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Lighting Women's Safety

A Gender-Perspective Approach to Public Space Activation After Dark
through Lighting

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« When you design for women, you design for everyone »

Laura Rojas
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TABLE OF CONTENT

Abstract

1. Introduction

2. Women in the City

2.1 What is public space?

2.2 Women's Right to the City

2.2.1 Fear of Crime

2.2.2 Female Fear

2.3 Women's Perception of Safety

2.4 Women's Services and Facilities

2.5 Women's Participation in decision-making

REFERENCES

3. Parks through Gender Perspective

3.1 Gender Equality Parks Through Design

3.1.1 Intersectionality

3.2 Pathways to Safety

Case Study: Mya Malar Community Park

Case Study: Einsiedler Park Pilot

Case Study: Bredäng Park

REFERENCES

4. Lighting Principles for Perception of Safety

4.1 Key Components for Lighting Design

4.2 Light in Public Space for Women

4.3 Lighting in Parks: Case Studies

REFERENCES

5. Conclusions

6. Case Study Part I: Women's Safety in Cali, Colombia

6.1 Cali, Colombia

6.2 Colonial Period

6.3 Women and Public Space in Cali Colombia

6.4 Historic Cali's City Center

6.5 City Center Safety Strategies

6.5.1 Mandato Centro

REFERENCES

7. Case Study Part II: Boulevard del Rio

7.1 Another Strategy to restore the Historic City Center

7.2 Analysis

7.3 The Boulevard as a Cultural Scenario

7.4 Methodology

7.5 Phase I: Observation

7.5.1 Conclusions of the Observation

7.5.1.1 People's Appropriation Activities

7.5.1.2 Lighting in the Boulevard del Río After Dark

7.6 Phase II: Surveys

7.6.1 Survey's Conclusions

7.7 Conclusions Phase I - II

REFERENCES

8. Case Study Part III: El Parque de la Poesía

8.1 Parque de la Poesía

8.2 History

8.3 Analysis

8.4 Conceptual Lighting Design

8.4.1 Activate

8.4.2 Diversify

8.4.3 Connect

8.5 Implemented Lighting Typology

8.5.1 Visuals

REFERENCES

9. Conclusions

Glossary

Abstract

Which strategies are useful along a gender perspective to improve women's perception of safety in public spaces? Does women's perception of safety changes in the public space after dark, and how is it perceived in the context of Colombian culture? Is lighting a gender perspective strategy to activate parks after dark?

The present thesis focuses on understanding the main factors that affect women's perception of safety in public space. The lack of inclusive urban planning combined with the minimal involvement of women in the design process, results in high levels of rejection and fear associated with walking or being alone in public space. Hence, increasing their vulnerability to becoming potential victims. of sexual harassment.

Moreover, the perception of safety is influenced by cultural, social, economic, and individual intangible factors. Similarly, physical factors like maintenance, constant visibility, surveillance, and the presence of facilities, are crucial for women to feel comfortable.

Additionally, lighting is an essential factor for the urban context since it ensures visibility, constant comfort and the possibility to move around the space after dark. However, it is crucial to implement proper lighting design, due to the fact that after dark, the number of people on the streets decreases, turning spaces that may function adequately during the day to become empty, dark, and unsafe, after dark. Thus, increasing the levels of unsafety, affecting specially women - as they are consider a

minority within the public space.

Therefore, the present thesis focuses on lighting as a strategy to enhance women's perception of safety in the city center of Cali, Colombia. The methodology implemented, consisted of on-site visits to the area, follow by a qualitative level analysis through a series of surveys and evaluations of women's perception of safety in the context. Based on the research conducted, the aim of this thesis is to propose a conceptual lighting design to promote gender diversity and social sustainability.

1. Introduction

“Social sustainability aims to design and construct buildings and urban spaces that promote well-being, inclusion, and community cohesion. It focuses on creating environments that enable positive human interactions, support diverse needs, and improve the overall quality of life for people who inhabit and use these spaces” **Camilla Ghisleni (2023)**

Public space is the epicenter of urban life in a city, as it is where a large number of activities converge that contribute to the personal and social development of its inhabitants. However, historically, women have been largely excluded from this space and from the opportunities it can offer.

The arrival of the Industrial Revolution marked a significant change in pre-established social norms in the late 18th and early 19th centuries. With this, women began to participate in wage labor, which implied a certain degree of freedom and allowed them to spend less time at home performing domestic tasks and caring for the family. Similarly, they began to become visible figures in public space.¹

These events caused considerable upheaval in a society where the division of labor was strongly determined by gender. This led to growing concern among contemporaries, not based on principles grounded in industrial development, but because allowing the visibility of a working woman freely circulating in public space signified a shift in traditional patriarchal dynamics, and to maintain the pre-establish order it was necessary to

keep the feminine and reproductive within the private realm.²

As a result, these dynamics were extrapolated to the urban context, leading to the masculinization of public space, making women feel neither fully welcomed nor safe in them. Being in public space, in many cases, means being subject to sexualization, mistreatment, or violence, which results in a constant fear of feeling unprotected in these spaces. Consequently, public space take on a negative character, becoming a focal point of insecurity and fear.

Moreover, there are factors related to the urban context itself that can influence how public space is perceived. Specifically, the presence of litter, signs of deterioration, and the generally poor condition of public spaces can cause them to be perceived as unsafe. The disproportionate growth of vegetation can also become a problem, obstructing visibility and creating hiding places for potential perpetrators. Furthermore, the lack of surveillance or even the absence of people in the space can negatively influence the perception of safety.

Similarly, lighting plays a key role in the image of public space and the perception of safety, as it is the most important factor during the after dark. It is through lighting that the use of these spaces is facilitated after dark, as it enables visibility, which is crucial for orientation and understanding the environment. Lighting also allows for the recognition of facial features of others, helping to identify potential threats within the line of sight. Additionally, proper lighting can contribute to creating a pleasant atmosphere that enhances the safety of all its users.³

² Scott, J. W, *The Woman Worker, History of Women in the West, Volume IV: Emerging Feminism from Revolution to World War*, 1993, pp. 405–436

³ *Illuminating Engineering Society, Designing Quality Lighting for People in Outdoor Environments*, 2020, pp. 2–3

¹ Kern, L. *Feminist City. Claiming Space in a Man-Made World*, 2020, pp. 13–20

That being said, the issue of safety perception in public space is also influenced by cultural and social aspects, deeply rooted in the place to which people belong. Specifically, within the context of Colombia—the location of the case study for this thesis—cultural beliefs are strongly tied to the idea that public space “belongs to the masculine realm.” Combined with a history permeated by violence, complex social issues, and a high level of sexualization of women, has led public space to become a place of constant fear for Colombian women.

For this reason, alongside the considerations expressed above, the present thesis focuses on understanding how a conceptual proposal, primarily centered around lighting, can contribute to improving the perception of safety and whether the use of this element is sufficient to create inclusive public space that promote the well-being of women within the Colombian context.

2. Women in the City



2.1 What is public space?

2.2 Women's Right to the City

2.2.1 Fear of Crime

2.2.2 Female Fear

2.3 Women's Perception of Safety

2.4 Women's Services and Facilities

2.5 Women's Participation in decision-making

REFERENCES



2. Women in the City

2.1 What is Public Space?

In order to gain a deeper understanding of **women's perception of safety**, it is pertinent to firstly define what constitutes public space. By definition, within the field of architecture, public space refers to urban areas that are freely accessible to all residents of a city. These include open spaces such as **plazas, parks, streets,** and **avenues**, as well as collections of enclosed buildings that facilitate daily life, like **community centers, markets, churches,** and **libraries**. Additionally, there are more subtle spaces, often excluded from the literature under the category of "public space," yet still part of the built environment in cities, such as **gaps areas between buildings, bridges, sidewalks,** and even **public transportation networks**.¹

Public space, therefore, serves as the primary setting for **social interaction, cohesion,** and **exchange** within urban life, providing a **physical framework** for **collective needs**. In addition, it holds an immaterial character, as it serves as a meeting point for diverse social manifestations, gatherings, and expressions, thereby generating a **collective identity** and a **sense of belonging** among its inhabitants.

Public space is, furthermore, an essential component for the development of economic, productive, and cultural factors within a city, as it often functions as the **focal point** for a wide range of activities. In this context, it is crucial to recognize that the dynamics occurring in public spaces are the outcome of

the direct **correlation** between the **built environment** and its **users**, specifically the ways in which the space is used and the behaviors patterns within them. These factors, in turn, determine the manner in which spaces are inhabited, designed, and constructed.²

2.2 Women's Right to the City

Furthermore, as mentioned before, cities are fundamental spaces for innovation, productivity, and opportunities for society. It is estimated that **55%** of the **global population** lives in cities, and half of the urban population is composed of women.³ However, cities are not designed with **women's needs** in mind. For example, in many cities, streets and sidewalks present a lack of ramps; making it difficult for pregnant women or those with strollers to navigate the city without issues. Similarly, girls lack suitable spaces for enjoyment in parks—areas where they can sit and have conversations while feeling protected from the **environment** and the **climate**. Instead, spaces often prioritize the design of playgrounds and facilities for **traditionally male-dominated activities**, such as skateparks or basketball courts.⁴

The concept "**Right to the City**" is given to anyone who **inhabits, accesses,** and **uses** the city; is the right to define, design, and create new spaces that meet the needs of the inhabitants.⁵ However, the design of public space has traditionally been analyzed from a specific perspective that fails to distinguish between genders, as a result of **patriarchal power relations,** and the creation of **discrimination** and **inequality** in the social construction of space. For example, women often feel uncomfortable being alone in public spaces, especially in areas

1. Rocchio, D., Xavier, F., & Baca, C. *Convivir en la ciudad: Una reflexión sobre la percepción de inseguridad en el espacio público*, 2024, pp. 3–13.

2. R, Svendsdotter, A., & Guaralda, M. *Dangerous Safety or Safely Dangerous. Perception of safety and self-awareness in public space*, 2018, pp 75–92.

3. ARUP, "Cities Alive designing cities that work for women", 2022, pp 16

4. Kern, L, *Feminist City*, 2020, pp. 59–60

5. Kern, L, *Feminist City*, 2020, pp. 100–104

dominated by men, due to fears of being harassed, assaulted, or sexualized. This restricts women from navigating and fully utilizing public spaces when alone, leading to **urban violations** of the collective rights of women. Therefore, in order to design aligned with **human rights**—more specifically, the right to the **city for women**—it is essential to conduct a **gender analysis** to identify existing inequalities like: **poverty, unemployment, unpaid care duties, barriers to education, experiences of violence** and **street harassment** and thus, meet the needs of people in public spaces with a clear **gender perspective**.⁶

Therefore, it is essential for women to be involved in the **design** and **planning** of cities to ensure **inclusive** and **suitable** spaces for everyone, because designing for women means considering **social identity** and how this identity shape the ways people experience and live in space, for example women are limited and negatively impacted by **poorly lit** public spaces, as they are often forced to take longer, alternative routes to reach the same destination out of fear. **Inclusive design** not only ensures the well-being of women but it also creates spaces for all individuals, including **minorities** such as children, the elderly, and people with disabilities. This, in turn, provides cities with economic, social, and environmental benefits.⁷

Nevertheless, cities, in general, are full of barriers that exclude women both **physically** and **culturally**. The design of public spaces, public transportation, neighborhoods, and cities in general affects how women experience the city. For example, women's dynamics in the city are often **non-linear** and less divided between work and home compared to men's routines, However, the transportation system tends to function in favor

of men, as buses typically run more frequently during the hours when traditional men commute to and from work; limiting public transportation availability during the rest of the day, failing to consider that most **traditional women** need to make **multiple trips** throughout the day. This creates segregated spaces for women, disproportionately affecting women's activities compared to men's. These activities can generally be categorized into different spheres:

1. **Productive sphere:** Refers to people engaged in paid economic activities, or remunerated work. For example, the traditional man who goes to work.
2. **Reproductive sphere:** Refers to those involved in unpaid work or domestic tasks, including family care, household chores, cleaning, and meal preparation, normally women are part of this sphere.
3. **Personal sphere:** Refers to activities related to personal and intellectual development, such as sports and social life.
4. **Political sphere:** Refers to activities related to political participation and community involvement to improve one's living environment.⁸

6. Buckingham, S, *Examining the right to the city from a gender perspective*, 2010, pg. 57-58

7. ARUP, "Cities Alive designing cities that work for women", 2022, pp 16

8. Col·lectiu Punt 6, "Espacios para la vida cotidiana", 2014

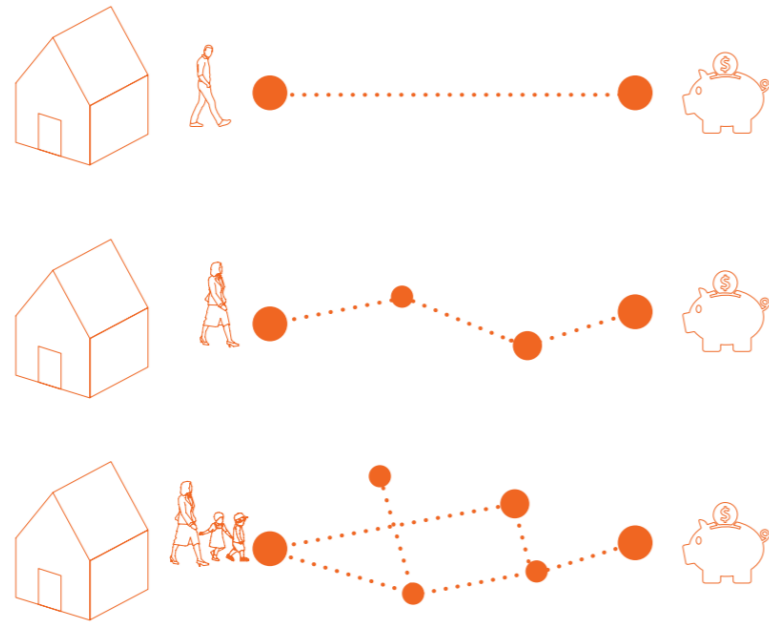


Figure 1: Everyday Life, Gender Roles and Urban Spaces Diagram

Source: Schoberleitner S, 2022

Despite this classification and the interrelation of these spheres, urban planning with a gender perspective seeks to give visibility to all spheres and view them **equally**, due to the fact that a **person's gender** and **pre-established roles** play a significant part in this differentiation.⁹ For example, a person who operates only within the productive sphere has **linear mobility**. In contrast, a person who participates in the reproductive and/or productive sphere has much more complex **multi-directional mobility** due to multiple activities, such as not only going to work but also shopping and dropping children off at school.¹⁰

In the 1970s, due to the discrimination on the classification of the spheres; a feminist movement emerged criticizing the way in which these roles were classified through the **division of labor by gender**. At the time, the **productive sphere** was referred to as the "**public sphere**," and the **reproductive sphere** as the "**private sphere**," which categorized women as individuals

confined to closed spaces - as houses and housework - enabling them to use public spaces and violating their **right to the city** itself. In response, the "**nonsexist city**" movement was created by the architect and urbanist Dolores Hayden, presenting a vision of a city without **gender distinctions by labor roles**, thus creating a city designed equally for both men and women.¹¹ This movement focused on viewing housing and the nuclear family home in a different way - as it is currently an activity that women carry out as unpaid work - and seeks to provide women with the opportunity to belong to more than one sphere, reframing the home and childcare as activities rooted in **community solidarity**.

To address this, efforts were made to create **community-based housing** where women could share domestic tasks with others, such as childcare or cooking, allowing them to engage in other activities like work or self-exploration. In the 1970s, Canada implemented **cooperative housing** for single women, elderly women, and women with disabilities. Similarly, in Vienna, housing projects were developed to include childcare facilities, healthcare services, and access to public transportation, ensuring equal access to public spaces and amenities.¹²

Breaking the dichotomy of public and private domains is also important because despite shifts in this concept, cities have been designed to favor **paid work** over **unpaid work**, contributing to the **inequality** of the **economic factor**. The reproductive sphere should be categorized in a higher position than it currently is, as it enables productive activities to take place. In other words, the person responsible for the **productive sphere** - in large families- can only work if someone else is

9. Col·lectiu Punt 6, Ortiz, S, "La vida cotidiana de las mujeres que trabajan de noche en el área metropolitana de Barcelona", 2017

10. Schoberleitner, S, "We Feel Safe: An Exploration of Planning Opportunities With a Gender Perspective to Encourage Urban Safety", 2022

11. Beebejaun Y, Gender, urban space, and the right to everyday life, 2016

12. Kern, L, Feminist City, 2020, pp. 46-48

assigned to the **reproductive sphere**: taking care of domestic tasks and the care of children and/or elderly family members.¹³

Additionally, women today still face significant **inequalities**, in the labor market, **low representation** in **politics, leadership**, and **persistent violence**. As well as factors like **race, age, religion**, and **ethnicity** also limit the right to the city. Therefore, in addition to the 1970s movement previously mention - which does not encompass all contexts; as it primarily benefits **white Western women** - is important to account for the **diversity** and **experiences** of the **minority women groups**, in order to understand the problematics and the **inequality** of all women. For example, in third world nations such as those in Latin America and Southern Africa, **fear** is seen as an institutional, cultural, and psychological repercussion, while **violence** is a result of destabilization, exclusion, and uncertainty.

For instance, in many Latin American cities, **sexual harassment** like **catcalling** toward women is **normalized**, making women from these territories more **vulnerable** to this type of violence, contributing to the **rape culture**—defined as a set of societal attitudes that normalize and excuse sexual violence against women.¹⁴ In the Feminist City book, Kern (2020) explains *“Rape culture teaches us that to be alone in public is to open yourself to the threat of sexual violence and thus vigilance is a part of the experience of being alone in the city for most women”*. This means that women who experience this type of **violence** tend to avoid being **alone** in **public space** and therefore, they tend to perceive the city as an **unsafe place**, resulting in navigate with fear: **fear of crime** and/or **fear of being sexually assaulted**.

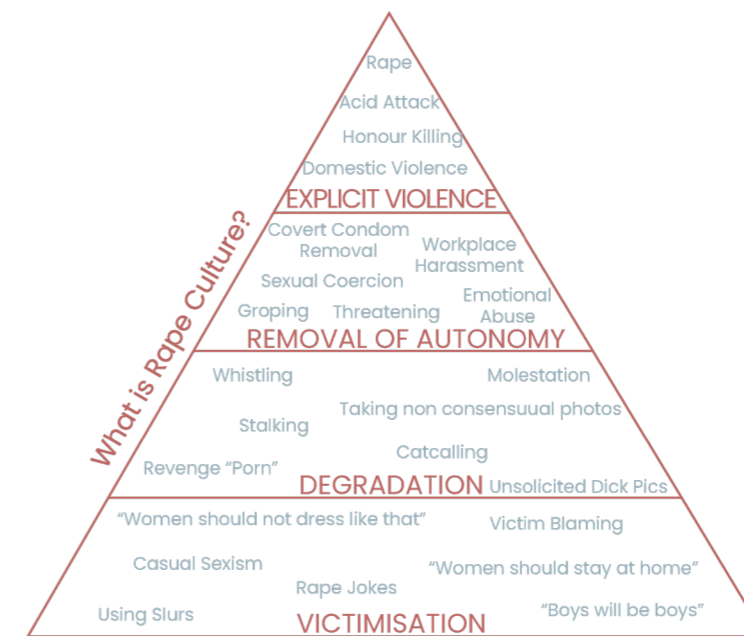


Figure 2: Infographic: What Is Rape Culture?
Source: ADAPTED by <https://feminisminindia.com/2020/05/04/infographic-rape-culture/>

2.2.1 Fear of Crime

Generally, cities tend to focus on the prevention and reduction of crime, which in turn, contributes to **high levels of fear** among the population regarding public space. Hence, the importance of addressing the concept of fear of crime. Since the last century, this **social phenomenon** has gained increasing relevance within the field of academic literature and has also become a topic of constant debate within current public policies of cities, due to its nature, implications, and consequences.

It is increasingly complex to separate not only the fear of crime from the confusion it generates in cities, but also from factors related to **social, cultural, and economic issues**, which in turn influence topics such as **housing, urban planning**, and **social exclusion**. This has led to the development of new

¹³. Buckingham, S, *Examining the right to the city from a gender perspective*, 2010. Pg.60-61

¹⁴. Kern, L, *Feminist City*, 2020, pp. 19

political strategies aimed at reducing **fear** through integrated approaches, in contrast to the strategies used at the end of the last century, which were based solely on the implementation of **local measures** in specific areas (situational approach).¹⁵

*According to Garofalo, J. (1981), fear of crime is “an emotional reaction characterized by a sense of danger and anxiety... caused by the threat of physical harm. Furthermore, for fear of crime to exist, the fear must be provoked by perceived signals in the environment that are related to some aspect of crime for the individual.”*¹⁶

While a certain degree of fear of crime is normal, as it relates to a common problem in metropolitan areas—namely, the fear of becoming a **victim** of some type of **crime**—this triggers a normal emotional response that stimulates the brain’s problem-solving area, which in turn, activates sensations of **caution** and **self-care** to ensure **survival**. However, the **excessive fear** generated by this phenomenon can cause **psychological harm** to individuals, as well as deteriorate the social fabric of a community, since it interferes with the habits and activities of its members, creates **distrust** and **isolation**, and transforms certain spaces into uninhabitable areas due to their high **danger levels**.¹⁷

The **urban context** is generally the physical location with the highest concentration of **fear of crime**, as it presents a large number of **spatial configurations**. Some of these may result in spaces with particular characteristics that either **encourage** or **intensify** this phenomenon, such as **poorly lit, isolated, deteriorated places**, or, in general, those with **unattractive**

designs. The relationship between these factors has been widely studied over the years.¹⁸

However, the source of this problem does not solely stem from **issues** directly related to the **built environment** in which it occurs; rather, it is deeply rooted in a variety of **social aspects** that have led to its widespread proliferation. An example of this is the numerous studies indicating the higher levels of fear of crime experienced by women compared to men. These well-founded **fears of women**, as explained by some **gender perspective** theories,¹⁹ have their origin in the **repression** and **control** of females, which in turn stem from certain dynamics that, over the years, have assigned “**roles**” to women, as mentioned earlier in this chapter. Thus, these traditional ideologies, together with information provided by the media and firsthand experiences, play a fundamental role in the increased **fear** that **women** experience in public spaces.²⁰

2.2.2 Female Fear

In addition, it is important to clarify that **fear of crime, violence** in cities, **fear of strangers**, and **fear of darkness** also contribute to the fear **women experience**. Furthermore, it has been shown that women also suffer **violence at home** at the hands of men. According to UN Women: “**One woman** or girl is **killed** by someone in her own family every **11 minutes**. Globally, more than **1** in every **10** women and girls aged **15–49** was subjected to **sexual** and/or **physical violence** by an **intimate partner** in 2021 **(12.5%)**.”²¹

^{18.} Hanmer, J., & Saunders, S. “Well-founded fear: a community study of violence to women”, 1984.

^{19.} Newman, O. “Defensible Space, Crime Prevention through Urban Design. In *Urban Design Group*”, 1972

^{20.} Pain, R. “Place, social relations and the fear of crime: a review. *Progress in Human Geography*”, 2000, pp. 365–387

^{21.} UN Women, *Progress on the Sustainable Development Goals, The Gender Snapshot, 2022*, pp.10

^{15.} Pain, R. “Place, social relations and the fear of crime: a review. *Progress in Human Geography*”, 2000, pp. 365–387

^{16.} Garofalo, J. “The Fear of Crime: Causes and Consequences. *Journal of Criminal Law and Criminology*”, 1981, pp. 839–857

^{17.} Da Silva, B., Dharmasiri, K. S., Buddhadasa, A., & Rannaweera, “An Overview of Fear of Crime and Its Criminological Significance”, 2021,

Furthermore, men are more likely to experience **theft** and **physical violence** in public space nonetheless, women are far more prone to fear **sexual** and **physical violence** in both **private** and **public** spaces. In Colombia, **70.60%** of the reports of **domestic violence** between 2016 and 2023 were made by women that had suffer from it.

Therefore, women experience **gender violence**, which refers to a concept that addresses a type of violence directed at a person due to their **gender**. Most women fear being **raped**, while men are more likely to fear being robbed; however, while robbery is a **harmful experience**, rape is significantly worse. ²² Similarly, women who have already experienced **sexual assault** tend to feel a heightened fear of it happening again.

Moreover, women's perception of safety, **fear**, and **mobility** significantly increased **after dark**. Although as mentioned earlier traditional women often belong to more than two spheres and consequently have more complex mobility patterns than men, this dynamic shifts at night due to the fear of being assaulted, often referred to as **female fear**. As a result, when it gets **dark**, women tend to take **alternative routes**, to avoid certain areas of the city, to refrain from leaving their homes, and in addition tend to avoid using **public transportation**, due to fear of **sexual violence** and crime in the city. A study carried out in 28 cities shows that **6** to **10%** of women feel more unsafe on public transport than men. ²³

Therefore, it is crucial for societies to ensure that women have the right to use the city both whether **after dark** or not ²⁴ so they can fully participate in all spheres regardless of the time.

Women deserve to have jobs that require nighttime shifts (**productive sphere**), moments of leisure **after dark** (**personal sphere**), and the ability to stay home (**reproductive sphere**) or go out at night without fearing **sexual violence**, and/or being leftout and fearful. For example, in Japan, nighttime public transportation options were created exclusively for women and children. However, such strategies only **exclude** and fail to address the root of the problem, **segregating** them and their **right to the city**. ²⁴

Additionally, Sustainable Development Goal (SDG) number 5 seeks to “*eliminate all forms of violence against all women and girls in public and private spheres*” (target 5.2 of the SDGs). However, women's safety is often linked not only to actual safety but also to **individuals' perception** of the space. Women, who are frequently subjected to **sexual harassment**, are more likely to feel **unsafe** in public space. Furthermore, the female body has historically been conceptualized in a way that **objectifies women, portraying them as objects, victims of fear, and inferior beings**. This is evident in reports of **sexual violence** against women in public space in Latin American countries like Mexico, where **90%** of women have experienced **sexual violence** while using **public transportation**, and in Peru, only **2.2%** of women feel safe in public spaces. ²⁵

2.3 Women's Perception of Safety

With that said, public space is a central concern for its users in terms of safety, especially for women. While it may possess numerous positive qualities, it can equally become a source of **apprehension**. The perception of safety is a **subjective**

22. Whitzman C, “Stuck at the front door. gender, fear of crime and the challenge of creating safer space”, 2007

23. ARUP, “Cities Alive designing cities that work for women”, 2022, pp 31

24. Schoberleitner, S, “We Feel Safe: An Exploration of Planning Opportunities With a Gender Perspective to Encourage Urban Safety”, 2022

25. Dubey, Shreya, et al. “Women's Perceived Safety in Public Places and Public Transport: A Narrative Review of Contributing Factors and Measurement Methods.”, 2024, pp. 2–7,

experience influenced by a variety of factors, such as the **built environment, sociocultural elements, economic conditions,** and **demographic characteristics,** among others, all of which shape an **individual's sense of security.** For instance, one of the most significant variables in determining whether a space is perceived as safe or not is the degree of **familiarity** individuals have with it. In other words, women tend to assess the safety of an urban area based on their own **personal experiences** and previous knowledge.

Consequently, in certain cases, factors such as the **appearance** of the built environment, or the characteristics of the people present may become secondary if the individual is familiar with the location in question. ²⁶ Similarly, the information acquired through media or **third-party testimonies** can profoundly influence one's perception of a place's safety, even in the absence of direct experience, as such information is often internalized as reliable. Furthermore, the presence of specific elements within the environment can significantly affect the perceived safety of the space. For example, areas with **dense vegetation** are often regarded as unsafe, as they limit **natural light, reduce visibility,** and provide potential **hiding spots** for possible aggressors.

Other elements that tend to negatively affect the perception of safety including **physical barriers**—objects that obstruct access to **escape routes** in the event of danger. As such, spaces with **high walls** or **fences** are generally perceived as less safe. However, it is important to note that these perceptions vary from **individual to individual,** as the notion of 'safety' is **inherently subjective.**

In recent times, the issue of women's safety in public spaces has gained increasing **relevance** and **visibility,** to the point where it is now **included** in the **2030 Agenda for Sustainable Development,** specifically in "SDG 5: Achieve gender equality and empower all women and girls, SDG 10: Reduce inequality within and among countries and SDG 11: Make cities and human settlements inclusive, safe, resilient, and sustainable". ²⁷



Figure 3: Goal 5, 10 & 11 United Nations Development Programme. Source: <https://sdgs.un.org/>

This is a crucial matter, as it has been shown that women tend to alter their behavior and avoid places, they perceive as unsafe, which limits their **freedom of movement,** affects their **participation** in public life, **restricts access** to essential services, and prevents them from benefiting from the opportunities these environments could offer. Therefore, it is fundamental to create **inclusive designs** based on identifying potential variables that affect the perception of safety, to generate **resilient** spaces that provide **comfort** and **peace** of mind for all its users.

^{26.} Traunmueller, Martin, et al. "...When You're a Stranger": Evaluating Safety Perception of (Un)Familiar Urban Places, 2016, pp. 71-77.

^{27.} UN Women. "Safe Cities and Public Spaces for Women and Girls.", 2016

As noted, there are a wide range of variables that influence the **perception of safety** that women experience in urban contexts; these can be classified into: ²⁸

1. Built Environment

Factors related to the built environment tend to have a more significant impact **after dark**, as they could potentially increase feelings of fear, which are closely related to perceptions of **insecurity**. This fear is generally associated with the possibility of becoming a victim of theft, assault, or any other form of violence. Elements such as: **public lighting, street visibility, walking path conditions, presence of security and surveillance, degree of openness**, have a direct association with perceived safety.

Public lighting has proven to have an indirect effect on improving the perception of safety and is also related to the fear of crime and female fear mainly on women's **vulnerability** and **victimization after dark**. Studies have shown that women are more aware of the environmental changes while walking the city than men. Other studies have shown that lighting modifications were acknowledged by **90%** of the people, while **54%** of women felt safer due to lighting. This means that lighting is a key element to improve and increase the effect of women's perception of safety, particularly when walking through **unfamiliar** or **deserted areas**, as they enhance **visual conditions**, allowing individuals to better assess their **surroundings** and guarantee **visibility**.

This is possible if the lighting is well **distributed**, if the **brightness** is controlled and the **level of lighting** is adequate. One of the reasons why public lighting plays a fundamental role is that it

increases individuals' ability to **recognize** facial features and body language of others nearby, thus linking the level of visibility with safety. ²⁹

Street visibility and **openness** are other factors that influence the perception of safety. It is proved that women feel safer when they are able to recognize **walking paths** with the possibility to encounter other people, to see clearly the **landscape** without obstacles like **high vegetation**. Furthermore, cities are currently designed in **favor of cars**. However, surveys show that women feel more unsafe in areas with **wide streets** for vehicles, when there is absence of **pedestrians**, and with the presence of **street vendors**.

Designing streets exclusively for **pedestrians and cyclists** would reduce this sense of **insecurity** and can provide alternative means of transportation to cars. In addition, women feel safer when they have the possibility to find an **escape route**, which contributes on the decreasing of the feeling of anxiety in the public space, especially **after dark**. For example, in Umea city The Lev! Tunnel was a place where girls didn't feel safe because it was a **dark** and **narrow space**. It was redesigned by shaping the entrances with curves, providing **continuous visibility** of the space and it reduced the **hiding places**. They added an exit in the middle of the tunnel, to guarantee a **scaping route**, and additionally implemented **lighting** in the wall's tunnel with some bird and forest pictures, to create a more **welcoming space**. ³⁰

²⁹. Boyce, Peter R. "The Benefits of Light at Night." *Building and Environment*, 2019, pp. 356–367.

³⁰. Make Space for Girls. "Umeå."

²⁸. Dubey, Shreya, et al. "Women's Perceived Safety in Public Places and Public Transport: A Narrative Review of Contributing Factors and Measurement Methods.", 2024, pp. 2–7,



Figure 4: Continuous Visibility with Curve Entrance
 Source: <https://www.makespaceforgirls.co.uk/case-studies/umea#:~:text=Ume%C3%A5%20has%20focussed%20on%20gender,safety%20for%20women%20and%20girls.>



Figure 5: Lighting and Wall Design
 Source: <https://www.makespaceforgirls.co.uk/case-studies/umea#:~:text=Ume%C3%A5%20has%20focussed%20on%20gender,safety%20for%20women%20and%20girls.>

Another element in this first group is the level of **surveillance** in the environment. A study conducted by researchers who digitally recreated different urban scenarios found that women felt safer after dark in areas with **mixed-use** buildings and high levels of **commerce**, as these areas had greater **surveillance** by both shopkeepers and passersby. The same study also revealed that **familiarity** with a place contributes to an increased sense of security compared to **unfamiliar** environments, places with **absence of people** and **poor lighting**.³¹

2. Individual Factors

Identity is shaped by a range of **demographic, social, and personal characteristics**, all of which play a central role in shaping the perception of safety, as these factors determine the essence of each individual and, in turn, establish the capacity to react to **potential danger** and to **assess** whether an environment is safe. Furthermore, preliminary studies examining variables related to ethnicity and safety perceptions have found that women belonging to **minority ethnic groups** expressed greater concern about safety in urban contexts.³²

Continuing along this line, there are two important variables to consider: **prior experiences related to crime**, such as being a **victim of crime**, and **prior information about crime**, such as information obtained through family members, the news, etc. Specifically, a 2022 study found that a significant portion of the insecurity perceived by women in a neighborhood in Amsterdam was due to **third-party information** rather than personal experience.³³

³¹. Basu, Nandita, et al. "The Influence of the Built Environment on Pedestrians' Perceptions of Attractiveness, Safety and Security.", 2022, pp. 203–218

³². Boyce, Peter R. "The Benefits of Light at Night." *Building and Environment*, 2019, pp. 356–367.

³³. Pain, Rachel. "Gender, Race, Age and Fear in the City." ,2001, pp. 899–913.

3. Social Factors

Just as individual variables are important in shaping women's perceptions of safety; social factors also influence this perspective. **Antisocial** behaviors such as **vandalism, damage** to the **physical environment**, and **alcohol consumption** in public spaces can negatively affect the perception of safety in urban areas. For example, a key aspect to consider is that women with **broad social** support networks tend to report a greater sense of security and trust in the effectiveness of the community as an **informal agent** of control to maintain neighborhood's safety. In contrast, women with smaller social circles more frequently report feeling unsafe in their neighborhoods due to a **lack of familiarity** with their surroundings and people.³⁴ The present, highlights the fact that women tend to feel safer in familiar environments with high levels of **social cohesion**.

In summary, according to findings in the literature, the sense of safety experienced by women in public spaces is affected by a variety of factors, including the **urban environment, personal characteristics**, and **elements** of the **social context** to which they belong. As such, each experience is **unique** and **subjective**, shaped by both **personal** and **environmental changes**. However, improving the conditions of the built environment can positively impact **social factors**, creating spaces with higher levels of **cohesion** which, in turn, influences individual perceptions of safety through design in **collaboration** with the **community**, the neighborhood, the city, and local public entities.

³⁴. Allesie, B.C. "Individual Safety Perceptions of Women in Public Spaces." 2022, pp. 45-49.

2.4 Women's Services and Facilities

Women also face critical challenges such as **poverty, lack of secure tenure, poor sanitation, and few sexual and reproductive health services**, as a result they tend to banded together to form collectives, that help them improve economic opportunities and advocate for security of housing and tenure. In consequence is important to provide different **services** and **facilities** in public space, to guarantee a more welcoming environment and counteract with the lack of them:

- 1. Public infrastructure and transportation:** To provide good infrastructure, where proper lighting is guarantee in streets, parks, buildings, etc. Additionally, the implementation of a proper public transportation is crucial with easy access, safety, a broader coverage throughout the city; and a 24h service, in order to avoid segregation between residential areas and zones for work or leisure.
- 2. Proximity between housing, services and employment:** As explained earlier, traditional women are part of more than one sphere, meaning that during the day, their mobility is more complex compared to traditional men. Therefore, it should be considered to place daily services such as work, home, supermarkets, pharmacies, and schools much closer together, as opposed to how the modern city currently arranges them: all scattered throughout the city. It would be necessary to think about the variety of needs and roles that women have in the city.

3. **Public provision of infrastructure and amenities:** In order to guarantee safety for women, it is important to consider some basic infrastructures to provide an inclusive public space, as it has been proven, women have fewer resources than men, suffering more from poverty. As a result, they depend on public factors in order to develop their lives: ³⁵

- **Physical infrastructure:** such as well-lit streets, pedestrian walkways, public restrooms, parks, and places to sit. For example, in Umea city, they have been implementing a lot of interventions on gender equality. One of the projects is located in the park Årstidernas and consists on the design of social seating, that were design by Tyrens architects, the artist Kerstin Bergendal and the collaboration of the local teenage girls. This social seating is perfectly ergonomic for girls, has the possibility to play music and it adapts to the winter weather, giving girls a presence and a space in the park. ³⁶



35. Visakha, S, *Making a Feminist City: Planning Safety and Autonomy for Women*, 2021, pp. 34-35)

36. *Make Space for Girls*. "Umeå."



Figure 6 - 7 : Seating Furniture for Girls

Source: <https://www.makespaceforgirls.co.uk/case-studies/text=Ume%C3%A5%20has%20focussed%20on%20gender,safety%20for%20women%20and%20girls>.

- **Social infrastructure:** As community centers, emergency centers, educational centers. An example is "Girls Garage" in Berkeley, USA which it offers a garage space, to teach young girls about construction, wood, metal, activities that are traditionally made by men. ³⁷



Figure 8-9: Education Girl's Center

Source: <https://www.designboom.com/design/girls-garage-all-female-workshop-diy-03-14-2017/>

37. Design Boom, "Girls Garage: the all-female workshop teaching young women DIY design + construction", 2017,

- **Mobility infrastructure:** Public transport that is well connected to the rest of the city, cycle paths and pedestrian areas. For example, in Lyon public transportation is available 24 hours. Every bus is accessible and **70%** of the bus stops were redesign in order to adapt them accessible to everyone, including disable passengers. On the other hand, in Lima Peru; Bernard van Leer Foundation, elaborated an intervention in order to provide a proper pedestrian path to a childcare facility, which in the past was unsafe and families had to pay for a mototaxi instead of walking. ³⁶



Figure 10: Guarantee Pestrrian Paths

Source: <https://www.proximityofcare.com/blog/2023/03/23/safe-and-playful-routes-for-children/>

- **Institutional infrastructure:** Such as public hospitals, and reproductive health centers. ³⁵ In Nantes, France in 2019 a post-trauma consultation center was opened for female victim of gender-based violence.

The center is called Citad'elles and they provide medical and psychological assistance.³⁸



Figure 11: Guarantee Pestrrian Paths

Source: <https://www.proximityofcare.com/blog/2023/03/23/safe-and-playful-routes-for-children/>

2.5 Women's Participation in decision-making

Just as it is important to consider the right to the city, the right to participate in the design of public spaces within the city must also be emphasized. In order to guarantee an **inclusive space** that takes everyone's needs into account; it is essential for women to be included in positions as **architects** and **urban planners**, as way to ensures a design with a female logical approach, especially by implementing **gender mainstreaming**—a concept that addresses **safety, access, and agency** in urban spaces while considering gender and **gender inequality** through **laws, practices, and planning** taking into account the specific needs of both women and men in the city. By doing so, different strategies can be achieved:

³⁸. ARUP, "Cities Alive designing cities that work for women", 2022, pp 31

³⁶. Make Space for Girls. "Umeå".

