

**COMMUNITY CATALYST: ARCHITECTURAL REHABILITATION OF
THE ALIANZA MARKET**

by

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Submitted in partial fulfilment of the requirements
for the degree of Master of Architecture

at

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DALHOUSIE UNIVERSITY
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CONTENTS

Abstract	v
Acknowledgements	vi
CHAPTER 1: INTRODUCTION	1
Thesis Question.....	1
The Market Place	1
Between Reality and Rehabilitation.....	3
CHAPTER TWO: CITY CONTEXT.....	5
History of Torreon	6
City Center.....	7
Barrio Alianza (Alianza District)	8
Case Study: Street Vendors	9
CHAPTER THREE: SITE AND PROGRAM STRATEGIES.....	12
Market Analysis	12
Spatial Conditions.....	14
Government Projects	15
Site Strategy	16
Market Reorganization.....	16
New Program.....	18
Public Square	18
CHAPTER FOUR: DESIGN METHOD.....	20
Placemaking	20
Material Culture	22
Building Precedents.....	22
CHAPTER FIVE: FINAL DESIGN	25
Design Development	26
A Square in the Market.....	30
Roof Structure.....	37
SUMMARY	48
REFERENCES	49

ABSTRACT

This thesis represents a speculation for the improvement of the Alianza Market located in the city of Torreon, Coahuila, Mexico. Torreon is part of a tri-city entity with a population of 1.2 million residents. The Alianza market was the first marketplace in the city, founded about 100 years ago. The site is located in an area with a high level of poverty across the entire district. Due to corruption and negligence on the part of the government, the social and economic standing of the market has suffered a tremendous decline in the past 30 years. Through the careful study of the existing site, this thesis proposes the reorganization of the market to improve its spatial qualities. The market represents the social and economic heart of its community which is kept alive solely by its members. By proposing the design of a public open square within the market site I intend to provide a space for the celebration of public life. Reviving the market will help to create economic life as well as improve street level life in the surrounding community.

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CHAPTER 1: INTRODUCTION

Thesis Question

How can the social and cultural context of a marketplace influence an architectural strategy for the rehabilitation of the site and its community?

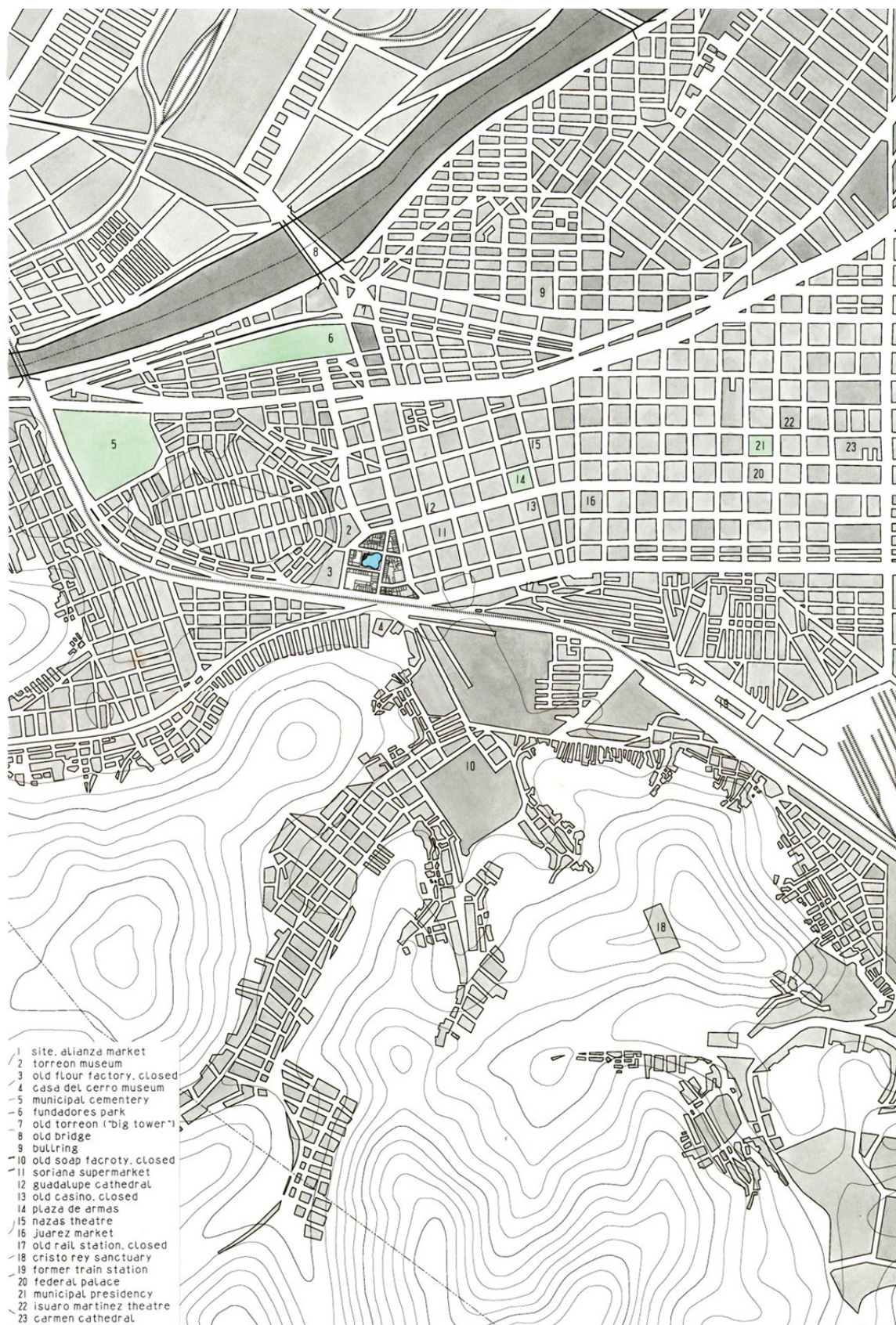
The Market Place

It is public life that enriches the scene as well as the beautiful space in which it takes place. (Carr 1992, 22)

The Alianza Market is located to the west of the city center. It consists of 300 market stores/stalls that encompass 6 city blocks, covering approximately 42,000m². The connecting streets are currently pedestrian and it is here where the life of the market is contained.

Throughout history, the development of human settlements began around well-used paths and sites (Gehl 2010, 227). This is also the case for the city of Torreon and the Alianza Market. The birth of the city corresponds to the expansion of the railroad across the country back in the 1890s, transforming the region into an important trading area. Located along the railroad tracks, market stalls for traders were first developed and this established the beginning of the most important commercial district in the city.

The site provided a space for the city to satisfy functional needs, as well as social ones. The initial infrastructure of the market was enriched by the underlying public life taking place on-site, i.e. walking, talking, standing, seeing, hearing, self-experiencing. With time, buildings were erected and the informal structure of the Alianza Market weaved into the fabric of the growing city.



Torreon, Mexico. Site plan

Between Reality and Rehabilitation

Before diving into the design component of this thesis, it was necessary to study the conditions of the site. As in most developing countries, the fast pace of change in the region aims to imitate the approaches of first-world countries into modernity. The desire for change could represent an opportunity for improvement of the site but it must be sensitive to the existing conditions that contribute to the best qualities of this space.



Viesca Street, Alianza Market, Torreon

The present character of the Alianza Market is functional, versatile and squalid. Furthermore to fully understand it one must go back in time. To recognize the reality of this marketplace is to recognize its incredible capability for adaptation. The essence of the Alianza Market already exists under heated, metal roofs and within modest, concrete market stalls. The heart of a community exists in the midst of rubble, canvas roofs and vegetable displays. The design ex-

ercise of this thesis is a balancing act between the old and the new, and it connects to the social reality of an existing place in time.

CHAPTER TWO: CITY CONTEXT



Above: Torreon is located on the north of Mexico in the state of Coahuila

Below: Illustration of Torreon's tri-city entity



Torreon is the second largest city in the northern state of Coahuila, Mexico. Torreon belongs to a tri-city entity known as “La Laguna” (The Lagoon), named after the Lagoon of Mayran found in the region thousands of years ago. Its metropolitan area makes it the 9th biggest city in the entire country. As of 2010, the city’s population was 608,836 in its municipality and 1,215,993 in its metropolitan area (counting the adjacent cities of Gomez Palacio and Lerdo). The city of Torreon holds more than half of the state’s population and overall economic activity (INEGI 2011).

Despite extreme climate conditions, the region’s most important economic activities are agriculture, metallurgy and the livestock industry. The average yearly temperature and rainfall are 22°C and 250mL, respectively (SEMARNAT 2011). The region has a regular water supply coming from the Nazas River and from underground water mantles. The river’s ford is currently dry due to a dam located 200km west. The water supply for agriculture is controlled by governmental institutions as a measure to avoid water shortage.

