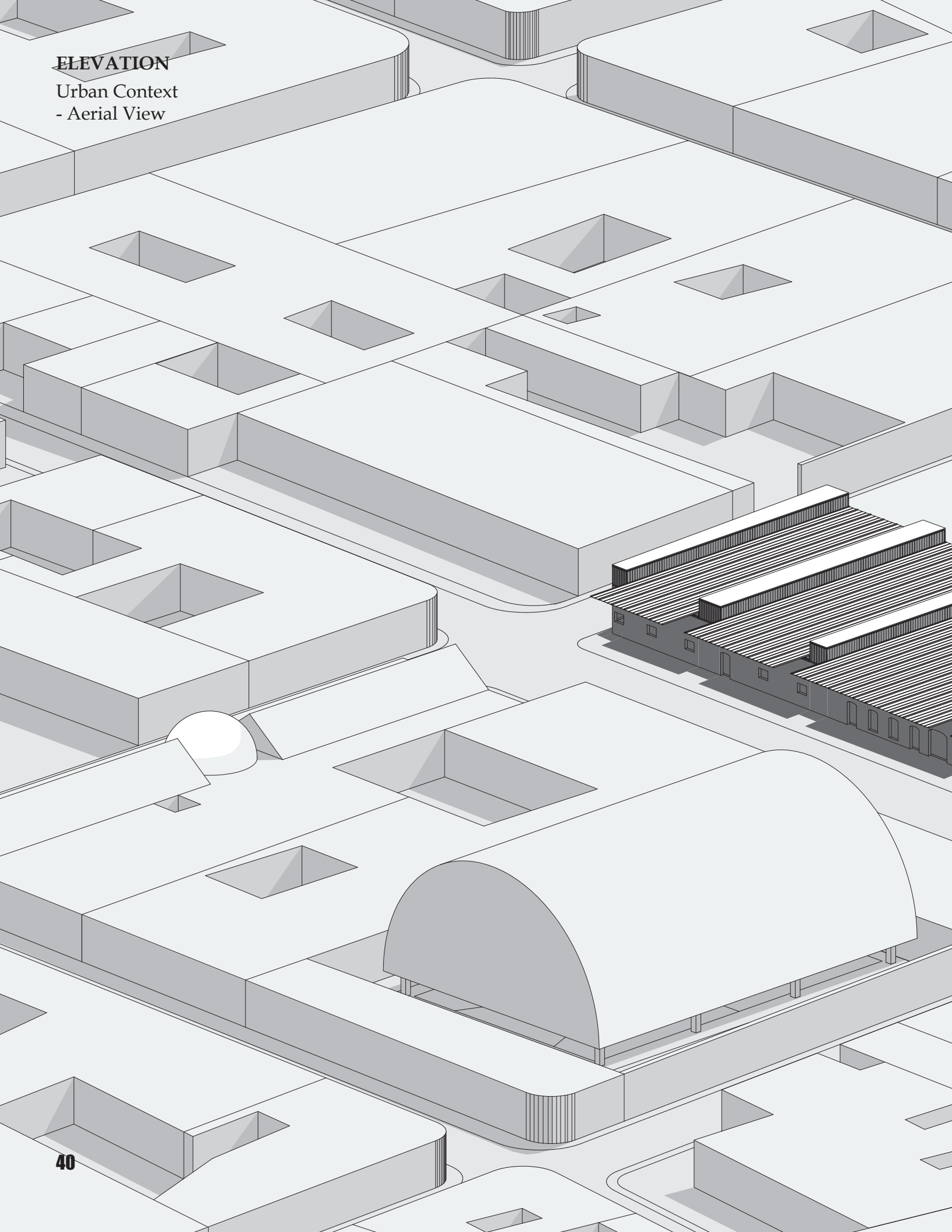


RESTROOMS

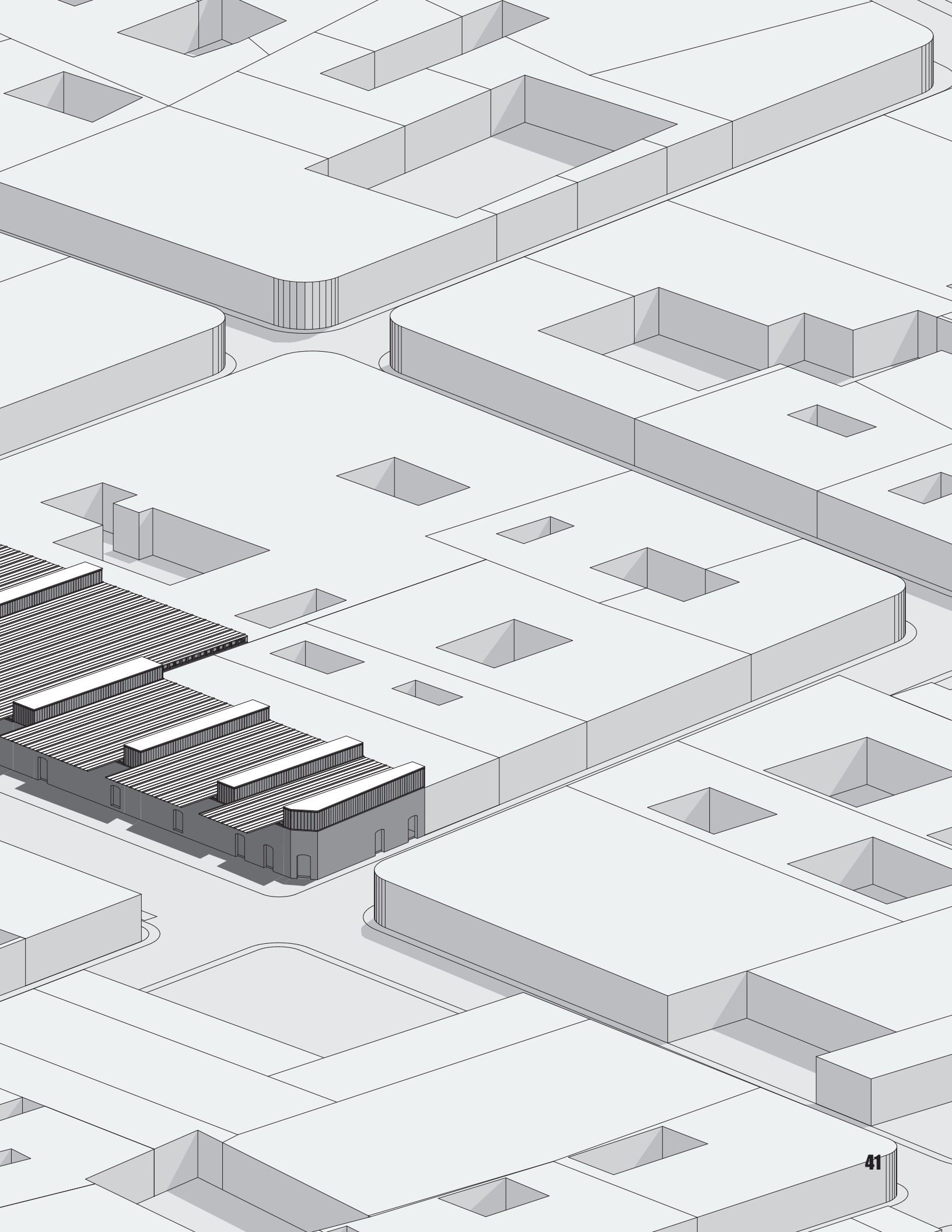


# ELEVATION

Urban Context  
- Aerial View





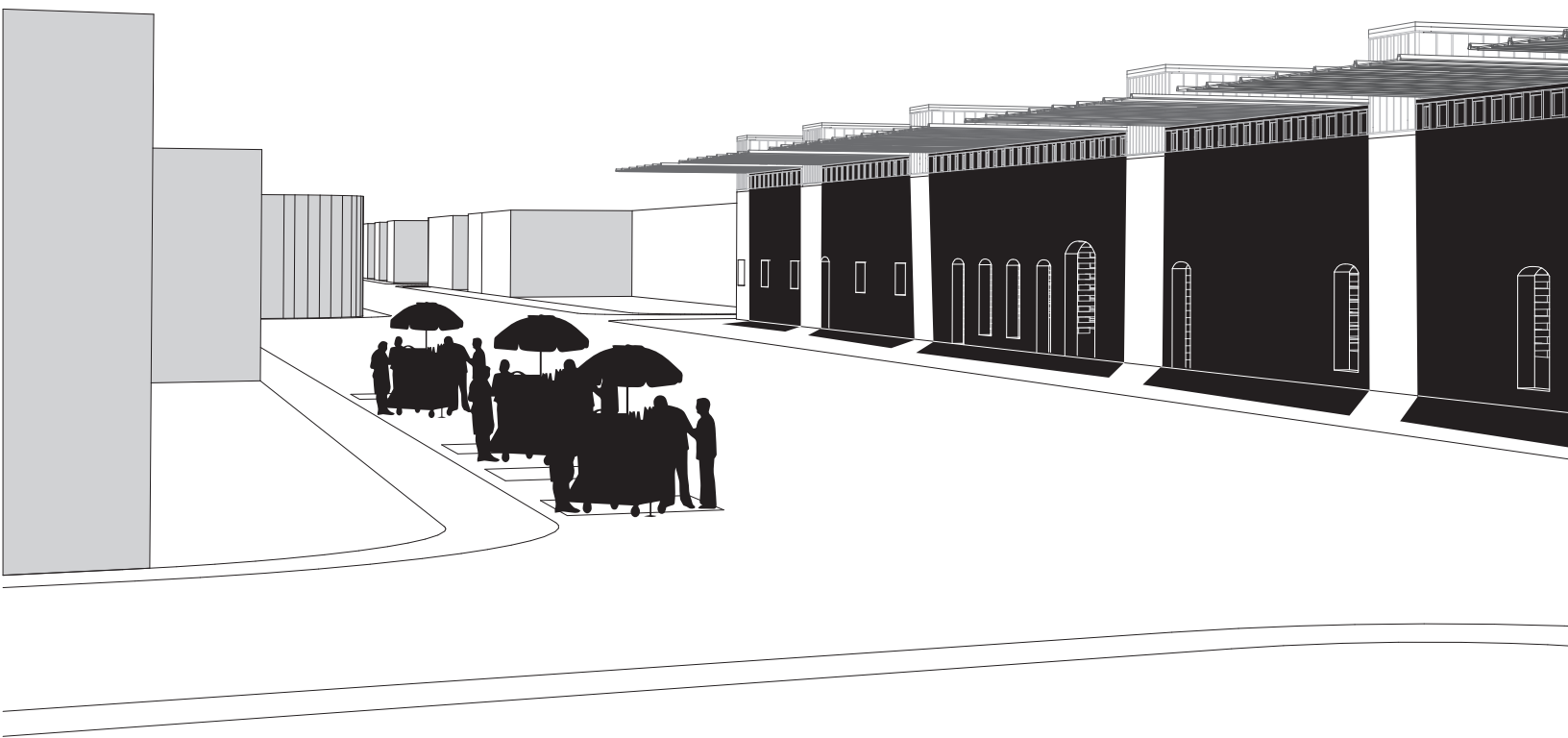




## ELEVATION

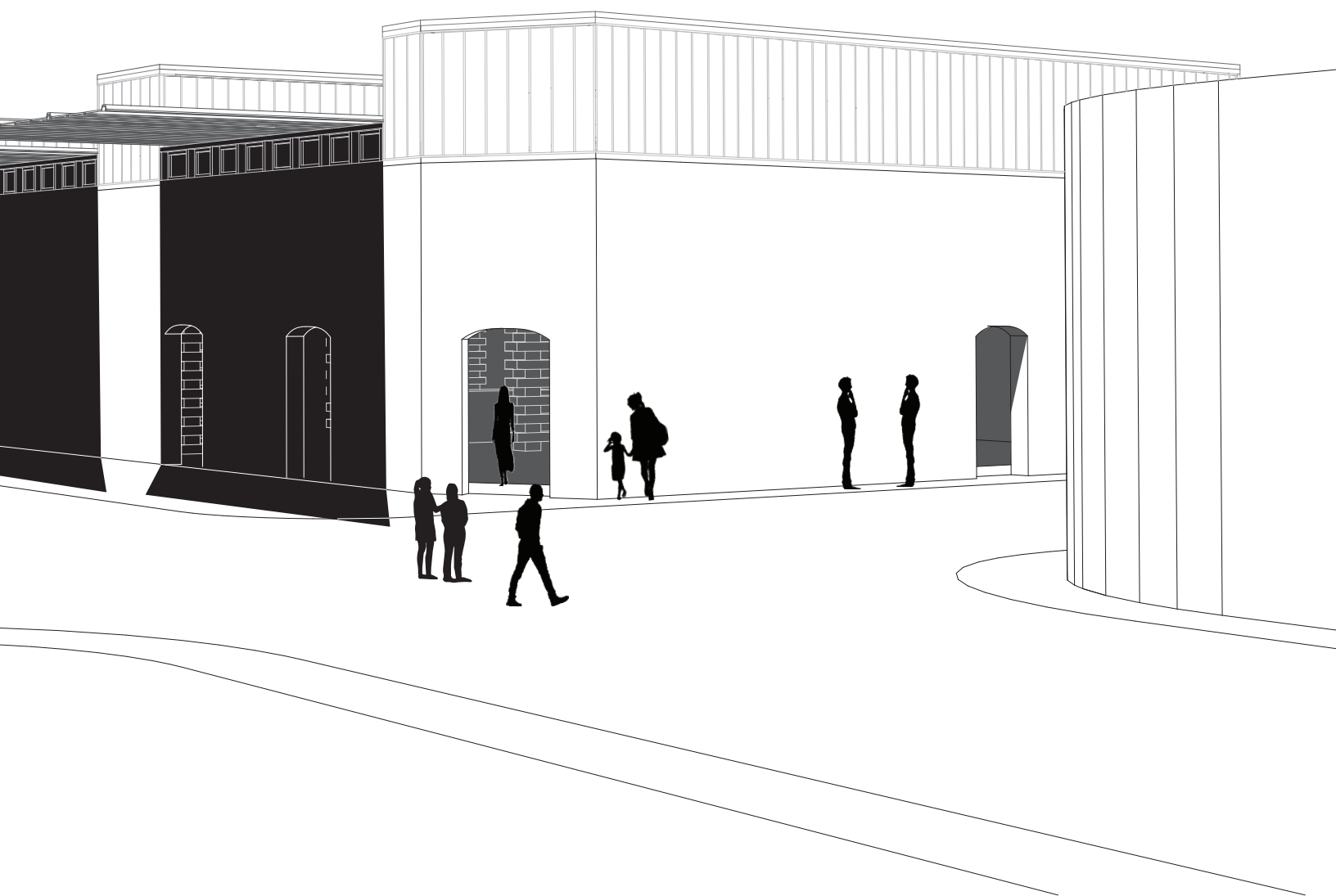
Fabrication for Hope

- Community Education Center of Manufacturing and Workforce



The offset metal roof panels provide shading and liberate the sidewalk and the historical perimeter wall that has been conserved for so many years in the city.