³⁵. Visakha, S, Making a Feminist City. Planning Safety and Autonomy for Women, 2021, pp. 34–35)

- **Gender impact assessment:** “Is the estimation of the different effects (positive, negative or neutral) of any policy or activity implemented to specific items in terms of gender equality”. ³⁹
- **Gender Budgeting:** “Gender budgeting is a strategy to achieve equality between women and men by focusing on how public resources are collected and spent. The purpose is to promote accountability and transparency in fiscal planning, to increase gender responsive participation in the budget process, to advance gender equality and women’s rights”. ³⁹
- **Exploratory Walks:** are walks led by and involving women to gain a better understanding of and empower women’s perceptions of safety in urban areas. This method focuses on developing safety strategies through partnerships between grassroots organizations, communities, and municipalities by involving women in the planning process. The walk aims to strengthen the sense of safety and belonging and explore women’s experiences and suggestions for improving urban space. ³⁵

Additionally, it is essential to have a **stakeholder’s participation** in order to achieve an **inclusive design**. Since, the experiences and the need of each women are different. The key for creating inclusive cities is to integrate their ideas into **decision-making**. This will make spaces live longer with a **sense of ownership** and **empower women** to create their own spaces and become more active in the local decision-making.

39. European Institute for Gender Equality, “Gender Budgeting & Gender Impact Assessment”, 2025

35. Visakha, S, Making a Feminist City. Planning Safety and Autonomy for Women, 2021, pp. 34–35)

Me Nuevo Segura

Carry out by: Bicistema Architecture & Urbanism

Location: Bogotá, Colombia

Year: 2019

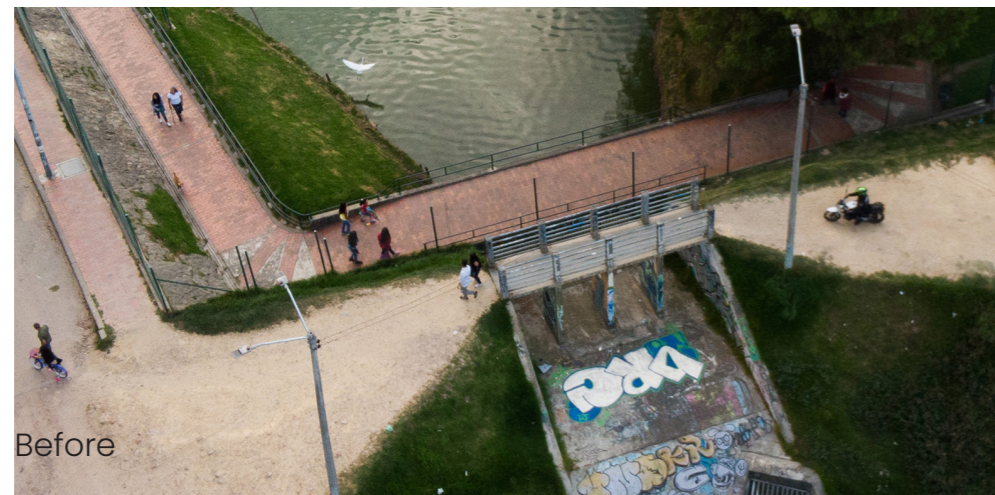


Figure 12-13: Before and after tactical intervention
 Source: <https://www.archdaily.cl/cl/933210/renovacion-y-regeneracion-de-espacio-publico-mediante-urbanismo-tactico-con-enfoque-de-genero-en-bogota>

Taking into account the above, the pilot project ‘Me Nuevo Segura’ coherently illustrates how community participation in a gender-focused project can transform the perception of security in urban spaces considered unsafe.

This tactical urbanism project is based on a campaign aimed at improving the prevention of violence committed in public space against women, through a gender-based approach and its social and urban impact.

As an initial step, an identification of dangerous areas within the city was carried out by measuring variables such as lighting, visibility, diversity of activities, number of people in the space, proximity to public transportation, street condition, and the presence of security. These factors were used to average the most unsafe areas of the city, which were then targeted for intervention.



Before



After

Figure 14-15: Before and after tactical intervention
 Source: <https://www.archdaily.cl/cl/933210/renovacion-y-regeneracion-de-espacio-publico-mediante-urbanismo-tactico-con-enfoque-de-genero-en-bogota>

The primary objective of these interventions was to create safe urban spaces for women and girls, both in public spaces and on public transportation, by encouraging the use of bicycles, thus improving their sense of safety. This approach was based on the understanding that the condition of public spaces was a key factor in their perceived insecurity, as identified in the diagnostics carried out.

Some of the strategies employed included improving spaces adjacent to bike lanes, roads, infrastructure, and pedestrian areas through the use of tactical urbanism. In this case, this was achieved through the creation of murals, cultural and educational activations, always in favor of re-signifying gender-based violence.

The execution of this project carefully considered the social reality of the population in which the interventions took place. The community was integrated throughout all stages of the project via participatory design workshops, which were supported by local artists, women, and girls from the community.³⁶



Figure 16-17: Direct involvement of the community
 Source: <https://www.archdaily.cl/cl/933210/renovacion-y-regeneracion-de-espacio-publico-mediante-urbanismo-tactico-con-enfoque-de-genero-en-bogota>

³⁶. Baraya, S. (2020, February 7). Renovación y regeneración de espacio público mediante urbanismo táctico con enfoque de género en Bogotá.

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www.researchgate.net/publication/354476890_An_Overview_
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3. Parks through Gender Perspective



3.1 Gender Equality Parks Through Design

3.1.1 Intersectionality

3.2 Pathways to Safety

Case Study: Superkilen

Case Study: Mya Malar Community Park

Case Study: Einsiedler Park Pilot

Case Study: Bredäng Park

REFERENCES



3. Parks through Gender Perspective

3.1 Gender Equality through Parks

Parks are essential spaces for the **well-being** of a city and its inhabitants. According to the green space standard proposed by the UN, the recommended area is **16 m²** per person, while the World Health Organization (WHO) suggests a minimum of **9 m²**. Studies conducted by the DAGMA (Administrative Department of Environmental Management) in 2021 estimated that the city of Cali faces an alarming deficit in effective green areas for its inhabitants, with only **2.62 m²** per person.¹

Therefore, it is essential for the city to implement strategies, not only to increase the number of these spaces but also to ensure that the few already existing parks are in the best possible condition and provide **well-being** to all users, particularly women and girls. Since, from an early age, there is a **decline** in park usage among girls, a trend that worsens during adolescence.² This is due to the sense of **insecurity** often experienced in public space, as explained in the previous chapter.

Unfortunately, **sexual harassment** in public space is a part of daily life for most women. In a 2023 survey conducted by the Gender Observatory of Valle del Cauca, the department to which Cali belongs, it was found that **69.3%** of women over **18** years old have experienced some form of **street harassment**. The survey also identified the time frame with the highest rates of harassment as being between 18:00 and 22:00 (**39.2%**), followed by the period from 23:00 to 4:00 (**24.9%**), according to the respondents,³ indicating a correlation between **sexual**

harassment in public spaces and the time **after dark**.



At least **7** out of every **10** surveyed women say they have witnessed a situation of street harassment

Figure 1: "Perception of street harassment situations", Source adapted from: Observatorio de Género del Valle del Cauca

Moreover, another study conducted exclusively in Cali found that **40%** of the women living in the city consider parks and recreational spaces to be **unsafe**.⁴ Therefore, it is evident that this reality experienced by women and girls in the city directly affects them, reducing the likelihood of **utilizing** and **enjoying** the benefits that parks can offer, as these spaces promote **social cohesion** and **interpersonal relationships**, while fostering **physical** and **mental health** due to their outdoor nature and contact with the environment.

Hence, it is necessary to implement **gender-sensitive** measures and strategies to enhance the sense of safety in these spaces, making them suitable for the enjoyment of women and girls.

3.1.1 Intersectionality

Taking into account the above mentioned, the perception of safety experienced by women within parks and other types of public spaces is not solely influenced by external factors such as the **condition of the context**, **lighting** and **time of day** etc. Rather, it also depends on variables such as **age**, **race**, and **religion**, among others, which are the product of the **interaction** between the **unique characteristics** of each woman.⁵

4. ONU Mujeres, Principales resultados, lecciones aprendidas y prácticas promisorias del Programa Ciudades Seguras CALI, 2023, pp. 10

5. Day K, Feminist approaches to urban design, 2011, pp. 150-161

1. C. Tascón, Expertos nos hablan del espacio público en Cali, 2024

2. West Yorkshire Combined Authority, Safer Parks: Improving access for women and girls, 2023

3. Observatorio de Género del Valle del Cauca, Acoso Callejero En El Valle del Cauca, 2023, pp. 10-11- 18

Furthermore, the concept of **intersectionality**, according to the Council of Europe (2024), “is a term used to describe the idea that social relations involve multiple intersecting forms of discrimination. This means a person might experience several forms of discrimination, such as sexism, racism, and ableism, all occurring at the same time.” This concept emerged from the idea that multiple **discrimination** is a real factor, and in the 1950s, various **feminist movements** began to employ it, gradually gaining greater recognition until it was formally defined as “**intersectionality**” in the late 1980s.⁶

An **intersectionality** approach is essential for the development of safe public spaces, as it serves as a tool to **analyze** and **understand** the different **individual characteristics** of women and why they may be more prone to feeling unsafe in public places. Therefore, it is crucial to integrate a **gender perspective** into urban design processes through the use of **intersectional** analysis to create equal and safe spaces⁷ (Kalms & Bawden, 2021).

3.2 Pathways to Safety

As previously mentioned, park design is essential to enhance the quality and safety of its users. This can be achieved through strategies that focus on key factors, divided into five general categories: **visibility, wayfinding, escape routes, management** and **surveillance**.⁸

6. Schoberleitner S, *We feel unsafe: An exploration of planning opportunities with a gender perspective to encourage urban safety*, 2022, pp. 17

7. Kalms, N., & Bawden, G, *Lived experience: participatory practices for gender-sensitive spaces and places*, 2021, pp. 104

8. West Yorkshire Combined Authority, *Safer Parks: Improving access for women and girls*, 2023, pp. 9

1. Visibility

This factor refers to the ability to **see** and **be seen** by others from a certain distance, which is crucial for increasing the **sense of safety** in parks. Generally, women avoid spaces that are **hidden** from view or have **dense vegetation**, as these obstruct **visibility**. This is due to four interconnected causes such as:

- **Perspective:** The need to observe both ahead and behind to anticipate if someone is approaching.
- **Natural Surveillance:** The act of being observed by others increases the perceived sense of safety. Urbanist Jane Jacobs discusses this phenomenon in her 1961 book “*The Death and Life of Great American Cities*”, calling the aforementioned “*eyes on the street*.” She explains that active community members are naturally attracted to the vitality of the street, and their presence can help reduce crime, creating safer spaces, as people tend to watch their surroundings.
- **Refuge:** The ability to recognize safe areas to head towards in case of necessity or in the presence of a problem or danger.
- **Hiding:** This refers to the idea that an open area should not offer any hiding spots for potential attackers.

Considering these factors, it is possible to improve the **visibility** in parks with simple strategies related to **vegetation, facilities, and landscaping**.

- **Vegetation:** The first aspect to consider is to enhance visibility in parks, vegetation adjacent to trails, high-traffic

areas, and central spaces should be maintained at **low heights** to avoid obstructing the view of people moving through these areas. Another strategy to improve visibility is to ensure that tree canopies rise above **head height**. Additionally, trees of medium or large size should be **placed away** from trails and in surrounding areas.



Figure 2: “Maintain good visibility by keeping treetops above the view of users and building on hills”, Source adapted from: SAFER PARKS: Improving access for women and girls

It is preferable to plant trees whose foliage grows **upward**, so they do not interfere with visibility in these areas. For these strategies to be effective, regular maintenance of the vegetation is necessary to control its **height** and **spread**, contributing to the perception of safety as it indicates the space is **well-maintained**, thus appearing safer. **Maintenance** is especially important along paths more frequented **after dark**, around **seating areas**, and areas where **criminal activities** are more likely to occur.

Facilities: If the park includes facilities such as **restrooms**, **changing rooms**, or **cafés**, the design of these structures must consider **visibility** and **natural surveillance**. This can be achieved by orienting **entrances** so they have a **clear**

line of sight to adjacent spaces, and if possible, allowing pedestrians to see inside the facilities.

- **Landscaping:** In park design or redesign, strategies to enhance the surrounding visibility include incorporating **open areas** throughout the park. Another strategy could be adding **small hills** or **elevated surfaces** to provide a good view of the entire site. **Expanding paths** also allows for more activities and increases the number of “eyes on the park”⁹

2. Escape

Before entering a public space like parks, most women assess the ease with which they can **escape** the area if a potential threat arises. Therefore, if a park features **dense vegetation**, **high fences**, or generally **enclosed spaces**, women and girls are likely to avoid it. To improve the conditions of parks with such characteristics, certain design measures and strategies should be employed:

- **Access and Boundaries:** The park’s boundaries are crucial for safety, so it is essential that these areas be as **open** and **accessible** as possible. Park entrances should be wide and easily distinguishable from peripheral areas, with **clear signage** within the park.
- **Distribution:** To increase the sense of safety and avoid using **barriers** as a means of delineating park spaces, alternatives such as **color use**, **level changes**, **vegetation**, or **different surface** treatments can be applied.¹⁰

^{9.} West Yorkshire Combined Authority, *Safer Parks: Improving access for women and girls*, 2023, pp. 23–27

^{10.} West Yorkshire Combined Authority, *Safer Parks: Improving access for women and girls*, 2023, pp. 28–31

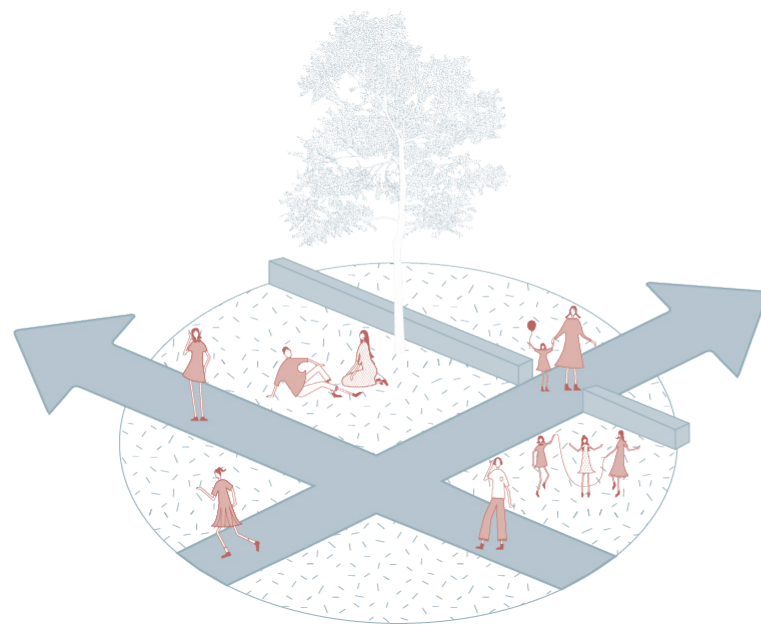


Figure 3: "Having several escape routes increases the feeling of security", Source adapted from: SAFER PARKS: Improving access for women and girls

3. Wayfinding and Distribution

The design of elements such as **paths**, the overall park **layout**, and **orientation** can enhance safety. The following recommendations provide guidance focused on these aspects:

- **Paths:** Generally, it is advisable to implement a clearly **demarkated path** around the park's perimeter, as this design is more likely to be used by women and girls, increasing the activity in the space.
- **Orientation:** Women generally feel safer when they are **familiar** with their surroundings and the route to their destination. Therefore, **clear signage** should be implemented to aid **navigation** and **orientation** within the park. It is essential to ensure that the signage are in good condition and that the information provided is accurate.

- **Layout:** One way to make parks more accessible for women is by **dividing** large areas into smaller spaces. **Fragmenting** larger areas has two main benefits: First, creating a variety of **distinct spaces** allows for a broader range of activities and users, increasing safety. Second, it prevents an area from being **monopolized** by one group of users, thus excluding others. The subdivision of these areas can be achieved through **changes in level, color, or surface treatments**.
- **Diversity and Nature:** Women believe that the presence of nature enhances the attractiveness of a space. Including a variety of natural elements with **different shapes, colors, and textures** improves the landscape, making it more interesting and likely to attract more users, particularly women and girls. ¹¹

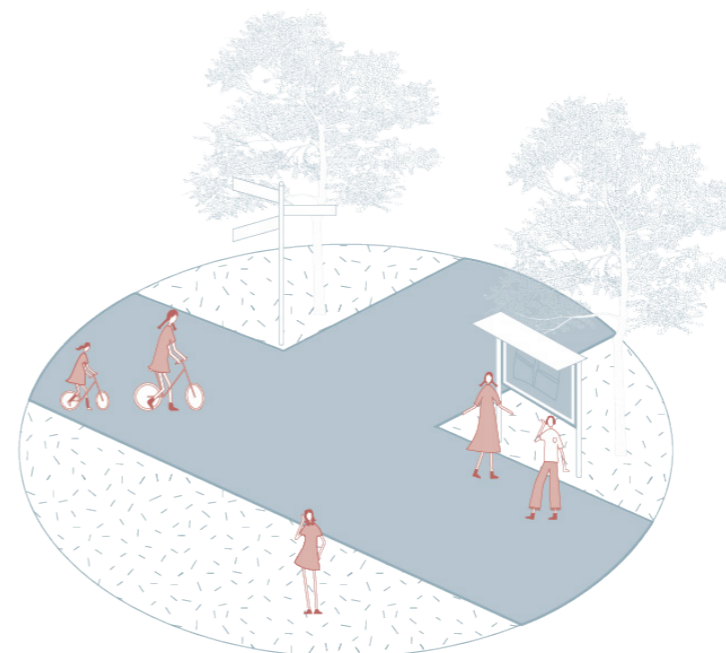


Figure 4: "Clear signage should be included to help guide users", Source adapted from: SAFER PARKS: Improving access for women and girls

¹¹. West Yorkshire Combined Authority, Safer Parks: Improving access for women and girls, 2023

4. Management and Surveillance

The presence of park **management personnel**, as well as **police** or **security officers**, is crucial for the park's **maintenance** and **safety**. However, it is important to note that these figures of authority can be intimidating to some users, particularly **adolescents**, who tend to feel more comfortable when the **staff** and **police officers** are **women**. As an additional security measure, **CCTV cameras** can be installed to increase the sense of safety. Although these cameras may not necessarily reduce crime or other offenses, they can serve as a **support tool**, especially in cases of property crime. ¹²

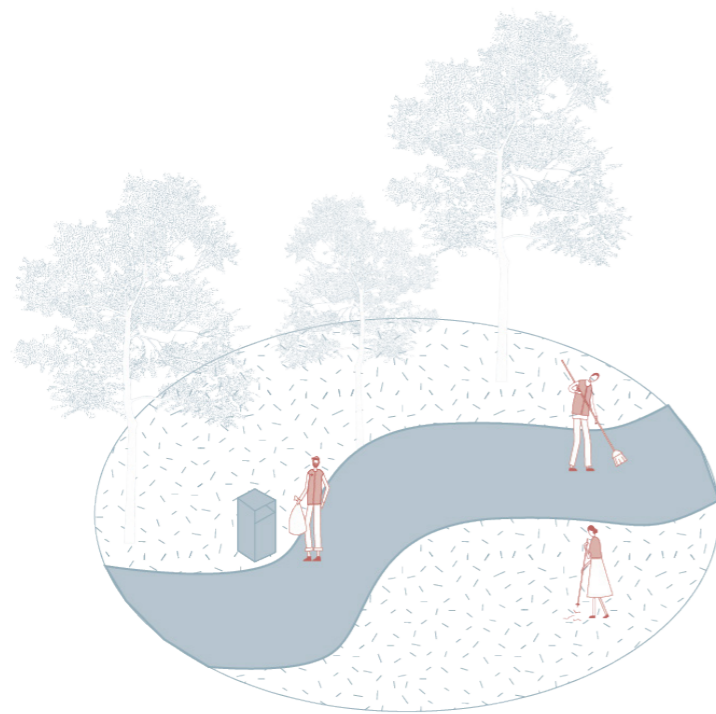


Figure 5: "keep the park free of signs of disorder so that women feel safer.", Source adapted from: SAFER PARKS: Improving access for women and girls

12. West Yorkshire Combined Authority, Safer Parks: Improving access for women and girls, 2023, pp. 18-21

Mya Malar Community Park

Carry out by Doh Eain, local community girls

Location: Yangon, Myanmar

Year: 2018



Figure 6: "Opening Day of Mya Malar Park" Source: Doh Eain

The park was designed due to girls of the city of Yangon felt unsafe and excluded in public space, forcing them to stay at home. As a result, a local multidisciplinary participatory design organization, Doh Eain, took the initiative to work together with a group of local adolescent girls aged 13 to 18 to create a space they could inhabit and feel safe in. The girls were in charge of the project, which allowed them to be a central part of the entire process, from the brainstorming to total implementation of it.

The realization of this project is particularly significant, as it represents a shift in the prevailing social dynamics within the Yangon community, since, traditionally, Mya Malar Park was almost entirely dominated by men.



Figure 7: "Participatory Process with the girls" Source: Doh Eain

The fruitful outcomes of the park covered improvements in the health and well-being of local teenage girls. This was achieved by making a gender-perspective environment, the park boosted an active lifestyle and fostered social cohesion within the community. Its successful mixed social inclusion, with youth civic engagement, and participatory design works

as a indicator to the transformative potential of collaborating with young girls to create sustainable and empowering urban environments, and even more so, to have the right not only to be in public space, but to feel safe there. Finally, the pathways are clearly defined through the use of paving stones, which facilitates easy orientation throughout the park.¹³



Figure 8-9: "Opening Day of Mya Malar Par" Source: Doh Eain

13. *Make Space For Girls.* (2018). Myanmar Case Study.

Einsiedler Park Pilot

Carried out by: Vienna City Hall

Location: Vienna, Austria

Year: 2001



Figure 10: "Einsiedler Park Pilot" Source: *Make Space For Girls*

The pilot Einsiedler park project originated from the gender perspective integration policy implemented by the City of Vienna at the beginning of the year 2000. As a result of this policy, a study was conducted which revealed that teenage boys were more likely to use parks and predominantly appropriate these spaces, leaving girls largely excluded. The same study found that, starting at the age of 9 years old, the presence of girls in public spaces such as parks and playgrounds decreased significantly, as they often felt that there was no space for them

In response to these findings, Vienna launched a campaign to redesign several spaces, with the most successful of all being Einsiedler Park, located in an ethnically mixed neighborhood. Most of the girls residing of the community stated that they did not use the park, as they did not consider it a safe space, primarily due to its use by groups of older adolescent boys who excluded them and made them feel uncomfortable.



Figure 11: "hammocks and platforms along the trails" Source: *Make Space For Girls*

Swings and platforms were placed near the park's pathways, as many of the girls passed through this area on their way to and from school. These elements helped encourage the girls to begin staying and using the space. Additionally, the pathways surrounding the park's perimeter were widened, and the lighting was improved, both measures being implemented to increase the safety perception of the area. Lastly, the number of swings, seating, and other types of furniture was increased to generate more spaces for socializing and observing activities in the park, which are more likely to be used by girls.¹⁴



Figure 12: "New sitting area" Source: *Make Space For Girls*

¹⁴. *Make Space For Girls*. (2018). Vienna Case Study.

Park in Bredäng

Carried out by: Nivå Landskapsarkitektur

Location: Stockholm, Sweden

Year: 2020



Figure 13: "Aerial view of Park in Bredäng" Source: *Nivå Landskapsarkitektur*

The park, located in the Bredäng suburb of Stockholm, was created with the intention of addressing the low levels of physical activity exhibited by adolescent girls in the area. The primary reason behind the park's design was that, while Swedish teenagers in general do not meet the recommended levels of physical activity, this issue was particularly pronounced among young girls. Therefore, it was crucial to create a space that would encourage them to be more active.

To this end, a group of teenage girls was involved in the design process to understand which elements could enhance their engagement in physical activities at the park. Focus groups were organized where the girls used post-it notes to write down elements they would like to see incorporated into the park so they would feel encouraged to use it.

The result was a park that offers a wide range of activities concentrated in a small area, with the main objective of promoting movement and physical activity among adolescent girls.



Figure 14: "Participatory process with the girls" Source: Nivå Landskapsarkitektur

Moreover, the park employs several interesting strategies in its execution to foster a positive perception of safety. One notable feature is the shelter zone that surrounds one of the corners and constitutes the main body of the park. This space includes seating and a stage, which contribute to enhancing social cohesion among the girls. Additionally, it is equipped with integrated lighting in its structure, allowing the space to be safely used during the evening.¹⁵



Figure 15: "Girls playing in the park" Source: Nivå Landskapsarkitektur

15. Make Space For Girls. (2020). Stockholm Case Study.

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4. Lighting Principles for Perception of Safety



4.1 Key Components for Lighting Design

4.2 Light in Public Space for Women

4.3 Case Studies

REFERENCES



4.1 Key Components for Public Lighting Design

In addition to the elements previously mentioned, to ensure a safe space for all genders in parks it is important to highlight that **after dark** has always been a challenge and a problem in public space. Typically, city activities **decrease** after dark, leading to a **reduction** in the number of **people, safety, and attractiveness** of the space. This is why elements such as **visibility, wayfinding, escape routes, management, and surveillance** are essential to ensure safety. However, after dark, these elements alone are not enough to meet this need, it is necessary to provide an **adequate lighting**, and avoid **lack of illumination** which creates **unused, dangerous, isolated, and adjacent spaces**.¹

Lighting is key for helping people find **directions** and avoid **potential dangers**. This system must be adapted to the **diverse** needs of **after dark users**, particularly marginalized groups such as **women and girls**, who are more likely to avoid these spaces if they are not **well-lit**. An appropriate lighting system can provide **reassurance** to such pedestrians and create more **harmonious** and safer spaces.¹

Before discussing how to achieve good lighting in public space, it is essential to introduce some concepts and criteria relevant in the lighting design process:

- **Visibility:** The ability to see and to identify a target on a background. It depends on the lighting levels, and on the luminance and color contrast between object and background. It can be affected by glare conditions.²

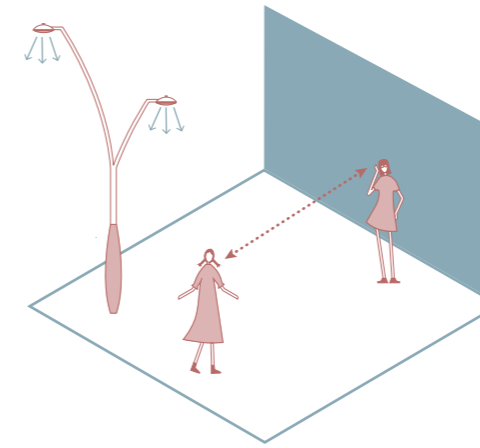


Figure 1: "Visibility",
Source adapted from:
Own Elaboration

- **Luminous flux:** It is the total amount of light emitted from a source in the time unit. It is measured in lumens (lm).³ Increasing the luminous flux emitted by the light sources in the outdoor environment does not necessarily improve visibility or perceived safety, especially when the luminous flux is unevenly distributed. This can create high contrast, which can negatively impact on the perception of the space.⁴
- **Luminous intensity:** It is the density of the luminous flux in a unit of solid angle, in a specific direction in the space and is measured in candelas (cd). The luminous intensity is a quantity related to the brightness of a light source and can vary at different angles depending on its design.³ It is important to consider this factor because brighter lighting does not necessarily lead to a greater sense of safety. On the contrary, according to some studies, there is a relationship between higher levels of brightness and an increased feeling of unsafety.⁴

^{3.} Markowitz, F, *Outdoor lighting for pedestrians : a guide for safe and walkable places*, 2022, pp. 10–11.

^{4.} ARUP Australia, *Out of sight, out of mind Are our cities designed for the dark?*, 2019, pp. 1-9

^{1.} *Illuminating Engineering Society, Designing Quality Lighting for People in Outdoor Environments*, 2020, pp. 2–3

^{2.} Whitzman C, "Stuck at the front door. gender, fear of crime and the challenge of creating safer space", 2007

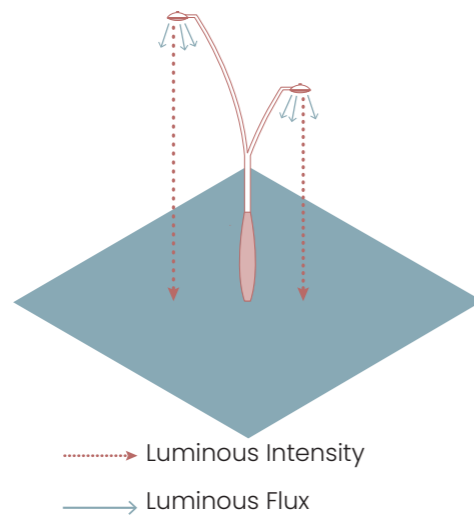


Figure 2: "Luminous flux and Luminous intensity", Source adapted from: Own Elaboration

- **Luminance:** It is a quantity used to objectively measure the brightness of a light source or a surface and it is measured in cd/m^2 ⁵

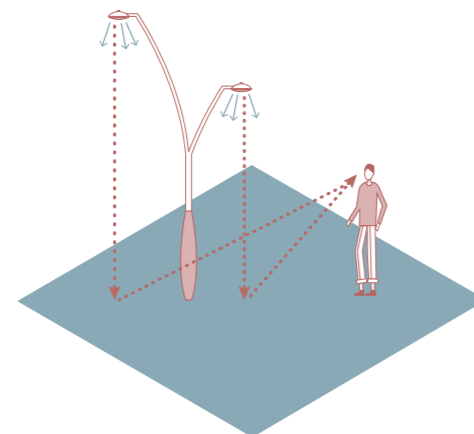


Figure 3: "Luminance", Source adapted from: Own Elaboration

- **Luminance Contrast:** The difference between brightness and darkness. ⁶ Strong contrasts between light and dark can be disorienting and make darker areas feel less safe.⁵

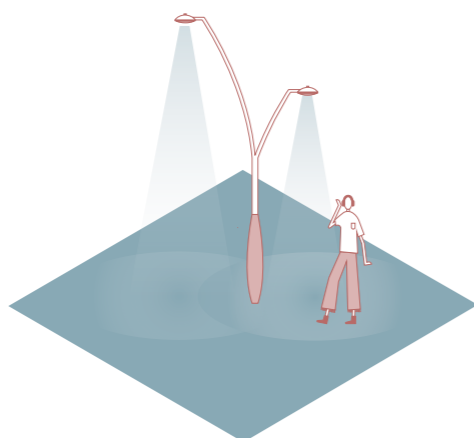


Figure 4: "Luminance Contrast" Source adapted from: Own Elaboration

- **Glare:** Condition of vision in which there is discomfort or a reduction in the ability to see details or objects, caused by an unsuitable distribution or range of luminance, by extreme luminance contrasts, ⁷ or unwanted bright light shining into the eyes of a traveler or observer, making it hard for the eye to adapt and interfering with proper vision. It is a condition called disability glare, that occurs when light scatters within the eye, creating a **luminous haze** on the retina, similar to a veil. ²In less extreme conditions of contrast, glare can cause discomfort without reducing the ability to see.

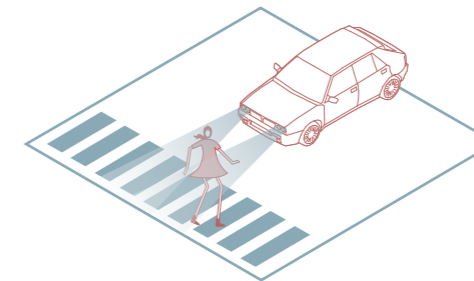


Figure 5: "Glare" Source adapted from: Own Elaboration

- **Illuminance:** It is the density of the incident luminous flux with respect to the area and it is measured in lux. ⁵

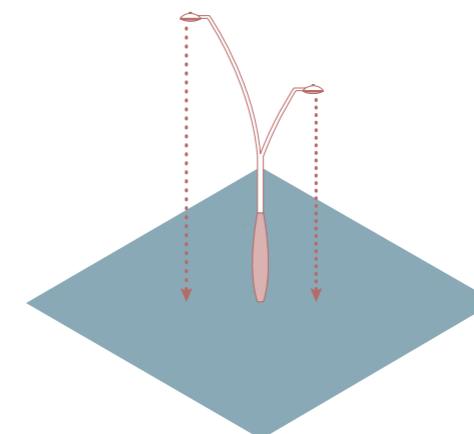


Figure 6: "Illuminance" Source adapted from: Own Elaboration

⁵. Keep Britain Tidy, Make Space for Girls, "SAFER PARKS Improving access for women and girls", 2023, pp. 32-37

⁶. Bardonaro E, "Lighting Vocabulary", 2023, Slide 7-8.

⁷.International Commission on Illumination, IEC 60050-845:1987 (No. 845-02-52), 2020.

². Whitzman C, "Stuck at the front door. gender, fear of crime and the challenge of creating safer space", 2007

⁵. Keep Britain Tidy, Make Space for Girls, "SAFER PARKS Improving access for women and girls", 2023, pp. 32-37

- **Uniformity:** Refers to how **evenly light** is distributed across an area. ⁶ This directly impacts the perception of safety, as poor uniformity can create **dark** and **isolated areas**. A welcoming atmosphere can be achieved through uniform, **lower-level lighting**. Using multiple, layered light sources is an effective strategy to accomplish this. ⁵

Colour of Light

With the evolution of various solid-state lighting sources, design processes have gained new options for implementation. Key concepts include spectral power distribution (SPD), correlated color temperature (CCT), and color rendering. These elements can generate an emotional response from the observer through the use of the spectrum and color.

- **Spectral Power Distribution (SPD):** SPD refers to the change in the visible spectrum of light emitted from its source. Light sources with different SPDs manifest changes in the appearance and color reproduction. The outdoor lighting in urban contexts must support the various tasks that pedestrians perform in these environments. Activities such as observing the landscape, surroundings, and other people—whether realistically or not—can evoke an emotional response from the observer. Therefore, SPD can become a fundamental element in the design of public space lighting, as emotions are crucial factors when appreciating outdoor spaces. ⁸

- **Color Rendering:** The ability of lighting to accurately **reveal colors**. ⁶ It represents the quality of light sources in terms of their color fidelity. In other words, it indicates how accurately the color of an object is reflected by a light source. The effect of SPD on the appearance of illuminated surfaces has been determined by the CIE color rendering index (CRI). For outdoor lighting, the CRI of the light source is often not a primary design criteria, more importance is given to luminous efficiency, lifetime, costs, or aspects related to maintenance. However, with the advent of newer, more durable and efficient light sources with broader spectrums, the suitability of color rendering and its influence on the pedestrian experience after dark has gained consideration. ⁴ Additionally people feel safer when they can perceive true colors and identify clothing colors, even if facial features are not as clear. ⁵

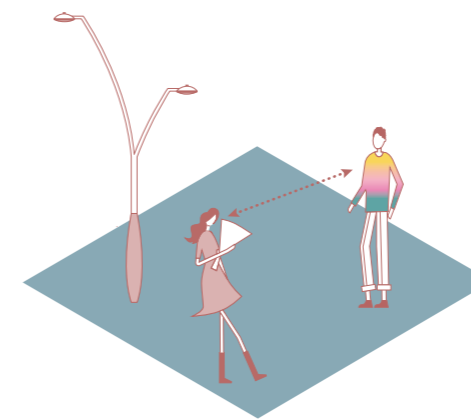


Figure 7: "Color Rendering"
Source adapted from:
Own Elaboration

- **Color Temperature:** Is a measurement of the chromaticity of white lights. Subjectively white lights are distinguished in terms of warm light (rich in the yellow-red wavelengths of the spectrum) and cold light (rich in the blue part of the visible spectrum). ⁶ White light, which is optimal for human vision and typically used in public space. Objectively, its appearance can be identified by CCT

⁵. Keep Britain Tidy, Make Space for Girls, "SAFER PARKS Improving access for women and girls", 2023, pp. 32-37

⁶. Bardono E, "Lighting Vocabulary", 2023, Slide 7-8.

⁸. Illuminating Engineering Society, Designing Quality Lighting for People in Outdoor Environments, 2020, pp. 10-11

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⁴. ARUP Australia, Out of sight, out of mind Are our cities designed for the dark?, 2019, pp. 1-9

⁵. Keep Britain Tidy, Make Space for Girls, "SAFER PARKS Improving access for women and girls", 2023, pp. 32-37

(Correlated Color Temperature), as the near-white light fits within the absolute temperature scale CCT which is measured in Kelvin. White-amber light is described as warm white light and falls within a CCT range of 2500K to 3300K. Neutral white light can range from 3300K to 5300K, with moonlight (4125K) being an example. On the other hand, bluish-white light is classified as cool white and has a CCT above 5300K and higher. Considering this, CCT has become an important factor in lighting design, as it allows for adjusting the appearance of light. ⁸

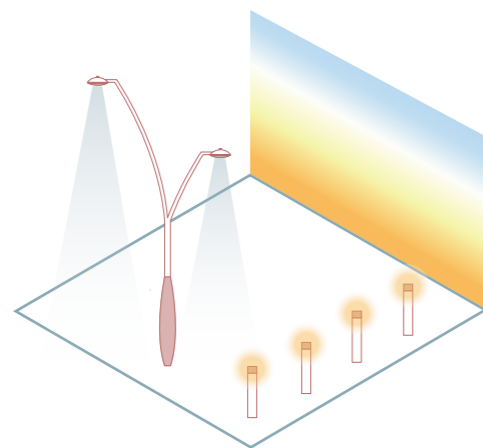


Figure 8: "Color Temperature"
Source adapted from:
Own Elaboration

4.2 Light in Public Spaces for Women

As previously mentioned, women's perception of safety is significantly lower and is affected by several factors, including the fear of being **assaulted, robbed**, and of **sexual harassment** especially **after dark**. A study conducted in Latin American countries revealed that between 6 p.m. and 6 a.m., women in the region make on average **16%** fewer trips than men. These differences are even more pronounced in countries like Argentina and Mexico, where the number of after dark trips made by women is **25%** and **35%** lower, respectively,

compared to men. The lack of **adequate lighting** in public spaces contributes to the **segregation** of urban use for women. Additionally, the same study shows that women make **51%** fewer trips, representing around **2 million** fewer job opportunities for women in the six countries studied (Argentina, Brazil, Chile, Colombia, Mexico, and Uruguay). Furthermore, trips made for hobbies and recreation are also reduced, with a **11%** difference between men and women. ⁹

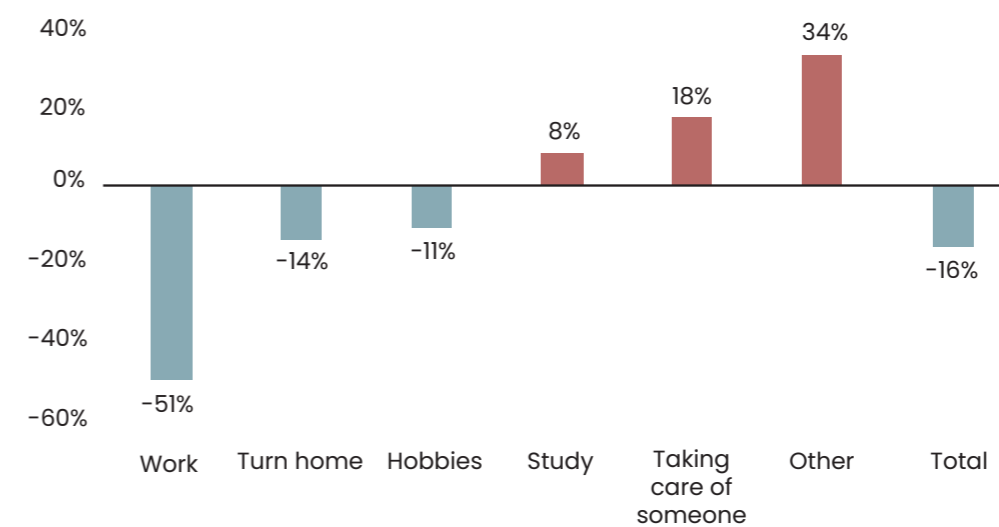


Figure 9: Percentage difference between men and women traveling at night by reason

Source: Adapted from <https://blogs.iadb.org/transporte/es/salir-de-noche-y-ser-victima-el-dilema-de-las-mujeres-latinoamericanas/>

This demonstrates the critical importance of proper lighting in public spaces to create urban environments designed with a **gender perspective**, ensuring they are **accessible** both during the day and after dark. A study conducted in Bogotá, Colombia, in 2024 found that women's perception of the adequacy of lighting in the city's **parks, plazas, and public squares** was strikingly low: **0%** considered it fully adequate, **25%** found it adequate, **46%** deemed it inadequate, and **29%** considered it completely inadequate. ¹⁰

^{8.} Illuminating Engineering Society, *Designing Quality Lighting for People in Outdoor Environments*, 2020, pp. 10–11

^{9.} Bernal, V, Montes, L, *Gender Transport Gender Lab "¿Salir de noche y ser víctima? El dilema de las mujeres latinoamericanas."*, 2021

^{10.} Departameto Administrativo de la defensoria del Espacio Publico de Bogota, "Espacio Publico para las mujeres. Boletín 11 ", 2024, pp: 9.

