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Spatial Opportunities for Self-Produced Environments - The Case of Caracas

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Spatial Opportunities for Self-Produced Environments

The Case of Caracas

A dissertation presented
by

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to

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No es tan importante darle el nombre a las estrellas como al espacio que entre ellas hay. ¿Cómo llegar a la anhelada casa si el nombre de la calle no sabemos?

(It is not as important to name the stars as the space between them. How to get to the longed-for house if we don't know the name of the street?)

Igor Barreto. Soul of Apure, 39. 2006

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Spatial Opportunities for Self-Produced Environments

The Case of Caracas

Abstract

Physical planning has contributed to perpetuating spatial inequality in Caracas, Venezuela, a dynamic that has many parallelisms with other processes that result in social and economic inequalities in Latin America. The consequence has been the reduction of access to spatial opportunities for people living in Self-Produced Settlements. Working with a historical lens, this thesis aims to identify the reasons why this has happened. The study begins in 1657 with the founding of Caracas and culminates in the government of Hugo Chávez the first decade of the twenty-first century. The research highlights the end of the Guzmán Blanco period at the end of the nineteenth century when the government carried out the first national population census, and the experience of Banco Obrero, a federal institution created in 1928 focused on the subject of housing for underprivileged communities.

To achieve this goal, this thesis proposes an index to measure spatial opportunities, and a methodology that applies the index to the analysis of government sponsored project as well as planning reports by federal agencies since the Venezuela oil-boom to our days.

Self-Produced Neighborhoods are known worldwide as slums. This thesis understands them as a form of urban development that occurs when communities manage the construction of their neighborhoods with no prior planning but through an incremental yet effective system of self-organization. From the analysis of technological, accessibility, and other infrastructural networks for the case of Latin America, we conclude that Self Production is efficient for the progressive construction of housing although fundamentally deficient in its lack of access to networked infrastructure systems. Nevertheless, most planning strategies of divergent ideological approaches have assumed fragmented and localized perspectives in planning Self-Produced Neighborhoods by providing scattered and spatially disarticulated "points of resources," most often aimed at the construction of housing units.

Instead, this thesis proposes that the framework of Spatial Opportunities, when applied to Self-Produced Environments could result in the integration of these extensive parts of the city by prioritizing networked infrastructural systems over housing units. This instrument is hinged on the right to the city discourse, which posits that cities are environments that either allow or limit the development of the capabilities of their citizens, in which the networked access to the opportunities offered by the city is a fundamental variable.

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Introduction

This thesis investigates Self-production as a form of urbanization. Self-production is the process that occurs when communities carry out and manage the construction of their neighborhoods with no prior planning but through an effective method or system of self-organization that allows them to attend to their need for shelter. Self-Produced Neighborhoods are known worldwide as slums.

The study of Self-Produced Neighborhoods is a broad topic that has been explored from different perspectives and geographies. These include the implications of global economic inequalities (M. Davis 2007; Portes, Castells, and Benton 1989; Sassen 2000) and participation of Self-Produced economies in the transnational exchange dynamic (Neuwirth 2005a; Weinstein 2014); the social consequences such as segregation and urban violence (Holston and Caldeira 2008; Weinstein 2008; D. Davis 2010); the role of governance systems to address urban segregation (Alsayyad and Roy 2006; Moser 2004; Arias 2004); the implication of Self-Produced urbanization in environmental sustainability (M. Roy et al. 2016; Gabaldón 2006); housing and land regularization for underprivileged communities (Sanyal and Mukhija 2001; Fernandes 2011; Bolívar 1991); the understanding of the Self-Produced Neighborhoods from the architectural point of view (Wu 2008; de Maat 2016); the emergence of a culture of innovation flexibility, pragmatism, and negotiation in Self-Produced Urbanization (Bayat 2007; A. Roy 2011); the participatory design as a tool for slum upgrading (Imparato 2003; Calderon 2008; Baldo 2001);

the relationships between poverty, informality and socio-spatial segregation (Portes and Roberts 2005; Ugalde and Bello 2005; Koonings and Kruijt 2007); and so on.

All these approaches are relevant and demonstrate the interest in this broad and complex topic that has caught the attention of researchers from many different disciplines. The attention Self-Produced Neighborhoods have received is due to the fact that they are lies in that they express a symptomatic spatialization of a complex system of structural inequalities. Nowadays, one in eight people worldwide live in a Self-Produced Neighborhood, averaging one billion people living in slum conditions (UN-Habitat 2020).

Within these complex and wide-ranging topics, this thesis focuses specifically on the spatial logic of inequality. This approach is framed under the umbrella of the right to the city discourse, and more specifically, on the limited amount of access of underprivileged communities to the spatial opportunities that the city offers. By Spatial Opportunities, we refer to access to resources such as public spaces, educational centers, health care facilities, public transportation, and other resources that facilitate citizens' integration into the urban exchange of economies, knowledge, passions, and so on. In this sense, this thesis understands the city as a system that offers -or limits- opportunities for its citizens to develop their capabilities as human beings and members of society.

To study this interaction between citizens and the urban built environment, we have developed an analytical instrument called the Spatial Opportunity Index (SOi). Spatial Opportunity refers to the physical proximities and adjacencies that facilitate citizens' access to urban resources that exist in the physical network of the city; the SOi is a tool to measure it.

In this research, the SOi is used as an analytical tool to demonstrate that both urban development and physical planning have perpetuated spatial inequalities by limiting access to spatial opportunities to the inhabitants of Self-Produced Neighborhoods. However, inasmuch as the SOi has been utilized to look at past practices, it may also serve to explore design solutions for planners, urban designers, community leaders, and others to address the dynamics of spatial inequalities in future projects.

Even though Self-Produced cities are a global phenomenon, each case is different and requires a close analysis of the forces that have worked to implant and sustain the form of urbanization throughout time. Thus, geographically, this work focuses on the rapid growth and expansion of Self-Produced Neighborhoods for the specific case of Latin America, starting during colonial times when the region assumed the role of suppliers of raw products first to European empires, and later to industrialized countries in exchange for manufactured products. This process, widely known as the Theory of Dependency, generated what Jorge Hardoy defines as urbanization without the corresponding degrees in development and industrialization (1972, 17). In this context, underprivileged communities did not find space in the city's planned development, thus the emergence of the Self-Produced Neighborhoods was inevitable.

But, at the same time, this thesis considers Self-Produced Neighborhoods not only as a by-product of industrialization but also as a vehicle for the sudden and accelerated pace of development amid existing inequalities. The spatial lens of this thesis does not exclude and is influenced by other economic, sociological, or political variables. As such, it explores a synergistic relationship between socio-economic and ecological processes. Here, we understand that socio-

economic inequalities cause spatial inequalities, but spatial inequalities contribute to perpetuating socio-economic inequalities.

The specific case study is Caracas (Venezuela), where these processes of economic dependency and inequalities are extreme today. Indeed, the cycle of dependency in Caracas, as in the rest of Latin America, began with colonization with the monopolized exchange of agricultural and mining commodities produced and extracted by the Spanish and Portuguese Crowns for export to Europe.

But from 1922, economic dependence became extreme in Venezuela when the country emerged as one of the top world oil suppliers, as the world turned to fossil fuels as the primary source of energy. In only a few decades, as the capital of Venezuela, Caracas became the administrative center of a globalized product managed by an all-powerful State with sufficient economic resources to control all economic processes, including urban development.

In this context, this thesis aims to investigate why physical planning failed despite the buoyant economic scenario explained above. In Caracas, Self-Produced Urbanization has grown consistently, currently providing homes to more than 46% of the population. Self-Produced Neighborhoods is significant in Caracas, all of them totalized 4,100 hectares (15.83 square miles) which is the equivalent of Manhattan Island, including Downtown, Midtown, and Uptown Manhattan until 125th Street. Simultaneously, in Caracas´s Self-Produced Neighborhoods, spatial inequalities are evident in the unequal distribution of urban resources, such as workplaces, public spaces, and facilities across different urban territories.

Within Caracas, now a city of 2.9 million inhabitants, this thesis narrows down special attention to the case of Petare (Caracas), the densest Self-Produced Neighborhood in Latin America and one of its largest ones (Figure 1). In Petare, a series of underprivileged settlements have evolved into a conurbation to generate a Self-Produced environment with about 450,000 inhabitants in an area of 730 hectares (2.82 square miles) which is twice the area of Central Park in Manhattan.

Before arriving at the Harvard Graduate School of Design, I had the opportunity to design urban projects in Petare for more than twelve years. This prolonged engagement has allowed me to access data and interviews from experts and community leaders in a self-produced territory that usually lacks reliable data. But at the same time, it has allowed me to delve into rigorous research strategies based on the triangulation of different perspectives, technical and community, normative and survival, which was only possible from the experience of studying Self-Produced Neighborhood at both academic and the practical level.

However, I arrived at the Doctor of Design with many questions and few answers. Years of walks in this Self-Produced Neighborhood allowed me to understand that inequalities have a structural character and that spatial inequalities are not only a consequence but a cause of other forms of inequality such as social and economic.

At the same time, this prolonged engagement inspired me to generate a spatial understanding of Self-Produced Neighborhoods to improve the daily life of the inhabitants of Petare and other similar places. In several Participatory Design Workshops conducted during those years, I witnessed the enormous capabilities of the inhabitants of Petare, and the hindering

of that capability appeared to be the result of a limited amount of access to public services and the reduced physical accessibility across different urban territories. Consequently, this thesis understands inequality from the trialectic proposed by Edward Soja, in which the social, the spatial, and the temporal contribute to perpetuating social and economic inequalities (2010a, 18). So, when planning fails, it fails simultaneously at all the components of this trialectic, and this insight vividly manifests in Petare.

Seeking to find some answers to why planning had failed to provide Spatial Opportunities to its inhabitants, this thesis takes a historical lens by analyzing a series of planning documents to address what was already understood as an emerging housing issue in underprivileged communities.

One of the main contributions of this analysis is the consolidation, previously non-existent, of documentary information on Caracas' physical planning. But, additionally, the Content Analysis overlaps with the historical report of the Spatial Opportunity Index with the idea of investigating the causes of the failure in physical planning, in addition to elaborating some working definitions of planning strategies. I expect this contribution helps to consolidate future proposals for the betterment of Self-Produced Neighborhoods, especially in Latin America.

To develop this research, Chapter 1, Self-Produced Neighborhoods, defines this form of development, including the arguments for using this name instead of others commonly used, such as slums or informal settlements. For this definition, the chapter studies three variables: construction systems, construction culture, and the qualification of the urban environment generated by the first two.

The purpose is to understand Self-Produced Neighborhoods beyond the subject of housing, as it is usually understood from the planning and design realm. The chapter explores that this form of development is inevitably part of a series of spatial, technological, and infrastructure networks.

Chapter 2, Foundational Approaches, is an overview of how different Latin American social scientists have understood Self-Produced Neighborhoods as a synergistic relationship between economic and spatial processes.

I spent many years designing projects in Self-Produced Neighborhoods without understanding the implications of structural inequalities in this form of development. That is why this chapter focuses on the pioneering texts on the subject, with the idea of investigating founding theories on the subject. From the literature, we deduced four foundational approaches that have existed in the study of Self-Produced Neighborhoods until to our days. They are the Modernizing, the Structuralist, the Revolutionary, and the Reformist approach; the last two derive from the Theory of Dependence mentioned earlier.

Underlying these approaches are two deep-seated myths that have ultimately contributed to the failure in integrating self-produced with the rest of the urbanized territory. The first is the *myth of marginal people*, which considers the limited participation of underprivileged people in the exchange dynamics of the city. The second is the *myth of the informal city* that proposes that unregulated economic, social, political, and ecological activities occur in a specific territory, that of Self-Produced Neighborhoods, instead of understanding informality as a process that occurs transversally between different urban environments. These myths end up being assumed as real and irrevocable, thus hindering the potential of spatially integrating Self-Produced Neighborhoods

and perpetuating their isolation. As a result, most of planners and designers have not developed the tools to understand the crucial role of systemic access to infrastructure, programs, and resources, focusing instead on either housing (defined as the dwelling unit), or on small-scale localized interventions, what is today called "tactical urbanism."

Consequently, in Chapter 3, I developed the Spatial Opportunity Index (SOi), a tool to measure access to opportunities in different city sectors in relation to Self-Produced Neighborhoods. This instrument is hinged on the right to the city discourse, which posits that cities are environments that either allow or limit the development of the capacities of their citizens. The SOi builds on Central Place Theory (Christaller 1933), which adresses the resources the city offers, including employment sources and the inherent physical network.

At the end of Chapter 3, I synthesize a methodology called Applied Process for the Analysis of Spatial Opportunities (APASO), which is then applied to eleven maps of Caracas produced during the course of its history, from its foundation in 1567 until 2015. The temporal study of Spatial Opportunities allows us to corroborate the variations in accessibility to the spatial resources of the city and confirms the perpetuation of spatial inequalities.

Finally, Chapter 4 and Chapter 5 apply what was learned to the case of Caracas. The fourth one focuses on a historical summary of the city from the point of view of its underprivileged sectors. The objective is to explain the founding causes of why spatial inequalities have been perpetuated in Self-Produced Neighborhoods. Here I distinguish between physical and non-physical patterns as the root cause for the implantation of inequality in the urban environment.

Chapter 4 inevitably culminates with an analysis of the most widely applied planning tool in the history of the community: Zoning. For this purpose, this chapter incorporates a comparative study between the first Zoning Ordinance of Caracas, some unpublished documents from the Francis Violich's archive, and some of the current ordinances where Self-Produced Neighborhoods of Caracas are located, especially those in the Petare area.

The study demonstrates that zoning ordinances have done nothing but consolidate the patterns of inequality that have existed since colonial times. At the same time, the chapter explains how this planning tool has reinforced the Venezuelan all-powerful Rentier State's logic. This explains why zoning ordinances tend to ignore the emergence of Self-Produced Neighborhoods passing the baton to other planning tools, such as housing programs managed by federal agencies, with the excessive faith their intervention would reduce spatial inequalities.

Finally, Chapter 5 delves into federally driven planning reports to address the exponential growth and expansion of Self-Produced Neighborhoods in Caracas. The chapter begins with a graphic that summarizes the Content Analysis of 38 planning reports and overlaps it with the results of the Spatial Opportunity Index for the city. The study was carried out since 1928, the date of the creation of *Banco Obrero* (BO, Workers Bank), an institution of the federal government to address housing programs, and only six years after the start of the oil boom, including its change to the Instituto Nacional de la Vivienda (INAVI, National Housing Institute), until its dissolution in 2015.

The overlap of these two variables, the quantitative one of the SOi and the qualitative one of the content analysis of planning reports, allows us to explore intersections between these

planning strategies throughout history along with their ideological approaches based on the four foundational ones studied in Chapter 2, and with the results of the perpetuation of the lowest level of access to spatial opportunities for the inhabitants of Self-Produced Neighborhoods. The study also includes other planning reports that *Banco Obrero* developed in cooperation with other federal agencies.

This content analysis also makes it possible to elaborate a working definition of three detected planning strategies: Eradication of Self-Produced Neighborhoods, Enabling people to Self-Produce their homes, and Upgrading of Self-Produced Environments through comprehensive urban plans. The Content Analysis reveals that these planning strategies do not occur in specific periods but transversely throughout history, even following different ideological approaches. Moreover, the overlapping between the Spatial Opportunity Index and the Content Analysis on planning strategies was the key methodology to demonstrate the perpetuation of spatial inequalities in Self-Produced Neighborhoods for the case of Caracas.

Finally, each chapter is preceded by a short narrative drawn from my field notes while walking and working around Petare with Fina, one of its residents. Fina is an imaginary character who collects conversations with several women from Petare whose names we keep hidden to preserve their identities. Fina's experience serves to ground the ideas explored in each chapter, and to test how and whether general principles generated ex situ can be applied to the concrete realities of a specific place. Not least, it is my intention to connect the reader with the individuals that inhabit these places in a direct way by allowing them to explain simply yet vividly the reality we, as planners and designers, strive to change.

Chapter 1

Defining Self-Produced Neighborhoods

Fina's walk

Walking around Petare is walking through discontinuities. It is hard to find uninterrupted pathways to reach any one place from another.

I am thinking about Petare while walking to the GSD, around 3,500 km (2,175 miles) north of it. The journey is mainly through Cambridgeport to the nearest subway station, about 0.7 miles (1.13 kilometers), through a linear journey that almost always lasts 13 minutes. Cambridgeport is a small neighborhood of wooden houses close to Massachusetts Avenue, the most important urban corridor in this sector of the city. Like in Petare, the street is the most common articulator between buildings and public spaces. But in Cambridgeport, the street has many systems that we normally take for granted but are not common in places like Petare. In Cambridge, the street includes different mobility systems, all clearly categorized, in addition to space for infrastructure, such as water, electricity, drainage, and so on.

My journey is always the same. I confess that on my first walk, for someone who had been walking Petare daily for just over twelve years, the fluidity and smoothness of Chestnut Street in Cambridgeport were overwhelming. One word came to my mind when walking around this neighborhood: predictability.

Walking to the GSD, I remembered the year 2014. That year I led a participatory design workshop in Petare where we recorded Fina's journey from her home in Petare to the nearest subway station in the *Redoma de Petare*. The contrasts were very much in my mind and continue to inform me about the subjects considered in this thesis.

Fina's daily travel lasts 90 minutes to walk 1.34 Kilometers (0.83 miles). After 5 minutes walking the *vereda* -narrow pedestrian path- and greeting her neighbors, Fina spends 10 minutes descending through a precariously designed 42 degrees staircase. Then she must walk through the street (Fina usually prefers to do it on foot because public transport service is scarce). The average walk is 60 minutes, and the path is on the edge of the street narrowed to 60 centimeters (23.62 inches) wide without a built sidewalk. On her left side, motorcycles, cars, and trucks pass by; on her right side, the terrain slops down towards self-produced houses. Between one dwelling and the other, there are small apertures that vertically frame the landscape. Sometimes houses are built below the street level so Fina can see over their roofs and view the Valley of Caracas in all its majesty.

Fina walks through a narrow gap defined by the intensity of movement, noise, and gasoline smells produced by motorized mobility, and the grandeur and freshness of the landscape. She does not go alone; thousands of people walk that same path, often hampered by street vendors, garbage slots, or landslides. While walking down the street, Fina can distinguish the Francisco de Miranda Avenue, the most important urban corridor in this sector of the city, which is the equivalent of Massachusetts Avenue in Cambridge.

After this walk, Fina finally reaches the *Redoma de Petare*. Almost all the *veredas,* streets, and staircases of Petare end up connecting with this urban node. Nearly all of the more than 440,000 inhabitants who live in Petare eventually reach this 12,000 m2 (129,000 sqft.) space where 12,000 people walk in each direction every hour on sidewalks that are less than 2 meters (6.56 feet) wide.

The overwhelming image of so many people claiming a place in the public space does not exist in Cambridge, nor in Boston or anywhere Massachusetts. Perhaps the closest thing it can be compared with is the exit of Yankee Stadium at the end of a baseball game, when the city becomes paralyzed and security forces are mobilized to control those 30 minutes of thousands of people walking through the same place. But that event happens in the *Redoma de Petare* for more than 10 hours every day. The people walking compete with other means of transportation and with thousands of street vendors and multiple activities difficult to recognize in the middle of the crowd. Fina spends another 10 minutes travelling this final 300 meters (984 feet) across *Redoma de Petare* and but still must walk 5 minutes along the sidewalk of Avenida Francisco de Miranda to get to the subway station.

In the participatory design workshop, Fina told us about what she defined as "an everyday life made of sandpaper." These are the first 90 minutes a day for many people who live in Petare. The fatigue of this initial journey just to go from home to their workplaces every day undermines their capacity to insert themselves into the everyday life of Caracas.

1.1. What is a Slum?

Self-Produced Neighborhoods are recognized worldwide as slums. According to the United Nations Human Settlements Programme, nearly 105 million urban dwellers in Latin

America, or about 20.9 percent of its population of its urban population reside in slums reside in slums (2017)[1] (UN-Habitat 2020).

This information is based on the UN-Habitat Global Urban Indicators using a household survey of what is defined as "the four components of the slum (UN-Habitat 2016, 205)." These components are linked to the definition of housing: (1) having a durable home with a structure that is permanent enough to protect its inhabitants; (2) having access to reliable water supply; (3) having adequate access to sanitation with an excreta disposal system; and (4) having sufficient living area in the household to avoid overcrowding (UN-Habitat 2006, 21)[2].

UN-Habitat analyzes worldwide dwellings units lacking the components described by the four categories above to characterize the places where most underprivileged people live. From there, the formal definition of slum is "a settlement in an urban area in which more than half of the inhabitants live in inadequate housing and lack basic services (2006, 21)." The term also has widespread use among researchers, especially since the popularity of Mike Davis apocalyptic book *Planet of Slums* (M. Davis 2007) which proposes the future as an unstable planet as a consequence of the exponential growth of underprivileged settlements in the global south.

Davis thesis reveals a lack of understanding of the places where underprivileged people actually live as it does not recognize the incremental character of housing in underprivileged

[1] This data comes from the United Nation Global Urban Indicators for 2018 in a database updated on May 9th, 2020. The data from the World Bank is similar, accounting for 20.8 percent of people living in slums by 2018 (World Bank 2020). For UN-Habitat, the components used to define a slum were determined in a meeting of experts that took place at its headquarters at Kenya in November 2002, and they continue to be the variables for its definition, measurements, and policymaking, until our days.

[2] Although not accounted for in the statistics, some Un-Habitat reports consider a fifth component for the slum definition: secure tenure is the right of all individuals and groups to effective protection against forced evictions (UN-Habitat 2006; 2016). Later in this chapter, we delve into the relevance of this fifth element to define and measure the phenomenon of self-production.

settlements; this being one of the topics we explore in this chapter. On the one hand, the pejorative connotation of the word *slum* preconditions its eradication, regardless of nuanced considerations that may recognize its social and cultural values. On the other, the incomplete connotation and contextualization of this definition of *slum* ignores other intrinsic variables of what is hereto referred as a *Self-Produced Urbanization.*

This chapter demonstrates that Self-Produced Neighborhoods are forms of incremental development that progressively improve housing conditions. However, this form of development also limits accesses to infrastructure networks. As Self-Produced Neighborhoods evolve, housing remains one of the main components, but it is necessary to incorporate additional variables for their definition and analysis.

1.2. The Pejorative Connotation in the Definition of Slum

The current use of the word slum has a pejorative connotation that stigmatizes its residents. While they live in conditions of inequality, often lacking essential services, they provide a positive contribution to society (Castells 1983a; Gilbert 2012; Perlman 2004a; 1976; Walton et al. 1984). We call "people living in slums" as "underprivileged" and argue that specific communities do not enjoy the same opportunities offered to other members of the population living in the same general geographical environment.

The negative connotation of the word slum has existed since its inception. It first appeared in the nineteenth century as a derivation of the Cockney English street slang to depict housing in unsanitary conditions. At this time in history, slum clearance strategies emerged with the purpose of redeveloping low-income communities, its epitome being the London's 1930 Housing Act

(1933). Notwithstanding the *slum's* negative meaning, the UN-Habitat explains that nowadays in the global south "the word lacks the pejorative and divisive original connotation, and simply refers to lower quality housing (2007, 1)."

However, the use of the term slum is still perceived as inappropriate to describe underprivileged settlements. In 2016, amidst the discussions of the Sustainable Futures Conference held by the UN-Habitat headquarters in Kenya, Marwan Ghandour from Iowa State University strongly criticized the use of the word slum. The comment aroused a euphoric approval and acceptance among the more than 40 worldwide scholars present at the meeting.

Two main reasons have been used to criticize the term slum: its homogenizing, and its denigrating. On the homogenizing character of the word, the major limitation is the vast difference between settlements all referred as slums. For example, Dharavi (India), with a large contingent of slum dwellings, has intense economic activity linked to global exchange systems (Weinstein 2014). On the contrary, most of the Self-Produced Environments in Latin America are monofunctional[3] housing territories.

The second criticism is more robust, and it is the main reason many scholars and policymakers use the word slum, but no one within these communities uses it in association with their own neighborhoods. We still remember the uncomfortable moment when walking through Dharavi (India) one of our teammate researchers asked our tourist guide about "the values of the slum." Her bodily reaction showed evident displeasure. How could we be speaking of values in

[3] Self-Produced Neighborhoods in Latin America are usually large areas of housing, with a limited number of other activities such as recreation or sources of work. Commonly, its residents must travel long distances to their sources of work that are commonly located outside the neighborhood.

the context of a pejorative term? It is common to see the word slum together with the word clearance, but nobody wants their home swept out; and, although many UN-Habitat reports advocate for slum upgrading strategies, the term still has a negative connotation. For that reason, Alan Mayne recently wrote that "it is time to take the logical next step, and instead of attempting to reform a fundamentally ugly and judgmental word, to drop it entirely from our vocabulary (Mayne 2017, 287)". A statement we fully concur with.



Figure 1 - Petare Norte

East view of Petare Norte, the densest Self-produced Neighborhood located in the western hills of Caracas. In the background, the image shows the housing projects in flat zones of the Valley. On the right, it is the Ávila Mountain, located north of the city.

Similarly, many governmental reports continue to use the word *rancho* in Venezuela to define housing in Self-Produced Neighborhoods. The most recent census report uses the category "*rancho*" to describe single-family homes built with scrap materials such as board, cardboard, and cane (Venezuela. Instituto Nacional de Estadística 2014). However, our fieldnotes working in Petare and its surroundings (AREPA 2015) -a conurbation of Self-Produced Neighborhoods with about 450,000 (See Appendix A)- reflects that even those residents of the most precarious homes, reject the use of the word *rancho* to define their homes, which they simply call *casas* (houses).

1.3. The Incomplete Connotation in the Definition of Slum

But beyond the pejorative connotation of words such as slum or *rancho*, the second reason we cast doubt on them to define Self-Produced Neighborhoods is more relevant for this research. We consider that the categories to define slums –lack of durable housing, access to improved water, access to sanitation, having sufficient living area, and secure land tenure- are insufficient to define Self-Produced Settlements, since they are constrained only to housing conditions without considering fundamental aspects of the habitat -especially the relationship of the self-produced housing with the built environment- whose understanding we consider fundamental to define Self-Produced Neighborhoods.

Even though slums have been historically defined by the physical characteristics of housing (Abrams 1964; Crane 1947; Turner 1976), recently social scientists and especially designers and policymakers, have emphasized more comprehensive definitions that include the improvement of accessibility levels and the provision of infrastructural networks and public facilities (Baldo 2001; Echeverri and Orsini 2012; D. Gouverneur 2015; Jauregui 2009; Nijman 2010; Turley et al. 2013).

Many of these works have been based on empirical studies that seek to understand the weaknesses and the potentialities of specific Self-Produced Neighborhoods.

In our case, empirical studies in Petare have determined it has less than 0.24 square meters of public facilities such as schools and health care centers and/or public space per inhabitant (Cardona 2012), even though national regulations require the existence of at least 11.5 square meters (MINDUR 1985). This makes Petare the least served area of the entire metropolitan area of Caracas. This study suggests that the lack of access to public services and especially the street network associated with it is relevant to the definition of a Self-Produced Urbanization.

The same research shows that commuting from Self-Produced Settlements to workplaces implies the average person must go up and/or down about 40 floors per day (Cardona 2012). Although this is not inherently negative, the precariousness of the design and location of these pathways suggests that connectivity is an additional important variable to categorize Self-Produced Neighborhoods.

Conditions like those described above are seen in numerous Self-Produced Neighborhoods in Latin America. Underprivileged communities often live in similar urban built environments throughout the region. *Ciudad Neza* in Mexico City, *Rocinha* in Rio de Janeiro, *Cerro San Cosme* in Peru, *Villa 21-24* in Buenos Aires, *Campamento Manuel Bustos* in Viña del Mar, as well as *Petare* in Caracas, are just a few examples of huge territories where socio-economic inequalities have been geographically spatialized.

But despite the similarities through Latin America in urban built environments, with extensive territories sharing the same language and origin culture, each country has developed its

own nomenclature to define Self-Produced Neighborhoods. Among hundreds of names given to places where underprivileged community live we can highlight *villas miseria* (misery village) in Argentina, favelas in Brazil, *campamentos* (campsites) in Chile, *comunas* (communes) in Colombia, *llegaypon* (arrive and place in) in Cuba, *tugurios* (slums) in Ecuador and El Salvador, *trench town* in Jamaica, *asentamientos irregulares* (irregular settlements) in Mexico, *barrios bruja* (witch neighborhoods) in Panama, *asentamientos pobres* (low-income settlements) in Paraguay, pueblos jóvenes (young town) in Peru, *barriadas* in Puerto Rico, and *barrios* in the Dominican Republic, Honduras, and Venezuela.

Likewise, Self-Produced Neighborhoods also have several names among scholars, including slums, squatters, shantytowns, or often the addition of some adjective that define underprivileged settlements such as marginal or informal areas. These are just some euphemisms used to stigmatize particular populations (Canclini 2012). Clearly, one of the greatest difficulties in understanding underprivileged territories in Latin American is naming them.

In the case of Venezuela, everybody calls *barrio* the Self-Produced Neighborhoods where underprivileged communities live. The word *barrio* means "neighborhood" in Spanish, but in Venezuela it is used only to define neighborhoods otherwise known elsewhere as slums.

Houses built in *barrios* are frequently called *ranchos.* And, the word *rancho,* or the expression *barrios de ranchos,* and since the late nineteenth century has been the most widely used term to define Self-Produced Neighborhoods in the history of Venezuelan urban planning, So it is essential to understand what *rancho* means and how the term is inserted into the narratives about Self-Production at the national and international level.

One of several meanings for the word *rancho* in the Dictionary of The Spanish language (Real Academia Española 2001) is a *choza o casa pobre con techumbre de ramas o paja* (hut or low-income house with a roof made of straw or the branches of trees). The *rancho* as such refers to the idea of the "primitive hut" explained by abbé Laugier in Essay on Architecture (1753). Laugier defines the primitive hut as a primigenial dwelling that embodies what is natural and intrinsic to the need for shelter.

The *rancho* in Venezuela is a built typology used by the Amerindians who occupied the territory before the Spanish colonization in the 15th century and later adopted by populations associated with agricultural production. As Juan Pedro Posani describes in his monographic work on *La Vivienda en Venezuela (*Housing in Venezuela), the *rancho* was initially been the primary constructive manifestation of the indigenous family organization built with materials collected in the nearby environment (1979, 14–15).

So, what defines the *rancho* is not only its materiality itself, but the process of building it with collected materials. Since the 15th century, Amerindians -as well as rural dwellers- gathered straw or tree branches to self-build their homes.

Similarly, starting in the nineteenth century, underprivileged people in cities would collect discarded materials from factories, commercial establishments and demolished buildings to build their houses (Acosta Saignes 1967, 169). This process of securing materials from the surrounding environment, free of cost, becomes the seed of Self-Produced Neighborhoods (Figure 2).

In his influential Housing Report #7 written for the United Nations, Charles Abrams explains that Self-Produced Neighborhoods -slums in his voice- varies from place to place

including metropolitan and rural slums, new slums, hand-me-down slums, hand-made and prefabricated slums (Abrams 1953, 13). Abrams explains that these different types have significant differences. We argue that what defines these areas is not their materiality, not even their location, but the Self-Produced nature of their construction systems.

But the constructive nature of the *rancho* makes it progressively to cease being a *rancho* (See a detailed survey of this transformation in Figure 3). Although houses in barrios were originally built with waste materials such as cardboard or corrugated zinc sheets, these are gradually replaced by industrialized ones. For decades, people have incrementally consolidated their housing, as repeatedly explained by John F.C. Turner (1966; 1969; 1976) in his analysis of what he called "self-help" housing in the 1970s. With the intellectual strategy of associating underprivileged housing with the term self-help, Turner brilliantly managed to establish a narrative that understands this form of development as a solution rather than a problem to the issue of housing.



Figure 2 - Rancho circa 1963

In their original state, *ranchos* are a *primitive huts* made with materials collected from the environment

Later, in the late 1980s and early 1990s, several researchers in Latin America recognized certain nuances in the understanding of the housing underprivileged communities were able to

build with their own efforts. Among the pioneers in this field, we mention Teolinda Bolívar in Venezuela and James Holston in Brazil.

At the Central University of Venezuela, the group *La Producción de los Barrios Urbanos* (Production of Urban *Barrios*) led by Professor Teolinda Bolívar (CCG 2011) transferred to the academic world her experience working with underprivileged communities at Banco Obrero[4] (BO, Workers Bank) in the late 1970s. First, this group advocates recognizing skills and capabilities of *rancho´*s builders and their willingness and effort to produce their houses directly. Additionally, like John FC Turner, they acknowledge ranchos would progressively become solid houses (Bolívar and Rosas Meza, Iris 1983, 55).

Similarly, Holston uses the term *autoconstruction* (autoconstruão in Portuguese) to define how underprivileged communities build their own houses under precarious material circumstances. Holston explains how *autoconstruction* becomes a life project for its families where the initial shack of wood or concrete blocks consolidates to become a "dream house-a finished, furnished, and decorated masonry home" (Holston 1991, 447).

We debated the use of the term *autoconstruction*, which merely implies self-built processes. Later we will explain how the progressive transformation of precarious housing into a durable home implies other social and economic agreements, including the hiring of the labor from others as Teresa Caldeira recently explained in her studies on peripheral urbanization[5] (Caldeira

[4] *Banco Obrero* (BO, Workers Bank), was a Venezuelan federal institution created in 1928 to address housing programs for underprivileged populations. The analysis of their doctrines and planning strategies is a central topic in Chapter 5 of this research.

[5] It is important to emphasize that for Teresa Caldeira, the peripheral urbanization does not simply refer to a spatial location in the city -its margins- but rather to a way of producing space that can be anywhere (Caldeira 2017, 4). So, we can assume that this statement applies to any Self-Produced Environment regardless of its geographical location.

2017, 5). Nonetheless, Holston's perspective was visionary to understand the development of housing in underprivileged sectors from the progressive transformation from a vulnerable dwelling to a solidly-built one in Self-Produced Neighborhoods.

Furthermore, many dwellings in Self-Produced Neighborhoods display the same construction techniques we find in any other part of the city, including reinforced concrete columns, beams and foundations, brick walls, and waterproofed concrete slabs. Progressively, the houses incorporate other envelopes and sheathing materials, such as iron or aluminum windows and waterproofing mortars in walls. There are even cases where after decades of effort the residents of Self-Produced Neighborhoods have inserted themselves into urban consumption economies with the houses acquiring sophisticated appliances and conveniences such as furniture and electronics such as satellite televisions and parabolic reception antennas.

The housing consolidation process in *barrios* described above occurs after decades of Self-Production, and at different paces between one house and another within the same neighborhood. In the same *barrio,* we see inhabited houses with varying levels of development. Progressively, it is less and less frequent to find a *rancho* in a *barrio*. Most of them have been transformed into durable houses.

But these houses are not isolated; they are located around other homes in the same *barrio*, each at different stages in the progressive transformation from *rancho* to durable house. In the end, Self-Produced Neighborhoods grow incrementally through the accretion of houses growing at different paces. The weak capacity of housing development by the state and by the private sector contrasts with the building efficiency of Self-Produced Urbanization for which these neighborhoods reach large scales in very short times. The most emblematic examples in Latin

America are *Petare Norte*[6] (Caracas), with more than 16,000 housing structures in 2015 (Silva 2015), and La Rocinha (Rio de Janeiro), with more than 25,000 homes (Campos 2020).

This is how barrios have been born and have evolved as a form of urbanization. They emerge through a piecemeal process of hand-made buildings with materials first collected by builders/dwellers from the immediate environment and later bought in the marketplace, following a multiple and overlapping process of progressively making the city, while each family builds their own house (Bolívar, Teolinda, Erazo Espinosa, and de 2012; Bolívar and Rosas Meza, Iris 1983). This form of development is what we call Self-Production.

This form of development ends up being recurrent, intelligible, and regularized across urban territories which generates physical patterns that give the *barrio* a unique visual identity. This identity is intimately linked to its form of development and it is why we observe a certain homogeneity in the image of Self-Produced Neighborhoods. But this image is only apparent because we will see that each house may be at a different stage of development. To understand it, we must delve into the construction of Self-Produced Neighborhood both as a construction system and as a construction culture.

1.4. Investigating variables to define the Self-Produced Neighborhoods.

This research understands Self-Production as a form of urban development that includes three variables: construction culture, construction systems, and the qualification of Self-Produced urban built environments.

[6] This is our own calculation within the framework of this research.

These three are variables intensely intertwined. Construction culture and construction systems happen together, and both processes produce an urban built environment with certain qualities we seek to explain. The following discussion analyzes how these three variables are related which will serve as the basis foundation for understanding Self-Produced Neighborhoods. In any case, the main objective of this chapter is to demonstrate that construction culture and construction systems in Self-Production inevitably generate environments that are highly efficient in housing production, while at the same time developing urban territories with limited access to public resources. such as schools or health care centers, or infrastructural networks like water, sanitation, rainwater management, and energy.

The first variable to define Self-Production as a form of urbanization is the construction culture involved in its development. Construction cultures include the social networks created between different actors to generate the built form and the tacit practical knowledge that permeates across the territory.

The second one is the construction systems that generate Self-Production. These include not only the articulation of materials and assemblages of Self-Produced housing units, originally the *rancho*, but also its services such as improved water supply and access to sanitation infrastructure.

Our analysis of construction culture and systems is based mainly from two sources. First, fieldnotes of twelve years researching the topic in *Petare* (Caracas) by the author between 2005 and 2015 with the group *Arepa Architecture Ecology and Participation* that has permitted a prolonged engagement in the field interviewing residents and policymakers while designing and promoting public spaces projects through participatory design workshops (AREPA 2015).

Second, our understanding of the construction culture of Self-Produced Urbanization is also based on the research of the *Centro Ciudades de la Gente* (CCG, Cities of People Center), which is an important university research center created in 2004 at the Central University of Venezuela. CCG was the institutionalization of one of the most recognized research groups on the topic in Latin America, the group *La Producción de los Barrios Urbanos* (Production of Urban *Barrios*) that has investigated the subject for more than three decades (CCG 2011). Our research places special emphasis on the works and publications of Teolinda Bolivar, founder of the CCG, and of Iris Rosas, its current coordinator.

First, it is essential to contextualize Self-Production as a cultural phenomenon that has provided housing to many urban residents. As the British planner John F.C. Turner explained in his *Uncontrolled Urban Settlements* report to the United Nations, Self-Produced Neighborhoods are an inevitable by-product of urban development because of the difference between the demand for housing by underprivileged communities and the capacity to provide them by the institutionalized society (1969). In this sense, Tulio Hernández characterizes Self-Produced Neighborhoods as the most successful private enterprise in Latin American history (T. Hernández 2007).

Self-Produced Neighborhoods have been one of the dominant forms of urban development in Latin American. Several authors explain its ubiquity (D. Davis 2012; Fernandes 2011; Srinivas 2016) on Self-Production becoming one of the main resources of underprivileged communities to achieve urban homes (Bolívar 1980; Gilbert 2004; Rosas Meza 2009).

But the development of Self-Produced Neighborhoods has not happened in isolation. It is embedded in the dynamics of its environment. They have been both the product and the vehicle

for of the process of cities' modernization in Latin America (Turner 1969, 509). This complementarity between Self-Produced Neighborhoods and their urban environment is clearly expressed in their construction system, our second variable used to define Self-Produced Neighborhoods. Both materials and build practices of Self-Produced Neighborhood come from an appropriation of existing conventional technologies (Bolívar and Rosas Meza, Iris 1983; Rosas Meza 2009). In Latin American Self-Produced Neighborhood, it is common to see *ranchos* and solidly built structures with the same materials and construction systems as those in the rest of the city, such as reinforced concrete enveloped with brick walls.

Iris Rosas Meza (1995; 2009) explains the assimilation of construction technologies from the neighborhood to the city as three processes: learning, appropriation, and reinvention[7]. In many participatory design workshops at *Petare's* Self-Produced Neighborhoods, we recorded the presence of bricklayers and other construction workers who have served for decades in the constructions industry in various sectors of the city (AREPA 2015) there following the regulations of traditional forms of design and management of buildings, including the participation of architects and engineers. The same observation has been made in investigations made by *Centro Ciudades de la Gente* (CCG 2011; Rosas Meza 2009). In this process, the inhabitants of Self-Produced Neighborhoods have appropriated construction techniques from other sectors in the city and applied them to the production of their own neighborhoods.

[7] Iris Rosas Meza (2009) use the word "recodification" instead of "reinvention." We have decided to change it following the definition of "codes" as "a collection of laws, rules, writings, etc." (Oxford University Press 2000a). Construction logics of Self-Produced Neighborhoods are reimagined through years of building and rebuilding houses, and they are known by the experience of making rather than by written or drawn codes.

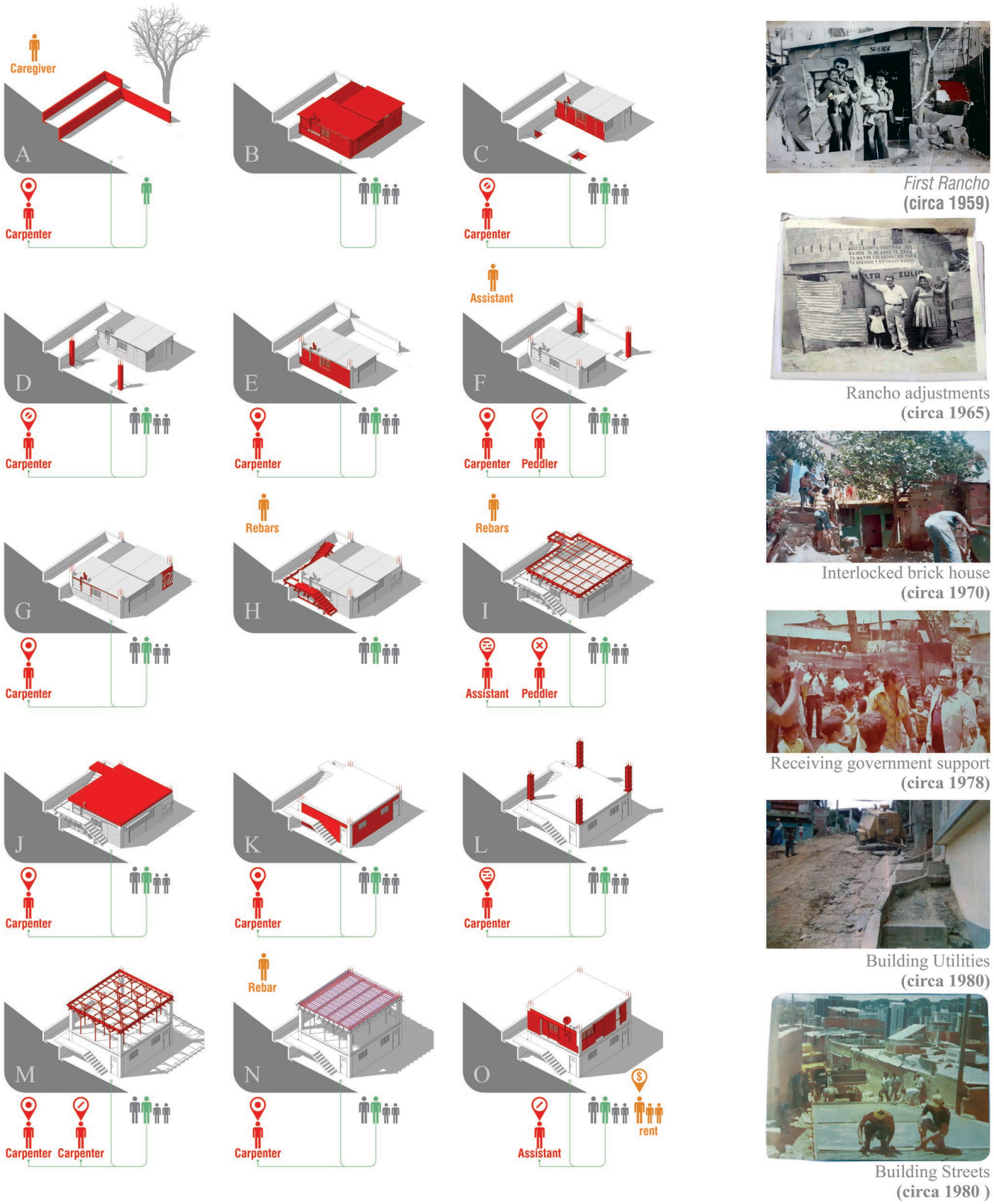


Figure 3 - Survey of the progressive transformation of a *rancho* into a durable house

The labor movement and agreements of the self-producer generates collection and reinvention of constructive technologies to build the home across time.

In this dynamic we notice a progressive evolution of Self-Production as a form of development. At the *rancho*, the inhabitants collected materials -first, straws or tree branches and later, discarded industrialized materials- from the environment and adapted them for the construction of their homes. Throughout the growth of cities and the influence of industrialization, dwellers of Self-Produced Neighborhoods not only collect materials but also technologies, re-imagining[8] them to the processes of Self-Production.

But this appropriation and adaptation of construction technologies do not happen from one moment to another but through decades of Self-Production. It occurs after the house is inhabited and as the families' economic resources improve.

In this sense, we could summarize the built process of Self-Produced Homes from the following five steps: the selection of the site (1) is followed by the land habitability through a temporal *rancho* (2), then the appropriation of materials and technologies from the environment (3) is followed by the assemblage and construction of housing infrastructures (4) and finalizing -if happens- with the fast-track production of design and planning (5). In this sequence, the infrastructural services if and when they arrive, do so after homes have been built. The process is almost the opposite of the conventional design process we learned in schools of planning and architecture in which the selection of the site (1), is followed by design and planning of the infrastructure (2), and the organization of a construction technology (3), that generates a system of assemblages and constructions (4), that finalizes with the house/land habitability (5).

[8] *Centro Ciudades de la Gente* (CCG 2011) has a large body of research seeking to advise the houses of the Self-Produced Neighborhoods to take advantage of the values of the new construction typology produced by the houses after this process of reinvention. Additionally, CCG investigates mechanisms to support the improvement of the weakest components of this reinvention of normalized construction systems, especially concerning some specific weaknesses in the structural supports when needed (Rosas Meza 2009).

In Self-Produced Neighborhoods, dwellers consider the *rancho* a temporal home and start its improvement at the pace of their financial resources. This process is not necessarily linear and does not coincide between one house and another. Hence, Self-Produced Neighborhoods grow from the combination of multiple interventions occurring at different times. Its geography shows a heterogeneous form with fragments at varying degrees of development. In the *barrio* cohabit the *rancho* and the solid three-story building, the paved street and the dirt road, the house with sanitation with the house in which its inhabitants negotiate the use of another house's bathroom. Teolinda Bolívar (1987) beautifully defines it as a city in permanent construction. This process of continuous transformation makes us define the Self-Produced Neighborhood as a settlement in constant conversion, a territory of perennial becoming.

But the development and consolidation of the Self-Produced form do not occur linearly, neither does it happen with a single strategy to implement social agreements. There are at least three modes of progressive transformation of *ranchos* into durable housing: Self-built, Low-Skill Contracting, and High-Skill Contracting (Amodio, Ontiveros, and Rosas 1995, 23–24)

First, Self-built, or *autoconstruction*, is a build process in which family members directly participate in the construction according to their capacities. This is common with simple techniques such as excavation, material handling, and mortar preparation.

Second, Low-Skill Contracting of more complex operations such as brick-walls, corrugated steel decking roof, or simple metalworks for which hiring skilled labor is necessary. This hiring process is commonly done through informal agreements between friends and the extended family. The payment is not always monetary but through barter or even through

negotiating the work for some beers and *sancochos* (Caribbean soup with root vegetables) as a compensation agreement at the end of the construction process in a workday.

Finally, there is the High-Skill Contracting needed for more complex assemblies, including formwork and rebar for reinforced concrete structures and elaborated enclosures and sheathings, including window framing.

The three previous modes of production are but a simplification of the complex systems of agreements that can be reached in Self-Production. In Self-Produced Neighborhoods, people with specific know-how on construction techniques meet other workers creating a network of foremen, bricklayers, plumbers, carpenters, electricians, and helpers (Rosas Meza 1995, 28). And from the agreements between families and this network appear multiple fragmented ways of progressively building the neighborhood.

Self-Produced Neighborhoods are urban territories with multiple mechanisms of agreement for its development, including self-building and written or unwritten contracts with various degrees of complexity. This agreement also includes community negotiations to reserve land for specific collective programs -especially pathways- or the civic struggle to achieve infrastructure services by external agencies, especially local governments (AREPA 2015). That is why we have assumed the term Self-Production, rather than Self-Build, *Autoconstruction*, Uncontrolled, or Spontaneous, to define this type of neighborhood.

Housing in the Self-Produced Neighborhood is neither temporary nor permanent, neither marginal nor integrated, neither spontaneous nor deliberated, neither uncontrolled nor controlled,

neither even formal nor informal. Instead, housing in Self-Produced Neighborhoods is always in a blurred stage between these categories.

To demonstrate the veracity of the previous statement we developed a short research study in 2019. We reviewed the expenses of *El Mocho*, resident of *Petare* in Caracas, from data collected between 2014 and 2015 (AREPA 2015). We analyzed these expenses to confirm the impossibility of defining the household within traditional categories (See Appendix B).

To facilitate the analysis, we use the five categories established by Edgar Feige (1990) to classify El Moncho's house expenses. Feige considers five categories of economical processes: First, 'formal economies' when their actions adhere to or are protected by the established institutional rules. Second, 'unrecorded economy' referred to those activities that should be recorded in national accounting systems but are not. Third, 'unreported processes' that evade the institutionally established fiscal rules as codified in the tax codes. Fourth, 'informal economy,' which comprises activities that circumvent the costs and are excluded from the benefits and rights incorporated in the laws and administrative rules. Finally, 'illegal economies' produced by those activities pursued in violation of legal norms through the production of prohibited goods and services.

In our analysis we separately evaluated the origin of materials, tools, and labor for the self-production of this house. We classified them according to the five categories between formal and illegal explained above; for example, we categorized some materials or tools as "informal" because they were found through informal agreements such as barter exchange, while we classified other ones as "formally" because they were bought in hardware stores including a reported and recorded

tax payment (See Appendix B). After several interviews with *El Mocho*, we also decided to include the origin of capital since he told us that his resources had different sources.

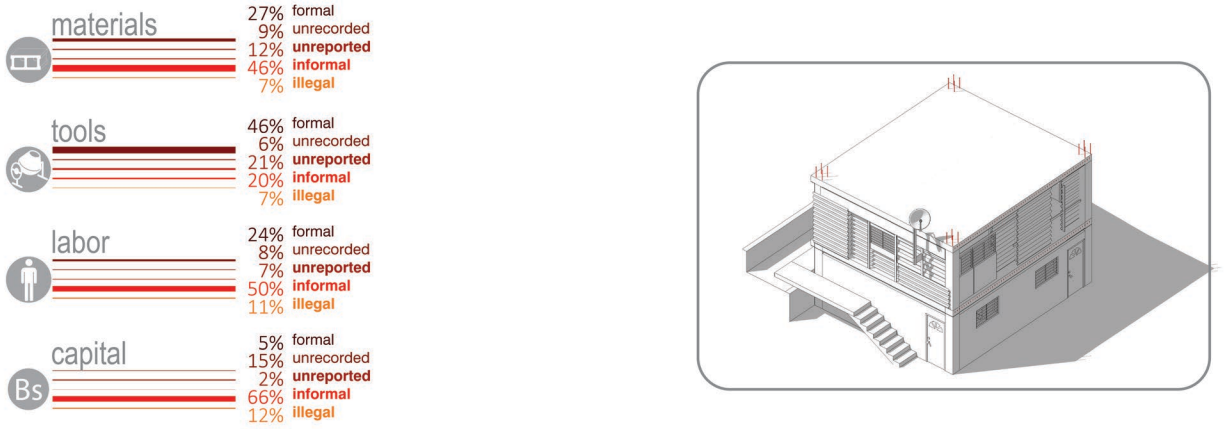


Figure 4 - El Mocho House Research - Computing by Categories

The graph shows the classification of materials, tools, labor, and capital of a house in a Self-Produced Neighborhood in Caracas. Data comes from expenses provided by its owner.

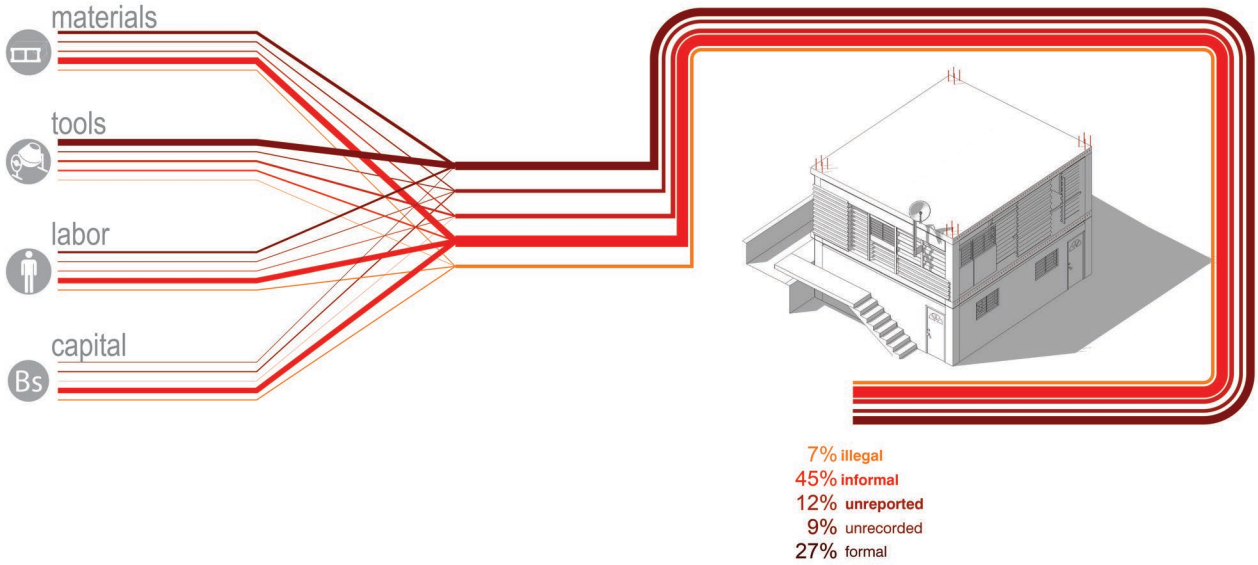


Figure 5 - El Mocho House Research – Total Count

After computing the origin of each of the components of the house -materials, tools, labor, and capital-, this graph shows the overall estimation of percentages of illegality, informality, formality, etc., of this house.

After calculating these inputs and categorizing them according to their relative weight in the total cost of the house (Figure 4), we were able to conclude that, to date, this house was 27% formal, 9% unrecorded, 12% unreported, 45% informal, and 7% illegal[9] (Figure 5).

El *Mocho's* house is neither formal nor informal, but parts of it fall into one category or another. But we must also remember that El Mocho has continued building his house, so this analysis was just a snapshot frozen in one specific moment. The data continues to change because of the progressive self-production of the home.

We could go further. We have used the relationship between formal and informal because Edgar Feige's categories allow a clear classification of economic exchanges to produce the house. But we could do the same study with other binary categories; for example, some fragments of the houses may have emerged spontaneously, or others may have been deliberately planned. Here, housing in Self-Produced Neighborhoods is in a blurred stage between these binaries.

To summarize, the first characteristic of the construction culture is appropriating technological construction systems and adapting them to the logic of Self-Production. This generates the construction prototypes we see today in many Latin American Self-Produced Neighborhoods. These progressively pass from *rancho*s made with waste materials to houses build with interlocked clay bricks, which are then demolished to insert a reinforced concrete structure that will later be coated with mortars or other sheathing materials, that will be later demolished to

[9] Unfortunately, we are not authorized to make public the specific data of this study. Petare's fragile security situation does not allow these results to be disclosed in detail. However, the general outputs help us to demonstrate the inconsistency of the use of traditional methods, such as the relationship between formal-informal or spontaneous-deliberate or controlled-uncontrolled to define housing in Self-Produced Neighborhoods (See Appendix B).

build a second or third level, and so on. This is a sophisticated and complex construction system that comes from a reinvention of technologies learned over the years.

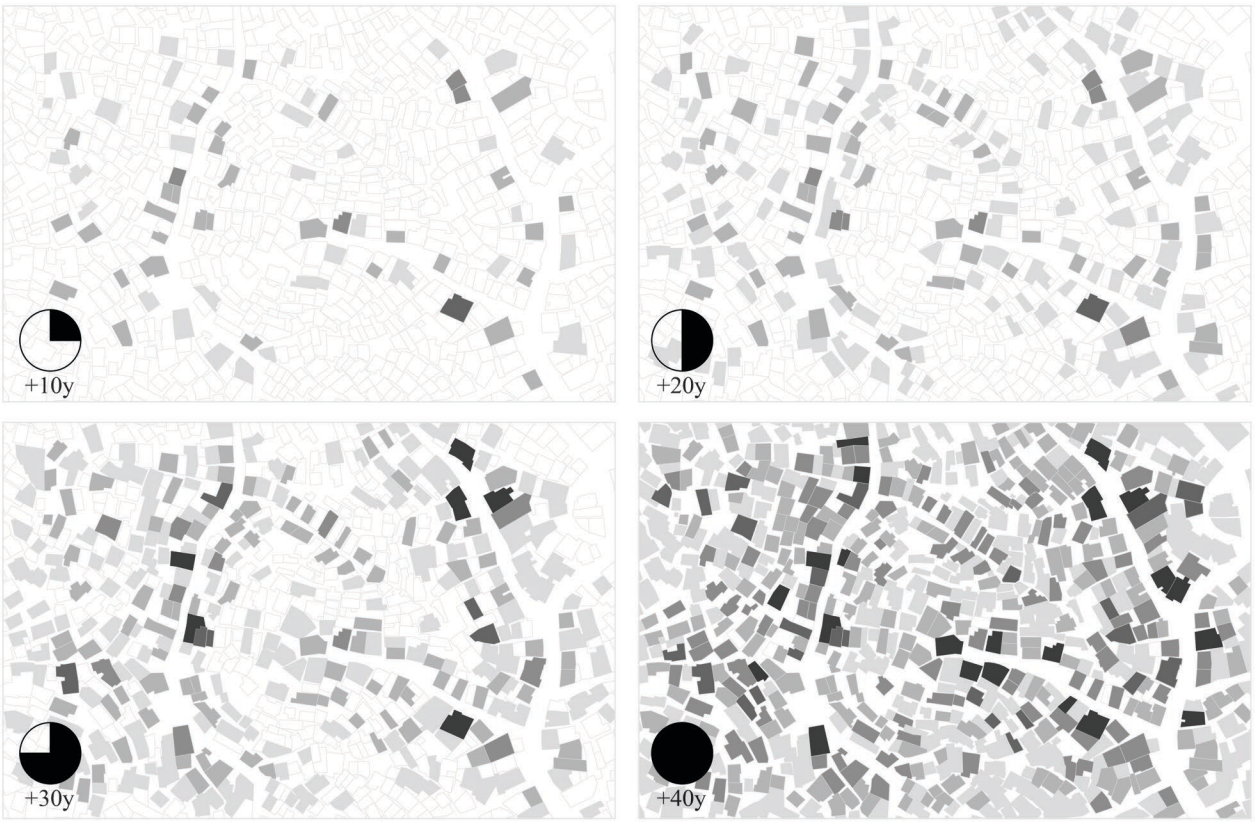
The second characteristic of the construction culture of Self-Produced Neighborhoods is how this technological reinvention becomes know-how that spreads among the inhabitants of the entire community. While the Self-Produced Neighborhoods emerge, dwellers/builders learn by doing and sharing techniques (Amodio, Ontiveros, and Rosas 1995). For this reason, especially in Self-Production Neighborhoods construction systems and culture are intertwined; the former occurs through the production of the latter.

This dynamic of doing and sharing construction techniques has progressively produced a tacit knowledge on Self-Production widely spread out of the territory. Tacit knowledge makes construction systems through a close engagement between materials and production (De Landa 2001) acquired through the experience rather than through formal education. Even though tacit knowledge is not articulated linguistically, i.e., it is not written or codified in any manual; it generates hidden rules and heuristics the whole system ends up following (Capra 2002). In this case, the construction system has generated hidden rules that entire neighborhoods follow and that is the main reason that explains why Self-Produced Settlements grow efficiently and through a non-syncopated process of development.

In short, Self-Produced Neighborhood have generated a constructive culture, implicit and inherent in its physical pattern, which translates into a formal, spatial, and visual identity.

Until this point, we have explained how the Self-Produced Neighborhood gradually consolidates itself in a series of asynchronous piecemeal interventions (See Figure 6). And we

have used the evolution of the *rancho* as a tool to explain Self-Production, because its progressiveness is evident. This dynamic occurs throughout the Self-Produced Neighborhood; each unit progressively grows or sometimes improves at different rates with respect to each other.



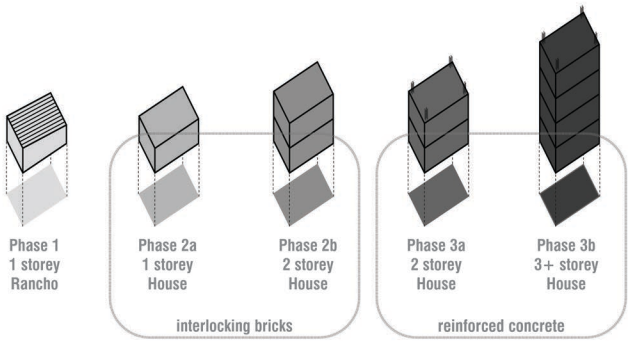


Figure 6 - Progressive growth of Self-Produced Neighborhood

Each frame represents the houses that have been consolidated for ten years. The last one shows the mosaic of different levels of asynchronous development produced by self-produced urbanization.

The same degree of progressiveness occurs with the infrastructural systems that the house itself needs to connect to the city's systems; these include infrastructures such as the supply of clean water and the disposal of sewage. For instance, surveying *Petare* we noticed many homes with toilets connected to pipes within the houses (AREPA 2015), similar to what happens in other *non-Barrio* parts of the city.

But, inevitably, the consolidation of these infrastructures implies that Self-Production loses its autonomy in the form of the agreements that residents progressively reach with government agencies to provide services (Hellinger 1991; Ray 1969; Violich and Daughters 1987). This leads us to recall the interesting debate that John F.C. Turner and Rod Burgess had in the 1970s about the autonomy/heteronomy relationship of Self-Produced Neighborhoods.

In *Housing for People*, John F. C. Turner (1976) states that the construct *"self-help autonomy" housing* is preferred over *"institutional heteronomous" projects* because it improves community participation, promotes the customization of consumer goods and services, allows the personalization of housing aesthetics avoiding the bored standardization of institutional developments, and achieves physical flexibility of dwellings. On the contrary, Rod Burgess (1978) argues that outside forces highly influence Self-Produced Neighborhoods' emergence. He provides a critical examination of Turner's approach on housing autonomy explaining the high level of dependence of Self-Produced Housing on the exchange systems of society as a whole, thereby defining it as a heteronomous rather than autonomous phenomenon. Burgess provides several examples to explain this influence of the civil society on Self-Production. We highlight the supply of resources, including construction materials, to Self-Produced builders from both the private market and the state apparatus.

Today, we know that both autonomy and the heteronomy of Self-Produced sectors occur simultaneously through transversal interactions between communities and the States and their institutions (Caldeira 2017, 3). People built Self-Produced Neighborhood trying to insert themselves into urban dynamics. Still, at the same time, they are creating their own culture, their own system of relations, and their own cultures to build achieving a significant degree of autonomy (Bolívar 1998; Chombart de Lauwe 1996) even though heteronomous relationships. Paraphrasing Edgar Morin (1991), Self-Produced Neighborhoods are conditioned by the culture and condition the culture in which they are inserted.

Perhaps the most obvious example of this autonomy process that communities living in Self-Produced Neighborhoods occurs in the agreements between specific communities' associations and local governments to build local infrastructures. Over the years, different communitarian organizations reach agreements with public and private agencies to supply resources such as the provision of construction materials to facilitate the neighborhood's Self-Production (H. de Padron 1998; López-Maya 2010; Myers 1969). In this scenario, external agencies such as political parties, public or private housing institutions, and developers end up being one actor among others for the generation of this gradual development process that we call Self-Production. Indeed, from self-production arises a significant degree of autonomy, an independent way of building the environment complemented by alliances with external forces.

After understanding the evolutionary capacity of this form of development, Self-Produced Neighborhoods have recently been understood as a "stepping-stone" for the integration of low-skilled households in the economic development of the country (Monge-Naranjo, Cavalcanti-Ferreira, and Torres de Mello Pereira 2018; Holston and Caldeira 2008). This process occurs as a

cause and consequence of an incremental process of improving the Self-Produced housing, that is, by the progressive improvement of the variables that define and identify the Self-Produced home as a slum by international agencies such as Un-Habitat.

But, as we have introduced at the beginning of this chapter, Un-Habitat defines a slum household as a group of individuals lacking one or more of the following five conditions: (1) durable housing, (2) access to improved water, (3) access to sanitation, (4) sufficient living area, and (5) secure tenure (UN-Habitat 2003, 243; 2006, 21; 2016, 57). The fifth category, secure tenure, has been excluded by Un-Habitats in their data collection (UN-Habitat 2016) because it cannot be accurately calculated, primarily due to the limited information available in most of the countries in the global south (PSUP 2020). Being consistent with this logic is the first reason why this research also decided not to incorporate tenure variables.

Moreover, after analyzing the construction culture and system of Self-Produced Neighborhoods that determines its urban growth and development for the case of Caracas, we argue that secure tenure does not determine the growth and development of Self-Produced Neighborhoods. Indeed, on the research *Alquiler y propiedad en barrios de Caracas* (Rent and property in Caracas' barrios), first published in 1991 and included with a revised version in the book *In search for home* edited by the influential Alan Gilbert (1993), the researchers Oscar Olinto Camacho and Ariana Tarhan explored the rental market in Self-Produced Neighborhoods of Caracas to document a very active real estate activity even without a formal land tenure system. A similar conclusion was reached by Roberto Briceño Leon (2008) when he explores creating a system of agreements and contract signing in a real estate market within Self-Produced Neighborhoods.

Both investigations highlight the formation of a spontaneous legal system created from a set of shared expectations and agreements that their actors make even for conflict resolution (Karst, Schwartz, and Schwartz 1973; Pérez Perdomo 1979). The historical processes of land occupation have generated a series of citizen agreements to assume ownership of the land. Hence, the lack of secure land tenure has not been a relevant variable for a consolidation, reduction, or maintenance of Self-Produced Neighborhoods.

Otherwise, the other four variables -durable housing, access to improved water, access to sanitation, and sufficient living area- have been fundamental for the definition and accounting of Self-Produced Neighborhoods because, as explained before, the construction characteristics of these territories are intimately related with its form of growth and development. For instance, In Venezuela, these four variables have been consistently measured for by all Population and Housing Censuses since 1941, in a periodic recognition of seeking mechanisms to reduce the lack of services in the Self-Produced Neighborhoods.

But all the components described above to define what is called slum refer to the conditions of the housing unit. After studying and analyzing Self-Produced Neighborhoods in Latin America, we argue that the incremental nature of this form of development makes the home itself the stimulus to progressively improve all these components. When the economic conditions make it possible, the underprivileged sectors can improve housing durability and access to improved water and sanitation through mixed autonomous and heteronomous processes of Self-Production. Even the incremental character of the house allows it to multiply its rooms, progressively reducing the levels of overcrowding.

Self-Produced Neighborhoods continue to be an omnipresent component of the Latin American landscape, and, as we have explained before, several empirical studies show they have a limited amount of proximity and connectivity to the networked opportunities that the city offers, specifically public spaces, schools, and workplaces.

In this sense, this thesis builds on top of a historical process of studies on Self-Produced Neighborhoods recognized as a complex form of development. For instance, in 1993, the Venezuelan *Tercer Inventario Nacional de Barrios*[10] (Third National Inventory of *Barrios*) defined them as "progressive development residential settlements (Fundacomún 1993)." The study followed the methodology of the *Primer Inventario Nacional de Barrios* (First National Inventory of *Barrios*) made in 1978 that included in the survey of housing units, other urban networks such as the location of the barrio concerning the broad urban built environment and surveying systems such as access to community services like schools, health care centers, public markets, and so on (Fundacomún 1978) as well as access to other infrastructural systems such as water supply.

Although this *Inventory* recognizes the difficulties to systematize the survey of the neighborhoods, limiting itself to an ocular inspection that "by trial and error" (Fundacomún 1978; 1993), its data give us a clear indication of how to recognize Self-Produced Neighborhoods, including other variables instead of only housing units, accordingly, the *Inventory* defines Self-Produced urban territories called *Unidades de Planificación Física de Barrios* (UPF, *Barrios* Physical Planning Units).

[10] The *Inventario Nacional de Barrios* (National Inventory of Neighborhoods) were important documents in the recognition of Self-Produced Urbanization in Venezuela. Their analysis are included in Chapter 5 in the discussion of the reports and planning strategies for the history of Caracas.

To confirm that the definition of housing does not include the condition of Self-Produced Neighborhoods, we measured the four categories of slums defined by UN-Habitat and compared it with an accounting of Self-Produced dwellings (See Appendix C for detailed data). We use Caracas as a case study, where the most significant number of Self-Produced Settlements in Venezuela are concentrated.

In the study, we take data from the Venezuelan National Population and Housing Censuses (Venezuela. Oficina Central del Censo 1962a) from 1941 until 2011. First, we count the four variables that define the slum. We totalized those homes counted as *ranchos* to determine the lack of durable housing (1), we included those houses with insufficient access to improved water (2), and to sanitation (3), and we also totalized overcrowding by accounting for those dwellings with more than three people sharing the same room (4) (Figure 4). In addition, we count Self-Produced Houses following the definition of areas defined as UPF as described above.

In general terms, the study shows that housing has been improving progressively over the years in all categories that define slums according to UN-Habitat (Figure 7). With some variations, they are becoming better over time. For example, we noticed an increase in overcrowded houses until 1981 after the boom in the migration of residents from rural areas to the city. Still, these houses have been growing or expanding incrementally, significantly increasing the sufficient living areas for households. We see similar patterns in the other three features: having a durable home, access to improved water supply, and adequate sanitation availability and excreta disposal system.



Figure 7 - Un-Habitat Categories vs. Self-Produced Urbanization

According to the Caracas censuses, the graph registers the change of the four categories of the slum according to UN-Habitat -durable home, water supply, sanitation, and sufficient living area-. The lack of these housing components has decreased over time, as observed in recent photos (2021) of some self-produced homes whose quality is similar to those we see in other parts of the city. However, the areas defined as "Physical Planning Units," that is, Self-Produced Neighborhoods in federal reports, have progressively grown. This graph demonstrates that these "categories of slums" are insufficient to define Self-Produced Neighborhoods.

However, this improvement has happened at the level of the house but not of the neighborhood. Several reports show an unequal distribution of infrastructure networks such as public spaces and facilities in Self-Produced Neighborhoods nationwide (Baldo and Villanueva

Brandt 1998; Fundacomún 1978; 1993). These are territories where spatial inequality is evident because the physical patterns of their built urban environment limit the access that citizens have to these urban resources.

We have said before that Self-Production could be understood as a "stepping-stone" for the integration of underprivileged people. However, this integration appears as insufficient without the network that provides the household access to resources and opportunities provided by the environment. The networked systems of infrastructure generate a qualification of the urban built environments through systems that include different networks such as those of services like water, those of public facilities such as schools, those of connectivities provided by the street network, and natural systems such as rainwater management.

1.5. Qualification of Self-Produced Neighborhoods.

This chapter has been focused on the discussion of three variables used to define Self-Production. As we have seen, the first two - construction culture and construction systems- are intimately and intensely intertwined. The following discusses how they establish the third variable: the qualification of Self-Produced Neighborhoods, especially their limits to provide integration of networked infrastructural systems to its residents.

We understand infrastructural systems in Self-Produced Neighborhoods as the physical and organizational structures and facilities needed for the basic living conditions of its community members (Trindade, MacLean, and Posen 2021, 2). Basically, infrastructural systems provide services including water, sanitation, rainwater management, and energy, but also public amenities such as schools, health care centers, and public spaces.

Networks are patterns of links among a set of things (Easley 2010) that come from a systematic connection between lines and nodes (Watts and Strogatz 1998). Mark Newman explains that networks happen at different levels, including social, informational, biological, and technological (Newman 2010). The boundaries between these types are not rigid because there are many overlaps between them; for example, networks of biotic tissues are overlapping every day with technological networks of water supply or provision of public spaces, and so on. For this research, we focus on the technological networks that constitute the urban infrastructural systems, although aware that these generate intersections with other networks such as governance and community agreements produced by social networks.

We could say that urban infrastructures are intrinsically networks because they constitute linear systems such as pipelines and transportation routes and nodes such as water adductions to homes or intermodal stations. However, we argue that the existing infrastructural systems in unequal urban territories such as Self-Produced Neighborhoods do not automatically generate the network condition, so we must emphasize the idea of a networked infrastructural system.

Networked infrastructure systems are crucial to address spatial inequalities, but this condition varies between one Self-Produced Neighborhood and another. To discuss some of the nuances between access to infrastructure systems and the physical and spatial characteristics of Self-Produced Neighborhood, we use the categories recently formulated by Jérôme Chenal, Yves Pedrazzini, and Jean-Claude Bolay in their *Tentative Classification of Various Slum Types* (2016). In this paper, the authors analyze several Self-Produced Neighborhoods across the globe from visual and spatial criteria to summarize four conditions for their possible classification: location,

physical nature of the land, street layout, and levels of housing *durcification* (Chenal, Pedrazzini, and Bolay 2016).

First, location refers to the proximity of Self-Produced Neighborhoods to other urban structures. Second, the physical nature of the land - called "constructability" by Chenal, Padrazzini, and Bolay- refers to the condition of land before the emergence of the Self-Produced Neighborhood; some of them happened in previous zones for residential use while others in considered "non-buildable" lands. Third, street layout refers to the physical configuration of roads, from gridiron to non-orthogonal shapes. Finally, *durcification* refers to the constructive characteristics of houses, from non-durable to solid materials, in a similarly to that described earlier in this chapter.

In *Tentative Classification of Various Slum Types,* the authors develop a binary relationship between these categories; for example, the location condition is classified between two poles: central and peripheral Self-Produced Neighborhoods (Chenal, Pedrazzini, and Bolay 2016, 36). From this binary classification, Chenal, Pedrazzini, and Bolay combine the four categories to conclude with a matrix of 16 types of Self-Produced Neighborhood.

We consider that this conclusion is not convincing because, as we explained previously, the ethos of Self-Produced Urbanization is progressive change. Inevitably, Self-Produced Neighborhoods are in intermediate territories between these categories, making the classification of neighborhoods almost infinite, as many as they exist. For example, we had already explained how construction durability -the housing *durcification*- changes progressively in Self-Produced Neighborhoods. But the same happens with other of these conditions, a Self-Produced Neighborhood can be considered today as physically peripheral, but its physical expansion -as well

as the physical expansion of other areas of the city-, results in these initially peripheral neighborhoods being "absorbed" by the city and are subsequently located in conditions of physical centrality, as can be the case of Kibera in Nairobi or La Rocinha in Rio.

However, the four categories explained above - location, physical nature of the land, street layout, and levels of housing *durcification*- are useful for understanding the dynamics of interaction between Self-Produced Neighborhoods and the networked infrastructural systems that permit the qualification of Self-Produced Environments.

Among these categories, "location, location, location" has become a mantra among policymakers and other stakeholders due to the evident spatial inequalities between Self-Produced and non-Self-Produced Neighborhoods (Krishnamurthy 2018). Location is essential to understand inequalities and how infrastructure networks serve Self-Produced Neighborhoods since it is common that settlements geographically distanced from urban centers have the least access to the services it offers. Nevertheless, also including other categories studied by the essay *Tentative Classification of Various Slum Types* (Chenal, Pedrazzini, and Bolay 2016) allows the study of other nuances on the ability of infrastructural systems to articulate networks to serve Self-Produced Neighborhoods

The combination of lines and nodes create networks that allows fulfilling the fundamental purpose of urban infrastructure systems of providing services to citizens. But we must recognize that infrastructural systems are neither fully networked nor fully un-networked; even in unequal urban territories, all lines of networks have some levels of nodes to serve communities. But within the framework of this thesis, we understand that if an infrastructure exists in neighborhoods and the number of nodes to connect it with its houses are scarce, we could say that this infrastructure

is highly un-networked to the community. This is the reason why we advocate for the understanding of networked infrastructural systems.

It is common to see in Self-Produced Neighborhoods the existence of infrastructures frequently with limited nodes of connections to its dwellings. The binomial relationship between urban infrastructure and Self-Produced Neighborhoods is ubiquitous because infrastructures are common attractors for the consolidation of Self-Produced Neighborhoods, but these are not necessarily articulated as networks to serve them. In Buenos Aires (Argentina) Villa 31 emerged adjacent to the Retiro - San Martín Railroad Station, the most important transport hub of the city. Cairo's City of Dead is a high-density Self-Produced Neighborhood that emerged synergistically with the activities of the infrastructure of the ancient Necropolis. Formal and informal labor that occurs around open waste dumps function in binomial with Self-Produced Neighborhoods like Stung Meanchey in Phnom Penh and Mbeubeuss in Dakar. The large amounts of land owned by the Indian Railways have been receptors for Self-Produced communities in the safety zones along railroad tracks such as the route between Patel Nagar and Taj Nagar. Those described above are just a few examples of the many cases where there is an unequal synergistic relationship between infrastructures and Self-Produced Neighborhood. In the case of Caracas, it is common to find Self-Produced Neighborhoods that bear the name of the infrastructures that promoted their emergence because the infrastructure 'ignores' its surroundings, leaving in its wake a "blind spot" in the urban territory that supports the implantation of a Self-Produced Neighborhoods. The *Barrio La Silsa*, in the west sector of Catia in Caracas, emerged around an important milk-producing factory inaugurated in 1940 with the same name. The *Barrio Mesuca* bears its name from its vicinity to the most important market in the Sucre Municipality to the east of the city; actually, the

name Mesuca is an acronym is *Mercados de Sucre Compañia Anómima* (Markets of Sucre Anonymous Company). But the binomial between infrastructures and neighborhoods does not automatically imply that infrastructural systems serve these neighborhoods if they do not become a network. Moreover, the attachment of Self-Produced Neighborhoods does not mean that other networked infrastructural systems serve it. It is commonly the opposite; while Self-Produced Neighborhoods emerge to provide labor to specific infrastructures, the provision of their services back into the neighborhood are often ignored.

We have said that infrastructural systems close to Self-Produced Neighborhoods do not necessarily mean that they are networked, especially when there is a limited number of nodes of connection between them. But the same applies to the opposite; the spatial inequality produced by lack of access to an infrastructural system also happens when Self-Produced Neighborhoods have a highly connected infrastructure with several nodes between them and the houses but of small scale in relation to the size of the neighborhood. The existence of overloaded and overburdened infrastructure lines with numerous connections is also ubiquitous in Self-Produced Neighborhoods, making the infrastructure system ineffective because of its limited capacity to become a network that distribute services efficiently across the neighborhoods.

Ultimately, the combination of lines of services and nodes of connections is what creates the network of infrastructural systems, and non-networked infrastructure systems happen because of the scarcity of lines, nodes, or both. This produces spatial inequality as a consequence of uneven distribution of urban infrastructural systems.

But we can even go further in understanding that infrastructural systems work better when overlapped with other ones because they are heavily connected and co-dependent, an aspect that

is likely going to increase in the future (Derrible 2017, 69). This adds an additional level of complexity to the study of networked infrastructural systems. The importance of the overlapping between different infrastructure systems is evident in territories where they are scarce such as in Self-Produced Neighborhoods. Lack of street networks complicates the performance of other infrastructures such as water networks and other services that are usually distributed under streets. Lack of accessibility makes it difficult for people to reach other amenities such as public spaces and recreational areas. In short, service infrastructures are networks (roads, water, etc.), that are networked since they function in a co-dependent way.

But to better understand how infrastructural systems work as networks, it is useful to develop a brief classification of their types according to the relationship between systems and dwellers through lines and nodes. In this sense, Sybil Derrible elaborates on a taxonomy of technological networks of urban infrastructural systems. In her essay *Complexity in future cities: the rise of networked infrastructure* (2017) her thoughts serve as inspiration to understand different nuances of networking in infrastructure systems Self-Produced Neighborhoods. We summarize our interpretation of this taxonomy with the following table:

	System	Examples	Infrastructure		Household
	Layout	Streets and other pathways layouts	one	to	many
	Mobility	Pedestrian, transportation, cargo, etc.	many	to	many
	Utilities	water, sanitation, rainwater, energy, etc.	one	to	many
	Amenities	Public space, schools, health care, etc.	many	to	many
	Houses	Self-produced, public and private housing, etc.	one	to	One

Figure 8 – Taxonomy of infrastructural systems.

As previously stated, the interplay between the physical nature and the households served by the network infrastructure helps classify the networked infrastructural systems. Among these infrastructures, the street layout has a one-to-many relationship, i.e., it is one infrastructure built to serve many households. The layout of the street is of fundamental importance because it serves as a support structure for other infrastructures such as public utilities and mobility systems. Likewise, amenities also rely on the street layout as the fundamental structure to become a network; reaching public spaces, schools, and other amenities require street corridors for their accessibility. Finally, housing is a one-to-one infrastructure whose nuances of progressive consolidation in Self-Produced Neighborhoods were explained earlier in this chapter.

In the relationship between infrastructure and households, we often see that "many" elements must coincide to establish the very definition of infrastructure (Figure 8). Based on the idea that Self-Produced urbanization occurs from units that are progressively integrated, here I discuss each of these infrastructures and determine how Self-Produced Neighborhoods end up incapable of generating networked infrastructural systems.

First, the street layout is fundamental in the definition of networked infrastructural systems. In their influential book *Urbanization Primer for design of site and services projects (*later *Urbanization Primer),* Horacio Caminos and Reinhard Goethert from the Massachusetts Institute of Technology establish a comprehensive method to define and measure infrastructural systems with the street design as the main catalyst of all infrastructures. The book sets actionable design data, including indices for acceptable quantities per hectare for public circulation with standard levels in the range of 150 to 230 meters per hectare (m/Ha) (Caminos and Goethert 1976, 15). It

also includes other variables such as slope standards for safe circulation and desirable area percentages for public paths.

Caminos and Goethert conclude that optimization of the design of infrastructures depends primarily on optimizing their layout, which relies on the optimization of the street layout (Caminos and Goethert 1976, 8). They conclude the gridiron is the form that better optimizes the distribution and allocation of infrastructure systems[11], in contrast to non-orthogonal, potentially organic shapes. The conclusion arises from a cost-benefit relationship in the construction of infrastructure networks, that is, the distribution of networks such as utilities -water, electricity- or transport systems, ends up being more efficient in urban grids than in other forms.

As mentioned before, the street layout is also a fundamental variable for the *Tentative Classification of Various Slum* Types by Chenal, Pedrazzini, Bolay (2016). In this essay they observe that many Self-Produced Neighborhoods are located on orthogonal paths or with checkerboard patterns; cases such as Ciudad Neza in Mexico City or Villa El Salvador in Lima are well-known examples of gridiron Self-Produced Neighborhoods. Many of these neighborhoods come from self-help processes where local governments or international agencies organized the growth of Self-Produced Neighborhoods, providing a priori street layout in the method known as Sites-and-Services, developed by the World Bank in the 1960s, 1970s, and 1980s (Reimers 1993).

[11] The study was made to establish design standards in the creation collected of the World Bank's Site-an-Services proposals especially during the 1960s and 1970s. Data for this research was from studies developed by the program in Urban Settlements and Design in Developing Countries carried out at the School of Architecture and Planning of Massachusetts Institute of Technology. It involved 45 researchers, 30 cities in 20 countries across the world from 1964 to 1976. The study is based on the analysis of the street layouts of different worldwide underprivileged neighborhoods in a cost / benefit ratio that allows the assessment of the efficiency of infrastructural systems.

But certainly, many Self-Produced Neighborhoods grows progressively in steep terrains following its contour lines which produce non-orthogonal shapes (Chenal, Pedrazzini, and Bolay 2016, 38), ad frequently with a limited network of connectivities.

This barely organic and fragmented organization in the street layout is common in Latin America, a condition that has historical roots. Originally, many Latin American cities were founded near coastal areas in response to the dynamics of exchange from colonies with the Spanish and Portuguese empires (Berrizbeitia and Hecht Marchant 2011). The geography of the continent presents its steepest slopes towards the coastal areas, with the Andes Mountains to the west, the Coastal Range to the north, and the Brazilian Highlands to the east. Commonly in these regions, colonial settlements occurred on valley floors rather than on the foothills the latter being the geographies occupied by the underprivileged classes; consequently, it is common to see sloping Self-Produced Neighborhoods with street layouts organically articulated with contour lines in territories as distant as Valparaiso, Medellín, Caracas and Rio.

However, the topographic condition does not necessarily imply spatial inequalities. There are countless examples of cities on slopes that were planned to provide networked infrastructural services to their residents. For instance, there are neighborhoods with similar topographic conditions in Caracas and with equal proximity to service centers - such as the Bello Monte and Petare neighborhoods - and those that planned their services have better accessibility conditions to infrastructure systems than Self-Produced Neighborhoods. This indicates the lack of planning of these networks is what generates inequalities much more than the conditions of the land.

Undoubtedly the challenge of providing services to territories already fragmented by topography is enormous. In Chapter 5, we discuss emblematic examples to address this issue,

specifically, the Projeto Favela-Bairro (PFB, the Slum-Neighborhood Project) in Rio de Janeiro, Brazil, and the Planes Urbanos Integrales (PUI, Integral Urban Plans) in Medellín, Colombia.

Commonly, mobility and transportation networks (the second network listed in Figure 8) are intimately linked to street layout. The book *Urbanization Primer* elaborates the overlapping of both systems as indissociable as circulation systems including streets, alleyways, or pedestrian paths happen in road patterns (Caminos and Goethert 1976).

However, cases such as the cable cars of Medellin or the funiculars of Valparaiso show us that a break-out of the automatic association between street layout and circulation can provide other accessibility mechanisms in physically disjointed territories. But these systems are only infrastructure lines that will not become networks without an articulation with other mobility methods through intermodal nodes, including those happening at the street level. This is the complexity of networked infrastructures of mobility -including all its systems ranging from subway stations, bus stations, but also pedestrian mobility-, they imply a many-to-many relationship system (many infrastructures to serve many households) that must articulate different transportation methods.

The fact that networked mobility systems require the articulation of many systems explains why connectivity systems are often weak in Self-Produced Neighborhoods. Through self-organization, communities have managed to self-produce localized roads to connect their homes with other areas of the city; local transport system entrepreneurship has also emerged. But the articulation of these systems with other neighborhoods or neighboring urban sectors requires an institutional organization that is not achieved from small agreements of local *Asociaciones de Vecinos* (Neighborhood Associations). The planning processes to articulate the many mobility

infrastructures to network them require the intervention of other governance systems, other than self-produced community organization.

Also associated with the street layout, we have utilities such as water or electricity. They are physically a single infrastructural system in pipes or cables and connections to serve many families, hence their one-to-many relationship (Figure 8). One-to-many infrastructural systems need central facilities and sub-stations to produce or distribute services (Derrible 2017, 77), which need techno-managerial processes coordinated by institutions governed beyond self-organization.

Horacio Caminos and Reinhard Goethert established a comprehensive way to define and measure utilities as collective infrastructures that certifies the technical complexity for its design and implementation in *Urbanization Primer* (1976). First, they accurately count the number of linear meters of infrastructure per hectare to define acceptable levels for utilities. The study establishes indices for acceptable quantities per hectares for water pipes (standard level of 150 m/Ha / minimum of 100 m/Ha), for low-tension electricity (standard and minimum level of 170 m/Ha), for storm drainage (standard and minimum of 150 m/Ha), and for sewage disposal (standard level of 140 m/Ha / minimum 90 m/Ha) (Caminos and Goethert 1976, 15). Additionally, the study proposes a binary study of dwellings by analyzing on-networks versus off-networks to understand levels of connectivitiy of these infrastructures from residences (Caminos and Goethert 1976, 20). In *Urbanization Primer*, utilities are technically analyzed from the network logic, assessing lines (meters per hectare) and nodes (on-off network connection).

Recently, Tatiana Trindade, Heather MacLean, and Daniel Posen use a similar “on/off study” by calculating percentages of houses served in Self-Produced Neighborhoods based on information from censuses in six cities on three different continents: Sao Paulo, Rio de Janeiro,

Lima, Johannesburg, Mumbai, and Hyderabad. In these cities, the research compares Self-Produced Neighborhoods with the percentage of houses served in non-Self-Produced areas to measure levels of inequality in the supply of utilities, specifically water supply, electricity consumption, and improved sanitation (Trindade, MacLean, and Posen 2021). The research demonstrates levels of spatial inequality in these cities due to unequal access to these infrastructures between Self-Produced and non-Self-Produced Environments. In the end, the utilities are the ones that have the most sophisticated design and measurement mechanisms that allow demonstrating spatial inequalities.

From the categories of the essay *Tentative Classification of Various Slum Types* mentioned above, the physical nature of land significantly influences access to many public service networks (Chenal, Pedrazzini, and Bolay 2016, 37), including utilities. Those Self-Produced Neighborhoods that have emerged in previously urbanized territories end up having greater accessibility to systems such as water or electricity than that self-produced in places that society defines as non-buildable.

This is the case of the famous *Torre de David* (David Tower) in Caracas, a widely publicized "vertical slum" after it was awarded at the 2012 Venice Biennale (Saieh 2012). Although the government did not have the volition to complete the integration of its inhabitants, the infrastructure of pre-existing services in the tower facilitated the consolidation of a Self-Produced Neighborhood in its interior, opening possibilities for a high connection of dwelling with the existing service infrastructural networks of the city. Even more emblematic is the case of Barrio Sarria, north of the *Torre de David* in Caracas; this is a Self-Produced Neighborhood consolidated on an urban grid that had been developed as a housing project at the beginning of the 20th century; today, this is one of the sectors best connected to the city's utility networks.

But, certainly, the overwhelming majority of Self-Produced Neighborhoods around the world are located on land unfit for construction due to steep gradients prone to landslides, ravines, lowlands, flood plains, dumps (Chenal, Pedrazzini, and Bolay 2016, 37). In these areas, the construction of infrastructure networks has progressively occurred without design, planning, regulation and maintenance processes. The consequence has been a weak articulation between the Self-Produced Neighborhoods and the networks of infrastructure.

Finally, we have the amenities, which refers to public facilities such as schools, health centers, public spaces, and so on (Figure 8). These are also a many-to-many structures; the amenities occur from a summation of multiple actors and institutions that articulate services to many families. The amenities are nodes in the territory, service centers structured in a network from using the circulation systems -the street layout-, as lines of connectivity.

Horacio Caminos and Reinhard Goethert differentiate two types of amenities, those considered in terms of immediate access located in the vicinity, and those provided in the immediate neighborhood (Caminos and Goethert 1976, 79). Certainly, since the city residents make use of the city as a whole, we must include amenities on the large scale that Self-Produced Neighborhoods share with other territories, such as metropolitan parks and larger educational and health centers such as hospitals and universities. The importance of studying amenities at different scales comes from the awareness that the inhabitants of the Self-Produced Neighborhoods deserve to access urban opportunities at different levels. In this thesis, we understand the citizen's access to amenities offered by the city as a vehicle to facilitate the connection between citizen capabilities and city processes of exchange. This research advocates for creating infrastructure networks that support networks of capabilities between citizens.

Access to networked amenities is commonly measured by walking distance, for which *Urbanization Primer* established a wide range between 400 to 1000 meters (Caminos and Goethert 1976, 61). However, this form of measurement is insufficient to understand the complexity of this infrastructure as a network for several reasons. First, the measure of walking distance leaves out the possibility of studying access to amenities that are beyond the geographical scope of the neighborhood. Second, this indicator only counts the linear component of the network to a single service node but not the relationship of this node with other service centers that could include the networked infrastructure. Finally, the distance calculation ignores the size of the amenity to which we connect, and proximity to a small plaza is not the same as a medium or large-scale park. These nuances are especially relevant in territories such as Self-Produced Neighborhoods, where the distribution of amenities is scarce.

Access to urban amenities from neighborhoods is important but barely explored. The recent essay *Slum Infrastructure: Quantitative Measures and Scenarios for Universal Access to Basic Services in 20*30, explains that access to amenities is the least studied by the existing slum infrastructure literature having less than 10% occurrence for almost all indicators, despite that access to public spaces and number of available schools and other public facilities are also infrastructure-related topics and essential for the well-being of the population (Trindade, MacLean, and Posen 2021, 6). Consequently, in Chapter 3 we elaborate on one of the main contributions of this thesis, that is an index that seeks to understand access to the city's amenities as a central point and including measures of other networks; that is what we have defined Spatial Opportunity Index (SOi).

The importance of improving the networked system of amenities is also evident when analyzing other categories explained in the *Tentative Classification of Various Slum Types* (Chenal, Pedrazzini, and Bolay 2016, 37). For instance, the housing *durcification*, that is the progressive consolidation and densification of dwellings through progressive processes of self-production, undermines the appearance of amenities. In extremely consolidated Self-Produced Neighborhoods, space ends up being almost completely filled with houses grouped and solidified horizontally and vertically. This process is especially common in favelas of Rio and barrios in Caracas, where the very ethos of the Self-Produced Neighborhood threatens the availability of space for networks of infrastructure, including amenities.

In the previous lines, we overlapped the taxonomy of infrastructural systems -circulation, utilities, amenities, and houses- with spatial categories of Self-Produced Neighborhoods -location, physical nature of the land, street layout, and *durcification*- to discuss some nuances about how infrastructure systems and Self-Produced Neighborhoods do not always operate networked.

We conclude that the ethos of the Self-Produced Neighborhood is incapable of creating network infrastructure systems. And we can summarize the causes of why this occurs in two reasons highly intertwined. First, the progressive growth and expansion of Self-Produced Neighborhood focus on incremental production of units while the infrastructure networks require the overlap of many systems that work codependently. Second, infrastructures require layouts planned in advance to articulate infrastructural systems as networks, while Self-Produced Neighborhoods emerge without these initial layouts. In the next few pages, we will discuss both statements in more level of detail.

Regarding the importance of overlapping different systems in networked infrastructural systems, we can highlight that in Figure 8 (the taxonomy for infrastructural systems), the word “many” is recurrent. These infrastructures depend on a layout to handle the "many" infrastructures and/or the "many" families involved in the infrastructure. The exception is housing, whose slow and progressive growth in Self-Produced Neighborhoods occur as one-to-one infrastructure, i.e., it is one infrastructure to serve one family, no matter how large it is. The development of the house by itself does not imply collective actions but rather the family capacity for construction and management to self-produce the house as infrastructure. As explained before, the other infrastructures -circulation, utilities, amenities- need coordinated actions to produce comprehensive layouts, which happens when the infrastructures are designed, planned, regulated, and maintained by institutionalized forms of governance.

