

MADE IN BOGOTÁ

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250000

HYBRID BOGOTÁ HYBRID FACTORY

Economic and spatial integration of industry in the city. Understanding zoning and local urban policies to enhance adaptive reuse and the diversification of activities in single plots to keep manufacturing alive in the expanded city center of Bogotá. Case Study: “Zona Industrial”, in the locality of Puente Aranda, Bogotá, Colombia.

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ABSTRACT

Made in Bogotá as a research project has been developed in different stages over time. It started in 2015, under the name of "Atlas Eclético / Bavaria Centro" at the Pontificia Universidad Javeriana in Bogotá, Colombia, in the development of an atelier course: **Centros Urbanos** (Urban Centers) under the direction of Fernando Rubio and Jacobo Molina, with the support of other professionals (Fabio Avendaño, Natalia Valencia, Luz Mery Rodelo, Ángela León and Andrea Mozzato) and developed as a **teamwork** of students formed by Laura Pérez, Ricardo Stähelin, Melissa Pachón and the author of this thesis. This first approach for its time was quite complex, in a way that most of the work was done in understanding the territory through different field visits and interviews with inhabitants and workers in the area.

Years later, now as a master's degree student at Politecnico di Torino, I decided to continue with this research and with the development of an urban proposal. This time being followed by Professor Matteo Robiglio and framing this work under the ongoing research of Professor Nina Rappaport with her **Vertical Urban Factory** project, which marked the structure under which this thesis was developed, generally keeping the same sector of the city but this time with a much clearer approach, which redirected and facilitated the focus of the research.

So, I started with the question: what is the relationship industry-city? It is clear that it is something too wide so I needed to limit it, my interest turned towards understanding the industry in the Latin American city. In this way, I came to the concept of Company Towns and its influence in Latin America because it seemed coherent to start studying cases of the first urban settlements that combined housing with work, understood from the productive activity framed within the **industry/manufacturing**. And this was precisely the next question to answer, what really is industry and what is manufacturing or at least how the modern city defined it since its appearance in the twentieth century and how it is still defined today in the land use regulations and policies.

After trying to answer these questions, through a limited case study in the center of the city of Bogotá, I started to deepen, passing from a metropolitan scale, to a zonal and finally to a neighborhood scale, understanding the nature, the factors and phenomena that make this case study unique, that is, its local particularities, in comparison to its previously explained global factors of the general problem. How does this area really look like? How does it feel being there as a tourist, as a pedestrian, as a resident or as a worker? In this way I came to concepts such as **informality** and the **"hybrid"**. At this point, feeling that I already had the necessary tools to face a successive step, I explained through scenarios which is the future that I believe possible for the area in relation to its position in the city and in the region, to subsequently make a master plan that finally sought to propose practical strategies at a block scale, in which it was sought to give a contemporary response to this problem of modernism of making the industry live with housing, attacking it from sustainability this time around.

CHAPTER I

THE

FACTORY

IN THE

LATIN

AMERICAN

CITY

INTRODUCTION

Historical and ideological context of the factory in the Latin American city

When we think of industry and the arrival of the factory as a new productive activity, it is impossible not to relate it to the beginning of the city as we know it today. Thanks to the factory, the migration from rural areas to a new consolidation of urban life was generated, leading to the appearance of the first forms of planning/zoning in the beginning of the 20th century. However, this situation is usually understood (and it makes sense that it is) from the powers that lead this movement: in general terms USA and Europe. However, it is necessary to understand this scenario from developing countries such as Latin Americans. This is demonstrable from the Manuel Castells's multi-ethnic and multicultural position. He states that structural phenomena such as: technological change, digital culture and globalization, or in this case: the industrial revolutions, all must be seen from different points of view to analyze what is characteristic of each culture and then its interdependence. In other words, the industry of Bogotá is correlated to industries of cities all over the country and the world, so even if it is not the main node in this network of industries it is worth watching and necessary for the network to work as a whole. Emphasizing, I consider it important to understand how the ideas of industrialization have been translated to these other countries since its inception in the 20th century, how it is being done today and the possibilities there are to implement.

Some of these questions are easily solved by consulting history books, for example, Chapter 6 of Contemporary History of Latin America in its Third Part: Exhaustion of the Neocolonial Order, in which Halperin Donghi explains in detail how world economic crises affected or not Latin America, in addition to the changes in its dependency relationship towards the powerhouses, the motivations behind it and consequences. However, not being the objective of this thesis to detail the historical framework of this situation, I present below a paragraph of this text suggestively as an important starting point for who is interested in deepening the subject:

"From the 20s, while the foundations of the Latin American economic order became weaker, it (the Latin American order) acquired a new complexity. In major countries, industrialization made significant progress, thanks to the expansion of local demand sustained by the previous advance of the export economy. Towards this industrialization, during the 20s, a part of the foreign investment that used to pay credit to the state and to the primary and services sector was turned over. The contrast between the weakness of the old core of the economy (the primary sector) and its tendency to expand into new activities, translates into an imbalance that can only be saved thanks to credits and investments from no longer England, but especially from the USA, the new financial center". (Halperin Donghi, 1967)

Industry is usually cataloged as a identical typology around the globe, it seems to be the most generic thing that modernism left us in cities, but I insist: is European or North American industry really comparable to the Latin American industry? Is it spatially comparable? Is its relationship with the development of urban planning during the twentieth century the same? The idea of developing this thesis is based on the fact that, on a personal note, during my adolescence I had a concept of industry marked by visual (imaginary) referents of "industrial powerhouses" I did not actually know while I had no awareness of the local industry. In fact, I consider that it could even be understood as a problem of citizen culture in which there is no reflection on what we are making, on what is being produced. On the contrary, we tend to focus on deciding what is the new import product to be consumed. This became evident to me when I started living in a city like Turin, which today is perhaps not what it used to be in the last century, but it was clear how different the way of approaching industry was, starting from the inhabitants. The product of the local factory is supported, the local gastronomic product is venerated, etc. This cultural shock I experienced was my starting point.

Put in a colloquial way, I felt that in Bogotá it was necessary to start asking ourselves about what is "Made in Colombia", even more now that all products seem to have the same "Made in China" or "Made in Bangladesh" or Vietnam tag. And even more so when the conditions under which some of these products are manufactured are becoming more visible in mainstream media such as the so called "fast fashion" industry and its headquarters in developing countries. When trying to personally answer the question of what is being produced in Bogotá or Colombia, first at the national level I thought, about the raw materials, food, fruits, flowers and crafts of indigenous communities mainly, at least that is what I had always been taught from very young years. That is what gets exported the most. When I thought of Bogotá, I couldn't think of any high-export products, however, I thought about how different neighborhoods were historically characterized by the production, assembly or repair of specific things. It is often said: do you have to print a book? Go to 'Ricaurte' area, are you looking for affordable quality shoes? Go to 'Restrepo' neighborhood, do you need a spare part for your car? Go to 'Siete de Agosto' zone. So this **nature of scattered polycentric production**, could this be comparable to coffee or crude petroleum exports, for example? Can this be classified as an industry? Can they both be categorized under the same term?

Note *1: Manuel Castells is a sociologist, economist and university professor of Sociology and Urbanism at the University of California at Berkeley, as well as director of the Internet Interdisciplinary Institute at the Open University of Catalonia and president of the academic board of Next International Business School. The statements used in this section belong to an interview conducted by Spanish Radio Television (rtve.es) on June 16, 2013.

They seemed all banal questions, however, through the guidance of the Professor Nina Rappaport, co-supervisor of this thesis, I discovered that they were not only valid, but important questions to ask. Each country, each city, has its own definition of industry and that implies that it develops in the urban space in different ways in each of them. To understand this dynamic, having already limited the case study to Latin America and the 20th century, I came to the concept of Company Towns, because before studying the emergence of industry in the city I considered it convenient to review the independent settlements in which industry and housing, intertwined, function - or once functioned - as living organisms by themselves, isolated, unrelated to a preexisting city, and this is precisely what the next chapter will be about. So, while Company Towns meant a starting point, current urban issues became the engine that drove this research. We keep noticing that 'industry' continues to move to new peripheries, which in cities of the magnitude of Bogotá means an infinite process of both duration and extension, since today the city limits remain unclear while it continues to expand uncontrollably.

Consequently, being precise, the general questions this thesis wants to address are: **can industry remain within urban centers? Should it be this way? If the answer was affirmative, where and how can the industry coexist with the other activities that take place in the city life?**


CHAPTER II



Construction of the steel plant in Acerías Paz del Río, Boyacá, Colombia
Source: Mayorga Alba, G. M. (2015). *La Ciudadela Industrial en la Planta Siderúrgica de Belencito: Modernidad y patrimonio industrial en el proyecto nacional de Acerías Paz del Río*. Bogotá, Colombia: Universidad Nacional de Colombia.

THE MODERN CITY VS. THE MODERN FACTORY

Issues and philosophies about the places of production in Latin America beginning in the Industrial Revolution including utopian visions, factory towns and Modernist factory districts. Economic, social and political ideologies that led to the conceptual ideas for company town plans and districts. Issues of paternalism, social welfare, democracy and socialist planning.



Wire drawing plant construction in Acerías Paz del Río, Boyacá, Colombia
Source: Mayorga Alba, G. M. (2015). *La Ciudadela Industrial en la Planta Siderúrgica de Belencito: Modernidad y patrimonio industrial en el proyecto nacional de Acerías Paz del Río*. Bogotá, Colombia: Universidad Nacional de Colombia.

COMPANY TOWNS

Context of the factory in the Latin American city in the twentieth century

To address this entire chapter, I started mainly with the research carried out by Eugenio Garcés in his paper "Las ciudades del cobre. Del campamento de montaña al hotel minero como variaciones de la company town". In fact, very few people have treated the subject and he addresses it with several case studies, with maps and drawings and good documentation. Initially I share with the author the fact that it is a theoretical problem to draw the line that divides the concept of company town with industrial settlement, working class neighborhood, and in the case of Chile: mining settlement, mining camp, mining village and mining hotel. However, for the purposes of this chapter this problem is set apart and this term is used to address a specific phenomenon that is **the manifestations of a way of city making derived from the 'company town', that is, of industrial settlements linked to the productive occupation of complementary territories made from building typologies and urban morphologies that have evolved throughout the twentieth century**, from examples emerged in the field of the Industrial Revolution towards new models. (Garcés, 2003)

"Company towns were the spatial manifestation of a social ideology and an economic rationale. Though national politics, social protest, and local culture transformed those founding ideologies, company towns across the Americas played similar economic and social roles. They advanced the frontiers of industrial capitalism and became powerful symbols of modernity. They expanded national economies by supporting extractive industries on thinly settled frontiers and, as a result, brought more land, natural resources, and people under the control of corporations. U.S. multinational companies exported ideas about work discipline, race, and gender to Latin America as they established company towns there to extend their economic reach. **Employers indeed shaped social relations in these company towns through education, welfare, and leisure programs, but working-class communities also reshaped these programs to serve their needs.**" (University of Georgia Press, 2011)

And this is what becomes really important for this study, as these new models change in the Latin American reality, due to the productive, geographical, spatial and historical context in which they are located. They are paradigms for the understanding of the most generic problem of **a segregated way of inhabiting society and traditional cities, related to extractive and productive activities, dependent on a centralized business administration**. They have been with populations that exceed 20,000 inhabitants at a time of their peak, have had a strong identity and urban complexity, were built with advanced technologies, were part of a system with wide repercussions in the territories **but have lacked permanence in time**. (Garcés, 2003)

This is the reason why La Perseverancia (Bogotá's example) is seen as a relevant case study, since is the one in which the working area is the closest to the living sector and both of them are close to the main city, which in this case is also the capital of the whole country. Being one of the few cases studied in which urban-community-working life remains intact to this day.

COMPANY TOWNS

Questions to answer throughout this chapter for each case study

Description of the company town

What do they make?

Who lives there?

How many work in factories?

How many work outside the factories?

What were the design parameters?

How is the town based on utopian or socialist ideas?

What made it succeed or fail?

SEWELL
1906



LA PERSEVERANCIA
1920



BELENCITO
1948



EL SALVADOR
1956



SAN LORENZO
1995






COMPANY TOWNS

Studied categories / Legend for following maps






BUILT PATTERN

-  Industrial
-  Residential
-  Social/collective
-  Commercial

STREET PATTERN

-  Primary
-  Secondary
-  Tertiary

LAND USE PATTERN

-  Private / Industrial
-  Private / Commercial
-  Private / Residential
-  Semi-private / Collective
-  Public

SEWELL

Braden Copper Company, 1906, Chile

Sewell is located 90 km south of Santiago (Chile), approximately at the 34th parallel, east of the city of Rancagua and at 2,100 m a.s.l. in the Cordillera de los Andes, VI Region. It is currently part of the El Teniente division of CODELCO. Sewell is the only example of industrial mountain mining settlement in Chile. It is located in Cerro Negro; whose topography and orientation are decisive for the implementation of the buildings and the layout of the roads. It was declared a World Heritage Site by Unesco in 2006. In 1911 the total population was 4.000 and in 1960 it reached its highest population with 15.000 people.

Some of its design parameters are:

The central staircase is constituted as the public space of greater importance. Distributes to the sides by branches of circulation, like a fishbone, parallel to the height levels, to allow access to housing, equipment and industrial facilities. It connects with small squares that open in its path, from the topographic landmark Penstock and the Morgan Square, at the base, the Theater Square

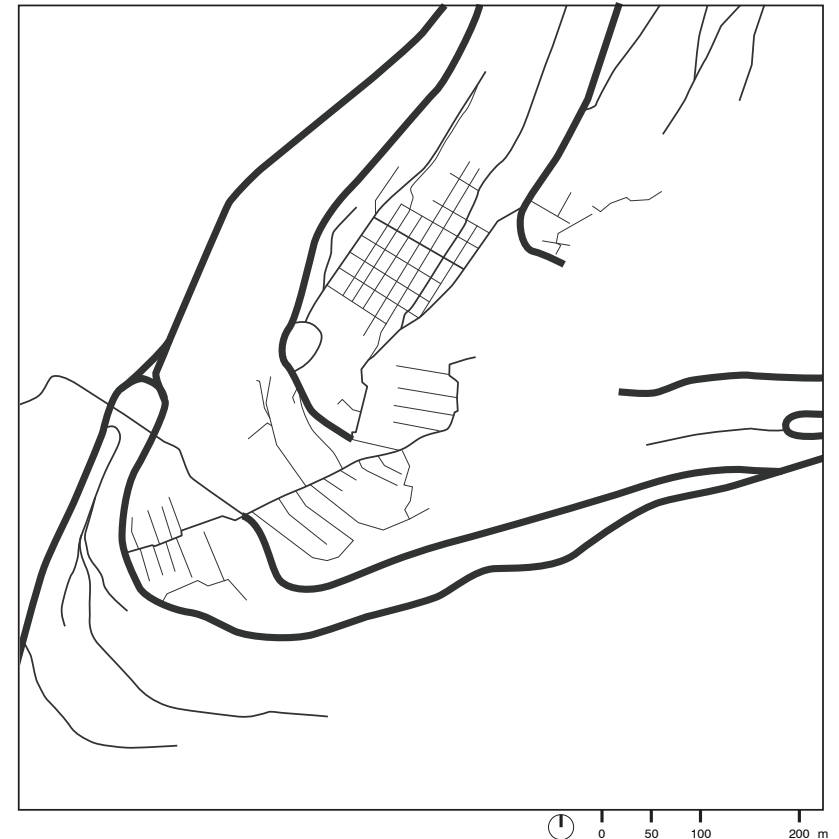
in the center, the Plaza del Patinaje (Skate Square) on the edge of the camp and the Plaza del Obrero del Cobre (Copper Worker Square), at the base of the railway structure called Punta de Rieles. The motorized vehicles have access to the edges of the pedestrian system, while the railroad makes its way between the buildings, passing by the smelter, until approaching the lower part of the Concentration Plant.

The residential buildings were built from three different types: external circulation, with autonomous housing units, similar to apartments; of central circulation with corridor as linear articulator element between enclosures; and perimeter circulation that allows access to two bays of rooms, without services. On the other hand, isolated single-family houses were built in the **American neighborhood**, now demolished, arranged step by step on the steep slope, starting from their organization in two parallel bays to the level.

BUILT PATTERN

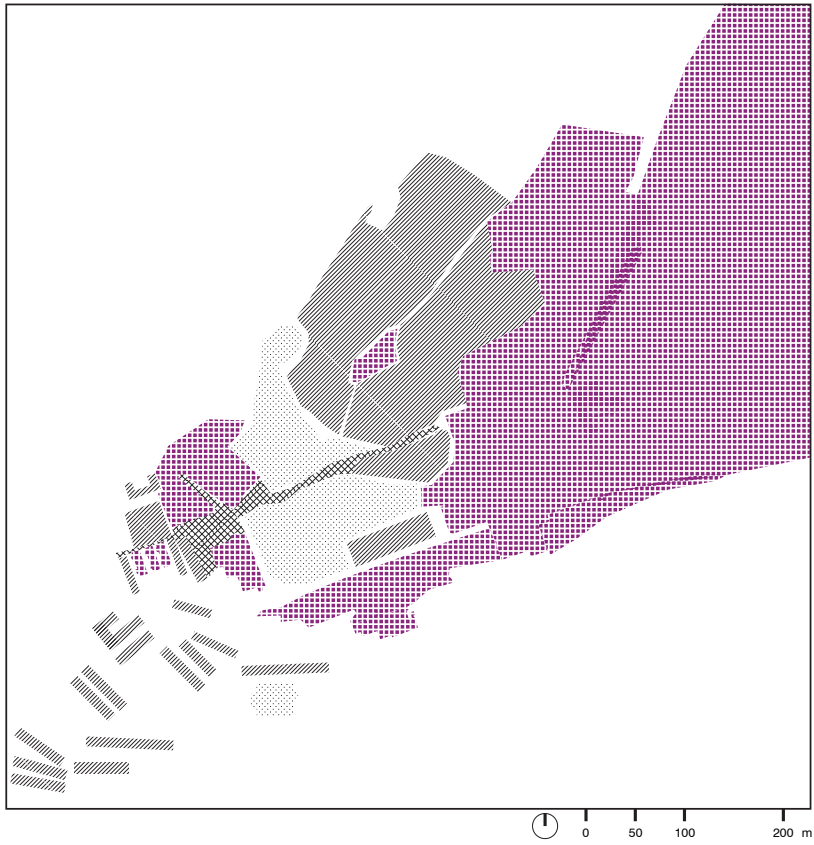


STREET PATTERN



The single buildings become benchmarks in the camp. An example is the Hospital, with a complex floor plan and volumetry highlighted by its roof, from which the small attic windows protrude. On the south side of Cerro Negro is the Church. Another example of a modern language is the Industrial School, with three levels - in addition to a baseboard floor and a singular curved and stepped façade, without any ornament. Finally, the Teniente Social Club, with a neoclassical aspect, still exists in what was the American neighborhood. (Garcés, 2003)

BUILT PATTERN



Sewell Mining City, Agua Dulce Court, 1940, Chile
Source: Unknown. (2018, May 10). *Enterreno Chile*.
<https://www.enterreno.com/moments/ciudad-minera-de-sewell-cancha-agua-dulce-1940>

EL SALVADOR

Andes Copper Company, 1956, Chile

El Salvador was a mining settlement. Located at more than 2,400 meters of altitude, next to the Mountain range of the Andes and in the middle of the Desert of Atacama and counts on a population of **8,697 inhabitants**. In 2004, according to official figures, **1,727 people worked** in Codelco's Salvador Division, producing a total of **74,874 metric tons of fine copper**. (Garcés, 2003)

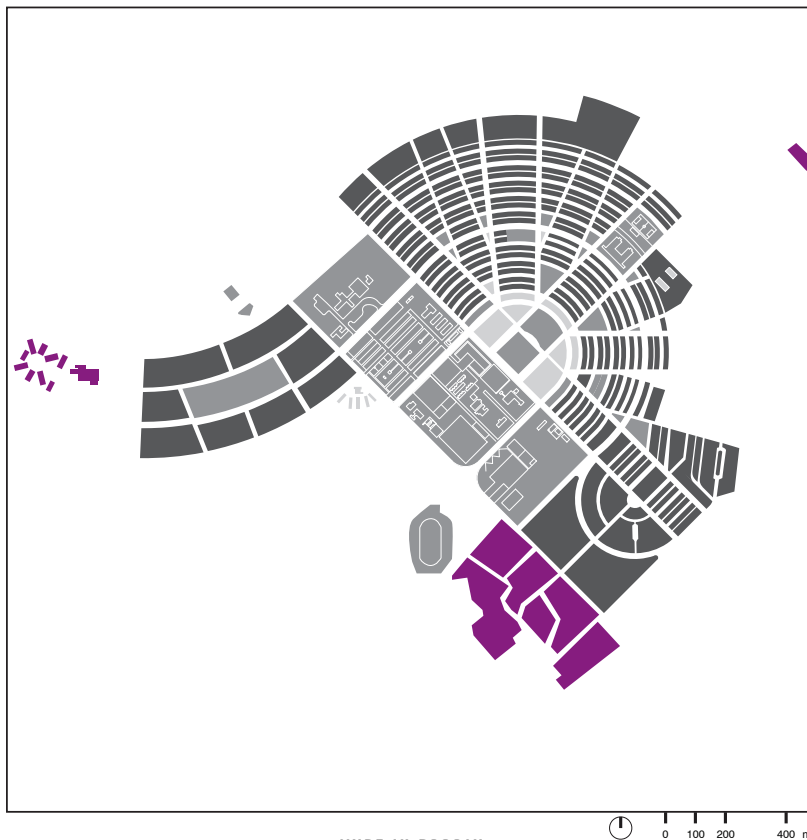
The design of the city and the houses is due to the American architect Raymond Olson. It was planned ex novo with formal precision and functionality, from a geometric pattern of concentric rings and a detailed program. Over time, it has been modified with the vitality of a conventional city, due to the increase in population and the necessary provision of new services. What it has been found fascinating about it is: its modern layout of broad converging avenues, in the form of an amphitheater, to the commercial and administrative center, as well as the homogeneity of its buildings and the complete urban and tourist facilities, **including an airport** (Ricardo García

Posada Airport), with regular air service. El Salvador still retains some benefits from the mining camps, such as workers and their families do not pay for electricity, water or rent, according to the agreements between the workers and Codelco. This city is home of a National First Division soccer team, Cobresal. Its stadium, El Cobre Stadium was inaugurated in 1980 and expanded in its capacity for the participation of Cobresal in the Copa Libertadores de América. It has a total capacity of 20,752 spectators, that is, almost three times the population of the town.

Design Parameters:

1. The curved design was made to avoid the monotony displayed in many organized camps with a strict checkerboard grid.
2. The camp was located in a natural amphitheater. The terrain rises gradually from the focal point of the semicircle towards the edges of the camp, in a gradual ascent of approximately 27 m., At a distance of 600 m.

BUILT PATTERN

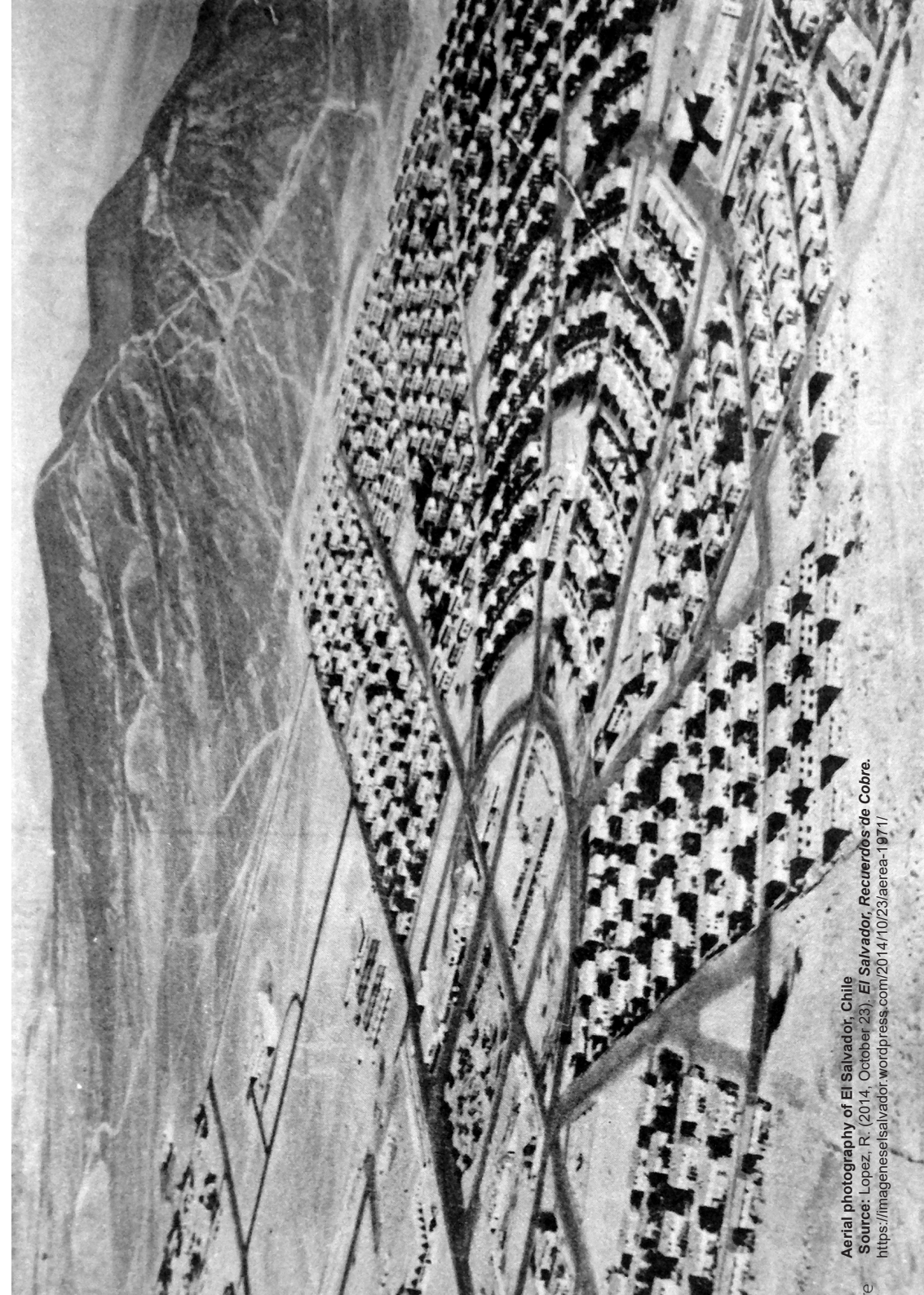


STREET PATTERN



3. El Salvador is a pedestrian community, in which the facilities such as shopping center, meeting places, public offices and church near the square, are within easy walking distance from all homes.
4. Recreation and equipment areas are located in appropriate areas because of their proximity to the neighborhoods and distributed evenly.
5. The transportation of employees and workers to the mine is carried out in the most convenient way possible for all users. There are numerous bus stops in the semicircular arch, located in the center.
6. For safety purposes for young children, schools were arranged away from traffic areas, so that children can go to and from school through areas of lower traffic flow, on the periphery of the camp.
7. The hospital is located at hand of all residential areas.
8. 10 different pastel colors, compatible with each other, have been used to decorate the houses, in order to avoid any appearance of monotony.
9. Monotony has also been avoided by varying the design of single-family homes. Four types of housing were designed, each with different models of three and four rooms.

LAND USE PATTERN



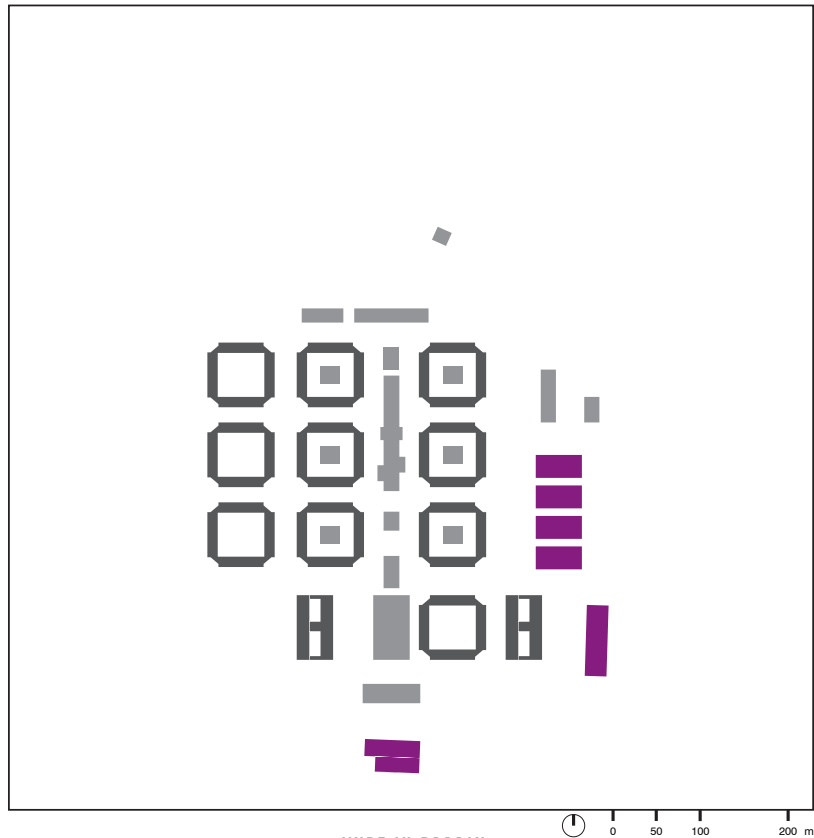
VILLA SAN LORENZO

Minera Escondida Copper Company, 1995, Chile

The mining town San Lorenzo, of Minera Escondida, is located at 1,550 km. to the north of Santiago (Chile), approximately in the parallel 24°, to 220 km. from the city of Antofagasta and at 3,150 m.s., in the II Region. It is part of the Compañía Minera Escondida Limitada.

Villa San Lorenzo is the physical materialization of a policy that confronted the issue of the construction of rooms and services for its staff with a different perspective, as a result of a joint effort between professionals from the mining company itself, the Pfenninger and Sologuren architecture office and a construction company. The notion of camp, traditional in the mining environment, was replaced by that of villa, trying to characterize new labor relations that were able to effectively replace the Codelco camps, assuming all the experience accumulated by 80 years of copper mining settlements. From the housing point of view, the company established two foci: in the area of operations it developed three camps for the personnel in tasks, and for the workers and their families it built housing units in Antofagasta.

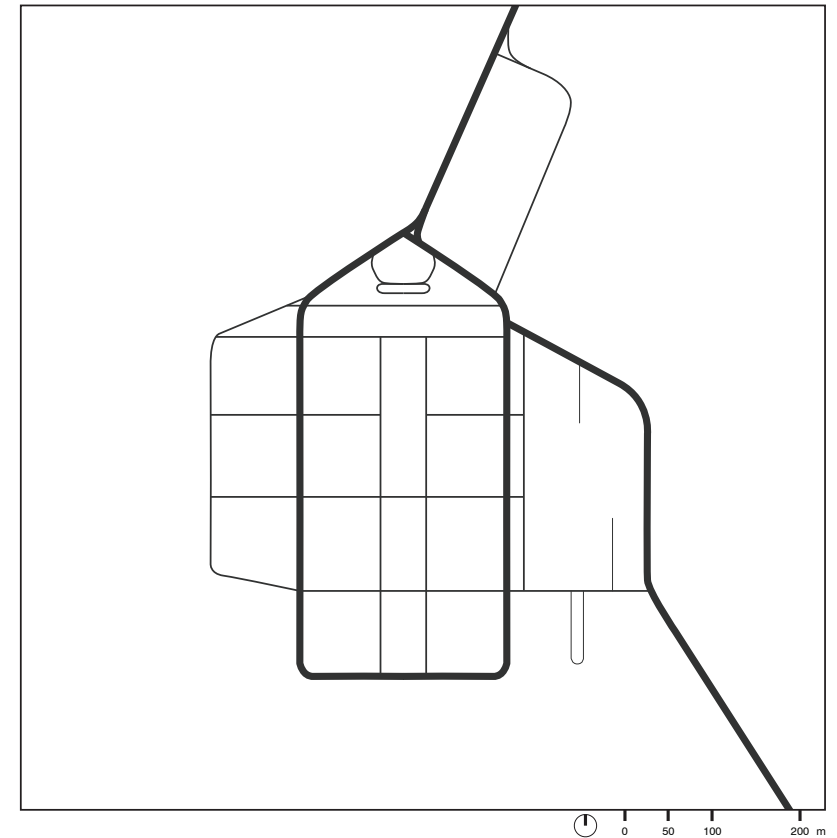
BUILT PATTERN



The camps correspond to the mine camp, with a capacity for 1,000 people; Camp 2000, for contractors, with capacity for 2,000 people; and the Villa San Lorenzo, for 2,000 people. These last two are located about five kilometers from the mine. The program of the villa was studied in relation to a system of rotating shifts of 4 by 4 days, divided into four groups. Each shift corresponds to four working days, staying in the camp and four days of rest, in the city of Antofagasta.

This shift system allows two groups to always coexist in the villa: one in the day shift and another in the night shift, so the intensity of use of the common spaces is scarce, both in the blocks and in the central block, considering a maximum of four hours available for the use of recreational and service spaces. (Garcés, 2003)

STREET PATTERN



This case study is interesting to be the newest, it comes to enter the category of mining hotel / villa more than a "real settlement", however, it is interesting how its existence and realization is in itself an industrial process. The buildings that make up this complex are all prefabricated and the company that provides them (TECNOFAST, retrieved from <https://tecnofast.cl/?lang=es>) defends that it is a quick product to make, economical, resistant, flexible and sustainable, they affirm:

- *Reduction of the environmental impact in the construction zone due to less waste, air pollution, water, noise and energy costs.

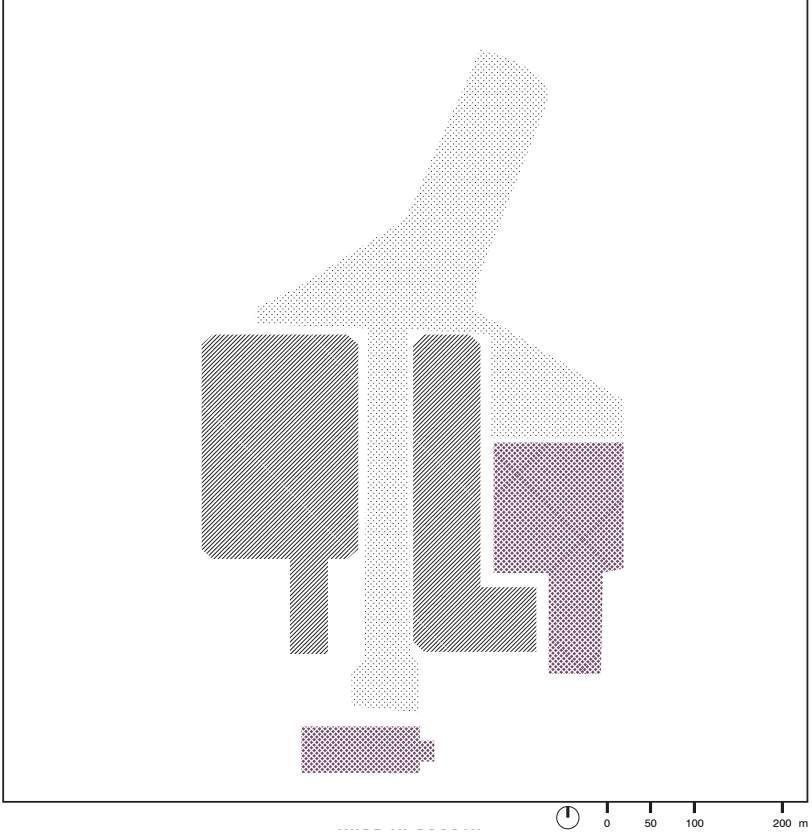
- *Modular construction uses certified wood, this means that the production is controlled, replanting each tree that is cut down.

- *Increased security for personnel because they are not exposed to extreme weather and temperature conditions for a long period of time.

- *The modular construction being faster produces a lower impact on the construction site in addition to being dry and tidy tasks.

- *Recyclable modular construction since this can be reassembled in a different place than the initial one, thus transforming into a project with the same or different objective as the first.

LAND USE PATTERN



Minera Escondida, Chile
Source: *Molina Herrera, J. (2013, January 12). flickr.*
<https://www.flickr.com/photos/28854051@N08/8388402960/in/photostream/>

BELENCITO

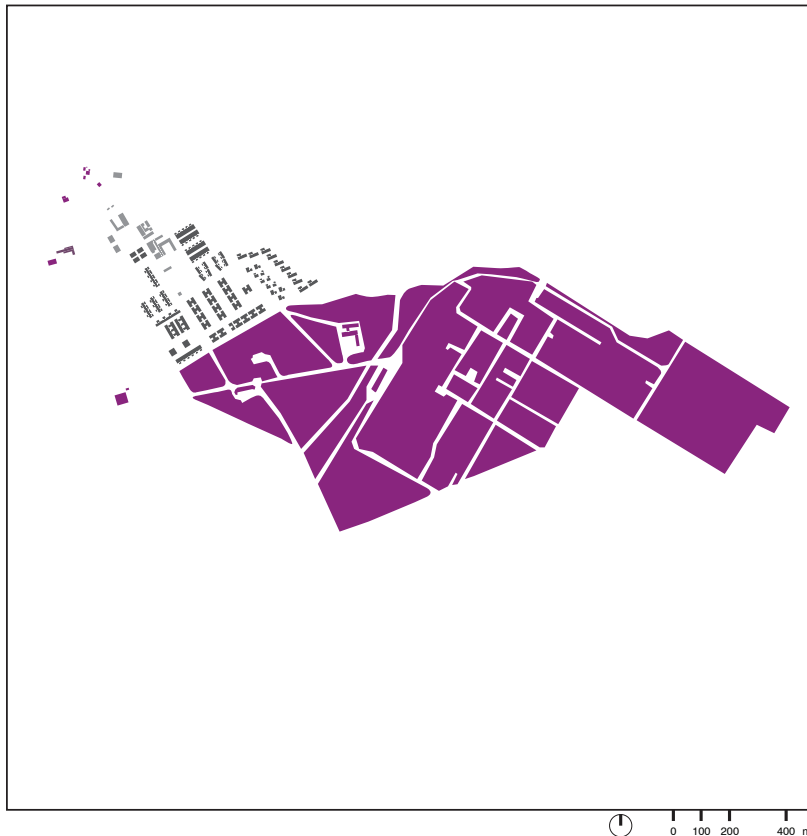
Acerías Paz del Río, 1948, Colombia

Acerías Paz del Río is the second largest steel company in Colombia. It was founded in 1948 under the name of “Empresa Siderúrgica Nacional de Paz de Río”. The company’s full production began in 1954, when it was renamed Acerías Paz del Río S.A. In 2007, the Brazilian business group Votorantim acquired 51.1% of the company’s shares and is currently responsible for 30% of steelmaking in Colombia.

In 1954, one of the most significant authors of the 20th century who at the time was working as a journalist, Gabriel García Márquez, wrote for the national newspaper El Espectador an article in which he describes in detail the foundation, quick consolidation and daily life dynamics of the new urban center created around the steel company called Belencito.

A modern city built in eight years. The French national day is celebrated in Belencito as in Paris. Blows of stubbornness. Seven thousand men around an oven. 500 tons of iron in a day.