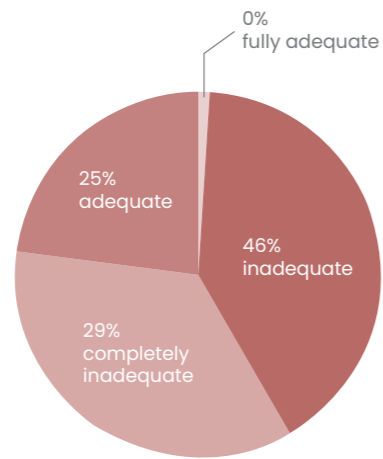


Figure 10:
 Percentages of women who consider adequate the lighting of parks, squares, and plazas in Bogotá, Colombia

Source: Adapted from <https://observatorio.dadep.gov.co/sites/default/files/2024/boletin11.pdf>

This highlights the significant **deficit** women feel regarding the lighting in public parks. Thus, it is essential to rethink the way lighting is designed, seeing it not merely as an **urban feature** to enhance **safety** and **visibility** but as an element that can create a **positive impact** on overall urban architecture while offering opportunities to improve the quality of life for those who use these spaces, generating more **vibrant, prosperous, safe, and inclusive spaces**.¹¹

1. Light for Pedestrians

Currently, cities are designed with a focus on cars rather than pedestrians, and this is also evident in lighting design. In the 20th century, most of the public lighting was designed for streets, ensuring **visibility** and preventing **glare** for drivers with a uniform lighting across the city. Although public lighting was initially implemented to facilitate pedestrian use **after dark**, the rise of automobiles shifted its purpose, sidelining pedestrian-friendly lighting. While this type of lighting is necessary for streets, applying the same high-mounted luminaires for pedestrian areas often creates **shadowy, unsafe** spaces instead of **improving safety**.²

11. Seiting, S, Weiss, A "Light for Public Space", 2015, pp: 10-13.

2. Whitzman C, "Stuck at the front door. gender, fear of crime and the challenge of creating safer space", 2007

Pedestrian lighting differs from street lighting in their lower mounting **heights** to ensure **inclusivity**, improve public safety, enhance pedestrian **comfort**, and aid in **orientation** and **wayfinding**. These light poles are often used for illuminating **access points, crossings, park pathways, and cycling paths**. In addition it can also be implemented in **bollards** or as **ground-level lighting**. In parks it is also common to illuminate the **furniture**, and the **vegetation** which can be resolve with **low-level lighting** to avoid tree canopies obstructing the luminaires' light emission. Additionally, designing lighting for pedestrians allows people to clearly identify **pathways** and provides **visibility** to identify other **individuals** and **objects** in the area (via proper color rendering).²

2. Orientation and Wayfinding

Orientation is the ability of people to situate themselves, understand how their surroundings are distributed, turning it in one of the most important elements **after dark**. Orientation is approached differently during the day and **after dark**; during the day, it relies on reference points such as buildings, architecture, landscape features, water elements, and flora and fauna. However, **after dark**, these elements can only be visible through lighting. Experts reveal that this can be achieved by using lighting to highlight elements of the **surroundings**, the **horizon, boundaries, nearby** and **distant objects**, as well as **movement** and **pathways**. Consequently, the **brightness** of certain surfaces can influence people's **visibility** and **orientation**.

On the other hand, **wayfinding** is an action performed both **consciously** and **unconsciously**. Consciously, due to the fact

2. Whitzman C, "Stuck at the front door. gender, fear of crime and the challenge of creating safer space", 2007

that humans have the ability to move and navigate through spaces –even unfamiliar ones–, and unconsciously, since the brain constantly sends signals to the eyes to help orient themselves. However, to ensure pedestrians feel safe in public space, it is essential to guarantee **visibility** of **key areas** and points after dark. This can be achieved with **continuous lighting** and **patterns** that ensure the ability to navigate and **orient oneself** in the space.⁸

3. Contrast Control

People often assume that effective lighting means spaces must be bright or overly illuminated. However, studies reveal that bright lighting often results in problematic **contrasts** caused by excessively bright points of light adjacent to **shadowy areas**. These contrasts lower the perception of safety, especially for women, making them feel more **vulnerable**.¹³

Additionally, overly bright lighting can cause **glare**, creating spaces that **discourage** use and hinder the **free movement** of people **after dark**. Balancing contrast and lighting is crucial for improving the sense of **safety**. Proper contrast can be achieved by avoiding excessively **bright lights**. This enhances visibility and creates a more **appealing** environment for users.¹²

4. Quality Light

When implementing quality lighting in public space it decreases the **differentiation** of the perception of safety that users feel between daytime and after dark; ensuring the **comfort** and **peace of mind** of those who inhabit the space, as a lot

of spaces work perfectly during the day, but after dark they become **dangerous places**. This comfort is compromised when pedestrians are unable to have a **clear view** of the public spaces due to **inadequate lighting**, this is why implementing quality light, provides a sense of **reassurance**—a subjective evaluation, defined as something that makes someone feel less worried, less afraid, or less doubtful, and that restores confidence.

It is also essential to implement lighting on the **peripheries** of parks to prevent the sense of **safety** and **well-being** from being negatively affected. Studies show that **vertical lighting** greatly contributes to this aspect, enhancing the perception of **depth**, **softening** and defining the environment, and providing **comfort** and **reassurance**.⁸

5. Lightscape Design

Designing park lighting requires a lightscape perspective that incorporates **contextual** and **conceptual** elements. Lightscape design does not imply using a single type of luminaire; utilizing diverse typologies and accent lighting (low-level, horizontal, and vertical illumination) and improve pedestrians' perception of safety.¹² This approach creates varied **atmospheres**, meets diverse user needs, and attracts a broader range of people, fostering **diversity** in the space.

Good lighting design emphasizes the **quality** of light emission over **lux levels**,⁵ provides **uniform** and **layered lighting**, taking into account factors that may affect how light is perceived by the **human eye** and, in turn, the perception of safety. These factors include dense **tree canopies**, **surface colors**, and the

8. Illuminating Engineering Society, *Designing Quality Lighting for People in Outdoor Environments*, 2020, pp. 10–11

13. ARUP, "Lighting the way for women and girls: a new narrative for lighting design in cities", 2024

12. London Legacy Development Corporation, "Creating places that work for Women and Girls", 2024, pp. 82–83

8. Illuminating Engineering Society, *Designing Quality Lighting for People in Outdoor Environments*, 2020, pp. 10–11

12. London Legacy Development Corporation, "Creating places that work for Women and Girls", 2024, pp. 82–83

5. Keep Britain Tidy, *Make Space for Girls, SAFER PARKS Improving access for women and girls*, 2023, pp. 32–37

type of **lighting** used. Studies have shown that incorporating **multiple light sources**, carefully designed and integrated based on the context and the activities taking place, creates safer urban experiences after dark. This approach also aims to reduce **sudden drops in light levels, glare, and excessive contrast**.¹⁴

6. Community Engagement

In order to create an **inclusive space**, it is essential to consider all the previously mentioned recommendations while also planning lighting taking into account the **experiences** of the most **vulnerable groups** in the **after dark**. For this reason, the **master plan** of a city must **integrate lighting** to ensure after dark strategies and develop a **24-hour, inclusive, and equitable city**.¹³ Additionally, in order to understand the dynamics and needs of people, it is crucial to establish a **community engagement** and involve them in the **design process** in order to guarantee a design that is **accessible** to the **entire community** and **its needs**.

^{14.} Berry, J, Kalms, N, Yang, Hoa "Perceptions of Safety in Cities After Dark", 2018, pp. 98

^{13.} ARUP, "Lighting the way for women and girls: a new narrative for lighting design in cities", 2024

Case Study: The Moorings Thamesmead

Carry out by: Lights Follow Behavior, Hawksmoor Youth Club, students of the Woolwich Polytechnic

Location: London, United Kingdom

Year: 2020

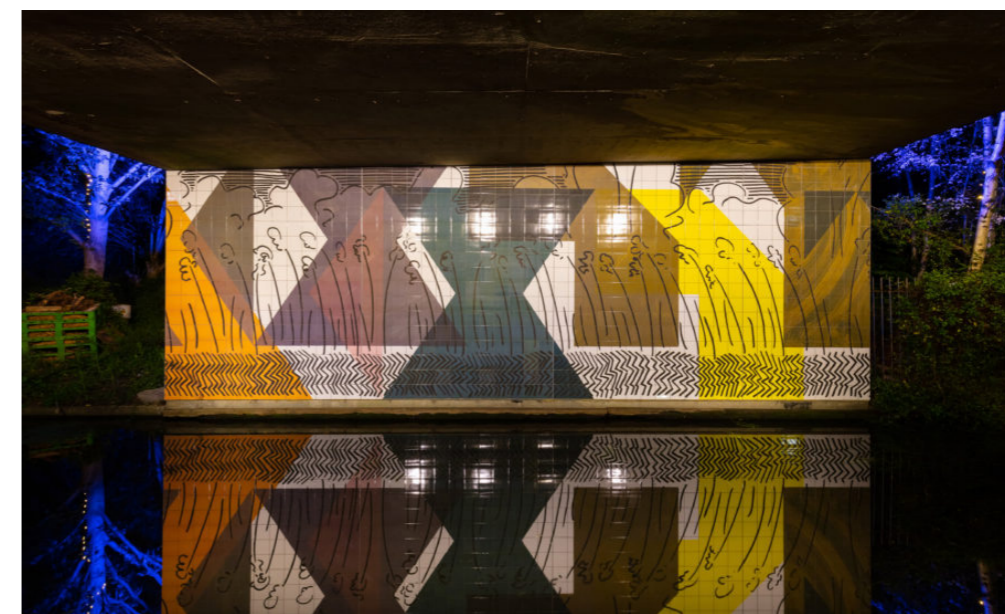


Figure 11-12: Working with the community to transform spaces
Source: <https://lightfollowsbehaviour.com/portfolio/thamesmead-moorings-london-lighting/>

The Moorings Thamesmead, a project located in London designed by Light Follows Behaviour studio in collaboration with the local community, transformed the space of an underpass pedestrian bridge, giving it life during the day and after dark. The project began with a series of conversations with the community, and the users of the underpass in order to understand their needs, the problematics and the surrounding. Then some night walks were implemented and a co-designing workshop with the young people, to listen to the community's ideas and how they imagined the space which lead to some conclusions and different solutions.

At the end, the project was elaborated by taking into considerations the community needs accentuating the art, the space and the gateway with a discrete center light fixture, which works during the day and after dark, and changed the space and the perception of safety completely, providing visibility and identification of other user's faces approaching.¹⁵



Figure 13: Queen Elizabeth Olympic Park in Stratford

Source: <https://office-breaks.com/running-the-supernova-london-5k-at-the-queen-elizabeth-olympic-park/>

¹⁵ Light Follow Behaviour, "The Moorings, Thamesmead", 2020

6.1 Innovative Lighting

Another way to involve the community and create much more inclusive spaces—attracting different types of people—is through the use of interactive lighting. This type of lighting design is made possible by new technologies that have been developed in the field of illumination. For example, interactive lighting can be activated through controls, sensors, and even mobile phones operated by users, enabling them to modify or generate light emissions. This new technology offers countless possibilities for users to shape and personalize their urban surroundings. Today, many projects adopt this strategy to invite citizens to influence the lighting, allowing spaces to be adjusted according to specific needs, fostering a sense of ownership and bringing life to the space itself.

Case Study: Banco de Crédito de Perú

Carry out by: Claudia Paz and Nick Cheung

Location: Lima, Peru

Year: 201

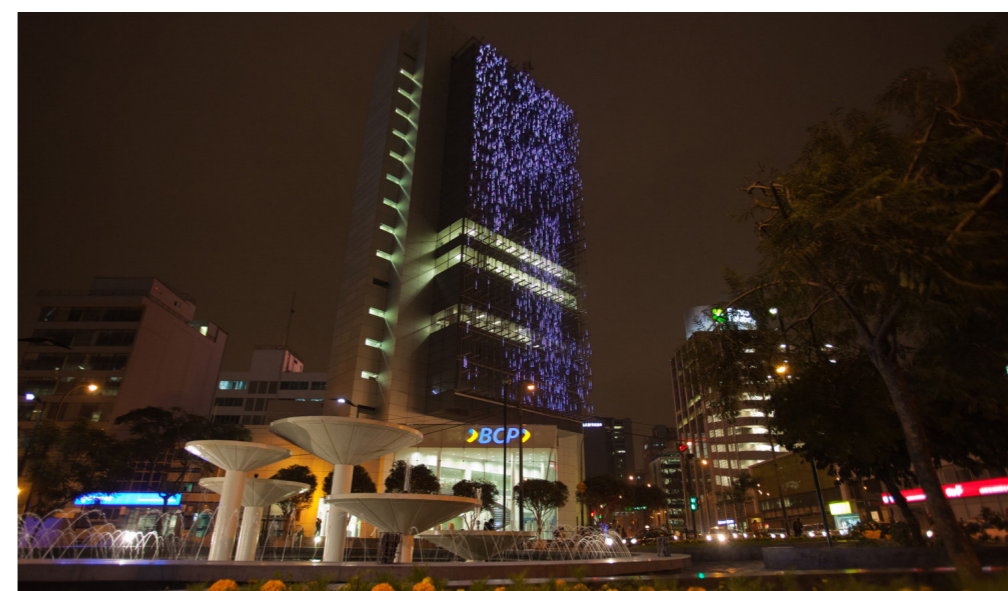


Figure 14: Interactive Light

Source: https://www.archdaily.pe/pe/624559/instalacion-de-iluminacion-afinidad-una-mezcla-interactiva-de-arte-e-iluminacion-edificio-bcp?ad_medium=gallery

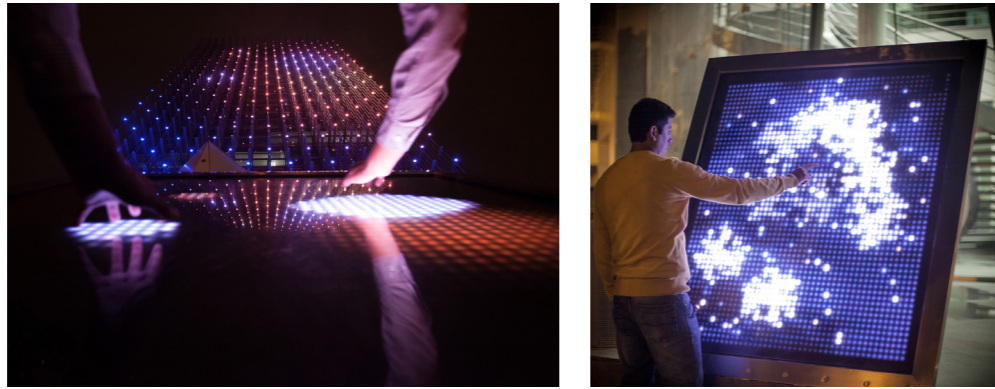


Figure 15-16: Interactive Light

Source: https://www.archdaily.pe/pe/624559/instalacion-de-iluminacion-afinidad-una-mezcla-interactiva-de-arte-e-iluminacion-edificio-bcp?ad_medium=gallery

The project involves the illumination of the facade of the Banco de Crédito del Perú, focusing on connecting with people through interactive lighting. This approach aims to attract individuals by allowing them to experience their own perception through the creation of light on the building's façade, thereby fostering a connection between people and the structure itself.

The objective of the project was to give a new face to this brutalist building by installing lights on the façade that can be controlled by people on a human scale as they walk through the city; users can choose the type of lighting to reflect on the building, enabling them to shape the city as they wish in real-time. ¹⁶This is achieved through a touch screen accompanied by music, which is reflected on the building, providing not only illumination but also a new activity that attracts people of all ages and genders.

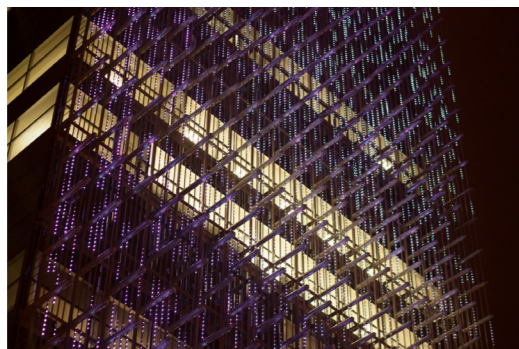


Figure 17: Interactive Light

Source: https://www.archdaily.pe/pe/624559/instalacion-de-iluminacion-afinidad-una-mezcla-interactiva-de-arte-e-iluminacion-edificio-bcp?ad_medium=gallery

¹⁶. Michael Grubb Studio, "Queen Elizabeth Olympic Park, London, UK", 2025

4.3 Lighting in Parks Case Studies

Queen Elizabeth Park

Carry out by: Speirs & Major, SKANSKA, JFCO, MAKE & Michael Grubb Studio

Location: London, United Kingdom

Year: 2018

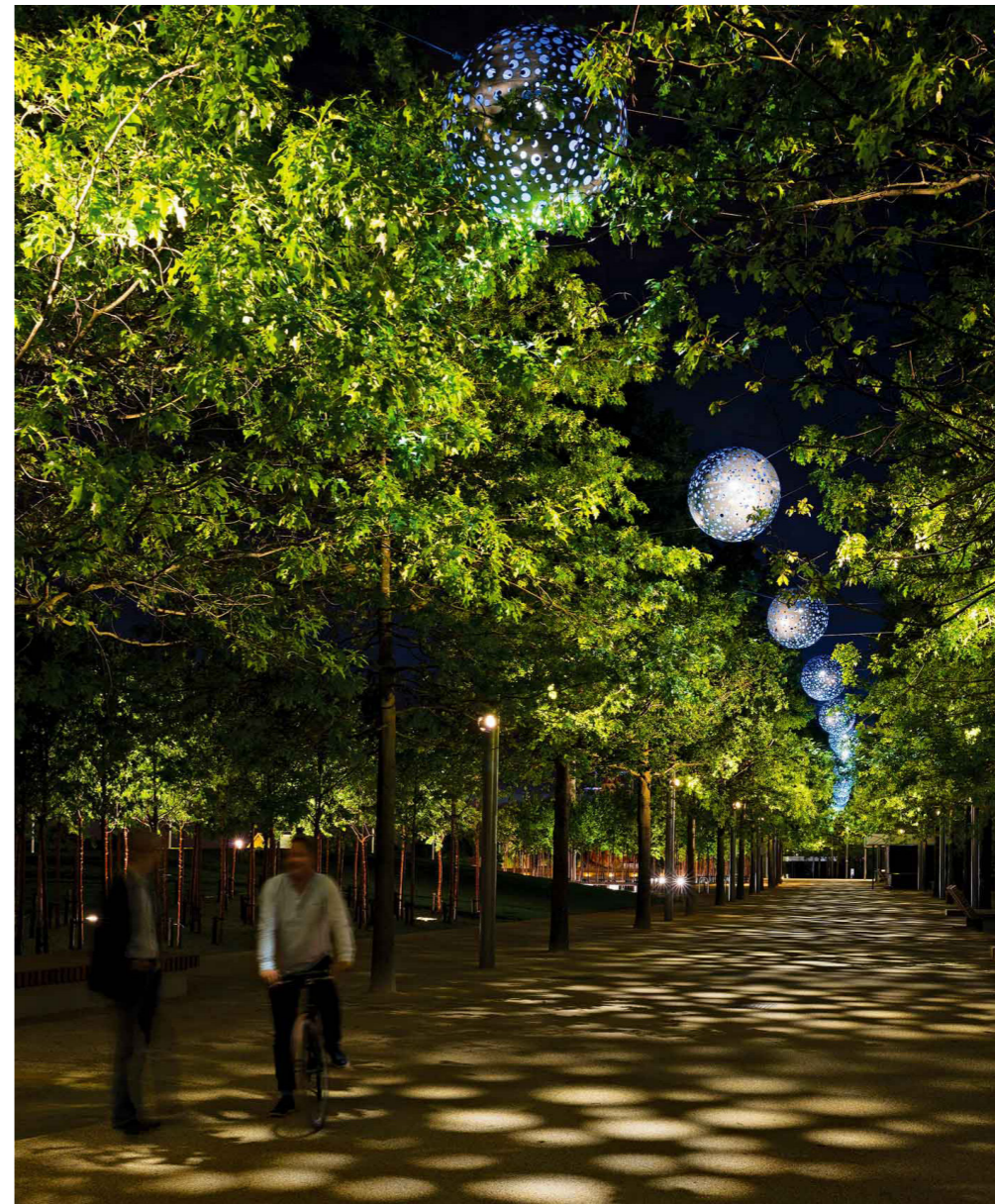


Figure 18: Queen Elizabeth Olympic Park in Stratford

Source: <https://www.landuum.com/en/interventions/queen-elizabeth-ii-olympic-park-south-park/>

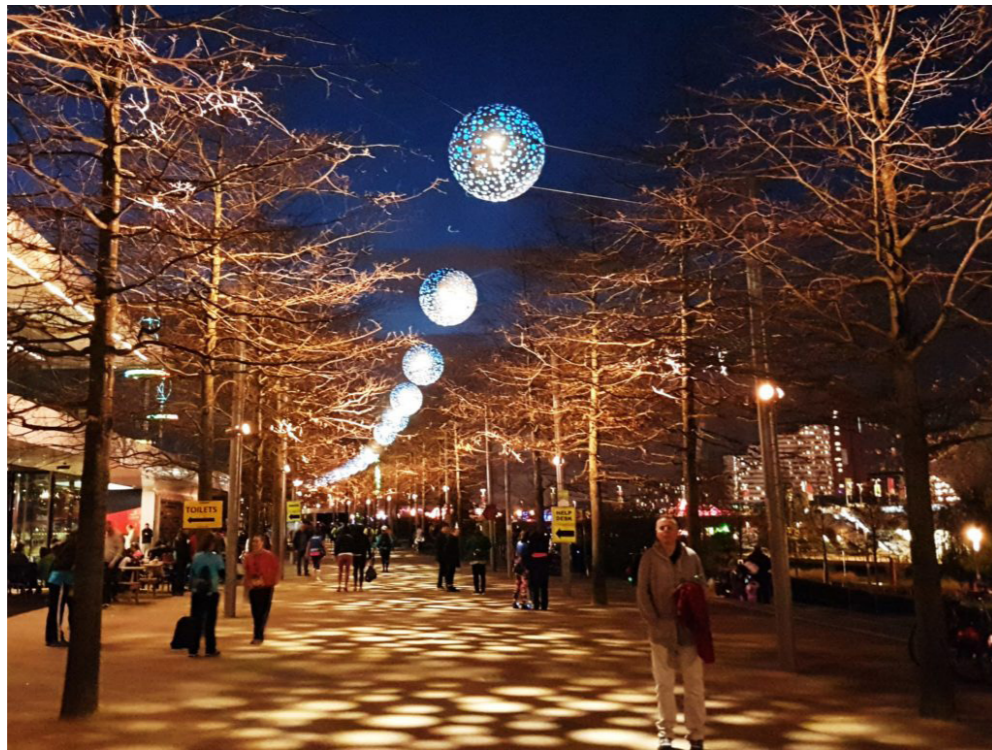


Figure 19: Queen Elizabeth Olympic Park in Stratford
 Source: <https://www.landuum.com/en/interventions/queen-elizabeth-ii-olympic-park-south-park/>

The Queen Elizabeth Olympic Park consists of various green spaces, sports attractions, waterways, and play areas. The park is located in the eastern area of London, originally considered a park for the Olympic Games. The challenge of the lighting project was to give an identity to the park after the games finished, while also reusing different luminaires, such as vertical poles and LED columns that were used during the games. Additionally the aim was to provide a suitable park for the city that was inclusive and suitable for all ages.¹⁶

The main lighting consists of a catenary system with ethereal blue and green spheres suspended along the park's main path to create depth of field and an aerial perspective. The aim of these spheres was to simulate and frame the treetops, creating an attractive space that plays with light and shadow as people

16. Michael Grubb Studio, "Queen Elizabeth Olympic Park, London, UK", 2025

stroll along the pathway, giving an attractive and inviting atmosphere.¹⁷



Figure 20: Lighting Spheres
 Source: <https://www.landuum.com/en/interventions/queen-elizabeth-ii-olympic-park-south-park/>

The remaining areas of the park were addressed based on their purpose, incorporating a series of lighting layers to ensure safety while also adding illumination to elements such as those in the children's area.

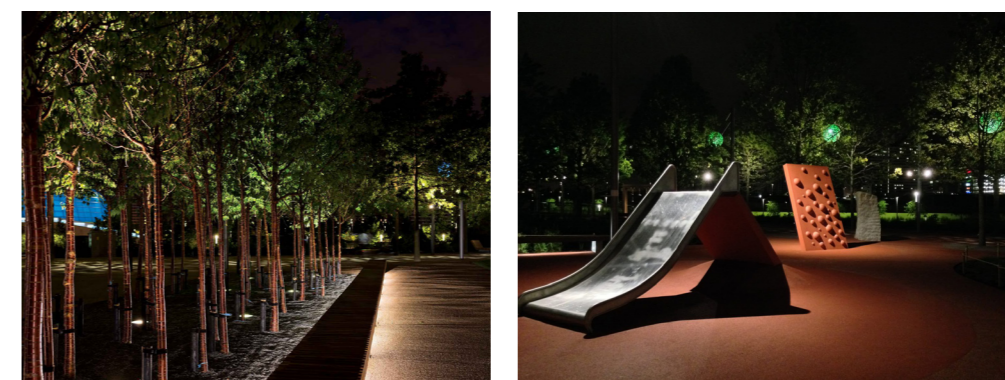


Figure 21-22: Remaining areas. Lighting Layers

<https://www.michaelgrubbstudio.com/portfolio/queen-elizabeth-olympic-park-uk/>

17. London Legacy Development Corporation, "Creating places that work for Women and Girls", 2024, pp. 82-85

This project aimed to provide visibility, visual cues, safety, and the ability to navigate the park using low light levels and different types of lighting, creating an inviting and cozier atmosphere. It also sought to manage the use of contrasts and the balance between darkness and light without creating completely dark areas, without affecting the perception of safety of the users.¹⁷



Figure 23: Balance between darkness and light
Source: <https://www.landuum.com/en/interventions/queen-elizabeth-ii-olympic-park-south-park/>

17. Michael Grubb Studio, "Queen Elizabeth Olympic Park, London, UK", 2025

Leicester Square

Carry out by: Burns + Nice

Location: London, United Kingdom

Year: 2020



Figure 24: Leicester Square
Source: <https://www.dpilighting.com/portfolio/leicester-square-london/>

Leicester Square is a very important area and square in the city, as it attracts many people thanks to the activities and dynamics in its surroundings: commerce, cinemas, hotels, food stalls, and casinos. However, the square had two distinct identities: during the day, it was a key spot for urban life and a tourist destination, but after dark, the center of the square became a dark space that people avoided, choosing alternative routes in the area. ¹⁸

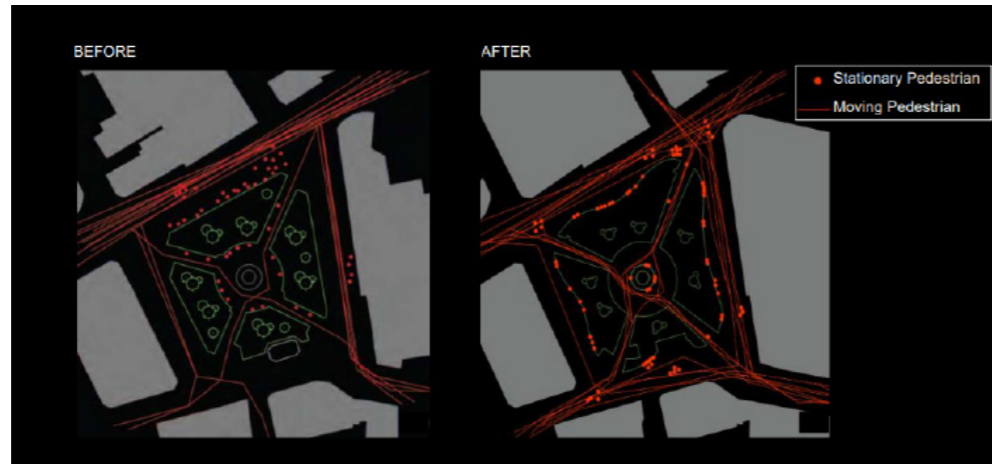


Figure 25: Flow of people before and after

Source: <https://www.arup.com/globalassets/downloads/insights/t/the-role-of-lighting-in-supporting-town-centre-regeneration-and-economic-recovery/the-role-of-lighting-in-supporting-town-centre-regeneration-and-economic-recovery.pdf>



Figure 26: Bench Lights

Source: <https://www.dpalighting.com/portfolio/leicester-square-london/>

This is why the lighting strategy focused on activating the center of the square through a contemporary lighting design while respecting the historical significance of the site. ¹⁹ This was achieved by illuminating the street furniture, creating a consistent visual appeal that invited people to sit after dark.

Additionally, the central statue was lit to enhance security and inclusion with well-distributed lighting. Today, the flow of people has changed drastically, becoming much more uniform throughout the square, as a result of lighting. ¹⁸



Figure 27: Statue Lights

Source: <https://www.dpalighting.com/portfolio/leicester-square-london/>

¹⁸. ARUP, "The role of lighting in supporting town centre regeneration and economic recovery", 2020

¹⁹. dpa, "Leicester Square, London, UK", 2020

¹⁸. ARUP, "The role of lighting in supporting town centre regeneration and economic recovery", 2020

Elephant Park

Carry out by: Speirs Major

Location: London, United Kingdom

Year: 2022



Figure 28-29: Elephant Park
<https://darcawards.com/portfolio/elephant-park-uk/>

This park focuses on balanced lighting, considering light, darkness, color temperature, and texture. All of these elements work together to bring the park to life after dark. Additionally, the park aims to provide spaces where people can sit, achieved by illuminating selected pieces of furniture, some of which feature individual pedestrian-level lights. ²⁰



Figure 30: Lighting Furniture
<https://darcawards.com/portfolio/elephant-park-uk/>

The lighting project also includes low-level illumination, creating more intimate spaces by managing darkness and contrast. Trees are lit to aid orientation and enhance visibility within the park. The park features a water fountain, where soft lighting after dark highlights the textures and colors of the stones, creating reflections with water and light, providing a calm space. Furthermore, the bicycle parking areas are also illuminated, contributing to wayfinding within the park. ²¹

^{20.} dpa, "Leicester Square, London, UK", 2020

^{21.} darcaward, "Elephant Park, London, UK", 2022



Figure 31: Lighting the trees
<https://darcawards.com/portfolio/elephant-park-uk/>

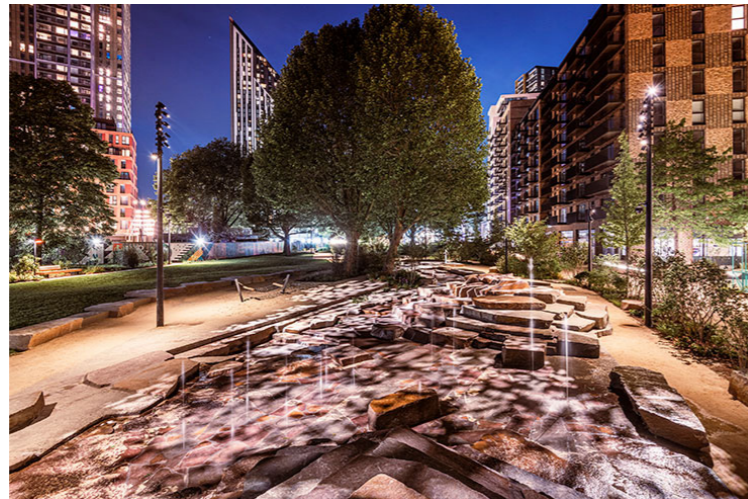


Figure 32: Lighting the fountain
<https://darcawards.com/portfolio/elephant-park-uk/>



Figure 33: Bike Parking Area
<https://darcawards.com/portfolio/elephant-park-uk/>

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5. Conclusions

Public space is the primary setting for social interaction in a city, as it enables the exchange and enjoyment of various activities among its citizens. However, historically, it has been predominantly designed for and used by men, while women have traditionally been associated with private spaces. Due to this, women's perception of safety in public space is significantly more affected compared to men's. While men typically fear being robbed, women are more likely to fear being harassed or assaulted, making them more vulnerable in public space. This, in turn, limits their movement patterns, forcing them to reduce their exposure to urban environments and ultimately affecting their right to the city—a right that belongs to all citizens.

However, there is a contradiction in that, today, women participate in various spheres of life, requiring them to undertake more complex journeys due to the multiple daily activities they engage in, in contrast to the more linear movement patterns of men. Due to this, in late 20th century, movements advocating for gender equality in cities began to challenge traditional gender roles and the classification of activities within specific spheres. Their goal was to create cities free from work roles based on gender distinctions.

Nevertheless, it is crucial to ensure that public space foster a greater sense of safety for women, as they are affected by various factors, including the built environment, social dynamics, and individual perceptions, which influence and reinforce one another. To improve women's perception of safety, it is essential to provide services and facilities that create inclusive and well-adapted spaces for their full participation in urban life. Therefore, increasing female representation in architecture,

design, urbanism, and other professions responsible for city planning is vital. Additionally, direct community engagement should be encouraged to ensure a continuous dialogue, where women's needs are considered in the inclusive design of public space.

By definition, public space is an urban area with free access, for all its citizens including parks, plazas, small squares, streets, and avenues. Parks, in particular, promote social interaction and well-being by offering a connection with nature within the city. However, to ensure that these spaces are suitable for women, it is essential to adopt an intersectional approach—one that considers factors such as age, race, or religion, among others, which may expose individuals to discrimination and make them more vulnerable in public parks as part of marginalized minorities. Similarly, it is equally important to guarantee good visibility, escape routes, clear orientation and wayfinding, proper maintenance, and constant surveillance in these spaces, creating safer, more comfortable, and gender-perspective environments.

Nonetheless, these considerations work well during the daytime; however, after dark, public lighting becomes indispensable in ensuring that a space remains safe, functional, and habitable. Beyond being a mere technical tool, lighting has a social impact, as it fosters identity and a sense of belonging by enabling social interaction among its users in inhabited spaces after dark, something that would not be possible without proper illumination. This is evident today, as park's lighting has shifted from merely providing visibility for vehicle drivers to pedestrian-scale lighting that enhances visibility and orientation while

creating an appropriate atmosphere.

A well-designed lighting system considers its context, employs different lighting levels, and ensures contrast control to eliminate dark spots that negatively impact women's perception of safety. Lighting should also be integrated from the initial design phase and considered throughout all stages of the project, incorporating community inputs into decision-making. Additionally, recent technologies allow for greater community engagement, such as interactive lighting, which enables users to interact with the lighting system.

All the aforementioned aspects have been considered in the development of the proposal and the creation of a methodological approach that incorporates the previously analyzed topics. The result is a conceptual lighting design, which will be presented in the next chapters.

6. Case Study Part I: Women's Safety in Cali, Colombia

6.1 Cali, Colombia

6.2 Colonial Period

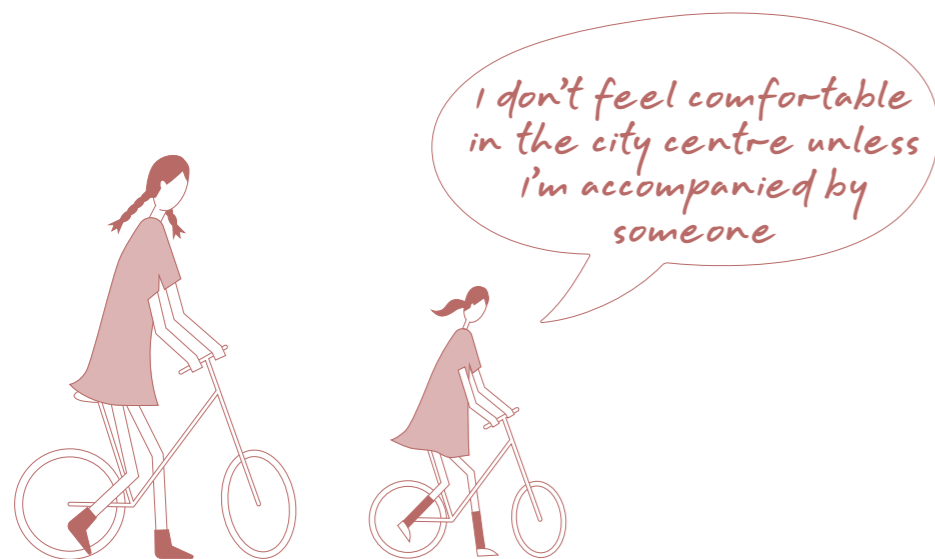
6.3 Women and Public Space in Colombia

6.4 Cali's Historic City Center

6.5 City Center Safety Strategies

6.5.1 Mandato Centro

REFERENCES



6. Case Study Part I: Women's Safety in Cali, Colombia

6.1 Cali, Colombia

The city of Cali is located in **western Colombia**, between the Central and Western **mountain ranges**, surrounded by the Farallones de Cali, which are part of the Colombian Andes. Cali borders with Yumbo and La Cumbre to the north, Palmira to the northeast, Candelaria to the east, and Jamundí to the south. It is the capital of the Valle del Cauca department and the most significant city in this region. Cali has a **warm, humid tropical climate**, with an average temperature of **24.5°C** and a maximum temperature of **31°C**.¹



Figure 1: Map of Cali Source: Own Elaboration

The city's location, along with its climate and topography, makes it a region of **great natural wealth**, particularly in terms of **water resources** and **vegetation**. Cali is traversed by **seven rivers**—Cali, Cauca, Pance, Cañaveralejo, Lili, Meléndez, and Aguacatal—which also plays a crucial role in the city's identity.¹ To gain a deeper understanding of Cali's current development, it is crucial to examine its **historical origins** and how they have influenced its **urban growth, social dynamics**, and prevailing **cultural trends** today.

