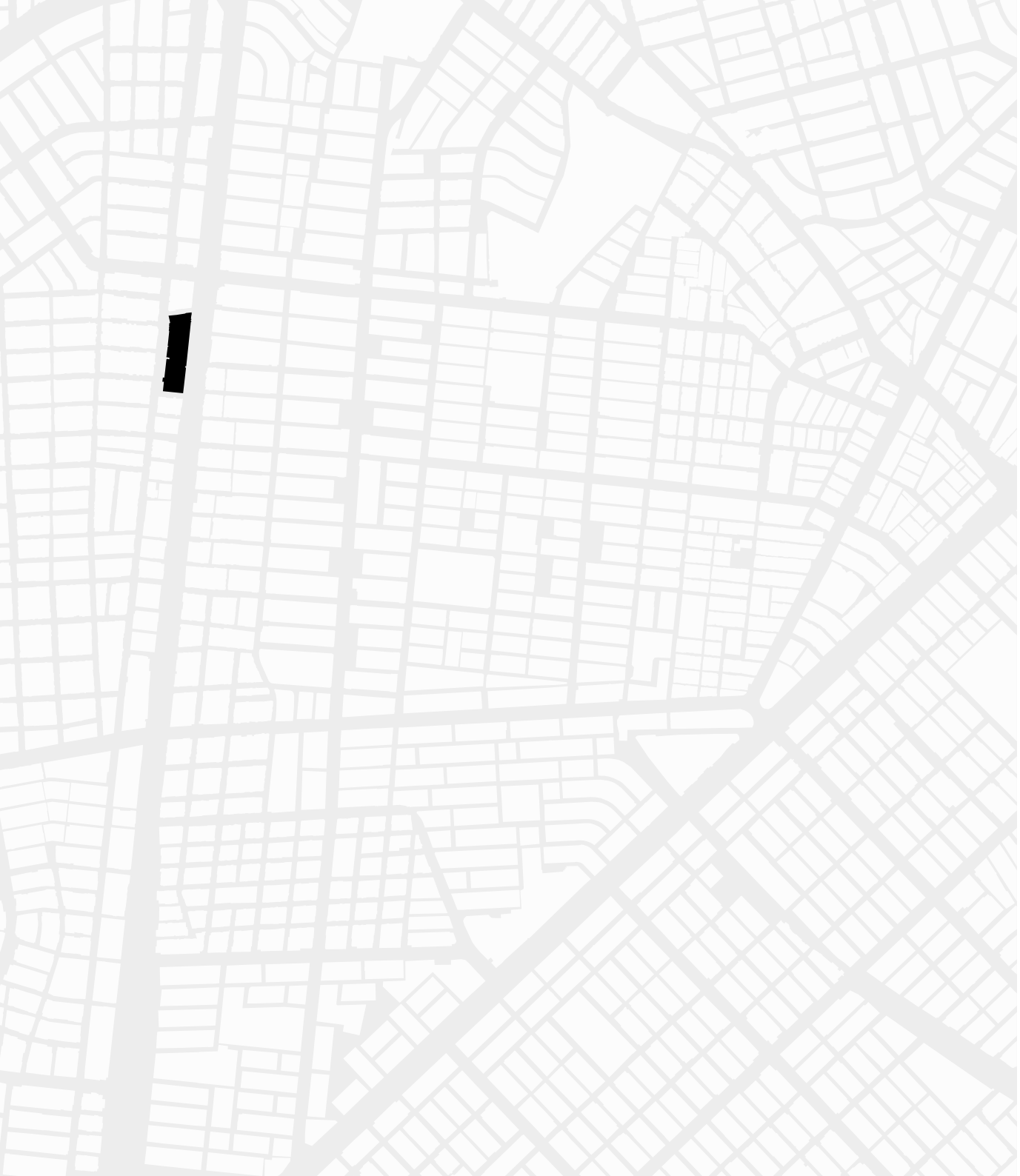

REDISGNING THE GALERIA SANTA ELENA URBAN LANDSCAPE IN CALI, COLOMBIA.

Enhancing the commercial hub and the surrounding public space as neighbourhood regenerative driver.

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MASTER THESIS
Architecture for Sustainability
POLITECNICO DI TORINO
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Adknowledgment

ENG/

We would like to express our thanks to our thesis tutor, Massimo Crotti, and our co-supervisor, Ilaria Tonti, for their constant support, guidance and motivation throughout the whole process, which was fundamental for the completion of this thesis. Thanks to Gustávo Adolfo Arteaga, a professor at the Universidad Javeriana Cali, who helped us achieve this goal by mentoring and encouraging us from a distance.

Maria Ximena Forero Castañeda.

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Last but not least i wanna thank me for believing in me, for doing all this hard work, i wanna thank me for never quitting.

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ESP/

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Abstract

By demonstrating how tactics from our field can support the city's expansion, we have found significant opportunities in this thesis to support Cali's sustainable development. The Galería Santa Elena, a historic marketplace that has developed into a paradigm over time, is one of these important locations. Its historical significance and strong ties to nearby residents and traders account for its architectural value. Cali's identity is symbolized by this gallery, which has established itself as a commercial hub where a number of urban systems, including public spaces, mobility, and the environment, converge. However, these systems are notable for their obvious flaws rather than their effectiveness. Those who are dedicated to revitalizing this situation have a huge opportunity.

As a consequence of the demographic explosion and the lack of urban planning, the Santa Elena neighbourhood has undergone a drastic transformation, resulting in the decay of its urban atmosphere. Overcrowding, environmental contamination, and disconnection from the intermodal mobility system are just a few of the issues that have resulted from this situation, making the area a hub of chaos and abandonment for market visitors. Aside from other architectural issues, the gallery has lost its protagonism due to the deterioration of the building's infrastructure and the shops that have been added to it. This has affected the building's structural beauty and symbolism.

The problem that guides this thesis focuses on answering how architectural and urban interventions can revitalise the Santa Elena Gallery, facing key challenges such as mobility, the environment and public space? In order to revitalize the gallery and promote its integration with the rest of the urban environment, the proposal seeks on how an integral project can benefit the neighborhood.

Through this approach, the aim is to give back to the Santa Elena sector its role as a central and dynamic place that meets the needs of the community. To address the problem, the thesis proposes two approaches: urban (macro scale) and architectural (micro scale). With the main goal of developing an intervention to improve the neighborhood's public space and urban infrastructure, the research attempts to provide comprehensive guidance for analysis and proposals. Developing design strategies that promote sustainable urban practices, reduce the risk of flooding, and preserve natural features like the rainwater channel are some specific goals, as recognizing how the supply network operates on a daily basis to create a market that is seamlessly integrated with the city.

Therefore, the methodology adopted is a mixed approach combining exploratory and descriptive methods. Where the first phase will be exploratory and collect data on the current state of the area, while the descriptive phase will focus on identifying relevant characteristics such as environmental infrastructure, urban design and mobility.

To sum up, this thesis argues that improving Galeria Santa Elena's urban environment and addressing spatial saturation will support the preservation of its role as an active heritage site. It draws attention to how Cali's climate can reduce environmental hazards, preserve resources, and foster urban integration.

Index

1.3.1 Regional and inter-regional food distribution networks
1.3.2 Supply and Storage in Cali's markets
1.3.3 Food distribution logistics in Cali's urban markets

1.2.1 Mobility Structure
1.2.2 Hydrographic Structure
1.2.3 Environmental Structure
1.2.4 Public Space and Facilities System

1.4.1 Pillar of Cali's Cultural Heritage
1.4.2 Historical transformation of the Surroundings of Santa Elena Gallery
1.4.3 Pollution accumulated over time

2.3.1 Regeneration of the urban market atmosphere
Theory:Hyper place / Case study:Theaterplein

2.3.2 Connecting the urban market atmosphere with the city
Theory: Sustainable mobility / Case study: Cheonggyecheon Project in Seoul

2.3.3 Strengthening an Environmental focus as a pillar for urban sustainability
Theory: Green and blue infrastructure / Case study: Fortaleza Park: A Model of Urban Sustainability in Brazil

3.7 Collective spaces of the Santa Elena Market area
3.8 System and functioning of mobility
3.9 Vitality of Santa Elena Market area
3.10 Flooding risk in Santa Elena Area
3.11 Void shape on main roads and commercial streets

4.1.1 Use of orography as a design mecanism

4.1.2 Creation of adequate multifuntional spaces for market and other activities.

4.1.3 SUDS / NBS

4.1.4 Reduce the private car and integrate sustainable mobility including the suburban train as a fundamental part of the connection to the city.

4.1.5 Highlight the image of Santa elena market as a heritage asset and Preservation of the identity of the neighbourhood as a food supply and marketing node.

Introduction

The history of the Santa Elena Market (inaugurated in 1962 as the Cristóbal Colón market square) and its urban environment is defined by the processes of growth and industrialisation that transformed Cali in the mid-twentieth century, in the neighbourhood of the same name, located in the south of the city. On land that was originally swampy and difficult to access, the neighbourhood began to grow in 1947 with a promising urban future, despite the problems of flooding and limited access to basic services. From 1958, with the intervention of the Corporación Autónoma Regional del Cauca (CVC) and its "Agua Blanca" project, which included the construction of dikes, pumping stations and canalisation systems, the urbanisation of the sector was consolidated, including the Santa Elena housing development.

Since the beginning of the 21st century, the Santa Elena gallery has been part of a process of urban regeneration driven by both local authorities and community groups, with the aim of improving the infrastructure, safety and accessibility of the area. However, as González describes in his analysis of markets in conflict, these types of interventions not only imply improvements in the physical environment, but also generate new social and economic dynamics that often do not benefit all community actors in the same way. It is necessary at this point to clarify two terms that can cause confusion in the development of the project, which are ***"Market"*** and ***"Gallery"***. The "Market" from an architectural point of view comprises a type of commercial infrastructure, designed to hold different buying and selling activities, with a focus on circulation, accessibility and functionality of the space, adapted to the needs of the users and sellers. J. (2007). On the other hand, the term "Gallery" is understood as a circulation structure or covered space connecting different areas of a building, or an area intended for exhibitions, with a particular focus on light, view and ventilation in its design. F. D. K. (2014). It is not intended to impose either of the two previous terms, but it is important to make the clarification that historically the building has adopted the name 'Galería Santa Elena' culturally this term being much more in line with the final result desired.

The approach proposed in this research aims to answer the question: How can architectural and urban interventions revitalise the Santa Elena gallery by addressing critical aspects such as mobility, environment and public space? Through a detailed analysis of the current situation an approach for intervention in which the result can respect the historical characteristics of the area and can be seen as a way to overcome the negative effects of gentrification, promoting social cohesion and sustainable development. In this way, the market is not simply an engine of economic transformation, but an inclusive meeting and development space for all members of the community that seeks physical modernisation and promotes sustainability. The Galeria Santa Elena urban renewal project must therefore be a comprehensive intervention that not only includes improvements to infrastructure, public space and mobility, but also focuses on environmental protection. This proposal draws on a Municipal scale project named "Green corridor" that connects the city of Cali through the suburban train with other surrounding areas and specifically to the Santa Elena Gallery, reinforcing the idea of a commercial epicentre. (TER-Corredor Verde Cali — Opus - Diseño Arquitectura Paisaje, n.d.-b). Moreover, interconnecting this proposal with the public space system was also an important aspect to develop. As it creates the possibility of develop collective spaces and blurring the boundaries without subdividing the space and creating a multifunctionality center, finally, the environmental system completes the urban project scheme, to respond to the global urgency of mitigating the recurrent flood risks in the area. Enhancing the stormwater channel as a design opportunity that includes sustainable design strategies.

Incorporating sustainable strategies such as the treatment of water channels and the optimisation of the use of space reflects an attempt to solve the deeper problems, in line with Gonzalez's (2017) statements on the urgency of incorporating elements for the needs of the community. This approach also aligns with Blue Theory which seeks to integrate sustainability into the Santa Elena Gallery renovation project, implementing tactics such as the creation of drainage systems promoting solutions that reduce the risk of flooding. On the other hand the Green Theory involves the promotion of green spaces, the restoration of habitats and the embedding of vegetation in the urban landscape. Similarly, the principles of Sustainable Urban Design Systems (SUDS) and Nature Based Solutions (NBS) are two contemporary approaches in architecture and

urbanism that seek to integrate environmental strategies that not only aim to improve physical infrastructure, but also to strengthen community resilience in the face of climate change and other environmental challenges.

This project will transform a forgotten and problematic space, both at neighbourhood and urban level, into a key driver for the sustainable development of Cali. This change allows the previously recognised but ignored area to become a valued and appreciated place. Not only the gallery in the space is highlighted, but also the importance of other elements that had been hidden and undervalued, such as the water bodies, which, previously invisible, prevented their true value to the city and the area from being recognised.

GENERAL GOAL:

Design an urban intervention in the area of the Galería Santa Elena, integrating the urban and environmental regulations, in order to contribute to the improvement of the mobility, environmental and public space system indicators at the neighbourhood.

SPECIFIC GOALS:

A.Identifying the daily functioning of the supply network, which will allow for the creation of a market efficiently connected to the city.

B.Apply design strategies that support sustainable urban practices to mitigate flood risks, while preserving pre-existing natural elements such as the rainwater channel.

STRUCTURE OF THE THESIS:

This chapter 1 analyzes the urban environment of Cali, the project's specific location, and its importance in the city's urban development. It focuses on providing a detailed description of the intervention area and its context. The Galería Santa Elena and its environs' historical, cultural, and social features are described, as well as the contemporary problems that call for action. Using sustainability principles and urban regeneration case studies, we will develop Uban Renewal Strategies.

In Chapter 2 along with the theoretical and practical foundations for intervening in the Santa Elena Gallery sector. A diagnosis of the area that pinpoints issues with trade, mobility, infrastructure, and the environment comes first. Based on this, specific strategies are suggested to enhance mobility, environmental sustainability, and local business revitalization. Additionally, a phased action plan that identifies the resources and important players is provided.

The third chapter analyzes the intervention area and looks at the main elements that affect its urban structure. An overview of land typology and land use activities in public spaces is the first of several sections that make up this chapter. After that, it examines Santa Elena's centrality by pointing out boundaries, land uses, and intervention blocks. The chapter also looks at the number of apartments in the study area, as well as the population and market densities.

The proposal for Santa Elena Gallery's urban renewal is developed in Chapter 4. It includes sections, plans, schemes, and technical drawings. It also shows design strategies like mobility, environmental sustainability, and effective use of urban space. The plan emphasizes ways to enhance urban infrastructure and make the most of water channels.

The conclusions drawn from the proposal's analysis and development are presented in the final chapter, which also shows the expected effects of the intervention on the environment. In addition to highlighting the project's primary contributions to the revitalization of the Galería Santa Elena and its incorporation into Cali's urban development, suggestions are offered for its execution and long-term viability.

PROBLEM QUESTION:

How architectural and urban interventions can revitalise the Santa Elena Gallery in the city of Cali by addressing critical issues such as mobility, environment and public space?

01 Development and arrival of Santa Elena Gallery in Cali

INDICATORS

1.1 MARKET DYNAMICS

- 1.1.1 Regional and inter-regional food distribution networks
- 1.1.2 Supply and Storage in Cali's markets
- 1.1.3 Food distribution logistics in Cali's urban markets

URBAN

1.2 CALI´S URBAN CONTEXT

- 1.2.1 Markets in cali in relation to conenectivity and mobility
- 1.2.2 Demographic explosion

1.3 MACRO ANALYSIS OF CALI

- 1.3.1 Mobility Structure
- 1.3.2 Hydrographic Structure
- 1.3.3 Environmental Structure
- 1.3.4 Public Space and Facilities System

ARCHITECTURAL

1.4 ARCHITECTURAL EVOLUTION OF THE GALLERY

- 1.4.1 Pillar of Cali's Cultural Heritage
- 1.4.2 Historical transformation of the Surroundings of Santa Elena Gallery
- 1.4.3 Pollution accumulated over time

01 CHAPTER

THE GALLERY

- **WHY WAS IT IMPORTANT TO UNDERSTAND HOW MARKET LOGISTICS WORK, WHAT PRODUCTS ARE DISTRIBUTED, WHERE THEY COME FROM AND WHERE THEY GO?**

"We are unable to provide a solution for what we do not understand. By studying the gallery's processes, we were able to identify the main cause of the issue. We learned about the most popular products, their origins, destinations, transit times, and the quantities covered by the gallery in addition to its already overly crowded architectural appearance."

(Arturo, Forero, Alfonso, 2024)

INDICATORS **1.1**

MARKET DYNAMICS

1.1.1 Regional and inter-regional food distribution networks

1.1.2 Supply and Storage in Cali's markets

1.1.3 Food distribution logistics in Cali's urban markets

National Context Colombia

Capital: Bogóta
Population: 53,717,000.
Official language: Spanish
Total Area: (Sq Km) 1,140,970.
Urban Population: 80.8%
Rural Population: 19.2%

Characteristics:

Colombia, in the northwest of South America, is a rich country in many ways. With an amalgam of ethnic and regional specificities that bring with them distinct social practices, worldviews and cultures, it is a country that is rich in many ways.

In Colombia there are 32 departments (headed by governments); 1,123 municipalities (headed by mayors); five territorial entities with a special administration (Bogotá and the port cities of Cartagena, Barranquilla, Santa Marta and Buenaventura); the indigenous territorial entities; and the collective territories awarded to Afro-Colombian communities in Pacific areas.

Colombia is a country located in the tropics, with coasts on the Pacific and Atlantic oceans. Its territory is 1'141,748 square kilometres, to which the marine and submarine platform must be added.

The climatic and landscape diversity is enormous thanks to the existence of five diverse regions: the Andean re gion, made up of three divisions of the Andes mountain range; the Amazon region, considered the lungs of the planet; the Caribbean region, on the northern coast of Colombia; and the Orinoco region, with its enormous plains. Colombia is also rich in biological diversity. This biodiversity provides a variety of environmental services, such as so-called provisioning services (food, water, medicines, timber).
(Sobre Colombia, n.d.)

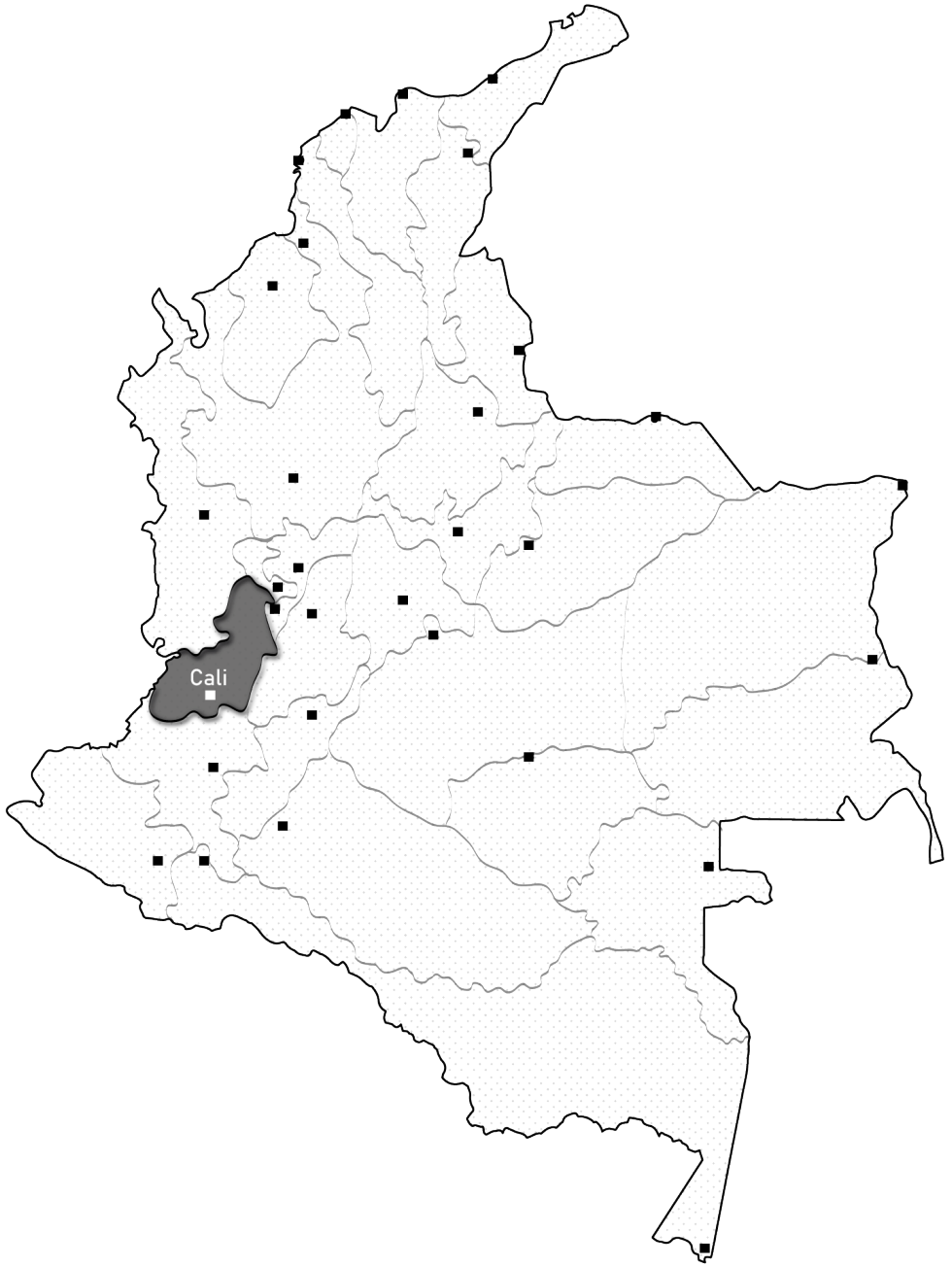
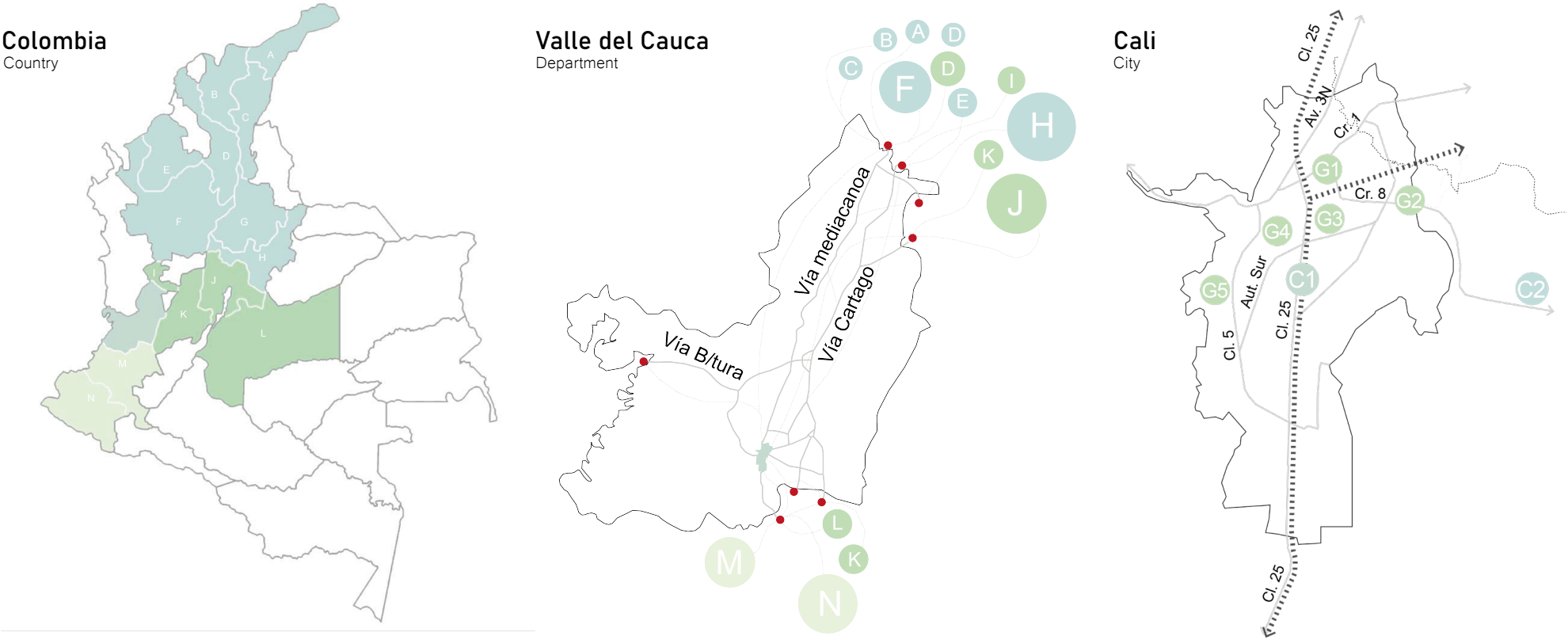


Figure 1. National Context Colombia Elaborated by the author based on (Abastecimiento De Alimentos Para Cali, n.d.-b) (El País, 2020).

Colombia Perimeter
Valle del Cauca
Capital Cities



Distribution by Department of Origin

- Cundinamarca: 16 alimentos
- Tolima: 9 products
- Meta: 7 products
- Cauca: 2 products
- Nariño: 7 products
- Antioquia: 14 products
- Santander: 1 products
- Valle del Cauca: 22 products
- Boyacá: 6 alimentos
- Risaralda: 1 products
- La Guajira: 1 products
- Magdalena: 3 products
- Cesar: 1 products
- Bolivar: 2 products
- Cordoba: 2 products

Distribution of Market places

- Santa Elena
- CAVASA
- Provenir
- Alfonso Lopez
- Alameda
- Siloé
- Floresta

Figure 2. Food distribution Network on different scales. Elaborated by the author based on (Abastecimiento De Alimentos Para Cali, n.d.-b) (El País, 2020).

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1.1.1 Regional and inter-regional food distribution networks

Food distribution in Cali Is fundamental to the economy and the daily lives of its inhabitants. Through an organized network of galleries and collection centers, the arrival, storage and distribution of a wide variety of essential products is managed. This analysis covers from the main foodstuffs arriving at the Galería Santa Elena to the storage capacity and frequency of supply in the different galleries and collection centers of the city.

Galería Santa Elena is a key food distribution center in Cali. Among the foods that most frequently arrive at this gallery include:

- Fruits: Bananas, pineapple, papaya, mango, apple, pear.
- Vegetables: Potatoes, tomatoes, onions, lettuce, carrots, garlic.
- Grains and cereals: Rice, beans, corn, lentils, wheat.
- Meat: Beef, pork, chicken, fish.
- Dairy products: Milk, cheese, yogurt.
- Tubers: Cassava, yams, arracacha.
- Legumes: Beans, peas, chickpeas.

Depending on the time of year and the demands of the market, some of these products are imported and others originate from various parts of the country. Fruits and vegetables are balanced in this distribution, while legumes, cereals, and grains are less common. The limited availability of meat and dairy products emphasizes how much fresh product there is.

The infrastructure of Cali is well-organized to guarantee effective food distribution throughout the city and is made up of a varied network of galleries and collection centers. The Galería Santa Elena is especially important in this network. This gallery has become a vital component of Cali's food distribution system thanks to its 20,000-ton storage capacity and daily supply frequency. It is essential to keeping a constant and sufficient supply of food in the city, which benefits both customers and the local economy, due to its advantageous location in the heart of the city and its ability to handle large volumes of goods. (Alcaldía De Santiago De Cali, n.d.)

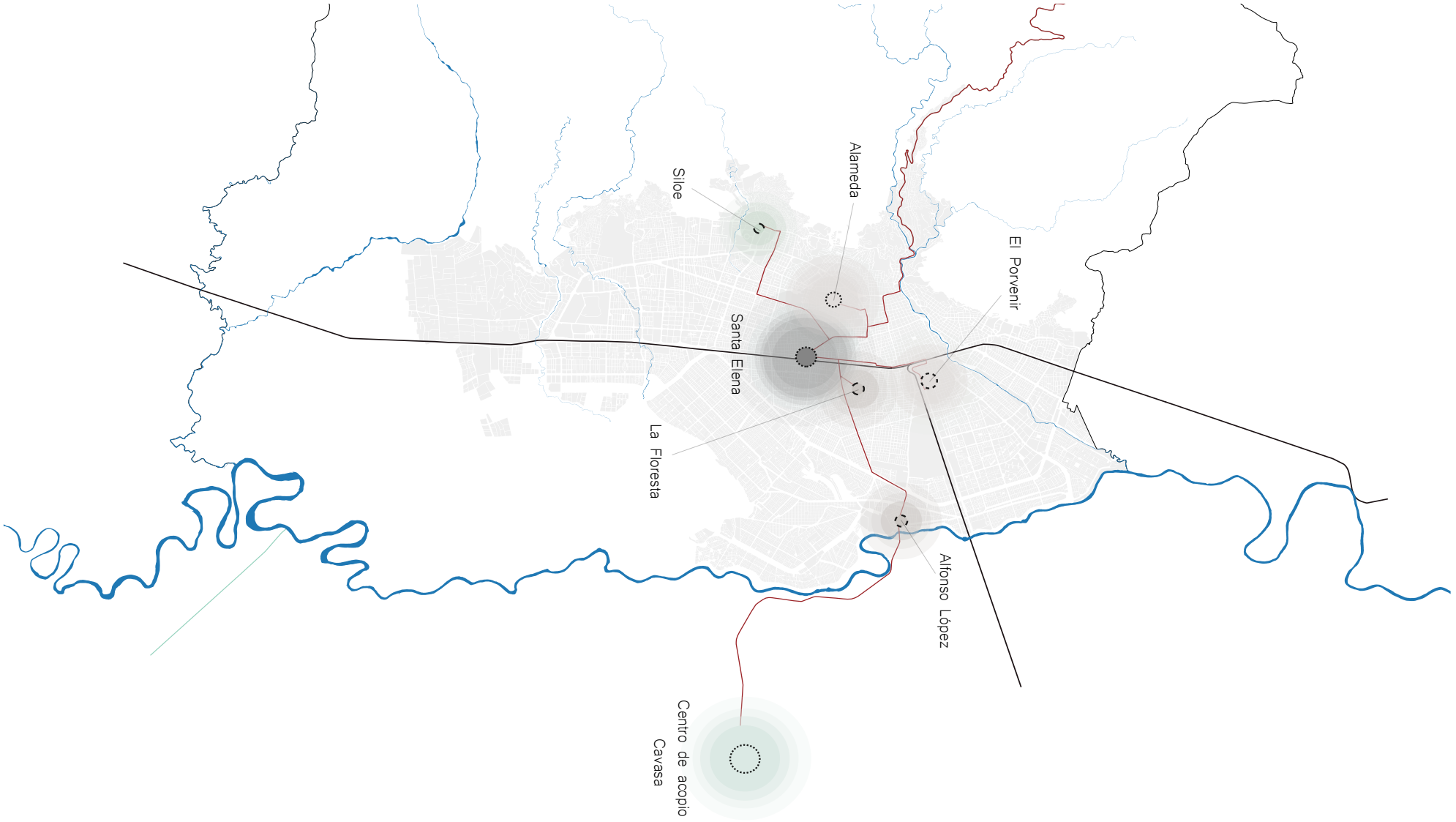


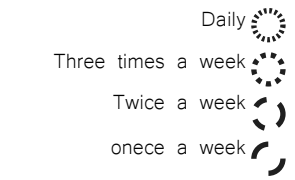
Figure 3. Frecuency of supply of markets in Cali. Elaborated by the author based on (Abastecimiento De Alimentos Para Cali, n.d.-b) (El País, 2020).

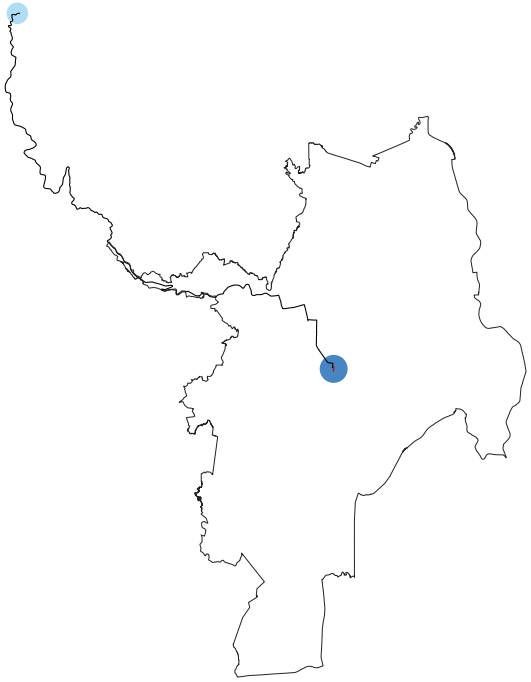
1.1.2 Supply and Storage in Cali's markets

The products that arrive at Galería Santa Elena have their origin in different parts of Colombia, and some are imported from other countries.

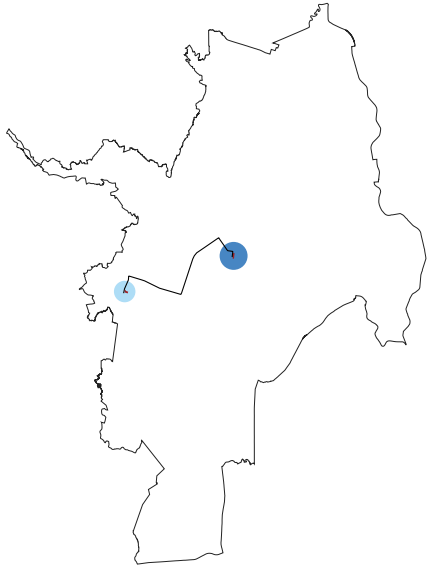
- Fruits and vegetables: Mainly from Valle del Cauca, Tolima and Huila.
- Grains and cereals: Originating in Boyacá and Meta.
- Meat: Produced in regions such as Antioquia, Córdoba and the Eje Cafetero.
- Tubers: Cultivated in Nariño and Cundinamarca.
- Dairy products: Produced in the Andean region and the Cundinamarca highlands. Some products, such as apples and pears, are imported from countries such as Chile and the United States.

(Abastecimiento De Alimentos Para Cali, n.d.-b)

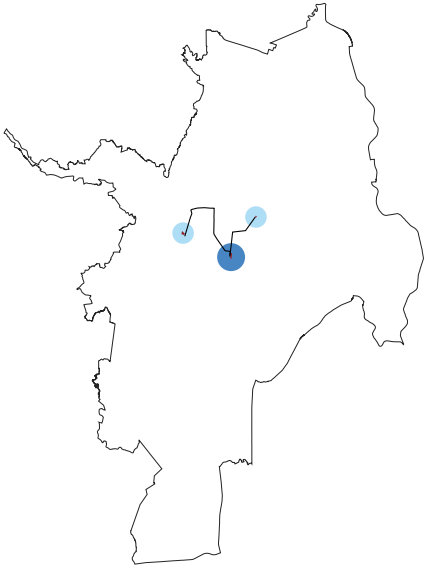




Pacific Collection Centre - 2-3 Hours

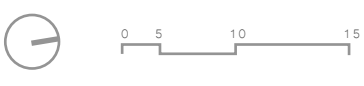


Siloè Market - 40-60 min



Alameda Market - 20 min
la Floresta Market - 50-60 min

Figure 4. Distribution Times From Santa Elena Gallery to other Galleries. Elaborated by the author based on (Abastecimiento De Alimentos Para Cali, n.d.-b) (El País, 2020).



1.1.3 Food distribution logistics in Cali's urban markets

The logistics of food distribution from Galería Santa Elena to the other galleries in Cali is a key process in the city's food supply. Santa Elena, as one of the main collection and distribution centres for agricultural and food products in Cali, plays a fundamental role in receiving fresh and processed food that is then transported to smaller markets and galleries in different parts of the city. The process starts at Santa Elena's storage facilities, where products are sorted and stored in warehouses according to their type and preservation conditions.

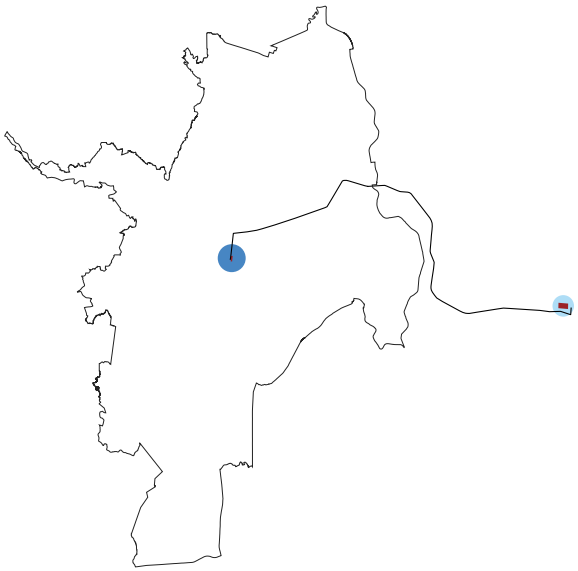
The distribution time from Santa Elena to each gallery varies depending on factors such as the geographic location of the destination gallery, urban traffic conditions and the availability of efficient transport routes. On average, the closest routes are usually completed in less than 30 minutes, while deliveries to more distant galleries or in dense traffic areas can take up to an hour or more. Logistics planning takes these estimated travel times into account to optimise the frequency and timeliness of deliveries.

Pacific Collection Centre: This collection centre, located near the port of Buenaventura, is a strategic distribution point for the Pacific region and Valle del Cauca. The considerable distance between the Pacific Collection Centre and Santa Elena (approximately 115 kilometres) means that transport takes 2 to 3 hours, depending on traffic conditions and weather, as roads to Buenaventura are often affected by rain or landslides. Distribution logistics to the Pacific Collection Centre are planned less frequently than for other galleries within Cali, and are mainly used for products that can be stored for long periods or are in high demand in other cities in the region.

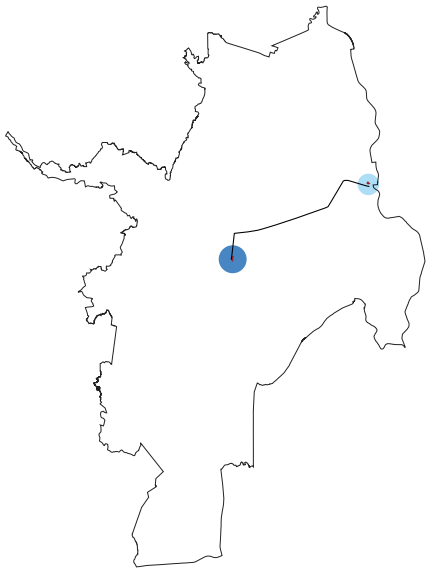
Siloé Market: Due to geography and road infrastructure, Siloé is a community with more restricted access, situated in a mountainous region southwest of Cali. This suggests that moving food from Galería Santa Elena will present some logistical difficulties. The average travel time from Santa Elena to Siloé is forty to sixty minutes, particularly during the rainy seasons when getting to the area becomes more difficult. Logistics concentrate on less frequent deliveries with higher storage capacity in order to maximize distribution to Siloé.