In an intermediate territory between the family production of housing and the institutional organization to build other infrastructural networks, we have the community self-organization agreements to provide the minimum infrastructure for this house. We previously described this as a heteronomy process of agreement inherent to self-production; however, these interventions are commonly limited to the minimum infrastructure necessary to operate the home. In interviews with Petare's self-producer families, they explained to us that together communities planned space for placing streets and some utilities. Every time a new family arrived at the emergent neighborhood, they asked to respect this placement. However, this self-organization was taking place progressively without an initial layout that would allow its planning. They also explained to us how through heteronomous self-organization, communities did not reserve land for amenities such

as schools (AREPA 2015) because they focused on building environments just to survive. So now they have to travel long distances to reach outside of the Self-Produced Neighborhood.



Figure 9 - Self-Produced Neighborhood in Caracas, circa 1963

West view of Petare in the early 1960s. The photo shows the Self-Produced Neighborhood in its first stages. Houses are still ranchos, staircases are in a preliminary phase of construction thought processes of community self-organization, and the environment have much open space available.



Figure 10 - Self-Produced Neighborhood in Caracas, in 2015.

West view of Petare in the early 2015. The photo shows the Self-Produced Neighborhood in current stage. Many of the houses are solidly built, almost all the environment has been occupied by housing. After fifty years of self-construction - and *durcification* of the environment- the image shows a limited availability of infrastructure networks

Self-Produced Urbanization is incapable of creating network infrastructure systems, the second reason because this happens dwells in the idea that networks require layouts planned a priori. To discuss this argument in more detail, we must synthesize the piecemeal urbanization of Self-Production as a process that occurs through a fragmented and asynchronous construction of infrastructures. This form of development happens when communities manage the building of their neighborhoods through incremental yet effective self-organized systems.

At this point, we must reinforce that there are many advantages to this emerging mode of Self-Produced Urbanization. We can emphasize its incremental character that allows high levels of adaptability and flexibility (Dovey 2012; Lapping 1973; Turner 1976) and being a development method that promotes creative and innovative processes (Capra 2002; Holston and Caldeira 2008; Neuwirth 2005b; A. Roy 2011)[12].

But the great potential of Self-Production is its ability to coordinate efforts between different individuals. Thus, Self- Production allows the provision, among other things, of housing for thousands of people after the failure of both the state and the market to supply them. The efficiency in housing generation in the Self-Produced Urbanization, which is gradually being consolidated, is more than evident. From the survivability of underprivileged communities has emerged an efficient built capacity, and from that capacity, Self-Produced ended up being a symbol of resistance. This is what Roy (2011) defines as subaltern urbanism as a mechanism to urbanize and modernize the territory.

This urbanization process implies the materialization of the notion of "togetherness in difference" (Harvey 1993; 1993; Hickey and Mohan 2004) based on the articulation of different groups, even being disparate ones that have migrated to primary cities seeking opportunities to thrive. According to this relational concept, differences and similarities come together, allowing the connection of multiple "others." In Self-Produced processes, recognizing similarities is tacitly given, opening the possibility of community alliances over and above any difference. And these

[12] Most of the authors that we include in this paragraph refer to the slums as informal settlements, even so, the emphasize they provide to their development capacity from the articulation of different actors allows us to include their essays to qualify the logic of self-production.

alliances are both tacit and coordinated and are framed in the search for a common goal: shelter seeking.

Many scholars recognize great potential in this urbanizing process because it allows the generation of new urban citizenship (D. Davis 2012; Holston and Caldeira 2008) rooted in the overlap between social processes and the emergence of the urban built environment. In our opinion, which best reflects this dynamic is Professor Teolinda Bolivar in her book *Hacedores de Ciudad* (City Makers) (1995). The book is a compilation of ten Latin American social scientists' research that includes a series of life-stories that are surveyed from interviews in Self-Produced Neighborhoods of various cities of the region such as Buenos Aires, Montevideo, Mexico City, Quito, La Havana, San Salvador, and Caracas.

The book shows the struggle of underprivileged people in self-producing their environment. Among other things, it exemplifies the unequal relationship between inhabitants of Self-Produced Neighborhood with the productive dynamics of the rest of the city; for instance, the fact that, from Monday to Friday, citizens work hard in different jobs while working on Saturday and Sunday in the construction of their neighborhood, as said one of the interviewees from *Villa 12* in Argentina (Bolívar et al. 1995, 23). At the same time, the book also celebrates how communities are producing their own cities through a cross-generational engagement with the urban built environment.

Bayat (2000) describes this silent, prolonged, but pervasive advancement of people to build their environments with the notion of quiet encroachment of the ordinary. After a prolonged engagement with dwellers of Self-Produced Neighborhoods from both academic and practice realms, we concur with this statement.

We argue that *City Makers* deserve recognition for their productive capacity through emerging efforts. But after analyzing the way in which this form of development is articulated with the infrastructural systems, we observe that Self-Produced Urbanization generate urban environments that we can qualify as highly un-networked. For that reason, we argue that Self-Produced Neighborhoods, deserve a deeper analysis of how this form of development comprises spatial inequalities. as well as means such as physical planning has contributed to perpetuate this condition,

To study spatial inequalities, it is convenient to understand the growth pattern of Self-Produced Neighborhoods. To do so, we use the outputs of the book *Formas de Crecimiento Urbano* (Forms of Urban Growth), in which Manuel de Solà-Morales i Rubio analyzes various forms of urban development (1997a). Among various ones the following stand out: the *Ensanche*, the Suburb, and the Barrack. He evaluates three urban elements that happen at different times depending on the form of urban development. They are:

- Urbanization (U) refers to the networked infrastructures of the city. Here, the book emphasizes the importance of the street layout, which generates the framework for articulating other infrastructures such as utilities, including water, electricity, etc., as well as the mobility networks and the accessibility to urban amenities.
- Parceling (P) refers to the division of land into property plots, and
- Building (B) refers to the enclosed built component of the city.

For Manuel de Solà-Morales how these elements occur (U, P, and B) qualifies the urban space generated. For example, Barcelona's *Ensanche* followed a "P + U + B" process in which Idelfonso Cerdá's plan began with a method of parceling agreements with the former owners (P)

to define a streets layout (U) and other infrastructure networks associated with it, which later determined the built form (B). Then in the *Ensanche*, the built form is determined by the parcel and street infrastructures' logic.

Providing another example, Manuel de Solà-Morales explains the Suburb growth through a "U + P + B" process, in which the development starts with infrastructural systems (U), followed by parceling of the land (P), and finally the buildings (B). Hence, in Suburbs, the street layout has a primary and dominant role.

Without a doubt, the Latin American Self-Produced Neighborhoods resemble what Manuel de Solà-Morales defines as Barrack, where the first and only thing is developed in the site is the Building component (B). As we have explained so far, the Self-Produced Neighborhood emerges from a grouped succession of progressively built houses and grouped together, where infrastructural systems occur late through a piecemeal process of urbanization.

Furthermore, in a presentation about Barcelona, in the course "SES-5210 - Cities by Design I" at the Harvard Graduate School of Design, Professor Joan Busquets further develops the idea to define that in "informal housing," as in the Latin American case, Buildings (B) follow one after the other, to generate their own Parceling (P) dynamically. Later, the Urbanization (U) layout arrives gradually following a dynamic described as "B + B + B… + P… + U + U + U" (2016) that occurs in a fragmentary through a summatory of minor agreements.

But how do these fragmentary agreements occur for the construction of urbanization systems such as the street layouts produced in Self-produced Neighborhoods? Nabeel Hamdi (2004; 2010) best describes this process, based on his readings on the *Hidden Connections* by

Fritjof Capra (2002). Hamdi uses the word "emergence" to describe the way the Self-Produced Neighborhoods piecemeal develops. Self-Produced Neighborhoods are neither designed nor planned but rather "emerge" from the sum of small self-productions occurring simultaneously but at different paces.



Figure 11 - Aerial View of La Urbina - Petare (Caracas) in 1972

In the middle, undulating, we see the old route to connect Caracas and Guarenas (outside Caracas´ Valley). On the left, we see La Urbina, a middle-income housing development in ancient agricultural land. On the right, we see Petare in the process of self-production over the hill.

Institutionalized infrastructural systems of the planned city -including *Ensanches*, Suburbs, among others- need preconceived procedures with rules such as zoning, minimum dimensions, land uses, and so on. This process includes the planning of infrastructure systems, including the

design of networks trying to anticipate urban development. They also include risk mitigation in the development of these infrastructures to maximize adaptation to environmental changes.

On the contrary, "emergence" occurs when there was no prior planning but an effective communication system that enabled systems to self-organize in response to need (Capra 2002; Hamdi 2004; 2010). In this case, the construction of the urban built environment (See Petare in Figure 11).

Through small interventions, the process of "emergence" builds dense housing networks with simple units. Each *rancho* is combined with another one, and both with durable houses and so on, they are united through tacit knowledge that generates hidden -unwritten and undrawn- agreements to develop piecemeal urbanization. Self-Produced urban forms emerge from the inside out, from the small scale to the totality, in a progressive grouping of small spontaneously articulated micro developments (See Petare in Figure 11). In this process, pieces of land are distributed equitably; that is why we see that Parceling (P) in the Self-Produced Neighborhoods has a reasonably homogeneous result. But the articulation of relatively equitable infrastructure systems networked to different sectors and sub-sectors of the city requires a priori planning that Self-Produced Neighborhoods lack.

The distribution of Urbanization (U) also occurs fragmentary. This means that infrastructural systems, including streets layouts, utilities, mobility and amenities that usually require design layouts and planned decision-making tend to happen, if they occur, un-networked in Self-Produced Neighborhoods. Streets and other pathways develop fragmentarily in Self-Produced Neighborhoods, including the provision of infrastructure systems associated with them.

Self-Produced Neighborhoods also grow without strategic planning to provide public resources such as schools, health care centers, and other facilities.

The difficulties of networking infrastructural systems in Self-Produced Neighborhoods are especially evident when we understand the temporality of urban development processes. In *Urbanization Primer,* Horacio Caminos and Reinhard Goethert explain that infrastructural systems are developed in cycles. This means that they grow and improve as the population grows. However, they explain that the initial stages are the most critical for creating network infrastructures because it is there where design decisions determine the layout of the lines and nodes of the system. This is why when an infrastructure occurs after the neighborhood has grown in a self-produced way, its layouts become more intricate, resulting in less networked systems (Caminos and Goethert 1976, 8).

Planning involves the design of layouts and processes to anticipate the future performance of systems. Therefore, infrastructures require layouts planned to connect them as networks. On the contrary, Self-Produced Neighborhoods are progressively developed without these initial layouts, which makes difficult -if not impossible- the overlapping of the many systems that must be articulated co-dependently to constitute a network. In summary, the inability of Self-Produced Neighborhoods to anticipate the infrastructures ends up undermining the levels of access of their residents to these systems.

The fragmentary growth of self-produced urbanization is efficient in terms of housing consolidation, but it ends up generating weaknesses in terms of the development of networked infrastructural systems. For example, in 2015, Tatiana Noguera, President of the *Instituto Municipal de Aguas y Acueductos de Sucre Sucre* (IMAS, Municipal Water and Aqueduct Institute

), told us how the amount of water that the local government-supplied Petare, the largest Self-Produced Neighborhood in Caracas, was approximately 30% higher per inhabitant compared to other areas of the same city (Noguera 2015), due to the hidden water leaking that occurs in the system, product of a myriad of small connections generated through the historical process of Self-Production (See water leaking of water in Figure 12B). The weakness of infrastructural systems also happens in other infrastructures, including discontinuities of pathways and the limited articulation between different transport systems.



Figure 12 - Photos of Petare in 2014 (pedestrian views)..

A: Typical staircase in self-produced neighborhoods on a slope. They are not always continuous; they lack ergonomic design, and barely contain utility networks below.

B: The houses show a significant degree of consolidation, Including the reinforced concrete structure and air A/C units. However, the precariousness of the infrastructure systems with improvised connections and water leaking

Additionally, the deficiencies of an infrastructure system end up affecting others. For example, the most severe environmental risk in Self-Produced Neighborhoods occurs due to water seeps that erode the soil, generating landslides that affect housing (Salcedo 2012).

Piecemeal urbanization of Self-Produced Neighborhoods has not allowed an even distribution of public amenities such as schools and health centers. In general, some small-scale facilities, such as childcare centers or small retail, arise from the entrepreneurship of some residents of the Self-Produced Neighborhood. But commonly, from the progressive and non-syncopated emergence of houses, Self-Produced Neighborhoods ends up being large extensions of monofunctional territories of housing, with limited access to these public facilities (Baldo and Villanueva 2012). This occurs both because of the little programmatic diversity within Self-Produced Neighborhood and its intricate connections to the outside it after years of fragmentary urban development. Although Self-Production has been highly efficient in promoting both community organization and progressive housing development, it has its weaknesses in the systemic access to the physical opportunities that the city supposedly offers.

As described above, the urban anthropologist Lisa Peattie in 1968 wrote a beautiful comparative analysis between the slum Watts, Los Angeles (USA) and many slums in Venezuela such as Niño Jesus far west of the Caracas. The output of this research was published in the book *Shaping an urban future* edited by William Nash, Bernard Frieden, and Catherine Bauer Wurster (1968a). Her findings have served as inspiration for this research because it anticipated the relevance of looking for categories that include the spatial relationship of Self-Produced Neighborhoods beyond the production of units such as housing.

Lisa Peattie explains that housing in Self-Produced Neighborhoods -slums in the voice of Lisa Peattie- of Caracas were far worse physically than US-American slums such as Watts. However, she ponders a sense of freedom in Caracas' slum compared to Watts' case due to their inhabitants' perception of having access to opportunities for personal advancement. She bases her conclusions on Stokes's theory (1962), to explain that *ranchos* in Caracas "are not expressions of despair, but of hope and activity and courage (Peattie 1968a, 18)." On the contrary, "Watts is a 'slum of despair' partly because it is isolated, it does not give adequate access to opportunity (Peattie 1968a, 21–22)." Surprisingly, this conclusion, given more than 50 years ago, is still valid and demands an understanding of Self-Production as a form of development beyond the production of houses but is inevitably born from it.

That is why this thesis assumes two fundamental goals. First, to define some variables that expand the understanding of Self-Produced Neighborhoods beyond housing, including the spatial opportunities of its inhabitants to connect themselves to networked structural systems offered by the urban built environment. This also makes it possible to demonstrate how the piecemeal urbanization of Self-Produced Neighborhoods generates environments with limited access to the spatial resources offered by the city.

However, Self-Produced Neighborhoods have not occurred in isolation but rather embedded within the city's planning processes. That is why it is not difficult to hypothesize that there is a literal relationship between physical planning strategies or the absence of them in perpetuating spatial inequalities on Self-Produced Neighborhoods. That is the second goal, the analysis of the relationships between planning strategies, their ideological approaches, and the access to spatial opportunities by Self-Production as a form of urban development.

Chapter 2

Foundational Approaches

Fina's struggle

The presence of the *barrio* is overwhelming. Every time I visit Fina's house we go up to her *platabanda* (concrete roof slab), often with several of her neighbors. From there, we try to imagine a better *Petare*. Because Petare is on a hill, you can see the entire city from this roof.

It is hard to describe what I feel in a place like the roof of a *barrio*'s house. Fina's one amalgamates with those of her neighbors and those with those of other sectors of the *barrio*, generating a continuous set of bricks against bricks, *platabandas* upon *platabandas* in an almost infinite built sea.

We discussed how Petare had been built and I cannot forget Fina's laugh when I told her about informality. She is a very organized woman, so she meticulously stores many documents in a drawer at her home. She took out a folder where she had kept a series of invoices to purchase cement for the *platabanda.*

"Mira, aquí está el pago del IVA "

(Look at this, said Fina, here is the VAT - Value-added tax payment).

"Déjame ver."

(Let me see, I replied).

Fina had received entrepreneurial training at the Municipality Hall. With that simple gesture of showing the invoice, she refuted me that her house was not informal. The receipt was Bs 36,000 ($ 360) for 30 bags of cement of 42.5 Kilograms. She paid a tax for cement in the formal market of Caracas.

"Claro, esto es lo que pagué por el cemento. El transporte lo hizo mi padrino El Mocho. Le tuve que pagar bastante para que me trajera los sacos. A veces siento que es un abuso que el costo del acarreo sea lo mismo que los sacos, pero también los entiendo, el camino es difícil, hay que subir más de 200 escalones."

(This is what I paid for the cement. Of course I gave the transport freight to my godfather *El Mocho*. I had to pay him a lot to bring me the bags. Sometimes I feel that it is an abuse that the lugging costs are the same as the cement bags. But I understand, the path is difficult, they must climb around 200 steps).

> *"¿Y tienes también el recibo del transporte?"*
>
> (Do you also have the transport freight receipt? I asked her).
>
> After an awkward silence, Fina stopped the discussion. I am not sure if Fina would have felt what I felt. I had easily dismantled her argument of "being formal" because she did not pay taxes for the cement's transportation and had no receipt to show. There *is* also a quota of informality in the *barrio*.
>
> Certainly, Fina benefits from the flexibility she achieves with that slice of informality, but she also suffers from it. The high cost of transportation she must pay for her house's materials is proof.
>
> What Fina did not know and neither did I is what is the root of the problem, which by now is part of the structure of the *Barrio*. I would have liked to tell her about theories of development. I would have wanted to talk about the difference between modernizing or structuralist perspectives. I could have asked her what she thinks about these different approaches. But at that time, I did not had any ideas about this.

2.1. Why Foundational Approaches?

One of the goals of this research is to understand Self-Production as a form of urban development and its relationship with planning strategies; hence it is essential to elaborate a theoretical framework about development theories and their main ideological approaches.

In Foundational Approaches, we analyze four ideological perspectives - Modernizing, Structuralism, Revolutionary Dependency, and Reformist Dependency- that have been consistent across the research history of Self-Produced Neighborhoods. Even though there have been changes in the way Self-Production environments have emerged, these foundational approaches have been consistent across time spans. For that reason, we argue they have generated cultural behaviors that resulted in the emergence of non-physical patterns that promote spatial inequality.

We conclude that from these foundational approaches, two widespread myths have emerged that undergird planning strategies towards Self-Produced Settlements. First, *the myth of marginal people* which is the belief that underprivileged people have an involuntary condition that prevents them from developing their capabilities. This ignores the dynamics by which Self-Production environments, including physical ones, integrate those capabilities, albeit in an unequal way. Second, *the myth of informal settlements*, which originates in a misunderstanding of the dichotomy of development by which both formal and informal activities emerge simultaneously in particular geographic territories. The misconception originates from an economic perspective of Self-Production that ignores other perspectives such as social agreements and/or environmental arrangements. We argue that informality exists, but it happens across spatial territories. Therefore, we do not assert the existence of informal settlements as self-contained, isolated forms of urban development.

In Latin America, socio-economic variables present in the process of urbanization that arose without concomitant industrialization determined the emergence of self-producing settlements. In this sense, Mike Davis refers to Self-Produced Neighborhoods - slums in his voice- as "urbanization without growth" (M. Davis 2004, 9), and -years before- Jorge Hardoy as "decapitalized urbanization" (Hardoy 1972, 115). This is why an understanding of the four foundational approaches and their relationship to the two aforementioned predominant myths -the myth of marginal people and the myth of informal settlements- must consider these emergence dynamics from a socio-economic perspective. In this chapter, we highlight how -despite some

exceptions- the four foundational approaches generate a fragmented and narrow vision about Self-Produced Neighborhoods that has contributed to the perpetuation of spatial inequalities.

2.2. Defining Four Foundational Approaches

Modernizing, Structuralism, Revolutionary Dependency, and Reformist Dependency are foundational approaches that represent alternative perspectives to understand spatial inequality in Latin America. All of them seek explaining the limited possibilities of development of Latin American Countries, with particular emphasis on how these limitations produce high levels of inequality.

Instead of reviewing a contemporary look of these approaches, the objective of this chapter is to examine the pioneering foundational documents about theories of development in Latin America. These theories relie on the propositions of development and underdevelopment processes (Kay 1989). Nowadays, we can assume there is no unique form of development and all countries have strengths and weaknesses, depending on the perspective of the analysis. Even the so-called developed countries have areas to be developed, for example, greenhouse emission. For that reason, we assume all countries are in the process of development in some stage between underdevelopment and development. The four foundational approaches seek to understand how development forms may or may not flow from underdevelopment to development and vice versa.

The flow between these two analytic categories -underdevelopment and development- is the main difference between the first two categories, Modernizing and Structuralist approaches. For the first one, under- and development is a linear process; nations, urban territories, and peoples

must transition from underdevelopment to development to modernize their production processes. In contrast, the Structuralist approach proposes that underdevelopment and development are part of the same process that occurs under the umbrella of structural inequalities, so both analytical categories run in parallel.

From the latter arise both the Revolutionary and the Reformist approaches, which differ in how these inequalities must be addressed. The first poses a conflictive standpoint that aims to dismantle the economic system of inequalities; the second advocates for incremental adjustments from within it.

Can a society closer to underdevelopment reach development within a few years, decades, or centuries? For the Modernizing approach, the answer is a simple yes. This transition is only a matter of time after modern processes and behavior arrive. The modernizing perspective understands development as an evolutionary, progressive, articulated process. Like other countries of the global south, Latin American countries only have to articulate transformation strategies to move towards modern development.

Modernization assumes there is a dualism between tradition and modernity. While tradition includes a multiplicity of activities blurred in affective patterns of action such as making decisions according to family relationships, modernity proposes a highly differentiated occupational framework following human skills that results in a self-sustained process of development (Valenzuela and Valenzuela 1978). According to Modernizing perspective, this duality is deeply articulated; the traditional patterns not merely precede and differ from the modern, but inform the

diverse forms of modernity which leads to modernity and, as a consequence, to development (Lee 2013).

In the scale of development, modernization is primarily concerned with micro-social relations. Its unit of study is the individual or small communities that supposedly must be modernized to be integrated into development. This process implies standardization of social behavior and planning methods. Commonly, organizational systems at the national and institutional level are obstacles that hinder development at the micro-social level.

Therefore, the Modernizing approach focused mainly on how development processes occur for which many actions are taken from this perspective. They aim to achieve the same development level in places labeled as "underdevelopment" as in other supposedly more developed urban territories. Urban projects are used to promote modernization, where the fundamental variable is not the spatial relationship itself but the modernization of individuals (Cf. Yujnovsky 1976).

Additionally, there are other nuances and details in understanding the modernizing perspective. For example, the primary source of change is people's innovations rejecting procedures of traditional institutions (Valenzuela and Valenzuela 1978). Prior observation among development conditions in different societies may allow that this people's innovation will be articulated to skip stages and accelerate the arrival of modern society (Silvert 1966).

The second foundational approach is the Structuralist one which permeates the next two. Revolutionary and Reformist Dependency, so many of the precepts described here will coincide later with these views.

In opposition to the Modernizing perspective that understands a linear process of development in which, for instance, less developed urban environments evolve, the Structuralist approach conceives underdevelopment as part of embedded structural forces that impede its evolvement. In cities, these forces are the global socio-economic exchange dynamics. Both underdevelopment and development are two aspects of the same phenomenon; both processes are historically simultaneous, functionally intertwined, and interact and determine each other. To summarize, "development and underdevelopment can then be understood as partial but interdependent structures that make up a single system" (Sunkel and Paz 1970, 6).

The result of the simultaneity in development processes is a dualistic vision of countries at the global level. Within this approach, the world is divided into industrial or "advanced" countries with "central" economies, and underdeveloped or "backward" or "peripheral" ones. The latter are structurally subordinated to the former, and assumes there is an unequal human world development. According to the Structuralist perspective, this dualism at the global level produces other dualities at the local one because it results in the fruits of development being left in the hands that have access to the world-wide exchange processes. This explains why people living in Self-Produced Neighborhoods have limited access to development. Even though there is a similar dualistic view between Modernizing and Structuralist approaches, the big difference is that in the latter, dualism is considered disarticulated. From the Structuralist view there is no historical path for development in backward territories and the gulf between development and subsistence sectors is permanent.

Consequently, the scale of development in the Structuralist approach is primarily concerned with macro-social relations, even on a global scale. The unequal global urbanization patterns are the primary causes of underdevelopment (Hardoy 1975; 1989; Leeds 1969). In Latin America, this is explained primarily because of accelerated rural-urban migration patterns, especially those that occurred at the beginning of the twentieth century that marked the emergence of Self-Produced Neighborhoods.

The Structuralist approach focuses mainly on why development does not occur in some territories; and because unequal global patterns of urbanization are the primary causes of underdevelopment, none of the phenomena of urbanization itself, including the emergence of Self-Produced Neighborhoods, can be understood outside the context of globalization (A. Roy and AlSayyad 2004; Sassen 2000).

Moreover, the Structuralist approach assumes that individuals perform differently in each territory, not because they are different but because their contexts differ. Therefore there is no historical precedent of a learning process necessary for people to achieve development. As Cristobal Kay, "underdevelopment is in their view not a historical stage through which the presently developed countries passed" (1989, 129).

From the Structuralist perspective emerged the Dependency Theory, a dominant idea that serves as an umbrella for the following two approaches, the Revolutionary and the Reformist approaches. Dependency Theory explains how the "central" countries dominate the modes of exchange and world production while the "peripheral" countries have the role of raw material

suppliers. By this approach, this outward-looking development process of "peripheral" economies makes them dependent on the “central” countries, condemning them to underdevelopment.

Following the Dependency Theory, the Revolutionary approach affirms there are different development levels simultaneously and that this is structurally linked to globalized patterns of inequality. This approach uses a Marxist framework to analyze Dependency and argues that only a socialist revolution can overcome inequalities (Cf. Kay 1989). For the Revolutionary approach, urbanization is not a backwardness source but a symptom of structural inequalities within the world system. In this sense, nations instead of cities are relevant subjects of development analysis.

In this context, individual and small community interventions could be strategies to dismantle oppressive systems by building awareness of class struggles. Portes, Castells, and Benton explain that interventions of underprivileged communities in informal economies "may be seen from this position [the confrontation between workers and groups in power] as an instrument wielded by different participants in the class struggle, depending on the overall organization of the economy" (1989, 308).

However, they warn about the disadvantages of attending to informal activities -that, in the case of these authors, refers to activities carried out by inhabitants of Self-Produced Neighborhoods- due to the risk of mitigating the consequences of the processes of inequalities (Portes, Castells, and Benton 1989). In other words, from the Revolutionary perspective, working to integrate Self-Produced Neighborhoods at the city level runs the risk of alleviating inequalities that can discourage the necessary class struggle for the dismantling of the global capitalist system.

The Reformist approach has a similar origin to that of the Revolutionary one that derives from the Dependency Theory, i.e., development does not occur in "peripheral" territories because of unequal global patterns of urbanization. However, the Reformist approach affirms that Dependency cannot be explained only by factors external to society and by certain levels of inequality inside its economic structure (Cf. Yujnovsky 1976).

Basically, the Reformist perspective explains that it is possible to overcome socio-economic Dependency through the gradual amelioration of the capitalist system (Kay 1989). In this sense, Fernando Henrique Cardoso argues that although it is undeniable that development in the global south is uneven and with plenty of inequalities, this does not mean that development is unviable within capitalist forms of exchange (1972).

The main difference between the Revolutionary and Reformist points of view is the former assumes a conflictive stance while the latter an incrementalistic approach to address structural differences of development. This difference dwells in the origin of Dependency studies. In the pioneering book *Dependency and Development in Latin America*, Cardoso and Falletto explain that the interaction between external and internal forces influences underdevelopment processes (1979). These complex class relations happen at different scales; there are world-wide unequal relations in addition to national class relations; but also, inner-communities class relations. Even within the Self-Produced Neighborhoods, there are groups with differences in the socio-economic level such that the division of social classes is more complex than many revolutionaries assume.

In this sense, thinking about the possibility of understanding inequalities at different scales inevitably opens the possibility of reformist thinking because there are inequalities at different

scales that can be studied simultaneously. Although they are fundamental, global inequalities are not the only ones that influence development processes. Cardoso and Faletto conceive a complex relationship between [different levels of] internal and external forces that creates a plethora of interconnections dynamically interwoven (1979, xv–xvi).

Paradoxically, the origin of the Reformist approach is similar to the Revolutionary, both are centered in the systemic understanding of the processes of inequality and considering world-wide variables. But despite transiting across a similar ideological stance, the Reformist approach assumes postures closer to the Modernizing perspective because they open the possibility of a progressive transformation of inequality working from within the capitalist system.

2.3. Processes of Development in Latin America

Seeking to define Latin American inequality, two questions guided the researchers within Modernizing, Structuralism, Revolutionary, and Reformist, the four foundational approaches to development.

First, the concern about why the rapid urbanization process in Latin America has resulted in the emergence of Self-Produced Neighborhoods. Second, the question of how to define the levels of participation of the disadvantaged migrant population in cities' socio-economic dynamics. Understanding the ideas that answer these questions allows for explaining spatial inequality and establishes the narratives to define underprivileged settlements.

In Santiago (Chile), between July 6 and 18, 1959, the Bureau of Social Affairs of the United Nations, the Economic Commission for Latin America (ECLA), and UNESCO organized the very

influential seminar called *Urbanization in Latin America*, whose proceedings were reported by Phillip Hauser (1961) from the University of Chicago.

This report became highly influential because it summarized many of the ideas that these foundational approaches discussed. The seminar received the support from other relevant institutions, including the International Labor Organization, the United Nations Food and Agricultural Organization (FAO), the World Health Organization (WHO), and the Organization of American States (OAS), in addition to the participation of experts appointed by the governments of ten Latin American countries: Argentina, Chile, Colombia, Cuba, El Salvador, Guatemala, Panama, Paraguay, Uruguay, and Venezuela.

But, beyond the broad participation in this influential seminar, the opening words delivered by Pablo Pérez Zañartu, Minister of Public Works of Chile, were a clear reflection of the narrative about *Urbanization in Latin America* that was emerging among Latin American researchers:

> "the **rapid growth** of urban population has had serious human and social repercussions deriving from the need for the **mass assimilation** and adaptation of rural dwellers to the new patterns imposed by town life." (Hauser 1961, Preface) (Highlights from the author).

This speech highlights the two themes that ended up defining the Latin American discourse on urbanization. The first topic refers to the ecologies of urbanization; it is related to the conflict of the rapid growth of underprivileged population in cities that generated -and continues to generate- a persistent emergence in Self-Produced Neighborhoods. The second theme is about

socio-economic processes that have created it; it refers to the difficulties of nations in assimilating this population within the dynamics of the urban exchange.

The debate between ecological and socio-economic variables, specifically how the latter determine the former, has been constant topic of research on Self-Produced Neighborhoods in Latin America. Two concepts have always been present: marginality and informality (Saravi 1996; Kay 1989; Peattie 1987a).

Through the history of social science research in Latin America, the concepts of marginality and informality have had clear differences that we explore in this chapter. Studies on marginality focus on the passivity and on the spatial exclusion of underprivileged people, while informality focus on their active but differentiated participation level (Saravi 1996). However, the four foundational approaches -Modernizing, Structuralism, Revolutionary, and Reformist- remain constant throughout the studies on inequalities in Latin America which end up producing continuity in the definition of marginality and informality as concepts that define the socio-economic dynamics in Self-Produced Neighborhoods.

We argue that the persistence in the four foundational approaches has generated two myths – the myth of marginal people, and the myth of the informal settlements. This has contributed to a fragmentation of planning perspectives around Self-Produced Neighborhoods.

Before delving into the ideas of marginality and informality, it is appropriate to define what we understand as a myth, and what has encouraged us to use this term to explain these concepts.

A myth is a popular conception about a person or thing that exaggerates or idealizes the truth (Oxford University Press 2000b). A myth is also a narrative that explains and justifies a human or social phenomenon. The narrative embedded in myths embody some agreements to tell fragments of humanity's history in such a way as to serve the interests of a particular theory or idea (Perlman 1976). Despite involving some true thoughts, the definition of a myth also hides other thoughts to justify a specific construction of what we call "the reality." In the end, this reality is built through a set of agreements to support an ideological statement. For that reason, Josep Campbell says that the validation of a specific sociological system is one of the four functions of the myth[13] (2004).

Then, the myth contributes to shaping "the reality." In this sense, there is a close relationship between mythical beliefs and actions. We would say between ideologies and designs. Like a viper that bites its tail, myths emerge from a biased understanding of "the reality," which allow societies to ideologically formulate actions in such a way as to justify the myths that dictated them. This is the reason why the definition of myths is essential to understand first the planning rules designed to eradicate, enable, or upgrade Self-Produced Neighborhoods, and second, the mechanisms to address their accessibility conditions. Myths, rather than defining "the reality"

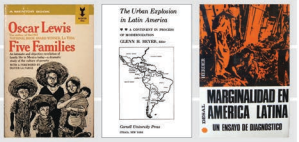
[13] Recently, Joseph Campbell established what he call "the four functions of myth (2004, 6–10):" First, to evoke in people a feeling of gratitude towards the mystery of existence. Second, to present an image of the unknown universe. Third, the sociological function we are using in this research that readers to a myth as a mechanism to validate and maintain a certain sociological system of order. Finally, to psychologically prepare people to accept their position within the established social order in front of the mystery of the universe. Although this thesis only focuses on the third function, we do not rule out future research that allows understanding other effects of myths, for example, the fourth function referring to the psychosocial dimension of myths in the context of Latin American self-production.

redefine it and encourage societies to act, projecting desires, ideals, and hopes (Peñuelas 1965; Sorel 1999).

To sum up, understanding of the myths of marginality and informality (two concepts widespread among Latin American researchers, designers, and policymakers), helps us understand the socio-economic dynamics that define the underprivileged communities of Self-Produced Neighborhoods. It also provides a framework to explore the rationale supporting different planning approaches.

To understand the persistent presence of the four foundational approaches among social scientists, designers, and policymakers, we have summarized the main focus and authors of the different theories on the recurrent terms of marginality and informality. The analysis has produced the following table:

Approach		Marginality	Informality
Modernizing	Theory	Modernization	Neoliberalism
	Authors	Beyer, DESAL, Germani	De Soto , Guisarri
	Focus	**Disintegration**	**Illegality**
Structuralism	Theory	Structuralism	Productivity
	Authors	ECLA , Prebisch, Singer	ILO PREALC,Tokman
	Focus	**Dualism**	**Workforce Unit**
Revolutionary Theory of Dependency	Theory	Revolutionary	Neo marxism
	Authors	Nun, Quijano, Dos Santos	Portes, Castells
	Focus	**Conflict**	**Unregulation**
Reformist Theory of Dependency	Theory	Reformist	Reformist Design
	Authors	Cardoso, Faletto, Pinto	Echeverri, Jauregui
	Focus	**Incrementalism**	**Social Planning**



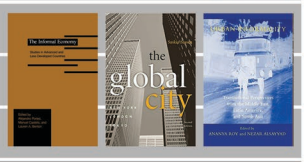












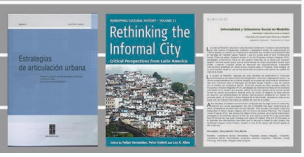


Figure 13 - Ideological Approaches on Marginality and Informality
The table includes the covers of the most influential documents for this research.

This table (Figure 13) summarizes the four foundation approaches -Modernizing, Structuralism, Revolutionary, and Reformism- the last two framed within the Dependency Theory. These foundational approaches have occurred transversely in the analysis on marginality and informality and remain to the present.

Following the structure of this Table on marginality and informality (Figure 13), the following explains in detail the history of how social scientists have understood two phenomena that can be considered equivalent: the growth of Self-Produced Neighborhoods, and the growing levels of inequality in Latin America. The aim is to demonstrate how the four foundational approaches have colluded in the building the "myth of marginal people" and "the myth of informal settlements". This collusion has had the effect of fragmenting the planning perspectives on Self-Produced Neighborhoods.

The following does not propose to be a chronological description of the research on socio-economic inequality and its repercussions on spatial inequality in Latin America, but a compilation of the essential pioneering authors on the topic, classified from the logic of the four foundational conceptual approaches -Modernizing, Structuralism, Revolutionary, and Reformist-.

2.4. On Marginality

2.4.1. Definition of Marginality

According to Gatzweiler, marginality is "an involuntary position and condition of an individual or group at the margins of social, political, economic, ecological, and biophysical systems, that prevent them from access to resources, assets, services, restraining freedom of

choice, preventing the development of capabilities, and eventually causing extreme poverty (2011, 3)."

In Latin America, researchers, planners, and policymakers embrace the concept to explain the emergence of Self-Produced neighborhoods, supposedly completely marginalized or unconnected from the broad urban built environment (DESAL 1969; Germani 1980; Quijano 1974), amidst rapid and massive post-war urbanization that produce an unprecedented population explosion and a sprawling of Self-Produced Neighborhoods.

Indeed, in Latin American, the literature mixed at least two different "marginality" assumptions. First, a socioeconomic perspective understands marginality as those disparate cultures that do not participate in socially established exchange patterns. Second, an ecological perspective classifies as marginal those geographic territories located outside but on the edge of environments standardized by urban planning, which is where Self-Produced Neighborhoods have usually been built.

The assumption of marginality from an ecological perspective has also included other categories beyond the geographical location of Self-Produced Neighborhoods, including the poor quality of the housing and the absence of services like water, electricity, sewers, and public infrastructure facilities such as schools and health care centers (Kay 1989; Rabinovitz et al. 1974). In the end, the so-called marginal neighborhoods are not only those located in the periphery but, as in the case of Caracas or Rio de Janeiro, those whose environmental and social qualities have lower standards than the rest of the city.

But marginality from both economic and ecological points of view is quite different. We could have someone labeled as marginal for not being integrated into the socio-economic dynamics of the city but who does not inhabit the ecologically identified as a marginal territory, that is the Self-Produced Neighborhood. However, the temporal coincidence between the increasing mostly rural migration to primary cities of people then labeled as marginals, and the massive appearance of Self-Produced Neighborhoods in Latin America, led incautious theorists to postulate an automatic relationship between these two events and the root cause of marginality (Portes and Walton 1976). This coincidence also served to classify Self-Produced Neighborhoods as anomalies of urban development, whose form of growth generated social maladjustments as a product of their marginal condition (Cf. Castells 1983b; Peattie 1987a; Bonilla et al. 1967)

But marginality is also understood from a third assumption, the cultural one. This assumes marginality is a cultural -even a psychological condition- or an incapacity of underprivileged people (such as the recent migrants to cities and self-producers of their homes) to belong to the dominant way of life in cities. Not in vain, the first use of the term marginality occurred in the Chicago School of Sociology (Kay 1989) when Robert Park used it to describe the psychological disorientation experienced by individuals situated between two US cultures, predominantly Anglo-Saxon, versus other ethnic cultures (1928, 881–93).

In the end, the mixing of all these layers of understanding -the socio-economic, the ecological, and the cultural- determined the concept of marginality. This is an idea that has been used to describe the social conditions experienced by Self-Produced Neighborhoods, often called shanty-town, slums, or squatter dwellings, labeled as marginals because of their poor working

conditions and low or miserable living standards (Hoffmann et al. 1969). Within this framework, the physical layout of Self-Produced Neighborhoods is considered chaotic, disorganized, and oblivious to all developmental benefits (Hauser 1961; Mangin 1967; Leeds 1969).

2.4.2. Modernizing Approach on Marginality

Despite not using the term marginality literally, we can consider Oscar Lewis as the pioneer author in the modernizing view on the subject. In 1959, Oscar Lewis wrote *Five families: Mexican case studies in the culture of poverty,* one of the truly seminal works of modern cultural anthropology (Gilbert 2012). The book regards cities in Latin America as carriers of a chronic disease that included tertiarization and ruralization, generating a series of poverty subcultures (Lewis 1975).

Under the paradigm of a *Culture of Poverty*, Lewis studies a series of tenants in Mexico City to explain how communities living in conditions of poverty ended-up developing cultural imprintings that are transferred from generation to generation producing cultural patterns that made them unable to take advantage of opportunities offered by cities and society in general (1959; 1966).

Oscar Lewis's perspective has been widely criticized, mainly because it brought many social researchers who considered it a myth that stigmatized underprivileged communities by generalizing ideas from the abstraction of a few cases (Leacock and Leacock 1971; Portes and Walton 1976). However, the influence of the Modernizing gaze is undeniable, supported the

existence of a traditional premodern character of certain social groups that are incapable of actively participating in the dynamics of modern socio-economic exchange.

This approach had its most influential pioneering approach at the beginning of the 1960s with the organization *Desarrollo Social para América Latina* (DESAL) founded in Santiago de Chile and headed by the Jesuit priest Roger Vekemans. DESAL Schools define as marginal those people or groups that are located in the lowest sector of the socio-economic scale or even outside it because they are no integrated into society (Vekemans and Silva Fuenzalida 1969).

Within this Modernizing approach, marginality occurs because of the lack of participation of individuals and groups in those spheres they might be expected to participate in. Still, this participation is understood as a multidimensional phenomenon, including economic, cultural, social, and political processes (Germani 1980, 49).

In this approach, marginality is understood as the failure of migrants to incorporate themselves into modern city life. Marginal people "are not found in the countryside, which expels them, nor in the city, which does not receive them: they are nobody, they are only there; they populate a piece of land which is no-man's land" (Vekemans and Silva Fuenzalida 1969, 44).

In summary, the DESAL school divides society mainly into two groups, the integrated ones that constitute modern groups, and those that are legally members of a nation but do not participate in its affairs. (DESAL, 1969: 242). The latter are especially those people inhabiting Self-Produced Neighborhoods. In general, the social scientist within the Modernizing approach does not consider the underprivileged people's ability to insert themselves into the dynamics of the city progressively as we described in Chapter 1.

Consequently, in the 1960s and 1970s, defenders of the Modernizing approach could only see *ranchos* - or their equivalent depending on the country - settled in territories devoid of services (Cf. (Sanabria 1967) . Hence, the Self-Produced Neighborhood could not be considered as a form of development; Oscar Yujnovsky explains that in Modernizing approach, urbanization disappears as a consequence of marginality (1976); even the service sector in the economy disappears as a social and economic indicator (Beyer 1967; Mangin 1967). From this view, the premodern condition was considered to be embedded in individual mindsets of marginal people; the emergent Self-Produced Neighborhoods was nothing but a consequence of its inhabitants' inability to insert themselves into the modern way of life.

In this context, the urban project would become a tool to facilitate the transition between a traditional and a modern society, either through urban regeneration projects (Violich and Jones 1949) or by relocating homes in new housing developments (Mangin 1967). Under this doctrine, marginalized people would supersede their marginalized condition and engage with modern society through the reconversion of the urban built environment.

The conventional notion of marginality served as an idea for a tradition of lag theories (Peattie 1987a), showing the lack of understanding that inhabitants of Self-Produced Neighborhood were not only a by-product of the modernizing process but a fundamental process for its development, especially both from their contribution as a workforce and from their contribution to the construction of a new emergent urban culture (See Chapter 1).

2.4.3. Structuralist Perspective on Marginality

The Structuralist approach also contributed to the development of the idea of marginality, but from a diametrically opposite perspective to the Modernizing one. Structuralism explains the spatial and organizational inequalities that make it inevitable that underprivileged people configure a marginal population.

The Structuralist perspective on marginality is born from the Structuralist School of Development initially conceived by members of the Economic Commission for Latin America and the Caribbean (ECLAC), an agency based in Santiago (Chile) created by the United Nations in 1948. Just two years after its founding, ECLAC published a structuralist manifesto called *The Economic Development of Latin America and its Principal Problems* (Prebisch 1949). This document founded a doctrine that has permeated all Latin America's theories of development through our days. This was a key document to understand that social and economic inequalities existing in Latin American countries have been the leading cause of spatial inequalities.

Based on the notion that the development and underdevelopment processes run in parallel, ECLAC built the dualistic theory of the relationship between center and periphery. According to this view, world-wide central economies dominate the productive systems due to their higher level of industrialization, while peripheral countries, including Latin America, receive the role of raw materials suppliers. This will become a structural dynamic that ends up perpetuating unequal relations between the center and the periphery. And these socio-economic differences would be decisive for the construction of a dual society where the emergence of Self-Produced Neighborhoods would become inevitable (Sánchez 1974; Peattie 1968b).

Economically, the Structural perspective explains how historically, Latin America assumed the role of suppliers of raw materials to the global exchange system (Leeds 1969). From its inception, ECLAC defines an "outwardly directed development," which was the fundamental basis of why the Latin American countries inclined their closest balance towards underdevelopment (Wythe and Prebisch 1951). This was the basis for ECLAC to prescribe the widely studied import-substitution industrialization (FitzGerald 2000; Kay 1989) as an inward-oriented development model.

Within the framework of the Structuralist School of Development, Prebisch explains that the price of raw materials exported from peripheral countries increases at a lower rate than manufactured goods produced by major economies, which generates a deterioration cycle that hinders the economic development possibilities of the first groups of nations (Prebisch 1959; 1984). This cycle generates an unequal distribution of the gains of development between borrowing (peripheral economies) and investing (central economies) countries (H. W. Singer 2012), with the former disadvantaged compared to the latter.

This idea of the cycle of deterioration shows what we consider an undeniable relationship between structural socio-economic inequalities and the emergence of Self-Produced Neighborhoods. That is why we have chosen to elaborate an interpretation of this phenomenon.

Despite greatly simplified, Figure 14 allows us to understand this structural deterioration cycle and its connection with development imbalances of Latin American countries and the emergence of spatial inequality.

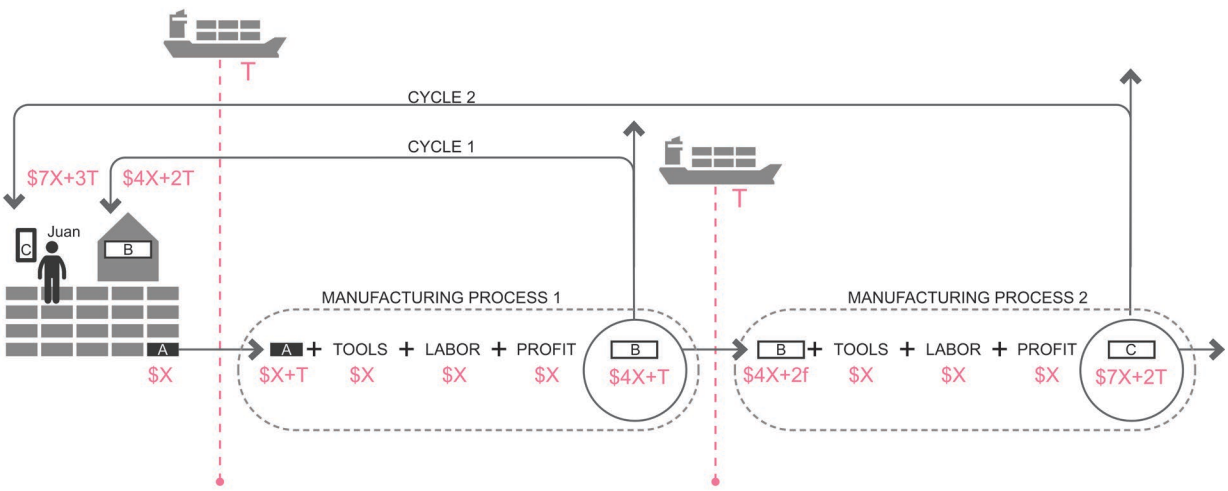


Figure 14 - Deterioration Cycle of Structural Inequalities

The diagram presents the owner of a property land that produces "A." This owner can be an entrepreneur or even the State. For this diagram, we have given the owner the name Juan. In Latin America, as we had previously explained, Product A is usually raw materials.

To expand its production, Juan sells Product A to any agency able to transform it into a finished product. We have assumed a cost of $X for Product A. Product A is carried as a raw material to a MANUFACTURING PROCESS 1, to its price must be added the freight transportation cost (T). The idea is to transform raw-Product A into finished-Product B. This fabrication process must include the cost of tools and labor; it also includes profit. To simplify the diagram, we assume all these costs with a value of $ X; then, the price of Product B ended-up being $4X + T, which is four times X for raw-Product A, tools, labor, and profit, in addition to transportation costs.

CYCLE 1 ends when Product B goes back to Juan's country, adding an additional transportation cost (T) and is sold to Juan at $4X + 2T.

The absence of sufficient technology, know-how, and skilled labor makes Juan incapable of transforming raw materials (Product A) into finished products (Product B). For this reason, Juan is forced to buy finished products from other producers, usually located in more industrialized countries. In this context, the added value to Product B is a much higher proportion of the original value of the raw Product A. After all, as Juan does not have the resources to create the industrialized product he needs, he is expected to pay for this added value. Consequently, the cost of finished materials ends up being higher than raw materials, so the entrepreneurial growth capacity of the owner is hugely restricted[14].

We can continue with the deterioration cycle, because the finished-Product B could be manufactured to produce new materials to make more elaborated products (Product C in Figure 14). These products are also transported and consumed by Juan, our Latin American owner. These finished products will be more and more elaborated and, obviously, more expensive, while the owner continues receiving the relatively stable income of the raw material. This cycle becomes structural, making the progressive deterioration of the development capacities of Latin American nations inevitable.

In an economy that relies on raw materials as described, we see two ways that the model will work for Juan. First, when the quantity of raw products Juan generates and sends to the industrialized country for processing is a much higher proportion of the number of industrialized

[14] Although oversimplified, this diagram helps us to demonstrate the deterioration cycle of development in Latin American countries. But the socioeconomic dynamic is even more complex if we add the subjective value usually included on finished products. So, the cost of Product B is elastic, and could be even higher, while the cost of raw material (Product A in Figure 14) commonly remains stable.

products that Juan needs in return, which could have an undesired consequence on environmental degradation by overexploitation of natural resources; that is an important topic we left aside for future investigations. Second, when Juan reduces costs for the extraction of raw material (Product A in Figure 14), which could generate a decrease of investment in labor that we explain further in the following lines.

2.4.4. Dependency Theory

But, as we said before, the Structuralist approach will derive different perspectives depending on how to act before the processes of structural inequality. They are the Revolutionary and Reformist approaches both framed in the Dependency Theory, being dependent on the central economies, Latin American countries would inevitably enter the deterioration cycle explained above.

In this context, both Revolutionary and Reformist thinkers used the term marginalization regarding the failure of import substitution industrialization to assimilate the growth of the labor force after migration of underprivileged people to primary cities (Sunkel 1973; Castells 1974).

Indeed, import-substituting industrialization had proved incapable of diffusing its benefits to other economic sectors due to the concentration of technical progress and its fruits in few hands. Basically, a process in which Latin American development inevitably depends on the deterioration cycle explained above, the access to fruits of technology determines possibilities for growth. Thus, internal inequalities intensify, generating a sector that captures the benefits of dependent exchange,

which will have more benefits than underprivileged sectors. In this context, the dependency perspective sees as inevitable a dual society that promotes marginality.

And this deterioration cycle occurs in a precise scenario: the cities. During the first half of the twentieth century, Latin American cities experienced rapid and tremendous growth. Cities became the main attractors of many types of opportunities, including access to jobs and opportunities for access to education, health, recreation, and so on. The deterioration cycle comes irremediably with an hyper tertiarization[15] of the economy, whose jobs usually occur in cities (Cardoso 1968, 91; Castells 1976, 71; Cordova 1973, 88). While the manufacturing sector implies a considerable degree of economic diversification, the primary sector is the opposite; it involves a large mono-productive sector commonly left in very few hands and often under the State's control. In the end, there is only a handful of Latin American producers (Juan in Figure 14). However, around primary activity, a series of tertiary administration and service activities begin to occur that do not participate directly in primary production, but depend on the economy that it generates.

To sum up, the significant concentration of economic development in the primary sector, which is in the production of raw materials, has implied an overburdened tertiary sector (Cardoso 1968, 91; Castells 1976, 71; Cordova 1973, 88) dedicated to its administration or support. Historically, these activities tended to be concentrated in cities.

[15] The idea of a tertiarization refers to the widely used three-sector models in economy (Clark 1940; Fisher 1935; Fourastié 1949) that classifies the economies in primary, secondary and tertiary. The model explains that the production of raw materials constitutes the primary sector of the economy, the manufacturing processes the second one, while the tertiary sector of the economy consists of the production of services rather than final goods products. These services include all administrative activities needed to operate primary and secondary economies as well as transportation and distribution, services such as media, tourism, insurance, banking, as well as professional services such as health care, legal advice and design.

For example, between 1925 and 1960, most of the Venezuelan occupational structure moved from working in the primary agricultural sector to the urban tertiary sector of the economy. The agricultural sector was reduced by 31% (63% in 1925, 42% in 1950, and 32% in 1960). What is remarkable is that this migration only happened by 2% to the manufacturing sector (10% in 1925, 10% in 1950, and 12% in 1960) but 29% to the non-manufacturing sector (27% in 1925, 48% in 1950, and 56% in 1960)[16] (Cardoso 1968, 80).

To a lesser degree, a similar process occurred in other Latin American countries between 1925 and 1960. The increase in the non-manufacturing sector was recurrent (Argentina by 9%, Brazil by 15%, Chile by 16%, Colombia by 18%, Mexico by 11%. %, and Peru by 10%), while agricultural activities were reduced, and the manufacturing sector grew at minimum levels throughout the region (Cardoso 1968, 79–82). In less than 35 years, Latin America went from a predominantly agricultural occupational structure to one dominated by the tertiary sector of the economy.

In addition to the hyper tertiarization of the economy, another phenomenon occurs because of the deterioration cycle: underemployment. Among other factors, it comes from the progressive cost reduction necessary to produce Product A (Figure 14), to remain competitive in the international structurally unequal market. This cost reduction often affects the most flexible cost: salary, due to the impossibility of reducing costs in other factors such as tools or other

[16] Original data were taken by Cardoso (1968) from the Latin American Symposium on Industrialization, organized by ECLAC in Santiago (Chile) in 1966.

technological means. It is there when phenomena such as unemployment or underemployment occur (Hauser 1961; Leeds 1969; Mangin 1970).

As we have said before, the main consequence of this deterioration cycle has been the tendency to a dual socio-economic society, where one group will have access to the fruits of development, while the other ended up navigating within a survival economy working in both informal and underemployed activities. This is, finally, the most direct and evident consequence of structural inequalities whose immediate outcome has been the emergence of Self-Produced Neighborhoods.

2.4.5. Revolutionary Approach on Marginality

Within the revolutionary approach of Dependency, Latin American writers' vein has strongly tied the concept of marginality closely to uneven development ideas. Jorge Nun framed the discussion within a Marxist perspective to explain the inability of Latin American development to absorb labour (Kay 1989). He coined a new concept of "marginal mass" to refer to that part of the relative surplus population that is afunctional or dysfunctional for the productive sector (Nun 1969, 201).

Similarly, Jose Quijano explains that economic inequality intensifies with the emergence of a marginal pole that shows the contradictions of the economic system (1977, 124; 1974, 422). He further divides the economic systems into three categories: monopolistic, competitive, and marginal. The first group holds modes of production due to their connections with world economic

systems, leaving a minimal possibility for the last group to develop. In this context, the two poles -the monopolistic and the marginal- are getting bigger and bigger, increasing inequalities.

In this sense, theorists within the Revolutionary approach believe dependent capitalist systems, "reproduces backwardness, poverty, and marginality generating more dependence and people's over-exploitation" (Dos Santos 1973, 67). Consequently, it is assumed to be impossible to address inequalities within the current socio-economic system because inevitably reproduces and reinforces this marginal mass's proliferation. In this context, even an attempt to improve Self-Produced Neighborhoods seems to reinforce structural inequalities, so the only solution is a conflictive solution that can dismantle the system.

From our perspective, Quijano's proposal to classify economies in three sectors -monopolistic, competitive, and marginal- opens a possibility to reduce inequality, which is the thickening of the middle one -the competitive one-, by increasing capacities among the so-called marginal sectors to join it. But this perspective implies working incrementally within the predominant capitalist system, which approximates the reformist logic described later.

2.4.6. Reformist Dependency on Marginality

The Reformist approach to dependency theory criticizes the conflicting view of the revolutionary approach arguing that it is based on an inadequate and oversimplified class analysis. In the case of Latin America, Fernando Henrique Cardoso explains that the national bourgeoisie continues to play an active role in political domination and social control of the subjected classes (1977, 59), which allows him to explain that, as we had stated regarding the Reformist approach,

the power relations that generate inequalities occur at different scales, at transnational, national, and local social levels.

Thus, with this complexity of social relationships, the myriad activities carried out by the marginal sector, many of which are located within the service sector of the main cities, tend to be linked to and benefit from the formal capitalist economic system (P. Singer 1973). This means that, despite the existing structural inequalities, Reformists cast doubts on the view of a marginal, unrelated, and exploited group that does not participate in exchange systems.

Consequently, even though the Reformist approach understands the proposed inequalities in the framework of the Structuralist one, its theorists suggest abandoning the hypothesis that marginal groups emerge from the contradictions between accumulation and misery (Cardoso 1972, 198). They open a room to imagine that marginal groups increase their active participation through a progressive improvement of their living standards, such as access to education (Mattelart 1965, 14). Consequently, this approach understands taht the capitalist system itself can be a vehicle for overcoming inequalities.

2.4.7. The myth of Marginal People

In the mid of the 1960s, the concept of marginality misunderstood people living in Self-Produced Neighborhoods as passive disarticulated exchange processes (Stavenhagen 1974; Mattelart 1965). This perspective was progressively dismantled when it was realized that disadvantaged groups had evident participation in the productive processes. But, Janice Perlman (2004a; 1976) certainly has had the most vital voice to argue this criticism when explained that

there was little sign of marginality, irrationality, or a culture of poverty in Latin American Development (Gilbert 2012).

In her book, *The Myth of Marginality*, Perlman argues that the term marginality is both ambiguous and ideological because it is unclear who was included in the term (1976). She asks if that means that the "marginal" all lived in physically peripheral places, or were they were marginal because they did not adapt to the city's culture; and if "marginals" are politically apathetic and/or do not contribute to the economy. Through the analysis of many favelas in Rio de Janeiro, Perlman determined that none of these stereotypes seemed to fit residents of Self-Produced Neighborhoods who are "tightly integrated into society, albeit in an extremely perverse and asymmetrical manner" (Perlman 2004b, 89). Even though Perlman's critique on marginality refers mainly to the Modernizing approach developed by the DESAL-type theories of marginality, we can argue that the same critique could be applied to all foundational approaches which oversimplify the status of underprivileged people under the concept of marginality.

Building on top of critiques elaborated by Janice Perlman, we argue that, even though we can affirm a certain level of marginality in the way Self-Produced Settlements has been incorporated into the socio-economic dynamics of the city, we cannot say that this marginality belongs to the people but to the systems of connections that unevenly integrates them. That is, marginality has been more socio-ecological than socio-economic or cultural.

We can undoubtedly affirm that there is marginality in the ecological understanding of Self-Produced Neighborhoods because they have been actually built in the edge of cities or where there is reduced access to opportunities that allow people to develop their capabilities. Following

Teresa Caldeira´s concept of peripheral urbanization, we assume that this socio-ecological marginality does not refer only to a spatial location on the edge of existing cities, buy instead to a way the space is unequally served that can be anywhere (Caldeira 2017). We can also assume that there is rise of marginality in socioeconomics processes because of a certain level of des-integration in underprivileged communities to production modes. We will see that this is the core of the emergence of the notion of informality. But what we cannot affirm at all is the existence of a marginal people.

Nowadays, when we travel across Caracas, and indeed across Lima, Bogotá, Ciudad de Mexico, or Sao Paulo, we see people moving around, and it is impossible to know their places of residence. Even when they live in Self-Produced Neighborhoods, they are culturally fully integrated into the city's dynamics, including the city's socio-economic dynamics; they work in the offices, shop at bakeries, enjoyed the cinemas as any other citizen. We argue that the notion of "marginal people" is a myth.

2.5. On Informality

2.5.1. Definitions on Informality

In 1971 (published in 1973), Keith Hart first made a distinction between formal and informal sectors, based on the recognition of employment types such as wage-earning or self-employment. Here, informality emerges as an idea to explain the chronic imbalance between income from wage employment and the unsatisfied aspiration of migrants to improve their living standards through regulatory frameworks (Hart 1973).

The concept was ideal for explaining the active albeit differentiated participation of underprivileged people in the urban economic exchange. Informality explains how self-employment that happens outside the regulatory framework becomes a buffer against unemployment.

Similarly, the 1972 report of the International Labor Organization (ILO) analyzed emergent underground activities such as street hawking, shoeshine boys, and other underemployed groups in the streets of big towns. ILO provided a dualistic division of the economy in formal versus informal sectors, demanding massive governmental support to the latter (International Labour Office 1972). This perspective has been maintained in almost all studies on the subject since that date. For the ILO Report, income inequality had become a barrier to, rather than a necessity for, growth (Peattie 1987a, 854).

In this sense, the term informality arises from an eminently economic sphere through the study of production modes. However, as Lisa Redfield Peattie already anticipated in her text *An idea in good currency and how it grew: The informal sector*, the concept of informality has become an ambiguous term, whose definition has amorphous and imprecise limits (1987a, 444).

We could generalize that informal activities are those happening outside the existing regulatory framework. But the concept has been used to define ideas from various disciplinary realms, including the emergence of informal settlements, what in this work we have called Self-Produced Neighborhoods (M. Davis 2007; D. C. Gouverneur 2014; Huchzermeyer and Karam 2006). These include the social practices that are not necessarily illegal but are outside regulatory frameworks such as informal agreements between co-workers (Nee 1998; Pejovich 1999), the

informal democracy that establishes that unwritten agreements coexist with formal democratic institutions (Helmke and Levitsky 2006; Herz and Hoffmann 2019), and the non-regulated informal sector of the economy (Portes, Castells, and Benton 1989; D. Davis 2012; Sassen 1994; Garcia-Bolivar 2006). Moreover, the combination of one or more of these perspectives allows for the emergence of a cultural perspective that considers informality as subaltern actions that run parallel to the formally established (Bayat 2007; Chickering and Salahdine 1991; A. Roy 2011).

Particularly in Latin America, the concept of informality has dominated housing policies arguing that "the informal sector" can solve the low-cost housing problem more cheaply and effectively than the government can (Turner and Fichter 1972). Within this doctrine, in the 1960s emerged an emancipatory movement advocating for squatters' rights, freedom to build, self-help values, and dweller control of the housing process (Peattie 1987a).

All perspective on informality coincides in its dualistic perception of urban processes of exchange and production, which are divided into formal or informal ones; a duality that we also recognized before in the concept of marginality that divided the urban dynamics between tradition versus modern (in the Modernizing approach) and center versus periphery (in the Structuralist, Revolutionary, and Reformist approaches). However, informality is considered as a phenomenon that is not disarticulated, as in the concept of marginality, but rather interdependent (Portes, Castells, and Benton 1989; Portes 1989; Lomnitz 1977); i.e., formal and informal processes are intensely dependent on each other, they are part of the same process.

However, many times the different views on informality described above do not intersect with each other. We repeatedly see disciplinary disarticulations -especially between the socio-

economic and planning strategies- in the understanding of informality. For example, in the book Urban Informality (A. Roy and AlSayyad 2004), Alan Gilbert claims that the use of informality does not always bring what he considers the more significant problems: the contribution that [informal] self-help housing has made to improving housing in Latin America (2004, 41). In these same book, Ananya Roy claims that "many of the policy discussions are dominated by architects or architectural considerations which view informal housing solely as a type of the built form" (2004, 1).

We argue that the fuzziness in using the concept of informality has produced a gap between socio-economic theories and planning practices. On the one hand, informality means the economic sector that operates outside regulatory frameworks, which occurs in different urban territories, inside and outside Self-Produced Neighborhoods, i.e., those in subsistence economy (Angotti 1987). On the other hand, informality is commonly used to name Self-Produced Neighborhoods, regardless of non-economic relationships operating there. That has been one of the significant differences in the use of the terms marginality and informality. In general, social scientists and policymakers agreed to use the first term to name the same processes that produced Self-Produced Urbanization. In contrast, the use of the concept of informality varies depending on the disciplinary field.

But, as explained by the Mexican anthropologist Gonzalo Saraví, many ideas continue between the concept of marginality and that of informality (1996). This continuity is revealed in the permanence of the four foundational approaches -Modernizing, Structuralist, Revolutionary, and Reformist- as a way of defining the concept of informality.

2.5.2. Modernizing Approach on Informality

The Modernizing approach on informality has its most explicit representatives in the voices of Hernando de Soto in Peru and Adrian Guisarri in Argentina (Saravi 1996). From an economic perspective, both demand excessive state legal regulation that promotes informality processes (Soto 2002; Guisarri 1989).

This legalist approach to modernizing societies significantly impacted several microlevel professional interventions by nongovernmental interventions, international donor agencies, and private entrepreneurs (Rakowski 1994). In Venezuela, for example, one of the most important jacks promoted by the Venezuelan political opposition has been to grant property titles to the inhabitants of Self-Produced Neighborhoods (Aveledo 2016). Their goal was often poverty alleviation through the encouragement of small enterprises or housing projects, and practitioners of such work had little interest in structural theories about inequalities.

According to De Soto, the informal sector is a euphemism to define the illegal sector (Soto 2002, 3). So that overcoming underdevelopment only results in breaking the *telaraña legal* (legal cobweb) that prevents citizens from developing their capacities (Vargas Llosa 1987). Within this framework, the urban poor is pioneers fighting against the damp hand of the mercantilist State (Soto 2002), and just by giving the poor property titles and reducing bureaucratic obstacles will accelerate the pace of economic development, resulting in the fall of poverty.

Hernando De Soto proposes an optimistic and simple message focused on designing a legal system to reduce the interference from State bureaucracy in the poor's economic activities;

supposedly, this manuever is enough to help underprivileged people escape from backwardness and advance towards a modern society. Soto's thesis dwells in the idea that in Latin America people depend on informal economies because of the restrictiveness of the formal system. The poor migrate to the cities and fail to find entry into formal sources of employment because of bureaucratic barriers to legal property ownership and the lack of legal structures that recognize and encourage ownership of assets.

The possibility of modernizing society and overcoming poverty through an exclusively legalistic strategy has many criticisms. We can mention that the simple titling of land does not generate economic development and that this approach ignores the complex meaning of spatial relations.

First of all, several empirical investigations have found little evidence to support the claim that newly titled households can use their property as collateral for loans, so the simple regularization of land is not enough to allow the integration of underprivileged communities into development modes (Bateman et al. 2010; Durand-Lasserve and Selod 2009). This happens because there are other variables that determine access loans beyond secure tenures such as evaluating the qualification of the territory where the home is located. For instance, loan-providing institutions will be more inclined to lend to home owners in planned developments than in Self-Produced Neighborhoods.

The second criticism of De Soto's legalistic stance derives from the first one. This is the perspective that spatial relationships in development processes can be ignored by assuming that individual regulations are a panacea for development.

Providing land tenure may have a social restorative effect in recognizing the progressive effort of the resident of the Self-Production in the construction and establishment of his home. This implies an important symbolic effect which is not enough to integrate communities as it does not consider the weakest link in the Self-Produced Neighborhoods: the lack of infrastructure networks and of the access to public services that the city supposedly offers. What gives a home value is the unit itself as such and the quality of its location in terms of its access to social and infrastructural services.

2.5.3. Structuralist Approach on Informality

While De Soto's perspective has an eminently legalistic approach, the Structuralist approach is primarily related to economic exchange. This approach to informality was based on the understanding of modes of production as the structural unit that explains inequality (Klein and Tokman 1988, 516).

This perspective was mainly developed by the International Labour Organization in Geneva (Switzerland) and the Regional Employment Programme for Latin America and the Caribbean (PREALC) in Santiago (Chile). Its highest representative was the Argentine economist Victor Tokman, who began to research about informality in 1973 shortly after the concept was created.

Through a series of reports sponsored by the United Nations, PREALC explains that the primary characteristic of the informal enterprise is the low threshold of difficulty for entering the

economic activity of the market, determined by the low capital requirement and technical capacity necessary to execute specific tasks, for example, peddlers (1981; 1995).

But, after recognizing the increasing growth of the informal sector of the economy, Victor Tokman analyzes modes of production to conclude there are four main factors that promote the development of the informal sector: ease of entry point, minimum capital/labor division, low capital investment, and low productivity (1978; 1995).

These four points define two fundamental characteristics of informality, the effect of the first one considered positive and the second negative. On the one hand, the easiness of entry into the economic exchange and the minimal capital/labor division allows people to assimilate themselves into the socio-economic dynamics of the exchange creatively. On the other hand, Tokman characterizes informality as a sector in which low capital investment generates low productivity and vice versa (1978).

However, we can summarize two critics that have emerged from the understanding of modes of production as the main unit to define urban inequality: the oversimplification of informal categories and the lack of consideration of spatial relations in the analysis of modes of production.

First of all, as Portes and Walton pointed out, PREALC reports ignore the differences between distinct kinds of employment within the informal sector (1984, 10:98). Often, informal economy workers do not represent a homogeneous group, so the oversimplification of production modes as the main conceptual unit can ignore power relations within informal activities.

Additionally, the classification of jobs as formal and informal is not always clear. There are different gradients to define the conditions of formality or informality of an occupation, including nominally formal and informal jobs, and unreported, unrecorded, or even illegal jobs (Feige 1990). For example, there could be a job that is not formally reported one month but can be declared in the next one, making it difficult to consider employment as binary categories of formal or informal. Moreover, precisely because we are studying survivalist modes of production, we must understand that a worker may have a formal job during the day and an informal one during the afternoon or evening.

Second, is the lack of consideration of spatial relations in the analysis of modes of production. Even though the informal economy results from a process structurally linked to urbanization processes, the city is its main spatial scenario. The interconnection between the modes of production generated by the informal economy and the physical patterns such as streets and neighborhoods is ambiguous. For example, although merchants in the informal economy occupy specific spaces in the city, we cannot assume that all people who inhabit this space belong to the informal economy.

Moreover, informality occurs undoubtedly within specific modes of productions, they do not necessarily occupy isolated territories. Modes of production tend to move from one environment to another; a product can be assembled in one place and sold by a peddler in another one. In this sense, the concept of informality is useful to understand economic dynamics but confusing to define spaces in the urban environment.

2.5.4. Revolutionary Approach on Informality

In the literature on informality, we see the disciplinary disarticulation described above. While the Modernizing approach assumes a legalistic perspective, and the Structuralism assumes the study of production modes, the Revolutionary approach mainly assumes the political battle against inequalities.

As we have said before, the revolutionary gaze is derived from the understanding of structural inequalities in the global economy. Those sectors located in the periphery of the world-wide economy have less capacity to access the fruits of development than those close to transnational modes of production. The transition towards informality gives even greater weight to global forces. This perspective explains that the globalization process is an update of the theories of dependence on national sovereignties that generate new forms of international subordination (Cortes 2012).

The concepts of globalization highly influenced this perspective, especially wielded by Saskia Sassen, who explains the geography and composition of the global economy that produces a complex duality: a spatially dispersed manufacturing yet globally integrated organization of economic activities (1991).

In this framework, globalization is considered the primary cause of inequalities, mainly for the following reasons. First, the uneven distribution of income is reflected in the high remuneration of workers connected to the main centers of globalization compared to the rest of the population. Second, the proliferation of low-wage jobs required to supply the amenities and lifestyles that large

urban global centers offer. Finally, the downgrading of the manufacturing sector, a process in which the proportion of unionized shops declines and wages deteriorate while sweatshops and industrial homework proliferate.

As the economic relations that lead to the emergence of the informal economy as a mode of production respond to transnational dynamics, the city ceases to be an effective scale of intervention to reduce inequalities. In this framework, Self-Produced Neighborhoods are no more than a consequence of globalized inequalities. Urban informality is considered a "new way of life" that emerges from survival modes of production resulting from structural imbalances. And, because its dynamic emerges from globalized economics processes, scholars consider it "absurd to continue to believe that spatial ecology produces social processes, because [they] now understand the importance of the capitalist economy in defining and sustaining urban conditions (A. Roy and AlSayyad 2004, 26).

Moreover, it seems the natural consequence of an approach that focuses on external relations as the sole cause of the processes of inequalities is the perspective of conflict. Only a revolution could manage to dismantle the system that structurally generates inequalities. However, we see that the scale of individuals and small communities is not completely neglected.

The Revolutionary approach understands informality as a tool wielded by different participants in the class struggle (Portes, Castells, and Benton 1989, 308). Hence, the Self-Produced Neighborhoods inhabitant may be an instrument for forming an awareness against inequalities and even against the oppressive dynamics imposed by global economies.

In this context, it is not inappropriate to consider individual attention to small communities in alliance with self-help strategies to promote community empowerment within the framework of class struggle. So, the Revolutionary approach on informality focuses on two diametrically opposed scales: the political battle for economic inequalities on the global scale, and the individual scale related to the awareness about those battles.

But this revolutionary logic brings with it a weakness we must point out. Dismantling the existing system of inequalities brings uncertainty about the benefits of the system to come. Already in 1989, Cristobal Kay states this warning in *Latin American Theories of Development and Underdevelopment*, where he explains that the constraints and costs of a revolution have to be considered carefully (Kay 1989, 208–10). He explains that revolutions create new problems such as inefficiency in resource allocation (Kay 1989, 209). In our case, we come from a country -Venezuela- where the dismantling of the system ended up deepening inequalities, leading the country to an unprecedented and prolonged political, social and economic crisis.

In this sense, Even though we also advocate a fight against inequalities on a global scale as well as the promotion of people empowerment, we also defend the idea that the meso-level -that of the connections between the individual and exchange systems on the urban scale- can also be a way to overcome inequalities.

2.5.5. Reformist Approach on Informality

But, as mentioned before, the Reformist approach is similar to the Revolutionary one in understanding the structural differences in the system that generates inequalities, but it resembles

the Modernizing perspective in seeking alternatives to reduce inequalities within the capitalist system.

Our research found little theoretical pieces of evidence for exploring the Reformist approach on informality, but a proliferation in the physical planning strategies that follow it. The two most emblematic planning projects seeking to reduce inequalities in Latin America, both addressing Self-Produced Urbanization, demonstrate an awareness of structural inequalities while providing incremental strategies for overcoming them. We refer to the cases of the Projeto *Favela-Bairro* (PFB, the Slum-Neighborhood Project) in Rio de Janeiro, Brazil, and the P*lanes Urbanos Integrales* (PUI, Integral Urban Plans) in Medellín, Colombia. Both projects won of the Veronica Rudge Green Prize in Urban Design of Harvard Graduate School of Design in 2000 and 2013.

For instance, Jorge Mario Jauregui, the most emblematic architect of the *Favela -Bairro Project* and (Machado and Harvard University Graduate School 2003), define Latin American inequality as the product of dependence on the hegemonic countries in terms of capital management and technological development (Jauregui 2009). Alejandro Echeverri, the architect leader of Medellín transformation, recently stated that after the great efforts and changes achieved, the structural problems of inequalities are still there (2020). Both processes are aware of structural inequalities but continue to search for alternatives to progressively overcome them, this time using the resources of the discipline of planning.

2.5.6. The myth of Informal City

We have seen that perspectives on informality brought recognition of underprivileged people as active participants and integrated members of urban societies. However, the diffuse nature of their definitions results in establishing a disarticulation in their approach to Self-Produced Neighborhoods.

As we have seen, the most prominent representatives of the Modernizing approach tends to assume a legalistic perspective; the Structuralist one a socio-productive logic; Revolutionaries takes the political battle against global inequalities; while physical planning has taken Reformist strategies. And it is not easy to find points of connection between those approaches. We even see contradictions such as the lack of considerations of physical planning variables in the legalistic view of granting secure land titles to people living in Self-Produced Neighborhoods.

However, all foundational approaches coincide in understanding informality from a dichotomic perspective that divides categories between those formally regulated and those happening informally. Among these categories, the distinction between formal or informal settlements is well understood and widely used by urban planning and architectural design disciplines.

However, the understanding of informality as a process that occurs transversally in different territories brings doubt to the idea of informal settlements. We argue that labeling specific territories -such as Self-Produced Neighborhoods- as informal settlements arises from a time-frozen examination of their characteristics.

Undoubtedly, there are socio-economic, legal, political, physical, and other origins in the emergence of Self-Produced Neighborhoods; many of them happen outside the regulatory frameworks thus labeled as informal. But the Self-Production evolves progressively, incorporating formal processes in its development (See Chapter 1). Hence, today it is difficult to find purely informal activities in Self-Produced Neighborhoods; they are in a constant state of transformation from one stage to another, even from one form of agreement and one mode of production into another. Moreover, informality is not an exclusive process in Self-Produced Neighborhoods. There are informal agreements in the so-called planned city, including activities outside the law, that could give space to an investigation on informality within the supposed formality.

In summary, informality exists as a process, but not as a spatial territory; this is the foundation of our argument against the idea of the "myth of informal settlements."

2.6. Seeking the Integration of Self-Produced Neighborhoods

From the first manifesto of the *Economic Commission for Latin America and the Caribbean* (ECLAC) in 1948 up to the current views on informality, we have seen an evolution in the perspective of Self-Produced Neighborhoods. Nowadays, we understand that people who live in Self-Produced Neighborhoods are not there because of a culture of poverty (Lewis 1959), but because they are embedded in a system of structural inequalities that reduces their integration possibilities into urban dynamics.

In this sense, if we embrace the idea of the "myth of informal settlement," we must understand informality as a process. In this sense, territories such as Self-Produced Neighborhoods

cannot be labeled as informal settlements. We argue that designing a single territory the condition of being informal may run the risk of stigmatization, believing that its conditions are different from others, in which standards of development may be different. This idea demands us the explore cross-territorial studies on spatial inequality.

Furthermore, the assumption of the "myth of marginal people" means that some communities are not incapable of inserting themselves into the dynamics of society but rather that systems hinder their integration demand us to explore cross-territorial strategies to reduce obstacles to integration. At the urban scale, these obstacles are the lack of connection to the networks that the urbanized environment supposedly has to integrate peoples. We refer to networks such as access to workplaces and public services such as schools and health centers that cannot be considered exclusively within the local scale if we envision having a fair distribution of these resources.

However, the analysis of the fundamental approaches -Modernizing, Structuralism, Revolutionary, and Reformism- in both marginality and informality reveals that foundational approaches frequently imply planning strategies where relay on either small or global scales, neglecting cross-scalar interventions. These perspectives run the risk of fragmenting planning strategies to address Self-Produced Neighborhoods by generating scattered and spatially disarticulated interventions among different communities.

For example, from the Modernizing approach, there is a tendency to focus on the individual's scale, emphasizing that its modernization of people will its development. This is evident in the strategy for granting land titles (Soto 2002), but it also occurs in the provision of

resources such as housing units or public spaces that are not necessarily integrated into broad spatial systems. Similarly, in the Revolutionary approach, there is a hierarchy on the political advocacy against global inequalities while focusing on small-scale interventions to promote awareness of struggles against these structural imbalances.

However, we see a lack of advocacy on multi-scale and cross-territorial approaches to facilitate the transition between the small-scale interventions and the global-scale battle that allows integrating underprivileged communities to the opportunities offered by the environment at different scales. This perspective contributes to a narrow perspective at the phenomenon of the Self-Produced Neighborhoods, limiting the possibilities of its integration to spatial and socio-economic urban dynamics,

Our position is that there is no contradiction in overlap battles at different scales of development. The advocacy against external structural inequalities does not contradict the planning of internal strategies to integrate Self-Produced Neighborhoods with design mechanisms that understand its values and weaknesses. Consequently, in the next chapter, we seek to generate tools for analyzing what we have seen that requires more attention in the spatial integration of Self-Produced Neighborhood: the access to the opportunities that the city offers from a systemic perspective

Chapter 3

Spatial Opportunities

Fina's advocacy

That morning, Fina came from the *Hospital Pérez de León*, the closest health care center that is 1.45 Kilometers (0.90 miles) and more than 95 minutes away from her home. She has been suffering from a meniscus tear since she was 30 years old. The staircase *La Farmacia* to reach her home does not meet any design of ergonomic standards which is not trivial for the daily life and the health of Petare's residents.

We had conducted a participatory design workshop at the Sports Park Mesuca, a complex in an old junkyard in South Petare[17]. It was one of those projects that can only be done in a Self-Produced Neighborhood; while the swimming pools we had built were fully functioning, we were still drafting and planning other parts of the project.

The Sports Park Mesuca project came up through discussions between several stakeholders, including community members, the local government, private financiers, and professionals from different disciplines such as architects, engineers, clinical psychologists, and sports specialists. We had several disagreements during the design and construction process, especially about the best way to invest our resources.

The project was ambitious, and funds scarce. Indeed, this is one of the big concerns about working in Self-Produced Neighborhoods: the gap between what is desired and what is possible is always huge. During participatory design workshops, we spent a lot of time talking about developing the project. Fina and I were obsessed with continuing forward despite the financial difficulties.

At that moment, Juan Carlos raised his hand and interrupted the meeting. It was the first time I had met him:

"Disculpen que los interrumpe, sé que están en algo importante, pero me tengo que ir… quería decirles que mi hijo está en silla de ruedas, él necesita fisioterapias semanales en una piscina. El año pasado tenía que llevarlo a las

[17] For details on the construction and social agreements processes of the Mesuca Sports Park, look at *From a Junkyard to a Peace Promotion Sports Park: A Transdisciplinary Approach* (Izquiel et al. 2019), and *A Community´s Struggle: Developing a Global Cultural Approach* (Cardona et al. 2020).

Naciones Unidas, ahora puedo traerlo aquí, más o menos cerca de mi casa. Solo venía a darles las gracias por haberse puesto de acuerdo para construir esto."

(Sorry to interrupt you, I know you are into something important, but I have to go… I wanted to tell you that my son is in a wheelchair. He needs weekly physiotherapy sessions in a pool... Last year, we had to go to the Naciones Unidas [a public swimming pool that is 14.5 km (9 miles) away from Petare], now I can bring him here relatively near my house. I was coming to thank you for building this).

The testimony of Juan Carlos was moving. It made us understand that the difficulties we had in developing the project were justified given the scale and diversity of the needs of the community.

For a long time, I regretted that we had not enough resources to fully build the Sports Park Mesuca. Now I understood the effort went beyond the design of the Sports Park infrastructure and that in fact we managed to preserve an 8,100 m2 (87,187,67 sqft.) space -the largest in all of Petare- for community use. Additionally, the infrastructure itself had managed to create an institutional framework to generate social agreements among different stakeholders and community members.

Sports Park Mesuca was a tool for reaching this consensus. Now I understand that it was possible because its location and connectivity networks allowed good access to several communities simultaneously. Probably what we have to highlight is the importance of physical and human networks that an efficient infrastructure generates when it is accessible to many people.

3.1. Spatial Opportunity and The Just City

In this research, we hypothesize that physical and non-physical patterns of Latin American cities have inherently promoted spatial inequality. This chapter elaborates on concepts and methods that help us quantify cities' physical growth patterns over time. By applying the concepts and techniques explored, we can measure Spatial Opportunity, defined as a condition of physical proximities and adjacencies that facilitates access to well-designed urban resources. These include workplaces, public spaces, and recreational and social facilities. Spatial Opportunities are

counterweights of Spatial Inequalities. The increase in Spatial Opportunities reduces Spatial Inequalities.

Giving the ubiquity of spatial inequalities in Latin America (See Chapter 1), the study of urbanization processes in Latin America demands the understanding of spatial opportunities as a fundamental category of analysis. This thesis understands the improvement of Spatial Opportunities as a mechanism to promote spatial justice by improving the access to the spatial resources offered by the city. The more opportunities citizens have to access the city's resources, the more possibilities they will have to articulate their own capabilities on the urban dynamics. Ultimately, the goal is to demonstrate that physical and non-physical patterns have perpetuated inequality in spatial opportunities for citizens, especially those living in Self-Produced Neighborhoods.

The study of spatial opportunities is placed under the umbrella of spatial justice, focused on seeking more just societies. As explained by Edward Soja, spatial justice is a complement rather than a substitute for different -social, economic, political- opportunities intended to be articulated by the people in the process of seeking social justice (Soja 2010a, 13). But as a clear complement of the justice equation, spatial options should not be ignored, and the idea of this investigation is to deepen the spatial side of social justice.

In this sense, Edward Soja says that "human action and the collective social contexts that frame human activities literally 'take place', they occur in particular places and spaces, and in so doing they tend for the most part to cluster" (Soja 2010a, 72). Principles of social justice apply to geographical situations.

But, at the same time, we must be aware that the allocation of spatial resources is not simply "there." In the fundamental book, *The Production of Space*, Henri Lefebvre criticizes the proposition of understanding the "pureness" or "abstract" spaces as well-designed objects but ignoring that spatial arrangements are the representation of the complex dynamics of power imbalances (1991). As such. space is a construct through a "generative past" (Lefebvre 1991, 110) that dynamically creates means of inequality. Social relations happen throughout space as well as across time. We are also temporal beings (Soja 2010b).

Inequalities in the triad social, spatial, and temporal produce unjust environments, i.e., the imbalances created by spatial conditions related to the limitations of access to spatial resources. At the same time, this spatiality is understood from the social relations that occur in time, which determines and is determined by non-physical patterns such as cultural behaviors.

But, there is another relevant side of spatial exclusion, that is, social stigmatization by location. This is the process in which communities are naively considered as a homogeneous unit with clearly defined boundaries, not dealing with the complex differences within the community (Guijt and Shah 1998), which is a common dynamic in Latin American Self-Produced Neighborhoods (A. Brillembourg et al. 2005; Ferreira Nunes and Veloso 2012; Holston and Caldeira 2008; Jacques 2001). After four decades doing research in *favelas* -Self-Produced Neighborhoods in Brazil-, Janice Perlman affirms that the conditions associated with exclusion, such as race or gender, have been progressively reduced; nevertheless, the place where people live is still a consistent source of social segregation (2010).

Despite this complexity, spatial inequality is commonly associated only through the spatialization of non-spatial categories, mainly income. The variation in per capita income across spatial units, among other fluctuations of income data, is used to characterize spatial inequality (Kanbur et al. 2005, 8; van Ham et al. 2021). This characterization of income inequality can be measured, spatialized, and then mapped at different scales (Figure 15). Also, national income data can be broken down into smaller spatial units and between them into successively finer integration levels, so we could have income inequality mapped at the neighborhood level.

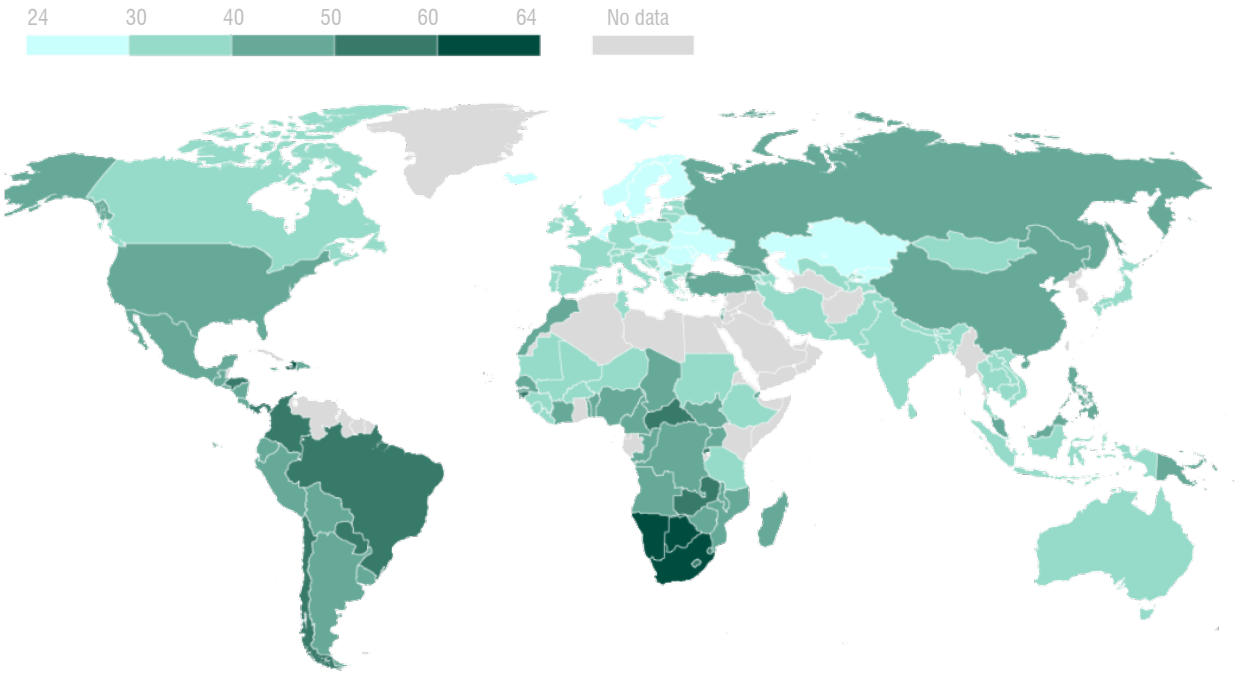


Figure 15 - Gini Index of Income Inequality Ranges from Zero to 100.

In this graph, zero means absolute inequality. This representation of income inequality is very common in many research in international agencies such as the World Bank. It serves as inspiration for our perspective that seeks to graph spatial inequality instead of representing the spatialization of income inequality.

But, as Ravallion & Wodon pointed out, the spatialized income inequality tends to generate planning strategies focusing solely on households with particular attributes that foster poverty but ignoring constraints on accessibility or location issues that may reveal hidden household attributes or limitations (1999).

From this perspective, we propose a different interpretation of spatial inequality. In this research, we explore the inequalities generated by spatial means rather than the spatialization of non-spatial means of inequality. Regarding spatial inequalities, we seek to explore the two main hypotheses explained at the end of Chapter 1. First, that Self-Produced itself generates environments with limited access to the spatial resources offered by the city. Second, planning approaches have contributed to perpetuate spatial inequalities.

Working with Edward Soja categories on societies' determination, we argue that we certainly are social beings, so structural income inequalities affect people's relations to urban dynamics (2010a). A person born into a family stuck in a deterioration cycle of disadvantages has more difficulty connecting with opportunities such as jobs or income sources the city offers (Cf. Chapter 1). This discussion leads us directly to the idea of *the right to the city*.

For Henri Lefebre, "*[le droit a la ville] ne peut se formuler que comme droit a la vie urbaine, trasnfromee, renoiuvelee*" (The right to the city can only be formulated as a right to urban, transformed, renewed life) (Lefebvre 1968, 35). This statement has been widely interpreted to mean that improving access to urban spatial resources is a strategy for enhancing the right to the

city[18] (Harvey 2003; Isin and Wood 1999; Mitchell 2003; Schwab 2018) through an equitable allocation of spatial resources across the city.

The first study about the allocation of urban resources explores the ideal provision of resources devoted to social services, especially for the underprivileged population, was the pioneering *Social Needs And Resources in Local Services: A Study Of Variations in Standards of Provision of Personal Social Services Between Local Authority Areas,* by Bleddyn Davies (1968). From then, the importance of providing services to underprivileged communities has been recognized in urban planning and implemented through the allocation of urban resources such as schools and community centers in targeted neighborhoods.

But the simple idea of spatial resource allocation returns us to the warning issued by Ravallion & Wodon about producing planning strategies focused solely on the needs of microscale spatial units ignoring issues related to accessibility in different territories (1999). This opens a discussion about the distribution of spatial resources that by promoting fragmentation of the territory into unequally served sectors, instead of contributing to the reduction of spatial inequalities, ends up accentuating it. Unplanned provision of spatial resources, whether public spaces, new facilities, or new sources of employment can deviate from the accessibility objectives described in the framework of the right to the city.

Henri Lefebvre himself criticizes the provision of infrastructure as a mechanism for imposing new spatial logics on an inherited city (Lefebvre 1991, 311). The allocation of public

[18] We understand that access to spatial resources is one of the many variables to promote the Right to the City. Later in this chapter we include another opening the possibility to people´s participation on planning and decision-making.

space, new transportation system, the urban network, the tertiary sector, the school system can reduce planning into an endless allocation of systems and subsystems, and any social object whatsoever can pass for a coherent entity (Lefebvre 1991, 311) while at the same time isolating planning parameters and, especially, spatial territories. This point returns us to the discussion with which we ended Chapter 2 about the risk of fragmentation in planning perspectives by intervening specific urban sectors without considering ideas that create a systematic relationship between the neighborhood and the broad urban built environment.

This fragmented-planning perspective has occurred in Latin America through different projects that originally sought to improve the conditions of Self-Produced Neighborhoods. As Diane Davis points out, planning strategies such as Site-and-Service schemes, supporting communities through Self-Help strategies, or the regularization of land, have served a fraction of the population, fragmenting the territory into multiple constituencies with diverse if not contradictory urban demands (2014). This effect could be the consequence of de-coordinated intervention between different stakeholders, or between different planning initiatives that seeks to serve specific urban sectors without considering their broad relationships with networks and infrastructure systems. In this sense, Lefebvre criticized the provision of "points of resources" scattered in the urban space (Lefebvre 1991, 12), even when these are well-designed or appear to be spatially well-articulated with their immediate urban context.

In short, the provision of spatial resource points without planning their systematics can contribute to an urban fragmentation that generates spatial inequalities. In the case of *Petare Norte*, a fragment of one of the densest Self-Produced Neighborhoods in Latin America, this is evident

in the provision of public spaces. Certainly, every urban intervention generates trade-off processes, but it is also true that a planned allocation of resources could generate that it produces the maximum possible level of benefits. In the following lines we will show an experiment that shows that the simple distribution of service points, specifically of amenities, is not enough to reduce spatial inequalities.

Between 2010 and 2015, both the national and local governments -from ideological perspectives diametrically opposed- launched two similar public space programs. The municipality program was called *Espacios Sucre* (ES, Sucre Spaces), while the federal government program was called *Espacios de Paz* (EP, Spaces for Peace). The second was part of the XV Edition of the Venice Biennial 2016. Despite political differences, the two programs were similar and were also informally articulated. Working in close coordination young architects, active community members, and governmental agencies built public spaces centered in the scale of a basketball courtyard. The spaces were characterized by their competent design which relied on the use of color and on construction techniques that meshed and hybridized with the logics of self-production. Simultaneously, the author of this research led a series of participatory design workshops (PDW) with participation of community members in the same Self-Produced Neighborhood with the aim of providing similar spaces. Because the territory was already fragmented into multiple constituencies, the placement and allocation of "points of resources" was different between government agencies and the requests of community members.

In these maps, we analyze different strategies of the location of spatial resources. Maps highlight in black the housing served by the allocated "points of resources" graphically represented

with red pins through the existing street network[19]. In addition to the current condition (EC, Figure 16A), we map the ES+EP program (ES+EP, Figure 16B) and the output of participatory design workshops (PDW, Figure 16C).

Then, and just to delve deeper into the spatial resource endowment assessment, we analyze the implementation of an institutional grid (GRID, Figure 16D) in the style of Bernard Tschumi in the Parc de La Villette, simply by fantasizing about a diagrammatic strategy to create a new system of external order in the Self-Produced Neighborhood. We include a proposal to avoid housing demolitions, by which the spatial resources are placed in the location of high-risk homes[20] (HRH, Figure 16E).