6.2 Colonial Period

Generally, when analyzing **Western architecture** and **urban planning**, having a panoramic view of the different periods allow us to explore how various changes were reflected in disciplines such as **art** and **architecture**, and how these same shifts gave rise to clearly identifiable styles that are associated with specific **chronological periods**. However, unlike the correlation exhibited by **European styles**, due to the **historical-cultural ruptures** and impositions that occurred in **Latin America**, it was not possible to establish the same kind of continuity.

Therefore, in order to understand the **architecture** and **urban** development of **Latin American** metropolis such as **Colombian cities**, it is essential to examine the characteristics of local expressions, together with **social, political, and economic conditions**, as well as to understand the ideologies that gave rise to them.¹

While in 16th-century **Europe**, the **Renaissance** was taking root as a result of the ideas of humanist thinkers that led to a

¹ Jiménez Correa, S, *La arquitectura de Cali: valoración histórica*, 2022, pp. 65

¹ Jiménez Correa, S, *La arquitectura de Cali: valoración histórica*, 2022, pp. 64–75

significant transformation in the **arts** and **sciences** of the time, causing a break with the **Middle Ages** and condemning it as an **ignorant** and **barbaric period**, the groups of **conquistadors** who arrived on the **American continent** were composed of **fortune hunters, soldiers, convicts, adventurers, priests, and tax collectors**.

These individuals were in no way prepared to assume the role of **colonists**, as their knowledge was more focused on **war, theft, and greed** than on **sciences, commerce, or land cultivation**. Thus, the **Spanish system** of occupation was primarily based on **resource extraction** and the urgent establishment of cities quickly in exchange for privileges and noble titles.¹

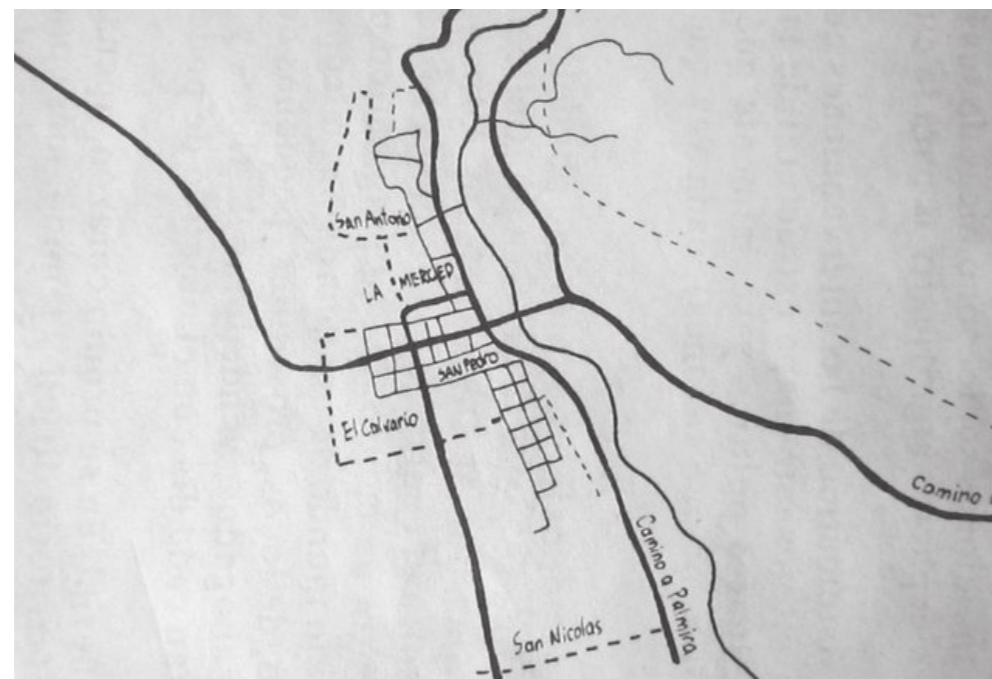


Figure 2: Map of Cali in its beginnings, main center

Source: https://www.researchgate.net/publication/305719677_El_Plan_de_Ordenamiento_Territorial_POT_de_Cali_una_aproximacion/figurespublic-lighting

As a result, alongside Spanish impositions, the cities built in the **New World** show common **patterns**, established in the

“*Ordinances of Settlers*” of 1573 and later preserved in the “*Laws of the Indies*” of 1680, which set clear guidelines: The new cities had to be designed with **straight streets** within **regular grids**, that is, forming a **checkerboard layout**, mostly composed of **square blocks** about 80 meters long, and each block made up of **four to six plots** surrounding a **main square**. Important buildings were erected around this square, with the main **church** generally built beside it.²

Considering the above, it is evident that the privileged nature of the main square in **Latin American** cities did not emerge in response to any **economic** or **social development**, but rather, was **pre-established** as a decision from the exact moment of their **foundation**.³

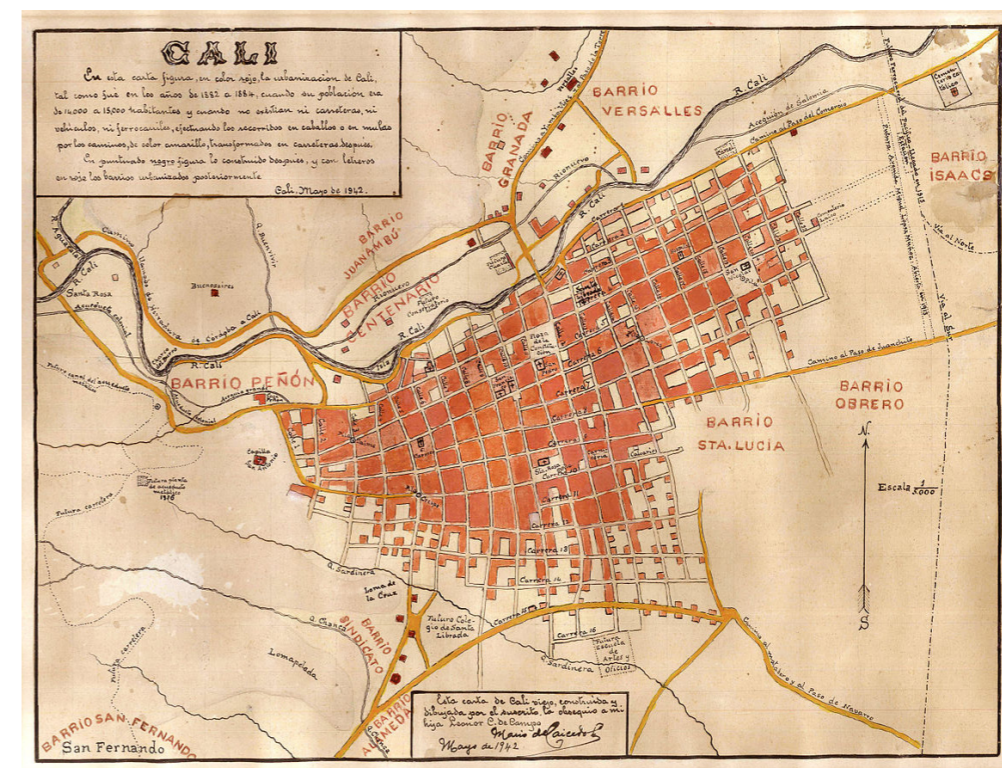


Figure 3: The checkered urban layout of Santiago de Cali in the 1880s

Source: https://www.researchgate.net/publication/305719677_El_Plan_de_Ordenamiento_Territorial_POT_de_Cali_una_aproximacion/figurespublic-lighting

2. Vásquez B, *Ensayo sobre la historia del desarrollo urbano en Cali*. Historia Y Espacio, 1980, pp. 9–63

3. Barney Caldas, *Las siete imágenes construidas de Santiago de Cali*, 2001, pp. 94–106

1. Jiménez Correa, S, *La arquitectura de Cali valoración histórica*, 2022, pp. 64–75

Furthermore, these new cities were conceived as “*implantations of Europe, independent of the location they occupied, with the dimensions desired by settlers from a saturated and space-deprived continent, and marked by their artificial nature, as an act of culture of a civilization in contrast to barbarism*” (Salazar, 1997). This demonstrates that the colonization process was directed by **political-military** and **ecclesiastical hierarchies**, which led the upper positions of society and were responsible for instituting a clear **social stratification** based on **racial factors**.

This facilitated the **acculturation** and **control** of the **indigenous population** through the **imposition** of **Catholicism**, the prohibition and demonization of their **native cultures** and **traditions**, ultimately eradicating these and nearly completely **Spanishizing** the **New World**. Of course, these dynamics and the colonization process were reflected in the development, **organization**, and **distribution** of the **new cities**.¹

Considering the origin of Latin American cities, it can be affirmed that the contemporary model of **Colombian metropolis** is the result of a correlation derived from a history full of **conflicts**, **irregularities in territorial occupation**, **ideological impositions**, **racial inequalities**, as well as development processes that, just like urban physical factors, culturally organized a fabric of fragments throughout historical and urban development.⁴ These factors have led to their gradual deterioration, causing them to lose their characteristic importance as **spatial** and **functional** epicenters of the cities.

1. Jiménez Correa. S, *La arquitectura de Cali valoración histórica*, 2022, pp. 64–75

4. Jiménez Correa. S, *Valoración histórica del contexto construido: Cali, una mirada local*, 2006, pp. 83–120.

6.3 Women and Public Space in Cali

The phenomenon of colonization, impacted not only the spatial organization and the configuration of the city, but it automatically shaped the way women move through and how they perceive the city. As it was explained in the theoretical section of this thesis, cities have always been designed by and for men and the separation of the **public/private (productive/reproductive)** spheres is a duality that has historically established specific roles for men and women, based on the **inherent values** of the elements that make up these **spheres**. In this way, the action and control of the public sphere have been culturally associated with men, while the passive and private role has been assigned to women.

This represents a constant structural inequality that places women at a **disadvantage** in relation to the public sphere, despite the ongoing efforts of feminist movements advocating for gender equality since the mid-20th century.⁵ However, cultural, economic, social, and other gaps still exist, which hinder women’s appropriation of public space, as well as the **unsafety** that persists within it.

In the specific case of **Cali**, women’s fear of being **vulnerable** in public spaces is quite evident, as several populations show statistics with high levels of violence against women. As shown in the Epidemiological Bulletin: Gender-Based Violence in Colombia (INMLCF, 2016), it was recorded that the places where most **femicides** occur are, first, the **home** – part of the private sphere – with **249** victims in 2016; and second, **public spaces**

5. Cedeño Pérez, M. C, *Mujeres y espacio público de Bogotá, Colombia: Un campo de batalla, de riesgo, de miedo*, 2020, pp. 391–411.

– the public sphere – with a total of **260** victims during the same year (Idem, 2017, p. 8), primarily between the hours of **18:00** and **23:59**. These figures highlight the complexity of the **gender/public space** correlation within the Colombian context, in which unsafety levels create **barriers** for women, preventing them from accessing the **social privileges** that the urban context could offer. ⁵

The current issue is also reflected in the **perception** that **women** have of public space in the city, as evidenced by a survey conducted by the “Cali cómo Vamos” statistics program (2023), in which **81%** of the surveyed women stated that they **did not feel safe in public space**. Another research study aimed at determining how livable public space is in the cities of Bogotá, Cali, and Medellín concluded that for women in all three cities, public space is **not sufficiently livable** due to the **low perception of safety** they feel in the urban context, **fearing violence**, coupled with a **lack of trust** in the **police**. ⁶

This situation is similarly evident in other areas of the public sphere, such as transportation. In Cali, according to data from the Women’s Equity Observatory (OEM, 2019a), **41.1%** of women **do not feel safe** using **public transportation**, **41.9%** in the **city center**, and **57.9%** throughout the city. In response to this scenario, the solutions suggested by the respondents were **27.7%** to **not go out** – thus confining them to the private sphere – or **24.4%** expressed to go out only **accompanied**. ⁷

In light of this issue, it is pertinent to ask to what extent women’s fear of experiencing public space in Colombia, more specifically

in Cali, is influenced by the **masculinization** of **public space**, which is directly linked to **gender-related cultural aspects** within a context where **gender roles** have traditionally been separated within the **public** and **private spheres**.

Furthermore, this issue is exacerbated by the condition of the **built environment**, such as the **lack of pedestrian sidewalks**, the **encroachment of public space** by **street vendors**, the **lack of parks, recreational spaces**, and the failure to implement national programs and guidelines that prioritize the needs of the female population when **designing inclusive, safe, and vibrant public space** that foster the strengthening and harmony of the urban context. ⁵ For the purposes of the present thesis, the focus will be on Cali’s historic city center, as this is where the case study will be addressed.

6.4 Cali’s Historic City Center

The historic city center of Cali is located in the District 3 at the northern part of the city, this emblematic area was declared a **National Monument** in 1959 due to its **architectural** and **cultural** significance, ⁸ as it contains a wide variety of important buildings from the colonial period until the 1990s; including **churches, theaters, museums, squares, bridges**, and **public administrative building**, that contribute to the **memory** construction through architecture. Moreover, the historic city center has been the **main stage** for the most significant events in the city, throughout its more than 200 years of the **colonial period**, 100 years of the **republican period**, and another 100 years of the **modern period**, these have influenced its **layout** and its **urban configuration**. ⁹

5. Cedeño Pérez, M. C., *Mujeres y espacio público de Bogotá, Colombia: Un campo de batalla, de riesgo, de miedo*, 2020, pp. 391–411.

6. Yepes, M. S., *Espacios públicos habitables para las mujeres y calidad de vida urbana en las ciudades colombianas: un análisis comparado de Medellín, Bogotá y Cali*, 2024, pp. 280–310

7. Buchely, L. F., Castro, M. V., Arias-Arevalo, S., & Pinzon, M. R. *La movilidad urbana de las mujeres en dos ciudades colombianas: entre el trabajo de cuidado y la violencia sexual*, 2021, pp. 109–126.

5. Cedeño Pérez, M. C., *Mujeres y espacio público de Bogotá, Colombia: Un campo de batalla, de riesgo, de miedo*, 2020, pp. 391–411.

8. Alcaldía de Santiago de Cali, “Patrimonio Histórico, Arquitectónico y Cultural de Santiago de Cali”, 2024

9. Subsecretaría de Patrimonio, “Guía de patrimonio arquitectónico: Centro Histórico de Cali.”, 2018

The historic center originated from **Plaza Cayzedo** (the city's main square), with the characteristic checkerboard layout previously described, which has managed to maintain its role as **reference** point of the **city's urban center**.

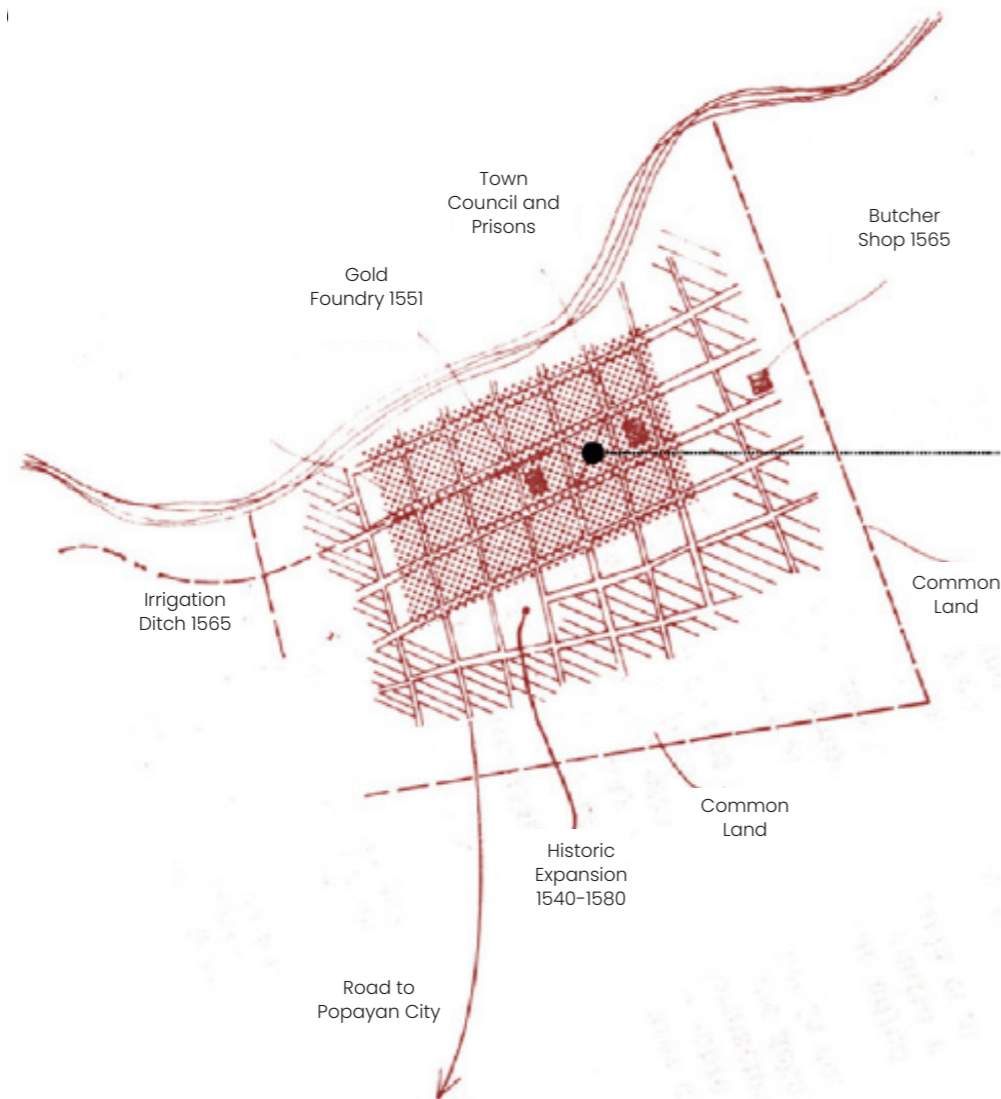
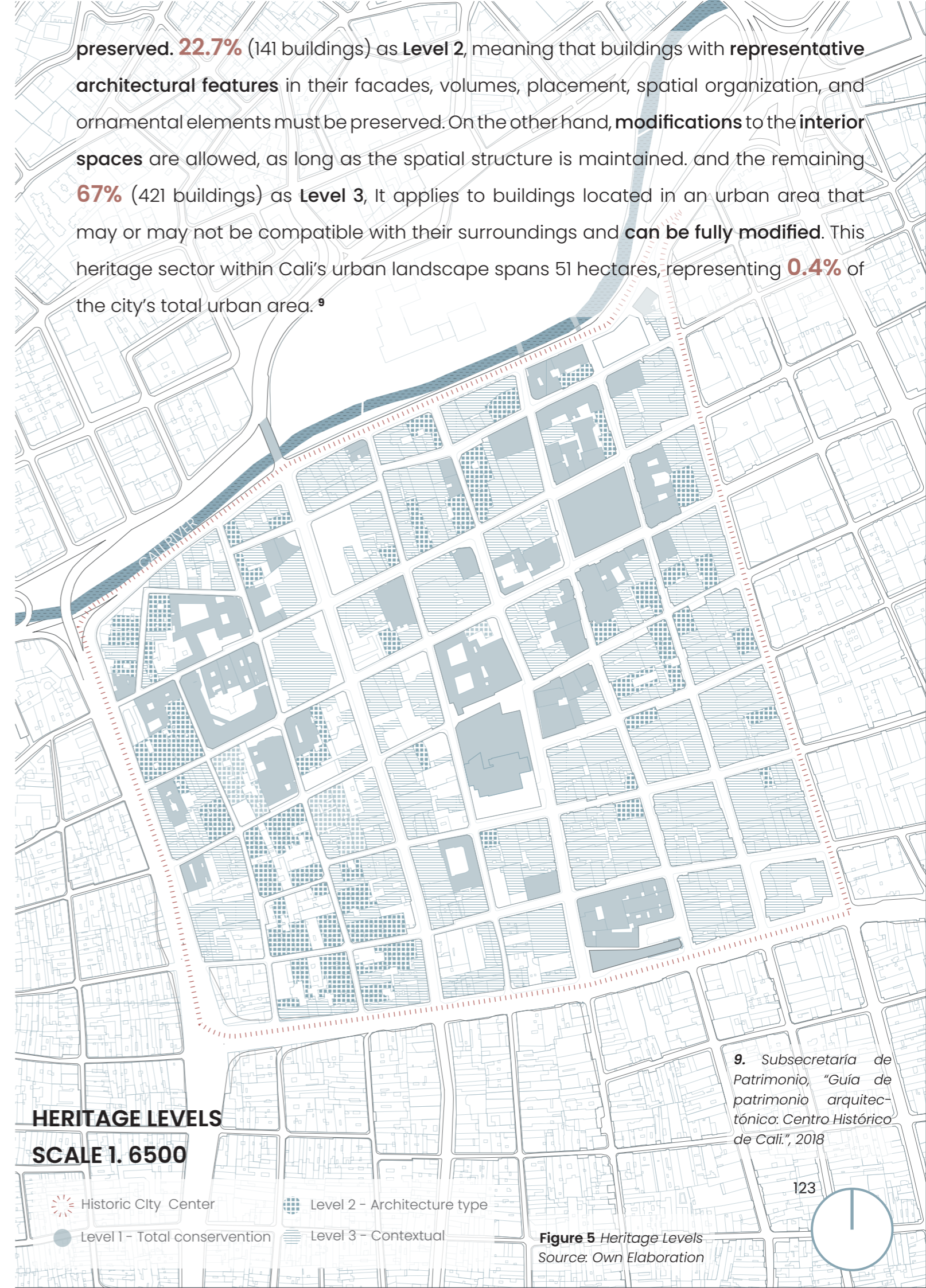


Figure 4: Historic Development 1540-1580
Source: Síntesis del PEMP del Centro Histórico de Cali

The historic district of Cali comprises 58 blocks and 620 buildings, encompassing both the impacted area and its zone of influence. Among these, the PEMP classified them in three different levels, according to its heritage preservation. **9.3%** (58 buildings) are classified as **Level 1**, referring to buildings with **irreplaceable architectural heritage** value that must be **fully**

preserved. 22.7% (141 buildings) as **Level 2**, meaning that buildings with **representative architectural features** in their facades, volumes, placement, spatial organization, and ornamental elements must be preserved. On the other hand, **modifications** to the **interior spaces** are allowed, as long as the spatial structure is maintained. and the remaining **67%** (421 buildings) as **Level 3**, It applies to buildings located in an urban area that may or may not be compatible with their surroundings and **can be fully modified**. This heritage sector within Cali's urban landscape spans 51 hectares, representing **0.4%** of the city's total urban area.⁹



HERITAGE LEVELS
SCALE 1. 6500

- Historic City Center
- Level 2 - Architecture type
- Level 1 - Total conservation
- Level 3 - Contextual

Figure 5 Heritage Levels
Source: Own Elaboration

⁹ Subsecretaría de Patrimonio, "Guía de patrimonio arquitectónico: Centro Histórico de Cali.", 2018

Colonial Period: Iglesia San Francisco *



Figure 7 Iglesia San Francisco

Source: <https://leosystem.travel/colombia/interesting-trip-to-the-city-of-cali-colombia/>

Traditional Colonial: Casa Martinez

Satizabal



Figure 8 Casa Martinez Satizabal

Source: Cali ayer y hoy

Republican Period: Teatro Jorge Isaacs*,

Edificio Otero*



Figure 9 Teatro Jorge Isaacs

Source: Cali ayer y hoy



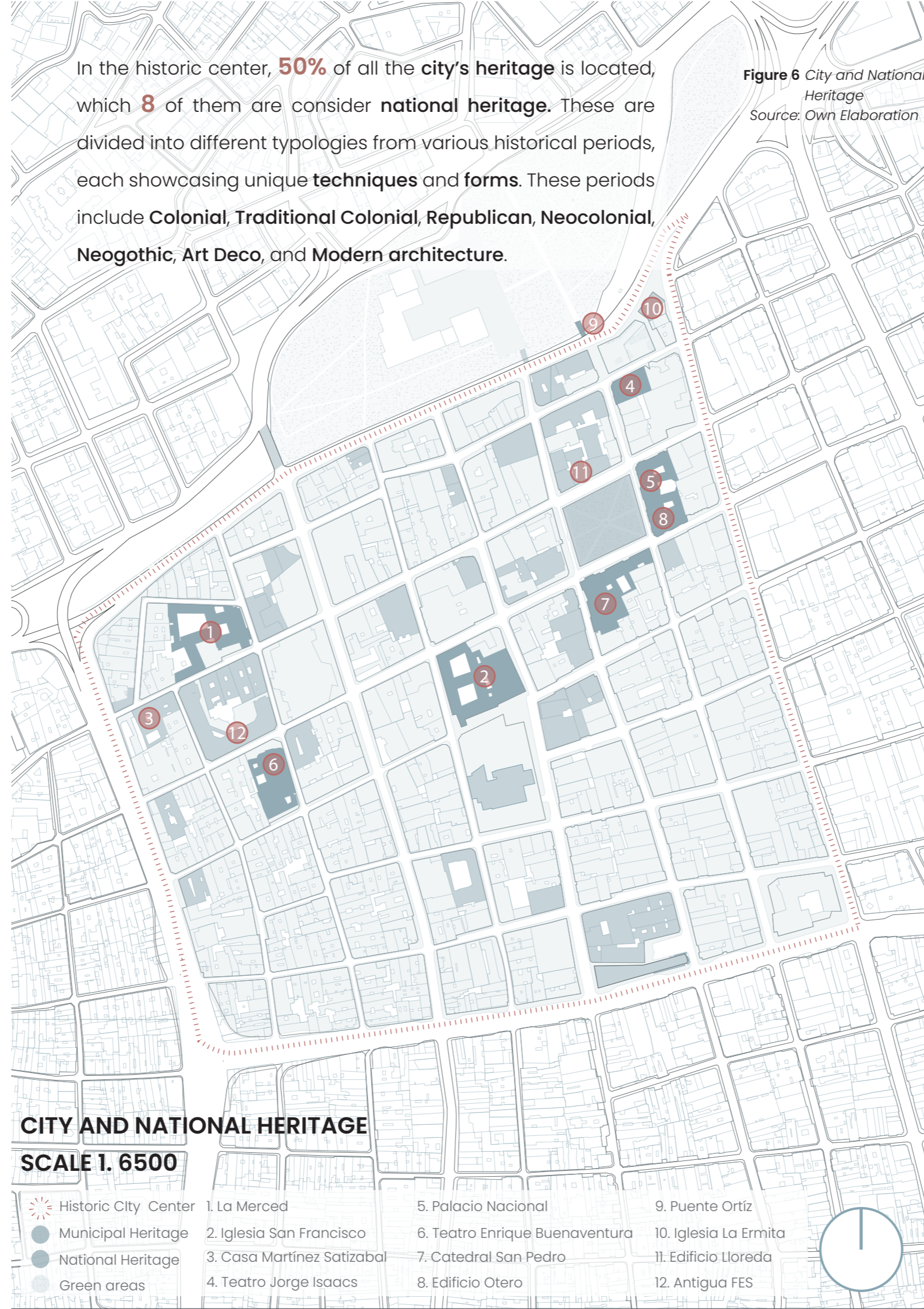
124 Figure 10 Edificio Otero

Source: https://www.cali.gov.co/general/publicaciones/18855/a_devolverle_el_esplendor_al_edificio_otero/

In the historic center, **50%** of all the **city's heritage** is located, which **8** of them are consider **national heritage**. These are divided into different typologies from various historical periods, each showcasing unique **techniques** and **forms**. These periods include **Colonial, Traditional Colonial, Republican, Neocolonial, Neogothic, Art Deco, and Modern architecture**.

Figure 6 City and National Heritage

Source: Own Elaboration



CITY AND NATIONAL HERITAGE

SCALE 1. 6500

- Historic City Center
- Municipal Heritage
- National Heritage
- Green areas

- | | | |
|----------------------------|--------------------------------|-----------------------|
| 1. La Merced | 5. Palacio Nacional | 9. Puente Ortiz |
| 2. Iglesia San Francisco | 6. Teatro Enrique Buenaventura | 10. Iglesia La Ermita |
| 3. Casa Martínez Satizabal | 7. Catedral San Pedro | 11. Edificio Lloreda |
| 4. Teatro Jorge Isaacs | 8. Edificio Otero | 12. Antigua FES |

Neocolonial: Puente Ortiz *



Figure 11 Puente Ortiz

Source: Quiero a Cali

Neogothic: Iglesia La Ermita



Figure 12 Iglesia La Ermita

Source: <https://www.elpais.com.co/cali/la-historia-de-la-ermita-un-icono-de-que-este-jueves-cumple-80-anos.html>

Art Deco: Edificio Ulpiano Lloreda



Figure 13 Edificio Ulpiano Lloreda

Source: https://idesc.cali.gov.co/download/bic_2014/BICMI-34.pdf

Modern Period: La Fes

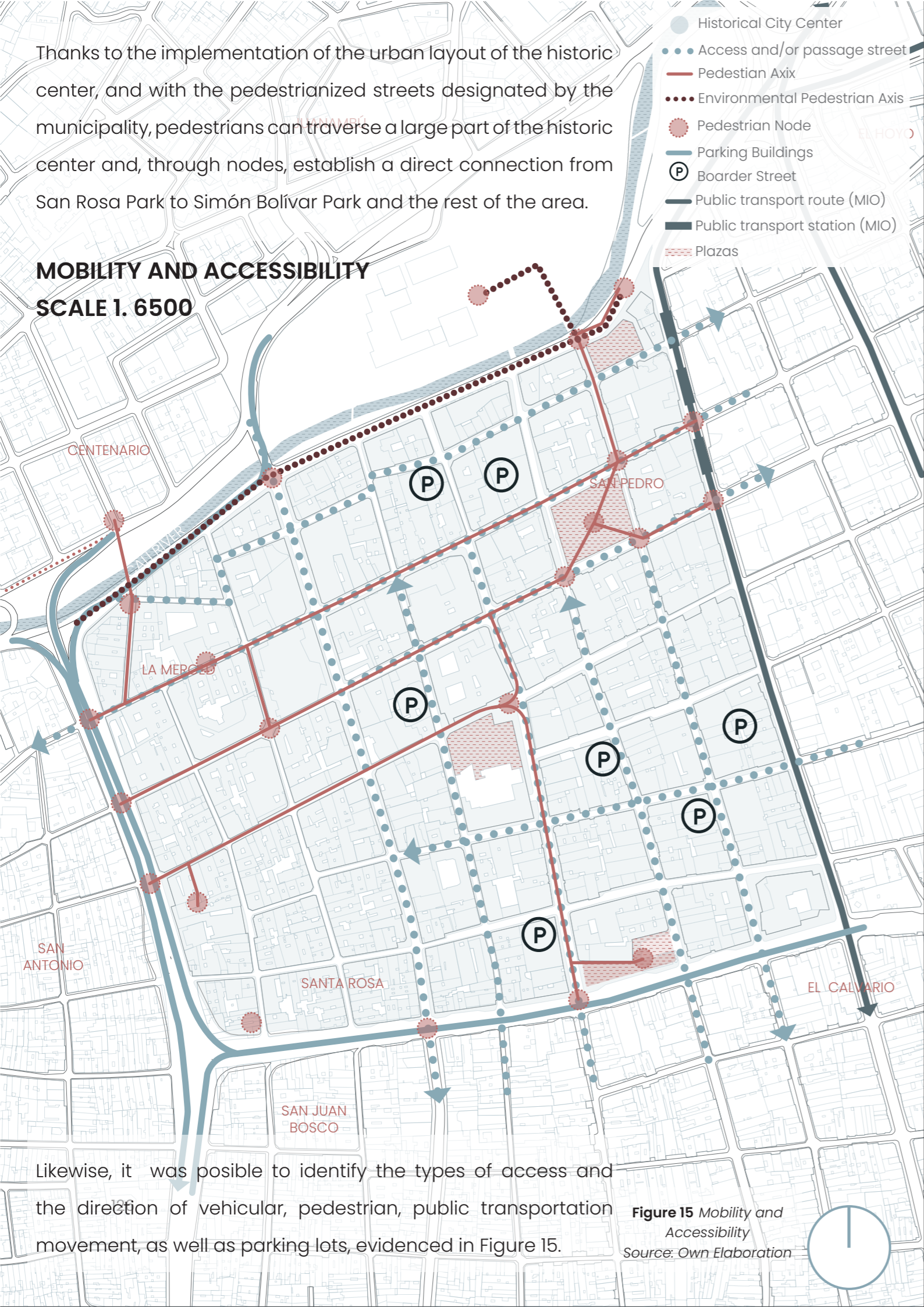


Figure 14 La Fes

Source: <https://www.colombia.com/turismo/sitios-turisticos/cali/atractivos-turisticos/sdi212/53204/centro-cultural-de-santiago-de-cali-fes>

Thanks to the implementation of the urban layout of the historic center, and with the pedestrianized streets designated by the municipality, pedestrians can traverse a large part of the historic center and, through nodes, establish a direct connection from San Rosa Park to Simón Bolívar Park and the rest of the area.

MOBILITY AND ACCESSIBILITY
SCALE 1: 6500



Likewise, it was possible to identify the types of access and the direction of vehicular, pedestrian, public transportation movement, as well as parking lots, evidenced in Figure 15.

Figure 15 Mobility and Accessibility
Source: Own Elaboration

Furthermore, during the last decades of the 20th century, Cali gradually **expanded** its urban area, both towards the east (Candelaria) and the south (Jamundí), resulting in the emergence of **extensive and dispersed housing developments**. This phenomenon has led to the **abandonment** of the **city's residents** from the **central area**, many of whom migrated to these **new urbanizations**, fostering the creation of **new urban centers**, primarily focused on **large commercial spaces** such as **chain stores, shopping malls**, and other facilities that have replaced the **services traditionally** provided by the **historical center**.¹⁰ Nevertheless, it still retains its importance as a historical landmark of the city.

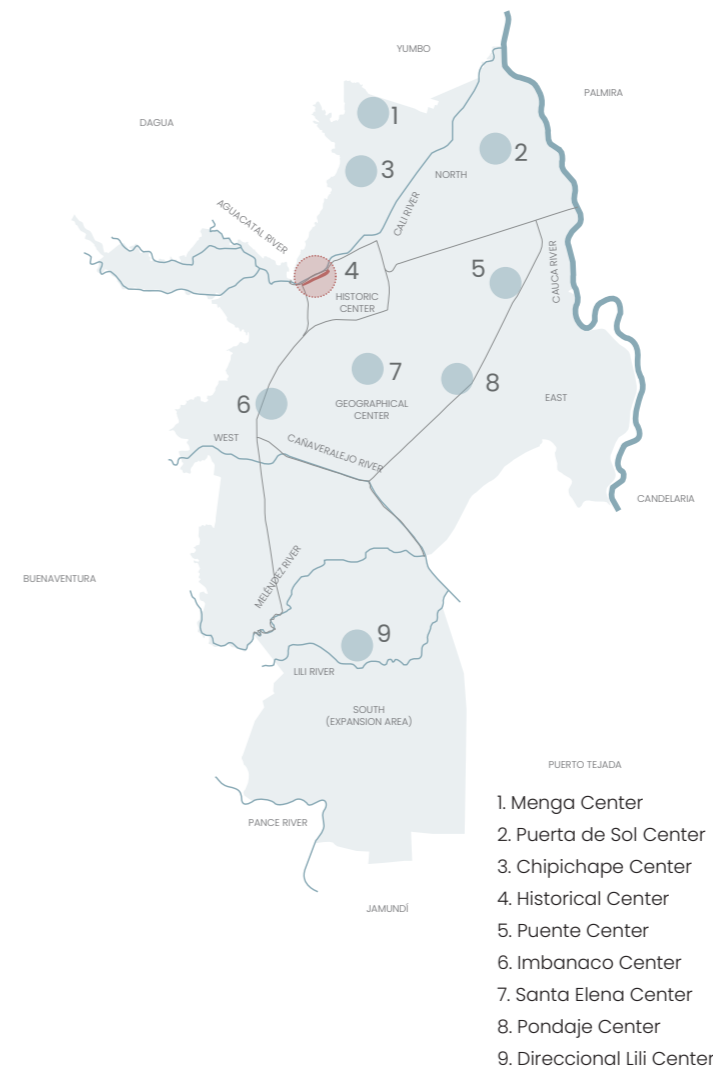


Figure 16: Historic Development 1540-1580
Source: Síntesis del PEMP del Centro Histórico de Cali

¹⁰. Martínez Toro. P, *El centro urbano de Cali, entre El Calvario y Ciudad Paraíso*, 2014 , pp. 167-195

This transformation has caused the **historic center** to lose most of its inhabitants. Instead, it has attracted tertiary service activities catering to **lower socio-economic strata**. It has also been affected by **traffic congestion**, the increasing demand for **parking spaces** from the middle class, the arrival of **street vendors**, and the growth of **homelessness**, leading to rising **insecurity**, particularly for **women** in Cali, who often limit their use of spaces within this area.¹⁰

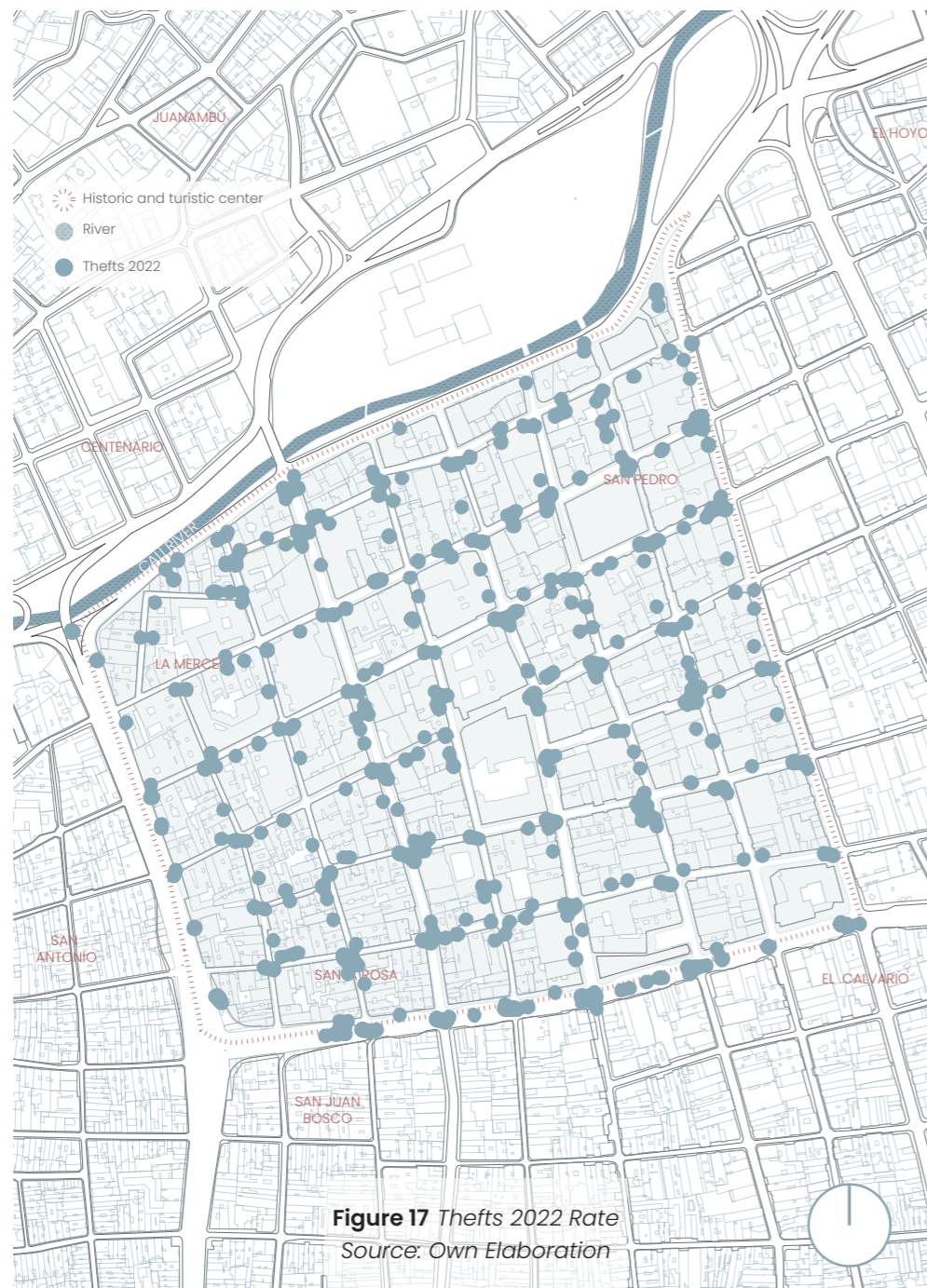


Figure 17 Thefts 2022 Rate
Source: Own Elaboration

10. Martínez Toro, P, *El centro urbano de Cali, entre El Calvario y Ciudad Paraíso*, 2014 , pp. 167–195

6.5 Historic City Center Safety Strategies

6.5.1 Mandato Centro

The Mandato Centro is a document prepared by the municipality of Cali in 2024, in collaboration with **entrepreneurs**, **business owners**, and **urbanism and environmental experts**. It presents 140 proposals for the recovery of the city's historic center. The strategies outlined in this document arose from the identification and prioritization of a series of recurring complaints from citizens, most of whom have expressed significant **dissatisfaction** with the **lack of effective solutions** to the issues present in the **center**. Therefore, part of the mayor's office proposes carrying out an **integrated intervention**, which focuses not only on infrastructure issues but also on **social and economic factors**. Additionally, this mandate, together with the Ciudad Paraíso plan, will have a significant impact not only on the city center but also on surrounding areas.¹¹

One of the main strategies emphasized in the Mandato Centro focuses on improving the perception of safety. To achieve this, the plan aims to increase the number of **surveillance officers**, implement a **video surveillance system**, and employ strategies to **reduce prostitution** and the **consumption/sale of drugs**. Similarly, there is an intention to reduce thefts and **homicides** in the area. Continuing along these lines, the issue of the high concentration of **homelessness** in the center will also be addressed, and an integral care pathway for **social reintegration** will be established.