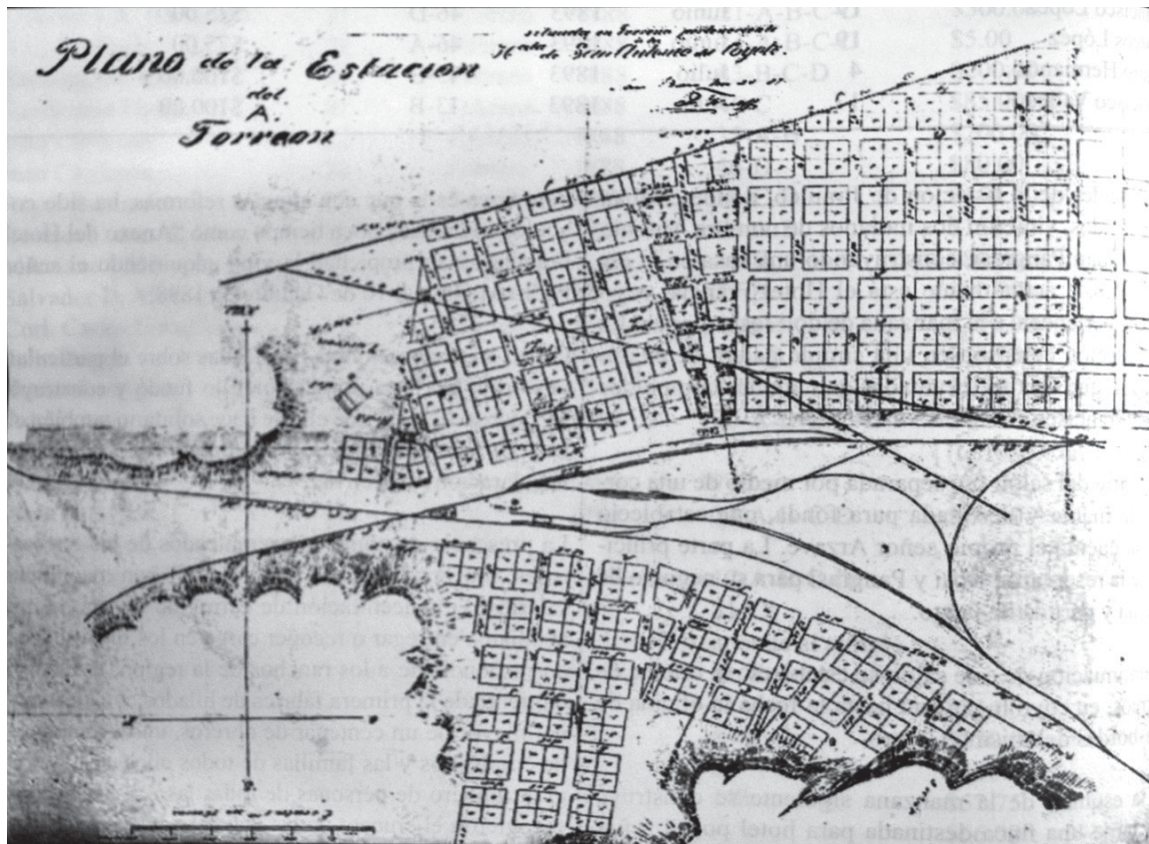
Due to the high level of rainfall in 2010, water flowed through the Nazas River in October of this year. This event is so rare it happens approximately every 25-30 years. Photograph by Julio Vladimir, from Flickr



History of Torreon

The origin of the town of Torreon is traced back to the expansion of the railroad in the 1890's. With the railroad coming from the south, going from central Mexico all the way to the US south border, the area became an important stop-point station. At the time, the town's main economic activity was the cotton industry. Between 1892 and 1910, the town's population boomed from 200 to 34,000 inhabitants, all due to the economic cotton venture. In 1893 the town was officially named a villa, and in September 15th, 1907, the city of Torreon was born (SEGOB 2011).

First plan of the station of Torreon, Mexico. From Torreon Municipal Archives



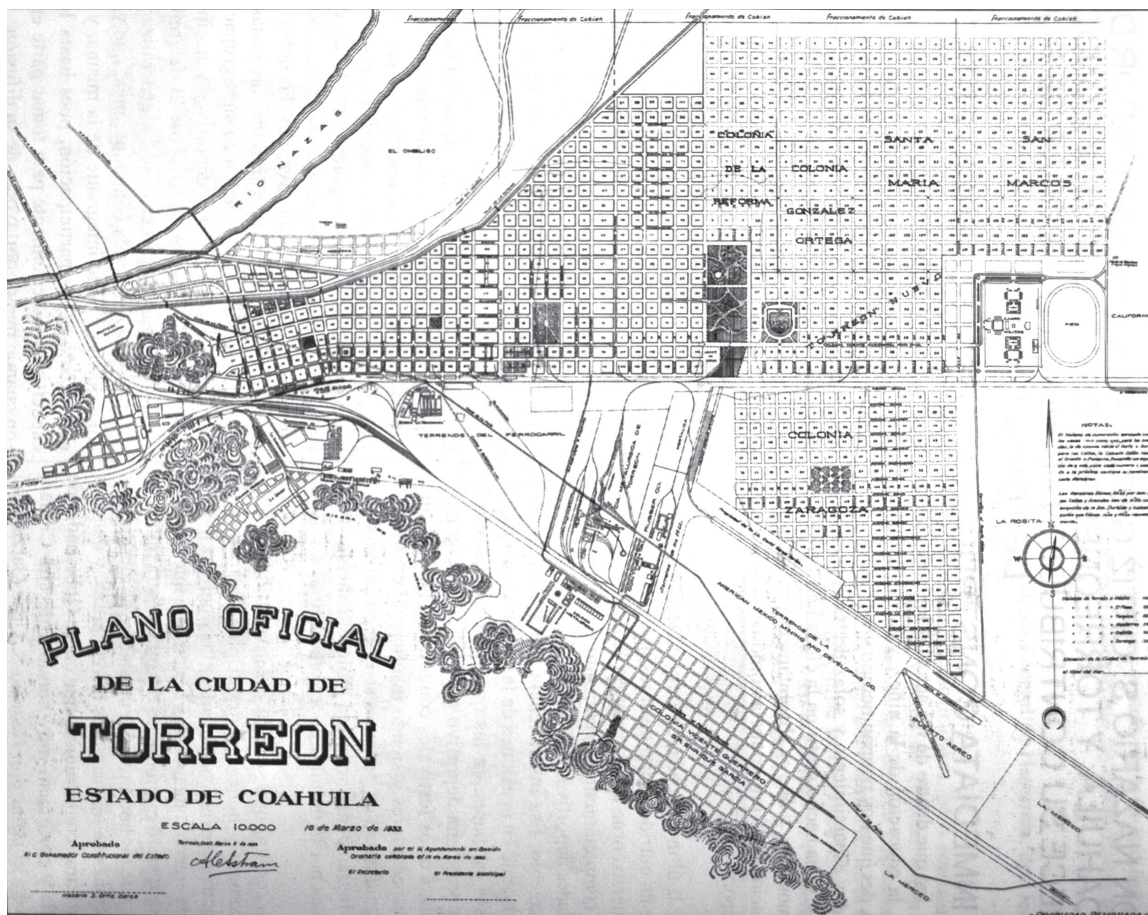
Bordered on the north by the Nazas River and on the southwest by the Candelaria mountain range, the city expansion

moved east. Today, the city core is located on the city's west border. The railroad still exists and is functioning merely for industrial purposes. It runs along the mountains, coming from the southeast and continuing northwest through the city of Gomez Palacio, Durango.

City Center

For many years, the city center served as an economic, residential and recreational hub. Social institutions flourished in the area, i.e. banks, parks, hotels, theatres, markets, cathedrals, governmental buildings and educational institutions. In the 1950's, sprawl towards the east started to take place; middle and high-class families moved to new residential areas while low-income families remained.

Official plan of Torreon,
Mexico, 1902. From Torreon
Municipal Archives



In the 1970's, smaller economic centers started to develop outside the city core, forcing many institutions to branch out or to move to the newer parts of the city. The concentration of retail spaces slowly transformed the area, although the city center remained the social heart of the city for ten more years. The squares and plazas were the stage of social interaction, especially on the weekends.

Barrio Alianza (Alianza District)



Entrance of Alianza Market
on the corner of Muzquiz
Street and Hidalgo Street,
Torreon

With the transformation of the area, residential space was forced into the edges of the city centre. To the southwest, the hostile conditions of the Candelaria Mountains became ground for the establishment of slum communities. This sector, "El Barrio Alianza", is today one of the poorest districts in the metropolitan area of Torreon. The dwelling conditions have improved greatly since 40 years ago, but the connection between this community and the Alianza Market is strong and significant to this day.

The majority of the shop owners in the market are residents of the Alianza district. In average, 5,000 people visit the market everyday. The community itself accounts for 60-70% of these visitors while the rest corresponds to people of rural areas and other city residents. The range of products found in the market makes it a unique site in the city, which is why the market is cherished by all citizens and not only by its community (Ramos 2004).

Case Study: Street Vendors

An important quality of the street life in the area relies on the large number of street vendors found here. The flexibility and affordability of street vending makes it a popular choice for low-income merchants. The street vendors keep clear of the market streets; instead, they keep to the perimeter sidewalks of the market. Their organization and control is an ongoing struggle that the government has not fully achieved yet.

The following illustration is a study of the stands and range of products found in the proximity of the Alianza Market.



Street vending stands commonly found around the Alianza Market

Street vendors are allowed to operate everyday between 8:00 a.m. and 8:00 p.m. and must be located on designated street vending areas. These businesses function under a permit provided by the municipal government on a year-by-year basis. The cost of a permit varies depending on the business purpose. In average, a permit is worth \$500 pesos/week (~ca\$40.00/week). A fixed number of permits is appointed each year. Their demand is always higher than their supply, resulting in the proliferation of falsified permits issued by illegitimate sources. The astounding number of street vendors in the city makes it a topic of debate, considering that in 2010, the average daily profit for a street vending stand is only that of ca\$50.00 (Gonzalez 2007).

CHAPTER THREE: SITE AND PROGRAM STRATEGIES

Market Analysis

Mercado Alianza,
Melchor Muzquiz s/n, Sector Alianza, Torreon, Coahuila, Mexico

Hours of operation:	Monday - Friday	6:00 a.m. - 6:00 p.m.
	Saturday	6:00 a.m. - 4:00 p.m.
	Sunday	8:00 a.m. - 2:00 p.m.