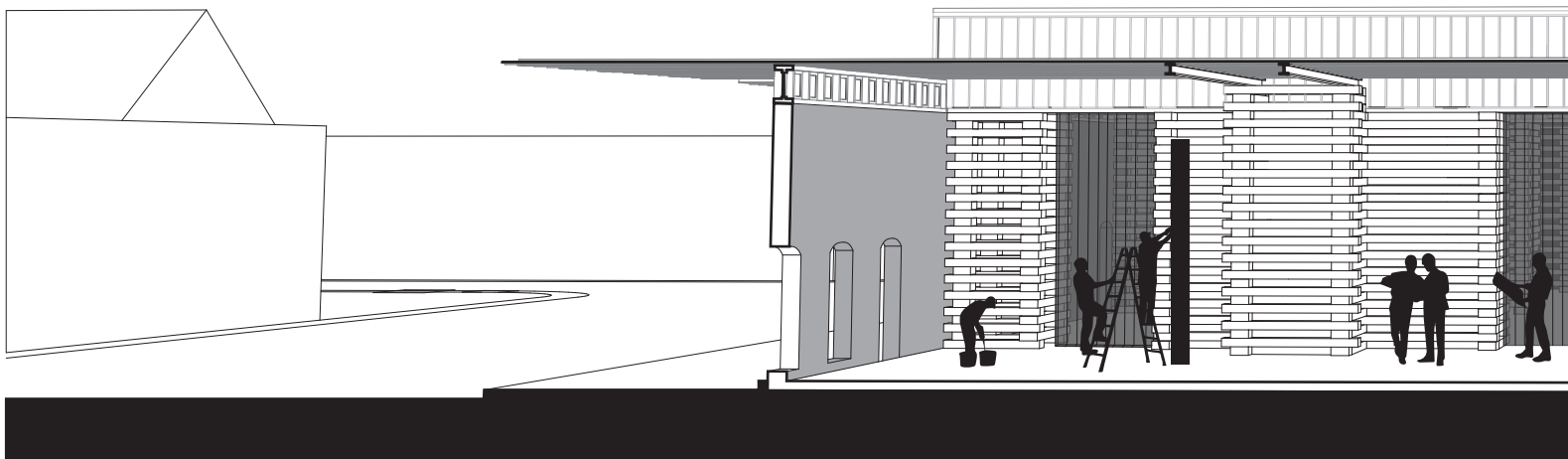






## SECTION

### Community Working Together

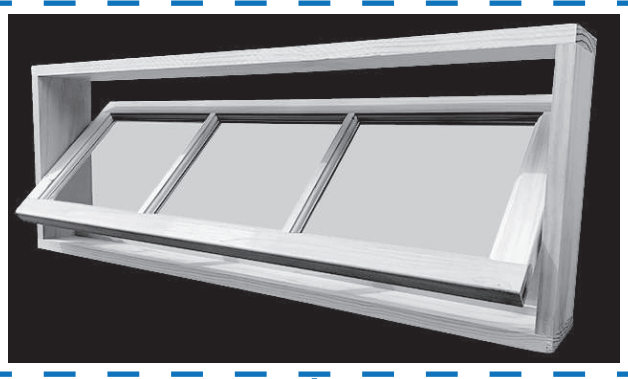


The historical perimeter wall is being conserved and liberated by elevating the metal roof which at the same time is being secured on both ends of the building by the use of transom windows.



### TRANSOM WINDOWS

HISTORICALLY THEY ARE  
USED TO ALLOW PASSAGE  
OF FLOWS OF AIR AND LIGHT  
BETWEEN ROOM

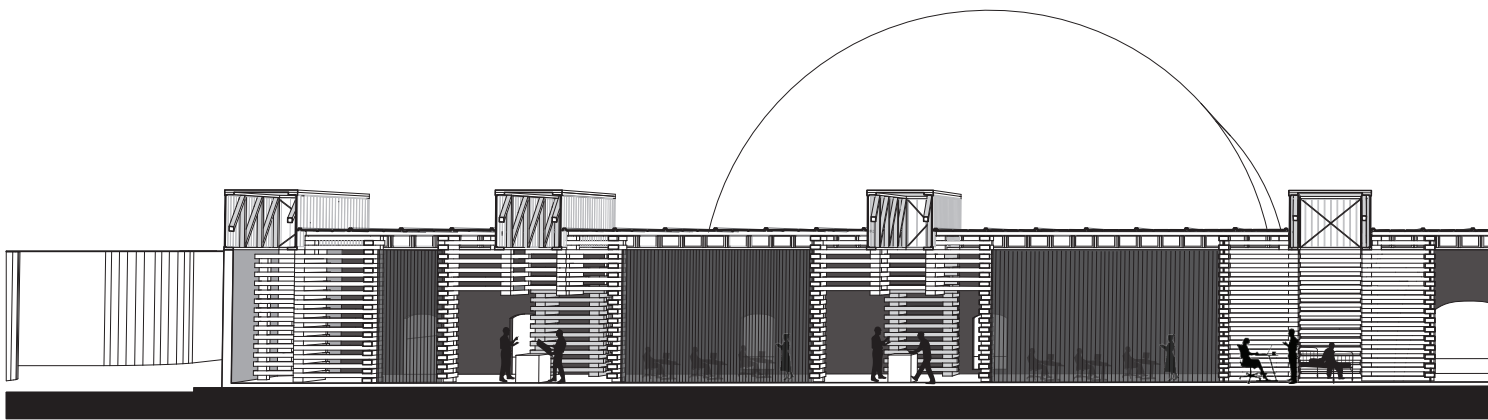


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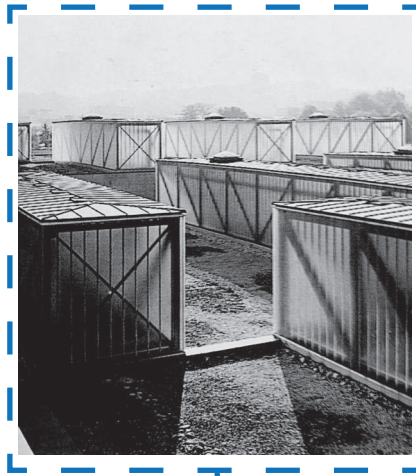
## SECTION

### A Place to Fabricate Hope



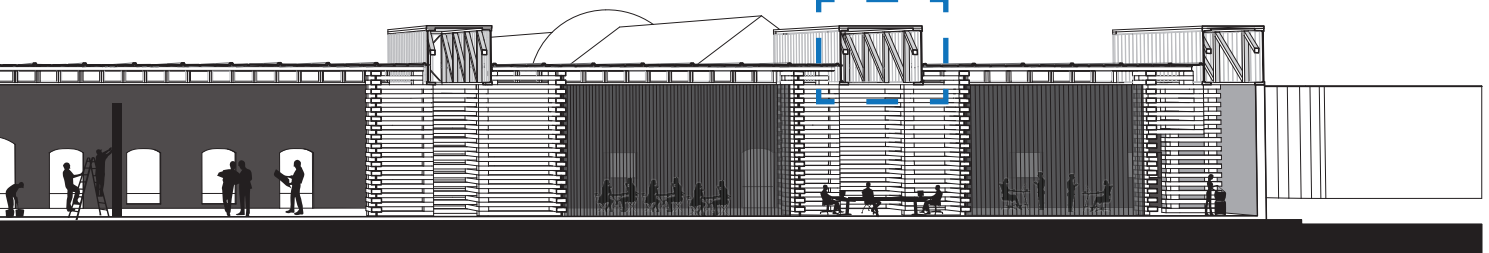
Thicken walls provide structural stability for skylights' super structure; bringing a great amount of natural light in to allow the performance of different activities during the day.