Alameda Market: Because of its close proximity to Santa Elena and excellent access to major roads, distribution to Alameda is comparatively quick and efficient. Under typical traffic conditions, trips to Alameda usually last less than 20 minutes, and because of the steady demand for fresh produce, there are multiple deliveries made daily.

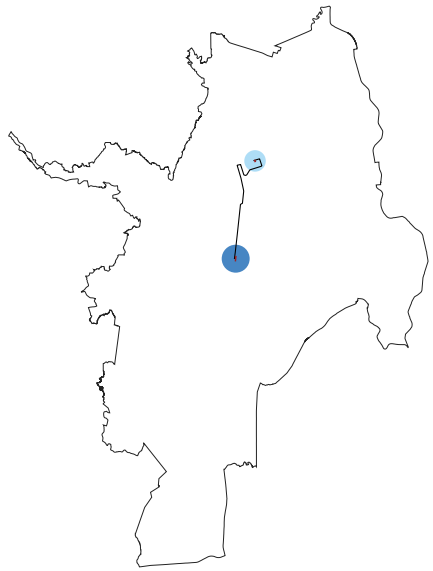
The Floresta Market: One of Santa Elena's most remote galleries is La Floresta, which is situated in the north. It typically takes 50 to 60 minutes to get to this location. Due to the gallery's extensive inventory and more consistent demand, deliveries to La Floresta are planned at less frequent intervals, typically every two days. In order to decrease the number of trips, vehicles with greater load capacities are given priority. (Alcaldía De Santiago De Cali, n.d.)



Collection Centre CAVASA - 45-60 min

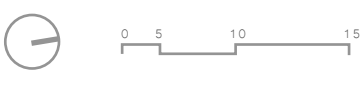


Alfonso Lopez Market - 40-50 min



el Provenir Market - 10 min

Figure 5. Distribution Times From Santa Elena Gallery to other Galleries. Elaborated by the author based on (Abastecimiento De Alimentos Para Cali, n.d.-b) (El País, 2020).



Cavasa: The Central de Abastecimientos del Valle del Cauca, better known as Cavasa, is located outside of Cali, in the municipality of Candelaria, about 20 kilometres south of the city. Cavasa is a wholesale distribution centre that receives a large part of the food distributed in Cali and Valle del Cauca. Travel time between Santa Elena and Cavasa usually takes between 45 and 60 minutes, depending on traffic on the access roads. Since Cavasa handles large volumes and has cold storage capacity, logistics from Santa Elena involves a bulk distribution approach, with large-capacity trucks carrying various types of food in a single trip. Deliveries to Cavasa are less frequent than to other urban galleries, typically a few times a week, but with higher volumes to meet the demand of this key distribution centre.

El Porvenir Market: This gallery is located in the east of the city, in a densely populated area. Distribution to El Porvenir faces certain challenges due to congestion on access roads, especially in the morning hours. To mitigate these effects, distribution is often scheduled early, at times of lower traffic, and alternative routes are planned to reduce travel time, which can extend 40-50 minutes during peak hours.

Alfonso López: This gallery, located in the east of Cali, is one of the largest and most popular in the city. Distribution from Santa Elena to Alfonso López is usually fast and efficient, with an average travel time of 20-30 minutes due to its proximity and good road connectivity in this area. Logistics to Alfonso Lopez involves daily deliveries in moderate volumes, as the demand for fresh produce is constant and the flow of consumers is high.

- **WHAT IS A GALLERY ?** A long, narrow passage or room, often with openings such as windows or columns on one side, used for circulation, viewing, or connecting different areas of a building. F. D. K. (2014).
- **WHAT IS A MARKET ?** In architecture, the market is defined as a space that transcends the commercial to become an element of social cohesion and an important urban node. In describing the Barceloneta Market, he considers it a structure that not only resolves a functional programme, but also interprets the identity and energy of the place, connecting the past with a renewed vision of urban space. Miàs, J. (2007).

"Maintaining the neighborhood's identity and character is one of the goals of this thesis. The neighborhood is known for its Galeria, which serves as a point of reference for Cali residents. For this reason, it is crucial that the project continue to be called Galeria Santa Elena."

(Arturo, Forero, Alfonso, 2024)

URBAN

1.2

CALI´S URBAN CONTEXT

1.2.1 Markets in cali in relation to conenectivity and mobility

1880-1900

The first plazas and the birth of a growing city

Cali was an expanding city that began to structure its commercial identity around the Plaza de Caicedo, the epicenter of social and economic life. Market squares developed as essential spaces for food supply, where the population gathered to exchange agricultural products, meats and essential goods. During this period, the city's road infrastructure was basic, with cobblestone streets connecting the center with the emerging residential and commercial areas.

Population growth, although still moderate, was beginning to put pressure on the city's resources and organization. However, the lack of structured urban planning meant that the marketplaces, although vital, operated in poor hygienic conditions, something that would later be documented by Dr. Evaristo García. The streets surrounding these markets were often congested and unpaved, complicating access and increasing sanitation problems. (Galindo-Díaz & Arteaga Botero, 2024)

1910-1940

The modernization and transformation of transportation

The railroad's arrival in 1915, which linked the city with the countryside and made it easier to transport manufactured and agricultural products, had fueled Cali's rapid growth. With the advent of the first streetcars in 1929, which enhanced urban mobility and permitted the city to grow into new neighborhoods, this era marked a turning point in the modernization of the city.

Although they were still hubs of commerce, marketplaces like the Galería Central were starting show symptoms of saturation.

Greater accessibility to these markets was made possible by the tramway's arrival, but it also highlighted the necessity of clearing the city center's congestion. Cali started planning the expansion of its transportation networks to accommodate a rapidly expanding population at the same time that new arterial roads were built to connect various parts of the city.

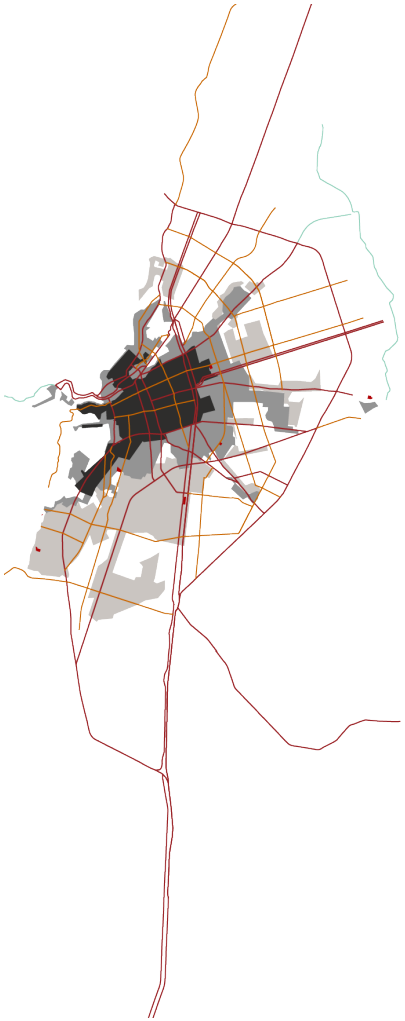
Even though the implementation of these solutions was still in its early stages, it became clear that improved urban planning and the establishment of satellite galleries were necessary. (Galindo-Díaz & Arteaga Botero, 2024)

Figure 6. City and market transformation 1880-1940. Elaborated by the author based on (Libro Atlas Histórico De Cali, n.d.).

1940-1960

Decentralization and new urban challenges

Cali had gone through a period of accelerated urban expansion, with a population approaching one million inhabitants. This growth was accompanied by the arrival of new means of transport, such as the jardineras (the first urban buses) that gradually replaced the tram, as well as the construction of primary and secondary arterial roads that improved connectivity within the city and with other regions. During this period, the saturation of markets in the city centre led to the creation of satellite galleries, such as the Galería Santa Elena, which sought to decongest the Central Gallery and improve sanitary conditions. However, despite these efforts, sanitation problems continued, aggravated by the lack of adequate infrastructure and the fast expansion of the city. Urban planning focused on the need to create new inter-regional roads connecting Cali with other cities in Valle del Cauca, while within the city work was done to widen existing roads to cope with the increasing flow of vehicles. (Galindo-Díaz & Arteaga Botero, 2024)



2000-2014

Actual challenges

Galería Santa Elena was one of the most significant of Cali's historic and satellite markets that were part of the city's consolidated market gallery system by 2014. But as the city's population increased and its metropolitan area grew, it faced new difficulties. During this time, the construction of primary and secondary arterial roads as well as the enhancement of interregional roads that connected Cali to other municipalities were the main goals of urban planning. Although the Integrated Mass Transportation System (MIO) had mixed results in terms of reducing traffic and increasing the effectiveness of public transportation, it was an attempt to increase urban mobility.

Despite increasing issues with cleanliness and order, the market galleries continued to serve as vital supply hubs for the general public. Traditional markets continued to be displaced by the emergence of supermarkets and large shopping centers, but they were still essential for a sizable portion of the population, particularly in places with lower purchasing power.

The primary wholesale distribution hub was consolidated at Central de Abastos de Valle del Cauca (Cavasa), and the urban galleries needed to be updated to meet the city's evolving needs. (Galindo-Díaz & Arteaga Botero, 2024)

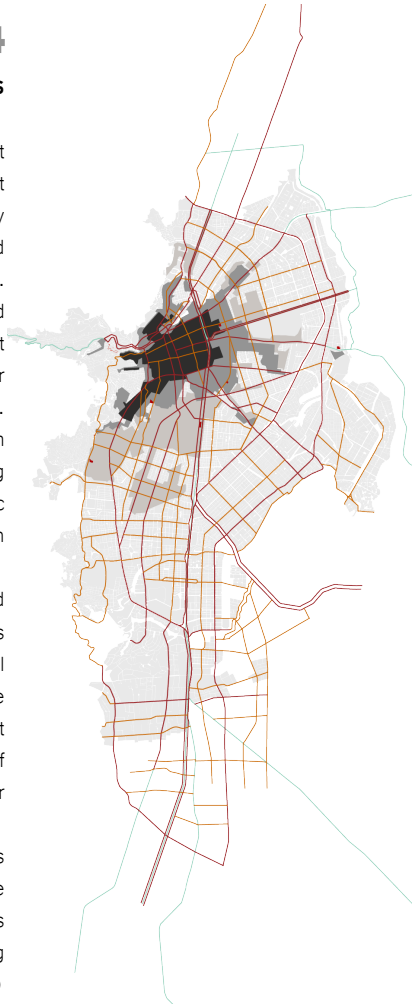


Figure 7. City and market transformation 1940-2014. Elaborated by the author based on (Libro Atlas Histórico De Cali, n.d.).

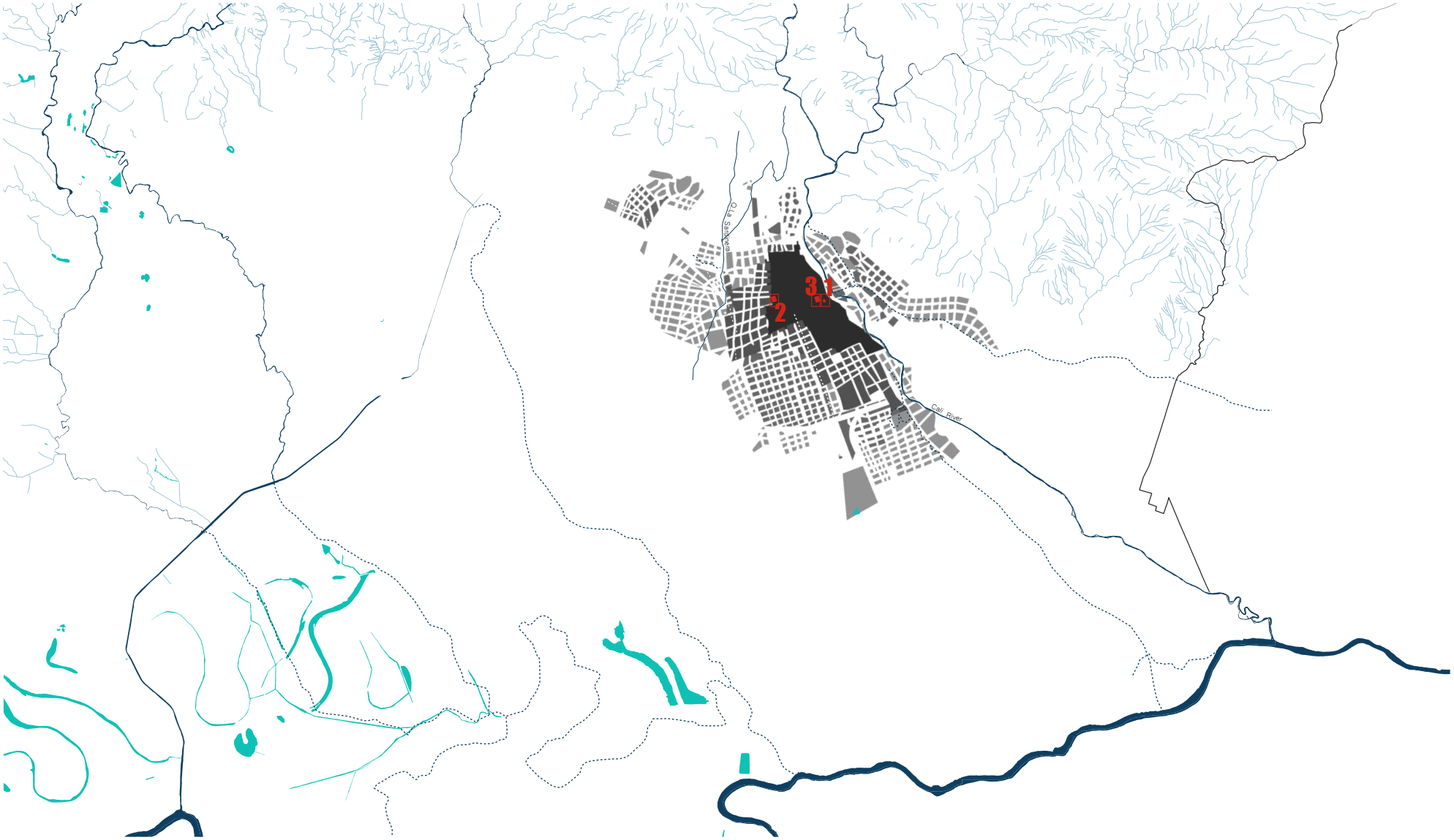


Figure 8. Location of the provisional and first butcher's shops. Elaborated by the author based on (Libro Atlas Histórico De Cali, n.d.) (Geoportal IDESC, n.d.-b).

1.2.2 Demographic Explosion

Historic growth map 1608-1885

The map illustrates the demographic growth of the city of Cali between 1608 and 1885, highlighting how this growth fuelled the emergence and expansion of market squares in the city. As the population increased, new areas of commercial and social activity became evident in different parts of the city, with market squares emerging as fundamental spaces for the supply and interaction of the inhabitants. This process of urbanisation shows how Cali went from being a small colonial town to a city with areas of commerce and greater population density, reflecting the importance of the plazas in the economic and social consolidation of the region during this period.

1608

1

First butcher shop (private bussines not managed by the city hall)

1674

First provision to organize market places.

1764

2

Second provision of the butcher shop. (the calvary) Cale 13 with Carrera10)

1884

First steamship that sails through the Cauca transporting food. Carl Hauer Simmonds Pioneer navigator of the Cauca River. For a period of 14 to 16 years there would be a lot of failure due to the sinking of these ships.

Dr Evaristo Garcia Piedrahita 1845-1921, part of the crea tion of the Cauca Medical Society, had concerns about the management of waste from butcher shops and food (the old butcher shop or public slaughterhouse) appointed president of the Cali council. Identifies the urgency of better management of meat sales.

1885

3

First Market place for agricultural products located in Plaza de Caicedo.

Cali 1885
Wetlands
Streams
Food supply Facilities

Sistema de Referencia Geocéntrico para las Américas (MAGNA - SIRGAS),

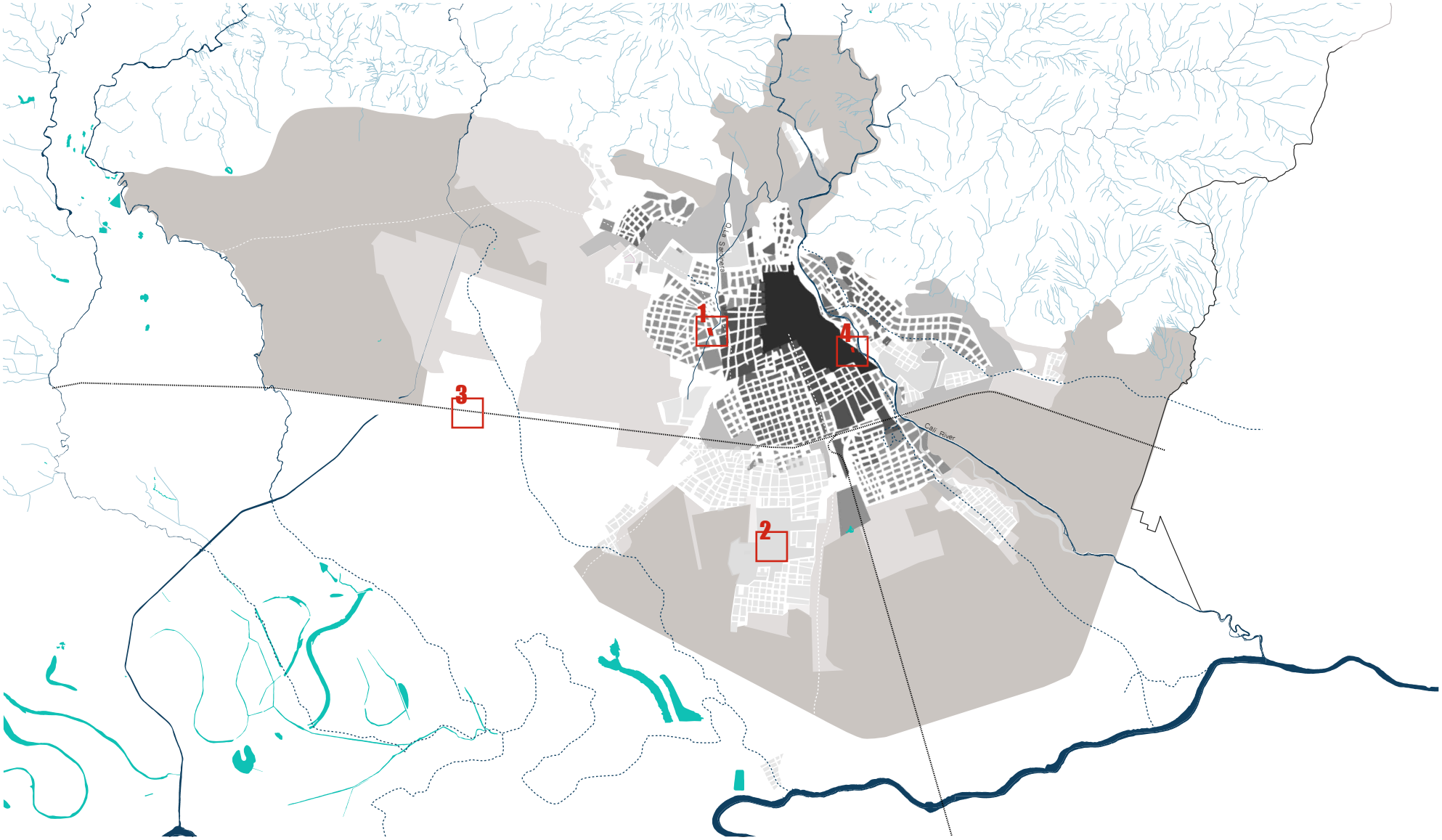


Figure 9. Location of the third provisional butcher's shops. the railway arrives to the city. Elaborated by the author based on (Libro Atlas Histórico De Cali, n.d.) (Geoportal IDESC, n.d.-b).

Historic growth map 1895-1951

The map illustrates the accelerated demographic growth of Cali between 1895 and 1951, a period of great urban expansion and population increase. During these years, market squares multiplied and spread to new areas, reflecting the economic boom and the emergence of peripheral neighbourhoods. The plazas not only provided a supply of products to a growing population, but also consolidated the city as a commercial and social hub. This urban development is evidence of Cali's move towards modernisation, with markets acting as meeting and exchange points, fostering community cohesion in each newly inhabited area.

1895 – 1905 – 1910 – 1911

1

Third provision of the butcher shop (Calle 13 with current Carrera 16 institution Antonio Jose Camacho) and in 1897 second provision of the market square reusing the space of the old butcher shop (Currently the Palace stands of Justice. Proximity to supply of water from the stream La Sardinera and La Chanca.

The president of the Republic of Colombia promotes the navigation of steaboats on the Cauca River and the distribution of food improves.

2

Cali is named capital of the department of the Cauca Valley. The urban perimeter expands towards the south and east but as they are wetlands The land was affected by the overflow of the Cauca River. The Tram is also inaugur ted as part of the important events for this year which passes right through the back of the Central Gallery. Steamers arriving with food to Juanchito and the tram used as a means transportation to take them to the plaza market. There is no aqueduct yet, Instead they continued using colonial channels.

Captive barges on the Cauca river in the Navarro sector. The first buses called Jardineras also arrive to integrate into the system transportation within the growing city.

1915 – 1930 – 1931 – 1951

3

The railway arrives in the city of Cali.

4

Belmonte market square, located on a property of Hernando Caicedo, located on Carrera 1 with Calle 25

Creation of Emcali to integrate the administration of all public services:energy 1944, telephone 1931, 1944, aqueduct, sewage Caicedo, located on Carrera 1 with Calle 25.

Increase in the Cali population by 1084% with 284,156 inhabitants compared to 1900 where there were only 24,000 inhabitants. This shows that the Central Gallery was falling short of supplies to supply the entire Cali population.

Cali 1910
Cali 1932
Cali 1937
Cali 1941
Cali 1951
Wetlands
Streams
Food supply Facilities

Sistema de Referencia Geocéntrico para las Américas (MAGNA - SIRGAS),

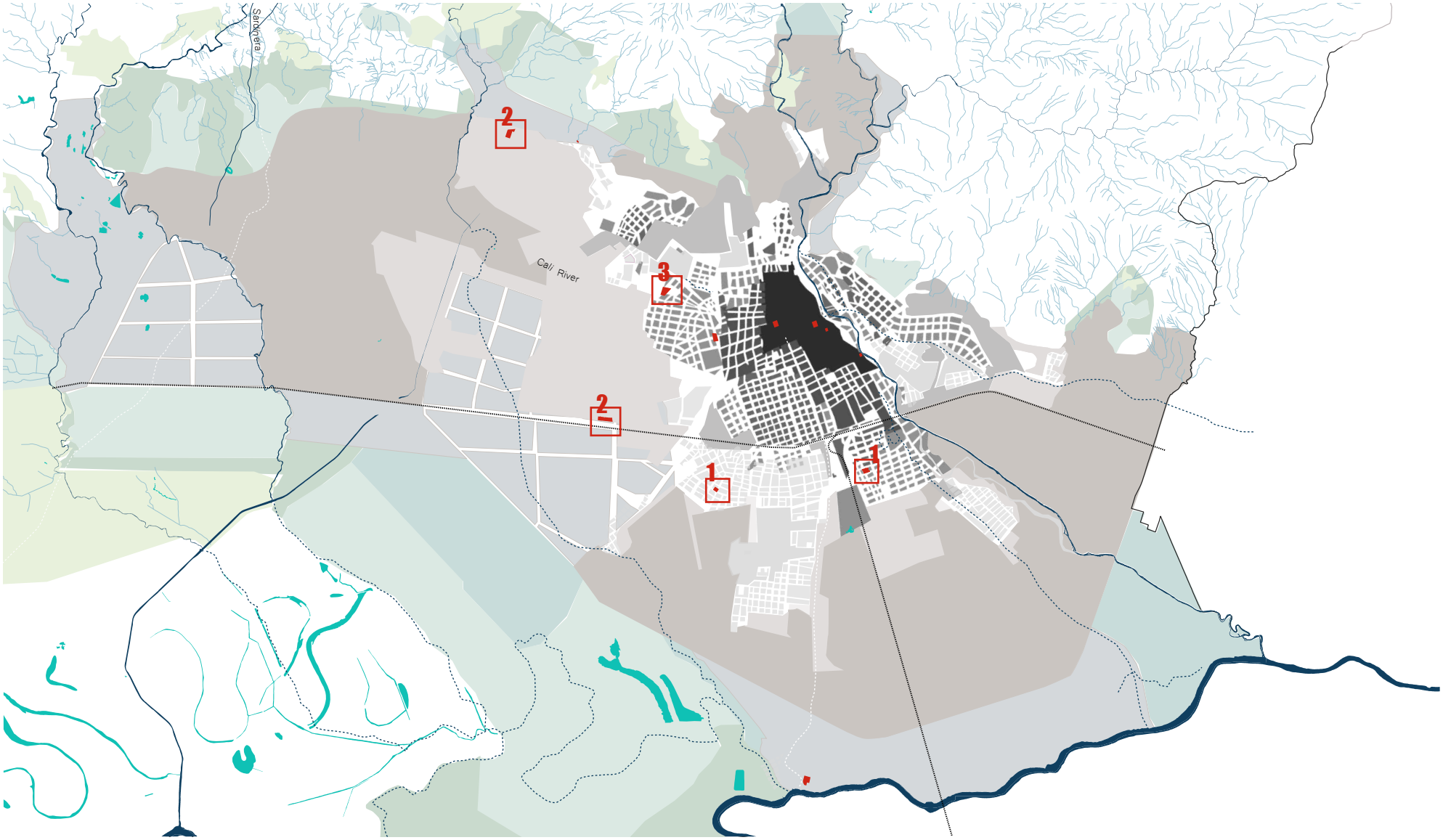


Figure 10. Location of the cali's Galleries. Elaborated by the author based on (Libro Atlas Histórico De Cali, n.d.) (Geoportal IDESC, n.d.-b).

Historic growth map 1958-2014

The map illustrates the demographic expansion of Cali between 1958 and 2014, a period marked by massive urban growth and massive transformations in the city's structure. With the accelerated population growth, market squares, once central to community life, begin to reconfigure and disperse to peripheral areas to supply new neighbourhoods and suburban sectors. In this context, some traditional market places lose prominence to supermarkets and modern shopping centres, although they remain relevant in specific areas. This transformation reflects Cali's evolution into a complex metropolitan city, in which market spaces adapt to changes in consumption patterns and urban social organisation.

1958

1

Because the Central Market was no longer able to cope with the population growth of the city, the Porvenir and La Floresta markets were built.

1962

2

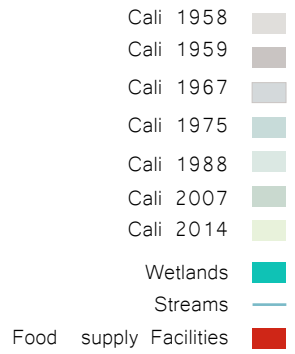
Siloe market, architects Libia Yusti and Elly Burckhard.

February 11, 1962 Gleria Santa Elena (Cristobal Colon Market). First the Urbanizacion Santa Elena was born as a response to the housing deficit in the city, which arises from a merger of land where the settlers were mainly public officials, military and some private individuals.

1970

3

Galeria Satélite La Alameda and Galeria Satélite Alfonso lopez



Sistema de Referencia Geocéntrico para las Américas (MAGNA - SIRGAS),

- **WHY ANALYSE THE ENVIRONMENTAL, HYDROGRAPHIC, PUBLIC SPACE AND MOBILITY SYSTEMS?**

"Since we have studied the city during our professional careers, we are aware of the difficulties and shortfalls that Cali will face in the years to come. We also know that the Santa Elena Gallery is situated in the city's geographic center. For this reason, Santa Elena seems to be a crucial location where several essential systems come together to function and grow. They must be examined separately in order to determine how to improve the sector as a whole. Following a thorough investigation, we discovered that these were the issues and flaws that stood out the most"

(Arturo, Forero, Alfonso, 2024)

URBAN

1.3 MACRO ANALYSIS OF CALI

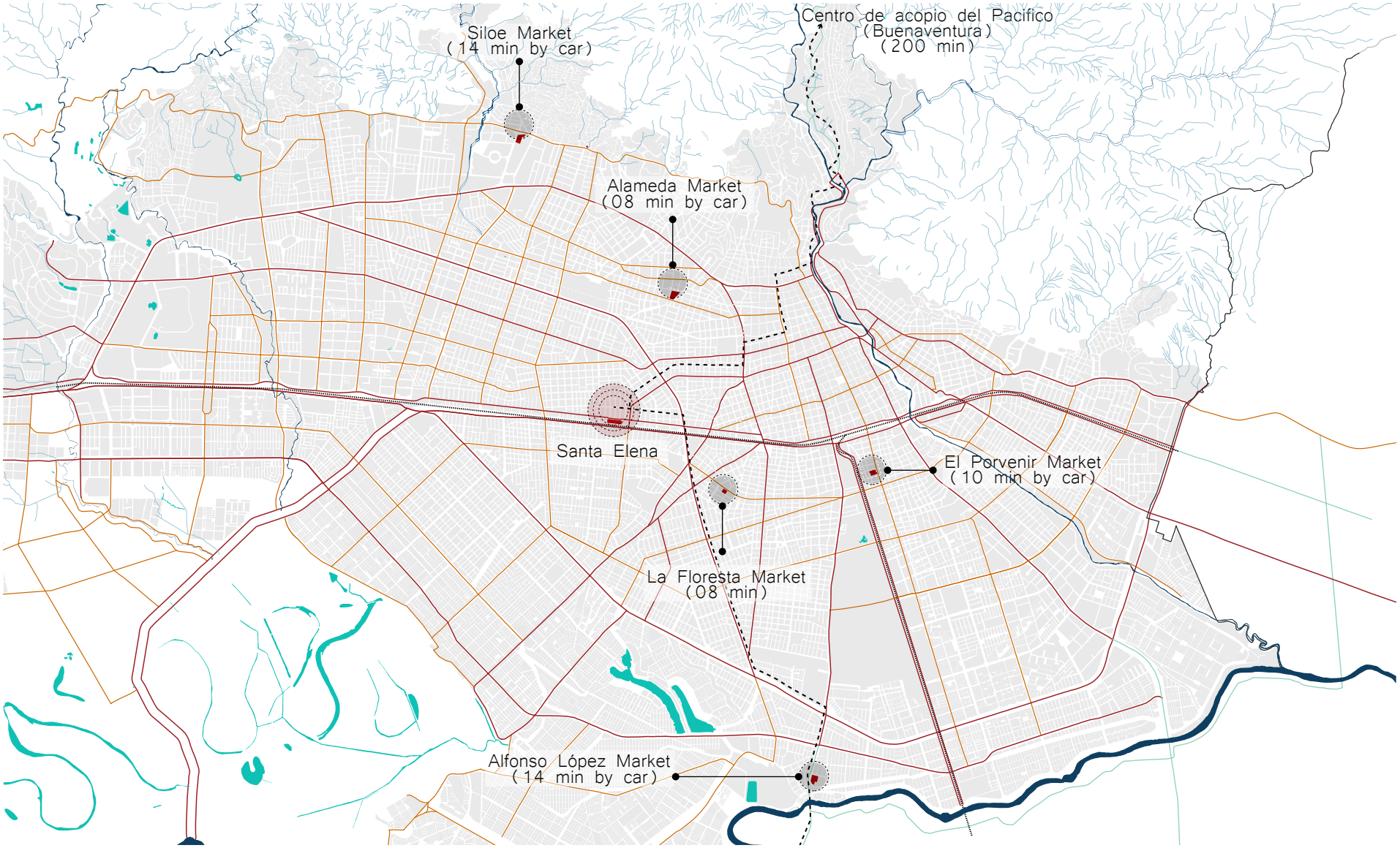


Figure 6. Location of the Cali's Galleries and Main routes. Elaborated by the author based on (Geoportal IDESC, n.d.-b).

1.3.1 Mobility Structure

The Santa Elena market, which is prominent as a key hub for the supply of food and agricultural products, is depicted on the map together with the locations of Cali's other markets. Distances to other markets in the city are measured from Santa Elena, showing the distribution networks and logistical links that sustain internal trade. Additionally, two key locations in Cali's supply chain which enable the flow of agricultural and maritime products are the Buenaventura collection center and the Cavasa collecting center, which is situated in the municipality of Candelaria. This map shows how Santa Elena serves as a vital hub, linking to regional collection centers and smaller local galleries that support the city's supply.

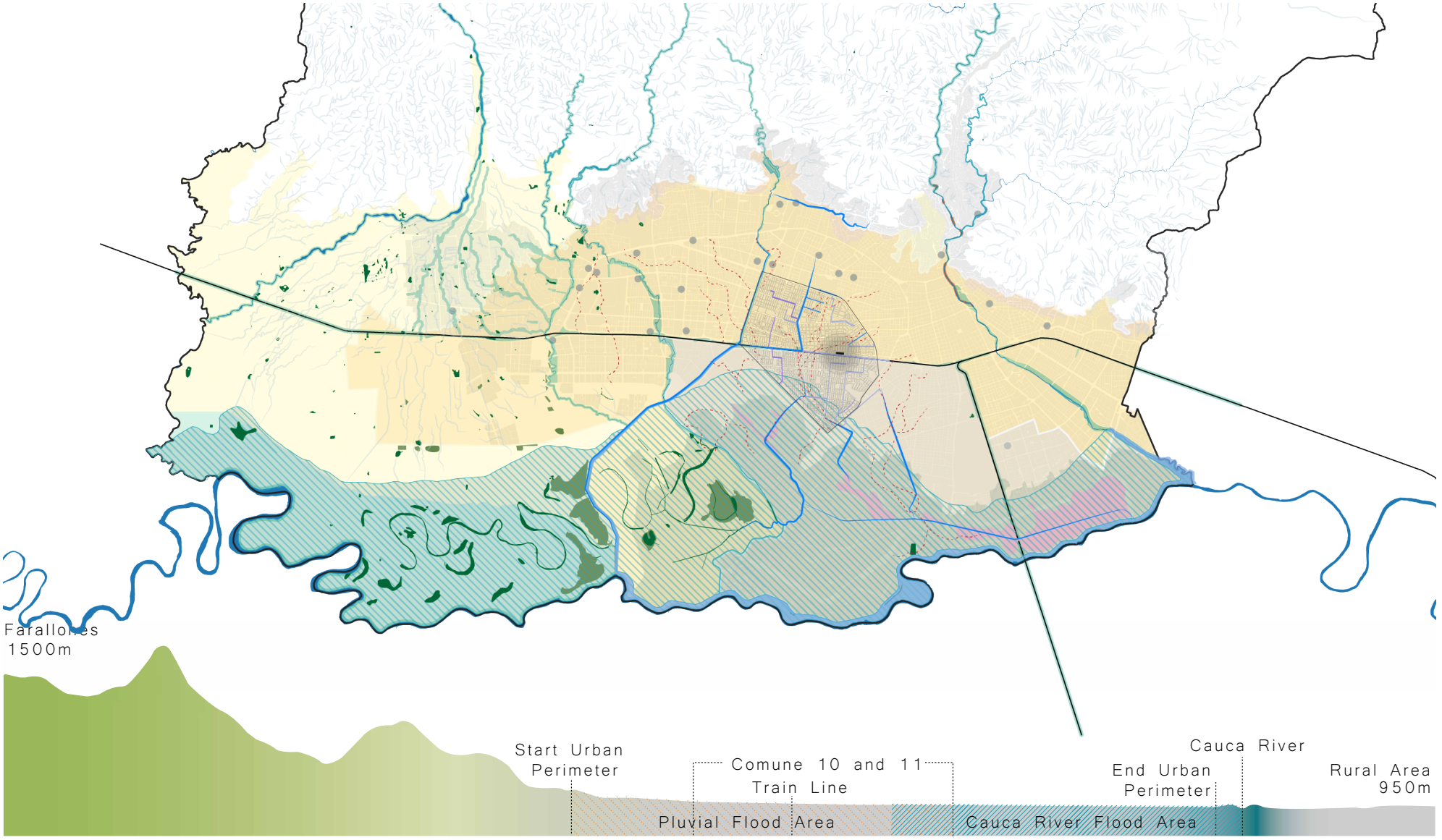
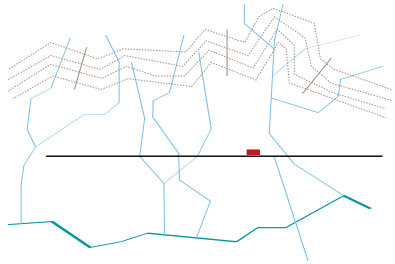


Figure 7. Current rivers, streams and water sources. Elaborated by the author based on (Geoportal IDESC, n.d.-b).

1.3.2 Hydrographic Structure

The Influence of Water Bodies on Urban Development

Cali's rivers and streams, especially the Cauca, have been vital arteries that have shaped the history and development of the city. However, their importance has been underestimated over the years, and recurrent floods have left an indelible mark on its urban growth. According to a study by the CVC (Corporación Autónoma Regional del Valle del Cauca), 'rivers are the heart of our urban ecosystems, providing fundamental environmental services such as climate regulation, the provision of drinking water and the conservation of biodiversity'. The Cauca River, formerly a fundamental waterway for the transport of food and goods, has been affected by urbanization and pollution, generating ecological imbalances. **The analysis seeks to highlight water bodies as sources of biodiversity and reveals how their dynamics have directly influenced the configuration of blocks and neighborhoods**, determining areas of greater or lesser flood risk and shaping human settlement patterns.