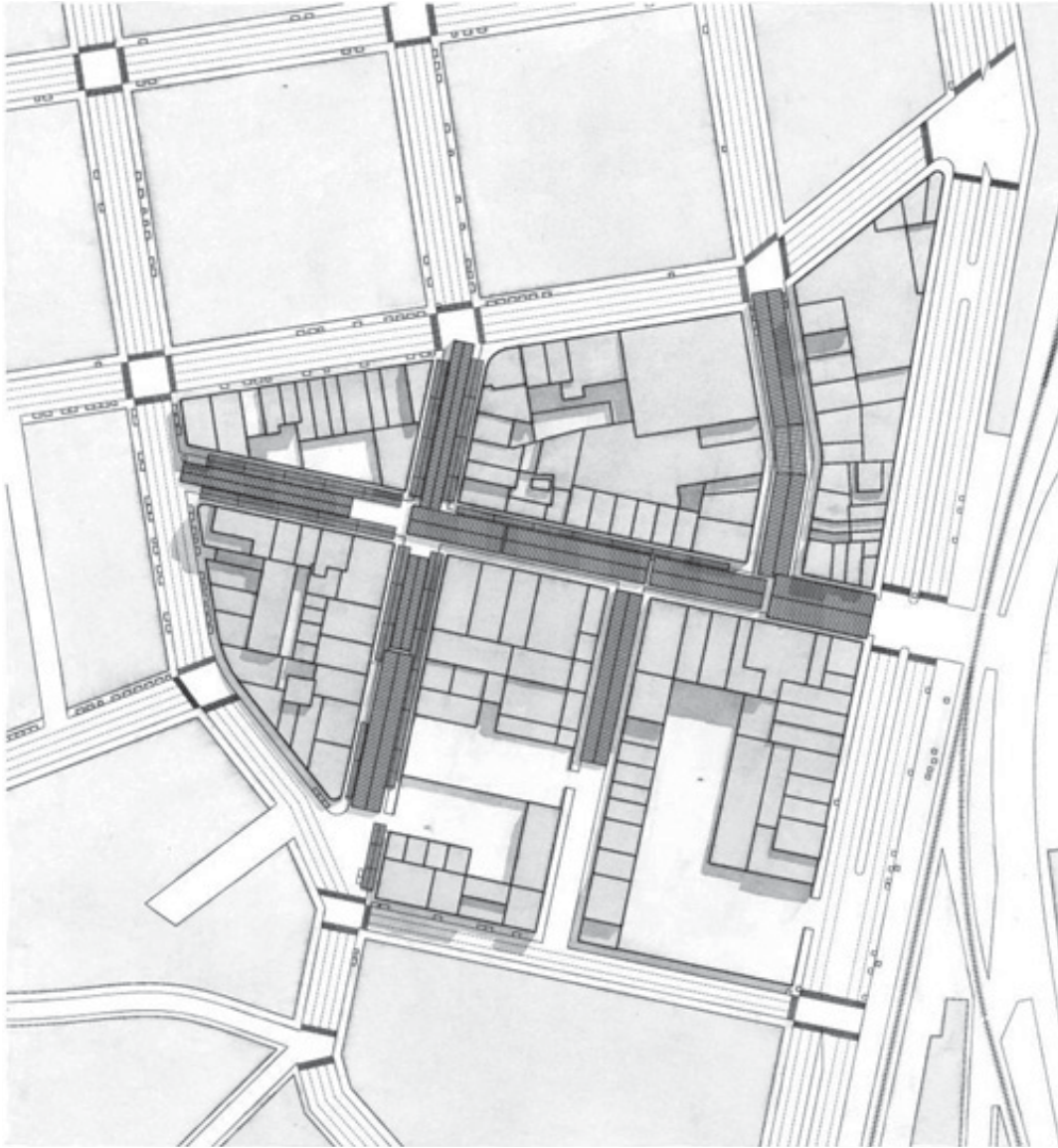
Average visitors per day:	5,000
Market total area:	42,000 m ²
City blocks area:	35,000 m ²
Streets area:	6,140 m ²

Number of stores:	160
Number of street stalls:	150
Street vendors in perimeter area:	175
Currently open stores:	aprox 70
Currently open stalls:	aprox. 30

Products in the market (%):	
Producers	5%
Non-producers	60%
Prepared food	14%
Crafts	1%
Clothing	20%

Store types (%):	
Food	40%
Dinning spaces	15%
Services	20%
Non-comestibles	25%

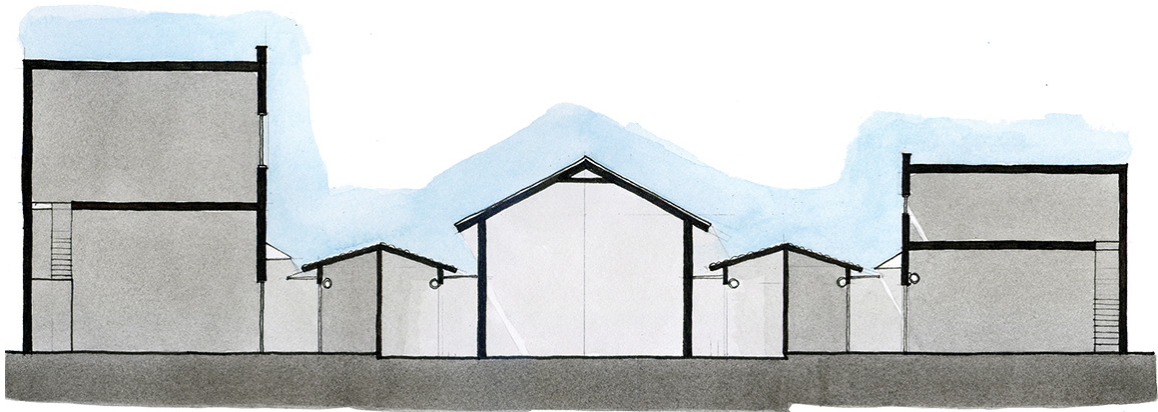
Thesis proposed design	
Site area:	4,000 m ²
Street stalls to remove:	150
Store fronts to reopen:	90



Existing site plan

Spatial Conditions

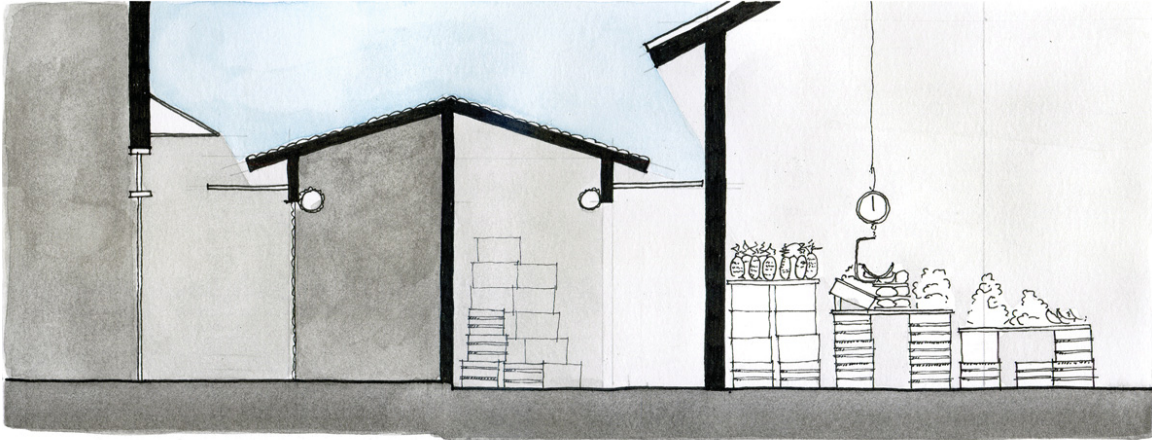
The present organization of the streets do not allow for the proper upkeep of the spaces. The poor design of the two major streets within the market, Hidalgo Street and Viesca Street, have resulted in unsanitary conditions and overcrowding. In the 1960s, small market stalls were built parallel to the circulation of the streets. They were positioned 3m away from the edge storefronts, creating an 8m-wide central lane. The unpleasant conditions of the narrow side lanes proved unsuccessful almost immediately after the construction of the street stalls. Presently, only the stalls lining the central lane remain open for business. The stores and stalls along the side lanes are either closed or used mostly for storage purposes.



Street section study of the existing organization of the market's streets

The dimensions of the street stalls are very compact, 2mX4m. The display of products generally spills onto the circulation lanes, further narrowing these spaces. All stalls are provided with electricity but since they were designed merely for storage purposes they lack any other service. The addition of services to some stalls, i.e. running water, was subject to the individual decision of each stall owner.

The lack of a proper sewage system for the stalls is the major cause of pollution in the market. Since all stalls rely on the street gutters for sewage, waste is commonly dumped onto the streets. Furthermore, the disposal of solid waste into the streets sewage causes the entire system to clog (Salcedo 2002).



Section across a street stall demonstrating the lack of space and the display of products on the street

Areas where the streets are free of stalls are in overall better sanitation and spatial conditions. These streets are unobstructed and well ventilated; all stores located on these areas are currently open for business. Here, exhibition of products from the storefronts onto the streets is neither a problem nor an overcrowding issue. Instead, the playful display of colorful products can be admired by the passing visitors.

Government Projects

Responding to the harsh climate conditions, the government first provided metal, shading structures along Hidalgo Street and Viesca Street back in the 1960s. The remaining streets were generally shaded by structures built by the stall owners using light materials such as canvas, rope and cardboard. The investment for the proper roofing of all the

streets was not provided until May 2008. The project was funded by the municipal government on a budget of \$10 million pesos (~ca\$850,000) (Martinez 2008).