Finally, we include some "points of resources" outside but at the edge of the Self-Produced Neighborhood. Finally, we present an experimental proposal (MAX) in which the allocation of spatial resources reaches the maximum level at the served area (MAX, Figure 16F).

All interventions provide spatial resources. In this exercise there are ten spaces with dimensions equivalent to those of a basketball courtyard scale per map. All maps have the same street network; what differs is the spatial location of these "points of resources." We assume a walking distance of 400 meters between all housing of *Petare Norte*, which is the comfortable maximum travel distance for this intricate street network of Self-Produced Neighborhoods as we surveyed in the participatory design workshops (AREPA 2015).

[19] For these diagrams we calculate networks with the Urban Network Analysis (UNA) Tool developed by Professor Sevtsuk in the City Form Lab (http://cityform.mit.edu/), working with Service Area tool (β:0.002, distance: 400m).
[20] This refers to house units in geologically unstable lands, according to the data collected from the project of *Habilitación Física de Barrios* (HFB, Barrio Upgrading Plan), developed by the national government for Petare in 2000.

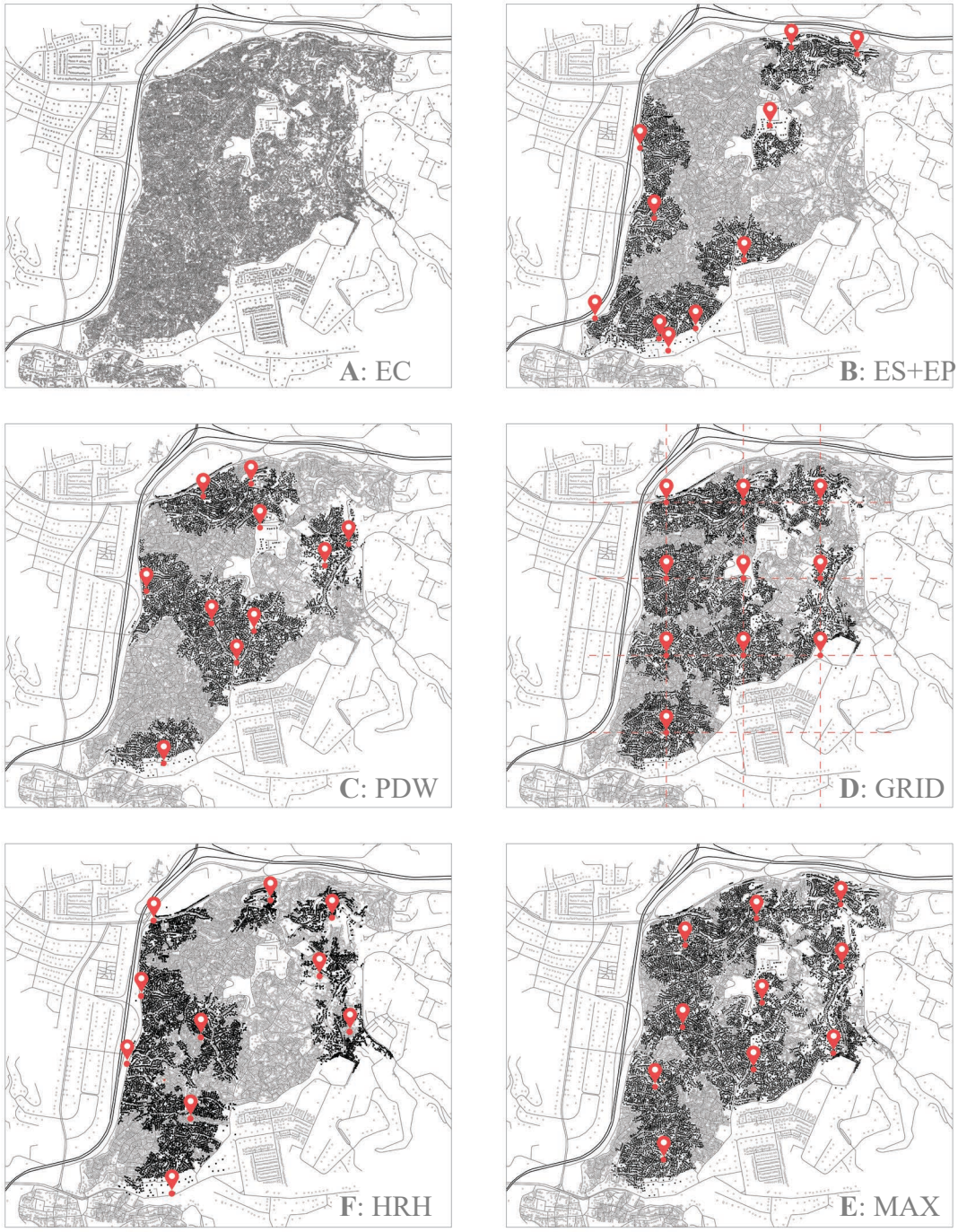


Figure 16 - Maps of points of resources study.

A: Existing Condition | **B:** allocation according to government program (ES, Sucre Spaces + EP, Spaces for Peace) | **C:** Allocation according to participatory design workshop | **D:** Allocation in a 500x500m grid | **E:** Allocation replacing at-risk houses | **F:** Allocation to produce maximum possible level houses served.

In the analysis, we uncovered that the spaces of ES+EP program (Figure 16B) (the only one built by government agencies) served 7,193 homes, or 40% of *Petare Norte*'s homes, this being the lowest of all strategies. We estimate the experimental proposal (MAX) would have served 13,644 homes, almost double the previous one (Figure 17).

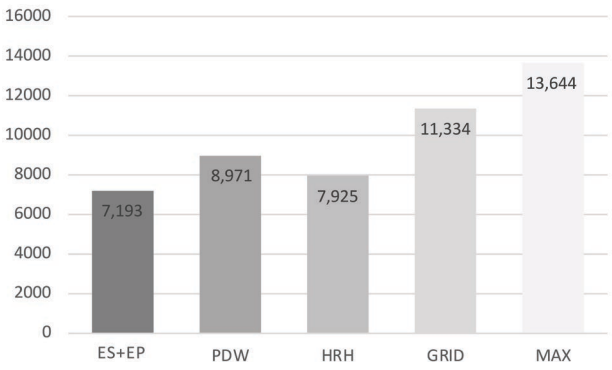


Figure 17 - Graph of points of resources study.

This graph shows the number of houses served by the allocation of resources distributed in Figure 16.

Although we understand this is a hypothetical exercise, it serves to exemplify that access to spatial resources does not simply depend on the provision of spaces -even well-designed spaces- or even the number of spaces is not relevant when compared to the strategic location of these "points of resources" in relation to the street network.

In fact, what happens in Self-Produced Neighborhoods, at least in Venezuela, is that better-served neighborhoods end up receiving greater services from governmental and other agencies in comparison to other areas[21]. This occasionally happens because its community is better organized or because the better accessibility to these sectors facilitates the provision of services. In fact, this pattern ends up generating territories that are much better served than others which increases the levels of spatial inequality.

[21] An emblematic example for the case of Caracas is Catuche, a centrally located Self-Produced Neighborhood with a well-organized community that has had multiple interventions from public and private agencies.

In short, the mere inclusion of new spatial resources does not address the right to the city but can contribute to its fragmentation. It is necessary to incorporate a new tool here defined as Spatial Opportunity, which considers spatiality over across different urban territories. The idea is to go beyond the provision of "points of resources" and include all the relationship of a series of spatial resources where access from the pre-existing street network promotes maximum access and establishes a link with the members of the community.

In this thesis, we use the Spatial Opportunities tool to assess the current condition of Self-Produced Neighborhoods. We do not rule out that it may also serve as a design tool in the future.

3.2. Research Methodologies

After analyzing Self-Produced Neighborhood both from academic and practice perspectives, we hypothesize that imbalances on Spatial Opportunities across the territory is a key factor in the physical patterns of Latin American cities and that those imbalances have inherently promoted spatial inequality.

In that sense, this thesis proposes the understanding of Spatial Opportunities in two ways. The first is quantitative, designed as the Spatial Opportunity Index (SOi) and is informed by the physical patterns. The second is qualitative, derived from a Content Analysis of planning documents. Although it is presumable that the perpetuation of spatial inequalities has occurred in several Latin American countries, this thesis will apply this methodology to the case of Caracas, hoping that fine-tuning the methodology will allow it to be applied in other Latin American territories in future research. For our case study, it is the planning documents applied by the federal

government in the city of Caracas. We expect to discover the non-physical patterns that have contributed to the perpetuation of spatial inequality.

In quantitative terms, the definition of the Spatial Opportunity Index allows us to measure the levels of inequality in the accessibility to the city resources. This study is built on top of the broader concepts of the Central Place Theory which seeks to explain the territorial arrangement in terms of number, size, and location of human settlements (Christaller 1933; Lösch 1954). We focus especially the study carried out by Andres Sevtsuk to measure levels of urban accessibility (2010), and in the index developed by Hansen to measure access across and to different locations in the city (1959a). This quantitative analysis is translated into maps that render a physical view of the Spatial Opportunity Index; this is what we call in our case study, the physical patterns that determine urban growth.

In Chapter 2, we presented the fragmented perspective and scale narrowness in planning after following different foundational ideological approaches. On the contrary, the Spatial Opportunity Index attempts to operate across multiple scales and across urban territories. Therefore, the analysis of Self-Produced Neighborhoods is framed in the context of the whole city geography. At the same time, we understand that citizens are temporal beings, so the analysis is developed in eleven maps that span from the Caracas' foundation in 1567 to our days (See Appendix E and Appendix F). Understanding changes in spatial inequalities across time becomes a reference to understand the nuances in physical pattern modifications that have occurred following cultural, not physical or geographic trends.

In qualitative terms, we propose a retrospective Content Analysis and the indexing of planning reports in Caracas since the first urban document in 1928, after the Venezuelan oil boom (See Chapter 5). This Content Analysis allows to explore the planning strategies' influence on the Spatial Opportunities variations. But, above all, it allows to understand the reasons why the levels of spatial inequality have taken place.

Additionally, we investigate in these planning reports the normative posture regarding Self-Produced Neighborhoods, seeking to overlap our findings with the four foundational approaches - Modernizing, Structuralism, Revolutionary, and Reformism - and trying to identify the validity of what we concluded in Chapter 2 on the fragmented perspective of planning approaches applied to Self-Produced Settlements.

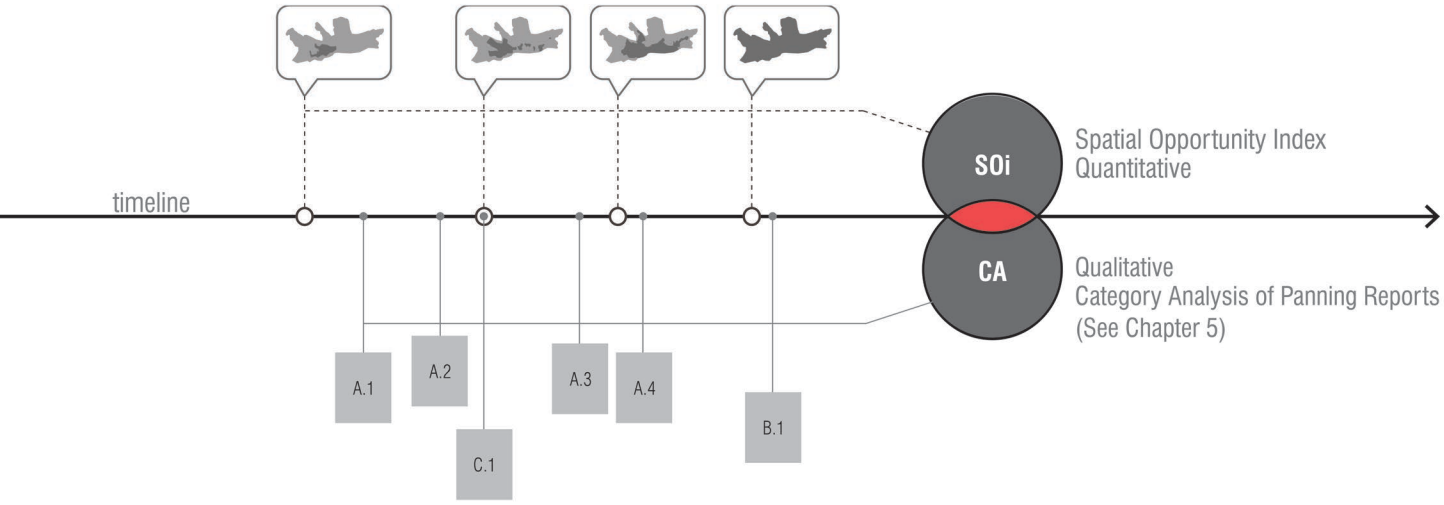


Figure 18 - Research Methodology

The top of the timeline represents the quantitative analysis (See Appendix E) of the Spatial Opportunity Index (SOi) in the city's history. The bottom line represents the qualitative analysis of the content of planning reports (CA) (See Appendix Ia, Appendix Ib, and Appendix Ic). The causes of spatial inequalities are in the overlap of these two analyzes (red color).

Finally, the objective of overlapping the quantitative and qualitative methodologies (Figure 18) is to increase the analytical rigor through the consideration of different study methodologies.

3.3. Quantitative Method: Spatial Opportunity Index

Sevtsuk defines urban access as "the ease of an individual to pursue an activity of a desired type, at a desired location" (2010, 35). We understand this concept through the combination of three variables: proximity (p), connectivity (c), and weight of destinations (w). The physical relationship between these variables defines the opportunities people have to access determined resources.

To explain how these three variables are related to defining the spatial opportunity, we use a hypothetical scenario (Figure 19A). In this diagram, people located in Circle i want to access some resources located in Circle j. Circle i represents, for example, the residence of a person or groups of persons, the place where the house is located; Circle j is a workplace, or any other resource offered by the city that allows individuals located in Circle i to develop their capabilities and take advantage of the opportunities this territory offers. Circle j could also represent educational health facilities, or public spaces and other recreational or contemplative activities. Circle j can even be a combination of all or several of the aforementioned resource facilities, or public spaces and other recreational or contemplative activities. Circle j can even be a combination

of all or several of the aforementioned resource and other recreational or contemplative activities. Circle j can even be a combination of all or several of the aforementioned resources.

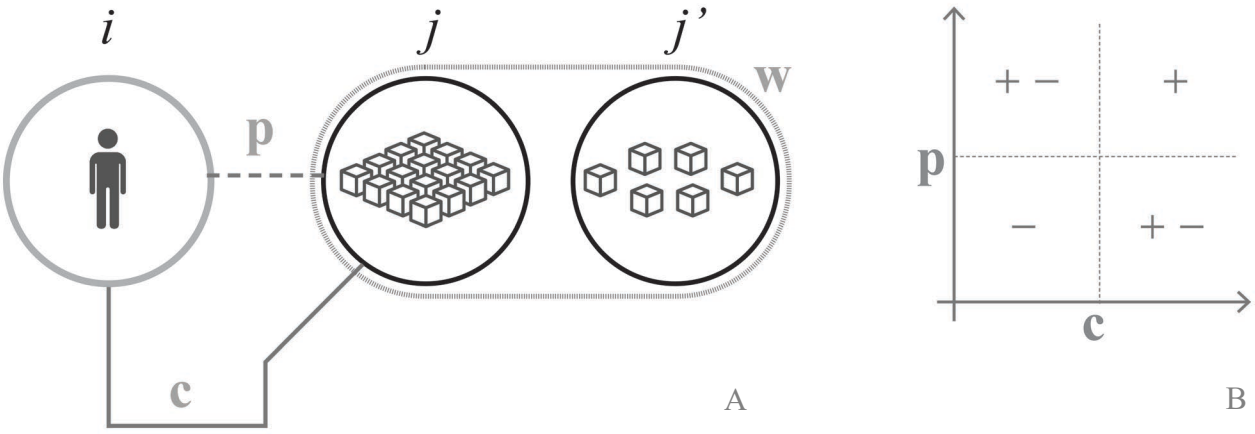


Figure 19 - Spatial Access Diagrams

A: Conceptual idea that integrates the three variables to define the Spatial Opportunity Index: connectivity (c), proximity (p), and weight of destination (w).

B: Synthesizes the dynamic relationship between proximity and connectivity; when a resource is little connected and not close, it has low access, and so on

How Circles i and j are related? Dash line "p" represents the proximity between Circle i and Circle j. The closer a resource is to the people, the bigger opportunity that people have access to them. The solid line "c" represents the connectivity between Circle i and j; similarly, the better the connection between people and resources, the bigger opportunity that people have to access them. Numerically, the relationship between p and c generates a distance (d) value that measures the pathway between Circle i and j rather than its geographical distance. In this sense, if the connection between Circles i and j is an intricate path, such as those that usually exist in Self-Produced Neighborhoods, the distance is obviously greater than a straight street connection. In the urban built environment, the allocation of activities and resources generates a layout of activities

that create different proximities across the territory. Additionally, the different levels of jointures and hindrances of pathways and street networks allow different degrees of connections of citizens from one location into another; some author refers to these levels of connectivities as the *spatial impedance of the network* (See Batty, 2009; Bhat et al., 2000; Sevtsuk, 2010). Impedance is a resistance that pathways apply to the movement of humans, it captures the ability of the system to accommodate different numbers of people at different times. For example, a zigzagging road will have a higher level of impedance than a straight street.

The relationship between proximities (p) and connectivities (c) is crucial to explain the access to urban physical resources that configure the opportunities that citizens have to provide for their needs within the capabilities of the urban dynamic. This relationship is even more important in the Global South, where the *spatial impedance of the network* is high due to unequal and fragmented processes of planning (See Chapter 1). In this context, Self-Produced Neighborhoods could have less proximity and/or connectivity to urban resources.

In this sense, it is important to remark that the distance between people and physical resources dwells in a dynamic spatial relationship between these two variables: proximity (p) and connectivity (c). With a hypothetical example, we can clearly understand this dynamism; for instance, we can live in a house geographically close to a public facility, like a community center, but with a gap -a river, a topographic slope, or a highway- between our house and the center, while another place is further away from the same facility but better connected to it. Probably, the latter could have more spatial opportunities, that is, more spatial access to the community center than us. This system of unequal spatial relationships is common in Latin American urban environments.

To explain this dynamic relationship between proximity (p) and connectivity (c), we use a Spatial Opportunity Diagram (Figure 19B). Coming back to the relationship between Circles i and j (Figure 19A), if resources (Circle j) are located at a low level of proximity and connectivity to individuals (Circle i), the opportunity to access them will be low. On the opposite, if resources (Circle j) are at a high level of proximity and connectivity to individuals (Circle i), the opportunity to access them will be high, and so on.

The dynamic relationship between proximity (p), connectivity (c) determines the value of the pathway's distance (d) which is a key factor to measure urban access. Still, a thirds variable contributes to the definition of the concept, that is weight of destinations (w). Coming back again to Figure 19, the Circle j exemplifies one of many options of resources available in this specific location. Many factors affect the availability of these resources within this particular location (Circle j): the number of resources available, quality of these resources, even subjective values related to levels of beliefs and preferences among the population of Circle i.

Furthermore, this third variable is a weight (w) adjudicated to the destination which captures the limitation of access opportunities. Coming back to the example of the community center, it could have a high level of proximity and connectivity to our neighborhood, but its physical capacity is limited. Suppose the number of people better located and connected than us to this center is greater than its physical capacity. In that case, our opportunities to access this facility will also be limited or even reduced to zero. This is frequent in Self-Produced Neighborhoods where spatial resources are limited; if we have a school but it is small in relation to the population surrounding it, the opportunity of many kids to study there is little. Just giving

another example, since this thesis is being written in times of the Covid-19 global pandemic, it is inevitable to explain that if a destination resource -for example, a community dining room- has a limited capacity to receive people located in Circle j (Figure 19), this capacity will be further reduced in times of social distancing, such as drawn in Circle j'.

But the weight of destinations (w) is also determined by non-tangible variables such as political ones. For example, in Venezuela, people are currently afraid to visit governmental health care centers because if they are tested positive for Covid-19, they are forced to be quarantined in a precarious isolated governmental facility. So, most people do not consider going to a health center even if they have one adjacent and connected to their home. In this case, the spatial opportunity to access them becomes zero. Something similar can occur in less conflictive cases, such as the placement of a religious center as a destination, which would not be an opportunity of accessibility for those individuals who do not belong to the specific religion.

Weight of destinations (w) is the more fluid of the three variables because it allows incorporating both tangible and non-tangible factors. For instance, in *Social Justice and the City*, David Harvey claims for a spatial organization that satisfies the perceptible of the population with the idea of promoting a right to the city connected with the felt needs of the citizen (2009, 107). Weight of destinations (w) can establish a value determined by participatory design mechanisms such as methods of partnerships between planning agencies, designers, and community organizations (Arnstein 1969) that overlap different needs in the fulfillment of a consensual proposal. Then transform the variables obtained from the dialogue with the communities into a

numerical code and consider it as a fundamental datum to measure their accessibility linked to their own choices.

In summary, the weight of destinations (w) allows us to include different variables that assign a measurement of desirability to urban destinations. These variables could be tangible: big factories can receive more workers than retails, or intangible preference and beliefs -sometimes related to circumstantial conditions- that affect this level of attractiveness to an urban resource.

Consequently, all or some of the three variables described above -proximity (p), connectivity (c), and weight of destinations (w), are those that commonly serve to define the access indexes defined under the umbrella of the Central Place Theory (Christaller 1933; Lösch 1954). Among them, *gravity type measure*[22] is an accessibility index generally credited to Hansen (1959b); it is a method broadly adopted to measure the ways in which accessibility shapes urban physical resources. This accessibility index has ended up being the most used because it includes the most complete model for its measurement (Sevtsuk 2010). *Gravity index* consists of the distance (d) -determined by the proximity and connectivity factors- as a value to measure the pathways between origins and destination, as well as the weight of destinations we explained before.

[22] In his thesis *Path and Place: A Study of Urban Geometry and Retail Activity in Cambridge and Somerville, MA*, Professor Andres Sevtsuk from Massachusetts Institute of Technology, concludes that gravity is the most complete accessibility index (Sevtsuk 2018). After reviewing some options and given the ease of this software and its compatibility with the data available for Caracas, we have decided to use the Urban Network Analysis (UNA) Tool developed by Professor Sevtsuk in the City Form Lab (http://cityform.mit.edu/).

Commonly, *gravity* type measure considers that accessibility at location i is proportional to the attractiveness of all other locations j surrounding i and inversely proportional to the distance between i and j, which generates the following equation:

$$\mathbf{A}_i = \sum_{j=1}^{n} \left(\frac{\mathbf{W}_j}{\mathbf{d}_{ij}^{\mathrm{b}\beta}} \right)$$ in which A_i is the access index at location *i*, w_j is the value assigned to the weight of destinations (w) described above, d_{ij} is the distance measure -determined by the spatial dynamic between proximity and connectivity- between locations i and j=(1,2,…n), β is the exponent for distance decay that essentially approximate the likelihood to reach a particular destination (Sevtsuk 2018), being a factor that describes how the interaction between i and j decreases when the distance between them increases. Through this equation, accessibility is defined as the total distance required to reach from one place to all others, measured as the sum of geodesic path distances from the location of interest to all other locations (Sevtsuk 2010, 37).

What has been described so far allows us to decipher an accessibility index for each of the locations located in the territory. However, the calculation is not sufficient to decipher the Spatial Opportunity Index. The opportunity for location i to access location j depends not only on its accessibility, but also on the comparison between its accessibility and neighboring points i.

Following again the example of the community center to which I have some level of accessibility and supposing this community center has a capacity to accept only one hundred people. Suppose there are other one hundred or more locations with a higher level of accessibility

than us, either because they are closer to or better connected to the community center. In that case, our opportunities for accessing the community center are fewer.

The calculation of a Spatial Opportunity Index rather than only the accessibility index is our contribution after studying access to physical resources offered by the city in Latin American cities. For example, analyzing the physical patterns that pathways draw to connect different locations shows evident inequalities, we find territories with highly connected street networks versus others with significant levels of discontinuity. The same occurs with the location of the resources offered by the city; while certain urban territories include some or lots of urban facilities, the Self-Produced Neighborhoods tend to be mostly monofunctional housing territories (Cf. Chapter 1).

The disparities in the relationships between proximity, connectivity, and weights of destination that we find in cities in the Global South, made the calculation of the accessibility index insufficient since certain locations with relatively good accessibility are at a disadvantage when compared to other locations.

The need to study access to urban resources from a comparative perspective dwells in an ideological approach of seeking spatial justice. The current spatial inequality levels require generating a comparative index that allows understanding of how to quantify spatial inequality levels between different urban territories.

Therefore, we found that to calculate the Spatial Opportunity Index one additional step is required. After calculating the accessibility indices of all the origin locations (points i) within a determined territory, the process demands to find the quotient between the existing maximum

accessibility index and the accessibility index for each point. which generates the following equation:

$$\mathbf{SO}_i = \frac{\mathbf{A}_i}{\underset{i \in [n]}{\max} \mathbf{A}_i}$$ in which SO_i is the Spatial Opportunity index at location *i*, "max A_{ij}" is this the maximum accessibility index among all the studied population, and A_i is the accessibility index of point i. This equation defines the Spatial Opportunity Index, in which each "location i" obtains a number between 0 and 1 that measures the possibilities of a certain territorial location to access a determined type of activity.

We envision Spatial Opportunity Index as a method to measure the integration of origins -mainly housing- to the infrastructural systems of the city. Access to "points of destinations," i.e., access to networks of amenities such as schools and public spaces, happens across mobility and circulation systems defined by street layouts that hold utility networks like water and electricity.

In Chapter 1, we discussed different mechanisms to measure the efficiency levels of systems of utilities -water supply, electricity, etc.- and circulation-street layouts, transportation, etc. -. However, access to amenities is the least studied by the existing infrastructure literature on Self-Produced Neighborhoods (Trindade, MacLean, and Posen 2021, 6).

But access to amenities is fundamental because it constitutes a network in itself, but especially because it facilitates the development of citizen's capabilities when connecting their skills to the spatial and social networks of the city. The Spatial Opportunity Index (SOi) prioritizes measuring access to networked systems of amenities. It also includes assessing other networks happening through street layouts, including mobility networks and utilities such as water and

electricity supply and water rain management. In summary, low SOi is an indicator of limited access to networked infrastructural networks.

Finally, this research proposes to generate Maps of Spatial Opportunities that allow reflecting the spatial inequalities in access levels between all origin locations concerning all destinations of a specific type. To facilitate the readability of the map, SO_i obtained are divided into percentiles to generate a color gradient that allows us to reflect how the Spatial Opportunity Indexes are distributed in the territory. We used a gradient from blue to red, where blue represents the number one, which is the locations with the maximum level of spatial opportunities. In contrast, red represents zero, that is, the locations with no spatial opportunities.

To summarize, Spatial Opportunity Index is the potential of a specific location to achieve a desired activity at that location. Spatial opportunity generates data that represent spatial inequalities in the territory. After a process of trial and error to systematize the analysis, we have developed the following methodology we have named Applied Process for the Analysis of Spatial Opportunities (APASO) (See Appendix D for details):

- Step 1. Survey and build of cartography that includes data on pathways and destination points. Pathways will make it possible to analyze the distance - a consequence of a dynamic relationship between proximity and connectivity - between points of origin and points of destination.
- Step 2. Calculate the accessibility index (gravity) for all the points determined as an origins.

- Step 3. Calculate the Spatial Opportunity Index (SOi) for all the points determined as origins.
- Step 4. Classify data of Spatial Opportunity Index in ten groups according to percentiles in order to make more legible the graphic representations of the maps.
- Step 5. Generate maps to spatialize SOi classified by percentiles.

As stated at the end of Chapter 1, one of the goals of this thesis is to demonstrate the perpetuating spatial inequalities in Self-Produced Neighborhoods. The Spatial Opportunity Index is the tool to achieve it.

But this method is incomplete if we do not consider the variations of these inequalities throughout history. Edward Soja explains that most of the literature on social justice has been focused on understanding societies only as social entities, yet the analysis of spatial relations also establishes indexes of inequality, what he called the "spatial turn" in seeking social justice (2010a). This statement has encouraged the idea of understanding Spatial Opportunity as a tool to analyze the spatial conditions that result in inequality.

However, societies are not only social and spatial beings but also temporal beings. Following studies by Michel Foucault who criticizes the tendency to understand space as dynamic and developmental but relatively fixed (1986), Edward Soja proposes a trialectic between social, spatial, and temporal beings captures complex and structural dynamics of social justice (2010a).

Here, the methodology proposes understanding historical processes of socio-spatial inequalities by analyzing the different maps across the history of the city. This analysis of Spatial Opportunities over time also allows us to understand temporal patterns of inequality, which is a

key factor in demonstrating the perpetuation of spatial inequality in Self-Produced Neighborhoods. Additionally, the variations in the Spatial Opportunities levels enables understanding the causes of these inequalities as it allows to overlap them with other historical events and their possible relationship.

3.4. Why Caracas?

Caracas, the capital of the Bolivarian Republic of Venezuela, is located at the North of South America, separated from the Caribbean Sea by the Coast Range. The Metropolitan Zone of Caracas includes of five municipalities (Libertador, Chacao, Sucre, Baruta, and Hatillo). By the most recent census (Venezuela. Instituto Nacional de Estadística 2014) its population is 3,220,540 inhabitants in an area of 810 square kilometers.

Caracas represents an ideal case study to evaluate the contrast between planning strategies and their ideological approaches, and spatial inequality. Several reasons justify this assertion.

First, in Caracas more than 46% of citizens reside in Self-Produced Neighborhoods (Instituto Metropolitano de Urbanismo Taller Caracas 2012), sharing the same geographic space as the planned city despite marked spatial inequalities. This research assumes Self-Produced Neighborhoods are enmeshed in the socio-economic dynamics of the whole urban built environment, therefore this phenomenon cannot be considered as isolated and independent from the rest of the city. Geographical proximities of the different neighborhoods in Caracas permit a relatively easy comparison of Spatial Opportunities across them. Moreover, after studying the variables that define the presence or absence of Spatial Opportunities, we can infer that if there are

levels of spatial inequalities between Self-Produced Neighborhoods and other urban territories when they are geographically close, this inequality will be greater in environments with more dispersed geographies.

Second, the author of this research worked for more than 12 years building infrastructure and public spaces through participatory design workshops (PDWs) in *Petare*, the denser Self-Produced Neighborhood in Latin America. Access to data (plans, maps, and surveys) and field diaries generated during that 12-year work is a fundamental asset in developing research programs in territories globally characterized by the lack of reliable data.

But this prolonged engagement of the author and *Petare*, permits a broad peer debriefing and support through the exchange of knowledge with Venezuelan experts on Self-Produced Neighborhoods from local universities, NGO's and other agencies, as well as community leaders living in *Petare*. This process has helped increase the analytical rigor of this research also supported by a peer debriefing process through the exchange of knowledge with local experts and residents of the Self-Produced Neighborhood.

Third, in Chapter 5, we will see an additional argument to work with Caracas when we do a Content Analysis in planning reports carried out by federal planning agencies about the phenomenon of Self-Produced Neighborhoods. Venezuela had been a worldwide top oil provider since 1922, and Caracas has been the administrative center of this globalized product. For this reason, both the flow of resources to attend to the phenomenon of Self-Produced Neighborhoods and their proliferation has been significant. We believe that if we prove the failure to increase

Spatial Opportunities in Caracas, where financial resources have not been a limitation, these failures could be more dramatic in less affluent contexts.

Finally, and more important, Venezuela is currently experiencing an unprecedented crisis. A mix of decades-old high levels of spatial inequality, along with the precarious level of institutional urban management by the failed state has generated a crisis that is already becoming structural as a consequence of a weak supply of urban public services (Inojosa 2018; Rendon 2019), and of epidemic violence that especially affects residents of Self-Produced Neighborhoods (BBC 2018; Galaviz 2020; PROVEA 2020). Additionally, the country is experienced persistent violations of human rights, as described in the bleak fact-findings report of the independent human rights international mission on the Bolivarian Republic of Venezuela (United Nation Human Rights Council 2020). Consequently, the Venezuelan urban crisis has generated one of the largest displacement crises globally, with more than 5.4 million refugees and migrants from Venezuela worldwide (United Nations High Commissioner for Refugees 2020). The author feels the ethical responsibility to contribute with an understanding of the phenomenon of Spatial Inequality in Caracas, the capital of a failing country that must be rebuilt in the near future.

However, this research is not only about Caracas but about Latin America's Spatial Inequality that affects most inhabitants of Self-Produced Neighborhoods. Despite regional differences, all cities in Latin America share a similar history of growth since European colonization and its processes of dependence on the world international economy that produced the phenomenon of hipertertiarization of urban economies along a rapid growth of people living in cities (See Chapter 2). This is the structural reason why Self-Produced Neighborhoods are

ubiquitous throughout Latin America, where it seems that low rates of Spatial Opportunities have been perpetuated despite plans and efforts of government entities to address the phenomenon of spatial inequality.

Giving the ubiquity of Self-Produced Neighborhoods and Spatial Inequality in Latin America, the study of foundational approaches on development and the fragmented perspective on planning strategies, the Spatial Opportunity Index tool could be applied to other cities of the region. So, working with Caracas, we hope to contribute to understanding spatial inequalities in other Latin American cities.

3.5. The Methodology applied in Caracas

Caracas, like all cities, had several milestones in the history of its urban planning. At these moments, the federal government elaborated documents on how to regulate the physical space. Working with these moments allows having some data to do the SOi analysis, but also to evaluate the cultural approach -the non-physical pattern- on Self-Produced Neighborhoods by the official discourse.For the case of Caracas, we run the Applied Process for the Analysis of Spatial Opportunities (APASO) described above in the following twelve milestones (See first page of Appendix E for detailed maps and the sources of its data):

- Year 1578: Colonial Times.
- Year 1810: Country Independence.
- Year 1875: The Republican Era.

- Year 1928: Oil Boom.
- Year 1939: The Hausmannian Project.
- Year 1951: The Us-Zoning Approach.
- Year 1958: Diversification of Planning.
- Year 1969: Planning Inertia.
- Year 1984: Barrios Recognition.
- Year 2000: Consolidation of Barrios Recognition.
- Year 2015: Plan Caracas 2020.
- Year 2020: Existing Conditions.

The selection corresponds to the milestones in the history of Caracas, where governments generated urban planning documents. On the one hand, this allows the research to take advantage of data availability through urban plans and its documents and reports. On the other hand, this selection permits the overlapping between the levels of SOi and the reading of the retrospective content analysis of these plans.

In Caracas, this thesis studies the relationship between residencies as origin and workplaces destinations[23]. Certainly, urban productivity has increased incessantly, reinforcing it as one of the most important roles of the city (Lefebvre 1991). In the case of Latin American cities, we have explained how hyperterarization in the second half of the twentieth century (Cardoso 1968, 91;

[23] The calculation for Caracas was made with the homes as the point of origin, and the workplaces as the destination. We made this decision based on historical references that explain the hypertertiarization of the main Latin American urban centers, and the growth of job sources, as a fundamental factor that has determined the expansion of Self-Produced Neighborhoods in Latin America. However, we also applied in Caracas the instrument of Spatial Opportunity Index regarding access to public spaces such as public parks, sport courtyards, playgrounds, and plazas. This application served as criteria validity to demonstrate that Spatial Opportunity Index as a form of the measurement of spatial inequality also apply to other variables related to Self-Produced Neighborhoods. The outputs obtained considering public spaces as a destination were very similar to those shown here taking job sources.

Castells 1976, 71; Cordova 1973, 88) generates an overwhelming explosion of urban employment that was a determining factor in the rapid growth of cities and the consequent emergence of Self-Produced Neighborhoods. The study analyzes inequalities in access to workplaces across different territories, especially those in the Self-Produced Neighborhoods.

Regarding Steps 2 and 3 of the APASO method for Caracas, this research also classified the residences (origins) according to the five main residential typologies identified in the city: They are: i) private residential single-unit buildings, ii) private residential multi-family buildings, iii) public residential single-unit buildings, iv) public residential multi-family buildings, and v) Self-Produced Neighborhoods. This classification allows us to determine the SOi for each dwelling and make a comparative study of the SOi levels between each of these forms of urbanization. The main goal is to determine the SOi in the Self-Produced Neighborhoods to show these have been the least favored territories by physical growth patterns. However, a taxonomy of these five categories allows a less dichotomous study of spatial inequality and makes the comparison between different urban territories more complex. }

Finally, for Caracas, this research assigns a beta (β) calibration of 0.0002[24] in the Spatial Opportunity Index as described previously. This distance decay factor allows the inclusion of accessibility from origins to destinations at a metropolitan scale. This condition permits the further analysis of inequalities between different territories at a broad scale.

The analysis produced the following maps and data analysis:

[24] The definition of the distance decay factors (β) for this research were determined after a calibration study carried out in conjunction with Andres Sevtsuk at the City Form Lab (http://cityform.mit.edu/) (See Appendix B for detail).

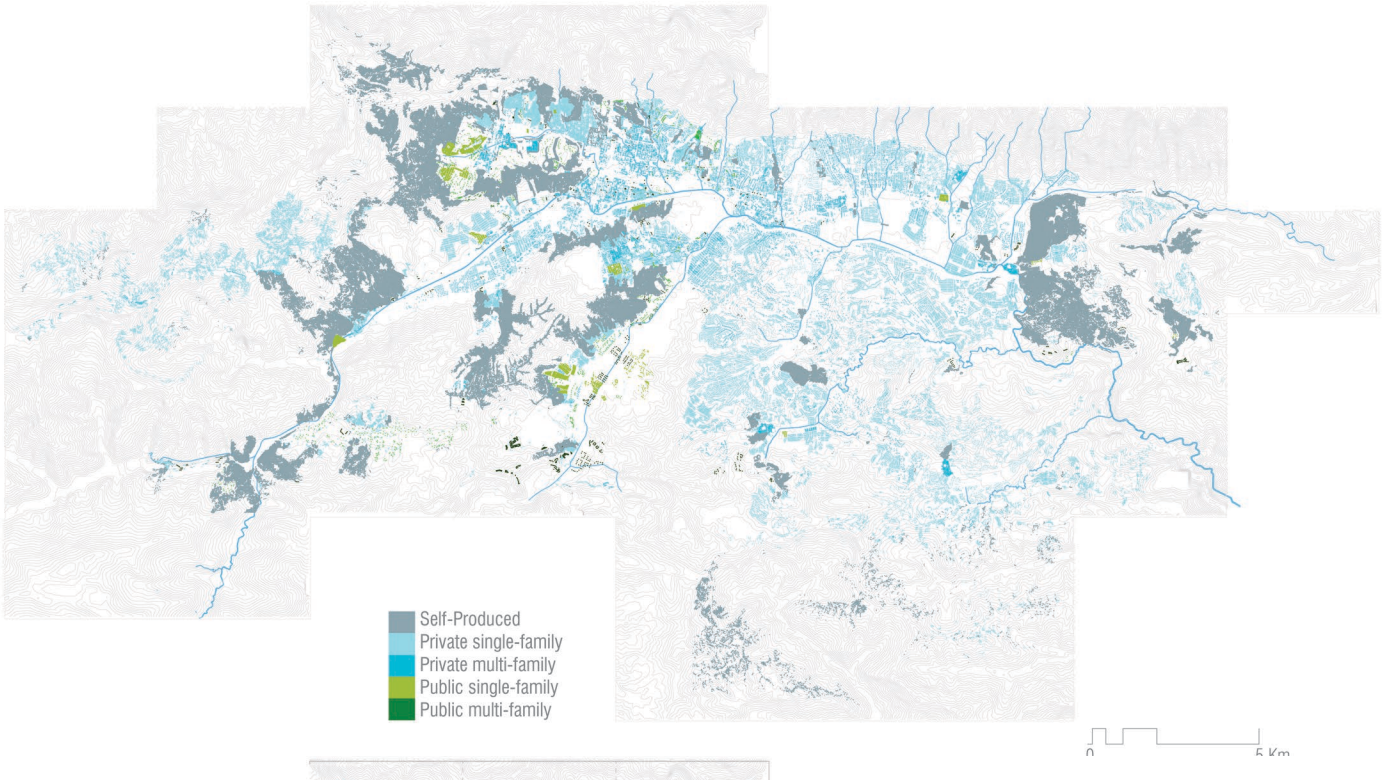


Figure 20 - Caracas 2020: Housing Categories

Location in the Caracas Valley of the different types of housing studied.

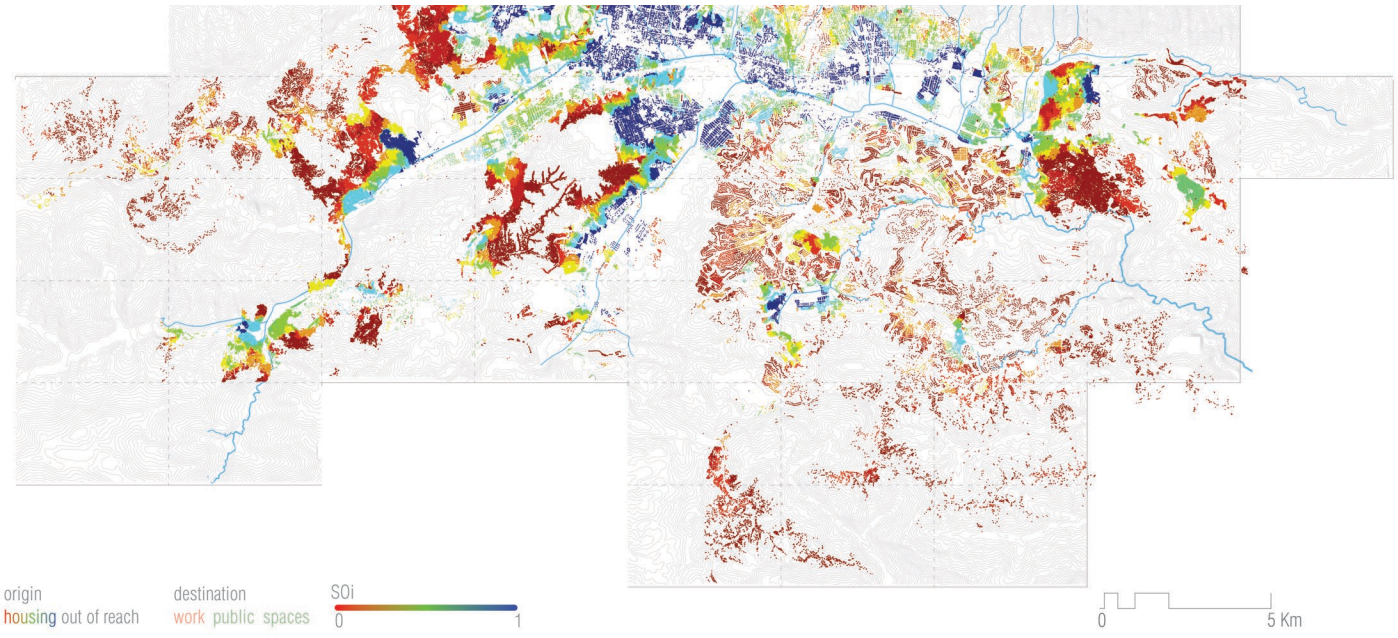


Figure 21 - Caracas 2020: Spatial Opportunity Index (SOi) map

SOi is mapped with a gradient from blue to red. Houses in red have the fewest Spatial Opportunities, in blue the greatest.

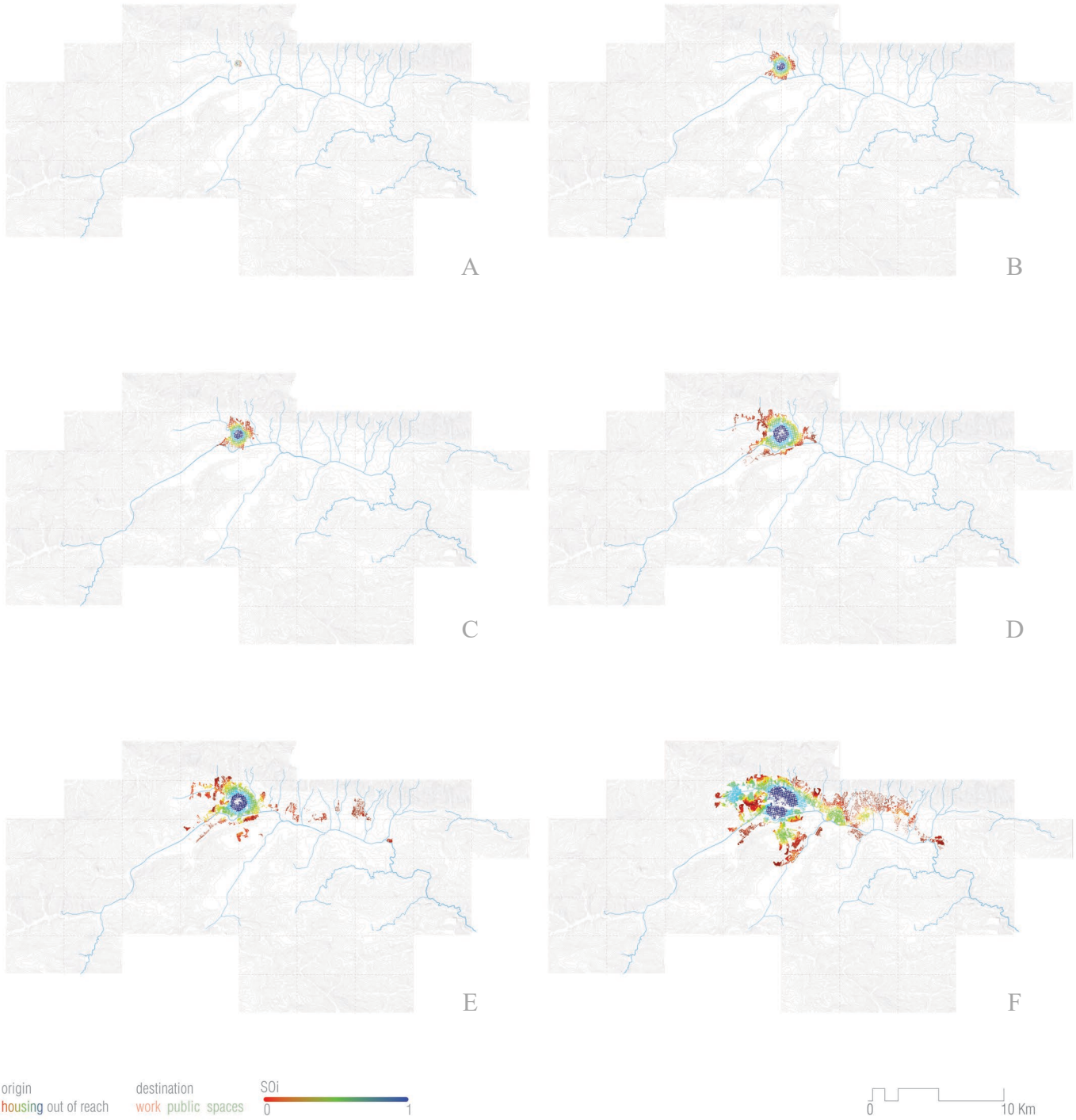


Figure 22 - SOi maps compilation: 1578-1951

A: 1578 - Colonial Times | **B:** 1810 - Independence | **C:** 1875: Republican Era

C: 1928: Oil Boom | **E:** 1939 - Hausmannian Project | F: 1951: Us-Zoning

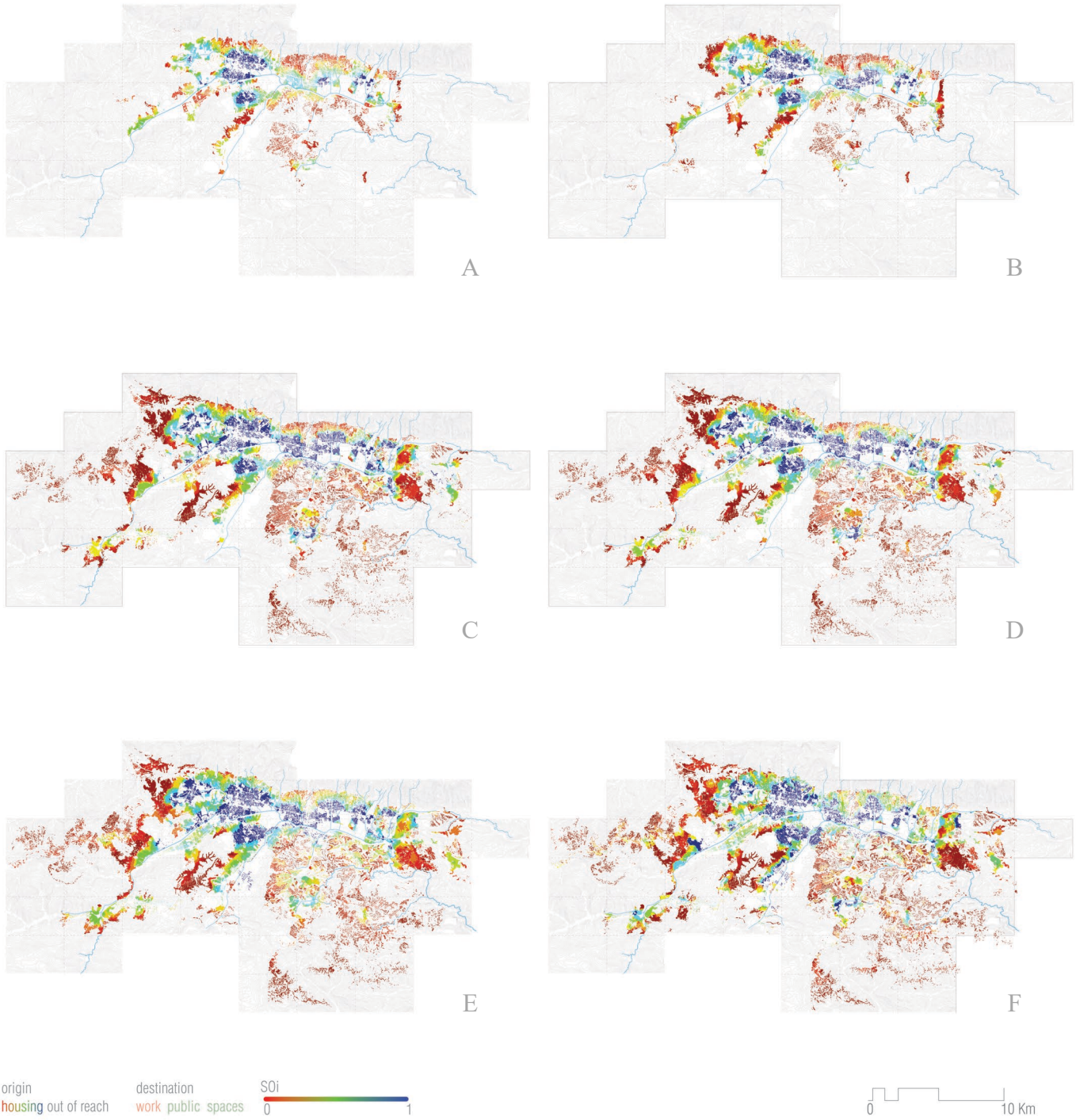


Figure 23 - SOi maps compilation: 1958-2020

A: 1958 - Diversification | **B:** 1969 - Inertia | **C:** 1984 - *Barrios* Recognition

D: 2000 - Consolidation | **E:** 2015 – Plan 2020 | F: 2020 – Existing Condition

SOi per housing categories	1578	1810	1888	1891	1920	1930	1940	1950	1961	1971	1981	1990	2001	2012
Self-Produced neighborhoods				0.18	0.19	0.16	0.08	0.04	0.08	0.07	0.06	0.06	0.06	0.06
Self-Produced Neighborhoods*						0.18	0.08	0.04	0.08	0.06	0.05	0.05	0.05	0.05
Private single family	1.00	1.00	1.00	0.80	0.76	0.60	0.30	0.18	0.17	0.18	0.17	0.16	0.15	0.13
Private multi family							0.52	0.42	0.41	0.47	0.49	0.52	0.49	0.42
Public single family				0.07	0.07	0.06	0.02	0.06	0.16	0.14	0.13	0.13	0.15	0.19
Public multi family								0.26	0.10	0.09	0.08	0.08	0.09	0.15

*** This alternative does not include self-produced paths (pedestrian paths -*veredas*- and stairscases)**

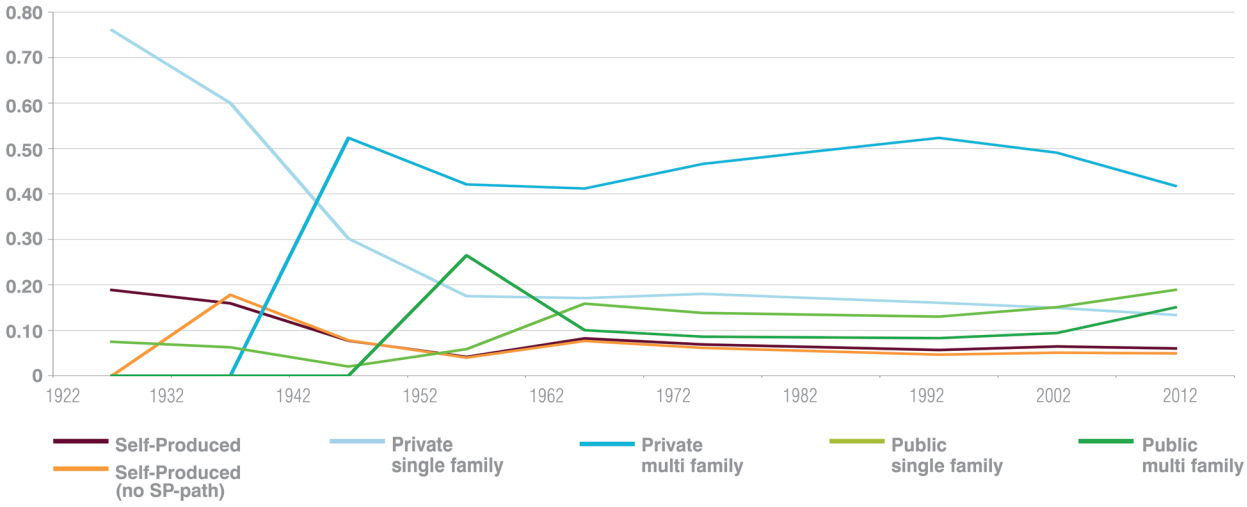




Figure 24 - SOi Historic Record per Housing Categories - Caracas

After doing a historical run of Applied Process for the Analysis of Spatial Opportunities (APASO) for Caracas in the twelve historical moments of Caracas (See Figure 22 and Figure 23), from its foundation in 1578 to 2015, The most obvious conclusion is the confirmation of the perpetuation of the lowest levels of Spatial Opportunity Index for its Self-Produced Neighborhoods.

Historically, we observed that, despite certain nuances, the historical trend is that Self-Produced Neighborhoods have had the lowest physical proximities and adjacencies to Caracas' urban resources. Indeed, we observe in the summary graph (Figure 24) a line of continuity where Self-Produced Neighborhoods historically have the least access to the opportunities of Caracas.

The study has also allowed us to verify that, in general terms, there is a direct relationship between socio-economic inequality and spatial inequality. This can be determined by a comparative visual analysis on the map that classifies the sectors by housing categories (Figure 20) and the map that geolocates the Spatial Opportunities Indexes (Figure 21), both from the same year 2020. As we explained before, historically, Self-Produced Housing has been the form of urbanization of the underprivileged population, that is, that population with the lowest income level; these sectors are represented with a dark gray color on the map that represents the buildings according to their housing categories (Figure 20), which are relatively equivalent to those territories that are represented with the lowest index (red to orange color) on the SOi map (Figure 21).

However, we see that the relationship is not always totally equivalent. We see some Self-Produced Neighborhoods with different levels of SOi and other territories that, without being Self-

Produced, also have low levels of SOi (Compare Figure 20 and Figure 21). The analysis shows that the nuances are recurrent. For that reason, we can argue that the Spatial Opportunity Index could be a planning tool that shows spatial inequalities instead of spatializing other inequalities such as income. This could allow a more detailed analysis of -or even proposals- to address spatial inequalities[25].

But the nuances we observe in the comparative analysis between the map that classifies the sectors by housing categories (Figure 20) and the map that geolocates the Spatial Opportunities Indexes (Figure 21) also allows to conclude that location is not the only variable that determines the relationship between proximity and connectivity of certain urban sectors, like Self-Produced Neighborhoods, to the spatial opportunities offered by the city. There are also aspects related to physical patterns, i.e., to intelligible spatial arrangements of physical elements that determine the levels of Spatial Opportunities (proximity, connectivity, and weights of destination). The way the street networks are organized and the distribution of the spatial "points of resources" across the city significantly determines spatial inequalities.

Finally, another conclusion of the analysis is the reduced level of contribution that Self-Produced pathways make to the improvement of Spatial Opportunities.

In Chapter 1, based on the reflections of various authors (Busquets 2016; Solà-Morales i Rubió 1997a; Hamdi 2004), we defined *street networks* as one of the fundamental variables that determine urbanization levels of urban forms. The streets allow the generation of connectivities,

[25] In Chapter 5, we extract several zooms of these results in order to understand details about how physical planning has contributed to consolidating spatial inequality with respect to Self-Produced settlements in Caracas.

but also the distribution of provision of infrastructural networks like as water, sanitation, rainwater management, and energy, as well as contributing to the even distribution of public facilities such as public space, schools, or health care center. In this sense, the street network layout is a good indicator of spatial inequalities at many levels.

As an additional analytical exercise, we analyzed historic levels of Spatial Opportunity Index for the history of Caracas with and without the Self-Produced street network - staircases and *veredas* (pedestrian pathways)- with the idea critically evaluate whether the existence of these paths has been a determining factor for access to the Spatial Opportunities of Self-Produced Neighborhoods.

This study is represented by the crimson and orange color in the graph (Figure 24). In crimson, we see the SOi for Self-Produced Neighborhoods, including the streets made under the community's coordinated construction. In orange, we made the same evaluation, suppressing those Self-Produced street networks (pedestrian paths -*veredas*- and staircases). Although we see that Self-Produced street networks have increased SOi levels in Self-Produced Neighborhoods, the analysis shows that this variation is almost negligible.

Many authors have referred to the importance of the rhizomatic value of connectivities to maximize Self-Produced Neighborhoods access (Berenstein-Jacques 2013, 288; Coronel, Mendoza, and González 2020); we must confess that we also advocated for this argument in our defense of Self-Produced Neighborhoods some years ago. However, our analysis shows that, although the self-production of staircases and *veredas* have considerable value in constructing a

community identity (Ontiveros 2002), its contribution is not significantly positive in promoting connectivity levels to maximize the Spatial Opportunities for its inhabitants.

Certainly, through the historical analysis of Caracas, we have verified that, despite certain nuances, the lowest spatial opportunities have been perpetuated for Self-Produced Neighborhoods. It is a clear demonstration of the failure of cities to integrate most of their inhabitants. However, the investigation would be incomplete if we do not analyze why this failure happened.

In the next chapter on the history of Caracas, we seek to explain the non-physical patterns that ended up influencing this socio-spatial segregation of underprivileged communities, including the consolidating of Zoning Planning Ordinances that contributed to perpetuating these inequalities. These documents passed the baton to the all-powerful rentier state in attending to the exponential growth of the Self-Produced Neighborhoods.

Thereafter, Chapter 5 on Planning Reports serves to drive a qualitative content analysis of 35 planning reports in the history of Caracas to explore the causes of these inequalities.

Chapter 4

Caracas: History of Inequalities

Fina's history

The history of this *barrio* is very similar to that of all other *barrios*. Fina arrived in 1959 at just seven years old. She came with her mother searching for jobs from *Barlovento* after the cocoa plantations where he worked had been abandoned.

Fina tells me that when she came to Petare, she could see the potato plantations in the Valley from her house. Petare was a mountain full of fruit trees and crops of corn and yucca, and farmed animals such as chickens, ducks, pigs, and turkeys. Fina told me that when she was a child, she used to go down to the Valley to walk along the long straight road [today Rómulo Gallegos Avenue], picking mangoes from one *hacienda* (farmland) to another.

Nadie se metía con nosotros porque éramos niños y porque teníamos un tío que trabajaba allí sembrando papas.

(Nobody messed with us, said Fina because we were children and had an uncle who worked there planting potatoes).

Before the transformation of the agricultural Valley into housing development, there was a special symbiotic relationship between underprivileged migrants and the productive dynamic of these plantations.

Fina's mother had come to Petare with seven children and she herself had knocked down a piece of the mountain on the site the first settlers had assigned to build her *rancho*, taking pieces of wood from the same trees that were already planted. It still impresses me that in just fifty years, this mountain went from being the agricultural mountain to the Self-Produced Neighborhood we have today with a density of more than 10,000 inhabitants per square kilometer.

We cannot say that this Self-Produced Neighborhood was spontaneous because it arose from various agreements. Between 1965 and 1967, the community created the *Asociación de Vecinos* (Neighborhood Council).

Entre todos planificamos donde dejar la calle, y cada vez que llegaba alguien nuevo ese trazado se hacía respetar... aunque no pensamos donde dejar una escuela. Fue solo la calle y las casas.

(Together, we planned space for the street. Every time someone arrived at the *barrio*, we asked to respect this road, said Fina, although we did not think about reserving land for the school. It was just streets and the houses).

In the beginning, Petare's neighborhood had to fight hard against the conventional wisdom of the civil society that was opposed to its existence. Perhaps that is why Self-Production was not allowed to go beyond what was just necessary for a subsistence dwelling: the houses and the minimum route to get to them.

At first, the *Guardia Nacional* (National Guard) demolished *barrios*. But people kept returning and under the cover of night the same groups rebuilt *ranchos* repeatedly. Until a day came when the community organized itself and the *Asociación de Vecinos* spoke with Municipal Council representatives.

Entonces empezaron a llegar las ayudas públicas trayendo material para hacer la calle, y todas las partes donde se iban a hacer, el alcantarillado, la electricidad… y todo lo demás.

(Then public aid began to arrive, bringing materials to make the street, said Fina's husband, and to make sewers, electricity, and so on).

Fina told me how, in these times, politicians were displacing the National Guard so that they did not run over the people who wanted to build a group of houses or wanted to build a *barrio*. Members of the Municipal Council and the political parties supplied materials in exchange for electoral votes, hence the consolidation of the Petare.

4.1. The history of Spatial Opportunity in Caracas

This chapter writes a different history of Caracas, the history of its Spatial Opportunities. Our narrative focuses not on the development and expansion of its urban forms but on the development of the non-physical patterns in the city and how these have determined the places underprivileged people live. It is a history that documents that the lowest levels of Spatial Opportunities exist in Self-Produced Neighborhoods. The chapter concludes with a presentation of the main planning tool that Caracas has had, Zoning, and its contribution to the perpetuation of spatial inequalities. In any case, this is not a history of Caracas itself, but the history of its underprivileged side.

Since the 1970s, social scientists have demonstrated that since the early colonial period, spatial inequalities in wealth distribution and socio-economic development have been characteristic of most Latin American countries (Cornelius and Trueblood 1975; Hardoy 1972; Portes and Walton 1976; P. Singer 1974). However, little has been written about the role planning has played in promoting spatial inequality in Self-Produced Neighborhoods.

4.2. The Emporium City

Caracas was officially founded on July 25, 1567, six years before the publication of the Laws of Indies by Captain Don Diego de Losada on behalf of the Spanish Crown (Nectario María 1966, 111–29). The Laws of Indies[26] were a set of practices transformed into legislation (Hardoy 1978; Latella Frías 1926) to provide control and regulation in American colonial cities under the rule of the Spanish Crown. In the foundation of Caracas, the principles governing the Laws of the Indies constituted the implicit form of action of the conquerors.

Eleven years after Caracas foundation, the Governor of Caracas, Don Juan de Pimentel, wrote the First Map of Santiago de Leon de Caracas (1578) in response to the request of the Spanish Crown, a document that shows more a set of wishes and aspirations for the city than the actual reality of what existed and had been built (Gonzalez-Casas 2009).

[26] The Compilation of Laws of the Indian kings, published by the Spanish Consejo de la Hispanidad (1943) is the assembly of nine-books with the normative to be applied in the New World (Latin America) and the Philippines, unifying the legal apparatus of the colony. Everything related to the city model and its regulations. Comes from the Ordenanzas de Descubrimiento, Nueva Población y Pacificación de las Indias prescribed by King Phillip II, on July 13, 1573, published by the Spanish Ministry of Housing (1973). For a detailed review of these ordinances, their rules and principles, we suggest reviewing "La Ciudad Ordenada," by Allan Brewer Carías (2006), and especially "Principles, rules, and urban form: The case of Venezuela," by Oscar Grauer (1991).

In addition, Don Juan de Pimentel wrote a document called *Relación de Nuestra Señora de Caraballeda y Santiago de León (*Hereinafter we call it *La Relación*) as a response to a questionnaire sent by King Philip II of Spain. This document, published by the Venezuelan National Academy of History in 1964, describes many characteristics of Caracas that are not explicit in the 1567 Pimentel's Map. These include climate, population, housing typologies, and agriculture production, among others (1964). Cross reading both documents written by Don Juan de Pimentel in 1578, the Map and *La Relación*, allows us to understand the early colonial Caracas whose physical characteristics will determine the spatial inequality of the territory.

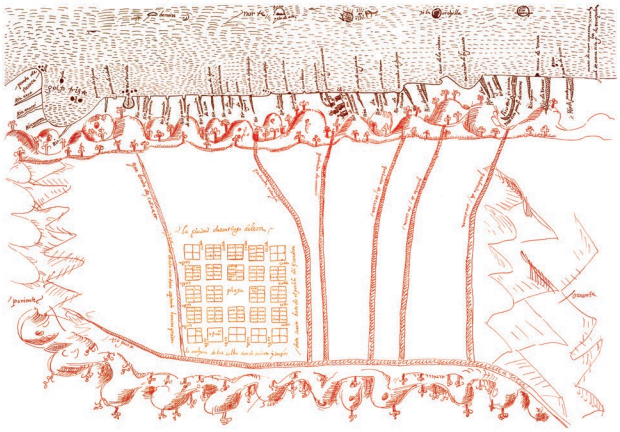


Figure 25 - 1578 Pimentel Map

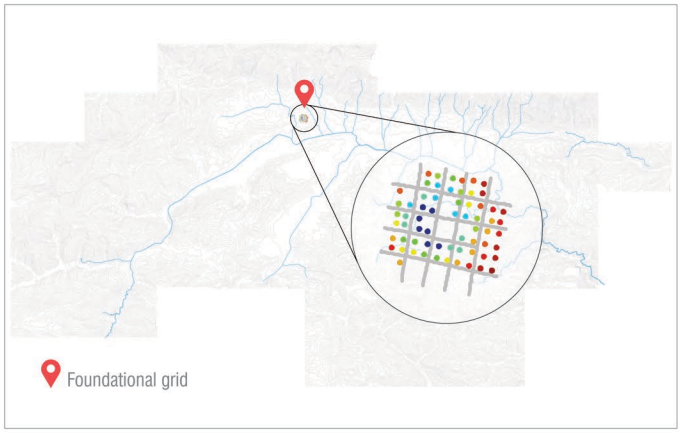


Figure 26 - SOi Map: Caracas 1578

Caracas was strategically founded in a fertile valley, well ventilated, and supplied by the waters of the quebradas (creeks). The core of the foundational grid embodied the emporium city where institutions controlled all the social and productive processes.

The foundational grid in Caracas has been widely studied, both from the morphological-spatial point of view (Centro de Estudios Históricos de Obras Públicas y Urbanismo (Spain) 1989; Gasparini and Posani 1969), as from the point of view of the legal system it generates (Brewer

Carías 2006). It consists of 25 regular blocks, forming a Hippodamian grid[27] in a north-south direction. Following rules finally published in Book IV of Laws of Indies, the grids distribute streets '*a cordel y regl*a' (cord and ruler, represents the technical tool to measure and retrace orthogonal street tracing at 1 to 1 scale in site), producing an urban grid whose center was assigned for civic and ecclesiastic power around the *Plaza Mayor* (Main Plaza) (See yellow color in Figure 25).

The legibility of the hippodamian grid helps provide legibility to this colonial social order, in a process that provided a civil organization to coordinate the distribution of lands and *encomiendas*[28] of the Amerindians among the Spanish colonizers (Gil Fortoul 1942, 118). From the foundational grid, the privatization of the land was ordered and coordinated among the colonizers. Its geometry establishes a regime of symbolic transmissions of the power associated with the Spanish Crown, imposing a social structure on the physical layout of streets and blocks (Rama, 1984, p. 7). In the book "*Latinoamérica, las ciudades y las ideas,*" José Luis Romero establishes a diaphanous and critical historiography of the Latin American city, where he defines the experience of the colonial Hippodamian grid as an emporium city (Romero 2001, 71), which

[27] This urban form Laws of Indies correspond to ancestral practices of the colonization and urbanization processes of the Spanish colony, widely applied in European Renaissance (Grauer 1991), whose precepts were inspired by Greek and Roman cities described in Vitruvius´ Book I of the Ten Books of Architecture (Morgan and Warren 2013) seeking to rationalize both the distribution of the streets and the location of the temple and the forum. But urban form is only one of several statutes of the Laws of the Indies, which included regulations topics such as duties and attributions of state functionaries (Book III), widely focused on the pacification of the Indians, as well as economic normative including provisions of private law, intermingled with other commercials, military, administrative and maritime regimes (Book IX).

[28] The *encomienda* was an Spanish institution that allowed to consolidate the dominion of the space that was conquered, since it organized Amerindian population as labor in such a way that it would benefit the Spanish crown (G. H. de Alba 1939; Zavala 1940; 1972). Thus, from the very foundation of Caracas, a dual social order has produced between conquerors and underprivileged populations, and those orders were imposed through the modes of territorial organization.

monopolized the administration of all resources, both productive and ethnic and cultural. In the urban grid, conquerors dominated the whole territory directly connected to the central colonial power from the institutions located around the *Plaza Mayor*. Around it, the *Cabildo* (Town Hall) also operated as a civil institution in charge of the construction of infrastructures such as ditches and the distribution of land and plots (R. Meza 1996).

Caracas's foundational grid was built over time, following a piecemeal consolidation, although always reinforcing the *Plaza Mayor* as the main center of power. Public institutions and best houses were located around the first area that surrounded the Plaza Mayor. A second ring held the home of a rudimentary middle class from this center, and so on. The physical pattern such as street paving and lighting was losing its level of quality as they moved away from the center (Portes and Walton 1976, 19).

In any case, *La Relació*n explains that the construction system of all houses was made of wood, nailed sticks, and covered with straw (Pimentel, 1964, #31). The construction system of the whole city corresponds to what previously we defined as *ranchos*, the same type of building 400 years later would be ignored by the official discourse (Cf. Chapter 1). Like most of the worldwide cities that start with an unregulated self-production process, Caracas was a *ranchería*, (a group of ranchos). However, its procedures and forms followed the regulatory framework established since its foundation. Following the logic of the fantastic book *La Ciudad Letrada* by Angel Rama, we can affirm that Caracas' colonial grid was an "Orderly City" (1984).The Spanish Crown required scriptures and map generating order in both spatial and social ways (Brewer Carías 2006). In this context, what determined social status was not the construction system of the dwellings but the

qualification of the urban environment where it was located. The access to the best-qualified lot depended on the financial capabilities to acquire it.

But the surrounding of the colonial grid, which was considered the outskirts of the city, was less than an uninhabited territory. It was occupied by a mixture of houses for artisans and agricultural workers (Portes and Walton 1976, 19), people who depend on the city but did not belong to its pattern. And beyond the grid, the 1578 Pimentel Map only shows watercourses, the *quebradas* (creeks), surely because of their value for cultivation (See red color in Figure 25).

However, *La Relación* explains that there were more than watercourses in the Valley, such as the existence of about 4.000 Amerindians scattered in Caracas and Caraballeda[29] who were in "good peace and obedient to the service of his majesty". *La Relación* also explains that Amerindians lived in neighborhoods with three, four, six more houses, and although they are very far [from the colonial grid], these neighborhoods have a "reasonable" population (Pimentel, 1964, #5). The occupation of the Valley by Amerindians followed a practice pattern of rotation agriculture (Antczak et al. 2020, 527). These nomadic agricultural patterns would be gradually transformed and incorporated into the colonial dynamics of economic exchange through the

[29] Nuestra Señora de Caraballeda was a Caracas' twin town located at the north of the Ávila Mountain close to the coastal sea during colonial times (the town still exist with the same name). *La Relación* does not explain in detail the number of aborigines located close to each one. In fact, the data are estimates and cast doubts about the interest in integrating them into the city census.

Reducciones[30] (literally reductions, but often called missions) that sought the pacification of Amerindians (Spain. 1943), but especially their submission to the ways of life and orders of the Spanish Crown.

The integration of Amerindian groups to the socio-economic dynamics of the colonial urban structure happened recurrently and continuously during colonial times. We could affirm that - paraphrasing Janice Perlman (1976) in her critique of the Modernist approach to marginality- indigenous populations were not marginal actors, they were integrated albeit in an unequal way.

And this social inequality was spatialized by avoiding the geographical dispersion of the indigenous occupation, who were grouped in villages at the service of the Crown (Pozo and Solano 1995), many of which were the seed of today's neighborhoods. For example, around 1621 emerged in Caracas´ Valley many indigenous towns such as San Francisco de Paula de Agua Fría de Baruta, El Valle, Dulce Nombre de Jesús o Buen Jesús de Petare, and San Pedro and San Pablo de Antímano (Arráiz Lucca 2013, 73).

Finally, the 1578 Pimentel Map shows a third scale of ports and inlets representing the relationship of Caracas with the National territory and the Spanish Crown (See color crimson in

[30] *Reducciones* referred to that of the Amerindian culture and its living patterns rather than the physical reduction of indigenous peoples. However, it must be said that there was also a significant reduction in the number of Amerindians during the colonization process. Undoubtedly, the initial process of occupation of the Caracas Valley implied a violent reduction of indigenous peoples. The year following the foundation of Caracas, in 1569, those indigenous people who approached the city with the purpose of rebellion against the Spanish mandate were subjected to a trial, which resulted in the imprisonment and death sentence of twenty-three caciques (Amerindians 'chiefs) (Gil Fortoul 1942, 38) (Gil Fortoul, 1942, p. 38). In the following years, Amerindians also died from diseases causes. this population was literally reduced mainly by the immune inability to face viruses and diseases that came from Spanish ships such as smallpox, measles, and flu (Antczak et al. 2020, 523–24)

Figure 25). In colonial times, the exchange processes between the colonies in the Americas and the Spanish Crown through these ports were centralized and monopolized from the *Casa de Contrataciones*[31] (Hiring House) in Seville (Cervera Pery 1997; Fuentes 1992, 137; Piernas y Hurtado 1907). The *Casa de Contrataciones*, and other colonial institutions consolidated the non-physical patterns of dependency of Latin American colonies on the Spanish Crown by monopolizing the exchange routes[32].

The Pimentel Foundational Map of Caracas and *La Relación* show three scales of the same socio-economic process. The Valley represents the productive landscape subdivided in private landholdings for agricultural production, both for subsistence and for exporting goods to Spain through *Casa de Contrataciones.*

The Pimentel Map shows the *quebradas* (creeks) of the Valley that served as land divisions between different owners while functioning as infrastructure for agricultural production. In this context, the map excludes unprivileged native populations -the Amerindians- who lived in the Valley. Then, the foundational grid represents the center, where the decision-making on social and economic dynamics took place, and the coastline showing the space for trade, dependent on the Spanish Crown.

[31] Subsequently, between 1728 and 1780, the particular case of Caracas will have the *Real Compañía Guipuzcoana* (also known as Caracas Company). It as the monopolizing agency of the agricultural and mining production systems with the Spanish colony.

[32] A side effect of this pattern of monopolization in the exchange between the Latin American colonies and the Spanish Crown is the emergence of smuggling culture, especially with the Caribbean islands (Cromwell 2018; Juan Giusti-Cordero 2015). Although this topic is not explored in this research, we consider it very important because of its relationship with the culture of informality in the growth and development of Latin American cities.

The Law of the Indies included several regulations, especially of an environmental nature, such as the importance of founding the city near clean water and fresh air, the preservation of *ejidos* (communal lands), open spaces for cultivation, and possible expansion of the settlement, among other things. However, from the perspective of the relationship with its underprivileged communities, we can say that from its foundation, Caracas derived two legacies of colonization that remain to this day. First, the economic dependence and the privatization of development. Second, the monopolized economic exchange with the Spanish mainland. And both legacies included land exploitation by colonizers and their descendants and a subordinated integration of underprivileged communities into the work force.

4.3. Rise of an Autarchic System

The productive system of Caracas included these other scales mentioned above: urban grid, Valley, and coastal ports. In the end, the key to the progress of Caracas would be outside the historic grid (Gonzalez-Casas and Vicente 2020).

In this context, the *hacienda* appears as a fundamental institution in Latin American urban development history. The *hacienda* is a unique agricultural production process that emerged in Latin America during the colonial period and continued until the first decades of the twentieth century. Although it has its center in agricultural production, it ends up consolidating itself as a social, even political, structure that determined power relations and spatial inequalities in Latin American history. In his Ten Keys to understanding Latin America, Frank Tannenbaum defines the *hacienda* as an autarchic system in the following way:

> The *hacienda* is not just an agricultural property owned by an individual. The *hacienda* is a society under private auspices. It is an entire social system and governs the life of those attached to it from the cradle to the grave. It encompasses economics, politics, education, social activities, and industrial development (Tannenbaum 1962, 80)

The emergence of the *hacienda* is the beginning of a profound reorganization of productive forces in the Latin American subsistence sector (P. Singer 1974, 15). And this reorganization went beyond the productive system and influenced political and social relations and the spatial distribution of these dynamics.

Hacienda as a form of development has certain similarities with the Company Towns developed in the UK and the US because both were social organizations with autarchic flavor coordinated under a single production system. However, while the Company Towns organized themselves out of industrial production under the control of one company (Garner 1992; White 2012), the *hacienda* was primarily agricultural and organized under the rules of one person: *the hacendado* (*hacienda* owner), and his -rarely her- family.

This power relationship between *hacendados*, their family, and the workers ended up characterizing the farm's politics with a decisive influence on national governance. To define this group in Caracas, Francisco Herrera Luque coined the idea of Los Amos del Valle (*Valley Lords*), a limited group of families, twenty according to his historical fiction novel, that controlled the political and commercial systems of Caracas (1979). *Hacendados* became a significant power driver in Latin America. Even though the*y* had their main houses in the Valley, they would

maintain a direct connection with the center of political power whose institutions were located at the center of the historic grid to influence government decisions (Rama 1984).

And these *hacendados,* Lords of the Valley for the case of Caracas, were much more than the manager of agricultural production; there existed a paternal relationship between his figure and that of the farmworkers. The *hacendado* was the godfather of many of the children born in the *hacienda* (Tannenbaum 1962, 86). In fact, the grandmother of the author of this work was one of the hundreds of goddaughters of General Juan Vicente Gómez, one of the most influential *hacendado* in Venezuela who ended up being, directly or indirectly, dictator of Venezuela for 27 years until his death in 1935.

Simultaneously, the *hacienda* was an important engine in giving place to the labor force[33], especially since the late 18th century when the institution of the *hacienda* was already fully established. In this context, the dominant feature was the consolidation of peonage (Rios de Hernandez 1997, 77). The peons were a free population of different races, but especially *pardos* (mestizo or mixed people) who worked on the farms as employees. They were employed within the autarchic agricultural production system established in the *hacienda* by a persuasive rather than a coercive power agreement (Cf. Castells 2016).

[33] The labor system in Caracas was not literally slavery[33], even long before its official abolition, but based on a social and economic agreement. The Dictionary of History of Venezuela (1997) explains that according to data from John Lombardi (1977), the slave population in Caracas was very low, probably because it was one of the least wealthy territories in Latin America, already in 1844 they represented only 1.75% of the population. When slavery was abolished in 1854, peonage was already fully established. However, this does not mean that the landowner / peon relationship was not loaded with inequalities, for instance, laborers received payments with *fichas* (tokens) for the consumption within *La Hacienda* (González-Casas 1998), limiting on peons their connection to the productive and exchange systems beyond those provided by the *hacendado*.

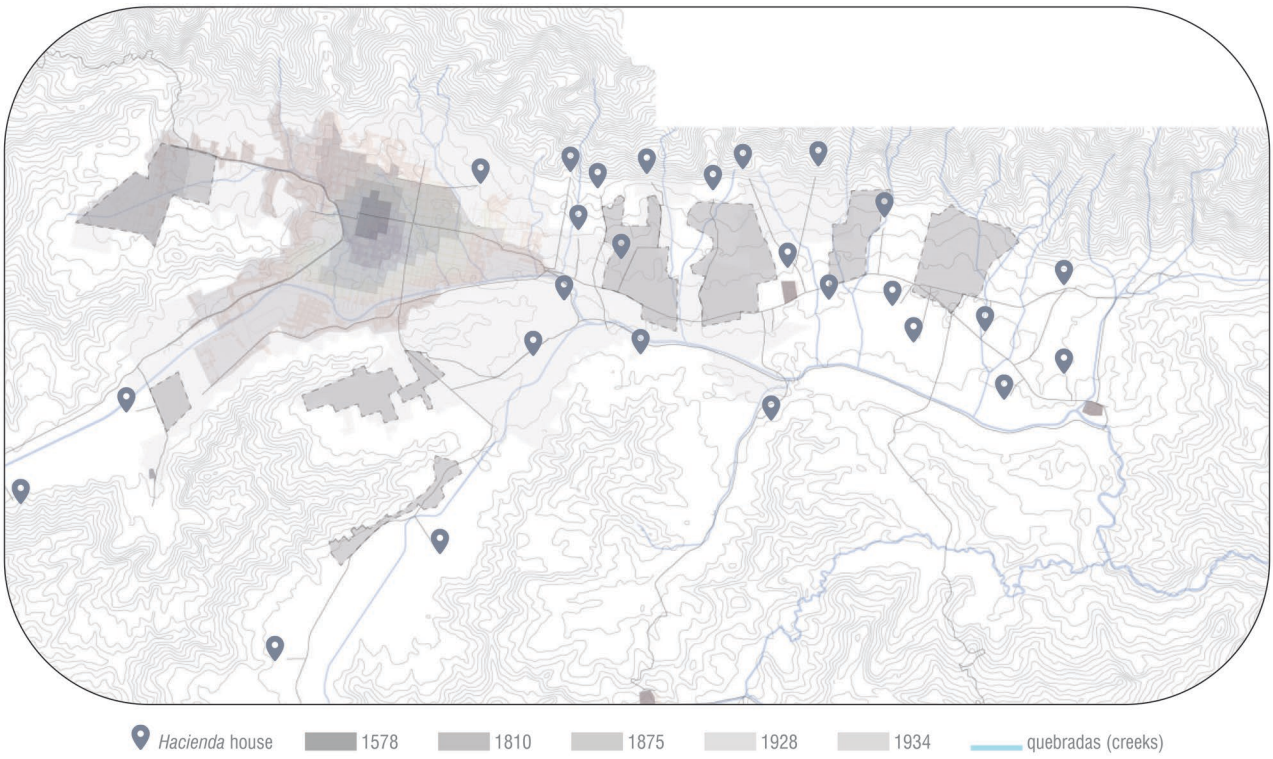


Figure 27 - Pattern of Haciendas in Caracas

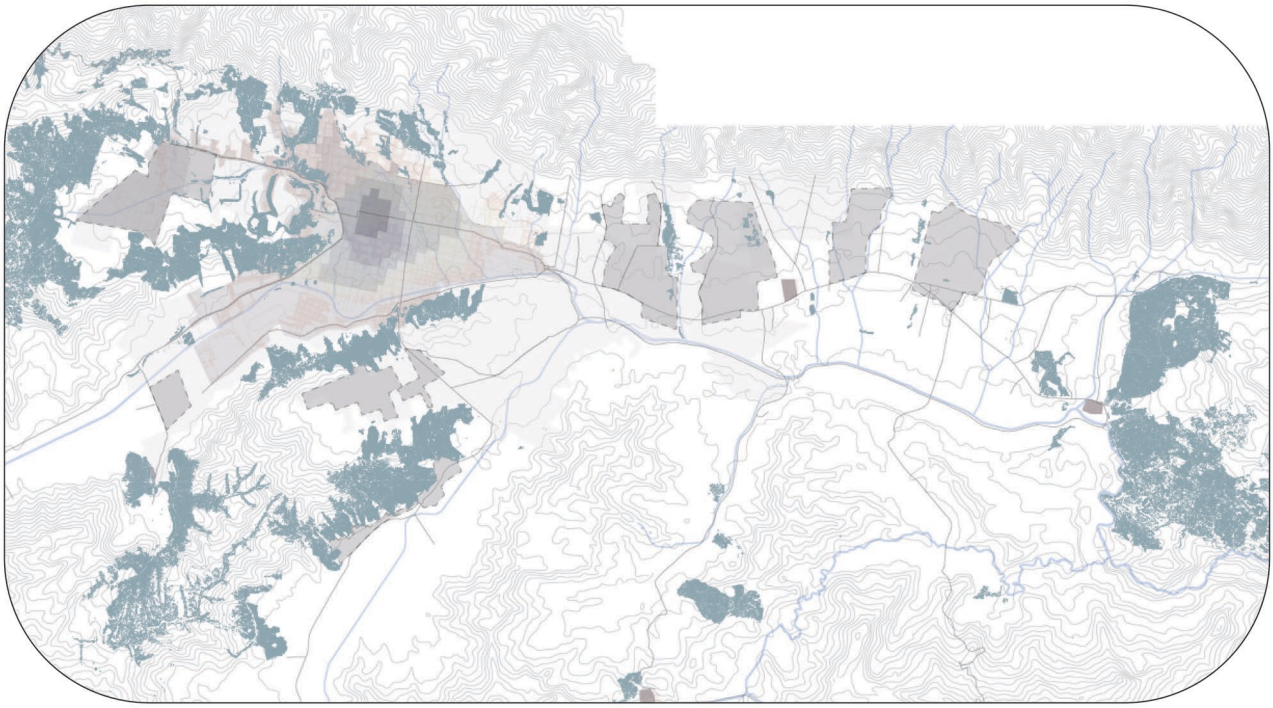


Figure 28 - Overlapping Housing Development (1939) / Self-Produced Neighborhoods

The transformation of Haciendas into middle and upper-class housing developments will leave out underprivileged people who will later self-produced their neighborhoods on the margins of these real estate developments.

From these relationships between different social groups concerning production and exchange systems, emerge a stratified society[34] (Salcedo-Bastardo 1970; Soriano de García-Pelayo 1988) where access by social groups to the means and fruits of production and exchange defined social strata. Even more than ethnic or racial categories, since colonial times productive and commercial activities established the power relations and social stratification in Venezuela, including Caracas.

And this social stratification was spatialized. The Valley of Caracas was structured around a series of *haciendas* with relatively similar dimensions following the logic of land privatization since founding times, commonly separated from each other by *quebradas* (creeks) and other geographic structures. This spatial structure determines that flat lads of the Valley, between creeks and creeks, creeks and hills, or hills and hills, be the productive sector controlled by *hacendados*, leaving these geographical accidents as leftover areas of the productive territory. Each *hacienda* would have its autarchic system, its *hacendado,* and working families dependent on him. The

[34] Graciela Soriano de García-Pelayo (1987; 1988) defines eight strata in the Venezuelan colonial era, the names that we will use correspond to those assigned during the colony according to her research. First, the "personas principales (main people)" at the highest level of the social ladder, regardless of having nobility titles, their social condition is based on their tenure as landowners for agricultural production or mining. To this group belonged mainly white people, because the distribution of land occurred between Spanish colonizers at the beginning of Caracas´ foundation. Second, the main people of lower constituted by merchants who controlled the commercial exchange between Venezuela, Spain and the rest of America. Third, the minorist merchants. These three groups conformed the elite, which dominated the decisions from the city centers (See Ciudad Patricia in (Romero 1976). Fourth, a wide range of "personas de condición (people with certain conditions)" including university students, officials of the state bureaucracy or employees of the private exchange systems. Fifth, people on the threshold of the "gentes de baja condición (people of low status)," including the blancos de orilla, which were Spaniards not born in the Iberian Peninsula. Sixth, "gentes de baja condición (people of low status)" involved in service activities including surgeons, barbers, muleteers, or even lower-ranking craft activities such as carpentry or pottery. Seventh, "gentes de baja condición (people of low status)," but involved in rural activities including capataces (rural foremans). Finally, the lowest condition made up of homeless people and beggars., which included those people considered lazy to join the commercial exchange systems.

haciendas would be physically and politically disconnected from each other but connected to the bureaucratic center of the historic grid through the Camino Real[35] (Royal Road*).*

These *haciendas* occupied the great extensions of the Valley. Meanwhile, peonage developed a minifundia agricultural system called *conuco* with two location alternatives: outside or inside *haciendas*. *Conucos* are small parcels of land attended by single families and dedicated to an agriculture of subsistence. *Conucos* were freely set in those spaces not incorporated in the *latifundista* occupation systems of the *hacienda,* especially the *quebradas.* But the majority of *conucos* happened inside *haciendas* through different mechanisms of agreements between *hacendados* and *conuqueros*, especially the transfer in usufruct of lands (Rios de Hernandez 1997; Cunill 1987), generating a *hacienda-conuco* binomial.

At the productive level, *haciendas* developed a mono-production agriculture vocation predominantly oriented towards the foreign market, especially with products like coffee and cocoa (Rios de Hernandez 1997; Pinto Cohén 1966). Meanwhile, *conucos* cultivated products of the internal market related to subsistence economies (Rios de Hernandez 1997, 77), such as corn, yams, and yucca (Cunill 1987, 382). The power relation was asymmetric in the *hacienda-conuco* binomial, where the latter inevitably depended on the former. The *conuquero* provided the labour force to exploit the monoculture for export, but also depended on the usufruct of the *hacienda's* land for the survival crops.

[35] The Camino Real is what is known today as Avenida Francisco de Miranda, which is divided into two roads, precisely in the area that we know today as Dos Caminos (Two Road). One road continues towards the eastern end (today called Avenida Rómulo Gallegos) reaching Guarenas outside the Valley, the other one goes down towards the river in the direction to Petare, which in aboriginal language means "facing the river".

But these social relations had a greater degree of complexity than the simple binomial structure between peons and *hacendados* because, as we explain above, from the colony emerged a stratified society of multiple levels.

Indeed, there was the social polarization between oligarchies linked to the commercialization of *haciendas*' production versus a mass of the population that produced and marketed survival products from *conucos* (Vallmitjana A. 1991, 23). But, it is also true the emergence of a permeable society where economic activities created contact zones between different social groups, allowing the underprivileged sectors to survive, even thrive, if people found opportunities to access a wider agricultural production system and, especially, its commercialization (Garcia-Pelayo 1985; Romero 1976; Soriano de García-Pelayo 1988).

This is especially relevant because social mobility in this stratified society would feature foster the growth and domination of primary cities such as Caracas since colonial times. Service providers located within the historic grid, such as surgeons, barbers, muleteers, or even lower-ranking craft activities such as carpentry or pottery, were perceived with higher status than rural workers. And working in urban centers opened in people the possibility of "rising" economically to merchant activities, which was perceived as an even greater status (Soriano de García-Pelayo 1988). Even before the country's independence urban centers were primarily conceived as bureaucratic centers but also as cores of growing urban service activities, or tertiary sector of the economy (Veliz 1980, 234–234). This process occurred in parallel in all Latin American countries in their relationship with the Spanish Crown (Hardoy 1972, 72; Rama 1984, 24).

To sum up, during colonial society the historic grid holds the bureaucratic power centers of a stratified society. Simultaneously, the Valley was privatized for agricultural monoculture to serve a centralized and monopolized exchange with the Spanish Crown. The spatialization of these economic dynamics included the integration of underprivileged people, albeit unevenly. They had some room to thrive but maintain a significant dependence on the *hacienda*'s system. We see this system, with its peculiarities, repeated in the colonial structure throughout Latin America.

After independence from Spain, little changed in Latin America's new nations, the social and economic structure remained more or less intact. Still, the market for their products changed, with Spain and Portugal being replaced first by England (P. Singer 1974, 16–17), and later by the USA. In this context, Latin American countries joined the world economy as a supplier of raw materials from agriculture crop or mining extraction (Fuentes 1992, 317; Leeds 1969, 55). In the case of Caracas, this exchange occurred through monoculture and the control of productive systems by private entrepreneurs (See *Hacienda* House in Figure 27) which contributes to a fragile and unequal society defined by its inequalities (Hellinger 1991).

The founding grid remained the center of bureaucratic power even after the consolidation of the Republic (See 1875's pattern in Figure 27). This had its epitome between 1870 and 1887 with the government of Guzmán Blanco[36] who promoted the first Haussmanian image of Caracas, including purported boulevards and great cultural buildings where the elites invoked the

[36] Antonio Guzmán Blanco was President of Venezuela for three separate periods, from 1870 until 1877, from 1879 until 1884, and from 1886 until 1887. He was responsible for the construction of a series of emblematic buildings, such as the Federal Palace or the Municipal Theater, seeking the monumentalization of the urban center with neoclassical architecture that contrasted with the village aspect of many sectors of the city (Nazoa 1977, 261).

Frenchification of the urban core that would make possible the magic transformation from the post-colonial city into the real metropolis (Almandoz 2009). Although the residential areas of Caracas were not sharply segregated by class, the wealthier persons tended to live toward the center of the city and the poorer toward the periphery (Stann 1975, 85).

Until the time of the government of Guzmán Blanco there were no major inequalities in the distribution of Spatial Opportunities throughout the city of Caracas. The *hacienda-conuco* binomial allowed underprivileged people to have a close albeit unequal connection with the fruits of development. The historic grid persisted with limited dimensions; by 1926, it barely exceeded a population of 130,000 (Venezuela 1926), which allowed the few inhabitants of Caracas to have relatively good access to its tertiary economy

Haciendas remained as the main territorial occupation mechanism until the second decade of the 20th century (See 1928's pattern in Figure 27), when oil extraction becomes the main export product in Venezuela. This process accelerated the transformation of *haciendas* into residential neighborhoods supported in the hipertertiarization of the economy and the abandonment of other sources of production such as the cultivation of coffee and sugar cane.

4.4. Urban Patchwork

At the end of the nineteenth century before the oil boom modernization arrived in Caracas in the form of positivistic foreign ideas about planning which contributes to the end of the *hacienda*. This process changes forever the urban built environment with the transformation of agricultural lands mainly into middle- and upper-class residential neighborhoods. The

consequence of the end of the farming economy and its replacement with real estate speculation on the farmland meant that underprivileged strata were dispossessed of their own land or the land they had access to, forcing them to seek land and shelter outside the socio-spatial structure of the *hacienda* which no longer existed. The relevance of this milestone for the future of spatial inequalities in Caracas is substantial and forces us to unpack with some detail this part of the history.