Areas of interest deu to pluvial flooding
Aquifer reccharge and discharge zones
Non-mitigable flood hazard area
Groundwater upwelling
Evaluated drainage zone
POT-Cauca River enviromental zone
POT- Fluvial flooding
POT- Overflow zones Tr. 50 years
POT- Hydrography rivers
POT- Lagoons and proposed pondages
POT- Enviromental corridors
POT- Mobility railroads
POT- Pluvial flooding
ExMu- Cauca River flood threats
POT- Hydrography wetlands
POT- Hydrography streams
Hydrography: Ancient river courses
Sub-system of pluvial drainage and flood mitigation:
A. Main drainages
B. Secondary drainages
C. Small drainages

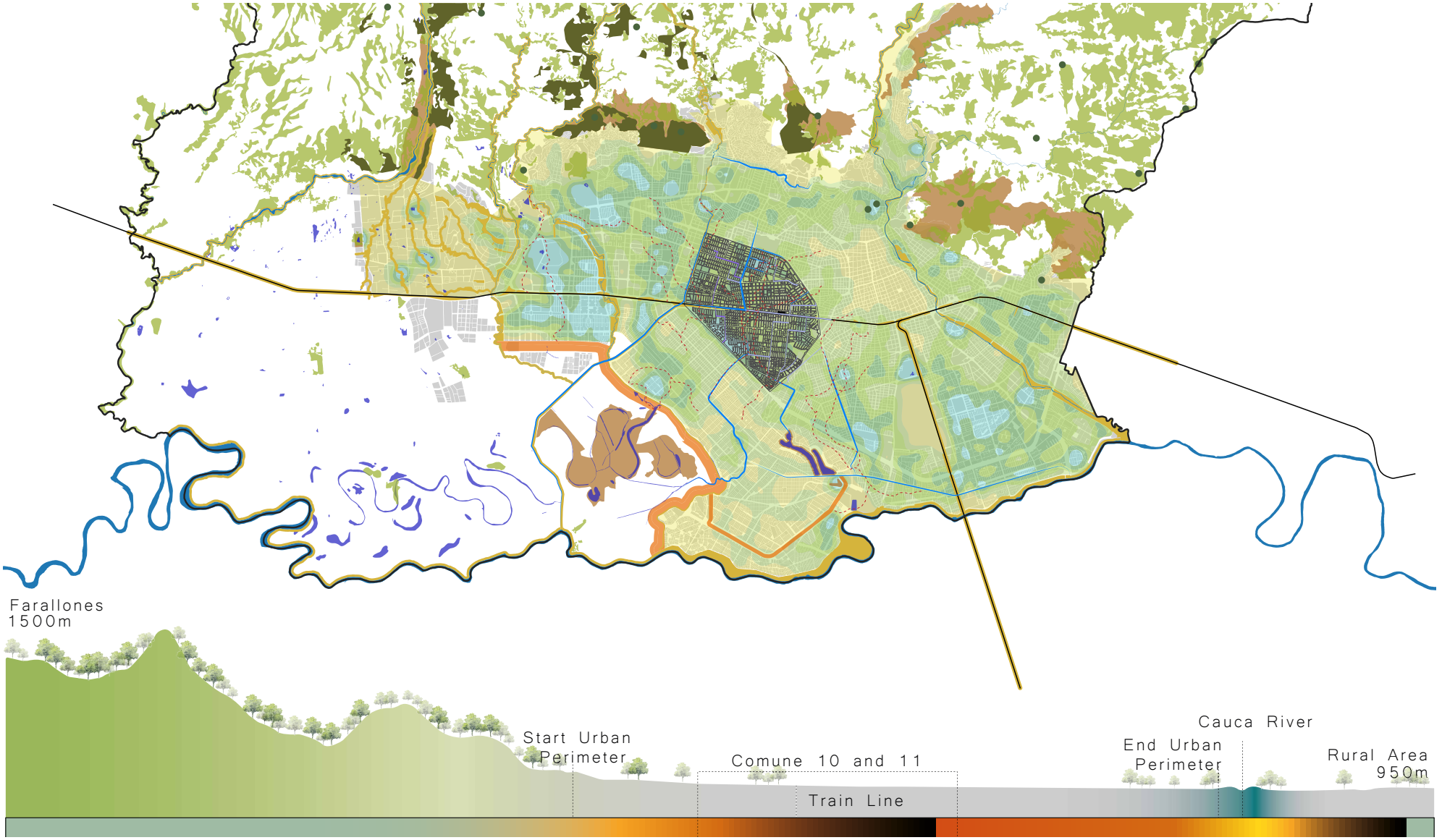
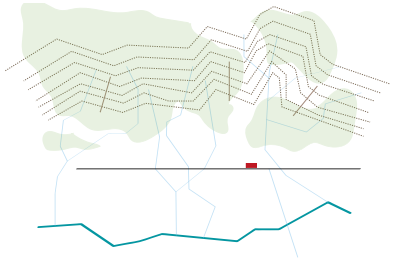


Figure 8. Green Corridors, Protected areas, Enviromental Structure, Farallones de Cali. Elaborated by the author based on (Geoportal IDESC, n.d.-b).

1.3.3 Environmental Structure

The Loss of Vegetation Cover and its Impact on Life

Cali's environmental structure, made up of the Farallones de Cali, green corridors and protected areas, is fundamental to guarantee the sustainability and quality of life of its inhabitants. The Farallones, as the lungs of the city, regulate the climate, protect the soil, and are home to a rich biodiversity. The green corridors and protected areas, in turn, connect ecosystems, facilitate the mobility of species, and mitigate the effects of climate change. Tree density, a key component of this structure, contributes to improving air quality, reducing urban temperatures and increasing water infiltration. However, a recent study by the CVC (Corporación Autónoma Regional del Valle del Cauca) reveals that **Cali has lost about 30% of its vegetation cover in the last two decades, especially in urban areas. This loss has generated a deficit of green areas of approximately 5 m² per inhabitant.** The decrease in vegetation cover has exacerbated problems such as air pollution, rising temperatures and the frequency of extreme events such as floods.



POT- Ecological belts
POT- Ecoparks
POT- Current forest and guaduales (wetland)
pot- Forest protection soil
POT- Enviromental corridors
POT- Enviromental zone of the cauca river
POT- Hydrography: rivers
POT- Hydrography: wetlands
POT- Mobility: Railroads
Arborea density:
A. Very high
B. High
C. Medium
D. Regular
E. Low
Hydrography: Ancient river courses
Suub-system of pluvial drainages and flooding mitigation
A. Main Drainages
B. Secondary drainages
C. Small drainages

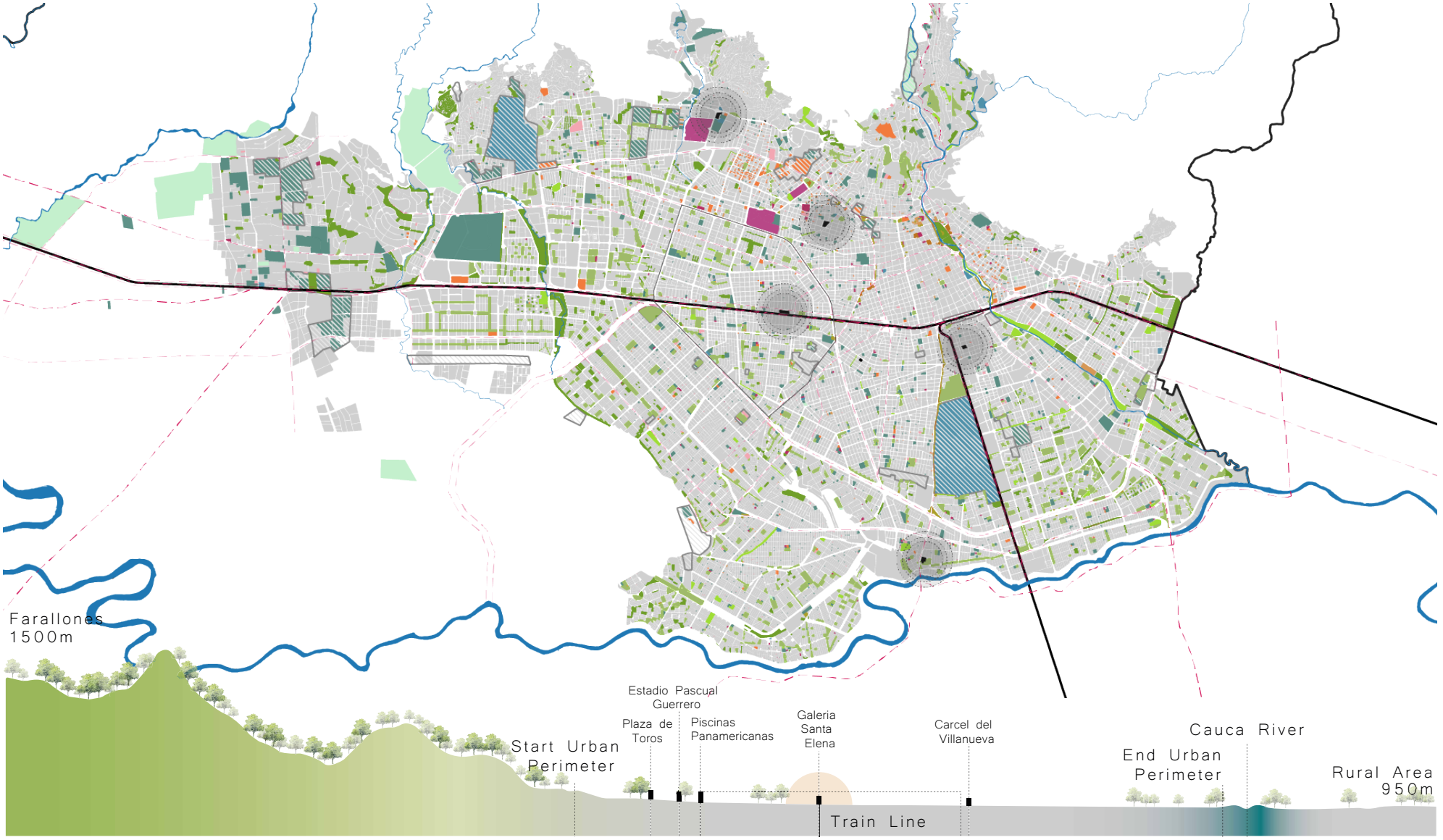


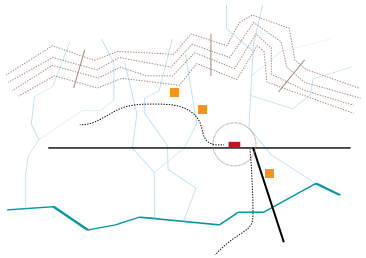
Figure 9. Network of galleries and supply centers, main road infrastructure and key facilities . Elaborated by the author based on (Geoportal IDESC, n.d.-b).

1.3.4 Public Space and Facilities System

The Role of the Galería Santa Elena and the Challenges of Public Space Heritage landmarks such as the Galería Santa Elena represent an invaluable historical and cultural fabric for the city of Cali. These galleries, in addition to being traditional supply centers, are strategically located at nodal points that connect to the main road infrastructure and other key urban facilities.

For instance, the Galería Santa Elena is a landmark in commune 10 and has served as the neighborhood's social and economic hub. Comparing communes 10 and 11 to other parts of the city, however, shows a notable lack of functional public space. This lack lowers the standard of living for its residents and restricts the potential for sustainable urban growth.

It is crucial to acknowledge the significance of having a network of galleries and supply centers that support local identity and the economy in addition to providing for the population's food needs. These supply centers should ideally be able to store and distribute goods all over the city, optimizing supply chains and cutting down on transportation costs. (Geoportal IDESC, n.d.)



Health facilities
Recreation facilities
Education facilities
Culture facilities
Workship facilities
Social wealfare equipments
Public safety equipment
Sport equipment
POT- Hydrography: rivers
Urban equipment nodes
Effective public space
POT- Mobility: railway track
Equipment food supply
Mobility: main and interregional roads

Figure 10. ‘Meet the winning project for the urban environmental corridor of the Cali River, Colombia.’ 15 Apr 2019. ArchDaily en Español. Accessed 30 Nov 2024.

Green Corridor Project

Architect:
espacio colectivo, OPUS.
Area: 30,200 m²
Location:
Cali, Valle del Cuca, Colombia
Year:
2015

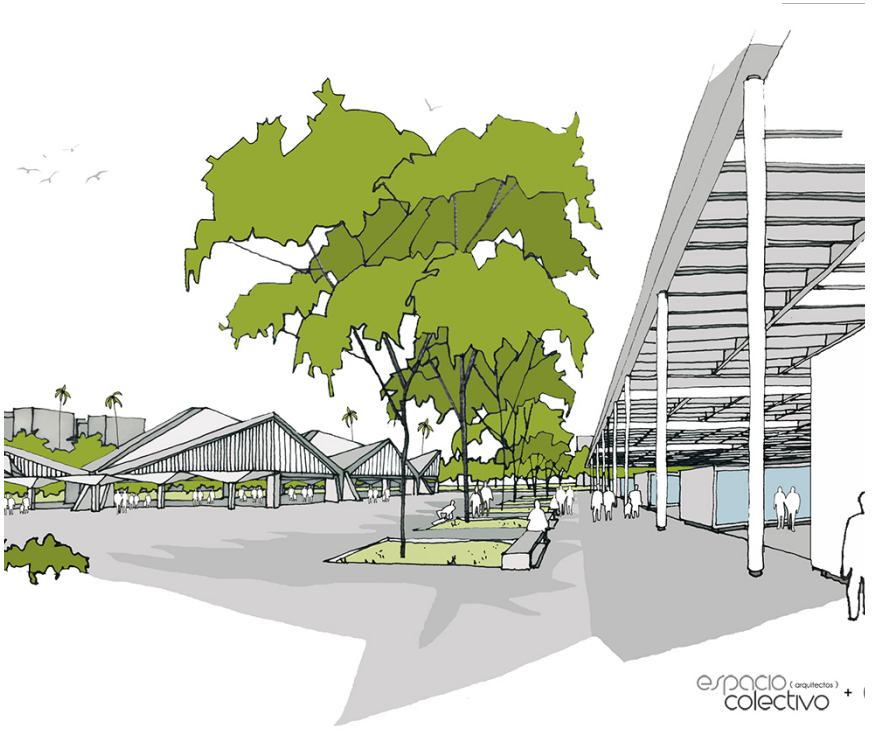
Entitled 'Between the hills and the river', the winning proposal appeals to 'the generation, recovery and adaptation of public space to achieve a large central and linear park in the city where recreational, cultural and leisure activities will converge, associated with a cycle path that will function as a non-polluting mobility system'.

Description of the architects: Cali was settled in a fertile valley, at the base of an imposing mountain range from where water sources and forests flowed down to the Cauca River. The way the city developed restricted cross-cutting ecological and social relationships.

The green corridor is an opportunity to promote a city model that is committed to the articulation of urban systems with natural systems to improve people's quality of life and recover environmental and landscape values that have characterised Cali.

The project proposes to take advantage of the strip of the old railway line to: recompose an urban ecological network between the hills and the river; integrate the city socially and spatially; balance connectivity with a clean public transport corridor and renew the city with strategic projects that trigger transformation processes from the central strip.

The Green Corridor aims to reconnect 22.3 kilometres of green areas along an abandoned railway track, covering 49.7 square kilometres and benefiting 108 neighbourhoods. With these actions, the project aims to 1. re-establish an urban ecological network between the hills and the river; 2. integrate the city socially and spatially; 3. balance connectivity with a clean public transport corridor; 4. renew the city with strategic projects that trigger transformation processes from the central strip. This Corridor aims to connect the city and its strategic parts as well as marginalised areas and improve access to urban services for all inhabitants. The Green Corridor is subdivided into 7 different sections to be intervened. Valencia, N. (2020b, February 3)



'Meet the winning project for the urban environmental corridor of the Cali River, Colombia.' 15 Apr 2019. ArchDaily en Español. Accessed 30 Nov 2024.

- **WHY IT IS SO IMPORTANT TO MAINTAIN THE IDENTITY OF THE GALLERY ?**

“As Cali residents, we have grown up appreciating the custom of visiting galleries to support the family market, which brings fresh goods at affordable prices and the generosity of the market vendors. In doing so, we evoke historical facts, customs, and living beliefs that have extraordinary significance and serve as a testimony for culture and tradition”

(Arturo, Forero, Alfonso, 2024)

ARCHITECTURAL

1.4 ARCHITECTURAL EVOLUTION OF THE GALLERY

1.4.1 A pillar of Cali's cultural Heritage.

The Galería Santa Elena has been recognised for its heritage value due to its historical and cultural relevance to the city of Cali. As an **epicentre of traditional commerce**, the market reflects the economic and social life of 20th century Cali. its importance lies in its role as part of the **city's living heritage**.

In terms of conservation regulations in Colombia, these mainly protect buildings of historical, architectural and cultural value, covered by the General Law of Culture and local land-use regulations. In Colombia, Bienes de Interés Cultural **(BIC)** are buildings or sites officially recognised for their heritage value, both nationally and locally. These assets are protected by laws such as Law 1185 of 2008, which defines criteria for their conservation, restoration and management, seeking to preserve their historical, architectural and cultural integrity.

Figure 11. Reference images 1,2,3: Félix Candela architectural records and papers, 1950-1984, Avery Architectural & Fine Arts Library, Columbia University, Nueva York, NY. Series I I Project Records, Drawer 113, Folder 29. "Christopher Columbus" Market (Cali, Colombia).

Figure 12. Instituto de Estudio y Conservación del Patrimonio de Cali (IDESC). (2014). Bienes de Interés Cultural: Guía para la protección del patrimonio cultural en Cali (BICN-16).

1.4.2 Historical transformation of the surroundings of Santa Elena Gallery

The body of water that runs through the Santa Elena neighbourhood in Cali, today converted into a stormwater and wastewater canal, is a **testimony to unplanned urban growth and human intervention on natural ecosystems since the early 20th century**. This canal, once a natural stream with ecological potential, has been **transformed into an urban drainage system** due to uncontrolled expansion and lack of adequate environmental policies.

Throughout the 20th century, the body of water passing through the Santa Elena Market area experienced **progressive degradation**. In the early 1900s, the waters of the streams that flowed through the area were an integral part of Cali's natural landscape, characterised by a fluvial ecosystem that provided services such as water regulation and biodiversity. However, with increasing urbanisation, commercial expansion and population growth, this stream was progressively channelled and converted into a recipient of domestic and industrial wastewater.

What was once a natural stream was transformed into a highly polluted canal that represents a public health problem and a factor of environmental degradation.

Figure 13. Reference images 1,2,3: Félix Candela architectural records and papers, 1950-1984, Avery Architectural & Fine Arts Library, Columbia University, Nueva York, NY. Series I Project Records, Drawer 113, Folder 29. "Christopher Columbus" Market (Cali, Colombia).

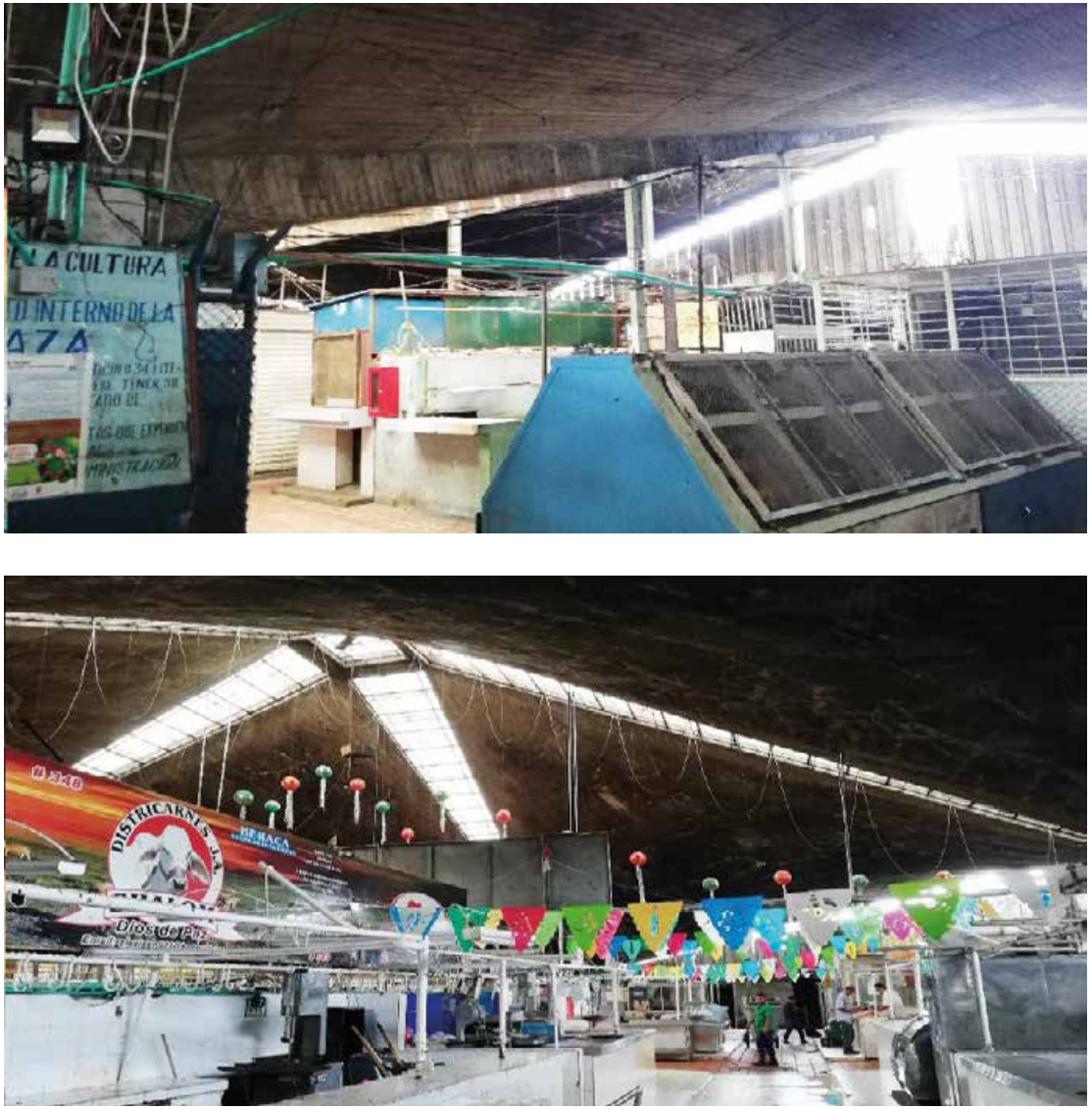


Figure 14. Instituto de Estudio y Conservación del Patrimonio de Cali (IDESC). (2014). Bienes de Interés Cultural: Guía para la protección del patrimonio cultural en Cali (BICN-16).

1.4.3 Pollution accumulated over time

As the city grew and the gallery established itself as a key commercial centre, the canal became an informal dumping ground for liquid and solid waste. Commercial activity around the market has increased pollution levels, with the constant discharge of oils, organic waste and chemicals from the market and nearby industries. In addition, the accumulation of sediment and solid waste obstructs the flow of water, increasing the risk of flooding in times of heavy rain, a challenge exacerbated by climate change. This cycle of channel degradation is part of a common pattern in many Latin American cities, where urban water bodies have been sacrificed in favour of economic growth without adequate environmental planning.

In Cali, current studies have identified the urgency of improving sanitation systems, rehabilitating the canal and generating green infrastructure projects that benefit both the environment and the community. The document of Urban Planning Unit (UPU) 11 highlights the need to involve citizens more in the conservation and sustainable management of water resources as an integral part of a broader climate change adaptation strategy.

Figure 15. Muñoz, A. M. (10 de enero del 2024). La Galería Santa Elena, punto de crítico de basuras en Cali. 90 minutos, 1.

Figure 16. País, E. (2023, April 22). Inició el cierre temporal de la Galería Santa Elena por casos de Covid-19 en el sector. Noticias De Cali, Valle Y Colombia - Periodico: Diario El País.

02 Microcosmos of the Santa Elena Gallery

2.1 OBSERVATION LENSES

2.2 KEY CONCEPTS

2.3 URBAN INTERVENTION STRATEGIES- THEORIES AND CASE STUDIES

02

CHAPTER

2.1 OBSERVATION LENSES

- **FROM WHAT PERSPECTIVES COULD THE SANTA ELENA GALLERY'S AREA BE EXAMINED?**

"In order to address all of the issues associated to the gallery sector, it would be necessary to involve other disciplines in the project's development and choose the appropriate observation lenses for the thesis's. We selected three from our architectural field to serve as our project development guidelines: Public space, mobility, environmental."

(Arturo, Forero, Alfonso, 2024)

URBAN

2.1.1 PUBLIC SPACE

A. Deterioration of pavements and streets
B. Scarcity or non-existence of collective spaces
C. Urban context as "Nobody's space"
D. Privatization and encroachment of public space (informal structures)

2.1.2 MOBILITY

A. Lack of space for loading and unloading
B. Lack of intermodality (current vehicle dominance)
C. Disconnection at city and inter-regional level (lack of public transport)
D. Lack of parking area

2.1.3 ENVIRONMENTAL

A. Poor waste collection and manegement system
B. Disassociation of the river as a water body (public rubbish dump)
C. Low tree density
D. High percentage of hard areas that impede the conservation of aquifers
E. Noise and visual pollution
F. Risk of flooding in rainy season.

ARCHITECTURAL

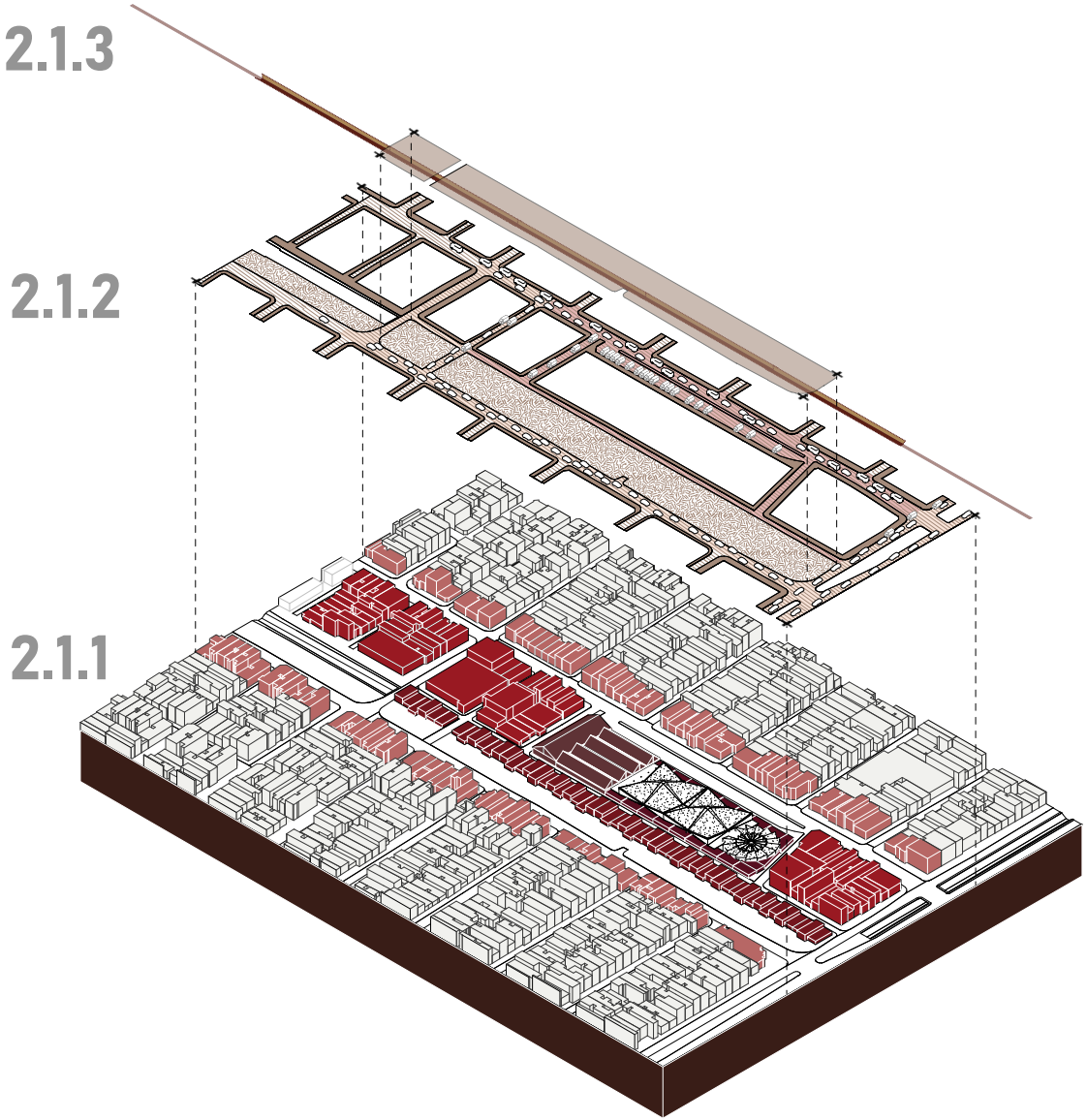
2.1.4 BIC BUILDING (Heritage)

A. Market structure hidden by parasitic shops
B. Obsolete in terms of the current market demand/supply
C. Neglected of infrastructure
D. Disconnection of the Bic with the city

SOCIAL

2.1.5 SOCIAL AND ECONOMIC

A. Perception of insecurity
B. High levels of informality (street vendors, informal bussines)
C. Social inequality
D. Criminal Activities (micro-trafficking, robberies, child exploitation)



2.1 OBSERVATION LENSE

2.1.1 PUBLIC SPACE

A lack of community ownership and identity, which has made the region a “nobody’s space.” This condition is represented in the **usurpation and privatization of public space, as unregulated buildings and street sellers have infiltrated common places,** restricting free access and causing the decay of urban environment. Additionally, the various market models—many of which are informal—that have been set up around the market created commercial congestion that rivals the site’s original infrastructure, impacting both the public space’s circulation and image.

Figure 17. Layers of the Observation Lenses: Public spcae, Mobility and Enviromental System. Elaborated by the author.

2.1.2 MOBILITY

Congestion is caused by a **lack of loading and unloading** space, which restricts traders' capacity to operate, particularly during peak hours. This is made worse by the **prevalence of private automobiles,** which indicates a **lack of intermodality** because public transportation and other forms of alternative mobility are not well incorporated into the urban system, creating a dependence on motorized transportation. Furthermore, the **lack of effective public transportation** creates a visible break down between this market and other parts of the city, making it challenging for both locals and visitors to get there. Last but not least, the **absence of parking facilities makes traffic congestion** worse by forcing drivers to look for spots in neighboring regions, which makes the area more crowded.

2.1.3 ENVIRONMENTAL

The Santa Elena neighborhood has many significant environmental problems. The river is currently a **public landfill rather than a body of water.** Also the **low tree density** and large percentage of hard terrain limit water infiltration and aquifer preservation. In addition to the potential for floods during the rainy season, the problem gets worse by **visual and noise pollution**. Thus, to improve sustainability and the standard of living for the local community, a comprehensive approach is needed.

Parasite shops
Informal businesses
Intervention blocks
Commercial block fronts
Pedestrian path
High traffic flow road
Low-flow road with traffic
Water Canal

2.2 KEY CONCEPTS

- **WHAT DO THE KEY CONCEPS GIVE US?**

"In order to define the scope of the proposal, create a common language for understanding the gallery concept, and determine the direction we wish to take the project, the key words and concepts in this thesis are crucial because they give the project clarity, focus, and coherence."

(Arturo, Forero, Alfonso, 2024)

2.2 KEY CONCEPTS

- **Gallery:** A long, narrow passage or room, often with openings such as windows or columns on one side, used for circulation, viewing, or connecting different areas of a building. Galleries are commonly found in classical architecture, often serving as colonnaded walkways or upper-level viewing spaces in large halls or churches. Ching, F. D. K. (2014).
- **Public Space Optimization:** Redesigning public spaces to encourage social interaction, provide recreational areas, and improve community cohesion.
- **Intermodal mobility:** Refers to the integration and coordination of different means of transportation (such as buses, trains, bicycles, walking and private vehicles) to facilitate the efficient and sustainable movement of people. Intermodal mobility seeks to optimise the use of various transport options, offering alternatives that improve connectivity between different points in the city or between cities, minimising travel times and reducing congestion. Banister, D. (2008).
- **Enviromental:** refers to the integration of ecological, sustainable and environmental conservation aspects in the planning and development of urban spaces. This dimension implies considering factors such as the efficient use of natural resources, the protection of biodiversity, the reduction of the carbon footprint, and the creation of spaces that favour the well-being of inhabitants while minimising negative impacts on the natural environment. González, M. (2022).
- **Urban Regeneration:** The renovation and revitalisation of deteriorated urban areas to improve their functionality, safety and aesthetics, promoting long-term sustainable development.
- **Sustainability:** Implementation of sustainable practices in design and construction that seek to reduce environmental impact and optimise the use of natural resources, such as water and energy.
- **Bioclimatic Design:** Architectural approach that integrates local climatic conditions into the design, improving energy efficiency and thermal comfort by taking advantage of natural light, ventilation, and ecological materials.
- **Local Commerce Revitalization:** Strengthening local commerce through the integration of formal and informal activities, promoting equitable and sustainable economic development in the area.
- **Hypercity:** Is a city that has intensified in density, complexity, and speed as a result of globalization, technology, and enormous fluxes of people, products, and information. Hypercities alter how urban space is organized and perceived by blurring the lines between the real and virtual worlds and facilitating worldwide social, economic, and cultural exchanges. Koolhaas, R. (1995).

- **"Nobody's space":** describes urban areas that are not associated with any particular community or collectively regarded as their own because they lack social appropriation or identity. Frequently located at the nexus of public and private spaces, these locations can become messy, neglected spaces with an unclear or marginal purpose due to a lack of regulation or appropriate design. Zukin, S. (2009).

- **NBS:** 'Nature-Based Solutions, which are strategies or interventions that use natural resources and ecological processes to address urban challenges such as water management, biodiversity, climate change and air quality. European Commission. (2015).
- **SUDS:** Sustainable Drainage Systems, which are approaches designed to manage stormwater in a more efficient and environmentally friendly manner. Unlike conventional drainage systems, which rapidly channel water into drains or sewer systems, SUDS seek to mimic the natural behaviour of water in the landscape, allowing it to infiltrate into the ground or be temporarily retained at the site of rainfall. Typical solutions include rain gardens, vegetated buffers, green roofs, cisterns and permeable areas. Department for Environment, Food & Rural Affairs (DEFRA). (2007). The SUDS Manual (C697). CIRIA.
- **Urban market atmosphere:** Refers to the urban atmosphere created around markets and other commercial spaces in the city, which have a strong influence on the social, cultural and economic environment of an area. This atmosphere is generated through the interaction between the physical elements of the market (such as the design of the space, the layout of the stalls, the circulation areas, etc.) and the commercial, social and cultural activities that take place there. The 'Market Urban Atmosphere' also includes the character of the products, the interaction of vendors with consumers, the sound, smells and colours of the market, as well as the dynamism and diversity produced by these spaces. In many cities, markets are not only places of commerce, but also meeting places and points of cultural exchange, forming a vital part of urban identity. Zukin, S. (1995).

- **Gentrification:** A process in which economic growth and intensification of land use in certain urban areas leads to the displacement of communities and changes in social composition. Urban Studies Dictionary. (n.d.). Gentrification. Retrieved November 15, 2024,

2.3 URBAN INTERVENTION STRATEGIES- THEORIES AND CASE STUDIES

- **HOW TO RELATE STRATEGIES, CASE STUDIES AND THEORIES?**

"It was essential to select case studies that would enable us to observe the chosen theories reflected in them and, as a result, determine from a realized example whether the principles could be applied to the project and the sector of the Santa Elena Gallery. This was done in order to comprehend the theories that we chose to guide the project and their relationship with the intervention site. It was crucial to develop the proposal while maintaining the project's focus by integrating the theories with the strategies and case studies. "

(Arturo, Forero, Alfonso, 2024)

2.3.1 Regeneration of the urban market atmosphere

Theory:
Hyper place

2.3.2 Connecting the urban market atmosphere with the city

Theory:
Sustainable mobility theory

2.3.3 Strengthening an Environmental focus as a pillar for urban sustainability

Theory:
Green and blue infrastructure

2.3.1

Regeneration of the urban market atmosphere

Theory:

Hyper place

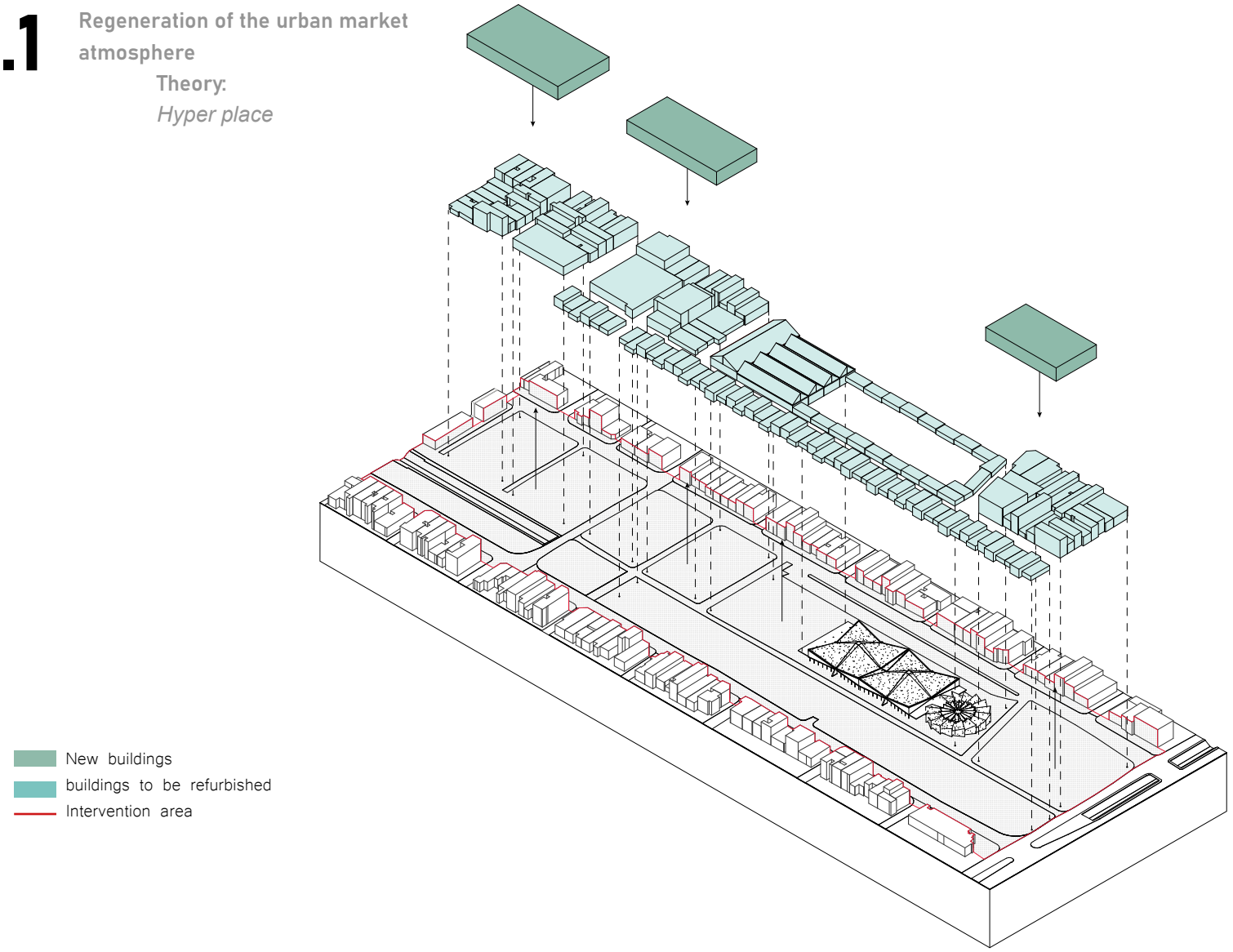


Figure 18. Strategy 1 of the study area. Elaborated by the author.