BUILT PATTERN



The French Street. From the ox to the locomotive. In 1954, Belencito had, during working hours, two thousand inhabitants. Five thousand during leisure hours. Eight hundred vehicles -huge cargo trucks, buses, modern automobiles- mobilize the three thousand commuters who work nearby: Colombians, Mexicans and French. But especially French, from specialized engineers to the power plant workers. (García Márquez, 1954)

On the other hand, most of the information (graphic and written) that was used to understand this case study was taken from a document presented as a Final work submitted as a requirement to opt for the title of: Master in Conservation of the Cultural Heritage Property in the research line: The conservation of the Cultural Heritage in Colombia: history, theory and practice of the National University of Colombia. In this document it is explained how:

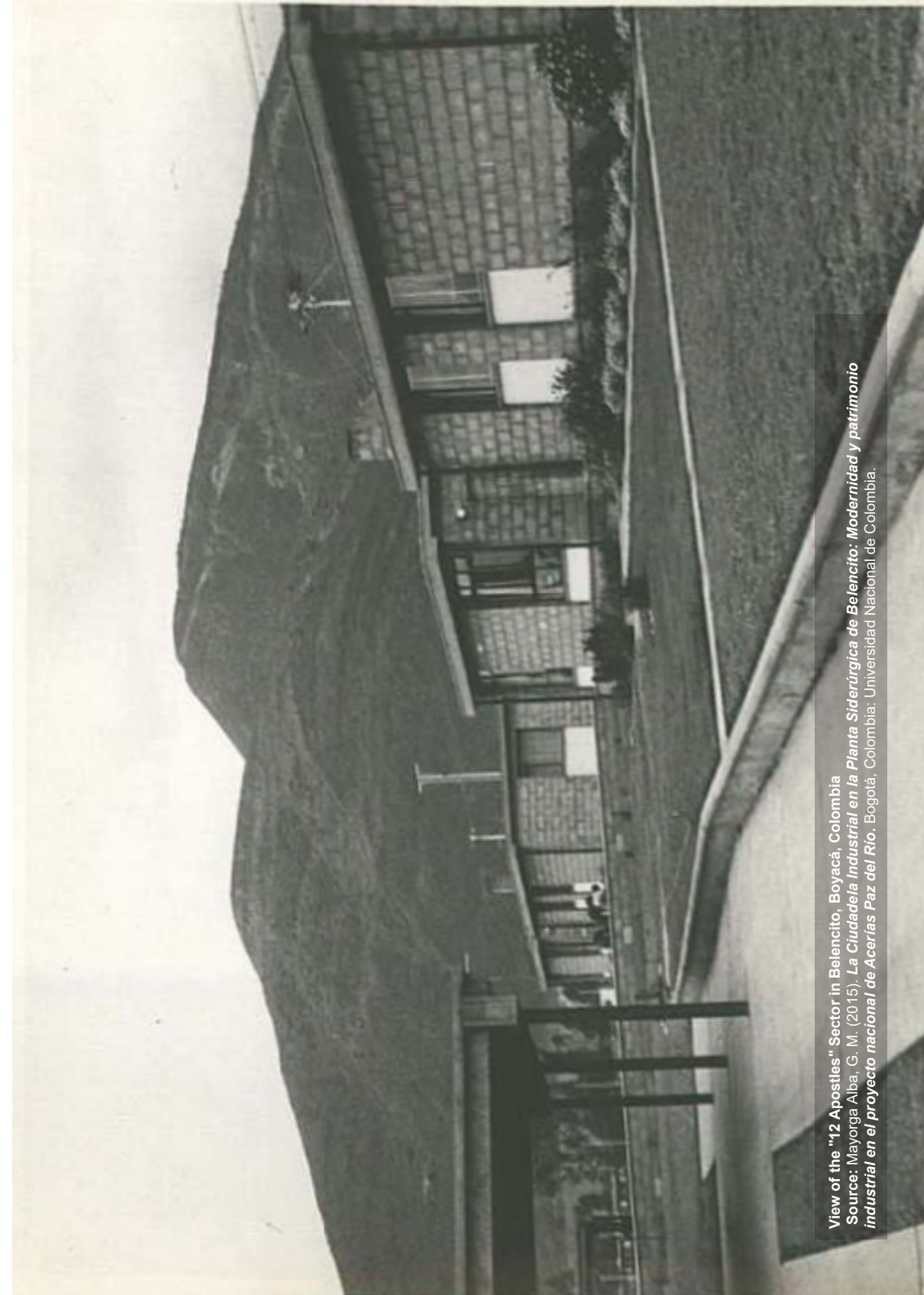
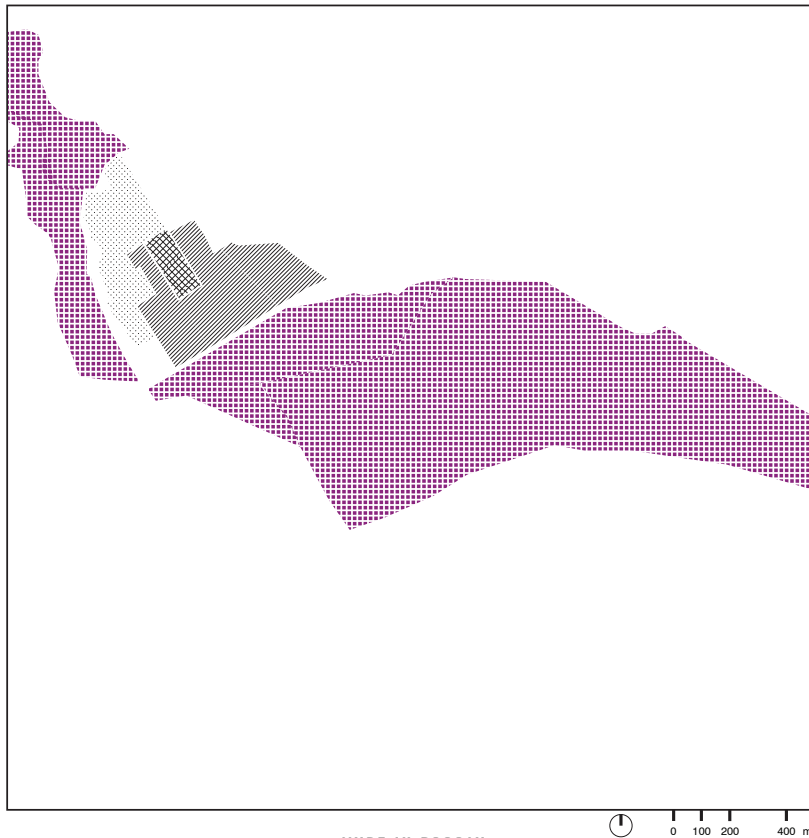
STREET PATTERN



The first two contracts were brought about in 1950 and were in charge of the Colombian firm Cuéllar Serrano Gómez, under the executive management of José Gómez Pinzón. The execution of these designs was delegated to the then-students of architecture: Arturo Robledo Ocampo and Hans Drews Arango, who developed from Gabriel Serrano schemes the design of houses for engineers, and houses for employees, "technical staff from France" (Museum of Architecture Leopoldo Rother, 2005)

Additionally, Arturo Robledo is entrusted with the preparation of a general plan for the steel plant, a telephone station, recreation spaces, a post office building and the physical and chemical laboratories. In this project of spatial planning for the Belencito plant, a clear differentiation of housing, recreation and production spaces is proposed, in accordance with the guiding principles of the Athens Charter (Living, working, circulation and recreating).

LAND USE PATTERN



View of the "12 Apostles" Sector in Belencito, Boyacá, Colombia
Source: Mayorga Alba, G. M. (2015). *La Ciudadela Industrial en la Planta Siderúrgica de Belencito: Modernidad y patrimonio industrial en el proyecto nacional de Acerías Paz del Río*. Bogotá, Colombia: Universidad Nacional de Colombia.

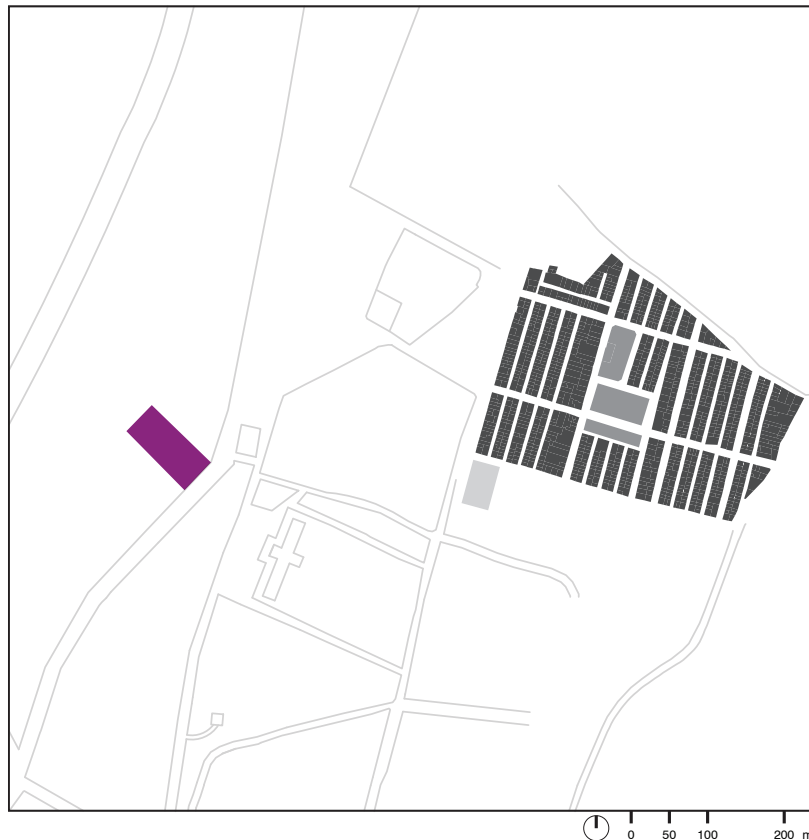
LA PERSEVERANCIA

Bavaria Brewery, 1920, Colombia

Bavaria Brewery, in Spanish Cervecería Bavaria, is a Colombian brewery company founded on April 4th, 1889 by Leo S. Kopp, a German immigrant. In 2005, Bavaria Brewery became a subsidiary of SABMiller. Before the merger, Bavaria was the second-largest brewery in South America.

The factory was inaugurated in 1890, and next to it (less than half a kilometer away) started the consolidation of a new urban center that, with time, would take the name of La Perseverancia, mostly populated by many of the inhabitants of the Egipto and Belén (neighborhoods located in the very center of Bogotá) and other families who lived in the countryside and where forced to move into the city because of a civil war. Most of these people, were direct workers from Bavaria and others indirect -who were engaged in the **manufacture of baskets** to protect the bottles-, and built the neighborhood with the help of Kopp, who discounted the wages of the workers for the purchase of lots.

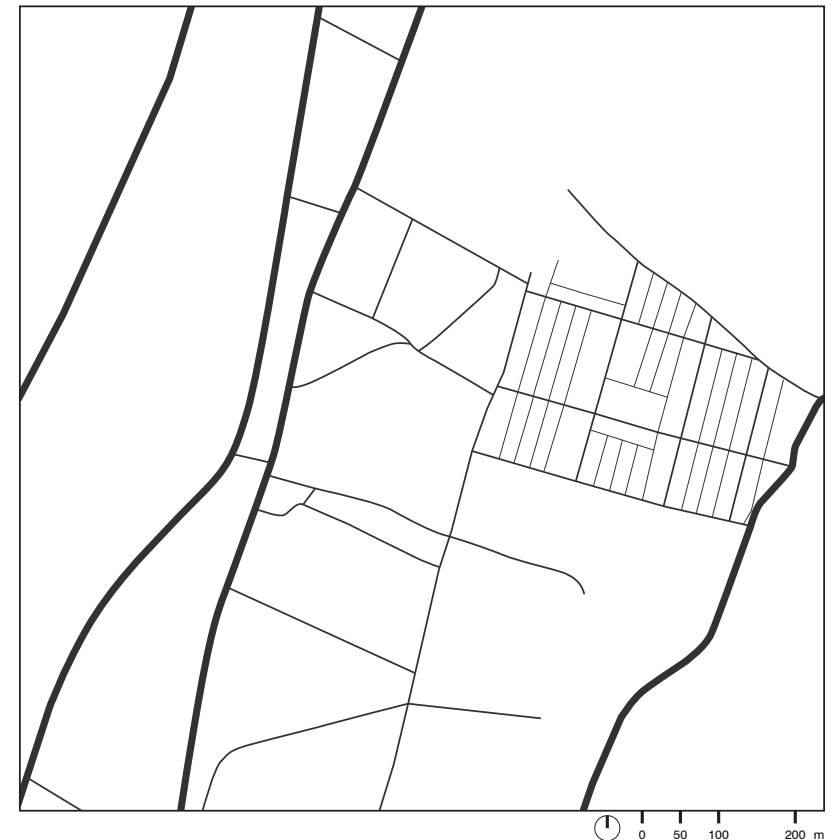
BUILT PATTERN



Like it is well described in a book published by the City hall in 2006, made with the participation of families who have lived in La Perseverancia from its formation:

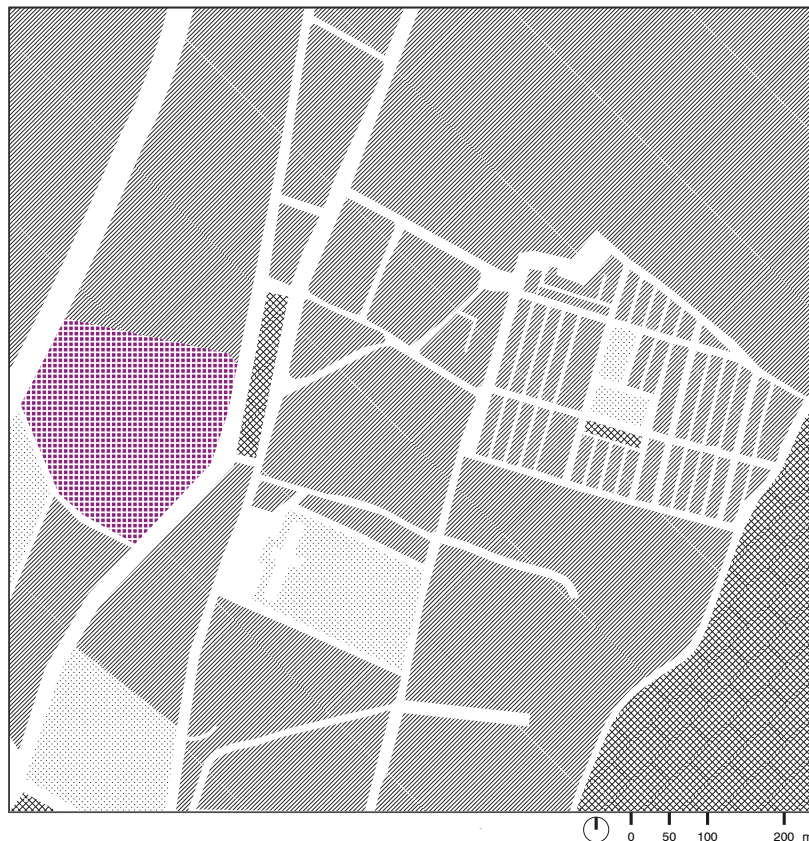
In most of the working-class neighborhoods that were starting to settle in this period, located mainly on the east of the city, there was no planning on the way of distribution of housing. Many were built in adobe with straw roofs, without any complementary public service, a situation that generated problems of overcrowding and spreading of diseases, as reflected in the epidemic of flu that the city experienced in 1918. Therefore, it was relevant the fact that Leo Kopp who, along with the construction of the factory, participated in the development of the worker's neighborhood of La Perseverancia, because was the first of its kind in the city. So, although the ideas of sanitation of the city had already emerged with the descriptions made by the engineer Alfredo Ortega Díaz, these ideas were not considered by the Administration at that time, but, by private companies such as this one.

STREET PATTERN



Due to the total area of the neighborhood of 10 fanegadas (64 km²), by municipal disposition it corresponded a free space or square of 10,000 square meters that was inaugurated on May 1st, 1914 under the name of Plaza del Trabajo (Work Square) and in whose center was placed the first stone of the Monument to Work. The consolidation of the neighborhood as a built area took many years because each of the properties was built by self-construction and in different stages. Initially, many of the lots were used as gardens to grow corn, potatoes and vegetables, while their owners saved enough money to buy construction materials. The inhabitants supplied themselves with water at the Chorro de Padilla or the Río Arzobispo. In fact, this situation led to the construction of two water piles, one in the 7th and 31st streets and the other in the place that the church now occupies. Without electricity, the communities used bait candles and wood stoves built with bricks produced in the area. Daily, many of the children in the neighborhood were collecting firewood from the eastern hills. (Gutiérrez & Niño, 2006)

LAND USE PATTERN

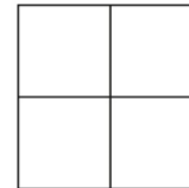


Typologies

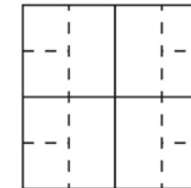
Residential

The peculiarities of the working-class neighborhoods of the British Empire's industrial citadels would be repeated at the beginning of the 20th century in Colombia, almost as tracings. Consequently, in the country, a new concept of social distribution of space was inaugurated that could be called "the working-class block", based on the typology of the "cottage" in the England of 1845. Indeed, while from the eighteenth century, the classic colonial block began to fragment internally in four, eight, twelve lots or more, but maintaining compact unity, the appearance of this new apple in the present century, was based on the classic orthogonal reticule, but broke the continuity relationship by sub-dividing into four or five internal lanes, creating intensely parceled micro-blocks as a particular urban expression of the emergence of the proletariat in Colombia. Thus, La Perseverancia has the value of being the first industrial-worker neighborhood built in its most classical form, that is, next to its rural factory and simultaneously with it. Its micro-block typology was the first planned and intentional urban response of a large industry to materialize on the distribution of urban land, the new social relations of production and property that were inaugurated with the attempts of industrialization in Colombia since the late nineteenth century.

Colonial Block



Post-Colonial Block



Working-Class Block



The proposal was three different housing typologies: one for a single person with a bedroom and a work room, a solar and a bathroom. One for three people, with four rooms: work room, two bedrooms and a kitchen, solar and bathroom; and finally, one for five people, which has at least three bedrooms, a living room, a kitchen, a solar and a bathroom. In this way, homes were built, mainly on one floor, in lots that had an extension of 4.30 meters in front by 8 meters in depth.

Factory

The buildings follow the parameters of German industrial architecture of the nineteenth century. Some of them are still preserved and make part of some architectural landmarks of Bogotá's city center.



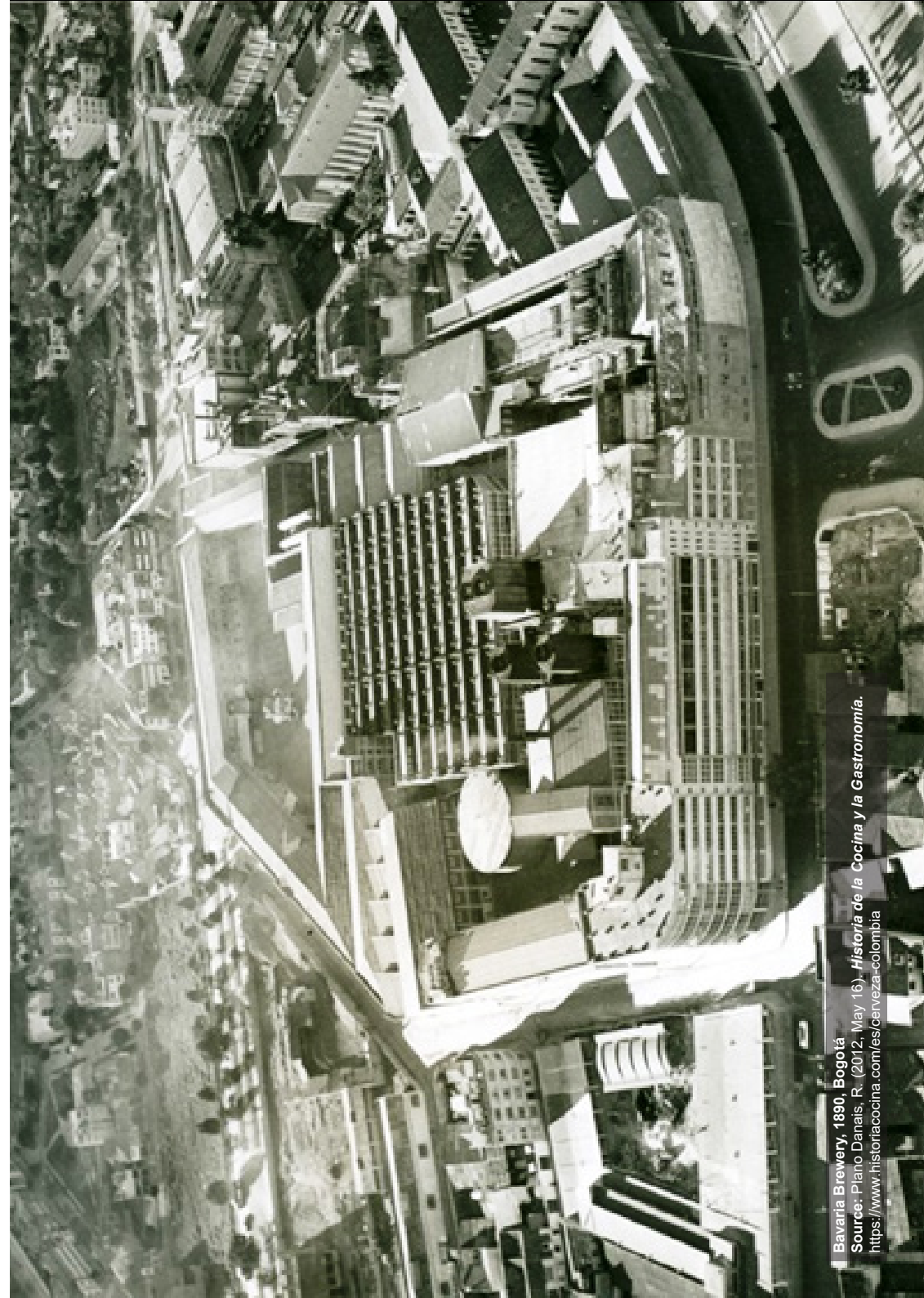
Bavaria Brewery, 1890, Bogotá
 Source: Plano Danais, R. (2012, May 16). *Historia de la Cocina y la Gastronomía*.
<https://www.historiacocina.com/es/cerveza-colombia>



Bavaria Brewery, 1890, Bogotá
 Source: Plano Danais, R. (2012, May 16). *Historia de la Cocina y la Gastronomía*.
<https://www.historiacocina.com/es/cerveza-colombia>



Row to market, 1940's, Bogotá
 Source: Jorge Eliecer Gaitán Documentary Fund in the Central and Historical Archive, Archive and Correspondence Division, National University of Colombia.
<https://fondogaitan.wordpress.com/2012/01/23/en-la-ciudad/>



Bavaria Brewery, 1890, Bogotá
 Source: Plano Danais, R. (2012, May 16). *Historia de la Cocina y la Gastronomía*.
<https://www.historiacocina.com/es/cerveza-colombia>

CHAPTER III



Bavaria Brewery, 1922, Bogotá

Source: Martínez Rey, J. (2006). *Historia de la Industria Cervecería en Colombia*.
<https://www.ellibrototal.com/total/?t=1&d=1997>



THE CASE OF BOGOTÁ

History of zoning and land use regulations from mixed to single use. Focusing on greenfield, manufacturing and suburban industrial development that led to “progressive removal”.

View of Bogotá from the Guadalupe Hill, a 3,317 meters high hill located in the Eastern Hills, uphill from the center of Bogotá.
Source: Author.

HISTORICAL FRAMEWORK

Zoning and land use regulations for industrial development in Bogotá

How was the zoning started? Why?

Who was it for?

City planning as a modernist trend was disseminated and formalized in Colombia as a national public proposal by **Ricardo Olano** in **1917**. After having the opportunity to travel abroad, he became aware of an existing international framework, such as the Town Planning Conference in London in 1910 and some initiatives in Germany. After realizing Colombia was lacking and needed this kind of approach, he set to march the '**Future Bogotá' Plan** which became the first attempt towards designing a city plan. He was supported in this project by newly formed Society of Embellishment of Bogotá, the first institution under the objective to deal with urban issues. However, they developed mostly guidelines instead of actual plans. This is the reason why the Bogotá Futuro Plan was so important, even if it didn't have direct outcomes and remained mostly as a first attempt for the only two other urban proposals discussed in this century and explained in further detail in this document.

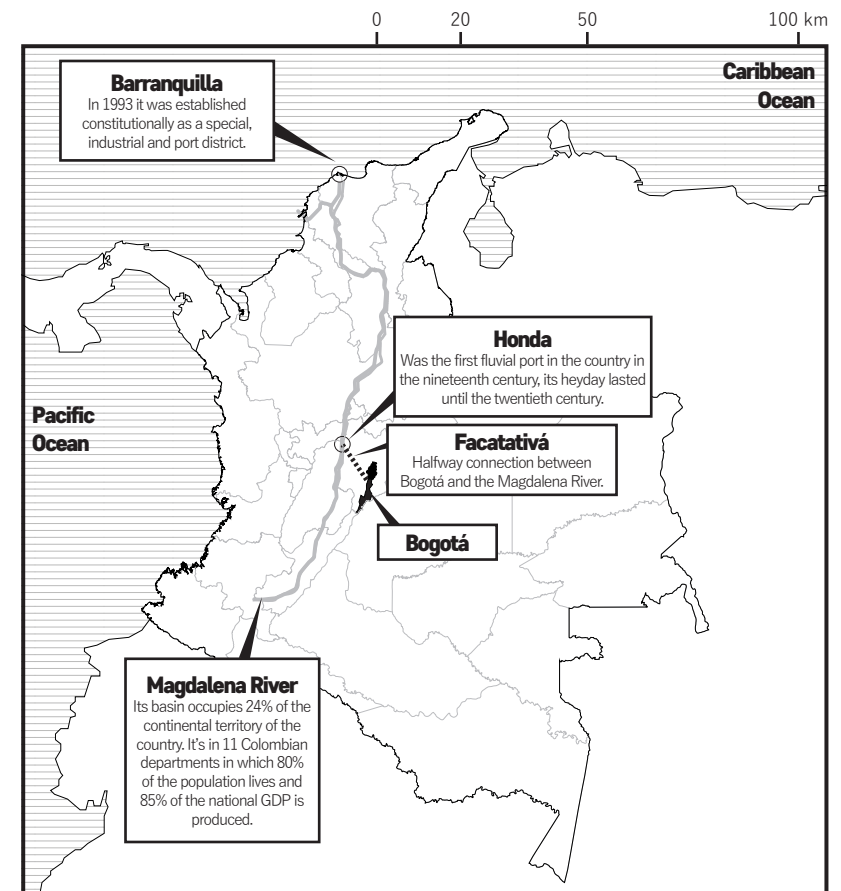
Olano's motivation with the **Future Bogotá Plan** was not only to give the city a privileged international position as a beautiful modern city, but to try to solve the city's current problems in which the industry had a lot to do with. New job opportunities were being generated by the manufacturing companies that came in handy since people were migrating from the countryside due to internal conflicts in which the Thousand Days' War is highlighted. By the 1920's, the city was full of illegal urban settlements inhabited by the working class, and there were plenty of problems regarding the citizens' life conditions, having no access to public services and dealing with hygiene issues. One of the factories that marked the exception to this was **Bavaria Brewery**, whose owner was involved in the planning of its workers' neighborhood **La Perseverancia**, becoming (or importing) a paradigm for what was next to come.

"The Bogotá Futuro Plan based the first modern, scientific, hygienist and aesthetic idea of planning the city, developed by the engineers of the Cundinamarca government, under the Anglo-Saxon city planning standards, during the first quarter of the 20th century. This modern idea was expressed in the necessary modernization of the city: sanitation through sanitation infrastructure; new and more efficient sources of energy; modern and healthy market halls, more extensive electrified tram lines with better service; ventilated, sunny, and cheap rooms for workers, in neighborhoods with squares and parks. This set of projects involved introducing new and modern ways of managing the city, transforming its institutions and increasing its taxation." (Alba Castro, 2013)

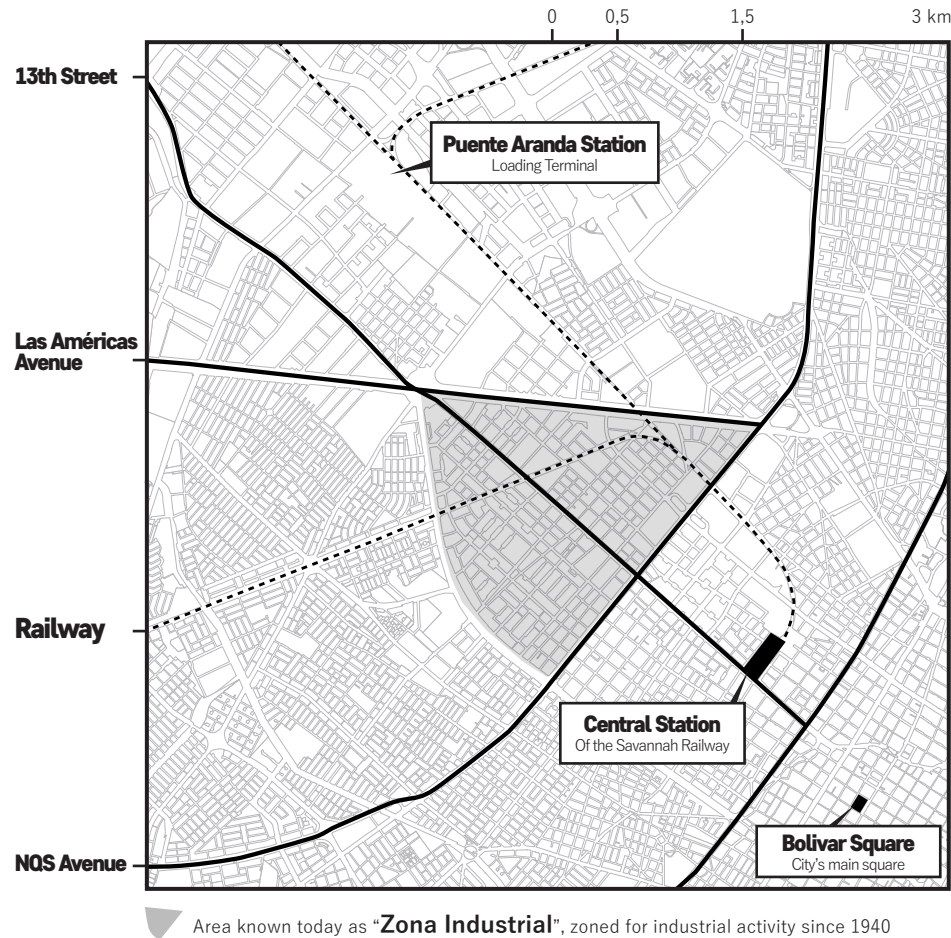
How planning tools regulate the location of industry?

Consequently, in 1930, **Karl Brunner**, an Austrian architect was called by the President Enrique Olaya Herrera to try to solve these problems through a **Regulatory Plan**. One of the highlights was his proposal of **widening** the most important streets for Bogotá at a regional and national scale, setting as a priority an **economic and commercial improvement**. This was important for the industry because those axes were identified to enhance productive activities through them, leading towards recognizing the first zones designated for industrial activity. It was located towards the West of Bogotá, since this axis had always been the most important for economic activities being the main connection to the **River Magdalena** (main fluvial artery of the country) that once was the spine of the national transportation and consequently counted with a **railway**, one of the components industry could not live without. Some urbanization processes of municipalities were consolidated, especially those located on the **western national highway**, which were structuring an **urban-productive corridor** between Bogotá and Girardot.

The importance of the West Corridor at a National Scale



West Corridor at the City Scale / Roads widening



The municipalities of Fontibón, Madrid and Facatativá were constituted as minor links of an economic system led by the projection of Bogotá to other regional markets.

So regarding the strategy of prioritizing the **road network** of Brunner's plan, it is visible the reason why the area (shown below with the gray spot) was the one chosen as industrial, as I will try to explain it in the following pages by describing the importance of the arteries that nourished this area like no other in the city besides its proximity to the historic city center:

_13th Street

_Las Américas Avenue

_NQS Avenue

_**Railway:** Inaugurated in 1889 and originally denominated as Railroad of the Savannah and

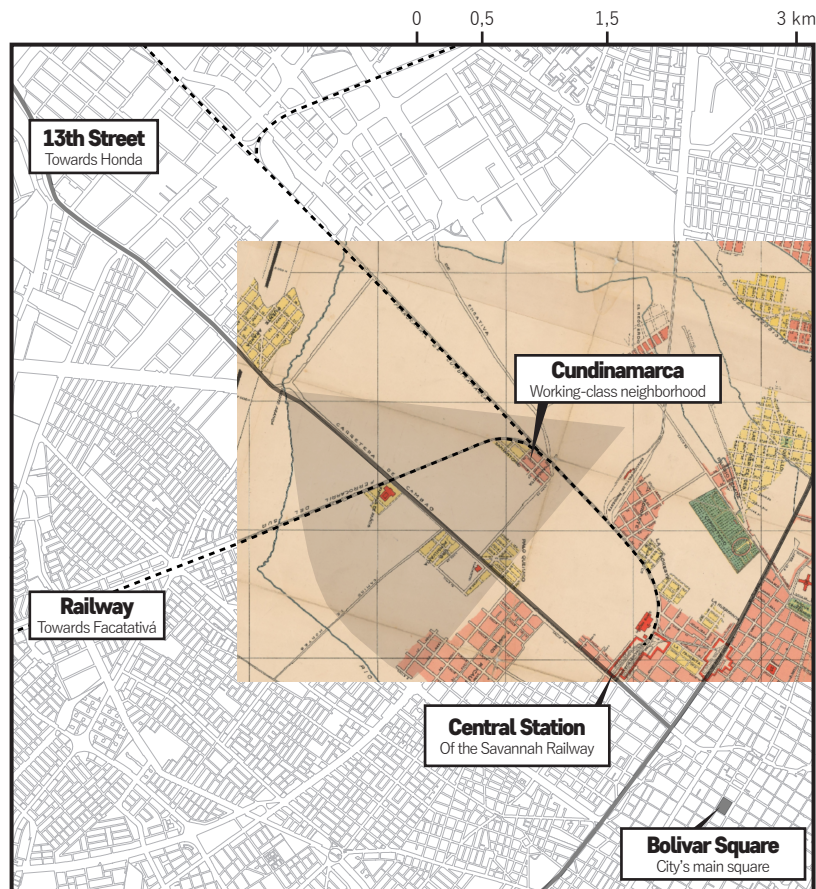
Cundinamarca, it was constructed with the purpose of communicating Bogotá with the Magdalena, specifically in Puerto Salgar port. For this, the Colombian engineers Indalecio Liévano (1833-1913) and Juan Nepomuceno González Vásquez (1839-1910) adapted in 1865 the path suggested by the Frenchman Antoine Poncet in 1848. By 1882, construction began, which reached Facatativá in 1889, in **1921 was created the Railway Company of Cundinamarca** whose extension to the lower Magdalena was completed in 1925, for that year, its junction was arranged with the Girardot Railway, so the narrowing of the La Sabana and Cundinamarca for the year of 1936 extended until Puerto Salgar and in **1953 it was integrated to the Central Division of the National Railroads**. The third stop starting from the Central Station was **Puente Aranda Station / Loading Terminal-Km 5**, denoting from that moment the industrial vocation of the area not only from the urban planning but through the mobility infrastructure.

What works in favor/against planning tools?

However, the Plan ignored an important part regarding economy. There were a lot of industries in Bogotá but most of them were **very small manufactures**. According to the DANE demographic statistics, most of them had under **24 employees** and were located mostly close to the railway, but also close to water sources due to the necessity of draining and as an energy source. In this way, they were all spread out in the city already but mostly in the city center and their incomes depended on the local market and the housing around it. When the Puente Aranda area was planned as an Industrial Zone, it took a lot of time to get the manufactures there precisely because of the locals they relied on, so the manufactures that started conforming the zone were the big ones or new ones which depended more on a regional/national market.

"Of the 2,490 industries registered in Bogotá in 1958, most of them were in the range of very small companies between 1 and 14 workers that constituted 58% of the total industries of the city. By expanding the range to 24 workers, you get a proportion of 84% of the industry with this feature. Comparing this data with the activity developed by these industries in the city, allows to induce the precariousness of the industrial machinery of Bogotá, especially in terms of technological development, the social division of labor, and very likely so, the projection of the regional market. 19% of the industries, equivalent to 472 units of the total of the city, were represented mainly by tailors, of which, more than 70% did not exceed ten workers. Its preferred location in the center of the city, implies that there was a direct relationship between production and **local consumption**." (Acebedo, 2003)

1932_BEFORE ZONING



Area known today as “**Zona Industrial**”, zoned for industrial activity since 1940

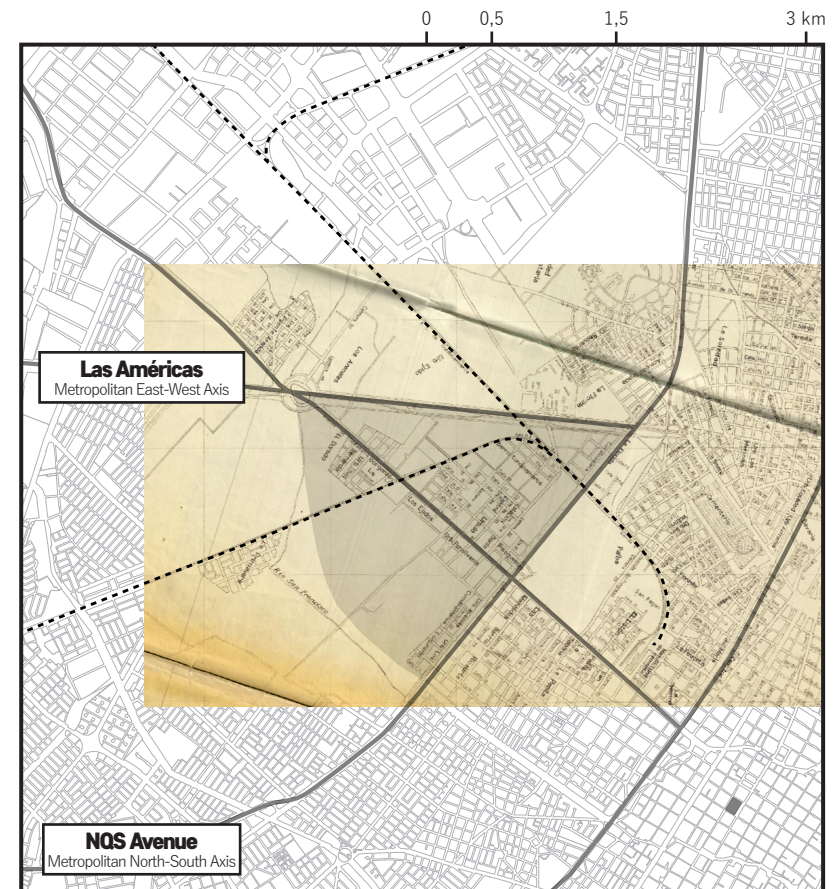
Urban Plan ,Bogotá, 1932

Source: Universidad Nacional de Colombia. (n.d.). *Cartografías de Bogotá*.

<http://cartografia.bogotaendocumentos.com/mapa>

The area does not have **any factories**, since the industry in Bogotá was still very precarious scattered throughout the city in small manufactures and depended only on the neighboring scale and local consumption. However the presence of the **Cundinamarca working-class neighborhood** (at the intersection of the railways northeast of the area) and the existence of **Calle 13** supporting the railway, which was the regional communication route to the West, is highlighted.

1950_AFTER BRUNNER



Area known today as “**Zona Industrial**”, zoned for industrial activity since 1940

Urban Plan ,Bogotá, 1950

Source: Universidad Nacional de Colombia. (n.d.). *Cartografías de Bogotá*.

<http://cartografia.bogotaendocumentos.com/mapa>

The area continues without occupation of any productive activity, however it is remarkable the appearance of arteries such as **NQS Avenue** and **Las Americas Avenue** that until today are part of the **main road network of the entire city**.

What can affect the displacement of manufacturing?

After Brunner finished his plan, Le Corbusier was the one to follow up. His plan wasn't remarkably different from Brunner's, at least in this matter. The framework for his intervention was undoubtedly much wider, but equally constrained in its regional scope by administrative decisions. Its main achievements were the definition of much wider areas of industrial expansion and in the location of new industries according to technology complexity and the modernization of the productive apparatus. Its main flaws, like Brunner's, laid in his failed attempts to relocate centric and pericentric industries of the city, perhaps because of the ignorance of its specific nature and behavior. In contrast, the zones of light and heavy industry had a visionary sense, especially for the new locations, since those were the areas of industrial growth throughout the second half of the 20th century. In this way it could be said that the economic model of industrialization followed by Bogotá, gave the industrial location a characteristic similar to that of other activities such as residential or commercial, so that they could coexist with each other without major traumas for the urban and functional structure of the city. This explains, in part, the **slow process of densification** of the zones contemplated for the **light and heavy industry**.

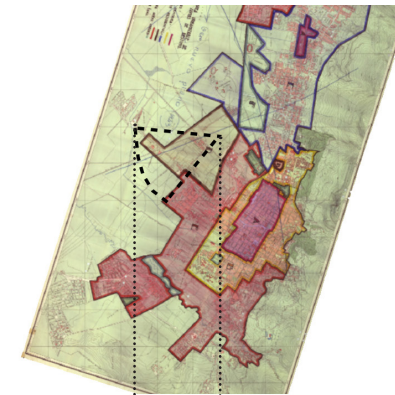
Finally, since the beginning of the 21st century, the figure of the POT (Plan de Ordenamiento Territorial) has been implemented in Bogotá without particular success. Due to political conflicts its objectives and scope are constantly changing, making their application ineffective. However, the industry has continued moving towards the West, fleeing the excessive growth of the city, reaching places that were previously regional limits and are now limits of the metropolitan area from Bogotá. On the economic side, the industry has been affected by the TPA (Colombia Trade Promotion Agreement), mostly because larger companies prefer to establish their factories in other countries and then bring products already made into the city, as is the case of Mazda, which until 20 years ago had headquarters in Puente Aranda (the study area) and was one of the most influential companies for the area, now working from Mexico leaving a 25.000 square meters warehouse abandoned right in the core of Le Corbusier's Zona Industrial for Bogotá, while its surrounding automotive retail stores and other local businesses are still trying to keep the zone alive.

The image on the right contains the Archive images, taken from the portal of the National University of Colombia: "**Cartografías de Bogotá**", which compiles a selection of historical maps of Bogotá, mainly from the 20th century, with the purpose of offering the user an interactive tool that allows them to interrogate historical cartography, visualize it in different ways, compare it with other sources and analyze it through layers of own elaboration.

The image sought to compare the information of what was planned in those specific decades with the urban area that is currently named "Industrial Zone" (marked with the dashed line), which is then analyzed in depth in the document.