The latest project in the market took place in November 2008. A 3-storeys parking building was built on the market's secondary entrance, on the corner of Presidente Carranza Avenue y Muzquiz Street. The need for parking was a long-term issue that the government failed to address for many years. The building sits on property land previously owned by private holders. The reinforced concrete building was completed in 10 months and provides the market with 220 new pay parking spaces. The budget of this project was reported to be \$33 million pesos, at ~ca\$150.00/m². Accounting for the affordability of labor and materials in the region, the accuracy of this budget is a debate of the country's on-going corruption issues (Sanroman 2008).

Site Strategy

This thesis aims to address the nature of the site and its social landscape. The proposed interventions mix with the social desire for changing this marginal place into a public space.

Market Reorganization

The analysis of the site highlights its major components:

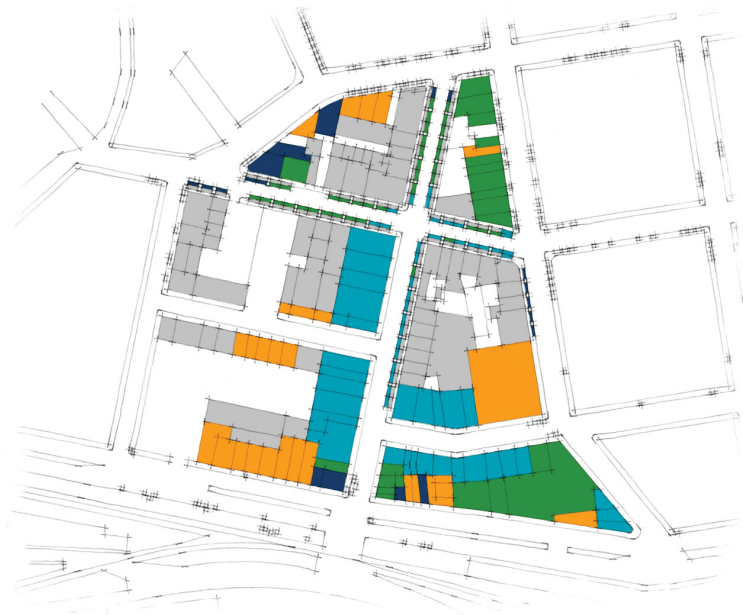
- Street stalls
- Pedestrian lanes
- Store-street connection
- Sun protection
- Clear product display

At the city scale, the streets represent the main spaces within the market. Therefore, the quality of the streets must be improved. All street stalls will be removed in order to open up the circulation and reconnect the street level storefronts and ground floor space to the passing visitors. The streets will remain accessible, comfortable and social. The metal roof structures will be removed and greenery will be used for shading purposes instead.

Currently, the location of stores within the market does not follow a rational organization.

Existing store types:

- Dinning spaces ■
- Non-comestibles ■
- Services ■
- Food ■



The random location of stores in the market does not facilitate the current hygienic conditions to improve

For sanitation and security purposes, the following organization of the store types is proposed:

Proposed store types:

- Dinning spaces ■
- Non-comestibles ■
- Services ■
- Food ■

Dinning spaces and food stores will be concentrated in the interior pedestrian streets and around the public square. General stores and services will remain to the perimeter of the market



At the site scale, a public square will be introduced on the heart of the market. This new layer will be an extension of the social functions of the market and its community.

New Program

That shopping should be more than a chore, and should have about it something of recreation and even celebration, has been recognized since markets and bazaars first took form... a scene of animation (just like the city hall and cathedral), a point of meetings, a stage for the dramas and entertainments of civic life. (Heckscher and Robinson 1977, 337-8)

Public Square

The design of the square is influenced by the present drawbacks of the Alianza Market. Its program includes:

1. Shading
2. Washroom facilities
3. Green spaces
4. Multi-purpose spaces

The design of the square does not intend to impose a new program into the site. Instead, its character is intended to weave into the social functions that already take place in the market. Like the ever changing state of the market, the use of this space could become a social reflection of the fads and needs of its community at any moment in time.

CHAPTER FOUR: DESIGN METHOD

People's movements are one of the great spectacles of a plaza. You do not see this in architecture photographs, which typically are empty of life and are taken from a perspective few people share. (Whyte 1980, 22)

The major influences of the design are the concept of placemaking and the material culture of the region. Placemaking explores the basic elements of a successful public space and the potential uses that people apply to such elements. This idea extends to the functionality and tectonics of the elements in the square, initially designed as a direct response to the climate conditions of the site.

Placemaking

The concepts behind Placemaking originated in the 1960s, when visionaries like Jane Jacobs and William "Holly" Whyte offered groundbreaking ideas about designing cities that catered to people, not just to cars and shopping centers. Their work focused on the importance of lively neighborhoods and inviting public spaces. (Projects for Public Spaces)

The organization Projects for Public Spaces (PPS) has developed several principles and tools that aim to spread the practice of placemaking. Their Place Diagram below is a graphic representation of the characteristics that describe a successful public space. The analysis of the Alianza Market highlights the major deficiencies of the site: its comfort and its image. These negative are manifested in the high crime statistics in the Alianza district, the poor sanitation conditions of the market and its declining building conditions.



Place Diagram. From Projects for Public Spaces

The elements of a successful public space vary across places and cultures. In some regions, people may seek a sunny area to sit in while in others, people may look for the comfort of a cool, shaded place. Therefore, the quality of a public space goes beyond the sum of its parts. The more activities that a public space offers, the more it engages its users and the community around it.

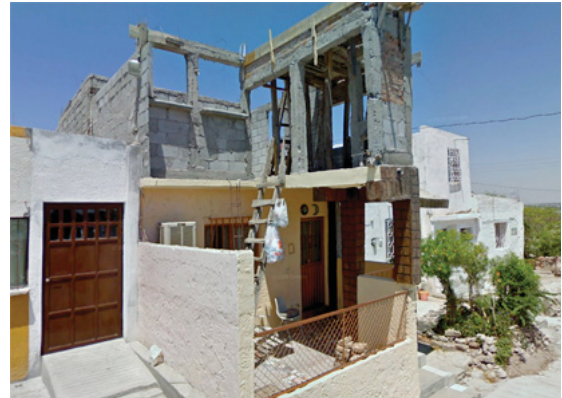
This idea was a key factor in the thesis design of the multi-purpose space of the square. Its design is thought to accommodate various activities of different backgrounds, i.e. a daily farmers' market, a community gathering or an evening concert. The possibilities for such a public space could be plenty considering the thriving community that already exists in the Alianza Market site.

Material Culture

The consideration of local materials demonstrates a common issue in developing countries: the inadequacy of modern materials that prove insensitive to acclimatize. Concrete, metal and brick are the most available and affordable materials in the city. These materials are today produced locally and have been the materials of choice for 60 years.

There is a special quality about the use of metal in the building industry. The use of metal gates for security purposes is a common practice in Mexico. The aesthetics that these elements provide add to the character of buildings in a very personal, expressive manner, as is the case with the residential areas of the Alianza district.

Below: typical houses of the neighborhood El Cerro de la Cruz, Torreon. From Google Maps



Building Precedents

Enrique Miralles Benedetta Tagliabue's Mercat Santa Caterina represent a delicate understanding of architecture across time. At first glance, the playful colors of the market's roof attract the attention of every passerby. The market's rehabilitation is a very respectful approach to the foundations of the site. Miralle's attention to the scale of the site is complimented with his notion of time.

Aerial view of Santa Caterina Market, Barcelona, Spain. From EMBT, *Work in Progress*



In order to work in a complex historical context like this, it would seem necessary to work not only from the present moment, but also to look for possible indications for the future in some moments of the past... (Miralles and Tagliague 2006, 173)

The experience of this public market weaves the fabric of past and present construction, the “bones and skin” of a modern roof structure, and the heavy transparency that these elements create.

MiAsArchitects’ Barceloneta Market in Barcelona is a second project of interest. The neighborhood of La Barceloneta is interesting on its own. Its industrial infrastructure is today a crowded neighborhood of narrow streets, cramped flats, and amusing displays of clothes hanging on the balconies. The distinction between blocks is impossible to notice for any visitor. Before the market’s rehabilitation, the building itself was “almost secret and visible only to its inhabitants”.

Barceloneta Market, Barcelona, Spain. From “MiAS Arquitectes.”





Above: View of back square of Barceloneta Market, Barcelona, Spain

Below: Barceloneta neighborhood



The market's new structure and modernized aesthetics indeed support the activities that take place within; however, the richness of this place is rooted in its connection with its immediate surroundings. The continuing grid across the neighborhood is only interrupted by the front and rear squares of the market, where the social cohesion of a community becomes clear (MiAS Arquitectes).

The precedents discussed have strong community ties. Their connection to site is inherent from the social landscape of their communities. This social character has become an important counterpoint in my design. The rehabilitation of the Alianza Market shares a 100 year history with its community. Attention to its past is crucial in this design exercise.

CHAPTER FIVE: FINAL DESIGN

Design commenced as a response to the climate conditions of the site, considering the elements that could provide protection against them. In the city, people seek protection against the extreme heat and keep to well ventilated and shaded spaces. The amount of passersby on a street is considerably dependant on the canopies extending from storefronts and/or the shade that the landscape provides. The existing arrangement of the different components in the Alianza Market clearly demonstrates these principles. Despite the fact that the metal roofs extending across the market streets heat up under the sun's rays, the shade they provide allow for the market life to spill into the streets.

This thesis considers the formal character of the streets in the market against the social functions that these spaces fulfill for its community. In these work the character of the streets is returned to the ground level storefronts and the remaining social activities in the site are invited to occur under the canopy of the market's square.

Initial parti sketch of the market square.



The design of a roof structure covering the square explores the possibility of a shading device that could also serve for water collection and solar energy harvesting. The exploration of its form is a parametric exercise that aims to combine its functionality and aesthetics.