11. *Diario Occidente*. (2024, May 27). *El Mandato del Centro, una apuesta por recuperar la movilidad, la seguridad y el espacio público*.

Regarding environmental issues, the **city center** is the area

with the **highest number of heat islands** due to the **lack of vegetation**, which is directly related to the scarcity of available public space. For this reason, the Mandato Centro includes proposals for increasing **tree planting, tactical urbanism strategies**, the **recovery of plazas**, and interventions in traffic corridors to make them 'green.' This issue is also connected to the **appropriation of sidewalks**, mainly by **street vendors** and **vehicles**, which forces pedestrians to walk in the streets. Therefore, the plan also proposes training programs for street vendors.

In terms of mobility, this is a key factor since the city center is an area of **high mobility**, where **private vehicles, public transport, bicycles**, and **walking people converge**. This diversity calls for strategies that facilitate efficient and comfortable transit for everyone. Thus, it is necessary to implement strategies that promote more efficient and **comfortable traffic flow**, with the proposal to reduce the number of private vehicles and prioritize the use of the MIO (**public transport system**).

These are just some of the many themes the Mandato Centro seeks to address in its development plan. To ensure its proper execution, rigorous monitoring and control by the municipality is necessary to guarantee the correct implementation of the proposed actions. Therefore, it is crucial to maintain an **open dialogue** with the **community** and involved **stakeholders**, so that the needs of citizens -especially **women**- are considered, through the implementation of **gender-sensitive strategies**.¹²

There are also prior strategies that have already been implemented in the historic center, related to security perception and other issues previously addressed in the area.

For the purposes of this thesis, the **Boulevard del Río** project will be taken as a case study, which will be explained in the following chapter.

¹² El País. (2024, May 12). No es solo cemento: así es el ambicioso plan para el renacer del centro de Cali. El País

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7. Case Study Part II: Boulevard del Río



7.1 Another Strategy to restore the Historic City Center

7.2 Analysis

7.3 The Boulevard as a Cultural Scenario

7.4 Methodolgy

7.5 Phase I: Observation

7.5.1 Conclusions of the Observation

7.5.1.1 People's Appropriation Activities

7.5.1.2 Lighting in the Boulevard del Río After Dark

7.6 Phase II: Surveys

7.6.1 Survey's Conclusions

7.7 Conclusions Phase I - II

REFERENCES



7. Case Study Part II: Boulevard del Río

7.1 Another Strategy to restore the Historic City Center

As mentioned in the previous chapter, the historic city center of Cali has experienced significant deterioration over time due to the issues presented earlier. Consequently, strategies such as the Boulevard del Río have been implemented to enhance the quality and counteract the deficit of public space in the city.



Figure 1-2: Avenida Colombia before Intervention

Source: <https://laciudaddeandrescaicedo.blogspot.com/2015/06/anecdotas-de-una-cali-distinta-1971.html>

The intervention was carried out at the northern edge of the historic city center, specifically on Avenida Colombia, bordering the Río Cali. This avenue presented high levels of traffic congestion, which reflected a city primarily designed for vehicles. At the same time, it created a fragmentation of the area, limiting pedestrian flow into the historic city center and its connection with the rest of the city.

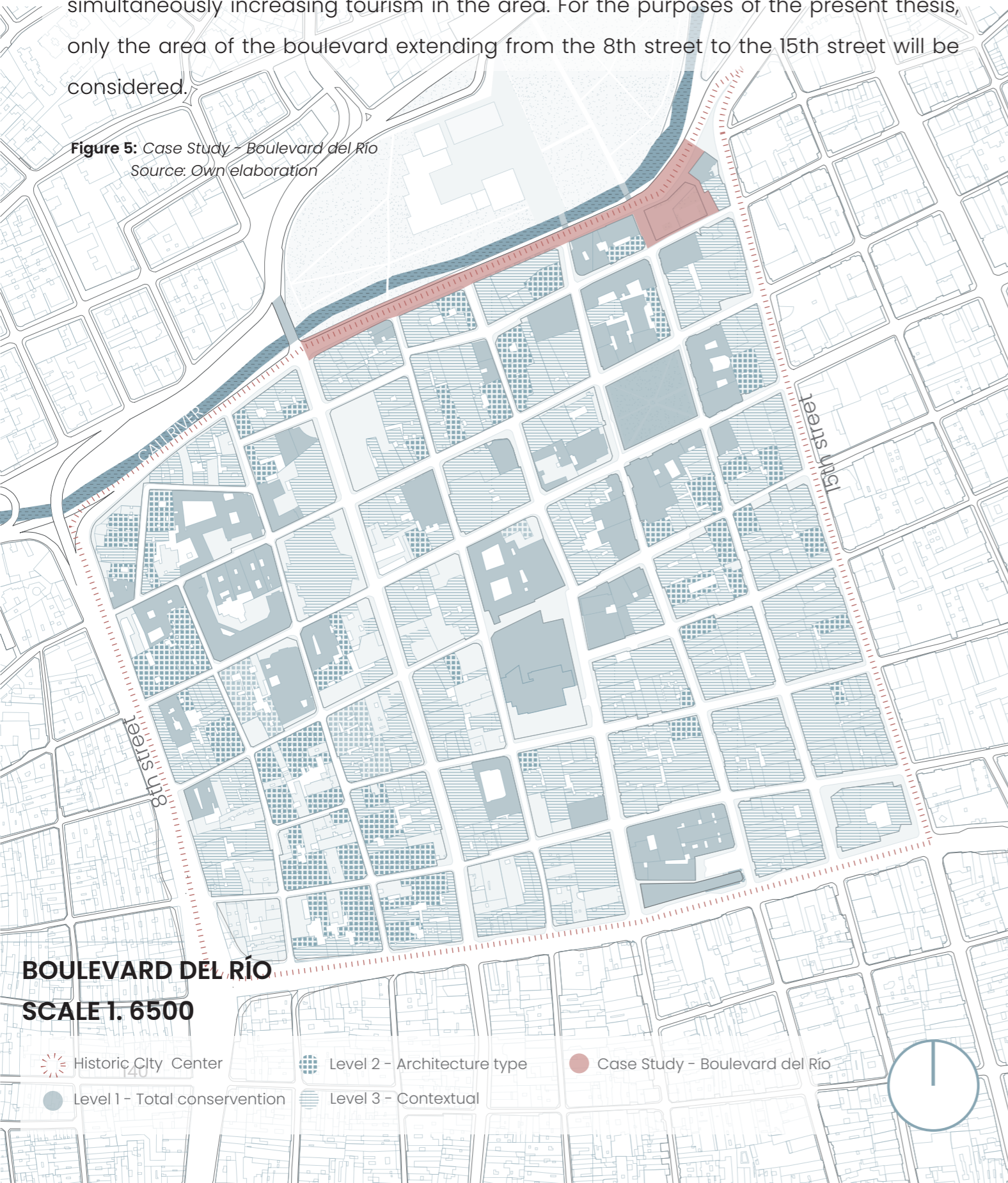


Figure 3-4: Boulevard del Río

Source: <https://www.elpais.com.co/calibulevar-del-rio-lo-bueno-y-lo-malo-de-este-espacio-urbano-de-cali-que-cumple-10-anos-1550.html>

In 2013, the Boulevard del Río project was developed. The aim of the intervention was the sinking of Avenida Colombia, which was carried out as an underground tunnel, to reduce traffic congestion. As a result, the residual space of the tunnel-top was fully pedestrianized –except for the 8th street, which divides the boulevard into two areas– creating a new public space, contributing to the decrease of this deficit, while simultaneously increasing tourism in the area. For the purposes of the present thesis, only the area of the boulevard extending from the 8th street to the 15th street will be considered.

Figure 5: Case Study – Boulevard del Río
Source: Own elaboration



7.2 Analysis

Mobility and Access:

By pedestrianizing Avenida Colombia, a frontage and access point to the historic center were possible, both for pedestrians and vehicles. Additionally, through the pre-existing vehicular and pedestrian bridges located over the River, a direct connection with the northern part of the city was established.

Furthermore, thanks to this intervention, the municipality undertook the task of adapting an area with limited vehicle traffic, thereby giving greater importance to pedestrians while also connecting the Parque Bolívar with the Plaza Cayzedo. This is further reinforced by the location of public transportation on 15th Street, allowing direct access to the Boulevard del Río.

Regarding vehicular mobility, it is possible to reach the historic center by private vehicles, which is supported by a large number of parking lots near the case study, after which pedestrians can access it through streets with restricted traffic.

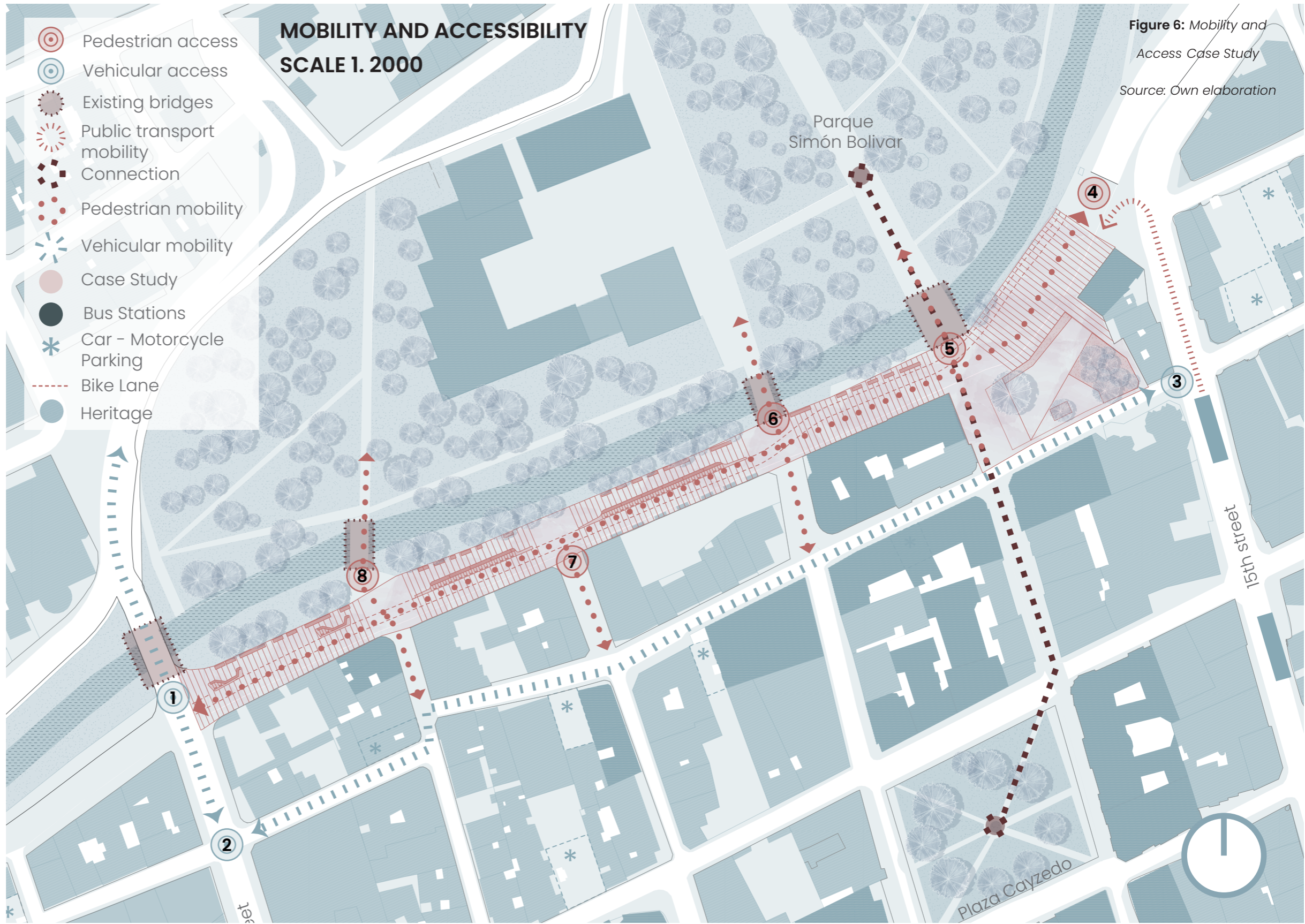


Figure 6: Mobility and Access Case Study
Source: Own elaboration

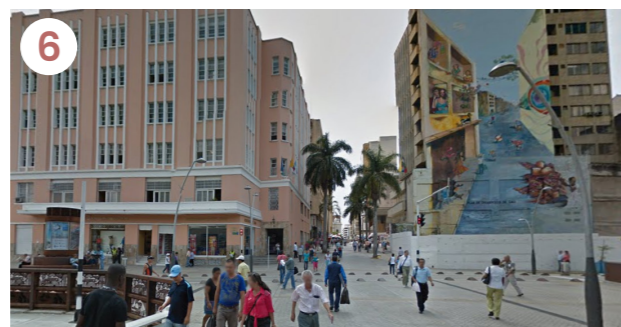


Figure 6.1 - 6.8: Mobility and Access Case Study
Source: Google Maps

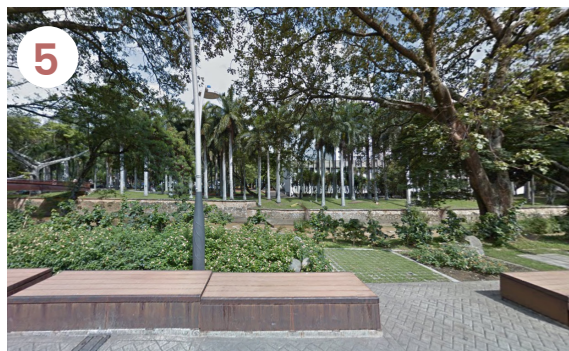


Figure 7.1-7.6: Surroundings and Visuals

Source: Google Maps

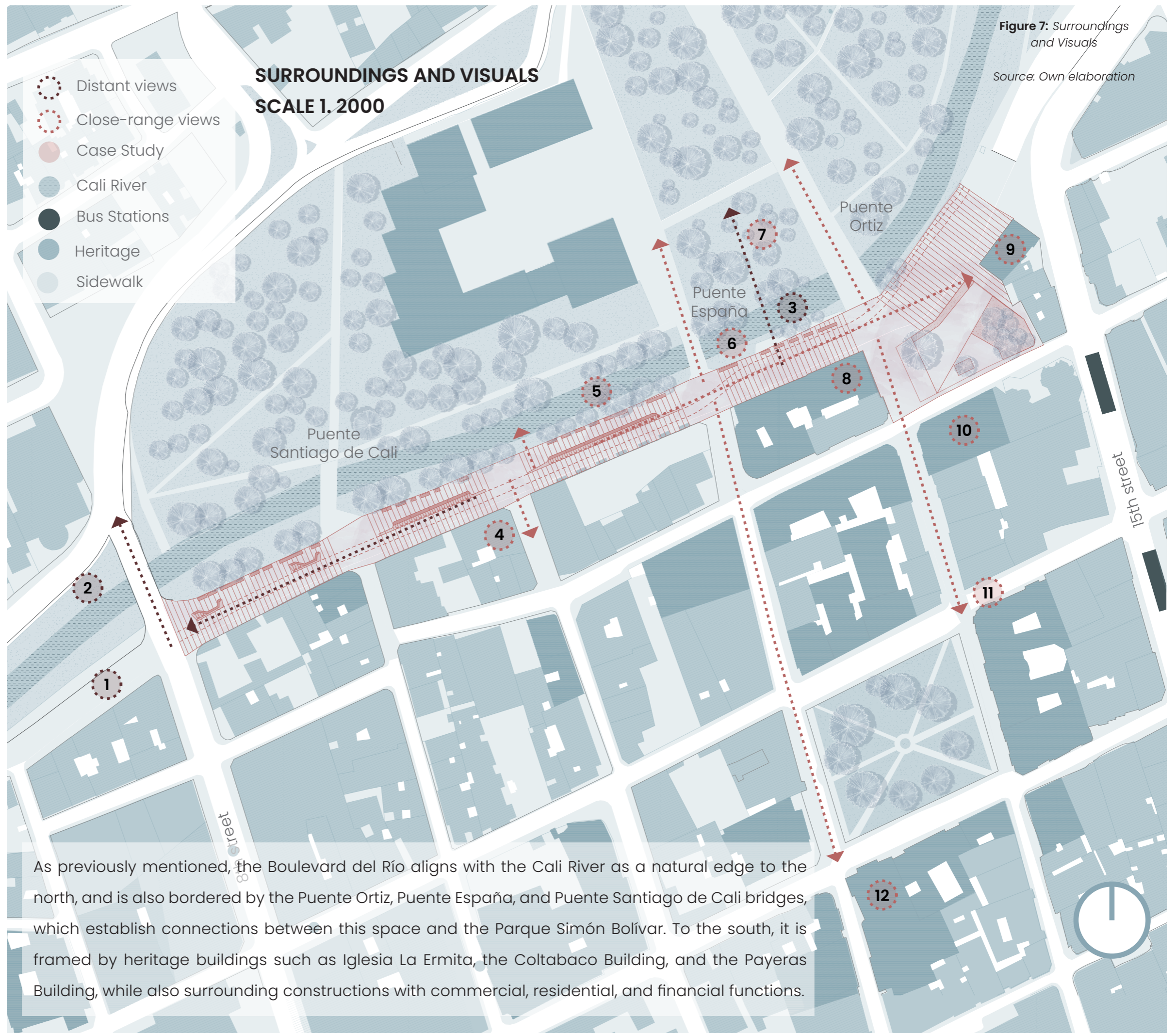


Figure 7: Surroundings and Visuals

Source: Own elaboration

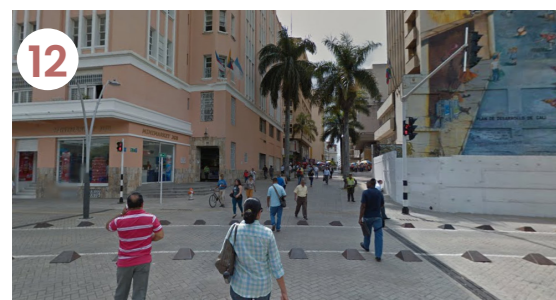
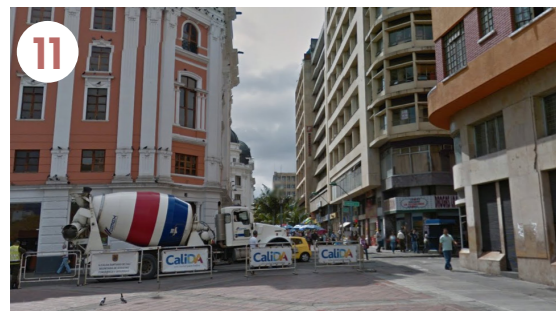
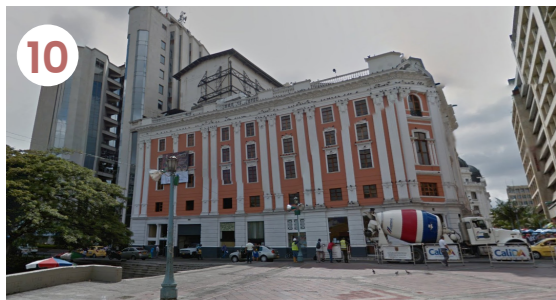


Figure 7.7 -7.12: Surroundings and Visuals

Source: Google Maps

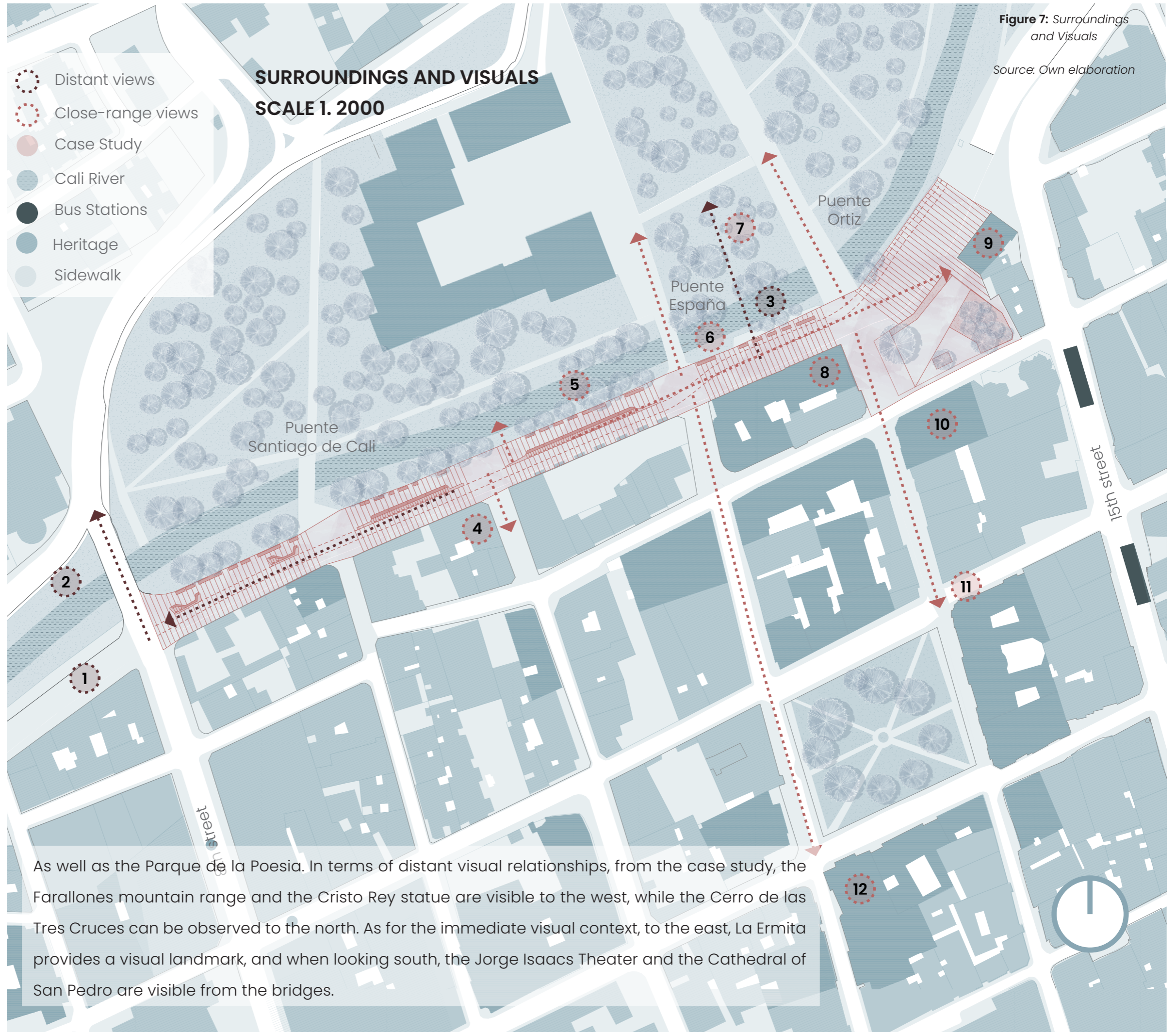


Figure 7: Surroundings and Visuals

Source: Own elaboration

1. To pedestrianised



Figure 9: Bikelane

Source: <https://www.elpais.com.co/cali/fundocol-se-queda-con-contrato-por-mas-de-3800-millones-y-seguira-administrando-el-bulevar-del-rio-en-cali-2716.html>

2. Contemplation



Figure 10: Urban Furniture

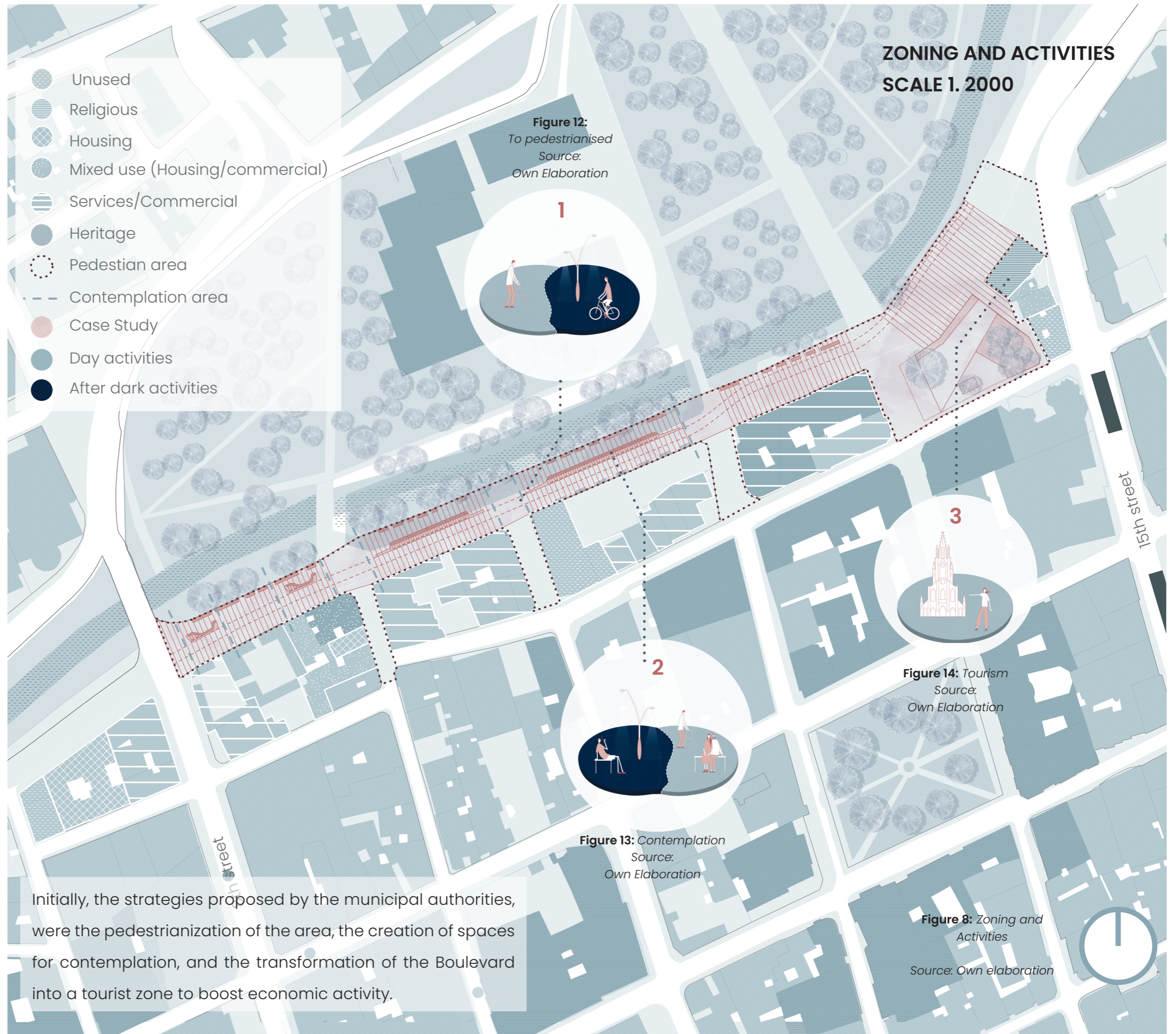
Source: <https://valledelpacifico.co/descubre-los-imperdibles-de-cali-una-guia-para-enamorarte-de-la-sucursal-del-cielo/>

3. Tourism



Figure 11: Iglesia La Ermita

Source: <https://www.elpais.com.co/cali/semana-santa-en-cali-estas-son-las-actividades-culturales-y-turisticas-programadas-en-la-ciudad-2202.html>



Initially, the strategies proposed by the municipal authorities, were the pedestrianization of the area, the creation of spaces for contemplation, and the transformation of the Boulevard into a tourist zone to boost economic activity.

7.3 The Boulevard as a Cultural Scenario

It is precisely in this intriguing space that, since its inauguration, a cultural catalyst has emerged for the city. The Boulevard del Río is a unique space in Cali where a variety of activities related to **cultural expressions** are most strongly evident, and consequently, these aspects must be mentioned in order to understand how they have contributed to keeping certain spaces and **dynamics alive** in the **city's center**:

- **Salsa:** Cali is globally recognized as “**the Salsa capital**” and represents a significant part of the city’s cultural identity, having attracted a diverse range of **locals** and **tourists** of various **genders, origins, socio-economic strata, ages**, etc, through this musical genre. The distinctive Cali salsa has its origins in the 1950s, when rhythms such as Cuban son, mambo, and guaracha became popular in the country, and were quickly adopted by the city’s inhabitants, who blended them with local rhythms to create a new musical style.

This gave rise to **dance academies** (127 to date), **museums, nightclubs** dedicated just to this **music genre** (115 to date), and special events such as the International **Salsa Festival** and the International **Salsa Biennale**, most of which take place in the **Boulevard del Río**, and the **Feria de Cali**. In 2017, salsa was declared an **Intangible Cultural Heritage**. This distinction demonstrates the importance of Cali’s salsa to Colombians and, especially, to Cali’s culture. ¹³

¹³. *Mundial de Salsa, Historia de la Salsa Caleña, Festival Mundial de Salsa Cali, 2024*



Figure 15: “People from Cali dancing salsa”
Source: <https://web1.cali.gov.co/gobierno>

- **Literature:** Literature originating from Cali has been of great importance at both national and Latin American levels. The city has produced key 19th-century figures such as Jorge Isaacs, whose acclaimed work “La María” was the first **romantic novel in the Americas**, and Eustaquio Palacios, with “El Alférez Real”, marking the beginning of the **city’s literary fiction**. Later, the commercial exchange driven by the creation of the Pacific Railway allowed for connections with the rest of the country, giving rise to other poets.

From the 1960s onward, Cali’s literature began to take shape, amidst the vibrancy of a city where music and new ideals, influenced by the “**Latin American boom**” pointed toward utopia. Writers and playwrights such as Óscar Collazos, Fernando Cruz Kronfly, María Elvira Bonilla, and Enrique Buenaventura (who named the city’s most important theater) contributed to this literary growth, ¹⁴ to such an extent that some of them were commemorated in a park in the city center, represented through statues, this is called **Parque de la Poesía**. In the 1970s, a young writer, Andrés Caicedo began writing his first stories set in Cali, with “¡Que viva la música!” becoming his most famous work and turning

¹⁴. Martínez, F., & Urriago, H. *Cali - grafías. La ciudad literaria, 2008*, pp. 149–152.

him into a literary icon of the city.

Thanks to this rich **literary culture**, activities related to literature began to develop in the **city center**, such as the **International Book Fair**, which takes place in the **Boulevard del Río**, the **International Literature Festival**, and the **International Poetry Festival**, at the **Parque de la Poesía**, all of which are organized annually.



Figure 16: "Poetry in the Park initiative"

Source: https://www.cali.gov.co/cultura/publicaciones/117889/este_miercoles_poesia_al_parque/

- **Pacific Folklore:** Cali is the capital and most important city of **Colombian Pacific region**. Due to its geographic proximity to the **Pacific Ocean**, during the **colonial era**, the Spanish brought thousands of **African slaves** to the **Pacific coast**, and these individuals later **migrated** to the **city** to be used as **labour**. This is why Cali has a high percentage of **Afro-descendant population**, specifically **26.2%**, according to data from the Secretariat of Territorial Development and Social Welfare (2013), making it the city with the largest **Afro-descendant population** in Colombia and the second largest in Latin America, after Salvador Bahia, Brazil. ¹⁵

Consequently, Cali has been heavily influenced by **Pacific**

Afro-Colombian culture, particularly in music, such as salsa, which incorporated traditional Pacific instruments and elements to create its distinct sound, as well as in food, beverages, and ancestral knowledge. This cultural influence gave rise to the **Pacific Music Festival**, which is celebrated annually, with part of the festivities also occurring at the **Boulevard del Río**, in the **city center**. The aim of this celebration is to preserve the traditions of **Colombia's Pacific region**, as elements that contribute to the cohesion of **identity**, and to reinforce the social fabric in order to consolidate **participation, inclusion, and development** in Cali. ¹⁶



Figure 17: "Traditional dresses from the Pacific"

Source: <https://www.revistapym.com.co/articulos/consumidor/65126/colombianidad-como-conectamos-los-colombianos-desde-nuestra-cultura-nacional-y-regional>

As can be seen, the historic center of Cali is the prime location where numerous events and manifestations rooted in the **city's cultural expressions converge**. As previously mentioned, several of these events occur frequently and spontaneously, primarily in an area known as the **"Boulevard del Río,"** which has been **fully embraced** by the **citizens** of Cali and is the **city's largest public social gathering point**.

¹⁵. El País, (2019, May 21). Cali es una ciudad afro, pero estos son los retos que tiene con su población

¹⁶. Arce Forero, P. (2023, August 19). Recorrido por la historia del Festival Petronio Álvarez

7.4 Methodology

After conducting the analysis along with the urban contextualization of the site, it is important to explain the methodology to be used, along with aspects related to a gender perspective approach, for the development of a lighting concept design. For the purpose of this thesis, three distinct phases were carried out, each interconnected: Observation, Interviews, and a Conceptual Design.

Phase I – Observation: This phase involved initial contact with the area of study, followed by examination over several days of the week and at different times of day. This approach allowed for the collection of information regarding the particularities of the site, including activities, services, and its inhabitants. Subsequently, a photographic record was made to highlight the state of the urban context throughout the day. A chronotopic analysis was then conducted to understand the flows and activities occurring in the area. Finally, an analysis of the lighting conditions was performed to determine the types of luminaires and their placement within the space

Phase II – Interviews: The aim of this phase was to engage with the users of the area through a series of qualitative questionnaires. The purpose was to gain insight into the characteristics of the place through the perception of safety held by its users. The interviews followed a structured, open format, allowing for comparisons between the responses of different participants. At the end of the interviews, the necessary

information was gathered, providing a clear understanding of the needs, requirements, and aspirations of the interviewees regarding the area of study.

Phase III – Conceptual Design: The primary objective of this phase was to propose solutions based on the information gathered in the previous steps and to express these through strategies tailored to the specific needs of the site. For the purposes of this thesis, once the hypotheses were finalized, a series of diagrams, plans, and photomontages were created to visualize the proposal and make the strategies for implementation more comprehensible.