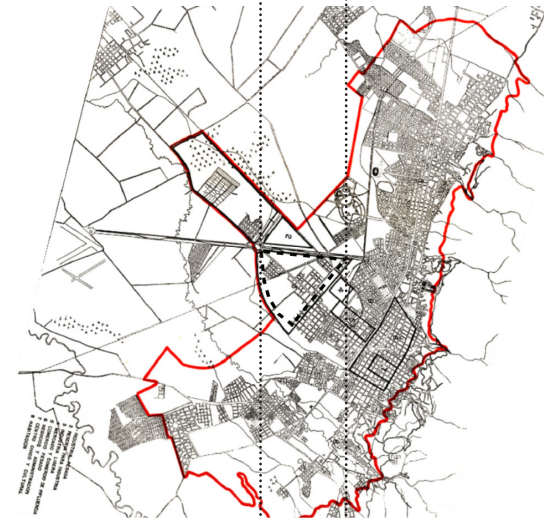
Portal: <http://cartografia.bogotaendocumentos.com/mapa>

MADE IN BOGOTÁ



40's

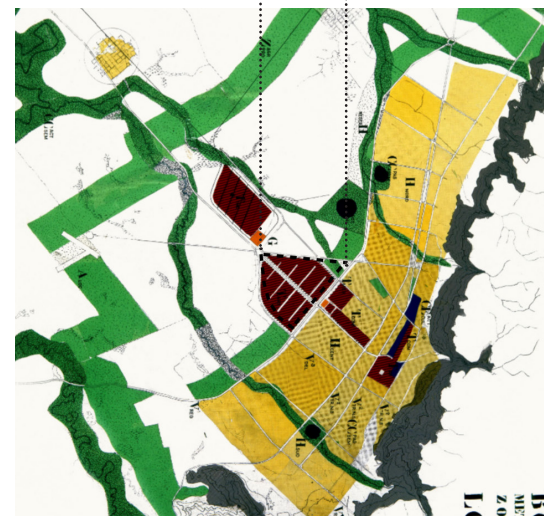
Karl Brunner's Regulatory Plan



50's

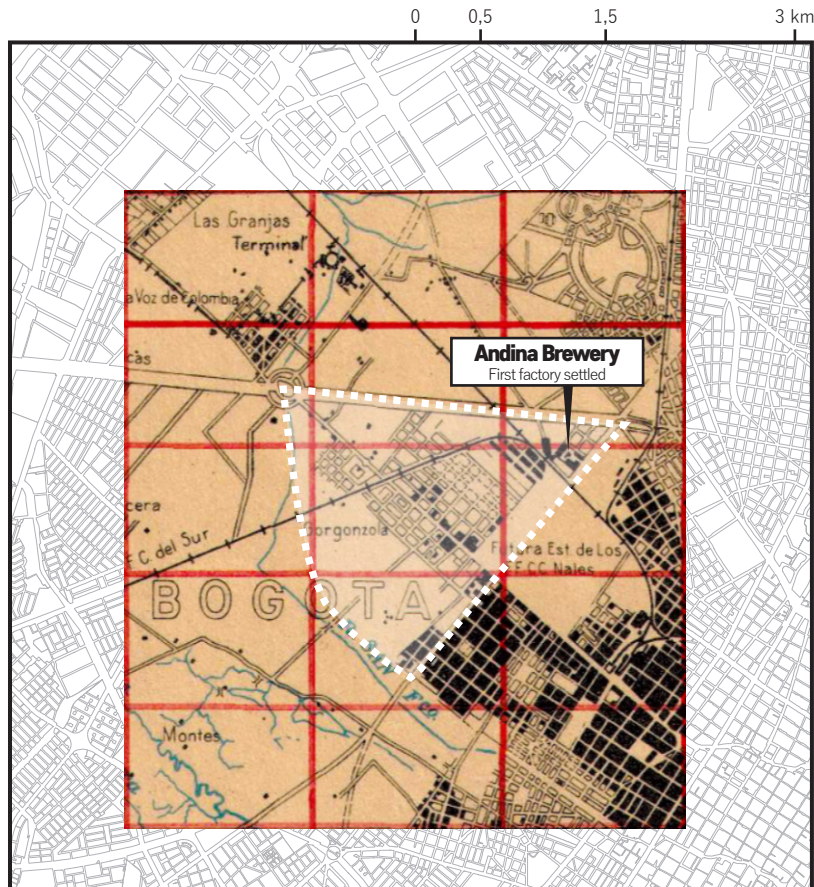
Le Corbusiers's Master Plan

INDUSTRIA PESADA
RESERVA PARA INDUSTRIA
INDUSTRIA LIGERA
MERCADO Y COMERCIO DE INFLUENCIA
COMERCIO PESADO
NEGOCIOS Y ADMINISTRACION
CENTRO CIVICO Y CULTURAL
HABITACION



THE CASE OF BOGOTÁ

1950_BEFORE LE CORBUSIER



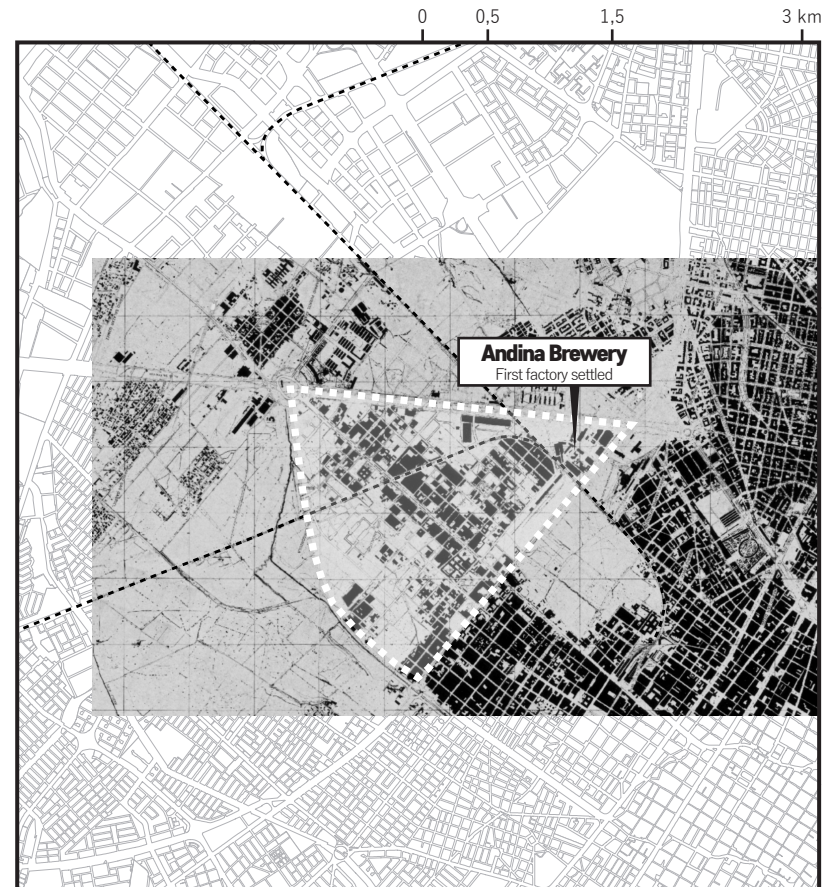
Area known today as “Zona Industrial”, zoned for industrial activity since 1940

Urban Plan ,Bogotá, 1952

Source: Universidad Nacional de Colombia. (n.d.). *Cartografías de Bogotá*.

<http://cartografia.bogotaendocumentos.com/mapa>

1960_AFTER LE CORBUSIER



Area known today as “Zona Industrial”, zoned for industrial activity since 1940

Urban Plan ,Bogotá, 1960

Source: Universidad Nacional de Colombia. (n.d.). *Cartografías de Bogotá*.

<http://cartografia.bogotaendocumentos.com/mapa>

ANDINA BREWERY

1945

"This factory (the Andina Brewery) was the second largest brewery in the country, **with a production of 1,173,000 hectoliters per year**, equivalent to **21% of the total national production**," says the historian and expert in Colombian beer Ricardo Plano. The construction of the brewery and malting took five years. It started in 1945. According to Plano's records, it began operating on September 25 of that year, but the first beer went on sale until February 18, 1950. The factory was the first facility built in West Florida (now Zona Industrial, this work's Case Study). After 1950, other industries and some wineries occupied the rest of the neighborhood properties.

1954

According to the architect Valentina Blanco, "in 1954 the expansion towards the West had not yet happened and it was possible to identify a single site developed in the West Florida neighborhood: the Andina Brewery. Before the industrial zone was a peripheral sector, now it is a centrality with institutional functions and completely integrated to the urban systems ". The brewery was registered, in its early years, as a strong competitor of Bavaria in the markets with the highest beer consumption, in Bogotá and the departments of Cundinamarca and Boyacá. Its brands were Andina, Andinita, Dorada, Sultana, Rubia, Imperial, Morena, Zipa and Malta Andina.

"Like this factory, some others are recognized in the industrial zone of Puente Aranda that responded to the first zoning of land uses and destinations defined for Bogotá, and that together make up the industrial landscape of the city of the mid-20th century", explains the architect Daniel Gutiérrez Reyes, author of the academic thesis Refunctionalization of the Cervecería Andina: Industrial Heritage of Bogotá.

1975

In 1975, the company ceased to be independent and became part of the Santo Domingo Group. In 1982, the name of Cervecería Andina disappeared and the factory became the Cervecería del Litoral.

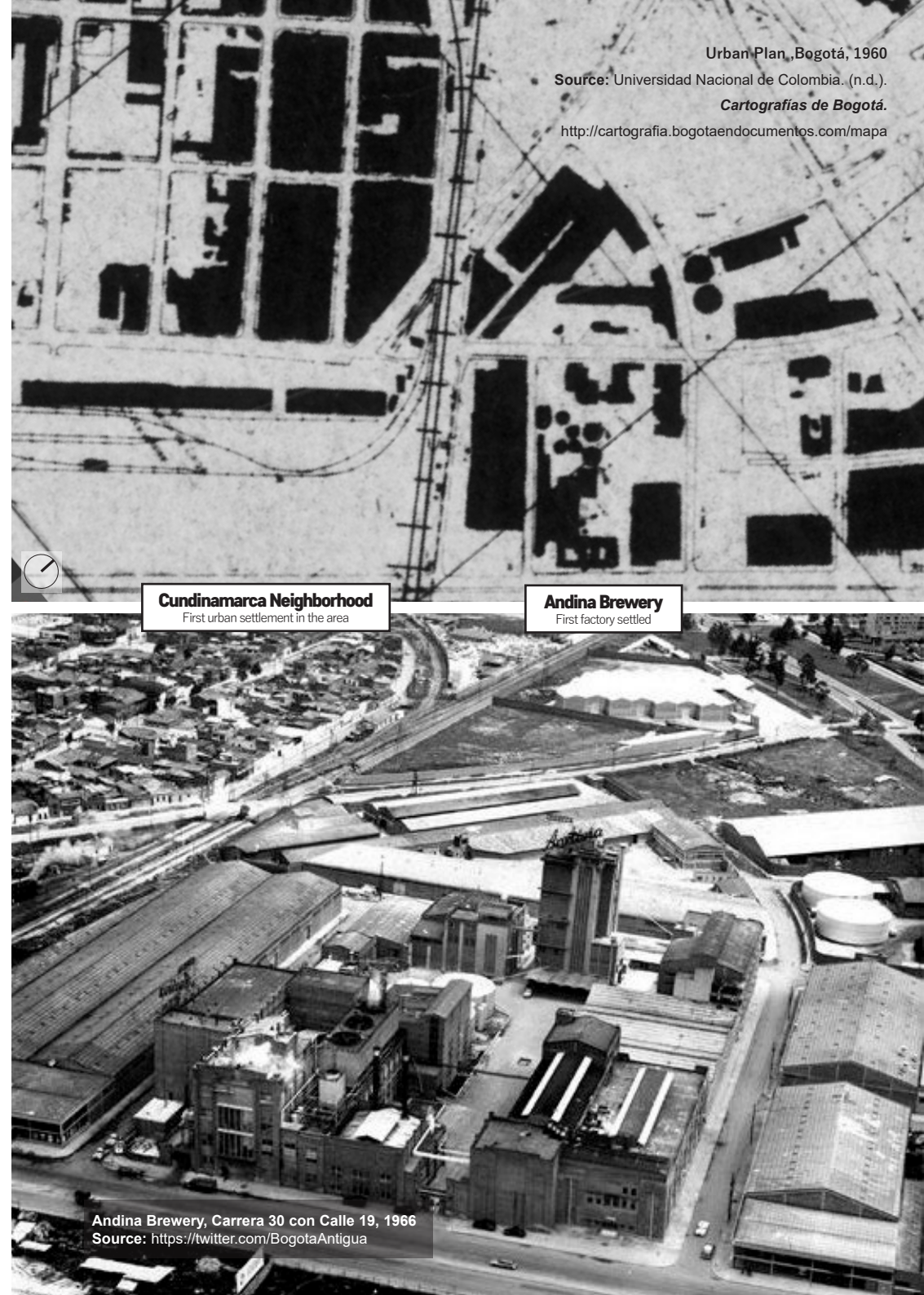
1997

Later, in 1997, the company was absorbed by Malterías de Colombia, from Bavaria, and finally closed in 1999. "Bavaria entered into an organizational plan for all its companies. It began to close breweries throughout the country because of overproduction and tried to modernize the five plants it stayed with," explains Plano.

Source: *Semana Magazine*

<https://www.semana.com/contenidos-editoriales/el-suroccidente-de-bogota-se-siente/articulo/el-proyecto-triangulo-bavaria-para-la-antigua-cerveceria-andina/553744>

MADE IN BOGOTÁ



Urban Plan, Bogotá, 1960

Source: Universidad Nacional de Colombia. (n.d.).

Cartografías de Bogotá.

<http://cartografia.bogotaendocumentos.com/mapa>

Cundinamarca Neighborhood

First urban settlement in the area

Andina Brewery

First factory settled

Andina Brewery, Carrera 30 con Calle 19, 1966

Source: <https://twitter.com/BogotaAntigua>

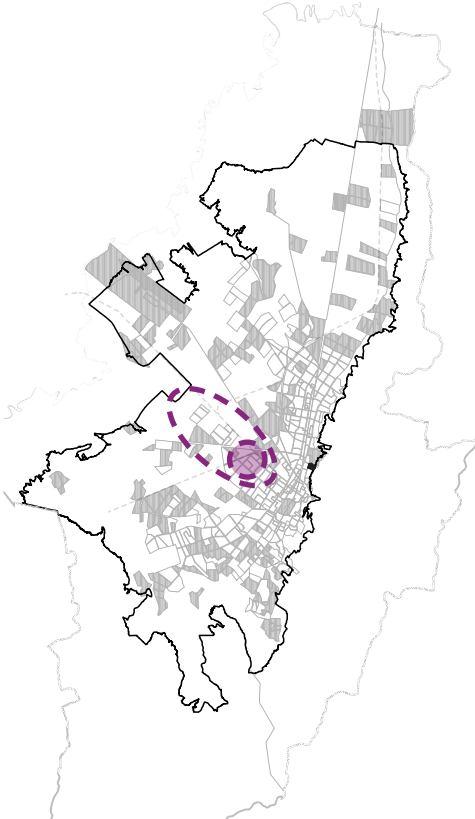
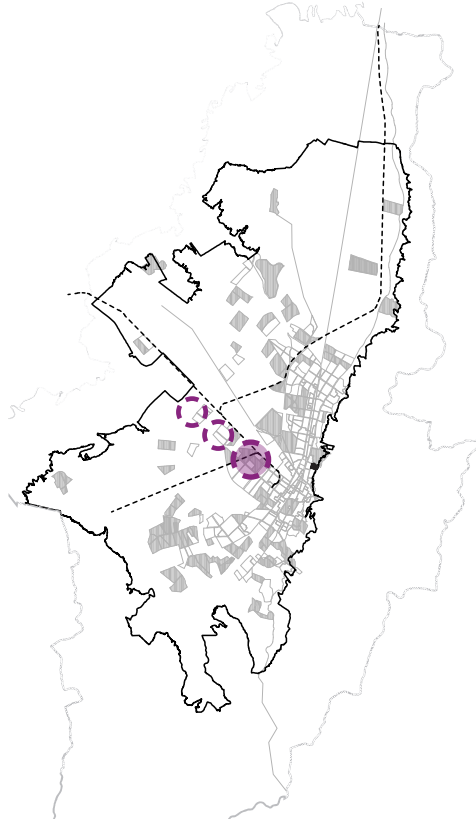
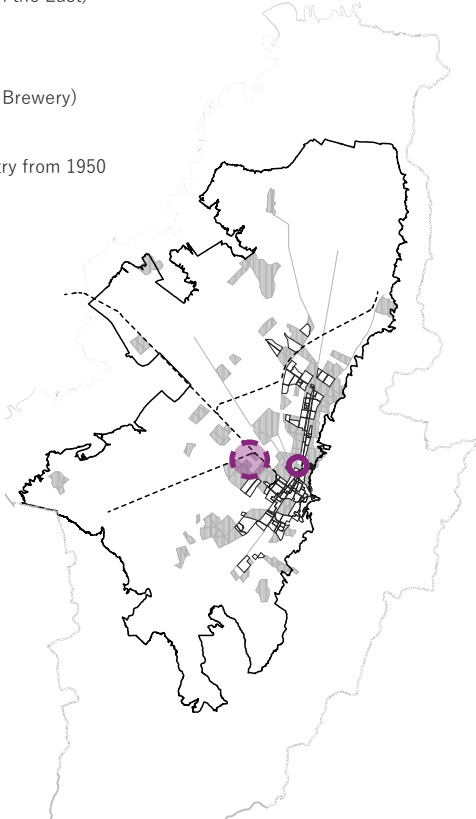
ZONING VS. CITY GROWTH

0 5 10 20 km

Time-line Summary



- Natural limit (Bogotá river in the West and the Andes in the East)
- Current Urban limit
- - - Railway
- First factory mapped in the city in the 1920's (Bavaria Brewery)
- Industrial Area since 1940
- Expanded areas for industrial activity and heavy industry from 1950
- Expanded area for industry in later years



1890

**Bogotá
pre-zoning**

Traditional colonial urban fabric with no major changes from its foundation in the 1500's.

1920

**Olaya's Bogotá
Futuro Plan**

Bavaria Brewery builds its factory in the outer part of the city, creating the first working-class settlement.

1940

**Karl Brunner's Regulatory
Plan**

First zoning map plans two industrial zones, one in the **Bavaria Brewery** and the other **close to the Railway Central Station and the 19th street**, with new important roads to come, heading the **West Corridor** (main commercial connection at a regional scale).

1950

**Le Corbusier's
Master Plan**

The Bavaria Brewery in the center is not longer zoned as industrial zone, on the opposite the West Corridor becomes stronger. The first zone is enhanced as **light industry**, then there are two new zones: one for **heavy industry** and the other **planned for expansion**.

1960

**Reality after
the Plans**

Slow process of densification in the planned areas, because the industry was rather precarious and depended on local consumption and closeness to water sources. However the **industrial zoning in the west** gets consolidated over time and remains until today.

CHAPTER IV

Bogotá's City Center

Source: Garvito, C. (2019). The Atrio Complex will be the highest building in the country. *AXXIS Magazine*.

Photography: RUDOLF.



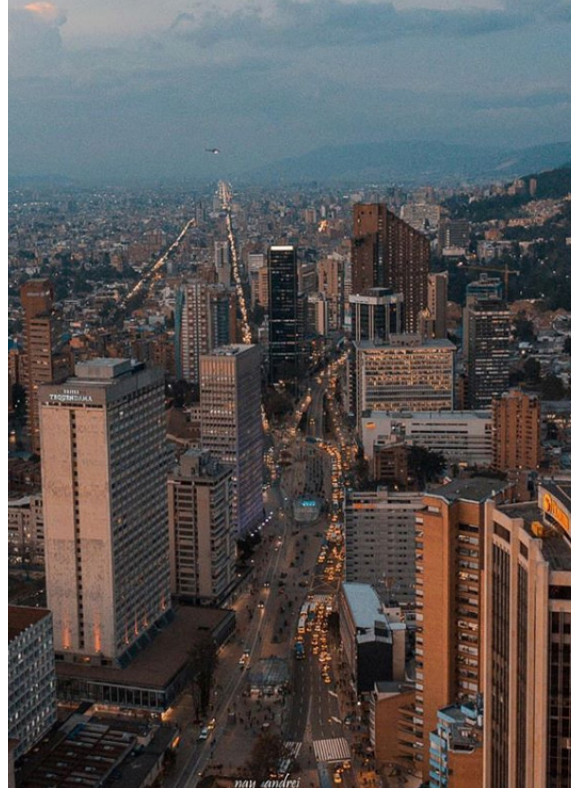
THE CONTEMPORARY BOGOTÁ VS. THE CONTEMPORARY INDUSTRY

What is the **current valid normative** for the industrial activity and where is it located today?

El Dorado Avenue, Bogotá

Source: Garvito, C. (2019). The Atrio Complex will be the highest building in the country. *AXXIS Magazine*.

Photography: RUDOLF



Bogotá today in social media
Source: <https://www.instagram.com/yoamobogota/>

THE 2004 'POT'

Current valid normative for land use

Current policies

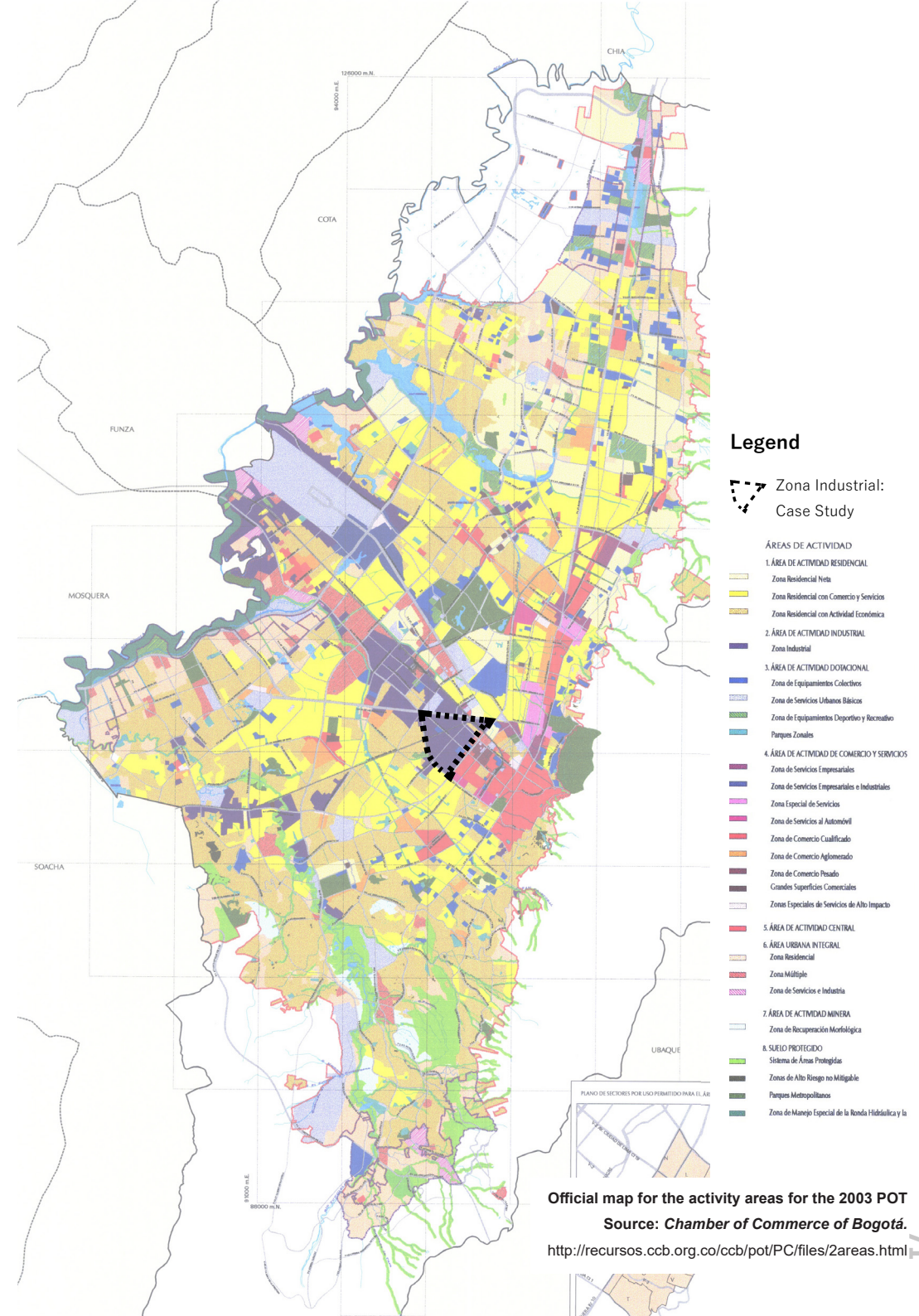
The Capital District adopted its first **POT** (Plan de Ordenamiento Territorial, in english: **Territorial Ordering Plan**), through District Decree 619 of 2000 and was revised for the first time by District Decree 469 of 2003. Subsequently, the mayor adopted District Decree 190 of 2004 and it compiled the rules contained in the two previous decrees. **The District Decree 190 of 2004 is the POT that currently governs Bogotá.** (Bogotá District Planning Secretariat, 2018)

What was the city's definition of industrial activity?

"Industrial Activity Area. Is an area in which it is allowed the location of establishments dedicated to the production, processing, manufacturing, preparation, recovery, reproduction, assembly, construction, repair, transformation, treatment and handling of raw materials, to produce goods or material products." (Chamber of Commerce of Bogotá, 2003)

What was the city's initiative for mixed uses?

"Integral Urban Area. Is the one that indicates a certain urban land and / or expansion zone for urban projects that harmoniously combine housing areas, trade and service areas, industry zones and public areas, in accordance with the strategy of territorial planning foreseen for the different areas and centralities." (Chamber of Commerce of Bogotá, 2003)



NEW 'POT' PROPOSAL 2018

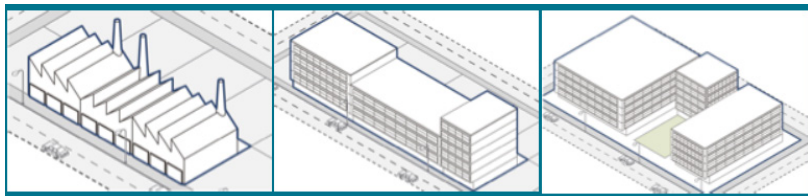
Formulation of the General Review of the POT

Aparent flexibility in activity areas



Flexibility

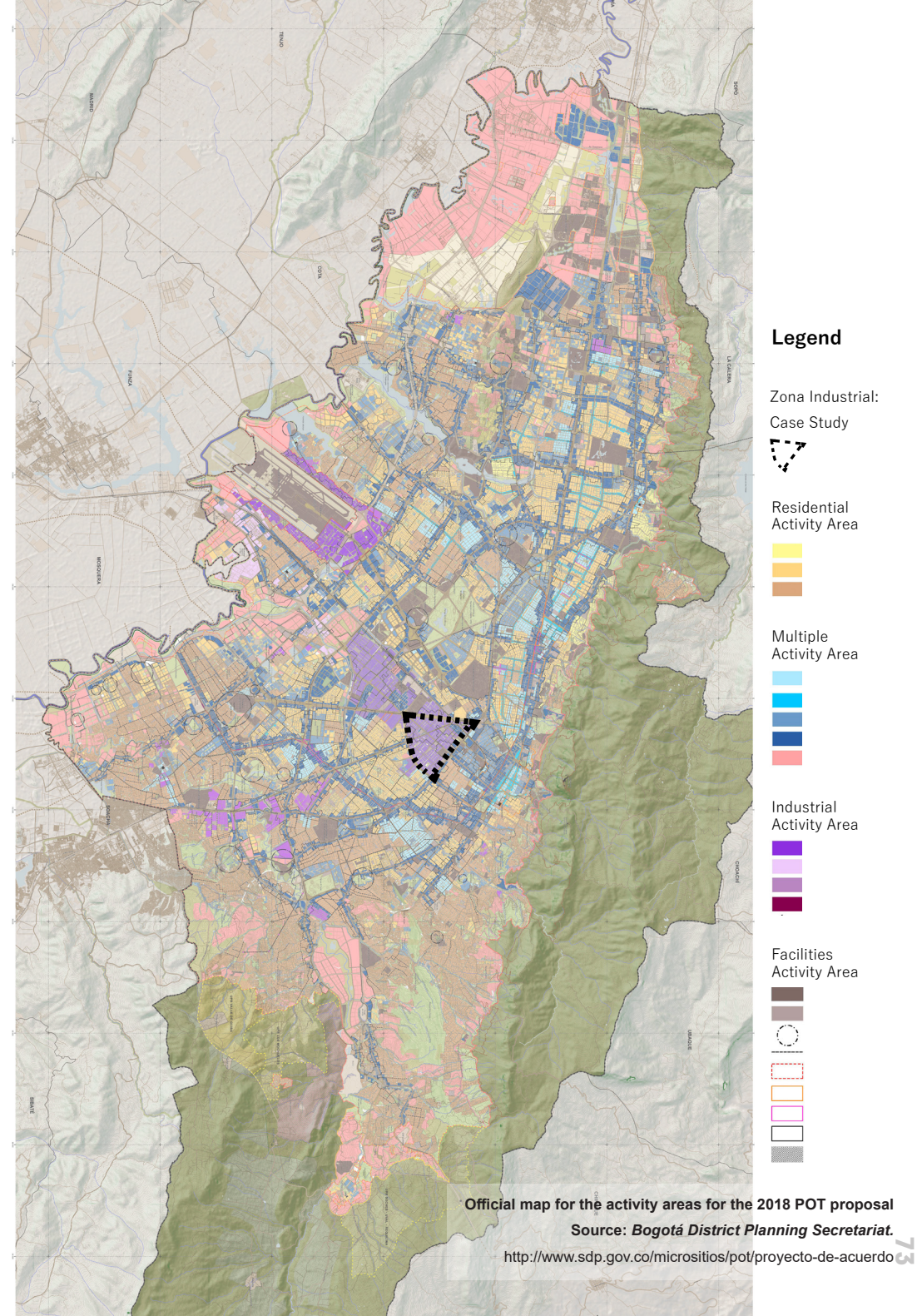
While there is a possibility of mixing activities in the proposal, the same document speaks of understanding the city by **homogeneous urban areas** and the case study is defined as a "non-residential estate/ typology", which not only limits the proposal but also which contradicts the current condition of diversity of uses in the area.



Current Superior Mayor of Bogotá's new proposal for the POT

Source: Alcaldía Mayor de Bogotá D.C. (2018). *Plan de Ordenamiento Territorial - Documento Resumen*. Bogotá.

MADE IN BOGOTÁ



INDUSTRY

Current zoning for industrial activity

Today urban policies that affect industry **are focused mostly on their environmental impact, controlled under the District Department of Environment.** In general, they explain that:

In Article 1, the United Nations Framework Convention on Climate Change (UNFCCC), this (climate change) is defined as: "climate change attributed directly or indirectly to human activity that alters the composition of the atmosphere global and that adds to the natural variability of the climate observed during comparable periods of time "As can be seen, it is a definition in which the exogenous nature of the phenomenon is established for a territory such as Bogotá, whose human activities (particularly the industrial ones) do not generate a decisive impact on the global atmosphere.

In fact, Bogotá emits 16 million tons / year of carbon dioxide, of which 65% correspond to the energy sector (industry, land and air transport, electric power production, among others), 20% to waste and 15 % to agriculture and land use change. It is a low emission compared to Santiago de Chile or Mexico D.F. (60 million T / year). The construction of trunk roads of mass public transport reduces GHG emissions by 30% on the main avenues.



The subregional nodes of Zipaquirá, Facatativá and Fusagasugá are now playing the role of alternative population concentration centers, while **Tocancipá and Gachancipá serve as industrial development centers** (keeping the historical west corridor) and municipalities with a rural vocation as areas of environmental balance, rural economic development and sub-centers of complementary activities according to their potential and restrictions.

"The attributes of this model in which the district territory is registered are: environmental sustainability, socio-economic balance and functional articulation."

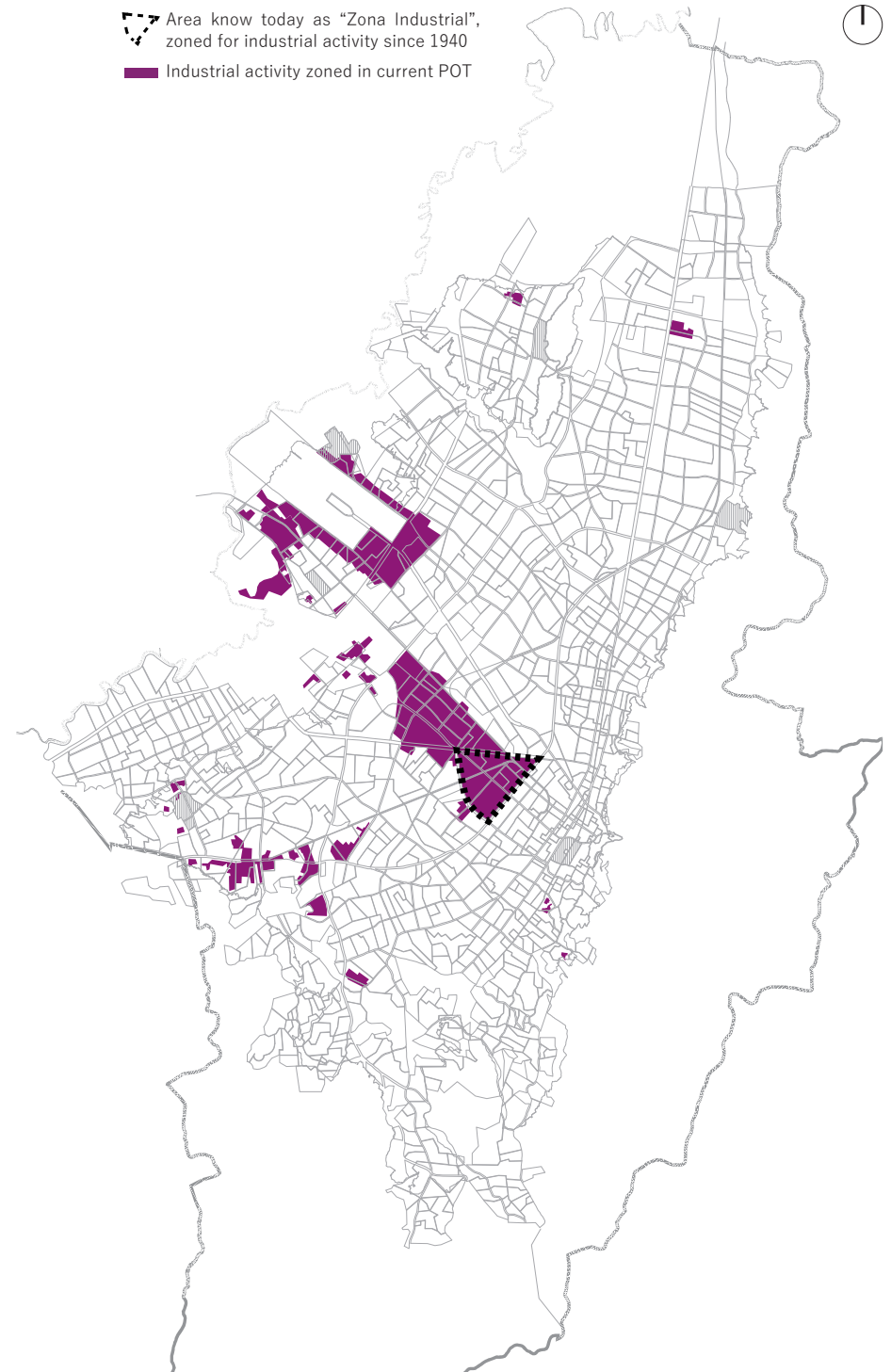
Current Superior Major of Bogotá's proposal

Source: Alcaldía Mayor de Bogotá D.C. (2018).

Plan de Ordenamiento Territorial - Documento Resumen. Bogotá.

Area know today as "Zona Industrial", zoned for industrial activity since 1940

Industrial activity zoned in current POT



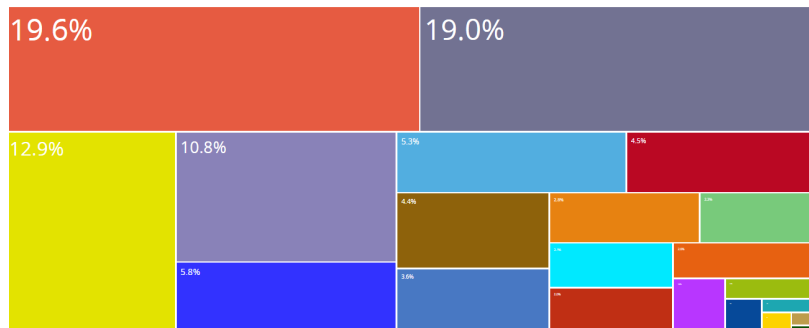
ECONOMIC ACTIVITIES

Current Condition

How many companies in 2017?

According to the DANE, there are **148.338 companies** in Bogotá (information with effect from December 31, 2017). These companies are classified according to the economic activity they develop following the **International Standard Industrial Classification of All Economic Activities** (ISIC). In this way, in the table below the official classification for Bogotá is shown and **the first 5 activities** are taken into deeper consideration, with special interest into the placement of manufacturing in this ranking.

- 1 19.6%_51.670 companies_(G) Wholesale and retail trade; repair of motor vehicles and motorcycles
- 2 19.0%_49.897 companies_(M)_ Professional, scientific and technical activities
- 3 12.9%_33.888 companies_(F) Construction
- 4 **10.8%_28.527 companies_(C) Manufacturing**
- 5 5.8%_15.233 companies_(N) Administrative and support service activities



Source: DANE

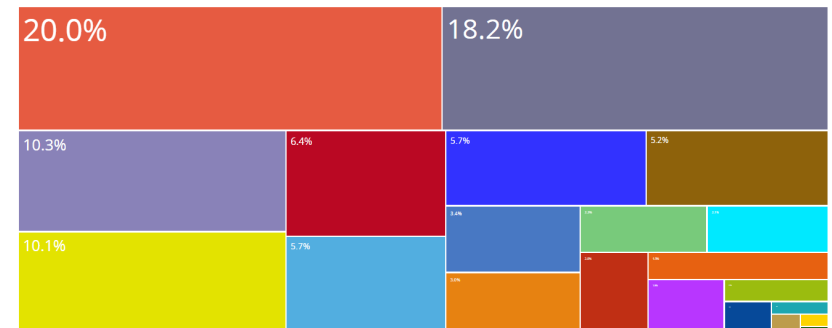
The National Administrative Department of Statistics - DANE (Departamento Administrativo Nacional de Estadística) is the entity responsible for planning, surveying, processing, analyzing and disseminating the official statistics of Colombia. <https://geoportal.dane.gov.co/laboratorio/directorio/#>

What about 2018?

According to the DANE in their latest report, there are now:

302.176 companies and 462.263 economic activities in total in Bogotá (information with effect from June 30, 2018). So it is evident the remarkable increase in the number of companies even by activity, likewise, it is interesting for this research especially the manufacturing ascent in the ranking. However, in general there are no radical changes in the order, rather continue to consolidate the categories that take the lead.

- 1 20.0%_92.403 companies_(G) Wholesale and retail trade; repair of motor vehicles and motorcycles
- 2 18.2%_84.158 companies_(M)_ Professional, scientific and technical activities
- 3 **10.3%_47.661 companies_(C) Manufacturing**
- 4 10.1%_46.767 companies_(F) Construction
- 5 6.4%_29.774 companies_(S) Other service activities



Source: DANE

The DANE offers more than 100 research in industrial, economic, agricultural, population and quality of life aspects aimed at supporting decision-making in the country. <https://geoportal.dane.gov.co/laboratorio/directorio/#>

(C) MANUFACTURING

Current Condition

What is the ISIC?

Revision 4 - 2008

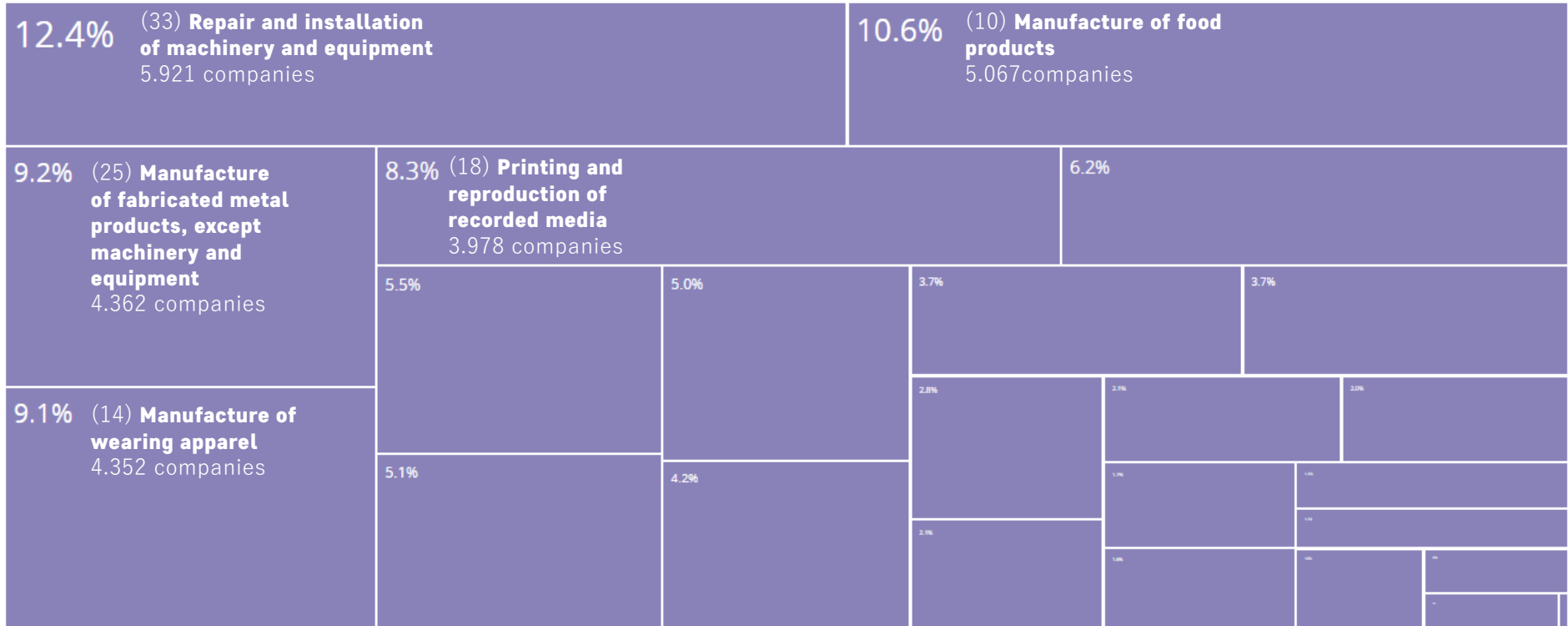
The International Standard Industrial Classification of All Economic Activities is a United Nations industry classification system. Wide use has been made of ISIC in classifying data according to kind of economic activity in the fields of employment and health data. It is maintained by the **United Nations Statistics Division**.

ISIC classifies entities by activity. The most detailed categories are defined by combinations of activities described in statistical units, considering the relative importance of the activities included in these classes.

ISIC Rev.4 continues to use criteria such as input, output and use of the products produced, but places additional emphasis on production processes.

In the **ISIC** the use of letters for the section level of the classification is complemented by the use of a purely numerical system at the **division** (2-digit), **group** (3-digit) and **class** (4-digit) levels, which progressively makes the description of economic activity become clearer.

In this regard, the chart below, shows the **ten divisions** of the economic activities with greater impact (regarding **number of companies per activity**) in Bogotá within the classification of manufacturing.



Source: DANE

<https://geoportal.dane.gov.co/laboratorio/directorio/#>

Group and Class Breakdown

Repair and installation of machinery and equipment

4.065 companies in Bogotá

Division 33	Repair and installation of machinery and equipment
331	Repair of fabricated metal products, machinery and equipment
3311	Repair of fabricated metal products
3312	Repair of machinery
3313	Repair of electronic and optical equipment
3314	Repair of electrical equipment
3315	Repair of transport equipment, except motor vehicles
3319	Repair of other equipment
332	3320 Installation of industrial machinery and equipment

Manufacture of fabricated metal products, except machinery and equipment

3.018 companies in Bogotá

Division 25	Manufacture of fabricated metal products, except machinery and equipment
251	Manufacture of structural metal products, tanks, reservoirs and steam generators
2511	Manufacture of structural metal products
2512	Manufacture of tanks, reservoirs and containers of metal
2513	Manufacture of steam generators, except central heating hot water boilers
252	2520 Manufacture of weapons and ammunition
259	Manufacture of other fabricated metal products; metalworking service activities
2591	Forging, pressing, stamping and roll-forming of metal; powder metallurgy
2592	Treatment and coating of metals; machining
2593	Manufacture of cutlery, hand tools and general hardware
2599	Manufacture of other fabricated metal products n.e.c.