DESIGN DEVELOPMENT

The market components explored in the previous studies were redefined and reorganized as a direct response to the market's overcrowding and sanitation issues.

The constant extension of activities into the pedestrian streets was a guiding concept on the design development of this thesis. The location of the existing market stalls on the streets imposed a partition against the buildings beyond, creating a sub environment that completely ignored the full extent of the streets' cross section. Therefore, the first design move was to remove the existing market stalls off the streets. The reorganization of the stalls does not aim to ignore their experiential importance, neither their economic significance for the market's community, but to recreate the original street-storefront connection lost about 30 years ago.

The proposed design of the pedestrian streets returns the commercial activity to the storefronts and proposes a multi-purpose use for the market streets. The existing metal roofs are to be removed and instead trees shall be used for shading purposes.

The main design of this thesis is a square located on the heart of the market. It sits on existing built property that shall be demolished in order to make place for the square. The reorganization of the market site takes into considera-

tion that at present only 50% of the market stores are open for business. The 4,000 m² of businesses located on the square's site shall be relocated into built facilities that are presently unused or closed for business in order to provide the necessary space for reconstruction.

The social and functional activities that currently take place on the market's streets do so because the streets are the only spaces in the market used in such a socially flexible manner. Beyond the commercial activities, numerous festivals and community gatherings take place here after hours. This thesis proposes the design of a square that will provide a better community space for social gathering which will serve the market as well as its community. The spaces designed on the square respond to the primary issues of sanitation and climate protection, as well as proposing flexible spaces that could be used for daytime markets, carnivals and/or evening Christmas posadas.



Site model

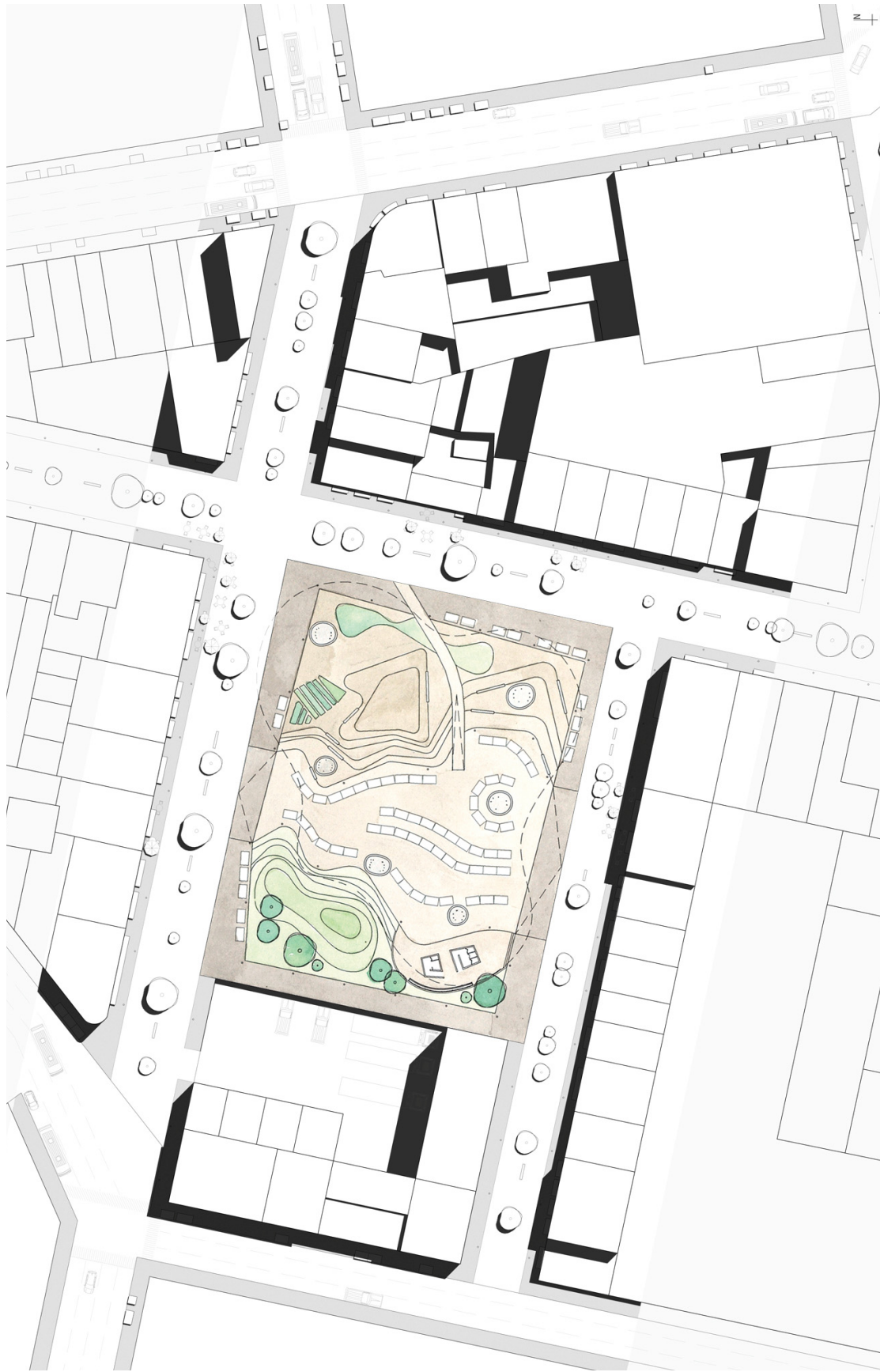


Site plan

A SQUARE IN THE MARKET

Located at the center of the site, along one of the main streets on the market, (Viesca Street) the square spans over approximately 4,000 m² and is mostly protected from the sun by a metal roof structure. The open design of the square is only interrupted by two washroom facilities located on its southwest corner. To the east of the square, a series of elevation changes and a ramp lead into the main esplanade located in the center of the square. Running in a north-south direction, this space is only interrupted by the water collecting components of the roof structure; to the west, the washrooms and a green space unprotected from the sun look over the square's esplanade.

The central esplanade in the square is designed as a multi-purpose space that can accommodate the market stalls that were previously removed from the streets, although the proposed use of this space goes beyond the market activities alone. In order to explain the potential of this space, three spatial concepts are proposed: the market square, the neighborhood square, and the public square.



Square plan

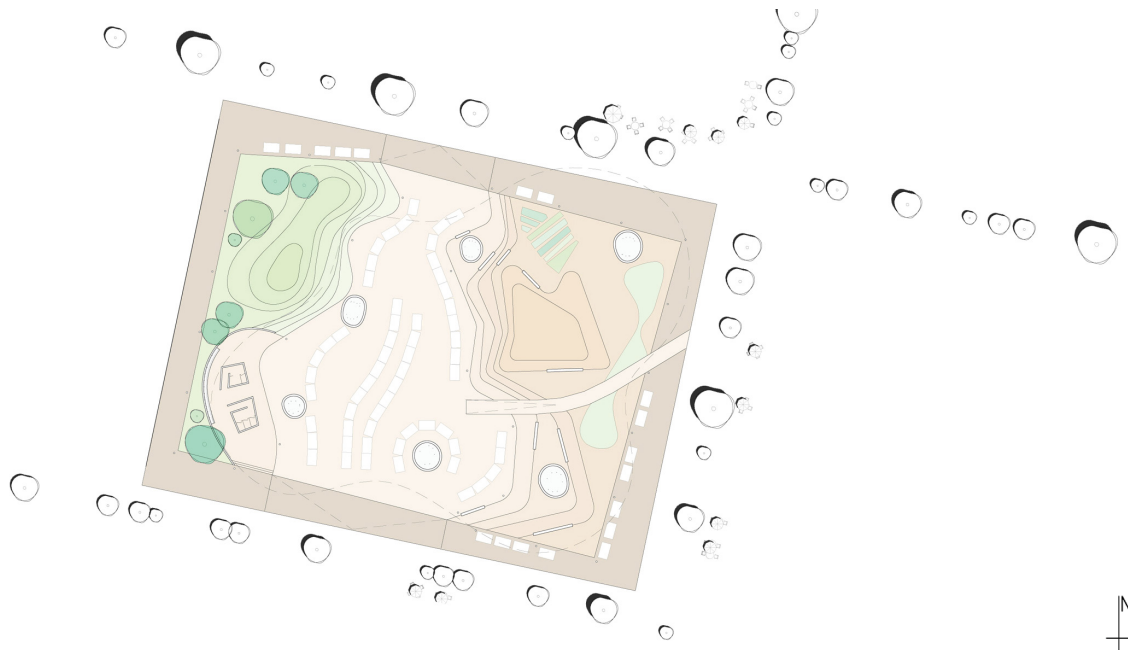


East-west section across the square



Fraction of the previous section drawing

Market Square



Square plan showing the arrangement of 76 stalls for daytime market purposes.

The evident connection between the square and the market stalls highlights its main purpose. During ordinary days, market stalls can be accommodated across the square. The stalls must be temporary and should only function on a 9-5 basis.