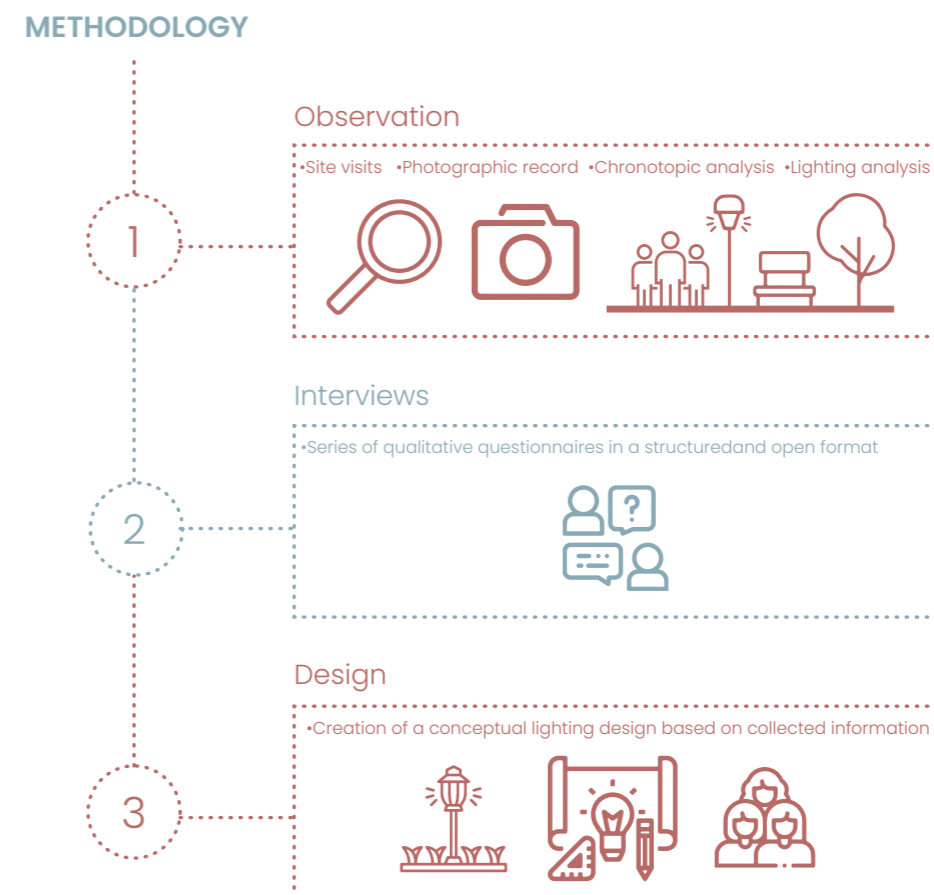


Figure 18: Methodology
Source: Own elaboration

7.5 Phase I: Observation



During the day, activities are mainly for contemplation



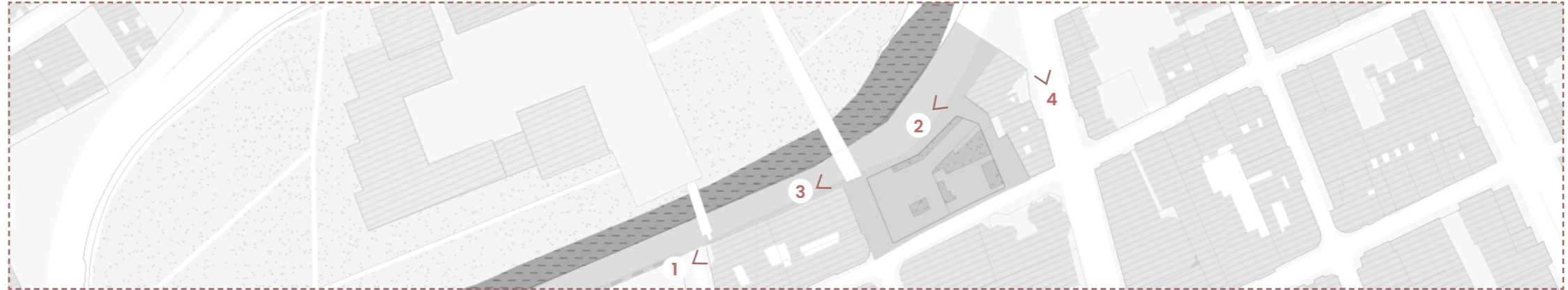
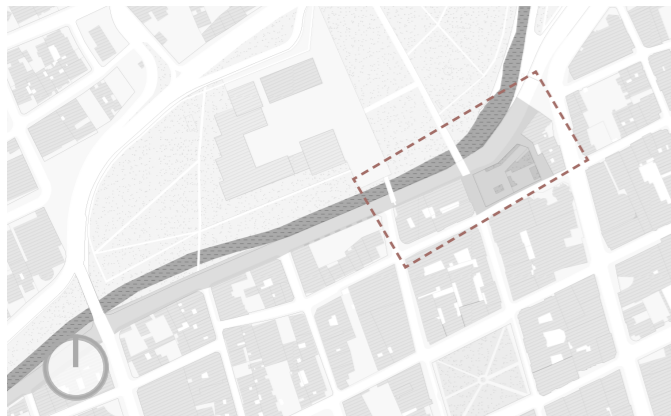
Contemplation area next to La Ermita



Low concentration of people during the weekdays



Arrival at the boulevard by public transport



After Dark

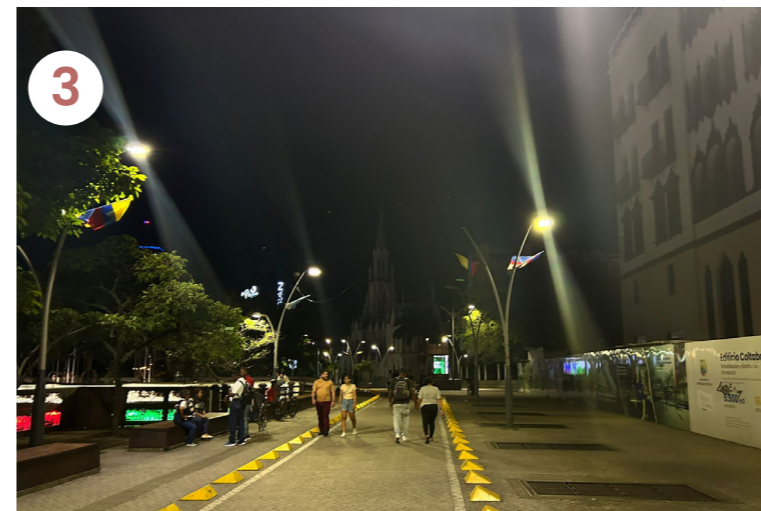
Increase in the number of people due to the offer of commerce after dark



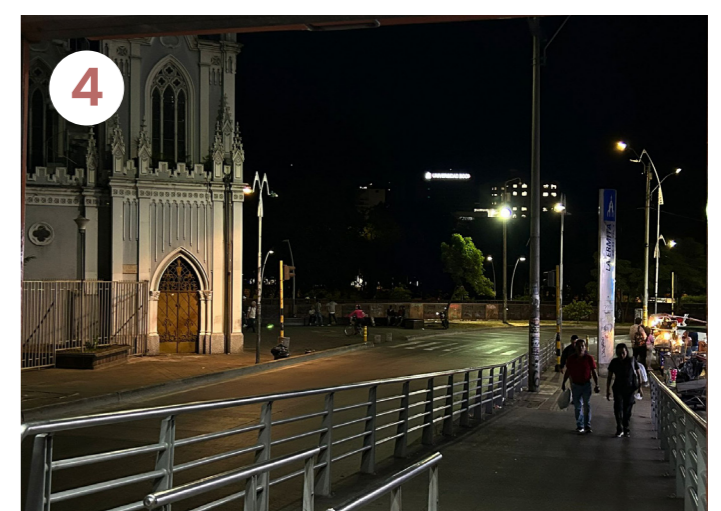
Little activity on offer after dark near La Ermita



Low concentration of people during the weekdays even after dark



Arrival at the boulevard by public transport



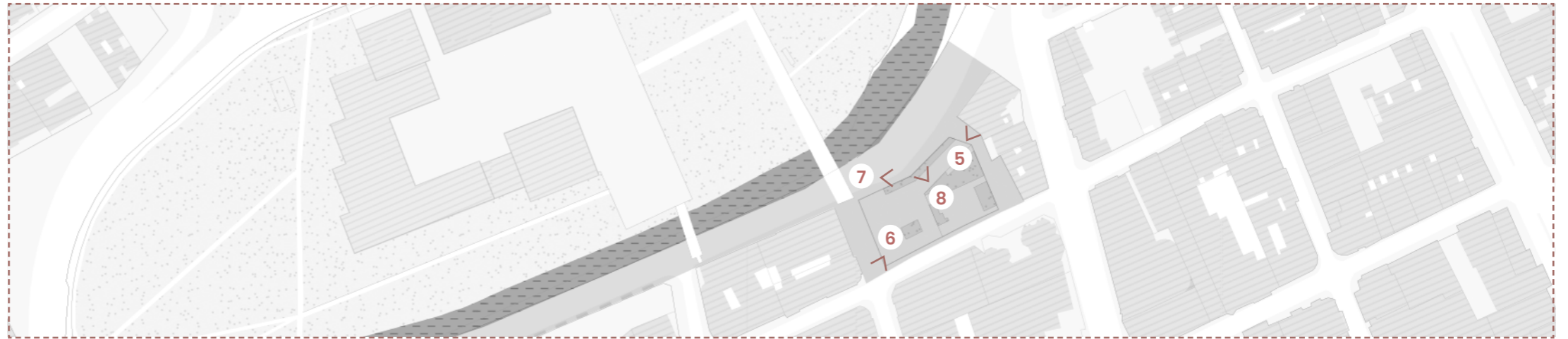
Day Time



No user presence during the weekend in the Parque de la Poesía due to the lack of activities

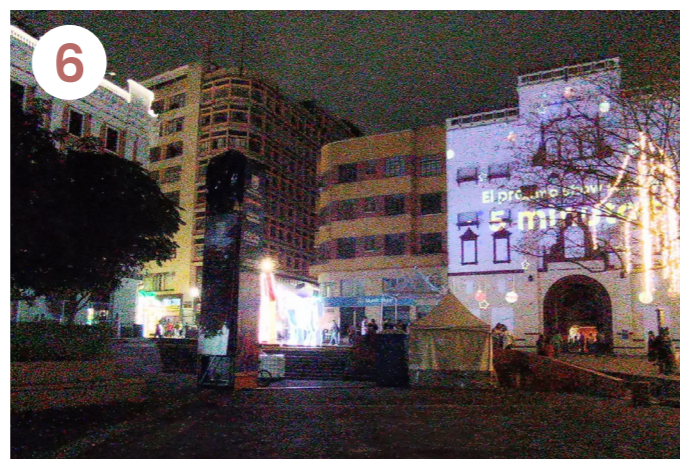


Thanks to the presence of the writers who work in the park, there is a small presence of people in the vicinity



After Dark

Little lighting after dark inside the Parque de la Poesía, despite having two reflectors, these are not used and the lighting that is observed is temporary, since it only appears during the Christmas season



Day Time



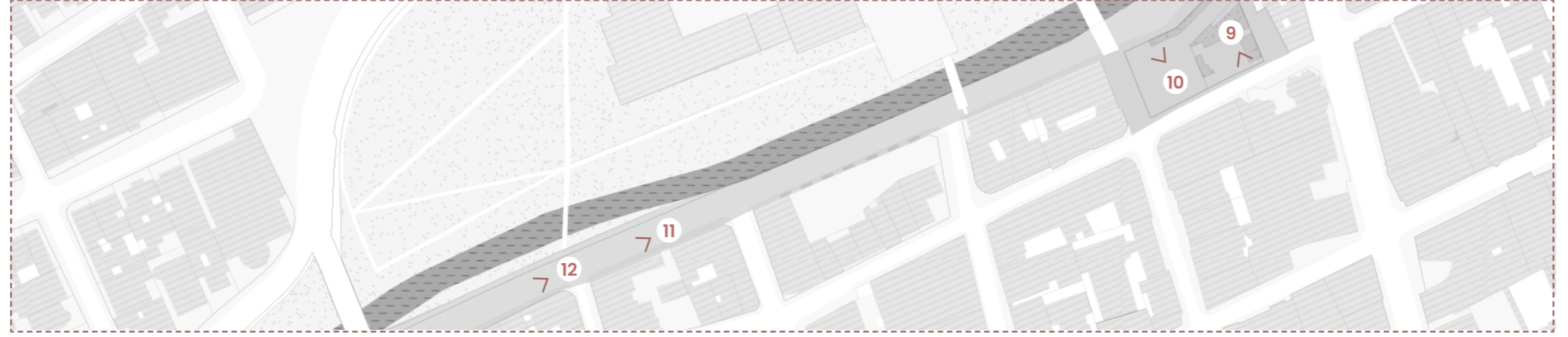
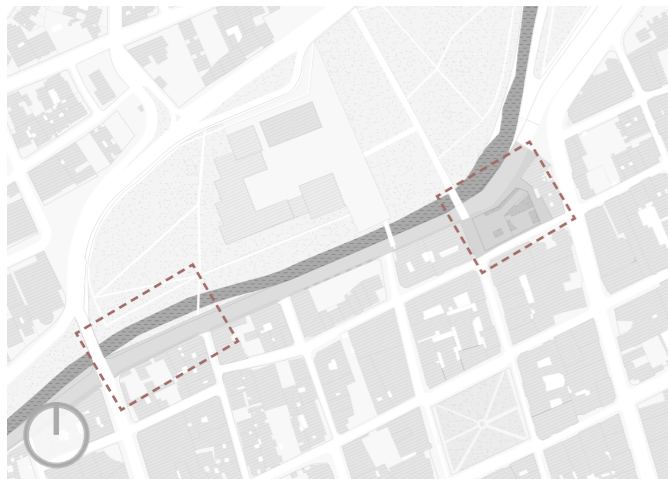
The statues of the poets are located in the green area of the park



Low concentration of people during the weekdays

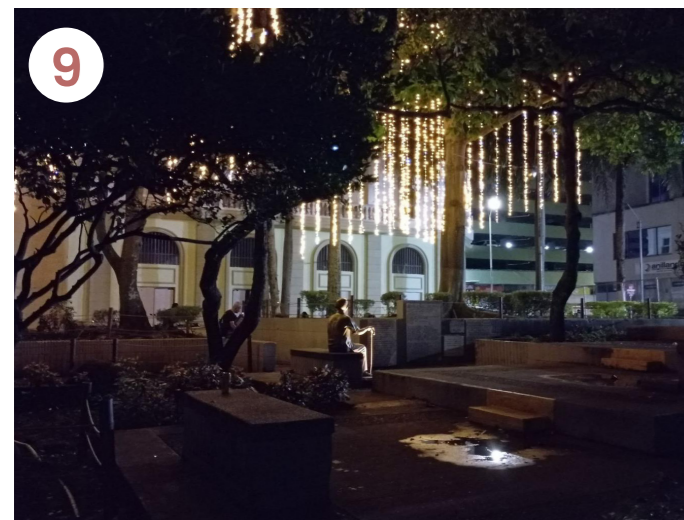


During the week this space is mainly used as a transit area to reach the center or northern part of the city



After Dark

Poor lighting makes visibility difficult, which affects the perception of security in the Parque de los Poetas



On the weekend after dark, the Café Boulevard area -central zone- is filled with users, who carry out different activities



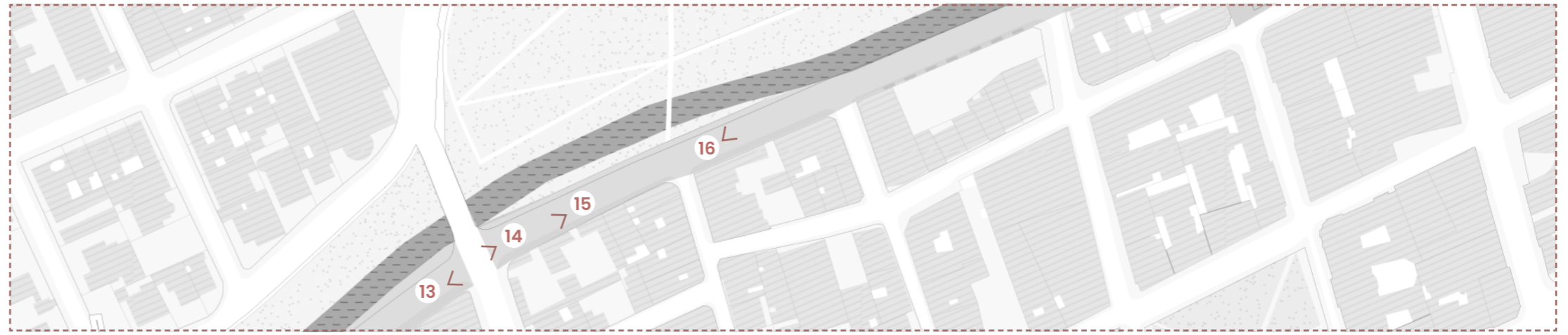
Day Time



During the weekend it is possible to observe a few more people engaging in contemplative activities, unlike on weekdays



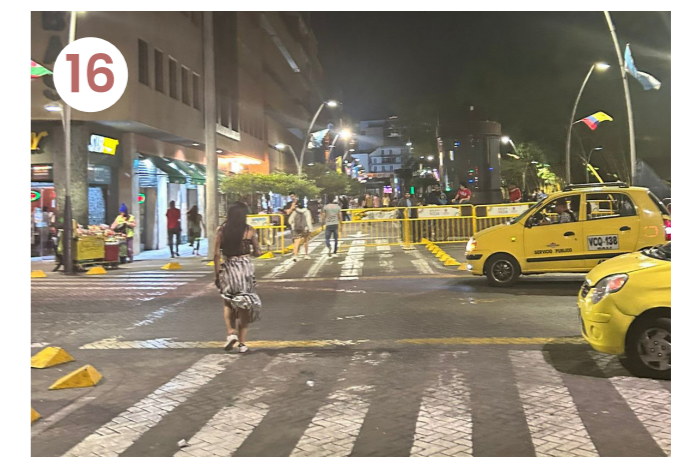
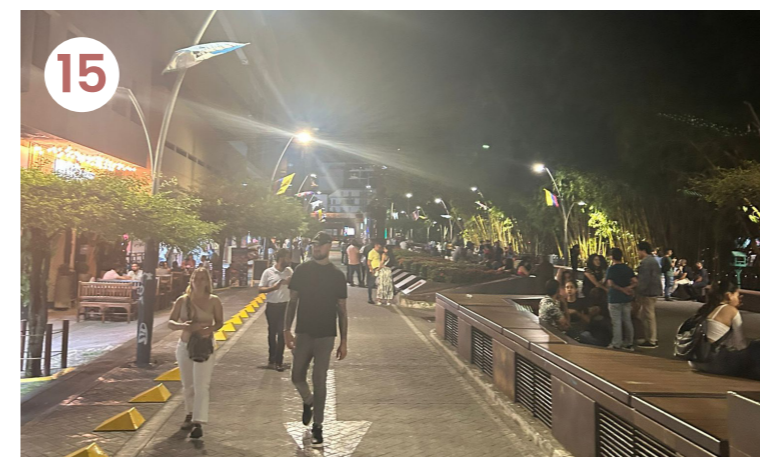
The 8th Street is the only vehicular route that reaches the boulevard and divides it into two areas



After Dark

People gathered in the central part of the boulevard to enjoy dancing and listening to live music

In the parts close to the center of the boulevard during the weekend after dark there is a greater number of users who carry out contemplation activities

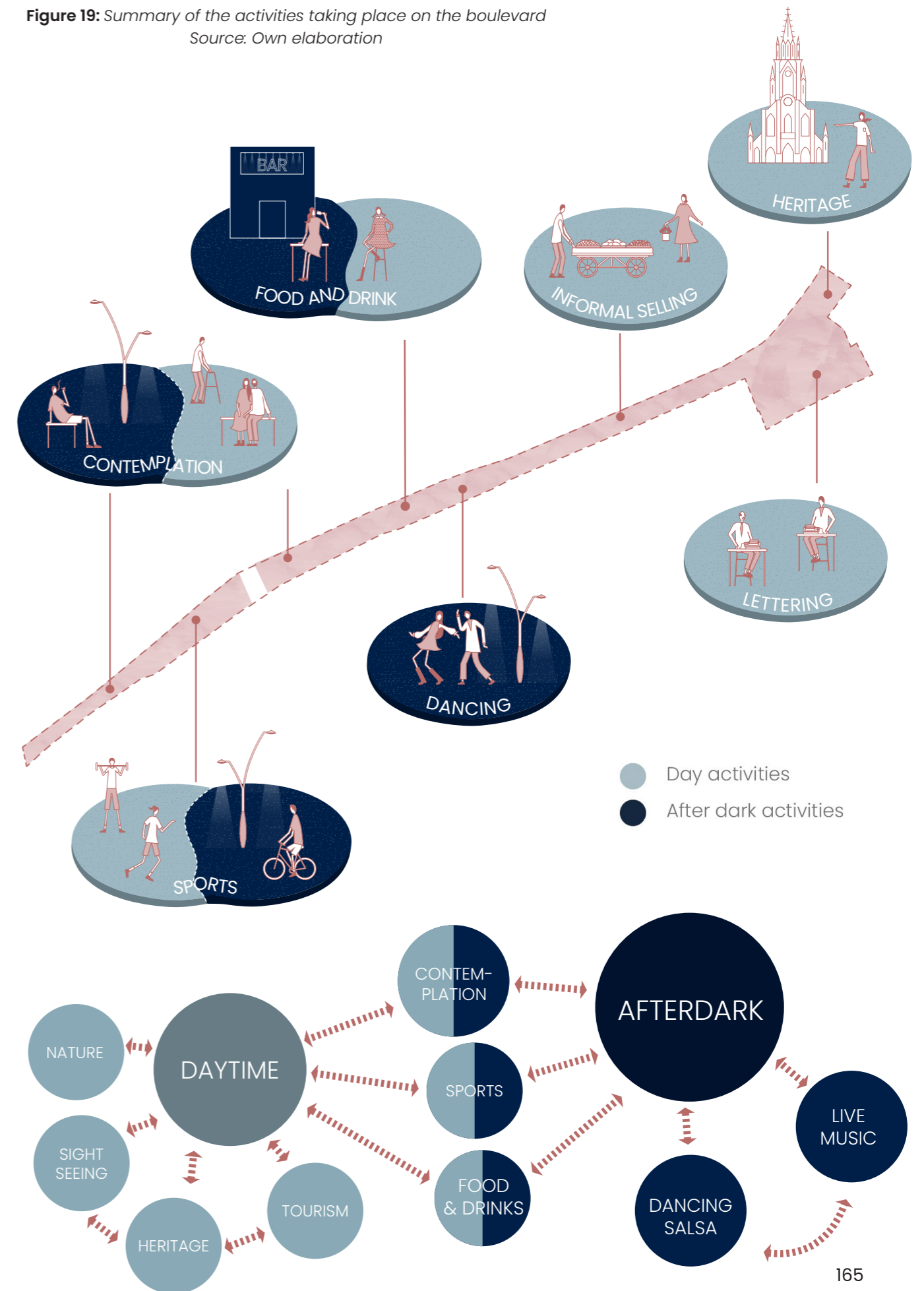


7.5.1 Conclusions of the Observation

7.5.1.1 People's Appropriation Activities

Based on the observations gathered, it can be concluded that the citizens have appropriated the space in such a way that cultural and artistic expressions are evident, emerging spontaneously. In particular, every weekend night, the Boulevard is filled with locals as well as visitors who come to dance and listen to live salsa music amidst a vibrant street scene. As mentioned earlier, this is an event that takes place exclusively in this part of the city. In addition to salsa culture, people gather for other activities, such as socializing, eating and drinking, or engaging in physical exercise. Street vending, as well as poetry and letters writers took the ownership of the Parque de la Poesia as a working area, where people commissioned them for the writing of love letters or administrative documents.

Figure 19: Summary of the activities taking place on the boulevard
Source: Own elaboration



1. Poetry and Letters



Figure 20

Source: <https://esculturasdecolombia.blogspot.com/2017/10/parque-de-los-poetas-jose-antonio.html>

2. Street Vendors



Figure 21

Source: <https://observatoriooiss.ieric.org.ar/2024/06/11/hay-mayor-proporcion-de-ocupacion-informal-entre-las-y-los-trabajadores-por-su-cuenta-en-america-latina-y-caribe/>

3. Dancing



Figure 22

Source: <https://www.elpais.com.co/calif/calle-de-la-salsa-un-recorrido-por-la-sabrosura-y-el-caos-caleno-0145.html>

4. Food and Drink



Figure 23

Source: <https://www.elpais.com.co/calif/calle-de-la-salsa-un-recorrido-por-la-sabrosura-y-el-caos-caleno-0145.html>

5. Sports

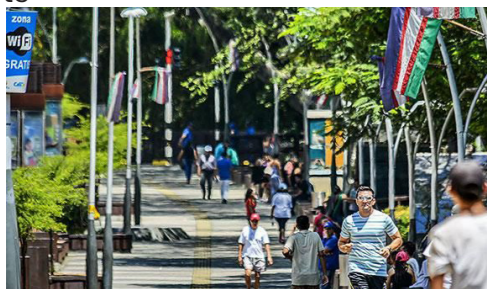


Figure 24

Source: <https://www.elpais.com.co/contenido-premium/video-seis-anos-de-la-inauguracion-del-bulevar-del-rio-cali.html>

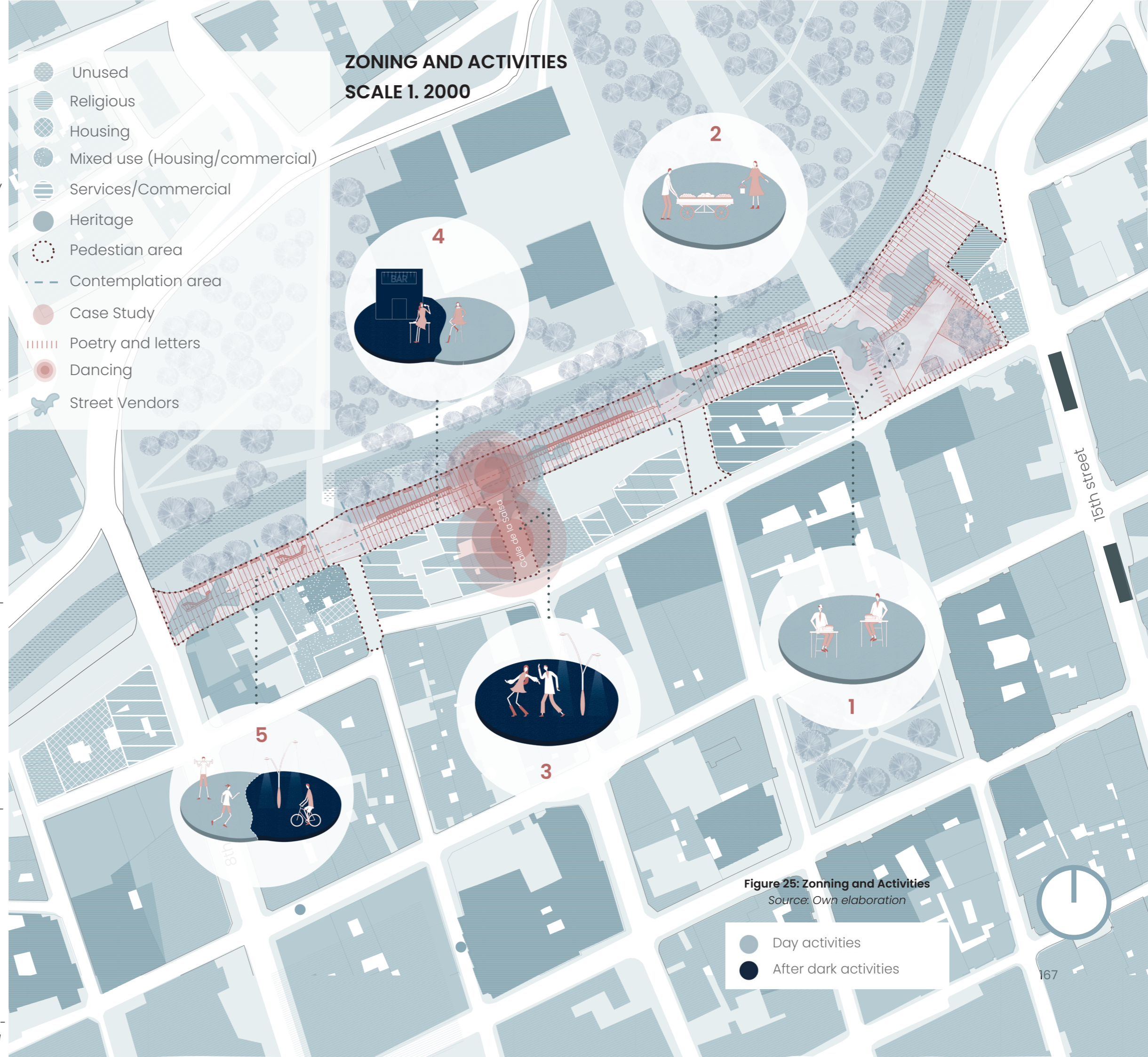


Figure 25: Zoning and Activities
Source: Own elaboration

● Day activities
● After dark activities



Access to the Boulevard through Public Transport



Different typologies of lighting post in the Boulevard



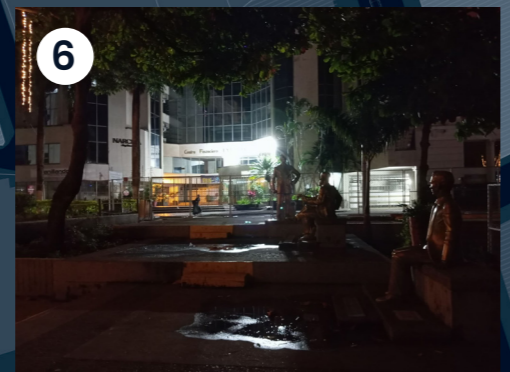
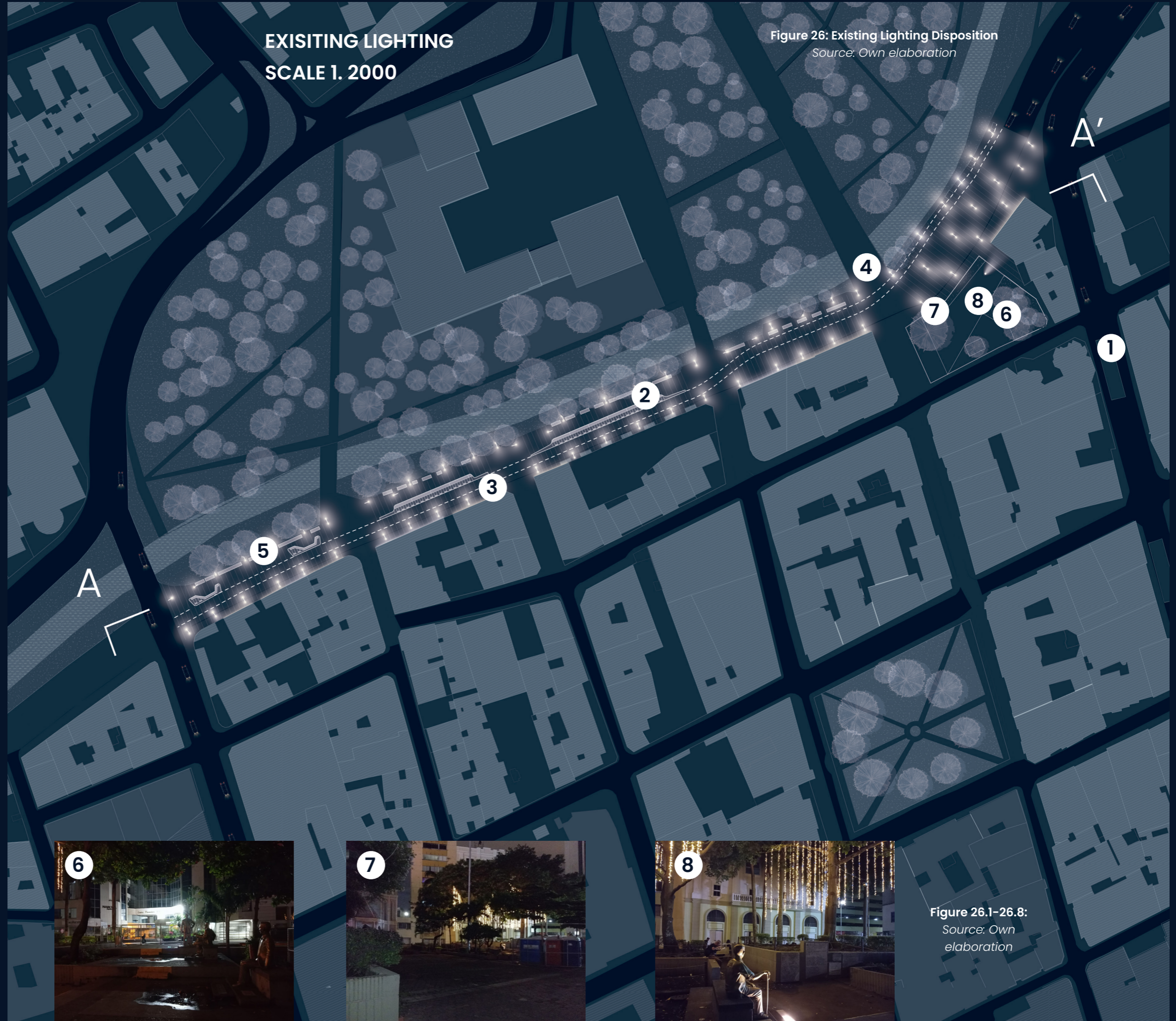
Lighting Facades coming from the commerce



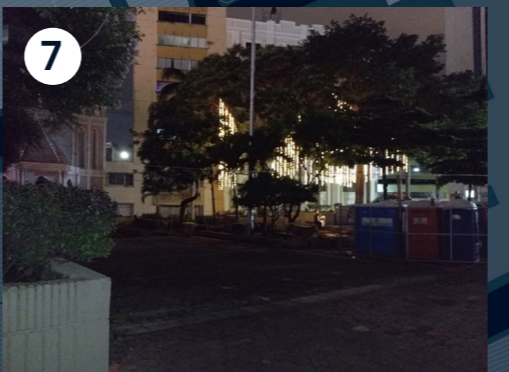
Not pedestrian lighting scale



Evident glare in the Boulevard



High contrast levels in the Parque de la Poesía



Lack of proper lighting after dark in the Parque de la Poesía



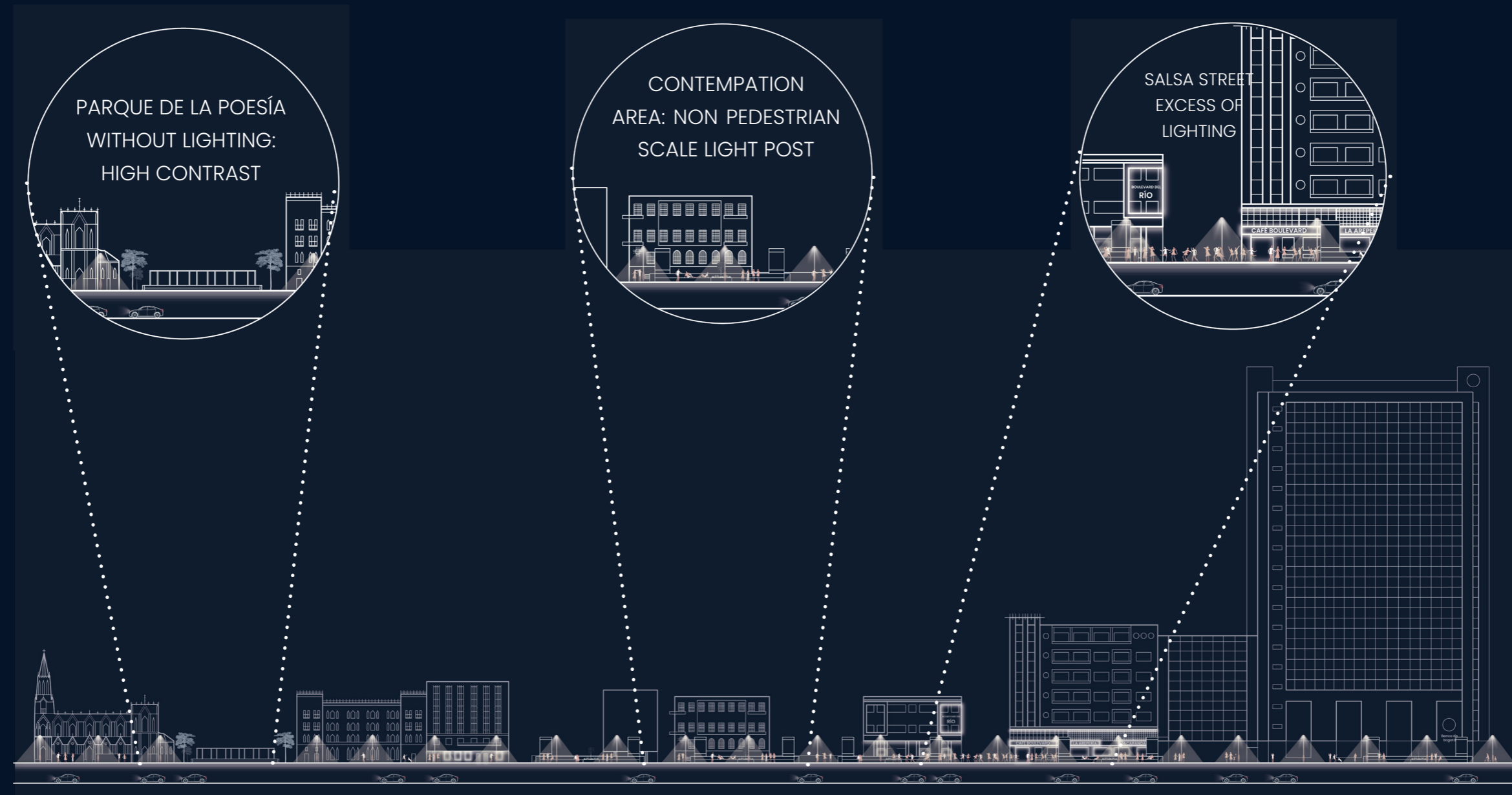
Lack of functional lighting
*Christmas lighting will not be consider

Figure 26.1-26.8:
Source: Own elaboration

7.5.1.2 Lighting in the Boulevard del Río After Dark

Regarding the lighting present at the site, it can be stated that the boulevard has an excess of light throughout its entire linear area. This is due to the fact that, in addition to having a high bright public lighting system, it also features a large number of neon signs belonging to establishments such as restaurants and bars. During the Christmas season lights are added along the entire space as a tourist attractions. Furthermore, the luminaire poles do not align with the human scale, as they are placed at a very high height, making them more suitable for illuminating vehicular streets rather than pedestrian areas.

In general, despite the excess lighting, the Boulevard maintains a constant lighting distribution throughout its linear area. However, the Parque de la Poesía turns into an adjacent space, due to its lack of lighting corresponding to an almost completely dark spot, since it has two high glare reflectors columns, one pointing towards La Ermita and the other one to the middle of the park. This, combined with the excess lighting in the rest of the space, results in a high contrast between both areas, making the park appear even darker and giving it an unsafe character.



**LONGITUDINAL
SECTION A-A'
SCALE 1. 2000**

Figure 27:
Source: Own
elaboration

MECOEP: Public Space | Regulations: Lighting

An investigation was conducted regarding local regulations concerning lighting. For this purpose, the Manual of Complementary Elements of Public Space in Santiago de Cali (MECoEP) was analyzed, which addresses street lighting in public spaces. However, this manual lacks pertinent information on light levels, color temperature, or any other type of information related to lighting itself. Instead, it focuses on the measurements and distances these elements should maintain, therefore it was not possible to collect precise information on these matters. Nevertheless, with the help of this manual, it was possible to identify the types of light fixtures used in the case study, even though this was published after the Boulevard was completed. (2017) According to the information obtained from the MECoEP, the Boulevard uses three types of light poles:

- Double lamppost: Present in the most remote section of the intervention, towards the pedestrian bridge.
- Single lamppost: Located throughout the central area.
- Mixed-height lamppost: Found at the beginning of the intervention, in front of the Ermita Church.