## SKYLIGHTS

LET NATURAL LIGHT ENTER  
AND ILLUMINATE THE  
INTERIOR SPACES

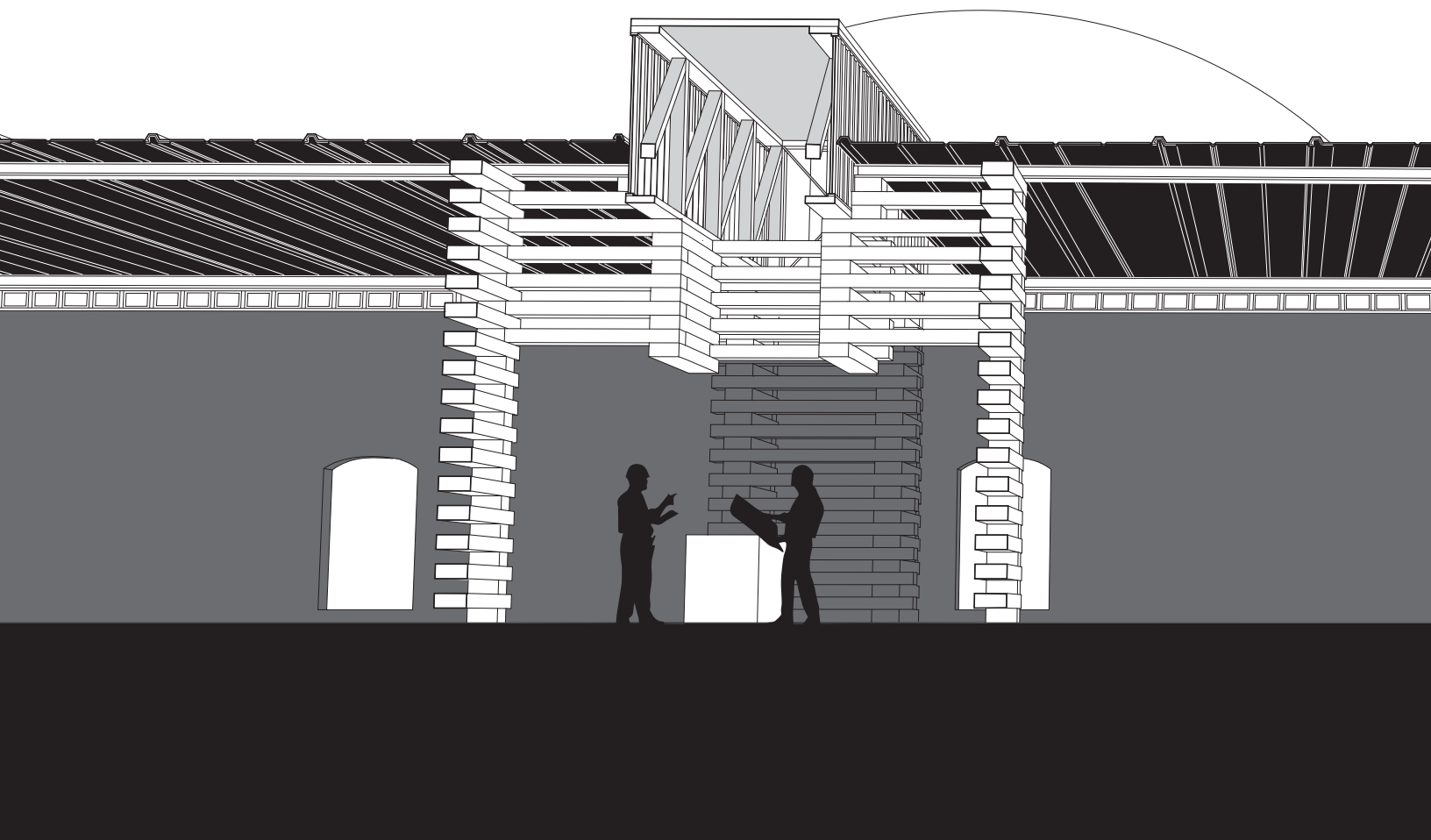


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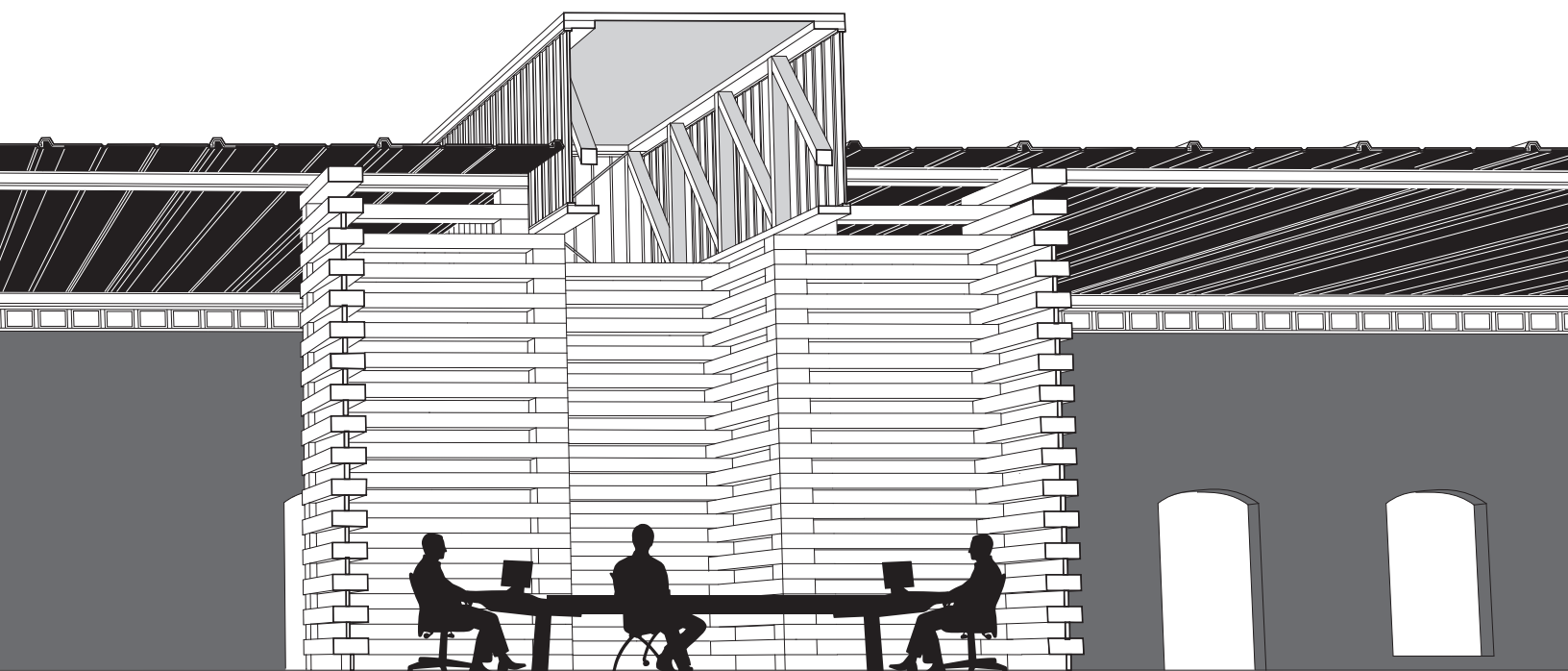
## SECTION

### Innovative Working Spaces



Wide large open spaces for semi-public and private activities are created by the structural stability that thickened walls provide made of local materials.











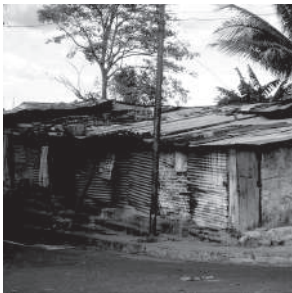



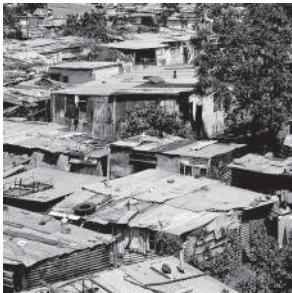

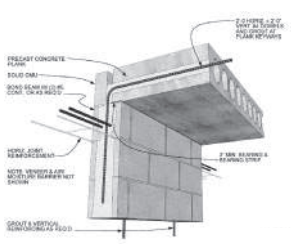
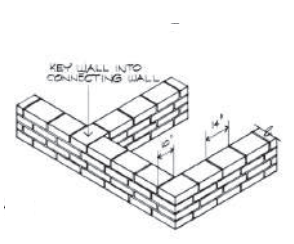




A faint, light gray background map of a city. It features a complex street grid, a winding river or canal that flows from the top right towards the bottom, and various irregular shapes representing parks or undeveloped land. The map is centered behind the word 'APPENDIX'.