The attempt to modernize the country had begun at the beginning of the republic era. In 1871, under the government of Guzmán Blanco, the *Dirección General de Estadística* (DGE, General Directorate of Statistics) was created in the Ministry of Development (Venezuela. Instituto Nacional de Estadística 2015) with the purpose of collecting important agricultural and economic information to inform the management of public affairs.

Two years later, the first census of the Republic reported the quantities and location of underprivileged housing, in addition to describing the physical location of the sites of these settlements. A total of 2,702 underprivileged houses located within or around the foundational grid were counted, classified according to *sitios, callejones y caserios* (places, alleyways, and homesteads) (Venezuela 1873). While privileged people lived in the center of the historical grid, the census measured underprivileged dwellings according to the quality of the urban environment outside from this center of power. This pattern of measuring places where underprivileged housing emerged remained in the second census of 1881 (Venezuela 1891).

In parallel, at the end of the 19th century, wealthier strata started to abandon the urban center, as their European counterparts had done much earlier, seeking to renovate houses and move to sites with high-quality natural amenities (Violich and Daughters 1987, 7). In Caracas, this phenomenon occurred for the first since 1891. As pointed out by María Leal in her research, *Orígenes de la urbanización El Paraíso 1891-1895 (Origins of the El Paraíso urbanization 1891-1895),* the arrival of the tram promotes the transformation of *Hacienda Paraíso* (See El Paraiso in Figure 29 and Figure 30), further away from the historic grid into an upper-middle-class neighborhood including the new electricity, water, sewer networks and recreational facilities (Leal 2010).

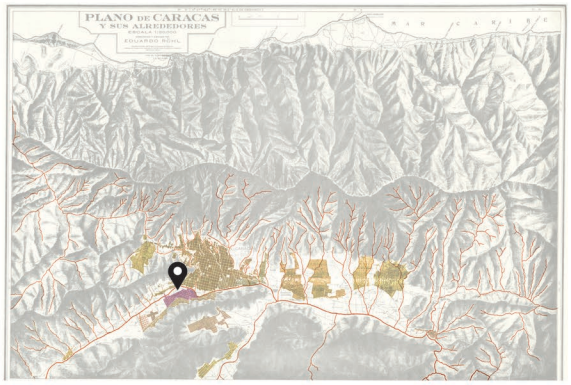


Figure 29 - 1934 Rohl Map



Figure 30 - SOi Map: Caracas 1939

Haciendas were gradually transformed into middle and upper-class housing developments.

The offer of a new city encompassed the desire for a better-qualified environment, including the improvement of urban services and infrastructure, but surrounded by greenery. This was the materialization of the modern Caracas' lifestyle which implied the abandonment of the historic center grid. In this modernizing strategy, the extension of the track tram systems by the

Compañía Tranvías de Caracas (Caracas Tram Company) was crucial (De-Sola Ricardo 1967, 26; Leal 2010). The paradigm of human movement in parallel with territorial expansion would continue with the installation of the first bus system in 1920 (Stann 1975) and the construction of the highway system starting in the 1950s**.**

In this context, a typology will be born in Caracas that, from now on will be associated with the well-to-do Caracas strata: *la quinta* (garden suburb dwelling). For the wealthy classes, it will no longer be desirable to live around the centers of power near the Main Plaza, which by this date has been renamed *Plaza Bolívar* in honor of one of Latin America's founding fathers, around the bureaucratic centers of power.

New forms of mobility and housing typologies appear with the emergence of the Modernizing approach in this first great expansion of the urban grid of Caracas at the beginning of the 20th century. These include the attractiveness of new rapid mobility, which allowed residential dwellings in spaces away from the urban center (See new housing developments in Figure 30), and the hygienic spirit of leaving the center to dwell surrounded by a domesticated natural area around the houses.

The emergent Modernizing approach also brought a change of perception about the Self-Produced Neighborhoods. While previously civil society was concerned about their location, and especially about the qualification given to the urban environment where they were located as underprivileged homes, which is what had been recorded in the first and second censuses of 1873 and 1881, now their survey focused on their constructive culture.

In 1891, the same year that the El Paraiso begins as the first modern gesture to abandon the foundational grid, the national government organized the Third Census of the Republic. This is the first time that the *rancho* - the house of underprivileged people that represent the seed of Self-Produced Neighborhoods as we explained in Chapter 1- registers in the official discourse as an independent category of housing type. The Third Census reported 1,630 ranchos distributed throughout the Valley of Caracas, representing almost 16% of all homes[37] (Venezuela 1891). This explains why the literature underlines the existence of the first ranchos towards 1891 (Cf. Gilbert et al. 1993; Stann 1975), although the evidence shows that they already existed, only that it is at this date that they begin to be considered as a form of housing in the official narrative.

In our opinion, this change in perception in the official discourse on Self-Produced Neighborhoods from the First Census in 1873 until the Third one in 1891 indicates a prejudice against this form of development. The Self-Produced Neighborhoods were seen as the residences of those "others" whose development should be ignored. The society perceived Self-Produced Neighborhoods according to the quality of their built environment. At the time, the middle and upper strata lived close to centers of power, either in the better qualified historic grid or in houses within *haciendas*. It also coincides with the period when the construction systems of all the houses were more or less similar. But, when the middle and upper strata started to build modern homes abandoning the historic grid, proximity to the center sectors ceased to be a status symbol, and Self-

[37] The Venezuelan Third Census of the Republic registers 982 ranchos in close and around of the historic grid (Catedral, Altragracia, Santa Teresa, Santa Rosalía, La Candelaria, San Juan, La Pastora and San José), which is 11.10% of housing structures, and 648 ranchos in foreign districts (El Valle, Antímano, La Vega, and El Recreo), which is 48.07% of housing representing. In total it represents 15.99% of housing structures for the entire Valley.

Produced Neighborhoods began to be accounted according to the nature of their construction system. Counting Self-Produced Neighborhoods would always be as "the others," or the inhabitants with different conditions from those who coordinated the surveys. This paradigm of assessing Self-Produced Neighborhoods as *ranchos* and their role in the urban-residential explosion across the entire Valley of Caracas is still relevant to this day.

This urban-residential explosion changes forever the spatial structure of the Valley, generating what we define as an Urban Patchwork (Cardona 2003). Recapitulating how Caracas had been occupied, we must remember that the Valley had been privatized due to the distribution of land in colonial times. Now, each *hacienda* would be transformed into different urban patterns following the interests of each private developer without planned coordination with the others.

But this transformation of *haciendas* into housing developments does not happen regularly from the foundational center towards its periphery. Rather, it happened at the pace of the interests of the *hacendados*. In particular, near the foundational grid there were located *haciendas* of prime importance since colonial times (Debrot 1988), so its profitability delayed their transformation into residential neighborhoods. Therefore, as we can see in the *Plano de Caracas y sus Alrededores* (Plan of Caracas and its Surroundings) drawn by the Venezuelan surveyor and naturalist Eduardo Rohl in 1934 (Figure 29), new residential areas emerged near the *Camino Real* (Royal Road) and in areas dedicated to minor crops far from the foundational grid (López Maya 1986, 23). This development dynamic generated a spatially fragmented growth of Caracas starting at the third decade of the 20th century.

But the way the *haciendas* were transformed into residential areas made the city not only fragmented but also disconnected. Spatial fragmentation would emerge as different *hacendados* transformed themselves into real estate developers. Each autarchic *hacienda* becomes a different city utopia. In this context, Caracas has garden-cities such as San Bernardino, US-American suburbs such as Las Mercedes, baroque avenues such as in Altamira, and so on, creating the urban patchwork of diverse urban grids of the Caracas of today.

But the development of new housing projects also followed patterns of the old *haciendas*. The organizational system of the *hacienda* used the geographical features - *quebradas* and hills - as limits, where the *hacendados* focused their interest on flat and non-floodable areas. This pattern was followed by the new housing developments that built urban utopias of the best lands, leaving hills and watercourses as it neglected backyards of new neighborhoods. Like its predecessor *hacienda*, the new modern neighborhoods are clearly connected only with the old *Camino Real* (Royal Road), now transformed into an urban avenue.

All of the above generates the breeding ground for an urban structure where the inhabitants of Self-Produced Neighborhoods have the least number of Spatial Opportunities. They ended up occupying the place of disconnection and limited proximity to the resources that the city offers. First, the disappearance of the *hacienda-conuco* binomial undermines the productive capacity of underprivileged people by losing both their source of employment in the *hacienda* and the lands they usufruct for the survival crop of the *conuco*. In spatial terms, the transformation of haciendas into the territory for real estate development would leave them dispossessed of dwelling areas territories to live in since they had no financial capacities to access the housing market.

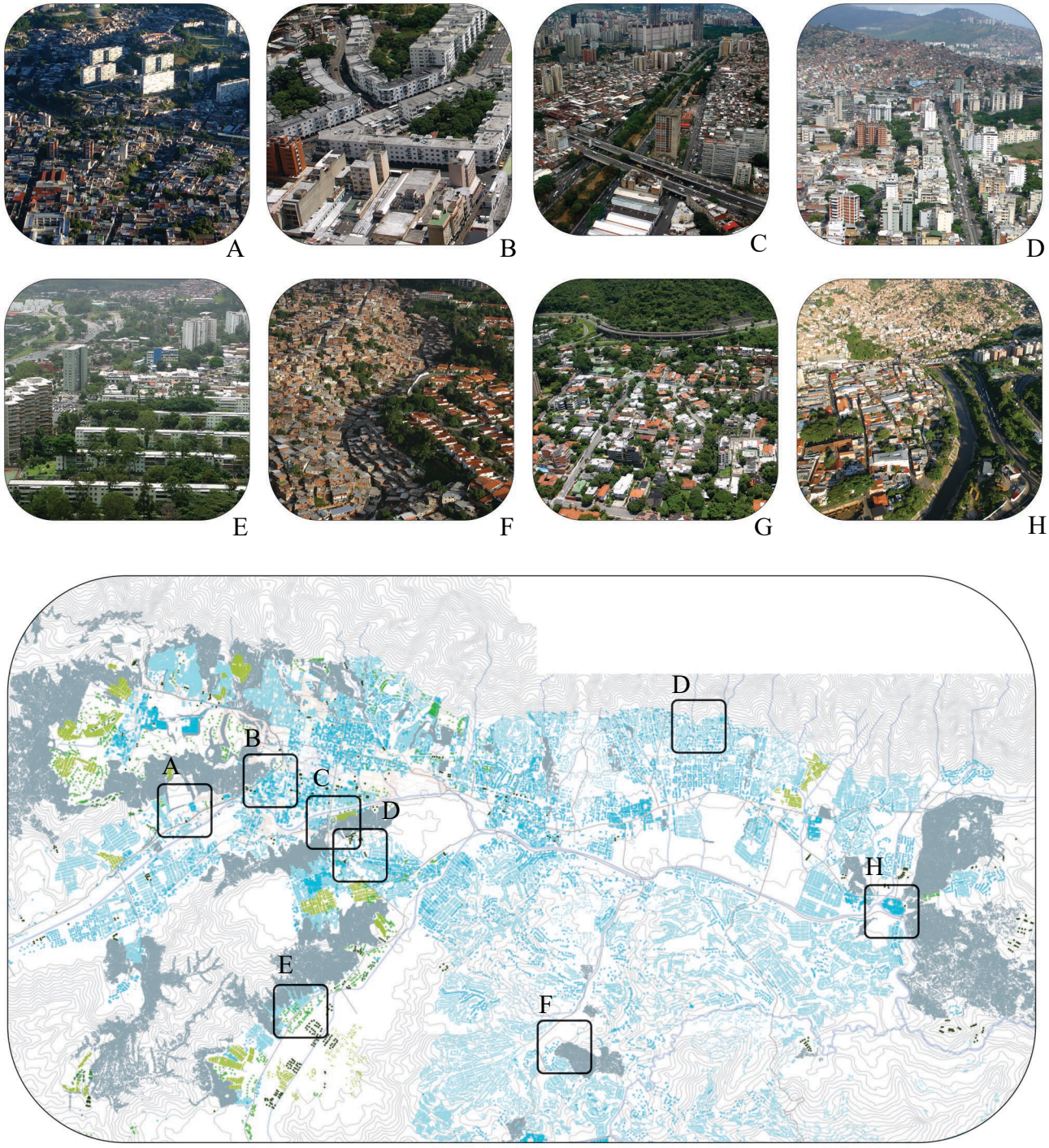


Figure 31 - Urban Patchwork in 2020

A quick view to the present. Progressively, the Caracas Valley will be filled with -public and private- real estate developments, leaving the leftover land to Self-Produced Neighborhoods.

In this context, the rapid emergence of Self-Produced Neighborhoods in leftover lands of the productive territories was inevitable.

On some occasions, old settlements located on the edge of the *haciendas* were consolidated as new residential developments, as is the case of the *El Pedregal* neighborhood, founded in 1899 and which remains today. But in general, boundaring *quebradas* and sloped hills that surrounded the *haciendas*, now transformed into middle-class and wealthier neighborhoods by private development, were the place for the growth and expansion of Self-Produced Neighborhoods.

4.5. Exponential Growth of Self-Produced Neighborhoods

But, as if this were not enough, this progressive transformation of the entire territory into mainly residential neighborhoods grew exponentially with the event that would change Venezuelan history forever: the oil boom after the eruption of Barroso II oil well on December 14, 1922. The industrial revolution was in full growth, and with it the fossil fuel market, with this event Venezuela would become one of the most important suppliers of oil worldwide (Arráiz Lucca 2016).

In 1913, before the appearance of oil, the coffee and cocoa trade were the main export products of Venezuela. According to Miguel Izard (1970), they represented 71.4% of exports in that year, by 1940 oil represented 94% of exports, while coffee and cocoa were reduced to only 3.2%. Venezuela's population goes from being dependent on the agricultural market to one dependent on oil exports where economic power is not in the hands of a few -the *hacendados*- but

in the hands of only one: the State[38]. In this context, the State became ever more powerful and proximity to its central power and its brokers would mean higher possibilities for economic development (Lieuwen 1965).

As explained in Chapter 2, the concentration of the fruits of development by the central power in an oil-dependent economy also brought about the hypertertiarization of the economy (Cardoso 1968, 91; Castells 1976, 71; Cordova 1973, 88). With this economic activity mainly in the hands of the State, the job market in service activities grows exponentially in the primary urban centers. In the case of Caracas, the tertiarization of the economy that had been occurring since the colony is expanded by the economic activity linked to the administration of oil revenues.

At this time, Venezuela became one of the top oil worldwide providers; and Caracas became the administrative center of this globalized product. Now, the federal government became an all-powerful State, capable of addressing all and would have in Caracas the symbolic site of the oil wealth. In this context, Fernando Coronil defines it as a Magic State capable of controlling all social processes (1997); this will be reflected in the planning processes, which will always have the State as the main promoter.

But in all urban histories, global and local events are mixed. In 1935, while Venezuela is increasingly inserted in the growing world market for fossil fuels, an event in the country will contribute to Caracas's modernizing project: The death of General Juan Vicente Gómez after 27 years of dictatorship.

[38] It is a common misconception that in Venezuela the petroleum industry is in the hands of the private sector. Since its inception, the oil industry has been run and entirely owned by the Venezuelan government.

One year later, the new President Eleazar López Contreras launched the February Programme, "the first social and economic program undertaken by the government in Venezuelan history (Hellinger 1991, 52)," which would be decisive for the beginning of the modernization of Caracas. At the end of the year, President Lopez Contreras broadcasted from Miraflores, the Government Palace, the aims of the Programme. It established the creation of a modern state as the main purpose of the Program. These included the organization of the state apparatus, its internal and foreign policies, and the public works to modernize the country's infrastructure. In terms of public services, the February Programme dictated a high priority in urban hygiene focused on the provision of sanitary services such as sewers and aqueducts (López Contreras 1962, 187) with special emphasis on the city of Caracas which had had secondary relevance during the dictatorship of Juan Vicente Gómez.

Caracas was transforming into the main national job market, largely because of the hyper-tertiarization of the economy. Now, additional factors contributed to this when large amounts of public money is invested in infrastructure within the February Programme context. The government spent around 100,000,000 bolívares (USD. 33.000.000 equivalent to 600 million in 2021) in hospitals, schools, highways, sewers, etc. (Violich 1946a). This expenditures incentivized an intense population mobilization towards Caracas (Sánchez 1974, 143).

This intense migration to Caracas contributed significantly to the exponential growth of its Self-Produced Neighborhoods. This migration started mainly from agricultural territories since the end of the 1930s (Lieuwen 1965; Ray 1969), and later from other urban areas becoming a massive migration from secondary cities into the capital by the 1960s (Violich and Daughters 1987, 9). In

1936, 65.3% of the Venezuelan population lived in primarily agricultural production; by 1961 that population had fallen to 32.5% as a consequence of all the internal migrations to the main urban centers, especially Caracas. (Páez Celis 1974, 48; Venezuela. Oficina Central de Estadística e Informática 1975, 44).

To this internal migration was added the transnational one, especially from Latin American countries. Around the 1970s, most of the foreign population living in Venezuela were European, especially because of the incentive promotion of the *Instituto Técnico de Colonización e Inmigración* ITCI (Technical Institute for Colonization and Immigration) since 1938s (Rey González 2011). However, mainly due to armed conflicts in Latin America since the second half of the 1960s, especially in Colombia (Lienhard 2011; Mejía Ochoa 2012) several groups of displaced people were moved to Venezuela. In 1971, people born in Colombia were 30.20% of the foreign origin population; the number increased dramatically to 51.79% in 1990.

In March 2013, we had the opportunity to co-coordinate the public screening of the soccer match between Venezuela and Colombia for the 2018 World Cup Qualification at Sports Park Mesuca, a public space whose design and construction we led in Petare (Caracas). Without any surprises, the vast majority of attendees, all of them residents of the Self-Produced Neighborhood, wore the Colombian jersey in support of their country of origin.

In this context, the exponential growth of the Self-Produced Neighborhoods in those leftover lands of private development was inevitable. The banks of quebradas (creeks), and the foothills of the mountains, would be the receiving territories of the Caracas' *barrios*.

4.6. Haussmanian Macro-Segregation

The need for an urban plan for Caracas was part of the zeitgeist, especially for Caracas, whose public and modern architecture were growing rapidly in the core of the city (Gonzalez-Casas 2009) while underprivileged housing was growing across the Valley. The following year of the February Programme, the urbanist, Maurice Rotival would arrive in Caracas to carry out the Plano Monumental de Caracas[39] (Monumental Plan of Caracas) (Figure 32 and Figure 45.4.1) joined by the planner Jacques Lambert who, as we will see in Chapter 5, will play a decisive role in the implementation of other planning tools about Self-Produced Neighborhoods in Venezuela. The Municipal Council approved the Plan in 1940. It was based on a typically Hausmannesque road system layout to create a city characterized by modernizing the grandeur of an emergent oil country (Gonzalez-Casas 2009; Vallmitjana A. 1991).

The architect Martin Vegas defines the 1939 Monumental Plan as a *macrocosmic vision* of planning, which regulates the territory through large traces (Martinez Olavarria et al. 1983, 64). This macro-layout classifies the city into three major sectors to segregate population according to social strata: the plan of a Hausmannesque road proposal in the urban core, and two territories outside the central area, the consolidation of private development towards the east, versus the delimitation of working-class neighborhoods towards the west (See letters W (west), C (core), and

[39] For a critical analysis of this plan and its implementation processes, we recommend reviewing Urbanization and Urbanism in Latin America: From Haussmann to CIAM (2009) by Arturo Almandoz, and El urbanismo francés en Venezuela de 1936 a 1950 (Rotival y Lambert en una historia de gestiones diplomáticas, contratos y zancadillas) (1993) by Juan José Martín Frechilla.

E (east) in Figure 33). These last two simply legitimize the development pattern that had been occurring in the Caracas´ Valley since colonial times.

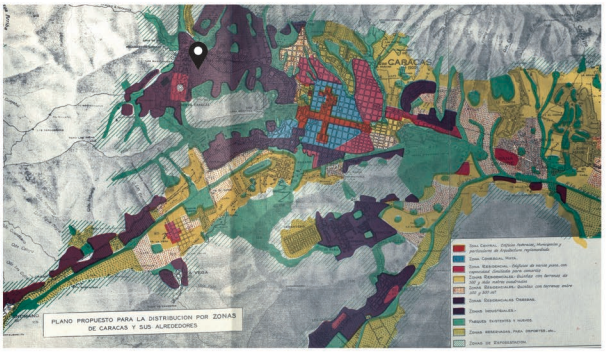


Figure 32 - 1939 Monumental Plan

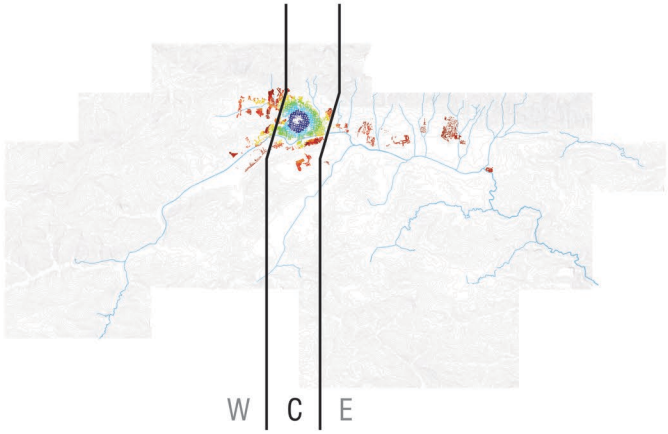


Figure 33 - SOi Map: 1939 (sectorized)

The 1939 Monumental Plan of Caracas assigned a Haussmannian development in the center (C) and maintained the inertia **of** working-class **areas** to the west (W) and the transformation of haciendas into housing **developments** to the east (E)

The Hausmannesque road system of the Plan focuses on the center of the urban fabric, from its foundational grid to its eastern expansion towards Los Caobos Park, seeking to recover a central and after urban decadence (Gobierno del Distrito Federal 1939), a process that has occurred as a consequence of the abandonment of the center by wealthier strata that have happened since the end of the nineteenth century. This perception of the urban decadence of the city center was not naive in social terms. With the abandonment of the center by the wealthy strata, many of the old colonial houses had been transformed into *Casas de Vecindad* (tenement houses) that had been stigmatized as pockets of poverty and unhealthy conditions since the beginning of the century (Razetti 1962). So, the construction of Haussmannian avenues implied a beautification of the old urban center, including the gentrification of the underprivileged residents in this other form of urban occupation. This would be an additional underprivileged population that generated Self-

Produced Neighborhoods after the construction of Avenida Bolívar as part of the Monumental Plan between 1945 and 1949.

But this demarcation of avenues was limited to the center of the city -from El Calvario to Los Caobos-, outside of this, the Plan is deliberately undefined. As Leszek Zawisza points out, the Monumental Plan led by Maurice Rotival of the Plan left in the hands of the private sector the expansion of the city towards the east, where the Plan maintained the spatial structure of the *haciendas* that existed since colonial times, some of them beginning to transform into housing developments (1985, 47). Thus, beyond the Frenchification of the consolidated urban center, the Plan did not regulate the development processes throughout most of the Valley.

Additionally, the 1939 Monumental Plan of Caracas frontally assumes a Modernist Approach that ends up segregating the territory according to social strata. Its publication in the *Revista Municipal de Caracas No.1* (Caracas Municipal Magazine No.1), says as follows:

> As for the popular masses, mainly made up of peasants, who were obviously not used to modern distancing but rather to live in the countryside, from which they mostly come, they currently live in extremely unfavorable and unsanitary conditions. To remedy this State of affairs, it is necessary to create working-class neighborhoods with their sports fields, gardens, open spaces, etc., such as those that have been built in recent times in some parts of the city [Nueva Caracas, today known as Catia]. (Gobierno del Distrito Federal 1939, 39)

To the west and southwest of the central core, the Plan is not much different in terms of planning strategies. It is undefined, only specifying the area that would continue the inertia of its

current development. In this case, the Plan uses brown color to allocate the growth of a working-class city. Due to the inertia of historical development, this sector included homes of underprivileged strata following the road to the port, in what was now known as Nueva Caracas (See Nueva Caracas in Figure 32), as well as Self-Produced Neighborhoods around hills at the west of the historic grid.

4.7. Zoning Micro-Segregation

In 1951, the *Comisión Nacional de Urbanismo* (CNU, National Planning Commission) hired the Planner Francis Violich to execute the Caracas Regulatory Plan. This document would undoubtedly be fundamental to institutionalized the levels of fragmentation and spatial inequality of the Caracas Valley. Here begins a long journey until the approval of the Zoning Ordinance in 1958.

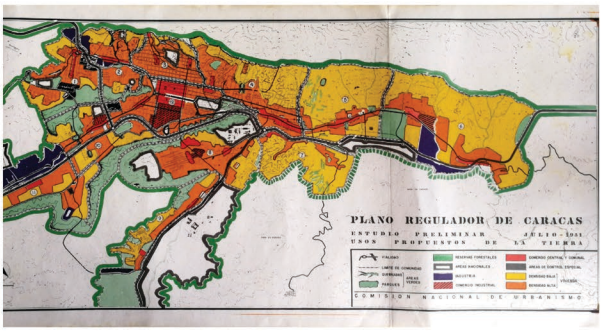


Figure 34 - 1951 Regulatory Plan

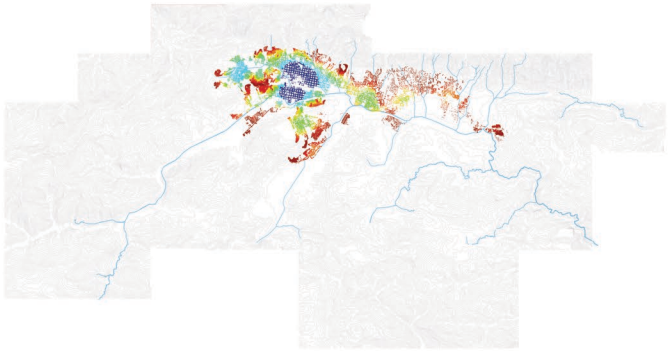


Figure 35 - SOi Map: Caracas 1951

The 1951 Regulatory Plan of Caracas introduces the US-Zoning Approach by formalizing the fragmentation of the Valle by following CIAM-based doctrines of classifying lands into monofunctional areas.

At the time, local planners were discomforted with the Monumental Plan led by Maurice Rotival in 1939, as recounted by Antonio N. Cruz-Hernández, President of the Metropolitan

Commission of Urbanism, in the prologue of the republication of the 1951 Caracas Regulatory Plan in 1987. He says that in the 1939 Monumental Plan, "the city was zoned according to social class" (Cruz Fernández 1987). Cruz-Hernández refers to the proposal that indicates road guidelines for the urban center and the segregation of the middle and upper strata to the east and the working classes to the west. So, the Caracas Regulatory Plan of 1951 originally came with the mandate to standardize similar ideas for the entire length of the Valley. To do so, Violich introduced the idea of US-Zoning in a process that ends with the Zoning Texts called *Ordenanza sobre Arquitectura Civil, Urbanismo y Construcción en General Distrito Federal de Caracas* (Ordinance on Civil Architecture, Urbanism and Construction in General Distrito Federal de Caracas) approved by the Municipal Council of Caracas in 1958.

In 1959, only one year after the approval of Zoning Ordinances of the Caracas Regulatory Plan, Francis Violich defined Zoning for the Encyclopedia Britannica the following way:

> Zoning is the legislative method of controlling land use through the establishment of standards and requirements concerning the use of land and building, the proportion of the lot to be covered by them, and the density of population (Violich, Francis 1959).

But in 1952. just when the Caracas Regulatory Plan was in its initial stages, the Pan American Union of the Organization of American States released the 12th edition of the publication *Vivienda y Planeamiento* (Housing and Planning) that clearly explains what the US-Zoning actually consists of. This essay is especially useful for our research for two reasons. First, because it defines the rules and objectives of Zoning for the Latin American case at the time this

planning tool was starting to be used in the region. Second, because it uses the case of the Caracas Regulatory Plan as a tool to explain the emergent idea of US-Zoning applied to the conditions of Latin America.

The article explains that Zoning Ordinance consists of two essential and inseparable parts: maps and texts. It includes a set of zoning maps with the boundaries of the various areas of the planned territory, and a zoning text that contains the regulations that must govern each zone established on the maps. Through these documents, the Zoning Ordinance entails the subdivision of the urban territories to regulate land use and building densities, the aim is rational urban development with full respect for the collective well-being (Pan American Union. 1952, 3).

The architect Martin Vegas explains that, contrary to the 1939 Monumental Plan led by Maurice Rotival that precedes it, the 1951 Caracas Regulatory Plan relies on a *microcosmic vision* of planning (Martinez Olavarria et al. 1983, 64), which controls the territory through the subtle and micro definitions of zoning ordinances established both by maps that delineate de territories, and by text that regulates them. This codifies the building and its possibilities in a regulated neighborhood. We argue that these have been micro-planning tools unsuitable for the assessment of Self-Produced Neighborhoods.

Following zoning methodologies, the 1951 Caracas Regulatory Plan focuses on the classification of the territory in large monofunctional areas that the maps and texts of zoning ordinances would regulate. In the analysis of the historical growth of Caracas, the Regulatory Plan criticizes the confusion of various activities coexisting in the same urban sectors (Violich, Francis

1951); consequently, the Plan mainly proposes zoning codes aimed to standardize the uses of the entire valley.

In this sense, the 1951 Regulatory Plan shows a diagrammatic vision of the whole territory seeking to sectorize it with a clear reference to the four components of the Athens Chart of IV *Congrès Internationaux d'Architecture Moderne* – CIAM (Corbusier 1973); namely housing, recreation, work, and circulation. In Caracas, the first three components served as a tool to standardize the territory into monofunctional areas, the later served to institutionalize mobility patterns that already existed in Caracas in which the old *Camino Real* (Royal Road) was the primary and almost unique backbone to connect different residential areas.

Indeed, the most remarkable aspect of the Caracas Regulatory Plan is that it institutionalized the Urban Patchwork that had developed as part of the process of transforming the old *haciendas* into housing developments. The final proposal was nothing more than the formalization of a practice originated from colonial times where the neighborhoods would remain as lots of lands promoted, paid, and built by private developers, and almost always separated by geographical accidents such as quebradas (creeks) and sloped lands, and weakly connected to each other (See Figure 34 and Figure 45.4.2).

Self-Produced Neighborhoods are identified in the diagnosis maps of the Regulatory Plan. The *Plano de Información Básica del Uso Actual de la Tierra* (Basic Information Map of the Current Land Use) (Ministerio de Obras Públicas 1951) specifies polygonal areas occupied by *ranchos*. Indeed, they are mapped and described as *ranchos*, which is the preliminary stage of

underprivileged houses with transient appearance (See Chapter 1). They are not recognized as neighborhoods or *barrios* but as homes clustered temporarily in specific territories.

Ranchos are accurately mapped in the Regulatory Plan on the edge of quebradas (creeks) and on the hills to the west of the founding grid. As we had described above, Self-Produced Neighborhoods were located precisely in these margins that divided the old *haciendas* and where the current neighborhoods were most weakly connected. On *ranchos*, the Plan describes.

> The most dramatic condition of the dwelling is made up of the 34,000 homes on the hills, *quebradas,* and unhealthy and undesirable islets. Moreover, this problem is undoubtedly the most alarming of the most difficult solution of those that concern the city (Ministerio de Obras Públicas 1951).

However, Self-Produced Neighborhoods disappear in the proposal map of the Regulatory Plan, blending them with the proposed monofunctional zones (Figure 34). For the integration of these sectors, the plan bets on the Zoning Texts of Ordinance.

In our opinion, here we come to a virtually neglected crucial point in the history of physical planning in Caracas: the drafting of the Zoning Text Ordinances of the Caracas Regulatory Plan between 1951 and 1958. Commonly, the Caracas Regulatory Plan is analyzed only from the understanding of the maps and their descriptions, which means only half of the Zoning Ordinance is considered. We argue these zoning ordinances, including its texts and its maps, determine the rules of physical planning in Venezuela until nowadays.

Francis Violich describes the beginning of Zoning ideas for the Caracas Regulatory Plan in a dialogue with the Venezuelan researcher Juan José Martín Frechilla. He explained the references he used for these pioneering ordinances:

> When people [in the Caracas of the 1950s] said "zoning," they were talking about existing land use and not thinking of Zoning as a means of carrying out a general land use policy established within the General Plan, as we do in California. When starting with the first draft of the ordinance, I relied heavily on the Puerto Rico Zoning Ordinance, which was the only US-type zoning ordinance that existed in Latin America (Martín Frechilla 2004, 123).

This interview was included in the book *Diálogos reconstruidos para una historia de la Caracas moderna* (Reconstructed Dialogues for a History of Modern Caracas) written in 2004 by Juan José Martín Frechilla, an important testimony about the history of urban planning in Caracas. The book also shows interviews with the authors of several planning documents of that foundational period of modern planning in Venezuela. And, among other things, it opens the question about the real influence of Francis Violich in the Zoning Texts of the Caracas Regulatory Plan of 1951. I had the opportunity to travel to San Francisco and visit the Francis Violich Papers in the Bancroft Library of the University of California (Berkeley). After reviewing this documentary base, we can affirm that the participation of Violich was fundamental for the writing of this document, working as an advisor to his friend, the Venezuelan engineer Oscar Urreiztieta, who was the leader of the team commissioned for the final document.

For example, in a private letter written on August 30, 1953 by Francis Violich to his family in Caracas, he explains his role as an advisor in the development of these Zoning Texts, based on his draft written in 1951 within the Regulatory Plan contract:

> I must say we're making good progress in that respect compared to Bogota [It refers to the Plan for this city developed by Josep Lluis Sert, together with Le Corbusier and Paul Lester Wiener between 1949 and 1953, a project widely criticized by Violich in other documents]. My team here consists of Oscar [Urreiztieta], engineer, very bright, US-trained, a Colombian architect, a young woman architect, Alicia, borrowed from the CNU, three or four drafters, and a wonderful bilingual secretary who worked for Sears for four years. Oscar is really in charge and will carry on the ordinance and maps right up to the final report to the Governor of the Federal District (Violich, Francis 1953).

The use of the pronoun in the expression "my team" shows that Violich considered himself one of the main members who wrote the whole of the Ordinances, including both maps and texts. However, he recognizes the role of Oscar Urreiztieta as the leader in the drafting of the text. Other documents in the Violich Papers also demonstrate the drafting of these Zoning Ordinances was a fluid and continuous process for the Caracas Regulatory Plan between 1951 to 1958.

In this process, the Zoning Regulation for Puerto Rico was the seed for the First Draft of the *Reglamento de Zonificación Propuesta para el Área Urbana de Caracas* (Proposed Zoning Regulation for the Urban Area of Caracas) written by Francis Violich in 1951. It influenced the *Ordenanza sobre Arquitectura Civil, Urbanismo y Construcción en General Distrito Federal de*

Caracas (Ordinance on Civil Architecture, Urbanism and Construction in General Distrito Federal de Caracas) mainly written by Oscar Urreiztieta and approved by the Municipal Council of Caracas in 1958. We have compared these texts with two ordinances in force in two different territories of Caracas, the *Ordenanza de Zonificación del Municipio Autónomo Sucre* (Zoning Ordinance of the Autonomous Municipality Sucre) approved in 1992, and the Ordenanza Modificatoria de la Ordenanza sobre Zonificación del Municipio Libertador (*Modifying Ordinance of the Libertador Municipality Zoning Ordinance*) approved in 1996. The latter two correspond to the two municipalities with the largest number of Self-Produced Neighborhoods in Caracas; the first one in particular, Sucre Municipality, is where Petare is located. In any case, we note that the striking similarities between all five of these documents.

For this research we have made a comparative analysis of these five ordinances to demonstrate similarities between the Zoning Regulation for Puerto Rico approved in 1946 and the ordinances in force nowadays (See Appendix G). The five documents have a similar structure, based on the classification of the territory into districts. Each one has assigned a code and characteristics to regulate use, lot coverage, and floor-ratio-area. Following CIAM-doctrine, all of them divide the territory into four coded categories: residential, commercial, industrial, and special districts such as zones for public uses or green areas.

The five zoning ordinances analyzed divide residential districts by coding R-1 to R-n, and commercial buildings by coding C-1 to C-n, similarly with industrial districts. With few exceptions, all these codes refer to monofunctional districts with different density levels. But Self-

Produced Neighborhoods are not coded as residential areas in maps but to the special districts; so it is worthwhile to review these in more detail.

The Zoning Regulation for Puerto Rico approved and published by the Puerto Rico Planning Board in 1946 describes the District M, Zones for rehabilitation and conversion which are the ones where Self-Produced Neighborhoods were located in 1946:

> An "M District" is defined as an area wherein excessive overcrowding of buildings and land, undersized lots, lack of adequate water supply, sewerage disposal devices and storm drainage, low elevation and swampiness, excessive grades, high groundwater level, soul and other physical conditions, lack of street paving, substandard and flimsy building construction lack of an orderly or convenient plan or design, or other conditions, intensify or aggravate dangers of fire, the spread of diseases, unsocial and immoral conditions, deterioration of adjacent property and dangers of life and limb (Puerto Rico Planning Board, 1946, #59).

Not surprisingly, the categories that define the District M coincide with the categories whose absence defines slums according to Un-Habitat (2006, 21): i.e.: lack of durable home, reduced access to improved water supply and sanitation system, and overcrowding (See Chapter 1). The definition of Self-Produced Neighborhoods based on the housing conditions, emphasizing their construction system did not meet the standards at the time of being observed, has been persistent throughout modern urban planning in Caracas.

The letter "M" in "M-Districts" means *mejoras* (improvements). To do so, the Zoning Regulation for Puerto Rico proposes "slum freezing" (Puerto Rico Planning Board, 1946, #62) that

is, prevent their development and growth. In addition, it proposes to the eradication of Self-Produced Neighborhoods through the reclassification of districts by changing the Zoning Map (Puerto Rico Planning Board, 1946, #63). So, M-District adresses not to the improvement of Self-Produced Neighborhoods but their eradication as a venie to improving the land.

In 1951, this was literally the reference Francis Violich uses for the First Draft of the *Reglamento de Zonificación Propuesta para el Área Urbana de Caracas* ((Proposed Zoning Regulation for the Urban Area of Caracas) (Violich, Francis 1951) submitted with the Caracas Regulatory Plan. The text is the same as the Zoning Regulation for Puerto Rico in its Spanish translation (See Appendix G).

After seven years of revision, including multiple changes to the zoning text and the review by different public and private institutions, including the Venezuela College of Engineers, the *Banco Obrero*, and the Government of the Caracas Federal District (Martín Frechilla 2004); the Municipal Council of Caracas approved the *Ordenanza sobre Arquitectura Civil, Urbanismo y Construcción del Distrito Federal de Caracas* (Ordinance on Civil Architecture, Urbanism and Construction of the Federal District of Caracas) on August 12, 1958. The document was drawn up by a team led by engineer Oscar Urreiztieta with the close advice of planner Francis Violich. Below is the translation of Article 195 of the zoning text assigned for territories where Self-Produced Neighborhoods were located. Similar to the Puerto Rico Ordinances, these districts are called *Zonas A-E-E: Areas a Mejorarse y Clasificarse* (District A-E-E: Areas to be Improved and Classified):

> Districts A-E-E are areas that require a special overall study for the construction or modification of buildings and any other use. Within these Zones, there are the following:
>
> - District A-E-E (R-5) Freestanding Single-Family House, density 200 to 320 inhabitants per hectare [this code dictates 3 meters of mandatory side yards).
>
> - District A-E-E (P-P) Areas that Require a Special Proposal
>
> - District A-E-E (R-N-M) Natural Reservoirs.
>
> - District A-E-E (A-V) Green Areas.
>
> (Gobierno del Distrito Federal de Caracas 1958, #195)

District M from 1946 Zoning Regulation for Puerto Rico and District A-E-E from the approved 1958 Zoning Ordinance for Caracas are similar in their planning strategies: both bet on an improvement of land conditions through the eradication of Self-Produced Neighborhoods based on land reclassification. However, while Puerto Rican Ordinances indicate that M-Districts must be reclassified with the approval of the Planning Board, leaving open the alternatives for this adjustment, the Caracas Ordinance specifies in detail four possible options of reclassification -R-5 (Housing), P-P (Public Housing), R-N-M (Natural Reservoirs), and A-V (Green Areas)- which allows us to know what the planner dictates regarding Self-Produced Neighborhoods.

After contrasting the alternatives between texts and maps of Caracas Ordinances (1951-1958), we see that Districts AEE (R-5) and AEE (PP) correspond to territories where the construction of social housing, especially superblocks, was already underway following the *Plan*

Nacional de Vivienda 1951-1955 (Housing Plan 1951-1955) (Banco Obrero 1951) by the *Taller de Arquitectura del Banco Obrero* -TABO (Banco Obrero Architecture Workshop) (See Chapter 5). The launch document of the National Housing Plan states

> The solution to the problem analyzed [that of housing in Venezuela] has its maximum technical expression in the Regulatory Plans, and the minimum expression in the Neighborhood Unit (Banco Obrero, Villanueva, and Celis Cepero 1953, 6).

Both planning strategies -the zoning ordinances, and the housing program-, were designed together around the elimination of Self-Produced Neighborhoods. On the one hand, Districts AEE (RNM) and AEE (AV), where most of the Self-Produced Neighborhoods were located, there would remain green areas in the Plan, erasing the existence of the housing of the underprivileged sectors. On the other hand, Districts AEE (RNM) and AEE (AV), where most of the Self-Produced Neighborhoods were located, there would remain green areas in the Plan, erasing the existence of the housing of the underprivileged sectors[40].

The purpose of the Ordinances regarding Self-Produced Neighborhoods is clear: ignore their existence. In the Plan, Self-Production have neither regulation nor accommodation for their improvement; the plan considers them only to the extent that the reclassification of the territory into other land-use codes will result in their demise. The rules applied to this reclassification

[40] The ignorance of Self-Produced Neighborhoods has one of its most emblematic moments on the commemorative map for the Quadricentennial Foundation of Caracas in 1967 (De-Sola Ricardo 1967, #130). For the year, we estimate that around 33% of Caracas' citizens lived in self-produced settlements (See Appendix H), but this official commemorative map showed them with the same drawing as green areas of the city.

suggest ignoring Self-Produced Neighborhoods in the plans reflected the confidence in the Builder State's ab0ility to eradicate them by their relocation into new housing developments (See Chapter 5). When Self-Produced Neighborhoods were not reclassified as social housing zones (AEE-R5 and AEEPP), they were classified as desired green zones (AEE-RNM and (AEE-AV). The Plan promised a future urban for Caracas without ranchos and surrounded by green.

4.8. Planning Automation

Between the decades of 1960s and 2000s, different planning agencies developed updates for the urban plans. With few exceptions, these documents followed repetitive rules established between 1951 and 1958, which assume Self-Produced Neighborhoods as a phenomenon that should be tolerated pending national government action to achieve solutions to this issue. For example, the *Plan General Urbano de Caracas 1990* (General Urban Plan of Caracas 1990), developed by the Oficina Municipal de Planeamiento Urbano - OMPU del Distrito Federal (Municipal Office of Urban Planning - OMPU of the Federal District) in 1969 (See Figure 38 and Figure 45.4.4), assume Self-Produced Neighborhoods as a provisional stage whose progressive improvement would serve as a stepping-stone for its residents to move to planned public housing:

> "In this regard, we should note that a high percentage of the houses in this category [mid-income families in Self-Produced Homes] actually correspond to improved *ranchos* and houses in *rancho* areas. To continue the current pace of construction of public housing, the rate of formation of improved *ranchos* could decrease, being replaced by multi-family [public] housing. (OMPU 1969, 33).

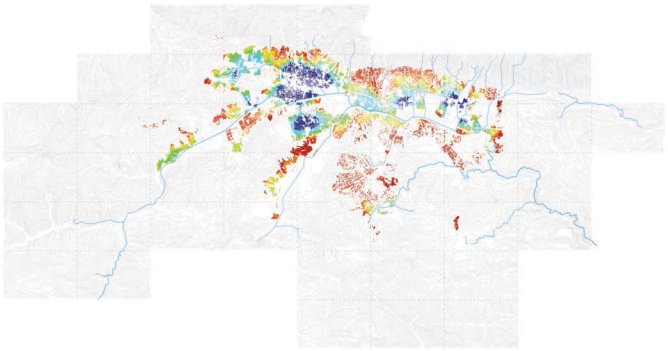


Figure 36 - SOi Map: Caracas 1958

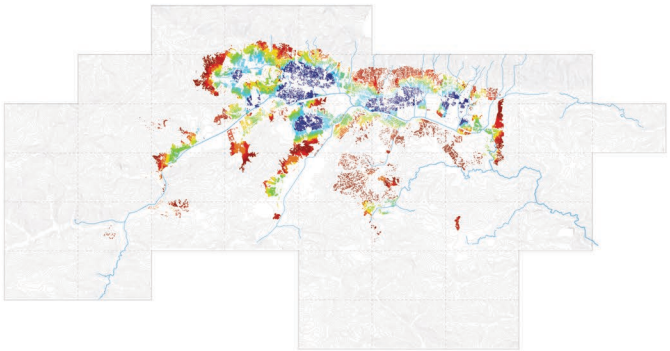


Figure 37 - SOi Map: Caracas 1969

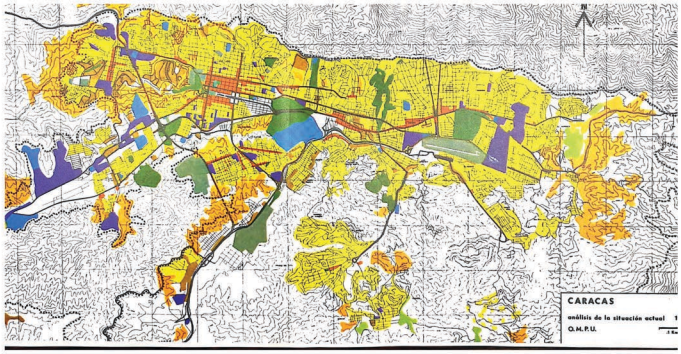


Figure 38 - 1969 Caracas Plan 1990

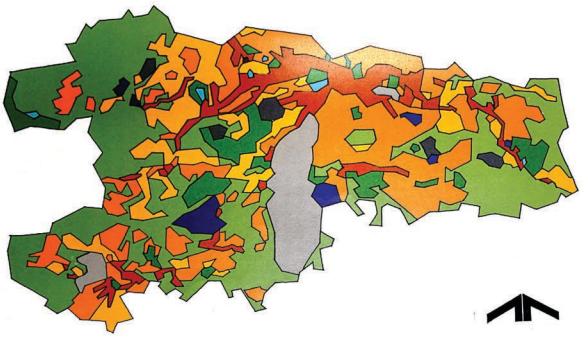


Figure 39 - 1979 Caracas Plan 2000

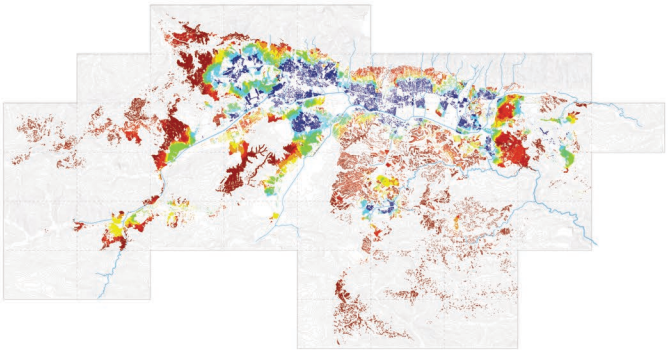


Figure 40 - SOi Map: Caracas 1984

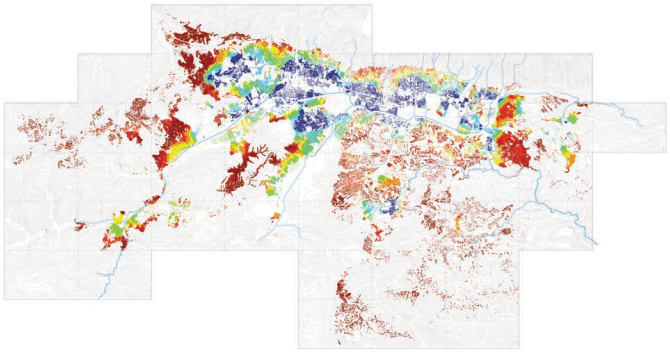


Figure 41 - SOi Map: Caracas 2000

Planning undergoes a process of automation and inertia. Meanwhile, Self-Produced Neighborhoods continue to grow and expand, remaining as the territories with the lowest level of Spatial Opportunities of the city.

In other cases, physical planning proposed proactive actions that were never carried out, including the *Plan Caracas* 2000 in 1979 (See Figure 39 and Figure 45.4.5) and the *Plan Rector Caracas* 2000 in 1983 (See Figure 45.4.6). In both cases, zoning maps and their specifications call for government actions for migrant control policies and structural upgrading strategies, including designing new street networks and services provision for Self-Produced Neighborhoods. For instance, the 1979 *Plan Caracas* 2000, states:

> In the long term, once a certain degree of control over the growth of marginalization has been gained, decisive action must be taken on the areas that must be eradicated due to their physically unstable conditions or the impossibility of providing them with the essential services. This action will necessarily have to be accompanied by important urban renewal programs and new urbanization, destined to provide housing and work and service centers. (OMPU 1979, 58)

The Plan assumes an excessive faith in state action to reduce the growth of Self-Produced Neighborhoods, despite evidence that this had not been achieved. After matching physical planning surveys and census of this period, we estimate that between 1969 and 1979, the dates of the aforementioned plans, the residents in Self-Produced Neighborhoods doubled in Caracas from more than 460,000 inhabitants to almost 1,150,000 inhabitants, also remaining as the territories with fewer Spatial Opportunities of the entire city.

4.9. Back to the Past

But, what is most surprising is that, despite the evident growth, expansion, and consolidation of Self-Produced Neighborhoods, Zoning Ordinances of the late twentieth century

maintained the same pattern of ignoring the existence of Self-Produced Neighborhoods.

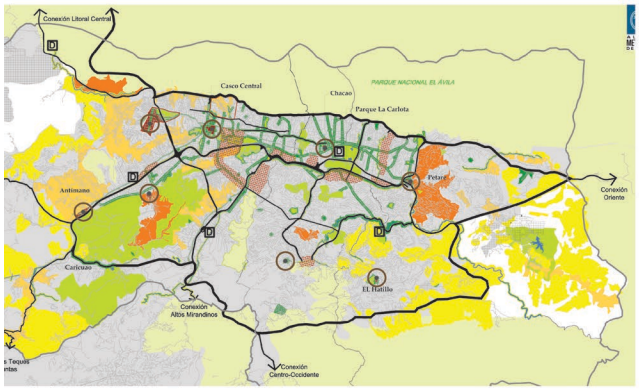
The still in force *Ordenanza Modificatoria de la Ordenanza sobre Zonificación del Municipio Libertador* (Modifying Ordinance of the Libertador Municipality Zoning Ordinance) approved in 1996, codifies the territories where Self-Produced Settlements are located in a similar way to that used by the Zoning Ordinances of the 1951-1958 Caracas Regulatory Plan. Its article 186 defines them as Districts *Areas Verdes con Reglamentación Especial* (AVRE, Green Areas with special Regulations), proposing the reclassification of the territories (Municipio Libertador, 1996, #186). Like the 1946 Zoning Regulation for Puerto Rico, it leaves the reclassification open to the discretion of the Oficina Municipal de Planeamiento Urbano – OMPU (Metropolitan Urban Planning Office).

Even more striking is the still in-force, *Ordenanza de Zonificación del Municipio Autónomo Sucre* (Zoning Ordinance of the Autonomous Municipality Sucre) approved in 1992 which codifies the territories where Self-Produced Settlements, including Petare. Its article 170 defines them as Districts A-M – Zonas a Mejorar (Areas to Improve) as follows:

> Una zona A-M se define como un área donde la excesiva aglomeración de edificios y terrenos, los solares demasiado pequeños, la falta de un servicio adecuado de agua, de alcantarillado, de instalaciones para la eliminación de aguas negras, los desagües, el terreno bajo pantanoso, las pendientes excesivas, el alto nivel freático, el tipo de suelo, la falta de calles o pavimentos, la construcción de edificios sin normas adecuadas y sin solidez, la falta de un plan o diseño ordenado y conveniente, u otras condiciones, producen e intensifican o agravan el peligro de

> fuego, programación de enfermedades, condiciones antisociales y lesivas a la moral, deterioros de la propiedad contigua y riesgos de daño corporal. (Gobierno del Municipio Sucre 1992, #170)

We have left the previous text in Spanish, its translation into English can be found on page 202 as it is literally the description of "District M" of the Puerto Rico Zoning Ordinance approved in 1946 and brought by Francis Violich in 1951.



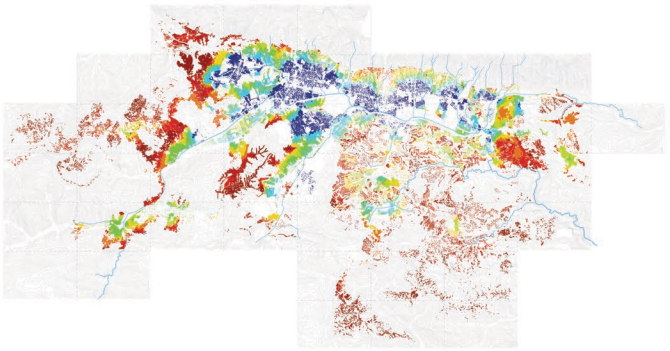


Figure 42 - 2012 Caracas Plan 2020 **Figure 43 -SOi Map: Caracas 2015**

The never approved or implemented Plan Caracas 2020 included a strategic location of metropolitan-scale amenities across the city, including in Self-Produced Neighborhoods.

To conclude this story, we should mention that in 2012 the Metropolitan Mayor's Office of Caracas, an institution whose main role was the physical planning of the Caracas' administrative division, wrote preliminary ideas for the *Plan Caracas 2020* (See Figure 42 and Figure 45.4.7). This plan has not been approved nor have zoning texts ordinances for its legalization, but it tried to be the first one in the history of Caracas with a strategic planning perspective that sought to catalyze the integration of Self-Produced Neighborhoods from the construction of connectivity systems and urban facilities (Instituto Metropolitano de Urbanismo Taller Caracas 2012).

Even though it cannot be verified, we have the intuition that its implementation would have contributed to improving Spatial Opportunities' levels in the inhabitants of Self-Produced Neighborhoods. This intuition is supported by the fact that the *Plan Caracas 2020* is the first comprehensive plan in the history of Caracas that places special emphasis on strategic planning with guidelines to attend to infrastructure system needs such as connectivity systems and public facilities for the city as a whole, including Self-Produced Neighborhoods, leaving zoning codes of housing units on a secondary level.

However, a series of gradual decisions that sought institutional centralization by the State ended with the closure of the Metropolitan Mayor's Office in 2017 (Cardona, Schloeter, and Urdaneta Troconis 2021), so the Plan Caracas 2020 Plan was forgotten.

In general, we have seen a pattern that ignores Self-Produced settlements and standardizes the territory for private development. Meanwhile, the practice has been consolidated as Self-Produced Neighborhoods are ignored in a planning strategy supported by the faith that the intervention of the State will result in their future disappearance. However, we estimate that by 1951 there were more than 230 thousand inhabitants in the Self-Produced Neighborhoods of Caracas; by the first decade of the 21st century, this figure exceeded 2 million inhabitants, representing a figure greater than 46% of the population (Figure 44). The growth of Self-Produced has been exponential, and it seems inevitable (See Appendix H for detailed data).

In the same 60-year period, between 1951 and 2011, Self-Produced Neighborhoods were characterized by having a low Spatial Opportunity Index (SOi) (less than 0.013) across all housing categories. This means that while the Plan calls for actions both for reducing Self-Produced

Neighborhoods and for the improvement of their connectivity systems, the *barrios*, have barely a 7.5% chance of accessing the spatial opportunities offered by the city, such as job sources.

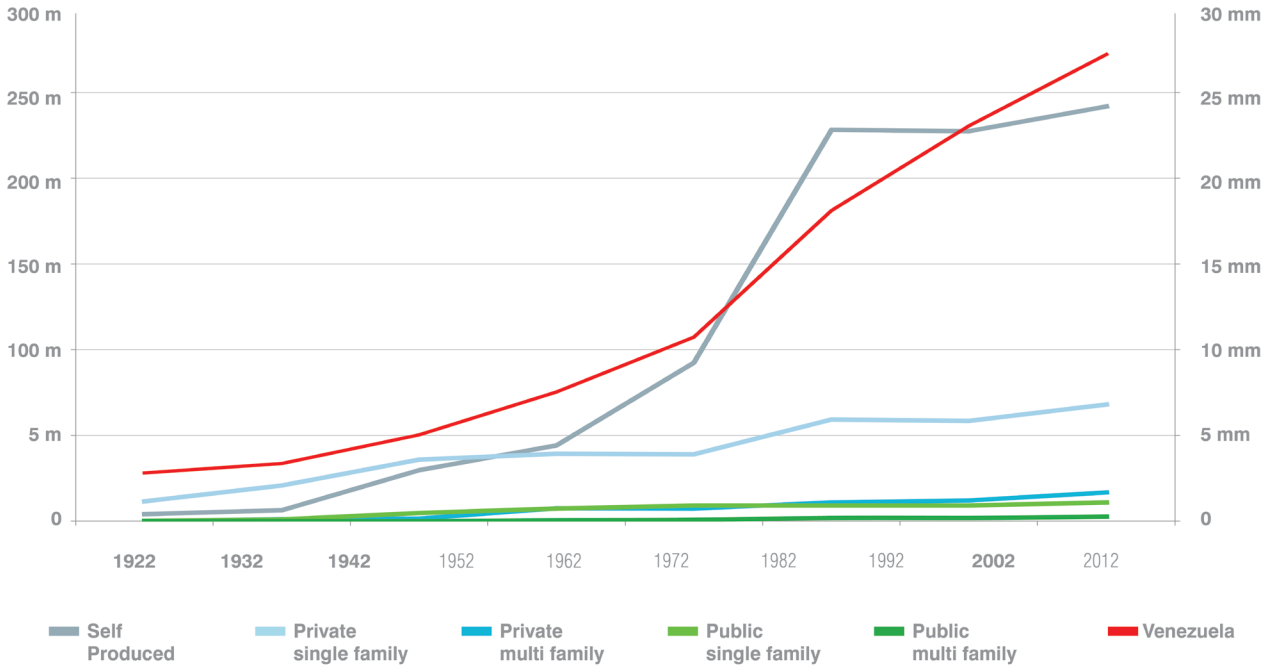


Figure 44 - National Population Growth vs. Caracas Housing Growth.

The graph shows the growth of housing structures. We observe that population growth is only similar to the increase of Self-Produced neighborhoods, while other types of housing -public and private, single and multi-family- remains almost the same.

We could compare this data, for example, with residents in multi-family private homes, with an average SOi of 0.49 during the same period. This means that since 1951 an inhabitant of a private multi-family building has had 6.5 times more opportunities to access the same place than one who resides in a Self-Produced Neighborhood.

This is the main reason why Fina, our resident friend who lives in Petare and who has accompanied us in the narratives that precede each of the chapters of this research, requires more time to access her workplace, having a similar experience to access educational or health centers. The evidence shows a spatially unequal territory that makes an important group of citizens, at least 46% of the population, have much greater difficulty (6.5 times more difficulty) in inserting themselves in the cities' dynamics. We see, clearly, the consequence of the failure of a Caracas and its Zoning planning process.

As we have explained above, Zoning Ordinances in Caracas were originally conceived in conjunction with other planning strategies, especially federally driven housing programs. These Ordinances have ignored the emergence of Self-Produced Neighborhoods, passing the baton to other planning strategies whose reports we analyze qualitatively in the next chapter.

Chapter 5

Caracas: Planning Reports and its Strategies

Fina's joy

The day I told Fina that I was going to pursue a doctorate we had a party. The truth is that in Petare there is a party almost every day.

No nos olvides, eres el primer amigo que tengo que se va a estudiar a Hogwarts.

(Do not forget us, told me Fina, you are the first friend I have that will to study something at Hogwarts).

Fina's mistake seemed very funny to me: Hogwarts instead of Harvard. But for her Harvard is a place as distant as Hogwarts. On the other hand, maybe I had moved out from Caracas with the fantasy of coming up with some wizardry magical idea that would help me comprehend Petare.

While researching Self-Production in Latin America, I talk to Fina from time to time. A very high percentage of people in Petare have smartphones (a municipal worker told me informally in 2013 that 67% of the homes in Petare have at least one). Just as people built their houses in response to both the state and the market's inability to provide dwellings, people stayed connected to the world through social media despite Venezuela's government restrictions.

One day, I wrote to Fina that I was surprised that in the libraries I have access to there is more information about Caracas' barrios than in all of Venezuela. With Fina, I often talk about academic issues. I explained to her about the Benson Latin American Collection at the University of Texas, the Bancroft Library of UC Berkeley Library, the Archives and Special Collections at Massachusetts Institute of Technology, and the Special Collections at Harvard GSD.

All this sounded far away for Fina, but she replied:

Mantenga todo eso organizado, uno nunca sabe para cuando haga falta revisarlo

(Keep all of that organized, we never know when we're going to need that information for something).

Later, Fina wrote me a long message explaining that things have gotten a bit more complicated in Petare, that she is experiencing more scarcity of services than before. But she tells me that they are still having a good time.

No te preocupes, en Petare siempre hay alegría.
(Do not worry, Fina wrote me, in Petare you can always find joy).

5.1. Content Analysis on Panning Reports

In Venezuela, the lowest levels of Spatial Opportunities for Self-Produced Neighborhoods has been perpetuated by physical planning. To evaluate the strategies that have generated these spatial inequalities, in addition to the non-physical patterns behind them, we have made a Content Analysis of 38 federal-driven planning programs. The overlap between this content analysis and the historical study of the Spatial Opportunity Index allows us to look for the causes that have caused these inequalities. This is why we have tried to find patterns instead of particularities in content analysis, trying to see those things that were repeatedly maintained throughout the history producing the failure of the planning in the integration of people living in Self-Produced Neighborhoods.

This Content Analysis focuses principally on the primary sources of *Banco Obrero* (BO, Workers Bank), established by law in 1928 (Congreso de los Estados Unidos de Venezuela 1928), the most important housing institution in Venezuela and one of the most emblematic in Latin America. The *Banco Obrero* was restructured as the *Instituto Nacional de le Vivienda* - INAVI (National Housing Institute) in 1975 (Venezuela 1975), until 2015, when INAVI's assets were transferred to other state agencies, such as the *Instituto Nacional de Tierras Urbanas* - INTU (National Institute of Urban Land) (Venezuela 2015).

But since 1975, Venezuela experienced a process of bureaucratization and decentralization of the institutional framework in urban matters (Cardona, Schloeter, and Urdaneta Troconis 2021;

Urbina Mendoza 2019), after which begins a process of diversification of agencies dedicated to promoting and managing ideas about Self-Produced Neighborhoods. For that reason and since that date we have also included plans from other national agencies related to physical planning, such as the *Fundación para el Desarrollo de la Comunidad y Fomento Municipal* – FUNDACOMÚN (Foundation for Community Development and Municipal Development), the *Ministerio de Desarrollo Urbano* – MINDUR (Ministry of Urban Development), and, since 2004 during Hugo Chávez's first term, the *Ministerio del Poder Popular para Vivienda y Hábita*t - MPPVH (Ministry of Popular Power for Housing and Habitat).

The Content Analysis seeks to find patterns in planning strategies generated by government reports from the National agencies mentioned above (See also Appendix Ia, Appendix Ib, and Appendix Ic). This analysis generates a condensed conclusion graphic (Figure 45), which summarizes planning strategies through the history of strategic planning in Self-Produced Neighborhoods. This chapter discusses this graphic generated by the Content Analysis findings and its overlap with variations in the historical records of the Spatial Opportunity Index, with especial emphasis on the effects of the variations in Self-Produced Neighborhoods.

The analysis demonstrates that in comparison with other urban territories there has been a fragmented perspective of urban planning for Self-Produced Neighborhoods that has perpetuated their low levels of Spatial Opportunities. In the end, we aim to contrast these outcomes with the ideological approaches -Modernizing, Structuralism, Revolutionary, and Reformist- embedded in the government's planning strategies and the resulting urban plans in order to reveal non-physical patterns that have generated this spatial inequality.

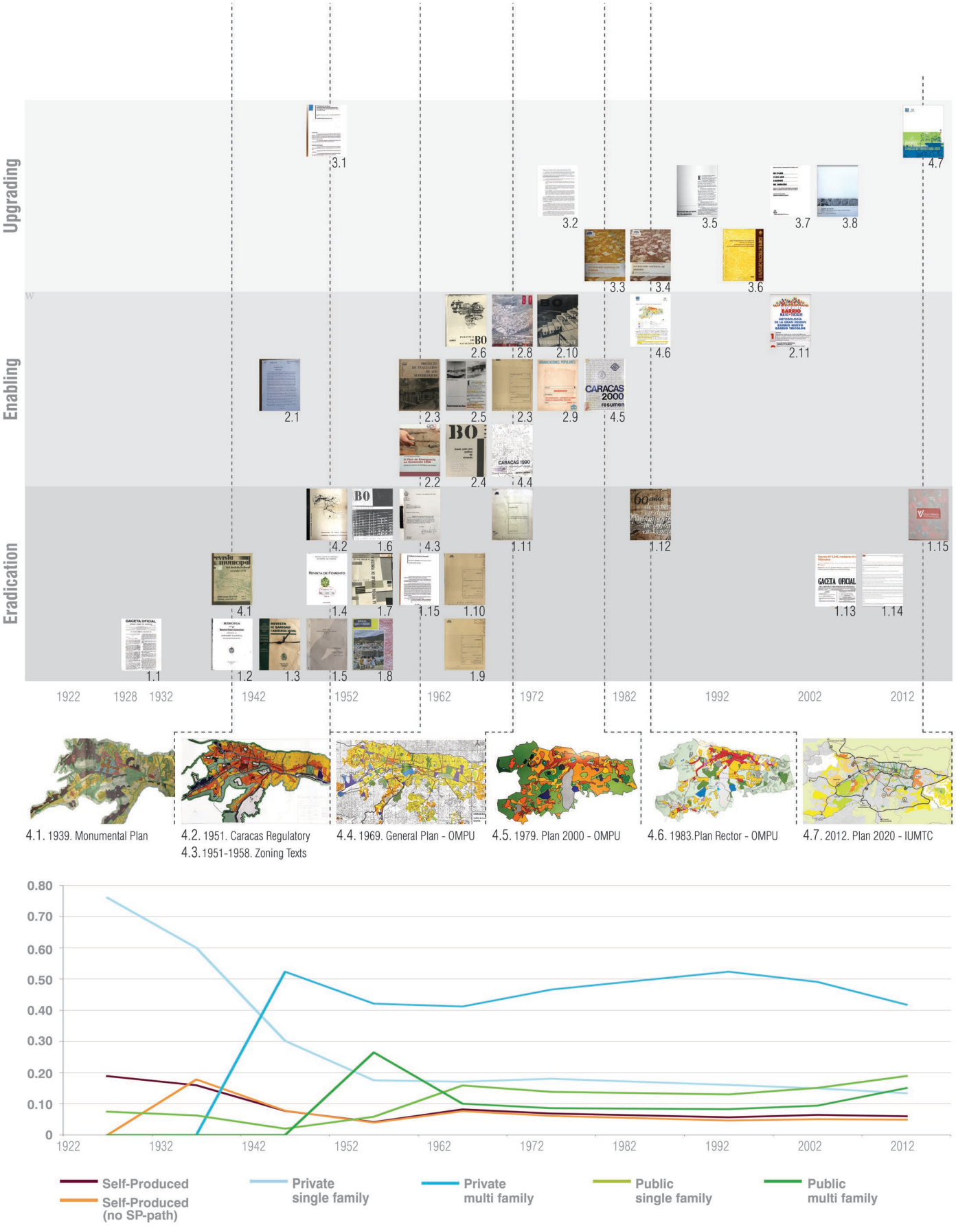


Figure 45 - Category Analysis on Planning Reports vs. Historic SOi Record

1. Eradication - 19 reports
(See Appendix Ia)
1.1. **1928** - Ley de Banco Obrero. BO
1.2. **1937** - Report Ministry of Health
1.3. **1942** - Sanitary Study by J.M. Bengoa. Ministry of Health
1.4.1 **1947** - Violich in *Fomento* Magazine No.66
1.4.2 **1947** - Olavarría in *Fomento* Magazine No.69
1.5. **1950** - Report on the Treatment of the "*Ranchitos*" [little ranchos] by J. Lambert.
1.6. **1951** - Housing Plan 1951-1955. BO.
1.7. **1953** - Popular Housing 1928-1952. BO.
1.8.1 **1954a** - BO Magazine (#1-1)
1.8.2 **1954b** - BO Magazine (#1-2)
1.8.3 **1954c** - BO Obrero Magazine (#1-4)
1.8.4 **1954d** - BO Magazine (No.1-5)
1.9 **1967** - Modular Coord Manual. BO
1.10 **1967** - Experimental Housing. BO
1.11 **1969** - Method housing analysis. BO.
1.12 **1989** - 60 years of experience in low-cost urban development in Venezuela. National Housing Institute (INAVI)
1.13 **2007-2011** - Villanueva Mission. Bolivarian Republic of Venezuela.
1.14 **2011-2015** - Great Mission Housing Venezuela. Bolivarian Republic of Venezuela.
1.15 **2011-2015** - Great Mission Housing Venezuela / book. Bolivarian Republic of Venezuela.

2. Enabling - 11 reports
(See Appendix Ib)
2.1 **1946** - Campaign Against Rancho. BO.
2.2 **1958** - Plan de Emergencia en Venezuela de 1958. Interin Government
2.3 **1959** - Superblocks Evaluation Project. CINVA / BO
2.4 **1961** - Bases para un Política de Vivienda. BO
2.5 **196** - Autoconstruction. BO
2.6 **1965** - Housing National Policy. BO
2.7 **1969** - Parcels with Nuclei Program. BO
2.8 **1969** - PRUEBA Program. BO
2.9 **1972** - Popular Urb. Program. BO
2.10 **1974** - PVP Program. BO
2.11 **2009-2015** - Plan Barrio Nuevo Barrio Tricolor. Bolivarian Republic of Venezuela.

3. Upgrading - 8 reports
(See Appendix Ic)
3.1 **1951** - Report for the Governor of Caracas Federal District. National Commission of Urbanism
3.2 **1974** - National Decree No.332. Republic of Venezuela
3.3 **1978** - 1st National Barrios Inventory. Fundacomún
3.4 **1985** - 2nd National Barrios Inventory. Fundacomún
3.5 **1984** - *Barrios* Consolidation. BO
3.6 **1993** - 3rd National Barrios Inventory. Fundacomún
3.7 **1994-1998** – HFB Plan. CONAVI.
3.8 **1999** – HFB Competitions. CONAVI

4. Urban Plans - 7 plans
(See Appendix Id)
4.1 **1939** - Caracas Monumental Plan. Rotival, Lambert, Prost, and Wegenstein
4.2. **1951** - Caracas Regulatory Plan. Violich.
4.3 **1951-1958** - Zoning Texts Ordinances. Various (See Appendix G)
4.4 **1969** - Caracas Plan 1990. OMPU
4.5 **1979** - Caracas Plan 2000. OMPU
4.6 **1983** - Plan Rector Caracas 2000. OMPU
4.7 **2020** - Plan Caracas 2020. IMUTC

Labelling of Figure 45 - Category Analysis on Planning Reports vs. Historic SOi Record

After a Content Analysis, reading, and extracting planning strategies in each of them (See Appendix Ia, Appendix Ib, and Appendix Ic), we have categorized three planning strategies: Eradication, Enabling, and Upgrading that serve to understand planning approaches regarding Self-Produced Neighborhoods in Caracas.

In addition, we have superimposed in this Content Analysis the Zoning Plans analyzed in Chapter 5 (See Figure 45.4). We believe studying the specific reports about Self-Produced Neighborhoods as they overlap with these general urban plans has deepened our understanding of the planning strategies.

The first and most obvious result of the Content Analysis is that, in general terms, the timeline shows there has been a progressive trend from Eradication, to Enabling, and then to Upgrading strategies for the physical planning of Self-Produced Neighborhoods. The graph shows a trend with grouping Eradication reports towards the 1940s and 1950s, then the appearance of Enabling reports in the 1960s Upgrading strategies between 1974 and in 2001. On average the reports create an ascending line on the graph (Figure 45).

In the first half of the period analyzed, planning reports considered the inhabitants of the Self-Produced Neighborhoods under the myth of marginal people, common since the creation of the *Banco Obrero.* This was the emphasis during the 1950s, where eradication was presented as the most logical planning strategy conceptualized as the so-called *batalla contra el rancho* (the battle against the rancho) initiative.

Starting in the 1960s the planning documents promote Enabling planning strategies after accepting that the inhabitants of Self-Produced Neighborhoods participate actively, albeit unequally, in the socio-economic dynamics of the urban built environment progressively dismantling the idea of marginality to define underprivileged people[41].

Finally, starting in the 1970s and greater force in the 1980s, planning documents recognize Self-Production as a form of urbanization. Following the *myth of the informal settlement* (See Chapter 2), Self-Produced Neighborhoods are perceived as the territories that embody the activities outside the regulatory framework of planning processes. Hence, federal agencies promote a number of studies focused on Upgrading strategies to regulate them.

However, even when we observe this "upward" trend that accompanies Eradication / Enabling / Upgrading, we see this sequence is not completely linear (See Figure 45). All three strategies have overlapped throughout the history of Self-Produced Neighborhood planning in Caracas. Discussing these overlaps allows us to understand the non-physical patterns behind physical planning.

From the Content Analysis, we observe two striking issues on the overlapping of planning strategies. First, is the persistence of Eradication strategies through history. For instance, during the 2010s, Eradication strategies reemerged strongly, especially with the *Gran Mission Vivienda Venezuela* (GMVV, Great Mission Housing Venezuela) (Figure 45.1.15), a housing program seeking the elimination of Self-Produced Neighborhoods with significant parallelism to the

[41] At this point, we also see that Enabling has the particularity that not everything is officially registered, there is an informal supply of materials such as tin roofs, clay block, etc. often promoted by political parties in electoral periods (Gilbert and Healey 1985; Bolívar and Rosas Meza, Iris 1983, 53).

strategies of the *batalla contra el rancho* (battle against the rancho) established in the decade from the 1950s.

Likewise, although Upgrading's strategies began strongly at the end of the 1960s with the creation of the *Departamento de Urbanización y Equipamiento de Barrio* (Department of Barrio Urbanization and Servicing) within the *Banco Obrero*, there are documents that demand a recognition of the neighborhoods existing since the decade of the 1950s when Eradication was the most relevant official strategy. Upgrading strategies are neither recent, nor have they appeared as a reaction against Eradication strategies when the Myth of Marginal People was at its peak.

Summarizing, Eradication, Upgrading, and Enabling have occurred in parallel throughout the history of physical planning in Caracas.

But the most important result of this Content Analysis, especially its overlap on the historical record of the Spatial Opportunity Index, is that it allows to develop a working definition of the planning strategies as presented in the physical planning reports of Eradication, Enabling, and Upgrading, as well as their consequences in the perpetuation of spatial inequalities. Analyzing the history of physical planning vis a vis Self-Produced Neighborhoods from this perspective is the objective of the following sections.

We see different planning strategies since 1928. On that date, just six years after the beginning of the Venezuelan oil boom, the national government founded the *Banco Obrero*, an institution that would be a reference for housing policies, not only in Venezuela but in all of Latin

America[42]. The First Article of the decree-law for the creation of *Banco Obrero* (Figure 45.1.1) states that its objective is to facilitate the acquisition of "cheap and hygienic dwellings for poor workers" (Ley de Banco Obrero, 1928, #1).

Although the name of the institution *Banco Obrero* suggests its main activity is granting of mortgage loans, this institution was consolidated as an Institution for research, design, and later construction of public housing (INAVI 1989). Article 3 of the decree-law (Figure 45.1.1) established it as a body dependent on the Federal Executive, so this institution is consolidated as the backbone of a centralized State provider of housing supported by the benefits of the all-powerful oil renter state.

The early period of the *Banco Obrero*, between 1928 and 1945, is characterized by a pragmatic and fragmentary action (INAVI 1989). The *Banco Obrero* focused on awarding contracts for the construction of houses to private developers. We have called this the Inertial State period because it maintained the existing logic of power from colonial times, where the state was an articulator of contracts and benefits managed from the private sector.

But, additionally, developers sought to follow the same pattern that the wealthy classes had followed since the end of the 19th century. i.e., the abandonment of the historic center. Underprivileged people were being progressively dispossessed of dwelling areas as the *hacienda-conuco* binomial was eliminated and the *haciendas* transformed into residential areas for middle

[42] The *Banco Obrero* was considered a good practice in several influential international reports such as the article *Venezuela attacks its housing problem* in the Journal of Housing #4 by Jason Crane (1947), the *Low-Cost Housing Report* by the Francis Violich and Robert Jones (1949), *UN Housing Report #7 Urban Land Policies* published edited by Charles Abrams to the United Nations (1953), among others.

or upper social strata. Self-Produced Neighborhoods emerged with more impetus in those areas in the Valley left without real estate development. This was primarily in the banks along the *quebradas* (creeks) and the slopes of the hills. In this context, the *Banco Obrero* coordinated the creation of working-class neighborhoods on the outskirts of the city, especially *San Agustín del Sur* and *Nueva Caracas* (today Catia). The latter located where there was a significant number of *ranchos* close to the exit from the urban center to the port as shown in reports from the 1870s (Tallenay 1954; Ramos y García 1901).

At the end of this phase, in 1935, there is a significant decrease in the levels of Spatial Opportunities in all housing categories due to the logic of abandoning the center.

At the time of the creation of *Banco Obrero*, the dictator Juan Vicente Gómez had already been in power for 20 years. Alejandro Velasco explains that to appease the *hacendados*, Gómez distributed public revenues through lucrative concessions (2015, 25). Specifically, in terms of housing, the fact that the *Banco Obrero* did not build directly ensured the interests of the private sector in the transition from an agricultural city to the administrative center of a powerful oil economy (Martin Frechilla 1991, 77).

As we have explained in Chapter 4, 1936 is a tipping point in the history of modernization of Caracas when, after the death of the dictator Juan Vicente Gómez, Eleazar López Contreras launched the February Programme. Broadcasting the results of the Program, the newly installed President points out:

> The *Banco Obrero* will build model housing developments in some cities of the Republic, which will allow workers to acquire hygienic houses at a reasonable price

> and which they will be able to pay in installments that are within their reach. (Venezuela 1936b, 26–27).

The most important aspect of the February Programme is that the first step is taken for a State builder and promoter of public housing, financed by the benefits of oil rent, which will continue to this day.

5.2. El Silencio: The difficulty of overcoming a success

Framed in the spirit of beautification of the urban core, the most important housing project in Venezuelan history takes place: The *El Silencio* (The Silence) Redevelopment. A project that would be one of the clearest representatives of a Latin American trend to prioritize social housing and giving birth to what we know today as *viviendismo* (policies focused on housing construction).

The territory where El Silencio is located had been underprivileged residential areas, at least since the mid of the 17th century. On the margins of the *quebrada* (creek) called Caroata, there were homes of people seeking proximity to the foundational grid, but that had no place within it. Its name is because in 1658 an epidemic struck Caracas, the *caserío* (small village) where *El Silencio* is located today was one of the most affected areas, so in the Acts of Caracas´s Town Hall it is noted that: *se advierte silencio, silencio, un profundo ¡silencio!* (there is silence, silence, deep silence!) (Sola Ricardo 1988). With the arrival of the modern city, this territory would have priority in an urban redevelopment process.

El Silencio was located practically at the intersection of the most important roads of the 1939´s Monumental Plan, so, in the midst of the modernizing spirit of the February Plan, the area had to be rethought following the plan.

But also in 1939, Venezuelan representatives participated in the First Pan-American Low Income Housing Congress that took place in Argentina. The meeting concluded about the importance of eradicating planning strategies.

This Congress happened in response to the resolution XXIV of the Seventh American International Conference (Pan American Union 1933) and brought together government housing agencies from Argentina, Bolivia, Brazil, Colombia, Costa Rica, Chile, Ecuador, El Salvador, the United States, Guatemala, Haiti, Honduras, México, Nicaragua, Paraguay, Perú, Uruguay, and Venezuela. The conclusions of the meeting were critical in the foundation of a Latin American tendency that associates urban planning and social housing (Feldman 2014). Explicitly, the report of the congress expressed the need to eradicate *arrabales* (poor suburbs) as the most relevant urban policy in the region (Ministerio de Relaciones Exteriores y Culto 1940).

Five years later, on July 5th, 1944, the President of Venezuela Isaías Medina Angarita inaugurated Block 7, the first one out of seven in the *El Silencio* Project. In his opening speech, Diego Nucete Sardi, Director of *Banco Obrero*, would celebrate the fulfillment of doctrines established in the First Pan-American Low Income Housing Congress that took place in Argentina. With this gesture, *Banco Obrero* inaugurates the eradication strategy in Venezuelan housing policy based on the logic of a Builder State. From that moment, Venezuela assigned the *Banco Obrero*

the role of an active agent in promoting social housing (Blay 1959), that is to say, became the main promoter of *viviendismo*.

The *El Silencio* Redevelopment has been one of the most celebrated projects in Venezuelan planning history, becoming an example of the Eradication of Self-produced Settlements for all Latin America. For instance, in 1946, in an article entitled "Venezuela Attacks the Housing Problem", Francis Violich, consultting for the Pan American Union, praises in the organization's Bulletin No. 80 the El Silencio Redevelopment as the *Banco Obrero's* greatest slum clearance effort (Violich 1946b, 629).

Likewise, *El Silencio* Redevelopment would be included in the *Low-cost Housing in Latin America Bulletin*, which would be a compilation of best practices at the Latin American level, with examples such as the Peruvian Unit No. 3 Housing Project, and the *Parque Residencial Obrero* (Worker's Residential Park) in Havana, Cuba (Violich and Jones 1949). In 1947, Jacob Crane influential member of the US National Housing Agency affirmed after visiting *Banco Obrero* that "the vigorous and intelligent manner in which [the housing] program is being carried on" in El Silencio, "the huge apartment project with 760 units to replace the city´s worst slum area (Crane 1947, 163)."

El Silencio Redevelopment is an exceptional project in architectural terms. Undoubtedly, El Silencio was a unique project that humanized the Monumental Plan's proposal even while maintaining its road layout. In 1942, Carlos Raul Villanueva - the great master of modern Venezuelan architecture- won a design competition creating what he described as a proposal to reinforce the "heart of the city" (C. R. Villanueva 1966). Villanueva was an active member of the

Congrès Internationaux d'Architecture Moderne - CIAM, at the time of writing this reflection on his own work, VIII CIAM had already taken place, chaired by Josep Lluís Sert, which proposed a revision of the doctrines of the Charter of Athens on the revitalization of urban centers in post-war times. Villanueva uses the metaphor of the heart of the city to emphasize the idea of a project with intense urban activity in a modernly revitalized center.

To achieve this urban core revitalization, Carlos Raul Villanueva developed an architectural typology of continuous facades with commerce on the ground floor and towards the main street and patios with terraces towards the interior of the block. Villanueva masterfully managed the scale and proportion of the architectural elements, achieving a project that mixes the modern character of the time with the heritage of colonial architecture and a well-accomplished understanding of the tropical climate through a beautiful balance of light and shadow. The project was innovative for the time. Analyzing the proposal, Sybil Moholy Nagy said that Villanueva "had to provide new solutions because the problems he faced were unprecedented" (1964).

The success of *El Silencio*, together with the paradigm of the wealth of an oil country, would forever establish the position that the Builder State is the tool to address the issue of Self-Produced Neighborhoods from the perspective of eradication.

Undoubtedly, El Silencio would become a symbolic project that gave Venezuela the illusion of being able to eradicate Self-Produced Neighborhoods through federal driven housing projects. In the document published the government published in 1974 in the *Revista de Fomento* No.66 (Promotion Magazine No.66) (Figure 45.1.4.1) the government laid out this ideological

guideline. Here, Francis Violich celebrates El Silencio Redevelopment and asks rhetorically: "How many dwellings are necessary to solve the housing issue" (Violich 1947).

In the same spirit, the government hires the French planner Jacques Lambert to develop the *Informe Básico sobre el tratamiento de los Ranchitos de Caracas* (Basic Report on the treatment of Los Ranchitos de Caracas) (Figure 45.1.5). Lambert had worked together with Maurice Rotival in the design of the 1939 Monumental Plan of Caracas (Figure 45.4.1), so he had a relatively comprehensive vision of the geography of Caracas. In this sense, this report synthetically proposes the study of the Caracas Valley to relocate the Self-Produced Neighborhoods.

However, the small scale of *El Silencio* Redevelopment compared to the number of homes required for the time shows its construction contributes minimally to eradicate Self-Produced Neighborhoods. Nonetheless, this would be the main failure of planning strategies in Venezuela, Eradication based on public housing construction as the perennial paradigm despite its failure as a strategy to deal with the ever-growing phenomenon of Self-Produced Neighborhoods.

El Silencio Redevelopment was nothing but a grain on a large beach of growing self-production. In an interview conducted by Valentina Krentzien De Sola with Carlos Raul Villanueva, in 1969, Villanueva affirms:

> When *El Silencio* was made, there was no need to do it quickly or in large quantities, this was not thought about, nor was there as much need as now (…) It is then necessary to try to find modern solutions while preserving the standard concrete or steel structure system (Sola Ricardo 1988, 86).

It is easy to detect in this statement the arrogance of the architect and the inability of society to seek alternatives for the growing phenomenon of Self-Production. Before the completion of *El Silencio* there were already clear signs that this strategy was not enough to achieve its eradication objective.

At the time, Self-Produced Neighborhoods continued to grow since they were first acknowledged in the nation's third census in 1891. After the analysis of the Seventh National Population Census (Venezuela 1945), we estimates that Caracas had more than fifty thousand of inhabitants living in self-produced territories in the 1940s, especially in areas not authorized for the housing as the banks of *quebradas* (creeks).

Not surprisingly, while in the decades of 1940s public housing improved their Spatial Opportunity Index levels moving from 0.015 SOi in 1936 to 0.047 SOi in 1949, levels decreased from 0.06 SOi to 0.03 SOi in Self-Produced Neighborhoods for the entire Valley in the same period. El Silencio represented a positive project for the accessibility of its inhabitants, not only for being located in the heart of the city but also for having committed a significant investment in connectivity networks and constructing communication infrastructures in the residential complex itself. Analysis of the project shows it goes beyond housing; 68% of the developed area is dedicated to collective spaces and to different categories and levels of public space, including about 400 premises for commerce and small industries. However, the Spatial Opportunity Index remained weak for the scale of Caracas and the spatial inequality between El Silencio residents and inhabitants of Self-Produced Neighborhoods augmented due to the low number of housing

units (716 units) built in the project while the growth of Self-Produced Homes estimated an increase of 975 units.

We may consider *El Silencio* more of a symbolic than a grounded success. From thereon *Banco Obrero* coordinated a series of decisions to consolidate the idea of the Builder State, including the preparation of localized housing censuses and pilot projects for new types of modern housing (Martín Frechilla 2004; B. Meza 2009; 2008). In this framework, the National Government launched decrees Nos. 144 and 145 on January 18, 1946, to increase the *Banco Obrero*'s capital for the construction of public houses (Martín Frechilla 2004; B. Meza 2008). Villanueva would lead the *Taller de Arquitectura del Banco Obrero* – (TABO, *Banco Obrero* Architecture Office) to formulate the *Plan Nacional de Vivienda* (National Housing Plan) 1951-1955.

The pamphlet of this Plan, from October 31st, 1951, explains:

> The massive construction, the simplification of distribution [of the architectural plan], the elimination of what is accessory in the home in favor of what is essential in its construction, the education as a family through the practical demonstration help in the same sense off the monetary investment to close the gap every time greater between the family with modest means and the achievement of a proper dwelling.

The modern solution expressed by Villanueva would be the superblock, following the modern typology of the horizontal slab (Banco Obrero 1951). Also, in 1946, the Comisión Nacional de Urbanismo (CNU, National Planning Commission) was created to coordinate urban

planning, being chaired by the then also Director of the *Banco Obrero*, Leopoldo Martínez Olavarría.

After this important event, planning strategies remained fragmented, without considering mechanisms to integrate housing projects into the infrastructural networks of the broad urban built environment. Planning reports will be more focused on counting the number of housing interventions than articulating them systematically across spatial territories. In general, planning reports counted built homes and other units such as schools or public spaces, or even the addition of connections to services such as water or electricity, but few of them explored the spatial relations among them.

In the following planning strategies -Eradication, Enabling, and Upgrading- we see that little has been discussed on how infrastructure systems allow the generation of cross-scalar relationships of infrastructures and public services in order to increase levels of Spatial Opportunities.

5.3. Defining Eradication

5.3.1. Working Definition

The first strategy is Eradication. The Content Analysis includes nineteen planning reports on tools that develop this strategy between 1922 and 2015 (See Appendix Ia). Eradication refers to the elimination of Self-Produced Neighborhoods.

Typically, Eradication strategies disregard the designing of infrastructure systems, including water, sanitation, rainwater management, and energy and the provision or management of public resources such as workplaces, schools or health care centers.

Instead, this planning strategy focuses on the value of the housing unit and its capacity to produce social change. According to Eradication strategies, the construction of new housing and the relocation of the underprivileged people in them will reduce the conditions that negatively affect them, including family breakdown, crime, and underemployment (Mangin 1967). Presumably, the Eradication of Self-Produced Neighborhood and its construction culture would also eradicate poverty.

In the previous paragraph, we have intentionally used the word poverty (*miseria* in the planning reports) for the first time in this thesis, because we have found it repeatedly in planning documents that promote Eradication strategies, especially between 1950 and 1958 and from 2004 onwards. Up to now we have used the notion of "the underprivileged" to refer to inhabitants of Self-Produced Neighborhoods because we believe that poverty is multidimensional and cannot be linked solely to the spatial condition (See Chapter 3). However, we have found in the planning documents that Eradication strategies oversimplify the idea of curtailing poverty through the eliminating of Self-Produced homes; hence the use of the term makes sense here.

Self-Produced Neighborhoods are considered pathologies of urban development because they promote activities that are outside regulatory frameworks and hinder social and economic development (Kapaz and Kenyon 2005). It becomes fundamental for planners and policymakers to eliminate them and promote human and urban development.

In Venezuela, the foundation of this doctrine is presented in an influential document published in 1942 in the Revista de Sanidad y Asistencia Social (Review of Health and Social Assistance) of the Ministry with the same name (Figure 45.1.3). It is the *Estudio Social Sanitario de un Distrito de Caracas. Distrito "B" del Guarataro, Parroquia San Juan* (Sanitary Social Study of a District of Caracas. District "B" of Guarataro, San Juan Parish). El Guarataro is one of the first Self-Produced Neighborhoods in Caracas, located in the hills to the west of its foundational grid. Understanding this survey can help us appreciate the perspective regarding Self-Produced Neighborhoods at the beginning of the official housing policies in Venezuela. It says:

> The housing conditions in Guarataro mark the most accentuated character of poverty [*miseria* in Spanish] (…) the dense conglomeration of humble houses, one on top of the other, explains the demographic data discussed above [it refers to the conditions of underemployment and unemployment of its inhabitants]. It is not logical to suppose that housing in conditions of abandonment like those that we observe in Guarataro will result in a flourishing vitality. The housing problem in the suburb of Caracas ["suburbs" is how Self-Produced Neighborhoods were called in Caracas in the 1940s] has two aspects: one, clearly economic; and the other, deeply rooted in the Venezuelan spirit: adaptation to an eternally provisional life (Bengoa 1942, 25).

In this report, Doctor Jose Maria Bengoa reaches two conclusions that will be very influential in the history of Caracas´ physical planning, especially because of it being an official report. On the one hand, the housing conditions make it impossible for its inhabitants to overcome

underemployment because their environment limits their abilities to thrive. On the other hand, the inhabitants of the Self-Produced Neighborhoods are destined to live in these temporary-looking *ranchos*, built with waste materials collected around.

In 1942, more than 39% of Caracas population lived in *ranchos*, and between 1941 and 1971, they increased from 12,788 to 77,137 homes. But later, even though Self-Produced Neighborhoods have grown steadily in Caracas, *ranchos* within them have been progressively diminishing; because Self-Produced Neighborhoods are in themselves a form of incremental development where housing progressively improves its construction systems (Leeds 1969; Rosas Meza 2009; Turner 1966), transforming *ranchos* into solid homes (Cf. Chapter 1).

For example, in Caracas Capital District, censuses have described a significant reduction in ranchos across time. The 2011 census register 15,904 of *ranchos*, which represents only 2.7% of all built structures. Translating into population in 2011, only 4% lived in *ranchos*. Now it becomes clear that the central issue of Self-Produced Neighborhoods is not housing per-se as housing has been improved through years of Self-Production, but the deficiency of the provision services which is associated with their low levels of Spatial Opportunities.

5.3.2. Eradication in the 1950s

In 1942 the number of *ranchos* alarmed Caracas´ elites. It is likely that at the time it was difficult to understand the incremental improvement of the housing infrastructure in Self-Produced urbanizations, a process that was consistent across all off Latin America. Between the 1940s and

1950s society assumes the narrative of the eternal provisional life of the Self-Produced Neighborhoods in which Eradication strategies seem to be inevitable.

Eradication had a great impact in Latin America in the 1950s. Not only because of events such as the Pan-American Low-Income Housing Congresses between 1939 and 1953, as well as other seminars and magazines that widely disseminated the success of experiences such as the El Silencio Redevelopment in Venezuela between 1942-1945 (Sola Ricardo 1988), and the Laborer City in Mexico City (Unión de Arquitectos Socialistas 1939) carried out respectively by the *Banco Obrero* in Venezuela and by the Socialist Architect Union in Mexico City. Architectonically they spread the influence of Le Corbusier´s *Unite habitation* in Marseille presented at CIAM 7 in Bergamo (Le Courbusier and Candilis 1949). This building becomes the exemplification of the modern slab building typology that materializes a high-density, mass-produced alternative of the "machine for living" (Frampton 2007, 182) adapted to the ideal modern human being. This turned out to be the perfect typology for a society who had assumed their urban environments had to be modernized.

Luis Carranza explains that through modern typologies, public housing reaches a monumental scale in Latin America in the 1950s (2014, 153). We could say a triumphalist scale, with proposals such as those developed in the *Taller de Arquitectura del Banco Obrero* (TABO, Architecture Studio of the Workers Bank) as well as several examples across the region among which stand out the Pedregulho Housing Complex (Rio de Janeiro, 1951-1952) by Affonso Reidy (Cavalcanti 2003), the JK Complex (Belo Horizonte, 1951) by Oscar Niemeyer with an evident

Corbusian influence (Frampton 2004), and the Multifamily Building *Miguel Alemán* (Mexico City, 1950) by Mario Pani (Adrià 2016).