Left: Market square, Helsinki, Finland. Photograph by Snuffy, from Flickr

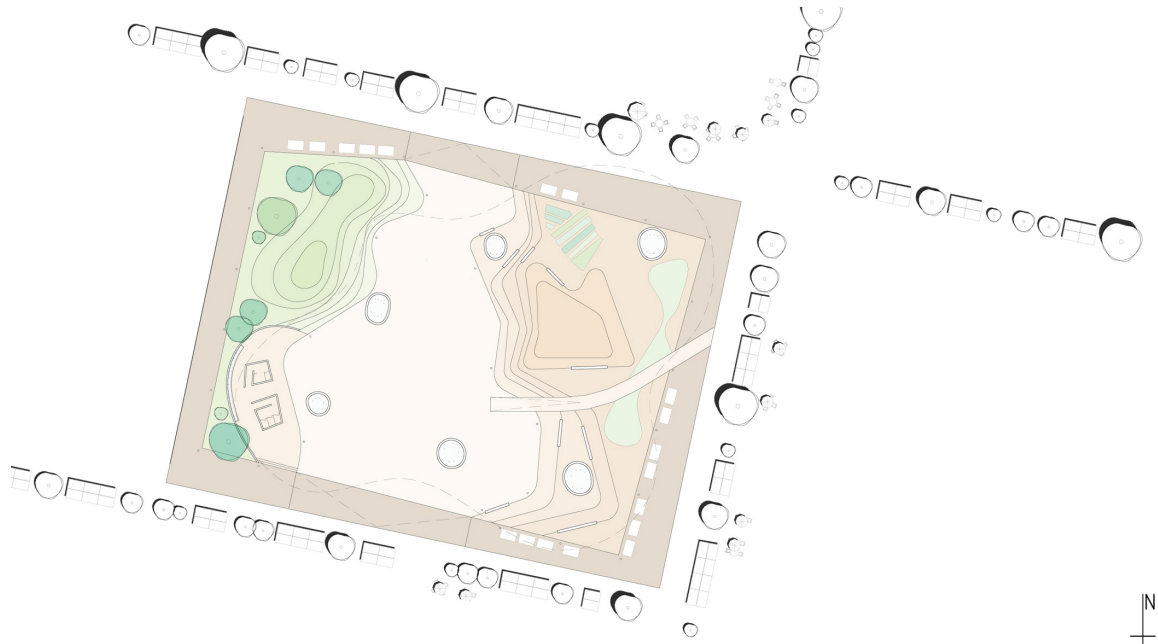


Right: Plaza Mayor, Merida, Mexico.

The reorganization of the market stores proposes that food stores and dining spaces should be allocated around the

square. The connecting streets represent a threshold between the square and the stores, allowing for all activities to spill into these spaces. The market scene could then become a spectacle for passersby and for those sitting at the restaurant or coffee shop located on the edge of the square.

Neighborhood Square



When the square becomes a space for community gatherings, the market stalls could return to the streets and continue their normal operations

The numerous social and religious festivities that take place on the market site are a clear reflection of the strong connection between the Alianza Market and its community. Consequently, these activities could move and take place on the square. Some of the most important celebrations are: the Alianza neighborhood festival (September), the Virgin of Guadalupe pilgrimage and mass (December 12) and the traditional Christmas posadas (December).

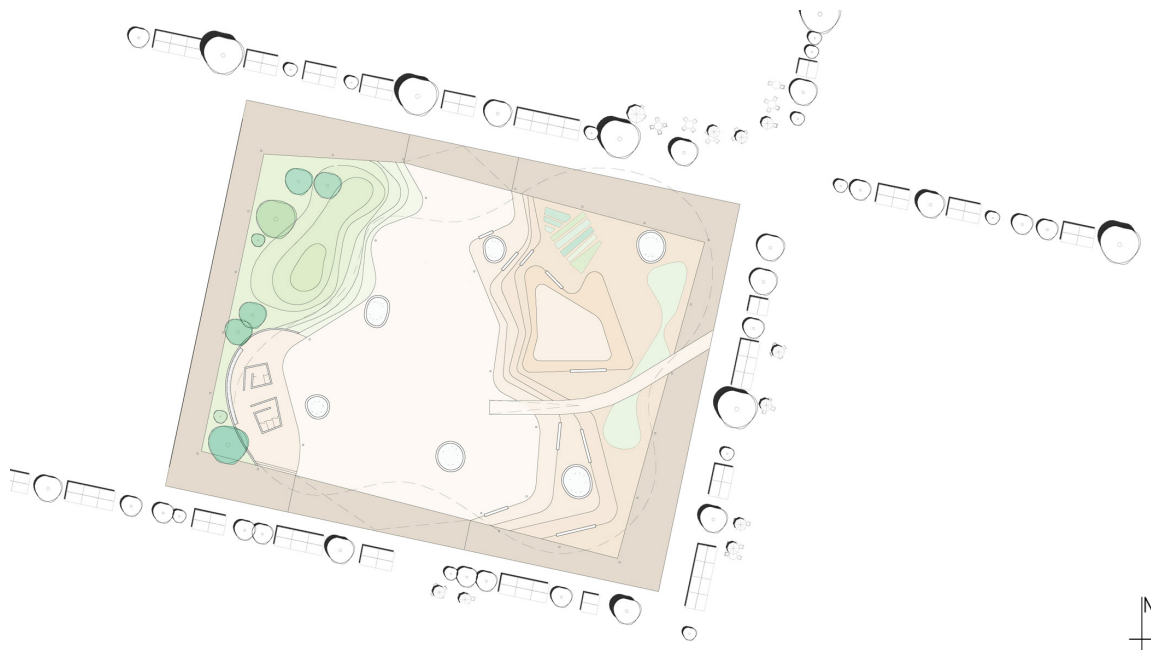


Left: Virgin of Guadalupe traditional pilgrimage, Torreon, Mexico. Photograph by lyote, from Flickr
Right: Christmas posada



When the square becomes unavailable for the arrangement of the market stalls, these can temporarily return to the market streets.

Public Square



The highest point on the square creates an informal stage that is spatially and visually connected to the main esplanade and the landscape across.

The opportunities for the use of the square could be endless and it would be an experience for the market community to discover it. The design of the square incorporates different changes in elevation and creates an informal stage on the

Left: Osheaga music festival, Montreal, Canada.
 Photograph by DJ EZ
 Pants, from Flickr

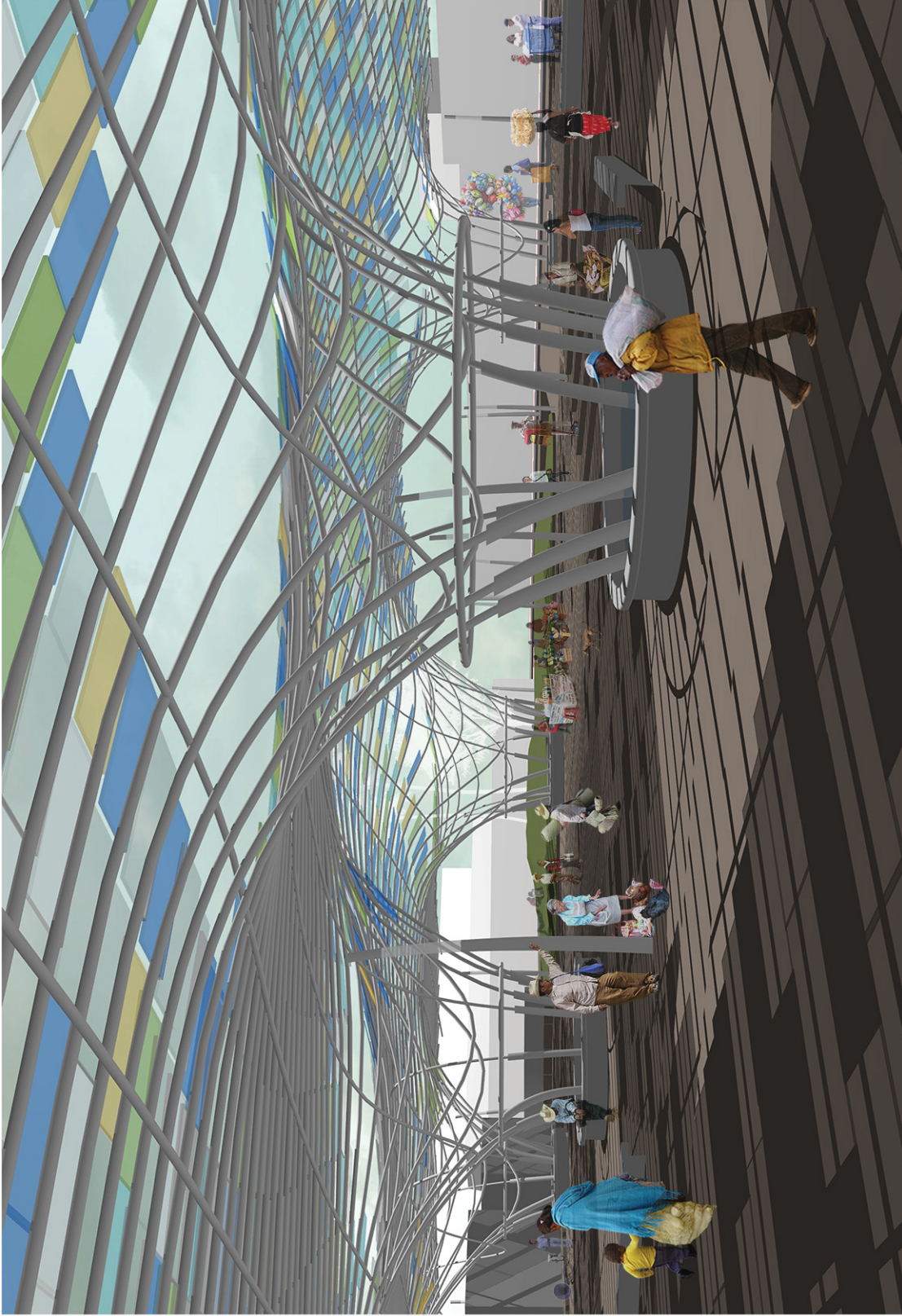
Right: Concert on Mexico city's Zocalo, Mexico.
 Photograph by Carlos Garcia, from Flickr

highest point of the square at its northeast corner. This setting is connected to the main space below and to the landscape in front of it, which could become an improvised sitting space. Again, the use of the square for purposes other than the market would rely on the temporary arrangement of the market stalls on the streets.