Manufacture of food products

2.649 companies in Bogotá

Division 10	Manufacture of food products
101	1010 Processing and preserving of meat
102	1020 Processing and preserving of fish, crustaceans and molluscs
103	1030 Processing and preserving of fruit and vegetables
104	1040 Manufacture of vegetable and animal oils and fats
105	1050 Manufacture of dairy products
106	Manufacture of grain mill products, starches and starch products
1061	Manufacture of grain mill products
1062	Manufacture of starches and starch products
107	Manufacture of other food products
1071	Manufacture of bakery products
1072	Manufacture of sugar
1073	Manufacture of cocoa, chocolate and sugar confectionery
1074	Manufacture of macaroni, noodles, couscous and similar farinaceous products
1075	Manufacture of prepared meals and dishes
1079	Manufacture of other food products n.e.c.
108	1080 Manufacture of prepared animal feeds

Source: ISIC Revision 4
United Nations, New York, 2008

https://unstats.un.org/unsd/publication/seriesM/seriesm_4rev4e.pdf

Manufacturing data

	BOGOTÁ
Area	1.775,98 km2

Manufacturing Companies	47.661
Date of data	30/6/2018

Population	11.000.000
Date of data	2.018

Manufacturing Workers	1.200.000
Date of data	2015

City's Manufacturing GDP	US\$ 0,73 billion
City's GDP	US\$ 101,6 billion
National GDP	US\$ 330 billion
Date of data	2018

Total Export	US\$ 2.599 million
Country # 1	USA_US\$ 883,6 million
Country # 2	Ecuador_US\$ 441,8 million
Country # 3	Perú & Mexico_US\$ 155,9 million
Date of data	2018

Total Export Product	
Product # 1	Flower buds_US\$ 229,5 million
Product # 2	Fresh roses_US\$ 214,5 million
Product # 3	Vehicles < 1000m3_US\$ 92,9 million
Product # 4	Carnation flowers_US\$ 86,3 million
Product # 5	Medicines_US\$ 83,2 million
Date of data	2018



Total Import	US\$ 2.071 million
Country # 1	USA_US\$ 516 million
Country # 2	China_US\$ 470 million
Country # 3	Mexico_US\$ 196 million
Date of data	2018

Source: DIAN Directorate of National Taxes and Customs.
Retrieved from <http://observatorio.desarrolloeconomico.gov.co/comercio-exterior-importaciones/crecen-las-importaciones-hacia-bogota-195>



CHAPTER V



CASE STUDY: ZONA INDUSTRIAL

Zooming in. Understanding zoning and land use regulations for industrial development from the city scale to the zonal planning units.

CONTEXT

Current administrative divisions in Bogotá

Locality/District

Bogotá is divided into 20 localities: 19 urban and one rural. Several of these were in their time towns contiguous to the capital of Colombia. They offer citizens networks of public services such as road infrastructure, entertainment and supply of products. **Each one has its own mayor, called Minor Mayor, and a Local Administrative Board (JAL).**

For the topic of this thesis, it is important to stand out the locality number 16, **Puente Aranda**, which is characterized by being the center of Bogotá's industrial and commercial activity.

ZPN - Zonal Planning Unit

Every Locality is divided into ZPN, in this way Bogotá has over a hundred of them. According to the District Department of Planning, the article 49 of **District Decree 190 of 2004** (POT of Bogotá) states that the Zonal Planning Units (UPZ) have the purpose of defining and specifying the urban land planning, responding to the productive dynamics of the city and its insertion in the regional context, involving social actors in the definition of aspects of urban planning and regulatory control at the zonal scale. They must determine, as a minimum, the following aspects:

1. The **guidelines of the basic urban structure** of each unit, which allow articulating the urban city norm with the zonal planning.
2. The regulation of the **intensity and mix of uses.**
3. **Floor area ratio** conditions.
4. Guidelines on **noise control** in accordance with the environmental policy issued by the DAMA on the subject based on National Decree 948 of 1995.

Expanded City Center

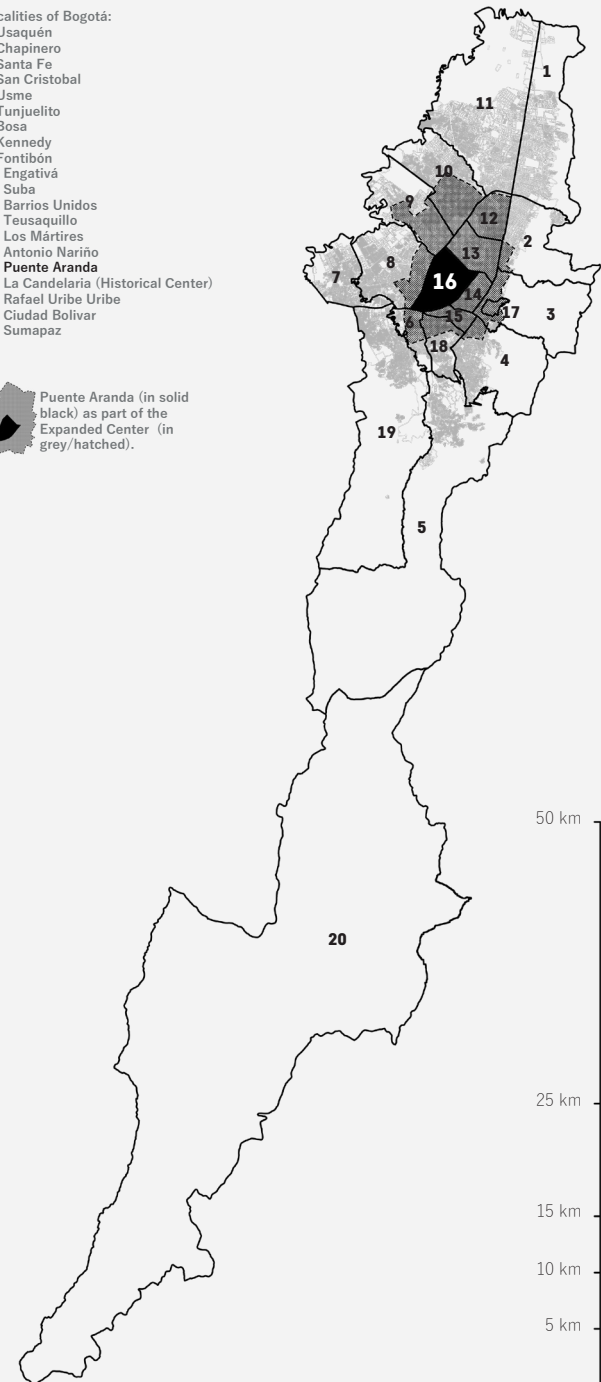
cept defined by the City Hall of Bogotá, which started from the need to improve urban planning in the areas that are being constituted as members of the city center.

During the course of the twentieth century (especially the second half), the constant growth of the city and the strong variations in the housing conditions in the city center, due to problems of crime and urban deterioration; commercial and residential activities were moving to other sectors further north. Due to the integration of these sectors, the need to create mobility and develop urban planning covering these sectors was considered.

Localities of Bogotá:

1. Usaquén
2. Chapinero
3. Santa Fe
4. San Cristobal
5. Usme
6. Tunjuelito
7. Bosa
8. Kennedy
9. Fontibón
10. Engativá
11. Suba
12. Barrios Unidos
13. Teusaquillo
14. Los Mártires
15. Antonio Nariño
16. Puente Aranda
17. La Candelaria (Historical Center)
18. Rafael Uribe Uribe
19. Ciudad Bolívar
20. Sumapaz

Puente Aranda (in solid black) as part of the Expanded Center (in grey/hatched).



PUENTE ARANDA LOCALITY

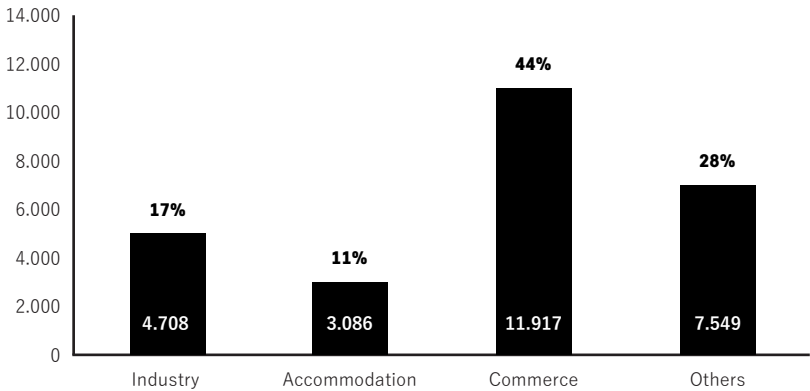
Current administrative divisions in Bogotá

General data

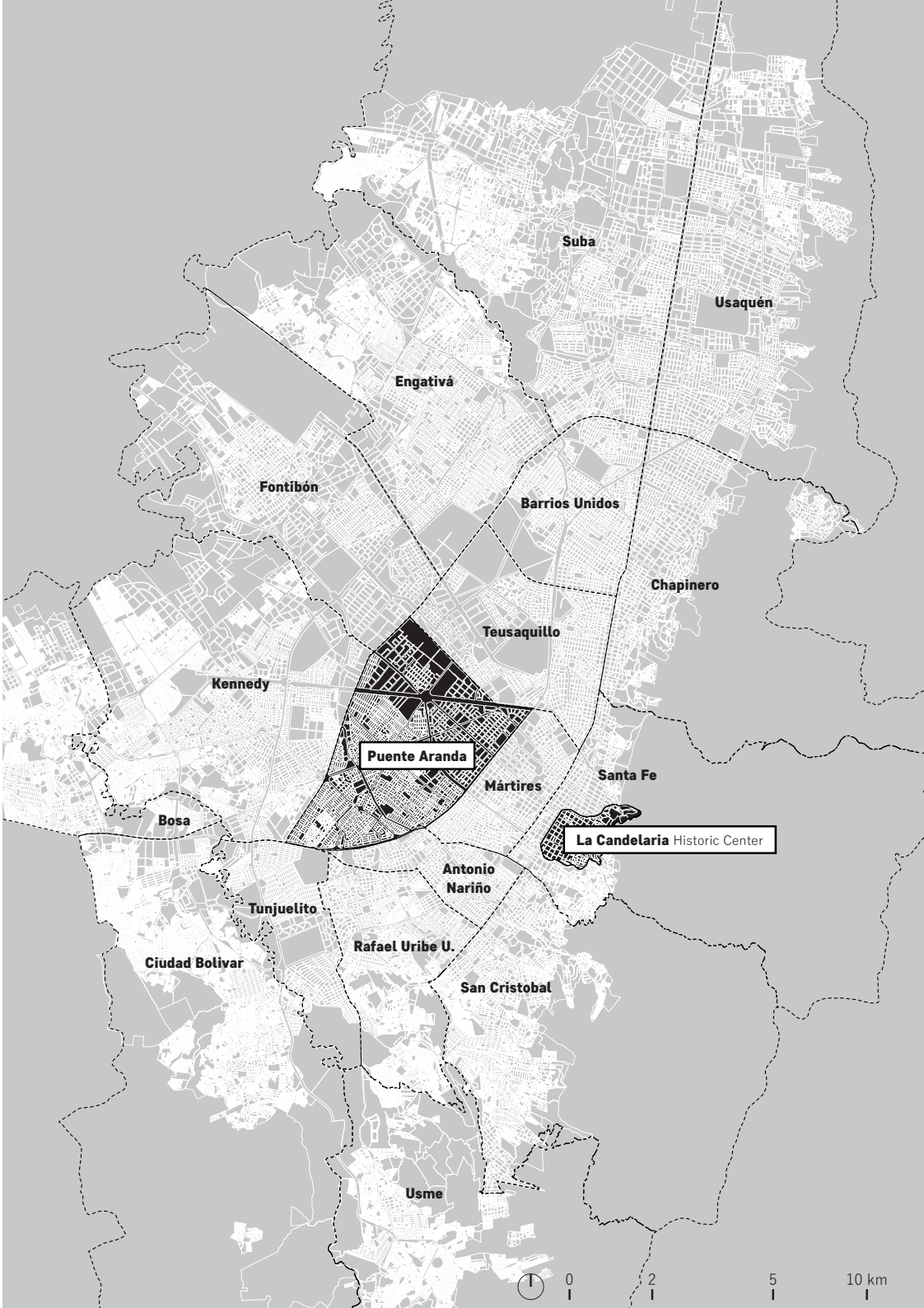
Demography and population	Puente Aranda	Bogotá
Extension	1.731 hectares 1% of Bogotá	163.663 hectares
Land type (urban/rural)	Urban: 100% Urban Expansion: 0% Rural: 0%	Urban: 23% (38.431ha) Urban Expansion: 2% (2.974ha) Rural 75%: (122.257ha)
Zonal Planning Units (UPZ) in total	5	120
Neighborhoods in total	285	5.502
Population	218.555 inhabitants	8.181.047 inhabitants
Population density	128 pop./ha	213 pop./ha

Source: District Department of Planning (2018); District Department of the Environment (2018).

Number of active license plates for establishments by economic activity in the Locality

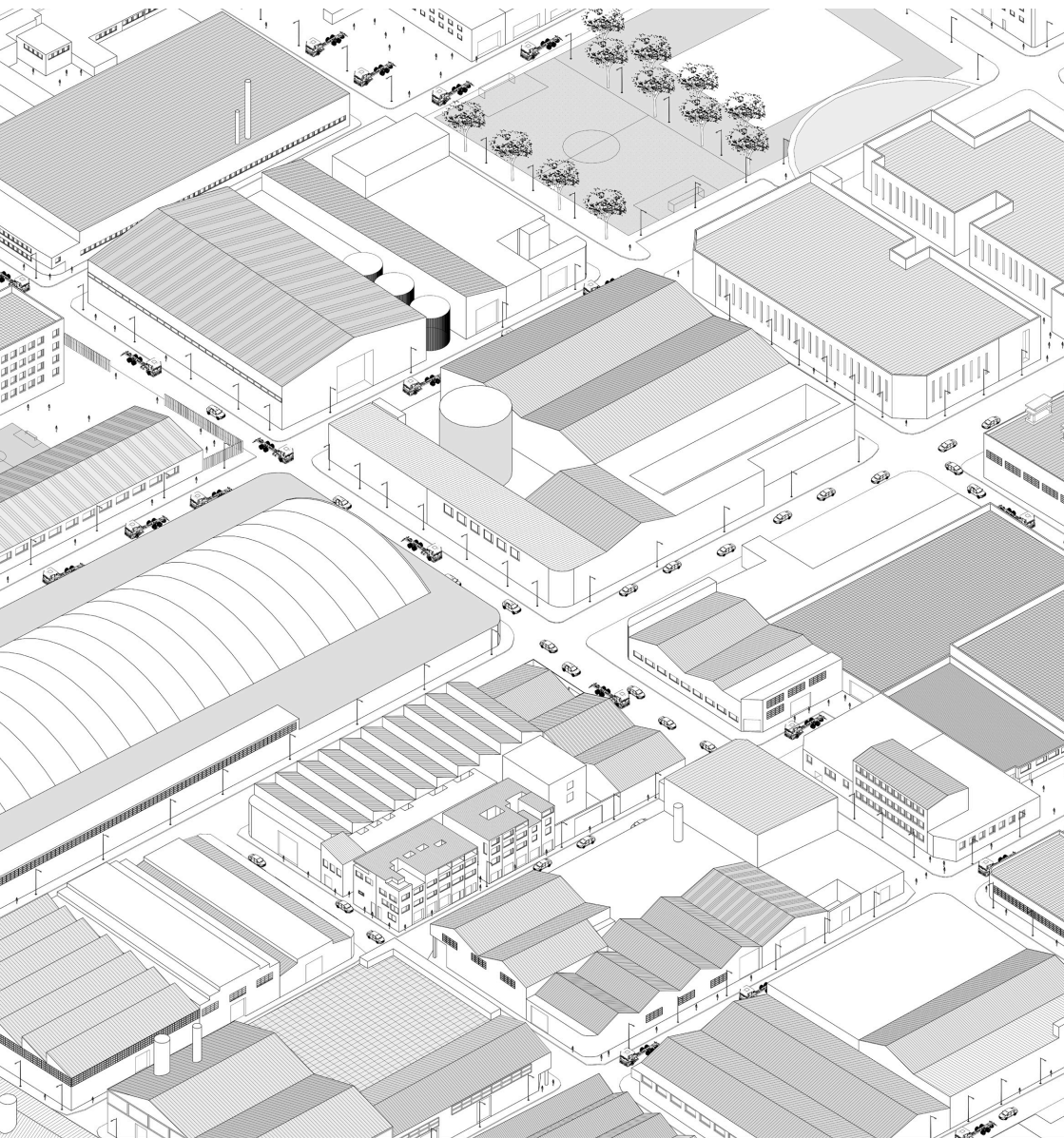


Source: District Department of Planning (2017).

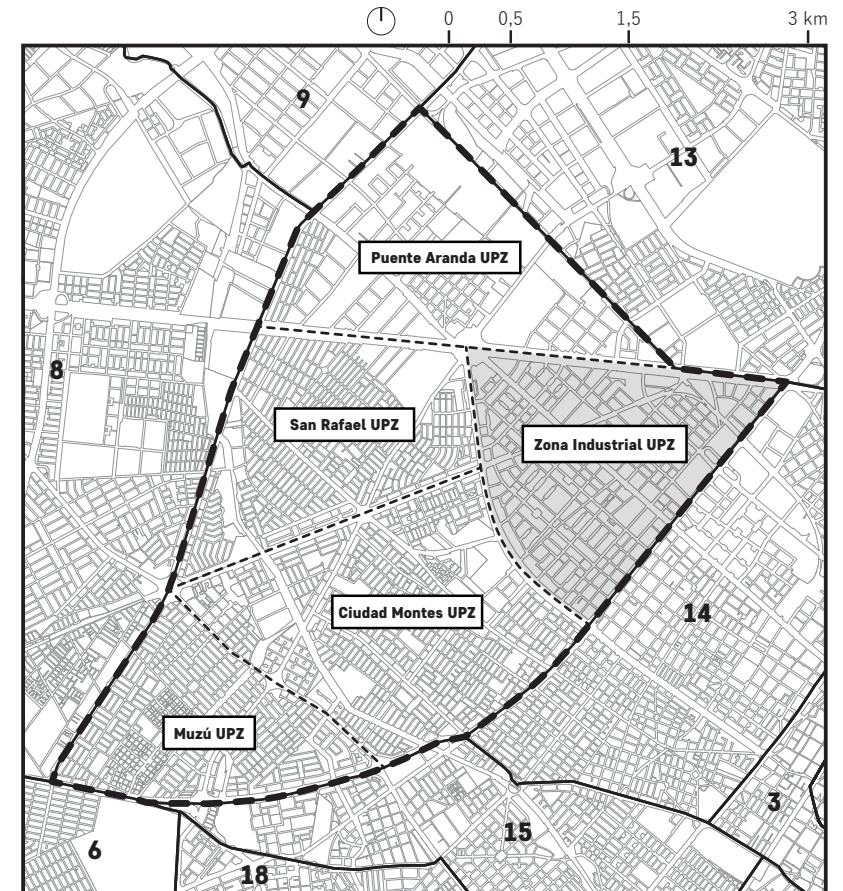


ZONA INDUSTRIAL UPZ108

Smallest administrative division



Puente Aranda divided into Zonal Planning Units



The plan shows the 16th district of Bogotá, **Puente Aranda**, with the adjacent districts identified by their correspondent numbers. Each district, in turn, is divided into UPZ (**Unidades de Planeamiento Zonal**), for example, Puente Aranda is divided into 5 UPZ, and for this study only one of them will be taken, which bears the name of Zona Industrial and is highlighted with the gray spot in the plan above.

Source: (Bonilla, D; Stähelin, R; Pachón, M; Perez, L; 2015)



Simón Bolívar Metropolitan Park

Movistar Arena

El Campín Stadium

National University

Corferias Convention Center

District Administrative Center

Zona Industrial UPZ

Calima Shopping Mall

Paloquemao Marketplace

Tequendama International Center

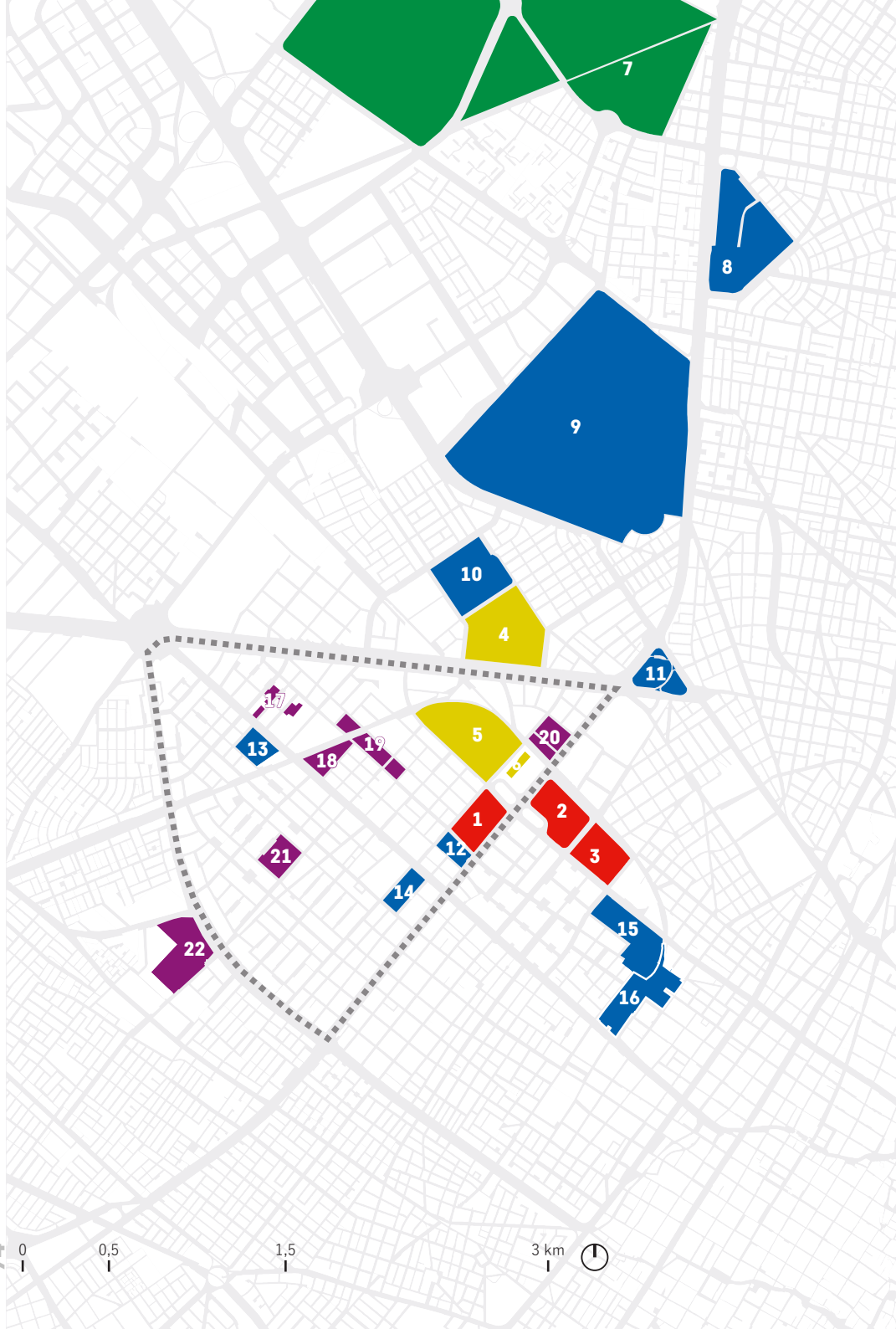
La Sabana Train Station

Zona Industrial UPZ inside Bogotá aerial photography
Source: The Spatial Data Infrastructure for the Capital District (IDECA). *Mapas Bogotá*.
<https://mapas.bogota.gov.co/>

URBAN ATTRACTORS

Which urban elements attract people from all around the country to this specific city area?

- 1. JUMBO SUPERMARKET...** Hypermarket.
- 2. CALIMA SHOPPING MALL...** It is the fourth largest commercial center in Colombia in size with 240,000 m².
- 3. PALOQUEMAO MARKETPLACE...** One of the largest market places in the city.
- 4. CUAN - Antonio Nariño Urban Center...** Social housing paradigm solution following the modernism guidelines set by the CIAM.
- 5. CUNDINAMARCA NEIGHBORHOOD**
- 6. LA HOJA APARTMENT BUILDING**
- 7. SIMÓN BOLIVAR METROPOLITAN PARK...** The largest and most important urban park in the city of Bogotá.
- 8. MOVISTAR ARENA + EL CAMPÍN STADIUM**
- 9. NATIONAL UNIVERSITY...** With more than 50.000 students.
- 10. CORFERIAS Convention Center...** The largest exposition center in the country. 23 pavilions in total, 53.150 m² for exhibition. The Great Hall can accommodate 21,000 people standing.
- 11. CAD - District Administrative Center...** Brings together the main entities of the Government of Bogotá.
- 12. SENA Industrial Management Center**
- 13. LA MERCED School**
- 14. DISTRICT UNIVERSITY...** With more than 25.000 students.
- 15. LA PRESENTACIÓN School**
- 16. LA SABANA RAILWAY STATION...** Headquarters of the central station of the Sabana de Bogotá Railway and the National Railways of Colombia (FNC). Inaugurated on July 20, 1917,
- 17. COMAPAN Food Factory**
- 18. CCA - Colombian Automotive Company**
- 19. POSTOBON Beverage Factory**
- 20. BAVARIA Brewery**
- 21. CUNDINAMARCA Brewery**
- 22. DERSA Detergent Factory**



BOGOTÁ'S INSIGHT

How do people get to these urban attractors?

TransMilenio (BRT) System Lines

TransMilenio is a bus rapid transit (BRT) system that serves Bogotá, the capital of Colombia, and Soacha. The system opened to the public in December 2000, covering Caracas Avenue and 80 street. Other lines were added gradually over the next several years, and as of 2019, 12 lines totaling 114.4 km run throughout the city.

F LINE_AMERICAS

E LINE_NQS CENTRAL

K LINE_STREET 26

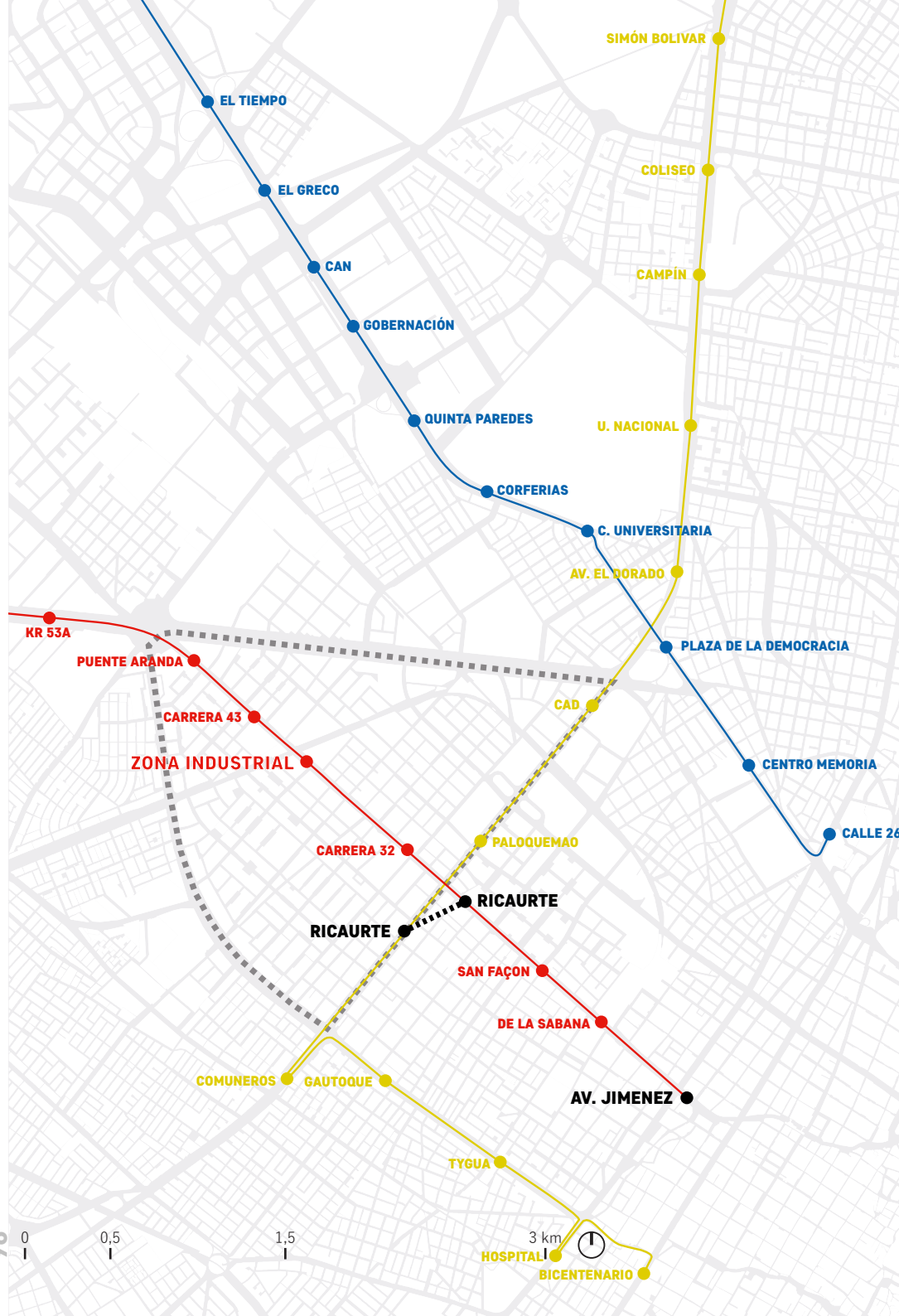
NODES

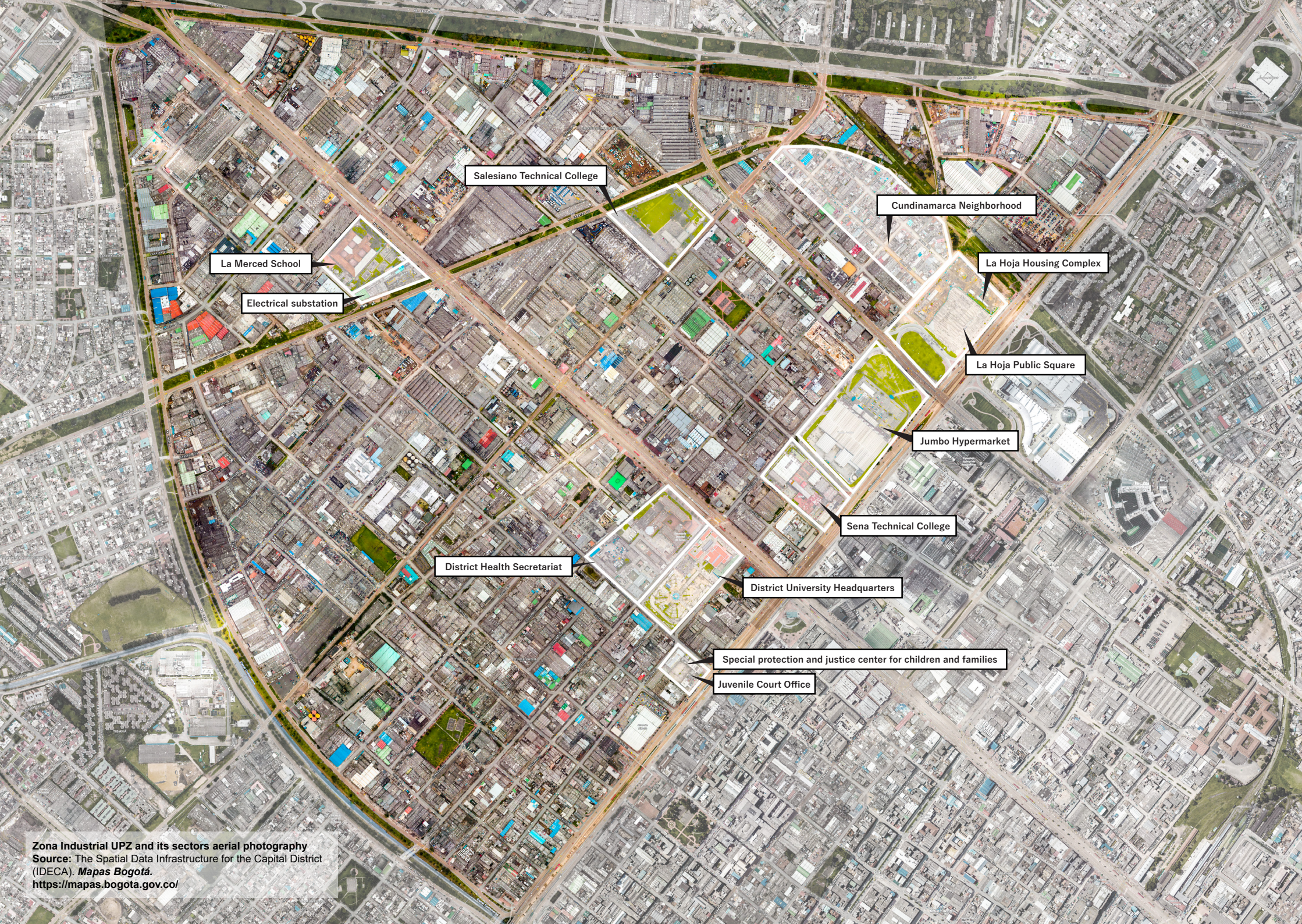


Transmilenio in Zona Industrial UPZ

Source: Google Street View (2018, July)

ZONA INDUSTRIAL UPZ 108





Salesiano Technical College

Cundinamarca Neighborhood

La Merced School

Electrical substation

La Hoja Housing Complex

La Hoja Public Square

Jumbo Hypermarket

Sena Technical College

District Health Secretariat

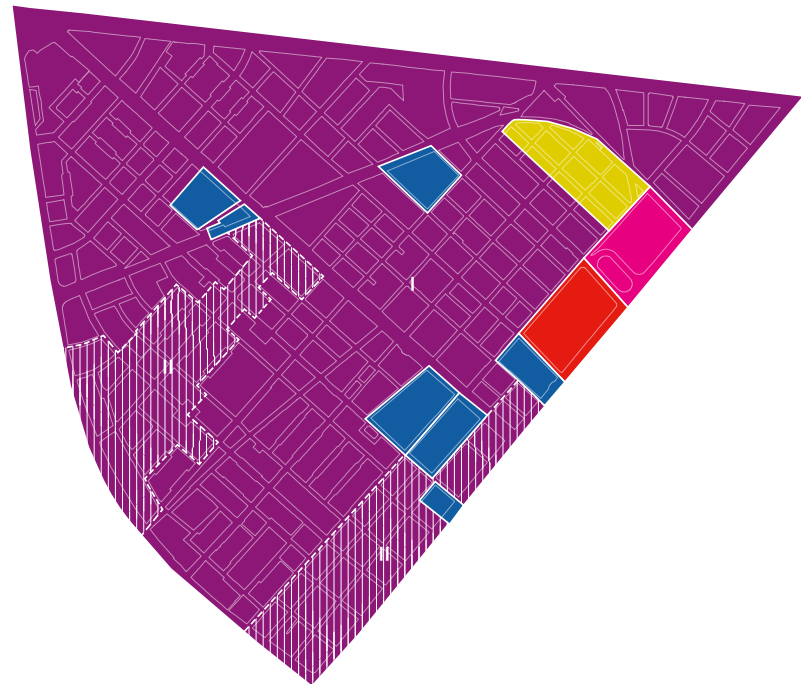
District University Headquarters

Special protection and justice center for children and families

Juvenile Court Office

UPZ ACTIVITY SECTORS

Land use regulations at a smaller scale



SECTOR	ACTIVITY	ZONE	TREATMENT
1/ I, II	Industrial	Industrial.	Consolidation of special urban sectors.
2	Residential	Residential with economic activity inside the dwelling.	Consolidation with moderate densification.
3	Commerce and services	Large commercial areas.	Urban consolidation.
4	Integral urban area	Multiple.	Urban renovation. Redevelopment modality.
5,6	Facilities	Collective facilities. Basic urban services.	Consolidation of special urban sectors.

PERMITTED USES CHART

General notes

Rigid zonal normative

A. All permitted uses in these regulatory sheets are subject to the provisions of the POT and District Decree No. 159 of 2004, District Decree 333 of 2010 and regulations that modify or replace them. These uses are ruled by the specific conditions set forth herein, without prejudice to the regulations in force on the corresponding subject. **The uses that are not assigned in each sector are prohibited**, with the exception of the Facilities uses in virtue of the established in the article 344 of the District Decree 190 of 2004 (POT compilation).

The development of all uses must be exclusively within the plots **without generating occupation of public space**.

One way of changing land use

E. In the regulatory sectors subjected to Urban Renewal Treatment, **only the Urban Renewal Partial Plan will define the applicable uses and conditions of buildability**. The area to be intervened by partial plan will be defined by the District Planning Department, in accordance with the determinants defined for its delimitation.

Industry regulated by it's environmental impact

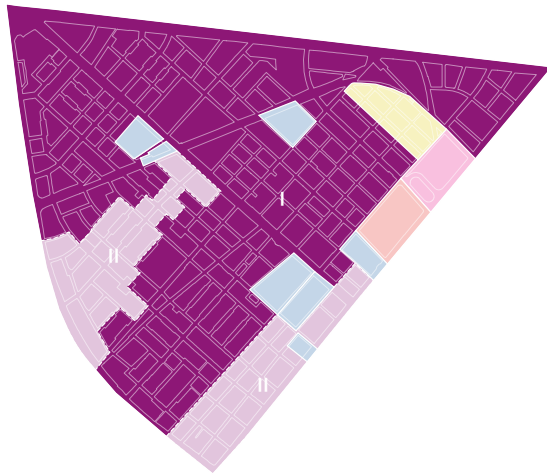
H. **INDUSTRIAL USES**: Industrial uses are allowed in the industrial zones and other areas indicated in this decree, with the established restrictions. Its implementation requires the respective concept of the District Department of the Environment (SDA). The analysis of risks of technological origin and the associated emergency and contingency plans will be based on the terms of reference prepared by the Emergency Prevention and Attention Department (DPAE). The existing industrial zones with regulations in force will continue to be ruled by the same, while the new regulation that deals with article 352 of District Decree 190 of 2004 comes into force. Articles 352, 353 and 372 of District Decree 190 of 2004 also apply.

Different scales for land use

The regulations also categorize their influence by scales. From bigger to smaller: **Metropolitan, Urban, Zonal, Neighboring scale**. In this way, it is established if the activity can be developed or not, and if yes, it is stated which scales are allowed establishing maximum areas, maximum number of users, etc.

SECTOR 1_SUB-SECTOR I

Industrial activity



Single use or hybrid?

Most of the UPZ is part of this Subsector I. At first glance it would seem that the area was destined for a single use, as an industrial cluster. However, the Regulation contemplates the mix of uses categorizing them among main, complementary, restricted and prohibited uses. So in the end this great 'violet patch' of industry can become less homogeneous, more hybrid. Hereunder it is sought to specify what really is allowed and in which terms.



PERMITTED USES CHART

Allowances for land use in Sub-sector I

Permitted as main uses

Industry: In industrial buildings the development of complementary activities to the use is allowed (offices, points of sale, maintenance, zones of attention to clients, and the other activities associated with the activity), as long as they do not occupy more than 20% of the built area of the property.

High Impact Services: Fuel sale and automotive services: automotive diagnostic centers. Only **urban scale** allowed.

Permitted as complementary uses

Facilities: Cultural facilities: museums, cultural, scientific, civic and/or artistic centers, innovative and research centers, 'cinematheques', libraries, auditoriums, planetariums, general scientific archives, exhibition halls and theaters, communal halls, houses of culture. **All scales** allowed.

Medical facilities: immediate medical attention center CAMI, basic health care unit UBA, primary health care unit UPA, ambulatory care center CAA, social health companies of the State and private health institutions equivalent to level 1 of care. Only **zonal and neighboring scale** allowed.

Religious facilities: existing or new with up to 800m² of net area for worship. Spaces for formation for up to 500 people and residency for up to people. Only **zonal and neighboring scale** allowed.

Sports and recreational facilities: main sports complex CDP, coliseums and sports centers with capacity for up to 3.000 spectators, mini-golf, facilities of the main sports network (conventional or singular), clubs and recreational-sports centers belonging to Compensation Funds, universities, companies and smaller unions to 1 hectare with a capacity of more than 500 users or spectators and indoor courts. Multiple courts and sports spaces of the basic sports network. Only **zonal and neighboring scale** allowed.

Citizen security, defense and justice facilities: houses of justice, centers of coexistence, unit of consultation and attention to the citizen of the Ombudsman's Office, family commissariat stations, zonal centers of the ICBF, operational unit of civil defense, operational unit of the Red Cross, centers of training and training of the official fire department, police substations, traffic substations, environmental carabinieri fortresses, fire station, immediate police attention centers CAI. Only **zonal scale** allowed.

Public administration facilities: 'veedurías', notaries, urban curators, headquarters of the Local City Hall, local administrative boards. Only **zonal scale** allowed.

Integrated management of solid waste facilities: warehouses of greater

PERMITTED USES CHART

Allowances for land use in Sub-sector I

Permitted as complementary uses

Facilities: area: separation, classification, packing, storage, pretransformation, transformation and/or commercialization. Lot area between 500 and 5.000m². **Metropolitan, urban and zonal** scale allowed.

Business Services: _**Financial** services: branches of banks, corporations, stock exchange, credit, insurance, cooperatives, exchange houses. ATMs. Only **urban and zonal scale** allowed.

_**Services to companies and real estate:** specialized offices of: real estate, leases, computing, consulting, advertising, marketing, consulting, auditing, accounting, stock exchanges and employment agencies, photo development laboratories and copies. Only **urban scale** allowed.

_**Logistics** services: warehouses: mail, packaging, storage, maintenance, cleaning, repair, guardhouse and fumigation. Only **metropolitan and urban scale** allowed.

Personal Services: _**Parking** services: Parking in specialized buildings. High-rise (two or more floors) or underground. **Urban scale.**

_**Food** services: restaurants and fast foods. Only **zonal scale** allowed.

_**Specialized technicians / professional** services: Travel agencies, trade unions, professional, political and labor associations, photographic studios and laboratories, medical offices, beauty centers, veterinarians, sale of pets, gymnasiums and cardiovascular conditioning centers, medical and dental laboratories (dental mechanics), ambulance services, cell phone telephony sales, nurseries, hairdressers, beauty parlors, tattoos, photocopies, florists, coffee shops, ice cream parlors. In the **zonal scale.**

Hairdressing, beauty parlors, tattoos, tailoring, laundry and dry cleaning, repair of electrical items, photocopies, shoe lifts, marquetry, glass manufacture, florists, clothing, coffee shops, ice cream shops, handcrafting. In the **neighboring scale.**

_**Mass communication and entertainment** services: Convention centers, concert and exhibition halls, television studio buildings, broadcast stations and recording studios of mass communications and entertainment companies with more than 600m², cinemas, audiovisual halls, social clubs, casinos. In the **metropolitan and urban scale.**

Rental and sale of videos, Internet services. Telephone services, dance schools. In the **zonal scale.**

_ **Establishments with sales area of up to 500m²:** Items and groceries of first

Commerce: necessity: greengrocers, bakeries, confectioneries, dairy, meat, charcuterie, liquors, beverages, drugstores, perfumeries, stationery, sundries and hardware stores. In the **neighboring scale.**

Permitted but restricted uses

Dwelling: _ **Single-family, two-family, multi-family.** It is only allowed in properties in which the use is already existing upon entry into force of this Decree. Expansions are not allowed.