Regeneration of the urban market atmosphere

0.1 Hyper Place

The term “hyperurbanism” describes the fast intensification of urban processes brought on by technology, globalization, and the concentration of human activity in urban areas. This dynamic is evident in the Galería Santa Elena in Cali on a number of levels, including the concentration of economic power, the digital transformation of business, the commercial growth and densification of urban space, and environmental issues.

Since its inception, Santa Elena, Cali’s commercial hub, has grown rapidly, illustrating one of the core traits of hyperurbanism: **the escalation of urban activity in particular areas of the city** (Brenner, 2004). The area’s growing economic density has caused marketplaces, small businesses, and stores to concentrate, forming an urban node where diverse economic endeavors come together. However, this area’s densification has also led to congestion issues and increased demand on urban resources. Brenner (2004) discusses how global processes, such as the rise of transnational trade, generate disproportionate growth in specific urban areas. In this sense, the Galería Santa Elena has been a manifestation of how globalisation transforms urban spaces, concentrating economic activity in certain areas and affecting the structure of the city.

Castells (1996) highlights how digitalisation and communication networks are key to the evolution of cities, enabling hyper-connectivity between local traders and the global market. In this context, the Santa Elena market exemplifies how traditional shopping centres adapt to new forms of consumption and trade, leading to a reconfiguration of urban space.

Moreover the intensification of the use of space in urban areas such as the Santa Elena market has had significant environmental consequences, such as the pollution of the nearby canal. **Hyperconnectivity** in the context of hyperurbanism refers not only to the interconnectedness of commercial and human flows, but also to the way in which urban activities affect natural systems. In the case of Santa Elena, the accumulation of industrial and commercial waste has obstructed the flow of water in the canal, exacerbating **flood risk** and environmental degradation.

As well a phenomenon associated with hyper-urbanism is **gentrification**, a process in which economic growth and intensification of land use in certain urban areas leads to the displacement of communities and changes in social composition. David Harvey (2012)

Reference: Brenner, N. (2004).

Theaterplein and the Hyperplace Theory: Rethinking Urban Spaces in the Digital Age

Architect: Studio Associato Bernardo Secchi Paola Viganò

Area: 30,200 m²

Location: Antwerpen, Belgum

Year:2009

Characteristics:

- Elevated Structure
- Large Interior Spaces
- Connection with the Environment
- Modular Structure
- Public Spaces
- Courtyards and Terraces

Sustainabiblity Properties :

- Sustainable Drainage Systems: The design includes stormwater management solutions such as permeable pavements that allow rainwater to infiltrate into the ground.
- Rainwater Harvesting: Systems have been implemented for the collection and use of rainwater.
- Local Materials: Priority is given to the use of local and environmentally friendly materials in the construction of the Theaterplein. that reduces the carbon footprint associated with the transportation of materials.
- Durability and Maintenance: The selection of materials has been made with an emphasis on durability and strength
- Climate Change Adaptation: Sustainable design also includes considerations for resilience to extreme weather events. , Theaterplein is better prepared to cope with the effects of climate change

(Theaterplein by Studio Bernardo Secchi & Paola Viganò, n.d.)

Figure 19. “Theaterplein por Studio Bernardo Secchi & Paola Viganò” METALOCUS. Accedido el 17 de noviembre de 2024.

2.3.2 Connecting the urban market atmosphere with the city

Theory:
Sustainable mobility theory

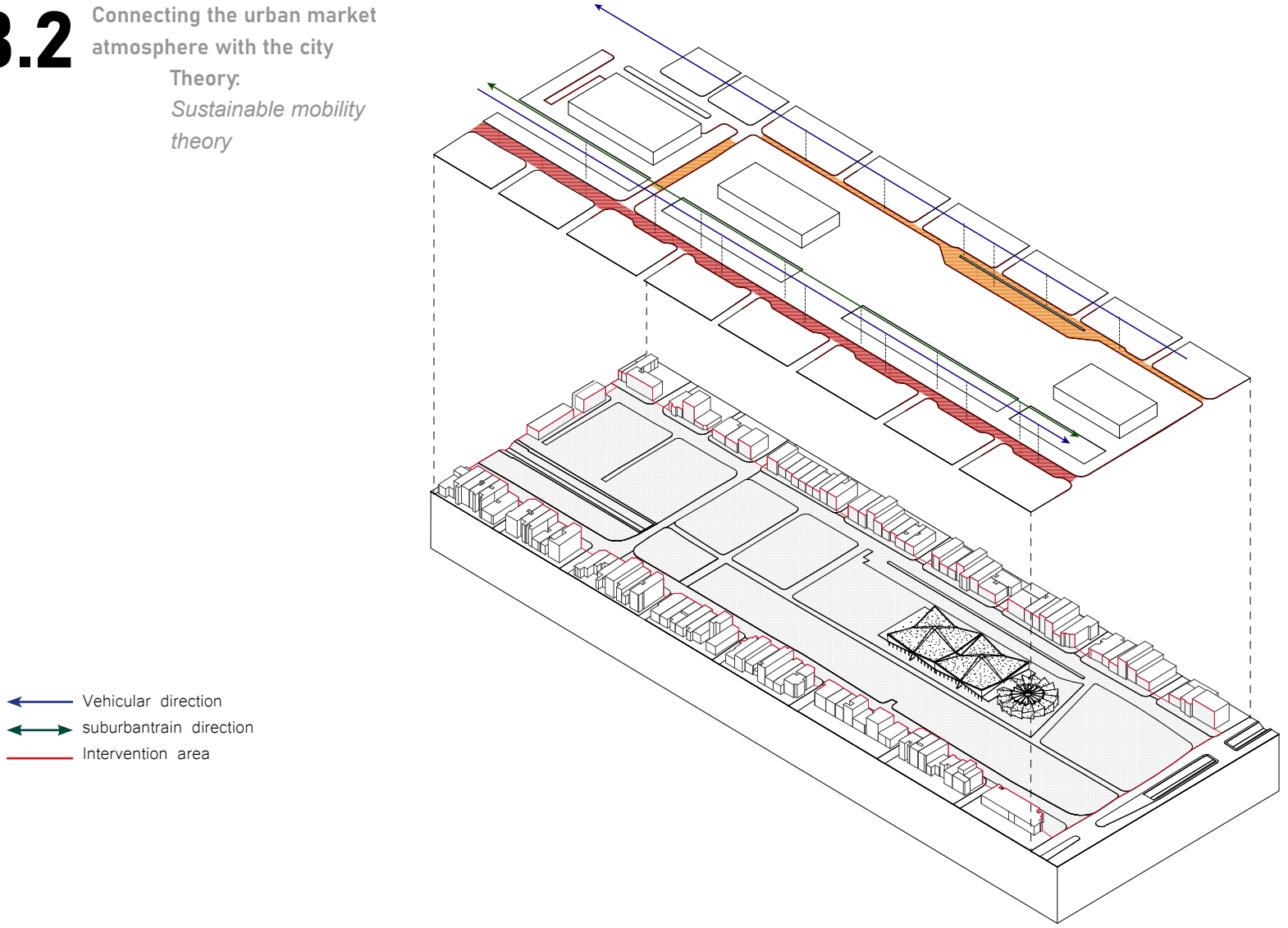


Figure 20. Strategy 2 of the study area. Elaborated by the author.

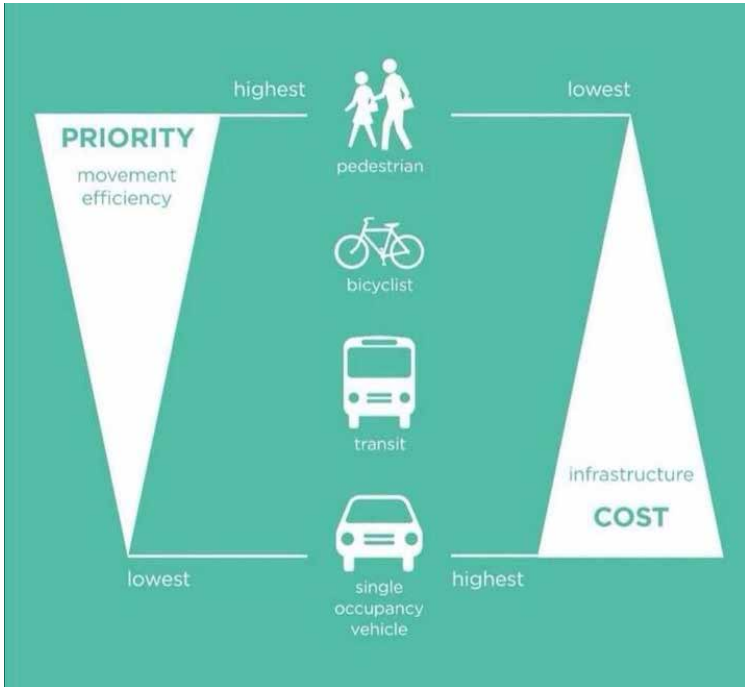
Connecting the urban market atmosphere with the city

0.2 Sustainable mobility theory

According to the Sustainable Mobility System hypothesis, urban transportation should be planned and managed to minimize adverse environmental effects, advance social justice, and guarantee economic viability. Banister (2008) asserts that this strategy calls for enhancing public transportation, cycling, and walking in order to lessen reliance on private vehicles. Along with reducing environmental effects, particularly carbon emissions, by integrating clean technologies and green infrastructure, it also advocates for the design of accessible cities with linked and secure public areas. Involving local communities in the planning process is crucial for ensuring that mobility solutions are fair and take into account the individual demands of users.

The arrival of the commuter train project, which will feature the Galería Santa Elena as one of its important stations, will be a significant factor in the development of Cali's mobility. In addition to linking outlying areas with the city center, this project will take advantage of urban regeneration in this key location. The addition of a station at Santa Elena will make it easier for customers to get to the market and promote the neighborhood's social and economic revitalization. Additionally, by integrating rail transportation with other environmentally friendly modes like bicycling and public transportation, this integration is anticipated to improve intermodality. In addition to helping to relieve traffic, this project will solidify the Galería as a major hub for business, culture, and sustainable mobility in Cali.

Banister, D. (2008).



Sustainable Mobility and Urban Renewal: The Case of the Cheonggyecheon Project in Seoul

Architects: Architectus S/S
Area: 10.9-kilometre-long stream and public space
Location: Seoul, South Korea.
Year: 2005

Characteristics:

- Urban Revitalisation
- Public and Recreational Spaces
- Urban Connectivity
- Social and Economic Impact
- Cultural and Historic Preservation

Sustainabiblity Properties :

- Priority to pedestrians and cyclists: An elevated motorway was removed and an accessible green corridor was created, promoting walking and cycling.
- Urban connection: Functions as a mobility hub connecting different neighbourhoods in Seoul, improving accessibility and reducing urban fragmentation.
- Reduced vehicular traffic: Public transport was promoted as an alternative, reducing traffic congestion in the area.
- Green infrastructure: Recovery of the river as a key element for sustainable transport, integrating footpaths and green areas.
- Impact on quality of life: Promotes social interactions, recreational activities and improved environmental quality in the city centre.

Moises Carrasco. “Re-Naturalization of Urban Waterways: The Case Study of Cheonggye Stream in Seoul, South Korea” 12 Sep 2024.

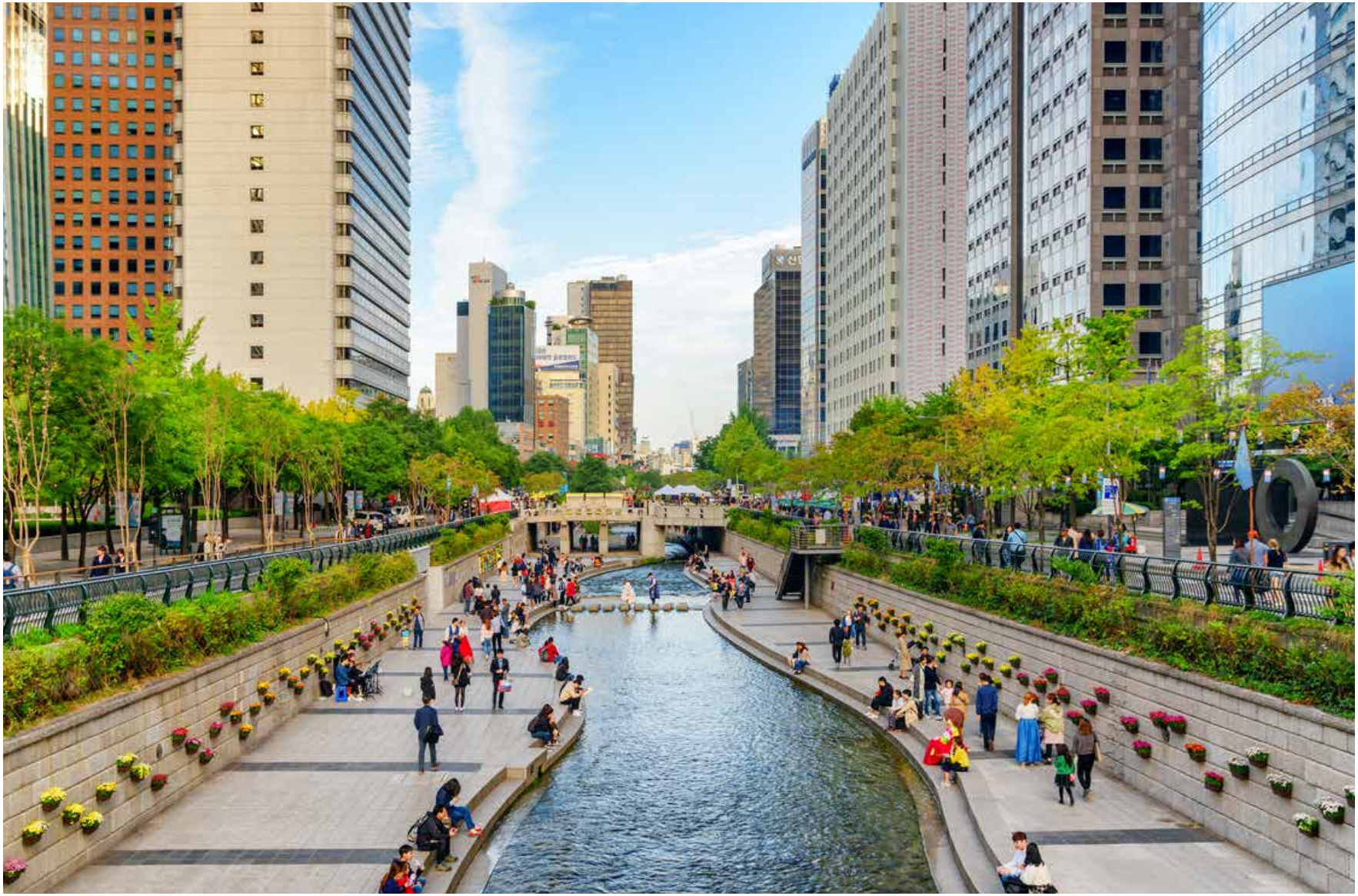


Figure 21. Moises Carrasco. “Re-Naturalization of Urban Waterways: The Case Study of Cheonggye Stream in Seoul, South Korea” 12 Sep 2024.

2.3.3 Strengthening an Environmental focus as a pillar for urban sustainability

Theory:
Green and blue infrastructure

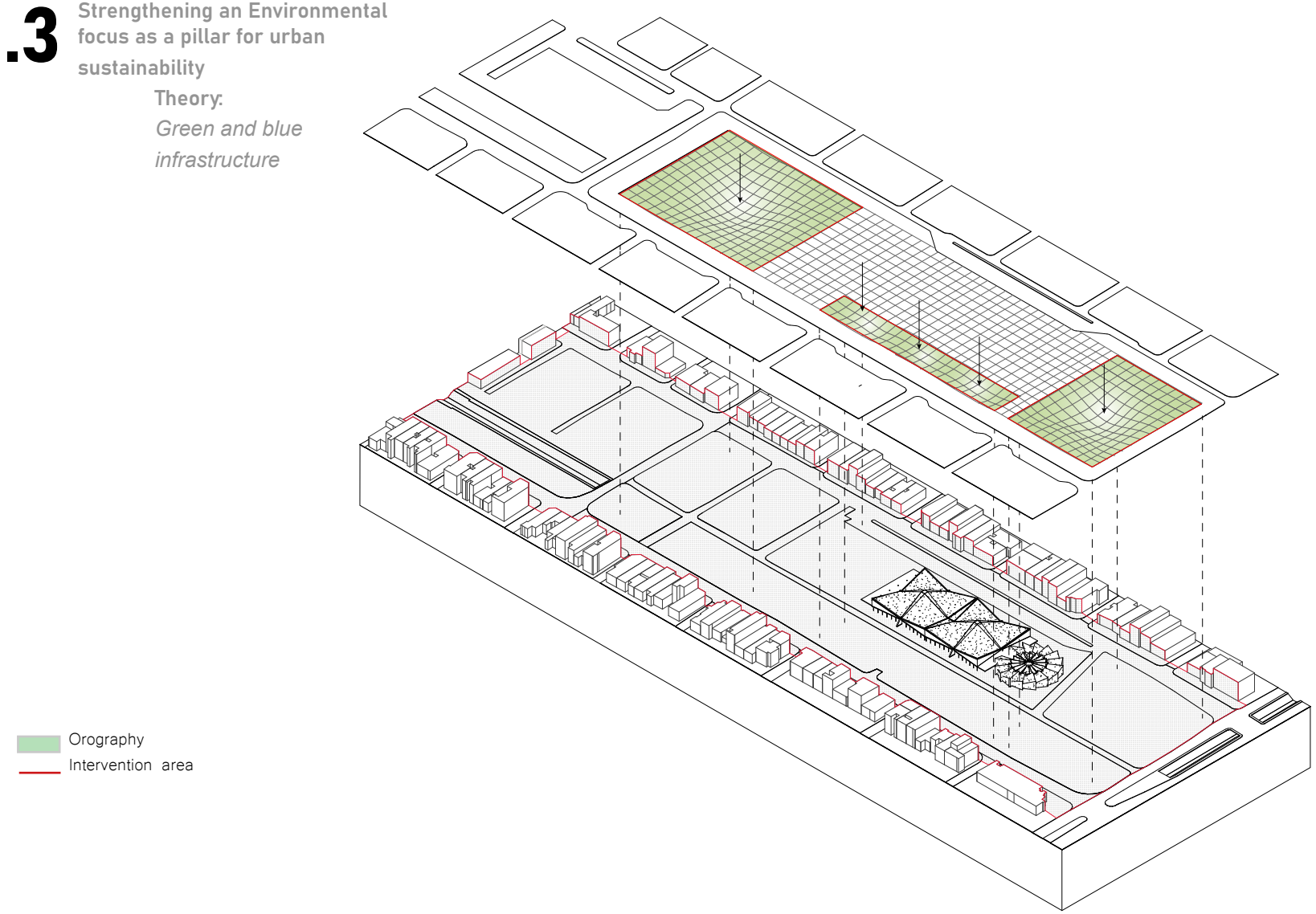


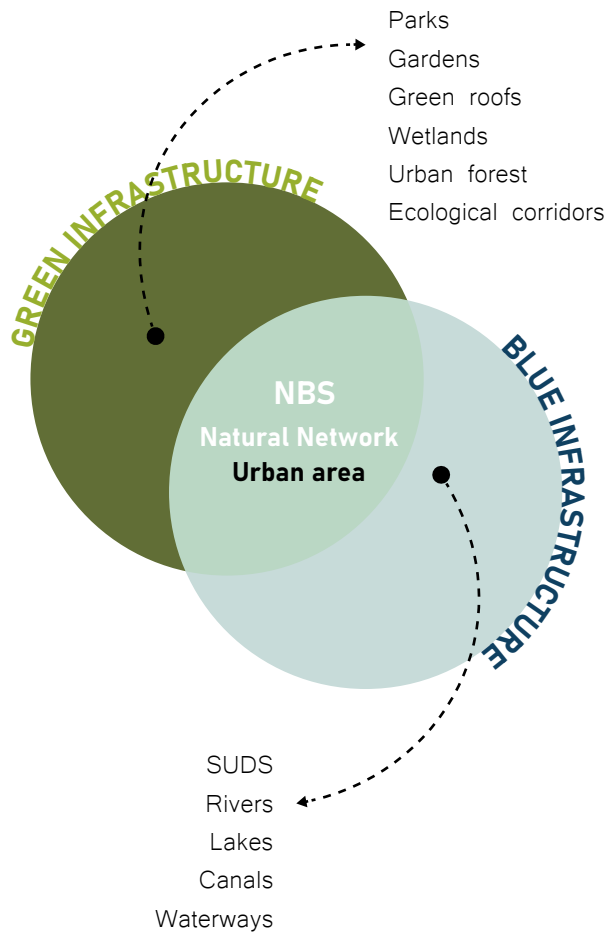
Figure 22. Strategy 3 of the study area. Elaborated by the author.

Strengthening an Environmental focus as a pillar for urban sustainability

0.3 Green and blue infrastructure

Mell's 2016 book Green Infrastructure: Planning for Climate Change and Urban Sustainability examines how green infrastructure might be a crucial response to today's urban problems, including sustainability, climate change, and urban quality of life. A network of natural and semi-natural areas in urban areas, such as parks, gardens, green roofs, wetlands, urban forests, and ecological corridors, is referred to as "green infrastructure," according to Mell these areas carry out vital ecological tasks include managing water resources, conserving biodiversity, enhancing air quality, and lowering urban heat islands. Furthermore, permeable spaces and rain gardens are examples of sustainable drainage systems (SUDS) that enhance stormwater management, lower the danger of flooding in urban areas, and increase resilience to extreme weather events.

Mell emphasizes that in order to combine natural solutions with conventional methods, green infrastructure needs to be carefully constructed. In order to combine natural solutions with conventional urban infrastructure, green infrastructure needs to be carefully developed. To build a resilient and sustainable urban environment, interdisciplinary planning comprising ecologists, engineers, urban planners, and the community is required. Both ecological and economic benefits should be taken into account in this planning. Instead of replacing grey infrastructure (buildings, roads, etc.), green infrastructure should be viewed as an addition to it. For effective urban solutions that support sustainability, both forms of infrastructure must be integrated. Green spaces, for instance, can enhance public areas, lessen the strain on



Integration of Green and Blue Infrastructure in Fortaleza Park: A Model of Urban Sustainability in Brazil

Architects: Architectus S/S
Area: 90969 m²
Location: Fortaleza, Bazil
Year: 2022

Characteristics:

- Open Space Design
- Design Integrated with Nature
- Multifunctional Spaces
- Connectivity and Access
- Urban Design

Sustainabiblity Properties :

- Efficient Water Management: Rainwater Harvesting: Systems have been implemented for the collection and storage of rainwater, which is used to irrigate the park's green areas. Infiltration Zones: Areas designed to allow natural infiltration of water into the soil are incorporated, which helps to recharge aquifers and reduce erosion.
- Native Vegetation and Biodiversity:Use of Native Species: The park is designed using plants and trees native to the region.
- Sustainable Materials: The use of recycled and environmentally friendly materials in the construction of infrastructure, and use of Local materials to reduce the carbon footprint associated with transportation
- Accessibility and Sustainable Transport: The park is designed to be accessible via pedestrian and cycle routes, reducing reliance on the car

(Moreira, 2022b)

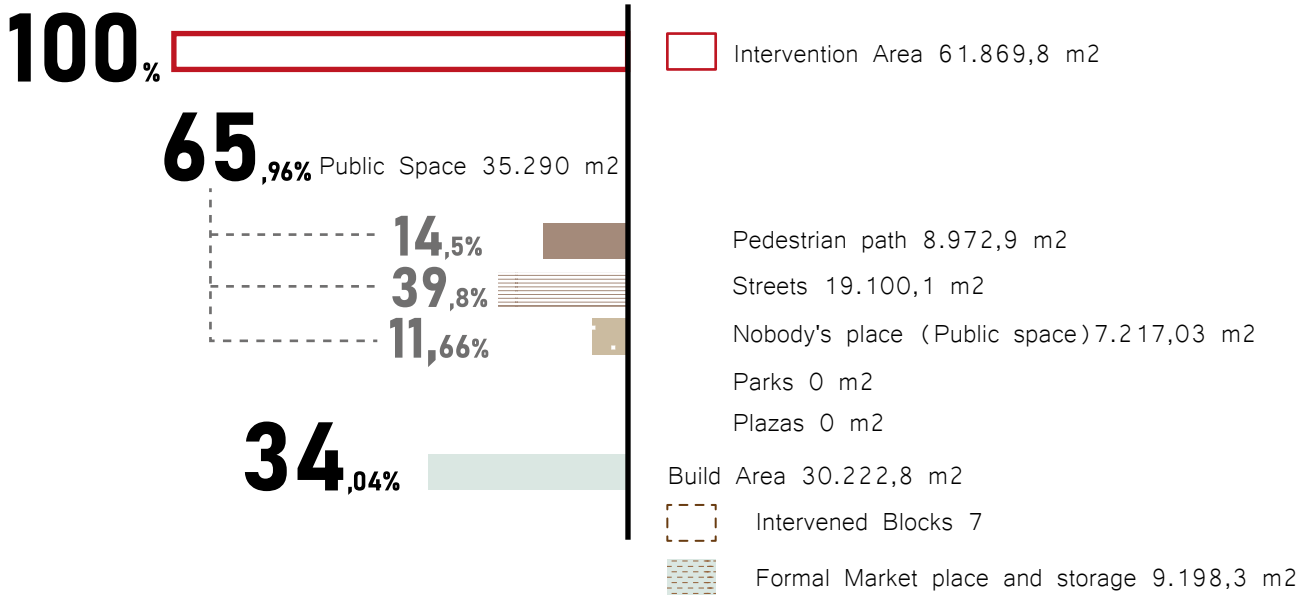
Figure 23. “Rachel de Queiroz Park / Architectus S/S” [Parque Rachel de Queiroz / Architectus S/S] 20 Jul 2022.

03 Analysis of the intervention area

Figure 24. Geberal areas of the proposed Study Polygon. Elaborated by the author based on (Geoportal IDESC, n.d.-b).

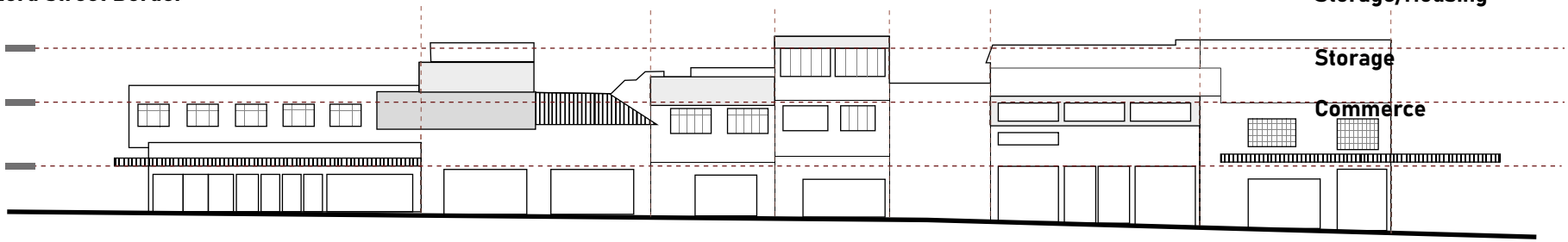
3.1 Soil tipology in the intervention area, activity and uses in the public space

The plan shows the work cut out and how the space is distributed according to the use given to each element that makes up the public space and built area such as streets, pavements, the so-called 'nobodys place', among others. It is evident according to the percentages that there is **no equity in the distribution of the space** being 65% of the public space not effective and 34% of the constructed area, showing the **deficiency of effective public space per inhabitant**.



23rd street facade | Santa Elena Market

23rd street Border



23rd street Activity

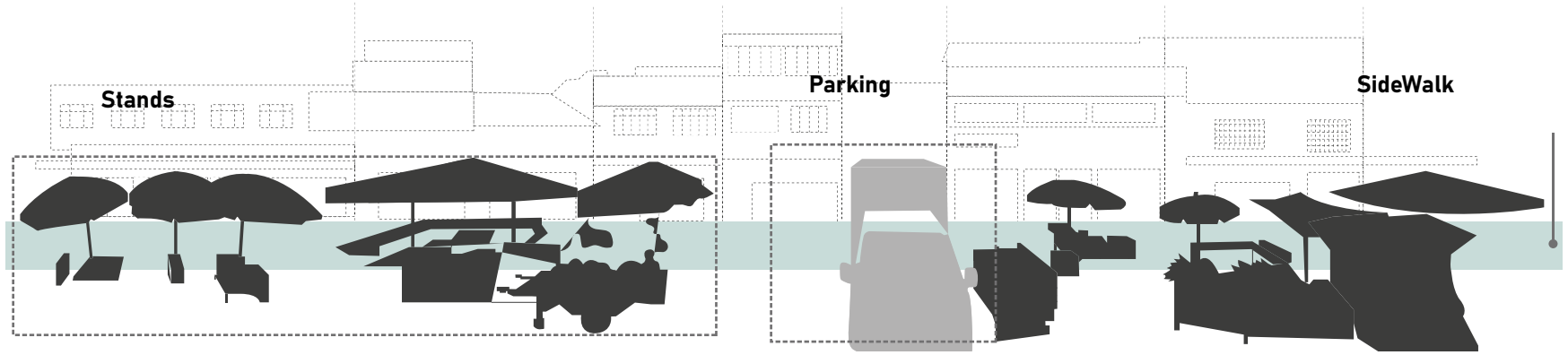


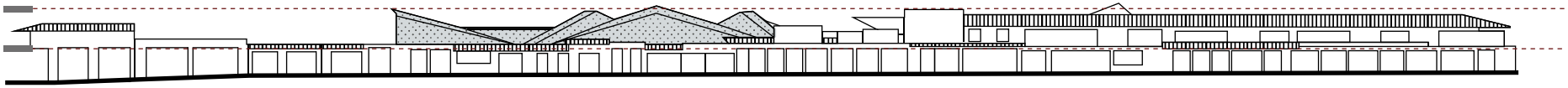
Figure 25. Facade-Edge with current activity and uses.. Elaborated by the author based on Google StreetView.

Facade ove the market place | Santa Elena Market

Border of the market place

Commerce - Market

Access

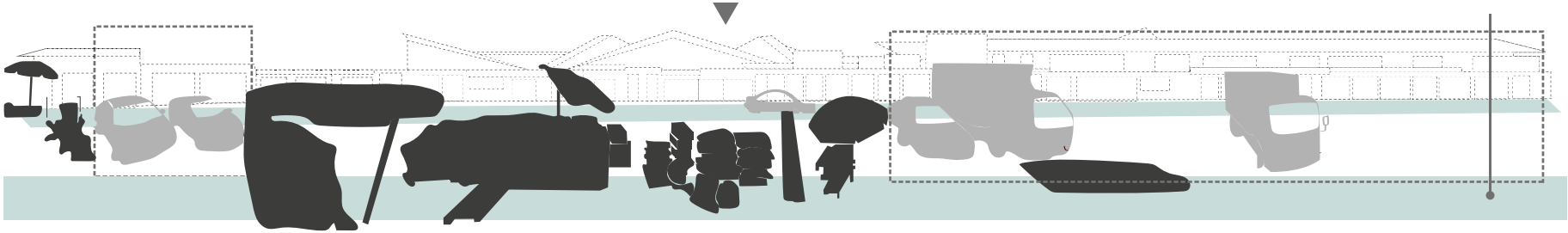


Parking

Access

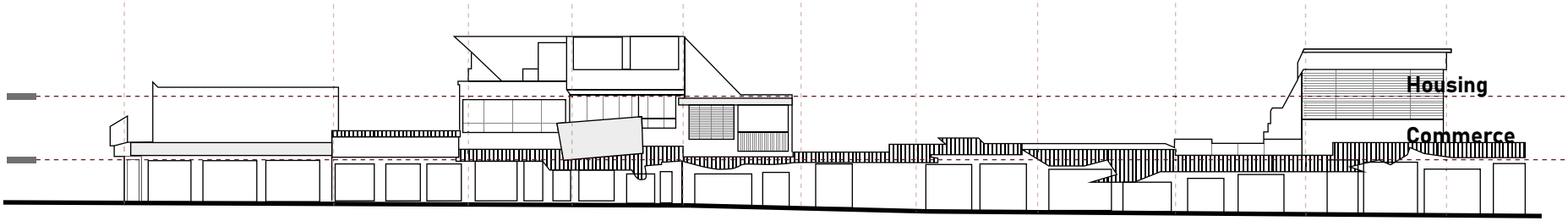
Parking

SideWalk



Facade on the Strees of Traders | Santa Elena Market

Border Street of Traders



Activityon the Street of Traders

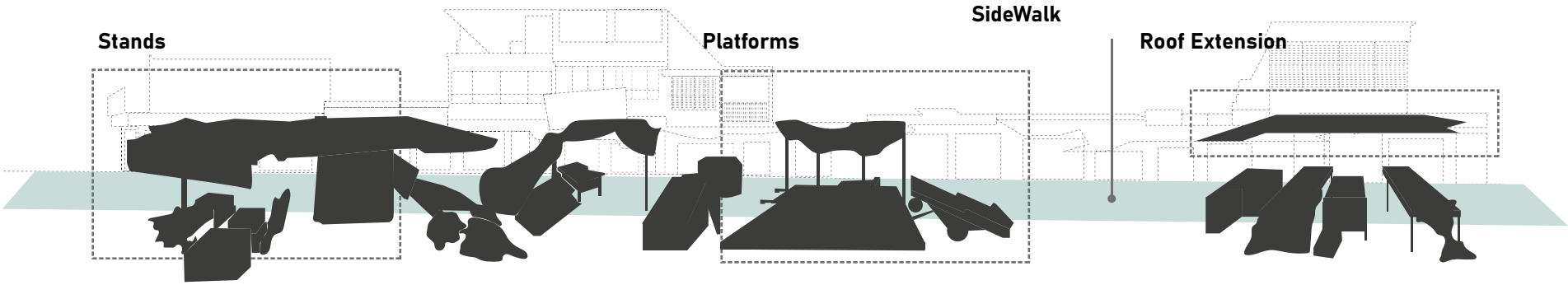


Figure 26. Facade-Edge with current activity and uses.. Elaborated by the author based on Google StreetView.

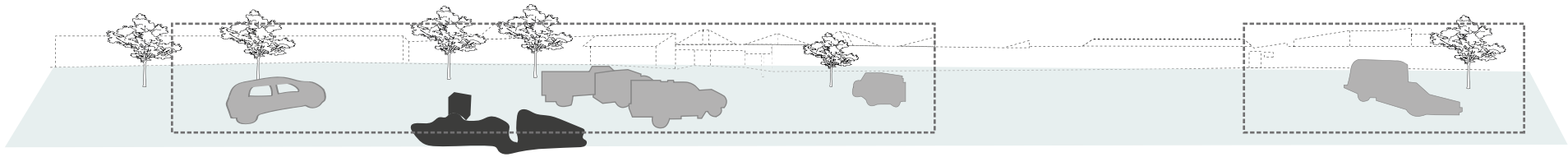
25th Facade Street | Santa Elena Market

25th Street Border

El Planchon **Market**

Current Activity Green Corridor

Parking **Parking**



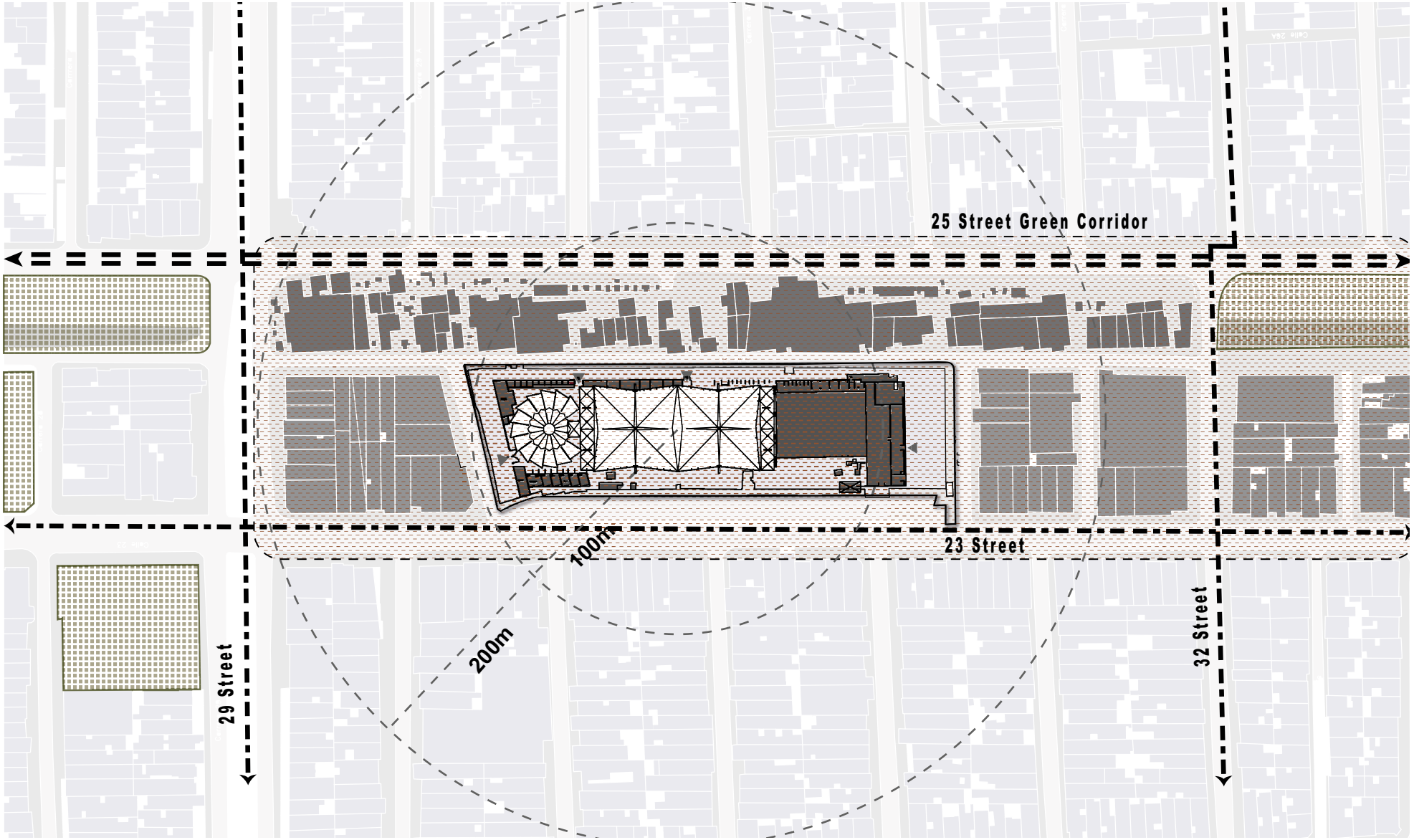


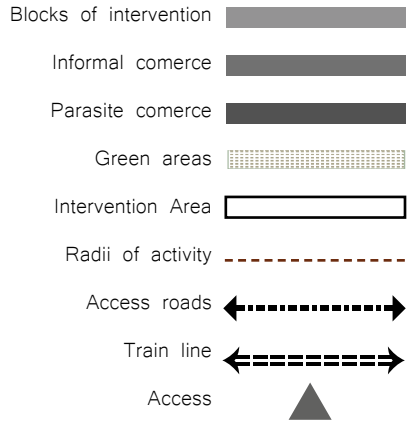
Figure 27. Conditions and Dynamics of the space. Elaborated by the author based on (Geoportal IDESC, n.d.-b).