# APPENDIX



## Existing Traditional Housing

	URBAN	RURAL		
	BRICKS AND CONCRETE	ADOBE	ALUMINUM SHEETS	TREE BRANCHES
HOUSING				
COMMUNITY				
TECHNIQUE				

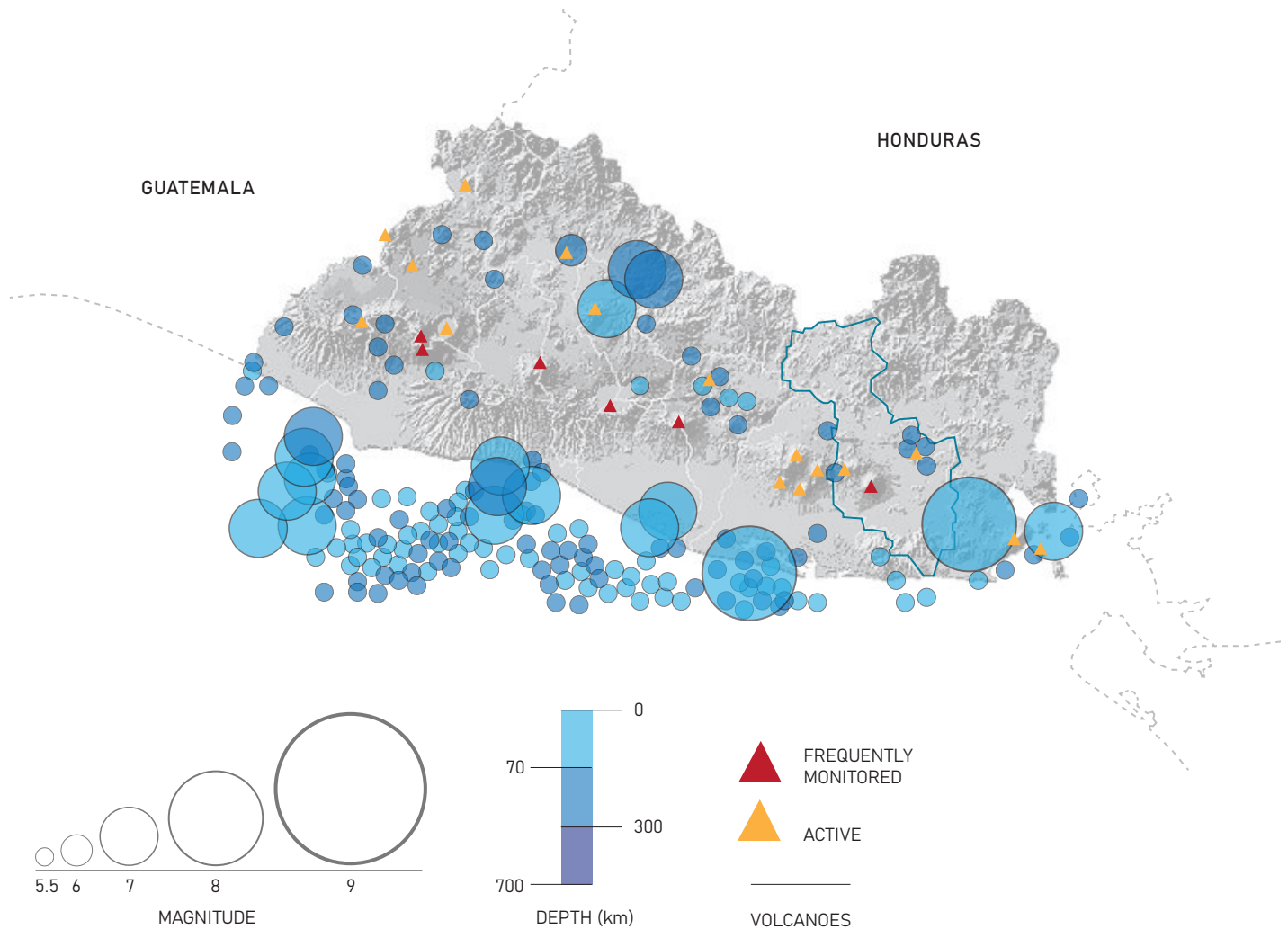
Houses in El Salvador are built so poorly and with low quality materials. Most of the buildings, especially residential buildings, are made of local materials such as adobe and wood. However, only the communities from medium-high to high income class are the ones privileged with sturdy houses made of bricks and concrete. On the other hand, many residences from communities of low income class in the rural areas are improvised houses made of adobe, aluminum sheets, and even tree branches.

As much as these low income communities would wish to make room these improvised houses a place to reside permanently, the truth is that it is not possible.



## FRAGILITY OF INFRASTRUCTURE

### Seismic Activity

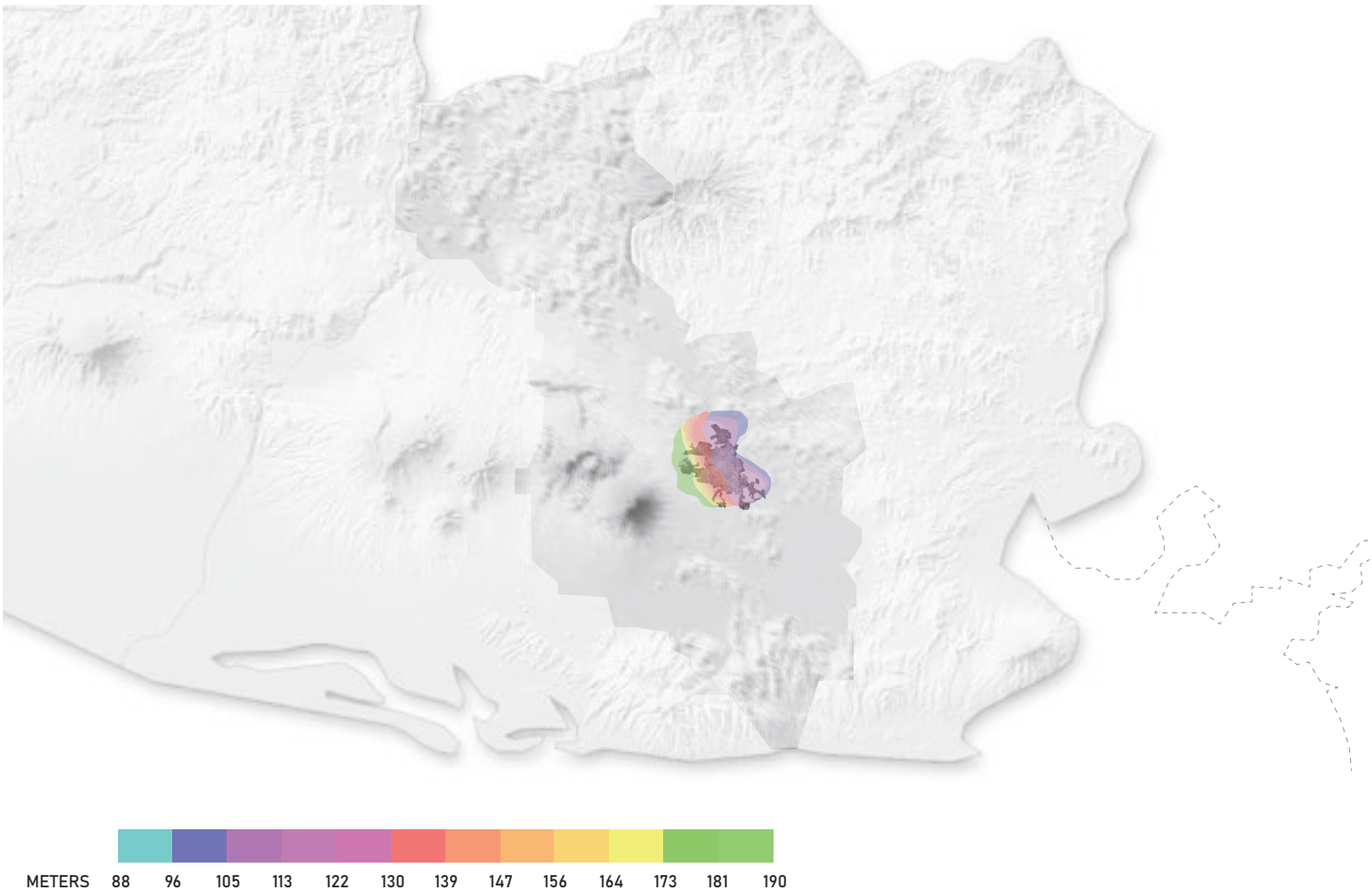


El Salvador has 23 active volcanoes, six of which are frequently monitored for seismic activity. San Miguel has suffered of seismic activities over the years creating a fragiled infrastructure and displacing many families and business.