Heavy Commerce: _Car sales.
_ Sale of agricultural items, machinery, tools and accessories, construction materials and wholesale trade. Only allowed in the **zonal scale.**
_ Ornamentation workshops, marble, services of bending machines and cutters, metal and wood carpentry, typography, lathe and lithography.
_ Automotive diagnostic centers of classes A and B.
_ Fuel filling services.
_ Maintenance services, repair and supplies to vehicles.

Facilities: _Educational facilities.
_Worship facilities in the metropolitan and urban scale.
_ Citizen security, defense and justice facilities in the metropolitan and urban scale.

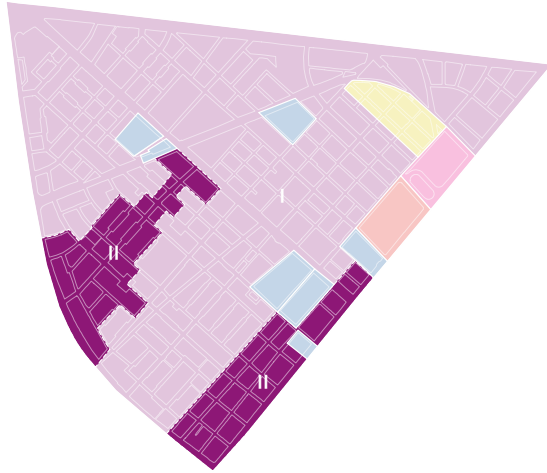
Prohibited uses

All other uses are not allowed.

The modification of the use for a single plot is not allowed either. To propose a change of use, it is necessary to put forward a Master Plan or a Partial Plan.

SECTOR 1 SUB-SECTOR II

Industrial activity



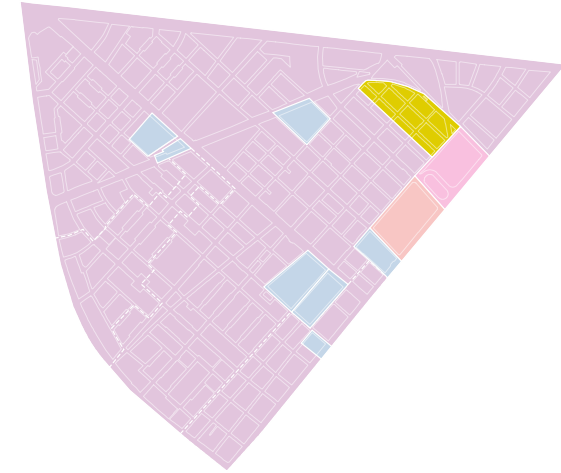
Less rigid/ A different industrial typology

Unlike the previous sector, this gives a little more flexibility with respect to the mix of uses, for example, the biggest difference is that in this sector residential use is allowed as complementary. At the same time, commercial use is given more importance by considering it as the main use, while industrial use is restricted by allowing production activities cataloged up to **medium environmental impact** according to what the District Department of the Environment determines.



SECTOR 2

Residential activity



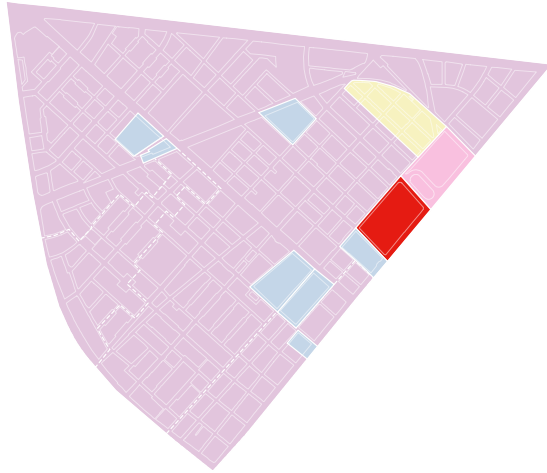
Neighboring life

This sector is made up of the oldest urban settlement in the area, the **Cundinamarca neighborhood**, which has been responsible for maintaining life in the sector through the conjunction of housing with productive activities. The normative allows a wide variety of uses of all types, including the **industry** that is restricted only to be of **low environmental impact**.



SECTOR 3

Services and commercial activity



Single Use

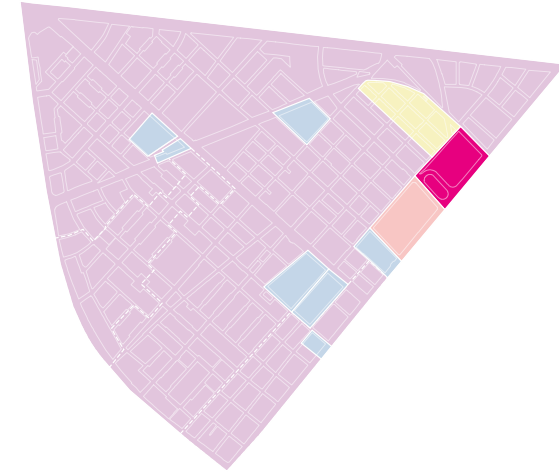
Only commercial use is developed and it is allowed in all its scales. It goes from stores with up to 2.000m² of sales area, department stores, shopping centers and hypermarkets with more than 5.000m² of sales area. In fact, the entire sector is currently occupied by a branch of the Jumbo supermarket chain.



MADE IN BOGOTÁ

SECTOR 4

Integral Urban Area



Hybrid possibilities

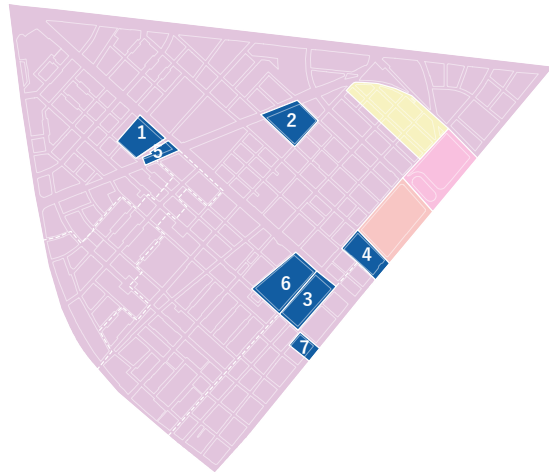
Being a sector destined for urban renewal, it is now made up of two important landmarks for the city: the **Hoja Square**, which is a large public space now occupied by skaters and bikers, and the second, a **Priority Housing project** awarded by public contest, which sought to be a permeable project, with commercial area and connected with the public space. The houses were handed over to victims of the armed conflict in the framework of the Free Housing program of the National Government and the policy of the Expanded Center of the District Government.



ZONA INDUSTRIAL UPZ 108

SECTORS 5 & 6

Facilities

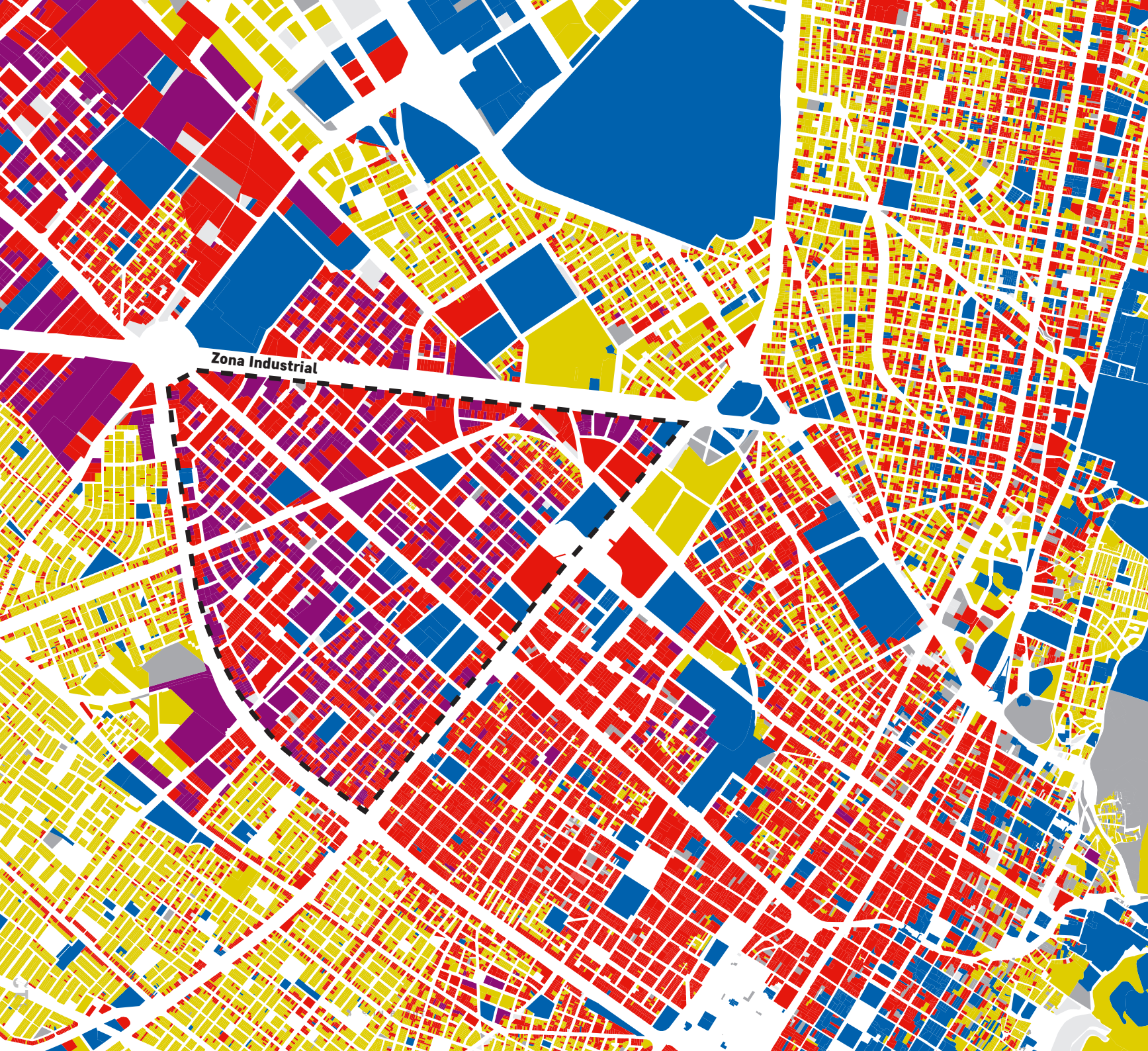


Single Use

SECTOR 5_Collective facilities: 1) La Merced Public School, 2) Salesian Technical College, 3) District University, 4) SENA with: National Hospitality Industry Center, Industrial Management Center and the Center for the Industry of the Graphic Communication.

SECTOR 6_Basic urban services: 5) Gorgonzola electrical substation, 6) District Health Department, 7) Headquarters of the ICBF (Colombian Institute of Family Welfare) with the Office for Juvenile Court and Juvenile Prison.





Zona Industrial

REAL USE

From the regulations to the construction of the city.

residential

services and commercial uses

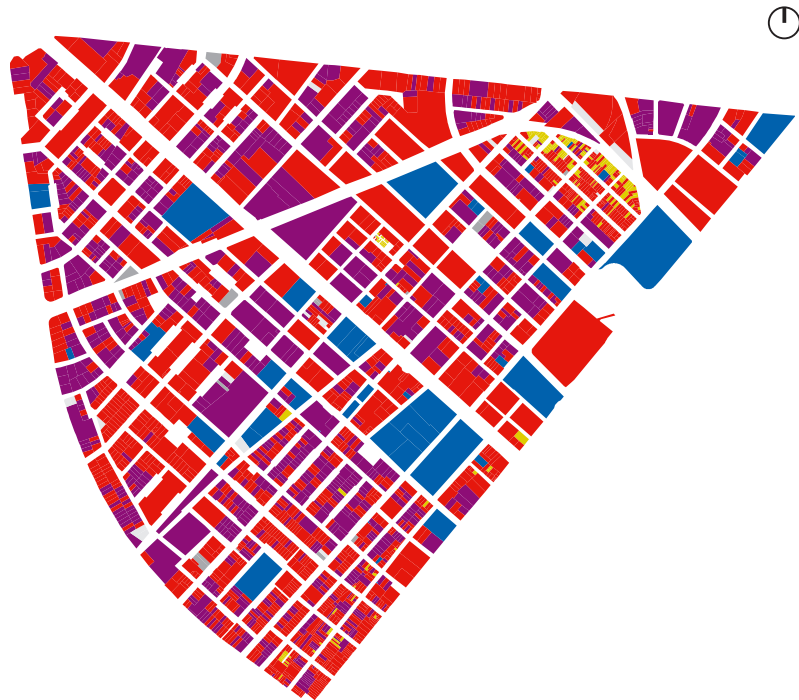
facilities

manufacturing

0
0.5
1.5
3 km

REGISTERED USE

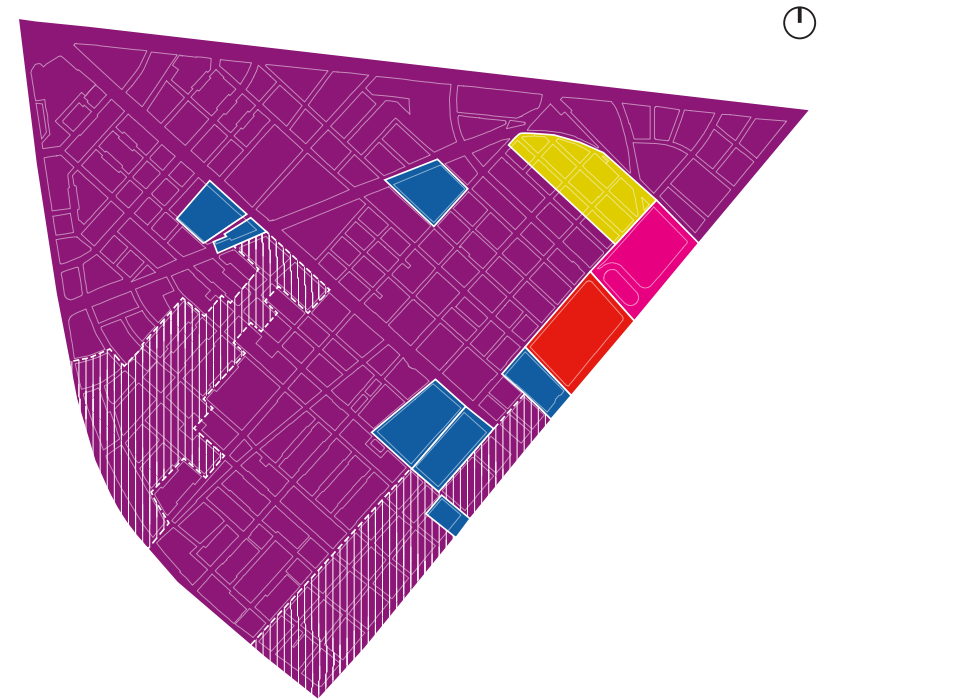
Current use for each plot



The apparent win of complementary uses in what actually gets built...

GENERAL URBAN NORM

Main or only activity per sector



Over the normative directives/intentions for main uses.

CHAPTER VI



A close-up to the dismissed Colombian Automotive Company. Initially founded by Leónidas Lara to assemble Peugeot vehicles, in the 1960s the production started with Italian and Polish cars. In 1983 its operation and facilities were sold to Mazda until 2015 when the operation was closed due to the inauguration of the Mazda plant in Mexico, restructured as the main importer.

Source: Author.

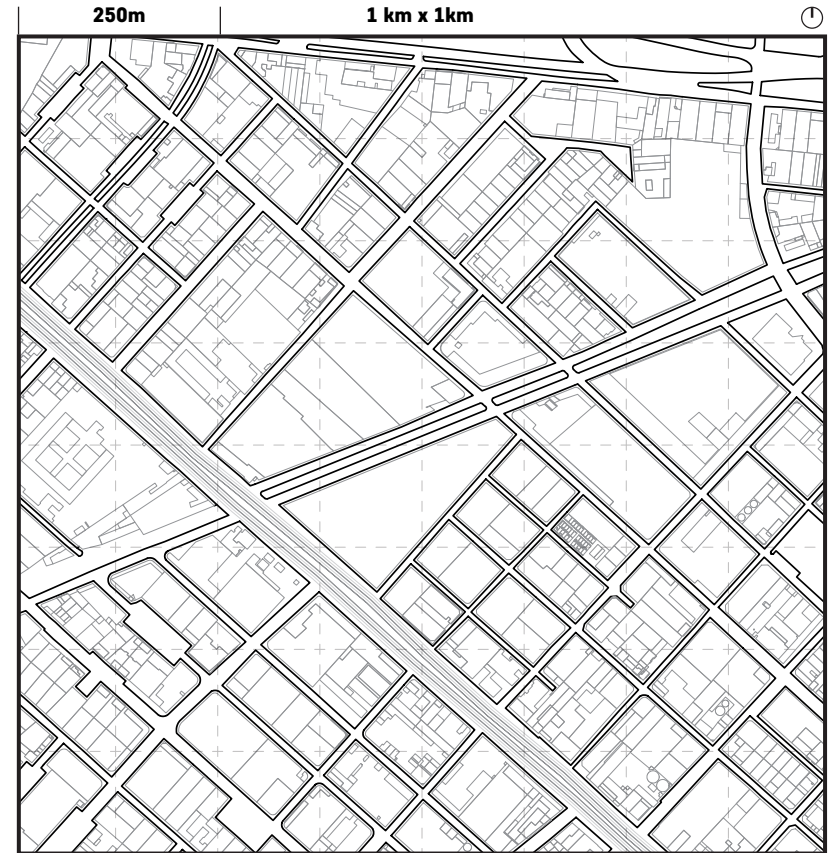
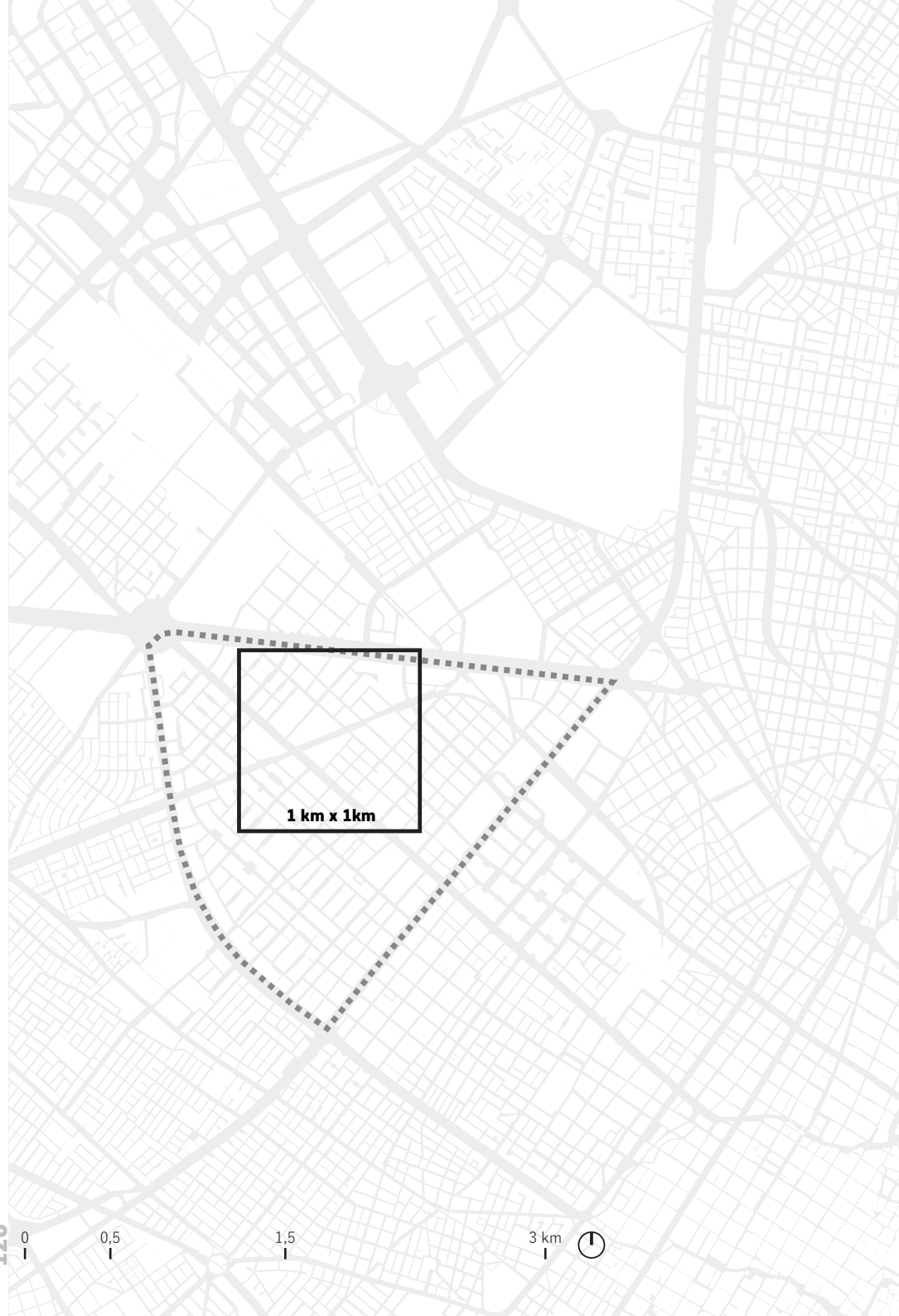


A close-up to the Transmilenio (BRT) station sign in front of the Colombian Automotive Company.
Source: Author.

SAMPLE

Zooming in. Understanding zoning and land use regulations for industrial development from the zonal planing unit to the neighborhood (plot by plot) scale.

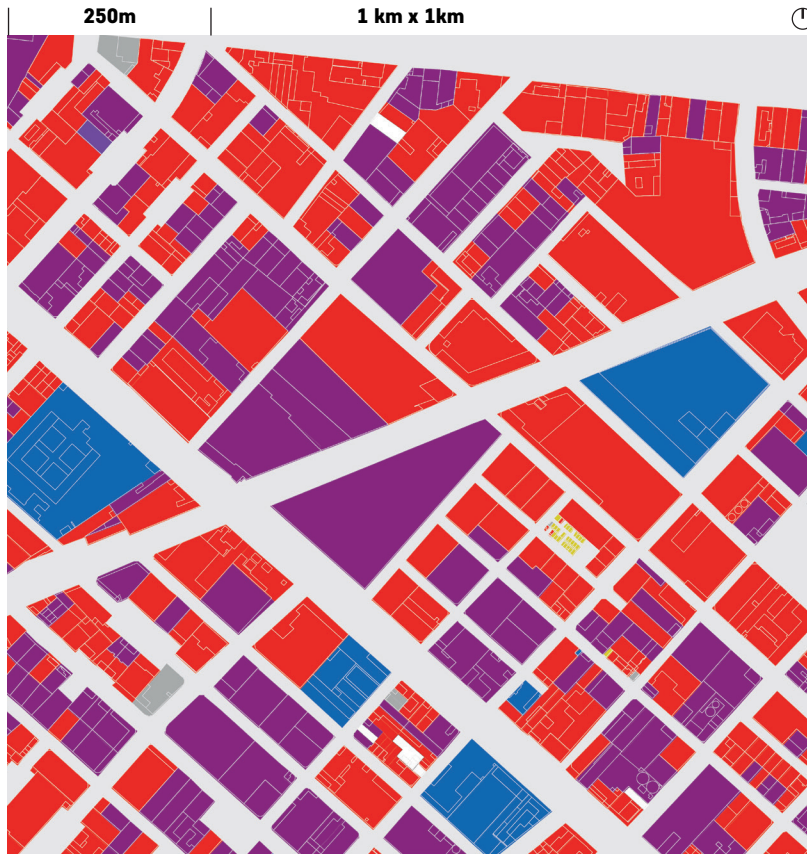
CASE STUDY SAMPLE



Like its definition: “a small part or quantity intended to show what the whole is like”, a study sample is used in order to have more control on what is being studied, to get more detail and find conclusions and strategies that could potentially be applied on a wider frame of the same territory. However, in this case, this specific area was picked as the sample because the abandoned Colombian Automotive Company already set an interesting panorama, so the idea is to keep it as the core of the studied area.

WHAT IS ACTUALLY BUILT

Registered use for each plot

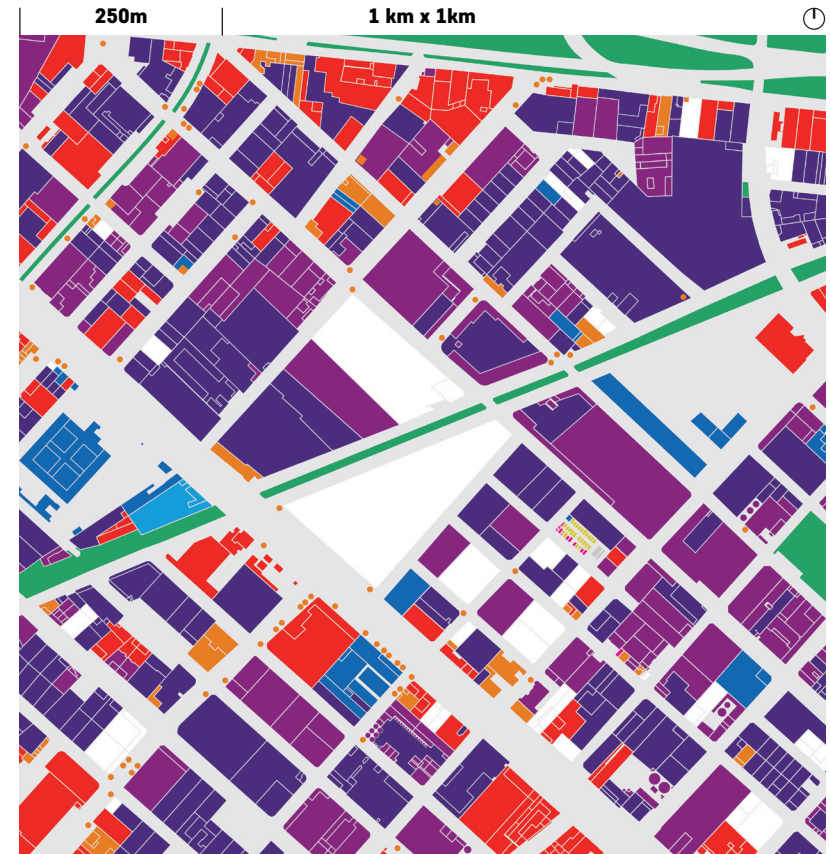


Source: IDECA's shapefiles worked with GIS software.

trade and services
residential
facilities
industry

The category under the name of **Trade and Services** of both the Regulations and the registry of the district cadastre is too broad, making it more difficult to distinguish between trade and manufacturing or the definition of 'service' itself and in the urban space this differences become wider.

Including more variables



Source: Author

Combining different sources: statistical information, Google Maps labels, IDECA - city's geoportal and virtual field visit through Google Street View.

retail, wholesale and commercial uses
neighboring scale and informal commerce
residential
environmental areas
utilities (water, electricity and gas)
facilities
storage
manufacturing
vacant

STORAGE

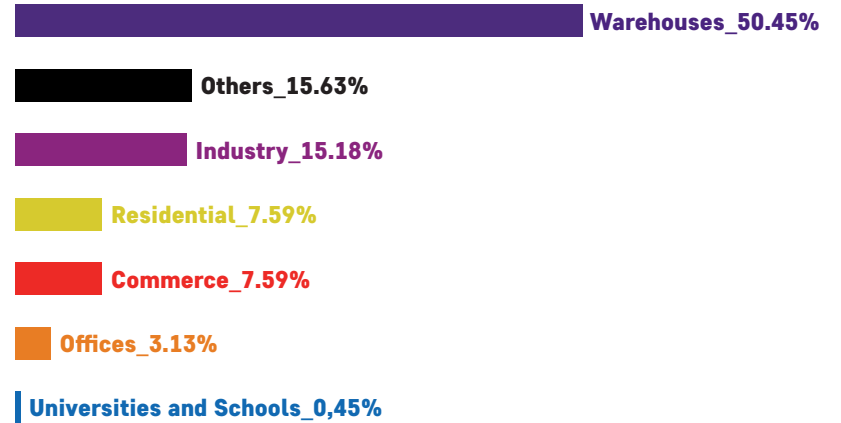
Land 'Actual' Current Use



According to the urban regulations most of the land use is destined for the activities of commerce and industry, however, according to the IDECA, in the whole locality of Puente Aranda most of the land is currently being used for storage.

Thus, through the 1x1km sample (on top), it is seen that this phenomenon implies an area that remains completely inactive for long periods of time because it is full of **private parking lots and warehouses** where during the day there is limited human presence and where it is not being generated any type of productive activity.

Percentage Use of Unit / Zona Industrial ZPU

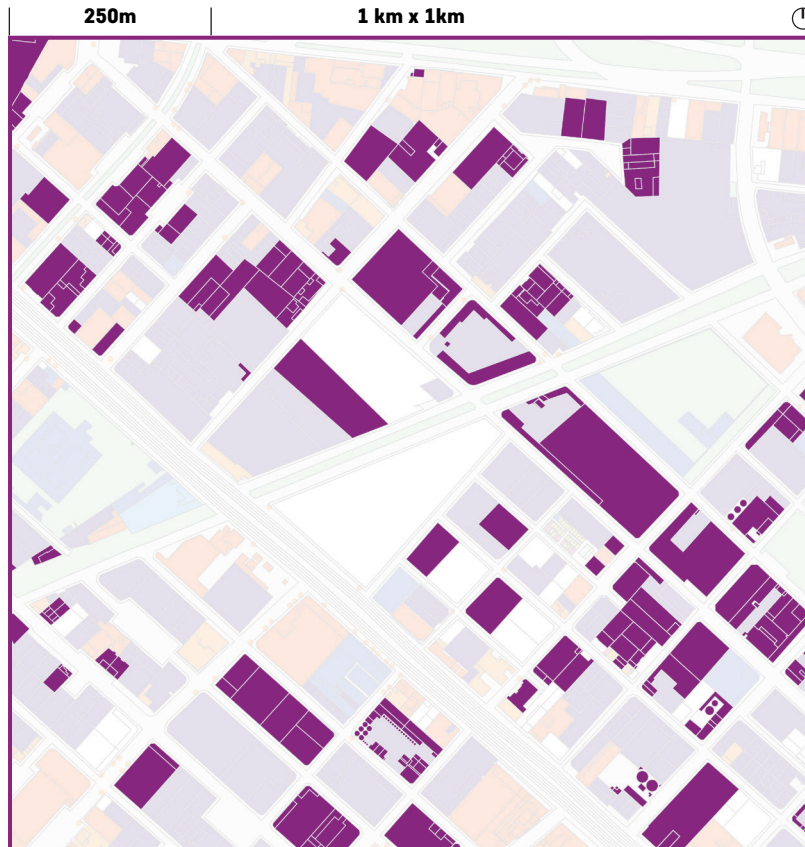


Source: IDECA

The Spatial Data Infrastructure for the Capital District - IDECA (Infraestructura de Datos Espaciales para el Distrito Capital), is defined as the set of data, standards, policies, technologies and institutional arrangements that, in an integrated and sustained manner, facilitate the production, availability and access to geographic information of the Capital District , in order to support their social, economic and environmental development.

MANUFACTURING

What is being produced?



In the sample taken, most of the factories that operate follow the pattern of the city: repair and installation of machinery and equipment, manufacture of food products, manufacture of fabricated metal products, manufacture of wearing apparel and printing and reproduction of recorded media. It is considered important to highlight the presence of recycling centers and environmental waste management companies.

Automotive

Repair service, workshop and/or distribution.

Mazda Auto Workshop.

Speed Motors Workshop.

Printing

Tecnopres Printing service and products in paper.

Xpress Printing.

Etipress.

QuadGraphics.

Food

Bakery.

Salsamentary.

Vinos Bodegas Añejas Liquor factory.

Del Valle Flour mill.

Procoharinas Flour mill.

San Martin Mills.

Colombina Manufacturing and marketing of food.

Postobon Sugary drinks (beverages with and without alcohol, fruit drinks, waters).

Comapan Food factory.

Apolo Food factory.

Textile

FDS Clothing.

Miratex Towels factory.

Magdalena Textiles.

Recycle

Recycling centers

DESCONT Environmental waste management.

Chemicals

Manufacture of pharmaceuticals.

Medicine laboratory.

Makxima Chemical products for agricultural use.

Colquimicos Distribution of chemical products for the textile industry, cosmetics, personal and home care, industrial, optical and pharmaceutical polymers.

Lab California Vet medicine.

Equipment

Manufacturer of farm and construction equipment.

Manufacture and marketing of high technology refrigeration equipment.

North Bayou Manufacturer specialized in the development of Brackets for the Assembly of Screens, TV, Video Projection Equipment, Mobile Pedestals and Video Players.

Other

Ropes manufacturer.

Glass factory.

Plastic products manufacturers.

Mattress factory.

Metal mesh factory.

BOHLER Production of steel tools and special forged parts.

Fotojapon Photolab.

Aristizabal & Jinete Wood company.

Wonderful Furniture factory.

American Glass Products.

Jem Supplies Manufacture of travel items, handbags and similar items.

RETAIL AND COMMERCIAL

Complementing manufacturing



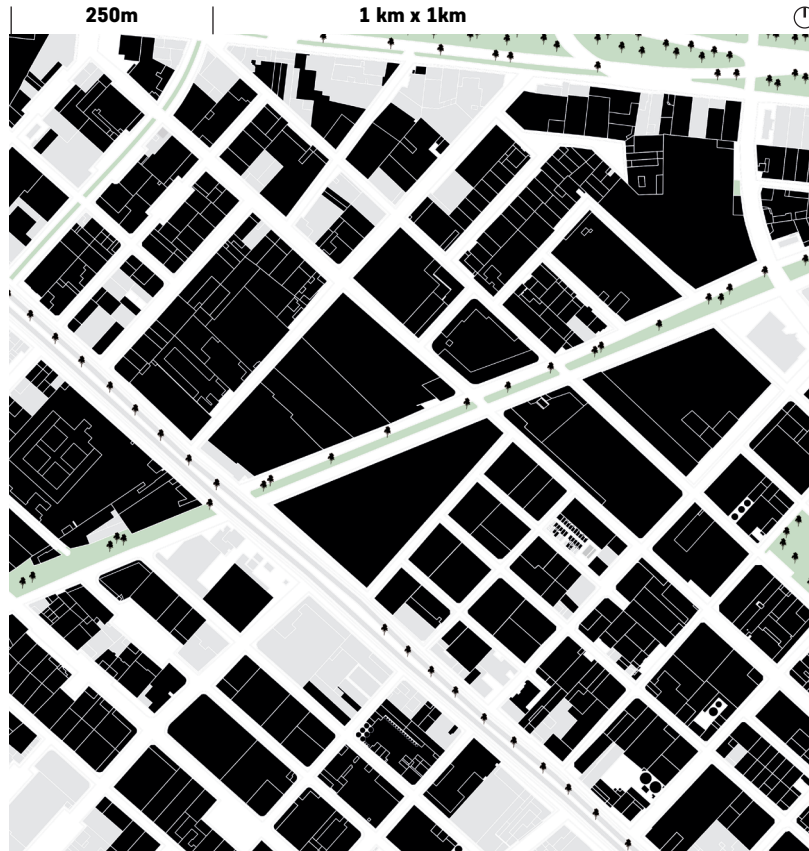
Most commercial premises correspond to supplements of the industries that characterize the area, for example, the influence of the (no longer present) Colombian Automotive Company is seen, because there are many stores that complement this specific sector of production such as spare parts stores or even car dealerships. There are also points of sale in the same lot in which their production takes place. **Commercial use is important because it manages to remove rigidity from the area, generating semi-public spaces in which the pedestrian can be a part.**



Commercial spots in Zona Industrial
Source: Google Street View (2018, July)

WAREHOUSES + FACTORIES

Social impact of architectural typologies



Permeability condition at pedestrian level

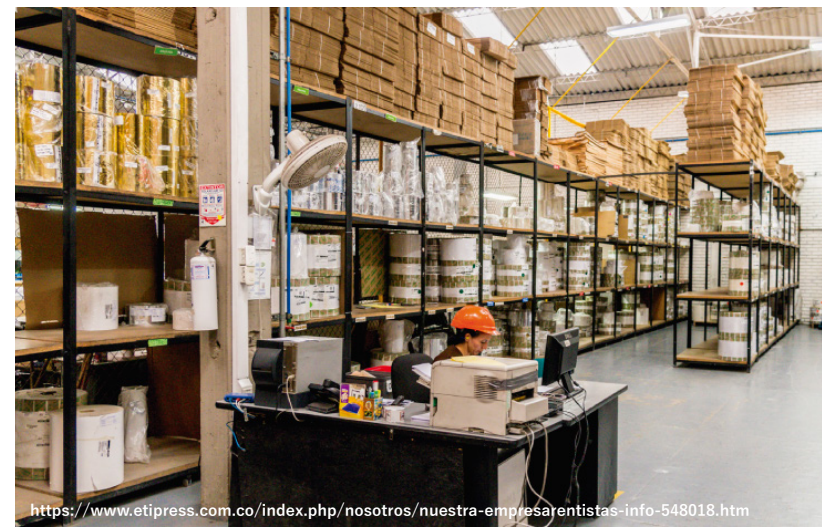
Rigid/non permeable ————— **Permeable**

Factories	Public facilities
Warehouses	Commercial uses
Dwelling	
Private facilities.	

MADE IN BOGOTÁ

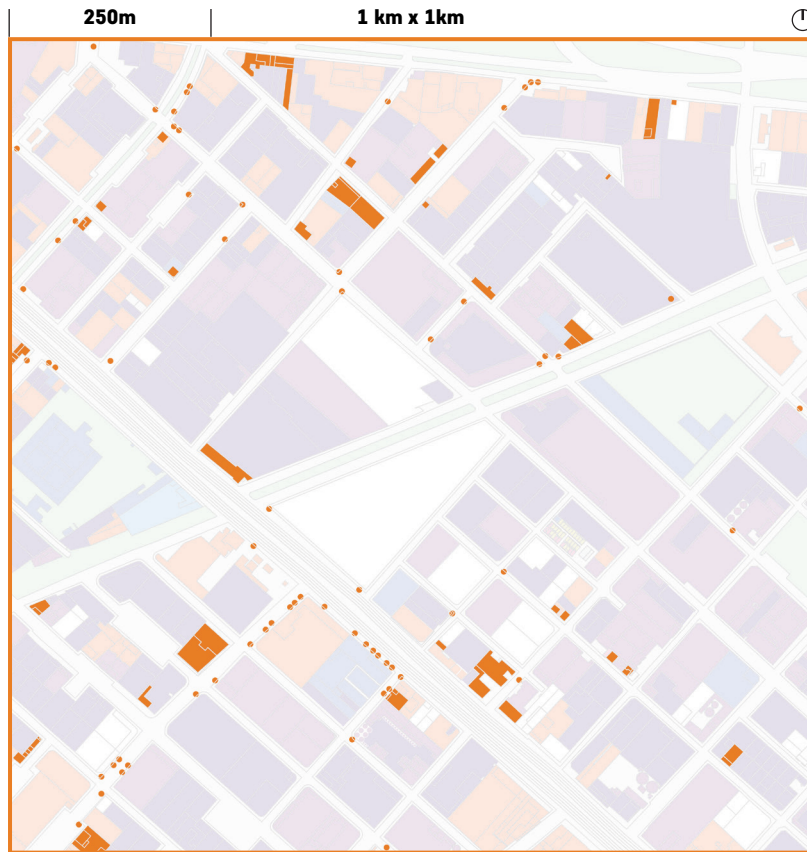


Factories in Zona Industrial
Source: Google Street View (2018, July)



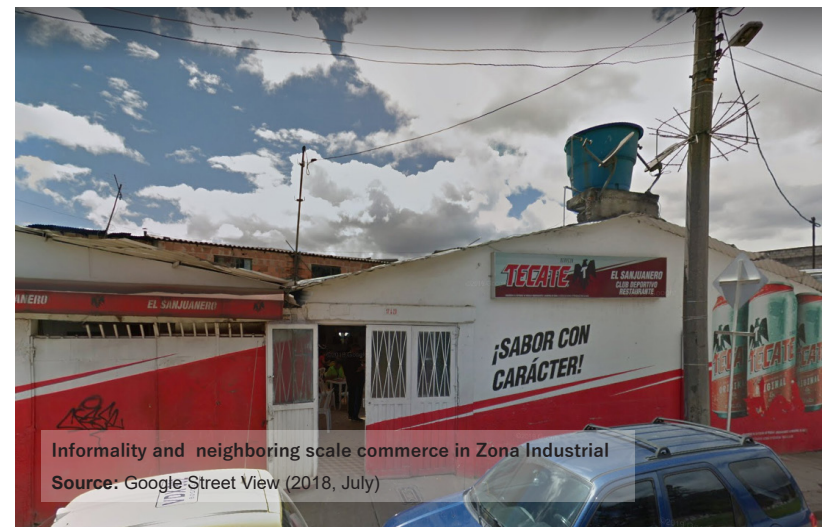
COMMERCE

Informal + Neighboring scale commerce



Around 200,000 people work informally in the public space in Bogotá alone. It is important to recognize the capacity of informal commerce and neighborhood trade to correspond to the most obvious local needs. By mapping them it is possible to understand important axes of people flow or even understand the temporality of life in the area or the type of user (pedestrian) that concurs. In fact, In other words: "Although a vital element of urban life, informal workers in public spaces are often stigmatized and neglected by traditional policies and academy. Despite their vulnerability, they can develop **valuable resilience skills and influence spatial dynamics**. In order to leverage their innovation potential, our cities should provide a more flexible regulatory framework, transforming the public space in a safe platform that fosters inclusion and healthy competition." (Benítez Bustamante, 2019)

MADE IN BOGOTÁ



Informality and neighboring scale commerce in Zona Industrial
Source: Google Street View (2018, July)

GREEN AREAS

Public space deficit + Terrain vagues



The area is characterized by the fact that the few unbuilt spaces are in a condition of abandonment, which historically have been **degraded through the inadequate disposal of solid waste**, debris, excreta and special waste, which have degraded the ecosystem and landscape quality and supply environmental. In addition, it presents a deficit of public space, which however is common throughout the city. The Capital District has a 74% public space supply deficit, that is to say that for each inhabitant there is 3.93 m² / hab of public space, contrary to what is established in article 14 of Decree 1504 of 1998, which states that for every citizen there must be 15 m² / hab. In the case of the Locality of Puente Aranda this index of Effective Public Space (EPE) is 4.03 m² / hab (DADEP, 2013) and 4.35 m² / hab of green public space.