3.2 The centrality of Santa Elena: intervention blocks, land uses and boundaries.

For the development of urban design strategies, the process begins with identifying a specific area or polygon to analyze the issues and opportunities of the study site. According to the POT (2014), the supply centrality of Santa Elena is limited by blocks affected by land uses similar to that of the market square. Likewise, the resolution of key factors was established for the creation of the partial plan of Santa Elena (Administrative Department of Planning, 2018), covering an area of 13 hectares.

However, to create an urban design project that connects various blocks surrounding the market area, the study area is defined with the Santa Elena Gallery's market square at its center, serving as a key element for urban development and placemaking (Baquero, 2011), with an approximate radius of 500 meters (walking distance).

Additionally, it is important to consider the positioning and arrangement of the market phenomenon within the urban space near the Santa Elena Gallery to fully understand the current conditions and the dynamics of how the space is appropriated.



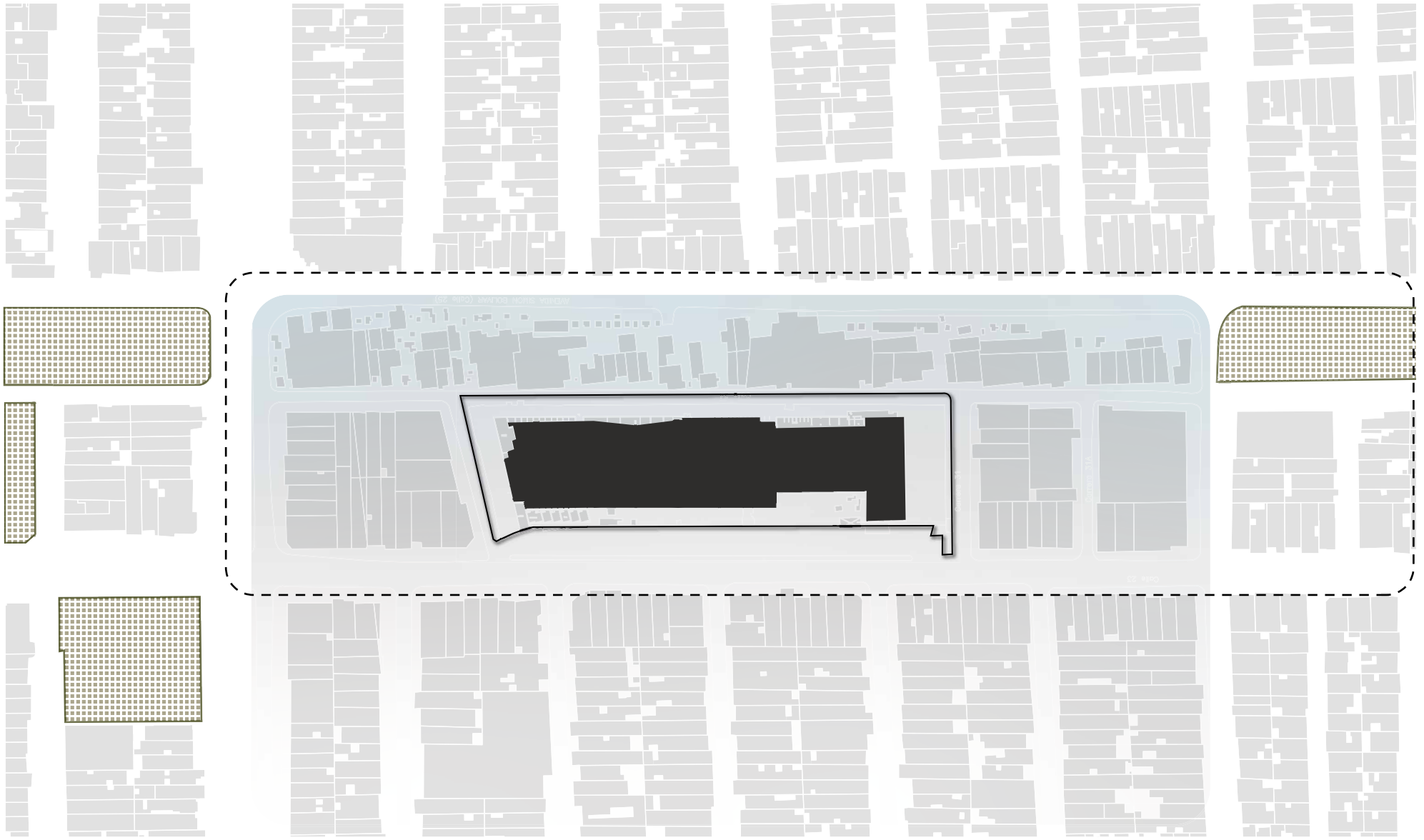
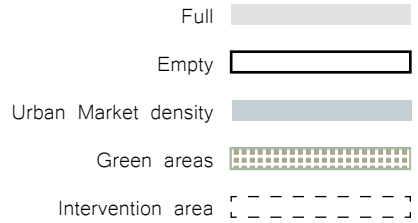


Figure 28. Full and Empty Space. Elaborated by the author based on (Geoportal IDESC, n.d.-b).

3.3 Full & empty and market density

The urban fabric presents a greater occupation in the constructions versus the lack of urban voids, even within the properties, since the emptiness is present predominantly in the structure of public space (streets and pavements) and the rest of the area denoted as environmental corridor according to the POT (2014) is invaded by informal businesses.

The phenomenon of the urban market is presented in a linear form along 23rd and 25th streets and is directly related to the market square. The recurrence of market activity as shown in Map 11 is greater around the Santa Elena gallery as the type of commerce present responds to the city level and therefore there is more movement of people during the day and the recurrence within the urban fabric is lower as the type of commerce within the blocks responds to the same residents of Santa Elena, i.e. on a more neighbourhood scale.



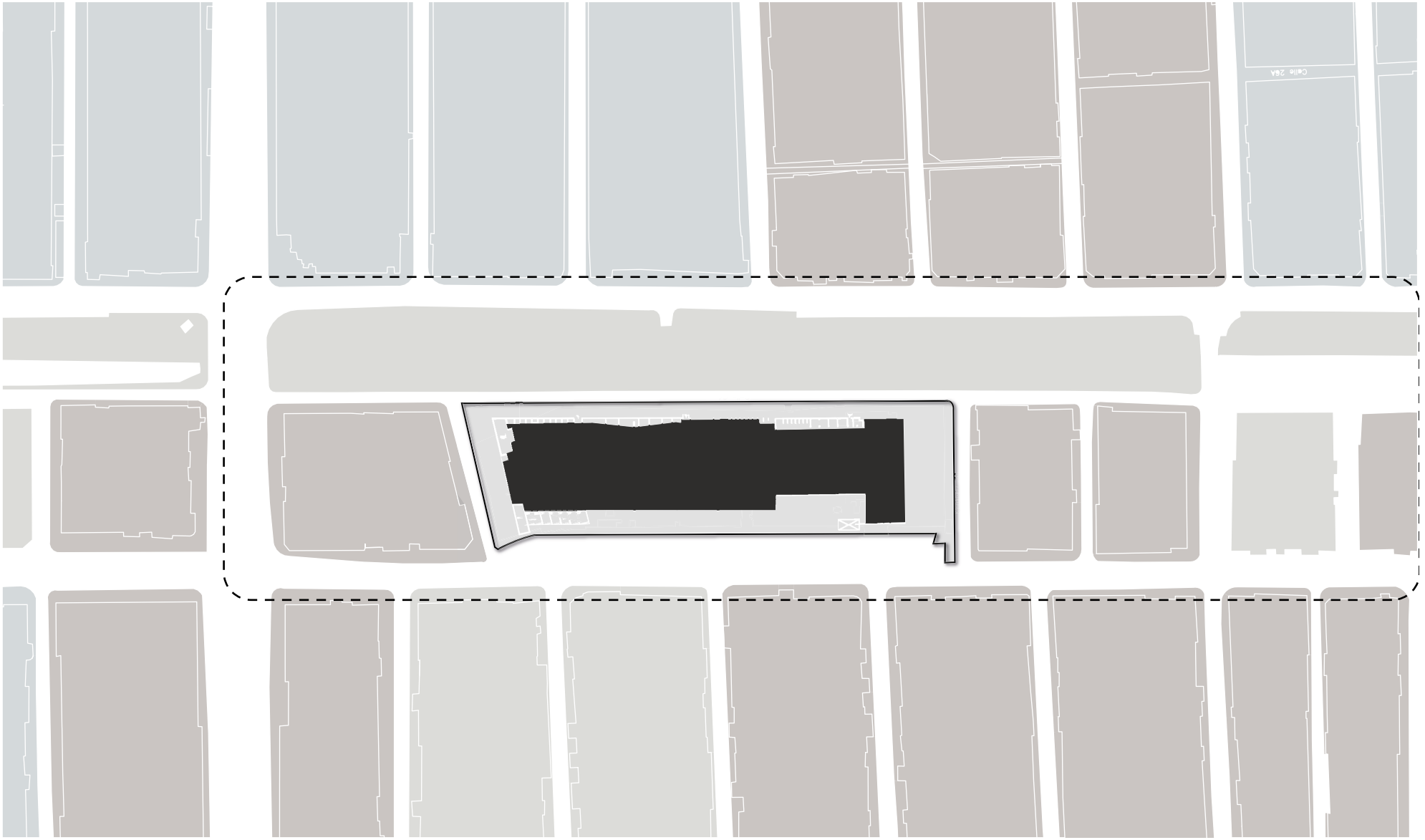
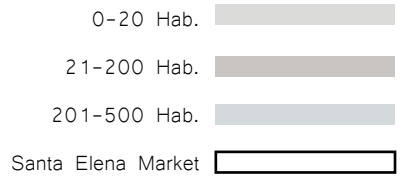


Figure 29. Population density per city block. Elaborated by the author based on (Geoportal IDESC, n.d.-b) (Geoportal DANE - Geovisor Detallado Para Sectores Y Manzanas Del CNPV 2018, n.d.).

3.4 Population density per block

The analysis shows that commercial activity in the area surrounding the Santa Elena market has changed significantly in recent years. The proliferation of markets and food exchanges has promoted the conversion of the first floors of buildings into commercial or warehouse space. This phenomenon has transformed the area into a commercial centre, displacing residents to the peripheries of the neighbourhood. As a result, the population density in the centre of this area has decreased, the surrounding blocks have between 0-200 inhabitants approx. as many inhabitants have been relocated out of the immediate area of the gallery.

This change has turned Santa Elena Market into a transit point, rather than a stable place of residence. The area now functions mainly as a transient commercial centre, where the flow of people is constant, but the permanence of residents has diminished.



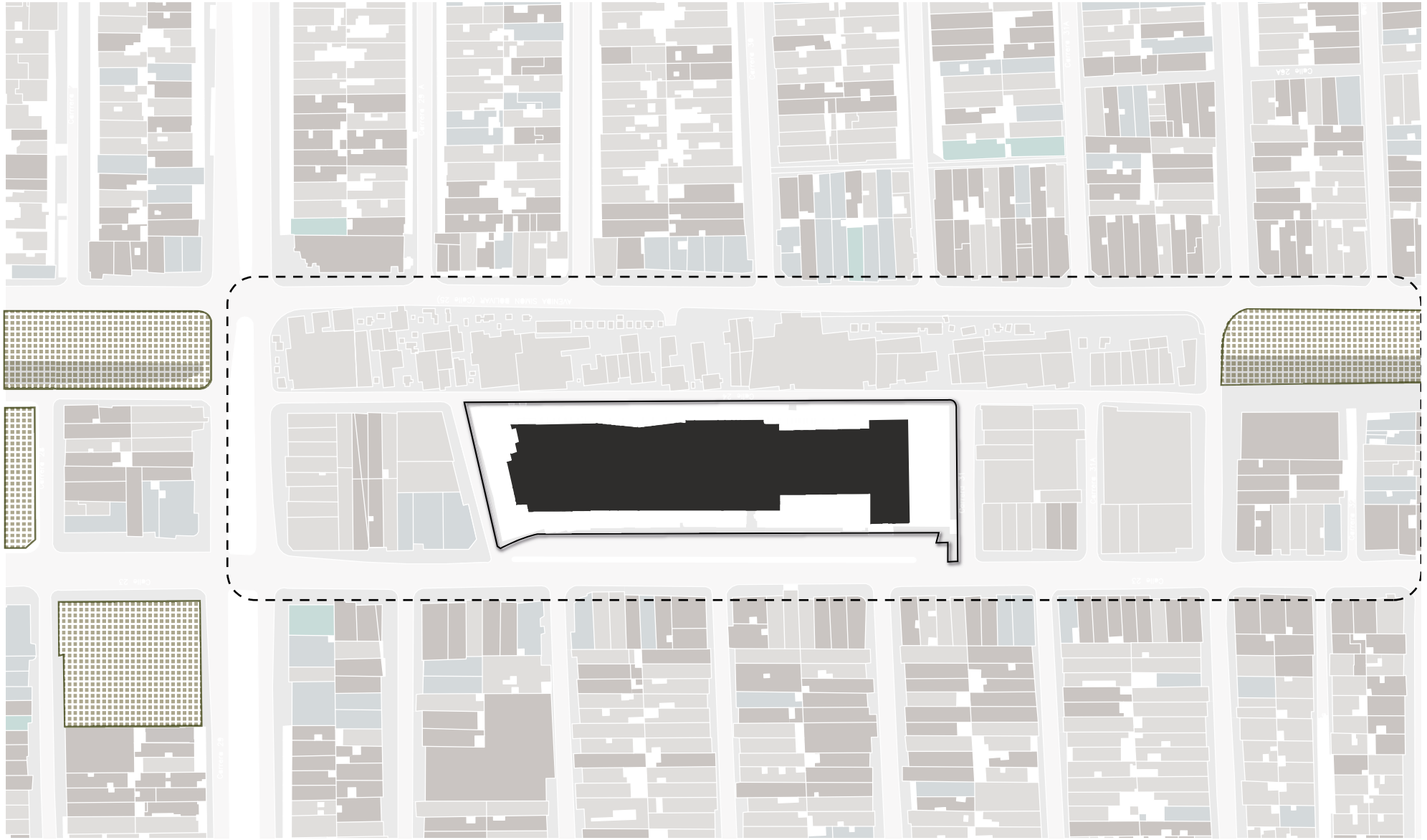
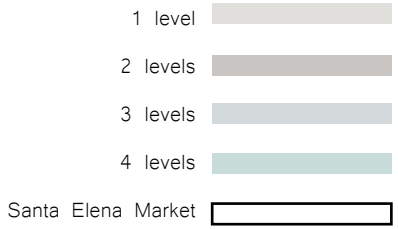


Figure 30. Number of floors in the area. Elaborated by the author based on (Geoportal IDESC, n.d.-b) (Geoportal DANE - Geovisor Detallado Para Sectores Y Manzanas Del CNPV 2018, n.d.).

3.5 Number of floors of the study area

The division of the blocks and the heights of the buildings in the sector provide a clear idea of the predominant architectural typology in the area, which is mainly oriented mainly to housing. The buildings around the Santa Elena Market are a maximum of four floors, which gives them a moderate height and therefore limits the residential density within the neighbourhood. This factor contributes to commercial activity being the most prominent, in contrast to little residential real estate development.



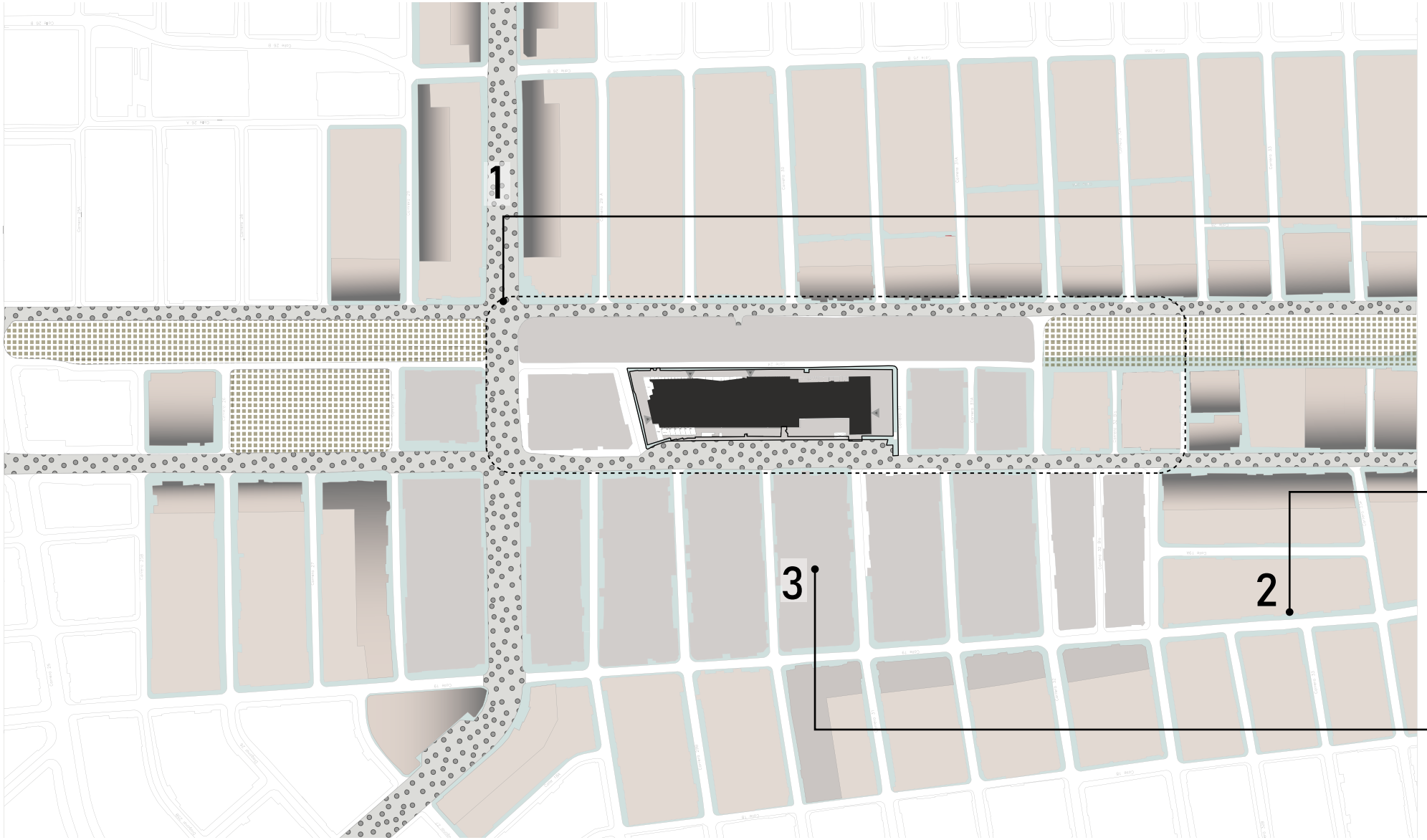


Figure 31. Market users and Diversity of activities of the Santa Elena Gallery. Elaborated by the author based on (Geoportal IDESC, n.d.-b).

1.Market Visitor

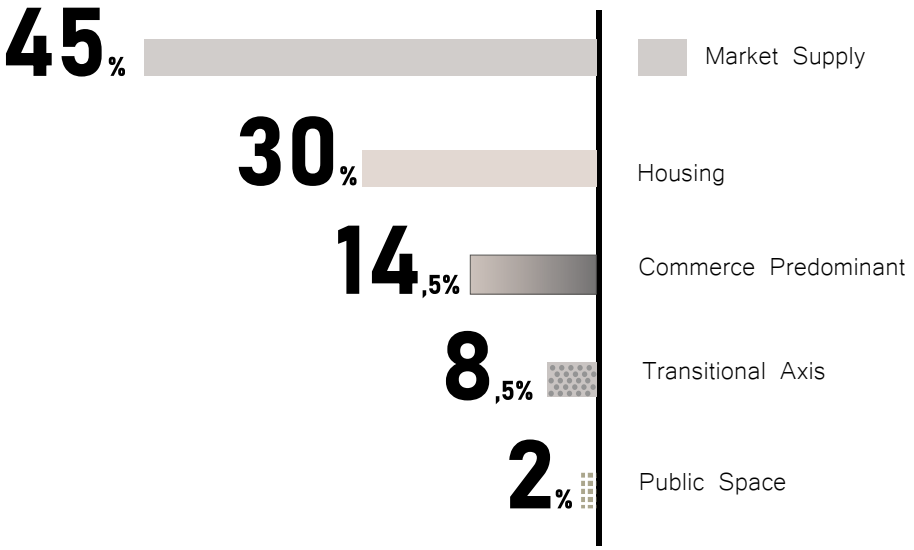
2. Resident

3.Market Seller

Figure 32. Photos by Paréntesis Cali (Blog-spot), Diario Occidente (25 May 2017)

3.6 Uses and activity lands

This allows us to understand how the three types of users, present in the urban space, are located and develop their activities in a fragmented way and without a social relationship since there are no spaces of permanence that invite the different users to stay and live life in community.



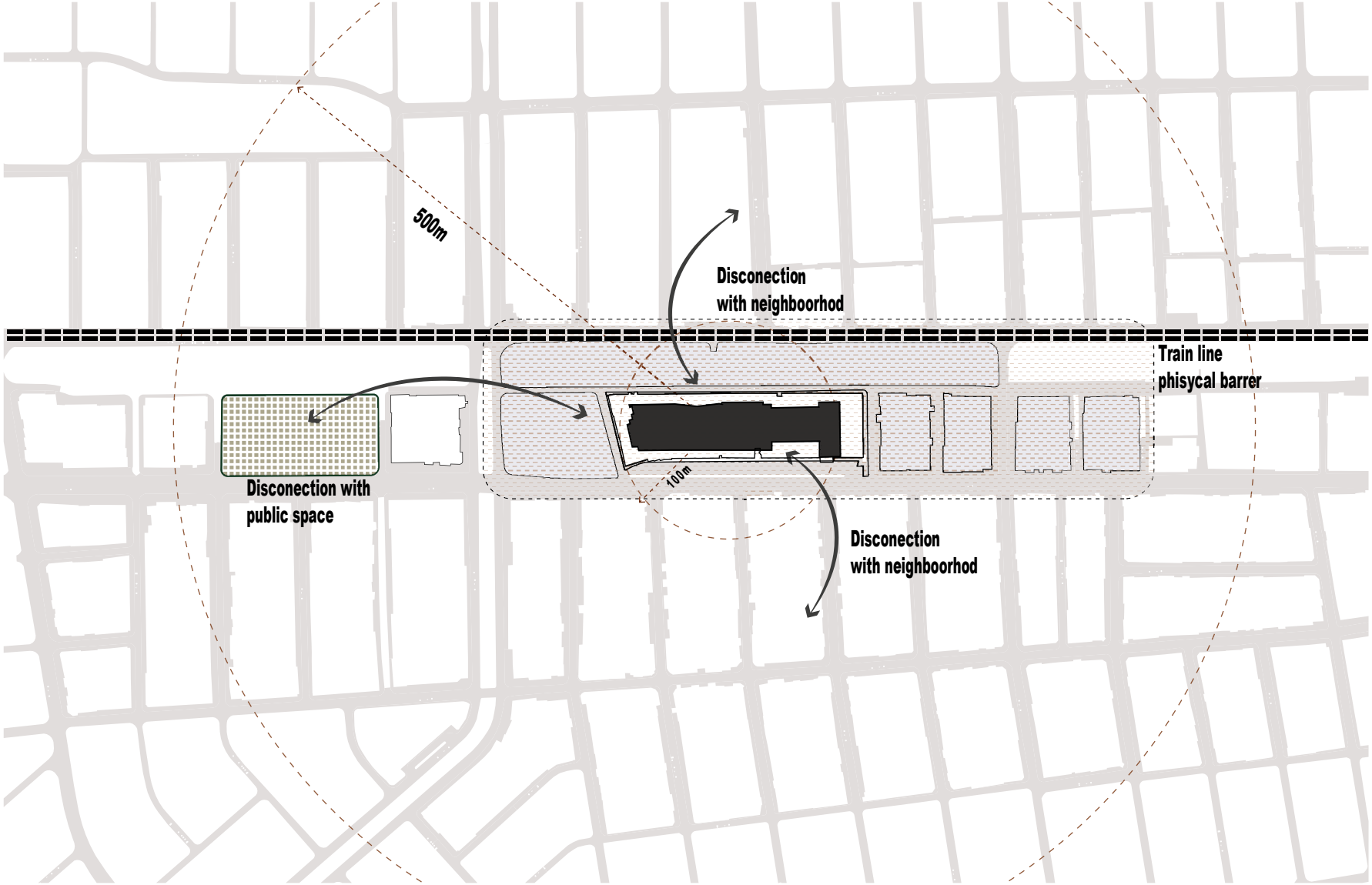
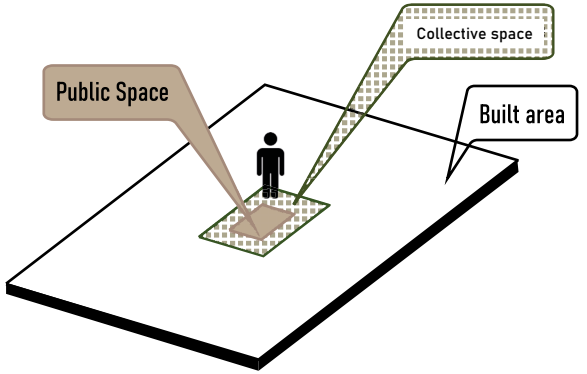


Figure 33. Collective spaces and disconnection in the Santa Elena Gallery. Elaborated by the author based on (Geoportal IDESC, n.d.-b).

3.7 Collective spaces of the Santa Elena Market area

The Galería Santa Elena is located in an urban corridor in the city of Cali, where there is a predominance of buildings that have arisen in response to the demand generated by the commercial activity in the area. Although the sector was originally intended for residential use, the development of the gallery has made the street the only collective space available. The absence of squares, parks, avenues or even streets designed specifically for the market environment limits the creation of meeting and appropriation areas for users. In this way, the social and spatial qualities are concentrated outside the gallery, creating a disconnection with the surroundings and the neighbourhood and denying the possibility for the community to develop new activities of integration and appropriation of the sector.



Train Line
Analysis Radius
Santa Elena Market
Intervention Area
Green Areas
Roads

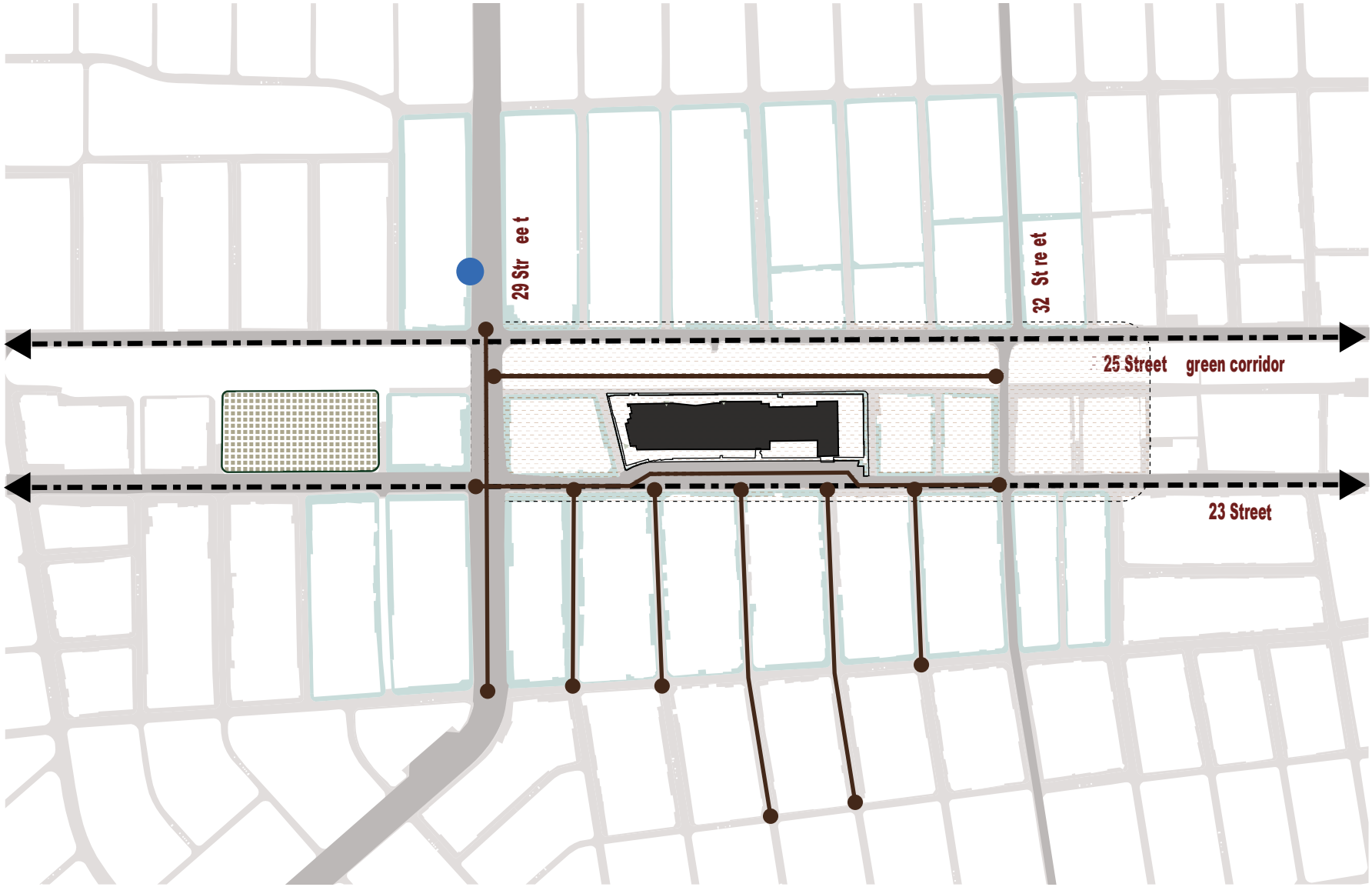
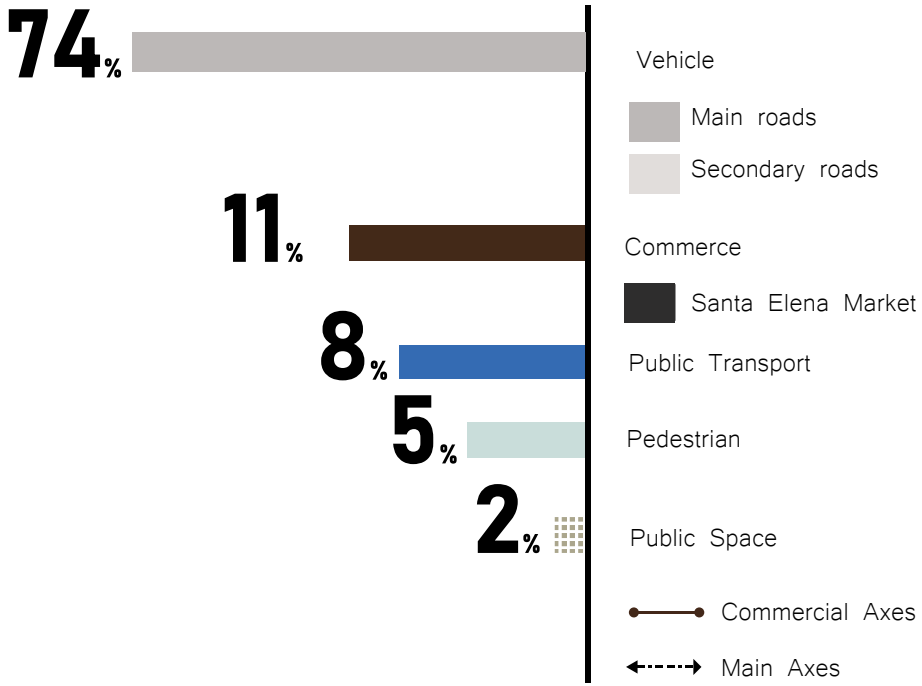


Figure 34. Typologies of mobility whitin the area. Elaborated by the author based on (Geoportal IDESC, n.d.-b).

3.8 System and functioning of mobility

The Galería Santa Elena was situated on two roads (Calle 25 and Calle 23) that made up Cali's railway system. Its primary function was to connect and relocate people in the region. The market requires people to leave the market, eat outside of the designated area, and be in an area where chaos reigns because of its carriages and temporary stands, which even take up part of the main pavements. The secondary streets, which reach the urban market in a transversal way and the traders take over the street.



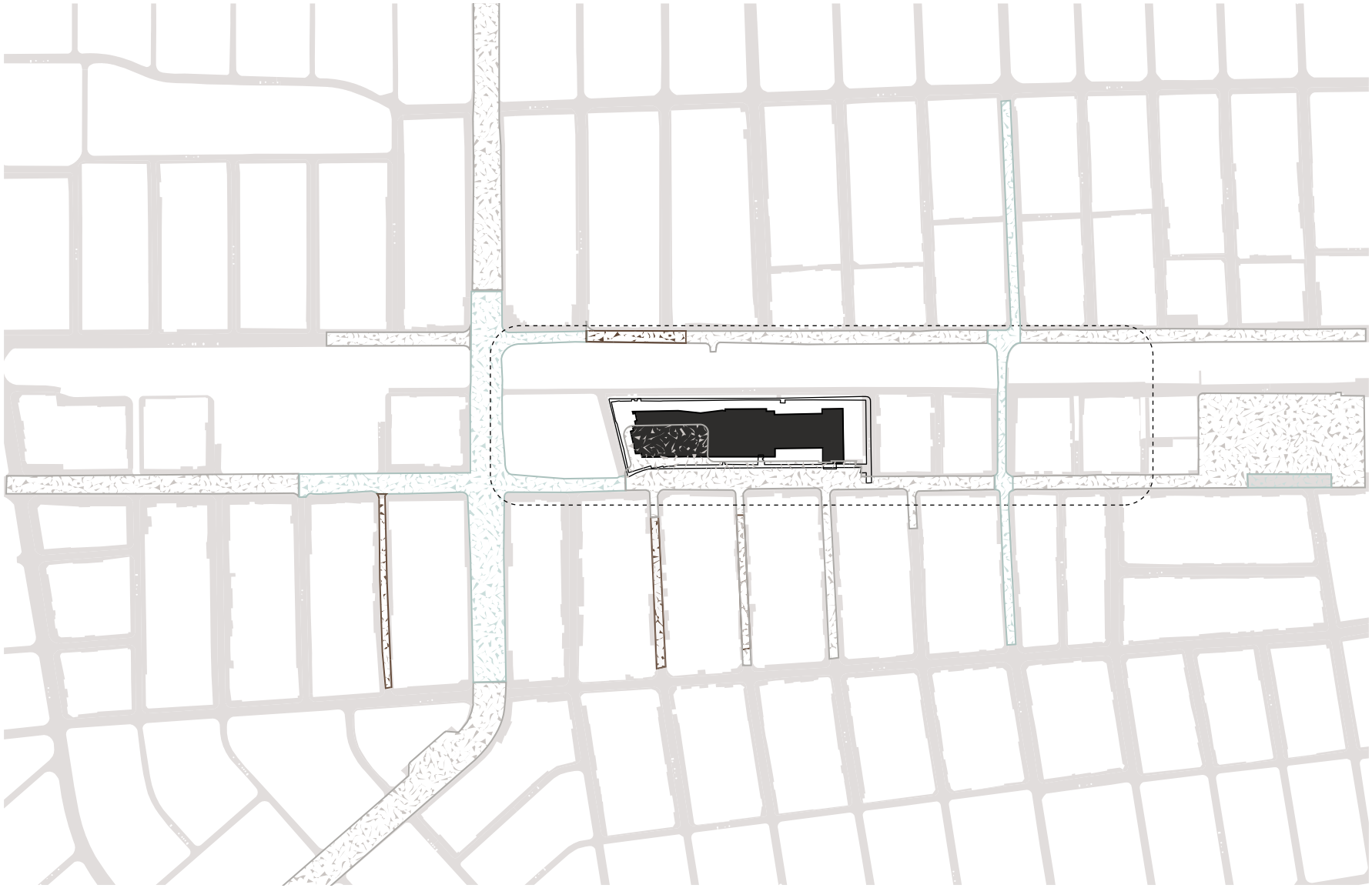
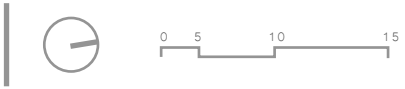


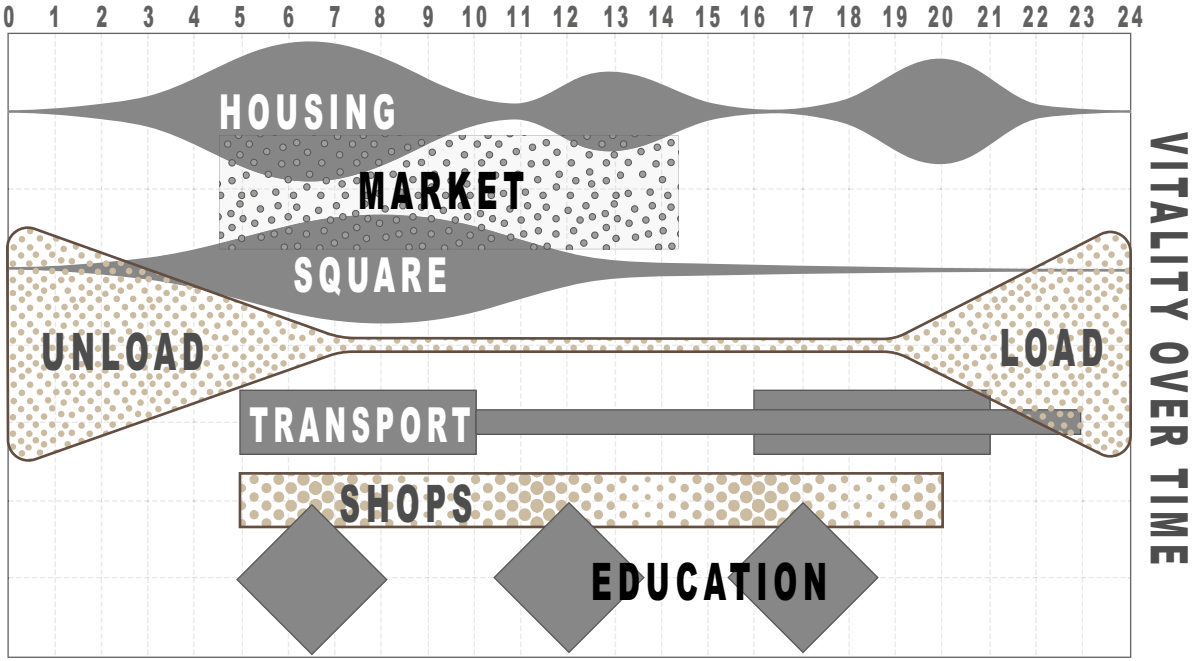
Figure 35. Vitality over time. Elaborated by the author based on (Geoportal IDESC, n.d.-b).