In the middle of the 20th century, social housing becomes one of the main tools to build a modern utopia in Latin America (Bullrich 1969; Fraser 2000; Mumford 1997), centered on the removal of the Self-Produced Neighborhood to axiomatically achieve the elimination of poverty.

In Venezuela, this doctrine was obvious in the *Revista de Fomento* (Development Magazine) published in 1947 by the national government (Figure 45.1.4.1). It promotes:

> … the need to completely eliminate urban sectors unsuitable for modern life [Self-Produced Neighborhoods] by definitively establishing minimum habitation standards. The moral and social improvement of the people becomes impossible as long as the unhealthy neighborhoods and urban crowds remain, which are nothing other than incubators of crime, prostitution, and bad habitual practices (Violich 1947, 158).

Under this doctrine, urban development supposedly manages to overcome all social problems, including poverty, by eliminating Self-Produced Neighborhoods. This is the zeitgeist that promotes the Eradication strategies in the *Banco Obrero* Plan Nacional de Vivienda 1951-1955 (National Housing Plan 1951-1955), whose doctrines (Sola Ricardo 1988) perpetuate the modern slab typology called *Superbloque* (Superblock) until 1958 (Hellinger 1991; B. Meza 2009; 2008) which marks the end of the dictatorship of Marcos Perez Jimenez.

In this context, the standardized modern housing was a design tool for Eradication of Self-Produced Neighborhoods in a program called *la batalla contra el rancho* (the battle against the *rancho*). In *Banco Obrero* Magazine Issue #1 (1955) (Figure 45.1.8.1), this is explicitly stated:

> From an aesthetic and architectural point of view, it is necessary to disappear the crowding *ranchos*, located in the heart of Caracas, the great modern city, pride of Venezuelans (Banco Obrero 1954a, 18)

Then, in Issue No.7 of the same magazine, the government states:

> Instead of *barrios* of uneven little houses, where the shadows and social problems seek refuge, an urbanization of perfect lines emerges. Modern homes arise in the heart of densely populated sectors. An environment of superior conditions is offered to the individual (Banco Obrero 1954b, 10).

Eradication became a state policy at the time of the dictatorship of Marcos Perez-Jimenez (1952-1958). For the government, *ranchos* were obstacles to the city´s progress towards morals, health, and security implied in the Modern Approach of the time (Martín Frechilla 2004, 160–82; B. Meza 2009).

On January 23, 1958 the dictatorship falls and a democratic period begins, the longest ones Venezuela experienced. *Banco Obrero* asks Eric Carlson, Director of the *Centro Interamericano de Vivienda y Planeamiento* (CINVA, Inter-American Center for Housing and Planning) based in Bogotá to write an evaluation of the housing projects and programmes in Venezuela (Figure 45.2.2). The report, first published by *Banco Obrero* (Carlson 1959), later spread out

across the continent in the Issue 31: 3 of the Town Planning Review (Carlson 1960), concludes in calling the *Superbloques* the symbolic building of the dictatorship.

Carlson highlights the invasions and incursions into housing project buildings once the dictatorial repression had fallen down and technical problems associated with *Superbloques* such as lack of public-school facilities. He recommended the cancellation of the Eradication program and the diversification of housing policies. The *Banco Obrero* follows this suggestion, so we see a pause in the reports that promote Eradication strategies in the following years.



Figure 46 - 23E Superblocks in 1957



Figure 47 - 23E Superblocks in 2004

As of 1958, the "empty spaces" around superblocks, originally imagined for green areas or parking lots, ended up mostly being squatted by Self-Produced Neighborhoods.

Years later, the failure of the Eradication program is evident. The most emblematic example is the *23 de Enero* (23E) Complex in Caracas completed in 1958 (Figure 46). Instead of achieving its goal of eradicating Self-Produced Neighborhoods, it incentives them (Figure 47). Currently the *Superbloques* and the Self-Produced Neighborhoods exist side by side as symbols of Venezuelan social architecture, generating an intense and rich dynamic of social community and political relations between its inhabitants (Blackmore 2017; Velasco 2015).

The failure of the superblock strategy in terms of Spatial Opportunities appears clearly. For instance, the 23E project was built in the hills to the west of the historic grid, poorly connected to the existing urban fabric. Consequently, this development reached only 0.018 SOi at the time of its construction, even before the incursions in the unbuilt areas by the Self-Produced Neighborhoods. In contrast, *El Silencio* which respected the street traffic of the 1939 Monumental Plan of Caracas had 0.75 SOi during the same time (Figure 48).



Figure 48 - SOi – 23E Project - 1958



Figure 49 - SOi – 23e Project - 1984

Superblocks El Silencio

These graphs show the lack of attention to networked infrastructure systems by federal-driven housing programs under the umbrella of a Modernizing approach in the twentieth century (In blue the housing buildings with the highest Spatial Opportunity index, in red the areas with the lowest one).

Twenty-six years later, when the Self-Produced Neighborhood around the 23E Project was consolidated, the superblocks lowered their spatial opportunities to 0.016 SOi, after barrios absorbed many Spatial Opportunities to position themselves in a 0.025 SOi (Figure 49).

The Eradication strategy has consistently failed in its fundamental objective of eliminating Self-Produced Neighborhoods but also in providing greater opportunities for the underprivileged inhabitant. However, after working in the Content Analysis of planning reports between 1928 and 2015, the most important observation is that Eradication in Venezuela has continued goes beyond 1958, been consistently pursued throughout the urban planning history of Caracas, and yet has to show convincing results in improving the living standards of Self-Produced Neighborhoods.

5.3.3. Eradication since the 1960s

The *Banco Obrero* continued to elaborate efforts to massify housing construction, while this effort is shadowed by the exponential growth of Self-Produced Neighborhoods (Cf. Chapter 4). In this context, during the 1960s planning reports seek to create increasingly technically sophisticated standardization instruments to speed up the production of homes. The most obvious example of this period of *Banco Obrero* is the *Manual de Coordinación Modular* (Modular Coordination Handout) published in 1967 (Figure 45.1.9). The document states the following:

> According to the National Plan, the *Banco Obrero* has planned a large increase in its housing production while at the same time needing to maintain a level of construction costs such that it allows it to continue serving the less favored economic classes. Faced with this question, the *Banco Obrero* has begun the search

> for more rational production methods, based on a series of experiences that range from the standardization of construction elements to the mechanization of production. The Modular Coordination represents an important chapter within all of this, since it allows to relate the manufacture of the components, their design and the assembly on site, eliminating the unnecessary sizes of said components and their coordination in a rational way (Banco Obrero 1967, 6).

Planning reports of the following years repeats this pattern, reaching the extreme of standardizing the types of family composition, seeking to normalize the inhabitant as a way to facilitate the normalization of the house to promote its rapid construction, as can be read in the *Método De Analisis del Problema de La Vivienda en Zonas Urbanas* (Method of Analysis of the Housing Problem in Urban Areas), edited by *Banco Obrero* (Roffe 1969).

In 1988, *Banco Obrero* which in 1975 had been formally converted into the *Instituto Nacional de la Vivienda* (INAVI, National Housing Institute) published a book that is fundamental to the understanding of the history of Venezuelan housing: "*60 años de experiencias en desarrollos urbanísticos de bajo costo en Venezuela* (60 years of experiences in low-cost urban development in Venezuela) (Figure 45.1.12). The book is a compilation of most of the housing units built since 1928. Here INAVI qualifies itself as a *viviendista* agency (pro-housing agency) (INAVI 1989, 386)

As we explained above, *Viviendismo* is a word commonly used in many Latin American countries to define a housing policy dedicated to providing housing to underprivileged communities. *Viviendismo* focuses on the construction and quantification of housing units as the

indicator of success. The generation of development and redevelopment plans and the improvement of infrastructure systems are irrelevant because what matters is the number of homes built to reduce poverty and poor homes, meaning Self-Produced Homes.

Following the emergent doctrines of construction normalization to increase housing construction espoused in the 1960s´ planning reports, *60 años de experiencias en desarrollos urbanísticos de bajo costo en Venezuela* devotes many pages recapitulating different construction techniques applied to massify housing construction between 1959 and 1973. It shows how INAVI experimented with 23 construction systems during that period, with modular building systems applied to a wide range of building types (INAVI 1989), including various construction techniques such as prefabricated reinforced concrete and standardized steel structures.

The standardization of construction systems sought to win the race of housing against Self-Production growth. The efficiency of modern and standardized construction systems that would achieve housing for underprivileged people and eradicate the Self-Produced Neighborhoods never happened (Cf. Chapter 4).

Between 1975, the date of the transformation of *Banco Obrero* into INAVI (1975), and the beginning of the Bolivarian Revolution under Hugo Chávez in 1999, we see a decrease in the number of planning reports in our Content Analysis. From 1978 after three years of institutional restructuring (INAVI 1989), Venezuela faces one of the greatest economic crises of its history that began after a dramatic decline in oil income (Cilento Sarli and Fossi 1998, 43), culminating with the events of Black Friday on February 18, 1983, when the Venezuelan bolívar was devalued

substantially against the US dollar causing a significant destabilization of the Venezuelan economy.

In this context, the exhaustion of the rent-oil model appears evident. The intense economic crisis that engulfed all of Latin America generates a breakout of the all-powerful and centralized Venezuelan State. In this context, the reduction of public spending by the national power in cities also caused a decline in public activity on issues such as low-income housing and the subsidy of public services (Cardona, Schloeter, and Urdaneta Troconis 2021; Cilento Sarli and Fossi 1998).

In this context, the State starts a decentralization process by de-concentration of public power through multiple autonomous institutes, foundations, funds, and societies (Urbina Mendoza 2019). A negative consequence of this decentralization process in this early phase is excessive bureaucratization of the all-powerful state apparatus that generates a complex and ineffective normative and institutional warp (Delfino 2005). It took years of bureaucratic adaptation until local governments began to respond positively to public policies only for the decentralization process be stopped by the authoritarian re-centralization policies of the Bolivarian government starting in 2006 (Cardona, Schloeter, and Urdaneta Troconis 2021). Nevertheless this failed decentralization process brought a period with innovations in planning.

Between 1974 and 1998 the construction of housing by the State continued in increasing numbers (González del Castillo 2016, 230) with the premise described above of standardization of construction systems. We can describe it as an inertial *viviendista* state while the continuous growth of Self-Produced Neighborhoods revealed the futility of the Eradication strategies.

5.3.4. Eradication in the Twentieth Century

But in March 2007, the Bolivarian government of Venezuela surprises with a new Eradication wave. They were probably motivated by one of the most significant oil booms in history when the oil barrel price rose from $ 19.51 in February 1999 to $ 83.92 in March 2007 just when the new housing policies began. The price reached $ 167.30 in June 2008 (Macrotrends 2021). As has happened in Venezuela since 1922, the almost exclusive dependence on a globalized product such as oil spawns an all-powerful state that monopolizes all production processes, housing included.

Consequently, the government starts an ambitious program of housing between 2007 and 2015, which by our content analysis, is an Eradication strategy. This project had two phases, first the *Misión Villanueva* (MV, Villanueva Mission) (2007) (Figure 45.1.13), a socialist-inspired program that sought to replace Self-Produced Neighborhoods with housing, relocating populations to satellite cities with a socio-productive vocation. Then the *Gran Misión Vivienda Venezuela* (GMV, Great Venezuela Housing Mission)[43] (Figure 45.1.14 and Figure 45.1.15), a more pragmatic strategy that sought to locate empty land in the already consolidated urban areas to build new standardized buildings with the intended objective of achieving the elimination of Self-Produced houses.

[43] The GMVV Program was a program supported by a series of decree laws, promulgated directly by the national government such as the Decreto con Rango, Valor y Fuerza de Ley Orgánica de Emergencias para Terrenos y Vivienda (2011) (Decree of Organic Law of Emergencies for Land and Housing), the Ley para la Regularización y Control de los Arrendamientos de Vivienda (2011) (Law for the Regularization and Control of Housing Leases), and the Ley de Régimen de Propiedad de Viviendas de la Gran Misión Vivienda Venezuela (2011) (Housing Property Regime Law of the Great Venezuela Housing Mission).

As has been done in Eradication projects since the 1940s, housing projects of GMVV focused exclusively on housing, working with the assumption that only the physical plant of the Self-Produced Neighborhoods embodies the evils of the society, and that their elimination is a mandatory step to overcome them. In the speech by Venezuelan President Hugo Chávez on March 16, 2011, four years after starting the housing programs, he claimed:

> …that *ranchos* come to an end so that poverty (*miseria* in Spanish) ends too. Go! Go! [he said] Long live the working class (IAEP-HRCF 2011).

In the same speech, the President promises the Eradication of a consolidated Self-Produced Neighborhood on the brink of a new public housing development (later called Ciudad Tiuna) in *El Valle* neighborhood (Caracas). He says:

> Thanks to China's support, the Chinese government, and *Citic* [a Chinese construction company hired by the Venezuelan government], well and many other allies and friends of the world, we will move forward. I am committed that the miserable *rancho* in Venezuela will end, and there will be decent housing for all Venezuelans (IAEP-HRCF 2011).

Likewise, the President assumes the housing problem as a condemnation of the prevailing political system from 1928 until the coming to power of the Bolivarian Revolution. Talking about the Self-Produced Neighborhood (*barrios* in Venezuela), Chávez says:

> ...because that is the capitalism that condemned the poor people to live [in] poverty (*miseria* in Spanish), in the to the miserable *rancho*… in the miserable *barrio* to

> live dying, the revolution is going to give the Venezuelan people more and more true life every day (IAEP-HRCF 2011).

In the official discourse, *barrio* and *rancho* are used as equivalent terms, even when they are not. The *rancho* is made up of precarious housing built with waste materials that are progressively improved until it becomes a home, even a solid one; the *barrio* is a Self-Produced Neighborhood that combines both *ranchos* and houses (See Chapter 1). Additionally, Self-Produced Neighborhood is associated with a condemnation of capitalism which must also be eradicated.

To pursue this never achieved Eradication of Self-Produced Neighborhoods, the government seeks a standardization strategy similar to that promoted in previous decades. The government creates the Oficina Presidencial de Planes y Proyectos Especiales (OPPPE, Presidential Office of Studies and Special Projects) as a centralized design agency directly attached to the Presidency, a contemporary version of the *Taller de Arquitectura del Banco Obrero* (TABO, Banco Obrero Architecture Office).

In this context, OPPPE formulates the new standardized typological and architectural solutions, progressive developments and prototyping (Wilson Wetter 2020, 410). Lucas Pou Ruan, Architect Director OPPPE, states that these buildings have become the emblematic housing buildings of the Bolivarian Revolution (Wilson Wetter 2020, 412). In a remarkably similar way to the Caracas's housing policies since the 1940s, the building's architectural standardization becomes a tool for Eradication. This standard building would be replicated repeatedly, without considering the context of infrastructure systems, public facilities, or other services.

GMVV's strategy repeated the same Eradication doctrine since the 1950s. It involves the inclusion of a building without considering the systems that allow the integration of the Self-Produced Neighborhood. In GMMV Program, there have been no considerations on the improvement of infrastructure systems such as water, sanitation, energy, or rainwater management, neither the improvement of the street network that upholds these infrastructures, the emphasis has been only housing.

Like any Eradication program, the big goal is the relocation of Self-Produced Neighborhoods. However, between 2000 and 2013 we estimate that the number of people living in GMVV residences increased by less than 30,000 people while the number of people living in Self-Produced Neighborhoods increased by 225,000. This is also evident just by walking through Caracas; despite the effort to build public houses, Self-Produced Neighborhoods have never been eradicated and remain there. This does not surprise; what is surprising is that more than 70 years of sustained *viviendista* policy, that is, of building houses to Eradicate Self-Produced Neighborhoods, civil society continues to fail using the same planning strategy.

We estimate that, between 1928 and 2015, the State have built more than 139.000 public dwellings in Caracas, and more than 1.9 millions in the whole country, which is a rate of 8.17 and 9.61 per thousand inhabitants respectively (See Appendix J). The promise has always been to use the all-powerful powers of the oil-rentier State to eradicate Self-Produced Neighborhoods. However, the building capacity of these has always been greater (See Chapter 4).

But the Eradicating strategy at the 21st century is surprising due to the lack of understanding by planners and policymakers about the Self-Produced form of urbanization, whose

dynamic allows the development of housing units but not of the systems that integrate them (See Chapter 1). As explained previously and by calculations based on official censuses for the year 2012, only 2.22% of the population of Caracas lives in *ranchos*, even when 46.3% live in poorly integrated Self-Produced Neighborhoods.

Regarding the levels of Spatial Opportunities between 2000 (Figure 50) and 2013 (Figure 51), the inhabitants of public housing, in this case built by the GMVV program, show an increase from 0.16 SOi to 0.19 between 2000 and 2013. However, it marked reductions in Spatial Opportunities in Self-produced Neighborhoods, falling from 0.017 SOi to 0.013 SOi. In these three years of intense investment to supposedly overcome poverty amidst a significant economic-oil bonanza, the inhabitants of Self-Produced Neighborhoods have 25% fewer opportunities to access the Spatial Opportunities offered by the urban built environment, such as workplaces, schools, or healthcare centers.

To exemplify this phenomenon, we show below a zoom of the analyzes carried out in *Ciudad Tiuna* in El Valle, one of the most massive and emblematic projects of GMVV program and the same enormous housing program built by the Chinese Citic mentioned above. President Chávez was on an electoral campaign, so this project represented an important achievement in the perpetuation of his power.

The mapping of the comparative analysis between 2000 and 2013 for this sector of the levels of Spatial Opportunities reveals the systemic relationship between public housing and Self-Produced Neighborhoods. As we can see, the diagram of 2013 shows the construction of new GMVV projects, whose contribution to the system was only the construction of new homes without

affecting the growth of Self-Produced Neighborhoods. The latter shows a decrease in their levels of Spatial Opportunities; those houses close to the urban fabric that were blue will lose SOi weight after GMVV Program.

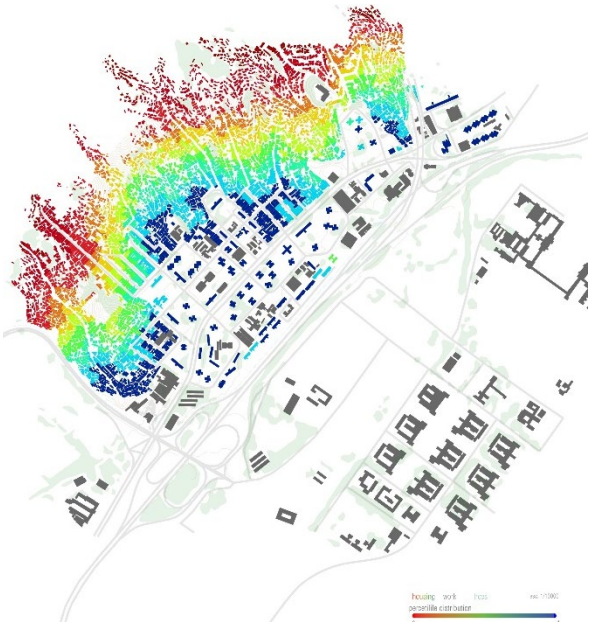


Figure 50 - SOi - El Valle - 2000

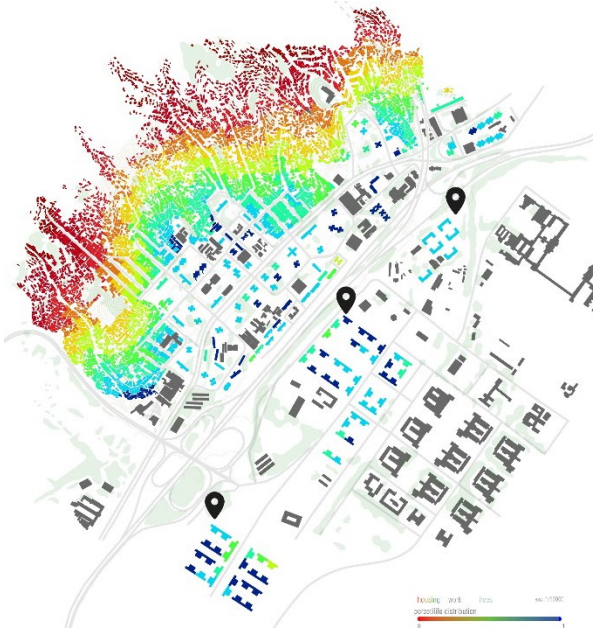


Figure 51 - SOi - El Valle - 2013

GMVV

These graphs show the lack of attention to networked infrastructure systems by federal-driven housing programs under the umbrella of a Revolutionary approach in the twentieth century (In blue the housing buildings with the highest Spatial Opportunity index, in red the areas with the lowest one).

In addition to failing in its Eradication strategy, GMVV's projects carry a greater number of homes to a territory that has already collapsed in its infrastructure systems. The provision of water, sanitation, rainwater management, and energy remain the same, as is the available stock of urban resources such as workplaces and schools.

Relying on existing services, GMVV does not contribute additional ones, generating a disequilibrium in the opportunities that different sectors have to access these services. The Spatial Opportunities analysis shows that, as usually occurs in Eradication strategies, when the goal of Eradication is not achieved, the result of the GMVV is an increase in the imbalance in the uneven distribution of services, that is, a systemic increase in spatial inequalities.

5.3.5. Closing Remarks on Eradication

The Eradication is being repeated over and over throughout the history of physical planning in Caracas; it is also repeating its failures. But, despite this continuous process, there are substantial differences in this history. We can divide this into three periods focused on Modernist, Reformist, and Revolutionary Approaches.

First, planning policies in the 1940s and 1950s demonstrate a Modernizing Approach that understands the inhabitants of Self-produced Neighborhoods adapt perpetually to surviving temporarily away from the modern way of living. So, the planning strategy is to understand the provision of housing as a stepping-stone towards a modern way of life.

Second, during the 1960s and 1970s, planning reports adopt a Reformist Approach that seeks to adapt planning to existing conditions trying to improve technical capacities for housing construction through standardization; and, as we will see later, in this period planning reports also promote other planning strategies, including Enabling perspective of mutual aid programs.

Finally, especially since 2007, planning strategies assume a Revolutionary Approach focused on condemning the capitalist city as the generator of people's poverty in living conditions.

Following this premise, Self-Produced Neighborhoods should be eliminated since they are the surrogates for the failure of capitalism.

But in all of them the output has been the same which we could summarize as the failed attempt to eliminate Self-Produced Neighborhoods by focusing on the supply of houses but scattering planning interventions in isolated housing projects. Despite certain differences, in general, this strategy ignores the infrastructure systems and the service networks in which the houses are inserted. This is what we call a fragmentation of planning strategies, which focuses on the quantitative calculation of units without addressing the distribution, design, or management of opportunities offered by the urban built environment. In this context, the unequivocal result being the perpetuation of the inequalities, especially affecting the inhabitants of Self-Produced Neighborhoods.

5.4. Defining Enabling

5.4.1. Working Definition

Enabling focuses on the formalization of Self-Production as a form of development. After the analysis of this planning strategy through the study category presented in the Content Analysis of eleven planning reports of Caracas between 1928 and 2015 (See Appendix Ib) and crossing their concepts with those applied in other Latin American experiences, we observe the Enabling approach contains several implementation schemes. These include Self-Help and Mutual-Aid which can serve as alternatives for the integration of Self-Produced Neighborhoods. But Enabling

is also an ideal strategy for the development of additional palliative actions that move away from the provision of infrastructure services.

While Eradication concentrates on housing, Enabling centers on people. The primary idea of the latter is to promote freedom of housing among individuals amidst the contemporary industrialized society (Kahatt 2011, 23). Hence, its best-known representative is the work of the English architect John F.C. Turner, and the idea of *Housing by People* (1976) pursuing an autonomous *Freedom to Build* (1972).

Therefore, and contrary to what has happened in the Eradication, the Enabling strategy conceives Self-Produced Neighborhood as a form of development that must be encouraged. Several social scientists have contributed to the theoretical support of this approach by considering that inhabitants of Self-Produced Neighborhoods embody a quiet rebellion by underprivileged communities against oppressive urban development (Bayat 2000). Here, the insurgent citizenship (Holston and Caldeira 2008) rebels against the society and generates a subaltern urbanism (A. Roy 2011). Within this framework, planners can go further and consider Self-Production a theory of development (Rao 2010).

In Venezuela, Teolinda Bolívar sees Self-Produced Neighborhoods as an urban phenomenon with plenty of positive values as it exemplifies the productive capacity of its inhabitants (1998; 2006), hence she promotes Enabling strategies as a form of development. As we have said in Chapter 1, Tulio Hernández defines Self-Produced Neighborhood as the most successful private enterprise in Latin American history (2007), so its urban growth and expansion must be understood and eventually encouraged.

All the previous views assume a Structuralist Approach to socio-economic development (Cf. Chapter 2), which understands that people´s struggles have generated Self-Produced Urbanization amidst industrialization processes. Hence, Self-Produced Neighborhoods are both by-products and vehicles essential for modernization (Turner 1969, 509).

However, Enabling Strategies can also be assumed from a Modernizing and more pragmatic approach. Here, the cost of the progressive adaptation of the Self-Produced Neighborhoods according to their own development logic is lower than the cost of Eradication and housing relocation (Mangin 1967, 88). Here Enabling is understood as a strategy for a progressive modernization of its inhabitants.

After almost twenty years of CIAM-based planning approaches to housing, international agencies such as the United Nations and World Bank in 1969 adopted and promoted Enabling Strategies (Ward 2012, 287) mainly around John F.C. Turner's concepts (1966, 1967, 1968, 1969). Internationally, Enabling has become a paradigm supporting that the institutional control of Self-Produced Neighborhoods depends on the encouragement of initiatives developed by the same underprivileged sectors to solve the housing issue.

Thereupon, Enabling has had a significant impact on physical planning plans and Latin American policies, especially since the late 1960s. The incremental nature of Enabling strategies has been imagined at different scales of development. These include understanding both housing Self-Production and the role of infrastructure systems, including water, sanitation, rainwater management, energy, and management of public resources such as workplaces, schools, and health care centers.

The most emblematic Latin American project that incorporated incremental strategies for the Enabling of Self-Production as a form of development was the *Proyecto Experimental de Vivienda* (PREVI, Experimental Housing Project) developed in Lima between 1968 and 1971. This was a Peruvian government initiative also sponsored by the United Nations and led by the Architect Fernando Belaunde Terry. Through architectural competition, renowned architects such as James Stirling, Aldo van Eyck, Christopher Alexander, Charles Correa, among others, designed incremental strategies of elemental houses that were to be completed by their owner with technical assistance provided free of charge by the government through the *Corporación Nacional de la Vivienda* (CNV, Housing National Corporation) (Kahatt 2011).

The most innovative aspect of the proposal is that the housing projects sought to overlap technocratic design tools with the progressive growth performance of Self-Production. The State built systems of infrastructure, leaving the construction of housing to Self-Help strategies of Enabling. Walking through Lima today, around the projects constructed 50 years ago in the PREVI framework, the image of the environment is confused between what was built by this program and what was Self-Produced by the inhabitants at other parts of the city. At first glance, it seems that both forms of development ended in the same result. However, infrastructure systems -water, electricity, drainage systems- have made a difference that is not obvious at first glance.

It is not the same for the individual to self-produce their homes while having services at hand than without them; obviously, the former is better for the inhabitants and for their spatial integration. We find the experience positive in relation to providing certain service infrastructure networks such as water. However, in the PREVI projects, we miss a greater percentage of public

spaces and other public facilities such as schools and community centers, which could have been done with a more expanded development; in the end, PREVI´s project ended up being on an urban but limited scale, ultimately focused on the housing unit.

Following this logic of provision of infrastructure systems was the well-known Sites-and-Service scheme promoted by World Bank during the 1970s and early 1980s. The proposal is based on providing service networks and reserving land for public facilities, leaving a wide room for housing Self-Production.

In this period, the Myth of the Informal City was already in full force, so the plan sought the Self-Produced City transformation to reduce informality to urban dynamics. The strategy combined land provision with basic service promoting incremental development under formal planning conditions (Reimers 1993). The project had very high expectations of improving the Self-Produced form of action globally through the agreement between international and national global agencies.

In the case of Venezuela, the program was developed through the government agency (FUNDACOMUN, Foundation for Community Development and Municipal Development), who had already been assuming Enabling projects supported by USAID within the framework of the Alliance for Progress in 1962 (Gilbert et al. 1993, 117; Fundacomún 1964, 10). The investment never represented a tangible improvement on Self-Produced Neighborhoods in the country.

The World Bank “Sites-and-Service” scheme was withdrawn at the end of the 1980s, mainly due to the gap between the development expectations produced and the achievements

generated by the program (Zanetta 2001)[44]. The case of the application of Sites-and-Service program is out of the scope of this work and deserves an independent investigation, especially the case of the FUNDACOMÚN urban projects in Venezuela. However, we can hypothesize that the management of expectations regarding what was desired and what was achieved ended up discouraging the program. In any case, we believe that the current priority on the part of international agencies such as the World Bank and the Inter-American Development Bank in projects of tactical urbanism is a throwback over the role of physical planning in the integration of cities. If we believe in planning as a way to anticipate conflicts and promote values, the Sites-and-Service scheme allowed a more preventive approach than temporary tactical strategies.

Recently, Alejandro Aravena innovates on Enabling strategies, building on PREVI´s ideas on incremental design (Aravena Mori et al. 2012). At the Elemental Iquique Housing Project, Aravena proposes a housing typology that leaves space for user participation in self-producing their house progressively as more cash and/or materials become available to the resident. The idea is envisioned as a replicable strategy to maximize the speed of response in housing projects while promoting citizen participation (Aravena 2011). This proposal brings to Latin America, and especially to the field of housing for underprivileged communities, design strategies such as massive community engagement in housing projects (Habraken 1972).

[44] For more details on the World Bank's sites and services program and the political and administrative reasons for their closure, we suggest reviewing Carlos Reimers (1993) who provides a comprehensive assessment of the program and the political and administrative reasons for its closure, Laquian (1983) and Peattie (1982) who value the results of the program above its negative effects, as well as McCarney (1987) who explains the international agencies' behavioral pattern of being inconsistent in maintaining development programs in countries of the, now called, global south.

Elemental strategy is a brilliant approach in architectural terms because its housing design scheme provides a framework that allows a homogeneity of the whole even after progressive and flexible growth. However, in terms of infrastructure services and, especially, the provision of services such as public space and other public facilities, the intervention is less effective. After visiting the project, we see an absence of an articulated systems of public spaces and service networks to increase the levels of Spatial Opportunities for its residents.

Historically, underprivileged communities have been well connected to technological networks to improve their homes through self-production (See Chapter 1). However, the connection to other systems such as accessibility and service infrastructure has been weak, being this the seed of Spatial Inequalities. This invites us to understand Enabling from the interaction between housing and infrastructure systems rather than from the housing itself.

The Elemental scale is the dwelling, while the incremental urban planning strategies are set out above the dwelling and are located at the urban scale. Without doubt, Enabling on a regional scale is still a promising field of exploration. David Gouverneur proposes the comprehensive thesis of Informal Armatures (2014) following the design concepts of "Recombinant Urbanism" by Grahame Shane (2005). The strategy seeks to identify fixed landscape elements that support an ordering system, leaving broad room for flexible urban form growth through self-produced incrementalism. The strategy is still under development and has no applications outside the theoretical field; however, we believe it has conceptual inconsistencies that could be refined including calling "informal" the armatures intended as elements with a formal socioeconomic order.

But if we envision the design of regional infrastructures that offer a physical, regulatory framework including an equitable redistribution of the services provided by the urban built environment as well as the management of its infrastructure networks, one could think of leaving a field open for Enabling Self-Production of housing. In this scheme, physical planning could focus on what self-production cannot do by itself: the anticipation and consolidation of infrastructure networks.

Certainly, the beginning of the Enabling happened as a reaction to a techno-managerial approach of housing Eradication, casting doubts about how the specialization of the Modernist Approach of Superbloques detracted from the handicraft capacities of the constructive culture of the inhabitants of Self-Produced Neighborhoods, as pointed out by the US-American planner Charles Abrams in the influential United Nation Housing Report #7 (1953, 11). Eradication strategies were in full swing, and there were already voices demanding alternative methods to face Self-Produced Housing issues. Enabling frequently disregards the possibility of exploring responses to Self-Produced Neighborhoods from the perspective of infrastructure systems.

In this sense, Charles Abrams stands out as one of the pioneers of the Enabling doctrine (1964; 1966) with a view from planning trying to anticipate self-production conflicts as a tool for intervention from public agencies. In Venezuela, Turner's impact has certainly been significant. He participated in national housing debates, especially in his contribution to the *Cuadernos de la Sociedad Venezolana de Planificación* (CSVP, Notebooks of the Venezuelan Planning Society) where he promotes understanding housing as a social activator beyond its condition of purely

physical shelter (Turner 1966, 77). But, without a doubt, Abrams had the most impact on Enabling Strategies in the country.

In fact, in 1967, in the essay *Uncontrolled Urban Settlement: Problems and Policies* that it was a predecessor to the report that would initiate the Enabling policies released by the United Nations (Turner 1969), Turner recognizes Abrams' experience in Venezuela, specifically in Guayana City, as early tests of Self-Help intending to control the growth of Self-Produced Neighborhoods (Turner 1967, 121).

Here, the experience in Guayana City in the early 1960s is a tipping point for the transition between Eradication and the alternative view of Enabling. This planned city was born in 1961 after an agreement between the Venezuelan government -represented by the Corporación Venezolana de Guayana (CVG, Venezuelan Corporation of Guayana)- and the Joint Center for Urban Studies of the Massachusetts Institute of Technology and Harvard University (Appleyard 1976; Macdonald 1979). In 1987, Lisa Peattie, who had been part of the project's consulting team, makes a critical evaluation of the project, explaining that it had assumed a rigid top-down planning approach incapable of bearing the existing dynamics in the field (Peattie 1987b, 16). But, additionally, Peattie highlights how Charles Abrams understood how Self-Produced Neighborhoods -squatters in Abrams and Peattie's voice- shape urbanization processes. The built urban form arises both from the Self-Production by Guayana´s people and from the plans designed in Cambridge, Massachusetts.

On this experience, Charles Abrams wrote a *Report on the Development of Ciudad Guayana in Venezuela*, including some considerations that we consider determinant to understand the variables that define Self-Produced Urbanization.

> *Rancheros* [builders of self-produced homes] will settle where they can if they are not told where they may. They will build what they can afford if they are not helped to build what they should. I am less worried, however, about what they will build than where they will build it and less concerned about initial standards than about initial layout. Rancho houses will improve with time and with better economic conditions if the *rancheros* are given a stake (Abrams 1962).

The first phase of the text is simply a consequence of the process of privatization of the land that we have been described so far (Cf. Chapter 4), Self-Produced Neighborhoods occur on those leftover land from private development and housing. Then, Abrams indicates the two aspects that deserve concern regarding its development: location, and the initial layout of the service infrastructures.

Abrams also demonstrates a pioneering faith in the incremental character of Self-Produced development and its ability to improve housing progressively (Cf. Chapter 1), although we will see that this perspective was not transversal among all the promoters of Enabling strategies.

Abrams' second phrase, dwellers of *ranchos* "will build what they can afford" can be read between the lines, whether or not the housing underprivileged people can afford is acceptable in a specific location. The posture assumed by planning reports on this topic helps us generate a

taxonomy on different Enabling strategies. Although there may be variations through the hybridization of these categories, we can generalize Enabling in three alternatives:

1.1.1. If the housing that underprivileged communities can afford is acceptable for a given location, Enabling proposes Self-Help schemes of development.

1.1.2. If the housing that underprivileged communities can afford is slightly acceptable for a given location, Enabling proposes Mutual-Aid development schemes.

1.1.3. If the housing that underprivileged communities can afford is unacceptable for a given location, Enabling proposes nothing, or tolerance for Self-Produced Neighborhoods; while providing resources like building materials as a Palliative action and expecting the beginning of alternative planning strategies. Unfortunately, this has resulted in the consolidation of neighborhoods as by-product, without a planning strategy to integrate them.

The following lines seek to explain each alternative using as evidence the planning reports, mainly from the *Banco Obrero*, between 1928 and 2015. We have classified them from the one least applied in Caracas -the Self-Help- to the most consistently applied Enabling strategy over the years, -the Palliative action-.

5.4.2. Self-Help

The first Enabling Strategy, Self-help, happens when the housing underprivileged communities can afford is acceptable for a given location, in which case the Enabling strategy

proposes Self-help schemes of development. It refers to promoting self-produced housing, although regulated through technical mechanisms such as the drafting of rules that facilitate good construction practices. In Venezuela, this has occurred in territories considered rural and is seen as a strategy that seeks to strengthen self-produced housing to reduce the impact of migration to the main urban centers such as Caracas[45].

In addition, this has also been promoted through the supply of construction materials to each *rancho* free of charge. In these cases, the development of service´s infrastructure will be a secondary factor supported through an incremental supply of services, or sometimes by doing nothing because this scheme assumes an acceptance by Self-Production of all the elements that make up the space of a neighborhood, such as streets, plazas, stairs, etc.

The first Enabling plan that we find in the history of Venezuela occurs in 1946, with the *campaña contra el rancho* (campaign against the rancho), even before the boom of the Eradication strategy called the *batalla contra el rancho* (battle against the rancho) explained earlier. The *campaña* involves the supply of construction materials to underprivileged communities so that their members build their own house (Oropeza Castillo 1946) (Figure 45.2.1).

Professor Beatriz Meza has studied this strategy in her critical essay *Contra el Rancho en Venezuela: De la "Campaña" de 1946 a "Batalla" de 1951* (Against the Ranch in Venezuela: From the "Campaign" of 1946 to "Battle" of 1951). She concludes that through this original

[45] The self-help of rural housing in Venezuela was significant in Venezuela and merit independent investigation. In 1961, the World Health Organization declared three countries as malaria-free territories, the two world powers of the Cold War -the United States, and the USSR - and Venezuela (C. La Roche 2005), and self-help housing projects were one of the fundamental components for this achievement (División de Malariología 1957).

Enabling plan in Venezuela, the *Banco Obrero* recognizes its inability to provide housing for sectors of the population through the construction of public housing only (B. Meza 2008).

In 1946, when the world entered the postwar period in what some have called the Golden Age of Capitalism (Marglin and Schor 1990), Venezuela was positioned globally as a top oil supplier. Even in that buoyant scenario the *Banco Obrero* warned about the financial impossibility of addressing the issue of urban services, including housing, based on the number of construction units projected by the State.

Even so, and as we had seen previously, in the 1950s, the boom of Enabling strategies occurred the arrival of democracy in 1958 and, along with it, Eric Carlson, Director of CINVA suggested to *Banco Obrero* the study of other strategies towards Self-Produced Neighborhoods to complement Eradication (Carlson 1959) (Figure 45.2.3).

But the image of an oil-export-rich country supported by an economy dependent on the high influx of oil revenues made Self-Help strategies rare in Venezuela. The *Banco Obrero* would almost always favor approaches where the all-powerful State would have the highest level of intervention, contradicting the logic of the Self-Help that calls for a higher level of autonomy in the communities (Cf. Turner 1969, 508).

Of the few experiences of Self-Help in Venezuela is the *Programa Piloto de Autoconstrucción* (Self-Construction Pilot Program) of 1965 (Figure 45.2.5), following experiences of the CINVA in Bogotá and with a duration of only 3 years (INAVI 1989, 261). But this program had a very low scope, dedicated solely to the construction of just over a thousand homes, all located in places far from urban centers. Later, Autoconstruction Program continued to

run intermittently until 1983, always located in areas far from urban centers. The main urban centers, such as Caracas, where the most exponential growth of Self-Produced urbanization occurred, were not considered acceptable territories for Self-Help schemes in Venezuela. The planning documents aspired to a "green Caracas" without Self-produced Neighborhoods (See Chapter 4).

Finally, in what is one of the most important experiences of the *Banco Obrero* that sought to formalize Self-Production as a form of development, the *Programa de Urbanización y Equipamiento de Barrios* (PRUEBA, *Barrios* Urbanization and Facilities Program) (Figure 45.2.8) which lasted only one year after it was implemented . The Revolutionary focus of the program, began with the creation of focus groups called *Discussion Circles* (Bolívar, Teolinda and Lovera 1980) not only to organize self-production processes but also to use the plan as a vehicle to put knowledge at the service of the people and against the privileged communities of other neighborhood of the city (Banco Obrero 1969, 17; Bolívar, Teolinda and Lovera 1980).

Additionally, PRUEBA proposes the transfer of the logic of Self-Production to the construction of infrastructure services through an incremental supply of water and electricity. Thus, the project sought to reinforce the autonomous character of Self-Produced Neighborhood as an independent body, that could even be at odds with the rest of the city.

This program was too short to assess its scope. But we have already established that while Self-Production has historically been efficient in the progressive improvement of housing, it has been the opposite in relation to the provision of service systems (See Chapter 1). That is why we

can infer that the program would be effective in raising social awareness, but not in the spatial integration of its inhabitants.

If we study the Brisas del Paraíso in Caracas, one of the Self-produced Neighborhoods where the PRUEBA pilot program was carried out in 1969, we see that the levels of Spatial Opportunities have been progressively reduced there.

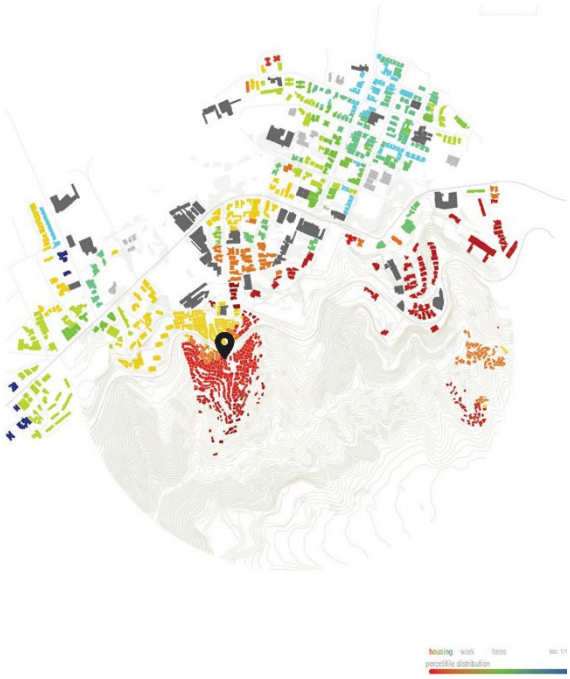


Figure 52 - SOi - El Paraíso - 1969

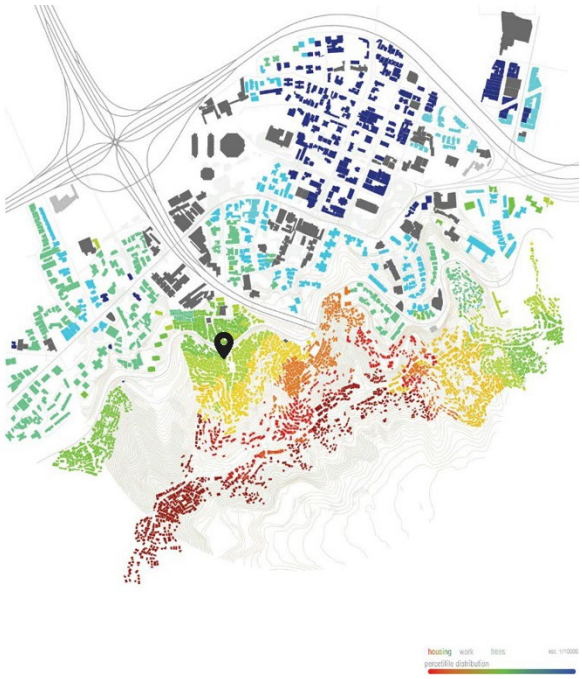


Figure 53 - SOi - El Paraíso - 2000

Barrio Brisas El Paraíso

These diagrams show how historically Self-produced Neighborhoods have grown **and expanded,** creating large conurbation areas. This has even occurred with the support of the state through different enabling strategies.

In 1969, this Self-Produced Neighborhood had an average of 0.003 SOi, evidently being one of the lowest in Caracas. Since then, the *barrio* has expanded significantly by ten times its original size becoming a huge conurbation with other Self-Produced Neighborhoods to the east

with the barrios known as El Cementerio (Compare Figure 52 and Figure 53). During these 31 years, the offer of services and employment sources has diversified in the street network located in the flat sectors close to the *barrio*, so the levels of Spatial Opportunities have increased throughout the studied area. However, inequality has remained; while in 1969 the difference in SOi between this Self-Produced Neighborhood and the total average was 21.6%, in 2000 this difference is 69.5%; and, what is more remarkable, the number of inhabitants below the 10th percentile of SOi has increased by 27%. In summary, from the Self-Produced form of development, houses have improved in quantity and quality, but access to infrastructure services has been increasingly precarious for its inhabitants.

In this analysis, we do not find indications that the incremental provision of services from the Self-Produced logic managed to overcome increasing levels of Spatial Inequality. However, we can affirm that the PRUEBA program, and especially the *Departamento de Urbanización y Equipamiento de Barrio* (Department of Barrio Urbanization and Servicing) within the *Banco Obrero*, created a precedent in Venezuela on the importance of symbolic recognizing the values of Self-Production.

5.4.3. Mutual-Aid

The second Enabling Strategy follows Mutual Aid schemes implies a cooperation between communities and government housing agencies. We argue that this scheme happens when the housing underprivileged communities can afford is slightly acceptable for a given location; Self-Production could then be promoted but with some control or advice from technical agencies. Here,

planning schemes are commonly accompanied by different regulatory mechanisms including construction manuals and technical advice.

Mutual-Aid was one of the mainstreams of housing policies by *Banco Obrero* between 1961 and 1974, commonly including anticipated projects for services of infrastructure and the reservation of land for public facilities in a project scheme that followed the logic of Sites-and-Service explained above.

For the consolidation of the Enabling strategy, the *Banco Obrero*'s *Bases para una Política de Vivienda* (Bases for a Housing Policy) (Figure 45.2.4), became the determinant guideline of the housing policy during the democratic period that had been born in 1958. The document states:

> However, it must be borne in mind that if the State assumed responsibility for providing a home to each Venezuelan family, it is certain that it would not be able to meet this objective. There is no rich country in the world that it can do so (Banco Obrero 1961a, 12).

This document would herald the end of the era of the Builder State that had culminated with the arrival of democracy and had ushered a new era for the *Banco Obrero* to diversify its housing policies. From this date, we see the exploration of different planning strategies to face the challenge of escalating numbers of Self-Produced Neighborhoods. The Enabling strategy gained support among the planners at *Banco Obrero.*

The new policy promoted the development of Mutual-Aid programs such as the construction of *viviendas nucleares* (nuclear housing) by the *Banco Obrero,* leaving space for residents to expand them through methods of Self-Production, as recorded in the Official Memory of the *Banco Obrero* of the same year (Banco Obrero 1961b) (Figure 45.2.5). Given the absence of high standards in the architectural design, this strategy is very similar to the Chilean Architect Aravena´s Elemental Iquique Housing Project.

But the most significant shift in the *Bases para una Política de Vivienda* is that , for the first time in history, *Banco Obrero* assumes a policy to go beyond housing to address the phenomenon of Self-Production. The agency explores technical strategies to introduce in a self-produced way those aspects currently lacking such as infrastructure and public facilities.

However, the following reports show that the effort is not sufficient to face the growth of spatial inequalities in emerging neighborhoods in many cities, especially Caracas. If we study the *Banco Obrero* planning documents between 1961 and 1972 (Figure 45.2.4 to 2.9), we observe two aspects we consider key to understanding the failure of Mutual-Aid in *Banco Obrero*'s policies.

First, a thrifty logic prevails in the extension of the infrastructures. The plans seek to provide *Servicios Mínimos* (Minimum Services) to emergent Self-Produced Neighborhoods, and no strategies are observed for progressive improvement of these services. This inevitably ends up generating territories with levels of services that are not comparable to other developments in the city consolidating spatial inequalities.

Second, and more importantly, all the Mutual-Aid experiences were carried out in territories far from large urban centers such as Caracas. As we stated previously, the economy

dependent on oil rent had generated a hypertertiarization of the primary urban centers (See Chapter 2), where the major employment sources and the greatest need for intervention was localized. This made the availability of sources of employment and other resources significantly higher in Caracas than in other Venezuelan cities.

These housing policies inherently supported the consolidation of Spatial Inequality in two senses: First, planning strategies seek to consolidate development nuclei in places far from the main urban centers which have greater access to workplaces and urban services. In general, the place with the lowest Spatial Opportunity rates in Caracas was a better place to live than a neighborhood in rural areas with limited job opportunities or reduced number of public services. This explains why the exponential growth of Self-Produced Neighborhoods never stopped. Second, planning strategies neglect to study the provision of services in the fastest growing neighborhoods, especially in Caracas, because they were considered unacceptable for their modernized urban growth (See Chapter 4).

However, there was one project that diverted from the patterns explained above. The *Proyecto de Viviendas en Pendiente* (PVP, Project for Housing on Steep Slopes) developed by *Banco Obrero* between 1969 and 1974 for communities west of Caracas (Caricuao, Las Brisas y El Valle) to be built on hillsides with extreme topography. This was presented in a report which systematized the typology of a replicable construction system, given the ubiquity of steep topography surrounding the valley (Banco Obrero 1974) (Figure 45.2.10). Although the project focuses mainly on the issue of housing, it also includes a development pattern that anticipates the construction of systems of public stairs and other infrastructure around which the facilities and

programs for the new neighborhoods would be built. The project also enables a margin for its incremental growth based on the logic of Self-production.

In the case of Caricuao (Figure 54), only one phase out of four was built (Figure 56). The others would be eventually occupied by conventional self-produced housing. The Banco Obrero did not have the volition to relocate them and continue the PVP project.

The project was too ambitious in seeking the total reconstruction of the neighborhood. This made it difficult to continue the PVP project as the growth capacity of Self-Produced Neighborhood was higher than the speed that the plan could exert actual changes. This allows us to open a set of questions about the relevance of a project that aims at constructing a large part of the house unit. Perhaps if the project had assumed a logic similar to Sites-and-Services, it could have continued to expand. The PVP project included the construction of infrastructure networks which in any case, are difficult to build rationally within the logic and strategies of self-production; however, it spent lots of effort and resources building house unit which, after our analysis, we conclude that can be made entirely by the inhabitants.

Additionally, it would be interesting to overlap the preceding concepts with the logic of the *Discussion Circles* among community members explored in the PRUEBA program (Figure 45.2.8). This would be able both to incorporate and demonstrate the value of citizen participation in the management of projects such as this.

But it must also be recognized that the analysis of the built part results in an increasing of Spatial Opportunities. In the present we see two hills in the area, one with a PVP project promoted by *Banco Obrero*, and another with traditional Self-Produced Neighborhoods. In the analysis, the

first doubled the levels of SOi of the second (0.008 SOi for PVP project, and 0.004 SOi for the Self-Produced Neighborhood) (Figure 55), even though both show a similar level in the quality in the construction systems of their homes.

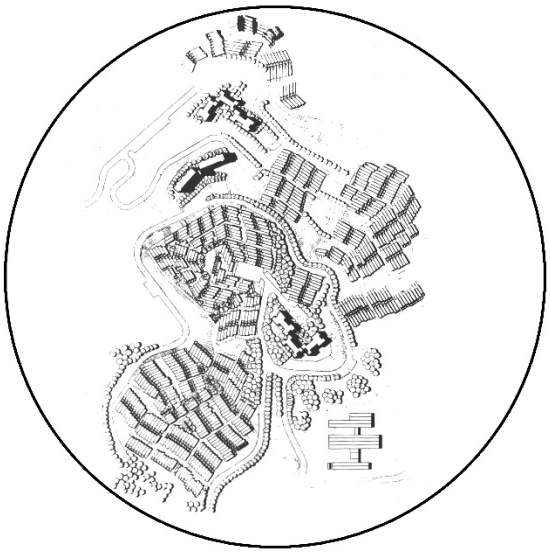


Figure 54 - PVP Project – 1974

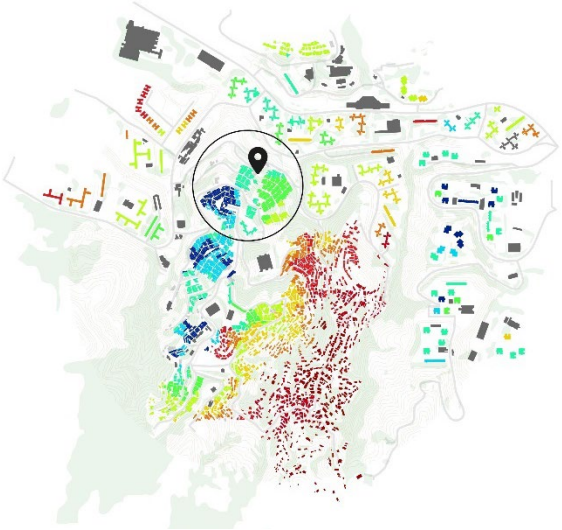


Figure 55 - SOi PVP Project - 2000

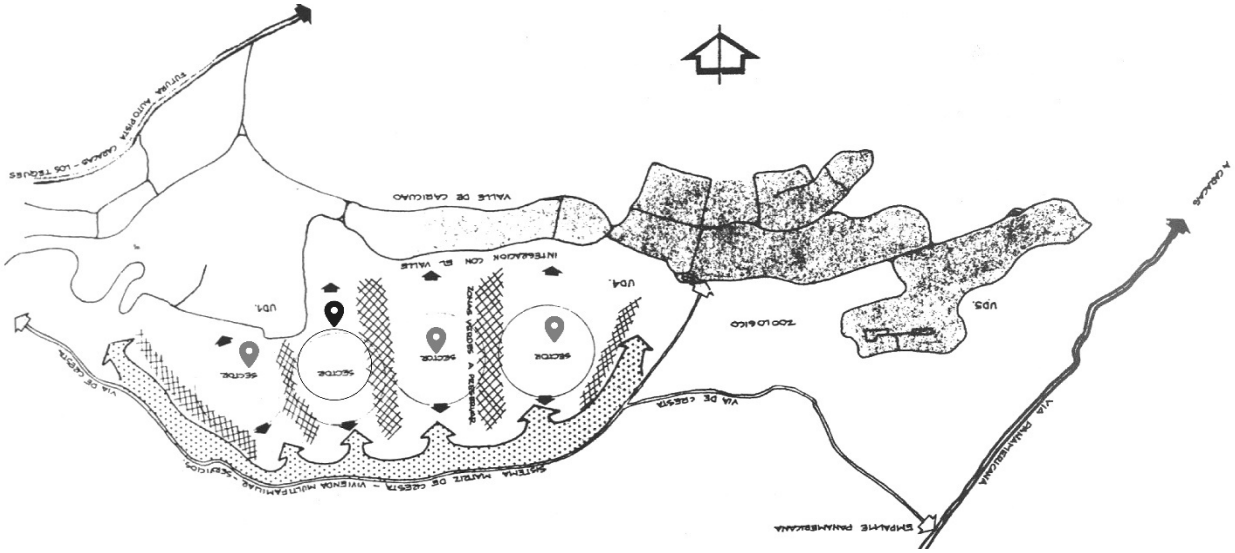


Figure 56 - PVP Master Plan – 1974 - (l'architecture d'aujourd'hi 1974)

PVP BUILT PVP – UNBUILT

Experimental Project of Homes on a Slope emulating the construction system, but not so much the constructive culture, of Self-Produced Neighborhoods.

This PVP has today better connectivity and proximity to the resources offered in its physical surroundings. The analysis shows how the anticipation of infrastructure systems in the PVP housing of *Banco Obrero* allowed greater Spatial Opportunities to its inhabitants. Those inhabitants located in homes on slopes have a higher level of access to infrastructures such as water and electricity, as well as to public facilities like community centers and schools.

Analyzing the project reveals that these good levels of accessibility were achieved by two strategies: the creation of a connectivity system outside the project boundaries, and the inclusion of public facilities close to it. As we explained in Chapter 2, connectivity and proximity play fundamental roles in providing Spatial opportunities to urban developments.

5.4.4. Palliative Actions

Finally, we have the third Enabling strategy, which despite being the most applied in the history of Venezuela, is the one that requires fewer lines due to its simplicity in terms of physical planning. This is the promotion by the state of Palliative Actions, with a low level of quality and without a planning project with the aim of a supposed temporary enabling approach to Self-production.

This option occurs when the housing that underprivileged communities can afford is considered unacceptable for a given location, but it must be tolerated given the inability of the State to address the issue in a structural way.

The reasons why Self-Produced Neighborhoods are not considered suitable for a certain location are varied. For example, it could refer to those underprivileged communities living in

geological risk areas or on waterways. But it could also imply ideological reasons, like considering that Self-Produced Neighborhood should be located in areas far from urban centers because they are considered alien forms of development in within the aspirations of modern progress of the city (Higgins 1966).

A first alternative when Self-Produced Neighborhoods are considered unacceptable for a given location is to develop planning ideas different from Enabling. It would be inconsistent to formalize a Self-Production presumed undesirable for a given location. But in the history of Venezuelan planning, the most common strategy has been the supply of materials such as zinc corrugated roofs, clay bricks, or plumbing pipes to individuals as a strategy to tolerate self-production while awaiting the arrival of others, supposedly more structural planning strategies. This strategy essentially supports the consolidation of housing towards more permanent and secure dwellings. In addition, the availability of construction materials allows the communities to organize under Enabling principles which allows for the construction of common infrastructures such as water supply drainage systems, or even public spaces within the heteronomous process of Self-Production (See Chapter 1).

The strategy of Palliative Actions has been repetitive in Venezuela. Here, we highlight two very different moments in history when this approach has been applied. First, in 1958 during the early years of democracy, and then between 2009 and 2021 during the Chávez and his successors' regime. The first, supported by a narrative of progress presumed the socio-economic growth of the working class and the eventual disappearance or at least the diminution of this type of settlement, i.e., the Modernizing approach. The second after 2009, was supported by a discourse of revolution,

seeking to integrate the low socio-economic strata by providing improvements to their dwelling, i.e., the Revolutionary approach (Cf. Chapter 2). In both cases the Enabling strategy was similar.

The first case is the *Plan de Obras Extraordinarias* (Extraordinary Works Construction Plan), commonly known as *Plan de Emergencia* (Emergency plan) (Figure 45.2.2), launched by the interim president Wolfgang Larrazábal after the fall of the dictatorship of Marcos Pérez Jiménez in 1958. The second is the *Plan Barrio Nuevo Barrio Tricolor* (New and Tricolor *Barrio* Plan) (Figure 45.2.11) launched by President Hugo Chávez in 2009, and it is still in effect.

The first implementation involved the constructing minor infrastructure works such as local water network connections, construction of small sidewalks, and public spaces as a palliative measure amid the transition to democracy (Delgado Hernández 2016). The second is a similar scheme, dedicated mainly to minor renovation works, especially the painting of the facades of the houses in Self-Produced Neighborhoods and public housings (VTV 2020). These palliative measures are aimed at cosmetic and superficial changes in Self-Produced Neighborhoods, using large quantities of plastering and painting of their exterior walls (Bolívar and Rosas Meza, Iris 1983, 53) instead of providing structural resources for the spatial integration of Self-Produced Neighborhoods.

5.4.5. Closing Remarks on Enabling

The understanding Palliative Actions opens space for a very important research topic beyond the scope of this work. It refers to the cooptation of the needs of communities by instances of power to achieve social stability from a populist perspective (Bello 1996; Ianni 1973). It is not

by chance that many of the interventions of what we have called Palliative Actions of Enabling have occurred during electoral periods, as they seek to turn the effective yet unstructured intervention into a "bargaining chip" to win the vote of the inhabitants of Self-Produced Neighborhoods (Bolívar 2009, 60; Gilbert et al. 1993, 119). In this scheme, Enabling escapes the thinking required to consolidate infrastructural resources in the spatial network of the barrios.

As early as (1969), Talton Ray made a wake-up call on this issue in his study on *The politics of the barrios of Venezuela*. In his text, he quotes Gino Germani as he analyzed the populist policies of Argentinian's Peronism:

> The most effective part of that demagoguery was not the material advantages, but rather the fact that it gave the people the experience (real or unreal) that they had attained certain rights, and that they were exercising them (…) [Self-Produced dwellers] far from feeling that they had been stripped of their freedom, were really convinced that they had won it… The freedom that they thought they had won was the concrete and immediate freedom of being able to assert their right against bosses and patrons, to elect representatives, to win suits in labor tribunals, to feel greater master of their own destinies (Germani 1962, 243–49).

In the case of Palliative Actions, it is an only apparent and unreal freedom that attends to the emergence of a change that is not structural. Even today, we are experiencing an array of interventions in Self-Produced Neighborhoods across Latin America. These are driven by different instances of power, including governments, international agencies, NGO´s, groups of architects, and university unions. In the Self-Produced Neighborhoods, more houses are painted every day,

more public spaces are built, more minor infrastructures are repaired; sometimes these are well-designed one-off projects by renowned architects or planners. However, these actions are seldom conceived systematically to allow increasing Spatial Opportunities for those who reside there. They are fragmented, disjointed projects, that intervene portions of the city without considering its systemic relations with the broad environment. Palliative Actions that a false sense of freedom to the inhabitants of the Self-Produced city, and for politicians to get more votes in elections or more "likes" in social media.

5.5. Defining Upgrading

5.5.1. Working Definition

Finally, we have Upgrading. To define this planning strategy, we refer to the *Plan de Habilitación Física de Barrios* (HFB, Barrio Upgrading Plan), which has been the most influential in the history of urban planning in Venezuela. One of its planning report estates:

> Technically, it [upgrading] is about urbanizing groups of existing neighborhoods: projecting and building adequate local infrastructure for roads and services, sufficient communal facilities, housing to replace those affected by high risks and by the physical facilities themselves, organizing the current occupation of the space, until reaching the same level of urbanization for *barrio* residents, as the rest of Venezuelans [citizens] (CONAVI 1999, 3) (Figure 45.3.8).

We analyzed eight reports that can be considered as Upgrading Strategies across the history of planning in Venezuela (See Appendix Ic). Upgrading programs became popular in Latin America,

especially after the 1988 General Assembly of the United Nations who demanded a clear and visible improvement in the shelter of underprivileged people (UN General Assembly 1988). Among other documents, this Assembly asked for the application of *The Vancouver Action Plan* that recommended among other things the achievement of more equitable distribution of services and resources among territories (UN General Assembly 1976).

Thereafter in Latin America emerged what was widely known as examples of Upgrading projects such as the *Planes Urbanos Integrales* (PUI, Integral Urban Plans) in Medellin in 2004, the *Favela-Bair*ro Project in Rio since 1993, and the *Habilitación Física de Barrios* (HFB, Upgrading Plan). The latter was selected as one of the best practices at the Second United Nations Conference on Human Settlements -Habitat II- in Istanbul in 1996. (F. Villanueva and Baldo 1996). All these plans have in common the desire to physically connect Self-Produced Neighborhoods as a mechanism to integrate them into the urban environment in the broadest possible way.

However, this approach is not new. In fact, the ideas about Upgrading are neither a recent nor an innovative strategy; they have been discussed since the 1950s and have appeared intermittently across the history of planning in Venezuela. The purpose of the following lines is to briefly delaminate this story, trying to understand why, especially in the Venezuelan case, these ideas have always remained in the pipeline but have never been implemented comprehensively.

The first report considering Upgrading Self-Produced Neighborhoods occurred in 1951. The same time when the Eradication strategy was in its initial phase with the *Plan de Vivenda Nacional 1951-1955 (National* Housing Plan) (Figure 45.1.6). It is included in the *Informe para*

el Ciudadano Gobernador del Distrito Federal como un aporte para la solución del problema de los ranchos de la Ciudad de Caracas[46] (Report for the Citizen Governor of the Federal District as a contribution to the solution of the problem of the *ranchos* of the City of Caracas) (Figure 45.3.1). This is a visionary report that proposes strategies to face the issue of Self-Production classifying the solutions according to the type of neighborhood. To a large extent, the three solutions raised by the report coincide with the three categories that we have discovered in all the planning documents between 1928 and 2015: (1) Eradication, (2) Improvement, similarly described as our Enabling, and (3) Redevelopment, like our Upgrading but highly influenced by *El Silencio Redevelopment* explained before.

The report places special emphasis on the importance of going beyond Eradication and Improvement and incorporating Redevelopment/Upgrading strategies in existent Self-Produced Neighborhoods, including the construction of pedestrian paths and sanitary services with aqueduct and sewer networks, as well as supplying public services such as schools, public parks, health care centers.

Beyond certain peculiarities in the definitions of these categories -Eradication, Enabling, and Upgrading- the important thing is that at a time when the mainstream was primarily focused on CIAM-based eradication, the report includes ideas for diversifying interventions in Self-produced Neighborhoods. According to the Caracas Regulatory Plan of the same year 1951,

[46] This Commission was integrated by several renown planners and scholasr such as Alfredo Laffé, Ricardo Zuloaga, Pedro Pablo Azpúrua, Leopoldo Martïnez Olavarría, Gustavo Ferrero Tamayo, Juan Andrés Vegas, Julián Férris Jr., and Carlos Dupuy. This document also includes the first map including Self-Produced Neighborhoods in the history of Caracas´ planning (Martín Frechilla 2004)

Caracas had 34,000 *ranchos.* If we compare this data with the more than 200,000 homes in self-produced territories that currently exist, including their high-density levels as well as their low level of Spatial Opportunities, it is easy to conclude that the options of implementing an Upgrading strategy, or any other one that seeks to improve Spatial Inequality, were much simpler 69 years ago.

In the absence of strategies to reduce Spatial Inequalities, the meaning of Upgrading as a planning strategy should be explored in more detail, with the idea of evaluating whether it may be useful for future interventions. In general, Self-Produced Neighborhood Upgrading is an urban renewal planning that focuses on designing a comprehensive technical and political process to design and redevelop the urban built environment. Commonly, upgrading plans are designed as a package of documents drafting specific actions that may include improving accessibility, land regularization, water supply, electricity, or other services, or even construction of new public facilities such as schools, community centers, or public space. In Upgrading Strategies, the relocation of housing is a secondary idea developed to make viable what is considered important: service infrastructures and their public facilities systems.

The strategy explained above is the principal one of the three most emblematic examples of intervention in Self-Produced Neighborhoods in Latin America -the PUI projects in Medellin, the *Favela-Bair*ro Project in Rio, and the HFB in Venezuela-. But they also coincide in several of their action strategies and planning mechanisms.

We can summarize four similarities between the three upgrading programs. First, the drafting of planning documents, including specific actions for the upgrading of Self-Produced

Neighborhoods. Second, the link between State institutions and the Academia who had previously worked on Self-Production in the learning realm preparing these planning documents. Third, the strengthening of institutionality to reinforce community participation in projects' development. We have synthesized these similarities hoping that they can serve as a guide for futures Upgrading programs for Self-Produced Neighborhoods. Finally, we summarize the most important similarities between the PUI projects in Medellin, the *Favela-Bair*ro Project in Rio, and the HFB in Venezuela that is its design approach emphasizing spatial connectivity, which we can summarize in three design operations: the cable car, the hinge building, and the street, respectively.

5.5.2. Planning Documents to Upgrade

First, the three case studies Medellin, Rio, and Caracas, worked with similar planning instruments. All of them focused their planning strategies on the development of comprehensive urban planning programs, including the preparation of a package of planning documents that provides a general structuring strategy, and specific actions for the upgrading of Self-production Neighborhoods.

The core of Medellin´s Upgrading Program was the *Planes Urbanos Integrales - PUI* (Integral Urban Plans). The urban transformation model of the Plan Integral Urbano of the Zona Nororiental (Northeast Zone) (Empresa de Desarrollo Urbano, EDU 2014) defines strategies to use the cable car infrastructure -already in the process of being built before 2004- as catalysts for the inclusion of Library Parks and especially, an articulated network of public spaces to provide a new urbanization structure to the Self-Produced Neighborhood.

In Rio´s *Favela-Bair*ro Project, the *Partido Urbanístico* (Urban Development Plan) drafts a precise definition of public and private lands. Then it formulates a proposed urban structure considering a time horizon of 15 years. The *Partido Urbanístico* comprehensively divides itself into two scales: long and short-term projects. The former, called *Plan Ideal* (Ideal Plan), drafts strategies over the territory while de second, *Plan de Intervención* (Intervention Plan) (Cabral 2014), provides tactical interventions to spatialize specific actions overlapping immediate community needs with long-term strategic ideas.

The Caracas case is based on the drafting of an Upgrading Plan, called *Habitlitación Física de Barrios*, that synthesizes all the actions necessary for the urbanization of Self-Produced Neighborhood, including new street layouts, ground stabilization, new housing projects to replace what needs to be demolished to construct the street network, public spaces and facilities, and so on. Additionally, the plans included all the architectural and engineering documents required to build a first project. Besides, planning documents included all architectural and engineering reports necessary for the construction of a first project. This first project could be an engineering project, such as retaining walls or aqueducts, or even a first public space, defined by the guidelines of the plan and the technical specifications in the documents.

5.5.3. The Influence of Academia

Second, it should be noted that the Academia has been an important source of knowledge in the study of Self-Produced Neighborhoods. However, in Latin America this resource has had limited application, mainly because of the close association between public and private agencies in the development of projects addressing Self-Produced Neighborhoods, at the exclusion of the

Academia. The Academia has explored ideas which often ignore existing trends in the field which has led to different and sometimes innovative programs of investigation. In the case of these emblematic upgrading projects in Latin America, academic explorations and their intellectual input became fundamental in defining and elaborating planning objectives and documents.

In the case of the Medellín experience, the methodology initiated in 2004 has a clear precedent in the academic realm, not in vain the motto of the project itself was centered on education. On the one hand, the mayor that initiated the project himself, Sergio Fajardo was a professor on mathematical logic at the *Universidad de Los Andes* and the *Universidad Nacional of Colombia and* understood the relationship between knowledge and development to promote innovative projects (Fajardo 2016). On the other hand, the architect Alejandro Echeverri was an active member of the research and teaching staff at the Laboratorio *Urbano de Barcelona* -LUB (Urban Laboratory in Barcelona). Hence, the Upgrading Medellín projects show the methodologies for analyzing urban structuring elements of that laboratory (Echeverri and Orsini 2012, 141–42). First it is obvious in Medellin case the understanding of the so-called marginal settlements as a form of development in which the private building prevails with few public structuring elements, exactly as explained by Manuel Solà-Morales (1997b, 59), one of the pillars of the Academy of the *Laboratorio Urbano de Barcelona.* Additionally, the relationship between the Medellín's Library Park and the cable car transport as an infrastructure that contribute to generate new organizational patterns that highlights specifics urban centralities has a clear precedent in the *Arees de Nova Centralitat* (Areas of New Centrality) (Barcelona (Spain) Area d'Urbanisme i Obres Públiques 1987) led by Joan Busquets in 1992's Barcelona and whose logic

was also a fundamental part of the *Laboratorio Urbano de Barcelona.* Before 2004, Alejandro Echeverri explored translating these Catalan ideas into local reality as the basis for defining the urban strategies of Medellin´s PUIs.

The case of the Favela-Bairro project began in 1993 through an agreement between Rio de Janeiro´s Mayor César Maia, the School of Architecture and Urbanism of the Federal University of Rio (FAU-UFRJ), and the Brazilian Institute of Architects (IAB-RJ) with financial support from the Inter-American Development Bank (IADB) (Osborn 2012). But the case of Brazil had the particularity that the incorporation of the academy was born as part of a social impulse that sought to guarantee individual rights as a reaction to the end of the military dictatorship in 1985. So, the exploration for strategies to integrate Self-Produced Neighborhoods in Rio de Janeiro has had precedence in the inclusion of urban policies in the 1988 Brazilian Constitution (articles 182 and 183), which generated the 1992 Rio de Janeiro Director Plan which was established for the first time in Articles 148 and 151 with the aim to "integrate the favelas into the formal city." In this institutional framework, it was expected to incorporate the academy in the search to materialize this integration with design ideas.

Finally, we find many similarities in the integration between the institutional world and the Venezuelan academy with the case of Medellín. At the Central University of Venezuela, a group of scholars led by Josefina Baldo and Federico Villanueva formed the *Taller Vivienda* (Housing Workshop). After exploring enabling strategies of progressive housing, *Taller Vivienda* began to explore Self-Produced Upgrading strategies within the academic field (F. Villanueva 1988). As we explained above, the experience worked with methodologies from other educational

institutions such as the Urban Settlement Design Program of the Massachusetts Institute of Technology (MIT) that sought to improve the design of the public utilities primarily through the optimization of the street layout (Caminos and Goethert 1976).

Later, David Gouverneur who had been Chair of Architecture at the Simon Bolivar University, fulfilling roles as Vice-Minister of Urban Development hired the Taller Vivienda faculty to prepare a Sectorial Plan for the Upgrading of Self-Produced Neighborhoods. This was the beginning of a long path of how the ideas explored in the academic realm became basic tools to build what would be the *Habilitación Física de Barrios* Program.

5.5.4. Institutionality to Participate

The third operational similarity between the main Latin American Upgrading Programs is the creation or reinforcement of an institutional framework to strengthen the development of the programs. The main goal was to strategize the articulation between communities' needs and government agencies' actions. Even though all the cases are similar in these objectives, there is a fundamental difference: while in both Medellin and Rio this institutional framework was articulated at the municipal level, in the Venezuelan case, it arose from a direct relationship between the communities the national power[47].

Medellin has one of the strongest municipal institutional structures in Latin America (IPEA 2020). The existence of a local agency such as the *Empresa de Desarrollo Urbano* (EDU, Urban

[47] The history of Venezuela's decentralization, as well as its process of institutional re-centralization during the Bolivarian Revolution that culminated in the undermining of the Venezuelan democratic system, is detailly explained in "Venezuela: From imperfect decentralization to absolute centralization " written by Ignacio Cardona, Luis Schloeter and Carlos Urdaneta Troconis (2020).

Development Company) was without doubt a key factor in the success achieved by *Planes Urbanos Integrales – PUI*. The *EDU* was created on February 20, 2002 by the Medellín Office of the Mayor to transform the habitat through the formulation, design, execution, advice, and consultancy of urban projects. In 2004, the Self-Produced Neighborhood Upgrading in Medellín began to work within this institutional asset that had already started the cable car system. Therefore, the program only had to include the joint work between *EDU* technicians and community´s member in each of the cable stations -*Andalucía, Popular and Santo Domingo*- creating a series of *Talleres Imaginarios* (Imaginary Workshops) that allowed incorporating the needs of the communities into the upgrading project logic (Echeverri and Orsini 2012, 142). One of the great learnings is the benefits that institutional continuity brings with it when carrying out complex urban projects.

Something similar happened in Rio de Janeiro's *Favela-Bairro* Project which had an institutional framework at the local level, articulating its structure in the Municipal Housing Secretariat of Rio de Janeiro during the conception of the program. The process also included an articulation with community participation even from the initial conceptualization of the projects. This dialogue between designers and community members would be maintained during the following phases of diagnosis, development, implementation, and maintenance. The process of citizen participation ended with the creation of a new institution, the *Puesto de Ordenación Urbanística y Social - POUSO* (Urban and Social Planning Office) that was installed in each urbanized community after the completion of the works included in the *Partido Urbanístico* to follow up all work done during the *Favela-Bairro* Project (Dixon 2014).

The *Habilitación Física de Barrios* Program was managed at the national level governance, especially due to its expectation of renewing simultaneously all Self-Produced Neighborhoods nationwide. The first phase of research and strategic definitions was managed by the *Ministerio de Desarrollo Urbano* - *MINDUR* (Ministry of Urban Development). Subsequently from 2000 the development of the projects was carried out by the *Consejo Nacional de la Viviendal* - *CONAVI* (National Housing Council) appended to this same named Ministry. Seeking to settle these ideas at the local level, the program planned the creation of two local institutions per project: the *Organización Comunitaria Autogestionaria – OCA* (Self-managed Community Organization), and the *Oficina Local de Asistencia Técnica – OLAT* (Local Technical Assistance Office). The former was a legal-organizational figure made up of community members to ensure compliance with the goals of the HFB Program; the OLAT was a group of professionals -architects, engineers, and others designers- to provide technical support and training to OCA´s members. This relationship between technicians and community members while the project was in force allowed significant levels of innovation in the proposals (López-Maya 2010) based on the exchange of knowledge. During the meetings of the HFB Program, communities learned about technical standards for the improvement of their barrio, while the architects learned from the knowledge about the place on the part of the residents.

5.5.5. Focused on connectivity

Finally, the most important aspect that stands out from all these experiences is the emphasis on spatial connectivity, which we can summarize in three design operations: the cable car, the hinge building, and the street.

The case of Medellin started in 2004, with the elaboration of the *Planes Urbanos Integrales* (PUI, Integral Urban Plans) in Self-Produced peripheral neighborhoods of the city. This program has become a world reference in terms of slum upgrading, receiving the prestigious *Lee Kuan Yew World City Prize* (2016). The strategy is shaped by the idea of Social Urbanism and is known worldwide for the visual impact of its Library Parks facilities connected to the city through a system of public spaces on two levels: a network of public spaces and neighborhood-scale roads, and the cable car that connects the Self-Produced Neighborhood to the city's metropolitan transport system. The striking moment of the Medellin experience occurred especially through 2008 during the government of Mayor Sergio Fajardo.

Almost ten years before, since 1993, the *Favela-Bairro* Project sought to integrate Self-Produced Neighborhoods (*favelas* as they are known in Brazil) with the fabric of the city (the *bairro*) through a series of infrastructure improvements and increased services. At the design level, the strategy used the improvement of infrastructure networks, especially watercourses, along with a series of small-scale buildings that tried to find conduits of integration between the two types of cities (the *favela* and the *bairro*) within a physical and culturally broken city (Jauregui 2003). The construction of infrastructure works of the *Favela-Bairro* Project first happened between 1999 to 2005 and the project was abandoned in 2008 when many contractors left due to lack of funds (Cabral 2014). Lowering the scale at the architectural level, the program includes the construction of some projects in the intersection between Self-Produced Neighborhoods (favelas), and the rest of the city (*bairro*).

Finally, *Habilitación Física de Barrios* (HFB, Barrio Upgrading Program) happened through a long journey that began officially in 1993 until its definitive halt in 2007 when the Venezuelan government returned to Eradication Strategies.

The path to arrive at this strategy has been slow but steady (Perez de Murci 2008). Its initial milestone was in 1974 with the Decree No.332 for the creation of the *Programa de Ordenamiento de la Áreas Ocupadas por los Barrios Pobres de las Ciudades del País* (Program for the Regulation of Areas Occupied by Poor Neighborhoods of the Country's Cities) (Venezuela, 1974) (Figure 45.3.2) which institutionalized for the first time in Venezuela the planning program for the areas occupied by neighborhoods.

Following the guidelines in this decree, in 1978 the government published the *First National Barrios Inventory* (Fundacomún 1978) (Figure 45.3.3), which publishes a survey of Self-Produced Neighborhoods for the whole country. After 87 years of counting the *barrios* only from the constructive logic, classifying them as *ranchos* but without considering the conditions of the infrastructural networks that affect their Spatial Opportunities, this Inventory generates a milestone on the recognition of Self-Production.

This document reports more than housing and infrastructural services such as aqueducts, sewers, public lighting and home electricity, and public services such as schools, nurseries, school canteens, milk distribution, markets, and so on. Following the same methodology, this inventory was updated in the *Second National Barrio Inventory* in 1985 (Fundacomún 1985) (Figure 45.3.4).

In 1993 the government issued the *Third National Barrios Inventory* (Fundacomún 1993) (Figure 45.3.6), which defines the Physical Planning Units as a key design tool for the regularization of the HFB Plan. According to it:

> Physical Planning Units" are equivalent in each city to relatively continuous large areas of barrios [Self-Produced Neighborhoods], whose needs in terms of articulation with the rest of the urban systems and networks (Fundacomún 1993, 10).

This document consolidates a recognition of the Self-Produced Neighborhood beyond the housing unit and incorporating its relationships with systemic infrastructure networks. This process had begun with Decree No.332 in 1974. Despite the good intentions between 1974 and 1993, the results have been extremely limited. In contrast, other strategies, such as Enabling and Eradication, continued to be applied extensively while these inventories were being carried out.

Among the few Upgrading experiences in Venezuela, *Banco Obrero* tested a pilot project called *Consolidación de Barrios* (*Barrio* Consolidation) (Banco Obrero, 1986) (Figure 45.3.5) in 1986. This plan that we could consider as a predecessor of the HFB Plan but its scope was much but limited and disarticulated. Both programs have extreme similarities in their conceptualization, such as the importance given to the provision of infrastructure services and public facilities (Flores Díaz 1988; INAVI 1989). While on paper, it looks like a promising strategy, the implementation of *Consolidación de Barrios* lasted only three years. The happened without the drafting of comprehensive documents for the intervention of *barrios*, causing a lack of a guidelines for the hierarchy of design proposals (Baldo 2021b). The consequence was that he program failed due to

power imbalances at the community level in prioritizing interventions, so resources went to repair homes assigned by community leaders' friendly relations (Salcedo Arismendi and Hernández Zea 2002, Hernandez)

Later, in 1992, another fundamental milestone occurred for the advancement of Upgrading in Venezuela. This year, the Ministry of Urban Development hired a group of academics from the *Taller Vivienda* (Housing Workshop) of the Universidad Central *de Venezuela* (F. Villanueva 1988). The contract sought to implement the experience learned in 10 years of academic activity for the drafting of a Plan Sectorial de Barrios (Sectorial Plan for *Barrios*) and whose summary would be published in 1998 by the *Consejo Nacional de la Vivienda* (CONAVI, National Housing Council) in 1998 (Baldo and Villanueva 1998) (Figure 45.3.7).

In 1999 the Bolivarian Revolution arrived in Venezuela, and the government decided to give continuity to the HFB Plan, including it in the *Plan Nacional de Vivienda 1999*-2004 (National Housing Plan 1999-2004) (CONAVI 1999).

Then, CONAVI planned the most ambitious Self-Produced Neighborhood Upgrading Program in Latin America that sought the urban renewal of 37 Self-Produced Neighborhoods in Caracas and 247 nationwide, investing 163 million dollars in design proposals (Baldo 2021a).

For this purpose, CONAVI launched several national design competitions for a *Plan Caracas Mejoramiento de Barrios* (CAMEBA, Caracas *barrio* improvement), proposing a new planning philosophy for the intervention of Self-Produced Neighborhoods. The competition brief explains it as follows:

> The complex problems of the housing sector oblige us to be open to all initiatives and proposals, both from the public sector and from the private sector or from organized communities. The basis for the success and efficiency of housing programs lies in this joint participation of the State, the private sector, and the communities. This difficult task also entails important paradigm shifts on housing. We no longer talk about the number of homes per year, and the equivalence of the housing deficit with the four walls of a house has been exceeded. (…) It is no longer the house or the number of dwellings, but the insertion of that dwelling not only in its environment, in the urbanization, but in the city, that is, the all-important urban connection (Baldo, Borja, and Lopez 1999, 5) (Figure 45.3.8).

When reading the HFB methodology in greater detail, this urban connection refers, especially, to the connection of Self-Produced Neighborhoods with the service networks offered by the city. The HFB plan sought to understand that above housing the inhabitants require connection to service networks and public facilities.

5.5.6. Closing Remarks on Upgrading

After great expectations, the HFB program stops in 2007 with the return of the Eradication strategy explained previously. Venezuela would return to focus on housing, leaving aside the importance of connectivity expressed in the HFB Program. Many explanations have been offered as to why this program ended up shutting down but little has been written on this topic. This has been a frequent theme among Venezuelan researchers and planners.

We can blame the incapacity of governments for overcoming the oil-dependent economy and the paradigm of the almighty State that supposedly can reduce Self-Produced Neighborhoods through housing construction.

We can argue the interests of private groups in rent-seeking (*enchufados*) through traditional housing policies; we can recast the myth of marginalized people that impedes elites to imagine them as fully integrated self-produced communities.

Here, we can claim two ideas that have made it difficult to understand Self-Produced Neighborhoods in their entire complexity. First, the "myth of marginalized people" and, as previously mentioned, the impossibility of elites to imagine integrated Self-Produced Neighborhoods. Second, "the myth of the informal city," which emerges when assigning an unregulated character to Self-Produced Neighborhoods despite that informality occurs in Caracas across different territories.

Finally, we can be surprised about how different ideological approaches, even contradictory ones such as the Modernist or the Revolutionary, assume similar positions on Eradication, and on the implementation and Palliative Actions fragmenting planning strategies by focusing on the units disregarding the systems in which they are inserted.

Regarding the latter, it should be remembered that the *Revista de Fomento* (Revista de Fomento) launched by Venezuelan government in 1947 states the importance of answering the question: "How Many Dwellings Are Needed?" to addresses the phenomenon of Self-Production. he report, written by urban planner Francis Violich, demands that the state increase housing construction to promote the elimination of Self-Produced Neighborhoods (Violich 1947, 25).

Two years later, the idea is spread out throughout Latin America in the *Low-cost Housing in Latin America* magazine, published by the Pan American Union, the article states:

> How Many Dwellings are Needed? (...) the conditions which constitute the acute housing crisis in Latin America have their roots in economic and social factors. One of the most important of these is the lack of a fully developed building industry. (Violich and Jones 1949, 8)..

Planners and policymakers failed to broaden understanding of Self-Production beyond the housing unit. But today, we understand that the weakness of this phrase is not only wondering about dwellings but questioning about “how many" units without considering the systems in which these units are inserted in the spatial networks. Nowadays, we know that we could ask, "How Many Schools Are Needed? "How Many Public Spaces Are Needed? "How Many Workplaces Are Needed?" Although these questions are necessary, they are still not sufficient as Spatial Opportunities will remain uneven if physical planning strategies remain fragmented.

That is why all the interpretations described above constitute non-physical patterns that must be sought to overcome for a future project to improve the Spatial Opportunities of Self-Produced Neighborhoods. However, from our rostrum as designers, it is imperative to focus on the latter: the role of spatial systems, understood in the HFB Plan as spatial connectivities.

To achieve the spatial connectivity, the *Habilitación Física de Barrios*, proposes “the street” as the fundamental urbanizing strategy (Villanueva, 1988), along with the incorporation of a new urban layout for the passage of vehicles, public transport, and services; a series of

endowments of services are articulated like water and electricity, and like public facilities such as plazas and community centers.

The adoption of the street layout as the main design element for HFB programs was born from the reading of the book *Urbanization Primer for design of site and services projects* in which. In this text, Horacio Caminos and Reinhard Goethert conclude that the optimization of infrastructures depends primarily on it (Caminos and Goethert 1976, 8).

In this scheme, the street has a cross-section following the model of the planned city, with 6 meters wide (20 feet) in addition to sidewalks and infrastructure networks below. Originally, the book envisions design schemes for World Bank´s Sites-and Services projects that follow Enabling strategies for new developments; however, the HFB program adopts this doctrine for Upgrading projects in consolidated Self-Produced Neighborhoods. Obviously, building streets is easier on unoccupied land, but it is not so when the land is already occupied by Self-Produced Neighborhoods, and much more difficult if the land has a slope where the traditional street involves a large infrastructure to stabilize slopes. The consequence is that the *Urbanization Primer* scheme ends up involving a significant number of demolitions of existing houses.

After analyzing the HFB program, we conclude that considering the street layout -with widths similar to those in other parts of the city- as the principal tool to achieve the most important objective of connectivity is both the most positive and the most negative of the programs proposed.

On the one hand, the street idea can be a fundamental tool for connectivity that goes beyond the mobility system. In addition to being a connector the street is a container for

infrastructure networks; entering a street introduces infrastructure networks. The street also allows implementing the water, sanitation, energy, or rainwater management infrastructure systems.

This is, in our opinion, the main weakness of the cable car in Medellín. The system transports people and goods but not service infrastructures. The same happens with the hinge architecture of the Favela-Bairro Project if the projects are not strategically inserted into the networked infrastructure systems of the neighborhood. But the possibility of introducing streets in the Self-Produced Neighborhood brings attention beyond mobility, amplifying Spatial Opportunities.

However, the insertion of the street layout in HFB Program is complicated when it overlaps with the formal logic that Self-Production generates, especially when the settlement is located in sloping territories as is usual in many of the Self-Produced Neighborhood in Latin America, and practically all the *barrios* of Caracas. This ends up complicating the implementation of the HFB program.

To verify this statement, we ran a theoretical explanation in the case of Petare Norte[48], located east of Caracas and the densest Self-Produced Neighborhood in Latin America (Appendix K). A sloping neighborhood with more than 16,000 homes. We used as a benchmark the situation in Petare Norte for the year 2000, the date on which the Upgrading project was completed within the framework of the HFB Plan, resulting in a supposed full implementation of

[48] The project is the Plan Especial para la Ordenación Urbanística de la UPF-4 Petare Norte Norte (Special Plan for Urban Planning of UPF-4 Petare Norte Norte) developed within the framework of Habilitación Física de Barrios (HFB, Barrio Upgrading Plan). It was promoted in 2002 by the Government of the Bolivarian Republic of Venezuela and designed by Proconsult, CA.

the program (See Figure 57 - Existing Condition of Petare Norte in 2000, and Figure 58 – HFB Proposal).

Following the criteria of HFB Program, the project is based in the incorporation of a new street layout. The design of the street is the same that existed in the planned city. It includes 652 meters (2,139 feet) of 6 meters (20 feet) wide and 3,015 meters (9,891 feet) of 4.5 meters (15 feet) wide streets.

This proposed street network implies the demolition of 1,666 homes; among them, 866 houses (52%) are demolished to insert the street layout, 671 houses (40%) because are houses built on terrains that has the risk of landslide, and 135 houses (8.10%) located land for new development -especially replacement housing- according to the plan. This output implies that 860 homes must be relocated due to the curvilinear street layout required in a sloping territory. To the cost of the 6.88 km (4.27 miles) of new streets and the nearly 14,500 m2 (156,076.70 sqft.) of retaining walls needed to support this layout, the HFB Plan must add the construction of 866 new homes, in addition to those homes relocated for other reasons. The study also shows that these demolitions are high due to the complications of introducing a traditional street -6 meters (20 feet) wide-, on a heavily built-up sloping land with neighborhoods.

However, the most negative effect is in the social implications of these relocations. That is why it is convenient to think of alternatives with less impact in demolitions as a consequence of the street layout. When we evaluate the Spatial Opportunities after this titanic effort regarding access to workplaces and other public resources such as parks and public spaces, the improvement is only by 1.07% from an average of 0.1801 SOi to 0.1909 SOi. The result is evident, in addition

the introduction of the street layout also reveals some weaknesses for which other connectivity mechanisms should be explored to achieve an increase of Spatial Opportunities.

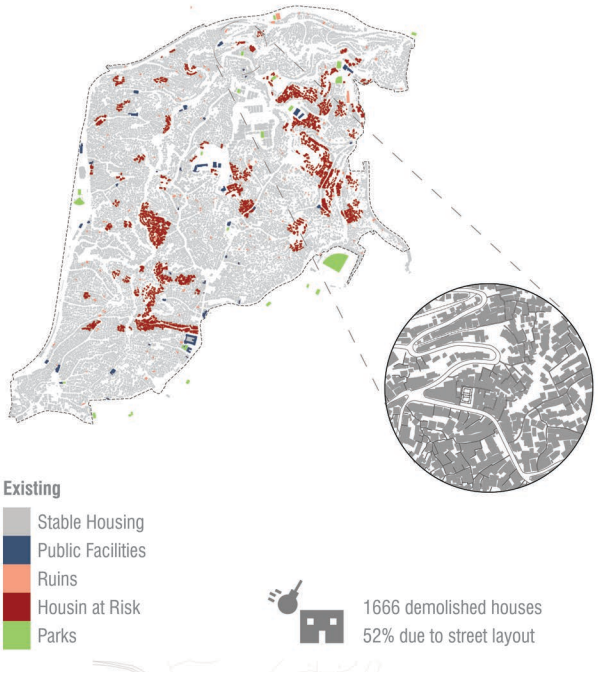


Figure 57 - Petare - Existing Condition

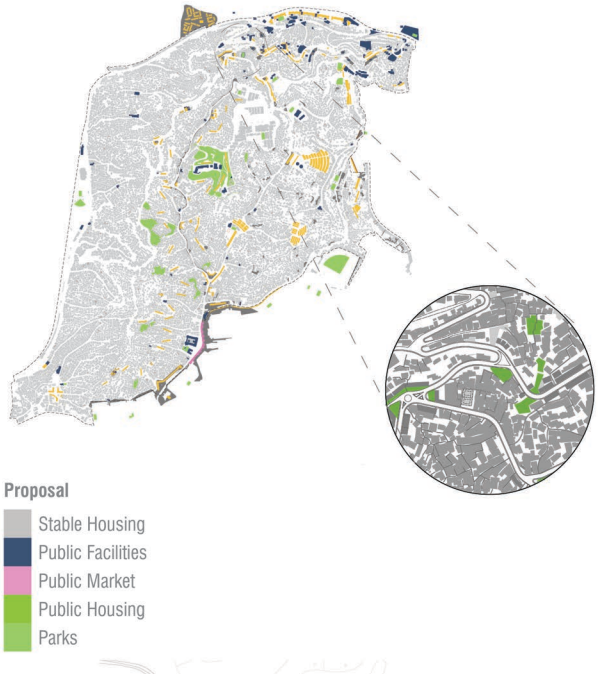


Figure 58 - Petare - HFB Plan (2002)

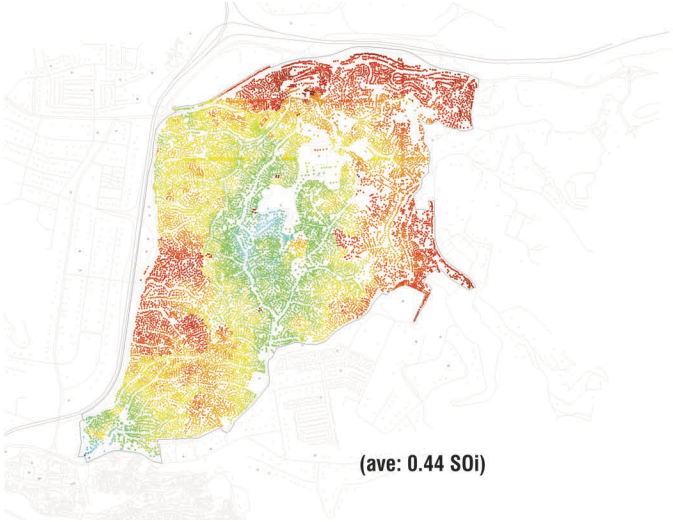


Figure 59 - SOi Existing Condition

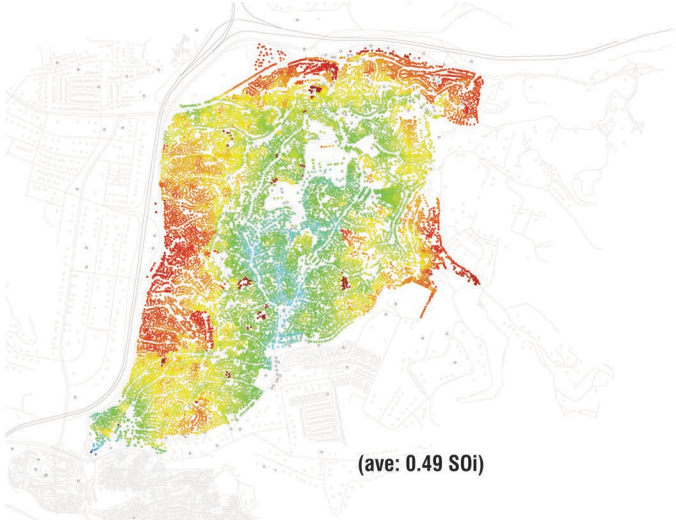


Figure 60 - SOi HFB Plan

Despite being primarily focused on connectivity, the strategy of introducing a traditional street-section, the proposal generates very little improvement in the SOi.