"Green areas" in Zona Industrial
Source: Google Street View (2018, July)

GREEN AREAS

Pollution Footprint

According to the report of the **Environmental Observatory of Bogotá** in 2012 and the **Local Environmental Plan** (PAL) 2017-2020.

Causes of environmental problems

Causes of environmental problems in the area are:

- * Lack of commitment and citizen education in recognition of the care and protection of channels.
- * Lack of environmental education and institutional commitment in the management of solid waste.
- * **Lack of control and validity in land use - Green Areas.**
- * **Lack of use of organic waste** for urban agriculture due to lack of technical support.
- * Absence of recognition and involvement of chemical, technological, socio-natural risks in the community in general.
- * Lack of education, awareness, promotion of control and surveillance programs in pets and their holders.
- * Lack of control, inspection and monitoring in generators of auditory and air pollution.

Environmental sustainability based on energy efficiency

Solid Waste Management

1. Education and awareness campaigns and adequate separation and collection of solid waste and environmental subpoena.
2. Project that strengthens the organization and dignification of recyclers, community and institutions with the implementation of recycling warehouses.
3. Cleaner production.
4. Risk mitigation.

Tree conservation, reforestation and gardening

1. Tree conservation, reforestation and gardening.
2. Foster coexistence, identification and protection, conservation and maintenance of trees.

Urban Agriculture

1. Organize people to raise awareness and generate knowledge on the issue of organic waste utilization
2. Develop composting techniques to take advantage of these.
3. Alternative energy program.



CHAPTER VII



DIVERSE BOGOTÁ

retail and wholesale commercial uses

neighboring scale and informal commerce

residential

green areas

utilities (water, electricity and gas)

facilities

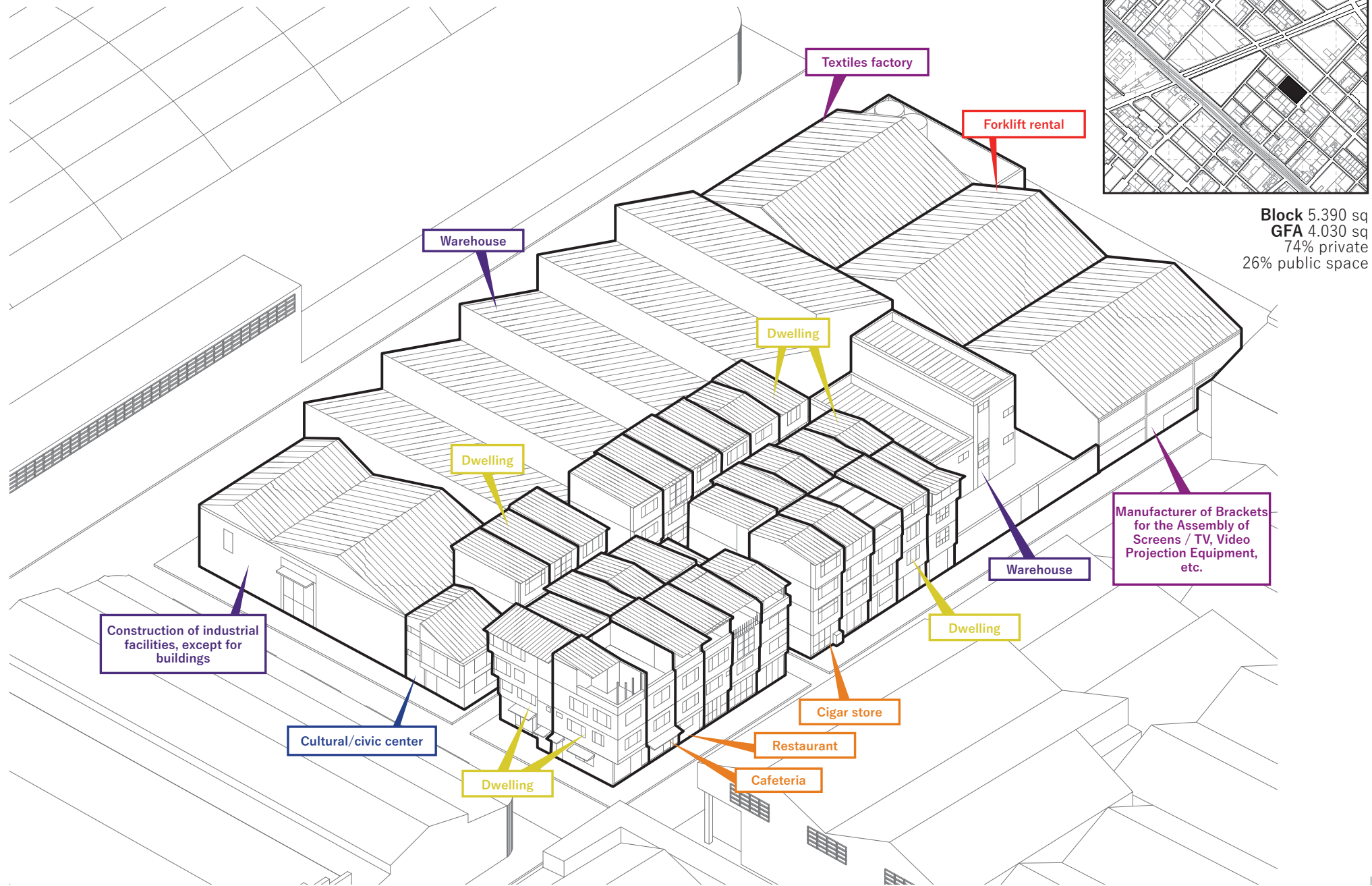
storage

manufacturing

mixed uses

ORGANICALLY MIXED

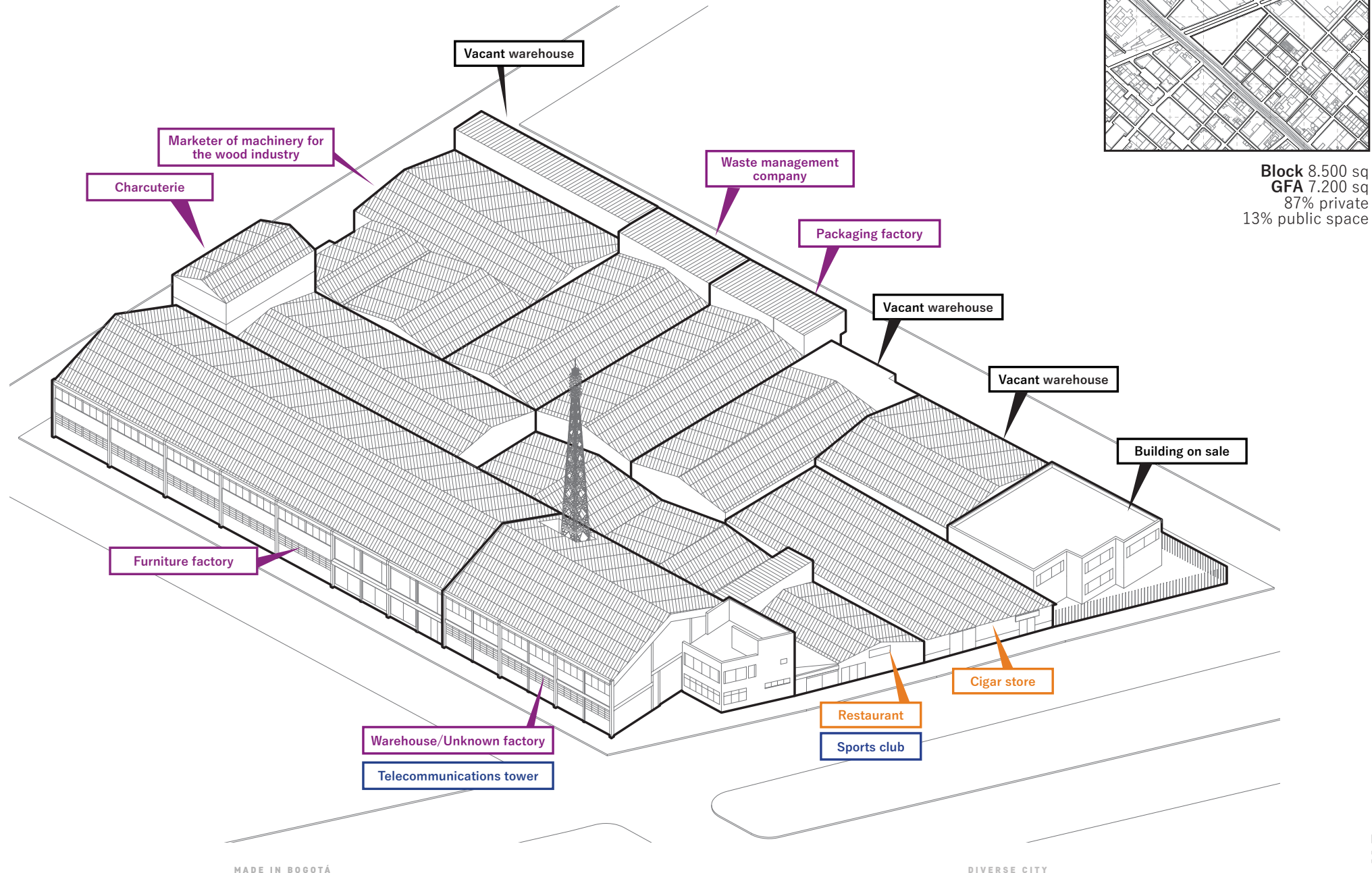
Housing in the core of an industrial zone



Block 5.390 sq
GFA 4.030 sq
 74% private
 26% public space

ORGANICALLY MIXED

Neighborhood life even in the most apparently consolidated industrial blocks



“...The formal, scalar and graphic techniques that are often employed-diagrammatic, large scale, and rationally orientated - lead to a detached view of the city in which a series of social and political issues are excluded.

It is at the smaller scale that the personal can be viewed as political, that the particular incident can be viewed as part of a wider structure, and that the body is seen not as a diagrammatic object but as the subject of conflicting forces. The urban miniature is a pedagogical method of revealing the ‘hazardous play of dominations’ that shape our cities.”

THE URBAN MINATURE (Till, Jeremy, 1994)

The industrial urban landscape from the twentieth century, is based on large and tall façades with few windows, leaving little to urban life, in an overwhelming and insecure space for the pedestrians. That is incremented when these monumental spaces get abandoned and its effect is more remarkable when it happens in the city centre.

However there are dynamics in which those who occupy this area try to confront this rigidity and appropriate the space day-to-day.

Tejo Club. Tejo is a **sport** much appreciated by the **popular** strata of society. It is seen as a portrait of their pre-Columbian origins and so it is an important community integration tool.

Having a look at the interior...

Micro-commerce dynamics, activating life in the street.

Informal commerce adds up, making the industrial landscape less rigid.

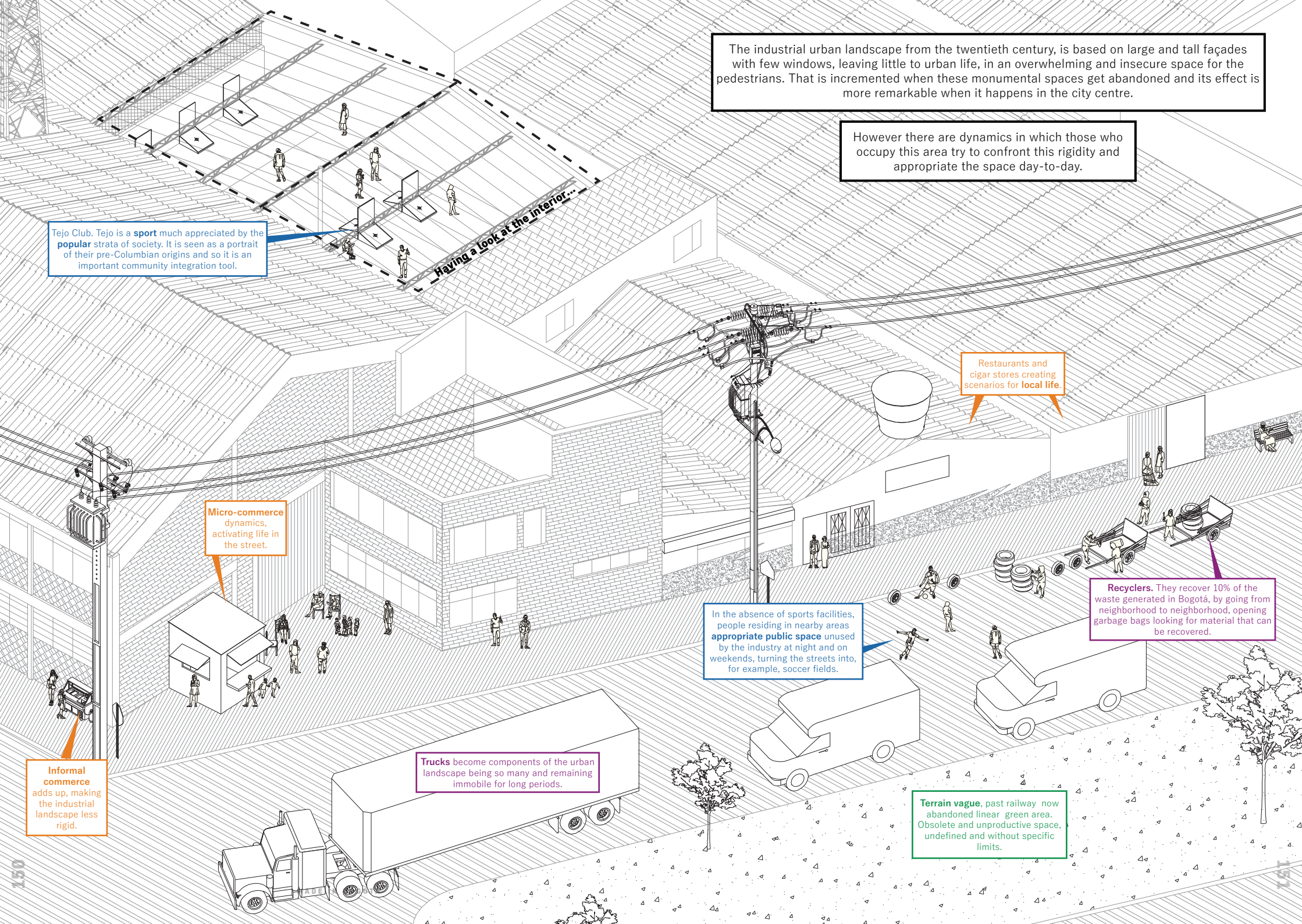
In the absence of sports facilities, people residing in nearby areas **appropriate public space** unused by the industry at night and on weekends, turning the streets into, for example, soccer fields.

Restaurants and cigar stores creating scenarios for **local life**.

Recyclers. They recover 10% of the waste generated in Bogotá, by going from neighborhood to neighborhood, opening garbage bags looking for material that can be recovered.

Trucks become components of the urban landscape being so many and remaining immobile for long periods.

Terrain vague, past railway now abandoned linear green area. Obsolete and unproductive space, undefined and without specific limits.



CHAPTER VIII

URBAN SCENARIOS

From the hybrid phenomena, to defining the possibilities of the area depending on the city for the future.

update

SCENARIO · 1

What if..
Smart industry
district

transition

SCENARIO · 2

What if..
Entertainment
industry district

leave still

SCENARIO · 3

What if..
Productive housing
district

give back

SCENARIO · 4

What if..
Urban farmland &
Recycling district

SCENARIO 1_ UPDATE

What if...

Zona Industrial becomes the first
Smart Industry District in Colombia
keeping the same infrastructure and
same productive vocation?

Keywords:

Industry 4.0
Internet of things
Cyber-physical systems
Maker movement
Smart factories



Industry 4.0

"Deka Investments asked me to visualize the factory of the future: A place where all machines are connected and everything is automated, humans are restricted to swipe around on their tablets". Published in Fondsmagazin.

Source: Axel Pfaender Illustrator & Designer

<http://www.axelpfaender.com/fondsmagazin-industry/>

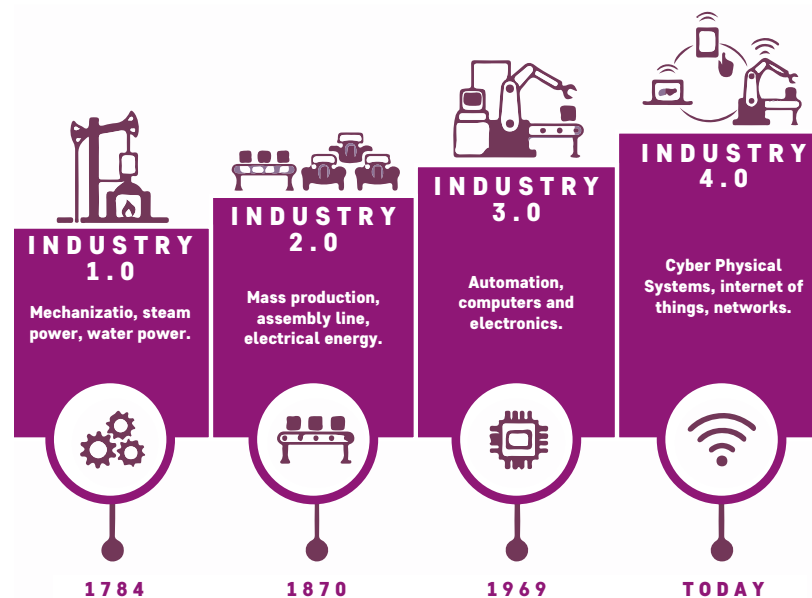
SMART INDUSTRY DISTRICT

The 4th Industrial Revolution

As explained in earlier chapters in this document, in modernism it was key to wait for new technologies to arrive in the country to be able to advance in the industry and as the country kept waiting it always got left behind having an industry characterized by its precariousness. Globalization and the scope of knowledge for all and having a clearer universal panorama seems a perfect opportunity to allow us to end this gap presented last century. However, how is industry doing nowadays? And how is the national industry responding to this historical context? Is it still precarious as in the twentieth century or has it caught up?

How is industry today?

As explained in the figure below in a very synthetic way, the world is facing the so called 4th industrial revolution. The term Industry 4.0, coined by the German Government to describe the smart factory, is a vision of computerized manufacturing with all the processes interconnected by the Internet - IIoT (Industrial Internet of Things) -, which entails many new meanings, especially in the incorporation of **greater flexibility and individualization of manufacturing processes**. (Bocanegra Gutiérrez, 2017)



The evolution of industry
Source: SHUTTERSTOCKR. *Personal re-elaboration*

What about the national framework?

Giovanny Serrano, Unitronics product manager at Colsein, a renowned company that has been supplying high-tech products and services in Colombia for more than 25 years, states in an interview for the Reportero Industrial website that the great denominator in the national industry, is that, in the same production chain **we find handmade processes, very artisanal, together with equipment with a certain level of automation, but without these machines being able to communicate with each other, nor with the entire production chain**. (Bocanegra Gutiérrez, 2017)

According to the same report, most of the leading technology providers in the country consider this Revolution a spectacle that we (as a country) see from the stands of an industry still too 'human', and that some fear for it to develop otherwise." In fact, in a recent survey conducted by the Association of Industrialists of Colombia, **54% of respondents accepted their ignorance in what has been called the Fourth Industrial Revolution**, so it implies that the efforts to promote it in the country haven't been enough. This is described by Serrano: "In Colombia there are many manufacturing plants that are 60 or 40 years old. In the visits we make, it is evident that their production processes have outdated equipment, so we have not been able to develop the third stage of automation."

What is the feasibility of the scenario, then?

In these terms seems non-viable an scenario in which the factories that make up Zona Industrial UPZ jump from allegedly Industry 1.0 to 4.0. However, while the "true industry" sector refuses these advances, we can see that a new generation of young entrepreneurs assume it in an almost natural way and that is why **it is important to reflect on the very concept of industry and manufacturing**. In this sense, this scenario is feasible when studying references such as LAB1 (which will be explained in detail in the following pages), in which it shows a local interest in "producing" but the city still does not offer spaces to prosper or incubate these initiatives, so it is important in a scenario to propose to use so much underutilized space in Zona Industrial UPZ to cultivate these ideas of innovation. Perhaps in this way, progressively the owners of the more traditional companies voluntarily decide to give a chance to the new technologies, while the state is also responsible for continuing to move from the city center or prohibiting totally polluting industries and in the future an area is consolidated that It is still "industrial", maybe even more industrial than it is now if we return to the basis of its definition of the Chamber of Commerce itself: "the production, processing, manufacturing, preparation, recovery, reproduction, assembly, construction, repair, transformation, treatment and handling of raw materials, to produce goods or material products. That is, that the term industry may be more related to the action of making and producing itself (natural to the human being) than to the imaginary of a warehouse of exorbitant dimensions that emits smoke.

MAIN REFERENCE

LAB1 is a space created by young students of the Javeriana University, bought, restructured and managed by them in which multiple activities are carried out. It highlights the hybrid and versatile capacity of the space, but at the same time the socially landed and ambition of its projects. "Today we live **more than 32 groups** within this **480 m2 space** working together to fortify this creative ecosystem and expand it in different scenarios of the world where it may be needed, right here **we use 3D printing technology to develop prostheses for**



LAB 1's facade in the Park Way of Bogotá, one of the city's cultural districts
 Source: Tato, B. (2017, February 3). Plataforma Arquitectura. Retrieved from *LAB1 Bogotá: reactivando la ciudad desde el trabajo colaborativo y la creatividad*: <https://www.plataformaarquitectura.cl/cl/804438/lab1-bogota-reactivando-la-ciudad-desde-el-trabajo-colaborativo-y-la-creatividad>



Prosthetic implants made with 3D printing
 Source: Tato, B. (2017, February 3). Plataforma Arquitectura. Retrieved from *LAB1 Bogotá: reactivando la ciudad desde el trabajo colaborativo y la creatividad*: <https://www.plataformaarquitectura.cl/cl/804438/lab1-bogota-reactivando-la-ciudad-desde-el-trabajo-colaborativo-y-la-creatividad>

LAB1 BOGOTÁ

low-income children ,we have a citizen laboratory where people can come to prototype their projects, we have art and music workshops led by great Colombian artists, we design urban settings for vulnerable communities, we work with low-income communities to develop their creative abilities and empower them of their possibilities of changing their reality, we have co-working space, theater and even a beer house." (Tato, 2017)



Cultural incubator
 Source: Tato, B. (2017, February 3). Plataforma Arquitectura. Retrieved from *LAB1 Bogotá: reactivando la ciudad desde el trabajo colaborativo y la creatividad*: <https://www.plataformaarquitectura.cl/cl/804438/lab1-bogota-reactivando-la-ciudad-desde-el-trabajo-colaborativo-y-la-creatividad>



Co-working and meeting spaces
 Source: Tato, B. (2017, February 3). Plataforma Arquitectura. Retrieved from *LAB1 Bogotá: reactivando la ciudad desde el trabajo colaborativo y la creatividad*: <https://www.plataformaarquitectura.cl/cl/804438/lab1-bogota-reactivando-la-ciudad-desde-el-trabajo-colaborativo-y-la-creatividad>

GLOBAL REFERENCES

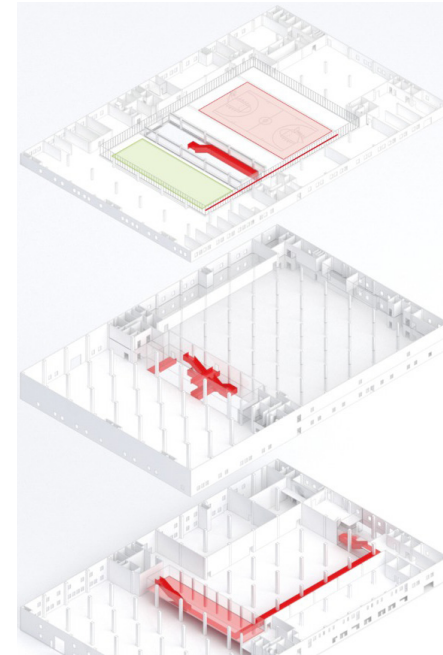
While it is true that the precariousness of the Bogotá industry is assumed on the scenario and the advantages of contemporary advances are said to be explored in small-scale manufacturing, it is important to know in the global framework what is being done, where are we headed. I consider these references relevant when complying with the statement that factories today could not be more different than what they were last century: they are inserted in natural contexts and



How a smart factory looks like in the US

Source: Archdaily. (2017, September 20). *Trumpf Smart Factory Chicago* / *Barkow Leibinger*. Retrieved from <https://www.archdaily.com/879572/trumpf-smart-factory-chicago-barkow-leibinger>

dialogue with them without affecting the environment, offer large offices with lots of lighting, they are presented to the city with large glass facades being completely permeable, at least visually, and in addition to this they have a program distribution that includes facilities and other elements that are part of community life rather than a usual factory-work life as sports courts or exhibition halls among others.



Art museum and basketball court inside the contemporary factory

Source: Archdaily. (23 de April de 2019). *FUTURE STITCH Smart Factory* / *AZL Architects*. Obtenido de <https://www.archdaily.com/915654/future-stitch-smart-factory-azl-architects>

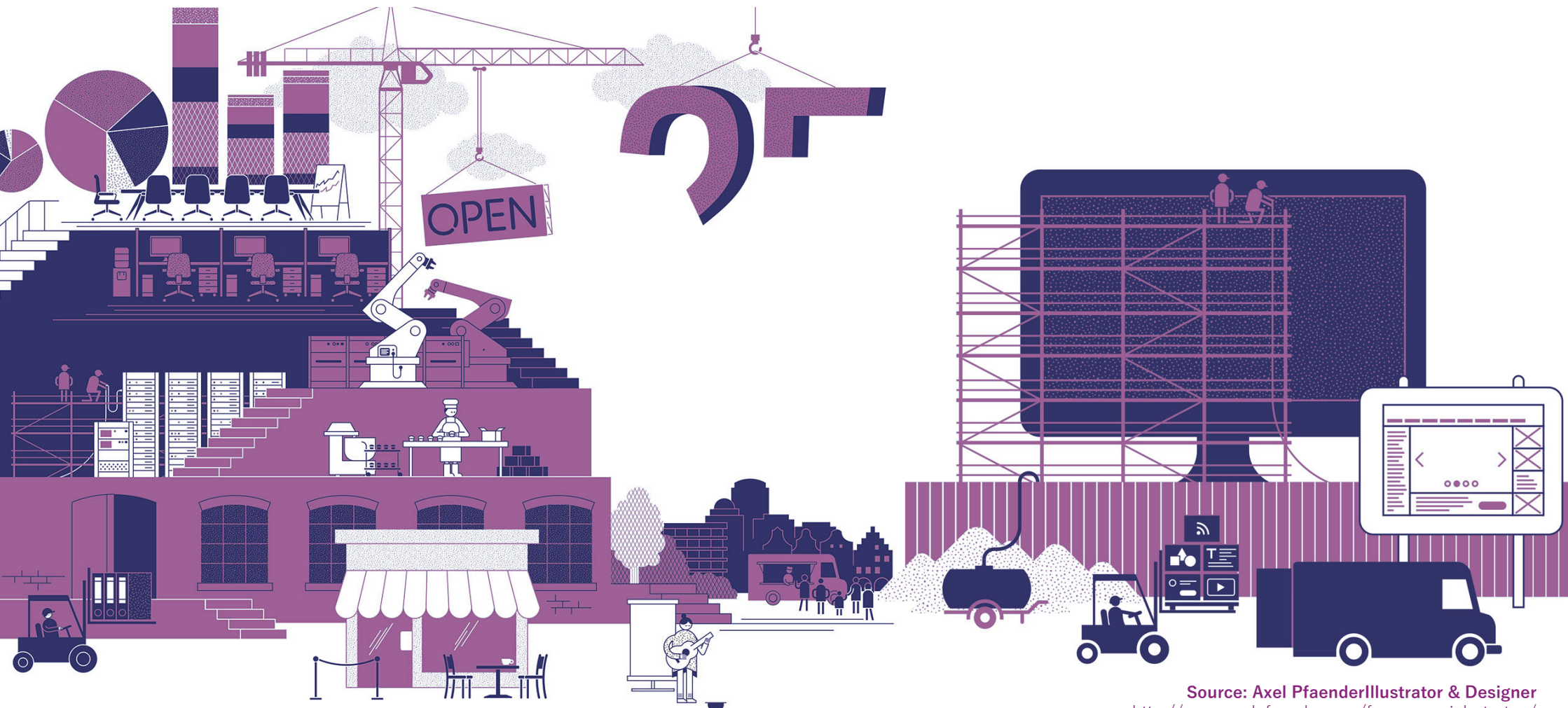
SCENARIO 2_TRANSITION

What if...

Zona Industrial becomes the main
Entertainment District in South
America?

Keywords:

Theater, film, art, dance,
music, literary publishing,
television, and radio. Show
business.



Source: Axel PfaenderIllustrator & Designer
<http://www.axelpfaender.com/focus-spezial-startup/>
Edited for this document by its author

ENTERTAINMENT DISTRICT

One of the most profitable economic activities

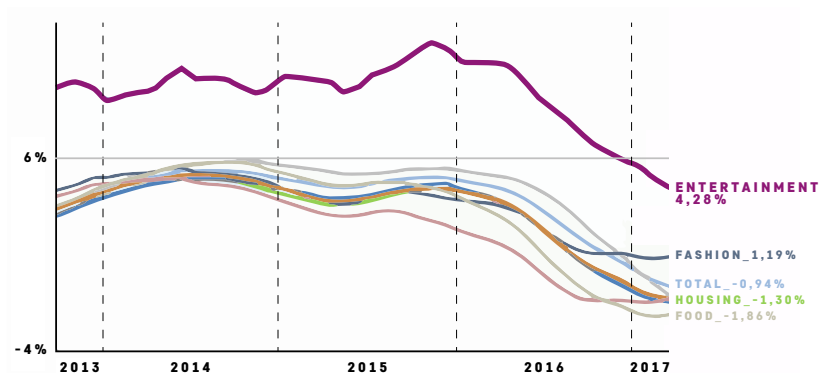
Why specifically this industry?

Although it continues to grow in the number of companies in Bogotá, this is not really reflected in the GDP which is not rising, so it was necessary to know which industries or activities have been growing in recent years and have a projection in the future. In the local market as in the global one. In addition, I was interested in the relationship between the activity with the largest number of companies and the one that produces the higher income.

Local consumption

Many headlines of different national media in the last couple of years come to the same result, the entertainment industry. First from the local point of view: "2016 was a difficult year, full of uncertainty as well as high levels of inflation. For these reasons, **Colombians reduced their spending on large quantities of products, which led them to make a resignation of spending to more important categories as is the food category. However, in this process of reallocation of spending the entertainment category did not give ground**". (Díaz Benites, 2017)

We can see that in the graphic below, as of May 2017, the Culture, Entertainment and Recreation category accumulated a current and real expense of \$ 8.71 billion and \$ 5.01 billion pesos (approximately 2.5 million USD and 1.5 million USD) respectively, that is to say that this year a Colombian has spent an average of \$ 177.490 pesos (approximately 50 USD) in this category, being the current monthly minimum wage 240 USD. It translates into a variation of 4.96% with respect to the per capita expenditure of 2016. (Díaz Benites, 2017)



How much have Colombian purchases changed in recent years?

Source: Díaz Benites, A. (2017, June 30). *Portafolio*.

<http://blogs.portafolio.co/raddar/2017/06/30/va-la-categoria-entretenimiento-2017/>

Thus, it is interesting what is happening with the so-called orange economy, for example in the audiovisual sector, which includes production, post-production and distribution of content, film exhibition, television programming and transmission, creation and advertising. **Only in Bogotá there are 8.991 companies dedicated to this business**, which last year billed \$ 6.4 billion pesos, 4.45% more than in 2016 and exported US \$ 209.2 million, with an annual growth of 18% generating 56.733 jobs according to the Chamber of Commerce. (Dinero Magazine, 2018)

Global market

As stated by different national media such as national television network and radio station RCN and one of the most important economics magazine Dinero, **Colombia is projected as the largest music exporter in Latin America**. As of December 2017, only in Bogotá the music sector was made up of **1.765 companies**, according to the Mercantile Registry of the Chamber of Commerce of Bogotá. Of these, 980 are dedicated to live musical entertainment activities, 304 to sound recording and music editing, 240 to creation, 183 to programming and broadcasting activities in the sound broadcasting service, 38 to instrument manufacturing and 20 to production of copies from original recordings. According to the musical union, **these companies generated 10.011 jobs** and sales in the Colombian capital for 836.766 million pesos (approximately 250 million USD) last year. In addition, figures from Invest in Bogotá, an investment promotion agency of the Colombian capital, "highlight that **between 2007 and 2017 the city received more than 400 million dollars in direct foreign investment for the creative industries sector, an amount higher than that reached by any Another Latin American capital**." (Ortiz, 2018)

Likewise, the last couple of years, there have been events such as the Bogotá Music Market (BOmm) carried out in 2018. It is a circulation platform, contact for business and business strengthening of the Colombian music industry. The event, in which 3,200 business meetings were held, brought together 281 artists and entrepreneurs with 205 national and international buyers, according to the same report. (Ortiz, 2018)

Finally, is interesting the data from the same report that establishes that 54% of live shows are made in Bogotá, placing the city in the first place in the country. Likewise, it is necessary to focus on the quantity of jobs that are related to this industry and that can be taken into account for the project and that are not treated in the report as the manufacture of instruments, or metal elements used for sets or stages or the same clothes used for events such as theater. Similarly, it is worth reflecting on how this industry works more than anything digitally, directly related to the previous scenario that implies an understanding of contemporary industry.

REFERENCE

Fama, ¡a bailar! Is a Spanish dance reality show, I present it as a reference because in its last two editions instead of resorting to common filming studios, agreements have been made with different owners of abandoned factories in which the building is restored to equip it with everything needed for this purpose, which lasts about 4 months. On both occasions at the end of filming, the owners being aware of the multiple possibilities transform the building for new uses.



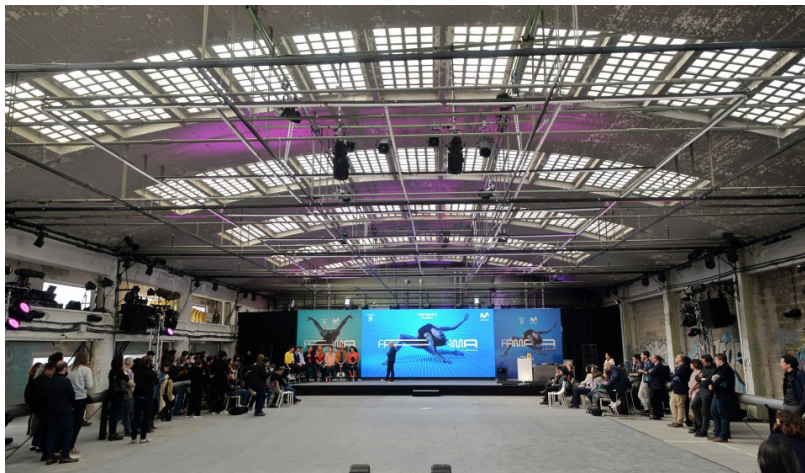
GAL, the abandoned perfumery factory

Source: Ridao, J. M. (2011, October 17). *Por Estos Andurriales*. Retrieved from Economía y crisis: ¿De qué estamos hablando?: <http://jmrldao.blogspot.com/2011/10/economia-y-crisis-de-que-estamos.html>



From abandoned factory of bathroom products (Roca) to TV studio

Source: Espinosa, R. (Photographer) (24 de January de 2019). *Alcalá Hoy*. <https://www.alcalahoy.es/2019/01/24/fama-a-bailar-se-presenta-en-la-fabrica-roca-de-alcala-de-henares/>



The factory after the building rehabilitation process, becoming a TV studio

Source: Alcalá Hoy. (2018, March 7). *La antigua fábrica de Gal se convierte en la Academia de Fama, a bailar*. Retrieved from <https://www.alcalahoy.es/2018/03/07/la-antigua-fabrica-de-gal-se-convierte-en-la-academia-de-fama-a-bailar/>



How the flexibility of industrial architecture can be used for other types of creation

Source: Espinosa, R. (Photographer) (24 de January de 2019). *Alcalá Hoy*. <https://www.alcalahoy.es/2019/01/24/fama-a-bailar-se-presenta-en-la-fabrica-roca-de-alcala-de-henares/>

SCENARIO 3_ TRANSITION

Source: Axel PfaenderIllustrator & Designer
<http://www.axelpfaender.com/green-city-real-estate-magazine/>
Edited for this document by its author

What if...

Zona Industrial becomes a productive housing district?

Keywords:
Housing deficit



PRODUCTIVE HOUSING

Sustainably living while manufacturing

Why this escenario?

This scenario is based on the understanding of the current reality of Bogotá, if there is something evident for all citizens, it is overpopulation and the housing deficit that potentially increases over the years. From the end of the last century, Bogotá became the recipient of all the migrations to the interior of the country motivated mainly by political reasons, civil war, forced displacement. In the last five years, however, to this factor is added excessive migration of Venezuelans to other countries in Latin America and the world, especially to Colombia and particularly the capital. Justly, the national newspaper El Tiempo, details the situation with the data presented below derived from a report of the Red Cross of Bogotá and Cundinamarca made by the Directorate for Humanitarian Action and Development. The report cites: "Displacement is one of the phenomena that continues to cause the most damage to society. **Displaced people leave the rural areas to the populated centers and are located in the most vulnerable areas, subject to accusations, exclusion, discrimination, rejection and violation of rights**". (Murillo, 2019)

"In 2018, 351.336 victims of the national armed conflict arrived in Bogotá, of which 1.523 are children between 6 and 11 years old and 751 are from early childhood. In addition, 43.483 people arrived from Venezuela in a 'non-regular' condition. In the Point of Archdiocese of Bogotá Terminal (Center of attention to the migrant) of the 150 people attended daily, around 15 are victims of the armed conflict and the rest, Venezuelan immigrants." (Malaver, 2018)

What are the current government strategies to solve this?

can access a home. However, sometimes it does not work as desired, they are not enough or by privileging the economic factor spatially poor spaces are projected. A specially important case to assess is that of the **La Plaza de la Hoja project**, mentioned earlier in this document. A VIP (Priority Interest Housing) project that was one of its kind when inserted right to the center of the city (since these projects are usually located on the periphery), right next to the industry in the Zona Industrial UPZ. A project criticized from the architecture and urbanism point of view by not meeting the expectations under which it won the public contest for its realization, for example, for the architect Felipe González-Pacheco, the project of Plaza de La Hoja, beyond building housing, was intended to create spaces to improve the quality of life of those who would

live there. The current problems of the project, says the architect, lie in the lack of political will and budget to complete the other buildings and interventions. Also in the inhabitants themselves, who ignore the public and communal sense of the proposed spaces, in other words, **institutional decisions distanced it from being a permeable project, with commercial environments and connected to the public space**. (Sainea, 2017)



Qualities of public space in the proposal vs. problems in realization in the final project
Source: Dávila, Rodrigo. (Photographer). (2017, October 9). *Plataforma Arquitectura*.
<https://www.plataformaarquitectura.cl/cl/881228/plaza-de-la-hoja-espacios-inacabados-en-bogota>

Initially the residents of the Cundinamarca neighborhood (also mentioned earlier in this document before) were reluctant, due to that for them, bringing low-income people as neighbors would imply problems with security and other social issues. However, some time after the insertion, it is noted how the sector was brought to life through trade and the formation of cultural movements and reinforcing old ones and generating new neighborhood/communal dynamics; not to mention the overall positive feeling of those who benefited from the program.

And seeing this lack of success in government initiatives makes me think that maybe it is better to try initiatives that are made from people to the people themselves, and this is when I came to the classic example of kibbutz in Israel as self-managed sustainable societies that initially were 100% dedicated to agriculture but today those that remain are precisely those that raised industries, so they present a viable possibility for this scenario. Also knowing that there are already housing settlements living with the industry in the Zona Industrial, it means that the need is also exceeding the "legality" or the established.

SCENARIO 4_ GIVE BACK

What if...

Zona Industrial becomes an Urban
Farmland & Recycling District?



Source: Axel PfaenderIllustrator & Designer
<http://www.axelpfaender.com/internet-of-things-agriculture-deutsche-telekom/>
Edited for this document by its author

RECYCLING DISTRICT

Why a recycling district?

In Bogotá and particularly in the Industrial Zone there are currently a large number of **recycling centers**. The fact that someone is in charge of this important task is relevant, however, due to the lack of government support, **it develops from informality by the “carters” or “zorreros” and usually in very poor working conditions**. In a recent investigation the University of Applied and Environmental Sciences UDCA, it is argued that:

- * The main activity carried out by carters in the city is **recycling (52%)** and hauling (48%).
 - * For 78% of respondents, the work they carried out with horses was their **main work activity** and for the remaining 22% it was a secondary job that complemented other informal work they did.
 - * 45% had been exploiting horses as animal traction vehicles **between 10 and 20 years**, 22% less than 10 years and the rest more than 20 years.
 - * 37% were female heads of household and 63% men. 50% developed this work because they were unemployed and the other 50% by family inheritance or vocation. Of these, **18% considered that this activity generated economic independence**.
 - * 52% of respondents came from other areas or departments, including Antioquia, Boyacá, Caldas, Quindío, Huila, Cauca, Santander, Tolima and Valle. They recognized as the main causes of their arrival in the capital the forced displacement, labor expectations and for study.
- (Publimetro, 2015)

With the data of this study it is understood that there are many people involved in this work, who have long experience in their work, but in turn have expectations of improving their quality of life through education and other services offered by the city. As it is shown in the photographs on the right, several of these, in reality, are **not actual “recycling centers” but appropriate spaces in the public space where people settle down**, whose only means of subsistence is through this occupation. In recent years the district administration has begun to recognize this work and has tried to carry out some programs, for example, in search of ending animal abuse, all the horses that carried the carts used to perform this activity were collected and the Major's Office began to change them for automotive vehicles. However, the problem remains with the public space and with the right to a decent work space, and it is right here where the current city administration enters to play.

Since 2017 a new model was implemented with which recyclers would have to adapt to new conditions. One of them, how they will receive compensation for their trade. Before, the District, through the UAESP (Special Administrative Unit of Public Services), paid them individually.



Recycling spots in Zona Industrial UPZ
Source: Google Street View (2018, July)

Now, in order to charge, they will have to be associated with an organization endorsed by the Superintendence of Public Services. The change according to the article in the national newspaper El Espectador implies a challenge: "that the recyclers organize themselves, offer a better service, establish greater controls on the usable material they collect and comply with Resolution CRA Resolution 720 of 2015" (El Espectador, 2017) Given the new scenario, Paula Rengifo, legal representative of the Business Group of Waste Pickers of the Eighth Zone, said she agreed with the idea that her guild be organized so that in the future the associations will consolidate as companies or microenterprises. Even so, she hopes the District will help them with training to bring the initiative afloat. She stated that **"it is not easy to convince all recyclers that if we join together we will receive a more orderly payment and we can grow. Perhaps, if the administration gives us the tools to consolidate organizations, we can achieve it"**. (El Espectador, 2017)



Recyclers/carters in Bogotá
Source: Torrijos, Gustavo.(Photographer). (2017, March 1).
El Espectador. Retrieved from *El futuro de los recicladores en Bogotá*.