3.9 Vitality of Santa Elena Market area

The analysis shows how fragmented vitality can be in the sector of the galeria santa elena due to the lack of supply of a space with urban quality. this perception of the times of vitality shows how those spaces that overlap the daily activity, respond only to the commercial function.

Diagram 1 shows that the market and the squeare is most active in the morning hours, while the residents of the sector are active throughout the day. loading and unloading of goods and market supply takes place in the early hours of the morning or at night when human activity is less present. and the other surrounding shops are just as lively throughout the day.



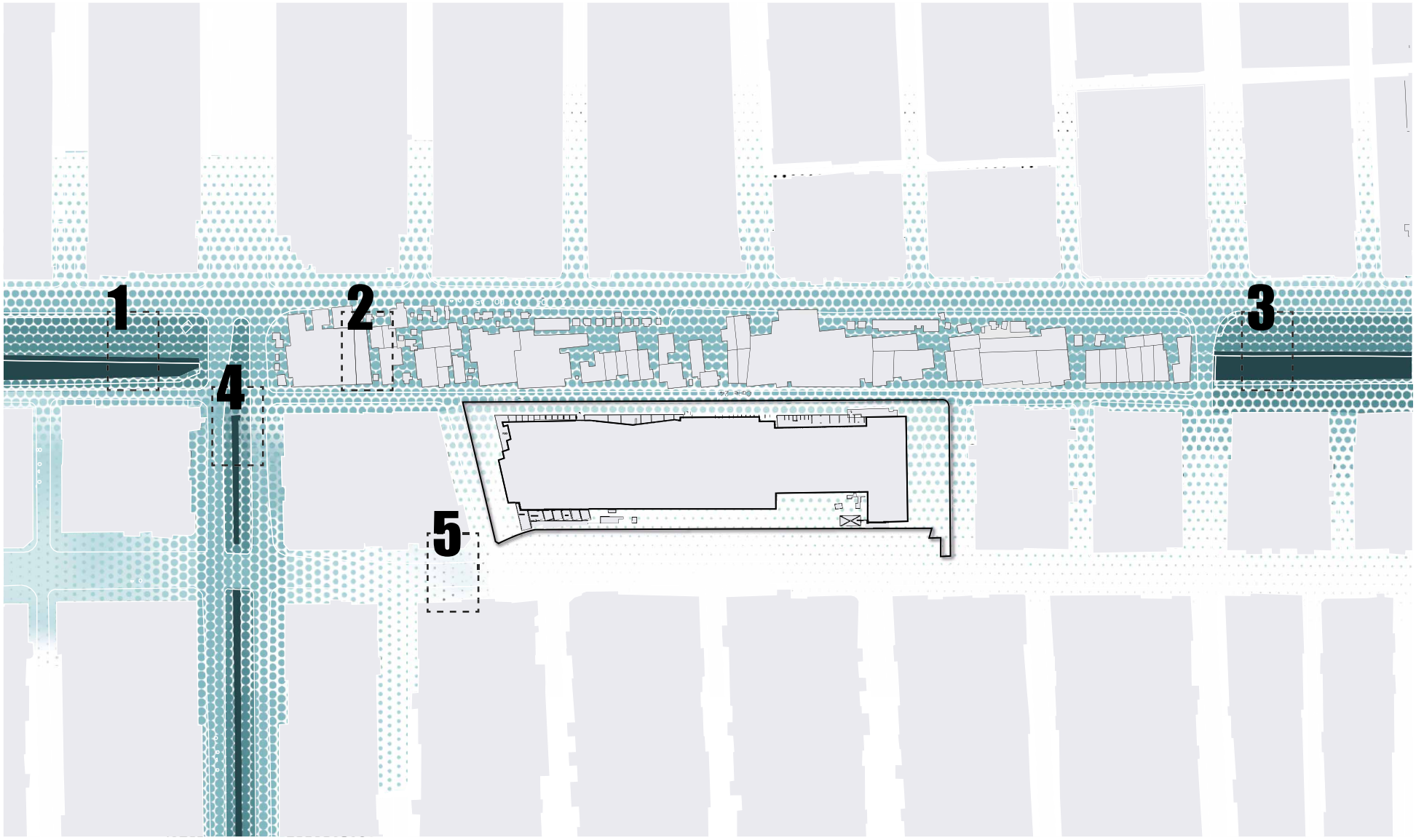


Figure 36. Flooding Areas. Elaborated by the author based on (Geoportal IDESC, n.d.-b) (Jiménez, N, Burbano, W, & Velásquez, A. (2012).

3.10 Flooding risk in Santa Elena Area

The urgency of addressing the city's flooding problem in times of frequent rainfall is quite evident. **The poor management of rainwater** and the conversion of the watercourse into a **communal rubbish dump** creates an **undesirable space for people to enjoy**, which is conducive to bad smells and clogging of the water channels around the Galeria Santa Elena.

1


2


3


4


5


FLOODING RISK

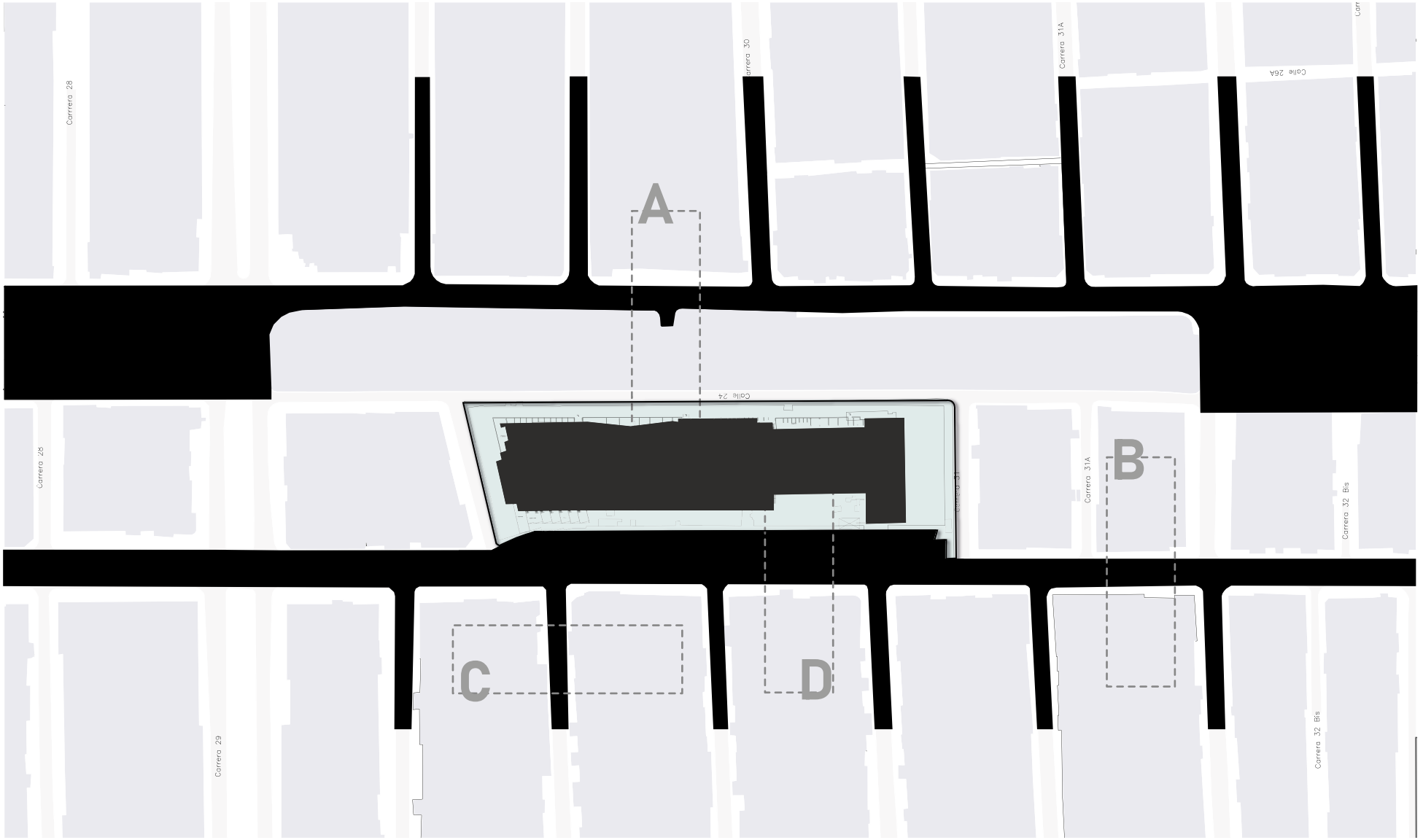


Figure 37. Urban Sections. Elaborated by the author based on (Geoportal IDESC, n.d.-b).

3.11 Void shape on main roads and commercial streets

it is important to understand how the typologies of road sections work and how the public space is organised in the intervention area, depending on the activity and use. We can find 3 different typologies, the first one where the width of the road is wider, there is an area of public space but the sidewalk and public space area is invaded by informal businesses, badly parked trucks and waste, therefore the area of permeable soil is only 26.2%. The second where the road section is smaller as they are streets that pass through the neighbourhood, without public space area, however, the same phenomenon occurs with the difference that in this profile there is no permeable area. The third cut where the disorder is shown when trying to carry out the activity of loading and unloading as the road section is small.

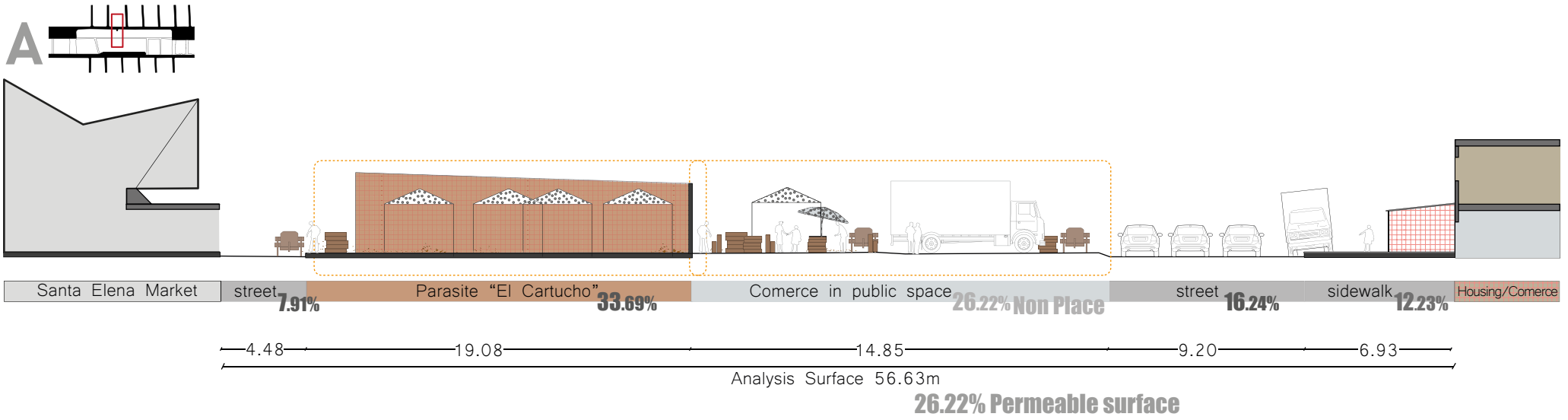
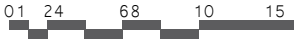


Figure 38. Section Calle 25.Santa Elena Market Urban context Elaborated by the author.



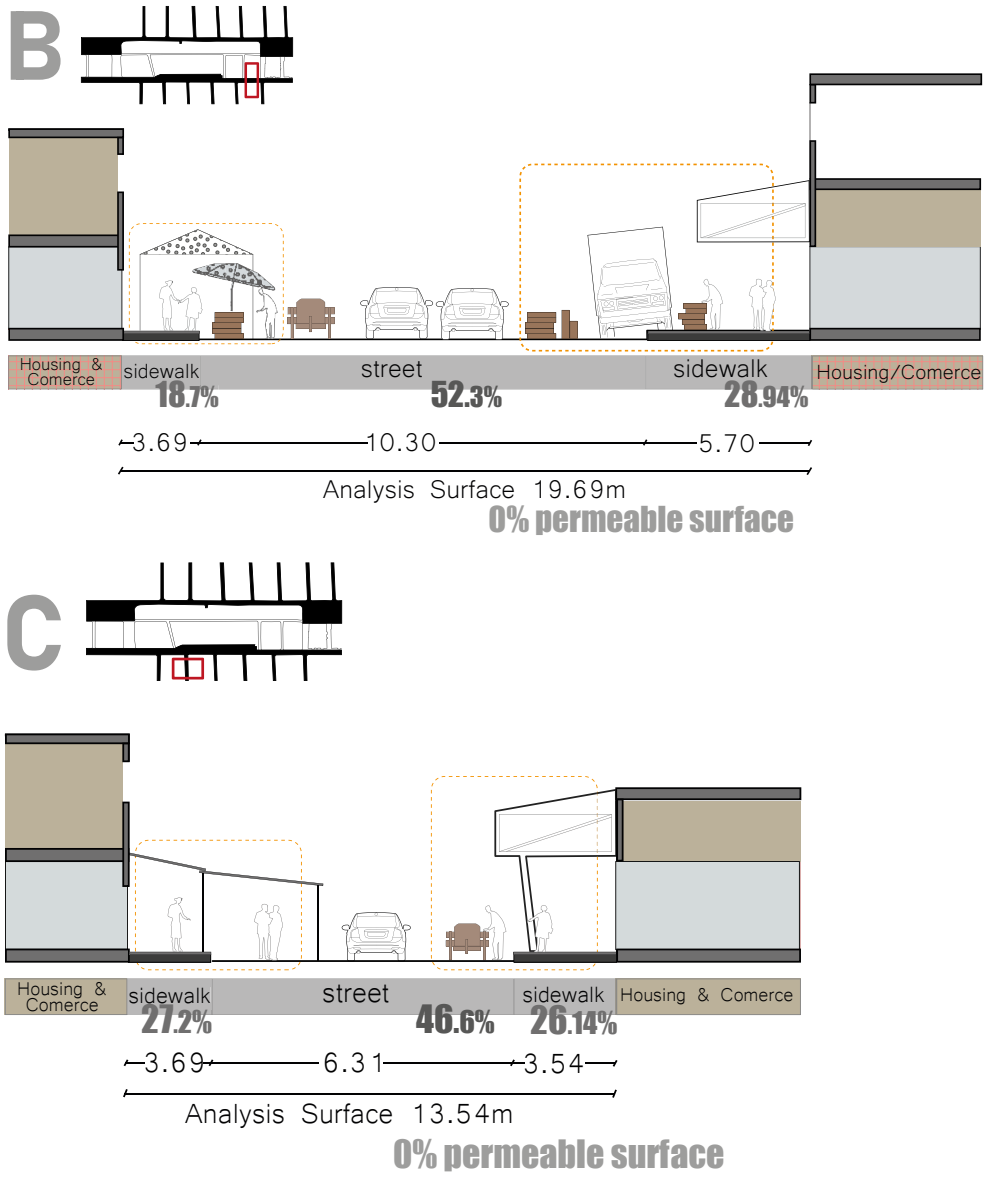


Figure 39. Section Calle 23. Between blocks Santa Elena Market Urban context, Section trasversal Streets to Calle 23. Elaborated by the author.

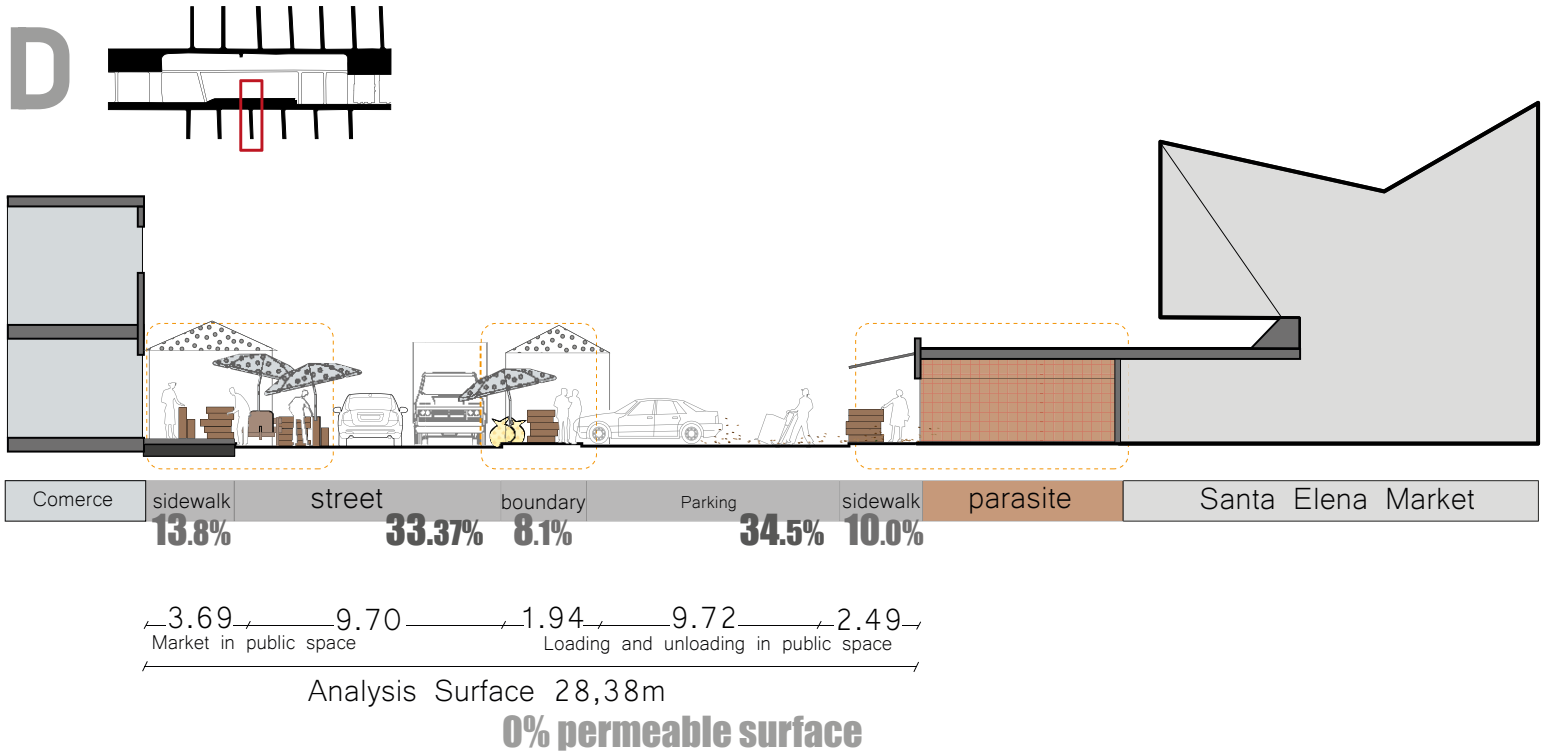


Figure 40. Section Calle 23. Santa Elena Market loading and unloading actual system. Elaborated by the author.

01 24 68 10 15

04 | The Valley, The Gallery and the Roof

4.1 TACTICS

4.2 PLANS, SECTIONS, SCHEMATICS, VIEWS AND DIAGRAMS OF THE URBAN INTERVENTION

04

CHAPTER

- **HOW TO MAKE TACTICS CONGRUENT WITH PROJECT PURPOSES?**

"Understanding that the project's tactics had to address the long-term goals of the strategies that were examined and put into practice presented a challenge for us. We can see from the tactics that the project prioritizes pedestrians, the environment, and improving the gallery's image in order to conserve the surrounding public space and heritage."

(Arturo, Forero, Alfonso, 2024)

4.1 TACTICS

4.1.1 Use of orography as a design mecanism

4.1.2 Creation of adequate multifuntional spaces for market and other activities.

4.1.3 **SUDS:** Soil transformation water reserve areas

NBS: Intermodal system for conection with the city

4.1.4 Reduce the private car and integrate sustainable mobility including the suburban train as a fundamental part of the connection to the city.

4.1.5 Highlight the image of Santa elena market as a heritage asset and Preservation of the identity of the neighbourhood as a food supply and marketing node.

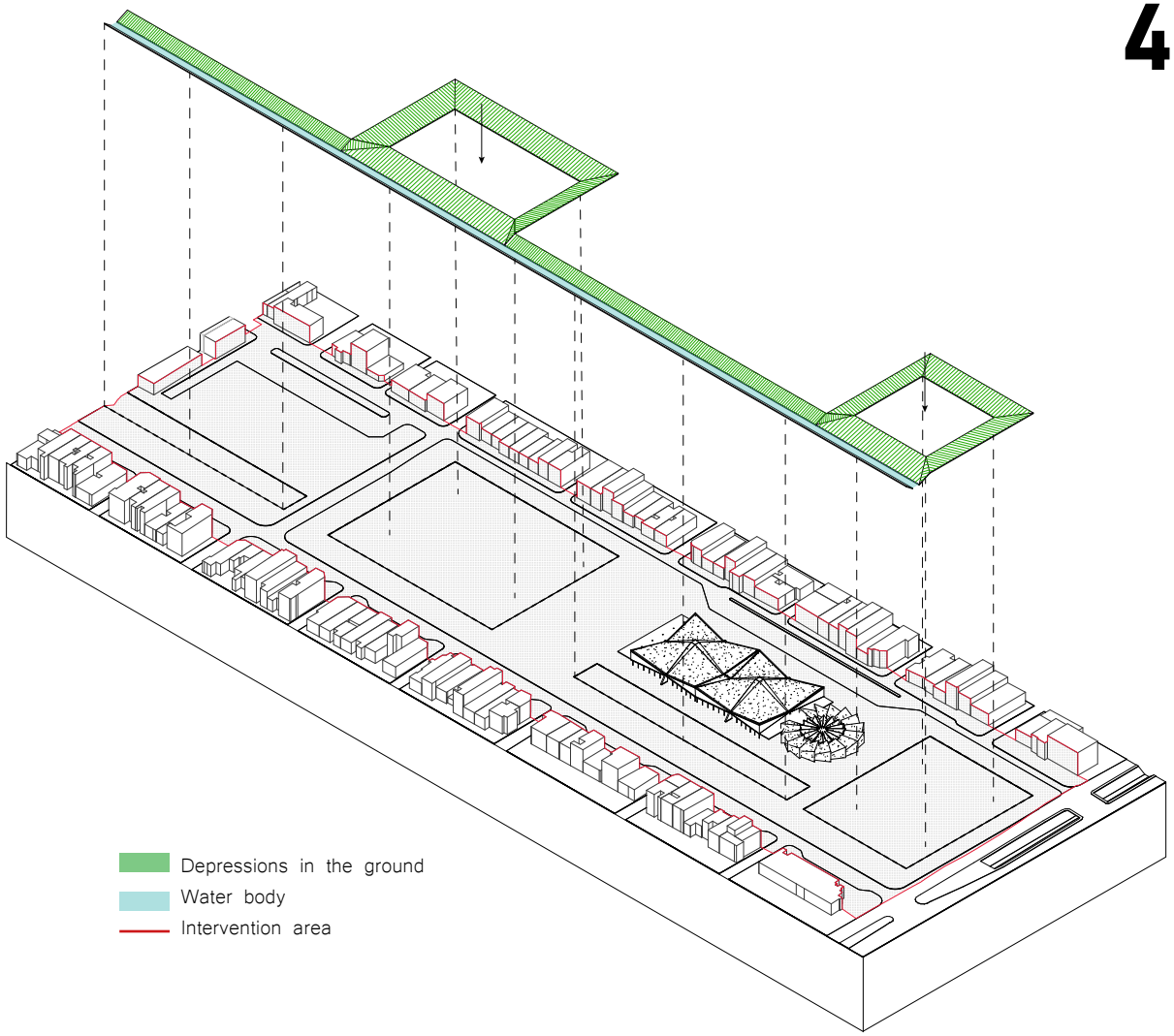


Figure 41. Tactics. Elaborated by the author.

4.1.1 Use of orography as a design mecanism

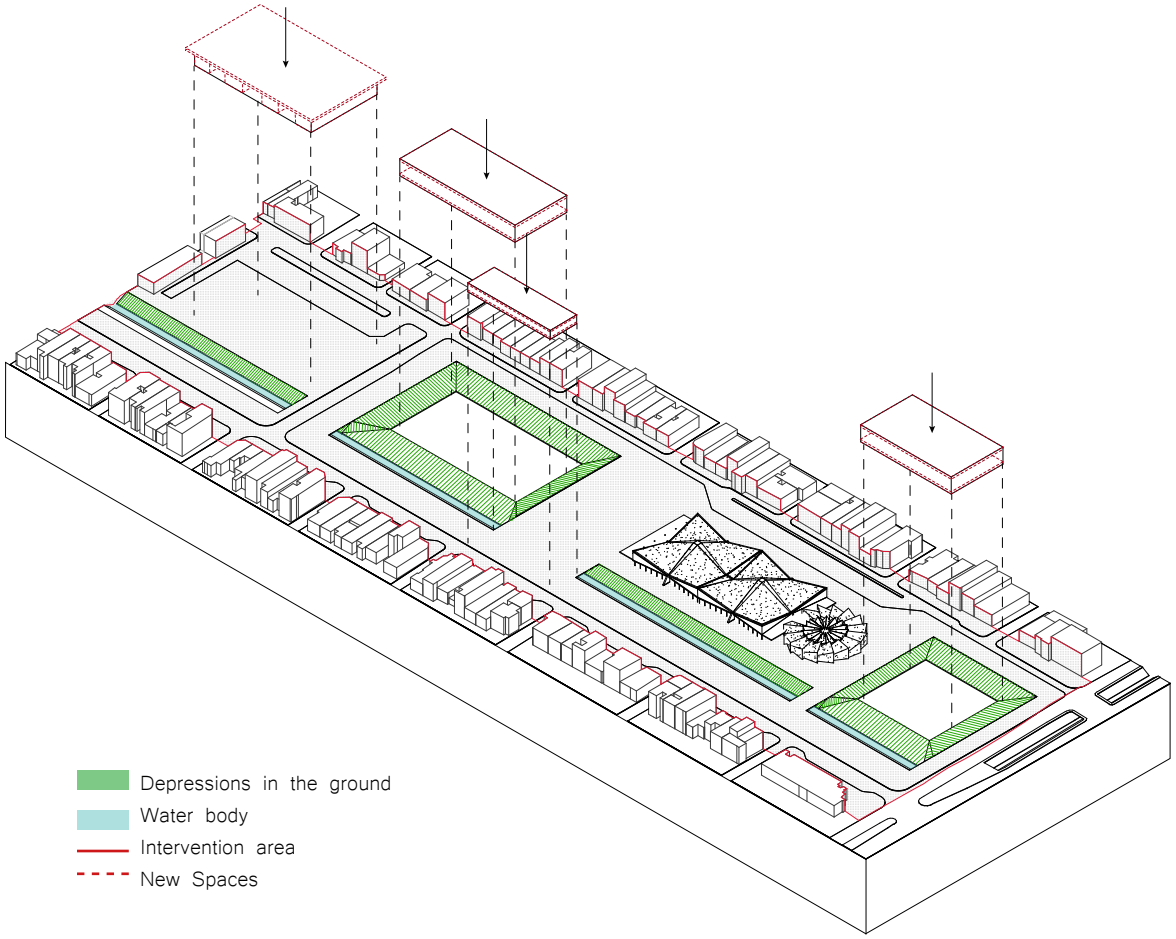
OROGRAPHY

The integration of the orography in the urban project of the Santa Elena Gallery is key to maximising the potential of the land and encouraging sustainable solutions that respond to the natural conditions of the site.

By taking advantage of topographical variations, flood zones can be designed to **not only manage excess water during rainfall, but also act as water recharge points and biodiverse habitats.** These orographic changes are strategically arranged in low areas to capture, filter and store water, complementing the functionality of the green spaces. **In this way valleys are created.**

Finally, the public space is shaped by the topography to offer a unique user experience.

4.1.2 Creation of adequate multifuntional spaces for market and other activities.



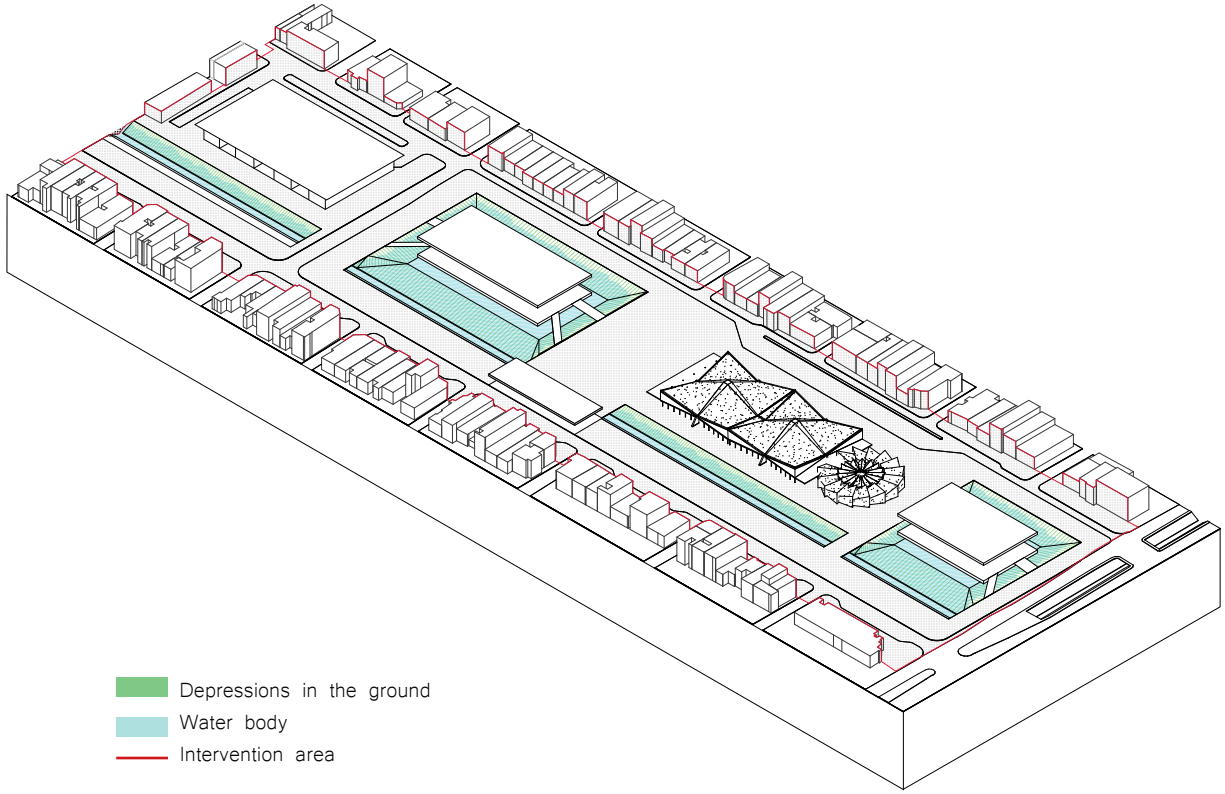
MULTIFUNCTIONAL SPACES

Multifunctional and open-plan spaces are essential in areas such as the Galería Santa Elena, as they **offer flexibility to adapt to the diverse needs of the community and encourage greater efficiency in the use of space.** These designs allow for the coexistence of activities such as markets, cultural events, recreational areas and social gathering spaces.

This approach also strengthens the social and economic dynamics of the area by encouraging interaction between different users, promoting local commerce and **enriching the experience of the public space**, making it an engine of integral development for the community.

Figure 42. Tactics. Elaborated by the author.

4.1.3 Sustainable Urban Drainage Systems (SUDS) and Natural Base Solutions (NBS)

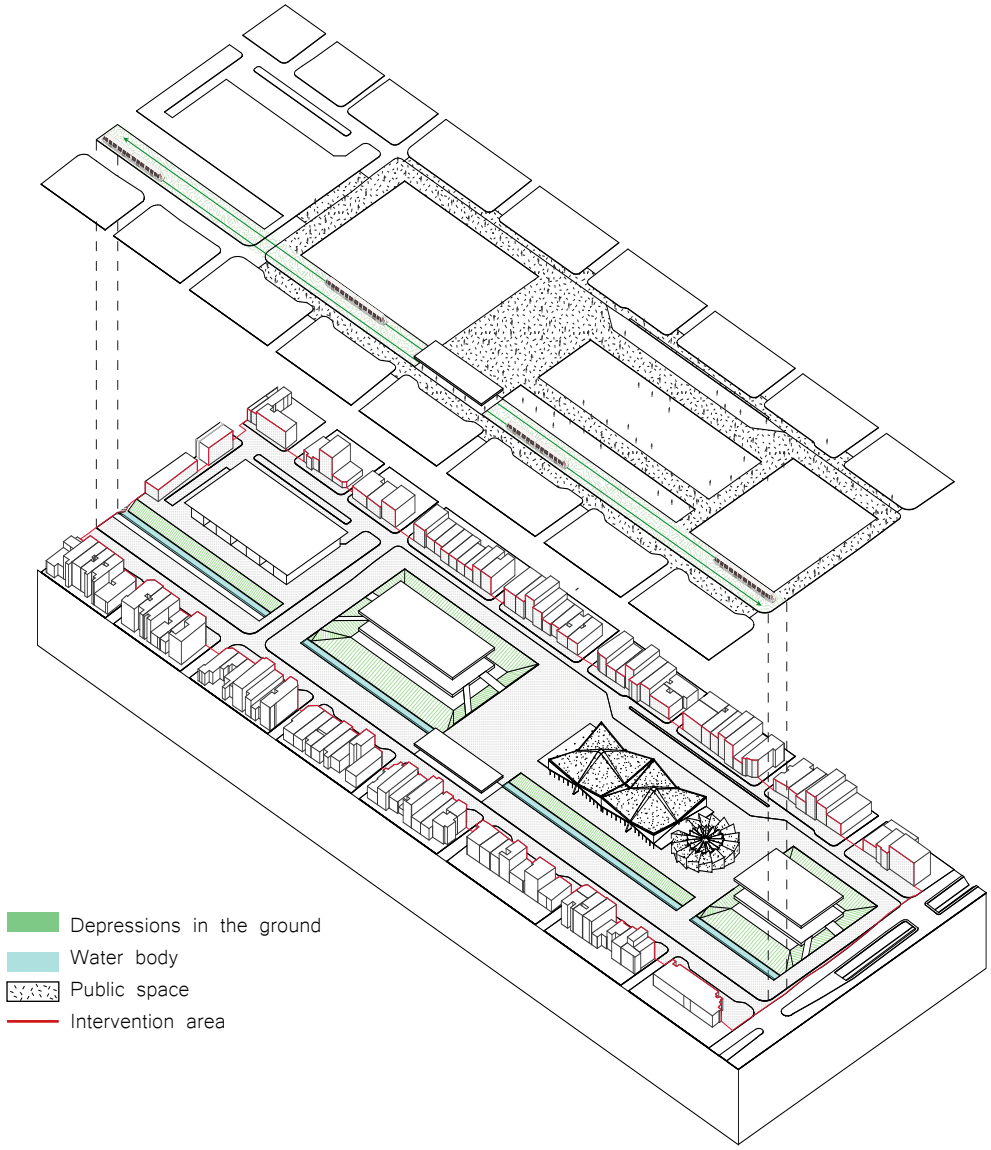


FLOODING SYSTEM

Areas like the Santa Elena Gallery require flood zones and **aquifer recharge** because they provide organic ways to manage water, a vital resource in cities. **Flood zones serve as barriers against intense precipitation**, lowering the chance of flooding and relieving strain on the city's drainage infrastructure. The ability to use the water that is captured to penetrate the subsurface is made possible by aquifer recharge.

These strategies combine urban development and environmental resilience in places like Santa Elena, enhancing long-term sustainability and infrastructure.

Figure 43. Tactics. Elaborated by the author.



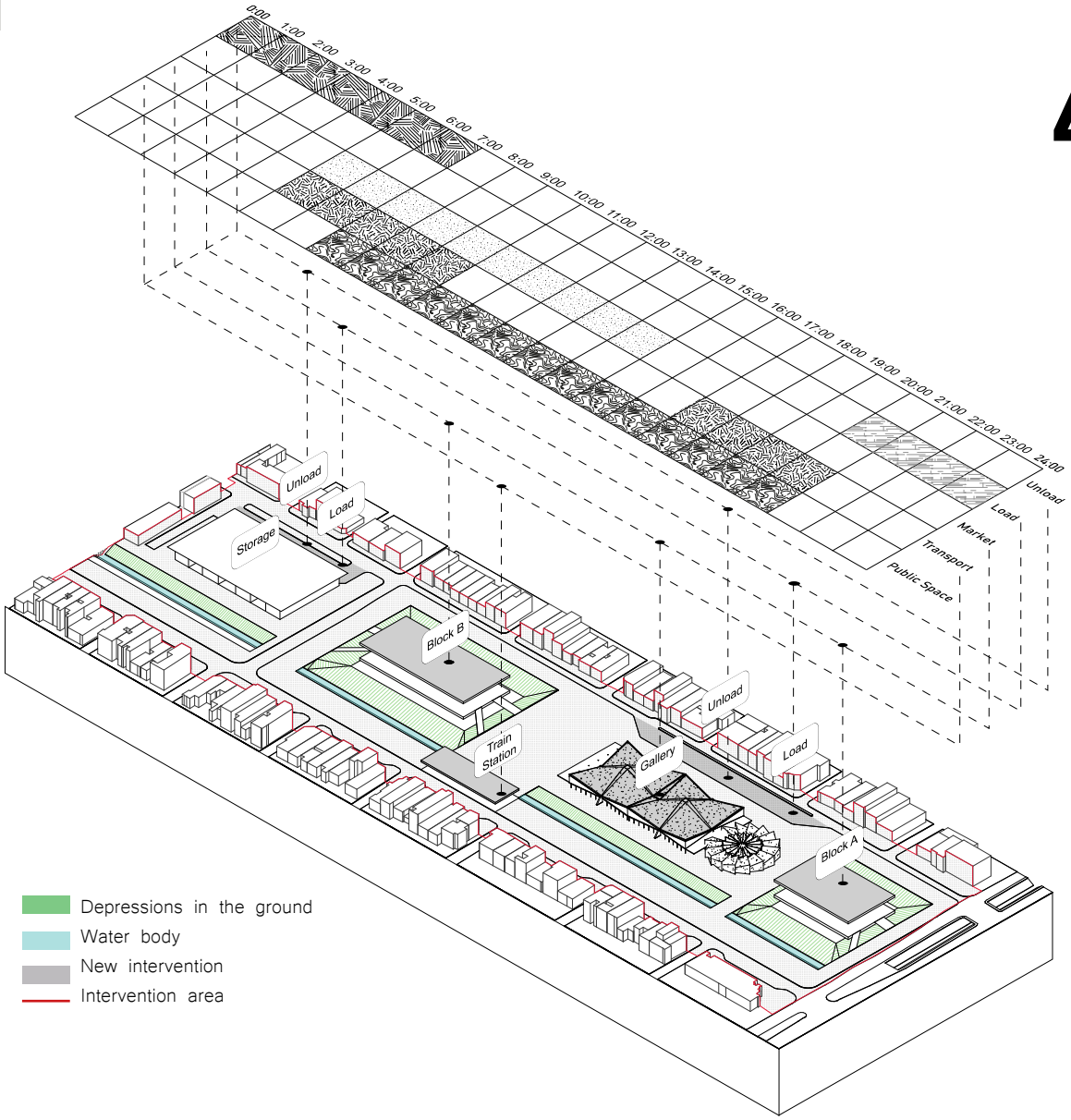
4.1.4

Reduce the private car and integrate sustainable mobility including the suburban train as a fundamental part of the connection to the city.