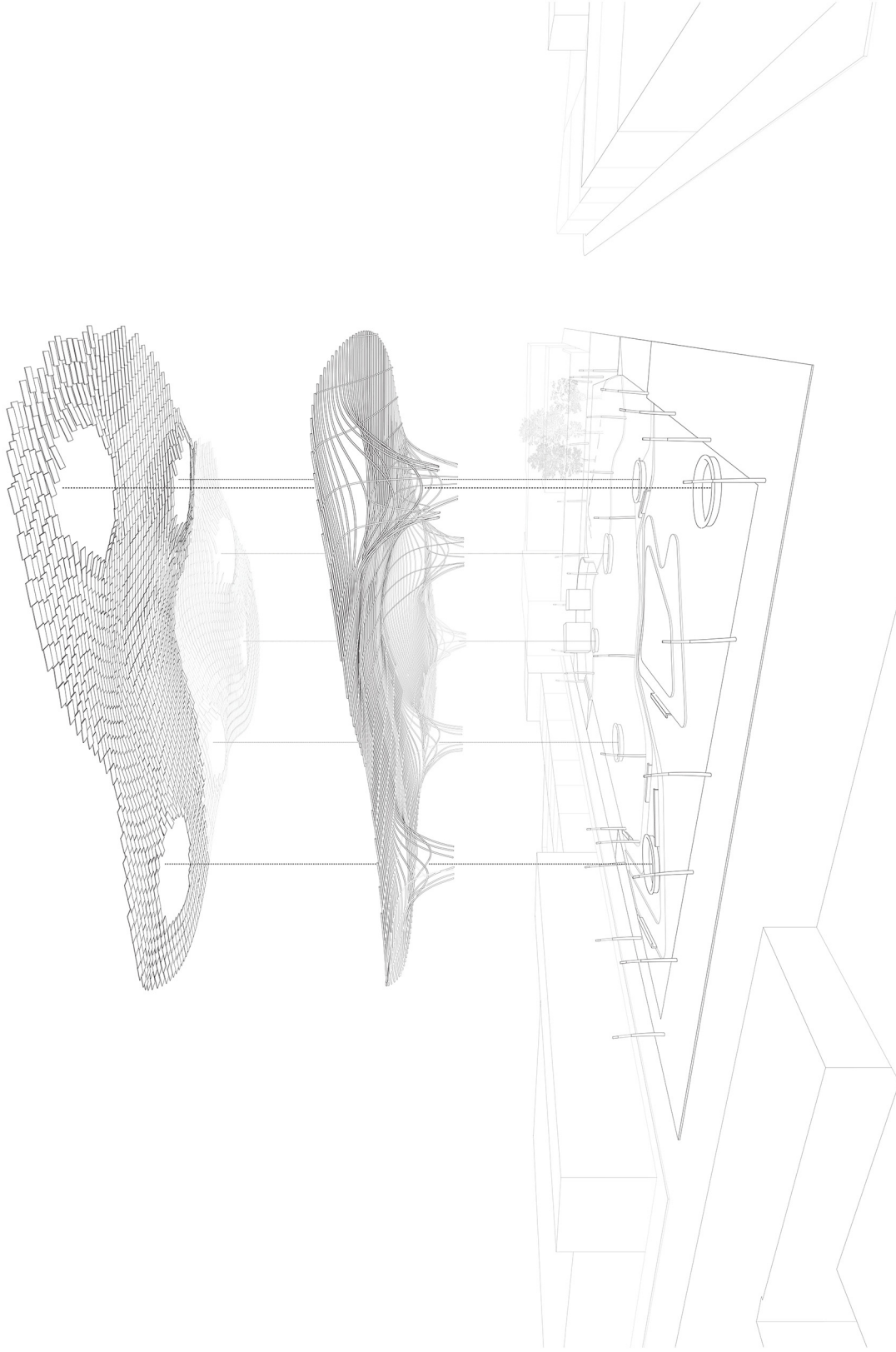


Roof Structure

The roof structure designed over the square is an important element in the market's overall design. Protection against the harsh climate conditions was a critical issue guiding this work.



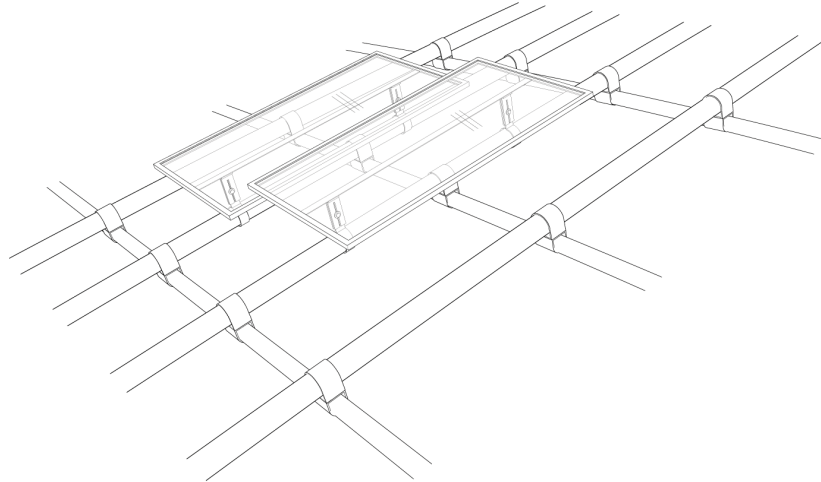
View from the square's southeast corner into the main esplanade



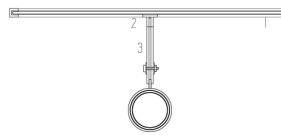
Exploded axonometric drawing of the square's roof structure

Tectonically, the roof structure is a vertical extension of the design of the square. The local material availability and the extensive knowledge of the welding trade made metal the material of choice. The aesthetic and structural design of the roof was possible through the exercise of its parametric modeling. The main influences determining its form, height and framework were the site's solar and wind conditions.

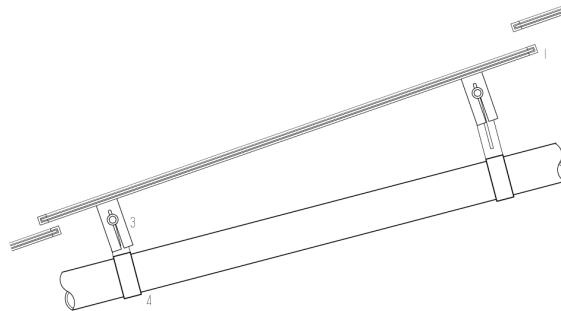
A main and a secondary grid of hollow, metal pipes of 0.1m and 0.08m in diameter, respectively, compose the infrastructure of the roof. The main pipes expand on the top and are positioned 0.8m apart, holding the shading panels above. The secondary pipes are arranged 1.2m apart and are connected to the main ones through a series of metal sleeves, positioned on each of the connecting points of the grid. The connection between the roof and the ground is an extension of the parametric form of the grid structure. There are six column elements where the main and secondary pipes reach the ground and create openings that function as light wells and water collecting devices.



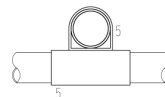
detail
n/s



D.1 pipe and panel section
n/s



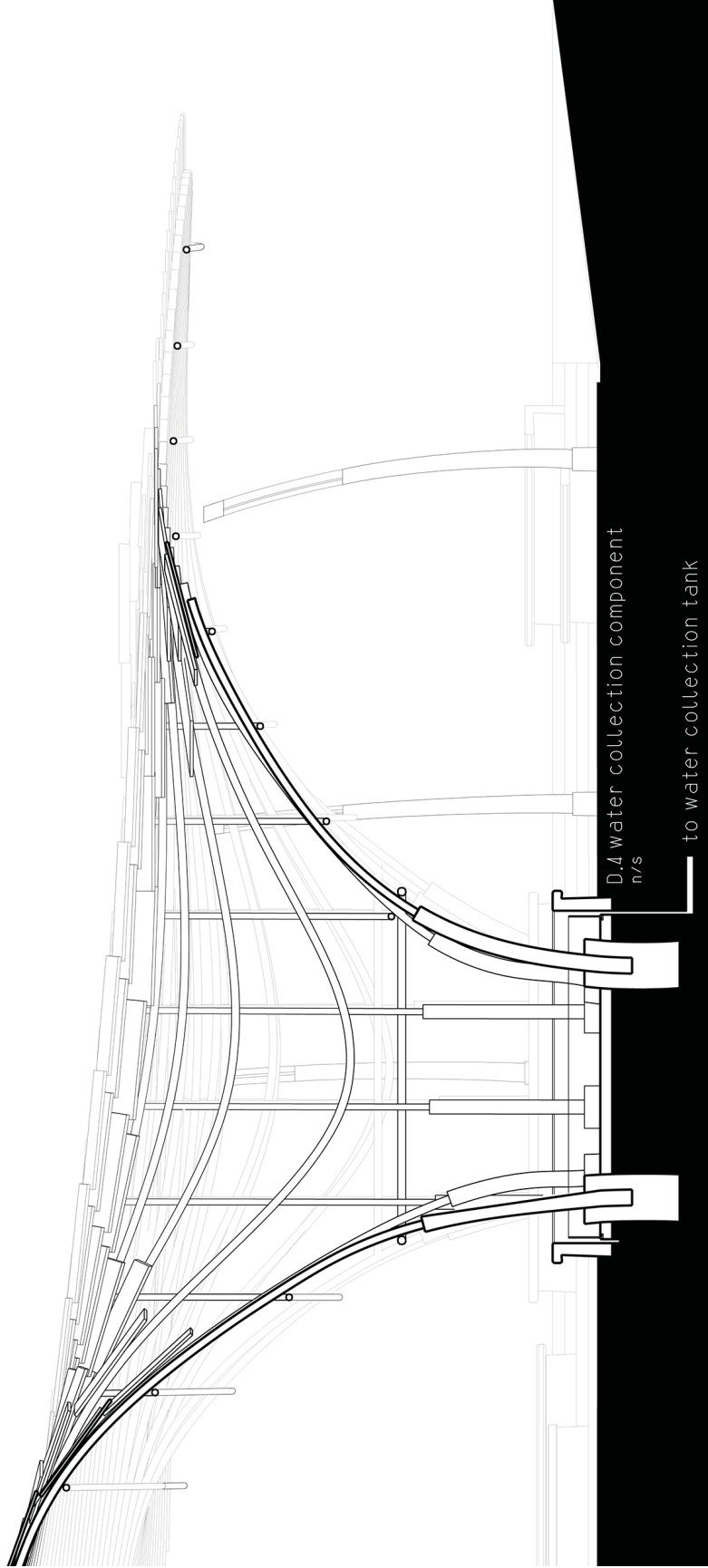
D.2 panel connection
n/s



D.3 pipes connection
n/s

- 1 roof panel
- 2 panel support
- 3 panel connector
- 4 pipe sleeve
- 5 pipe connector