However, according to a later article made, this time by the national newspaper El Tiempo at the end of the same year, there have been many complications to carry out the agreement between the district and the "carters", among these: many do not were included in the census that was conducted to identify those who were going to participate in the program, **1,200 people** who voluntarily surrendered their animals have not been taken into account, some claim to be now in absolute poverty and others have had to deal with the death of family members to causes of health problems linked to the lifestyle that they lived with horses and carrying out the recycling activity. (Murillo Mojica, 2017)

In addition, a new article in El Tiempo portrayed the current situation. A group of recyclers from different associations and private warehouses owners protested earlier this year at the Supercade (District Administrative Center), which is also located on the edge of the Zona Industrial, to demand the City Hall to extend the deadline to comply with the urban and mobility regulations required by decrees 113 of 2013 and 456 of 2010 that regulate the **Solid Waste Master Plan** and according to the law they must, among other things, adapt the platforms adjacent to the site where trucks and recycling carts enter and exit, signpost, have pedestrian spaces, avoid invading

public space. After the protest, the District Planning Office decided to extend the deadline for compliance with all requirements, for 11 more months. (Murillo, 2019)



Recycling centers in Zona Industrial UPZ
Source: Author.



Delivery of the new vehicles to the carters of Bogotá
Source: KienyKe (2013, January 18). *De las riendas al volante*.
<https://www.kienyke.com/historias/de-las-riendas-al-volante>

For all the reasons explained above, I tried to look beyond the problem to see the future potential of a district in which these recycling activities are carried out in an organized and functional way by having the "human material" to do so, however it was necessary to review on the global framework initiatives that could show viable to manage this scenario. This is the case of **Alencop**, which is why I will try to explain its right guesses successively..



The recycling process in Bogotá in figures

Source: El Espectador. (2017, March 1).

El futuro de los recicladores en Bogotá.

MADE IN BOGOTÁ

ALENCOP, BARCELONA

Main reference for the recycling district scenario

Alencop, as they explain on their official website, “is a new cooperative of social initiative, created to respond to a problem of waste collection and treatment in urban settings, and to guarantee the living conditions of a collective in vulnerability situation.”^(Alencop, nd)

It is a project aimed at sub-Saharan people who use the Office of Irregular Settlements Plan (Opai). It began involving 15 working partners, with the aim of gradually incorporating more people as the project consolidated. (Alencop, n.d.) Now they have grown and there are 28 working partners. It is interesting to understand how the payment they receive for their services to the community works: A part of the salary, which is the minimum interprofessional salary, is received in euros and the other, in a social currency created: the alencopins. With them the partners are able to cover their home and basic needs. In addition, the contract with the cooperative allows members to initiate procedures to regularize their legal status.

These 28 people receive continuous training in various areas: cooperativism, business management tools, education for public awareness, communication tools, training in scrap collection and reuse of WEEE (Alencop, n.d.). Which is interesting, because in the UPZ Industrial Zone there is a headquarters of the SENA (The National Learning Service) which is a public establishment of the national order that offers free training to millions of Colombians who benefit from technical, technological and complementary programs that are focused in the economic, technological and social development of the country; “they enter to thicken the productive activities of companies and industry, to obtain better competitiveness and production with globalized markets”. (SENA National Learning Service - General Directorate, 2019). So their presence in the area that precisely brings together fields such as: National Center for Graphic Industry, Industrial Management Center, is worth mentioning.



Worker members of the Alencop cooperative
Source: Alencop. (n.d.). *Alencop - Cooperativa de Ferralla a Barcelona.*
<http://alencop.coop/la-cooperativa/>

WHAT IF? URBAN FARMLAND & RECYCLING DISTRICT

URBAN AGRICULTURE

Current possibilities and initiatives

It is taken as a complementary scenario to the recycling district in the sense that both can be grouped under the category of “environmentally sustainable”. While sustainability is a field that should be understood from a holistic approach, it is important to highlight strategies that have a more direct focus, or at least clearer when remedying the damage to the ecosystem generated by the activities, in this case particularly: production. So, when are talking about the possibility of an entire district that is responsible for recycling a city like Bogotá, it is a scenario of not being content with being “eco-friendly” but going beyond and contributing incrementally. In this order of ideas a key factor, in my opinion, is urban agriculture, and through this proposal I realized that the district has already been contemplating this possibility, in fact in the Botanical Garden of the capital advice and training spaces are offered, at the same time there are faculties of universities such as the UDCA (University of Applied and Environmental Sciences) are specifically innovating in this field, as is the case with his report on the determination of the thermal behavior of a Colombian space greenhouse using computational fluid dynamics. This added to the fact that the main threat in the area is air pollution: “associated with high concentrations of particulate material, less than 10 microns (PM10) and gases, as a result of atmospheric emissions from industries and vehicles of heavy transport and collective public that circulate in the area ”, according to the Local Environmental Plan published by the Mayor's Office in January 2017 (Local Mayor's Office of Puente Aranda, 2017). Among other strategies, this can be mitigated with the help of trees, since a current problem is low tree density, where the proportion is 7.4 inhabitants per tree for this location.



Urban agriculture in Bogotá
Source: Bogotá's Botanical Garden. (n.d.). *Agricultura Urbana*.
<http://www.jbb.gov.co/index.php/agricultura-urbana>

"In the Botanical Garden of Bogotá, urban agriculture is promoted as a strategy that contributes to the knowledge of the flora and agrobiodiversity of the capital district, training the population for the management of genetic heritage through the conservation of seeds, the improvement of the vegetation coverage, mitigation of the effects of climate change, the use of organic waste, the implementation of appropriate technologies and the promotion of food security."

BOGOTÁ'S BOTANICAL GARDEN



CONCEPT

To combine the four scenarios to give a north to what happens inside the area, maintaining the industrial urban landscape and its identity as the central industrial zone of the city.

How possible is it to mix it all? What are the advantages? What are the difficulties?

CHAPTER IX

URBAN STRATEGIES

How to apply the scenarios and city vision
(concept) to reality.

So, what is the actual proposal?

Is an urban regeneration project carried out through a **Master Plan** that follows the guidelines of the application of **strategies tested at the block scale**. Starting from a **manifesto** in which it is established that the importance of protecting and enhancing the industry within the city is undoubted and in order to do so, it is necessary to make the community understand that the contemporary industry can be green, non-polluting, smart, light, little. So it is necessary to rethink the possibility of underutilized spaces and explore new paradigms of the **live-work relationship** (work always understood from the production / manufacturing) just as it was done at the beginning of the last century with the Company Towns. Only this time the engine will be sustainability, the quality of life and the context is a contemporary, polycentric city, with an inclusive and diverse society and with programs that link and give worthy housing and work opportunities to those who do not have the same privileges than others.

"How can we preserve industrial activity in the city?"

To ensure a more sustainable future, it is important to retain industrious activity within the city. Reduced travel distances between the production premises and the market will reduce congestion and carbon emission, while retaining the industry in the city secures employment, diversity and resilience.

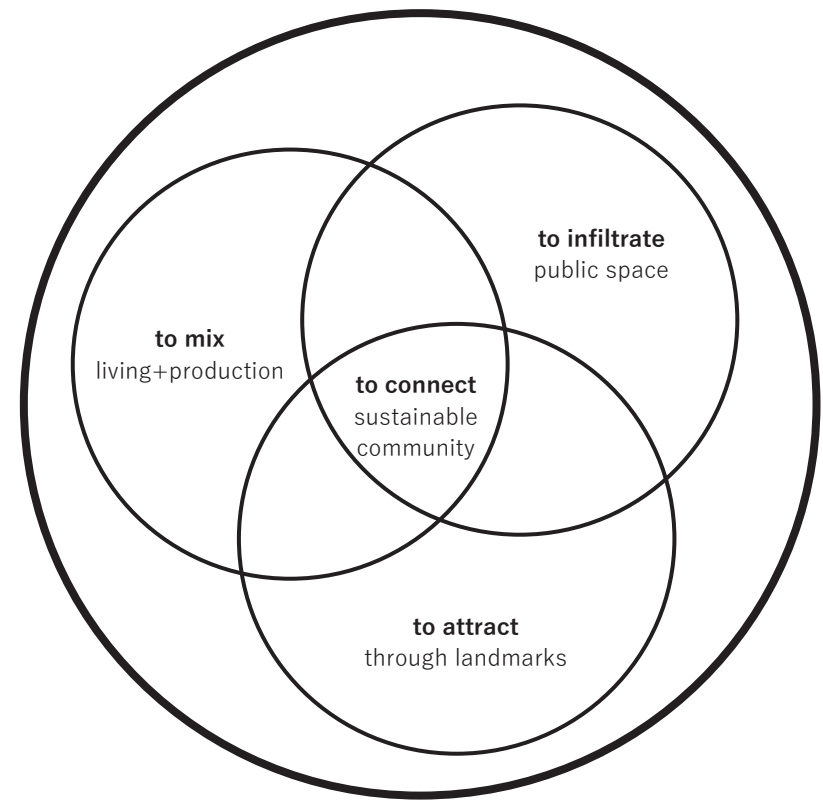
Enhancing the existing environmental and social performance of the industrial estate, while extending its function. Creating collective spaces within the industrial estate for discussions and planning of the future era."

COLLECTIVELY INDUSTRIAL (Grigoropoulou, 2019)

How to carry it out?

Through sustainable strategies

to reuse



to reuse

upgrading

AVAILABILITY TO REUSE

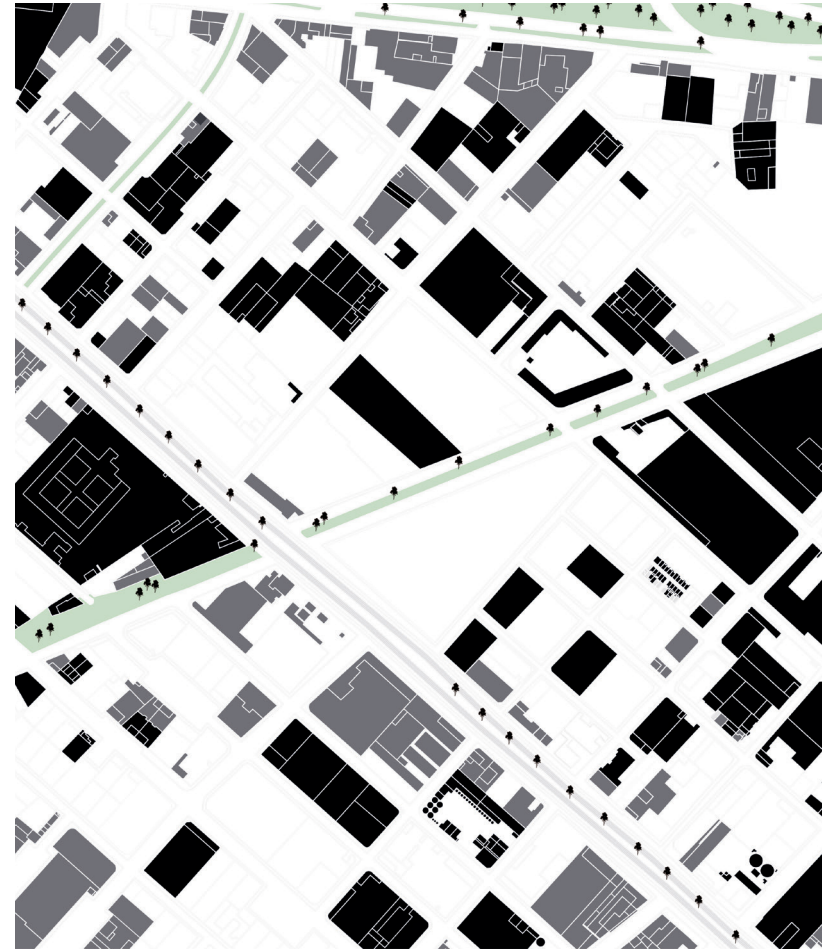
From super rigid



The lack of public space and the overload of storage spaces...

- **Impermeable.** Such as factories, warehouses, dwelling and private facilities.
- **Permeable.** Such as public facilities and commercial uses.
- **Public.** Urban grid.

To potentially permeable

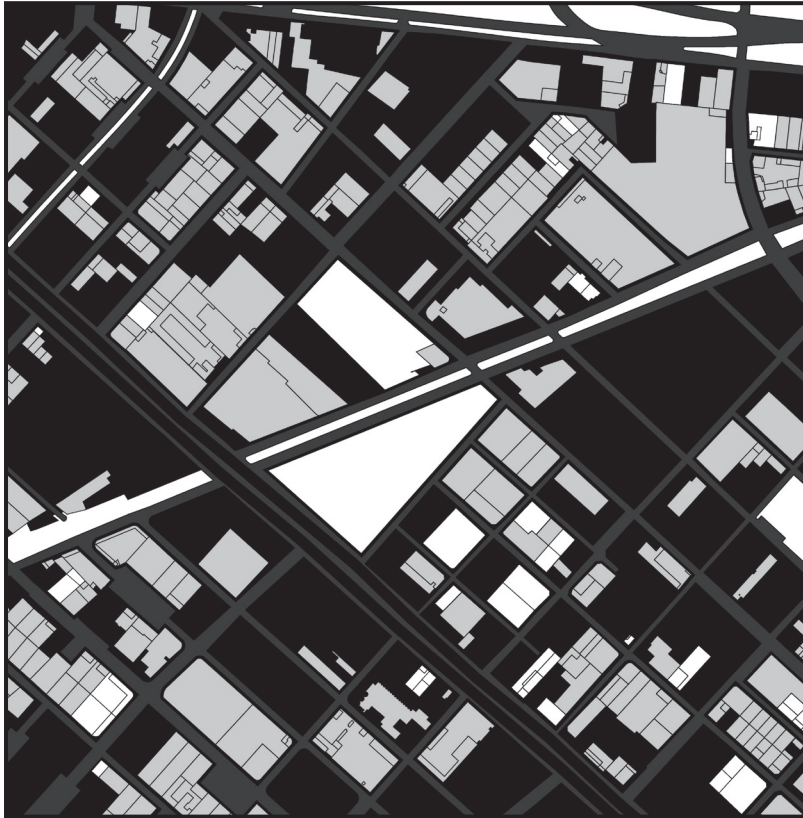


...Versus potentially usable and easily adaptable spaces.

- **Currently productive or functioning.** Such as factories, dwelling and facilities.
- **Underused or "easily accessible".** Such as warehouses, parking lots, buildings and lots for sale or for rent.

AVAILABILITY TO REUSE

Starting from what is vacant or underused



Up for grabs

The elements marked with black in the map represent: **Urban legacies*** such as the CCA (**Colombian Automotive Company**), but also other buildings (mostly warehouses) with less urban importance but sharing the condition of being currently available, obtainable, there for the taking since they are on sale or up for rent.

It is worth mentioning also the green areas that currently act as **terrain vagues*** as the **railway** and the remaining spaces between the vehicular trace, because being residual spaces share the previously established condition, even from the normative side.

Underused infrastructures

Most of the **warehouses** and parking spaces in which there's no economical activity or manufacturing happening inside. **Unused** buildings or the ones used only for **storage**.

High possibilities















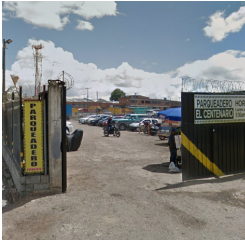






The street, is a space that is in poor condition more than anything by the heavy machinery of the industry. However, it is an urban element capable of transforming itself depending on the temporality and supplying the needs of citizens.

It acts as a **parking lot, warehouse, sports equipment, sales room, relaxation room**, among others.

To leave untouched

WHAT TO RECYCLE?

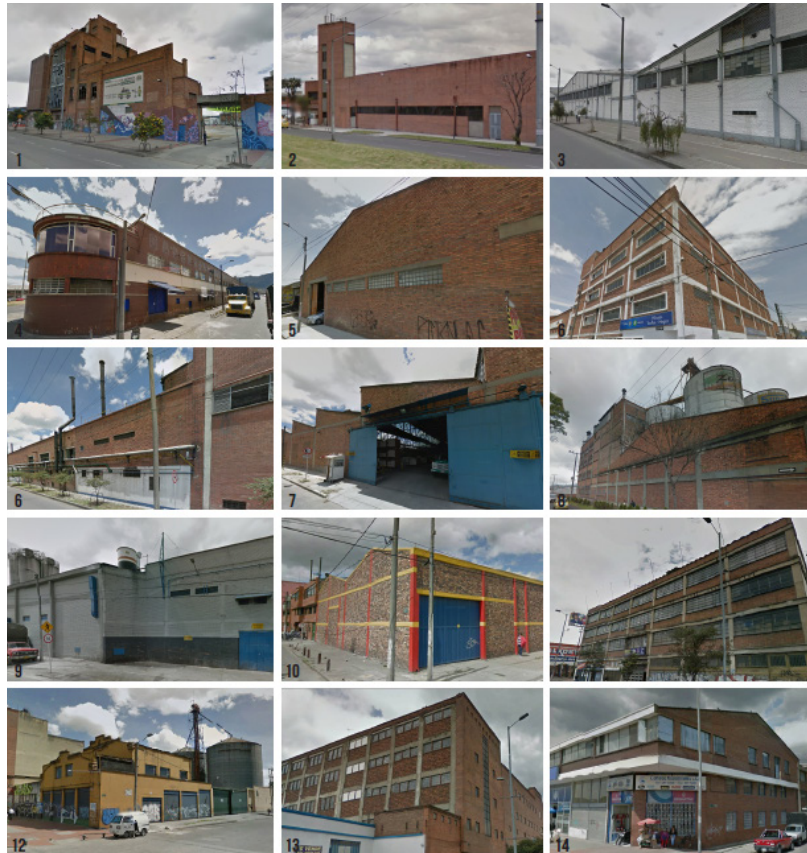
Matrix of actions

ARCHITECTURAL VALUE								
LAND USE ACTIVITY	+	+ / -	-	+	+ / -	-		
	 +   				<div>Leave untouched.</div>	<div>Adapt.</div> <div>Additions or subtractions to insert a new activity. Leaving the current one intact.</div>	<div>Dismiss and reuse lot.</div> <div>For a civic space (public squares or facilities) or/ and productive activities + housing.</div>	 Currently producing factories +  + active housing,  trading and facilities. 
					<div>Adapt.</div> <div>Additions or subtractions to insert a new activity. Leaving the current one intact.</div>	<div>Adapt.</div> <div>Additions or subtractions to insert a new activity. Leaving the current one intact.</div>	<div>Dismiss and reuse lot.</div> <div>For a civic space (public squares or facilities) or/ and productive activities + housing.</div>	 Active warehouses and parking lots.
					<div>Adapt and reuse building.</div> <div>Restoration. Additions or subtractions to insert new activities.</div>	<div>Adapt and reuse building.</div> <div>For a civic space (public squares or facilities) or/ and productive activities + housing.</div>	<div>Dismiss and reuse lot.</div>	 Vacant warehouses and lots.

WHAT TO REUSE?

Preserved buildings catalogue.

How the industrial landscape looks like in Zona Industrial .



WHAT TO DISMISS?

Elements that will not be reused but will be used for urban transformation.



to attract

**strengthening
cooperativeness
inside the area
while creating new
landmarks outwards**

TO ATTRACT SPECTATORS

New architecture to consolidate the sector's industrial identity to the city



Reference for landmarks by manufacturing companies
Source: Guía de Alemania. (n.d.). *Edificio BMW (Múnich)*.
<https://www.guiadealemania.com/edificio-bmw-munich/>

Smart industry / Entertainment industry

The plots that will not be reused/adapted will be taken as an advantage to install a contemporary paradigm of a **Smart Factory Complex/Entertainment Industry Hub** for the city and Latin America, under the model of "Vertical Urban Factory".

On the other hand, the past Colombian Automotive Company, will be reused as a new complex of around 23.000 m² one of a kind **co-working space** for the region, bringing at least 1000 workers from more than 200 companies. Taking as referents initiatives like the Building 128 in New York, a space in which in a few word, people who come here: "rent studios and workshops, host web conferences in vitreous rooms, and mingle in the colorful lounges and café" . (Rappaport, 2017)

TO ATTRACT ACTORS

New social purposes for abandoned buildings

Productive and Sustainable Housing

The condition of industrial cluster is considered negative, especially if one speaks of a central area of the city, so the power of housing as an urban activator is recognized. In this way, I propose to combine the industrial vocation with urban life. This form must be done in a sustainable way, so it is not only necessary to think about environmental and climate strategies but also to think economically and socially. In this way it is thought that in what is more feasible the realization of productive housing is under the concept of **cooperatives**, in fact, currently part of the Zona Industrial is still active thanks to these, implying that they work. It is also important to learn from informal initiatives happening already in the urban space, like the recycling centers. A good example taken as a referent is Alencop in Barcelona, a cooperative that define itself in its official website as: "a new social initiative cooperative, created to respond to a problem of waste collection and treatment in urban settings, and to guarantee the worthy living conditions of a vulnerable group."

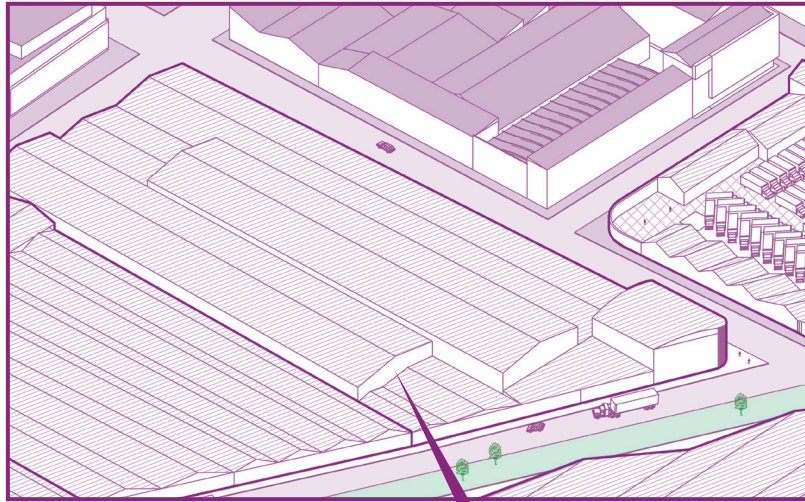
It would work like this: They meet a group of people (for example people displaced by violence and civil conflicts or immigrants for political issues such as Venezuelans can be involved), they are explained that they will be helped with housing spaces as long as they commit to work in productive activities either: smart manufactures, urban gardens, recycling centers, etc. In this way, it is expected to generate income in the area, keep it active from production since it is its function in the city and reduce crime rates, insecurity and other social issues due to lack of opportunities and housing shortages. In this way it would really be like a new industrial revolution, resembling the migration from the countryside to the cities with the beginning of modernization, now it is to address overpopulation in the cities through industry and the advantages of technology and globalization.



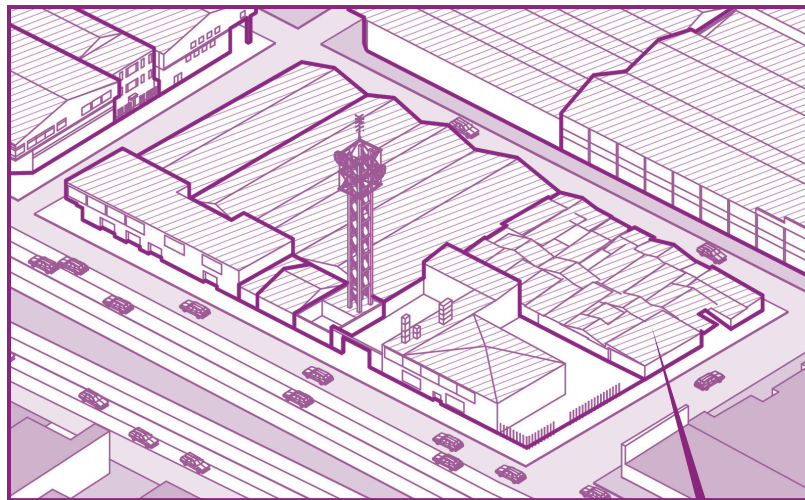
Recycle centers ruled by cooperativism in Latin America
Source: Buenos Aires Ciudad. (2016, March 11). *Un recorrido por el Centro Verde de Retiro Norte*.
<https://www.buenosaires.gob.ar/noticias/un-recorrido-por-el-centro-verde-de-retiro-norte>

TO ATTRACT SPECTATORS

New architecture to consolidate the sector's industrial identity to the city



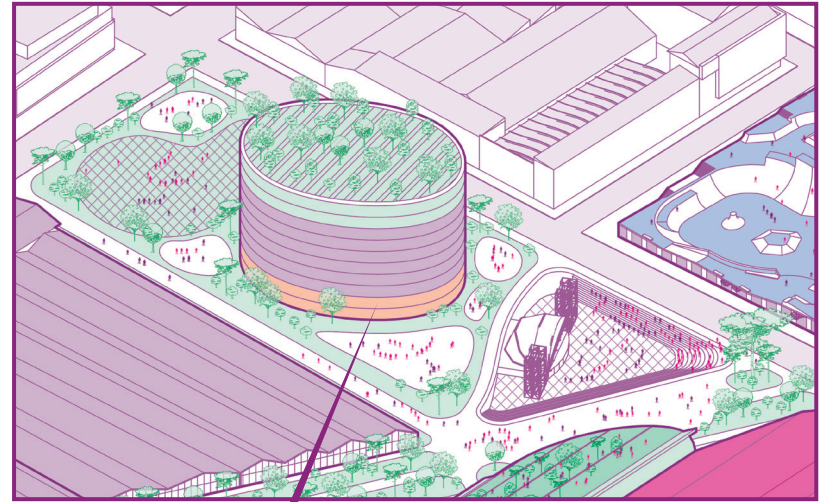
Building in poor conditions but a great location



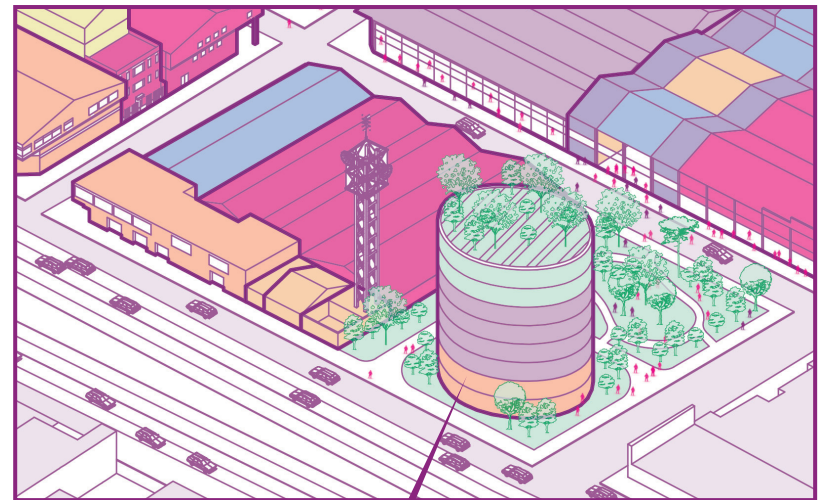
Current slum/dump condition

...CREATING LANDMARKS

The proposal regards urban strategies not architectural design/form.*



Opportunity for a manufacturing landmark building and collective space for the city



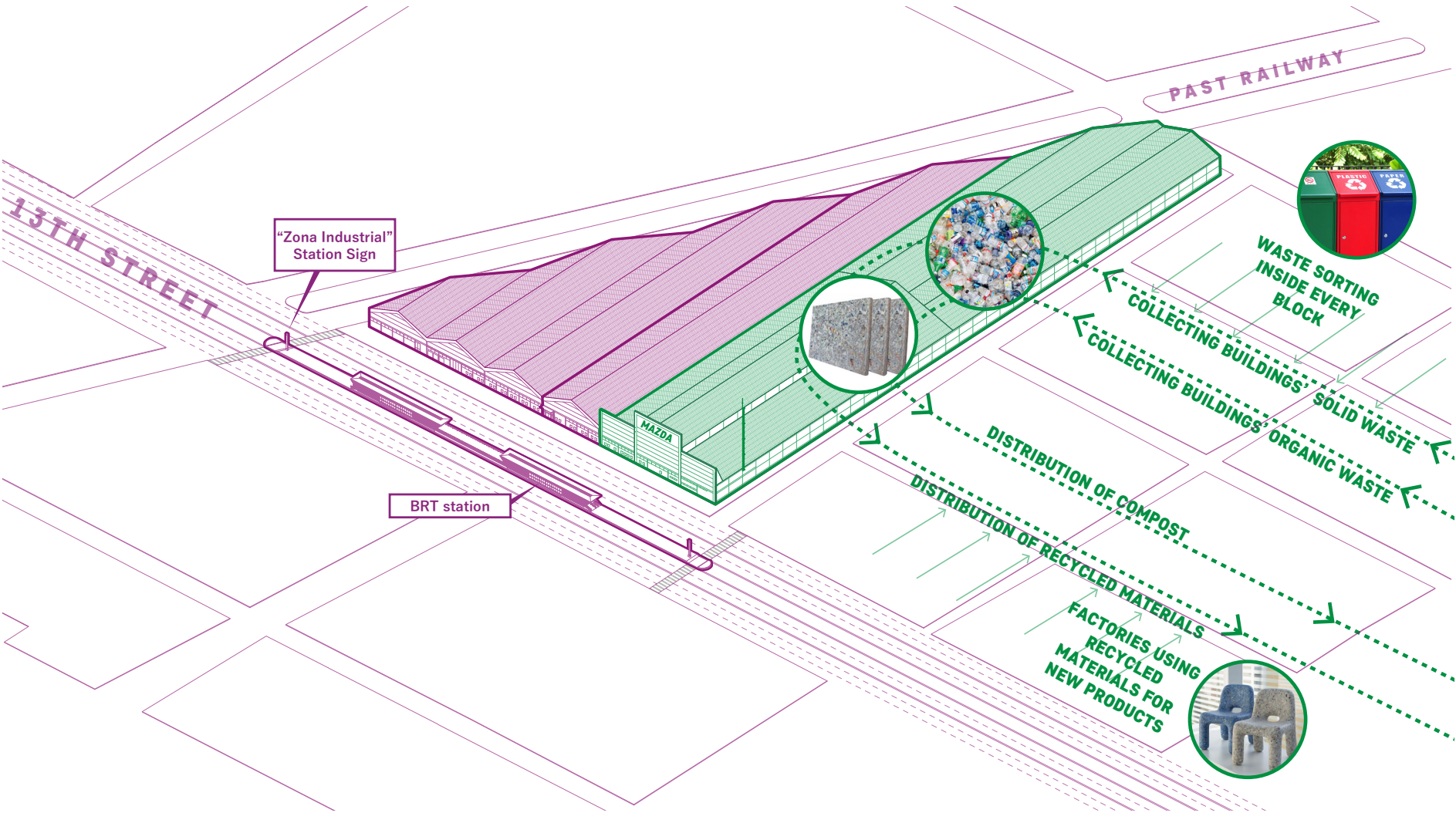
Possibility for a new building (considering the scenarios) and public space

TO ATTRACT ACTORS...
New social purposes for abandoned buildings

TRANSFORMING LEGACIES

From abandoned car factory

To KM 0 Recycling Center



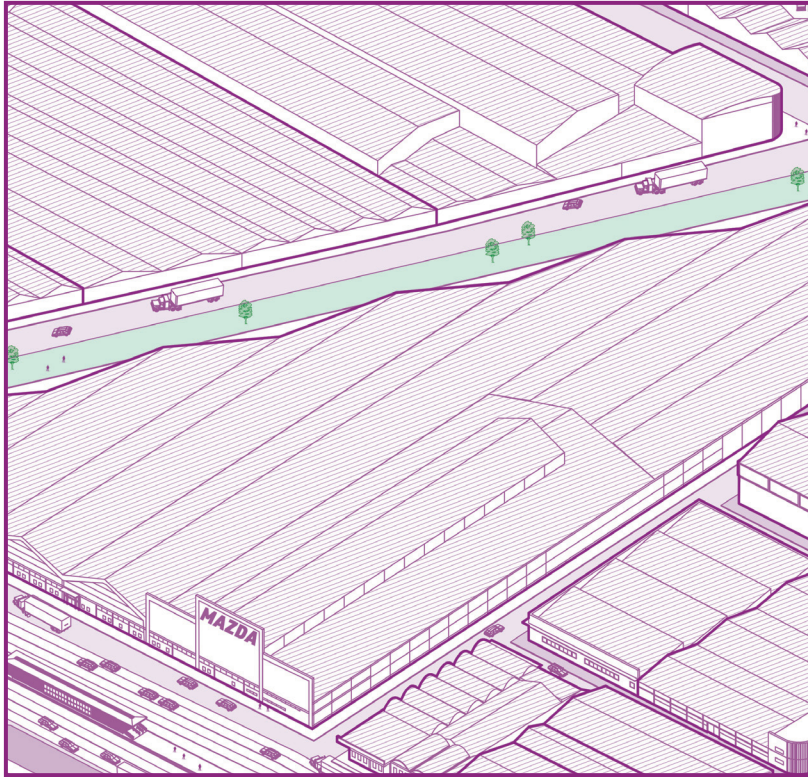
View towards the BRT station of the Zona Industrial UPZ, towards the reuse project of the Colombian Automotive Company, that is now **commercial center** offering recycled products like the objects that people carry in the foreground, public **green passage** connecting to the master plan's linear park and a **Km 0 recycling center**. In the background a new industrial landmark is shown.



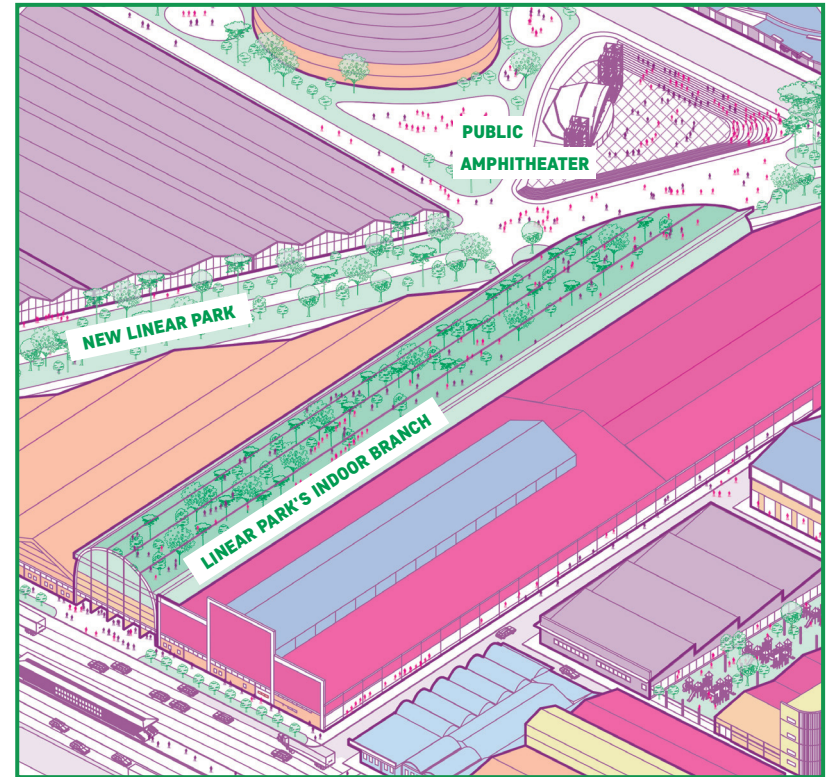
**to
infiltrate**

**green spaces and
public space to break
rigidity**

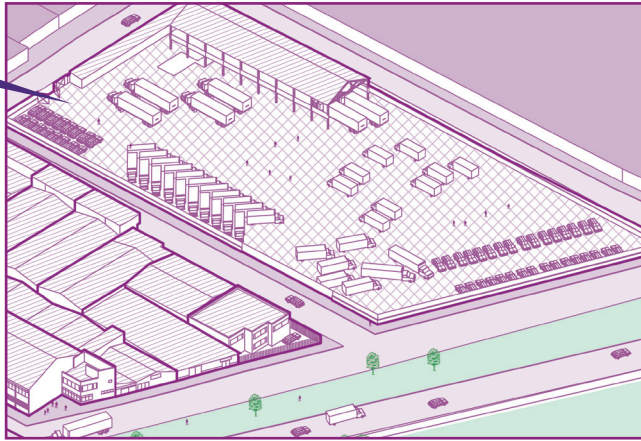
CURRENT STATE



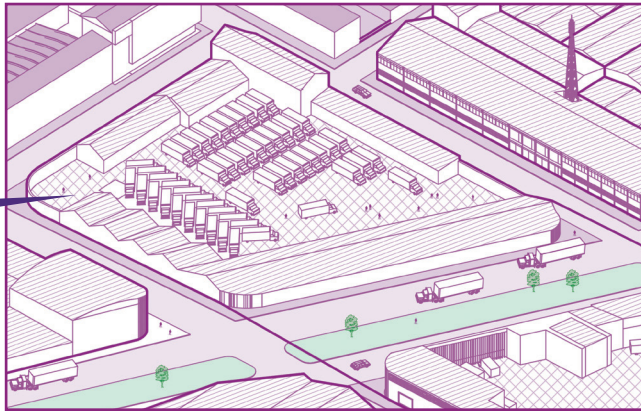
URBAN SCALE PROPOSAL



Parking lot.
Underutilized space with no architectural value but very well located and connected to the city.



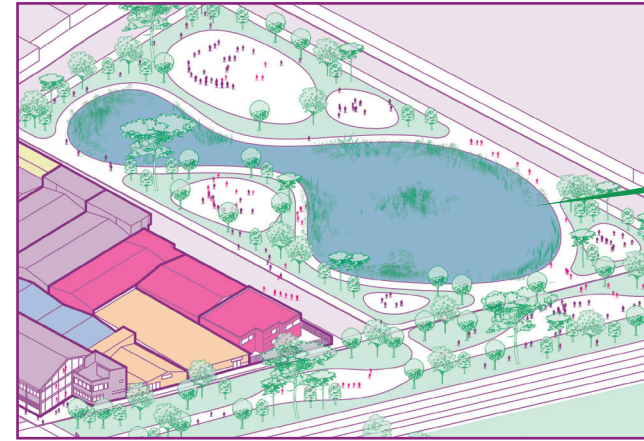
Parking lot.
Complementing Postobón, a Colombian sugary drinks company, one of the largest companies in Colombia and one of the largest in South America. A currently active factory that contributes to the permanence of the industry and the productive activity in the area.



Typical dense industrial block, with very high occupancy rate, very rigid.



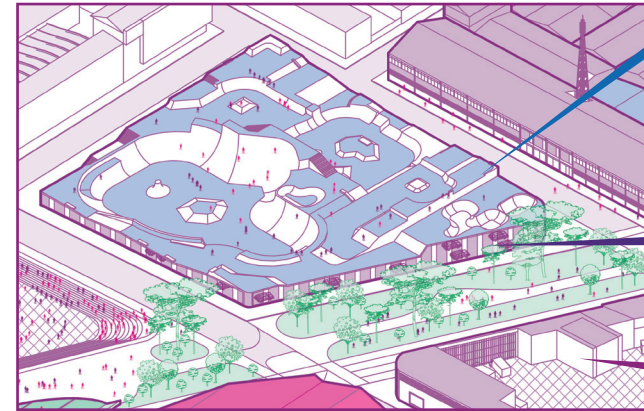
Green spaces with water infrastructure involving rainwater, which are added to the structure of the linear park.



Skatepark

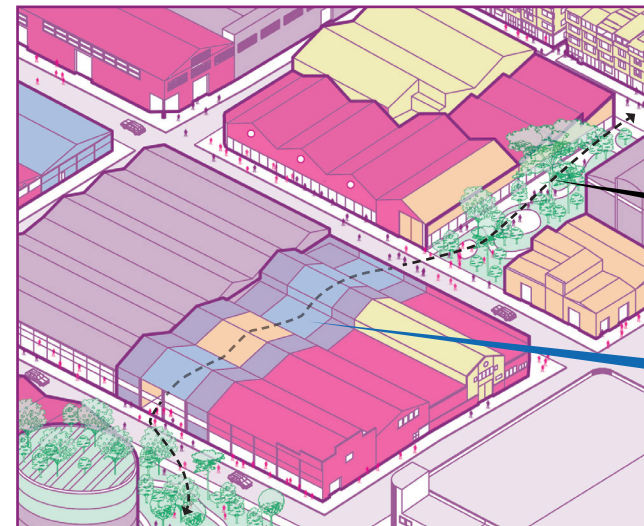
Spaces for **storage** such as **parking**, are necessary to complement the manufacturing activity, however, they do not need spatial particularities, so when they are left, they intervene to give new collective spaces for the city.

Postobón. Currently active beverage company.



New corridor of indoor and outdoor collective devices inside the blocks, communicating with each other.

New **artistic facilities** (dance studios) for the community, part of a **new block structure** through hybrid devices. Explained in detail in the following section.



A vibrant, surreal illustration of a modern urban park. The central feature is a large, colorful, grid-patterned bowl, resembling a giant video game level. People are engaged in various activities: a person is jumping high in the air, a skateboarder is performing a trick, a person is riding a red bicycle, and others are walking or running. The background features a large building with a 'Burger King' sign, a blue truck, and a tall antenna tower. The sky is a mix of purple and green, suggesting a digital or futuristic theme.

to mix

**taking advantage of
current diversity to
project hybrid devices**

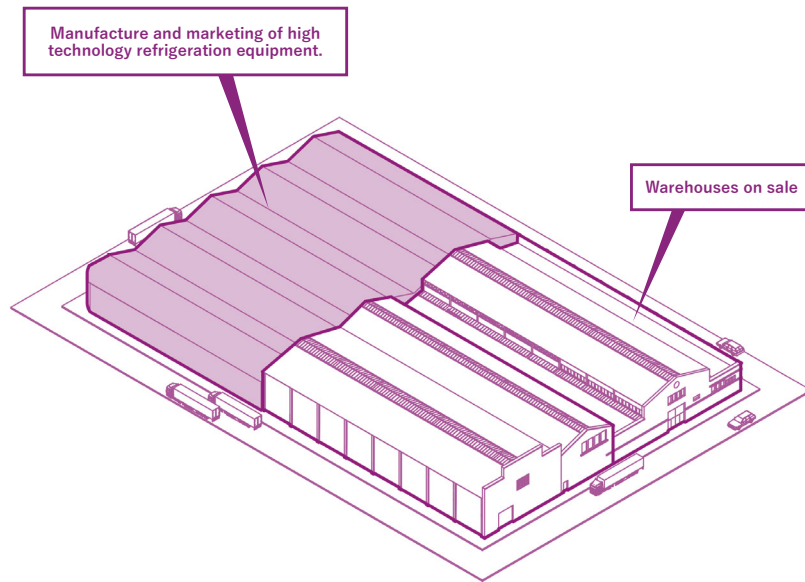
Mixing

The main challenge with the mix of activities is how to combine the different parameters or spatial needs of each one under the same space (a warehouse / factory). Paradoxically, this is its greatest virtue, since it needs different characteristics, it is possible to know (or at least test) which activity works best in each subspace and does not become a game of chance.