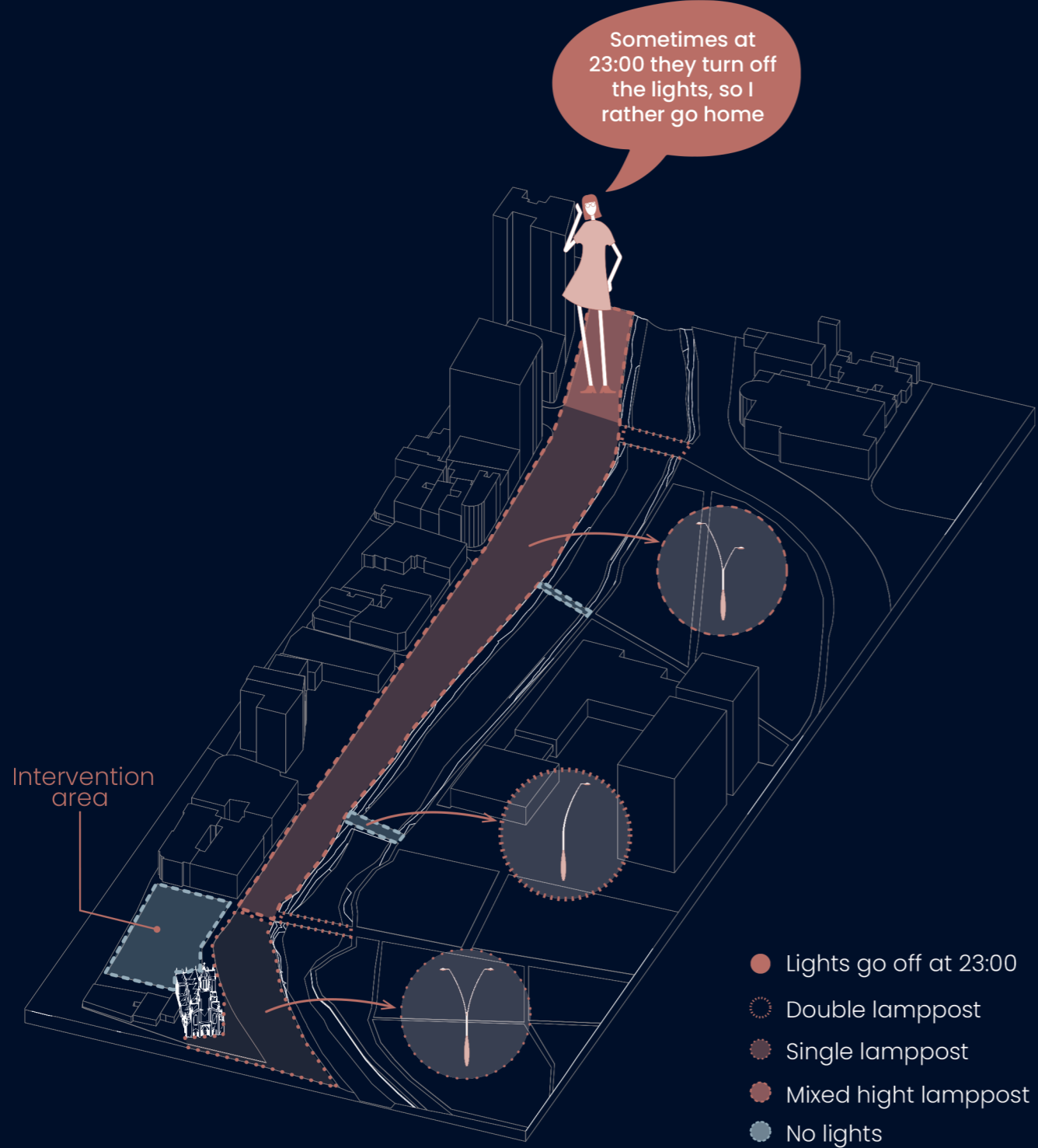


Figure 28: Lighting Typologies
Source: Own elaboration

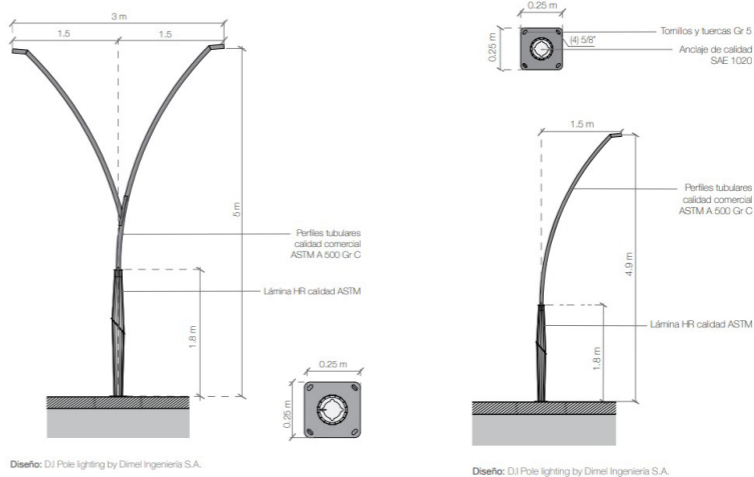


Figure 29 - 30: Types of luminaires
Source: MECoEP

7.6 Phase II: Surveys

During the multiple visits to the site, surveys were made to stakeholders, tourists and locals - mostly women - to understand their perception of safety regarding light, security and the different activities that can be carried out on the site. Interviews were made during the day and after dark, during the week-day and also during the week-end.

Questions:

- How do you feel in this space?
- Can you navigate easily after dark in the space?
- Do you live here? Are you a tourist?
- How far do you live from here?
- How did you get here?
- How accessible do you think it is this place?
- Do you come during weekdays or weekends?
- Why did you decide to come to this place?
- What type of activities do you do here?
- Is there any issue about the space during the day and after dark?
- When walking to the space during day and after dark do you use the same route?
- What part of the Boulevard do you like the most and why?
- How would you feel walking alone during the day and after dark in the space?
- How was this space in the past? What do you think has changed? What impact do you think the new activities have had?

7.6.1 Survey's Conclusions

The feedback from the interviews was good, however some of the interviewees were uncomfortable with answering or expressing their thoughts. Regarding the interviews, some conclusions were made which were useful for the design process:

- People's appropriation of the public space changed completely the perception of safety, since it increases the sense of belonging to the space, which, in turn, invites more people to make use of it
- Commerce and restaurants located in the concentration area influence the dynamics of the general space of the Boulevard
- During the day the Boulevard is not really used, but in the after dark the activities like dancing, going to the restaurant and playing music gather a lot of people, specifically during the weekends
- People feel safer when there is a presence of physical surveillance
- Men in general feel safe, even when they must walk alone through the Boulevard.
- Overall women feel comfortable in the linear Boulevard; however, they wouldn't go alone to the site, specially after dark.
- Even though women feel safe in the Boulevard, they wouldn't pass through the Parque de la Poesía after dark, due to lack of illumination and activities.
- People in general pass by the Parque de la Poesía in order to get to the concentration areas of the Boulevard.
- During the day the Parque de la Poesía is used by writers that transcribe letters and poetry, but after dark is completely empty and becomes a dark space due to lack of illumination.



Women's Interviews: Boulevard

Locals - Non Locals

Time of day: 19:00 - 20:00 - **Weekend**

12 Name: Laura Fernández Chacón
Age: 23
Profession: Leader of a youth organization

13 Name: Isabella Casas
Age: 23
Profession: Architect

14 Name: Marcela López
Age: 36
Profession: Health Administrator

15 Name: Jessica Correa
Age: 36
Profession: Oral Hygienist

16 Name: Camila
Age: 30
Profession: Forest Engineer

17 Name: Juliana
Age: 32
Profession: Psychologist

18 Name: Angelica Serrano
Age: 29
Profession: Industrial Engineer

19 Name: Jessica Carvajal
Age: 32
Profession: Sociologist

20 Name: María Paula Zapata Restrepo
Age: 21
Profession: Student

21 Name: Andrea Echeverry
Age: 35
Profession: Nurse

22 Name: Camila Guzmán Acero
Age: 23
Profession: Student

23 Name: Liliana Villegas
Age: 42
Profession: Accountant

24 Name: Daniela Manrique Torres
Age: 23
Profession: Student

Locals - Non Locals: Poetry Park

Time of day: 17:00 **Weekend**

25 Name: Claudia Sánchez
Age: 31
Gender: Female
Profession: Lawyer

26 Name: Verónica Chamorro
Age: 18
Gender: Female
Profession: Gastronomy student

27 Name: Jairo Lasprilla Jiménez
Age: 70
Gender: Male
Profession: Writer of the Poetry Park

Women's Interviews: Poetry Park

Locals - Non Locals

Time of day: 22:00 - **Weekend**

28 Name: Laura Valentina
Age: 24
Profession: Student of Social Communication

29 Name: Alejandra Castro
Age: 26
Profession: Independent worker, with a graphic arts business

Stakeholders

Time of day: 12:00 - 2:00 - **Weekday**

1 Name: Piedad Fernández
Age: 67
Gender: Female
Profession: Candy seller (informal vendor)

2 Name: Piedad Fernández
Age: 67
Gender: Female
Profession: Candy seller (informal vendor)

3 Name: Juani Peñar Nieto
Age: 69
Gender: Female
Profession: Rose seller (informal vendor)

4 Name: Adriana Gonzáles
Age: 27
Gender: Female
Profession: Barista

5 Name: María Teresa Quiroz
Age: 64
Gender: Female
Profession: Restaurant manager

6 Name: William Manuel Santa Coloma
Age: 24 years
Gender: Male
Profession: Street fruit vendor (informal vendor)

7 Name: Andrés Acevedo
Age: 28
Gender: Male
Profession: Motorcycle caretaker (informal)

8 Name: Juliana Muñoz Restrepo
Age: 31
Gender: Female
Profession: Waitress

9 Name: Joaquin Mora Velasquez
Age: 37
Gender: Male
Profession: Bartender

10 Name: Maria Angélica Hurtado
Age: 58
Gender: Female
Profession: Ice cream vendor (informal vendor)

11 Name: Adriana Garcés
Age: 24
Gender: Female
Profession: Waitress

7.7 Conclusions Phase I – II

After carrying out and separately completing the phases from one to three, which had been previously outlined in the methodological approach, a comprehensive analysis of the results obtained from each phase was conducted. This analysis led to the following observations regarding the analyzed space.

Daytime:

Based on field visits conducted at the site during the daytime hours on weekdays, it can be stated that during the day, the Boulevard del Río is a calm and moderately visited space. Most of the pedestrians present in the area used it primarily as a transitional area to reach other destinations. The few users present are individuals whose workplaces are nearby the case study, and they use it during the 12:00–14:00 time frame for their lunch break.

However, once this ends, the space remains mostly empty again. At the front of the area, there is an adjacent space to the linear area of the rest of the Boulevard called the “Parque de la Poesía,” where during weekdays, between the hours of approximately 8:00–17:00, a group of men can be found engaging in various types of writing, from drafting petitions to composing love letters. This interesting dynamic keeps the park active until before the after dark. During the weekend, the situation was found to be somewhat different from the previously described scenario, as the area experiences a higher flow of people, most of whom engage in contemplative activities primarily related to the commercial establishments surrounding the Boulevard.

Another important aspect to highlight about the Boulevard is that, despite being located in one of the more challenging areas of the city—due to the reasons previously outlined—citizens perceive it as a safe and livable space. This is particularly noteworthy because it is not only men who feel comfortable in the area; women who visit this space also consider it relatively safe and habitable.

After Dark:

Based on the analysis conducted during the after dark on weekdays, it was concluded that the Boulevard exhibits a more active character than it does during the same days in the daytime. A greater number of people can be seen, particularly in the central part of this space, engaging in the same types of contemplative activities witnessed during the day, with the difference being that, at this time, a greater variety of commercial establishments are open to the public. As for the Parque de la Poesía it was completely deserted due to a near-total lack of lighting.

During the weekend, the situation changes entirely on the Boulevard. The central area fills almost completely with visitors, as live music performances are held there, attracting a large number of people who gather to dance Salsa. Around this space, other types of contemplative activities can be observed, as well as a high percentage of people engaging in physical activities. This is the only time of the week when such events occur.

Likewise, the general perception of safety obtained through the interviews can be related to the presence of lighting and activities found in the case study. In the linear area of the boulevard,

where restaurants and other commercial establishments are located, along with the lighting, it is perceived as a safe space by the women interviewed. However, in the case of Parque de la Poesía, where there is a lack of lighting and a complete absence of activities, women tend to avoid it after dark, as it is associated with a low perception of safety on their part.

Daytime:

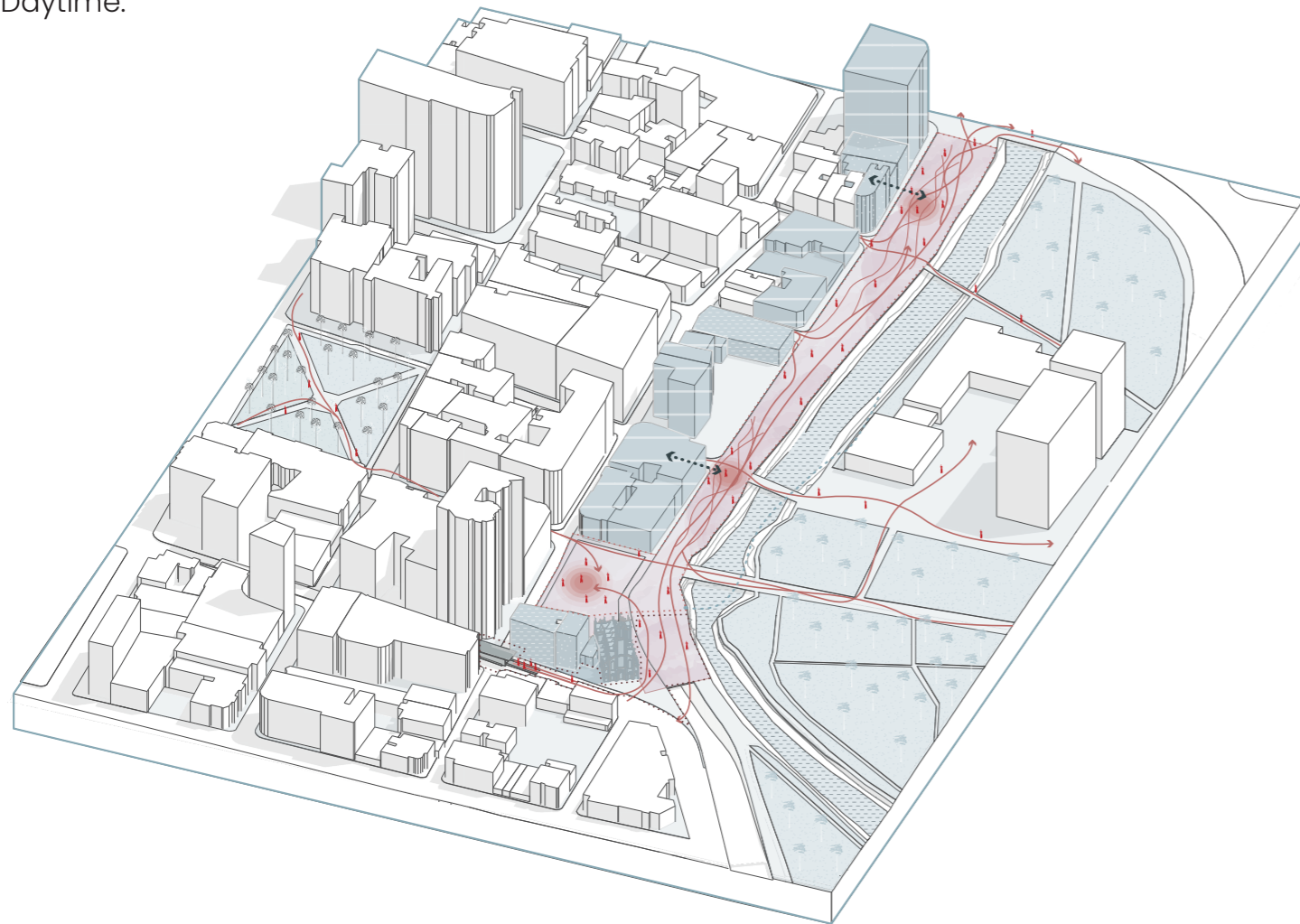


Figure 31: Conclusions Daytime
Source: Own Elaboration

After Dark:

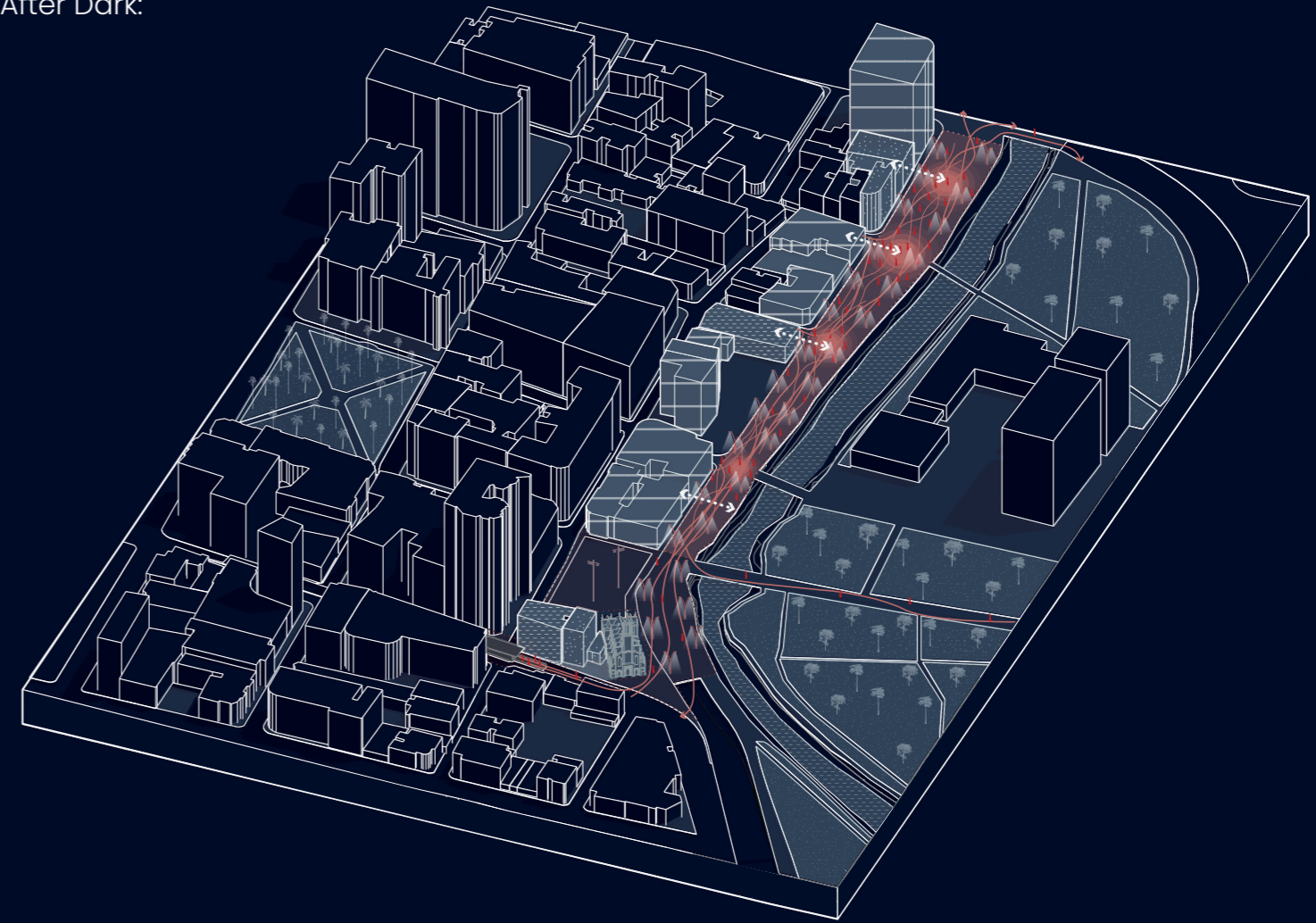


Figure 32: Conclusions After Dark
Source: Own Elaboration

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8. Case Study Part III: El Parque de la Poesía



8.1 Parque de la Poesía

8.2 History

8.3 Analysis

8.4 Lighting Design Principles

8.4.1 Activate

8.4.2 Diversify

8.4.3 Connect

REFERENCES



8.1 Parque de la Poesía

Based on the information collected from the previous analysis, the Parque de la Poesía is primarily frequented during the day by writers who use typewriters to compose letters and poems. Additionally, individuals are observed sitting and contemplating the park, along with passersby moving through the area. However, after dark, the park becomes unsafe and desolate, turning it into a space with no activity and a significant lack of lighting.

Consequently, it can be stated by the surveys results, most women agreed they would not feel safe visiting this area alone after dark. Additionally, they all agreed that the Parque de la Poesía is an unsafe place and they would not use it after dark. Furthermore, they tend to avoid the section with dense vegetation, since it hinders proper visibility, and contributes to the high contrast of the park.

To address these concerns, a lighting concept design will be developed, aiming to reactivate the space and provide new activities by improving the lighting with a gender perspective approach.

8.2 History

Former Hotel Alférez Real 1927 - 1972



Figure 1: Former Hotel Alférez Real

Source: <https://museolatertulia.com/obra/el-puente-ortiz-y-el-hotel-alferez-real-cali/>

The history of what is now known as the Park of Poetry dates back to 1927, when the Cali-based architectural firm Borrero and Ospina constructed the Alférez Real Hotel. The name of the hotel was given in recognition to the novel of the same name by the writer Eustaquio Palacios, published at the end of the 19th century. As for its appearance, the hotel's exterior facades were the only components of the building inspired by classical architecture, while the interior of the hotel was characterized by an Art-Déco style, which was popular at the time. Hotel accommodations in the city of Cali remained relatively scarce until the late 1960s. However, in 1972, the city organized that year's Panamerican Games, requiring the expansion of the

city's hotel infrastructure. This led to the construction of a new, modern hotel, causing the decline of the Alférez Real.

Demolition 1972



Figure 2: Former Hotel Alférez Real Demolition
Source: <https://repository.icesi.edu.co/items/5f9b8cea-3679-7785-e053-2cc003c84dc5>

As a result, the owners decided to demolish it and replace it with a tower to increase the profitability of the land. However, this project was never realized, and the lot was abandoned, gradually turning into a space of neglect and homelessness until, in 1995, it was transformed into the Poets' Park, as a tribute to the Valle del Cauca writers Jorge Isaacs, Carlos Villafañe, Ricardo Nieto, Octavio Gamboa, and Octavio Llanos.¹

1. Figueroa Pereira, E. A, *Un emblema olvidado de Cali: el Hotel Alférez Real (1927-1972)*, 2011, pp. 61-65

Parque de los Poetas - 1995

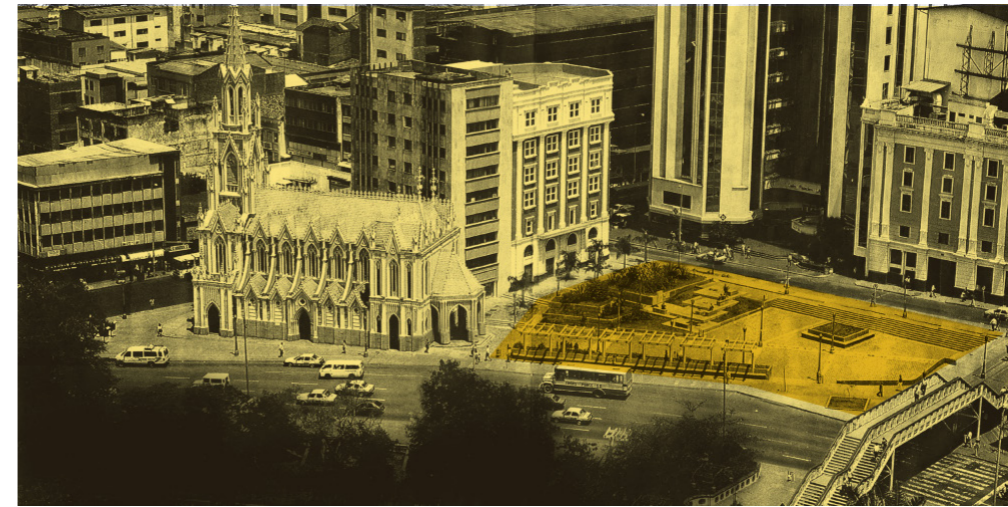


Figure 3: Parque de los Poetas
Source: <https://repository.icesi.edu.co/items/5f9b8cea-3679-7785-e053-2cc003c84dc5>

Parque de los Poetas - 2007



Figure 4: Writers with Typewriters
Source: <https://esculturasdecolombia.blogspot.com/2017/10/parque-de-los-poetas-jose-antonio.html>

In 2007, the “writers” from Plaza de Cayzedo were transferred to the park to carry out their work here. These individuals, equipped with typewriters, are responsible for performing all kinds of writing

tasks, ranging from drafting petitions and deeds to composing love letters and poems. They can be easily recognized because they are seated in the park under characteristic umbrellas.

Parque de la Poesía 2017 - Present Day

In 2017, the female poets of the city came together to rename the park to "Park of Poetry," so that under this name, homage would also be paid to the female poets from the department of Valle del Cauca, a name that the park has kept to this day.



"The women of Cali", in an act of symbolic self-repair and as a tribute to the hundreds of women poets, we renamed this place: Poetry Park"

November 25 of 2017

Figure 5: Naming of the Parque de los Poetas to Parque de la Poesía
Source: Own work

8.3 Analysis

To gain a deeper understanding of the specific site, it is relevant to conduct an analysis of the Parque de la Poesía in its current state. Throughout the previously conducted analysis, it became evident that, in addition to the deficits in aspects such as lighting, activities, and safety, the park is also a space that has been largely neglected by the municipal administration and, consequently, by the city's residents. Specifically, during the analysis, it was not possible to find detailed information regarding its planimetry, despite the fact that the Boulevard del Río project was developed in 2013, which included a minimal intervention within the park, limited to the installation of a fountain.

Furthermore, the observation phase was carried out during the Christmas season, where it became evident that public lighting was provided throughout the surrounding area, except for the park, where temporary infrastructure such as information points, police tents, and portable public restrooms were placed. These elements generate unpleasant odors and potential hiding spots, further contributing to the negative perception of safety within the park. Therefore, this thesis aims to restore the lost relevance of the space over time by integrating it with its vibrant surroundings, as well as attracting the community and reestablishing its use both during the day and after dark.

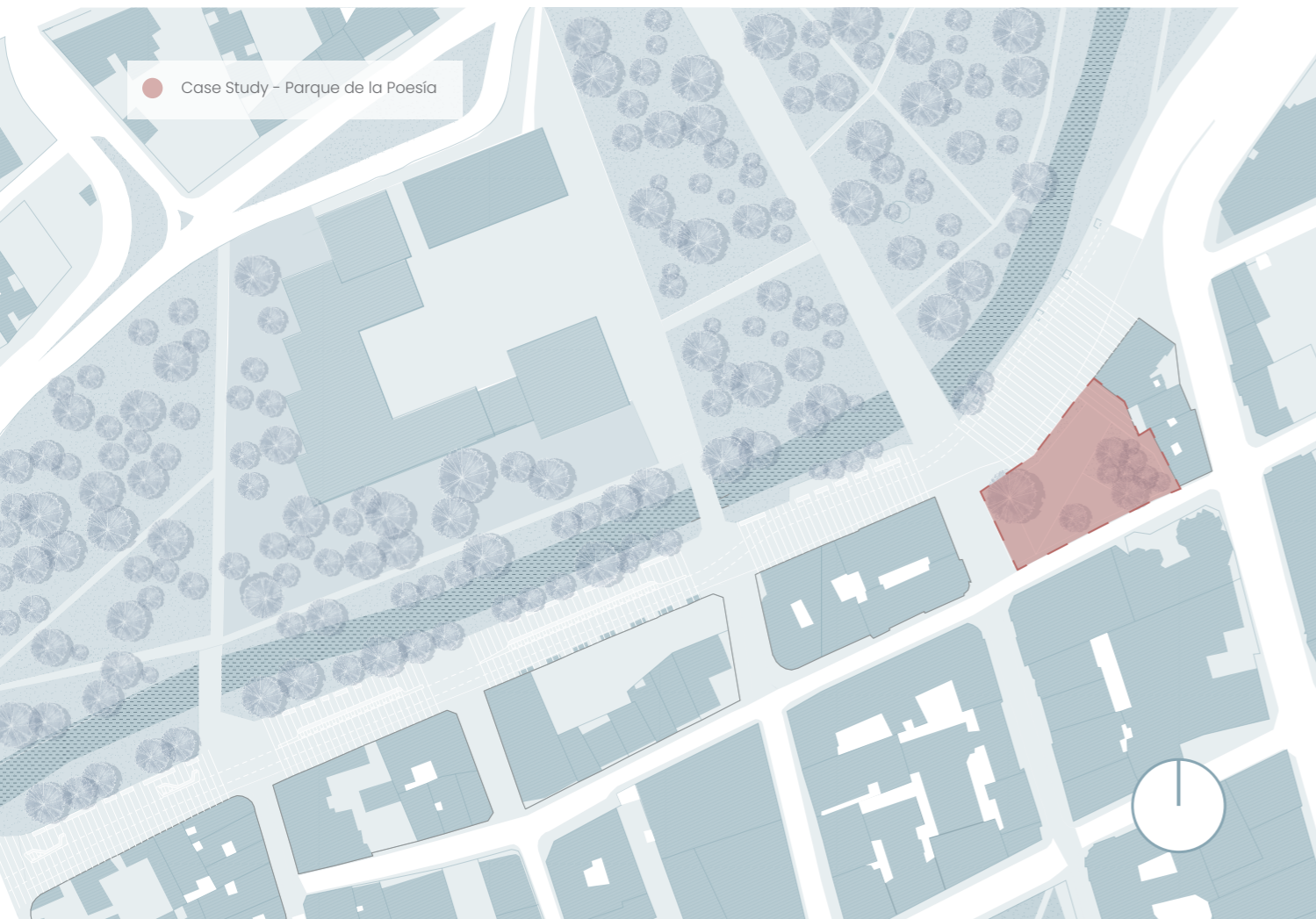


Figure 6: Contextualization Parque de la Poesía
Source: Own Elaboration

Mobility and Accessibility

The Parque de la Poesía is located at the beginning of the Boulevard del Río, forming part of it as an adjacent space that integrates its structure towards the east. This is surrounded by two vehicular streets—13th Street and 3rd Avenue— with a speed limit of 30 km/h. Two pedestrian streets—the Boulevard del Río (Avenida Colombia) and 12th Street, which connects to Simón Bolívar Park to the north and Plaza de Cayzedo to the south, therefore it is a space with easy pedestrian access. Additionally, the park is serviced by a bus station on 13th Street, which is one of the main lines providing access to the historic city center, and the Boulevard itself, with the rest to the city, as previously mentioned in previous chapters.

In terms of accessibility, the park features a depressed configuration relative to the Boulevard del Río. However, its design includes two ramps to facilitate access for people with reduced mobility: one next to La Ermita and the other parallel to the pedestrian axis of 12th Street. Furthermore, the park is designed with a series of perimeter staircases that provide access to the lower-level interior, improving both visibility and wayfinding. Inside the park, the escape routes are quite evident, as it is a large open space with various pathways leading to the exits.

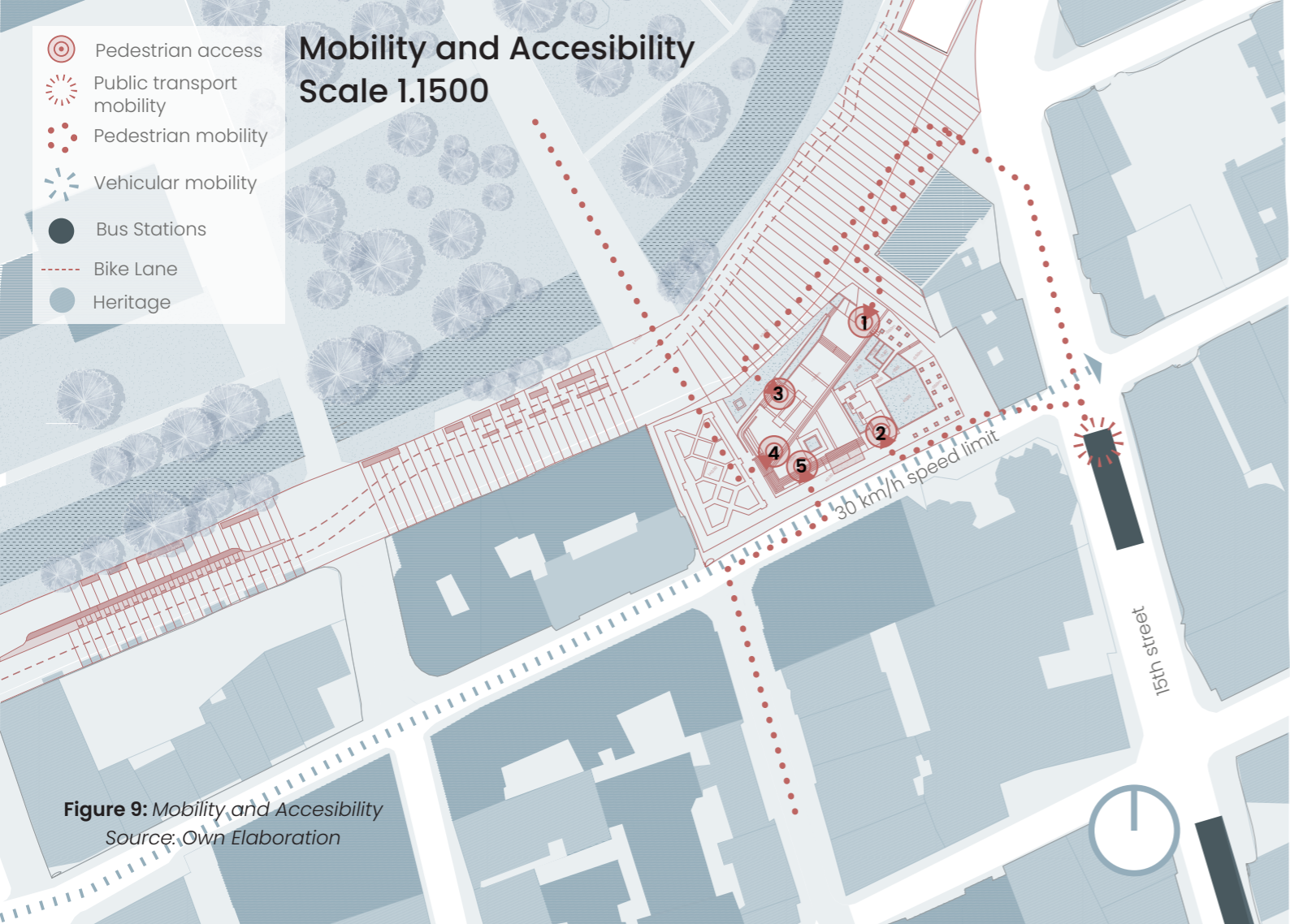


Figure 7: Police and Information Tends
Source: Own Elaboration



Figure 8: Temporary Public Bathrooms
Source: Own Elaboration

The entrances and boundaries are well-defined, and the park features different environments, which also enhance its safety. The pathways are clearly marked, and the park is a small space where people can easily orient themselves. Moreover, there is physical security during both the day and night, which contributes to the park's safety.



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4



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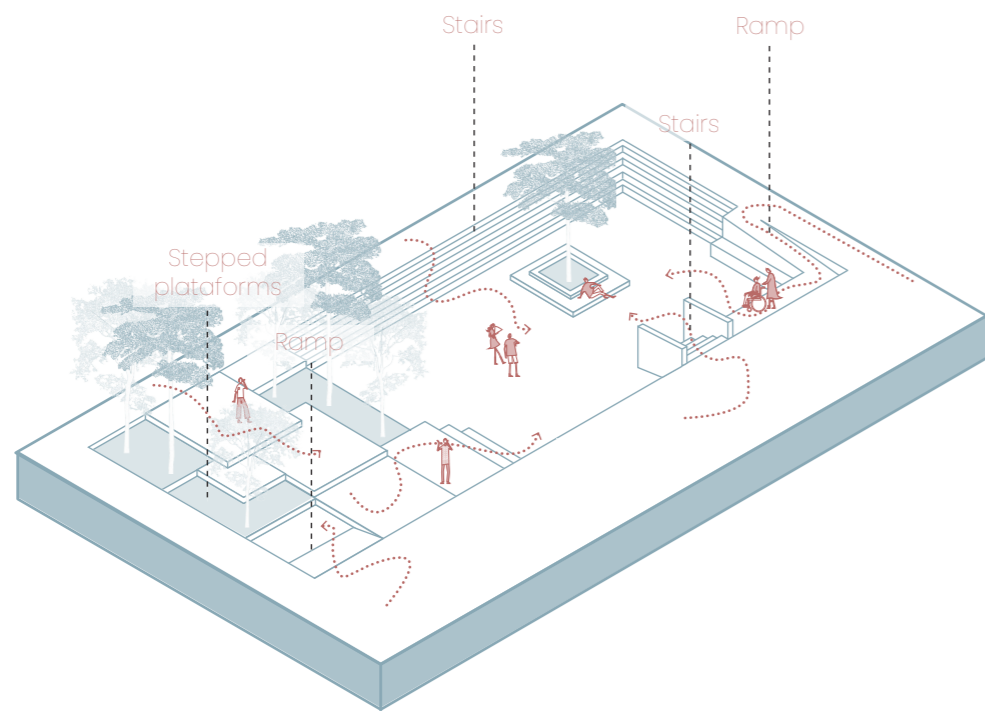


Figure 10: Mobility and Accessibility
Source: Own Elaboration

Figure 10.1-10.5: Accessibility
Parque de la Poesía
Source: Google Maps

Zoning and Uses

The park consists of two distinct spaces. The first features a hard-paved surface, which is depressed and includes a piece of furniture with integrated vegetation, providing shade to its users. In this area, the perimeter stairways also serve as spontaneous seating and meeting spaces within the park.

The second zone consists of stepped platforms, some of which are furnished, while others function as informal seating. This zone also combines hard and soft surfaces, with dense vegetation, creating a cool and shaded microclimate. However, it could affect visibility, creating potential hiding spots.

Both areas are differentiated by their use: the first is used by the writers, creating an outdoor workspace throughout the day. The second area is marked by iron statues that form a commemorative space dedicated to the poets who have contributed to the city's cultural development, establishing a symbolic reference point within the park.