FRAGILITY OF INFRASTRUCTURE

Flood Levels

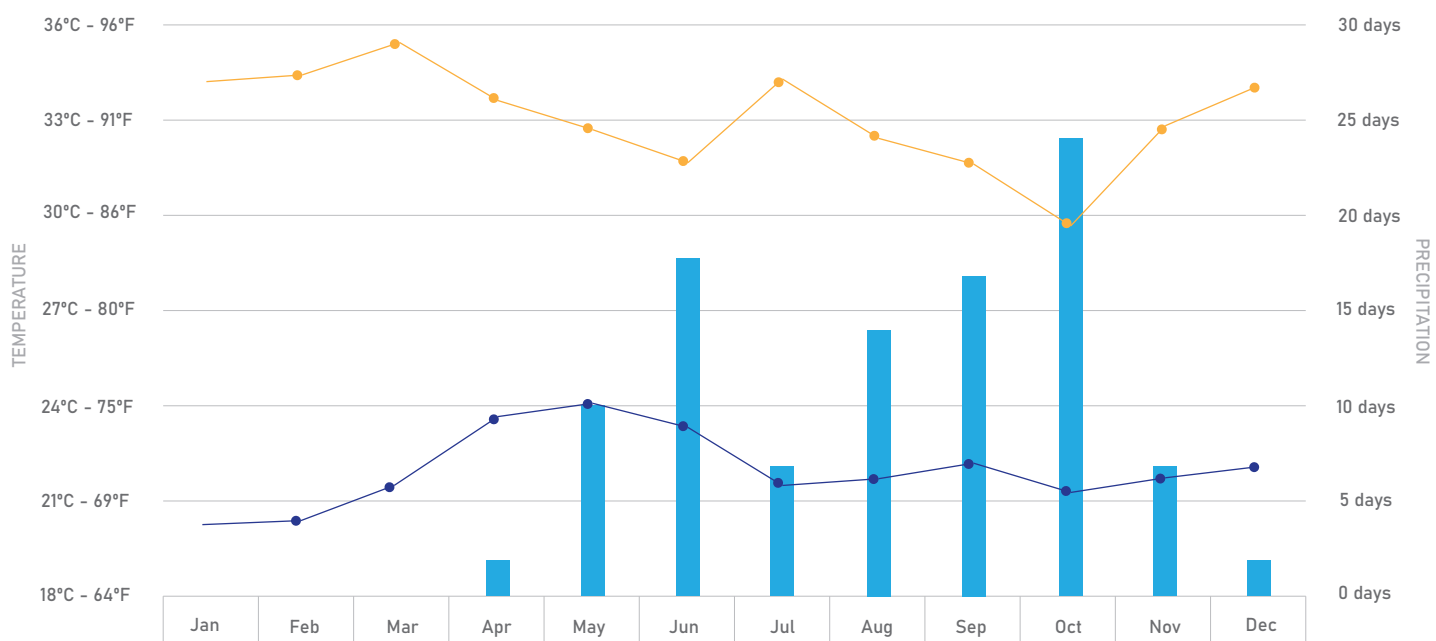


San Miguel downtown floods constantly due to the poor sewer systems it counts with and the lack of sewer systems on the low-income areas.