ACTIVITY	NEEDS	PROPOSAL
Housing	Lighting, ventilation, privacy, noise isolation.	To avoid in ground floors, far from roads.
Neighboring scale trading	Close to dwelling. Close to pedestrian high fluxes.	Flexible policies regarding informality, public space as a safe platform.
Commerce supporting manufacturing	Accessible to pedestrians, open/clear facades, forming groups.	Creating urban corridors, taking advantage of long facades
Spaces for production	Visible but not necessarily accessible. Close to storage.	Visual permeability.
Storage.	Accessible to main roads for delivery and loading.	Noise isolating (buffer) areas, separating housing to the rest of uses.

CURRENTLY

Half empty industrial block



After considering the COOPERATIVE approach

Actions to follow for the management of the project under the figure of cooperative, taking the principles of **Alencop in Barcelona**:

Employment and training

- *To generate an economic activity that favors the employment of potentially cooperative people.
- *To consolidate the existing system for the collection of scrap and other residues.
- *To raise awareness, inform and educate the public on the selective collection of scrap and other materials.
- *To explore other economic activities of interest to the partners, contributing to the viability of the cooperative.
- *Facilitate collective training in waste management and cooperativism.
- *Design a personalized training itinerary according to individual needs.

Housing

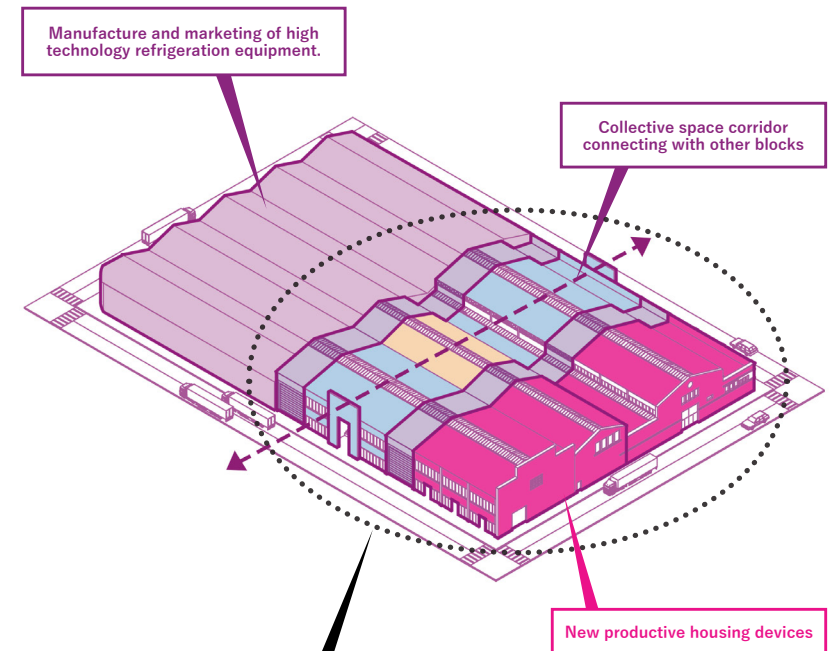
- *To facilitate access to housing and self-management.

Basic Needs

- *To facilitate coverage of basic needs, managed among all cooperatively.

PROPOSAL

New block formation



Internal redistribution PROPOSAL

As it will be **detailed in the following pages**. It goes from an old industrial block model, in which the occupation of the block for private use is 85% leaving only the platforms for pedestrian use free, and that mostly trucks also usually occupy this space.

Currently

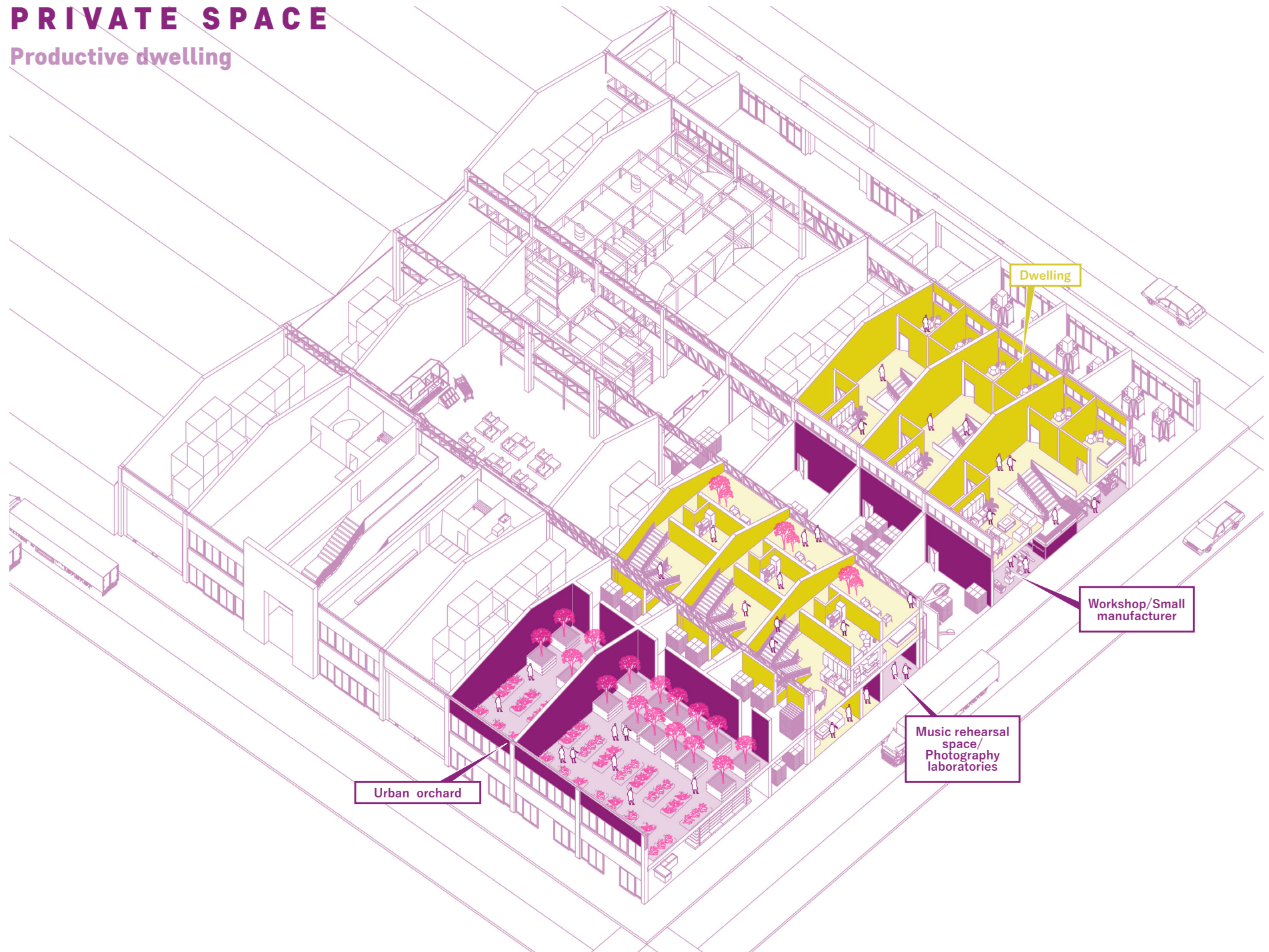
2.560 m² _Currently active factory.
3.140 m² _Vacant area on sale.

In the proposal

2.560 m² _Active factory.
1.140 m² _Facilities and Neighboring scale trading/Public Use.
720 m² _Housing.
610 m² _Manufacturing.
380 m² _Trading supporting manufacturing.

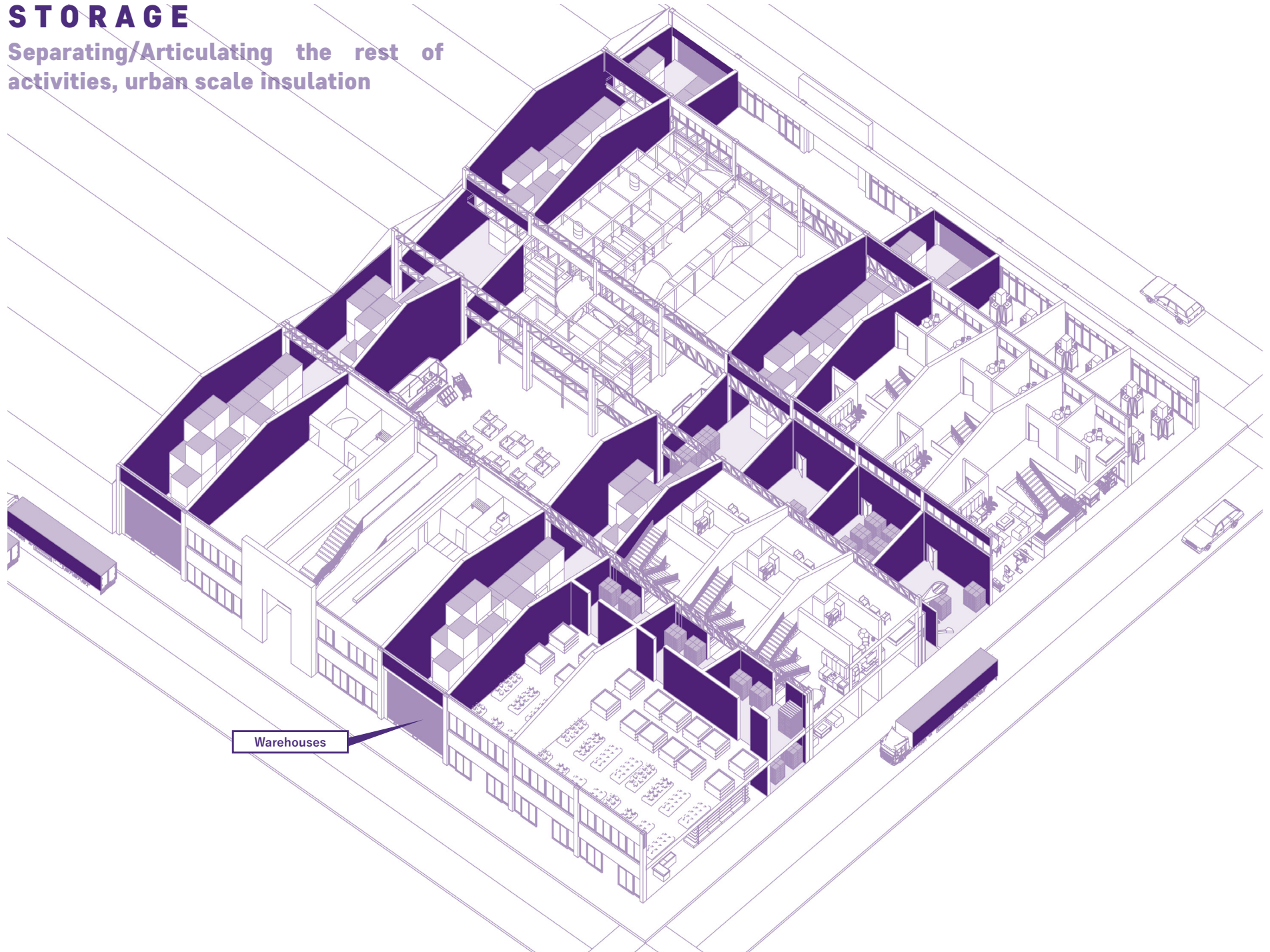
PRIVATE SPACE

Productive dwelling



STORAGE

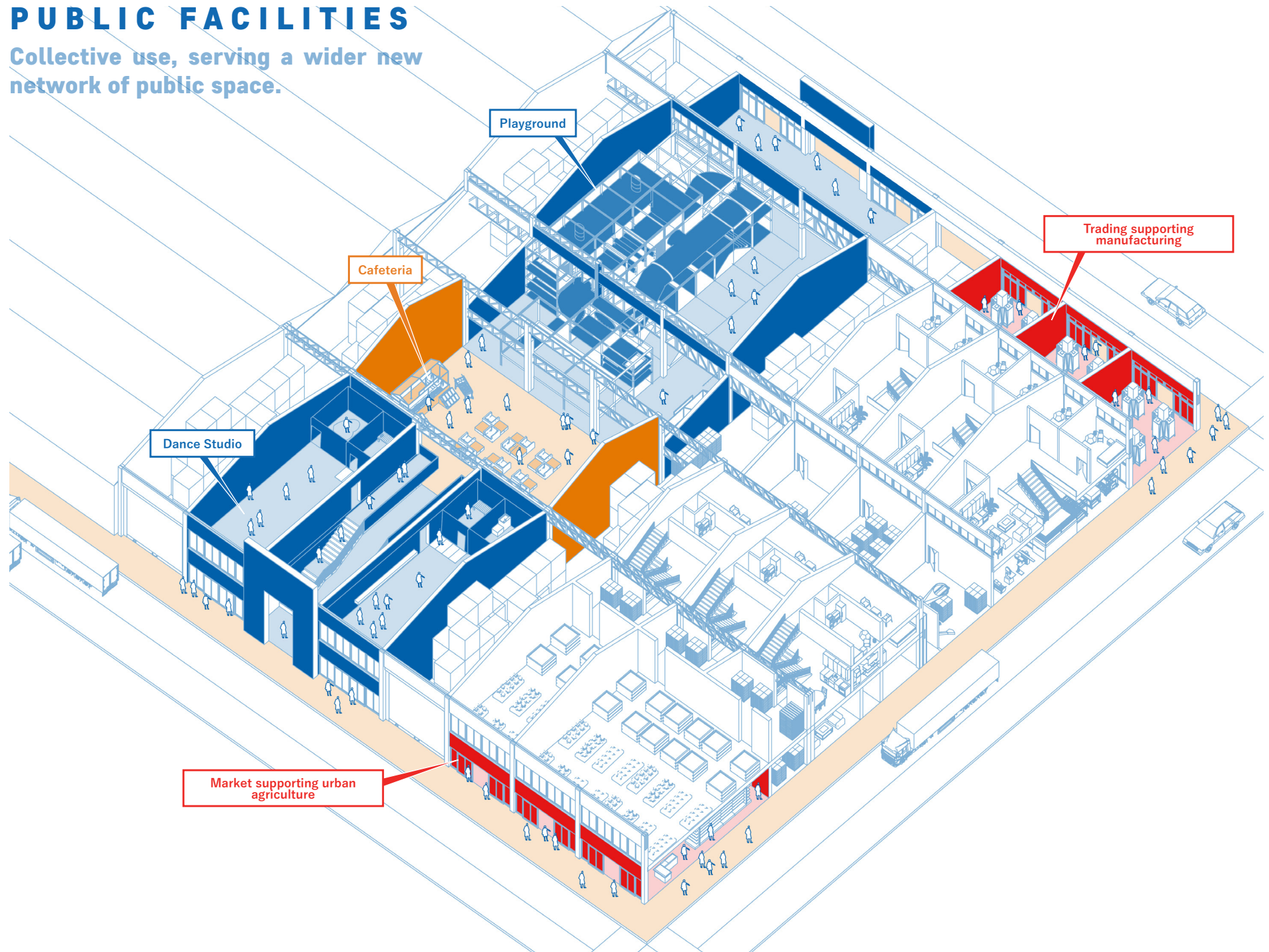
Separating/Articulating the rest of activities, urban scale insulation



Warehouses

PUBLIC FACILITIES

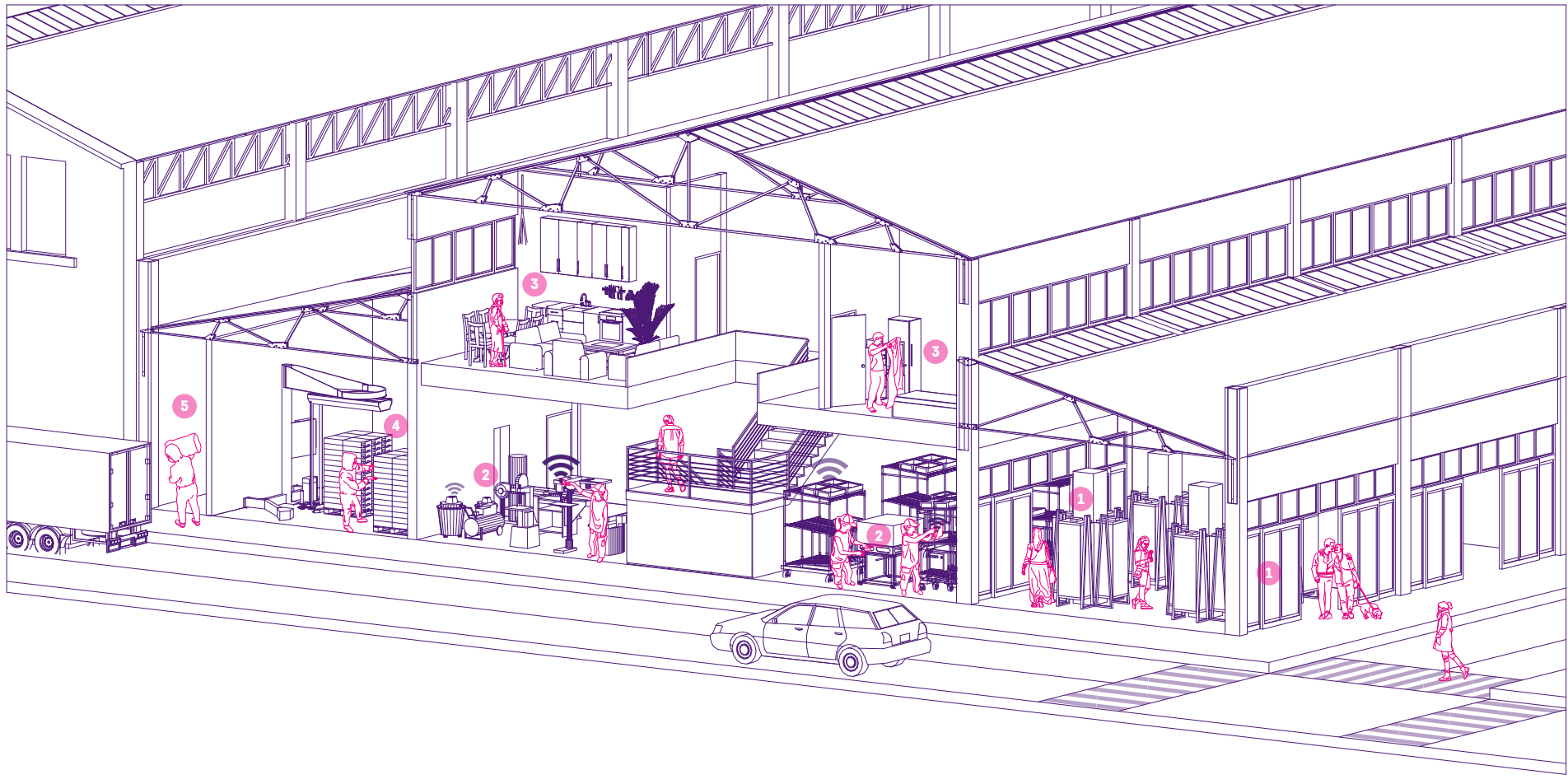
Collective use, serving a wider new network of public space.



PRODUCTIVE HOUSING

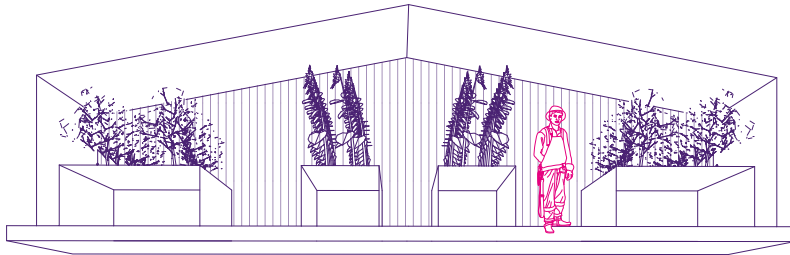
New devices breakdown

- 1 Taking advantage of the longer facade as a commercial, exhibition corridor
- 2 Right next to the showcasing, there's the workshop/manufacturing space. So it's still visible to people and they can engage in the producing process and "consume" it as an experience. Taking advantage of the smart industry and new technologies for making the space destined for production smaller.
- 3 The most isolated, best ventilated and illuminated part is where the residential use is located.
- 4 In the part of less spatial qualities the storage is located. It's also right next to the space for production.
- 5 Alternative corridor (which crosses the entire building), to distribute to the production parts without disturbing the commercial part / showcases.



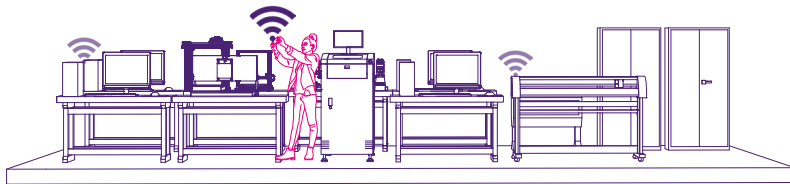
PRODUCTION BREAKDOWN

Different types of manufacturing



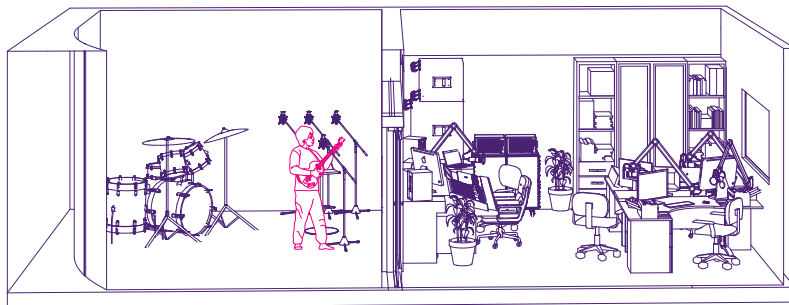
Urban agriculture as manufacturing, examples of spaces needed:

- *Greenhouses controlled by smart devices.
- *Indoor urban agriculture.
- *Outdoor urban agriculture.



Small smart industry as manufacturing, examples of spaces needed:

- *Fablab
- *Neo-cottage
- *Small manufacturer



Entertainment industry as manufacturing, examples of spaces needed:

- *Recording, TV or radio studio
- *Photography laboratory
- *Tailoring and fashion designers

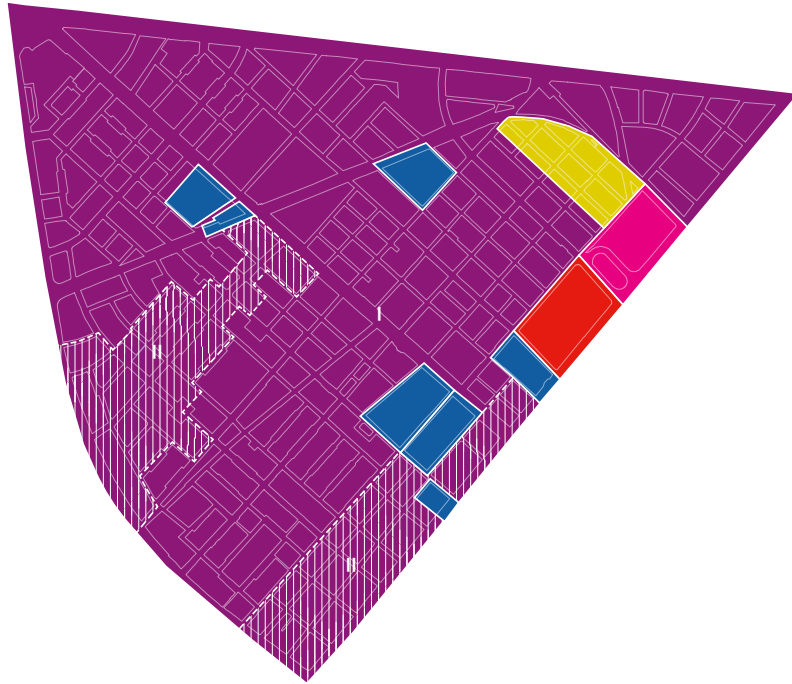
CHAPTER X

URBAN PROPOSAL

What would have to be changed from the current policies to allow the development of the strategies.

NORMATIVE

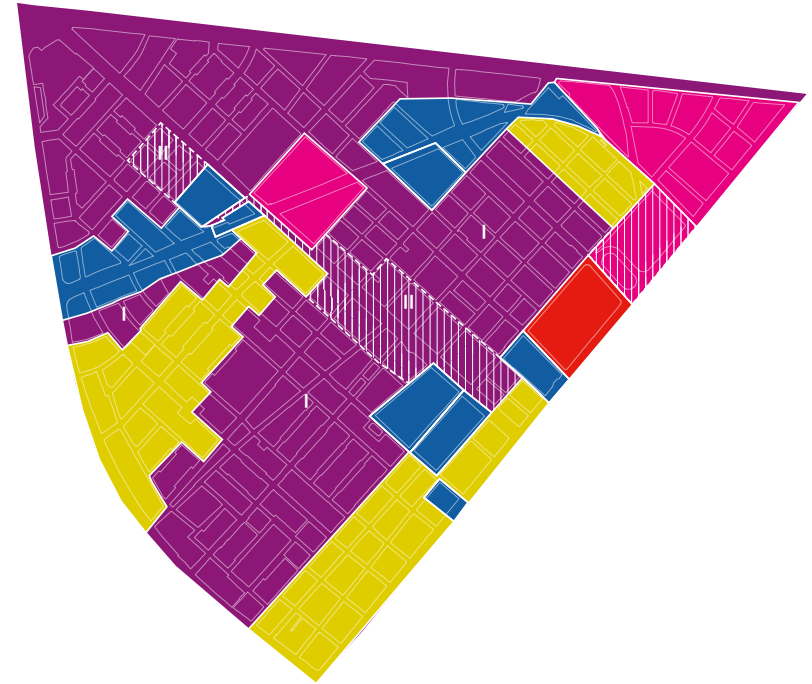
Current use for each plot



SECTOR	ACTIVITY	ZONE	TREATMENT
1/ I, II	Industrial	Industrial.	Consolidation of special urban sectors.
2	Residential	Residential with economic activity inside the dwelling.	Consolidation with moderate densification.
3	Commerce and services	Large commercial areas.	Urban consolidation.
4	Integral urban area	Multiple.	Urban renovation. Redevelopment modality.
5,6	Facilities	Collective facilities. Basic urban services.	Consolidation of special urban sectors.

PROPOSAL

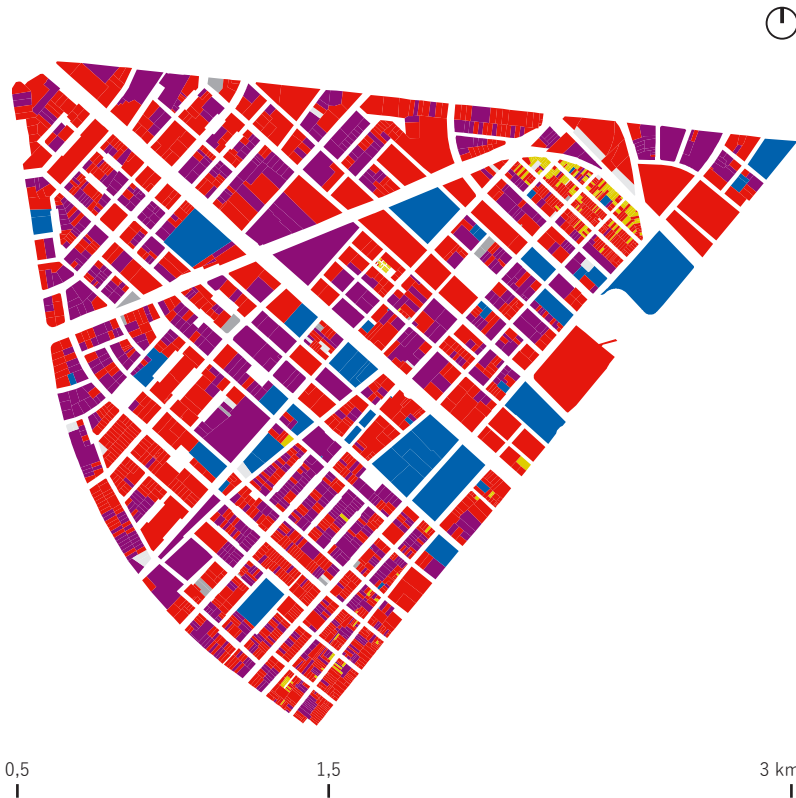
Actions in the Zonal Planning Unit scale



SECTOR	ACTIVITY	ZONE	TREATMENT
1/ I	Industrial	Industrial.	Consolidation of special urban sectors.
1/ II	Industrial	"Flexible" Industrial.	Allowance of more uses to gave back the relevance to the 13th Street.
2	Residential	Residential with economic activity inside the dwelling.	Enhancing spaces with typologies of neighborhood life to insentivate productive housing.
3	Commerce and services	Large commercial areas.	Urban consolidation.
4	Integral urban area	Multiple.	Urban renovation. Redevelopment modality.
5,6	Facilities	Collective facilities. Basic urban services.	Consolidation of special urban sectors.

REGISTERED USE

Current use for each plot



Enhancing the complementary uses in the normative...

INDUSTRY

To enhance it. Keep all the plots for industrial activity "untouched".

COMMERCE AND SERVICES

As it is the most flexible category, it is used for urban transformation. So it functions as a 'wildcard' for the main changes intended in the sector.

RESIDENTIAL

In the zones allowed for this use in the normative, infiltrate housing taking from the commerce and services category in the current-state map. However it is intended as: dwelling+economic activity.

PROPOSAL

Actions in the Zonal Planning Unit scale



And mixed uses in the built and informal space for urban transformation

FACILITIES

Infiltrate as explained in the residential but scattered in the territory due to the fact that the normative is less rigid with this activity.

NEW DEVICE

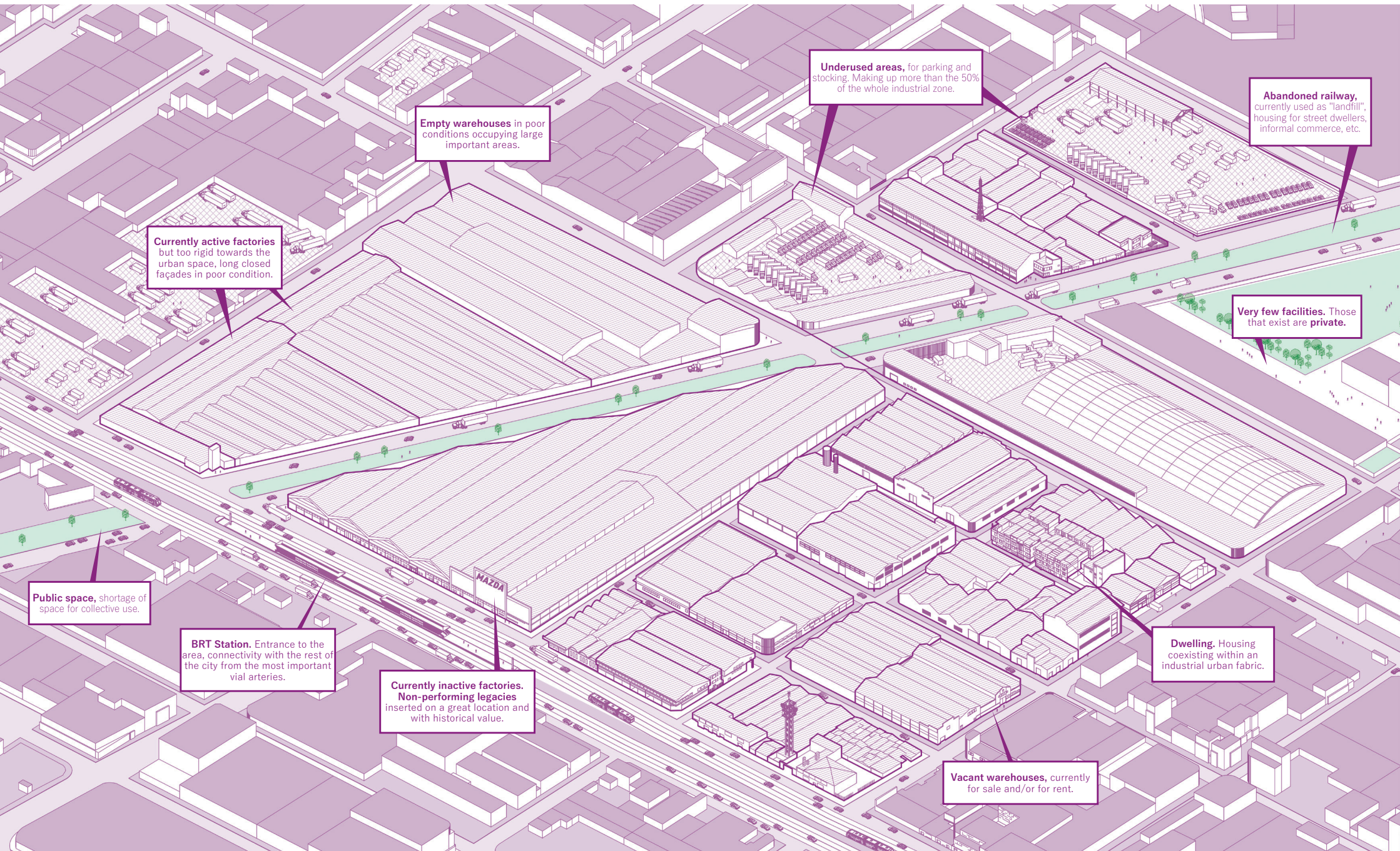
Taking the city vision as a referent, dispose new devices through main existing axes, specially the ones delimiting the area, trying to attract as new facade of the sector to the city.

CIVIC/GREEN SPACE SYSTEM

Take underused terrain vagues and warehouses to create a system of civic space that the sector is lacking.

PROJECT PROPOSAL

BEFORE / CURRENT STATE



Currently active factories but too rigid towards the urban space, long closed façades in poor condition.

Empty warehouses in poor conditions occupying large important areas.

Underused areas, for parking and stocking. Making up more than the 50% of the whole industrial zone.

Abandoned railway, currently used as "landfill", housing for street dwellers, informal commerce, etc.

Very few facilities. Those that exist are **private**.

Public space, shortage of space for collective use.

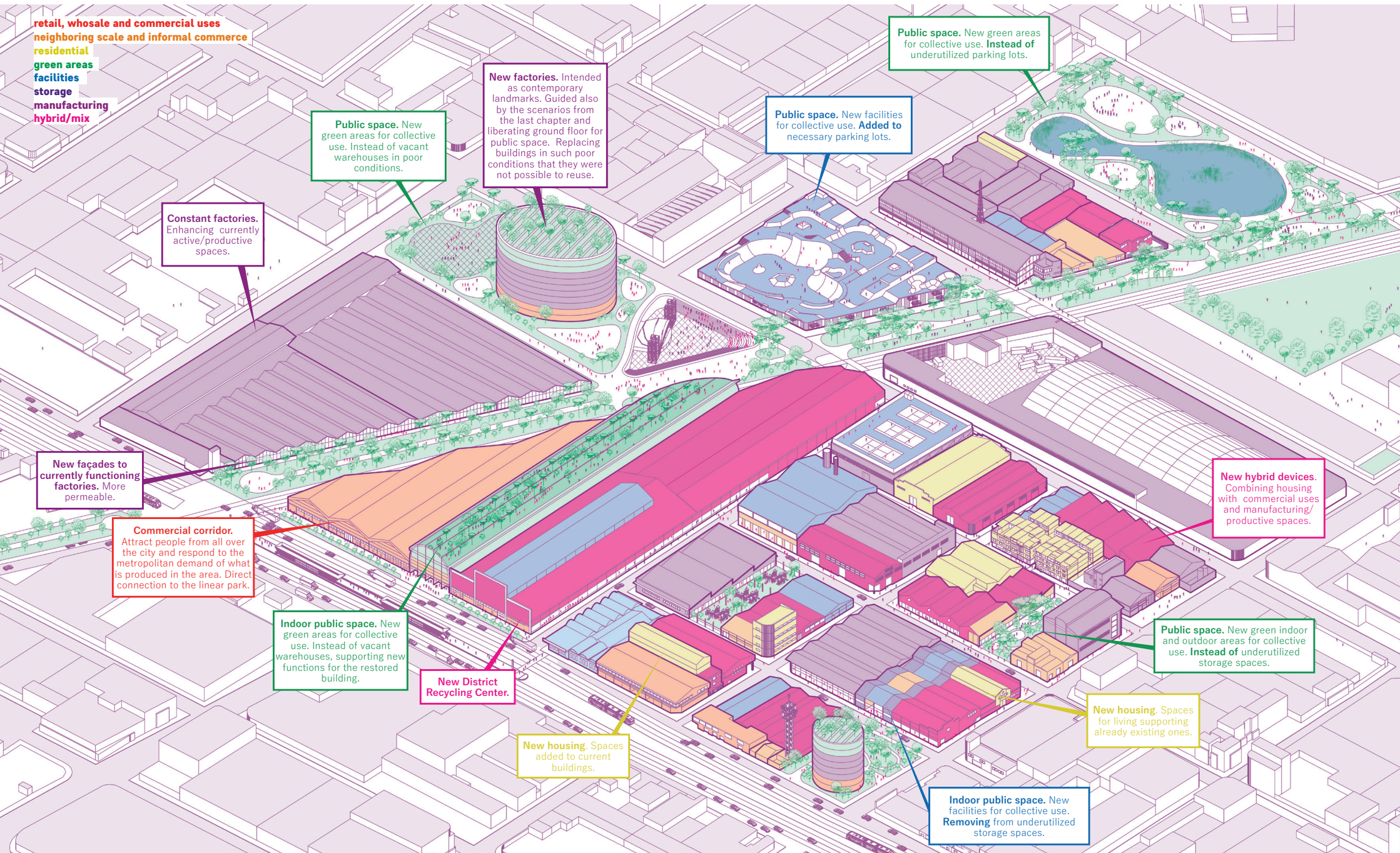
BRT Station. Entrance to the area, connectivity with the rest of the city from the most important vial arteries.

Currently inactive factories. **Non-performing legacies** inserted on a great location and with historical value.

Dwelling. Housing coexisting within an industrial urban fabric.

Vacant warehouses, currently for sale and/or for rent.

AFTER / PROPOSAL



CONCLUSIONS

Made In Bogotá meant for me, first of all, a personal discovery not only in the contents covered but also as a process through the method followed. Speaking of the latter, the first thing would be the change in daily mentality after questioning myself for months about manufacturing, how it shaped me as a conscious consumer. Likewise, I now reflect on the importance of looking for different means to understand a given territory / context. I think that with all the means we have today it is necessary to "try them all". It should be clarified that it is important to initially refer to primary sources precisely because of the excess of existing sources. I would also like to talk about the process of drawing and modeling as a thinking process. Beyond its final graphic communicative value, the understanding they give us about the object/subject of study is undeniable, as it requires a more analytical way to look at things.

Now, as is due, related to the contents covered within this document: I think about the importance of understanding and assuming Bogotá from its industrial precariousness. It makes it unique, and gives it certain advantages. Colombia has always been very attentive in being reciprocal towards other countries, especially the economic powerhouses at specific times, so it is necessary now to consolidate an understanding of the local industry. Regarding the advantages mentioned above, one of them is leapfrogging, meaning that, using precariousness to make a leap to contemporary technologies can be simpler than the progressive process of other contexts. Also speaking of this 'contemporaneity', when making the scenario chapter I was pleasantly surprised at the initiatives and possibilities that exist throughout Latin America and that are currently happening in Bogotá, especially from the younger generations.

Specifically for the Zona Industrial UPZ. It is curious that being such a central area and a planned neighborhood from so long ago that it is so uncertain to the city. It is paradoxical that the only area that bears the name of Industrial Zone is the least known for its production and seeing that it is mostly made up of underutilized spaces, it really opens the doors to many possibilities to take advantage of its location in the city. It is necessary to understand the regulations, their potentials and their defects. For example, the issue of housing in the industrial zone. It makes sense not to want to mix residences with high impact use, but if we have established that non-polluting factories are the only remaining ones and that there is no environmental damage, this position can be reconsidered, even more so if we see that housing already existed even when it was prohibited and that in this way it is better to equip it and link it to a larger dwelling system. Intending not a generic kind of dwelling that could work in any sector of the city or in any city, but one that directly links living with production as shown throughout this document. It is here when the District's mentality fails, in biasing to see the spatial possibilities of the industrial typology while building VIPs (Housing of Priority Interest) which in the end always falls short for random reasons. If the decisions are made by the community, family or cooperative there is more chance it will work, because it attends their actual needs and does not depend on political will or budget

issues. In other words, the spatial possibilities of the interior landscape of industrial areas are endless. This added to a global environmental awareness and local economic-social sensitivity should result in a proposal that makes the most out of a vocation destined for a specific sector, simply put, and I would like to paraphrase the co-tutor of this thesis Nina Rappaport: **it is necessary to encourage manufacturing within cities (or to support the existing ones), inspiring policies that connect public to private, federal to state, city to neighborhood, and community to household, ultimately creating places for jobs and providing sustainable livelihoods.**

So, to conclude, in the case of Bogotá **can industry remain within urban centers?** The answer is yes, the industry can and should stay alive inside (in the center) of Bogotá. How can it be made possible? First of all, expanding, or rather updating, what we understand by industry or manufacturing. In fact, it is not necessary to invest a disproportionate amount of money or to propose a new urban norm. It is much simpler, if we attended what is currently established by the Chamber of Commerce of Bogotá we will realize that activities such as recycling, urban agriculture and entertainment fit completely under this term and if we embrace them we can potentiate not only a central area in decline as it is Zona Industrial UPZ but the entire city. While taking the most out of industrial architecture and caring to serve areas of great historical and geographical value for the District.

On the other hand, a practical conclusion on the block scale is the one learned through the mix of activities part. Even when seeking adaptability and flexibility, it should be understood that not everything can be variable and there must be constants. And that is the main challenge, to find them. How to combine the different parameters or spatial needs of each activity under the same space (a warehouse / factory). Paradoxically, this is its greatest virtue, since it needs different characteristics, it is possible to know (or at least test) which activity works best in each subspace and does not become a game of chance.

Finally, regarding the project proposed in this thesis, it is like taking the concept of Company Towns and making it work in the 21st century under the term of Cooperative. Just like the Company Towns that once sought self-management through production, only in this case, the fact of proposing different scenarios, and therefore different fields of action, functions as an administrative strategy in the sense that the risk is reduced by diversifying the sources of income. Not to mention the advantages that are generated at the social and environmental level, by combining concepts such as urban agriculture and recycling with production to support housing deficit.

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