After implementing the new street layout, Petare Norte has 540 linear meters per hectare 131 ml/ha of vehicular roads + 409 ml/ha of pedestrian streets). The standards according to Urbanization Primer that we had previously described calculate a range between 130 and 230 ml/ha as the optimal range for a street layout (Caminos and Goethert 1976, 15). We could say that the road structure is optimal for circulation, the vehicular streets are practically in the standard; and the system of pedestrian veredas and staircases serve the spaces inside the neighborhood. They also give it its distinct sense of closeness that promotes community relations. This makes us infer[49] that the deficiencies in Spatial Opportunities dwell not in lack of connectivity but the limited diversification in offers of networked infrastructure services, especially amenities, within the neighborhood.

We also did the exercise of testing the Spatial Opportunities model looking for mechanisms to increase the accessibility of Petare. After several design tests (See Appendix K), we discovered that the street as a design principle is not enough to implement an efficient distribution of public facilities. Recapitulating the definition of Spatial Opportunities, we observe that both connectivity (c) and proximity (p) play an important role in improving spatial accessibility (See Chapter 3). In this sense, the inclusion of public facilities within the Self-Produced Neighborhood implies a significant impact in improving Spatial Opportunities. These public facilities could have different

[49] Although the main goal of this thesis is retrospective in the analysis of the history of planning to confirm the causes of the perpetuation of spatial inequalities. This inference led us to develop a prospective exercise of the SOi that we include as a Post-script to this thesis.

weights of destinations -different sizes or programming-, but must be strategically located to maximize its accessibility. In other words, increasing proximity is just as important as connecting.

What we have seen so far in the HFB is that it succeeds in its intentions, especially in the idea of thinking systemically beyond the housing strategy whose failure has promoted spatial inequality. However, it seems that the tunnel vision of trying to implement a traditional planning model exclusively related to the street with traditional measurements as a design tool has not made it possible to address the dynamics of spatial opportunities, which leaves an open parchment to explore other connectivity mechanisms that involve fewer impact on housing demolitions.

Moreover, we understand that for Upgrading strategies, connectivity aspires that go beyond the physical. All these experiences recognize the structural nature of Latin America's inequalities that occurs due to imbalances between the inhabitants of the Self-Produced Neighborhoods and the broad urban built environment's socio-economic dynamics. However, all these cases propose spatial mechanisms to minimize their negative effects while working on urban projects as a vehicle for development. We could argue that these strategies have a Reformist Approach applied to design and planning that believes in progressive redress of inequalities within the prevailing socio-economic system.

In Chapter 2, we discussed the Reformist approach of many planning strategies in Latin America. Both Jorge Mario Jauregui from the Brazilian *Favela -Bairro Project* and Alejandro Echeverri from Medellín´s *Planes Urbanos Integrales* recognized the structural problems of inequalities while trying to fix them through progressive physical planning interventions. The HFB program proposed a massive nationwide upgrading program of Self-Produced Neighborhoods

simultaneously (Baldo, Borja, and Lopez 1999) in a titanic effort whose results ended up being practically insignificant.

We certainly recognize the drawbacks of an incremental intervention because structural inequalities remain while planning projects progress. But we argue that it is not contradictory to fight for structural inequalities while working for the progressive integration of Self-Produced Neighborhoods. Additionally, the possibility of a series of incremental planning projects could include trial and error learning from pilot experiences to continue with the next one.

Progressive planning runs the risk of developing fragmented experiences and this has been one of the great weaknesses of the Latin American planning perspective. This force to think strategically, seeking to develop specific experiences that articulate planning processes through different scales and times.

5.6. Closing Remarks on the Content Analysis

The analysis of each strategy has allowed us to have some conclusions for each planning strategy – Eradication, Enabling, and Upgrading-. But, another takeaway from the study of federal-driven planning reports in the history of Caracas is the lack of plans that overlap different strategies. Certainly, the three strategies found -Eradication, Enabling, and Upgrading- occurred simultaneously and repeatedly from 1928 to 2015. But these strategies have rarely overlapped; each plan has assumed a given strategy as if it is the only approach. It may be advantageous to imagine a hybrid planning process that considers the benefits of each of these strategies.

Regarding Eradication, the physical planning can propose the relocation of those houses built on unstable land, negotiating with the communities their relocation outside the Self-produced Neighborhood to areas with potential for urban redevelopment.

Enabling's value cannot be underestimated, especially after realizing the enormous capacity that Self-Produced Neighborhoods have had in building their homes. Caracas has been the administrative center of the Venezuelan oil wealth; that is why the all-powerful State has invested enormous resources in addressing housing. Even in this scenario, the State has not been more efficient than the people in building houses. This invites us to stop thinking of the State as a housing provider but rather as a facilitator for people to self-produce their homes.

The Upgrading strategy offers the benefits of a thinking and a planning process that includes documents that serve as agreements for development. Additionally, Upgrading invites the creation of an institutional framework that incorporates different stakeholders -policymakers, designers, community members, and so on- for the design, criticism, and monitoring of the plan. The incorporation of different actors can help create planning projects that include flexibility as a variable, avoid planning documents that may have a tunnel vision by proposing ideas that later end up being unfeasible as we observed in the case of the HFB Program for Petare.

From the above, the possibility of imagining an ER-EN-UP Planning combining the advantages of Eradication (ER), Enabling (EN), and Upgrading (UP) is appealing. This methodology remains open for future project-design explorations.

The great takeaway of the overlapping of Spatial Opportunity Indexes and the Content Analysis of the federal-driven planning reporters between 1928 and 2015 is the importance of the

often neglected role of spatial systems, networks of infrastructures, and the even distribution of spatial resources following inherited physical patterns. Fina always expresses her desire to arrive with fewer difficulties to her destination, whatever it may be. She always dreamed of having greater access to the spatial opportunities that Caracas offers. We believe that this is also a battle that cannot be delayed.

Perhaps it should be understood that the issue is finding mechanisms to improve underprivileged people's lives by understanding values and constrains of Self-Produced urbanization. This implies the implementation of new design methodologies that develop their potentials while addressing their systemic weaknesses. That is the great challenge that remains open.

Conclusion

Working with the city of Caracas as a reference, this thesis determines why physical planning strategies perpetuate spatial inequalities in Self-Produced Neighborhoods in Latin America.

From a historical perspective, the analysis of Self-Produced urbanization shows the causes of failure in physical planning are extensive and overlap multiple variables, including cultural, socioeconomic, political, and ecological. Among these variables we have focused on the study of the spatial logic of inequality. This approach comes after more than twelve years of field work in the improvement of Self-Produced Neighborhoods. This experience makes us realize there is a dissociation between the objectives of intervention strategies and the understanding of the structural causes of the inequalities in Self-Produced Neighborhoods.

The historical view has also unveiled that physical planning strategies directed to Self-Produced Neighborhoods have focused on defining and outlining physical units, such as housing, instead of focusing on the networked systems that articulate these units across the geographical and cultural territories. This is why we start this thesis by quoting a text by the Venezuelan poet Igor Barreto:

> *No es tan importante darle el nombre a las estrellas como al espacio que entre ellas hay. ¿Cómo llegar a la anhelada casa si el nombre de la calle no sabemos?*

(It is not as important to name the stars as the space between them. How to get to the longed-for house if we don't know the name of the street?)

(Barreto 2006, 39)

What Igor Barreto describes is exactly the experience of Fina and the other residents of Self-Produced Neighborhoods like Petare. In general, houses are well identified and end up being well built after years of self-production (See Chapter 1) and the same happens with some small and scattered experiences of public spaces, schools, and job sources. Most of these "points of services" are well designed and equipped as the result of heteronomous agreement between Self-Produced communities and private or public agencies. But the spatial systems between these services are often discontinuous. For example, street networks are difficult to navigate because the systems that are supposed to connect "points of services" have been rarely considered or implemented. Certainly, no one has considered them systematically. The failure of planning in providing networked spatial systems across Self-Produced Neighborhoods -the not-naming the space between the stars- has perpetuated spatial inequalities. The next lines explain the historical causes of why this has happened.

Socioeconomic inequality in Latin America emerged in the colonial era when its countries were born under the sign of economic dependence. During the Spanish and Portuguese crowns' domination the colonies existed as suppliers of agricultural and mining commodities. This exchange had a centralized and monopolized character (See Chapter 1 and Chapter 4) that resulted in unequal socioeconomic societies where only those who had access to this exchange benefited from the fruits and riches of development.

In Venezuela, economic dependency reached extreme conditions with the oil boom which started in 1922 (See Chapter 4). Caracas would become the administrative center of a globalized fossil fuel market which made it a very attractive focus for thousands of migrants who found jobs in the tertiary urban economy after agricultural sectors had been abandoned.

The dynamics of limited social distribution of the rewards of development and the growing migration to the cities made the exponential growth of the neighborhoods inevitable. Today more than 46% of the inhabitants of Caracas live in Self-Produced Neighborhoods, with an average of less than 0.07 SOi, the lowest of the city.

The State would become an agent of change as an all-powerful entity capable of dominating all productive processes, including urbanization. In Caracas, as the center of the national oil-export economy, the civil society developed high expectations that the Magical State (Coronil 1997) could meet all housing needs.

The State persistently tried to assume its role of almighty entity. Contrary to what we had imagined years before starting this investigation as we walked the narrow pedestrian streets of Petare, the planning failure in Caracas did not occur because of lack of resources. The Venezuelan federal government made a consistent effort to direct oil revenues toward attending the phenomenon of rapid urbanization. There were more than six comprehensive zoning plans for the entire city and more than 38 documents to analyze planning strategies for of Self-Produced Urbanizations. In addition, since 1922, the federal government built almost 2 million public housing units -an average of 9.6 dwellings per 1000 inhabitants- seeking to stop the growth and expansion of Self-Produced Neighborhoods (See Appendix J).

We also cannot assume there was a lack of political will. From different planning strategies which included technical zoning studies (Chapter 4) to housing programs (Chapter 5), there was frequently a competent group of professionals from public institutions dedicated to the physical planning necessary to address the continuous growth of Self-Produced Neighborhoods.

Nor can we affirm there was lack of recognition of the phenomenon of Self-Production. A few years ago, we sought to address practical solutions in Self-Produced Neighborhoods and advocated for the understanding that "the *barrio* is part of the city." The analysis of the planning reports in Caracas's history since 1922 shows that the relevance of Self-Produced Neighborhoods has been rising steadily. This makes us think we must go beyond recognizing the reality of Self-Produced Neighborhoods and understand why this acknowledgement has had so few tangible results in reducing spatial inequalities.

In Chapter 4, our research shows the zoning ordinances in Caracas ignored housing built by underprivileged communities, assuming other planning tools would regulate or control Self-Produced Neighborhoods. But zoning ordinances had excessive faith in the State's capacities to regulate Self-Produced Neighborhoods with the planning tools used by federal agencies, mainly housing programs.

The main agency in charge was the *Banco Obrero* created in 1928 to address housing for underprivileged sectors. The analysis of planning reports published mainly by this agency defined the working definitions of the three planning strategies: Eradication, Enabling, and Upgrading. But, beyond some nuances in the drafting of these planning reports, as explained in Chapter 5, we can affirm that the idea of recognizing Self-Produced Neighborhoods has been present at least

between 1951 and 2007. This started with the *Informe para el Ciudadano Gobernador del Distrito Federal como un aporte para la solución del problema de los ranchos de la Ciudad de Caracas* (1951) (Report for the Citizen Governor of the Federal District as a contribution to the solution of the problem of the *ranchos* of the City of Caracas) (Figure 45.3.1) and stopped with the beginning of *Misión Villanueva* (2007) (MV, Villanueva Mission) (Figure 45.1.13).

The above proposes that it is not sufficient to recognize Self-Production as a form of urbanization or to have both the financial resources and the political will to address the issues associated with their existence. It is necessary to understand what is being recognized the essential ethos of Self-Production, and why spatial inequality. In this sense, there are constants in the history of the underprivileged in Caracas that explain why planning has failed: a tunnel vision on planning strategies, a limited understanding of self-production, and a narrowness in the consideration of spatial approaches.

We have demonstrated that different strategies such as Eradication, Enabling, and Upgrading happened simultaneously in almost all studied periods. However, we rarely observed any overlap within the same plan or project. Instead, there was a tunnel vision approach in applying a given planning strategy.

First, we believe the complexity of Self-Produced urbanization demands the overlapping of different planning strategies. Therefore, we speculate on the hybridization of planning strategies to facilitate plans and projects at the end of Chapter 5. For example, developing proposals that understand that Enabling could be beneficial more than Eradication under specific conditions or locations, and vice versa.

Second, we see in the planning reports a limited understanding of the progressive nature of self-production. We refer to the incremental essence of Self-Production that has allowed the continuous consolidation of the housing, although this has contributed to the incapacity of the planning agencies to focus on the infrastructure systems as the solution (See Chapter 1). In Chapter 5, we explain how, regardless of the foundational approach starting from apparently contradictory perspectives such as modernizing or revolutionary, most planning strategies have focused on addressing housing construction even though this has been the better-developed product in Self-Produced urbanization.

The limited understanding of self-production found in the planning reports is evident in the limited of attention to networked infrastructural systems, including street layouts, utilities such as water supply, and sanitation infrastructure, transportation systems or allocation of public amenities. As explained, the progressive nature of the Self-Produced Neighborhoods generates a fragmented urbanization (See Chapter 1). Self-production generates piecemeal urbanization that fragments infrastructure networks, including street layouts and systems such as water, sanitation, energy, rainwater management, public transportation, and even distribution of "points of resources" such as schools or health care centers.

We repeatedly see that the applied planning reports, mostly Eradication and Enabling, focus on addressing the housing unit, fragmenting the interventions into multiple individual projects without a systematic vision of the relationship between these interventions and the spatial system of the whole urban built environment.

In this sense, we confirmed that planning programs developed from different foundational approaches have assumed this fragmented perspective, regardless of the foundational ideological approach -modernizing, structuralism, revolutionary, or reformism- assumed by planning.

Finally, this fragmentation in planning perspectives and the limited of consideration of networked infrastructure systems has produced a spatially narrow approach focused on physical units such as housing rather than in systems such as street networks or the even distribution of spatial resources.

Through the narrowness of spatial approach about Self-Produced Neighborhoods, planning reporters have oversimplified urban complexities ignoring the ethos of this form of development. Physical planning has historically occurred with little understanding of how the city actually emerges. By not dealing with Self-Production as a form of development, physical planning has ignored most citizens.

Urban planning has repeatedly focused on counting the units rather than connecting them. This has been a consistent pattern throughout history for Self-Produced Neighborhoods in Caracas, which has ended up being intrinsic to urban planning, has contributed to perpetuating spatial inequalities.

From all of the above information, we propose an analytical framework to understand access to the Spatial Opportunities offered by the city from the especial perspective of the Self-Produced Environments (See Chapter 3). It was precisely in the definition and development of the Spatial Opportunity Index (SOi) as an analytical instrument where this work revealed the greatest number of limitations that can be addressed and become recommendations for future researches.

The first and most persistent limitation in this endeavor is the lack of data. In the history of physical planning in Caracas it is easier to find data on the construction and regulation of housing units than on the planning of infrastructure systems. Limited access to information made the analysis a daunting task, especially mapping streets networks and weighted points of destinations of the eleven maps selected for the historical study of spatial opportunities.

The libraries specialized in Latin American subjects of several universities and other institutions in the United States are valuable but are limited because there is still local information that does not exist in these archives. There is also useful information in the National Library and other Venezuelan institutions. But in this thesis we had to take advantage of informal networking with Venezuelan researchers whose personal files contain important information. It is apparent that Latin American countries lack an institutional infrastructure to make this information available to the broad audience of researchers.

After a historical documentary exploration, this research consolidates previously non-compiled information on physical planning in Caracas, with special emphasis on the issue of Self-Produced Neighborhoods. Therefore, the need for some form of institutionality that allows it to be made available for future research remains open.

But the lack of data also results in limitations that generate weaknesses in the SOi method. For example, some fundamental variables such as public transportation were left out because of a lack of historical information about their specific routes across the history of planning in Caracas. If we consider that mobility is a fundamental variable of connectivity, it is reasonable to assume

that different mobility systems determine variations in SOi levels. In this sense, a future version of the SOi will include parameters of accessibility driven by different mobility systems.

The same could be said about other variables such as water supply, rainwater management, and the energy systems, in addition to other demographic variables such as population-specific data that could be incorporated in a *weight of origin*, adding to the already measured weight of destination (w) (See Chapter 3). The lack of specific information in Self-Produced Neighborhoods where infrastructure networks were the consequence of unplanned urbanization makes it difficult to incorporate all of their variables.

Here we see Spatial Opportunities as a developing tool that could become more complex if we recognize the importance of strategies for reducing spatial inequalities.

There is an additional constrains weakness in the study of Spatial Opportunities within the framework of this thesis. It is important to point out the role of incorporating local communities' criteria in the definition.

During this investigation, we had continuous conversations with parties from Petare and other sectors from Caracas including other Self-Produced Neighborhoods. This was done by triangulating the collection and validation of data with different agencies, including local professionals and community members. However, all definitions have been done in Harvard University without citizen participation from Petare or any other neighborhood.

But the distance between Harvard and Petare has had its benefits. From my personal experience working in both academia and field practice, I can affirm that daily pressures, especially

while working in the midst of difficulties of Self-Produced Neighborhoods, do not allow thinking beyond the urgent needs. This is what I have tried to express in the narrative that precedes Chapter 3. Distance enables us to think of alternatives that are not usually obvious in the field.

The latter may explain why many of the projects in Self-Produced Neighborhoods we analyze follow the inertia of fragmented interventions. As a designer, I can affirm that it is not easy to think systemically when the difficulties at the local level are overwhelming.

In Venezuela, among the many experiences that follow the inertia of fragmented interventions, the experience of *Espacios de Paz* (EP, Spaces for Peace) has had an international resonance. As we explained in Chapter 3, this is a form of intervention close to tactical urbanism that has been replicated in Venezuela. This one was part of the XV Edition of the Venice Biennial of 2016. The projects are very good and have excellent photographic statements, but still they are no more than punctual interventions, disarticulated from the spatial system of the city.

We can argue that the inertia of fragmented interventions in planning is a Latin American phenomenon. I was able to verify this during the event *Informal Means, Alternative Design Practices in Latin America*, organized by the Loeb Fellowship Program and the Latin GSD on March 29-30, 2020 at the Harvard Graduate School of Design. Most of the proposals showed -all from practicing researchers from Latin America-, referred to the provision of specific services of different types, including housing, schools, or public spaces. The proposals were always more concerned with the design of specific "points of resources," or at most with the number of resources needed in Self-Produced Neighborhoods, instead of establishing mechanisms to provide them systemically.

The distance between Harvard and Petare has also allowed me to identify why spatial logic fails in Latin American planning. But from my experience in the practice field, I have noticed how some innovative solutions emerge from the hybrid between the technical vision of design and the daily experience of the communities.

In this sense, Chapter 3 explains the variable *weight of destination* (w) of the SOi that could incorporate community participation as an additional layer to the Applied Process for the Analysis of Spatial Opportunities (APASO). We refer to the introduction of community needs to increase access to the right of opportunities offered by the city, which can overlap both academic and community realms; we leave it open for future research.

Finally, we conclude with the most important suggestion: the need for more study and research on self-production. Today it is clear that Self-Produced Neighborhoods are a viable vehicle for the development of their inhabitants. We find it imperative to develop new concepts such as to integrate the know-how developed through this form of urbanization; values such as adaptability, flexibility, and the ability to promote innovative processes through effective chains of self-organization. Simultaneously, it is mandatory we incorporate strategies that minimize those aspects where self-production requires more attention: a systemic vision to create networked infrastructures that will serve to provide citizens with right to access those opportunities that enable the full development of their capabilities.

Post-script

Actionable Outcomes

Fina's claim

In academia sometimes I am perceived as an overly technical designer. I have always been an advocate of understanding how ideas translate into actionable outcomes.

But I am also perceived as too theoretical to be a practitioner. Fina frequently made that claim. When I discussed ideas that went beyond everyday life concerns, she argued:

"¿Con qué se come eso, mi arquitecto? "

(And how does that work, my architect?).

In a conversation on *Intellectuals and Power*, Michel Foucault and Gilles Deleuze conclude that no theory can develop without eventually encountering a wall, and practice is necessary for piercing this wall (Foucault 1977, 205).

Talking with Fina -but also with the advisors of this thesis- has allowed me to realize that standing exclusively on the theoretical or on the practical realm allows the intellectual and the practitioner to make the most of a space of power that limits the capabilities of both fields.

Breaking that wall between theory and practice has been an obsession during this research. So, thinking about actionable outcomes is in fact, a gift for Fina, and for the theorists and practitioners who have helped me on this path.

SOi as Prospective Tool

The main goal of this thesis has been to conceptualize the framework of Spatial Opportunities as the set of physical proximities and adjacencies that facilitate access to a networked infrastructural system. The application of this framework has been made retrospectively.

Infrastructural systems should work in a network. Access to networks, including amenities such as schools and public spaces, happens through mobility and circulation systems defined by street layouts that also hold utility networks like water and electricity. But the existence of infrastructure does not guarantee its connection with the surrounding context. Furthermore, we can affirm that frequently in Self-produced Neighborhoods occurs exactly the opposite. In many cases, there are infrastructures -such as highways or large monofunctional facilities- which contribute to the neighborhood's isolation by hindering access from the community to the opportunities that the city provides. We advocate that infrastructure should work as an interconnected network, having lines and nodes to serve the urban environment, even the most underprivileged one.

The framework of Spatial Opportunities could be applied to different urban territories with varying levels of inequality. In this research we have studied the reasons why urban development, including physical planning, has perpetuated spatial inequalities in Self-Produced Neighborhoods. However, analysis of the history of urban planning within this framework has allowed us to verify the possibilities of this idea from a prospective standpoint. Spatial Opportunities can also be a tool in the improvement of access to networked infrastructural systems.

Strategic Plan

This research included designing a methodology that we have defined as APASO (Applied Process for the Analysis of Spatial Opportunities). This method generates a digital model of the physical environment (SOi model) that defines and measures the Spatial Opportunities of territories perceived as having areas with limited access to networked infrastructural systems.

The APASO method builds a cartography that generates data about pathways and destination points which reflect the dynamic relationship between proximity and connectivity between points of origin (commonly housing) and points of destination. This data allows the engendering of an SOi model for the calculation of the Spatial Opportunities Index.

Once the SOi model is established, it is possible to explore new connectivity networks or service nodes and calculate potential improvements of access to spatial opportunities prospectively. The SOi allows the analysis of a range of opportunities in the studied urban territory by analyzing different alternatives to improve access to existing or proposed space resources. It could be, basically a scenario testing model

The urban model of a specific urban built environment is an actionable outcome itself, and a motivator to produce design tests to improve spatial opportunities. In other words, the SOi model can become a tool for strategic planning, i.e., a tool to establish an action plan based on key medium and long-term objectives (Pascual i Esteve and de Forn i Foxà 1999).

From the SOi model, we propose to strategize improvement of access to networked infrastructural systems through procedures that, although intertwined, can be summarized in two perspectives, one predominantly economic and the other of social nature.

From an economic point of view, the SOi model opens the possibility of planning the location of the minimum number of resources for the maximum level of access to spatial opportunities. Those who have experience planning and designing infrastructure in Self-Produced Neighborhoods know that scarcity is the rule; the number of resources is always limited in relation

to the needs that the projects they seek to meet. It is then essential that each intervention have the greatest possible impact.

But the decision of where and how to intervene may be associated with a strategic vision that includes the drafting of social pacts. Planners and designers know that urban projects imply many negotiations to produce actions and agreements. This thesis proposes that the *socialization* of the SOi model can become a tool to reach agreements between different stakeholders regarding the urban project, turning it into a methodology that overlaps process management, infrastructure design, and advocacy for community integration. When we say *socialization*, we refer to sharing the SOi model with different stakeholders -including active members of the community- not only to invite them to become familiar with the tool but also to listen to their contributions to improve the spatial opportunities of a certain neighborhood.

For the above purpose this thesis includes a design test placed within the framework of Spatial Opportunities from a process-design perspective which seeks to integrate the three dynamics mentioned above: management, design, and advocacy.

In an exercise that lasted one academic term, we shared the SOi model for Petare Norte bringing together a group of community leaders[50] from this Self-Produced Neighborhood, together

[50] The exercise was carried out in support of the NGO ProPetare led by Jonathan Martínez and coordinated by Pedro Méndez Dager, with the direct participation of community leaders Alvis Pasión, Ana Karina Vital, Evelyun Piñate, Lolimar Mejia, Nancy Chávez, Yusneizy Gabriela Garcia, among other Petare residents whose names we were not authorized to release. The investigation had an important support from Vicente Paez from Petare Norte and his family to reinforce connections between the academy and the barrio realities.

with students of the architecture program of the Simón Bolívar University [51] in Caracas, Venezuela, and a group of planners [52] standing-in as local government and trained to integrate the framework of the Spatial Opportunities into de planning process. We served as a leading planner for exploring options to maximize Spatial Opportunities in the neighborhood, starting from a series of participatory design workshops jointly between these different stakeholders. The outputs that we show below are the result of this exercise.

This experience had two objectives. First, explore the possibility of introducing the concept of Spatial Opportunities to different actors and become familiar with the idea as a planning tool. Second, discuss through participatory meetings ideas to improve the spatial opportunities of this case study analyzed: Petare Norte.

The socialization of the SOi model also allowed incorporating the flexibility of self-production to the physical planning process by integrating divergent opinions progressively. This opened up the possibility of mixing different design strategies and exploring Eradication, Enabling, and Upgrading ideas depending on the particularities of each case and the agreements reached between a diverse number of actors.

[51] During the term September-December 2020, the Simón Bolívar University launched Studio X - DA3313 in the Program in Architecture where we had the opportunity to serve as academic advisors. This course was taught by Professor José Guillermo Frontado and was based on the application of the SOi model for the case of Petare Norte. The students The students who participated in this experience were Adriana Gonzalez, Claudia Lasso, Daissy Zambrano, Daniela Garcia, Frelsy Espinoza, Ray Gil, Roraima Ascanio, Samuel Vera, Thalia Colmenares, and Valentina Silva participated in this.

[52] One of the objectives of this research was to test the socialization of the SOi model with local researchers and policymakers. This was done with the group Boca Proyectos, led by researchers and professors Iliana Germán and Manuel Barrios. The research happened with the participation Yabeth Bautista, Jesús Goncalves, María Isabel González, Sofía Piñeiro, and Ninoska Correia. Unfortunately, giving the political crisis in Venezuela, we could not count on the support of the local government; so, Boca Projectos simulated being the regulatory agency of the local government in this design exercise.

In 1972, Jonathan Bradshaw distinguished five types of social needs: normative, perceptible, expressed, comparative and technical (Bradshaw 1972). The SOi model is based on the studies of social psychologist Martiza Montero who demands an intermediate broadening between the poles that represent those needs (Montero 1994; 2003).

Communities in Self-Produced Neighborhoods have perceptible needs in everyday life including traveling through territories with low levels of access to the opportunities offered by the city. Planners, architects, and other designers participate with technical needs by providing the urban project principles of stability, utility, and beauty (Dixit Vitruvius). Normative needs generally arise from government regulations and guidelines that must be included in urban projects. Planning happens through the trade-off of these and other social needs. The SOi model seeks to be a tool to facilitate those agreements.

The exchanging of social needs is consistent with the ethos of Self-Produced Urbanization, which we can summarize in two strategies:

- Focus the minimum effort on housing, since it is built progressively and efficiently by the incremental constructive culture of the Self-Produced Neighborhood; instead, the Spatial Opportunity framework focuses on improving networked infrastructural systems.
- Take advantage of the creative character and the ability to reach agreements typical of self-production. In this sense, rather than generating a fixed drafted project, the exercise seeks to deliver strategic guidelines that arise from the overlap of different social needs and whose design criteria can be adapted to each design case.

Characterizing Petare

Petare is a conurbation of Self-Produced Neighborhoods predominantly residential located east Caracas' Valley. It is the densest Self-Produced Neighborhood in Latin America and one of its largest ones with about 420,000 inhabitants in 730 hectares (2.82 square miles), which is twice the area of Central Park in Manhattan. Among them, Petare Norte is the largest and most consolidated area of this Self-Produced Environment.



Figure 61 - Aerial View of Petare

Internationally, Petare's best-known image is the one that contrasts the middle-income housing development in La Urbina (on the left), and the Self-Produced Neighborhood (on the right).

In their *Tentative Classification of Various Slum Types* Chenal, Pedrazzini, Bolay use four categories to classify Self-Produced Neighborhoods: location, physical nature of the land, street layout, and *durcification*, which refers to the constructive solidity of the houses(2016) (See Chapter 1or details). Regarding location, Petare has a privileged condition which would suggest that it has good access to infrastructure networks. Chapter 4 explains the historical conditions that caused Caracas' Self-Produced Neighborhoods to start in peripheral locations but ended up being "absorbed" by the urban grid.

However, our historical analysis of Spatial Opportunities reveals that Self-Produced Neighborhoods have limited access to the opportunities that the city provides, which shows that the other three variables - the physical nature of the land, street layout, and *durcification*- have an important influence in providing access to networked infrastructure networks.

Historically, street layouts in Petare arose through piecemeal urbanization which is the typical process of Self-Produced Urbanization that occurs through a fragmented and asynchronous construction of infrastructures (See Chapter 1). In Petare, this process happened in lands whose nature was not originally intended for housing development.

In the 1960s, Petare hills had an agricultural vocation. The infrastructure networks across its streets - for example, the route that currently goes to La Bombilla - were not designed to house the about 420 thousand people who reside there. The infrastructure has been built progressively and in a fragmented manner following a highly discontinuous street layout, which explains access difficulties reflected in its low levels of Spatial Opportunities.

Regarding *durcification*, Self-Produced Neighborhoods in Petare have been intensely densified horizontally and vertically, leaving little space for other programs other than housing, which has generated a limited distribution of amenities and public facilities, including schools and health care centers, and private facilities such as workplaces.

In summary, Petare is part of that conglomerate of Self-Produced Neighborhoods where 46% of the population of Caracas live, and where the lowest rates of Spatial Opportunities in the city have been perpetuated for almost a century.

Actionable Outcomes

We strategized Actionable Outcomes for Petare Norte working with it SOi model to test design possibilities together with the stakeholder mentioned above. We also considered that it does not make sense to start a project from scratch, so we took advantage of the analysis and learnings developed for Petare Norte by the *Habilitación Física de Barrios* (HFB, Barrio Upgrading Plan) in 2000[53]. We analyzed four lines of action, three of them related to infrastructure -house, street layouts, and amenities- and a fourth about processes management to generate them.

Housing as Networks

The first step to generate a prospective view framed in the promotion of Spatial Opportunities is changing the paradigm of housing from the all-powerful builder State to the

[53] Many of the data for this design-text was extracted from analyzing the *Plan de Habilitación Física de Barrios* (HFB, Barrio Upgrading Plan developed for Petare Norte (UPF-4) by the Program *Caracas Mejoramiento de Barrios* (Cameba, Caracas Barrio Improvement) of the Government of the Bolivarian Republic of Venezuela by the Proconsult CA in 2002. The survey and its preliminary project were coordinated by the planner Maria Estela Mangia, e inspected by the planner Alberto Rengifo.

government as a regulatory agency. This includes the promotion of housing development by the private sector, including the self-produced entrepreneurship and the regulation of private real estate companies. Prioritizing housing by private processes also allows the State to focus on networking infrastructural networks, which is what self-production is incapable of developing on its own (See Chapter 1).

This thesis includes the analysis of 38 federal planning reports to address the emergence of Self-Produced Neighborhoods in Caracas between 1928 and 2015. The majority failed to focus exclusively on housing construction. But, as we discussed in Chapter 1, housing is a one-to-one infrastructure, i.e., they are units of infrastructure to serve a single or limited number of households; in this sense, housing is incapable of generating collective network infrastructures. But even more important is the fact that self-produced housing grows efficiently and progressively.

Consequently, we propose strengthening the Enabling approach to housing but avoiding Palliative Actions that are limited to providing construction materials (See above our discussion on Palliative Actions in Enabling Strategies). In the case of Caracas, private capacity and entrepreneurship have proven to be efficient in constructing housing, so we propose the reinforcement of this practice but include normative regulations that allow each home to efficiently articulate with urban networks. We could divide this strategy into two levels of action:

- Promote housing from the self-produced logic, organizing the entrepreneurial capacity of citizens. The technical and normative action can be limited only to regulation and specialized advice to facilitate and promote an articulated self-production of homes.
- Promote affordable housing in private real estate developments.

Latin America has few examples of real estate development regulations to promote affordable housing. Although they are limited, we can mention the improvements of housing through the promotion of new urban developments led by Juan Ignacio Duarte and Luis Baer from Buenos Aires University developed in Trenque Lauquen (Argentina) (2013), and the land acquisition experience for the Third Perimeter of Porto Alegre, by the Architect Néia Corrêa Uzon (Brazil) (2013).

But, among many worldwide examples that promote the inclusion of housing in urban developments, we consider relevant what was dictated by the Urban Planning Law of the Generalitat of Catalonia. Its Article 57 establishes that housing developments must preserve at least 30% of the land for low-income dwellings (Diari Oficial de la Generalitat de Catalunya 2005), which facilitates the incorporation of the private sector to the provision of affordable housing, but also the generation of mixed-income developments. Within the Spatial Opportunity framework, these houses should be developed with the anticipated planning of networked infrastructural systems, and within the already served urban grid.

Our research concluded there is a tunnel vision of planning proposals which have assumed a single strategy between Eradication, Enabling, or Upgrading. But narrowing down the analysis of a case like Petare, we noticed that most of the housing are solid and well-constructed, but 4.85% of them are built on unstable lands. This opens the possibility of including a negotiated Eradication quota to relocate these at-risk homes. However, contrary to what has happened in the history of planning in Venezuela, instead of these houses being built by the all-powerful State, we advocate

the construction of affordable housing by regulating private housing developments with mechanisms such as those explained.

Street Layout

Street Layout is the second line of action to generate a prospective approach on Spatial Opportunities. In *Urbanization Primer for design of site and services projects,* Horacio Caminos and Reinhard Goethert elaborate on how the street layout is the fundamental element to organize the infrastructure networks (Caminos and Goethert 1976, 6). The optimization of the street networks facilitates the generation of other networks such as water and electricity adductions, mobility networks in different gradients that include public transport, pedestrian circulation, and networks of amenities through access to public and private facilities by circulation system.

Based on the standards established in the *Urbanization Primer* (Caminos and Goethert 1976), the HFB Program incorporates a new street layout as the main design strategy. For Petare Norte, it counts 652 meters (2,139 feet) of 6 meters (20 feet) wide and 3,015 meters (9,891 feet) of 4.5 meters (15 feet) wide streets. The typology of the street is like the ones existing in the planned city, including width for automobile circulation, sidewalks, and, most importantly, the reconditioning of the infrastructural system under the street. The project envisions facilitating the transit of large motor-driven transportation units within the neighborhood.

If we compare the existing routes (Figure 62A) with the proposed routes (Figure 62B), we see that the implementation of the street layout proscribed by the HFB Plan in Petare implies a subtle integration of new routes to provide continuity to the existing network. The plan proposes

following the physical alignment of many of the existing streets with acupunctural additions (indicated in red in Figure 62B) to improve connectivity systems.

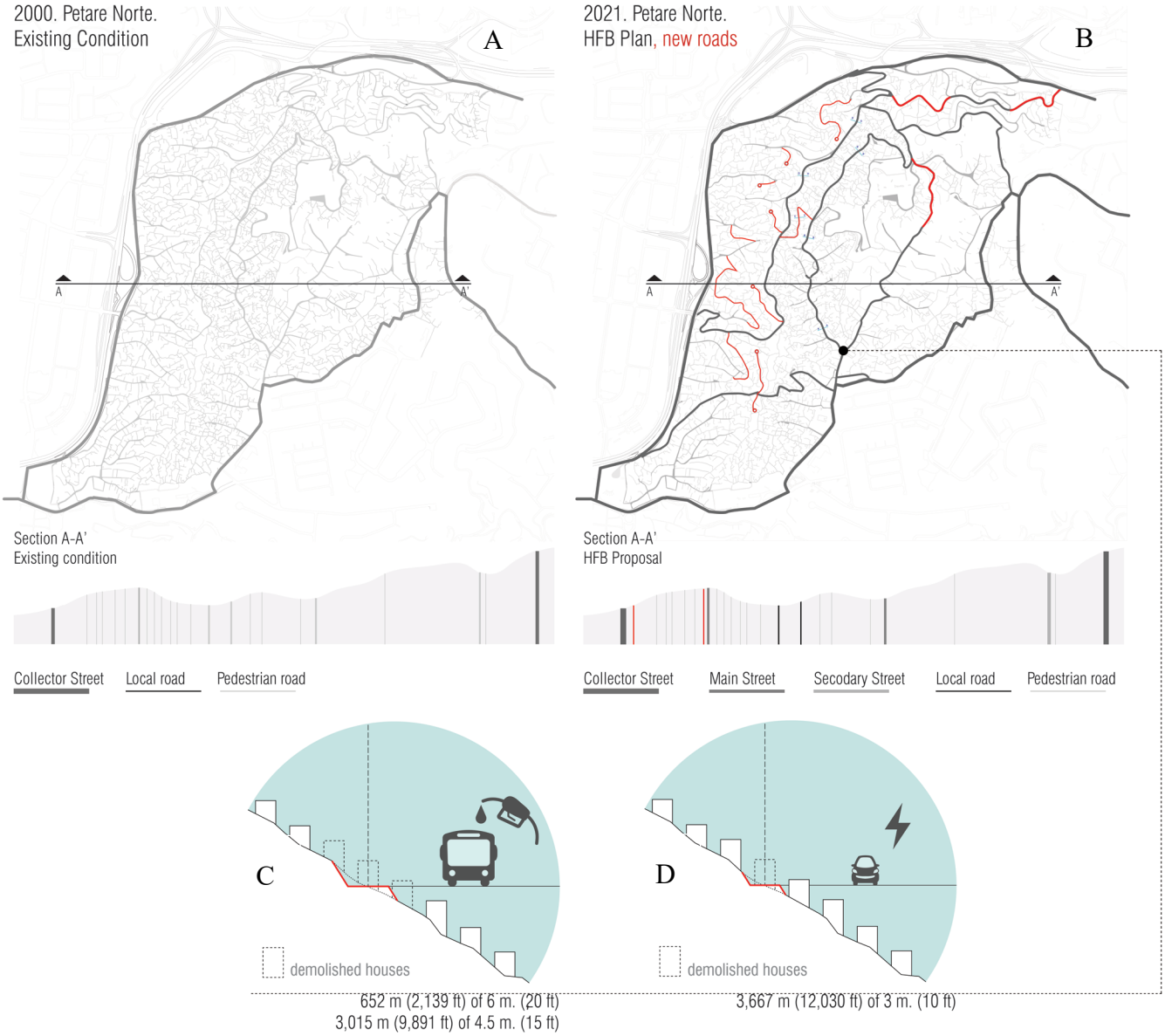


Figure 62 - Petare Norte - street layout.

The proposed street layout includes only 13% of the main streets. In this layout, the use of traditional mobility technology (buses) involves large demolitions (See section C); therefore, it is convenient to explore other mobility technologies (See section D).

Certainly, the street layout design systematically respects the morphological logic of Petare, but we also note that it implies significant demolition of housing. As we explained in Chapter 5 in our critical analysis of the HFB Upgrading Program, the vast majority of demolitions (52%) occur because of the widening of existing streets. Looking at Figure 62C, we see the impact that a road of standard dimensions has on sloping land, where the stabilization of slopes implies an effect that requires large demolition quotas.

Housing demolition in Self-Produced Neighborhoods involves a high social cost, especially because the years of self-organization generated strong relationships of brotherhood and friendship across its residents (Amodio, Ontiveros, and Rosas 1995; Ontiveros 2002). However, we are not a priori against house demolitions if they benefit the entire community. After more than twelve years working in Self-Produced Neighborhoods, talking with its residents in hundreds of street walks and many participatory design workshops, we can affirm that their inhabitants can also be open to moving, as long as they find better housing alternative in that move.

Here, we support strategies for new homes outside the Self-Produced Neighborhood, in the urban grid of the planned city, which serves as receptor areas for people who must move in a possible upgrading plan. In other words, even though there are social networks in Self-Produced Neighborhoods, people can move outside it just as anyone can. As pointed out by George Steiner, whereas trees have roots, men [women and others] have legs (1970, 226), and people living in Self-Produced Neighborhoods are no exception.

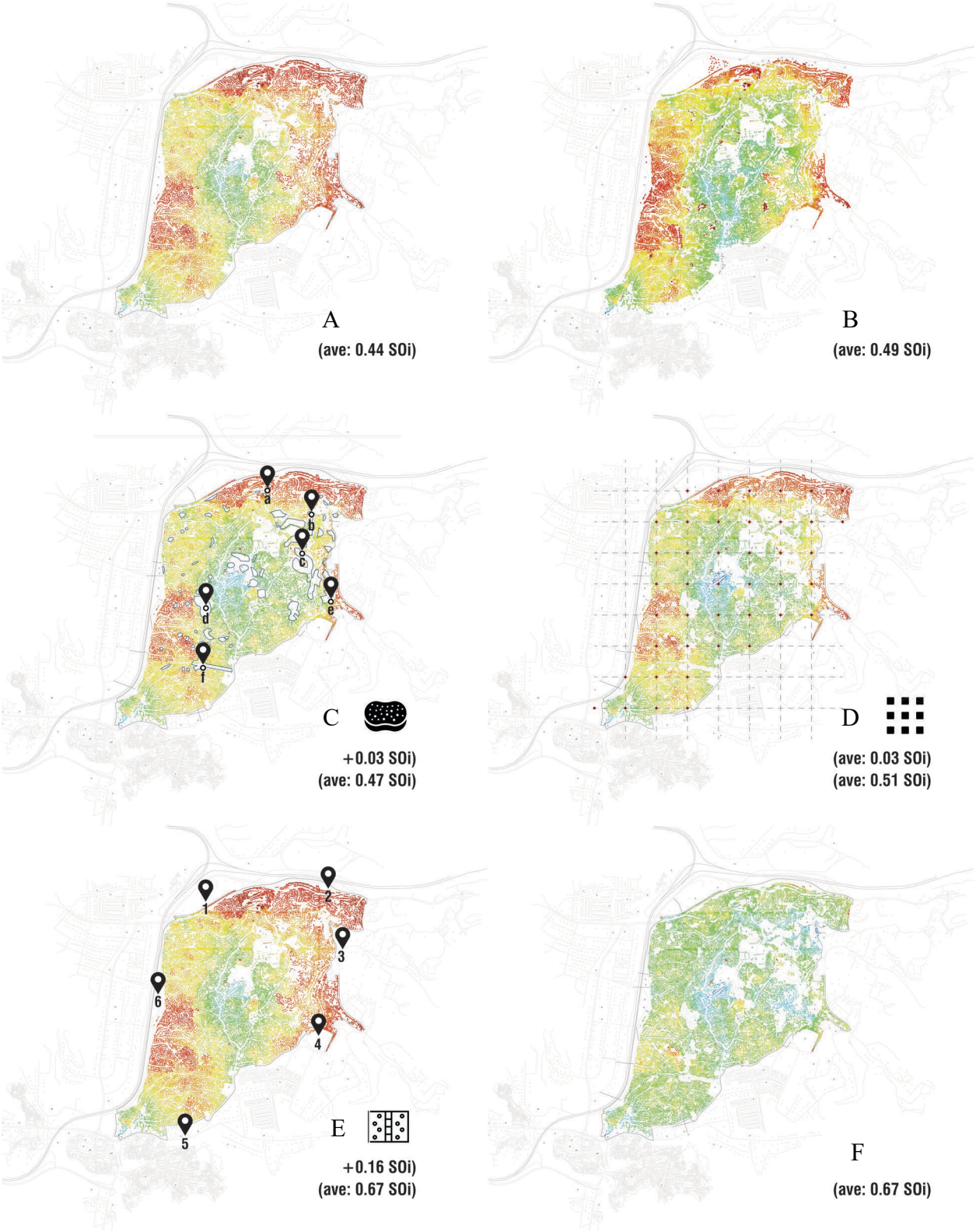


Figure 63 - SOi test for Petare Norte

A) Existing Condition (2000) | B) PROPOSAL

C) FLUFFING | D) MICRO INSTITUTIONAL GRID

E) HINGE PROJECT | F) C+D+E COMBINED



However, as explained above, the analysis of the Spatial Opportunities indices for the case of Petare Norte comparing its current situation with a supposed implementation of the HGB Upgrading Plan, revealed that the SOi average[54] of Petare was 0.44 before this new street layout (Figure 63A) versus 0.497 SOi after its implementation (Figure 63B). Every urban proposal implies a trade-off between different alternatives; planning projects are not positive and negative in themselves but depend on their impact. In this case, the SOi model allows simulating the effect of the new street layout and the analysis cast doubts about the relevance of the layout if we compare the high impact in demolitions that it would cause in the context of the minimal increase in Spatial Opportunities it generates.

But the new street layout (Figure 62B) could have significant benefits in creating a new network utility infrastructure system as it would allow the improvement of water networks and electricity among other utility networks which is the true positive impact of street continuities. But the utilities' implementation does not require a street width of 6 or 4.5 meters, so we could envisage keeping that proposed street layout in the HFB Project[55], but with a smaller width of 3 meters (10 feet) (Figure 62D), which reduces the number of required housing demolitions by one third.

When this idea arose in the workshop working with the SOi model for Petare Norte, Fina reminded us that historically in Self-Produced Neighborhoods in Caracas, transportation needs had been served with small vehicles known as *rutas de jeep* (jeep routes). Learning from this self-

[54] For the analysis of SOi in Petare we decided to normalize the data giving the value of 1 to the maximum SOi existing within the neighborhood, this allowed us to review with greater precision its nuances in access to spatial opportunities.
[55] Within the studies on the SOi model of Petare, we also tested the implementation of a cable car system following experiences of Planes Urbanos Integrales (PUI, Integral Urban Plans) in Medellin. However, given the nodal location of its stations, they ended up serving less than 27% of Petare (4.400 houses), so the study of the street system is still important. In the end, mobility systems work in a network when their infrastructures are connecting with each other.

produced experience, it is possible to implement regular travel through the neighborhood with a system of microbuses or microcars. This scheme could include *parks and rides* on the edge of the area to discourage the number of private vehicles inside. From the analysis of the street layout, we believe it is useful to make design criteria flexible, incorporating strategies different from the traditional street.

Networks of Amenities

The SOi model allows comparing networks of amenities existing in Petare with a proposed system of public spaces and facilities across the neighborhood. After doing many design tests, it was surprising two observe how strategically located "point of services" maximized the Spatial Opportunity. The analysis demonstrates that this has a significant impact, even greater than the improvement of the existing street layout.

As explained throughout this thesis, SOi is built on three variables: Connectivity, Proximity, and Weight of Destination (See Chapter 3). The first two variables, connections (C) through lines and proximity (P) to service nodes build the notion of networks. The third, Weight of Destination (W) influences the attractiveness of allocated physical resources. Working prospectively with the SOi model for Petare Norte, we determined that the diversification of amenities within the neighborhood (P) has a greater impact in the SOi than creating new connections (C) with a lower economic cost and higher social impact.

Additionally, the creation of proximity spaces within the neighborhood contributes to empowering community engagement. In the end, well-connected amenities are key factors for

agreements between different actors. This maximizes community resilience understood as the emergence of the individual or the use of collective alternatives when having to face adversity or social trauma (Cardona et al. 2020; Izquiel et al. 2019).

During the design exercises on Petare Norte, by testing the SOi model, we verified empowerment among community members. In the meetings, the residents understood the importance of the new streets to connect the neighborhood with other urban sectors, but enthusiasm, creativity and emotion arose with greater intensity each time we discussed a new facility near their homes. Improving spatial relations contributes to the improvement of social networks (Izquiel et al. 2019).

Working with the SOI model we explored numerous ideas to diversify the location of amenities such as public spaces and other resources to improve Spatial Opportunities across Petare Norte. Below we summarize the three that achieved the greatest impact; we call them Fluffing, Micro Institutional Grid, and Hinge Projects. These strategies are complementary for which the levels of SOi are conceived as cumulative where the contributions of the first strategy are added to the following one, and so on.

One of the SOi strategic goals is to maximize impact with the fewest number of interventions. The first exercise was to locate new public spaces on unstable terrain. The urban analysis carried out within the framework of the HFB Upgrading Plan in 2002 sectorizes land occupied by houses where the geological conditions of the soils make them vulnerable to landslides and other risks. Fluffing's strategy sought to increase public space by introducing green areas after relocating the houses built in those areas. This proposal is inspired by the urban renewal

of Barcelona in preparation for the Olympic Games in 1992 (Barcelona (Spain) Area d'Urbanisme i Obres Públiques 1987), which creates public spaces in the most densified areas of the city, a proposal often called *esponjamiento* (sponging or fluffing).

This strategy is the most obvious for us because it involves relocating homes due to risk issues. It had immediate receptivity among the different stakeholders who worked with Petare's SOi model, including community members. Fluffing implies the relocation of 878 housing structures (4.85% of the total number of houses in Petare) to the planned urban grid. As a result it is possible to open 61,000 m2 (6.1 Hectares) of new areas for public space with secondary facilities within Petare Norte, or 22 times the current availability. Through this strategy, the Spatial Opportunity increases to 0.47 SOi on average for the whole barrio (Figure 63C), which we consider a high impact because the only urban operation carried out is the relocation of at-risk houses.

Second, and at the suggestion of community members, we propose creating a Micro Institutional Grid of amenities. Instead of introducing new buildings within the neighborhood, we suggest creating Enabling strategies to promote small-scale collective facilities inside some homes (weighted in 100 clients/day in the SOi model).

After drafting a virtual 250 x 250-meter grid (820 x 820 feet), we evaluated the possibility of including 41 new micro - amenities in Petare Norte (Figure 63D). Although the precise location of these points would depend on agreements with members of the community, the exercise showed that those facilities located at fewer than 400 meters from an intersection with the main road have the greatest positive impact on Spatial Opportunities.

In summary, this strategy, complemented with the previous one (Fluffing), allows bringing the level of Spatial Opportunities in Petare Norte to an average 0.51SOi.

Finally, and given the high level of *durcification* of Petare Norte, we used the SOi model to test the idea of the Hinged Project. This strategy seeks to test the impact of larger-scale facilities on the neighborhood's edge in currently under-built territories. In Latin America, this idea has been widely known by the work of the architect Jorge Mario Jauregui (Cf. (Jauregui 2003) in the Brazilian *Favela-Bairro* Project.

The positive impact of placing larger amenities as hinges between Petare and the rest of the city resulted in a significant increase in the levels of Spatial Opportunities, bringing an average value of 0.67 SOi throughout the neighborhood (Figure 63E). The strategy allows the incorporation of amenities with a high target weight (5,000 people capacity in the SOi model) given that the neighborhood limits usually have lots with great development capacity.

Finally, the design test included preparing six SOi Primers with guidelines that architecture and urban design projects should follow to achieve the expected level of Spatial Opportunities.[56] The SOi Primers had requirements of connectivity lines (C), service nodes (P), as well as suggestions at the programmatic level, agreed upon in meetings with community members (W). Students of Simón Bolívar University developed a series of architectural and urban design tests on

[56] In Petare Norte, the six SOi Primers were as follows: S1: A transportation HUB in northwest Petare, connecting with the most important subway system of Caracas. S2: An Institute of Technology bridging with Metropolitana University at the north of Petare. S3: A cultural center in connection with the Centro Simón Diaz, a public but isolated facility at the west of Petare. S4: A Sports Park connecting with Palo Verde (one of the middle-income housing areas neighboring Petare. S5: A set of public spaces connecting Petare Norte and Petare Sur. And, finally, S6: A Public Market bridging La Urbina, a middle-income neighborhood at the west of Petare. The number of cases will vary depending on the case study analyzed.

how to translate these facilities into a system that provides a new networked fabric of opportunities across the neighborhood[57] (See Appendix K).

On a spatial level, the actionable outcomes of the test working with the SOi model proved the possibility of using the tool prospectively. The experience has shown us that there is no single solution to increase Spatial Opportunities, but rather the overlapping of different strategies -such as Fluffing, MicroGrid, and Hinge Projects- (See Figure 631F) while calibrating their individual pros and cons. This requires a creative process with flexible thinking and the opinions of many different stakeholders.

Process Management

To conclude, we decided to elaborate a diagram that exemplifies the possibility of scaling-up the process learned with the SOi model for Petare Norte; this is an open workflow for the SOi model (Figure 64).

This process imagines a first step where communitarian participation contributes data to define variables of Connectivity (C), Proximity (P), and Weight of Destination (W) for the calculation and definition of the Spatial Opportunities. Digital tools regulated by the local government permits the socialization of these variables. Then, a work team made up of different stakeholders, including community members, academics, professionals, representatives of private

[57] We explained above that every planning process involves trade-offs between different alternatives. In this case, we had to negotiate to carry out the Hinge Projects because it better overlapped with the academic objectives of Studio X in the architecture program of Simon Bolivar University. However, we do not rule out the possibility to test the SOi model with other disciplinary approaches; for example, Landscape Architecture could work in proposals for the public and green system through Fluffing or Adaptive Reuse courses in the transformation of some houses into new facilities such as those envisioned in the Micro Institutional Grid strategy.

companies, etc., processes this data to quantify and qualify the networked infrastructures necessary to improve SOi levels. Since the digital parameters compile all information, it is possible the results overlap with those of other places within the same urban territory.

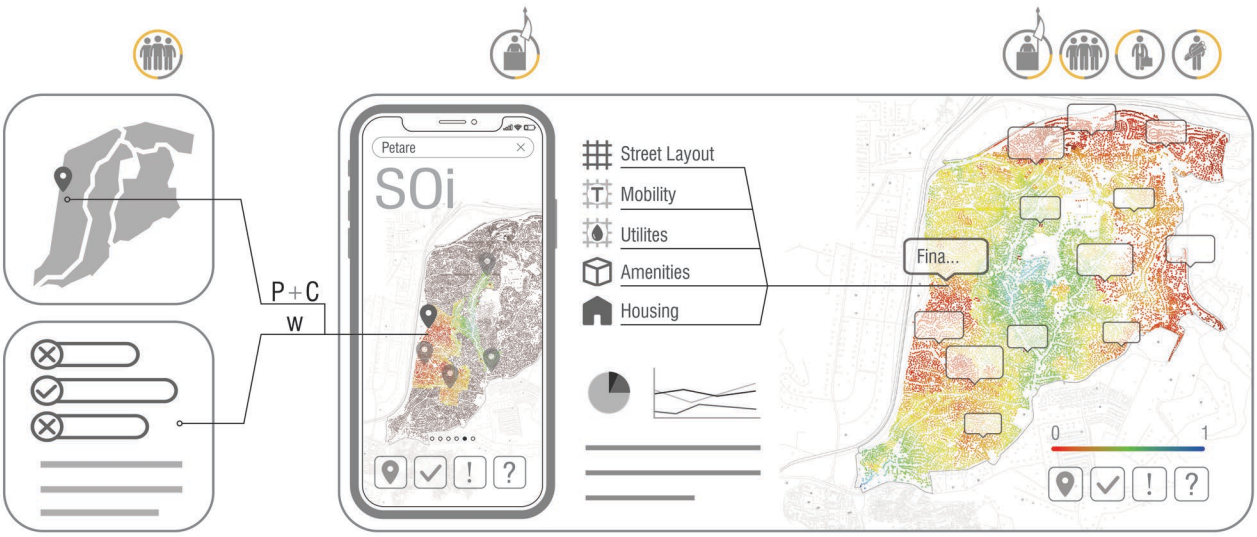


Figure 64 - Workflow for the SOi model

This process imagines a first step where communitarian participation contributes data to define variables of Connectivity (C), Proximity (P), and Weight of Destination (W) for the calculation and definition of the Spatial Opportunities. Digital tools regulated by the local government permits the socialization of these variables. Then, a work team made up of different stakeholders, including community members, academics, professionals, representatives of private companies, etc., processes this data to quantify and qualify the networked infrastructures necessary to improve SOi levels. Since the digital parameters compile all information, it is possible the results overlap with those of other places within the same urban territory.

What described above is nothing more than a systematization of the experience of the SOi model for the case of Petare scaled-up through the use of digital technology.

As we had established in this research, the framework of Spatial Opportunities is hinged on the right to the city discourse, which posits that cities are environments that either allow or limit the development of the capabilities of their citizens, in which the networked access to the opportunities offered by the city is a fundamental variable. But thinking about Spatial Opportunities prospectively has allowed us to broaden this discourse by imagining the socialization of the SOi as a strategic planning tool incorporating various social needs into the urban project.

In the end, the experience of raising human and spatial networks through the SOi model was extremely rewarding, an adventure that we hope to be able to repeat in the future with this or other location

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Appendices

Appendix A **Estimated population in Caracas' Self-Produced Neighborhoods**

National Population	(a)	30,149,534
National Electoral Population	(b)	20,733,941
factor	(f)	1.45

Caracas Electoral Population	(b)	2,214,777
Caracas Population:	(a)	3,220,540

Caracas		**Number of Buildings**	**Average Storey**	**Estimated homes**	**hab./home (a)**	**Population (a)**	**%**
Private Single-Family Houses	(c)	59,480.99	1.00	59,480.99	3.20	190,339.17	5.9%
Private Multi-Family Houses	(c)	14,667.87	22.40	328,560.36	3.50	1,149,961.26	35.7%
Public Single-Family Houses	(c)	9,694.47	1.25	12,118.08	3.80	46,048.72	1.4%
Public Multi-Family Houses	(c)	2,271.35	43.10	97,895.26	3.50	342,633.41	10.6%
Self Produced Houses	(c)	210,226.56	**2.15**	**451,987.11**	**3.30**	**1,491,557.45**	**46.3%**
Total:		**296,341**		950,041.80		3,220,540.00	

Sucre Electoral Population	(b)	473,000
Sucre Population:	(a)	687,796

Sucre Municipality (Petare)		**Number of Buildings**	**Average Storey**	**Estimated homes**	**hab./home (a)**	**Population (b*f)**	**%**
Private Single-Family Houses	(c)	9,498.00	1.1	10,447.80	3.20	33,432.96	4.8%
Private Multi-Family Houses	(c)	2,149.00	27.0	58,023.00	3.50	203,080.50	29.1%
Public Single-Family Houses	(c)	776.00	1.5	1,164.00	3.80	4,423.20	0.6%
Public Multi-Family Houses	(c)	168.00	15.0	2,520.00	3.50	8,820.00	1.3%
Self Produced Houses	(c)	**52,253**	**2.6**	**135,857.80**	**3.30**	**448,330.74**	**64.2%**
Total:		**64,844.00**		208,012.60		698,087.40	

Sources:

(a) XIV National Population Census. National Total Results of the Bolivarian Republic of Venezuela (Venezuela. Instituto Nacional de Estadística 2014)
(b) Counting buildings on the 2014 Map
(c) Own calculation

Note:

In several interviews with the Office of Strategic Analysis of the Mayor's Office of the Sucre Municipality of Miranda State, during 2015-2016, its director assured us that the data provided by the Census is underestimated. Several data make him doubt this, such as the demand for public services, or the factor that relates population with registered voters. In this sense, there are indicators to argue that there is a significant margin of error in these data of about 40%. According to the estimations of this local government office, the number of inhabitants in this municipality is close to 600,000 inhabitants.

Appendix B **El Mocho's house research**

B.1. Construction Estimation - **Numerical Summary**

	SUMMARY*	Total (%):	7%	45%	12%	9%	27%	Total (USD
		Total (USD):	2,924.19	17,887.41	4,574.64	3,400.56	10,542.07	**39,329**

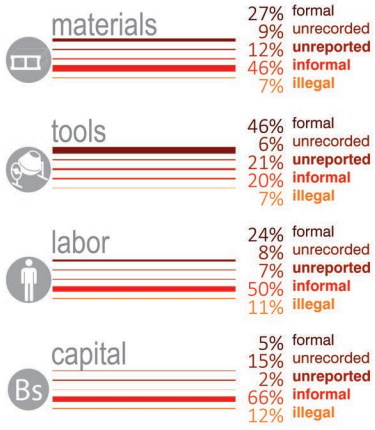
	EL MOCHO HOUSE	illegal	informal	not reported	not recorded	formal	Total Cost
A	A. MATERIALS	2,494	15,961	4,161	3,070	9,346	35,033
		7%	46%	12%	9%	27%	
B	B. TOOLS	50	140	150	43	328	711
		7%	20%	21%	6%	46%	
C	C. LABOR	380	1,786	263	288	868	3,584
		11%	50%	7%	8%	24%	
D	CAPITAL**	12%	66%	2%	15%	5%	

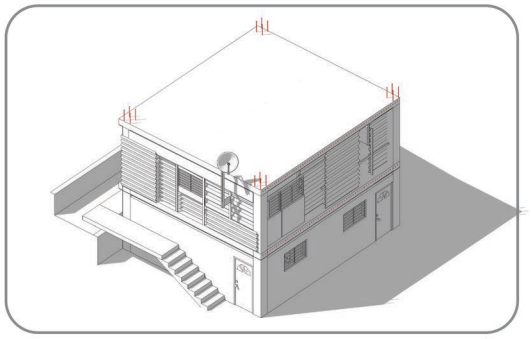
	STRUCTURE						
A	A. MATERIALS	789.30	9,571.29	1,327.67	1,242.27	3,898.89	16,829.42
B	B. TOOLS	50.13	126.05	130.44	36.92	305.88	649.42
C	C. LABOR	73.95	1,135.71	100.96	133.70	173.26	1,617.59
						Total (USD):	**19,096.43**
	ARCHITECTURE						
A	A. MATERIALS	1,031.26	4,012.36	1,438.09	648.95	4,503.51	11,634.18
B	B. TOOLS	-	11.77	15.71	5.12	13.61	46.21
C	C. LABOR	305.96	630.38	122.26	122.26	392.65	1,573.49
						Total (USD):	**13,253.87**
	MEP Systems						
A	A. MATERIALS	673.59	2,377.74	1,395.68	1,178.67	944.03	6,569.71
B	B. TOOLS	-	2.45	4.21	0.54	8.54	15.74
C	C. LABOR	-	19.66	39.63	32.13	301.70	393.12
						Total (USD):	**6,978.57**

* The data of this investigation was the product of a series of meetings with El Mocho, a resident of the Petare (a Self-Produced Neighborhood in Caracas), where we classified the construction systems of his house according to the categories suggested Edgar Feige in un *Defining and Estimating Underground and Informal Economies: The New Institutional Economics Approach* (1990).

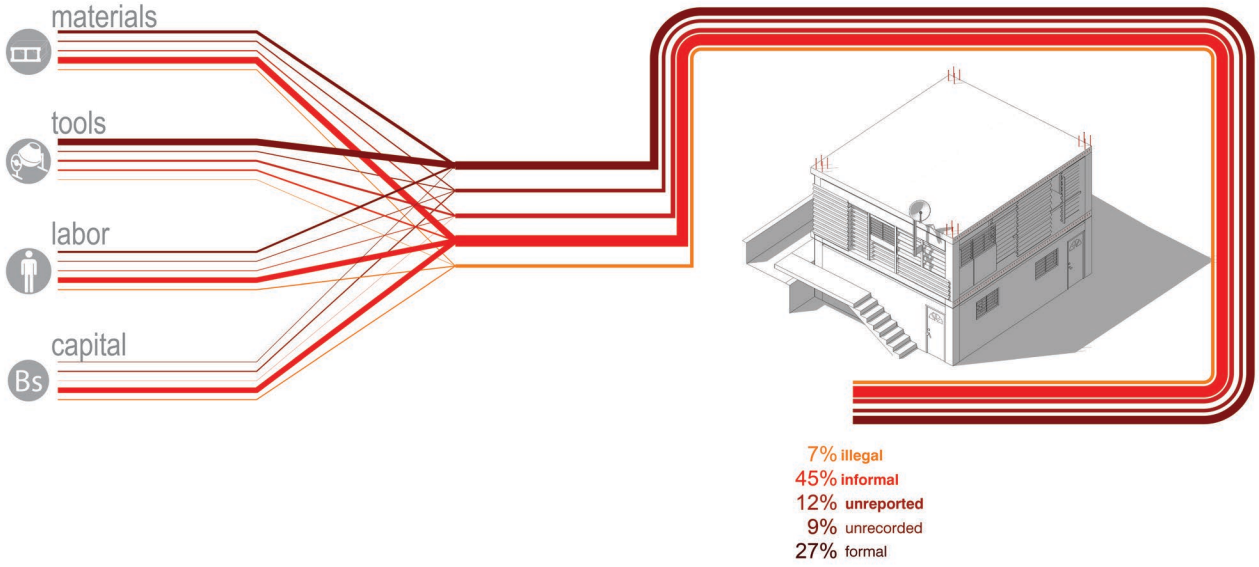
** For security reasons we did not obtain permission to publish the origin of the capital in detail.

B.2. CONSTRUCTION ESTIMATION - **GRAPHIC SUMMARY**





El Mocho House Research - El Mocho House Research - Computing by Categories



El Mocho House Research – Total Count***

***The weighted result arises from the sum of the costs in each category analyzed (illegal, informal, not-reported, not-recorded, and formal activities).

B.3. CONSTRUCTION ESTIMATION - BUILDING SURVEY **1/3**

A. MATERIALS			Total (%):	7%	46%	12%	9%	27%	Total (USD
			Total (USD):	2,494	15,961	4,161	3,070	9,346	35,033
	STRUCTURE (Items in Spanish)	Unit	Cant	Cost	illegal	informal	not reported	not recorded	formal	Total Cost
1	Compactación de terreno	m3	18	-	-	-	-	-	-	-
2	Excavación de zanjas a mano, 0 a 1,5m	m3	3	-	-	-	-	-	-	-
3	Base de piedra picada en fundaciones	m3	5	14.90	4.0	7.24	30.57	24.13	14.48	80.44
4	Concreto 250 en Vigas de Riostra	m3	2	126.74	3.8	186.31	-	-	-	190.11
5	Encofrado de madera en Vigas de Riostra	m2	11	14.29	-	157.22	-	-	-	157.22
6	Losa de Concreto 250 maciza e=0,20m	m3	7	126.74	118.6	-	-	-	793.91	912.54
7	Concreto 250 en Zapatas y Pedestales	m3	1	126.74	6.3	-	25.35	13.94	81.11	126.74
8	Encofrado de madera en Zapatas y pedestales	m2	7	6.11	-	-	39.03	-	4.34	43.37
9	Encofrado de madera en losas (de fundación)	m2	5	17.19	-	24.76	8.25	-	49.51	82.52
10	Concreto 250 en columnas	m3	4	126.74	-	22.18	97.59	62.10	261.72	443.60
11	Losa de tabelones e=12cm	m2	70	45.02	156.4	2,659.54	-	312.89	-	3,128.87
12	Concreto 250 en Vigas	m3	10	126.74	126.7	38.02	-	164.76	937.89	1,267.42
13	Concreto 250 en Escaleras	m3	2	126.74	22.8	164.26	-	41.06	-	228.14
14	Encofrado de madera en Vigas	m2	67	16.83	112.8	451.12	-	67.67	496.23	1,127.81
15	Encofrado de madera en Columnas	m2	35	10.23	35.4	194.70	106.20	-	17.70	354.01
16	Encofrado de madera en Losas (superiores)	m2	2	17.19	-	14.85	11.14	-	15.27	41.26
17	Encofrado de madera en Escaleras	m2	9	24.83	23.2	71.77	19.00	-	97.10	211.10
18	Acero de refuerzo 1 al 3 en Infraestructura	Kg	140	2.44	6.8	129.74	99.01	61.45	44.38	341.42
19	Acero de refuerzo 4 al 7 en Infraestructura	Kg	670	1.47	9.9	148.00	296.00	187.47	345.34	986.68
20	Acero de refuerzo 1 al 3 en Superestructura	Kg	740	2.44	162.4	-	595.53	306.79	739.90	1,804.62
21	Acero de refuerzo 4 al 7 en Superestructura	Kg	3600	1.47	-	5,301.57	-	-	-	5,301.57
	ARCHITECTURE (Items in Spanish)									
22	Pared de bloque arcilla acabado corriente c15	m2	130	6.28	-	171.45	163.29	269.42	212.27	816.43
23	Friso liso de yeso en paredes interiores	m2	127	2.01	-	56.02	56.02	45.84	96.77	254.65
24	Revestimiento pisos con cerámica nacional	m2	60	18.56	-	254.01	-	-	850.38	1,104.39
25	Revestimiento paredes con cerámica nacional	m2	38	15.96	12.1	422.31	120.66	-	48.26	603.30
26	Revestimiento escaleras con cerámica nacional	m2	3	18.56	-	25.61	-	-	25.61	51.23
27	Marcos chapa metálica doblada en paredes c15	m	80	34.86	-	-	557.74	-	2,230.98	2,788.72
28	Puertas metálicas lámina sencilla	m2	4	99.01	90.6	69.70	76.67	90.61	20.91	348.50
29	Puertas de madera entamborada	m2	24	17.33	122.2	-	-	-	285.25	407.50
30	Ventanas bsculante metálica, incluye vidrio	m2	15	213.59	640.8	2,563.08	-	-	-	3,203.85
31	Friso liso de cal en techos interiores	m2	57	3.10	-	63.54	-	-	112.96	176.51
32	Pintura de caucho en paredes interiores	m2	127	3.21	40.7	77.35	-	-	289.04	407.10
33	Pintura de caucho en paredes exteriores	m2	66	3.21	23.3	-	95.28	-	93.16	211.73
34	Pintura de caucho en techos interiores	m2	57	3.21	21.9	36.51	29.21	-	94.92	182.54
35	Esmalte en puertas metálicas	m2	8	2.12	2.5	3.66	5.72	3.97	-	15.89
36	Esmalte en marcos metálicos	m2	18	0.81	2.1	3.73	4.73	3.44	0.29	14.33
37	Esmalte en ventanas metálicas basculantes	m2	15	0.55	-	2.96	1.64	1.31	2.30	8.21
38	Barniz en puertas de madera entamborada	m2	49	1.71	7.6	25.19	20.99	15.11	15.11	83.97
39	Rodapié de vinyl h=10cm	m	52	0.52	2.1	-	5.37	5.91	13.43	26.86
40	Impermeabilización con manto asfáltico	m2	36	23.54	59.3	237.25	279.61	194.88	76.26	847.31
41	Cerradura de pomo para puerta de madera	Un	4	5.42	-	-	6.29	4.77	10.62	21.68
42	Cerradura de sobreponer para puerta metálica	Un	2	29.73	5.9	-	14.87	13.68	24.98	59.47
	MEP Systems (Items in Spanish)									
43	Punto de aguas residuales PVC 2" embutida	Punto	5	5.36	2.7	11.79	5.36	6.43	0.54	26.79
44	Punto de aguas residuales PVC 4" embutida	Punto	2	17.19	3.4	6.88	7.56	8.60	7.91	34.39
45	Llaves de paso 1/2"	Un	7	5.10	3.9	24.98	-	6.78	-	35.69
46	Tubería aguas claras PVC 1/2" sanitaria	m	72	1.84	15.9	47.57	29.07	33.03	6.61	132.13
47	Tubería aguas residuales PVC 2" sanitaria	m	35	35.36	198.0	767.24	-	272.25	-	1,237.48
48	Tubería aguas residuales PVC 4" sanitaria	m	25	17.42	78.4	222.05	-	134.97	-	435.40
49	Tubería ventilación PVC 2" sanitaria	m	15	4.91	7.4	51.56	-	14.73	-	73.66
50	Calentador eléctrico 35l	Un	1	66.31	6.6	36.47	-	13.26	9.95	66.31
51	WC cerámica nacional económico	Un	2	598.90	119.8	539.01	395.28	131.76	11.98	1,197.80
52	Lavamanos cerámica nacional mediano	Un	2	236.78	9.5	293.61	161.01	9.47	-	473.57
53	Ducha nacional económica	Un	2	93.99	9.4	-	84.59	54.51	39.47	187.97
54	Fregadero de acero inoxidable dos poncheras	Un	1	276.97	49.9	99.71	-	66.47	60.93	276.97

55	Grifería de fregadero	Un	1	98.06	9.8	33.34	54.92	-	-	98.06
56	Batea prefabricada de granito nacional	Un	1	63.83	6.4	9.57	35.11	-	12.77	63.83
57	Toallero metálico para fijar con tornillos	Un	2	54.17	5.4	-	36.83	21.67	44.42	108.34
58	Porta rollo de papel sanitario, de cerámica	Un	2	1.65	0.3	1.09	0.66	0.66	0.60	3.31
59	Llave de paso 1"	Un	1	12.05	1.0	5.42	-	1.20	4.46	12.05
60	Dren de piso 2" PVc embutida	Un	5	1.99	2.6	1.99	1.99	0.20	3.18	9.94
61	Tablero eléctrico de 12 circuitos, metálico	Un	1	41.88	5.4	5.03	-	10.47	20.94	41.88
62	Interruptor termomagnético 30A	Un	10	4.88	4.4	10.73	9.75	10.24	13.65	48.75
63	Interruptor termomagnético 70A	Un	1	30.47	2.4	7.01	6.09	5.79	9.14	30.47
64	Interruptor de luz, de palanca, nacional	Un	10	3.43	7.9	8.23	-	6.17	12.00	34.30
65	Interruptor de luz tres vías, de palanca, naciona	Un	2	2.60	0.4	1.46	1.04	0.88	1.40	5.20
66	Tomacorriente doble, nacional, económico	Un	13	3.88	4.5	19.14	10.08	10.08	6.55	50.38
67	Tubería PVC 3/4" para canalización eléctrica	m	160	7.77	87.0	24.85	422.49	248.52	459.77	1,242.61
68	Cajas cuadradas de derivación metálica P.6.8.4	Un	12	25.72	24.7	80.24	18.52	52.47	132.71	308.63
69	Cajas rectangulares para mecanismo electrico	Un	23	0.34	0.7	1.94	0.70	1.24	3.18	7.77
70	Cable THW AWG 12	m	360	0.59	2.1	42.83	83.52	36.41	49.26	214.16
71	Cable THHN AWG 8	m	40	1.56	3.7	13.11	9.37	12.49	23.73	62.44
72	Lámpara de techo, superficial, económica	Un	10	4.94	-	10.88	21.75	7.91	8.90	49.44

B4. CONSTRUCTION ESTIMATION - BUILDING SURVEY **2/3**

B. TOOLS				Total (%):	**7%**	**20%**	**21%**	**6%**	**46%**	Total (USD
				Total (USD):	50	140	150	43	328	711.53

	STRUCTURE (Items in Spanish)	Unit	Cant	Cost	illegal	informal	not reported	not recorded	formal	
1	Compactación de terreno	m3	18	0.30	-	0.98	1.09	0.11	3.26	5.44
2	Excavación de zanjas a mano, 0 a 1,5m	m3	3	0.07	-	0.04	0.04	-	0.12	0.20
3	Base de piedra picada en fundaciones	m3	5	7.48	-	9.29	8.08	-	23.03	40.41
4	Concreto 250 en Vigas de Riostra	m3	2	19.16	28.74	-	-	-	-	28.74
5	Encofrado de madera en Vigas de Riostra	m2	11	0.05	-	0.13	0.11	0.03	0.28	0.55
6	Losa de Concreto 250 maciza e=0,20m	m3	7	15.33	-	30.90	22.07	9.93	47.45	110.36
7	Concreto 250 en Zapatas y Pedestales	m3	1	19.16	-	3.64	3.83	1.53	10.15	19.16
8	Encofrado de madera en Zapatas y pedestales	m2	7	0.05	0.18	-	-	-	0.02	0.36
9	Encofrado de madera en losas (de fundación)	m2	5	0.07	0.25	-	-	0.03	0.03	0.31
10	Concreto 250 en columnas	m3	4	30.89	-	21.62	21.62	7.57	57.30	108.12
11	Losa de tabelones e=12cm	m2	70	0.19	-	2.67	2.67	0.80	7.20	13.34
12	Concreto 250 en Vigas	m3	10	23.29	-	46.59	46.59	4.66	135.11	232.95
13	Concreto 250 en Escaleras	m3	2	23.29	20.97	-	-	3.35	17.61	41.93
14	Encofrado de madera en Vigas	m2	67	0.07	-	0.86	1.44	0.43	2.06	4.79
15	Encofrado de madera en Columnas	m2	35	0.06	-	0.38	0.68	0.32	0.74	2.13
16	Encofrado de madera en Losas (superiores)	m2	2	0.07	-	0.03	0.00	0.03	0.10	0.16
17	Encofrado de madera en Escaleras	m2	9	0.07	-	0.12	0.24	0.12	0.12	0.61
18	Acero de refuerzo 1 al 3 en Infraestructura	Kg	140	0.01	-	0.20	0.49	0.20	0.10	0.99
19	Acero de refuerzo 4 al 7 en Infraestructura	Kg	670	0.01	-	1.04	2.60	0.95	0.14	4.73
20	Acero de refuerzo 1 al 3 en Superestructura	Kg	740	0.01	-	1.29	3.22	1.17	0.18	5.85
21	Acero de refuerzo 4 al 7 en Superestructura	Kg	3600	0.01	-	6.26	15.65	5.69	0.85	28.45
	ARCHITECTURE (Items in Spanish)									
22	Pared de bloque arcilla acabado corriente c15	m2	130	0.06	-	1.51	2.42	-	3.63	7.56
23	Friso liso de yeso en paredes interiores	m2	127	0.09	-	2.31	3.92	0.92	4.38	11.53
24	Revestimiento pisos con cerámica nacional	m2	60	0.06	-	0.75	1.27	0.11	1.60	3.73
25	Revestimiento paredes con cerámica nacional	m2	38	0.09	-	0.68	1.30	-	1.44	3.42
26	Revestimiento escaleras con cerámica nacional	m2	3	0.06	-	0.03	0.04	0.03	0.07	0.17
27	Marcos chapa metálica doblada en paredes c15	m	80	0.05	-	1.22	1.34	0.65	0.85	4.07
28	Puertas metálicas lámina sencilla	m2	4	0.07	-	0.01	0.08	0.02	0.13	0.24
29	Puertas de madera entamborada	m2	24	0.16	-	1.31	1.17	0.66	0.51	3.65
30	Ventanas bsculante metálica, incluye vidrio	m2	15	0.10	-	0.52	0.49	0.41	0.03	1.45
31	Friso liso de cal en techos interiores	m2	57	0.10	-	2.24	2.13	1.54	-	5.91
32	Pintura de caucho en paredes interiores	m2	127	0.01	-	0.23	0.18	0.19	0.19	0.80
33	Pintura de caucho en paredes exteriores	m2	66	0.02	-	0.28	0.26	0.39	0.42	1.36

34	Pintura de caucho en techos interiores	m2	57	0.01	-	0.09	0.20	0.11	0.00	0.41
35	Esmalte en puertas metálicas	m2	8	0.01	-	0.01	0.01	0.01	0.01	0.04
36	Esmalte en marcos metálicos	m2	18	0.00	-	0.01	0.01	0.01	0.01	0.04
37	Esmalte en ventanas metálicas basculantes	m2	15	0.01	-	0.04	0.07	0.02	0.00	0.13
38	Barniz en puertas de madera entamborada	m2	49	0.01	-	0.06	0.16	0.05	0.03	0.30
39	Rodapié de vinyl h=10cm	m	52	0.00	-	0.03	0.07	0.00	0.04	0.14
40	Impermeabilización con manto asfáltico	m2	36	0.03	-	0.35	0.52	-	0.10	0.97
41	Cerradura de pomo para puerta de madera	Un	4	0.05	-	0.04	0.03	-	0.10	0.18
42	Cerradura de sobreponer para puerta metálica	Un	2	0.06	-	0.03	0.03	-	0.05	0.11
	MEP Systems (Items in Spanish)									
43	Punto de aguas residuales PVC 2" embutida	Punto	5	0.09	-	0.10	0.10	-	0.26	0.45
44	Punto de aguas residuales PVC 4" embutida	Punto	2	0.11	-	0.05	0.05	0.02	0.11	0.23
45	Llaves de paso 1/2"	Un	7	0.01	-	0.02	0.02	0.01	0.04	0.09
46	Tubería aguas claras PVC 1/2" sanitaria	m	72	0.03	-	-	0.46	0.17	1.23	1.86
47	Tubería aguas residuales PVC 2" sanitaria	m	35	0.03	-	-	0.31	0.04	0.85	1.20
48	Tubería aguas residuales PVC 4" sanitaria	m	25	0.03	-	-	0.20	-	0.60	0.81
49	Tubería ventilación PVC 2" sanitaria	m	15	0.02	-	-	0.10	0.01	0.25	0.36
50	Calentador eléctrico 35l	Un	1	0.35	-	0.07	0.10	0.01	0.17	0.35
51	WC cerámica nacional económico	Un	2	0.55	-	0.20	0.33	0.08	0.49	1.09
52	Lavamanos cerámica nacional mediano	Un	2	0.41	-	0.14	0.17	0.02	0.49	0.82
53	Ducha nacional económica	Un	2	0.40	-	0.14	0.19	0.06	0.42	0.81
54	Fregadero de acero inoxidable dos poncheras	Un	1	0.41	-	0.10	0.06	-	0.25	0.41
55	Grifería de fregadero	Un	1	0.41	-	0.12	0.03	-	0.25	0.41
56	Batea prefabricada de granito nacional	Un	1	0.33	-	0.11	0.11	0.08	0.03	0.33
57	Toallero metálico para fijar con tornillos	Un	2	0.02	-	0.02	0.01	-	0.01	0.03
58	Porta rollo de papel sanitario, de cerámica	Un	2	0.02	-	0.00	0.01	-	0.02	0.03
59	Llave de paso 1"	Un	1	0.01	-	0.01	0.00	-	0.00	0.01
60	Dren de piso 2" PVc embutida	Un	5	0.05	-	0.14	0.06	0.00	0.02	0.23
61	Tablero eléctrico de 12 circuitos, metálico	Un	1	0.22	-	0.04	0.05	-	0.12	0.22
62	Interruptor termomagnético 30A	Un	10	0.08	-	0.16	0.19	0.02	0.40	0.78
63	Interruptor termomagnético 70A	Un	1	0.10	-	0.02	0.03	0.01	0.04	0.10
64	Interruptor de luz, de palanca, nacional	Un	10	0.02	-	0.05	0.06	0.00	0.12	0.24
65	Interruptor de luz tres vías, de palanca, naciona	Un	2	0.03	-	0.01	0.01	-	0.03	0.06
66	Tomacorriente doble, nacional, económico	Un	13	0.03	-	0.07	0.08	-	0.18	0.33
67	Tubería PVC 3/4" para canalización eléctrica	m	160	0.01	-	0.30	0.36	-	0.83	1.48
68	Cajas cuadradas de derivación metálica P.6.8.4	Un	12	0.06	-	0.14	0.18	-	0.39	0.71
69	Cajas rectangulares para mecanismo electrico	Un	23	0.03	-	0.13	0.29	0.01	0.21	0.64
70	Cable THW AWG 12	m	360	0.00	-	0.15	0.44	-	0.16	0.74
71	Cable THHN AWG 8	m	40	0.00	-	0.04	0.04	0.00	0.11	0.19
72	Lámpara de techo, superficial, económica	Un	10	0.07	-	0.15	0.15	-	0.44	0.73

B5. CONSTRUCTION ESTIMATION - BUILDING SURVEY **3/3**

C. LABOR	Total (%):	**11%**	**50%**	**7%**	**8%**	**24%**	Total (USD
	Total (USD):	380	1,786	263	288	868	3,584

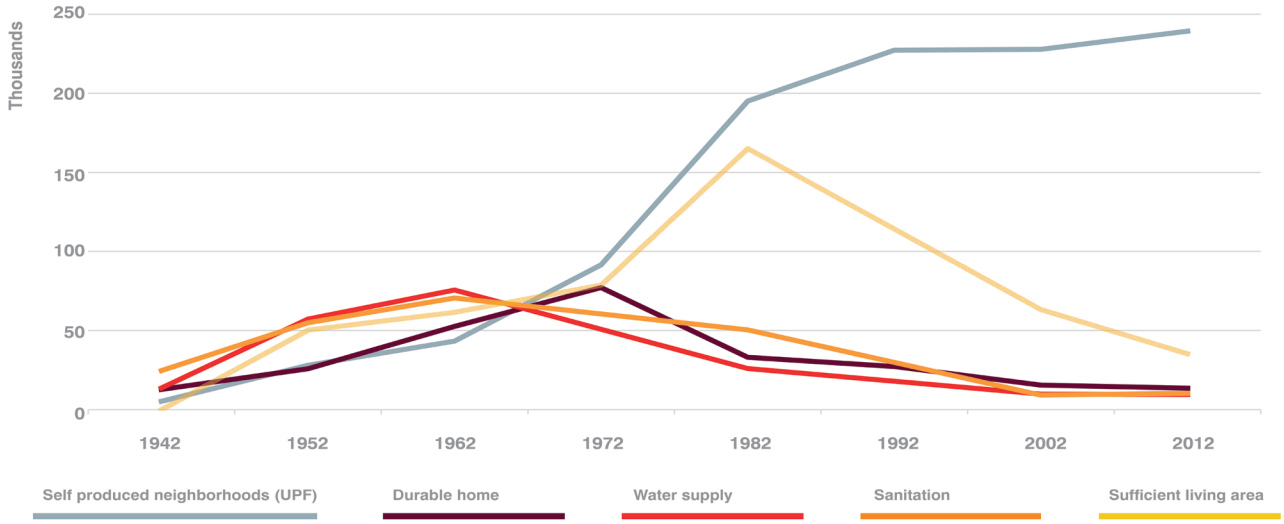
	STRUCTURE (Items in Spanish)	Unit	Cant	Cost	illegal	informal	not reported	not recorded	formal	Total Cost
1	Compactación de terreno	m3	18	5.76	62.18	41.46	-	-	-	103.64
2	Excavación de zanjas a mano, 0 a 1,5m	m3	3	5.37	9.01	6.01	-	-	-	15.02
3	Base de piedra picada en fundaciones	m3	5	0.85	2.76	1.84	-	-	-	4.59
4	Concreto 250 en Vigas de Riostra	m3	2	10.14	-	11.41	1.37	2.28	0.15	15.21
5	Encofrado de madera en Vigas de Riostra	m2	11	2.16	-	17.81	2.14	3.56	0.24	23.75
6	Losa de Concreto 250 maciza e=0,20m	m3	7	8.11	-	43.81	4.67	9.35	0.58	58.42
7	Concreto 250 en Zapatas y Pedestales	m3	1	10.14	-	6.08	0.91	2.74	0.41	10.14
8	Encofrado de madera en Zapatas y pedestales	m2	7	2.16	-	11.50	1.07	1.07	1.69	15.33
9	Encofrado de madera en losas (de fundación)	m2	5	2.51	-	9.03	1.08	1.08	0.84	12.04
10	Concreto 250 en columnas	m3	4	13.09	-	34.35	3.21	-	8.24	45.80
11	Losa de tabelones e=12cm	m2	70	3.81	-	198.78	18.55	-	47.71	265.04
12	Concreto 250 en Vigas	m3	10	14.13	-	105.99	14.13	2.83	18.37	141.33
13	Concreto 250 en Escaleras	m3	2	14.13	-	15.26	1.27	6.36	2.54	25.44
14	Encofrado de madera en Vigas	m2	67	2.74	-	109.99	11.00	60.50	1.83	183.32

15	Encofrado de madera en Columnas	m2	35	2.51	-	65.09	3.47	-	18.22	86.78
16	Encofrado de madera en Losas (superiores)	m2	2	2.51	-	3.01	0.18	2.71	0.12	6.02
17	Encofrado de madera en Escaleras	m2	9	2.74	-	17.44	0.47	-	5.35	23.26
18	Acero de refuerzo 1 al 3 en Infraestructura	Kg	140	0.10	-	10.72	1.29	1.29	1.00	14.29
19	Acero de refuerzo 4 al 7 en Infraestructura	Kg	670	0.10	-	51.30	6.16	4.10	6.84	68.39
20	Acero de refuerzo 1 al 3 en Superestructura	Kg	740	0.12	-	63.91	5.11	6.82	9.37	85.21
21	Acero de refuerzo 4 al 7 en Superestructura	Kg	3600	0.12	-	310.92	24.87	29.02	49.75	414.56
	ARCHITECTURE (Items in Spanish)									
22	Pared de bloque arcilla acabado corriente c15	m2	130	1.49	-	38.79	17.45	17.45	120.24	193.93
23	Friso liso de yeso en paredes interiores	m2	127	4.43	224.79	224.79	50.58	50.58	11.24	561.97
24	Revestimiento pisos con cerámica nacional	m2	60	1.86	44.38	44.38	8.88	8.88	4.44	110.95
25	Revestimiento paredes con cerámica nacional	m2	38	2.33	35.24	35.24	7.05	7.05	3.52	88.11
26	Revestimiento escaleras con cerámica nacional	m2	3	1.86	1.54	2.57	0.41	0.41	0.21	5.15
27	Marcos chapa metálica doblada en paredes c15	m	80	1.49	-	71.61	9.55	9.55	28.64	119.34
28	Puertas metálicas lámina sencilla	m2	4	3.53	-	2.49	0.87	0.87	8.21	12.44
29	Puertas de madera entamborada	m2	24	4.67	-	21.98	7.69	7.69	72.55	109.92
30	Ventanas bsculante metálica, incluye vidrio	m2	15	3.45	-	10.36	3.11	3.11	35.24	51.82
31	Friso liso de cal en techos interiores	m2	57	2.66	-	90.95	7.58	7.58	45.47	151.58
32	Pintura de caucho en paredes interiores	m2	127	0.32	-	24.29	1.62	1.62	12.95	40.48
33	Pintura de caucho en paredes exteriores	m2	66	0.34	-	13.47	0.67	0.67	7.63	22.45
34	Pintura de caucho en techos interiores	m2	57	0.36	-	12.45	0.41	0.41	7.47	20.74
35	Esmalte en puertas metálicas	m2	8	0.43	-	1.91	0.29	0.29	0.70	3.19
36	Esmalte en marcos metálicos	m2	18	0.21	-	2.25	0.34	0.34	0.82	3.74
37	Esmalte en ventanas metálicas basculantes	m2	15	0.85	-	7.66	1.15	1.15	2.81	12.76
38	Barniz en puertas de madera entamborada	m2	49	0.09	-	2.72	0.41	0.41	1.00	4.53
39	Rodapié de vinyl h=10cm	m	52	0.28	-	8.75	1.02	1.02	3.79	14.58
40	Impermeabilización con manto asfáltico	m2	36	0.95	-	13.73	2.40	2.40	15.79	34.32
41	Cerradura de pomo para puerta de madera	Un	4	1.77	-	-	0.42	0.42	6.22	7.07
42	Cerradura de sobreponer para puerta metálica	Un	2	2.21	-	-	0.35	0.35	3.71	4.42
	MEP Systems (Items in Spanish)									
43	Punto de aguas residuales PVC 2" embutida	Punto	5	2.63	-	0.66	1.18	1.18	10.13	13.15
44	Punto de aguas residuales PVC 4" embutida	Punto	2	3.29	-	0.33	0.53	0.53	5.19	6.58
45	Llaves de paso 1/2"	Un	7	1.72	-	0.60	1.08	1.08	9.26	12.02
46	Tubería aguas claras PVC 1/2" sanitaria	m	72	0.66	-	2.37	2.37	2.37	40.24	47.34
47	Tubería aguas residuales PVC 2" sanitaria	m	35	1.14	-	1.99	1.59	1.59	34.67	39.85
48	Tubería aguas residuales PVC 4" sanitaria	m	25	1.07	-	1.33	0.80	0.80	23.75	26.68
49	Tubería ventilación PVC 2" sanitaria	m	15	0.71	-	0.53	0.42	0.42	9.22	10.60
50	Calentador eléctrico 35l	Un	1	6.67	-	0.33	0.53	0.53	5.27	6.67
51	WC cerámica nacional económico	Un	2	6.02	-	0.60	1.08	1.08	9.27	12.04
52	Lavamanos cerámica nacional mediano	Un	2	4.51	-	0.45	1.08	1.08	6.41	9.03
53	Ducha nacional económica	Un	2	4.42	-	0.44	1.24	1.24	5.92	8.83
54	Fregadero de acero inoxidable dos poncheras	Un	1	4.51	-	0.23	0.54	0.54	3.21	4.51
55	Grifería de fregadero	Un	1	4.51	-	0.23	0.41	0.41	3.48	4.51
56	Batea prefabricada de granito nacional	Un	1	3.61	-	0.18	0.33	0.33	2.78	3.61
57	Toallero metálico para fijar con tornillos	Un	2	0.88	-	0.09	0.16	0.16	1.36	1.77
58	Porta rollo de papel sanitario, de cerámica	Un	2	0.88	-	0.09	0.16	0.16	1.36	1.77
59	Llave de paso 1"	Un	1	1.83	-	0.09	0.40	-	1.34	1.83
60	Dren de piso 2" PVc embutida	Un	5	3.34	-	0.83	0.33	0.33	15.18	16.68
61	Tablero eléctrico de 12 circuitos, metálico	Un	1	4.12	-	0.21	0.91	-	3.01	4.12
62	Interruptor termomagnético 30A	Un	10	1.77	-	0.88	4.42	-	12.37	17.67
63	Interruptor termomagnético 70A	Un	1	2.21	-	0.11	0.55	-	1.55	2.21
64	Interruptor de luz, de palanca, nacional	Un	10	0.85	-	0.43	2.30	-	5.78	8.51
65	Interruptor de luz tres vías, de palanca, naciona	Un	2	1.02	-	0.10	0.18	-	1.76	2.04
66	Tomacorriente doble, nacional, económico	Un	13	0.91	-	0.59	1.07	1.07	9.12	11.85
67	Tubería PVC 3/4" para canalización eléctrica	m	160	0.36	-	2.86	5.15	5.15	44.08	57.25
68	Cajas cuadradas de derivación metálica P.6.8.4	Un	12	1.10	-	0.66	1.06	1.06	10.42	13.19
69	Cajas rectangulares para mecanismo electrico	Un	23	0.55	-	0.63	5.06	6.32	0.63	12.64
70	Cable THW AWG 12	m	360	0.04	-	0.66	2.63	2.63	7.22	13.13
71	Cable THHN AWG 8	m	40	0.09	-	0.17	0.31	0.31	2.62	3.40
72	Lámpara de techo, superficial, económica	Un	10	1.96	-	0.98	1.77	1.77	15.11	19.63

* All costs are in dollars at the unofficial exchange rate at the time of the interview.