FRAGILITY OF INFRASTRUCTURE

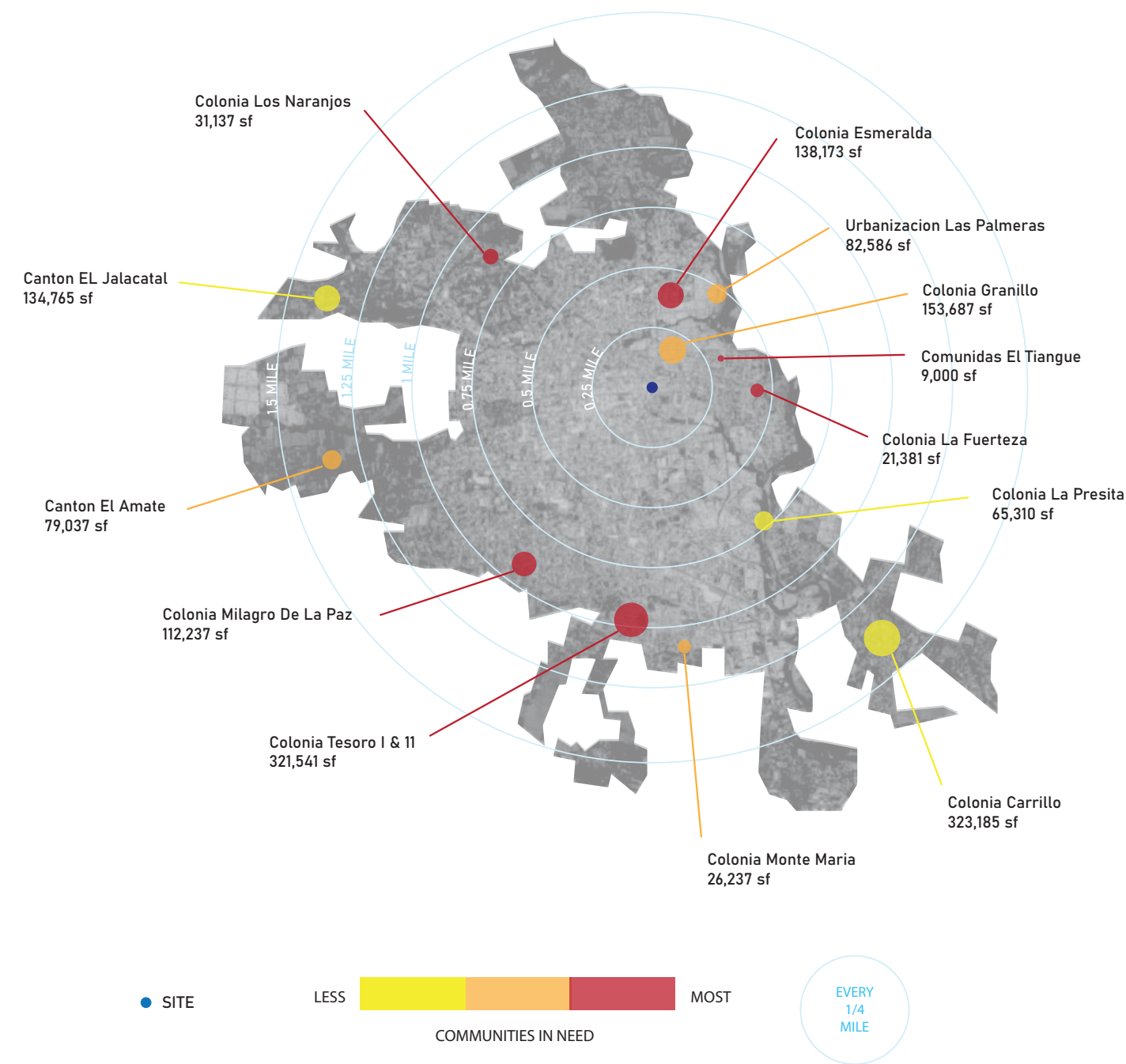
City Weather





# FRAGILITY OF INFRASTRUCTURE

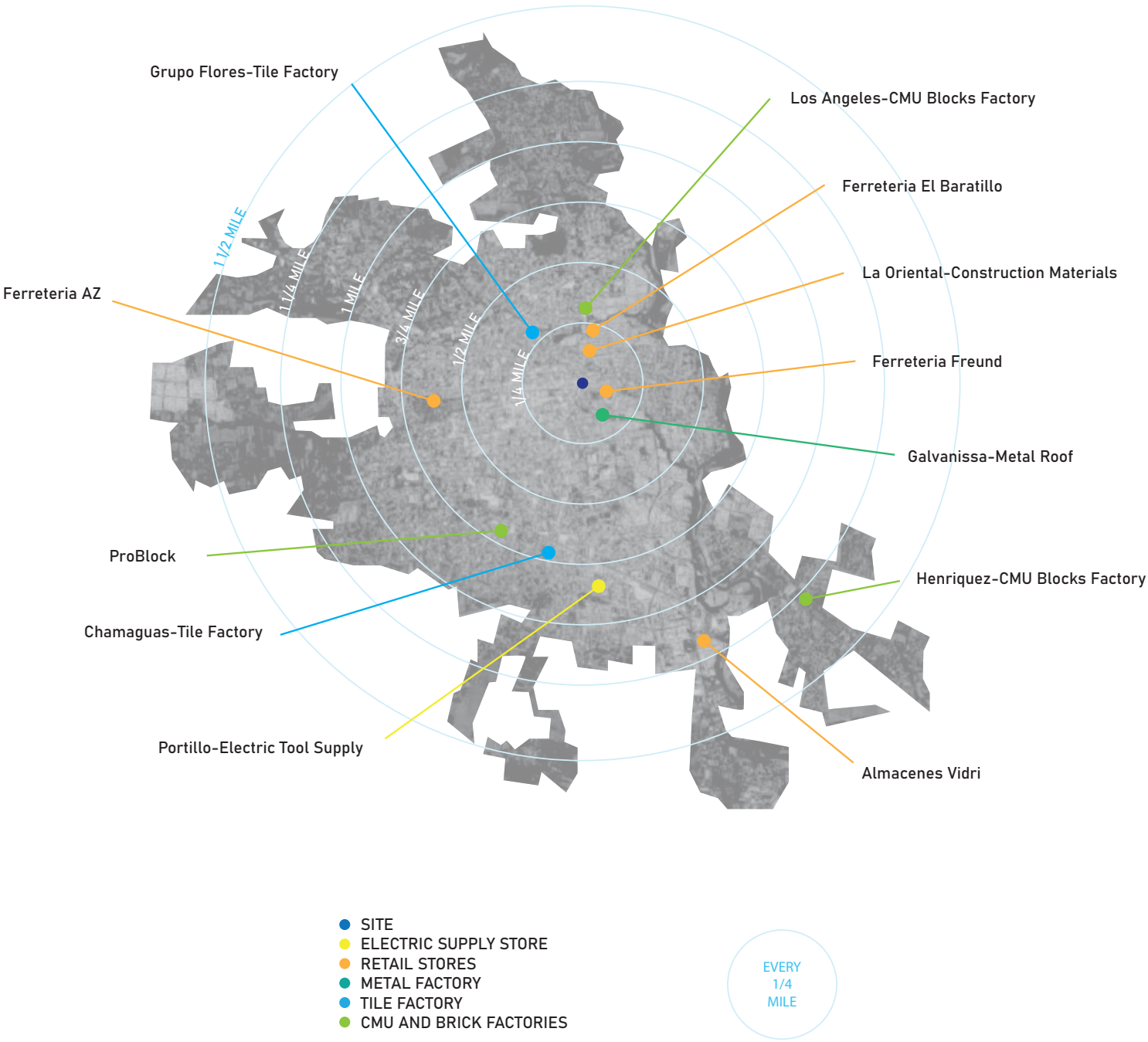
## Communities in Need of A New Hope





FRAGILITY OF INFRASTRUCTURE

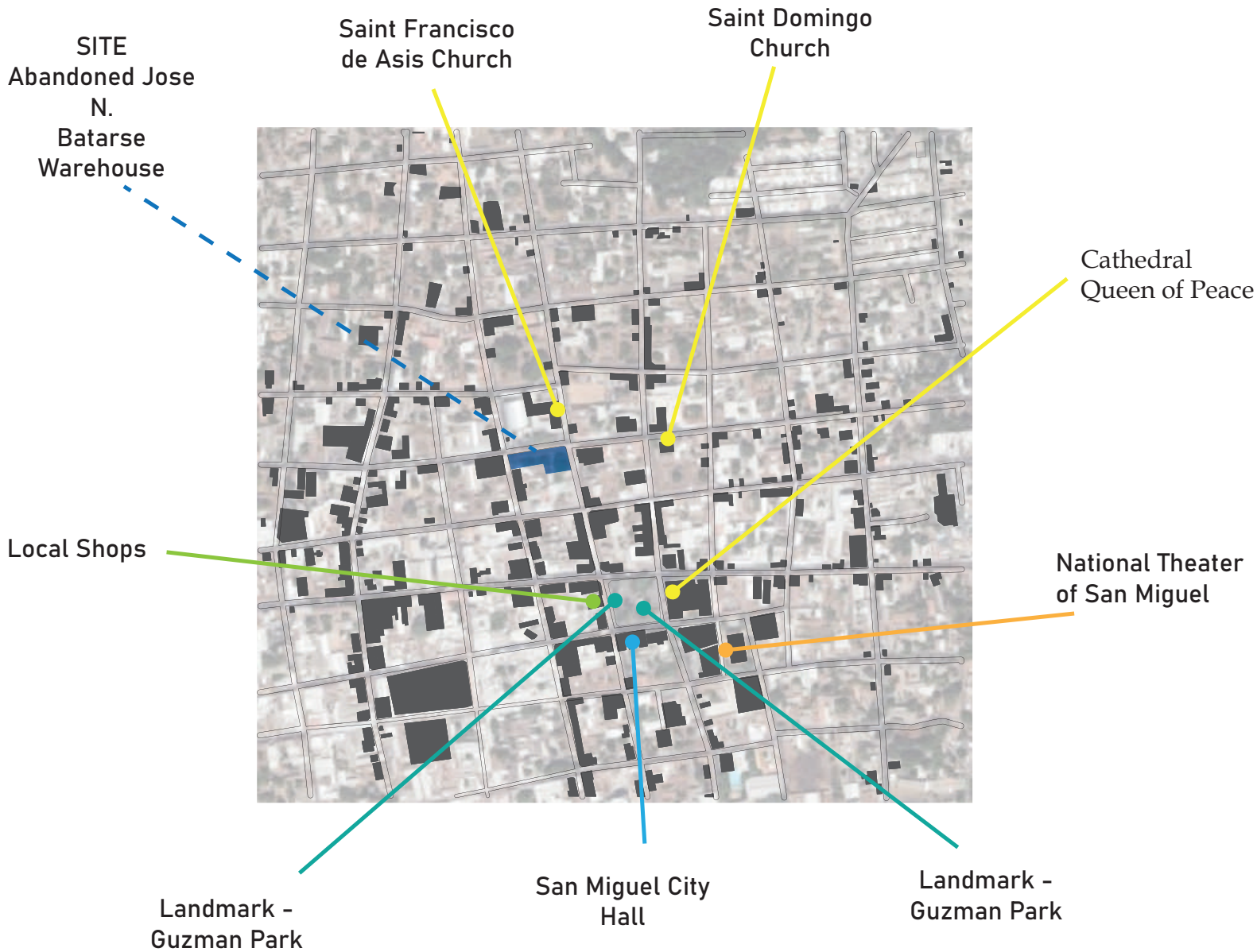
Centralization of Materials





## T TYPOLOGY

### Existing Traditional Housing



- SITE
- CHURCHES
- THEATER
- LANDMARKS
- CITY HALL
- LOCAL SHOPS







Saint Francisco de Asis Church



Local Shops



Saint Domingo Church



San Miguel City Hall



Cathedral Queen of Peace



Landmark - Guzman Park



National Theater of San Miguel



Landmark - Guzman Park



## HISTORY OF THE SITE

### Existing Traditional Housing

It was used to store all the merchandise for Jose N. Batarse Textile Store. It was left behind for the reason that the physical store moved to a new and bigger location. The new store counted with the following programs: sales floor, offices, work stations, and the full warehouse.