MOBILITY AND SUBURBAN TRAIN

Sustainable mobility and the implementation of the **Suburban Train** within the Cali Green Corridor project are key to transforming areas such as the Galeria Santa Elena into more connected, accessible and environmentally responsible spaces. This approach includes the **strategic reorganisation of loading and unloading zones**, optimising their location to improve vehicular flow, reduce traffic and avoid congestion in key areas. By reducing reliance on individual motorised transport, the project contributes to the reduction of pollutant gas emissions and improves air quality. **The integration of the Suburban Train with an efficient public transport system, pedestrian and cycling infrastructure facilitates access to services and promotes the revitalisation of the area**.

Figure 44. Tactics. Elaborated by the author.

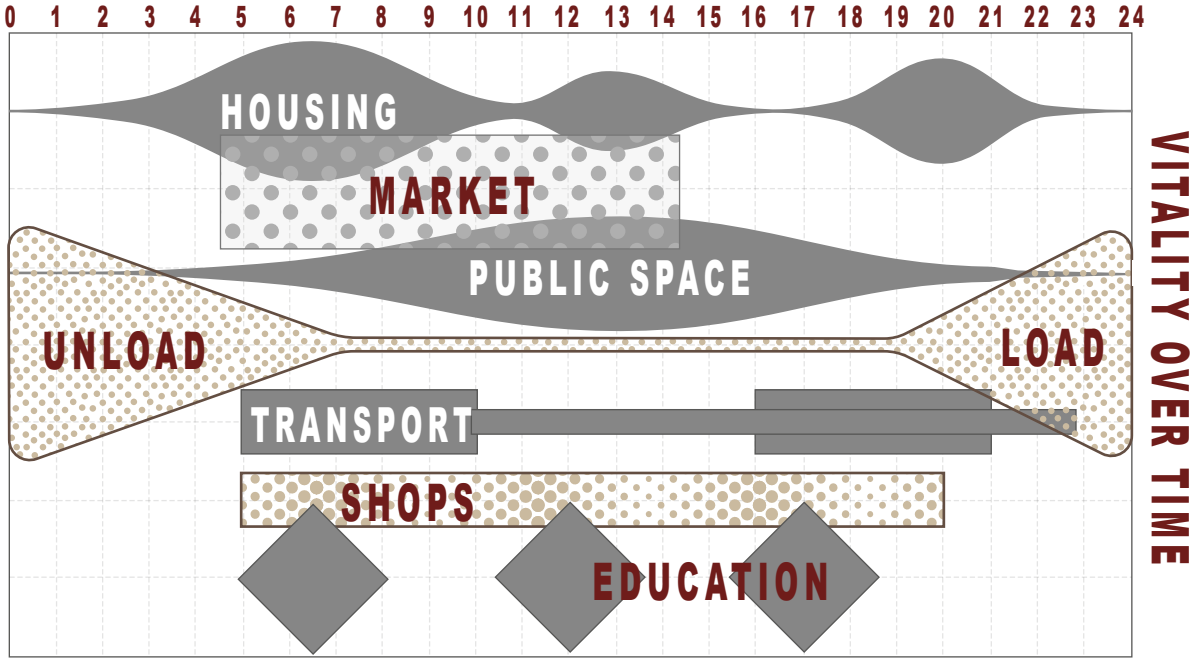


4.1.5 Highlight the image of Santa elena market as a heritage asset

VITALITY OF THE AREA

Urban vitality is reflected in spaces that are active throughout the day, with a diverse range of activities that attract different groups of people. In the case of Galeria Santa Elena, the urban interventions and tactics applied in the project have transformed the area into a dynamic and functional hub. Thanks to the integration of attractive public spaces, commercial areas, green spaces and recreational areas, Santa Elena has evolved into a living city model, where the community can work, trade, recreate and socialise at any time. This revitalisation has not only boosted the local economy, but has also created a sense of belonging and security, allowing the space to be fully enjoyed by residents and visitors alike. The vitality achieved makes Santa Elena an example of sustainable, people-centred urban development.

Figure 45. Tactics, The hours in wich the area is active and functional. Elaborated by the author.


0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
HOUSING
MARKET
PUBLIC SPACE
UNLOAD
LOAD
TRANSPORT
SHOPS
EDUCATION
VITALITY OVER TIME

- **PROJECT PRESENTATION**

"If it had been possible, we would have carried out this project to the last detail, but we stopped when we reached the master plan scale to give ourselves the opportunity to offer an alternative approach to resolving the Santa Elena Gallery issue, shifting the focus from priority to sustainable strategies and tactics and positioning this location in Cali as a strategic development point for the future."

(Arturo, Forero, Alfonso, 2024)

4.2 PLANS, SECTION, SCHEMATICS, VIEWS

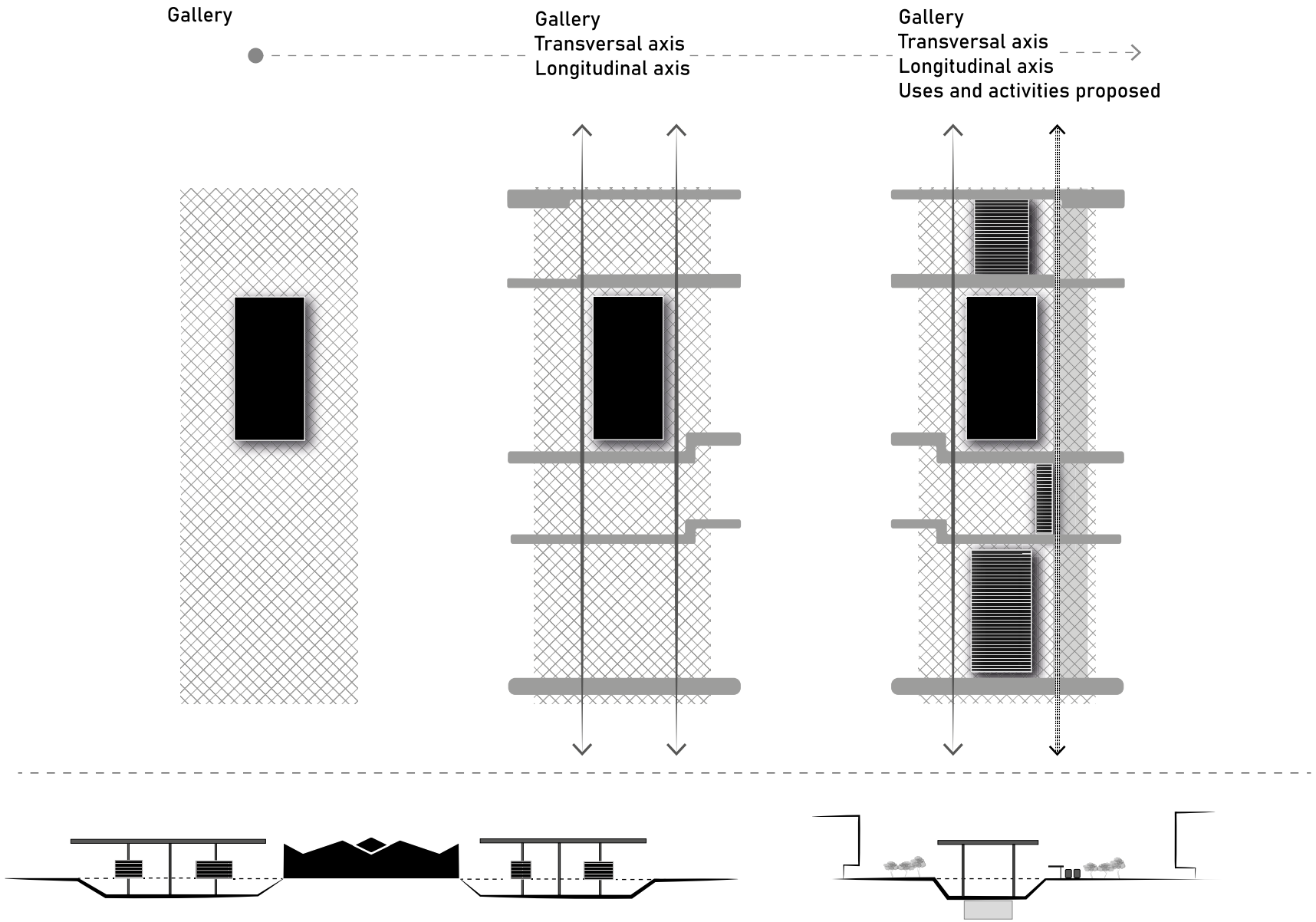


Figure 46. Inicial concept Elaborated by the author.

4.2.1 Concept.

The concept emerged from the desire to improve the gallery's image, restore its status as a city heritage building, strengthen the transversal connection, create gaps in the currently crowded space, and present the area looking like it were a scene from a movie that could be viewed from the sector's longitudinal.

Initially the space was seen as a blank canvas where the gallery was in the centre, the idea was to highlight the iconic structure of the gallery and take the roofs as a reference to generate a grid to guide the design.

In order to determine where people could access the area, we next highlighted the connections and main axes. As a result, the city is articulated with longitudinal axes and the neighborhood with transversal axes.

In order to maintain the space's identity as a food and grocery center and create a community-friendly atmosphere, tactics and strategies were finally put into place to give life, activity, and uses.

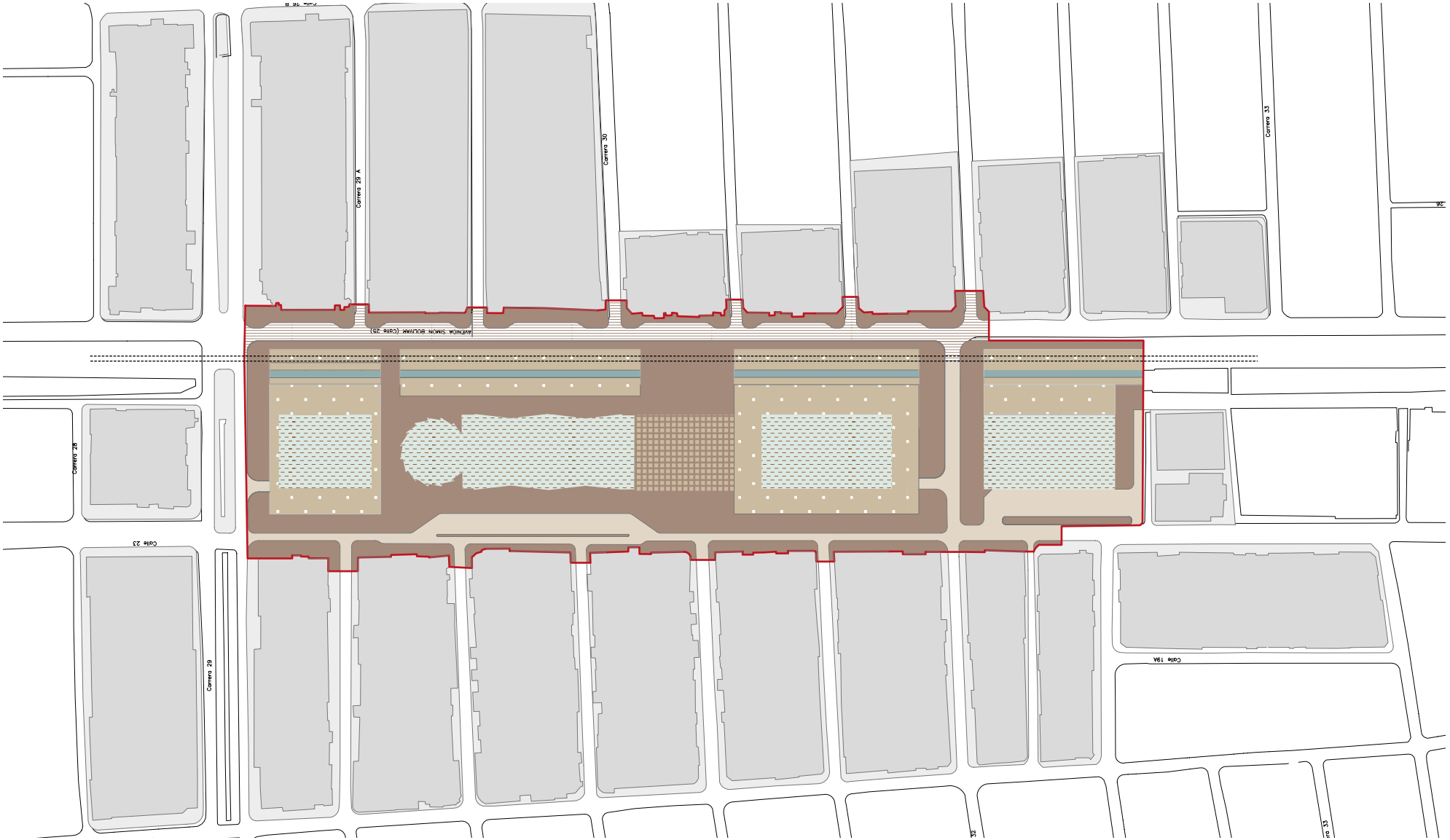
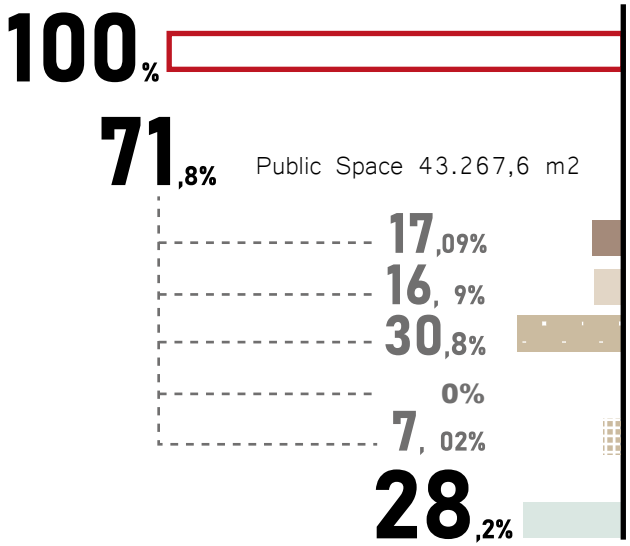


Figure 47. General areas of the proposed polygon. Elaborated by the author.

4.2.2 Santa Elena market Poposal Analysis.

The plan shows the work cut out and how the space is distributed according to the use given to each element that makes up the public space and built area such as streets, pavements, the so-called 'nobodys place', among others. It is evident according to the percentages that with the proposal's implementation, we were able to increase the amount of public space per inhabitant compared to the sector's current conditions, as the percentage of public space **has increased to 71,8%, or more than half of the entire intervention area.**



Intervention Area 61.869,8 m2

Public Space 43.267,6 m2

Pedestrian path 7.398 m2

Share Streets 7.340,4 m2

Permeable green Area 13.339,8 m2

Parks 0 m2

Plazas 3.039,2 m2

Build Area 12.153,9 m2

Formal Market place and storage 12.153,9 m2

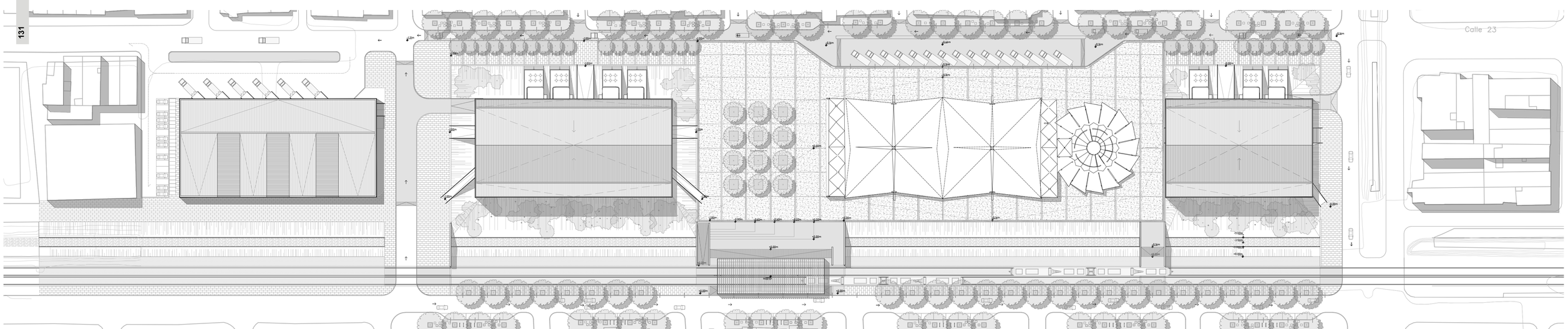


Figure 48. Top view. Elaborated by the author

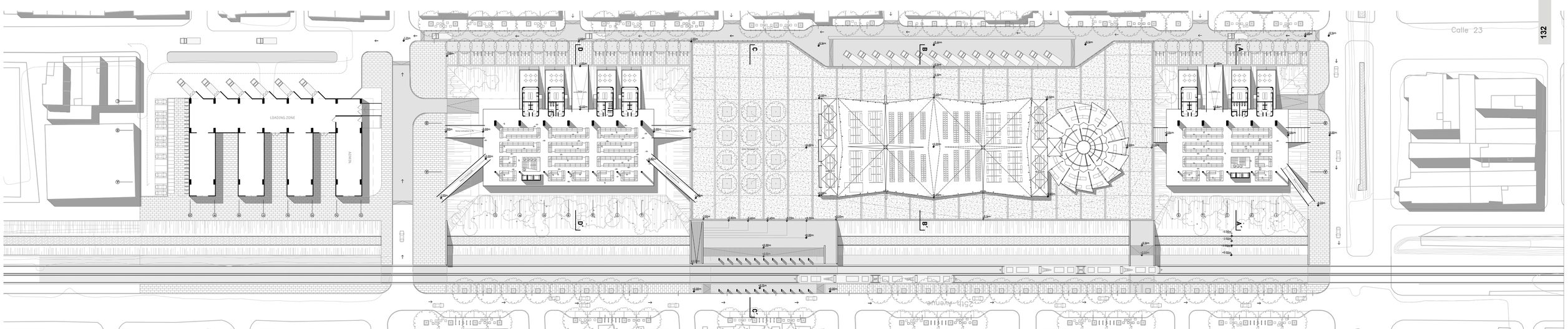


Figure 49. General plan. Elaborated by the author

Scale: 1/750
Shadow: 21 June
Day Time: 14:00

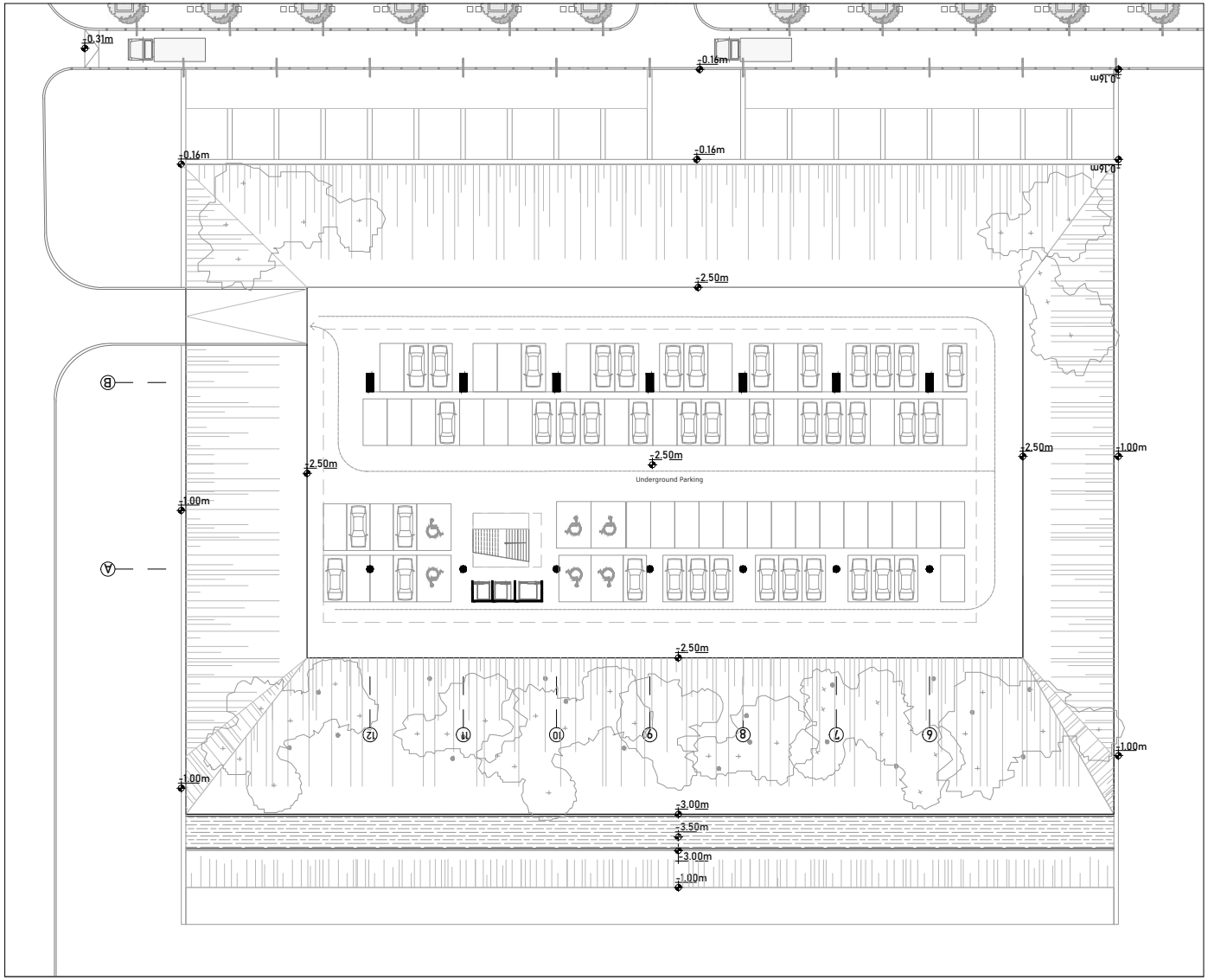
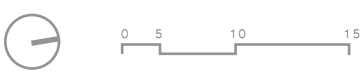


Figure 50. Parking. Elaborated by the author.



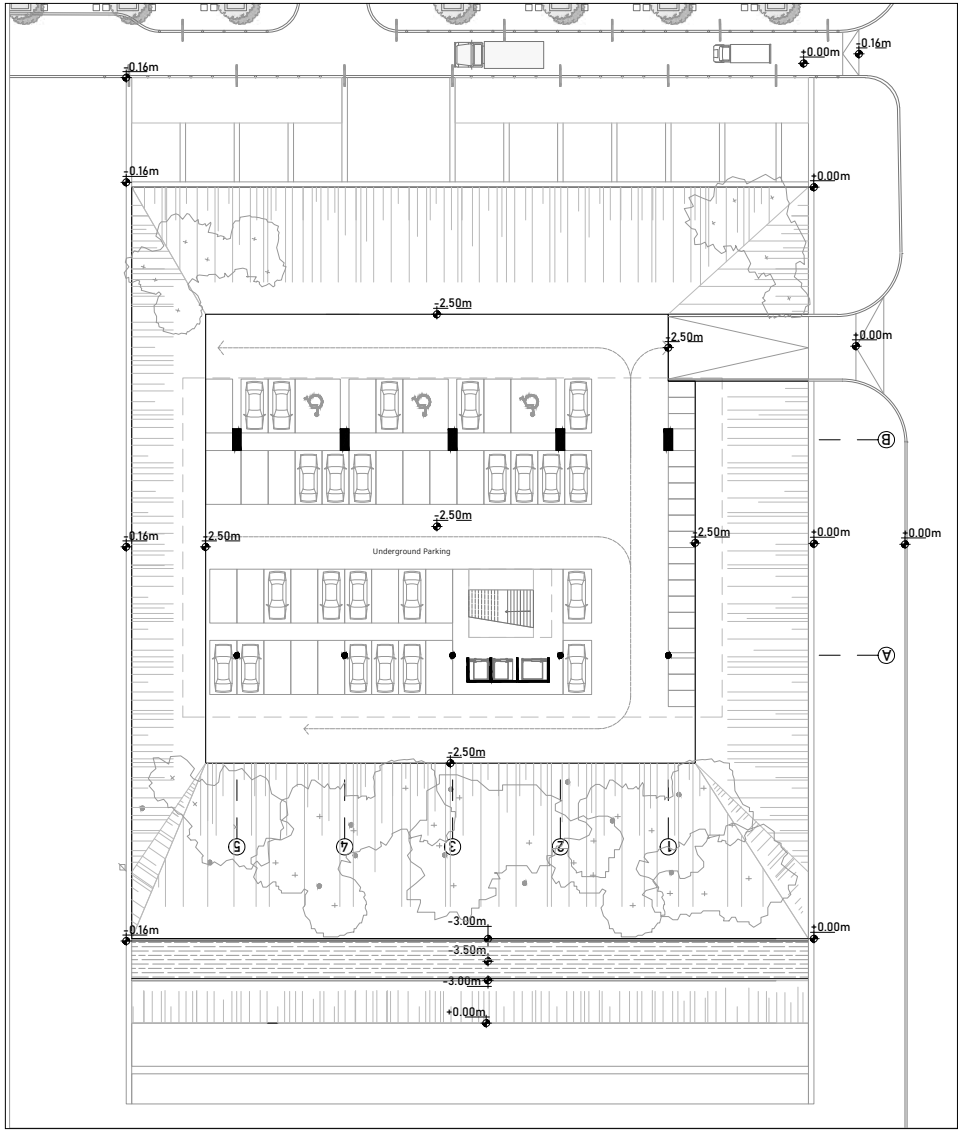


Figure 51. Parking. Elaborated by the author.

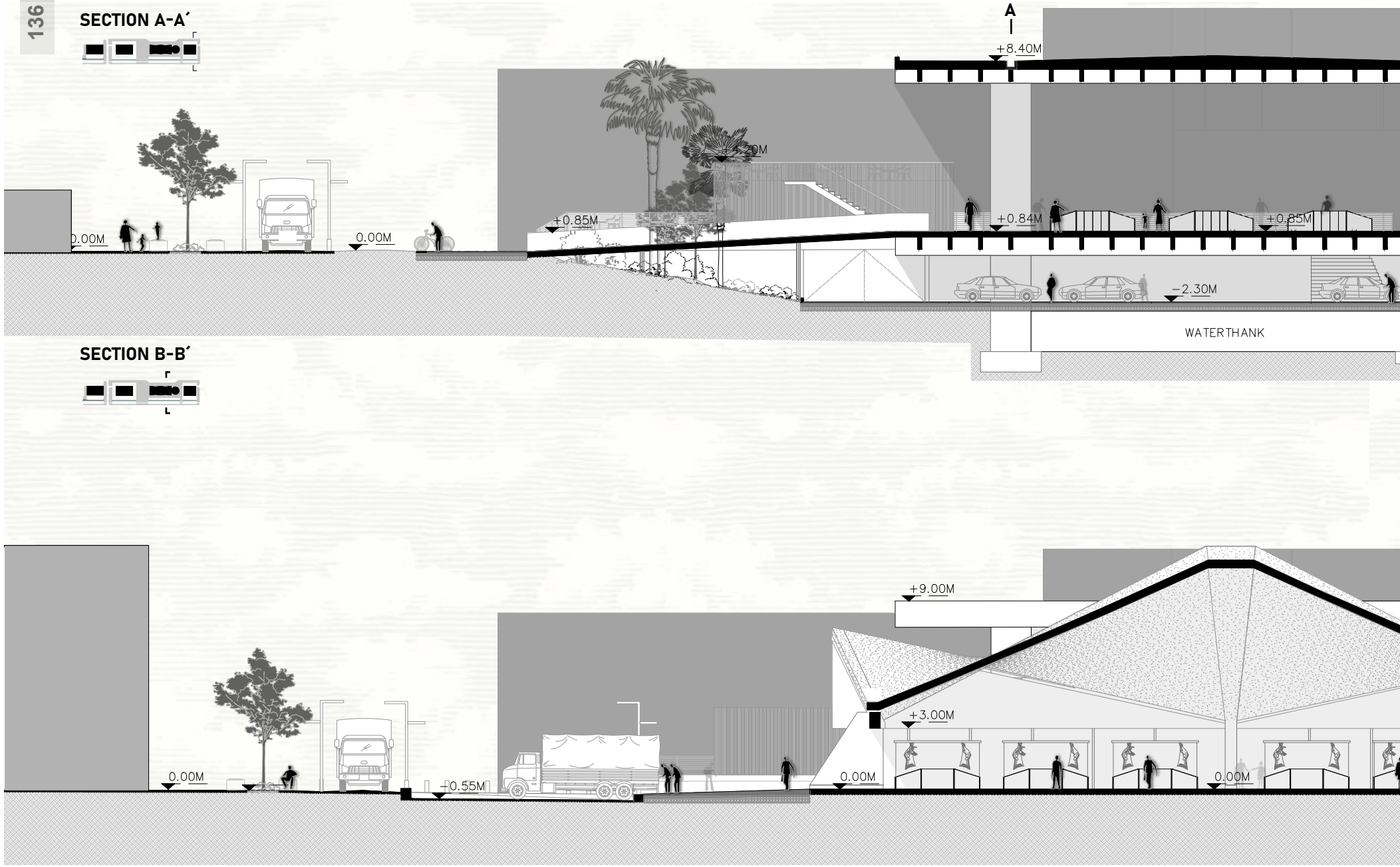
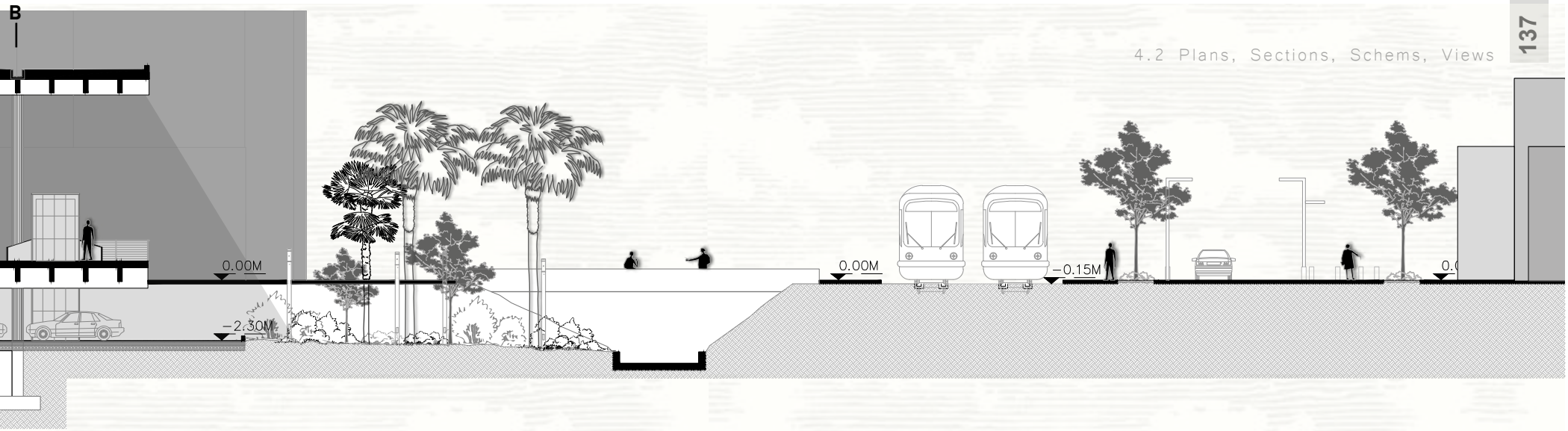
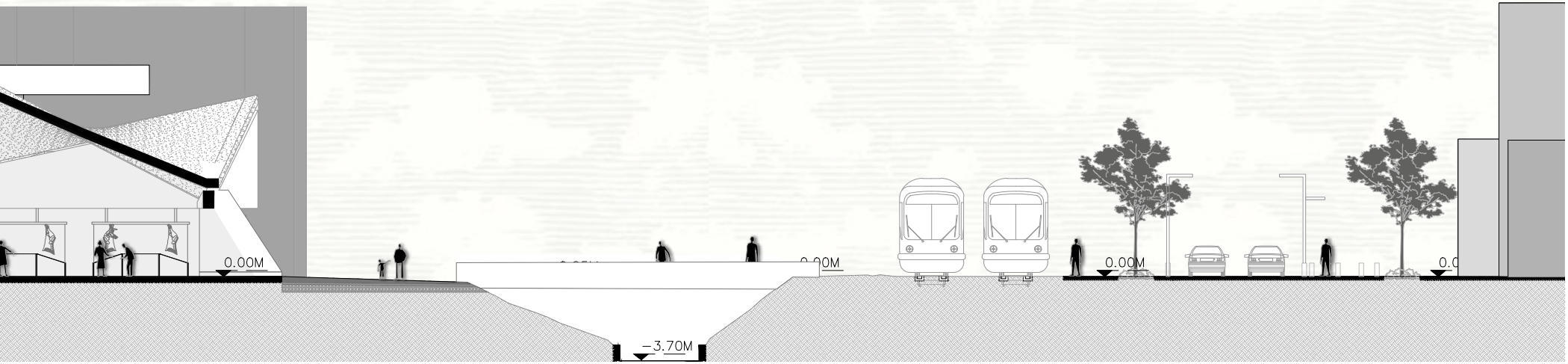


Figure 52. Sections. Elaborated by the author.





Scale: 1/500

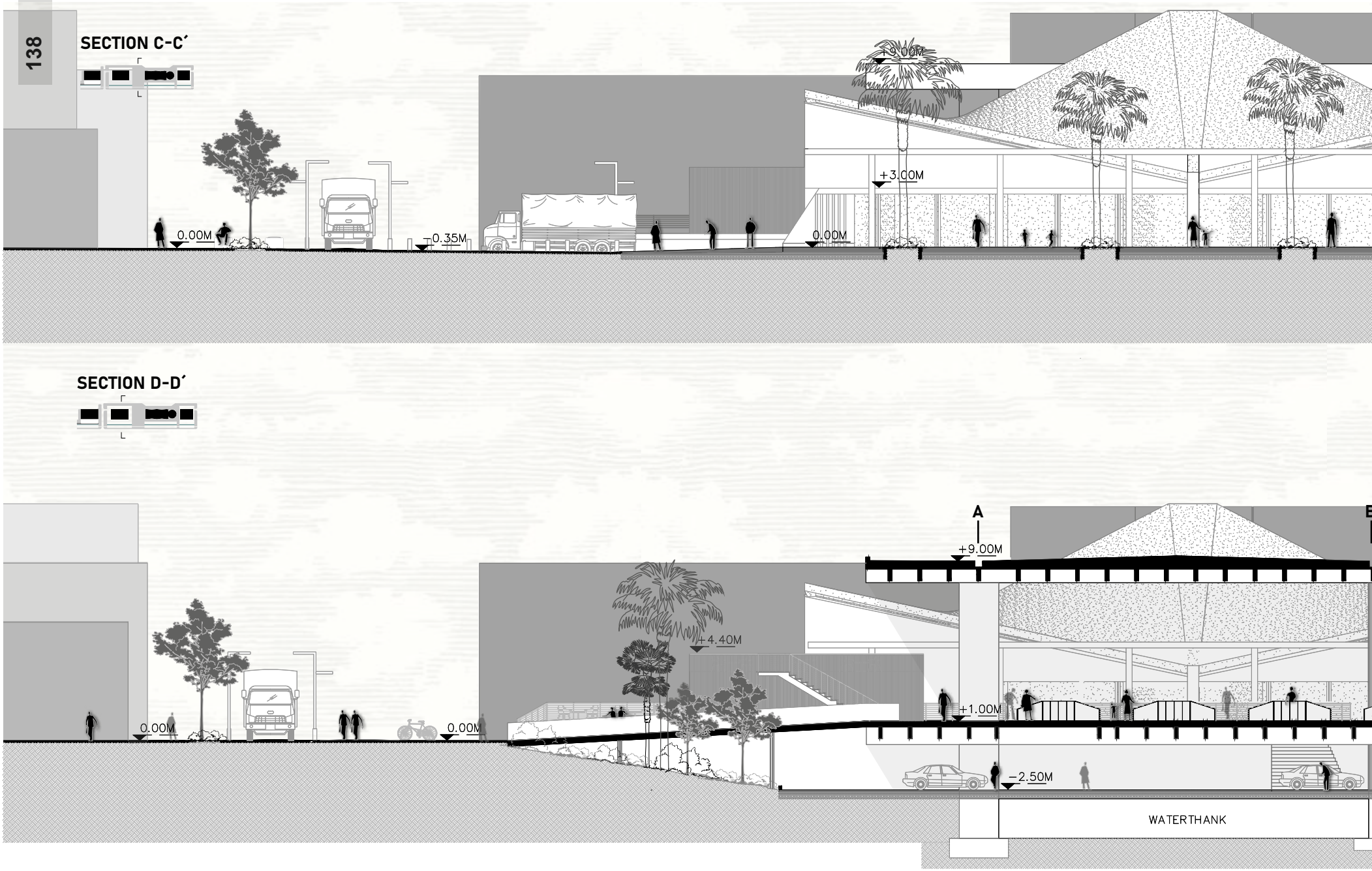
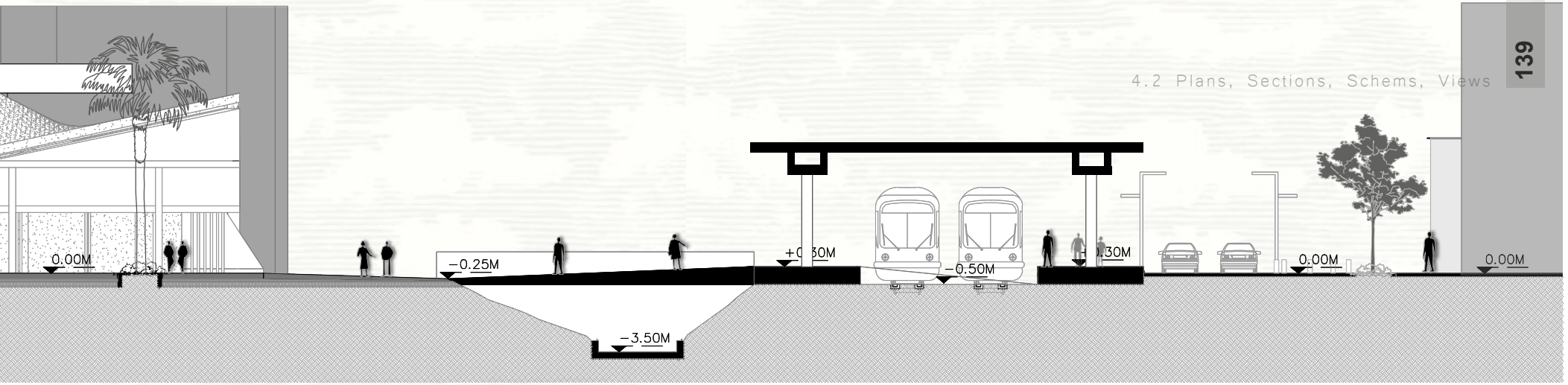
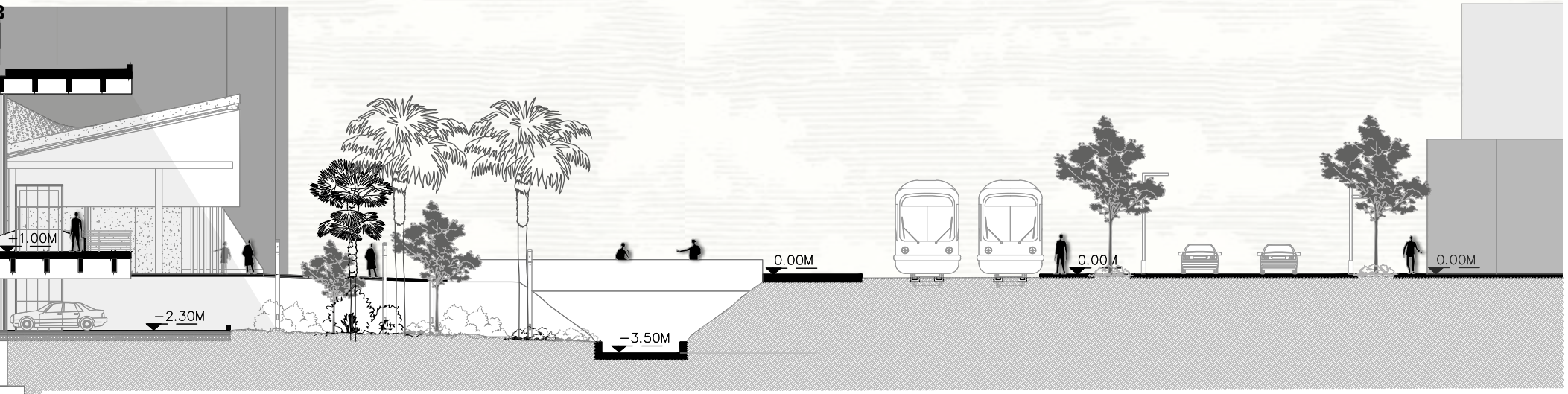


Figure 53. Sections. Elaborated by the author.