Appendix C UN-Habitat Slum Categories vs. Self-Produced Neighborhoods

Self produced neighborhoods vs UN-Hanitat categories on slums								
Census (a)	1941	1951	1961	1971	1981	1991	2001	2011
Self-Produced Neighborhoods Physical Planning Units - UPF (c)	5,381	28,044	43,259	91,536	195,080	227,294	227,712	239,279
1. Durable Homes Rachos (b)	12,788	25,855	52,572	77,137	33,122	27,233	15,472	13,610
2. Water supply (water wells, cistern, truck, or no water)	13,743	57,243	75,650	50,825	25,999	17,921	9,842	9,621
3. Access to sanition (septic tank, letrine)	24,738	54,937	70,625	60,538	50,450	29,843	9,236	10,332
4. Sufficient living area (more then two persons per bedroom)		50,287	61,575	78,730	165,089	114,216	63,342	35,349



Sources:

(a) Census data

- VII National Population Census (Dirección General de Estadistica 1944)
- IX National Population Census (Oficina Central del Censo 1961)
- IV Caracas Household Survey (Dirección General de Estadistica 1970)
- XI National Population Census (Oficina Central de Estadística e Información 1985)
- XII National Population Census (Oficina Central de Estadística e Información 1991)
- XIII National Population Census (Venezuela. Oficina Central del Censo Nacional. 2005)
- XIV National Population Census (Venezuela. Instituto Nacional de Estadística 2014)

(b) Rancho: structure used as a family home built with waste materials such as boards, cardboard, cane and the like. Definition taken from the glossary of terms on the 2011 data from the XIV National Population Census.

(c) Area Metropolitana de Caracas (AMC, Caracas Metropolitan Area), includes the Distrito Capital and Baruta, Chacao, El Hatillo and Sucre municipalities of Miranda State

Appendix D **Applied Process for the Analysis of Spatial Opportunities**

Step 1. Survey and Build of cartography that includes data on pathways and destination points. Pathways will make it possible to analyze the distance - a consequence of a dynamic relationship between proximity and connectivity - between points of origin and points of destination.

A. Build the cartography of the city including the road network and the buildings; it is useful to use different layers for each type of building and road, it might be useful later[58].

B. With a land use survey of the city save the specific information of each building as a tag.

Step 2. Calculate the accessibility index (gravity) for all the points determined as an origin.

C. Build the network on the toolbox[59]: adding the curves, the origins and the destinations.

D. Run the the centrality index[60] tool (variable: beta: 0.0002, distance:1000m, weight: population. (these variables may change according to the model).

[58] For this research we built the cartography, its street network, points of origins and of destination in Rhinocerus

[59] Giving the similarities of many the gravity access index reviewed in the literature, we have decided to use this one as explained by Professor Andres Sevtsuk from Massachusetts Institute of Technology, just for being the first one that the author knew in the course Spatial Analytics of the Built Environment at Harvard Graduate of Design. Consequently, and given the ease of this software and its compatibility with the data available for Caracas, we have decided to use the Urban Network Analysis (UNA) Tool developed by Professor Sevtsuk in the City Form Lab (http://cityform.mit.edu/).

[60] For this research we define of the distance decay factors (β) equal to 0.0002: distance: of 1000m, Weight of Destination equal to job sources according to census data. Beta was determined after a calibration study carried out in conjunction with Andres Sevtsuk at the City Form Lab (http://cityform.mit.edu/).

E. Run the the centrality index[61] tool (variable: beta: 0.0002, distance:1000m, weight: population. (these variables may change according to the model).

F. Save the gravity results as weight (UNA Tool command: *unaSaveAsWeight: (a)* unaSaveAsWeight, (b) select all points on the Origen category and press enter, (c) name the weight and press enter/

G. Export the tables (UNA Tool command: *unaExport: select the origins points and press enter / variables: format:TSV , exporttype:file , results=include , coordinates=include) Pick the files name and location, press enter*).

Step 3. Calculate the Spatial Opportunity Index (SOi) for all the points determined as origins.

H. Open the Spreadsheet[62]t File (Once the file is open we'll see all the points(rows) and their attributes (columns).

I. Organize cells according to the gravity column.

J. Fill all blank cells of Gravity's columns with the value "0"

K. Add a column at the end, name: *diff* (without spaces, punctuation or any symbols).

L. Calculate the Spatial Opportunity Index (In Excel work with the formula = *[gravity value] / MAX [gravity column])*

[61] For this research we define of the distance decay factors (β) equal to 0.0002: distance: of 1000m, Weight of Destination equal to job sources according to census data. Beta was determined after a calibration study carried out in conjunction with Andres Sevtsuk at the City Form Lab (http://cityform.mit.edu/).
[62] For this research we worked with Microsoft Excel and Stata.

Step 4. Classify data of Spatial Opportunity Index in ten groups according to percentiles in order to make more legible the graphic representations of the maps.

M. Add another column, name: *perdiff* (without spaces, punctuation or symbols).

N. Calculate percentiles (In Excel work with the function: *PERCENTILERANK .INC: (a)* variables: *array*: all the values to consider, *x*=the value, significance: the number of percentiles groups, (b) copy and paste this formula on all cells).

(This function may take a while)

O. Once the Percentilerank is done save the file (Do not change the file extension, you may save a separate copy of this file, but keep the tsv file).

P. Close the tsv file (Most of graphic software, such as Rhino or UNA will be able to read the tsv file if the file is open or being used by another app).

Step 5. Generate maps to spatialize SOi classified by percentiles.

Q. Open the graphic software model.

R. Import the values from the tsv (In UNA Tool working with the command *unaMergeData: (a)* located and select the tsv file and press enter, variables: update=*all*, override=*ON)*

S. Produce the Map (In UNA Tool working with the command *unaGraphics* - variables: mode*: weights* weight: *perdiff- press enter and bake the results with unaBakeWeightColor).*

Appendix E **Spatial Opportunity Index (Soi) - Historic Map**

Historical evolution of Caracas' spatial opportunities

Map 1578 - Colonial Times
Sources: census: (Valery and Morales Tucker 1990, Tables 24,28) | network, jobs and destinations: (Valery and Morales Tucker 1990, Tables 15,16).

Map 1810 - Country Independence
Sources: census: I National Population Census (Venezuela 1873) (Valery and Morales Tucker 1990, Tables 24,28) | network: (De-Sola Ricardo 1967, Maps 4,17) | buildings: (Valery and Morales Tucker 1990, Tables 34) / jobs: (Valery and Morales Tucker 1990, Tables 17,22).

Map 1875 - The Republican Era
Sources: census: II National Population Census (Venezuela 1881), (Valery and Morales Tucker 1990, Tables 24,28) | network: (De-Sola Ricardo 1967, Map 25) | buildings and jobs: (Valery and Morales Tucker 1990, Table 23,24).

Map 1928 - Oil Boom
Sources: census: V National Population Census (Venezuela 1926) | network: (De-Sola Ricardo 1967, Map 68) | buildings: (De-Sola Ricardo 1967, Map 102) | jobs: (De-Sola Ricardo 1967, Map 59).

Map 1939 - The Hausmannian Project
Sources: census: VI National Population Census (Venezuela 1936a) / network: (Gobierno del Distrito Federal 1939, 68), (De-Sola Ricardo 1967, Map 75) | buildings and jobs: (Hernández de Lasala 1997, 34–35) | jobs: (De-Sola Ricardo 1967, 102).

Map 1951 - The Us-Zoning Approach
Sources: census: VII National Population Census (Dirección General de Estadistica 1944) | network and building: (De-Sola Ricardo 1967, 103) | jobs: estimated by building typologies.

Map 1958 - Diversification of Planning
Sources: census: VIII National Census (Venezuela. Oficina Central del Censo Nacional. 1955) | network and building:Variations of (Estereofoto 2000) | jobs: estimated by building typologies.

Map 1969 - Planning Inertia
Sources: census: IX National Population Census (Venezuela. Oficina Central del Censo 1962b) | network and building: (Cartografia Nacional 1966) in (Enlace Arquitectura 2015) | jobs: (OMPU 1969), estimated by building typologies.

Map 1984 - Barrios Recognition
Sources: census: XII National Population Census (Oficina Central de Estadística e Información 1985) | network and building: (Tranarg 2000) in (Enlace Arquitectura 2015) | jobs: (OMPU 1979) (OMPU 1983), estimated by building typologies.

Map 2000 - Consolidation of Barrios Recognition
Sources: census: XII National Population Census (Oficina Central de Estadística e Información 1991) | network and building: (Enlace Arquitectura 2015) | jobs: estimated by building typologies.

Map 2015 - Plan Caracas 2020
Sources: census XIV National Population Census (Venezuela. Instituto Nacional de Estadística 2014) | network: (Estereofoto 2000) / Jobs: Estimations by Google Earth

Map 2020 - Existing Conditions
Sources: census XIV National Population Census (Venezuela. Instituto Nacional de Estadística 2014) / network: (Estereofoto 2000) / Jobs: Estimations by Google Earth

Spatial Opportunities for Self-Produced Environments

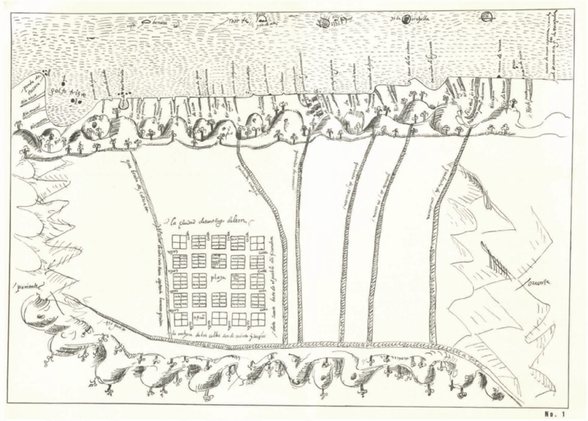
Origins: houses
1,800 hab.

Destinations: jobs
number of jobs is not available

Access Index

Urban Plan

1. Plan of Pimentel, 1578



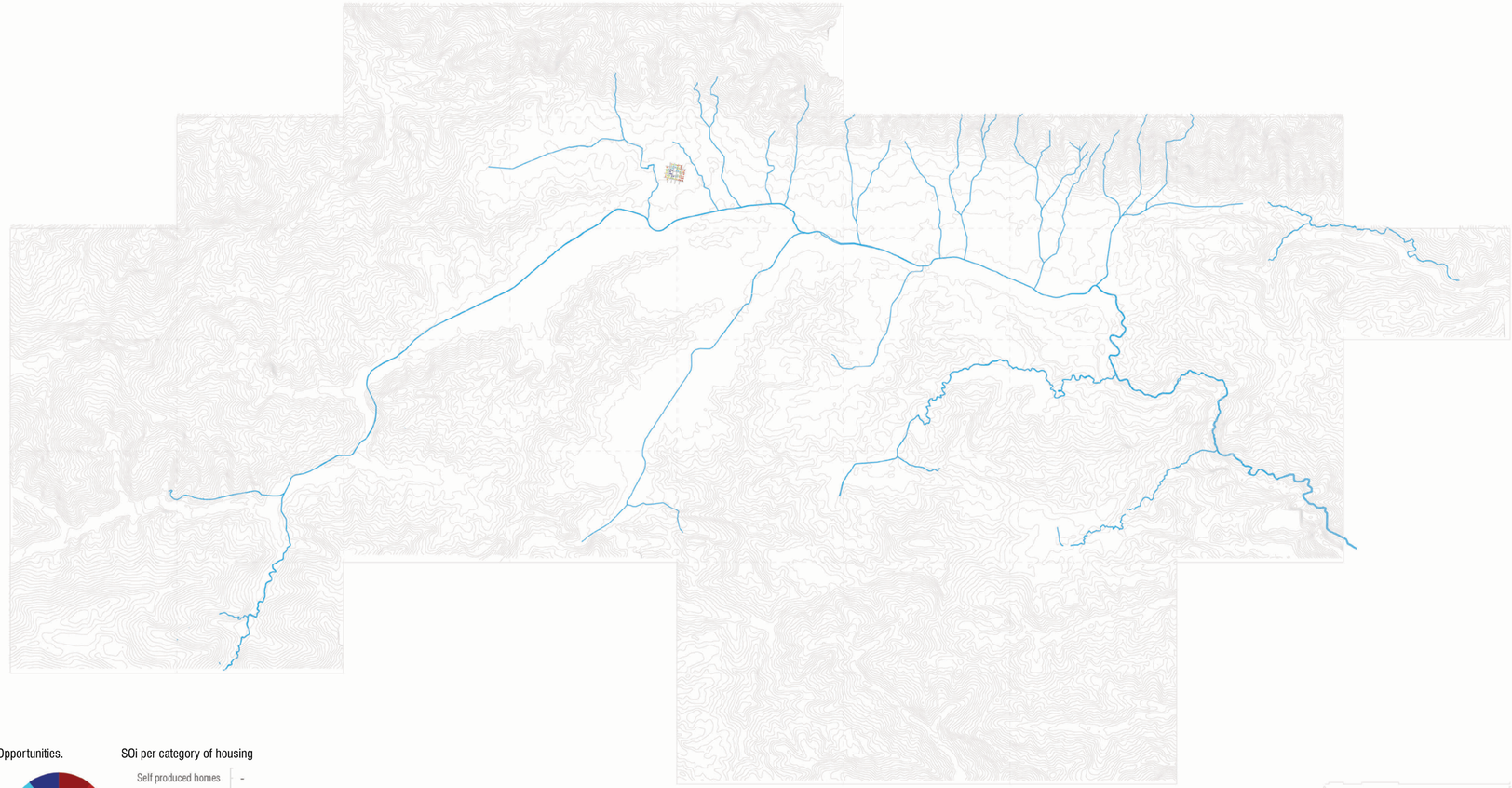
Sources: Irma De-Sola, R. 1967. Contribución al Estudio de los Mapas de Caracas. Map n° 01

Percentile distribution of SOi

Soi	1	2	3	4	5	6	7	8	9	10
mean of Soi	0.936	0.951	0.955	0.962	0.966	0.972	0.974	0.979	0.982	0.991
median of Gravity	39	39	39	40	40	40	40	40	40	41
percentage	11%	9%	11%	9%	9%	11%	9%	11%	10%	10%

Sources: Irma De-Sola, R. (1966). Map n° 01

1578 - Colonial Times



Opportunities.



SOi per category of housing



origin
housing out of reach

destination
work public spaces

SOi
0 1

Sources: census: (Valery and Morales Tucker 1990, Tables 24, 28) / network, jobs and destinations: (Valery and Morales Tucker 1990, Maps 15-16)

Spatial Opportunities for Self-Produced Environments

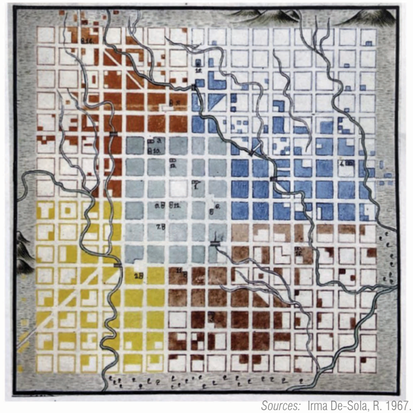
Origins: houses
32,000 hab.

Destinations: jobs
1,947 estimated jobs.

Access Index

Urban Plan

1. Exato Mapa de la Ciudad de Caracas. Bolívar. 1772.
2. Plano de la Ciudad de Caracas, con Divicion (sic) de sus barrios. 1775.
3. Plano Topográfico de la Ciudad de Caracas. Laue. 1852



Sources: Irma De-Sola, R. 1967. Contribución al Estudio de los Mapas de Caracas. Maps n° 04 & 17

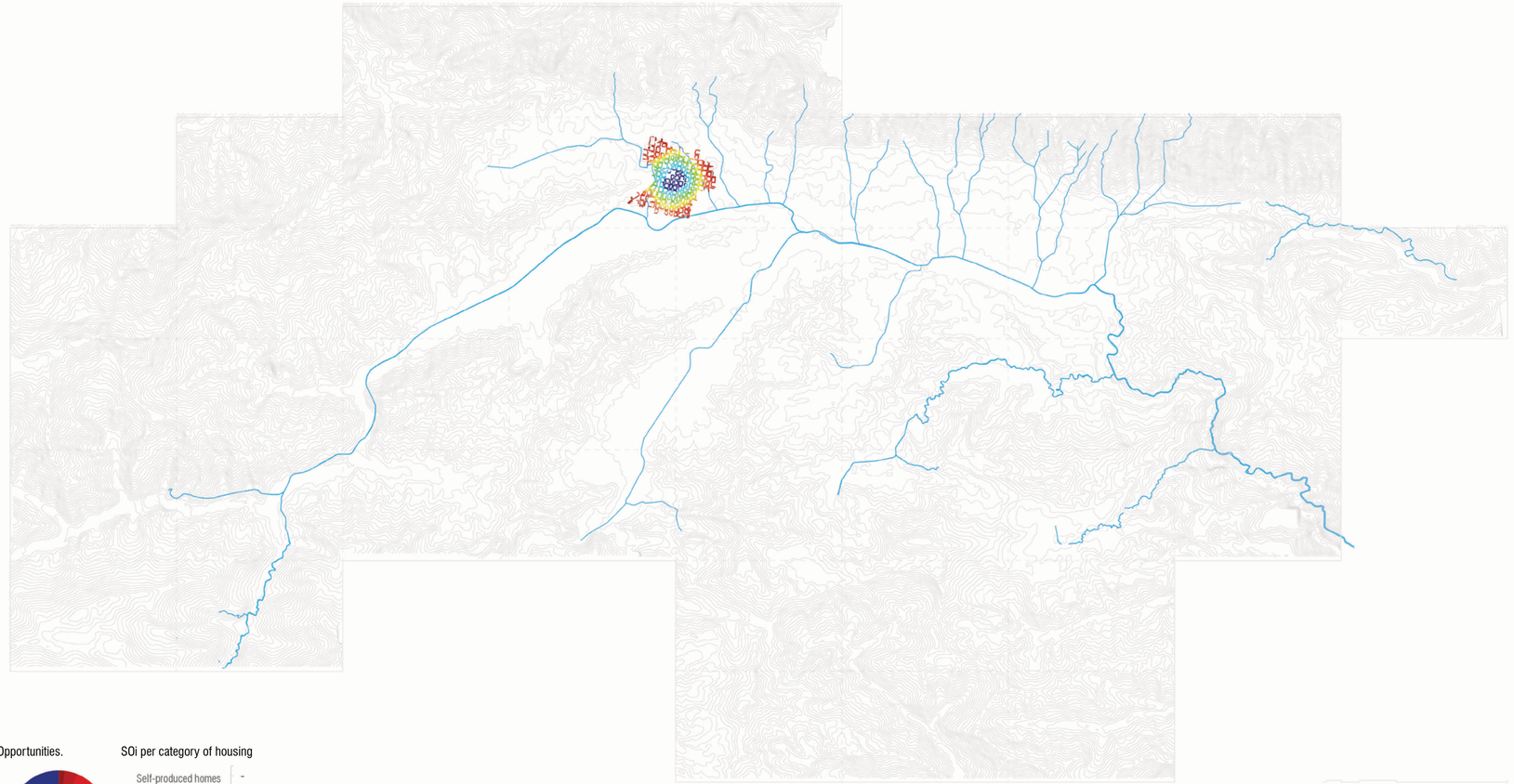
Source 2: CEHOPU. 1989. La Ciudad Hispanoamericana : El Sueño de Un Orden.

Percentile distribution of SOi

	1	2	3	4	5	6	7	8	9	10
mean of Soi	0.14	0.26	0.37	0.46	0.55	0.64	0.74	0.81	0.88	0.95
median of Gravity	252	417	604	752	895	1,050	1,202	1,330	1,438	1,362
percentage	0.02	0.04	0.06	0.08	0.09	0.11	0.13	0.14	0.15	0.16

Sources: Irma De-Sola, R. (1967). Map n° 01

1810 - Country Independence



Opportunities.



SOi per category of housing



origin housing out of reach destination work public spaces SOi 0 1

Sources: census: I National Population Census (Venezuela 1873), (Valery and Morales Tucker 1990, Tables 24, 28) / network: (De-Sola Ricardo 1967, Maps 4, 17) / buildings: (Valery and Morales Tucker 1990, Map 34) / jobs: (Valery and Morales Tucker 1990, Maps 17-22).

Spatial Opportunities for Self-Produced Environments

Origins: houses
91,997 hab.

Destinations: jobs
2,430 estimated jobs.

Access Index



Urban Plan

1. First National Census. 1873. President Antonio Guzmán Blanco
   - Self-Produced Neighborhoods surveyed as *sitios, callejones y caserios* (places, alleyways, and homesteads (qualification of the environment).

2. Third National Census. 1891. President Raimundo Andueza Palacio.
   - Self-Produced Neighborhoods surveyed as *ranchos* (construction system).





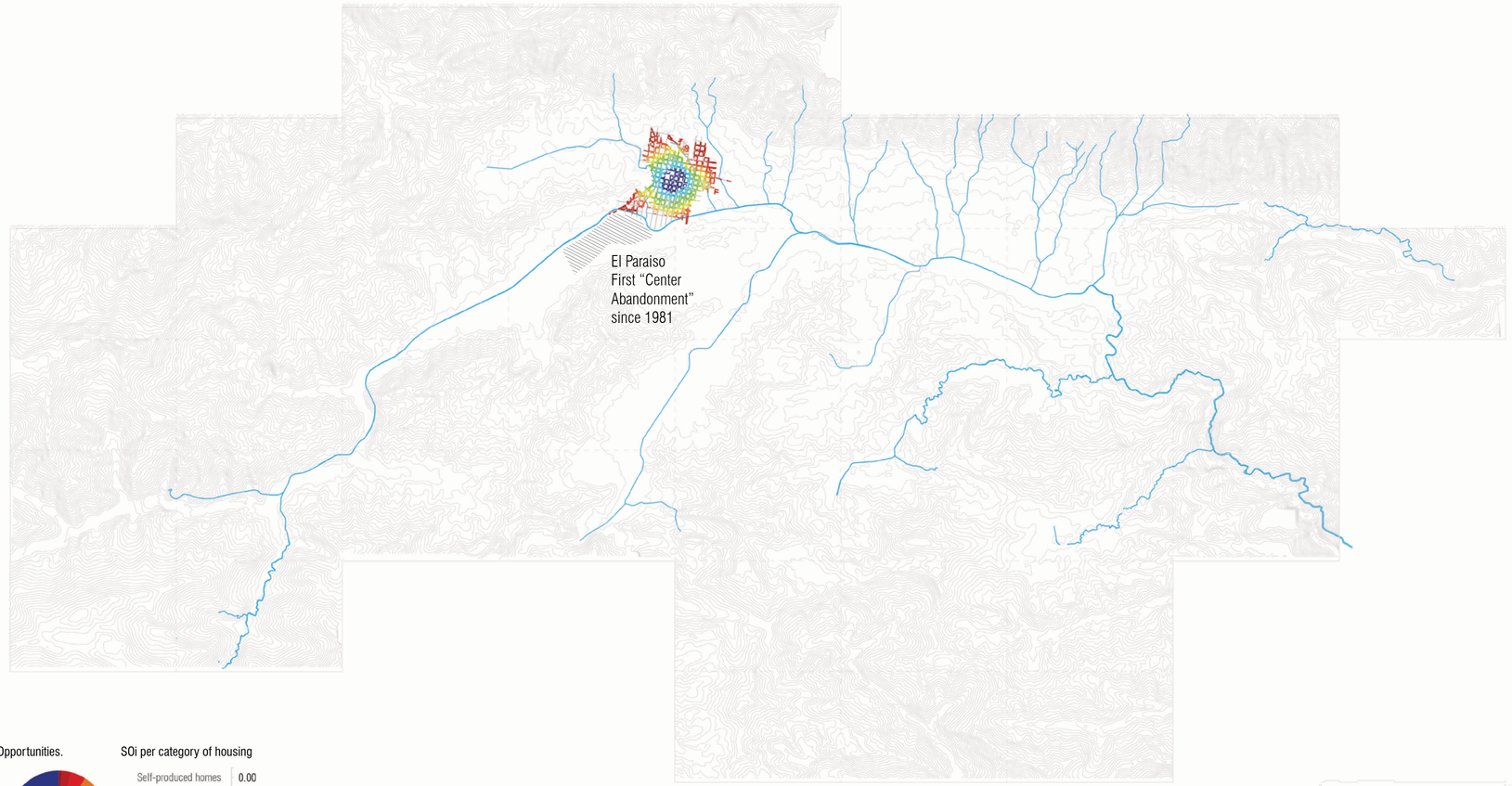
Sources: Venezuela. 1873. Primer Censo de La República. Decreto Del ... General Guzmán Blanco, Presidente de La República, de 3 de Junio de 1873. xxiv, 584 p.

Sources: Venezuela. 1891. Tercer Censo de La Republica. Decreto Del Doctor R. Andueza Palacio, Presidente de La Republica, de 26 de Agosto de 1890 ... 4 v.

Percentile distribution of SOi

	1	2	3	4	5	6	7	8	9	10
mean	0.067	0.143	0.224	0.331	0.435	0.548	0.664	0.762	0.849	0.941
median of Gravity	147	270	417	621	811	1,034	1,248	1,439	1,602	1,773
percentage	1%	3%	5%	7%	9%	11%	13%	15%	17%	19%

1875 - Republic Era



Opportunities.



SOi per category of housing



origin housing out of reach destination work public spaces SOi 0 1

Sources: census: II National Population Census (Venezuela 1881), (Valery and Morales Tucker 1990, Tables 24, 28) / network: (De-Sola Ricardo 1967, Map 25) / buildings and jobs: (Valery and Morales Tucker 1990, Map 23, 24)

Spatial Opportunities for Self-Produced Environments

Origins: houses
135,253 hab.

Destinations: jobs
21,133 estimated jobs.

Access Index



Milestone

1. Creation of Banco Obrero

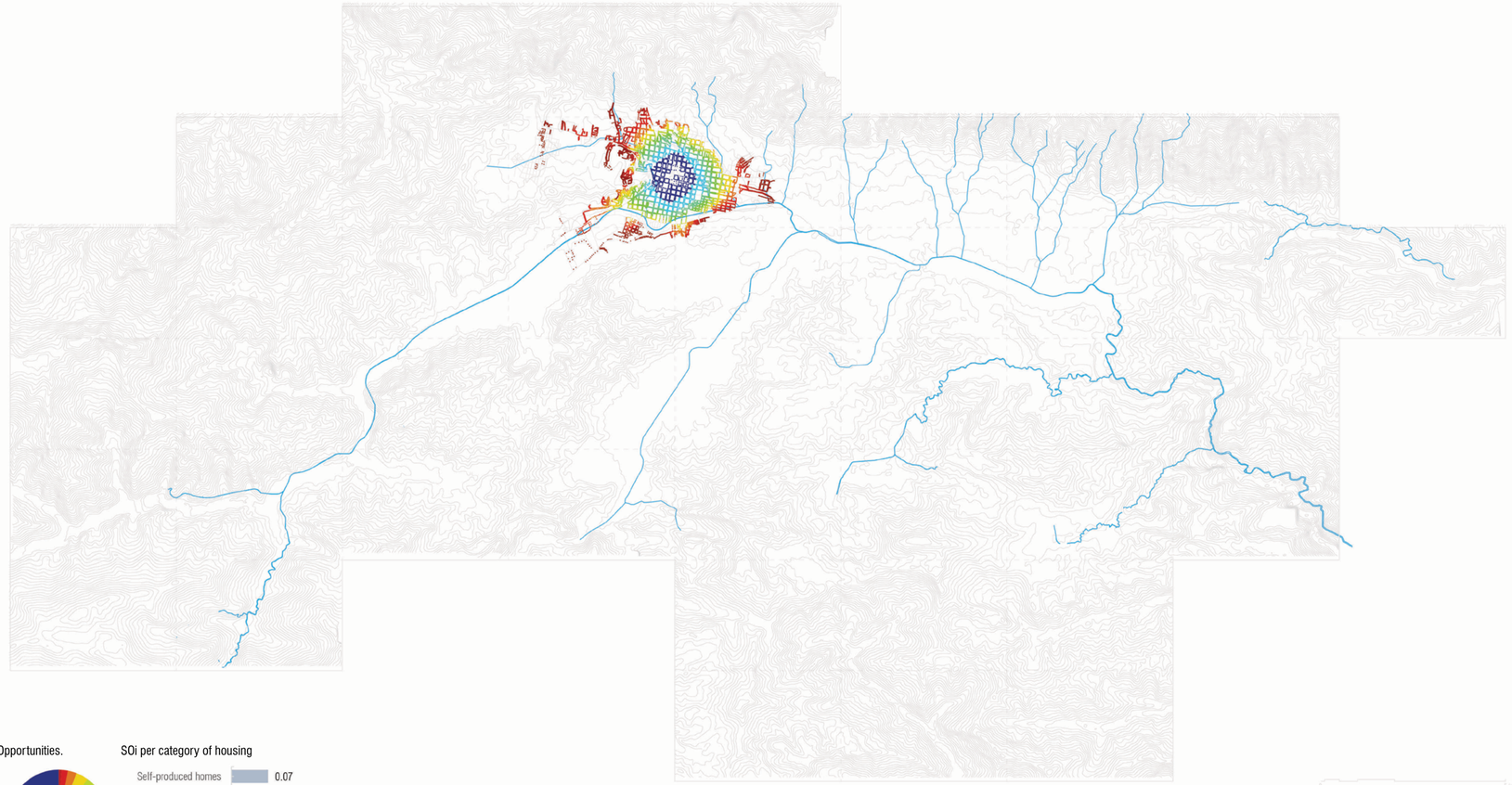


Sources: Ricardo Sola Ricardo. 1988. La reurbanización "El Silencio": crónica 1942-1945.

Percentile distribution of SOi

1928 SOi	1	2	3	4	5	6	7	8	9	10
mean	0.008	0.025	0.041	0.062	0.09	0.125	0.193	0.311	0.543	0.835
median of Gravity	109	328	534	797	1,175	1,574	2,460	3,980	7,091	10,852
percentage	0%	1%	2%	3%	4%	6%	9%	14%	24%	37%

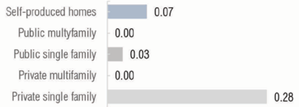
1928 - Oil Boom



Opportunities.



SOi per category of housing



origin
housing out of reach

destination
work public spaces

SOi
0 1

Sources: census: V National Population Census (Venezuela 1926) / network: (De-Sola Ricardo 1967, Map 68) / buildings (De-Sola Ricardo 1967, Map 102) / jobs: (De-Sola Ricardo 1967, Map 59).

Spatial Opportunities for Self-Produced Environments

Origins: houses
301,536 hab.

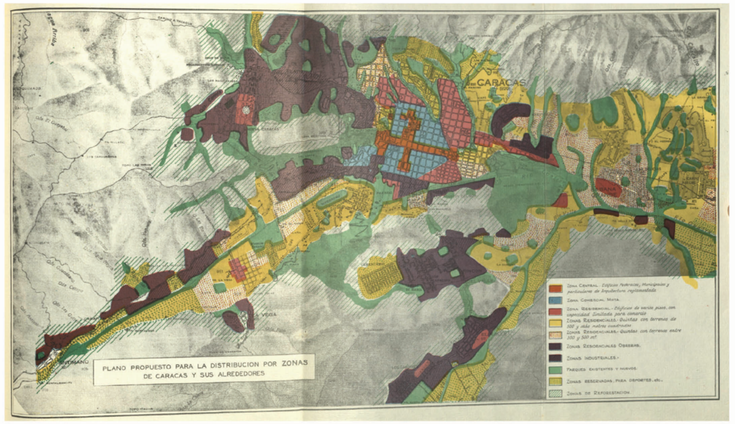
Destinations: jobs
35,043 estimated jobs.

Access Index



Urban Plan

1. Plano Monumental de CaracasRotival. Lambert, Prost, and Wegenstein. 1939.

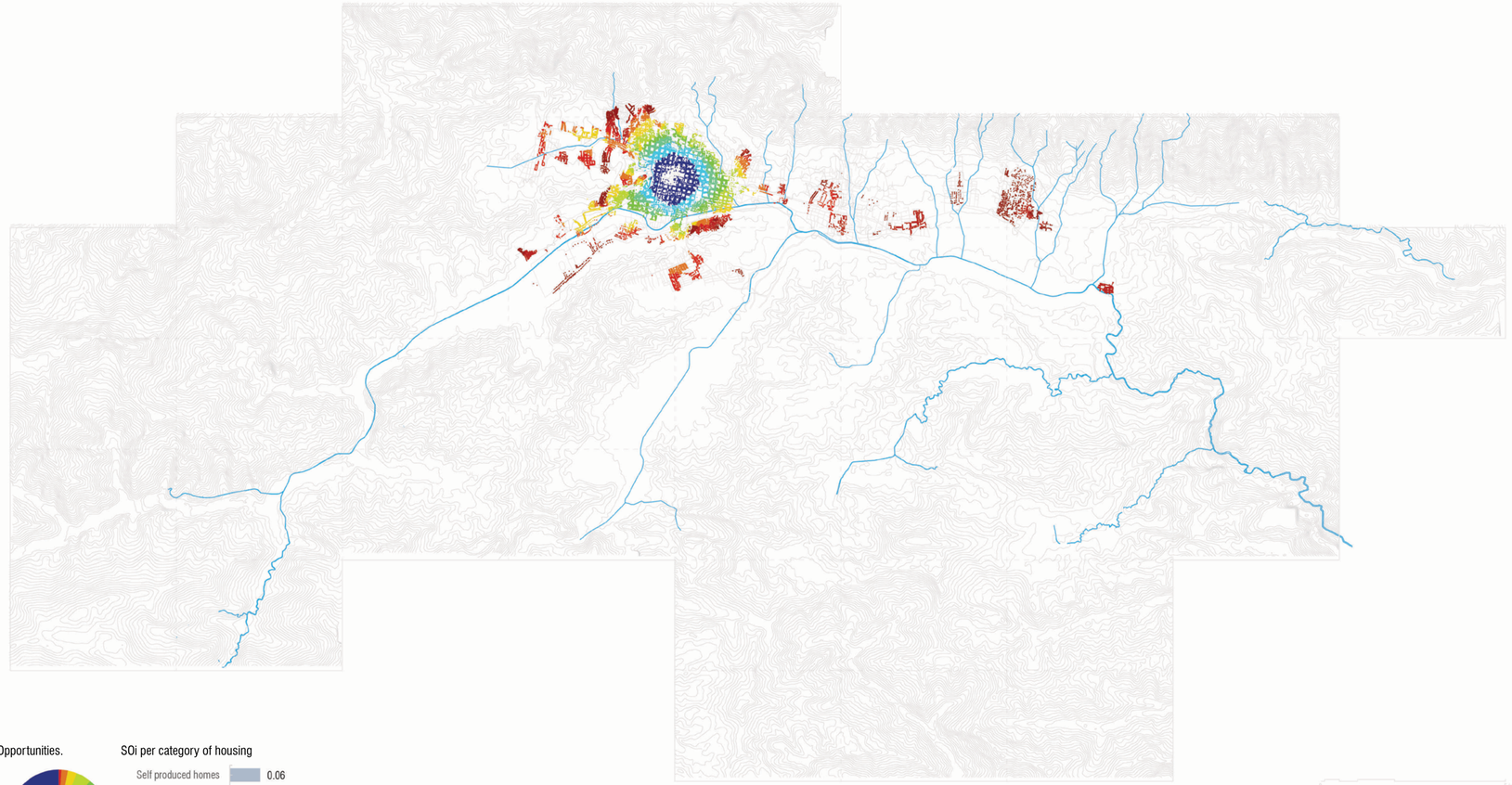


Sources: Gobierno del Distrito Federal. 1939. Revista municipal del distrito federal, no. 1

Percentile distribution of SOi

1939	1	2	3	4	5	6	7	8	9	10
mean	0.002	0.006	0.017	0.03	0.053	0.098	0.17	0.277	0.479	0.793
median of Gravity	44	112	330	551	1,009	1,817	3,201	5,135	8,842	13,077
percentage	0%	0%	1%	2%	3%	5%	9%	14%	25%	41%

1939 - The Hausmannian Project



Opportunities.



SOi per category of housing



origin housing out of reach destination work public spaces SOi 0 1

Sources: census: VI National Population Census (Venezuela 1936) / network: (Gobierno del Distrito Federal 1939, 68), (De-Sola Ricardo 1967, Map 75) / buildings and jobs: (Hernández de Lasala 1997, 34–35) / jobs: (De-Sola Ricardo 1967, Map 102)

Spatial Opportunities for Self-Produced Environments

Origins: houses
623,713 hab.

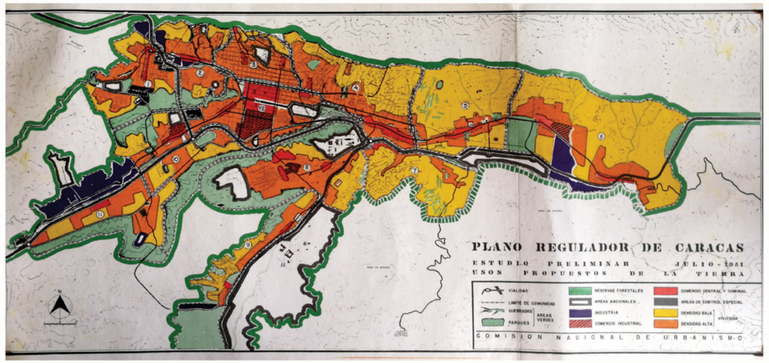
Destinations: jobs
201,271 formal workers
90,112 informal workers

Access Index



Urban Plan

1. Plano Regulador de Caracas. Violich. 1951.

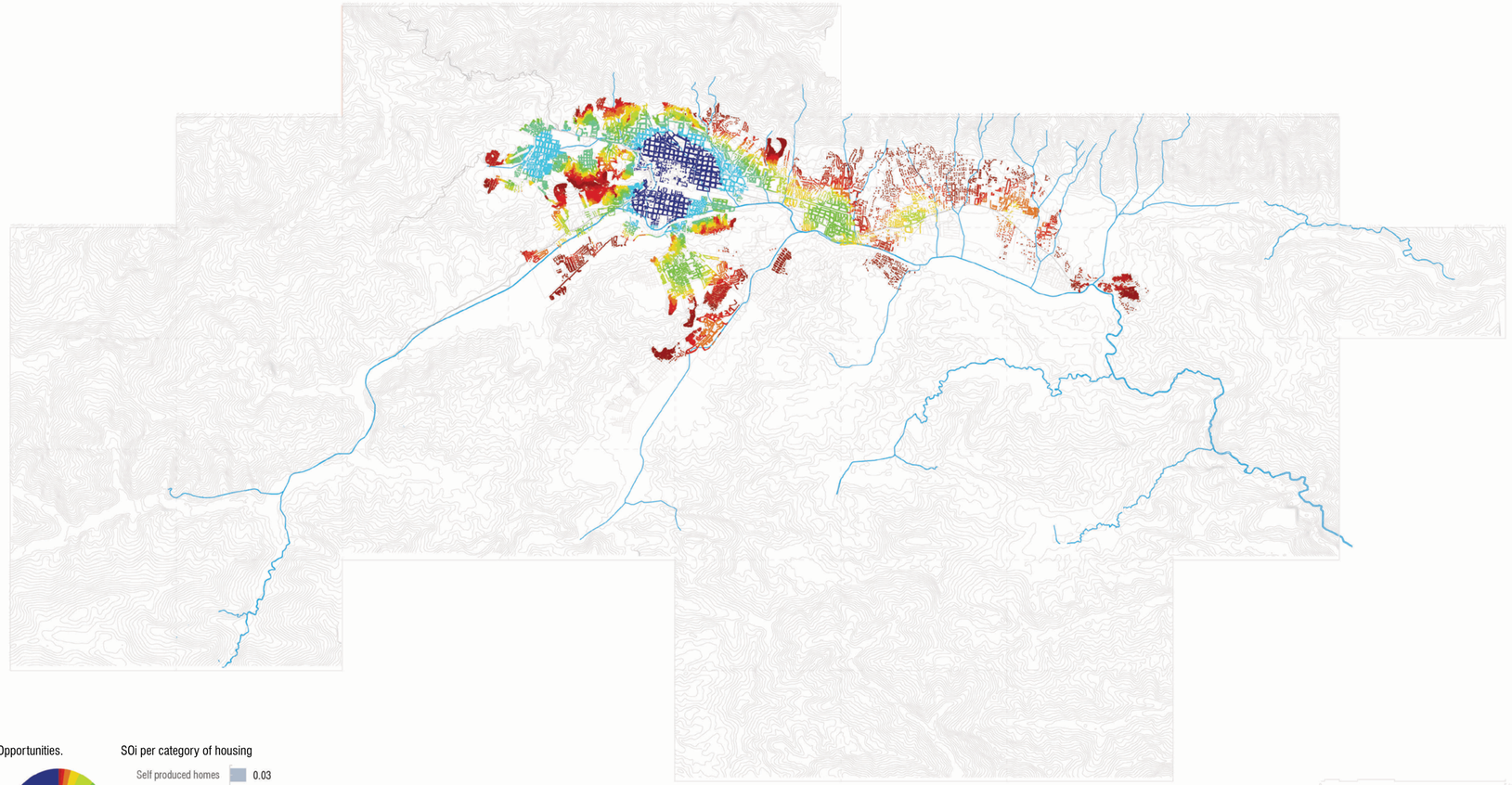


Sources: Ministerio de Obras Públicas. 1951. "Plano Regulador de Caracas." Comisión Nacional de Urbanismo.

Percentile distribution of SOi

1951	1	2	3	4	5	6	7	8	9	10
mean	0.001	0.006	0.012	0.019	0.032	0.045	0.064	0.107	0.173	0.475
median of Gravity	29	162	334	507	833	1,183	1,662	2,761	4,420	10,476
percentage	0%	1%	1%	2%	3%	5%	7%	11%	18%	51%

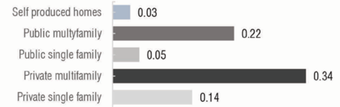
1951 - The Us-Zoning Approach



Opportunities.



SOi per category of housing



origin housing out of reach destination work public spaces SOi 0 1

Sources: census: VII National Population Census (Dirección General de Estadistica 1944) / network and building: (De-Sola Ricardo 1967, Map 103)De-Sola(1966), Map 103 / jobs: estimated by building typologies.

Caracas

Spatial Opportunities for Self-Produced Environments

Origins: houses
1,257,953 hab.



Destinations: jobs
377,016 formal workers
96,768 informal workers

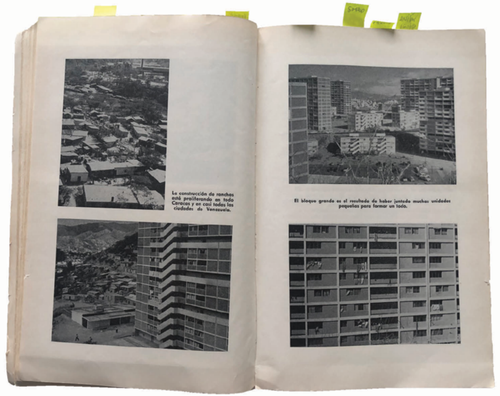


Access Index



Milestone

1. Proyecto de Evaluación de los Superbloques. Carlson. 1959.

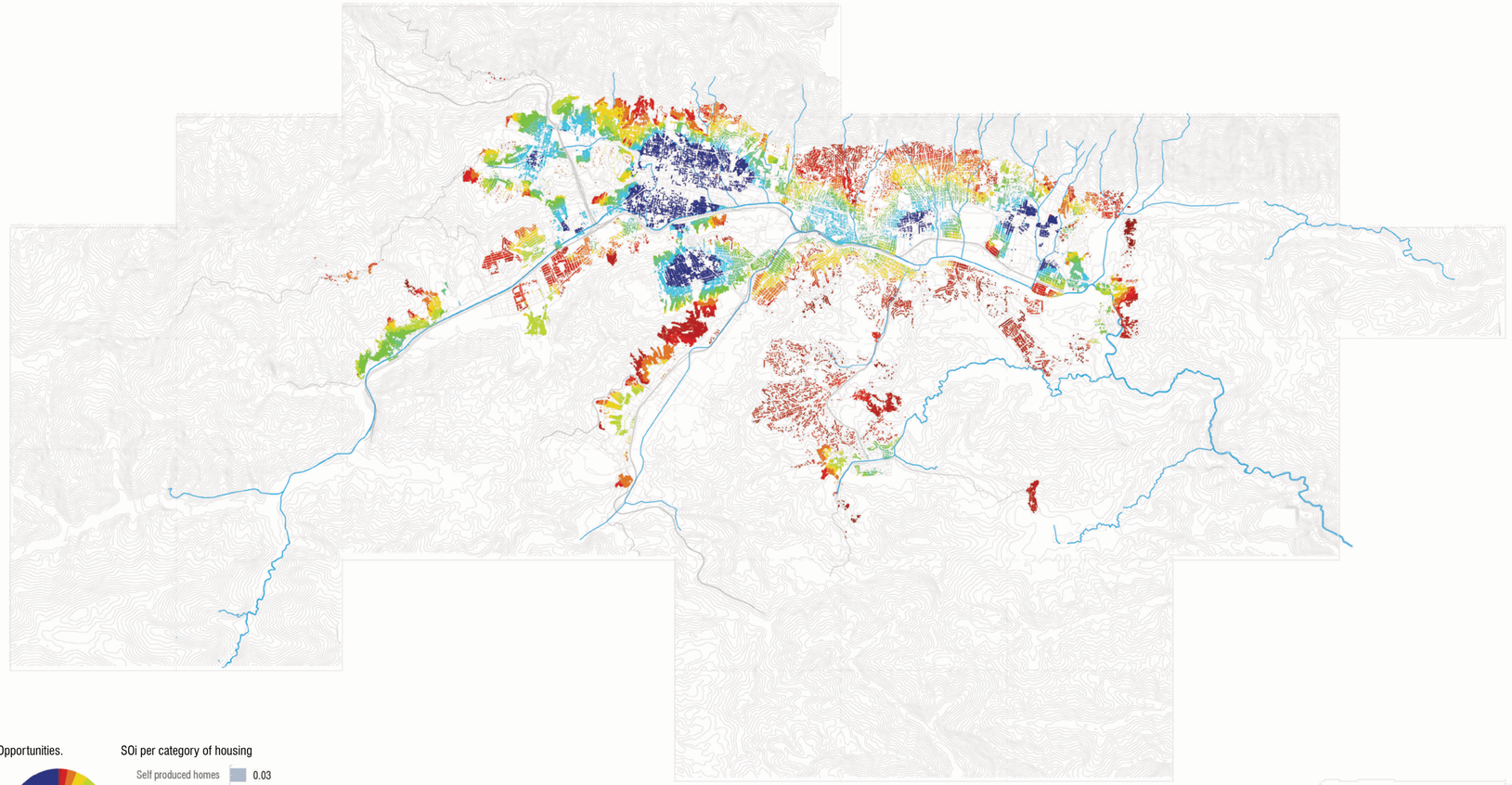


Sources: Eric Carlson. 1959. Proyecto de Evaluación de los Superbloques. CINVA / Banco Obrero.

Percentile distribution of SOi

1958	1	2	3	4	5	6	7	8	9	10
mean of SOi	0.001	0.005	0.010	0.016	0.025	0.034	0.064	0.107	0.173	0.475
median of Gravity	72	425	842	1,300	2,126	2,834	3,914	5,692	8,523	17,785
percentage	0%	1%	2%	3%	4%	6%	8%	12%	18%	47%

1958 - Diversification of Planning



Opportunities.



SOi per category of housing





Sources: census: VIII National Population Census (Venezuela. Oficina Central del Censo Nacional. 1955) / network and building:Variations of (Estereofoto 2000), / jobs: estimated by building typologies.

Spatial Opportunities for Self-Produced Environments

Origins: houses
1,501,145 hab.

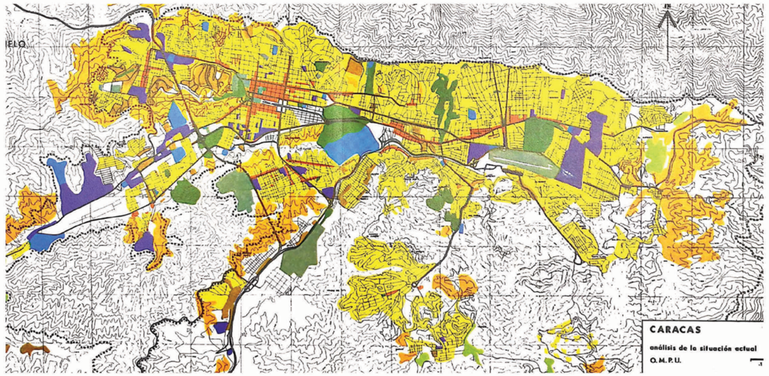
Destinations: jobs
569,166 formal workers
171,210 informal workers

Access Index



Urban Plan

1. Plan Caracas. OMPU, 1969.



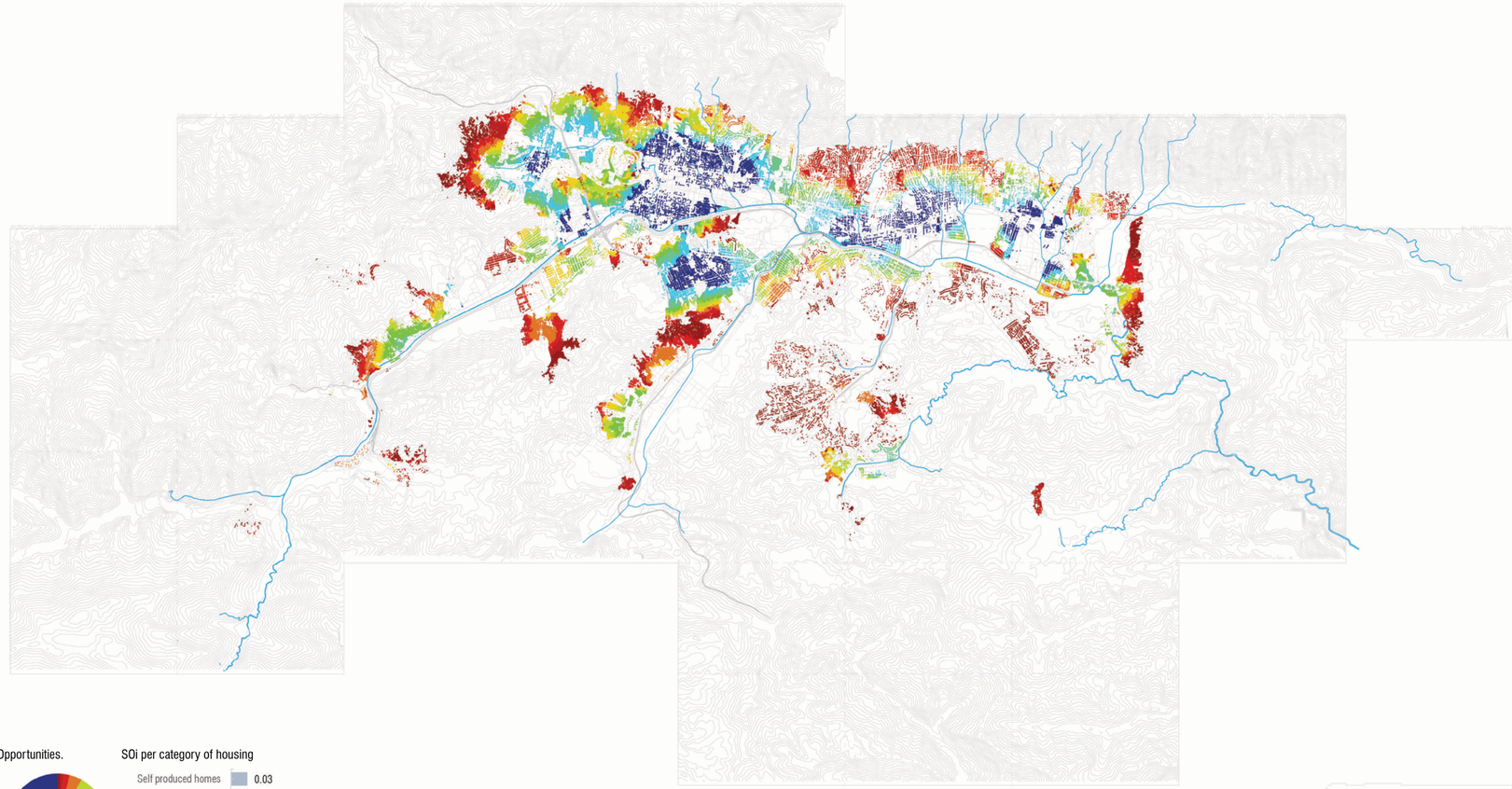
Sources: OMPU. 1969. "Caracas 1990. Plan de desarrollo urbano. 1era etapa del estudio (informe abreviado).

Percentile distribution of SOi

1969	1	2	3	4	5	6	7	8	9	10
mean of SOi	0.000	0.002	0.006	0.016	0.025	0.034	0.064	0.107	0.173	0.475
median of Gravity	20	269	656	1,007	1,707	2,546	3,568	5,190	8,061	16,886
percentage	0%	1%	1%	2%	4%	5%	8%	11%	18%	50%

Sources: Inga De-Solà, R. (1966). map n° 01

1969 - Planning Inertia



Opportunities.



SOi per category of housing



origin housing out of reach
destination work public spaces
SOi 0 1

Sources: census: IX National Population Census (Venezuela. Oficina Central del Censo 1962) / network and building: (Cartografia Nacional 1966) in (Enlace Arquitectura 2015) / jobs: (OMPU 1969), estimated by building typologies.

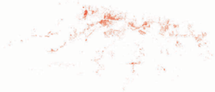
Caracas

Spatial Opportunities for Self-Produced Environments

Origins: houses
2,748,687 hab.



Destinations: jobs
635,676 formal workers
165,513 informal workers

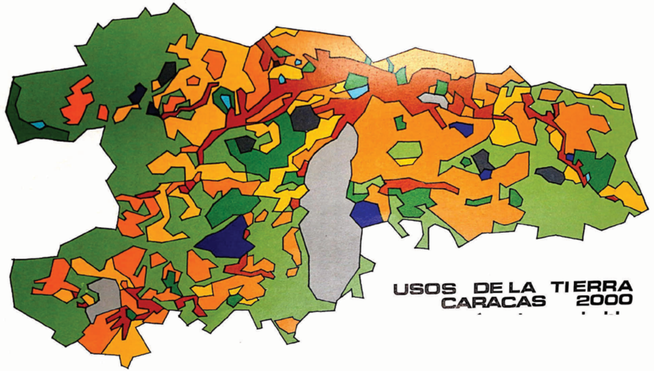


Access Index



Urban Plan

1. Plan Caracas. OMPU, 1979.
1. Plan Caracas. OMPU, 1983.



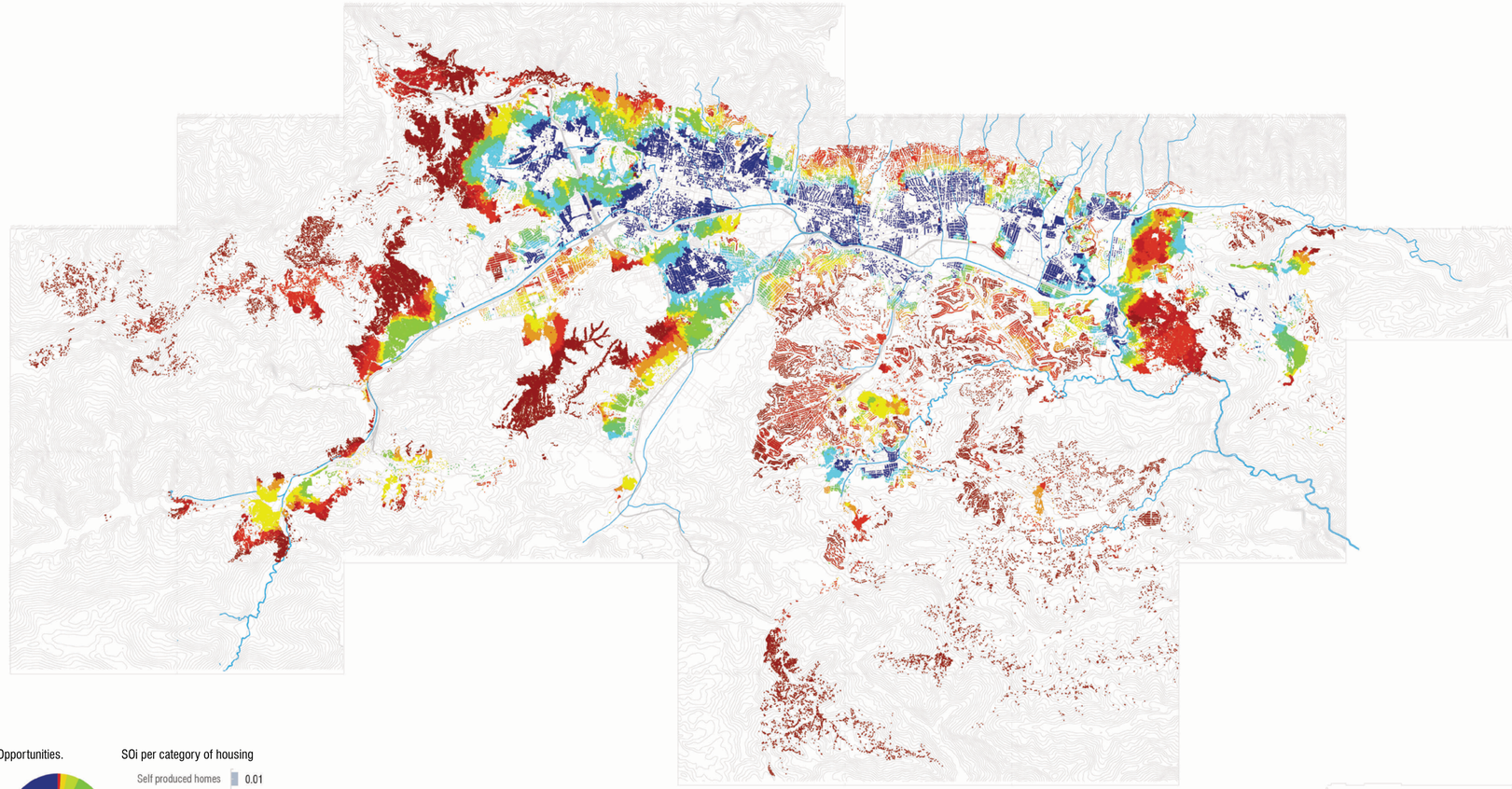
Source 1: OMPU. 1969. "Caracas 1990. Plan de desarrollo urbano.
Source 2: OMPU. 1983. Plan Rector Caracas 2000.

Percentile distribution of SOi

1984	1	2	3	4	5	6	7	8	9	10
mean of SOi	-	-	0.001	0.002	0.005	0.009	0.014	0.023	0.038	0.139
median of Gravity	-	22	166	374	851	1,354	2,123	3,378	5,432	13,027
percentage	0%	0%	0%	1%	2%	4%	6%	10%	16%	59%

Sources: Hoja De-Sola R. (1966), map n° 01

1984 - Barrios Recognition



Opportunities.



SOi per category of housing



origin housing out of reach destination work public spaces SOi 0 1

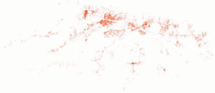
Sources: census: IX National Population Census (Oficina Central de Estadística e Información 1985) / network and building: (Tranarg 2000) in (Enlace Arquitectura 2015) / jobs: \(OMPU 1983; 1979), estimated by building typologies.

Spatial Opportunities for Self-Produced Environments

Origins: houses
2,748,687 hab.



Destinations: jobs
635,676 formal workers
165,513 informal workers

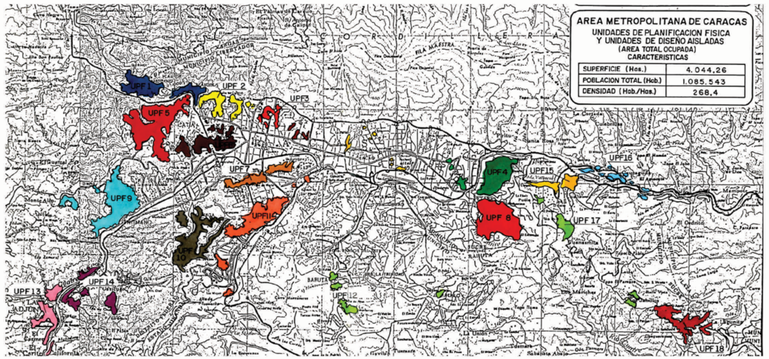


Access Index



Milestone

1. Plan Cameba, CONAVI 1999-2000.



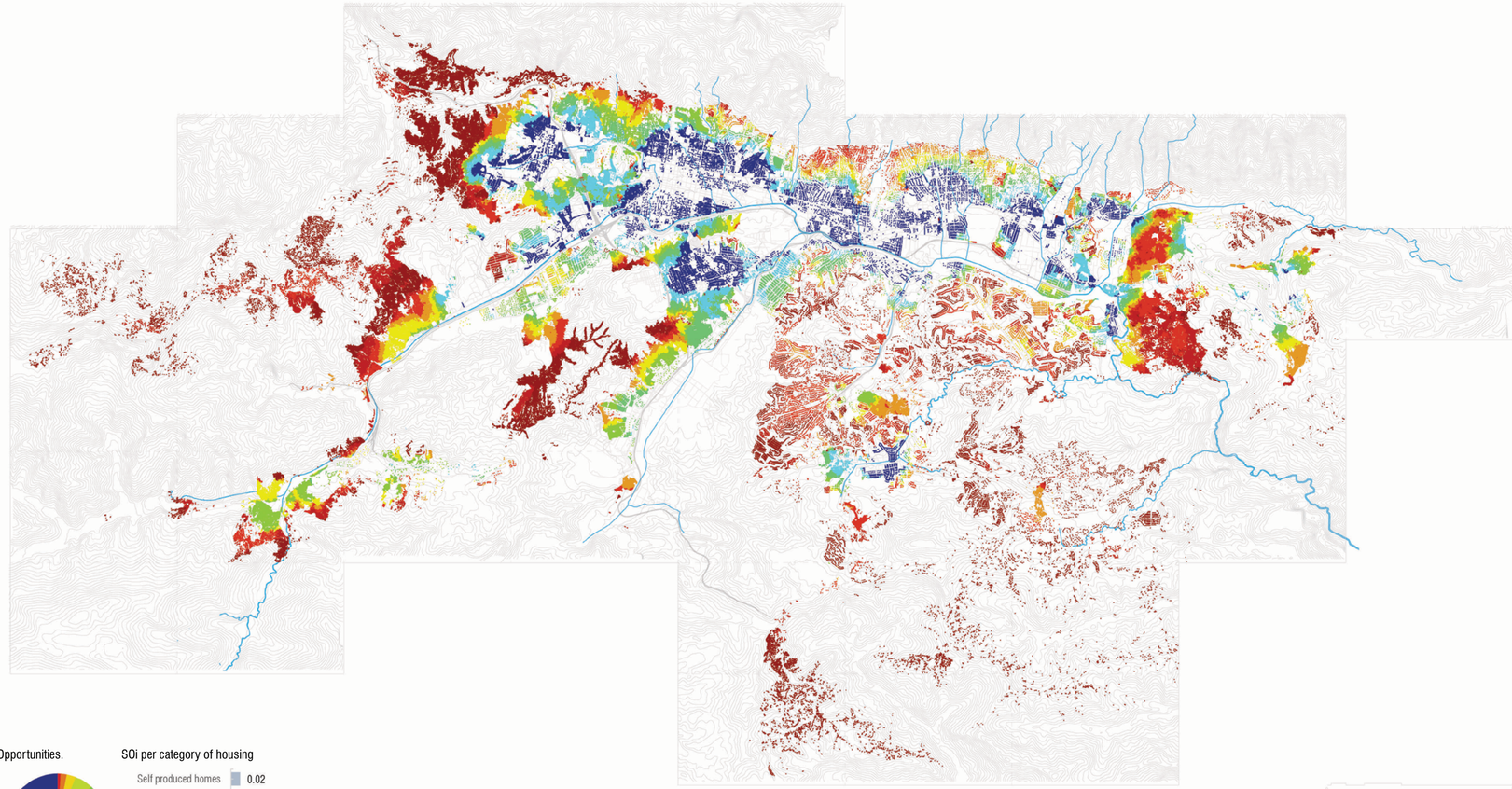
Source: CONAVI. 1998. Un Plan Para Los Barrios de Caracas. Urbano.

Percentile distribution of SOi

2000	1	2	3	4	5	6	7	8	9	10
mean of SOi	-	-	0.002	0.005	0.009	0.014	0.021	0.032	0.049	0.146
median of Gravity	-	51	238	540	1,041	1,666	2,416	3,720	5,718	12,514
percentage	0%	0%	1%	2%	3%	6%	7%	11%	18%	53%

Sources: Jaua De-Sola, B. (1966) mapp n° 01

2000 - Consolidation of Barrios Recognition



Opportunities.



SOi per category of housing



origin
housing out of reach

destination
work public spaces

SOi
0 1

Sources: census: XII National Population Census (Venezuela. Oficina Central de Estadística e Informática 1993) / Network and building:(Enlace Arquitectura 2015) / jobs: estimated by building typologies.

Spatial Opportunities for Self-Produced Environments

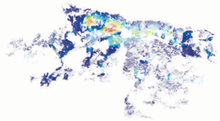
Origins: houses
3,220,540 hab.



Destinations: jobs
704,863 formal workers
263,922 informal workers

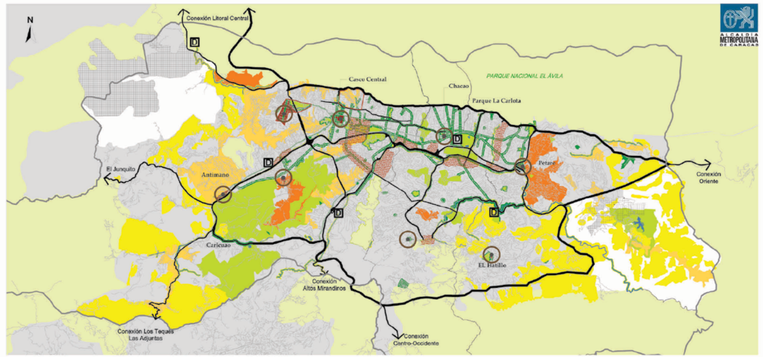


Access Index



Urban Plan

1. Plan Caracas 2020, IMUTC. 2012.



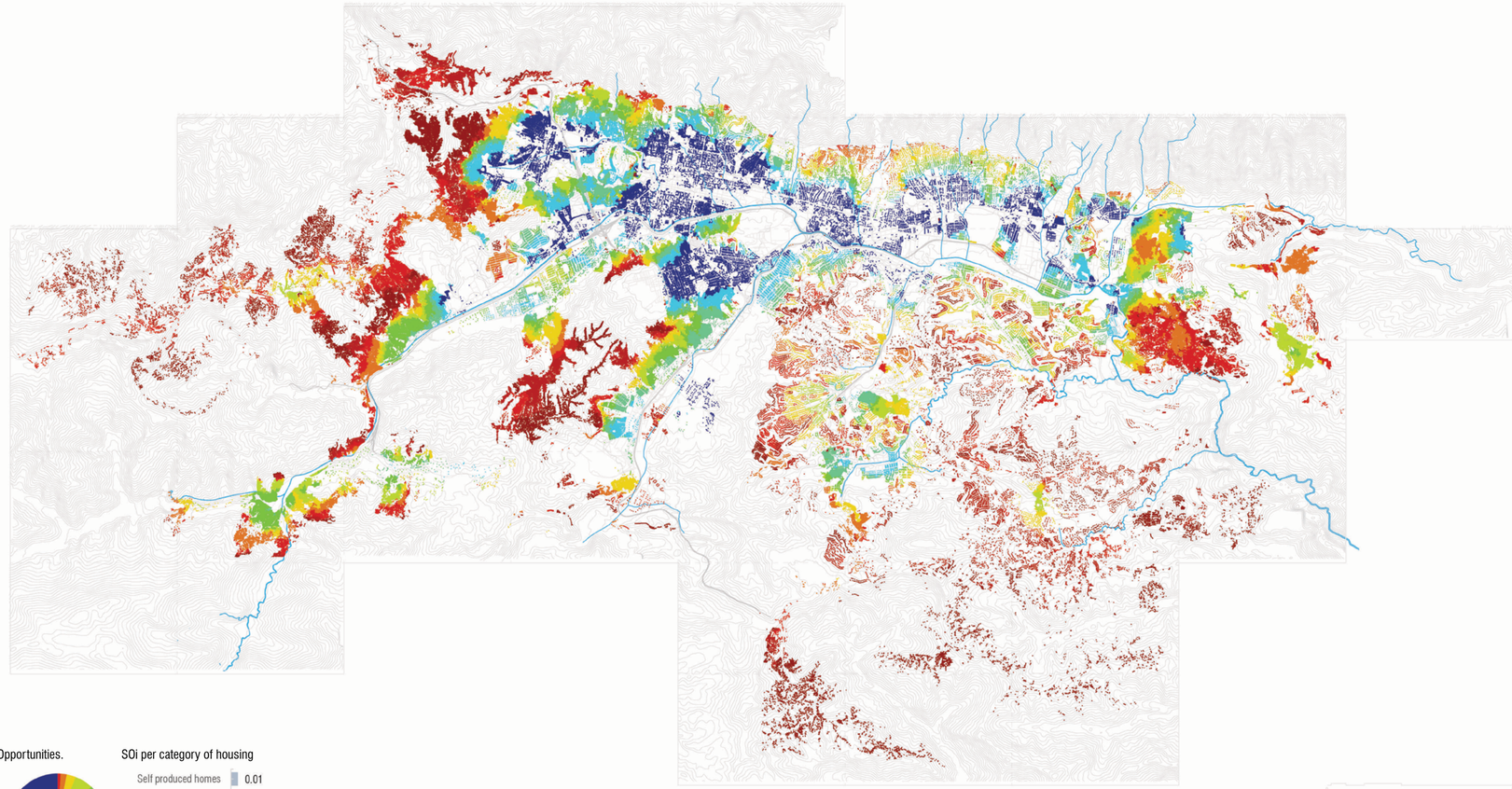
Source: IMUTC. 2012. Avances Del Plan Estratégico Caracas Metropolitana 2020.

Percentile distribution of SOi

2013	1	2	3	4	5	6	7	8	9	10
mean of SOi	-	-	0.001	0.003	0.056	0.010	0.015	0.024	0.037	0.149
median of Gravity	1	89	243	635	1,176	2,095	3,227	5,250	7,823	19,740
percentage of SOi	0%	0%	1%	2%	3%	6%	7%	11%	18%	53%

Sources: Jaua De-Solá, R. (1966), map n° 01

2015 - Plan Caracas 2020



Opportunities.



SOi per category of housing



origin housing out of reach
destination work public spaces
SOi 0 1

Sources: census XIV National Population Census (Venezuela. Instituto Nacional de Estadística 2014) / network: (Estereofoto 2000) / Jobs: Estimations by Google Earth

Caracas

Spatial Opportunities for Self-Produced Environments

Origins: houses

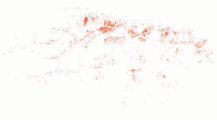
not available.



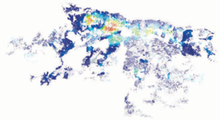
Destinations: jobs

not available

263,922 informal workers



Access Index



Milestone

1. Images of a Failing State









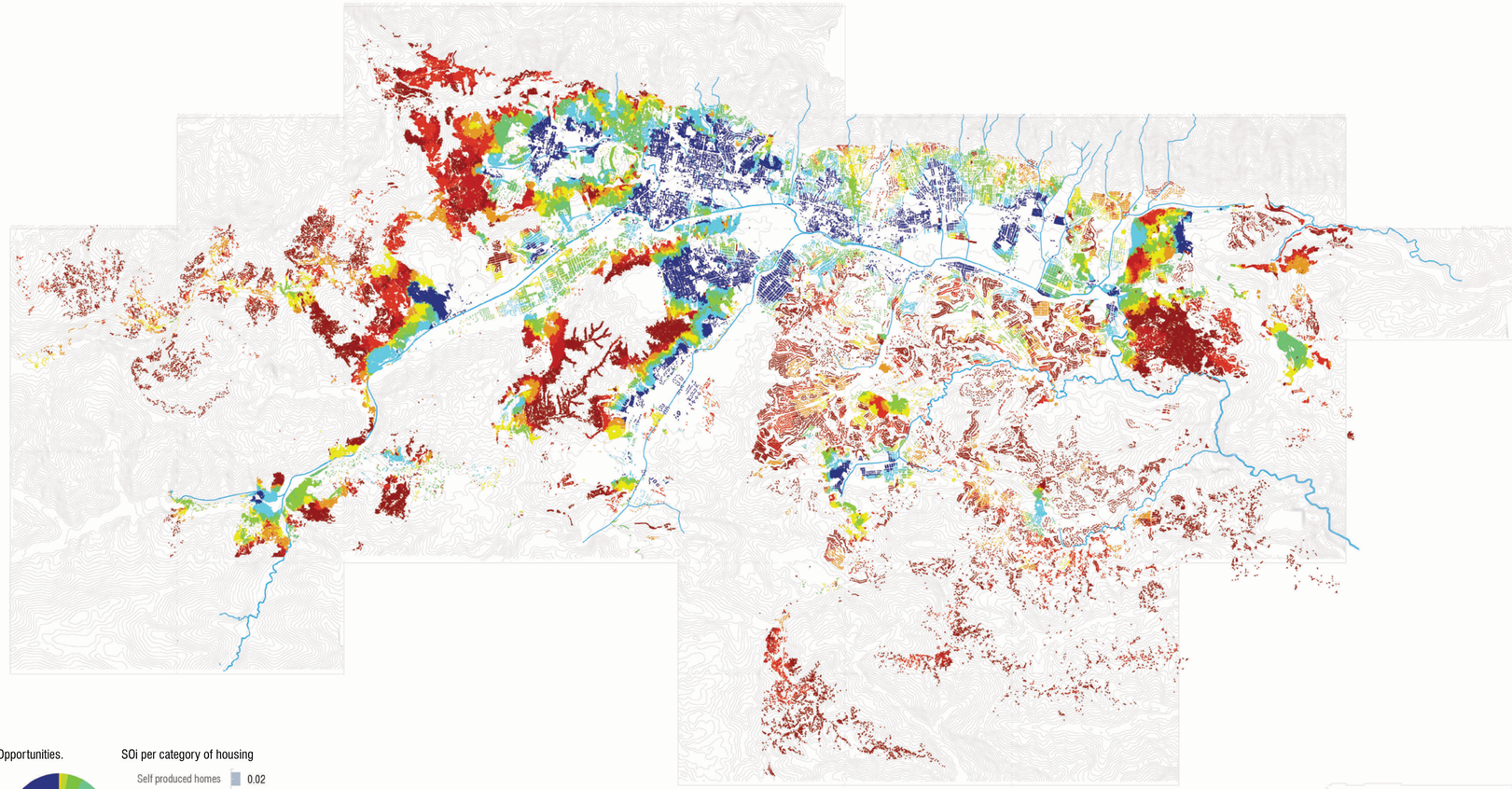
Source: Perreras: cronica.uno | Crisis del Agua: cinco8.com | Crisis Eléctrica: elnacional.com | Crisis de Seguridad: diariolasamericas.com

Percentile distribution of SOi

2019	1	2	3	4	5	6	7	8	9	10
mean of SOi	-	-	-	-	0.003	0.006	0.014	0.031	0.058	0.174
median of Gravity	-	1	2	7	91	153	317	776	1,456	3,432
percentage of SOi	0%	0%	0%	0%	1%	2%	5%	11%	20%	61%

Sources: Jaua De-Sola, B. (1966) mapp n° 01

2020 - Existing Condition



Opportunities.



SOi per category of housing



origin housing out of reach

destination work public spaces

SOi 0 1

Sources: census XIV National Population Census (Venezuela. Instituto Nacional de Estadística 2014) / network: (Estereofoto 2000) / Jobs: Estimations by Google Earth

Appendix F Spatial Opportunity Index (Soi) - Historic Data Outputs

1578 Colonial Times

1578. SOi analysis	population	(mean)	(median)	(max)	(min)
Private single family	1,842	0.966	0.966	1.000	0.927
Private multifamily	-	-	-	-	
Public single family	-	-	-	-	
Public multyfamily	-	-	-	-	
Non regulated	-	-	-	-	

1578. SOi percentile distribution



Population distribution per percentile of SOi

SOi per percentile	1	2	3	4	5	6	7	8	9	10
mean of Soi	0.94	0.95	0.96	0.96	0.97	0.97	0.97	0.98	0.98	0.99
percentage	11%	9%	11%	9%	9%	11%	9%	11%	10%	10%

Oportunities distribution per percentile of SOi

Pupulation per percentile	1	2	3	4	5	6	7	8	9	10
population	175	150	150	150	150	175	150	175	150	150
percentage	9%	8%	8%	8%	8%	9%	8%	9%	8%	8%

Population per category of housing per percentile of SOi

Population per category distribution	1	2	3	4	5	6	7	8	9	10
Private single family	175	150	175	150	150	175	150	175	150	150
Private multifamily										
Public single family										
Public multifamily										
Self produced										

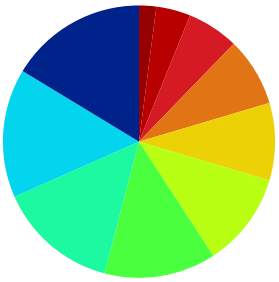
Building structures per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	7	6	7	6	6	7	6	7	6	6
Private multifamily										
Public single family										
Public multifamily										
Self produced										

1810 Country Independence

SOi analysis	population	(mean)	(median)	(max)	(min)
Private single family	34,584	0.581	0.604	1.000	0.003
Private multifamily	-	-	-	-	
Public single family	-	-	-	-	
Public multyfamily	-	-	-	-	
Non regulated	-	-	-	-	

1810. SOi percentile distribution



Population distribution per percentile of SOi

SOi per percentile	1	2	3	4	5	6	7	8	9	10
mean of Soi	0.14	0.26	0.37	0.46	0.55	0.64	0.74	0.81	0.88	0.95
percentage of oportunities	2%	4%	6%	8%	9%	11%	13%	14%	15%	16%

Oportunities distribution per percentile of SOi

Pupulation per percentile	1	2	3	4	5	6	7	8	9	10
population	3,464	3,456	3,456	3,464	3,456	3,456	3,464	3,456	3,456	2,456
percentage	10%	10%	10%	10%	10%	10%	10%	10%	10%	7%

Population per category of housing per percentile of SOi

Population per category distribution	1	2	3	4	5	6	7	8	9	10
Private single family	6,360	6,348	6,360	6,348	6,360	6,348	6,360	6,348	6,360	6,348
Private multifamily										
Public single family										
Public multifamily										
Self produced										

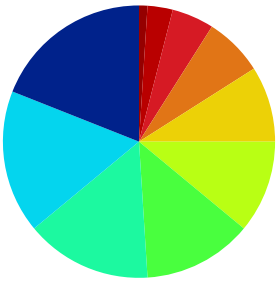
Building structures per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	433	432	432	433	432	432	433	432	432	432
Private multifamily										
Public single family										
Public multifamily										
Self produced										

1875 The Republican Era

SOi analysis	population	(mean)	(median)	(max)	(min)
Private single family	63,540	0.496	0.491	1.000	0.003
Private multifamily	-	-	-	-	
Public single family	-	-	-	-	
Public multyfamily	-	-	-	-	
Non regulated	-	-	-	-	

1875. SOi percentile distribution



Population distribution per percentile of SOi

SOi per percentile	1	2	3	4	5	6	7	8	9	10
mean of Soi	0.07	0.14	0.22	0.33	0.44	0.55	0.66	0.76	0.85	0.94
percentage of oportunities	1%	3%	5%	7%	9%	11%	13%	15%	17%	19%

Oportunities distribution per percentile of SOi

Pupulation per percentile	1	2	3	4	5	6	7	8	9	10
population	6,360	6,348	6,360	6,348	6,360	6,348	6,360	6,348	6,360	6,348
percentage	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%

Population per category of housing per percentile of SOi

Population per category distribution	1	2	3	4	5	6	7	8	9	10
Private single family	6,495	6,480	6,480	6,495	6,480	6,480	6,495	6,480	6,480	6,480
Private multifamily										
Public single family										
Public multifamily										
Self produced										

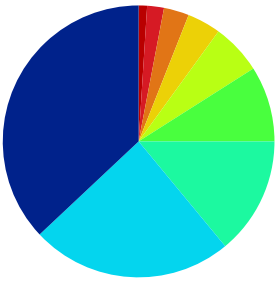
Building structures per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	530	529	530	529	530	529	530	529	530	529
Private multifamily										
Public single family										
Public multifamily										
Self produced										

1928 Oil Boom

SOi analysis	population	(mean)	(median)	(max)	(min)
Private single family	86,639	0.282	0.165	1.000	0.003
Private multifamily	-	-	-	-	
Public single family	1,988	0.027	0.025	0.056	0.004
Public multyfamily	-	-	-	-	
Non regulated	22,729	0.070	0.047	0.625	-

1928. SOi percentile distribution



Population distribution per percentile of SOi

SOi per percentile	1	2	3	4	5	6	7	8	9	10
mean of Soi	0.07	0.14	0.22	0.33	0.44	0.55	0.66	0.76	0.85	0.94
percentage of oportunities	1%	3%	5%	7%	9%	11%	13%	15%	17%	19%

Oportunities distribution per percentile of SOi

Pupulation per percentile	1	2	3	4	5	6	7	8	9	10
population	6,360	6,348	6,360	6,348	6,360	6,348	6,360	6,348	6,360	6,348
percentage	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%

Population per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	4,795	4,816	7,112	7,070	6,538	8,624	9,485	10,276	10,815	11,130
Private multifamily										
Public single family	490	791	448	259						
Public multifamily										
Self produced	5,852	5,530	3,577	3,808	4,592	2,513	1,652	861	322	

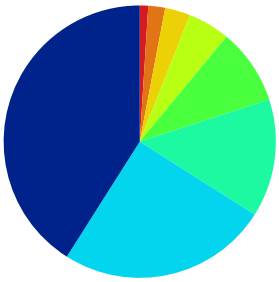
Building structures per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	685	688	1,016	1,010	934	1,232	1,355	1,468	1,545	1,590
Private multifamily										
Public single family	70	113	64	37						
Public multifamily										
Self produced	836	790	511	544	656	359	236	123	46	

1939 The Hausmannian Project

SOi analysis	population	(mean)	(median)	(max)	(min)
Private single family	174,240	0.230	0.126	0.997	-
Private multifamily	78,408	0.404	0.369	1.000	-
Public single family	5,840	0.014	0.006	0.066	0.001
Public multyfamily	-	-	-	-	
Non regulated	43,048	0.058	0.028	0.725	-

1939. SOi percentile distribution



Population distribution per percentile of SOi

SOi per percentile	1	2	3	4	5	6	7	8	9	10
mean of Soi	0.00	0.01	0.02	0.03	0.05	0.10	0.17	0.28	0.48	0.79
percentage of oportunities	0%	0%	1%	2%	3%	5%	9%	14%	25%	41%

Oportunities distribution per percentile of SOi

Pupulation per percentile	1	2	3	4	5	6	7	8	9	10
population	24,888	25,450	26,856	25,312	25,504	30,440	30,048	31,528	38,496	43,552
percentage	8%	8%	9%	8%	8%	10%	10%	10%	13%	14%

Population per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	11,184	14,648	16,464	13,040	14,800	14,536	19,384	21,368	20,396	20,552
Private multifamily	1,872	2,736	4,032	2,304	2,520	8,064	7,632	9,288	17,136	22,824
Public single family	3,064	1,658		1,280	720					
Public multifamily										
Self produced	8,768	6,408	6,360	8,688	7,464	7,840	3,032	872	1,064	176

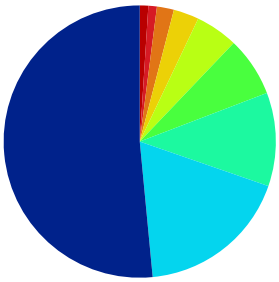
Building structures per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	1,398	1,831	2,058	1,630	1,850	1,817	2,423	2,671	2,537	2,569
Private multifamily	26	38	56	32	35	112	106	129	238	317
Public single family	389	238	160	90						
Public multifamily										
Self produced	1,096	801	795	1,086	933	980	379	109	133	22

1951 The Us-Zoning Approach

SOi analysis	population	(mean)	(median)	(max)	(min)
Private single family	225,888	0.141	0.069	1.000	-
Private multifamily	53,100	0.342	0.269	0.990	-
Public single family	27,150	0.047	0.032	0.195	0.001
Public multyfamily	4,050	0.215	0.048	0.897	0.019
Non regulated	140,220	0.031	0.018	0.666	-

1951. SOi percentile distribution



Population distribution per percentile of SOi

SOi per percentile	1	2	3	4	5	6	7	8	9	10
mean of Soi	0.00	0.01	0.01	0.02	0.03	0.05	0.06	0.11	0.17	0.48
percentage of oportunities	0%	1%	1%	2%	3%	5%	7%	11%	18%	51%

Oportunities distribution per percentile of SOi

Pupulation per percentile	1	2	3	4	5	6	7	8	9	10
population	39,805	39,607	39,334	40,557	40,461	42,740	45,908	44,015	49,625	68,356
percentage	9%	9%	9%	9%	9%	9%	10%	10%	11%	15%

Population per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	15,972	11,520	10,884	18,570	12,702	17,142	26,754	28,332	35,922	37,140
Private multifamily	1,152	900	900	756	1,260	1,908	5,436	2,952	8,496	29,340
Public single family	894	4,788	3,132	3,258	3,876	3,270	2,490	4,584	1,782	
Public multifamily				150	600	1,800	450			
Self produced	22,787	22,399	24,418	17,823	22,023	18,620	10,778	8,147	3,425	826

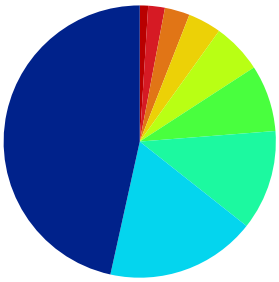
Building structures per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	2,662	1,920	1,814	3,095	2,117	2,857	4,459	4,722	5,987	6,190
Private multifamily	32	25	25	21	35	53	151	82	236	815
Public single family	149	798	522	543	646	545	415	764	297	
Public multifamily				1	4	12	3			
Self produced	4,329	4,429	4,811	3,512	4,370	3,705	2,144	1,604	652	159

1958 Diversification of Planning

SOi analysis	population	(mean)	(median)	(max)	(min)
Private single family	240,006	0.066	0.032	0.814	-
Private multifamily	694,965	0.163	0.082	1.000	-
Public single family	44,088	0.062	0.046	0.271	-
Public multyfamily	292,500	0.039	0.019	0.766	-
Non regulated	216,295	0.031	0.020	0.533	-

1958. SOi percentile distribution



Population distribution per percentile of SOi

SOi per percentile	1	2	3	4	5	6	7	8	9	10
mean of Soi	0.001	0.005	0.010	0.016	0.025	0.034	0.064	0.107	0.173	0.475
percentage of oportunities	0%	1%	2%	3%	4%	6%	8%	12%	18%	47%

Oportunities distribution per percentile of SOi

Pupulation per percentile	1	2	3	4	5	6	7	8	9	10
population	79,757	88,958	115,428	165,375	136,202	122,598	136,251	135,375	184,370	320,530
percentage	5%	6%	8%	11%	9%	8%	9%	9%	12%	22%

Population per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	26,056	21,306	17,474	23,382	23,126	16,469	20,036	22,468	31,652	33,167
Private multifamily	12,475	16,485	19,630	45,000	46,665	43,880	71,235	71,355	94,650	273,615
Public single family	486	312	1,626	6,294	5,076	5,640	5,460	5,526	8,772	4,896
Public multifamily	14,500	21,000	48,000	69,000	39,000	28,000	15,000	14,000	40,000	4,000
Self produced	31,470	35,778	38,016	25,878	27,216	33,678	29,364	26,244	10,860	5,790

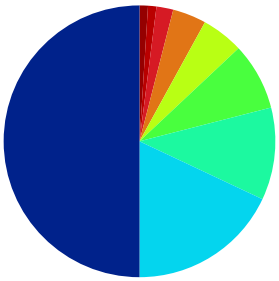
Building structures per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	4,343	3,552	2,913	3,898	3,855	2,746	3,341	3,747	5,277	5,528
Private multifamily	170	259	252	470	553	513	693	798	1,239	2,550
Public single family	81	52	271	1,049	846	940	910	921	1,462	816
Public multifamily	29	42	96	138	78	56	30	28	80	8
Self produced	5,245	5,963	6,336	4,313	4,536	5,613	4,894	4,374	1,810	965

1969 Planning Inertia

SOi analysis	population	(mean)	(median)	(max)	(min)
Private single family	240,006	0.066	0.032	0.814	-
Private multifamily	694,965	0.163	0.082	1.000	-
Public single family	44,088	0.062	0.046	0.271	-
Public multyfamily	292,500	0.039	0.019	0.766	-
Non regulated	216,295	0.031	0.020	0.533	-

1966. SOi percentile distribution



Population distribution per percentile of SOi

SOi per percentile	1	2	3	4	5	6	7	8	9	10
mean of Soi	0.000	0.002	0.006	0.016	0.025	0.034	0.064	0.107	0.173	0.475
percentage of oportunities	0%	1%	1%	2%	4%	5%	8%	11%	18%	50%

Oportunities distribution per percentile of SOi

Pupulation per percentile	1	2	3	4	5	6	7	8	9	10
population	106,780	155,234	113,664	159,942	165,669	156,615	173,491	164,200	236,492	444,924
percentage	6%	8%	6%	9%	9%	8%	9%	9%	13%	24%

Population per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	20,974	19,860	12,109	11,973	20,605	22,997	20,896	19,397	37,091	47,267
Private multifamily	11,020	12,070	9,375	15,990	29,090	44,685	53,379	59,710	122,392	354,570
Public single family	2,262	1,314	2,670	4,770	7,842	4,014	8,586	7,368	6,774	9,150
Public multifamily	18,500	67,022	29,505	68,506	59,005	36,000	44,500	29,500	38,500	23,500
Self produced	64,692	65,910	73,026	70,206	57,792	58,320	55,200	57,870	36,954	11,838

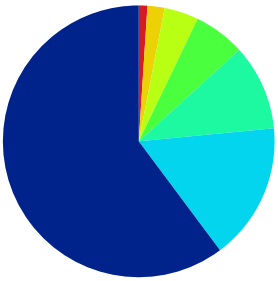
Building structures per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	3,496	3,311	2,019	1,997	3,435	3,833	3,483	3,233	6,183	7,881
Private multifamily	111	149	107	171	309	509	599	637	1,254	3,376
Public single family	377	219	445	795	1,307	669	1,431	1,228	1,129	1,525
Public multifamily	37	138	60	138	119	72	89	59	77	47
Self produced	10,782	10,985	12,171	11,701	9,632	9,720	9,200	9,645	6,159	1,973

1984 Barrios Recognition

SOi analysis	population	(mean)	(median)	(max)	(min)
Private single family	240,006	0.066	0.032	0.814	-
Private multifamily	694,965	0.163	0.082	1.000	-
Public single family	44,088	0.062	0.046	0.271	-
Public multyfamily	292,500	0.039	0.019	0.766	-
Non regulated	216,295	0.031	0.020	0.533	-

1984. SOi percentile distribution



Population distribution per percentile of SOi

SOi per percentile	1	2	3	4	5	6	7	8	9	10
mean of Soi	-	-	0.001	0.002	0.005	0.009	0.014	0.023	0.038	0.139
percentage of oportunities	0%	0%	0%	1%	2%	4%	6%	10%	16%	59%

Oportunities distribution per percentile of SOi

Pupulation per percentile	1	2	3	4	5	6	7	8	9	10
population	273,145	176,705	286,777	463,146	302,527	216,099	265,886	270,993	302,326	1,027,620
percentage	8%	5%	8%	13%	8%	6%	7%	8%	8%	29%

Population per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	34,555	25,005	35,670	22,745	23,655	17,285	15,025	17,000	35,000	69,810
Private multifamily	47,436	39,341	104,257	73,317	109,765	89,834	45,416	64,699	112,141	858,056
Public single family	1,980	396	1,260	4,914	4,896	5,940	6,510	3,954	10,668	18,312
Public multifamily	40,250	17,550	31,750	38,000	41,950	75,650	68,600	55,100	40,600	44,850
Self produced	179,106	113,376	136,860	149,532	147,510	154,056	157,614	157,080	126,834	47,208

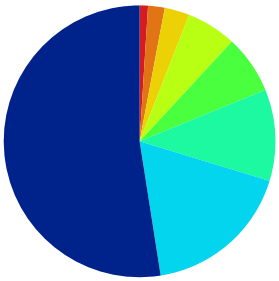
Building structures per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	6,911	5,001	7,134	4,549	4,731	3,457	3,005	3,400	7,000	13,962
Private multifamily	367	327	705	541	687	566	348	533	909	5,927
Public single family	330	66	210	819	816	990	1,085	659	1,778	3,052
Public multifamily	161	79	135	164	175	305	288	222	168	185
Self produced	29,851	18,896	22,810	24,922	24,585	25,676	26,269	26,180	21,139	7,868

2000 Consolidation of Barrios Recognition

SOi analysis	population	(mean)	(median)	(max)	(min)
Private single family	247,758	0.041	0.017	0.719	-
Private multifamily	867,139	0.146	0.093	1.000	-
Public single family	41,349	0.046	0.031	0.175	-
Public multyfamily	456,500	0.028	0.018	0.762	-
Non regulated	1,024,704	0.017	0.009	0.618	-

2000. SOi percentile distribution



Population distribution per percentile of SOi

SOi per percentile	1	2	3	4	5	6	7	8	9	10
mean of Soi	-	-	0.002	0.005	0.009	0.014	0.021	0.032	0.049	0.146
percentage of oportunities	0%	0%	1%	2%	3%	6%	7%	11%	18%	53%

Oportunities distribution per percentile of SOi

Pupulation per percentile	1	2	3	4	5	6	7	8	9	10
population	180,111	185,348	206,808	217,250	215,270	224,133	254,702	261,474	243,890	648,299
percentage	7%	7%	8%	8%	8%	8%	10%	10%	9%	25%

Population per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	25,269	25,907	24,686	19,202	15,066	13,987	18,309	23,046	27,412	52,501
Private multifamily	18,778	26,521	39,323	37,122	36,948	37,856	41,190	52,908	75,804	500,192
Public single family	102	2,340	2,550	6,030	1,506	7,194	8,028	6,660	7,044	22,080
Public multifamily	19,505	29,250	33,314	45,405	42,950	51,078	79,037	75,100	36,000	45,000
Self produce	155,292	136,032	143,550	148,344	159,006	154,824	147,168	140,874	132,402	46,836

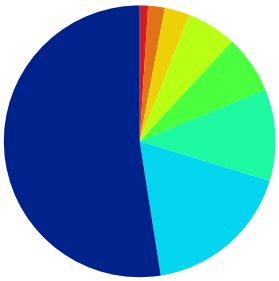
Building structures per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	6,004	6,139	5,877	4,572	3,587	3,330	4,359	5,487	6,526	12,500
Private multifamily	307	438	650	521	504	475	479	626	1,111	6,848
Public single family	17	390	425	1,005	251	1,199	1,338	1,110	1,174	3,680
Public multifamily	79	117	145	201	179	214	319	320	144	188
Self produced	25,882	22,672	23,925	24,724	26,501	25,804	24,528	23,479	22,067	7,806

2015 Plan Caracas 2020

SOi analysis	population	(mean)	(median)	(max)	(min)
Private single family	247,758	0.041	0.017	0.719	-
Private multifamily	867,139	0.146	0.093	1.000	-
Public single family	41,349	0.046	0.031	0.175	-
Public multyfamily	456,500	0.028	0.018	0.762	-
Non regulated	1,024,704	0.017	0.009	0.618	-

2015. SOi percentile distribution



Population distribution per percentile of SOi

SOi per percentile	1	2	3	4	5	6	7	8	9	10
mean of Soi	-	-	0.001	0.003	0.056	0.010	0.015	0.024	0.037	0.149
percentage of oportunities	0%	0%	1%	2%	3%	6%	7%	11%	18%	53%

Oportunities distribution per percentile of SOi

Pupulation per percentile	1	2	3	4	5	6	7	8	9	10
population	227,856	177,331	199,089	213,917	234,691	249,149	284,452	294,705	360,613	1,129,791
percentage	7%	5%	6%	6%	7%	7%	8%	9%	11%	34%

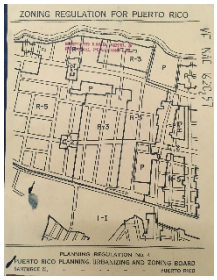
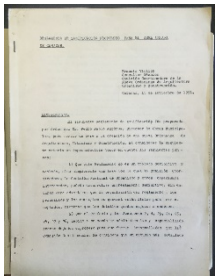
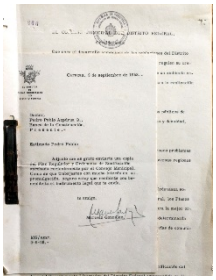
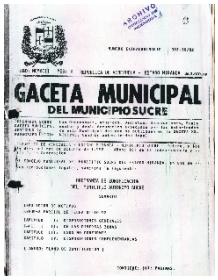
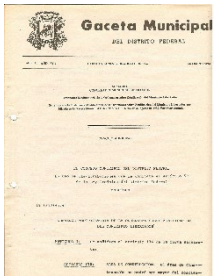
Population per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	47,940	26,100	20,040	20,252	19,828	16,664	19,892	25,488	29,948	46,332
Private multifamily	55,398	32,305	48,455	60,191	78,043	69,425	86,909	105,960	186,366	923,173
Public single family	456	1,596	3,642	4,908	396	3,378	13,206	6,762	7,872	23,706
Public multifamily	46,914	16,709	25,298	30,124	34,685	56,247	72,531	56,104	48,108	99,684
Self produced	125,808	160,398	166,182	164,610	168,504	168,882	154,830	151,920	136,212	53,664

Building structures per category of housing per percentile of SOi

	1	2	3	4	5	6	7	8	9	10
Private single family	11,985	6,525	5,010	5,063	4,957	4,166	4,973	6,372	7,487	11,583
Private multifamily	683	395	543	564	752	904	691	945	2,298	9,058
Public single family	76	266	607	818	66	563	2,201	1,127	1,312	3,951
Public multifamily	327	119	181	158	179	259	368	274	239	502
Self produced	20,968	26,733	27,697	27,435	28,084	28,147	25,805	25,320	22,702	8,944

Appendix G **Comparative Analysis Zoning Ordinances 1946-1996**

					
Name:	Zoning Regulation for Puerto Rico	Reglamento de Zonificación Propuesta para el Área Urbana de Caracas (DRAFT)	Ordenanza de Zonificación del Plan Regulador de Caracas	Ordenanza de Zonificación del municipio autónomo Sucre, G.M. N° Ext.382-10/92, del 14-10-1992	Ordenanza Modificatoria de la Ordenanza sobre Zonificación del municipio Libertador, G.M. N° Ext. 1609-1, del 12-08-1996
Author:	Puerto Rico Planning Zoning Board	Francis Violich (Consultant of Government of the Federal District of Caracas)	Government of the Federal District of Caracas	Mayoralty of Sucre (Petare)	Municipal Council of Caracas (Federal District)
Date:	**1946**	**1951**	**1958**	**1992**	**1996**
Source:	Act.429 in the Bulletin No.986 / Puerto Rico	Fracis Violich Papers	Fondo Pedro Pablo Azúpurua.	Mayoralty of Sucre	Municipal Council of Caracas
Library :	Harvard GSD: Special Collections	UC Berkeley: Bancroft Library - carton 9 - 09	INFODOC. Central University of Venezuela	https://es.scribd.com/document/332383124/otra ordenanza-pdf	http://www.caracas.gob.ve/alcaldiaDeCCS/ordenanzas/contenido/descargas/ordenanzas/ordenanzas

Housing Districts:	Districts R-1 to R-6: Zones with different densities for monofunctional housing.	Districts R-1S to R-3C: Zones with different densities for monofunctional housing.	Districts R-1 to R-10: Zones with different densities for monofunctional housing.	Districts R-1 to R-9: Zones with different densities for monofunctional housing.	Districts R-1 to R-10: Zones with different densities for monofunctional housing.
Commercial **Districts:**	Districts C-1 and C-2: Zones with different densities for monofunctional commercial buildings.	Districts I-1 and I-2: Zones of mononfunctional light and heavy industry.	Districts C-1 to C-4: Zones different densities for monofunctional commercial buildings.	Districts C-1 to C-3: Zones different densities for monofunctional commercial buildings.	Districts C-C / M: Zones different densities for monofunctional commercial buildings.
Industrial Districts:	Districts I-1 and I-2: Zones of mononfunctional light and heavy industry.	Districts I-L and I-P: Zones of mononfunctional light and heavy industry.	Districts I-L: Zones of mononfunctional light industry.	Districts I: Zones of mononfunctional industry.	Districts I: Zones of mononfunctional industry.
Self-Produced Districts:	District M: Zones for rehabilitation and conversion.	District M-R: Zones for rehabilitation and reclasification.	District A-EE: Zones for Improvement and clasification by special studies.	SECTION XVII - ZONA A-M: Areas of Improvement (Areas a Mejorar)	CHAPTER XXII - ZONA A-V-R-E: Green Area with Special Regulation
Other Districts:	- District P: Public Use	- District P: Public Use - District P-C: Green Area.	- District E-P: Public Use. - District R-N-M / AV / RF: Green Areas - District A-D-R: Educational. - District R-E: Special Regulations.	- District E-P: Public Use - District P / R-F / R-E: Parks: Green Areas - District D: Private Clubs - District E: Educational. - District R-E / A-E: Special Regulation	- District E-P: Public Use - District AVRE / ARAV / AV / R-N-M / R-F: Green Areas - District D-E, R-E / R-E-U: Special Regulations

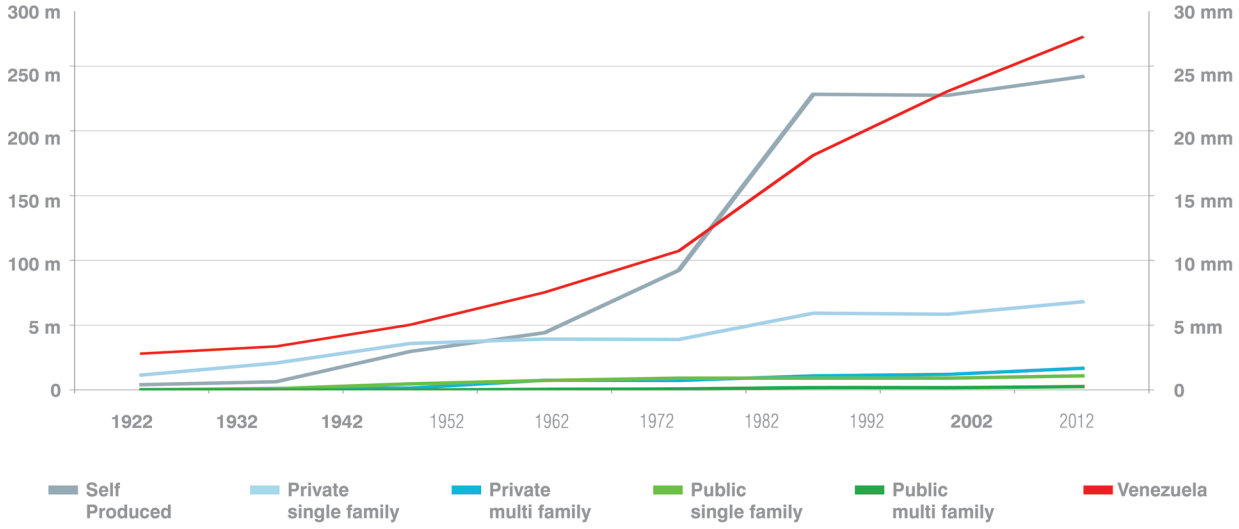
Self-Produced Districts **DETAIL:**					
Definition of M District. An M District is defined as an area wherein excessive overcrowding of buildings and land, undersized lots, lack of adequate water supply, sewerage disposal devices and storm drainage, low elevation and swampiness, excessive grades, high ground water level, soul and other physical conditions, lack of street paving, substandard and flimsy building construction lack of an orderly or convenient plan or design, or other conditions, cause intensify or aggravate dangers of fire, spread of diseases, unsocial and immoral conditions, deterioration of adjacent property and	Artículo 1. DEFINICIÓN DE ZONA M-R. Una zona M-R se define como un área donde la excesiva aglomeración de edificios y terrenos, los terrenos demasiados pequeños, la falta de un servicio adecuado de agua, de alcantarillas, de instalaciones de desagues (desagües), de pendientes excesivas, el tipo de suelo, la falta de calle y pavimentos, la construcción de edificios sin normas adecuadas y sin solidez, la falta de plan o diseño ordenado y conveniente, y otras condiciones, producen: intensificar o agravar el peligro de fuego, propagación de enfermedades,	Artículo 195. Definición de la Zona A-E-E. Las zonas A-E-E son áreas para las cuales se requiere un estudio especial de conjunto para la construcción o modificación de edificios, así como cualquier otra utilización: Dentro de estas Zonas existen los siguientes: - [Cambio a Vivenda]: --- Art.195. Zona A-E-E (R-5): reclasificada a vivienda Zona R-5. --- Art.197. Zona A-E-E (P-P): reclasificada a vivienda especial - [Cambio a Área Verde]: --- Art.198. Zona A-E-E (R-N-M): adquisición por parte del Gobierno Nacional. [reservas naturales].	Artículo 170: Definición de la Zona A-M: Una zona A-M se define como un área donde la excesiva aglomeración de edificios y terrenos, los solares demasiado pequeños, la falta de un servicio adecuado de agua, de alcantarillado, de instalaciones para la eliminación de aguas negras, los desagües, el terreno bajo pantanoso, las pendientes excesivas, el alto nivel freático, el tipo de suelo, la falta de calles o pvaimentos, la construcción de edificios sin normas adecuadas y sin solidez, la falta de un plan o diseño ordenado y conveniente, u otras condiciones, producen e	Artículo 186: La Zona A-V-R-E está constituida por aquellas que por su situación y características físicas son adecuadas para mejorar las condiciones de sitio y cuyo uso y especificaciones de cosntrucción serán definidas en el estudio preliminar y anteproueto esquemático que aprobare la Oficina Metropolitana de Planeamiento Urbano. [se verificaron los planos y se comprobó que barrios existentes para la fecha tenían asignada esta zonificación]

dangers of life and limb.	condiciones antisociales y lesivas a la moral, y donde tales condiciones prohibirán el uso eficiente del terreno y forman u obstáculo a su reconstrucción integral.	* Artículo 199. Zona A-E-E (A-V): destinadas a Áreas Verdes [usos públicos como parques recreativos y actividades deportivas].	intensifican o agravan el peligro de fuego, progragación de enfermedades, condiciones antisociales y lesivas a la moral, deterioros de la propiedad contigua y riesgos de daño corporal.	