Jose Nasser Batarse founded the Jose N. Batarse Textile Store in 1934. It started as a small family business dedicated to sell textiles only. The store was run by himself only at the beginning. In 1957, the small family business partnered with the Merchant Collective Society and changes its name to "Jose N. Batarse and Cia". After this partnership, the store now counted with 6 employees dedicated to sell textiles, white bedding sets, hospital uniforms, haberdashery, and other related products.

Two years later, Jose Nasser Batarse acquired "Casa Burkard and Cia". It was another competitive franchise. This incremented the number of employees to 40. It also allowed him to expand the product distribution to paint, hardware, materials for construction, home products, and stationary. For many years the textile store was run by him and his only son, Victor Batarse. They ran both locations, the "Jose N. Batarse and Cia" and Casa Burkard and Cia". Casa Burkard was a store that was dedicated to sell textiles, stationary, and haberdashery. After Jose N. Batarse's death, all his goods and businesses were passed to his son, Victor Batarse. His son then changed the business name to "Jose N. Batarse S.A de C.V"





1934



1960's



NOW



**Santa Catarina Market**

Architect: Enric Mirales and Benedetta Tagliabue

Location: Barcelona, Spain

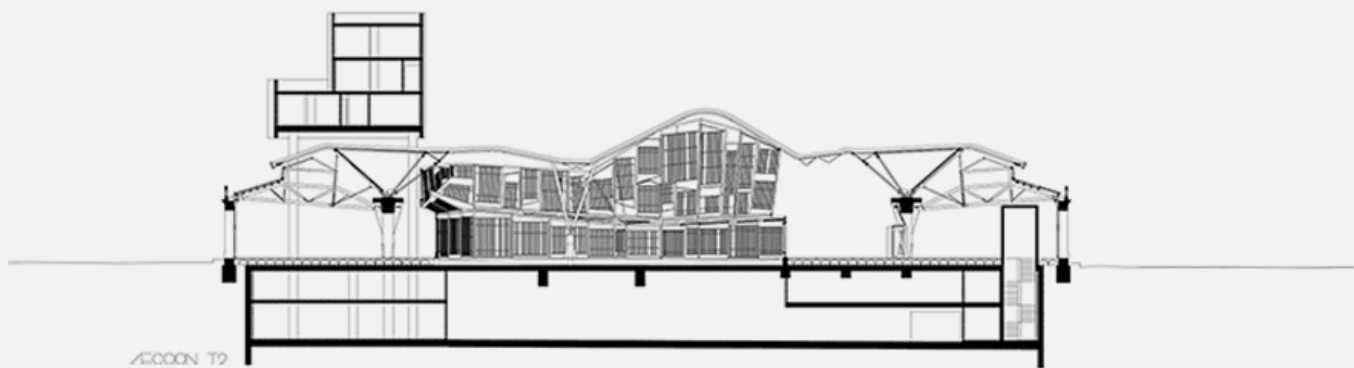
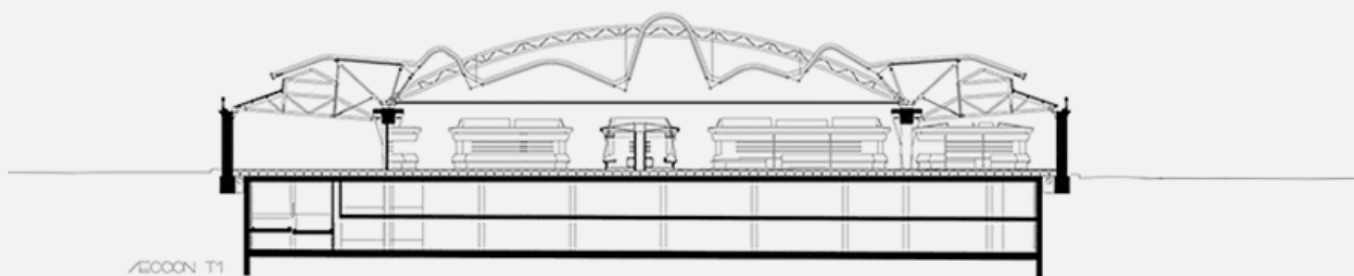
Year: 1997-2005

Part of urban rehabilitation of the area. The proposal superimposes the new architecture on the old, the mixes, and arises with a conglomerate, a hybrid that accentuates utility and is contemporary. The concept “blend and confuse” refers to the intervention intended to “blend and confuse” with the original structure.

The roof is transformed into the most important facade of the building enveloping the structure and extending beyond the perimeter of the first construction. Shops offering unique products are located in the perimeter of the market, as well as bars and restaurants to call the attention of the public.

The central structure is new and the lateral aisles keep the old trunks, some have been repaired and others had to be replaced. From the original market have been preserved the lateral walls and the porticoed facade preserving the entrance doors.







**Northwest Maritime Center**

Architect: Miller|Hull Partnership

Location: Washington

Year: 2010

The first LEED Gold nonprofit waterfront center in Washington State. Environmental stewardship is part of the core goal and mission—as is awakening a sense of wonder, connection to, and understanding of the Puget Sound and the Pacific Northwest. Designed by the Miller|Hull Partnership, the buildings are made to minimize impact on the environment, lower operating costs, reduce energy and water use, improve indoor environmental quality, and make more efficient use of materials and resources.

It counts with well-lit rooms with high ceilings provide flexible space for small meetings that may break off from the conference area, or for classes that serve ongoing programs. Large, vertically sliding doors create up to three separate rooms, while another closes off the space from the mezzanine. The rooms enjoy views both outside to the maritime district as well as into the Boatshop below.







**Brooklyn Navy Yard**

Location: Navy Street and Flushing and Kent  
Avenues Brooklyn, New York

Built: 1801

Industrial Development: 1990's

It follows an extensive structural stabilization, exterior restoration, and interior rehabilitation, the historic building has been returned to its former glory and transformed into a public education center that celebrates the Navy Yard's past, present, and future.

It's a center of manufacturing and workforce innovation where the future growth includes the continued development of manufacturing and commercial space that anchors the industrial sector, contributes to the preservation of high-quality jobs for the community, and supports continued economic growth for the city.







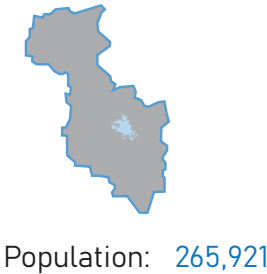
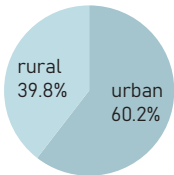
SITE CONTEXT

San Miguel Downtown, El Salvador



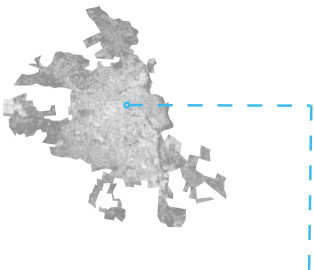
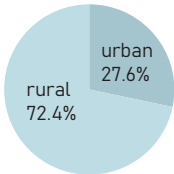
Population: 6,518,500

Area: 8,124 mi²



Population: 265,921

Area: 229.3 mi²





## SITE CONTEXT

### Imagery





## PURPOSE OF THE PROJECT

### Fabrication of Panelized Homes

“Fabrication for Hope” is meant to house workshop areas for the fabrication of panelized walls made of local materials using grass as a natural insulator. Grass insulation has the capacity to absorb moisture from the ambient air and release it, when the ambient air becomes drier. This characteristic has a balancing effect on the room climate, which is generally considered as one of the advantages of renewable insulation material. This technique will also allow pre-assembled houses to be kept cool during the day and warm during night time.

Once the panels are done, then they would subsequently be transported to the communities in need and be assembled on site. This construction technique is cheaper and easy to assembly on site.







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