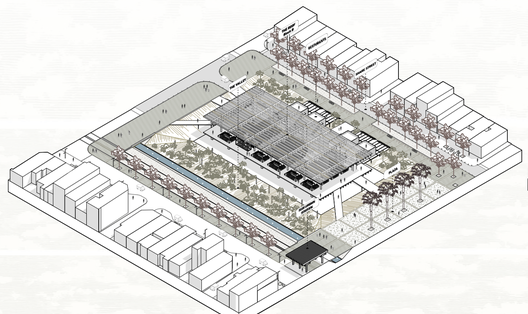




Scale: 1/500

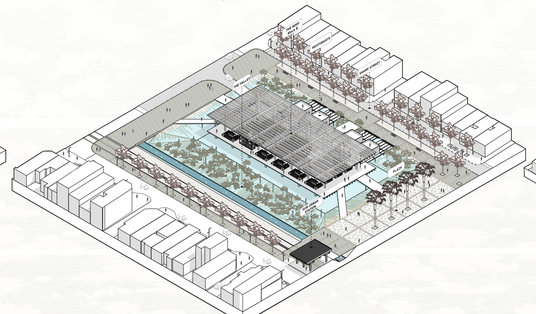
THE ROOF BLOCK B

Of the two blocks that the project offers this is the one with the largest dimensions and is directly connected to the train station and the arrival square. This space responds to a multifunctional area that not only responds to the market but also to different activities and events that the people of the neighbourhood and the municipality can arrange.



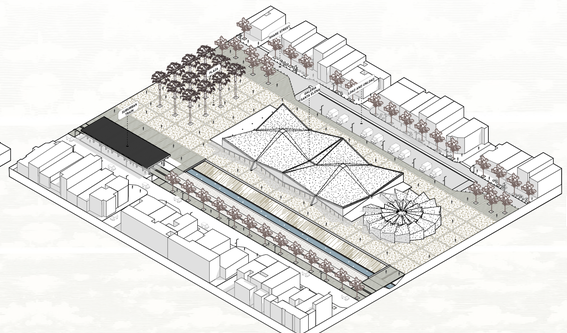
THE PLAZA

The reception square is a space designed to welcome people coming from different parts of the city and neighbouring municipalities on the local train. It allows to appreciate the whole structure and heritage of the Santa Elena Gallery and also to host open-air activities and events that can very well serve as a temporary market on some days of the week.



SUB URBAN TRAIN STATION

It was very important to highlight the arrival to the project, so a stop was designed to welcome people who wanted to enter the market. Making the gallery stand out as people arrive on the suburban train makes sense to gradually reveal the image of the gallery structure.



THE GALLERY

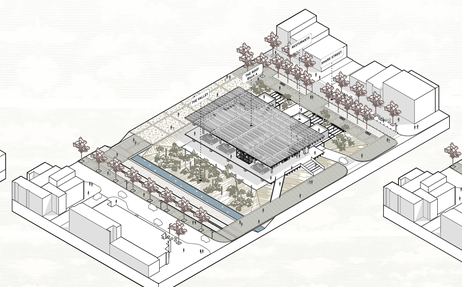
In this proposal the gallery recovers its space, now it can be seen, enjoyed and walked through, the chaos is over and citizens can enjoy going through their market without feeling disorder or congestion in the public space.

LOAD AND UNLOAD

leaving a special space for the loading and unloading system was essential for the proper functioning of food sales and distribution, so the topography of the street was lowered sufficiently to facilitate the loading tasks and to bring the food directly to the shops and distribution points.

THE ROOF BLOCK A

Multifunctional space that will serve to supply the market area space required by the gallery but also to store other activities and events that the neighbourhood and the municipality may require.

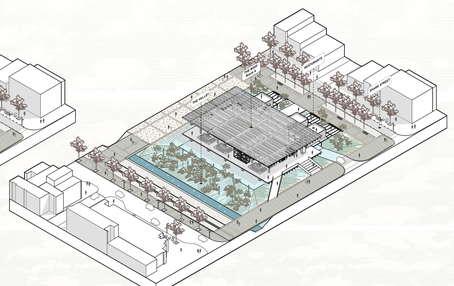


RESTAUTANTS

These spaces for restaurants and local businesses seek to maintain the traditional gastronomy that is offered in the Santa Elena Gallery, one of the commercial activities that are characteristic of the place.

THE VALLEY

The Valley in this project seeks to implement the sustainable tactics 'SUDS' which will be the flood risk prevention zones and will favour the recharge of aquifers and conserve biodiversity.



SHARE STREET

The project seeks to create shared streets in the public space where the pedestrian becomes a priority to enjoy the market and the surroundings of the Galeria Santa Elena. This vehicular zone will be enabled for trucks that bring merchandise and inhabitants of the area.

Scale: 1/750

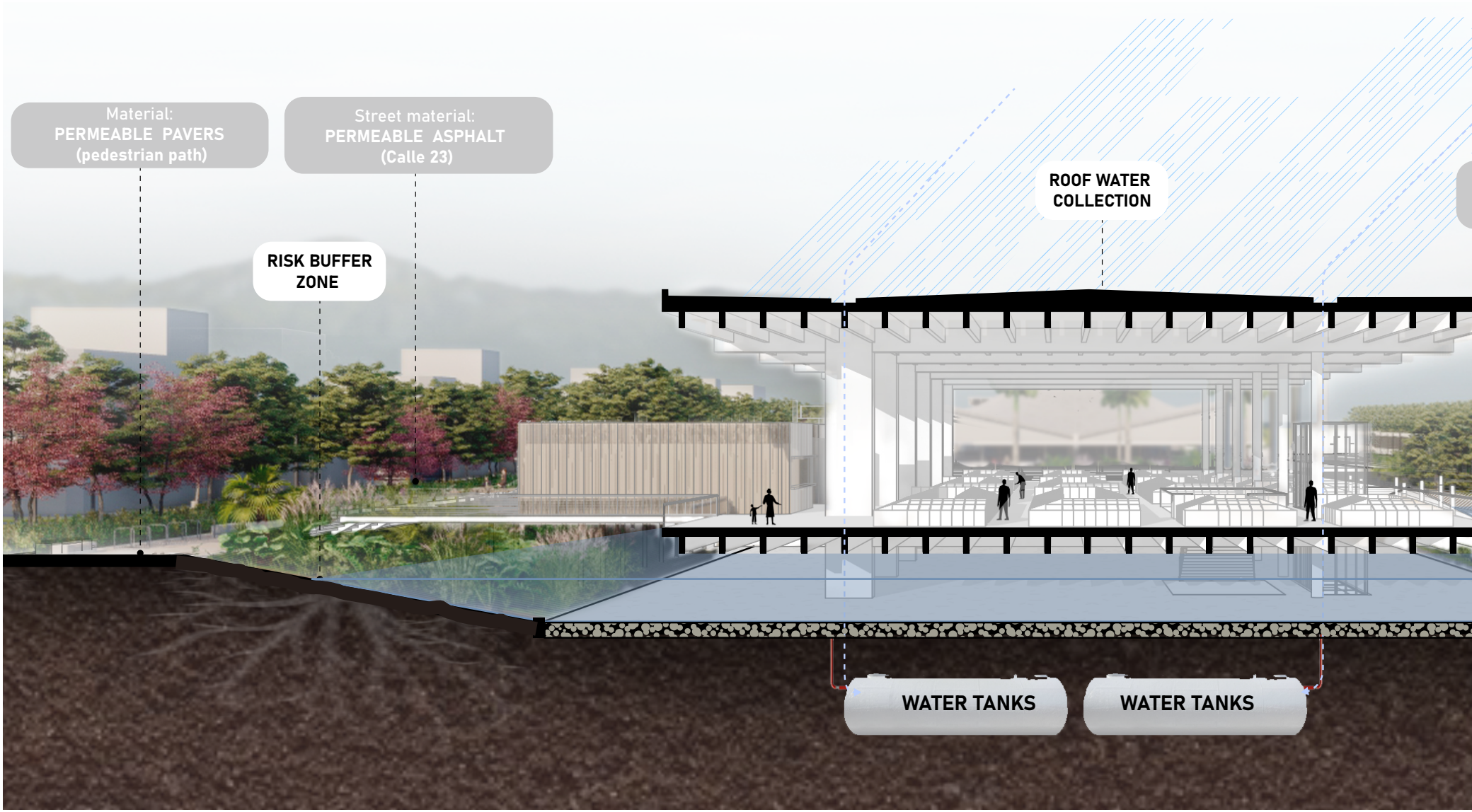


Figure 55. Section. Elaborated by the author.

4.2.3 Sustainable Urban Drainage Systems (SUDS) and Natural Base Solutions (NBS)

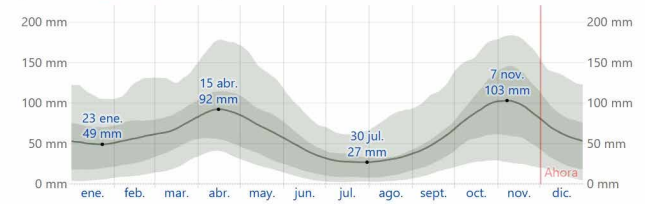
The parking area is shown in the section during the rainy season, when it acts as a flood risk mitigation area and allows the channel to carry rainwater without exceeding its dissipation capacity. Additionally, it is suggested that the project incorporate water collection tanks for use in the gallery and, if required, in blocks A and B.

Rainfall probability in Santiago de Cali

El porcentaje de días en los que se observan diferentes tipos de precipitación, excluidas las cantidades ínfimas: solo lluvia, solo nieve, mezcla (llovió y nevó el mismo día).

Días de	ene.	feb.	mar.	abr.	may.	jun.	jul.	ago.	sept.	oct.	nov.	dic.
Lluvia	7,5d	8,7d	11,1d	12,8d	11,0d	7,7d	6,0d	6,3d	8,5d	13,6d	13,0d	9,6d

Monthly average rainfall



La lluvia promedio (línea sólida) acumulada en un periodo de 31 días en una escala móvil, centrado en el día en cuestión, con las bandas de percentiles del 25º al 75º y del 10º al 90º. La línea delgada punteada es la precipitación de nieve promedio correspondiente.

	ene.	feb.	mar.	abr.	may.	jun.	jul.	ago.	sept.	oct.	nov.	dic.
Lluvia	49,5mm	56,2mm	68,4mm	92,2mm	70,8mm	42,9mm	27,5mm	30,5mm	49,0mm	88,6mm	99,8mm	62,5mm

Figure 56. (El Clima En Cali, El Tiempo Por Mes, Temperatura Promedio (Colombia) - Weather Spark, n.d.)
Sell, L. (2021, December 13). Permeable Paving. https://water.phila.gov/gsi/tools/permeable-paving/

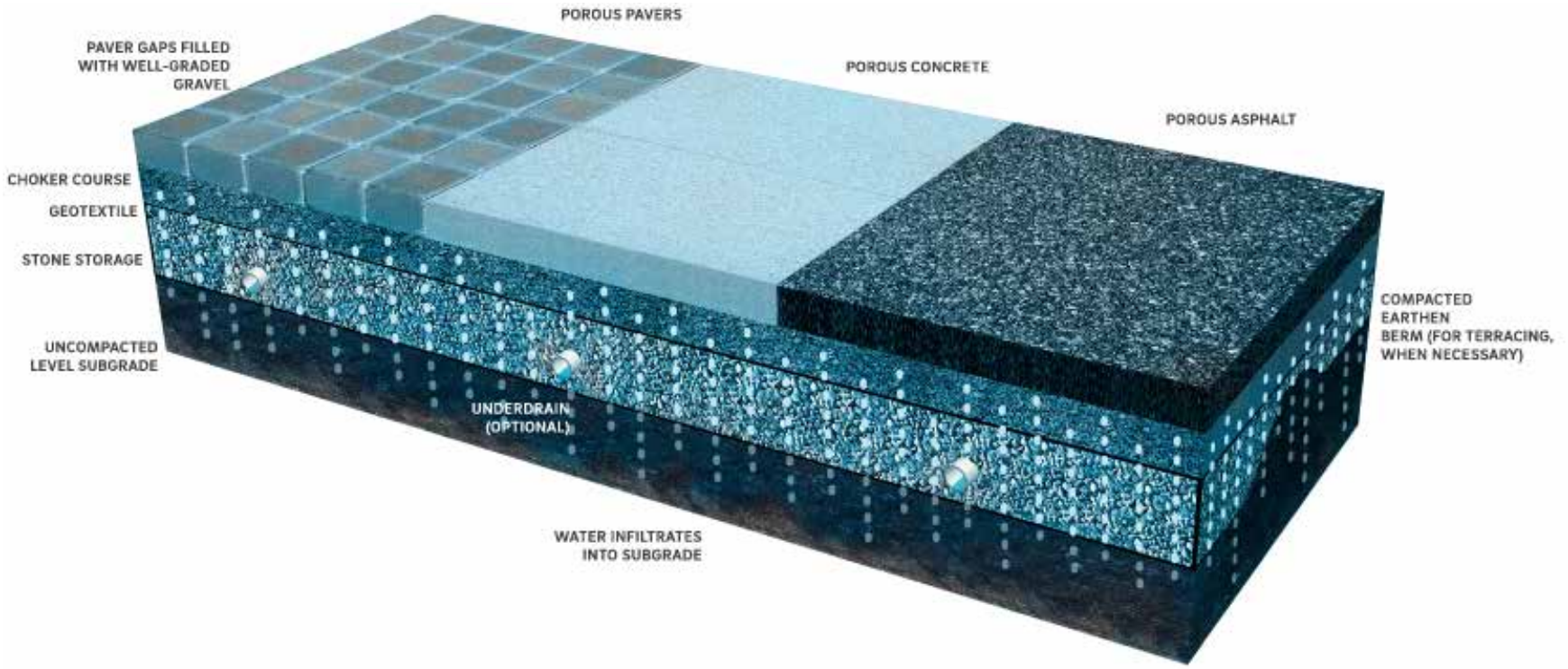


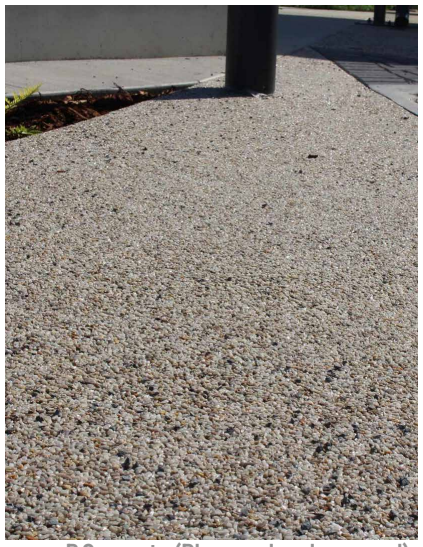
Figure 57. Sell, L. (2021, December 13). Permeable Paving. https://water.phila.gov/gsi/tools/permeable-paving/

4.2.4 Materials

The use os a pervious pavement can be effective as a low impact development stormwater control.

Permeable concrete and permeable asphalt

Both permeable asphalt and pervious concrete are used to manage rainfall, their compositions, characteristics, and uses differ greatly. The main ingredients of pervious concrete are cement, water, and coarse aggregates (like stones or gravel); sand is not used to create a porous structure that lets water through. On the other hand, modified asphalt, coarse aggregates, and a tiny quantity of fines are used to make permeable asphalt, which also allows permeability by forming voids. While both materials are intended to let water through, permeable asphalt tends to be denser and retain more water than pervious concrete, which has a larger drainage capacity because of its more open structure. Concrete's physical characteristics make it more resilient and stiff, particularly under high traffic conditions, but improper installation can make it more prone to cracking. In contrast, asphalt is typically less expensive than pervious concrete and is more flexible, making it appropriate for locations with ground movements and temperature fluctuations. Permeable asphalt is utilized on streets, highways, and in locations with heavy traffic, whereas pervious concrete is primarily utilized on roads, parking lots, and pavements. (» Porous Asphalt Pavements, n.d.)



P.Concrete (Plaza and underground)

P.Asphalt (Share street Calle 23)

Permeable pavers

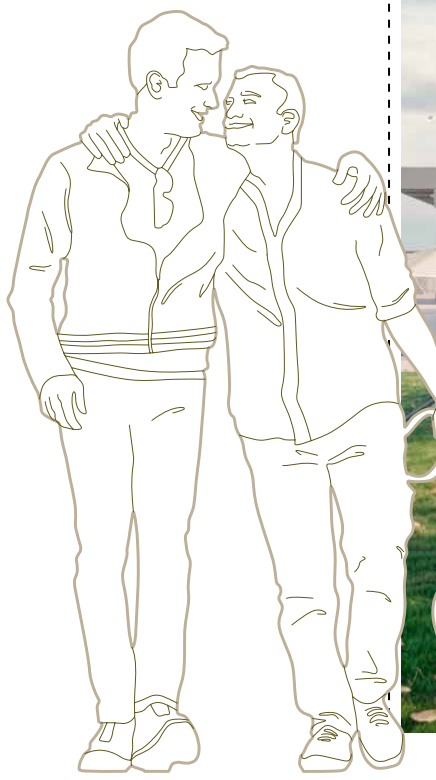
The pavers are impermeable, the spaces between the pavers are backfilled with washed, graded stone that acts as structural support for the pavers and also allows water to infiltrate. After passing the paving stones, the stormwater moves through several bedding layers where pollutants are removed. (Rowe et al., 2008)

P. pavers (Pedestrian paths)

Figure 58. www.shellyco.com/sustainability/greenleed/porous-asphalt-pavement/

4.2.5 PROJECT TRANCHES

The Santa Elena Gallery project can be explained in 5 tranches which will respond to each other as a whole. Each section reveals parts of the project that together create the santa elena market complex, a new engine and driver for the sustainable city.



SUBURBAN TRAIN STATION

WARE HOUSE

There was an undeniable need for a place in the project that would allow the correct storage of the food that arrives and leaves the gallery every day, and a suitable place for the loading and unloading of trucks.

ROOF

BLOCK B

Block b is the first block, a covered area that with its internal area of free floor plan allows multiple uses in its interior, it supplies in its level -2,50 m the parking area which in case of flooding in rainy seasons will drain the water to the reserve tanks and to the ground.

Figure 59. Renders. Elaborated by the author.

PLAZA

Is the meeting point, the uncovered area that provides a space for the community, for the people of the neighbourhood and enjoyment, is the welcome to the project, the point that will receive those who arrive using the suburban train.

GALLERY

The square is the meeting point, the uncovered area that provides a space for the community, for the people of the neighbourhood and enjoyment, a space that can be transformed and used according to what the municipality also provides. it is the welcome to the project, the point that will receive those who arrive using the suburban train.

ROOF

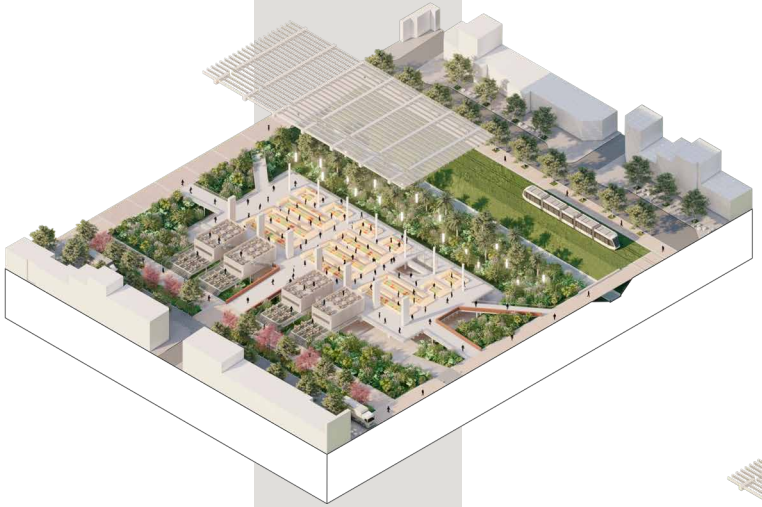
BLOCK A

Block A is the second block with smaller dimensions, a covered area that with its internal space of free floor plan allows multiple uses in its interior, it supplements in its level -2,50 m the parking area which in case of flooding in rainy seasons will drain the water to the reserve tanks and to the ground.

Figure 60. Render. Elaborated by the author.

4.2.5 THE ROOF: Block a and block b are two spaces composed of a concrete structure with a free floor plan and a distance between columns of 20 metres which allows the internal space to be used in a versatile way, this not only adapts to the market modules for the sale of fruit and vegetables but also as a space for fairs, exhibitions, communal events, or free floor space for recreation.

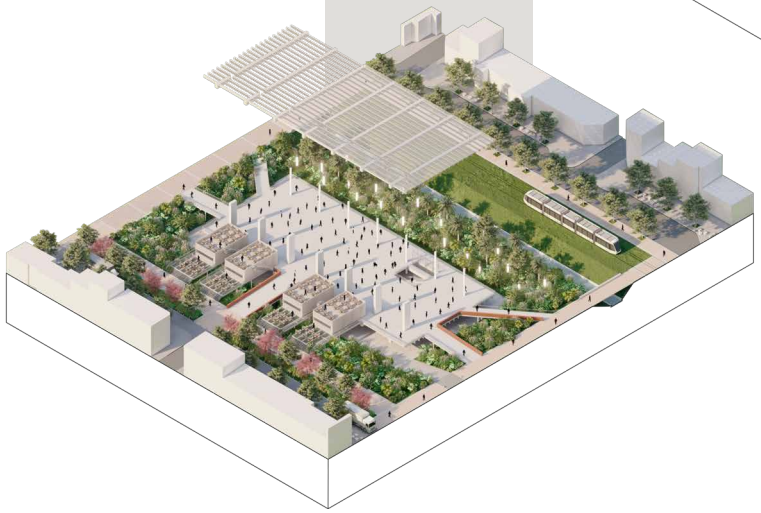
A MARKET



The first use for which the space has been earmarked is for the shops that are currently attached to the gallery in an informal way, in this way the market will have a space that offers the citizens a more organised space, without chaos in the public space.

B FREE SPACE

Allowing the open floor plan to be used gives the neighborhood's residents and gallery visitors a place to meet and socialize.

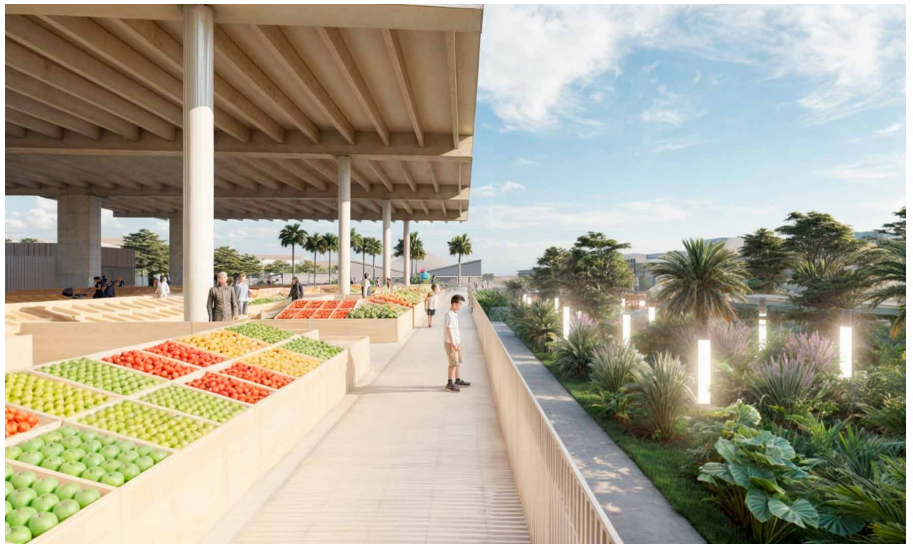


C ALTERNATIVE USE

Alternative uses such as fairs, artistic or gastronomic exhibitions, cultural events, among others, are the options that can be accommodated in the two blocks proposed in the project, in addition to market modules.

Figure 61. Isometric scheme. Elaborated by the author.

Figure 62. Renders. Elaborated by the author.



THE MARKET: Visuals of block A and block B serving as spaces for the fruit and vegetable markets while the gallery would be intended to house the meat and fish shops. These temporary fruit and vegetable modules can be configured in such a way as to make loading and unloading convenient for traders and shopping convenient for visitors.

05 Conclusions and Final Reflections

Conclusion and Reflections

In concluison, the process of this thesis project reflects multiple lessons that strengthen the vision for sustainable design as;
The understanding of the architects' training as a way of approaching problematics with tools that make the development of cities viable. In this way, The Santa Elena gallery represents an opportunity to give form, preserve the place identity and attract the population back to this currently ignored space. Therefore, the need arises to consider what interventions can revitalise the Santa Elena gallery, understanding that architecture by its own will not solve the problem,

Understanding, a valuable aspect of the thesis process was the understanding that it is not necessary to carry out a completely new urban development from scratch, nor to give up the identity of a space in order to create a project that really leave a mark and has a significant impact. This approach was encouraged through the guidance of the tutor, allowing for an appreciation of the richness of the existing context and its potential in the development of an effective and memorable project.

Exploring ways to transform a forgotten and problematic space, at a neighbourhood and urban level, into a key driver for the sustainable development of Cali. This change allows the previously recognised but ignored area to become a valued and appreciated place. Therefore, not only the gallery in the space is highlighted, but also the importance of other elements that had been hidden and undervalued, such as the water bodies, which, previously invisible, prevented their true value to the city and the area from being recognised,

As a result, this vision sets out a proposal that avoids extravagance in order to achieve a significant footprint. Indeed, the protection and conservation of aquifers and bodies of water is an urgent need that the project addresses by highlighting the value of these elements in the environment. Thus, the body of water becomes a focal point that invites the attention of the observer, giving it the value it hasn't had historically. The pipe, traditionally perceived as an undesirable or unpleasant element, is transformed into a positive resource, capable of being integrated into the community as a space of belonging and appreciation,

In addition, this proposal highlight the environmental component, the intermodal mobility system and public space as key points to avoid having an isolated intervention, but as part of the transformation planned for the future of Cali. In this sense, initiatives such as the suburban train, which is part of the mobility system will help to connect the city with other urban areas providing additional value by being integrated with this proposal, enriched by elements previously conceived in the POT (Plan de Ordenamiento Territorial),

Also, in an urban perspective, the architectural value of the site is recovered; in this way, by giving the Santa Elena gallery an atmosphere of revitalised public space, its role as a protagonist of its surroundings is re-established,

As a matter of fact, the reflection showed that the problem is complex and that aspects such as mobility, public space and the environment can be addressed through architecture. However, in order to achieve a comprehensive solution, the collaboration of several disciplines such as sociologists, anthropologists, public bodies and the active participation of the community is essential. Community involvement is crucial as it builds credibility, trust and ownership. As a result, it is recognised that the background of the situation is more complex than initially anticipated, and that it is not possible to resolve everything immediately. The approach must be progressive, understanding that solutions are not instantaneous. The key is to apply the principle of 'less is more', with clarity, precision and concreteness,

With this in mind, from an architectural perspective, both "sustainable" and "sustainability" are fundamental concepts that, although often repeated, reflect an urgent reality that needs to be addressed. Living in an environment such as Cali's, characterised by its pleasant climate and biodiversity, can generate a limited vision. However, by stepping out of this context and facing different realities and climates, it is possible to obtein a wider understanding of how the world functions as an interconnected system. The master's degree provides the knowledge necessary to address issues in a variety of settings, adapting the strategies learned to the specific needs of each context,

As it happens, in cities like Cali, boundaries in public space have been a barrier that fragments social interaction and the use of the urban environment. The project proposes, instead, to blur these boundaries, promoting the integration of diverse uses rather than strictly separating them. Instead of conceiving public space as a series of isolated areas defined for specific activities, the project seeks to make it more flexible and spontaneous, allowing for fluidity between different functions. This approach allows public space to be more dynamic, encouraging coexistence and social interaction in an organic way, without unnecessary restrictions,

Moreover, the formality with which this project is worked and the structure achieved throughout its development reflect the value of the methodological approach of the master's degree, allowing the project to be structured in a rigorous manner. In the field of architecture and urban planning, information is formalised through tools such as maps, which make it possible to express realities that are not obvious to the naked eye. This type of analysis is fundamental, as it allows the work to be organised in a coherent way, from the introduction to the development and final contributions. The information obtained goes beyond the superficial, revealing crucial aspects to understand how mobility, environment and public space are interconnected. This makes it possible to dynamise and bring into convergence the architectural and urbanistic aspects in an area with great potential for development, such as the Galería Santa Elena.

Last but not least, it is relevant to make certain recommendations that architecture should consider for this and other proposals in the future, for example in the case of Cali it is crucial not to lose focus on the integral development of the city, avoiding the creation of projects that are disconnected from urban systems. Likewise, spaces that have been analysed from a macro vision, and that face problems on an urban scale, must be approached with proposals that take into account an integral vision, emphasising the need to leave the door open to the possibility of continue developing the project from other disciplines that can address factors such as hydraulic, socio-economic and structural studies, different from architectural and urban ones, and in this way create projects that respond to problems such as those of the Galería Santa Elena from all fronts of action.

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Figures

1. National Context Colombia Elaborated by the author based on (Abastecimiento De Alimentos Para Cali, n.d.-b) (El País, 2020)
2. Food distribution Network on different scales. Elaborated by the author based on (Abastecimiento De Alimentos Para Cali, n.d.-b) (El País, 2020)
3. Frecuency of supply of markets in Cali. Elaborated by the author based on (Abastecimiento De Alimentos Para Cali, n.d.-b) (El País, 2020)
4. Figure 4. Distribution Times From Santa Elena Gallery to other Galleries. Elaborated by the author based on (Abastecimiento De Alimentos Para Cali, n.d.-b) (El País, 2020)
5. Figure 5. Distribution Times From Santa Elena Gallery to other Galleries. Elaborated by the author based on (Abastecimiento De Alimentos Para Cali, n.d.-b) (El País, 2020)
6. City and market transformation 1880-1940. Elaborated by the author based on (Libro Atlas Histórico De Cali, n.d.)
7. City and market transformation 1940-2014. Elaborated by the author based on (Libro Atlas Histórico De Cali, n.d.)
8. Location of the provisional and first butcher´s shops. Elaborated by the author based on (Libro Atlas Histórico De Cali, n.d.) (Geoportal IDESC, n.d.-b)
9. Location of the third provisional butcher´s shops. the railway arrives to the city. Elaborated by the author based on (Libro Atlas Histórico De Cali, n.d.) (Geoportal IDESC, n.d.-b)
10. "Conoce el proyecto ganador para el corredor ambiental urbano del Río Cali, Colombia" 15 abr 2019. ArchDaily en Español. Accedido el 30 Nov 2024.
11. Reference images 1,2,3: Félix Candela architectural records and papers, 1950-1984, Avery Architectural & Fine Arts Library, Columbia University, Nueva York, NY. Series I I Project Records, Drawer 113, Folder 29. "Christopher Columbus" Market (Cali, Colombia).
12. Instituto de Estudio y Conservación del Patrimonio de Cali (IDESC). (2014). Bienes de Interés Cultural: Guía para la protección del patrimonio cultural en Cali (BICN-16)
13. Reference images 1,2,3: Félix Candela architectural records and papers, 1950-1984, Avery Architectural & Fine Arts Library, Columbia University, Nueva York, NY. Series I Project Records, Drawer 113, Folder 29. "Christopher Columbus" Market (Cali, Colombia).
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16. País, E. (2023, April 22). Inició el cierre temporal de la Galería Santa Elena por casos de Covid-19 en el sector. Noticias De Cali, Valle Y Colombia - Periodico: Diario El País.
17. Layers of the Observation Lenses: Public spcae, Mobility and Enviromental System. Elaborated by the author
18. Strategy 1 of the study area. Elaborated by the author
19. "Theaterplein por Studio Bernardo Secchi & Paola Viganò" METALOCUS. Accedido el 17 de noviembre de 2024
20. Strategy 2 of the study area. Elaborated by the author
21. Moises Carrasco. "Re-Naturalization of Urban Waterways: The Case Study of Cheonggye Stream in Seoul, South Korea" 12 Sep 2024.
22. Strategy 3 of the study area. Elaborated by the author
23. "Rachel de Queiroz Park / Architectus S/S" [Parque Rachel de Queiroz / Architectus S/S] 20 Jul 2022.
24. Geberal areas of the proposed Study Polygon. Elaborated by the author based on (Geoportal IDESC, n.d.-b)
25. Facade-Edge with current activity and uses.. Elaborated by the author based on Google StreetView

26. Facade-Edge with current activity and uses.. Elaborated by the author based on Google StreetView.
27. Conditions and Dynamics of the space. Elaborated by the author based on (Geoportal IDESC, n.d.-b)
28. Full and Empty Space. Elaborated by the author based on (Geoportal IDESC, n.d.-b
29. Population density per city block. Elaborated by the author based on (Geoportal IDESC, n.d.-b) (Geoportal DANE - Geovisor Detallado Para Sectores Y Manzanas Del CNPV 2018, n.d.)
30. Number of floors in the area. Elaborated by the author based on (Geoportal IDESC, n.d.-b) (Geoportal DANE - Geovisor Detallado Para Sectores Y Manzanas Del CNPV 2018, n.d.)r
31. Market users and Diversity of activities of the Santa Elena Gallery. Elaborated by the author based on (Geoportal IDESC, n.d.-b)
32. Photos by Paréntesis Cali (Blogspot), Diario Occidente (25 May 2017)
33. Collective spaces and disconnection in the Santa Elena Gallery. Elaborated by the author based on (Geoportal IDESC, n.d.-b)
34. Typologies of mobility whitin the area. Elaborated by the author based on (Geoportal IDESC, n.d.-b)
35. Vitality over time. Elaborated by the author based on (Geoportal IDESC, n.d.-b)
36. Flooding Areas. Elaborated by the author based on (Geoportal IDESC, n.d.-b) (Jiménez, N, Burbano, W, & Velásquez, A. (2012)
37. Urban Sections. Elaborated by the author based on (Geoportal IDESC, n.d.-b)
38. Section Calle 25.Santa Elena Market Urban context Elaborated by the author
39. Section Calle 23. Between blocks Santa Elena Market Urban context, Section trasversal Streets to Calle 23. Elaborated by the author
40. Section Calle 23. Santa Elena Market loading and unloading actual system. Elaborated by the author
41. Tactics. Elaborated by the author
42. Tactics. Elaborated by the author
43. Tactics. Elaborated by the author
44. Tactics. Elaborated by the author
45. Tactics, The hours in wich the area is active and functional. Elaborated by the author
46. Inicial concept Elaborated by the author
47. General areas of the proposed polygon. Elaborated by the author
48. Top view. Elaborated by the author
49. General plan. Elaborated by the author
50. Parking. Elaborated by the author
51. Parking. Elaborated by the author
52. Sections. Elaborated by the author
53. Sections. Elaborated by the author
54. Sections. Elaborated by the author

55. Section. Elaborated by the author
56. El Clima En Cali, El Tiempo Por Mes, Temperatura Promedio (Colombia) - Weather Spark, n.d.
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59. Renders. Elaborated by the author
60. Render. Elaborated by the author
61. Isometric scheme. Elaborated by the author
62. Renders. Elaborated by the author

Annexes:

1. Board 1
2. Board 2