Roof structure details



Roof's column detail

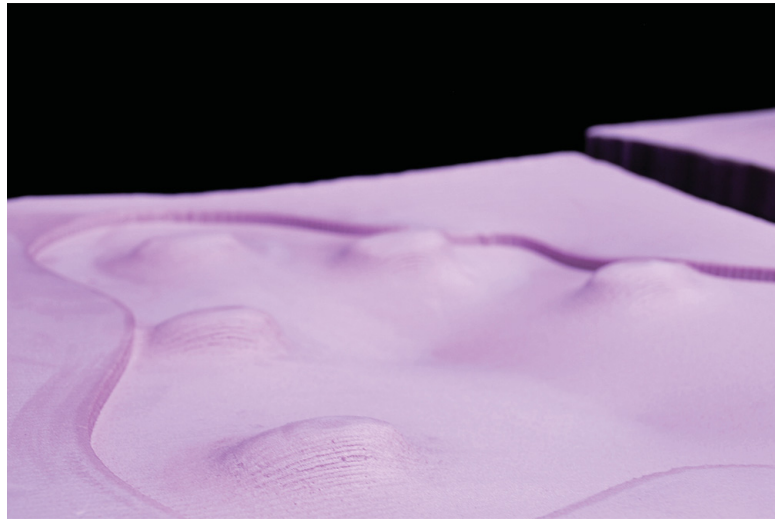


Market square model

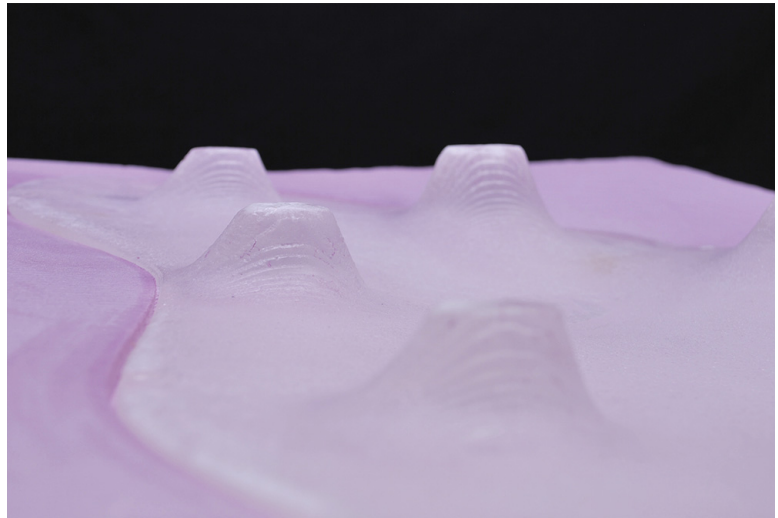
Foam mold and glycerine model of the roof form

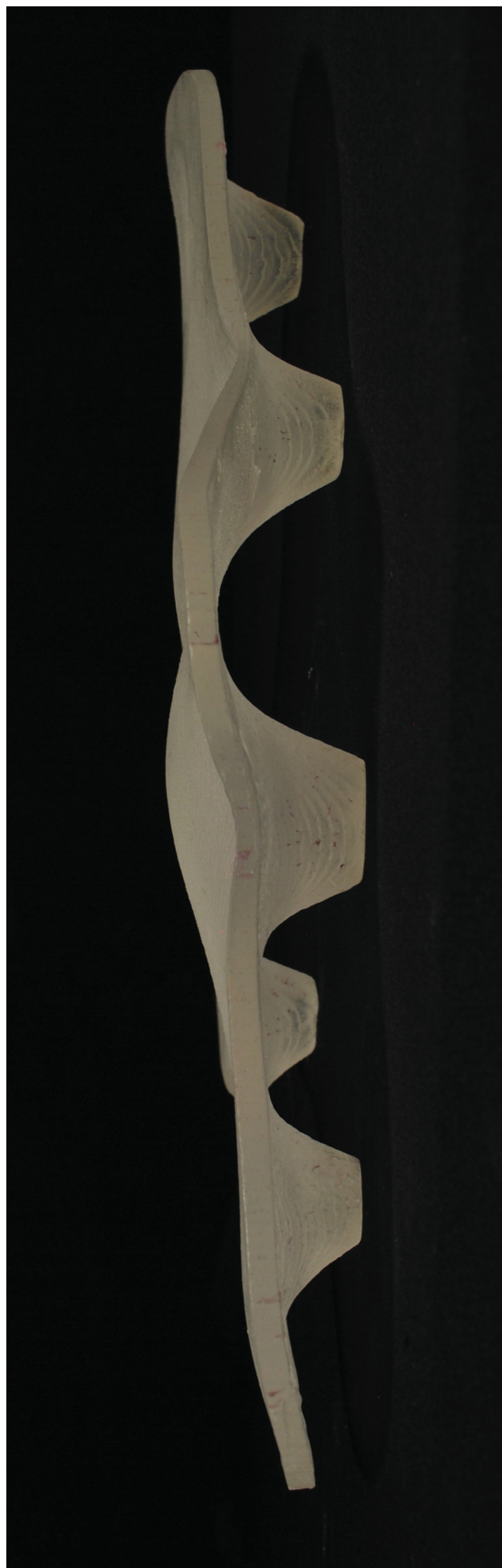


The computer parametric model of the roof structure was used to create a foam form , which was cut using a cnc machine.



Close up details of the glycerine cast of the roof model





Roof glycerine model

SHADING

The top surface of the grid structure is almost entirely covered by panels that function as the basic elements for shading. The panels are composed of a 1.2m X 0.8m metal frame holding a recycled, color glass pane. They are individually connected to the main pipes through a sleeve system that allows for the placement and rotation of each panel to be adjusted individually.

The proposition of using recycled glass for the panels looks into the local culture of salvaging materials mainly as an economic aid. The recycling of glass bottles is not a common, large-scale practice in the city and there are a large number of raw materials, such as glass, that are unutilized and disposed readily.

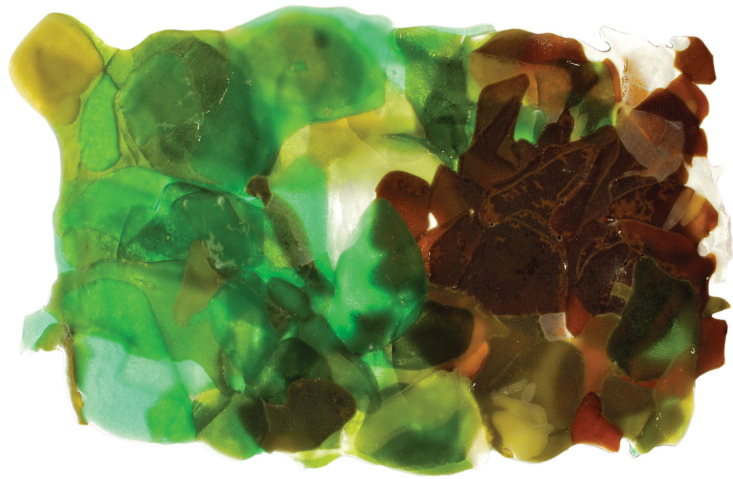
The process for the recycling of glass bottles does not require sophisticated equipment and it could easily take place on site. Depending on the desired results, the glass is broken into small pieces, placed in a kiln and subsequently submitted to temperatures above 900°F.

Color glass piled together before it was put in the kiln.



The fusing of the glass pieces and their transparency is a direct result to the temperature of the kiln, the speed in which it is reached and the cooling time-span. Quick cooling of the glass results in more transparency, while a longer cooling time produces a more opaque result. Several studies were conducted as part of this work and against to common belief that the different chemical components in the glass bottles would not allow the fusing of the pieces to occur, the results demonstrated to be successful and aesthetically exciting.

Recycled glass pane produced from firing different color glass pieces at 903°F for a period of 24 hours.



SUMMARY

The proposed design in this thesis is a response to the fragmentation of the market that have resulted from the numerous design decisions taken on the site since about 50 years ago. At present, the cohesive essence of the Alianza Market can only be experience in the inner core of the streets. The majority of the market site has fallen into despair and has been forgotten outside the two main streets, where all the market activity is now held. The remarkable sense of place that is able to be experienced in the Alianza Market should not only be confined to few areas, and instead it could be enjoyed and celebrated by the entire community and also the city of Torreón.

In response to the thesis question of how the social and cultural context of a site can influence an architectural strategy, I believe that the potential success of a public space relies on its sensitivity and awareness to the needs of its users, and in some cases this could involve simple moves such as the design of a canopy structure that provides people protection against the sun.

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