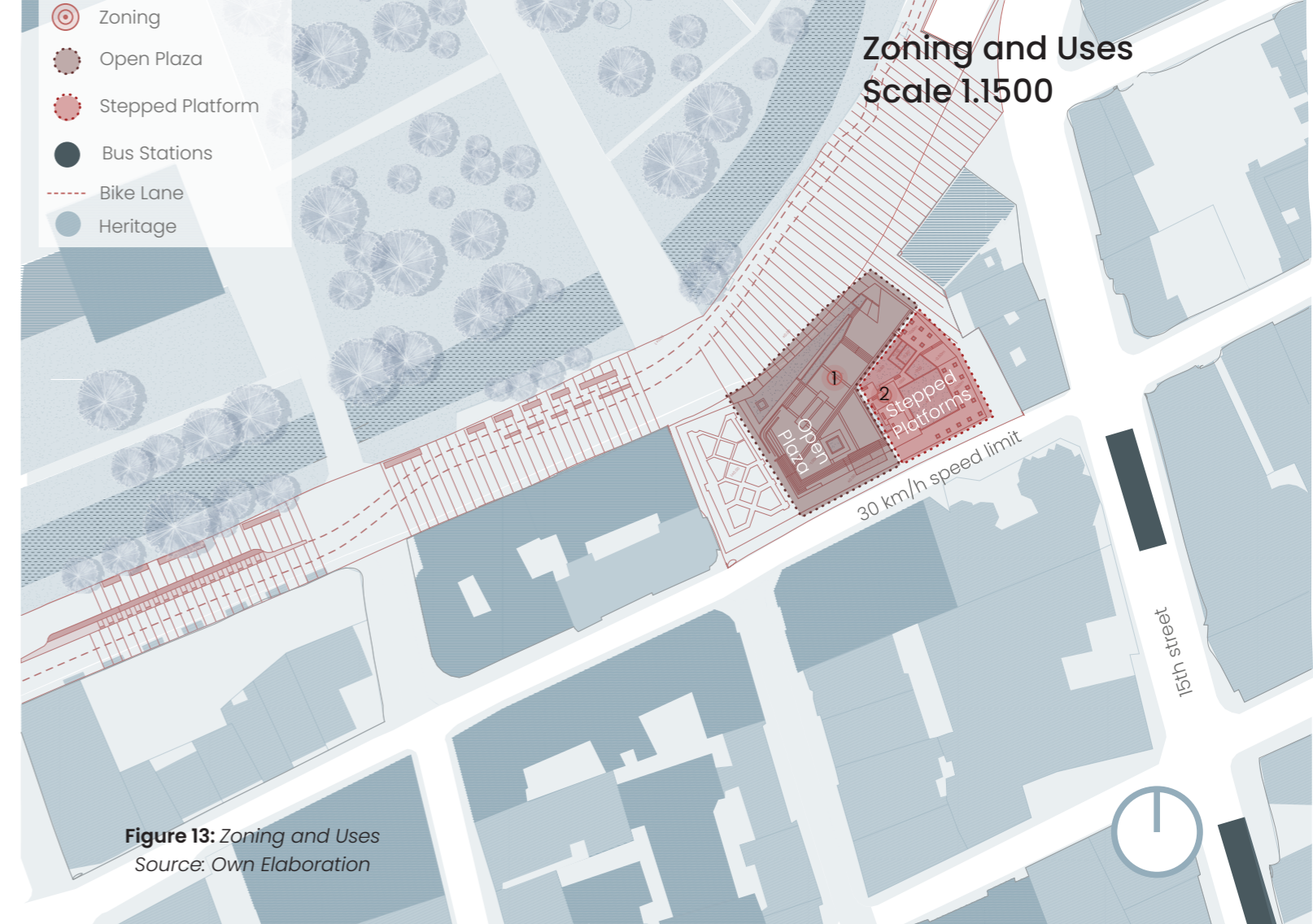


Figure 13: Zoning and Uses
Source: Own Elaboration



Figure 11: Zone 1
Source: Google Maps



Figure 12: Zone 2
Source: Google Maps

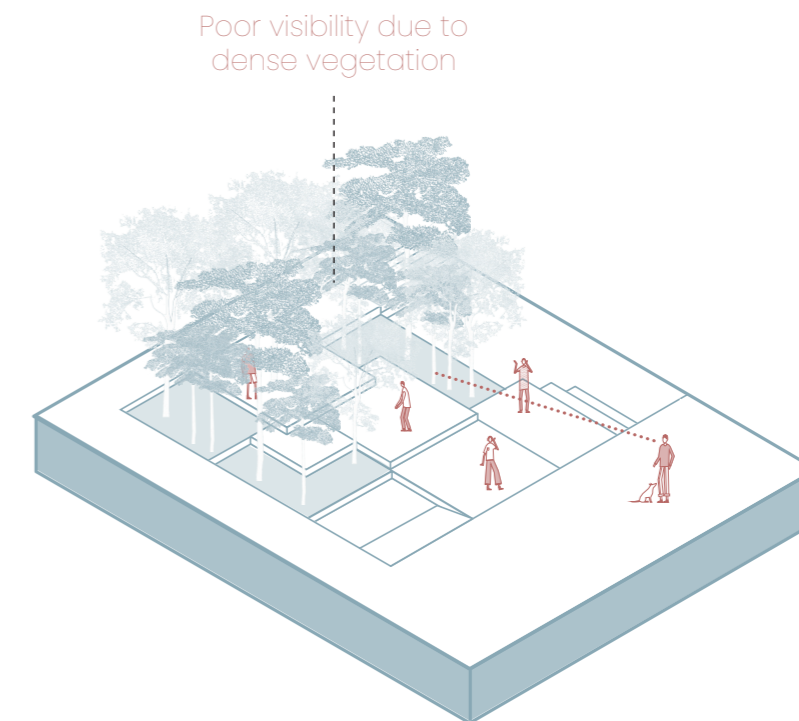


Figure 14: Dense Vegetation
Source: Own Elaboration

Heritage

As mentioned previously, the park is located in the Historic Center of the city and is surrounded by a concentration of architectural heritage. To the north of the park there is the Puente Ortiz, considered the oldest bridge constructed over the Río Cali. To the east, the rear façade of the La Ermita Church is located, meaning there is no direct access from this side. To the south, the Teatro Jorge Isaacs, does not have a direct access either. On the western side, the abandoned Edificio Coltabacos is situated, which will be transformed into a cultural center in the near future, with the main access oriented towards the park. This positioning establishes the park as a threshold welcoming visitors to the boulevard and the series of surrounding heritage buildings.



Figure 15: Edificio Coltabacos
Source: Google Maps

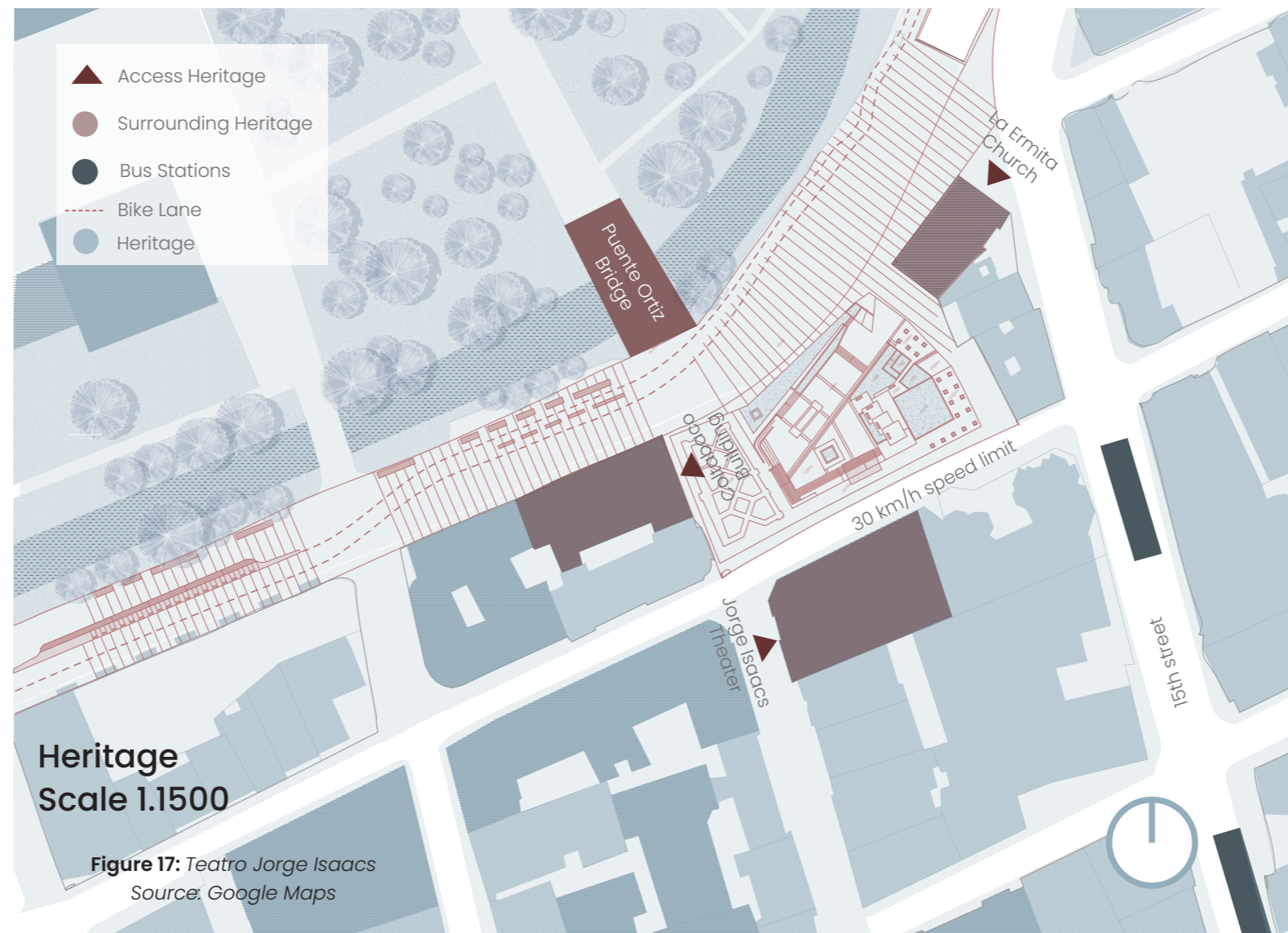


Figure 17: Teatro Jorge Isaacs
Source: Google Maps



Figure 18: Iglesia La Ermita
Source: Google Maps

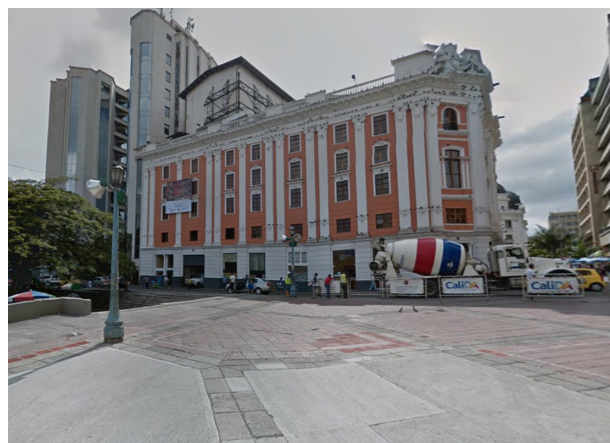


Figure 16: Teatro Jorge Isaacs
Source: Google Maps



Figure 19: Puente Ortiz
Source: <https://x.com/QuieroCali/status/123134101114303489>

As mentioned previously, the park becomes an empty and dark space during the night, as it lacks adequate lighting compared to the boulevard. Currently, the park is only equipped with two glary columns, whose light creates excessive glare, resulting in an extreme contrast within the space due to their out of scale proportion where some areas remain poorly lit and others completely dark.

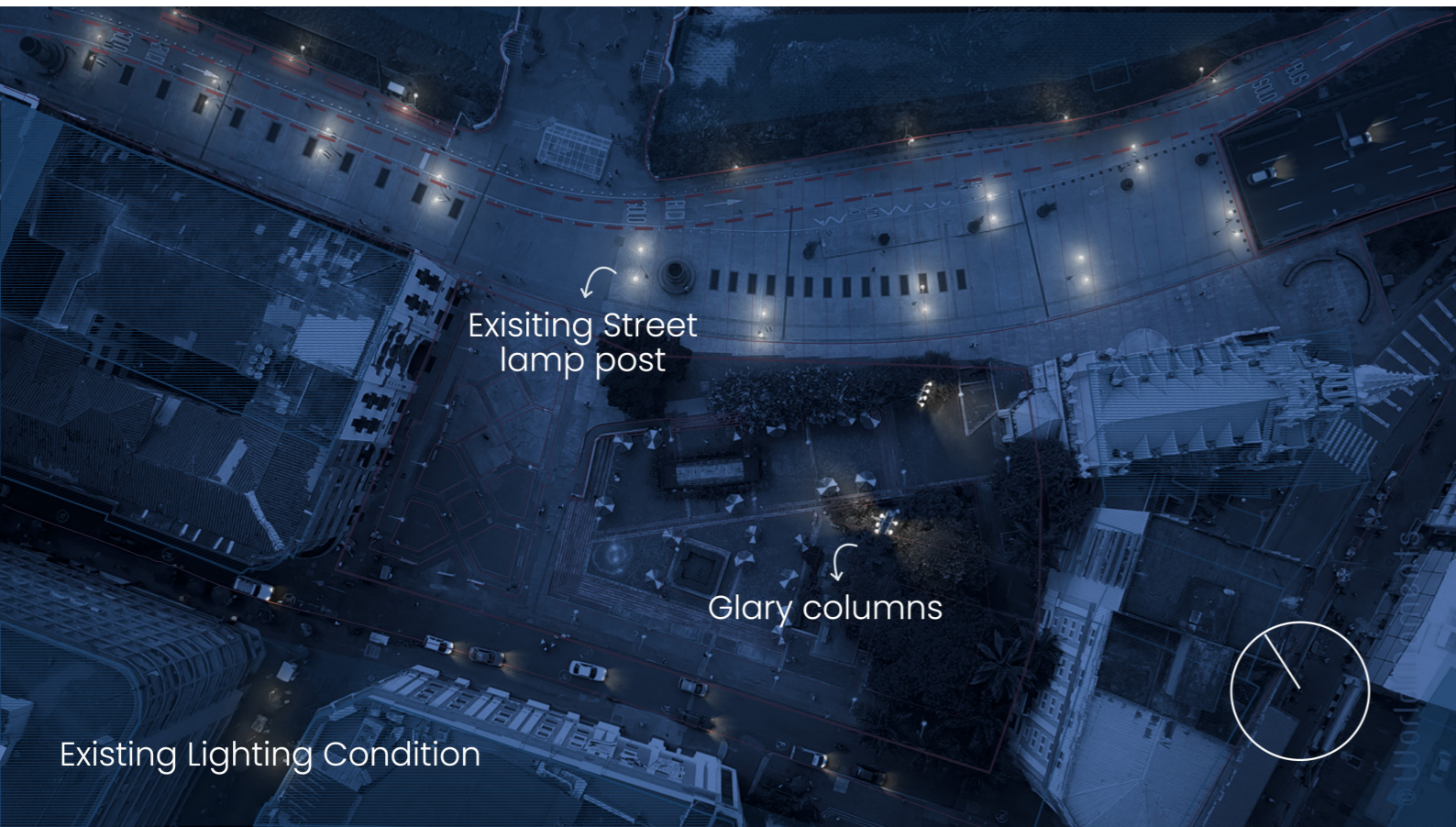


Figure 20: Render Night Plan
Source: Own Elaboration

also fails to provide efficient luminosity coverage. Additionally, these glary columns are not turned on daily, which limits the park's functionality, safety, visibility, and comfort after dark.

For these reasons, the conceptual lighting design is based on three core concepts: connecting, activating, and diversifying the space.

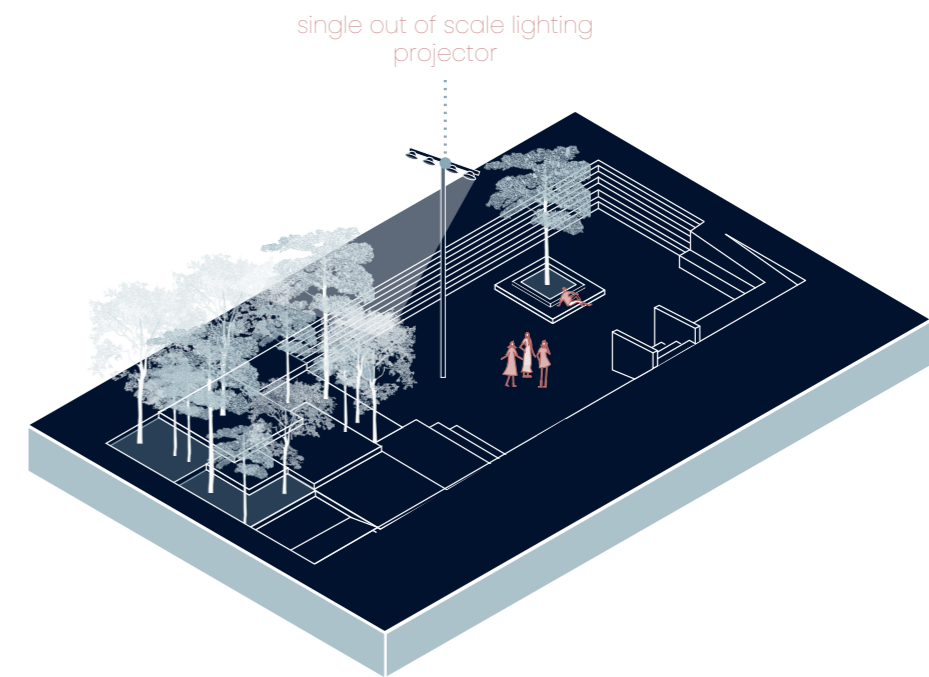


Figure 21: Glary Colymns
Source: Own Elaboration

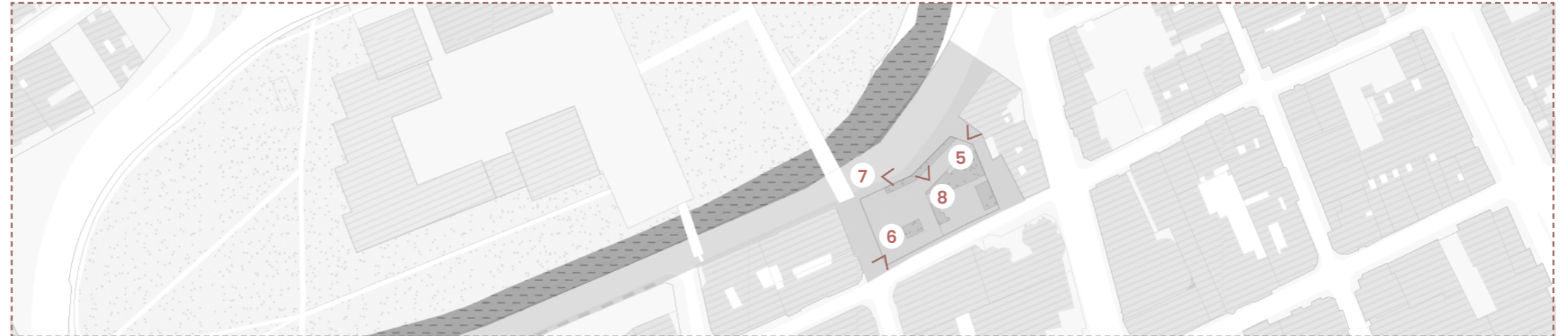
8.4 Lighting Design Principles

Day Time



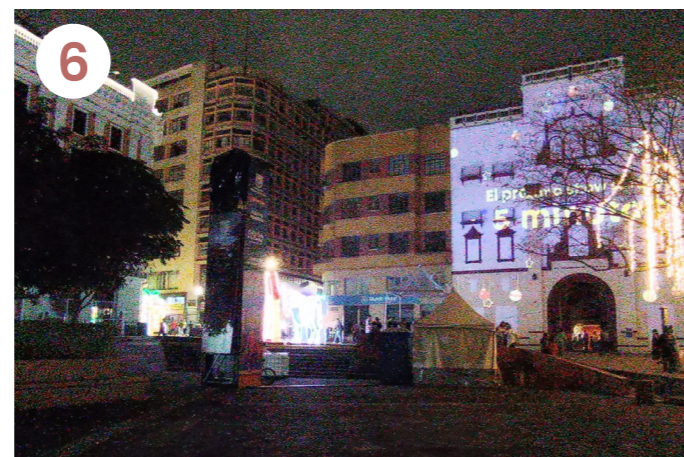
No user presence during the weekend in the Parque de la Poesía due to the lack of activities

Thanks to the presence of the writers who work in the park, there is a small presence of people in the vicinity



After Dark

Little lighting after dark inside the Parque de la Poesía, despite having two reflectors, these are not used and the lighting that is observed is temporary, since it only appears during the Christmas season



8.4.1 Activate

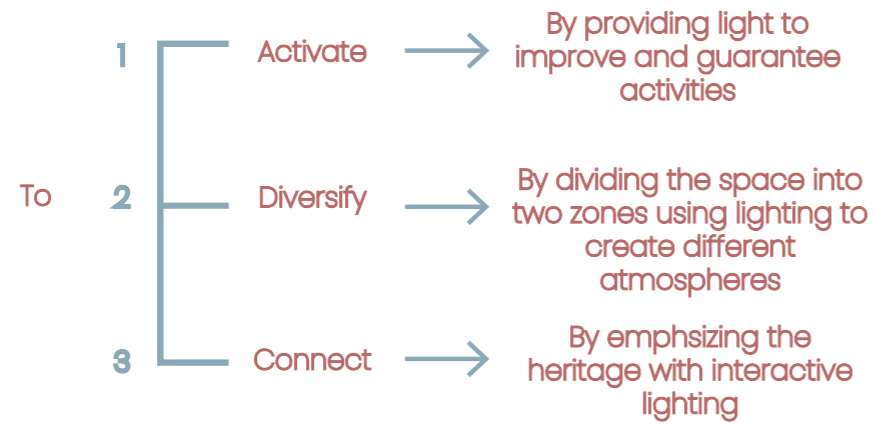


Figure 22: Lighting Principles
Source: Own Elaboration

Through this concept, the aim is to activate the park and transform it into a safety and functional space after dark. As previously mentioned, the park suffers from a lighting deficiency, which leads to a lack of activities, creating an inactive, underused space with a low perception of safety, especially among the women interviewed. The goal is to counteract the high contrast created by the single existing light source (glary column) with a lighting design that ensures adequate visibility, while fostering new dynamics within the park.

Specifically, through strategic lighting, the intention is to provide activities of a calmer nature, distinct from those already present on the boulevard, thereby attracting diverse user groups and transforming the space into an inclusive environment. With appropriate lighting, the park will promote activities such as reading, writing, contemplation, and other practices that encourage people to remain and engage with the space after dark, ultimately transforming the park into a more attractive and accessible public realm for the entire community.

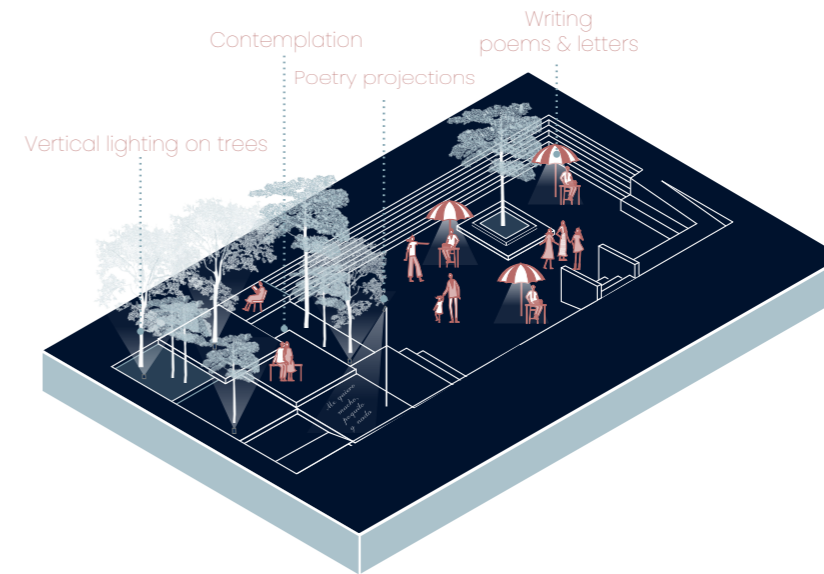


Figure 23: Activate the Park
Source: Own Elaboration

8.4.2 Diversify

As previously explained, the park is divided into two distinct areas, and through the proposed lighting design, the aim is to enhance the identity of these two existing zones. The first area is proposed as the interactive zone, where writers currently gather. By lighting the umbrellas, this tradition can be carried on even after dark, creating a vibrant and stimulating atmosphere.

In contrast, in the stepped platform area, characterized by dense vegetation, the proposal is to implement subtle and soft lighting to create a space with a more calm, introspective, and darker character, which will be identified as a commemorative space for the poets represented through iron statues that will receive appropriate illumination. This principle will also be reinforced by incorporating lighting fixtures such as an image projector,

through which fragments of their poems will be reflected on the ground. This differentiation allows users to engage with the space according to their needs, by offering distinct areas with varied characteristics and atmospheres.

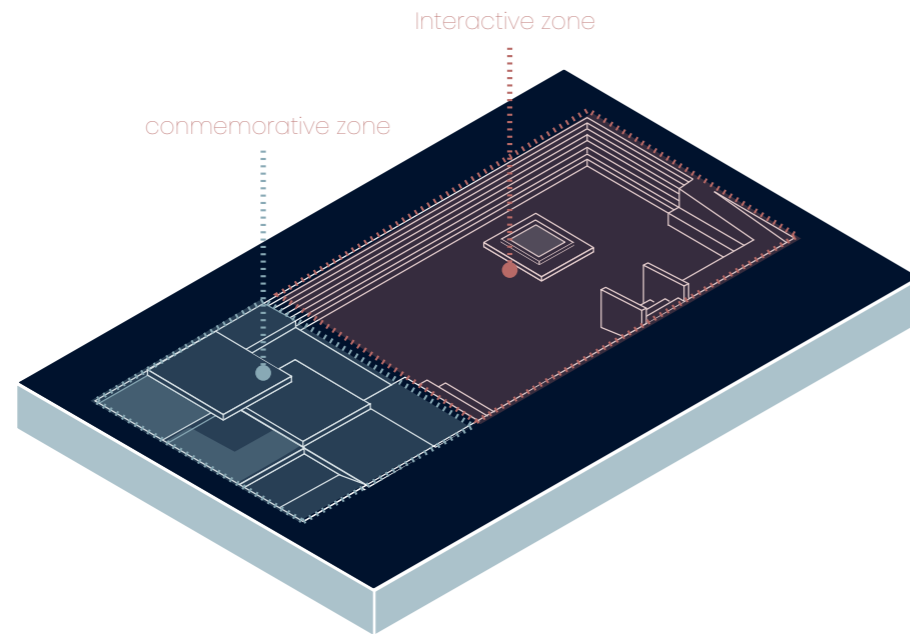


Figure 24 : Diversify
Source: Own Elaboration

8.4.2 Connect

The proposed interactive zone is surrounded by several heritage landmarks, which will serve as spatial articulators to effectively link the park —currently a passage zone— with its surroundings and the rest of the city. Through lighting, these landmarks will be emphasized to reinforce their role as urban reference points and establish a visual connection between the park and the surrounding environment. Additionally, the facades of Iglesia La Ermita, the Teatro Jorge Isaacs, and the edificio Coltabacos will feature interactive lighting, allowing citizens to project literary writings via a touchscreen interface. This will honor, its current

name -Parque de la Poesía- and foster a deeper-rooted identity within the park, inviting citizens to influence the lighting, enabling spaces to be adjusted according to specific needs, fostering a sense of ownership, and breathing new life into the space itself by involving the community and creating more inclusive environments.

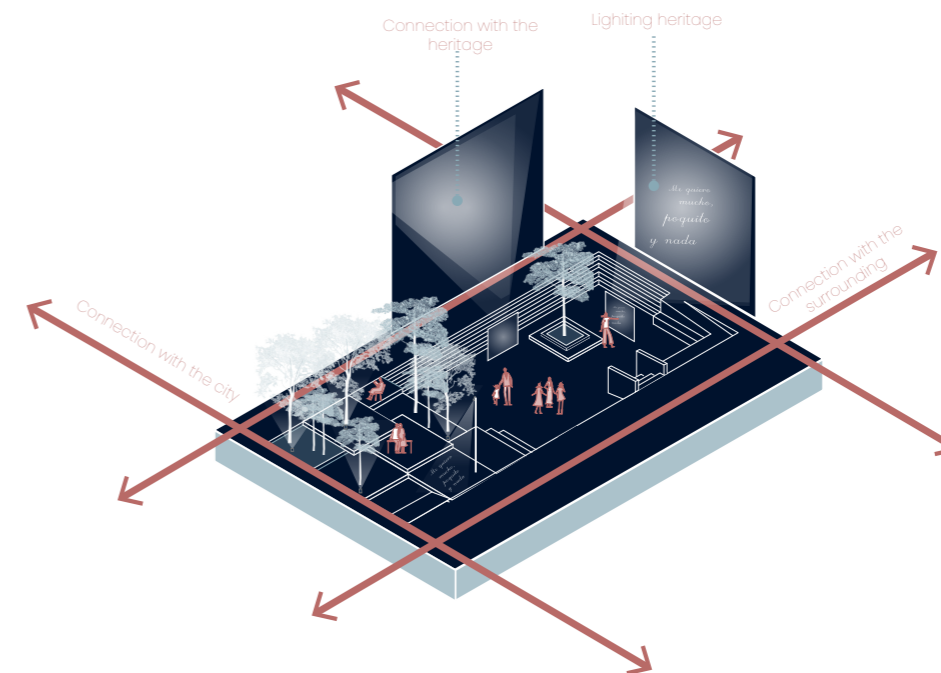


Figure 25: Heritage as a connecting element
Source: Own Elaboration

8.5 Implemented Lighting Typology

The park's lighting proposal is based on the integration of three types of lighting that respond to different dynamics and uses of the space.

Functional lighting through the use of pedestrian scale lighting to ensures visibility and safety in daily use to guarantee proper lighting on the pathways, as well, as the use of vertical lighting

in trees to highlight their presence within the environment, allowing users to recognize facial features and the surroundings.

Activity lighting, implemented only when specific interactions occur, such as the lighting on the umbrellas of the writers or the spotlights that project texts onto the ground, creating adaptable atmospheres according to the space's use.

Finally, **event lighting** is used for special occasions, such as weekends, where lighting projections on the facades of heritage buildings transform the park into a dynamic stage that strengthens its connection to the city and culture. This strategy enables an efficient use of light, balancing functionality, interaction, and memory.

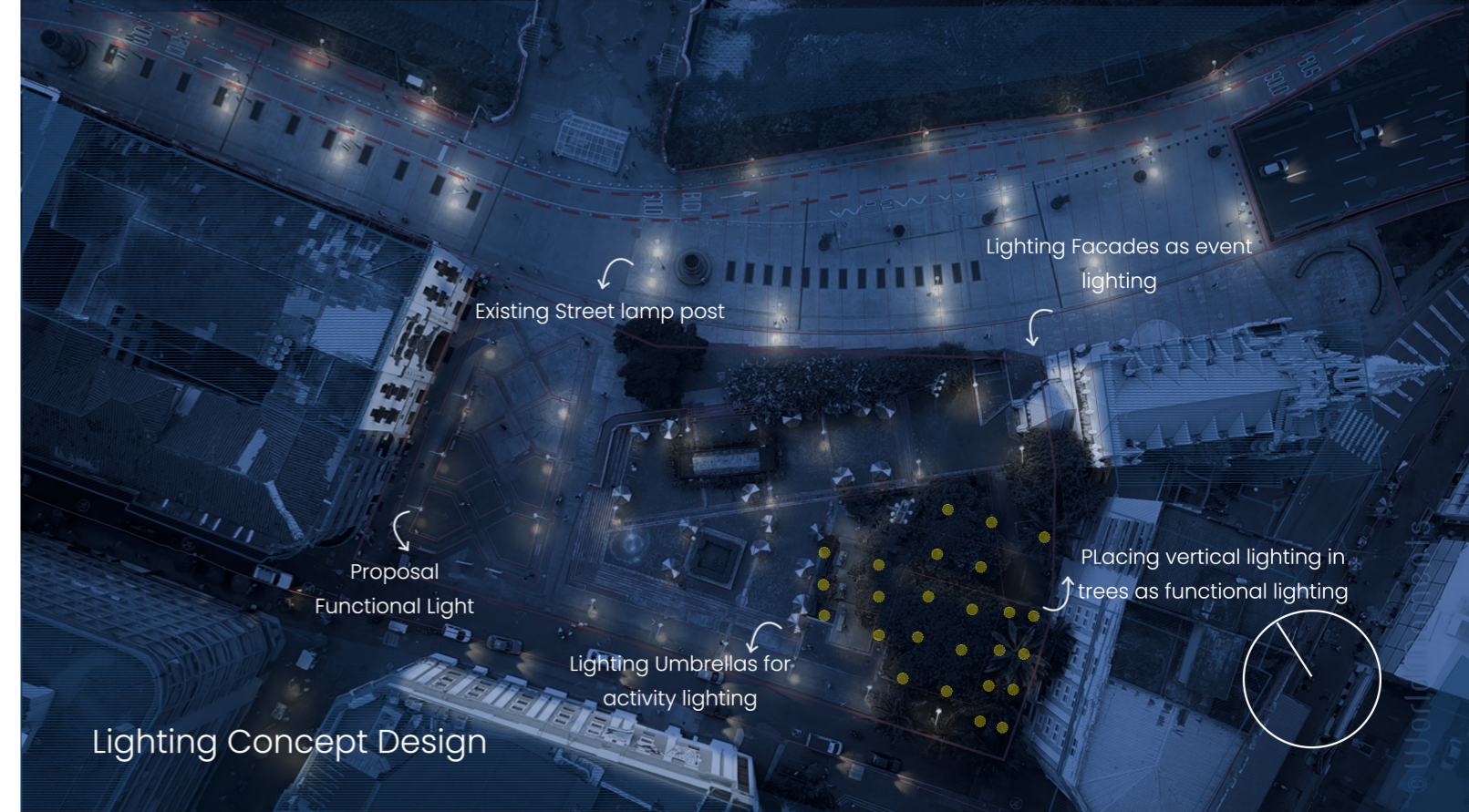


Figure 27: Lighting Concept Design
Source: Own Elaboration

Timetable		
Type of Lighting	Use	Lighting fixtures
Functional Lighting	Everyday	Lighting poles Vertical lighting on trees
Activity Lighting	when there are activities	Umbrellas Image projector
Event Lighting	Weekends/ events	Interactive lighting Image projector

Figure 26: Time Table
Source: Own Elaboration

8.5.1 Visual I



DAYTIME



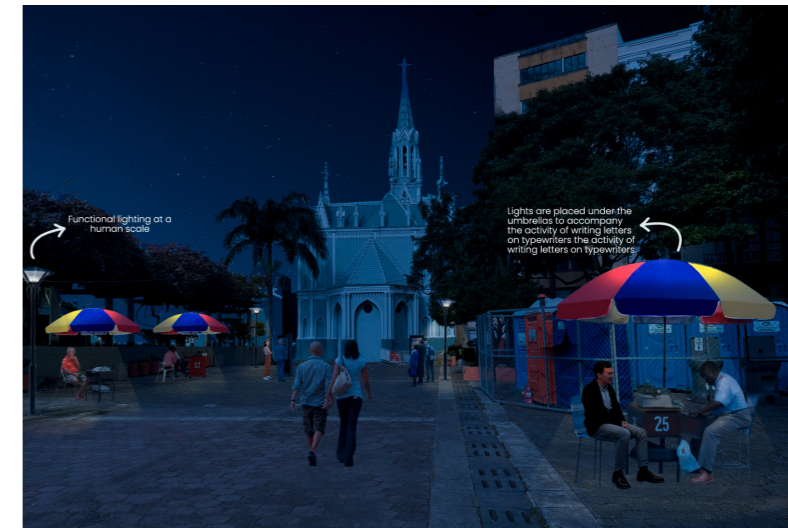
AFTERDARK



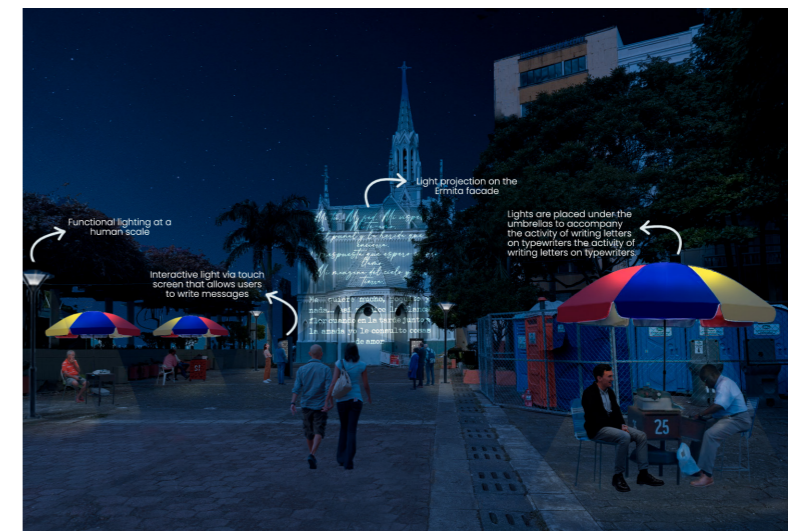
FUNCTIONAL LIGHTING



ACTIVITY LIGHTING



EVENT LIGHTING





8.5.1 Visual II



DAYTIME



AFTERDARK



FUNCTIONAL LIGHTING



ACTIVITY LIGHTING



EVENT LIGHTING





Removal of tents and objects that obstruct visibility

Light projection on Coltabaco's building facade

Lights are placed under the umbrellas to accompany the activity of writing letters on typewriters the activity of writing letters on typewriters.

Interactive light via touch screen that allows users to write messages

Functional lighting at a human scale

8.5.1 Visual III



DAYTIME



AFTERDARK



FUNCTIONAL LIGHTING



ACTIVITY LIGHTING



EVENT LIGHTING





Light projection of words on Jorge Isaacs Theater facade

Functional lighting at a human scale

Lights are placed under the umbrellas to accompany the activity of writing letters on typewriters. the activity of writing letters on typewriters.

Interactive light via touch screen that allows users to write messages

8.5.1 Visual IV



DAYTIME



AFTERDARK



FUNCTIONAL LIGHTING



ACTIVITY LIGHTING



EVENT LIGHTING





9. Conclusions

Although lighting is a fundamental factor in public spaces—providing comfort, visibility, and enabling activities that would otherwise not be possible after nightfall—it is not sufficient on its own to guarantee a complete and adequate perception of safety for women in public spaces. This is because many other elements interact and can influence this perception. Factors such as the individual user, psychological aspects, surrounding activities, the space itself, and/or other infrastructure all play a role.

Therefore, it is necessary to implement a holistic lighting design that considers these additional factors. Lighting should also be integrated from the beginning of the design process and included in all phases of the project. Furthermore, culture, society, and education play a crucial role in this area. For this reason, understanding the context and social dynamics is essential to determine the best strategies to implement and their scope. For instance, in the particular case of this thesis, it was observed that women felt a greater perception of safety when there was a physical security presence.

On the other hand, illuminating a space or ensuring its proper condition does not necessarily result in a drastic improvement in the perception of safety if there is no sense of ownership among its users. It is therefore essential to involve the local community in decision-making when proposing a lighting design.

Regarding the case study and the conceptual lighting design, it can be concluded that appropriate lighting after nightfall ensures that spaces actively used during the day do not become deserted, which affects women's perception of safety and diminishes the potential for these spaces to be used as

frequently and with the same atmosphere as during the day.

However, the scope of the project remains as a conceptual design due to the difficulty of consistently engaging with the community for geographical reasons. Nonetheless, the opinions and aspirations of the women who use the case study area were considered at the beginning of the methodology to achieve an inclusive design that fosters the creation of welcoming spaces through lighting.

Glossary

Safety:

Safety is a human right and requires factors as: personal security, employment, resources, health, property and freedom of fear. (Maslow,1954)

Urban Safety:

Semi-economic factors affect the safety of women: poverty and socio-economic status, infrastructure, usage of spaces and familiarity, societal attitudes and attitude of the police. Urban safety also Depends on: Individual factor, contextual factors | social and physical and social-cultural factors (Allessie, 2022)

Fear of Crime:

Fear of crime, as it distinguishes from different forms of perceived safety, such as general feeling safe in society or traffic safety. Koskela and Pain (1999) describe the fear of crime as 'an emotion which is situated in the local details of individuals' circumstances and life courses and sensitive to spatial, temporal, and social contexts' (p.271)

Female Fear:

Women's fear in urban settings is related to many factors, including previous victimization, women's feelings of physical weakness, warnings about women's vulnerability, and especially women's fear of sexual assault. (Gordon and Riger, 1981) Women's greater fears are sexual harrasment (staring, groping, stalking) and rape.

Gender Violence:

Is violence directed against a person because of that person's gender or violence that affects persons of a particular gender disproportionately. (European Commission, 2024)

Rape Culture:

Set of attitudes that treat sexual violence against women as normalised and excused through societal attitudes and actions towards gender and sexuality (Khatana, 2020)

Intersectionality:

Is a term used to describe the idea that social relations involve multiple intersecting forms of discrimination. This means a person might experience several forms of discrimination, such as, sexism, racism and ableism, all occurring at the same time (Council of Europe, 2024)

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