Appendix H National Population Growth vs. Caracas Housing Growth

Population (b)	1928	1939	1951	1958	1969	1984	2002	2012
Caracas	135,253	203,342	704,567	1,257,953	2,158,611	2,748,687	2,761,751	3,220,540
Venezuea	2,814,131	3,364,347	5,034,838	7,523,999	10,721,522	18,105,265	23,054,210	27,227,930

Population (b)	1928	1939	1951	1958	1969	1984	2002	2012
Self produced neighborhoods	4,101	6,334	29,715	44,055	92,276	228,196	227,388	241,835
Private single family	11,523	20,784	35,823	39,200	38,871	59,150	58,381	68,121
Private multi family		1,089	1,475	7,497	7,222	10,910	11,959	16,833
Public single Ffamily	284	877	4,679	7,348	9,125	9,125	9,125	10,987
Public multi family			27	585	836	1,906	1,906	2,606
Total	15,908	29,084	71,719	98,685	148,330	309,287	308,759	340,382



Sources:

(a) Census data

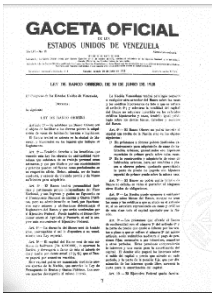
- VII National Population Census (Dirección General de Estadistica 1944)
- VIII National Population Census (Oficina Central del Censo Nacional 1953)
- IX National Population Census (Oficina Central del Censo 1961)
- IV Caracas Household Survey (Dirección General de Estadistica 1970)
- XI National Population Census (Oficina Central de Estadística e Información 1985)
- XII National Population Census (Oficina Central de Estadística e Información 1991)
- XIII National Population Census (Venezuela. Oficina Central del Censo Nacional. 2005)
- XIV National Population Census (Venezuela. Instituto Nacional de Estadística 2014)

(b) Population Estimated from Maps

(See Sources in Appendix E).

Appendix Ia **Category Analysis on Planning Reports – ERADICATION**

1.1. 1928

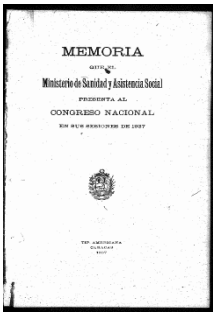

GACETA OFICIAL
DE LOS
ESTADOS UNIDOS DE VENEZUELA

Ley de Banco Obrero, Pub. L. No. LVI–IX, 2 (1928).

Categories
acquisition banco dwellings guaranteed house mortgage poor urban workers.

#		
1	*Artículo 1—Se establece un Banco Obrero con el objeto de facilitar a los obreros pobres la adquisición de casas de habitación baratas e higiénicas.*	Article 1 — A *Banco Obrero* (Workers' Bank) is established in order to facilitate poor workers the acquisition of cheap and hygienic dwellings.
1	*Art. 69 - El Banco Obrero no podrá invertir el capital que reciba de la Nación sino en los objetos siguientes: 1- En préstamos a obreros pobres destinados exclusivamente para adquisición de casas de habitación urbanas, garantizados con hipotecas especiales de primer grado sobre tales casas. 2- En la construcción y adquisición de casas de habitación urbanas, para ser vendidas a plazos a obreros pobres, quedando garantizada la parte de precio no pagada con hipoteca especial de primer grado sobre la misma casa. "*	"Art. 69 - The *Banco Obrero* may not invest the capital it receives from the Nation except in the following objects: 1- In loans to poor workers destined exclusively for the acquisition of urban dwellings, guaranteed with special first degree mortgages on such houses. 2- In the construction and acquisition of urban dwellings, to be sold in installments to poor workers, the part of the price not paid being guaranteed with a special first-degree mortgage on the same house.

1.2. 1937


MEMORIA

Ministerio de Sanidad y Asistencia Social

PRESENTA AL

CONGRESO NACIONAL

Ministerio de Sanidad y Asistencia Social. 1937. "Memoria y Cuenta que el Ministerio de sanidad y asistencia social presenta al Congreso Nacional en sus sesiones ordinarias." Ministerio de Sanidad y Asistencia Social.

Categories:
evict health houses lack neighborhood pay poverty state tenants.

# 415 416	*También, durante los primeros meses de 1936, la Dirección de Sanidad del Distrito Federal, realizará una primera encuesta para el registro y estado de las casas de vecindad. En el informe se señala que de las 820 casa registradas sólo poco mas del 12 por ciento reúne las características señaladas en el Reglamento como para librarse de la clausura y el desalojo. Sin embargo, se reconoce que "nuestra clase menesterosa, aquella cuyos jornales no le permiten vivir fuera de esos focos de infección" no puede ser desalojada "por la falta de locales en condiciones apropiadas para albergar a los inquilinos que desocuparán las casas de vecindad clausuradas, problema que agrava el estado de pobreza que la gran mayoría de los inquilinos, incapacitados para sufragar los gastos de mudanza y el depósito previo que exigen los arrendadores*	Likewise, during the first months of 1936, the Federal District Health Directorate will carry out a first survey for the registration and status of the tenement houses. The report indicates that of the 820 registered homes, only a little more than 12 percent meet the characteristics indicated in the Regulation, such as avoiding closure and eviction. However, it is recognized that "our needy class, the one whose salary does not allow them to live outside these sources of contagion" cannot be evicted "due to the lack of premises in adequate conditions to house the tenants who will evict the closed tenement houses. .., a problem that aggravates the state of poverty experienced by the vast majority of tenants, as they cannot pay the moving expenses and the previous deposit required by the owners
# 415 416	*Pero, donde resalta del modo más lamentable la falta de higiene es en las llamadas Casas de Vecindad, que en número de 820 existen en Caracas. Ante la grave responsabilidad que incumbe a la Dirección de Sanidad por lo que respecta a las condiciones sanitarias de dichos establecimientos, creí un deber ineludible dedicar especial atención al asunto y, desde el momento en que tomé*	But, where the lack of hygiene stands out in the most regrettable way is in the so-called Neighborhood Houses, which in number of 820 exist in Caracas. Given the serious responsibility incumbent on the Health Directorate with regard to the sanitary conditions of these establishments, I believed it was an inescapable duty to pay special attention to the matter and, from the

posesión de mi cargo, emprendí una rigurosa encuesta para poder apreciar con propiedad el verdadero estado en que se encontraban; hechas las investigaciones pertinentes, controladas personalmente por mi en muchas ocasiones, he llegado a la comprobación de qué muy pocas Casas de Vecindad reúnen las condiciones sanitarias que prescribe el Reglamento especial, en vigor hace muchos años.

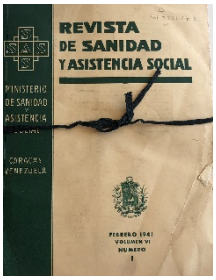
moment I took office, I undertook a rigorous survey to to be able to properly appreciate the true state in which they were; After making the pertinent investigations, personally controlled by me on many occasions, I have come to the verification that very few Neighborhood Houses meet the sanitary conditions prescribed by the special Regulation, in force for many years.

415 416

La mayor parte se encontraban en condiciones de ser clausuradas en resguardo de la salud de los inquilinos; pero esta medida, aunque ajustada a la Ley, no ha podido llevarse a la práctica de un modo absoluto, por constituir otro grave problema : la falta de locales en condiciones apropiadas para albergar a los inquilinos que desocuparan las Casas de Vecindad clausuradas, problema que agrava el estado de pobreza de la gran mayoría de los inquilinos, incapacitados para sufragar los gastos de mudanza y el depósito previo que exigen los arrendadores.

Most of them were in a condition to be closed to safeguard the health of the tenants; But this measure, although adjusted to the Law, has not been able to be put into practice in an absolute way, as it constitutes another serious problem: the lack of premises in appropriate conditions to house the tenants who vacated the closed Neighborhood Houses, a problem that aggravates the state of poverty of the vast majority of tenants, unable to pay for moving expenses and the previous deposit required by landlords.

1.3. 1942



Bengoa, José María. 1942. “Estudio Social Sanitario de Un Distrito de Caracas. Distrito ‘B’ Del Guarataro, Parroquia San Juan.” Revista de Sanitad y Asistencia Social VII (1): 5–49.

Categories:
conditions house lack neighborhood pay state tenants

415 416

También, durante los primeros meses de 1936, la Dirección de Sanidad del Distrito Federal, realizará una primera encuesta para el registro y estado de las casas de vecindad. En el informe se señala que de las 820 casa registradas sólo poco mas del 12 por ciento reúne las características señaladas en el Reglamento como para librarse de la clausura y el desalojo. Sin embargo, se reconoce que "nuestra clase menesterosa, aquella cuyos jornales no le permiten vivir fuera de esos focos de infección" no puede ser desalojada "por la falta de locales en condiciones apropiadas para albergar a los inquilinos que desocuparán las casas de vecindad clausuradas, problema que agrava el estado de pobreza que la gran mayoría de los inquilinos, incapacitados para sufragar los gastos de mudanza y el depósito previo que exigen los arrendadores

Also, during the first months of 1936, the Federal District Health Directorate will carry out a first survey for the registration and status of tenement houses. The report indicates that of the 820 houses registered, only a little more than 12 percent meet the characteristics indicated in the Regulations such as to avoid closure and eviction. However, it is recognized that "our needy class, the one whose wages do not allow them to live outside those sources of infection" cannot be evicted "due to the lack of premises in appropriate conditions to house the tenants who will vacate closed tenement houses. , a problem that aggravates the state of poverty that the vast majority of tenants, unable to pay for moving expenses and the previous deposit required by landlords

1.4.1 1947

Violich, Francis. 1947. "Banco Obrero: Venezuela Acomete El Problema de La Vivienda." Edited by Publicaciones Oficiales Venezuela. Revista de Fomento. 66 (IX–I): 25–47.

Categories:
area city construction country health homes housing rancho



25

El problema de la industrialización y urbanización de las principales poblaciones agrícolas es uno de los contemplados por muchos países de la América Latina.

The problem of industrialization and urbanization of the main agricultural populations is one of those contemplated by many Latin American countries.

# 25	*Cuántas casas son necesarias- La vivienda en Venezuela -como en otros países- es una parte integral de la economía y de la organización mundial.*	How many houses are needed- Housing in Venezuela -as in other countries- is an integral part of the economy and of the world organization.
# 25 26	*En 1873 la población del país era de 1.784.19; para 1940 esta cifra había aumentado mas del doble, llegando a 3.951.971. En estos años la ciudad de Caracas aumentó de 81.565 a 266.706, un aumento correspondiente a mas de tres veces.*	In 1873 the country's population was 1,784.19; by 1940 this figure had more than doubled, reaching 3,951,971. In these years the city of Caracas increased from 81,565 to 266,706, an increase corresponding to more than three times.
# 26	*Hoy este círculo [círculo vicioso de mas puestos de trabajo y menos viviendas producto de las migraciones] se ha estrechado en Caracas y Maracaibo, las ciudades más grandes y los centros de la industria petrolera. (...) Hay una escasez de vivienda decentes de requerimientos mínimos que resulta tremenda y trágica.*	Today this circle [vicious circle of more jobs and fewer housing as a result of migration] has narrowed in Caracas and Maracaibo, the largest cities and centers of the oil industry. (…) There is a shortage of decent housing with minimum requirements that is tremendous and tragic.
# 26 27	*El rancho es el nombre para el tipo de vivienda que sen encuentran en las áreas rurales y en los barrios bajos de la ciudad en Venezuela. Consiste en una armadura de madera generalmente hechas de desperdicios de los aserraderos; esta armadura está cubierta con barro mezclado de paja. El techo puede ser de paja o de pedazos de cáctus cubiertos con una capa de barro y paja. Un rancho generalmente cubre un área de 3' a 50 mts2) área de terreno de cerca 15x18 ó 15x30 pies) y cobija hasta doce (12) personas en un solo cuarto. Aunque el rancho se construye fácil y rápidamente, por lo general por los mismos familiares, requiere constante cuidado y reparaciones. La lluvia lava el barrio de las paredes y si*	The *rancho* is the name for the type of housing found in rural areas and in the slums of the city in Venezuela. It consists of a wooden frame generally made from sawmill waste; this armor is covered with mud mixed with straw. The roof can be made of straw or pieces of cactus covered with a layer of mud and straw. A *rancho* generally covers an area of 3 'to 50 m2) area of land of about 15x18 or 15x30 feet) and accommodates up to twelve (12) people in a single room. Although the *rancho* is built quickly and easily, usually by the relatives themselves, it requires constant care and repairs. The rain washes the neighborhood of the walls and if these are not properly protected; the roof, when made of straw, deteriorates.

	estas no están protegidas debidamente; el techo, cuando se hace de paja, se deteriora. En él se desarrollan insectos portadores de enfermedades y constituye una amenaza de incendio.	Disease-carrying insects develop in it and constitute a fire threat.
# 27	*La casa de vecindad es un edificio largo y estrecho con apartamentos de una sola habitación que abren a su espacio central abierto, el cual les provee luz, aire y sitio para lavar. Este tipo de vivienda se desarrolló necesariamente en las manzanas de 300 pies por lado originalmente trazadas en tal dimensión para permitir los enormes patios centrales de las casas coloniales.*	*La casa de vecindad es un edificio largo y estrecho con apartamentos de una sola habitación que abren a su espacio central abierto, el cual les provee luz, aire y sitio para lavar. Este tipo de vivienda se desarrolló necesariamente en las manzanas de 300 pies por lado originalmente trazadas en tal dimensión para permitir los enormes patios centrales de las casas coloniales.*
# 27	*El Banco Obrero, instituto oficial para la construcción de viviendas estima que en 1945 en Caracas había 40.000 personas vivienda en rancho y unas 20.000 adicionales vivían en casas de vecindad, hay por o tanto un total de 60.000 personas vivienda actualmente en habitaciones de tipo mas bajo que requieren ser mudadas. Esto hace un total de 10.000 viviendas en Caracas solamente requieren ser reemplazadas.*	The *Banco Obrero*, official institute for the construction of houses, estimates that in 1945 in Caracas there were 40,000 people living in *ranchos* and an additional 20,000 lived in tenement houses, there is therefore a total of 60,000 people currently living in rooms of a lower type. that require to be moved. This makes a total of 10,000 homes in Caracas that only need to be replaced.
# 27	*El Censo de 1941 para el Distrito Federal, incluyendo la capital y sus suburbios demostró que de las 54.062 viviendas en el Distrito, 12.570 tienen techos de paja; 11.464 tienen pisos de tierra; 22.157 no tienen servicios sanitarios o simplemente usan letrinas; 23.830 casi la mitad de la totalidad requieren conducir el agua hasta las casas; 12.7378 de las viviendas son ranchos.*	The 1941 Census for the Federal District, including the capital and its suburbs, showed that of the 54,062 homes in the District, 12,570 have thatched roofs; 11,464 have dirt floors; 22,157 do not have sanitation services or simply use latrines; 23,830, almost half of the total, require conducting the water to the houses; 12,7378 of the homes are *ranchos*.

#	*VIVIENDA Y SALUD*	HOUSING AND HEALTH
31	*El Ministerio de Sanidad y Asistencia Social publicó recientemente un Informe sobre los diferentes aspectos de la vida rural, incluyendo la vivienda, en un estudio experimental que cubrió 500 casas rurales. El Despacho encontró un promedio de 4,3 personas por cuarto, 33% tienen 2 habitaciones, promedio 4 por cuarto y 8%, tres habitaciones o más.*	The Ministry of Health and Social Assistance recently published a Report on the different aspects of rural life, including housing, in an experimental study that covered 500 rural houses. The Firm found an average of 4.3 people per room, 33% have 2 rooms, average 4 per room and 8%, three rooms or more.
	El doctor Bengoa quien escribió el Informe dice que de acuerdo con la Ley Inglesa, existe hacinamiento cuando una persona viven en un cuarto con un área de 8 a 10 mets.2. En las viviendas venezolanas estudiantes, 3%% de las habitaciones tiene un área de 5 a 10 mts2, y una densidad media de 4,3personas por habitación. 20% dice el doctor Bengoa no tienen camas y 40% tienen una sola cama para la familia entera.	Dr. Bengoa who wrote the Report says that according to English Law, there is overcrowding when a person lives in a room with an area of 8 to 10 meters. 2. In Venezuelan student housing, 3% of the rooms have an area of 5 to 10 m2, and an average density of 4.3 people per room. 20% says Dr. Bengoa do not have beds and 40% have only one bed for the whole family.
# *31* *32*	*El doctor Bengoa describe la vivienda típica rural. Es generalmente de construcción ligera con ventilación que él llama "permanente", refiriéndose a las muchas aberturas debido a la construcción rudimentario y los materiales empleados. Las viviendas son de bahareque -caña, paja y barro mezclados- o de adobes. Aunque ambos materiales son baratos y abundantes están sujetos a insectos y deteriores. El techo es generalmente de paja, los pisos de tierra, aunque algunas casas en pequeños poblados tienen pisos de cemento o de ladrillos. Debido a que las casas son de paja, frecuentemente son húmedas, las cocinas oscuras, el carbón usado para cocinar generalmente llena*	Dr. Bengoa describes typical rural housing. It is generally of a lightweight construction with ventilation which he calls "permanent," referring to the many openings due to the rudimentary construction and materials employed. The houses are made of bahareque - cane, straw and mud mixed- or adobes. Although both materials are cheap and abundant, they are subject to insects and deterioration. The roof is generally thatched, the floors are dirt, although some houses in small towns have concrete or brick floors. Because the houses are made of straw, they are often damp, the kitchens are dark, the charcoal used for cooking usually fills the room with smoke and blackens the

	el cuarto de humo y ennegrece las paredes, haciendo de las cocinas el sitio más desagradable de la casa.	walls, making kitchens the most unpleasant place in the house.
# 32	*El bajo tipo de estas viviendas y las condiciones de hacinamiento conducen a la propagación de las enfermedades contagiosas. De los 266.477 casos de enfermedades contagiosas clasificadas en 1944 por la División de Estadísticas Vitales del Ministerio de Sanidad y Asistencia Social, la mayoría se encontró en las viviendas de tipo bajo. Entre estos casos la mayoría fueron de tuberculosis, pulmonía y enfermedades intestinales, las últimas incluyen diarreas, esteritis, lombrices, disentería amibiana y parásitos, provenientes principalmente de abastecimientos de aguas deficientes.*	The low type of these dwellings and the overcrowded conditions lead to the spread of contagious diseases. Of the 266,477 cases of contagious diseases classified in 1944 by the Vital Statistics Division of the Ministry of Health and Social Assistance, the majority were found in low-income dwellings. Among these cases, the majority were tuberculosis, pneumonia, and intestinal diseases, the latter including diarrhea, steritis, worms, amoebic dysentery, and parasites, mainly from deficient water supplies.
# 33	*El doctor Bengoa encontró en su investigación de 500 viviendas que en casas de 1, 2, 3 y más dormitorios el número de muertes es respectivamente 188, 127, 115 y 120 por millar, una indicación clara de los efectos de hacinamiento en la vida de los niños. (...) El Instituto de Malariología ha establecido un mínimum standard para viviendas en lo que se refiere principalmente al uso de tela metálica y abastecimiento de agua*	Dr. Bengoa found in his investigation of 500 dwellings that in houses with 1, 2, 3 and more bedrooms the number of deaths is respectively 188, 127, 115 and 120 per thousand, a clear indication of the effects of overcrowding in the lives of the children. (…) The Institute of Malariology has established a minimum standard for homes in relation mainly to the use of wire mesh and water supply
# 35	*En todo el país el Banco tiene actualmente bajo su jurisdicción 1.669 viviendas [Sin incluir "El Silencio" en Caracas y la Urbanización "General Rafael Urdaneta" en Maracaibo, ambos en proceso de construcción y otorgamiento].*	Throughout the country, the Bank currently has 1,669 homes under its jurisdiction [Not including "El Silencio" in Caracas and the "General Rafael Urdaneta" Urbanization in Maracaibo, both in the process of construction and granting].

# 36	*El programa actual del Banco Obrero incluye la construcción de 40.000 viviendas en todo el país en un período de 10 años y con un presupuesto anual de nueve millones de dólares ($ 9.000.000). La necesidad de casas está demostrada por las 12.283 peticiones de archivo.*	*Banco Obrero*'s current program includes the construction of 40,000 homes throughout the country over a 10-year period and with an annual budget of nine million dollars ($ 9,000,000). The need for houses is demonstrated by the 12,283 filing requests.
# 42	*De acuerdo con estas cifras este grupo de bajas entradas tendría que usar el tipo mínimum, el tipo de rancho o casucha para poder normalizar el problema de la vivienda en su presupuesto. Si no es propietario de la choza, pagará una renta de Bs.10 a 25 mensuales o tendrá que arrendar una habitación en una casa de vecindad en Caracas de Bs. 20 a 40 mensuales. Los trabajadores son los que pagan generalmente el mayor porcentaje de sus entradas para vivienda, aún teniendo las facilidades para el standard mas bajos. La racionalización de los salarios y los costos de la vida, automáticamente aumentaría la construcción de vivienda.*	According to these figures, this low-income group would have to use the minimum rate, the type of *rancho* or shack, in order to normalize the housing problem in their budget. If you do not own the hut, you will pay a rent of Bs. 10 to 25 per month or you will have to rent a room in a tenement house in Caracas for Bs. 20 to 40 per month. Workers are the ones who generally pay the highest percentage of their income for housing, even having the facilities for the lowest standard. Rationalization of wages and living costs would automatically increase housing construction.
# 44	*Hay una gran necesidad de técnicos para planificar y construir viviendas de bajo costo. Los graduados de escueles de ingeniería son utilizados inmediatamente por las firmas privadas y las oficinas públicas. Las primeras ofrecen muchas oportunidades debido al auge de la construcción de oficinas, apartamentos, etc. Hace varios años se estableció una escuela de arquitectura, la cual está aumentando de tamaño; muchos estudiantes de arquitectura e ingeniería concurren actualmente las Universidades en los Estados Unidos. También hace falta obreros*	There is a great need for technicians to plan and build low-cost housing. Engineering school graduates are immediately used by private firms and public offices. The former offer many opportunities due to the boom in the construction of offices, apartments, etc. Several years ago a school of architecture was established, which is increasing in size; many architecture and engineering students currently attend universities in the United States. Skilled workers are also needed, although the supply increases daily as

	especializados, aunque diariamente el abastecimiento aumenta a medida que aumentar la construcción de nuevos edificios."	the construction of new buildings increases. "
# 46 47	*Los pasos siguientes insisten en la continuación de la acción definida que ha comenzado el Gobierno y en la construcción de buenos tipos de vivienda y urbanizaciones perfectamente estudiados en todos sus aspectos técnicos, económicos y sociales.*	The following steps insist on the continuation of the defined action that the Government has begun and on the construction of good types of housing and urbanizations, perfectly studied in all their technical, economic and social aspects.

1.4.2 **1947**



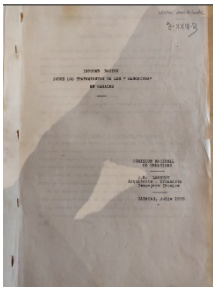
Martinez Olavarria, Leopoldo. 1947. "Discurso Del Dr. Luis Martínez Olavarría, Director Del Banco Obrero, Con Motivo de La Primera Reunión Internacional de Expertos Sobre La Viivenda Tropical." Revista de Fomento. 69 (IX–III): 157–62.

Categories:
construction eliminate habits housing improvement materials modern population urban

# 158	*Puede que en muchos casos los estudios y estimaciones actuales resulten abultados y que en ciertos lugares sólo se haga necesario un mejoramiento parcial de las condiciones de vivienda y una previsión de reemplazo para las construcciones ya hechas, pero también no sería extraño encontrar en otros, la necesidad de eliminar completamente sectores urbanos no aptos para la vida moderna al establecerse definitivamente los standards mínimos de habitación. La superación moral y social del pueblo se hace imposible mientras subsistan los barrios*	It may be that in many cases the current studies and estimates are bulky and that in certain places only a partial improvement of housing conditions and a replacement forecast for the constructions already made is necessary, but it would also not be strange to find in others, the The need to completely eliminate urban sectors unsuitable for modern life by definitively establishing the minimum standards of habitation. The moral and social improvement of the people becomes impossible as long as the unhealthy neighborhoods and urban

	insalubres, y los hacinamientos urbanos que no son otra cosa que incubado res del crimen, de la prostitución y de las malas costumbres. Sin atacar aun el problema de la vivienda campesina más que en forma experimental y limitada, los planes del Banco Obrero son dirigidos en el sentido de contemplar al mismo tiempo numerosas poblaciones y atender además la escasez de vivienda de Caracas"	crowds remain, which are nothing other than incubators of crime, prostitution and bad habits. Without even attacking the problem of peasant housing more than in an experimental and limited way, the *Banco Obrero*'s plans are directed in the sense of contemplating at the same time numerous populations and also attending to the housing shortage in Caracas "
# 159	*Por otra parte, es inútil pensar en el saneamiento efectivo de la población si no se suprimen los focos de tuberculosis, raquitismo, anemia y otras clases de enfermedades, anidadas en las viviendas antihigiénicas que plagan nuestras ciudades y nuestros campos.*	On the other hand, it is useless to think about the effective sanitation of the population if the foci of tuberculosis, rickets, anemia and other kinds of diseases, nested in the unsanitary houses that plague our cities and our countryside, are not eliminated.
# 159	*Se hace necesario una incrementación vigorosa a esas industrias [de la construcción] con la modernización total de sus equipos a fin de lograr materiales en cantidad suficiente y a precios económicos. Igualmente, un análisis detallado de los recursos autóctonos y el ensayo continua do de nuevos elementos con materias primas de la región, nos llevará al mejoramiento de los sistemas actuales de construcción o a la aplicación de nuevos conceptos en las soluciones por realizar.*	A vigorous increase in these [construction] industries is necessary with the total modernization of their equipment in order to obtain materials in sufficient quantity and at economic prices. Likewise, a detailed analysis of indigenous resources and the continuous testing of new elements with raw materials from the region will lead us to improve current construction systems or apply new concepts in solutions to be made.

1.5. 1950



Lambert, Jacques. 1950. “Informe Básico sobre el tratamiento de los ‘Ranchoitos’ en Caracas.” Comisión Nacional de Urbanismo. Archives Diplomatiques Ministère des Affaires Etrangères, Nantes, serie Caracas 1825-1952, cartón 79.

Categories:
agglomerations avoid capital cities hills materials property ranchitos ranchos social structure

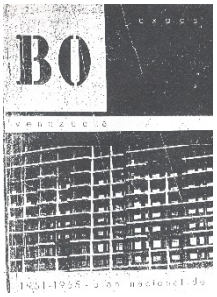
#		
3	*En la lucha contra los ranchitos emprendida en todas las partes del Continente, Chile se clasificó hace tres años a la cabeza con 18000 viviendas para una población de cinco millones y medio, seguido por el Brasil con 15000 viviendas para una población de cuarenta y siete millones, se señalan en seguida Uruguay con 3000 por tres millones y medio.*	In the fight against the ranchitos undertaken in all parts of the Continent, Chile ranked first three years ago with 18,000 homes for a population of five and a half million, followed by Brazil with 15,000 homes for a population of forty-seven million, Uruguay with 3,000 times three and a half million is immediately indicated.
5 6	*Por otra parte no debemos de olvidar en el caso de los ranchitos caraqueños que ellos, a pesar de sus formas rudimentarias, no son barrios de desecho como en varios países, sino formación instintiva y espontánea de aglomeraciones primitivas las cuales importa por la mayor parte organizar y ayudar en su desarrollo*	On the other hand, we should not forget in the case of the Caracas ranchitos that they, despite their rudimentary forms, are not waste neighborhoods as in several countries, but instinctive and spontaneous formation of primitive agglomerations which, for the most part, are important to organize. and help in its development
9	*El rancho, habitación instintiva usual en el medio de los llanos donde el hombre encuentra su subsistencia diaria, sus paredes y su techo, tornase en slums en las ciudades llegadas a un estado urbano cuyos lazos con el campo están rotos a fortiori, en la Capital.*	The *rancho*, the usual instinctive room in the middle of the plains where man finds his daily subsistence, its walls and its roof, turned into slums in the cities arrived at an urban state whose ties with the countryside are a fortiori broken, in the Capital .
	En el caso mas frecuente, el hombre se instala en condiciones similares a las de su vida ancestral (vida en las quebradas Catuche, Anauco y otras) pero el	In the most frequent case, man settles in conditions similar to those of his ancestral life (life in the Catuche, Anauco and other streams) but the urban

	ambiente urbano se interviene inmediatamente cambiando elementos primitivos de estructura en materiales un poco más duraderos en donde se instalan radios y, aun, refrigeradores.	environment is immediately intervened by changing primitive structural elements into slightly more durable materials where radios and even refrigerators are installed.
# 9	*Un estudio especial deberá ser emprendido en vista de suministrar bajo ciertas consideraciones y al menor precio, materiales preparados con recursos naturales y, a falta de ellos, materiales importados por organismos controlados por el Estado evitando la especulación.*	A special study should be undertaken in order to supply, under certain considerations and at the lowest price, materials prepared with natural resources and, in the absence of them, materials imported by state-controlled agencies, avoiding speculation.
# 10	*En estas aglomeraciones con ranchitos las modificaciones de estructura, materiales y disposiciones mismas precisan un esfuerzo sostenido de sus habitantes, un adelanto en la escala social y un gusto creciente de la vida urbana los cuales se deben fomentar y ayudar mientras es preciso reducir el número de los miserables.*	In these agglomerations with little *ranchos*, the modifications of structure, materials and dispositions themselves require a sustained effort of their inhabitants, an advance in the social scale and a growing taste for urban life, which should be encouraged and helped while it is necessary to reduce the number of the miserables.
# 10	*En los conjuntos de los cerros con "ranchitos" se puede notar las siguientes predominancias: tendencia al arraigamiento de los habitantes, tendencia al mejoramiento de la célula familiar, tendencia al desarrollo del instinto de la propiedad, tendencia en [sic] los grandes conjuntos (ciudades anárquicas de altura) algunos rudimentos de régimen de intercambio interior.*	In the assemblages of the hills with "ranchitos", the following prevalence can be noted: tendency to settle down of the inhabitants, tendency to improve the family cell, tendency to develop the property instinct, tendency in [sic] large assemblages (anarchic high-rise cities) some rudiments of the internal exchange regime.
# 12	*También existen terrenos libres para el realojamiento temporario o definitivo de los habitantes de los cerros los cuales podrán ser trasladados del Oeste.*	There are also free lands for the temporary or permanent relocation of the inhabitants of the hills, which may be transferred from the West.

# 16	*Todos los arreglos que pueden proponerse para los cerros con ranchitos como los cuales aunque moderados sugerimos mas abajo, necesitan sobre el plan técnico las operaciones iniciales siguientes las cuales, para economizar tiempo hemos hasta ahora reducido al mínimo indispensable:* *1) Investigaciones preliminares sobre las condiciones sociales de los habitantes y la estructura de los agrupamientos, ocupaciones y trabajos de los habitantes; estatuto social y sanitario, situación de las propiedades.* *2) Selección de terrenos libres o búsqueda de viviendas en un radio de 500 a 1.000 metros del cerro designado para colocar temporalmente a los desalojados hacia otros sitios.*	All the arrangements that can be proposed for the hills with little *ranchos*, such as which although moderate we suggest below, require the following initial operations on the technical plan which, to save time, we have so far reduced to the bare minimum: 1) Preliminary investigations on the social conditions of the inhabitants and the structure of the groups, occupations and jobs of the inhabitants; social and health status, property situation. 2) Selection of free land or search for housing within a radius of 500 to 1,000 meters from the designated hill to temporarily place the evicted to other sites.
# 16	*[Plan de transformación] "1).- Investigaciones preliminares sobre el nombre de las habitaciones y la estructura de sus agrupamientos, ocupaciones y trabajos de los habitantes; estatuto social y sanitario, situación de las propiedades."*	*[Plan de transformación] "1).- Investigaciones preliminares sobre el nombre de las habitaciones y la estructura de sus agrupamientos, ocupaciones y trabajos de los habitantes; estatuto social y sanitario, situación de las propiedades."*
# 23	*Para evitar ver la proliferación del mal, cuando sea tratado en las partes de la ciudad anteriormente definidas, reaparecer mas virulenta en otro punto de Caracas particularmente en el este (Estado Miranda) lugares amenazados por una invasión análogo, todos los modos de tratamientos mas arriba descritos para las masas de los ranchitos, deben depender de una acción general y concertada que se extiende, en primer lugar, al conjunto*	To avoid seeing the proliferation of evil, when it is treated in the previously defined parts of the city, reappear more virulent in another part of Caracas, particularly in the east (Miranda State), places threatened by an analogous invasion, all the treatment modes above described for the masses of the ranchitos, must depend on a general and concerted action that extends, in the first place, to the whole of the total territory of the capital Caracas agglomeration,

del territorio total de la aglomeración caraqueña capitalina,

1.6. 1951



Banco Obrero. 1951. "1951-1955 Plan Nacional de Vivienda." Folleto. Exhibicion Banco Obrero.

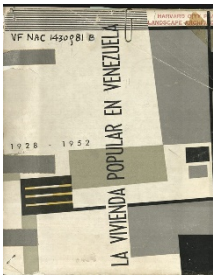
Categories:
cities construction country economy family-growth housing massive-national-plan

# 4	*Todos los países del mundo, aún los más ricos e industrializados sufren un déficit de viviendas. Ello explica por qué es una preocupación mundial la solución del problema de la habitación. Venezuela, país en pleno desarrollo económico, que ha duplicados u población en diez años y que recibe una corriente inmigratoria, en síntesis, país en crecimiento, siente con gran necesidad el problema de la habitación. El Plan Nacional de Vivienda se dirige principalmente a dotar aquellas ciudades de mayor crecimiento de la población, de cuotas anuales de viviendas proporcionales al crecimiento unifamiliar intercensal.*	Every country in the world, even the richest and most industrialized, suffers from a housing deficit. This explains why solving the room problem is a global concern. Venezuela, a country in full economic development, which has doubled its population in ten years and which receives an immigration stream, in short, a growing country, feels the problem of housing with great need. The National Housing Plan is mainly aimed at providing those cities with the highest population growth, with annual housing quotas proportional to intercensal single-family growth.
# 4 - 5	*La importancia de esa labor del Estado [construir viviendas] a través del Banco Obrero no la constituye solamente la capacidad de dotar de habitación al mayor número posible de familias venezolanas mediante la construcción de casas o del otorgamiento de créditos, sino también en la labor paralelo de la investigación económica en materia de vivienda. La construcción masiva, la*	The importance of this work of the State [building houses] through the *Banco Obrero* is not only the ability to provide housing to the largest possible number of Venezuelan families through the construction of houses or the granting of loans, but also in parallel work of economic research on housing. The massive construction, the simplification of distribution, the elimination of the

simplificación de distribución, la eliminación de lo accesorio en el hogar en favor de lo esencial en su construcción, La educación de la familia mediante la demostración práctica, coadyuvan en el mismo sentido que la inversión monetaria al acercamiento cada vez mayor de la familia de medios modestos a la obtención de la vivienda.

accessory in the home in favor of the essential in its construction, the education of the family through practical demonstration, contribute in the same sense that the monetary investment to the increasing approach of the family of modest means to the obtaining of the house.

1.7. 1953



Banco Obrero, Carlos Raúl Villanueva, and Carlos Celis Cepero. 1953. La vivienda popular en Venezuela, 1928-1952. Caracas: Ministerio de Obras Públicas

Categories:

cities construction country economy family-growth housing massive-national-plan

5

ESQUEMA PARA EL ESTUDIO DE UN PLAN NACIONAL DE VIVIENDA DE CUATRO AÑOS. QUE SE REALIZARÁ EN LAS PRINCIPALES CIUDADES DE VENEZUELA.

[Se describen las siguientes fases] I) INTRODUCCIÓN, II) FACTORES REGIONALES, II) PLANO ACTUAL DE LA CIUDAD, PLANOS REGULADORES, PLAN DE VIALIDAD, IV) SELECCIÓN DEL SITIO Y ESTIMACIÓN DEL NÚMERO DE VIVIENDAS, V) MATERIALES Y SISTEMAS DE CONSTRUCCIÓN, VI) TIPOS DE VIVIENDA, VII) CENTRO CÍVICO, SERVICIOS COMUNES Y EXPANSIONES, VIII) ASPECTOS LEGALES

SCHEME FOR THE STUDY OF A FOUR-YEAR NATIONAL HOUSING PLAN. TO BE HELD IN THE MAIN CITIES OF VENEZUELA.

[The following phases are described] I) INTRODUCTION, II) REGIONAL FACTORS, II) CURRENT CITY MAP, REGULATORY PLANS, ROAD PLAN, IV) SITE SELECTION AND ESTIMATION OF THE NUMBER OF HOUSES, V) MATERIALS AND CONSTRUCTION SYSTEMS , VI) TYPES OF HOUSING, VII) CIVIC CENTER, COMMON SERVICES AND EXPANSIONS, VIII) LEGAL ASPECTS

[Then the book does a history of housing, with an emphasis on colonial

[Luego el libro hace una historia de la vivienda, con énfasis en la vivienda colonial, y luego muestra varios proyectos de vivienda moderna].

housing, and then shows various modern housing projects].

23

[Información duplicada de Banco Obrero. 1951. "1951-1955 Plan Nacional de Vivienda." Folleto. Exhibición Banco Obrero] Todos los países del mundo, aún los más ricos e industrializados sufren un déficit de viviendas. Ello explica por qué es una preocupación mundial la solución del problema de la habitación. Venezuela, país en pleno desarrollo económico, que ha duplicados u población en diez años y que recibe una corriente inmigratoria, en síntesis, país en crecimiento, siente con gran necesidad el problema de la habitación. El Plan Nacional de Vivienda se dirige principalmente a dotar aquellas ciudades de mayor crecimiento de la población, de cuotas anuales de viviendas proporcionales al crecimiento unifamiliar intercensal.

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[Información duplicada: Banco Obrero. 1951. "1951-1955 Plan Nacional de Vivienda." Folleto. Exhibición Banco Obrero] La construcción masiva, la simplificación de distribución, la eliminación de lo accesorio en el hogar en favor de lo esencial en su construcción, La educación de la familia mediante la demostración práctica, coadyuvan en el mismo sentido que la inversión monetaria al acercamiento cada vez mayor de la familia de medios modestos a la obtención de la vivienda.

[Duplicated information from *Banco Obrero. 1951. "1951-1955 Plan Nacional de Vivienda." Folleto. Exhibición Banco Obrero*] The massive construction, the simplification of distribution, the elimination of the accessory in the home in favor of the essential in its construction, The education of the family through practical demonstration, contribute in the same sense as the monetary investment to the increasing approach of the family of modest means to the obtaining of the house.

# 119	*La ciudad es una herramienta de trabajo. "Ya las ciudades no llenan normalmente esta función. Son ineficientes; gastan el cuerpo y se oponen al espíritu. El desorden que en ellas se multiplica es oprobioso: su decadencia hiere nuestro amor propio y veja nuestra dignidad. No son dignas de le época. No son dignas de nosotros." Le Corbusier.*	The city is a working tool. "Cities no longer normally fill this role. They are inefficient; they waste the body and oppose the spirit. The disorder that multiplies in them is disgraceful: their decadence hurts our self-esteem and vexes our dignity. They are not worthy of the time. They are not worthy of us. " Le Corbusier.

1.8.1 1954a



Banco Obrero. 1954a. "Revista del Banco Obrero. Solución al Problema de la Vivienda (1)" 1 (1).

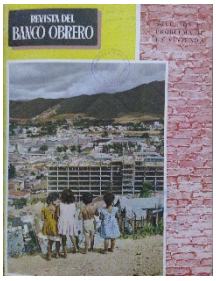
Categories:
advancing architectural banco built cerro city contrast housing modern obrero piloto rancho

# 13	*ÁNGULOS VISUALES EN CONTRASTE. Una vez trazado el programa y generado el impulso determinante que transforma la vivienda en Venezuela, las realizaciones del Banco Obrero avanzan con ritmo acelerado. Abrigamos la seguridad de que, en un plazo menor del que se había previsto, habrán sido eliminados radicalmente del paisaje urbano de Caracas espectáculos de tristeza y de miseria como el que, en contraste con nuestras edificaciones modernas y arquitectónicas, insertamos en esta misma página. A título de mera información, ofrecemos a nuestros lectores los siguientes datos: En un lapso extremadamente corto, se ha construido el edificio de cuatro pisos del Cerro Piloto, y adelanta rápidamente la*	VISUAL ANGLE IN CONTRAST. Once the program has been drawn up and the decisive momentum that transforms housing in Venezuela has been generated, the *Banco Obrero*'s achievements are advancing at an accelerated pace. We are sure that, in a shorter period than was foreseen, they will have been radically eliminated from the urban landscape of Caracas shows of sadness and misery such as the one that, in contrast to our modern and architectural buildings, we insert on this same page. For mere information, we offer our readers the following information: extremely short, the four-story building of Cerro Piloto has been built, and the structure of the fifteen-story multicellular building in the same sector is rapidly advancing. The

	estructura del edificio multicelular de quince pisos en el mismo sector. Las construcciones de Superbloques que, en Cútira y en Diego de Losada -barrio de "Los Hijos de Dios"- ejecuta el Banco Obrero, serán inauguradas dentro de corto tiempo." [Imágen de un ranchoo]	constructions of Superblocks that, in Cútira and in Diego de Losada - neighborhood of "Los Hijos of God "- executes the *Banco Obrero*, they will be inaugurated in a short time." [Image of a *rancho*]
# 17	*El "Cerro Piloto", la más extensa y diversificada zona de viviendas construidas en terrenos urbanos de accidentada topografía, ha sido escogido por el Presidente de la República, Coronel Marcos Pérez Jiménez, para realizar en vasta escala el primer gran experimento de la "Vivienda Social" que, en un cercano futuro, erradicará totalmente de la moderna capital de Venezuela el "rancho" mísero y antihigiénico, sustituyéndolo por la casita o el apartamento limpio, sano y confortable, a cuyo abrigo las clases trabajadoras del pueblo venezolano encontrarán una fuente —espiritual y material— de renovadas energías para cumplir su gran destino.*	The "Cerro Piloto", the most extensive and diversified area of housing built on urban land with rugged topography, has been chosen by the President of the Republic, Colonel Marcos Pérez Jiménez, to carry out on a vast scale the first great experiment of "Housing Social "that, in the near future, will totally eradicate the miserable and unsanitary" *rancho* "from the modern capital of Venezuela, replacing it with the house or the clean, healthy and comfortable apartment, in whose shelter the working classes of the Venezuelan people will find a source. —Spiritual and material— of renewed energies to fulfill his great destiny.
# 18	*[Elección del Cerro Piloto] "c) El censo verificado por Ia Seción de lnvestigaciones Social, Económica y Tecnológica" confirmó la tesis prevista en el sentido de que la mayoría de los habitantes del "Cerro Piloto" trabajan en San Martin y Catia. La reubicacion de sus viviendas en las cercanías donde la población desarrolla en gran parte sus actividades de producción, le permitirá mantener, sin peligro de desequilibrio, el ritmo de su economía, desde luego en condiciones muy superiores a las de ahora d) Desde un punto de vista estético y arquitectónico, era de necesidad hacer desaparecer el*	*[Election of Cerro Piloto] "c) The census verified by the Social, Economic and Technological Research Section" confirmed the thesis envisaged that most of the inhabitants of "Cerro Piloto" work in San Martin and Catia. The relocation of their homes in the vicinity where the population largely develops its production activities, will allow it to maintain, without danger of imbalance, the rhythm of its economy, of course in conditions much superior to those of now d) From a point of view From an aesthetic and architectural point of view, it was necessary to make the clutter of ranches located disappear, it*

	amontonamiento de los ranchos ubicados, se puede decir que en el corazón de Caracas, la gran ciudad moderna, orgullo de los venezolanos."	*can be said that in the heart of Caracas, the great modern city, the pride of Venezuelans. "*

1.8.2 1954b

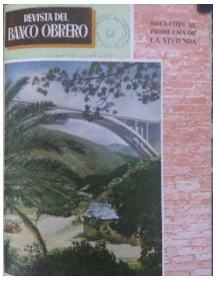


Banco Obrero. 1954b. “Revista del Banco Obrero. Solución al Problema de la Vivienda (2)” 1 (2).

Categories:
bad capital cover escape hills life national people-problems site-sensibly social urban

# 4	*Nuestra Portada. Las nuevas generaciones venezolanas que se forman en los cerros de la capital, miran con singular ternura y con un dejo de sana inocencia las magníficas obras que realiza el Gobierno Nacional para la transformación del ambiente social de nuestro pueblo. La portada recoge sensiblemente el tierno regocijo de la infancia inquieta y humilde.*	Our Cover. The new Venezuelan generations that are formed in the hills of the capital, look with singular tenderness and with a hint of healthy innocence at the magnificent works carried out by the National Government for the transformation of the social environment of our people. The cover sensibly captures the tender joy of restless and humble childhood.
# 8	*Es necesario erradicar de los cerros que rodean a Caracas, todo ese mal aspecto urbanístico que el mal tiempo ha ido formando. El cerro se ha constituido, para este grupo de venezolanos, en sitio para la dramática escapada a los problemas de la vida.*	It is necessary to eradicate from the hills that surround Caracas, all that bad urban aspect that bad weather has been forming. The hill has become, for this group of Venezuelans, the site for the dramatic escape from the problems of life.

1.8.3 1954c

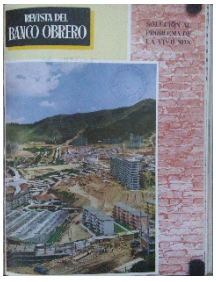


Banco Obrero. 1954c. “Revista del Banco Obrero. Solución al Problema de la Vivienda (4)” 1 (4).

Categories:
construction eradicating gigantic Pérez Jimenez order plan rancho regulations solution

# 8	*Cerca de quinientos documentos diarios ha venido recibiendo el mencionado Departamento, para ser sometidos a examen de acuerdo con las reglamentaciones establecidas en el estudio que de la mencionada zona realizara el Banco Obrero, como parte preliminar para ordenar la construcción de los gigantescos edificios que integrarán el plan del Cerro Piloto, solución inmediata al problema de la vivienda, y erradicación total de los ranchos que pueblan los alrededores de Caracas.*	About five hundred documents a day have been received by the aforementioned Department, to be subjected to examination in accordance with the regulations established in the study that the *Banco Obrero* carried out of the aforementioned area, as a preliminary part to order the construction of the gigantic buildings that will make up the Cerro Piloto plan, immediate solution to the housing problem, and total eradication of the *ranchos* that populate the outskirts of Caracas.
# 16	*La obra de tanta proyección social que adelanta el Banco Obrero, tendiente a erradicar el rancho de los cerros que rodean a la Ciudad, está próxima a ser concluida, debido a la voluntad y al deseo de cumplir con las justas aspiraciones del señor Presidente de la República, Coronel Marcos Pérez Jiménez.*	The work of so much social projection carried out by the *Banco Obrero*, aimed at eradicating the *rancho* from the hills that surround the City, is close to being concluded, due to the will and desire to fulfill the just aspirations of the President of the Republic, Colonel Marcos Pérez Jiménez.

1.8.4 **1954d**



Banco Obrero. 1954d. “Revista del Banco Obrero. Solución al Problema de la Vivienda (5)” 1 (5).

Categories:
capital country-development housing limited ministry national plans policy programs public

# 5	*Tal es el caso de la revista "Visión", quincenario que se edita en español en Nueva York, destinado al público de habla hispana y dirigido a dar una curiosa y atrabiliaria imagen de la*	*Such is the case of the magazine "Vision", a fortnightly magazine that is published in Spanish in New York, aimed at the Spanish-speaking public and aimed at giving a curious and*

realidad latinoamericana. Dicha publicación, en reciente entrega, glosa, en forma singularmente tendenciosa, el informe de Francis Violich, sobre la "Política de propiedad urbana en Latino América", publicada en "Housing and Town and Country Planning", Bulletin 7: Urban Land problems and policies New York, United Nations 1953, y hace hincapié en el caótico desarrollo del urbanismo venezolano, llegando a conclusiones francamente absurdas y extemporáneas.

outlandish image of Latin American reality. Said publication, recently delivered, glosses, in a singularly tendentious way, the report by Francis Violich, on "Urban Property Policy in Latin America", published in "Housing and Town and Country Planning", Bulletin 7: Urban Land problems and policies New York, United Nations 1953, and emphasizes the chaotic development of Venezuelan urbanism, reaching frankly absurd and extemporaneous conclusions.

9 *Y al mismo tiempo que se acometía la construcción de viviendas en gran escala, se proyectaba sobre el resto de todo el país, una política de saludable resonancia nacional, dirigida a estabilizar la situación del interior y a limitar, en consecuencia, la fuga del material humano hacia la capital.*

And at the same time that large-scale housing construction was being undertaken, a policy of healthy national resonance was being projected onto the rest of the country, aimed at stabilizing the situation in the interior and consequently limiting the leakage of human material. towards the capital.

9 *De aquí surgieron la serie de planes que, en escala nacional ha puesto en marcha el Gobierno, bajo la inspiración directa a de Primer Magistrado de la República, Coronel Marcos Pérez Jiménez. El plan de obras públicas que contempla la realización de grandes trabajos en todo el territorio nacional— carreteras, diques, canalizaciones, obras de riego, edificaciones médico-asistenciales, etc.— todas en marcha y en la que se utilizan grandes masas obreras. Los planes de recuperación económica adelantados por la Corporación Venezolana de Fomento ...; los programas de reforma agraria y de creación de unidades agropecuarias puestos en marcha por el Ministerio de Agricultura y Cría y el Instituto Agrario Nacional; los planes ferroviarios del*

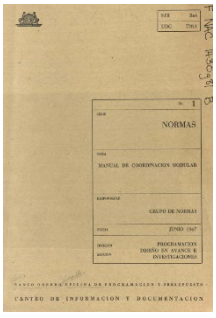
From here arose the series of plans that, on a national scale, the Government has launched, under the direct inspiration of the First Magistrate of the Republic, Colonel Marcos Pérez Jiménez. The public works plan that contemplates the realization of large works throughout the national territory — roads, dams, canalizations, irrigation works, medical-welfare buildings, etc.— all underway and in which large working masses are used. The economic recovery plans advanced by the Venezuelan Development Corporation ...; the agrarian reform programs and the creation of agricultural units launched by the Ministry of Agriculture and Breeding and the National Agrarian Institute; the railway plans of the Ministry of Communications, which

	Ministerio de Comunicaciones, que contemplan obras de largo alcance en todo el territorio nacional, y los programas de la Comisión de Estudios Especiales, entre los que se destacan el proyecto de electrificación del Caroní, la instalación de la industria siderúrgica y de la petroquímica, y en última instancia, el vasto plan de construcciones que moviliza el Banco Obrero, el primer instituto de la vivienda en Venezuela, y cuya labor no se circunscribe únicamente a Caracas, sino que se expande a toda la República, en forma eficaz, sistemática y tecnificada.	contemplate long-range works throughout the national territory, and the programs of the Special Studies Commission, among which the Caroní electrification project, the installation of the iron and steel industry and the petrochemicals, and ultimately, the vast construction plan mobilized by the *Banco Obrero*, the first housing institute in Venezuela, and whose work is not limited only to Caracas, but is expanded to the entire Republic, effectively , systematic and technical.
# 9	*Porque a la par que se levantan grandes bloques residenciales y se construyen monumentales avenidas en Caracas, las otras ciudades, de acuerdo con la densidad de población y las características esenciales que acusan, van recibiendo el beneficio de una serie de obras de vital importancia para el futuro de la Nación. Crecen, progresivamente, junto con el poderoso desarrollo capitalino*	Because at the same time that large residential blocks are being built and monumental avenues are built in Caracas, the other cities, in accordance with the population density and the essential characteristics they accuse, are receiving the benefit of a series of works of vital importance for the future of the Nation. They grow progressively, together with the powerful development of the capital.
# 9	*Ya los ranchos infectos comenzaron a ceder paso a los apartamentos higiénicos y modernos.*	Already the infected *ranchos* began to give way to the hygienic and modern apartments.

1.9 **1967**

Banco Obrero. 1967. “Manual de coordinación modular.” Banco Obrero.

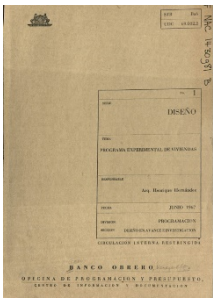
Categories:
assembly components construction coordination costs economic efficiency manufacture methods modular production proposed



# 6	*El BANCO OBRERO, tiene planteado de acuerdo al Plan de la Nación, un gran aumento en su producción de viviendas necesitando al mismo tiempo mantener un nivel de costos de construcción tal, que le permita seguir atendiendo a las clases económicas menos favorecidas. Ante esta interrogativa, el BANCO OBRERO ha iniciado la búsqueda de métodos más racionales de producción, en base a una serie de experiencias que abarcan desde la normalización de los elementos constructivos hasta la mecanización de la producción. La Coordinación Modular representa dentro de todo ello un capítulo de importancia, ya que permite relacionar la fabricación de los componentes, su diseño y el ensamblaje en obra, eliminando los tamaños innecesarios de dichos componentes y su coordinación en forma racional.*	According to the National Plan, the WORKERS 'BANK has proposed a large increase in its housing production, while at the same time needing to maintain a level of construction costs such that it allows it to continue serving the less favored economic classes. Faced with this question, the *Banco Obrero* has begun the search for more rational production methods, based on a series of experiences that range from the standardization of construction elements to the mechanization of production. The Modular Coordination represents an important chapter within all of this, since it allows to relate the manufacture of the components, their design and the assembly on site, eliminating the unnecessary sizes of said components and their coordination in a rational way.
# 9	*[Definiciones] Coordinación Modular. Es una técnica que permite relacionar las medidas de proyecto con las medidas modulares por medio de un reticulado espacial modular de referencia.*	[Definitions] Modular Coordination. It is a technique that allows project measurements to be related to modular measurements by means of a reference modular spatial lattice.
# 12	*Las retículas de referencia utilizadas como base para los proyectos y la determinación de rangos de medidas para los componentes de la construcción a través de la determinación de la "serie de tamaños preferidos", son los procedimientos utilizados para mejorar los problemas señalados.*	The reference grids used as a basis for the projects and the determination of measurement ranges for the construction components through the determination of the "series of preferred sizes", are the procedures used to improve the indicated problems.

# 17	*Los componentes de la construcción deben ser dimensionados para obtener una mayor eficiencia en su fabricación y ensamblaje.*	The construction components must be dimensioned to obtain greater efficiency in their manufacture and assembly.

1.10 1967



Hernández, Henrique. 1967. “Programa experimental de viviendas.” Banco Obrero, Oficina de Programación y presupuesto.

Categories:
companies construction design developed efficiency housing method problems production

# 4	*2. BASES Y PROPOSITOS DEL PROGRAMA - Fomentar y alentar a las empresas interesadas en desarrollar métodos que aumenten la productividad en la construcción de viviendas. - Desarrollar sistemas de construcción que satisfaciendo los requerimientos de habitabilidad, velocidad de producción y economía, permita aumentar la producción del Instituto con los mismos recursos disponibles. - Buscar procedimientos para hacer participar en el enfoque de la producción de viviendas las experiencias constructivas exteriores al Instituto existentes en el país. - Afrontar el proceso de producción de vivienda: Programación, proyecto y construcción, de modo de aprovechar al máximo los distintos equipos que intervienen en las diferentes fases del mencionado proceso.*	2. BASES AND PURPOSES OF THE PROGRAM - Encourage and encourage companies interested in developing methods that increase productivity in housing construction. - Developing construction systems that, by satisfying the requirements of habitability, speed of production and economy, allow to increase the production of the Institute with the same available resources. - Find procedures to involve the existing construction experiences outside the Institute in the country in the approach to housing production. - Face the housing production process: Programming, project and construction, in order to make the most of the different teams involved in the different phases of the aforementioned process.

# 5	*El programa abarca todas las etapas del proceso de producción de viviendas: Programación, Proyecto y Construcción, combinando a todos los que intervienen en los distintas etapas, de tal manera, que puedan aprovecharse al máximo la capacidad de éstos en interés de una mayor eficacia, evitándose en lo posible las contradicciones que surgen entre cada una de las distintas etapas. Se desarrollaron los siguientes aspectos: 1. Método de programación para la definición de los datos básicos necesarios para el diseño de la vivienda. 2. Nuevo método de diseño, acorde con las necesidades de producción masiva de la vivienda. 3. Nuevos métodos constructivos.*	The program covers all stages of the housing production process: Programming, Project and Construction, combining all those involved in the different stages, in such a way that they can make the most of their capacity in the interest of greater efficiency, avoiding as much as possible the contradictions that arise between each of the different stages. The following aspects were developed: 1. Programming method for defining the basic data necessary for the design of the house. 2. New design method, in accordance with the needs of mass production of the house. 3. New construction methods.
# 10	*Método de Diseño. El proyecto de arquitectura se desarrolló aplicando los criterios de la coordinación modular y el de los "sistemas constructivos flexibles", definiéndose S.C.F. como una serie de componentes constructivos coordinados entre sí para que puedan ser ensamblados en una variedad de formas tal, que permita el arreglo de diferentes viviendas en función a un programa dado y a un terreno determinado.*	Design method. The architecture project was developed applying the criteria of modular coordination and that of "flexible construction systems", defining S.C.F. as a series of constructive components coordinated with each other so that they can be assembled in a variety of ways that allows the arrangement of different homes based on a given program and a given terrain.
# 11	*Cada S.C.F. [Sistema Constructivo Flexible] fue estudiado íntimamente ligado al proceso y factibilidad de producción de las distintas empresas participantes; fijándose su unidad básica constructiva de tal forma, que, basándose en sus posibilidades combinatorias se pudieron armar viviendas que respondieran a las distintas estructuras familiares las*	Each S.C.F. [Flexible Construction System] was studied closely linked to the process and production feasibility of the different participating companies; fixing its basic constructive unit in such a way that, based on its combinatorial possibilities, houses could be built that responded to the different family structures and the location requirements posed by the site.

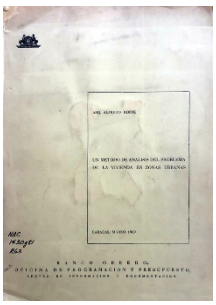
exigencias de ubicación planteadas por el sitio.

# 23	*Pero los factores más importantes que explican y justifican lo que externamente podría llamarse retardo, se refieren a la naturaleza misma del programa; se trata del desarrollo de un trabajo donde la técnica de realización y el conocimiento del personal que lo realiza está claramente definido, significando sólo la aplicación de experiencias anteriores. En nuestro caso, se trata de una búsqueda que parte de objetivos y principios no totalmente desarrollados, con un personal, que si bien tenía la preparación básica para afrontar dicha búsqueda, no tenía la práctica para ir en forma directa y óptima en la solución de los distintos problemas que se iban presentando; nuestro camino ha sido en espiral y con regresivas constantes. Esto exigió un tiempo de maduración sumamente difícil de prever y que no pudo ser evitado a riesgo de que se perdieran los objetivos fundamentales del programa.*	But the most important factors that explain and justify what externally might be called lag, refer to the very nature of the program; It is about the development of a job where the technique of implementation and the knowledge of the personnel who perform it is clearly defined, meaning only the application of previous experiences. In our case, it is a search that starts from objectives and principles not fully developed, with a staff that, although they had the basic preparation to face said search, did not have the practice to go directly and optimally in the solution of the different problems that arose; our path has been in a spiral and with constant regressives. This required a maturing time that was extremely difficult to foresee and that could not be avoided at the risk of losing the fundamental objectives of the program.
# 23	*En cuanto a lo participación de los productores en el desarrollo del proyecto, ha sido un aspecto positivo del programa; no obstante los retardos ocasionados por la forma como se realizó las relaciones de éstos y el equipo de diseño, se ha demostrado las ventajas de su intervención ya que: - Se logró un uso más eficiente de las posibilidades constructivas del productor. - Se han abierto nuevas posibilidades constructivas para la producción de viviendas. - El Grupo de Proyecto ha aprendido a interesarse por los problemas del productor y éste a*	Regarding the participation of the producers in the development of the project, it has been a positive aspect of the program; Notwithstanding the delays caused by the way in which the relations between them and the design team were carried out, the advantages of their intervention have been demonstrated since: - A more efficient use of the constructive possibilities of the producer was achieved. - New construction possibilities have been opened for the production of houses. - The Project Group has learned to take an interest in the producer's problems and

su vez, ha empezado a comprender mejor los problemas de diseño.

the producer, in turn, has begun to better understand the design problems.

1.11 1969



Roffe, Alfredo. 1969. Un metodo de analisis del problema de la vivienda en zonas urbanas, aplicable en Venezuela. Caracas: Banco Obrero, Oficina de Programacion y Presupuesto.

Categories:
dwellings homes households houses inhabitants lack-of-land overcrowding patterns places

# 1	*Definición de Viviendas hacinadas: cuando el tamaño del hogar es superior al número de cuartos de la vivienda multiplicado por dos.*	Definition of overcrowded dwellings: when the size of the home is greater than the number of rooms in the dwelling multiplied by two.
# 2	*Clasificación general de los tipos de problemas: 1. Viviendas privadas inhabitables: deben ser destruidas y sustituidas. 2. Viviendas habitables ubicadas en sitios que significan riesgo: deben ser destruidas y sustituidas. 3. Viviendas habitables que presentan algunas deficiencias físicas: deben ser mejoradas. 4. Viviendas habitables de propiedad de sus habitantes, pero con hacinamiento: deben ser ampliadas. 5. Viviendas habitables alquiladas de sus habitantes, pero con hacinamiento o que sus habitantes pagan alquileres superiores a sus posibilidades: los habitantes deben ser trasladados quedando las viviendas disponibles para ser utilizadas por otros hogares. 6. Hogares construidos por varios grupos familiares, donde puede haber hacinamiento: requieren de una nueva*	General classification of the types of problems: 1. Uninhabitable private houses: they must be destroyed and replaced. 2. Habitable homes located in places that pose risk: they must be destroyed and replaced. 3. Habitable dwellings that present some physical deficiencies: they must be improved. 4. Habitable dwellings owned by its inhabitants, but with overcrowding: they must be expanded. 5. Habitable dwellings rented from its inhabitants, but with overcrowding or whose inhabitants pay rents higher than their possibilities: the inhabitants must be transferred, leaving the dwellings available to be used by other households. 6. Homes built by several family groups, where there may be overcrowding: they require a new home. 7. Households living in places not

vivienda. 7. Hogares habitando en lugares no destinados a vivienda, por ejemplo, casas de vecindad: los ocupantes deben ser trasladados. 8. Viviendas habitables que carecen de alguno de los servicios infraestructurales: requieren ser dotados. 9. Viviendas habitables que carecen de alguno de los servicios comunales: requieren ser dotados. 10. Viviendas afectadas por los patrones de uso de la tierra o por mejoramiento de tráfico: requieren ser mejoradas. 11. Viviendas afectadas por los patrones de uso de la tierra o por mejoramiento de tráfico: requieren ser eliminadas y sustituidas por nuevas. 12. Necesidad de un número suficiente de viviendas habitables desocupadas para garantizar la posibilidad de movilidad y cambio de vivienda imprescindible en cualquier sociedad humana.

intended for housing, for example, tenement houses: the occupants must be transferred. 8. Habitable homes that lack any of the infrastructural services: they need to be equipped. 9. Habitable dwellings that lack any of the communal services: they need to be equipped. 10. Homes affected by land use patterns or traffic improvements: they need to be improved. 11. Homes affected by land use patterns or traffic improvements: they need to be eliminated and replaced by new ones. 12. Need for a sufficient number of unoccupied habitable dwellings to guarantee the possibility of mobility and change of housing essential in any human society.

1.12 1989



INAVI. 1989. 60 Años de Experiencia En Desarrollos Urbanísticos de Bajo Costo En Venezuela. Instituto Nacional de la Vivienda. Caracas.

Categories:
buildings changed construction-in-serie cross-shaped housing national system typologies

\# *1*

Es un libro que relata los proyectos del Banco Obrero en 1928 hasta 1974 cuando ya se había cambiado su nombre a Instituto Nacional de la Vivienda (INAVI), a través de diferentes programas y cambios en la historia y casi siempre signada bajo la lógica del viviendismo, donde sus resultados eran

It is a book that recounts the projects of the *Banco Obrero* from 1928 to 1974 when its name had already been changed to the National Housing Institute (INAVI), through different programs and changes in history and almost always signed under the logic of housing. , where their results were

	medidos por la cantidad de unidades habitacionales producidas.	measured by the number of housing units produced.
# 22	Mostrándose ejemplos de ellos en plantas y secciones. En general sin diferentes distribuciones, pero siempre bajo la topología del “tower in the park” (muchas veces en terrazas), casi siempre buscando una densidad menor a la de los superbloques, pero también con edificios altos como los de El Valle. Contados ejemplos de tipologías distintas. Las diferencias están en la forma en planta (por ejemplo la Serie M con planta en formas de cruces), o la diferenciación de sistemas constructivos (por ejemplo, el sistema túnel).	Showing examples of them in plants and sections. In general, without different distributions, but always under the "tower in the park" topology (often on terraces), almost always looking for a lower density than the superblocks, but also with tall buildings like those in El Valle. Countless examples of different typologies. The differences are in the plan form (for example the M Series with cross-shaped plan), or the differentiation of construction systems (for example, the tunnel system).

1.13 2007-2011


Decreto Nº 5.246, mediante el cu
Villanueva

GACETA OFICIAL

DE LA REPUBLICA BOLIVARIANA DE VENEZUELA

Gobierno de la República Bolivariana de Venezuela. 2007. Decreto para el creación de la “Misión Villanueva.” Vol. Decreto No.5.246.

Categories:
apartments Chávez formula housing micro-community mission plus ranchos-replacing

*AP** # 250	*Discurso del Presidente Chávez ...bueno aquí esta, hemos comenzado la revolución de la vivienda, con la participación de las comunidades y con este concepto integral, desde la sustitución de ranchos por viviendas hasta de manera individual hasta los nuevos pueblos y estos conceptos integrales de la vivienda y el hábitat, porque insistimos no se trata de soluciones habitacionales, borremos esos términos que son del pasado, de la IV República que era una cajita de*	Speech by President Chávez ... well here it is, we have started the housing revolution, with the participation of the communities and with this integral concept, from the replacement of *ranchos* by houses, even individually to the new towns and these integral concepts of housing and habitat, because we insist it is not about housing solutions, let's erase those terms that are from the past, from the IV Republic that was a wooden box, a phosphor box, 20 square meters, without water, without

	madera, una cajita de fósforo, de 20 metros cuadrados, sin agua, sin luz, sin puertas incluso las entregaban, como si fuera para que ahí se metieran cuatro marranos y es para gente, para seres humanos, para familias, la familia venezolana.	light Without doors, they even handed them over, as if it were for four pigs to get into it, and it is for people, for human beings, for families, the Venezuelan family.
AP # 257*	*Presidente Chávez Viviendas rurales en todo el estado 42 se están entregando hoy, ustedes saben que estas son viviendas aisladas, estamos sustituyendo ranchos por viviendas dignas en los sectores rurales, sustitución de rancho por vivienda hoy se están entregando 695 en varias ciudades del Estado Sucre, rehabilitaciones 12 viviendas, en Gran Sabana 87 viviendas, en El Pilar 82 viviendas, en La Llamada 144 viviendas, en Lomas de Ayacucho 76 viviendas y en Santa María 80 viviendas, en Santa Eduviges 57 viviendas, en Cariaco Rimero 120 viviendas, en SSA 250 viviendas.*	President Chávez Rural homes throughout the state 42 are being delivered today, you know that these are isolated homes, we are replacing *ranchos* with decent homes in rural areas, substitution of *rancho* for housing today 695 are being delivered in various cities of the Sucre state, renovations 12 homes, in Gran Sabana 87 homes, in El Pilar 82 homes, in La Llamada 144 homes, in Lomas de Ayacucho 76 homes and in Santa María 80 homes, in Santa Eduviges 57 homes, in Cariaco Rimero 120 homes, in SSA 250 households.
AP # 276*	*Presidente Chávez De acuerdo. Ahora, fíjate, yo quiero insistir en la fórmula de la Misión Villanueva, aquí la tengo en esta gráfica. A ver, por aquí, Misión Villanueva igual, ciudades satélites más microciudades, más microcomunidades más otras cosas, más ciudades gemelas y nuevos centros poblados. Lo que estamos mostrando ahora es el inicio del proyecto de construcción de microcomunidades, es decir, un edificio de 6 pisos, a lo mejor con 20 apartamentos, 24 apartamentos, es una microcomunidad, como parte de la fórmula de Misión Villanueva.*	President Chávez Agreed. Now, look, I want to insist on the formula of the Villanueva Mission, here I have it in this graph. Let's see, around here, Mission Villanueva the same, satellite cities plus microcities, more micro-communities plus other things, more twin cities and new population centers. What we are showing now is the beginning of the micro-community construction project, that is, a 6-story building, perhaps with 20 apartments, 24 apartments, is a micro-community, as part of the Mission Villanueva formula.

1.14 2011-2015



Gobierno de la República Bolivariana de Venezuela. 2011a. Decreto con Rango, Valor y Fuerza de Ley Orgánica de Emergencias para Terrenos y Vivienda. Vol. Decreto No. 8.005.
———. 2011b. Ley de Régimen de Propiedad de Viviendas de la Gran Misión Vivienda Venezuela. Vol. Decreto No. 8.143.
———. 2011c. Ley contra el Desalojo y la Desocupación Arbitraria de Viviendas. Vol. Decreto No. 8.190.
———. 2011d. Ley Especial de Regularización Integral y Ordenamiento de la Tenencia de Tierras de los Asentamientos Urbanos y Periurbanos. Vol. Decreto No. 8.198.
———. 2011e. Ley para la Regularización y Control de los Arrendamientos de Vivienda.
———. 2012a. Ley contra la Estafa Inmobiliaria.
———. 2012b. Ley del Régimen Prestacional del Régimen de Vivienda y Hábitat. Vol. Decreto No. 9.048.

Categories:
build Chávez condemned help housing living miserable-ranchos people capitalism

*AP**	*Presidente Chávez Dentro de poco la empresa Citic comenzará a construir en Fuerte Tiuna cerca de 20 mil apartamentos, para, ustedes saben, hay que, todas esas familias que viven en los ranchos de Caracas, se caen los cerros, se caen los ranchos, a veces mueren niños ¡hasta cuándo! ¡Hasta cuándo! porque esa es la condena del capitalismo que condenó al pueblo pobre a la miseria, al rancho miserable, eh, a los barrios miserables a vivir muriendo, la revolución le va a dar cada día más y más vida verdadera al pueblo venezolano, vivir viviendo, de eso se trata, vivir viviendo y la vivienda, de ahí viene la palabra vivienda, viene de vivir, vivir viviendo en la vivienda.*	President Chávez Soon the Citic company will begin to build in Fuerte Tiuna about 20 thousand apartments, for, you know, there is that, all those families that live in the *ranchos* of Caracas, the hills fall, the *ranchos* fall, to Sometimes children die, until when! Even when! because that is the condemnation of capitalism that condemned the poor people to misery, to the miserable *rancho*, uh, to the miserable *barrios* to live dying, the revolution is going to give the Venezuelan people more and more true life every day, to live living, That is what it is about, living living and housing, that's where the word housing comes from, it comes from living, living living in housing.
#		
11		
03		
16		

AP # 11 03 16*	*Presidente Chávez Ahora, nosotros pudiéramos hacer Adán, se me está ocurriendo eso en este instante, y yo estoy seguro que Citic nos puede ayudar, dígame con esta escuela que está aquí, allá donde hay, donde están esos ranchos en torno al aeropuerto o más allá, o más allá, pudiéramos activar sustitución pero no de un rancho por una vivienda, no, sino 20 ranchos por un edificio de estos, y ustedes pueden ser los profesores, los instructores para que aquellas comunidades participen en el trabajo. Y aquí pueden recibir adiestramiento ¿eh? sí. Entonces es una idea que se las dejo y le pido a Citic que estudie la posibilidad de apoyarnos en esa estrategia que es de menor escala pero que es vital para un número muy grande de venezolanas y venezolanos que tienen su tierra, que tienen un terreno, pero tienen es un ranchito de lata, pues, o de cartón. Ahora, uniéndonos allí se hacen donde hay 20 ranchos, un edificio de estos. Y se hace rápido.*	President Chávez Now, we could do Adam, that is happening to me at this moment, and I am sure that Citic can help us, tell me with this school that it is here, wherever there are, where are those *ranchos* around the airport or more There, or beyond, we could activate substitution, but not of a *rancho* for a house, no, but 20 *ranchos* for a building of these, and you can be the teachers, the instructors so that those communities participate in the work. And here they can receive training, eh? Yes. So it is an idea that I leave it to you and I ask Citic to study the possibility of supporting us in that strategy that is on a smaller scale but that is vital for a very large number of Venezuelans who have their land, who have land, but they have a tin rancho, well, or cardboard. Now, joining us there they make where there are 20 ranchos, one of these buildings. And it is done fast.
AP # 11 03 16*	*Discurso del Presidente Chávez Yo estoy seguro que cumpliremos la meta no sólo en Palma Sola sino la gran Misión Vivienda Venezuela. Que no quede familia, ni una sola familia viviendo aquí en ranchos miserables o en viviendas de cartón o en ranchos de cartón. Viviendas con todos los servicios. La vivienda para el vivir viviendo.*	Speech by President Chávez I am sure that we will meet the goal not only in Palma Sola but also the great Mission Housing Venezuela. May there not be a family left, not a single family living here in squalid ranchos or in cardboard *ranchos* or cardboard shacks. Homes with all services. Housing for living living.

AP: Data accesed from http://www.todochavez.gob.ve/ on November 20, 2020.*

1.15 2011-2015



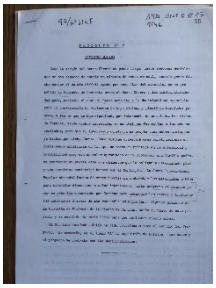
Venezuela. 2013. Gran Misión Vivienda Venezuela. Años 2011 2012. Caracas, Venezuela: Ministerio del Poder Popular de la Comunicación (MNCI) / X Producciones.

Categories:
central emergency families hope Chávez humanistic pending people precarious

AP # 6*	*Emergencia por lluvias, a apurar el paso. En los últimos meses del año 2010 en la región central de Venezuela, especialmente en Caracas, se registraron las lluvias más prolongadas e intensas que se han conocido en la capital. El Presidente Hugo Chávez al frente del Gobierno Bolivariano actuó de forma inmediata reubicando a todas las familias afectadas en espacios acondicionados como refugios temporales, lo que demostraba el principio humanista que caracterizaba y motivaba sus acciones. La situación generada por las lluvias puso de manifiesto una asignatura pendiente: la vivienda para el pueblo. Millones de familias estaban viviendo en condiciones de precariedad, en lugares alejados, terrenos inseguros, sin acceso a los servicios básicos y sin ninguna posibilidad ni esperanza de tener una vivienda mejor. Se planteó entonces la necesidad de implementar un Plan de Viviendas para la Emergencia que contempló la construcción de alrededor de 36 mil viviendas para las familias que habían perdido todo.*	Emergency due to rains, to speed up the pace. In the last months of 2010 in the central region of Venezuela, especially in Caracas, the longest and most intense rains that have been known in the capital were recorded. President Hugo Chávez at the head of the Bolivarian Government acted immediately, relocating all the affected families in spaces set up as temporary shelters, which demonstrated the humanistic principle that characterized and motivated his actions. The situation generated by the rains revealed a pending issue: housing for the people. Millions of families were living in precarious conditions, in remote places, unsafe land, without access to basic services and without any possibility or hope of having a better home. The need to implement an Emergency Housing Plan was then raised, which contemplated the construction of around 36 thousand houses for families who had lost everything.

Appendix Ib **Category Analysis on Planning Reports – ENABLING**

2.1 1946

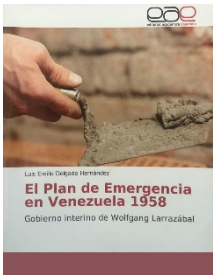


Oropeza Castillo, Alejandro. 1946. "Proyecto No. 6. Vivienda Mínima." Informe General (mimeo). INFODOC. Facultad de Arquitectura y Urbanismo, Universidad Central de Venezuela: Banco Obrero.

Categories
materials build campaign constructions family house humble lack-of-plan poorest rancho

#		
3	*Las ideas del Plan que ayudaría a los jefes de familias humildes a arreglar sus casas, las del sector más pobre de la población venezolana, constituyen las bases de una "campaña contra el rancho", aquellos con pisos de tierra y techos de paja, o que carecían de letrina, señalados factores de insalubridad general, puesto que, por falta de recursos de diferente tipo, el BO no podía eliminar y sustituir esos ranchos por edificaciones apropiadas.*	The ideas of the Plan that would help the heads of humble families to fix their houses, those of the poorest sector of the Venezuelan population, constitute the bases of a "campaign against the rancho", those with dirt floors and thatched roofs, or that lacked a latrine, indicated factors of general unhealthiness, since, due to lack of resources of different types, the BO could not eliminate and replace these ranches with appropriate buildings.
4	*El [ciudadano] interesado construya su propia casa sobre cimientos ya hechos por dicha Junta. Este sistema orientará esas construcciones en forma menos arbitraria de la que se ponen en práctica en la actualidad y posibilitará que, (...) una familia pudiera construir su propia casa con cimientos que le obligan a determinado plan y con servicios sanitarios hechos por el Municipio.*	The interested [citizen] builds his own house on foundations already made by said Board. This system will guide these constructions in a less arbitrary way than is currently being put into practice and will make it possible for, (…) a family to build their own house with foundations that oblige them to a certain plan and with sanitary services made by the Municipality.

2.2 1958



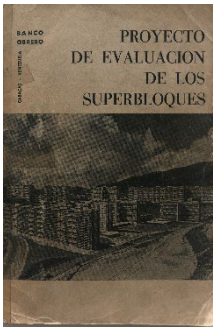
Delgado Hernández, Luis Emilio. 2016. El Plan de Emergencia En Venezuela 1958. Gobierno Interino de Wolfgang Larrazábal. Saarbrücken: Editorial Académica Española.

(Secondary source in the absence of a Primary one)

Categories:
crisis placita emergency government materials needs provision roads unemployment

# 48	*Creación de un plan mínimo de emergencia para solucionar en lo posible el problema del desempleo en escala nacional (...) Este plan coordinado por los organismos competentes (...) pensando en las tres cuestiones fundamentales: vialidad, sanidad y educación, que el gobierno consideraba como las grandes necesidades, las grandes preocupaciones nacionales.*	Creation of a minimum emergency plan to solve as much as possible the problem of unemployment on a national scale (...) This plan coordinated by the competent bodies (...) thinking about the three fundamental issues: roads, health and education, which the government considered as the great needs, the great national concerns.
# 56	*En Caracas, el Plan de Emergencia soluciona temporalmente la crisis del empleo, y por otro le otorga a los habitantes de los sectores populares insumos para reparar sus viviendas, y en algunos casos el entorno… en los cerros de Caracas se hacían placitas.*	In Caracas, the Emergency Plan temporarily solves the employment crisis, and on the other hand, it provides the inhabitants of the popular sectors with inputs to repair their homes, and in some cases the environment ... in the hills of Caracas, small squares were made.

2.3 1959



Carlson, Eric. 1959. Proyecto de Evaluación de los Superbloques. Bogota, Colombia: Centro Interamericano de Vivienda y Planeamiento / Banco Obrero.

Categories:
diversification apartments communal community-creation housing superblocks-problems

# 4	*Fue concretamente el 10 de septiembre de 1958, que el Departamento Técnico del Banco Obrero solicitó del Centro Interamericano Técnico de Vivienda y Planeamiento su colaboración para el proyecto de evaluación. Con el fin de puntualizar esta instancia una misión indagadora vio a Caracas a fines de septiembre.*	It was specifically on September 10, 1958, that the Technical Department of the *Banco Obrero* requested the Inter-American Technical Center for Housing and Planning to collaborate in the evaluation project. In order to clarify this instance, an investigative mission visited Caracas at the end of September.
# 7	*No hay duda que los superbloques del Banco Obrero simbolizan la obra del período dictatorial y que muchas de sus dificultades económicas, sociales y administrativas arrancan de su carácter político. Los superbloques fueron construidos a marchas forzadas con los escasos estudios previos de tipo económico, social y urbanístico.*	There is no doubt that the superblocks of the *Banco Obrero* symbolize the work of the dictatorial period and that many of its economic, social and administrative difficulties stem from its political character. The superblocks were built at forced marches with the few previous economic, social and urban studies.
# 9	*Posteriormente la caída de la dictadura, miles de familias invadieron los apartamentos vacantes en vías de adjudicación, así como los locales de los servicios comunales. Un alto porcentaje permanece todavía en condiciones de ocupación ilegal.*	After the fall of the dictatorship, thousands of families invaded the vacant apartments being adjudicated, as well as the premises of the communal services. A high percentage still remain in conditions of illegal occupation.
# 27	*ALGUNOS PROBLEMAS SUSCITADOS EN EL SUPERBLOQUE. 12% de la población vive en superbloques.* *FALTA DE ESCUELAS. Como una muestra de los múltiples problemas que han surgido al crearse estas unidades de vivienda, señalamos que de tal población se calcula que el 25% a 30% está en edad escolar (5 a 14 años) o sea, que hay entre 40.000 y 50.000 niños. Actualmente acuden a escuelas cerca de 24.000 alumnos, lo cual significa entre*	SOME PROBLEMS ARISED IN THE SUPERBLOCK. 12% of the population lives in superblocks. LACK OF SCHOOLS. As a sample of the multiple problems that have arisen when these housing units were created, we point out that of this population it is estimated that 25% to 30% are of school age (5 to 14 years), that is, there are between 40,000 and 50,000 children. Currently about 24,000 students attend schools, which means between 17,000 and 27,000 children, they do not have

17.000 y 27.000 niños, no tienen locales donde estudiar. En cuanto a facilidades de recreo y campos de deportes, hay únicamente 29, los cuales no satisfacen las necesidades del grupo. Hay concentraciones de tal naturaleza como la del "23 de Enero", que significan la existencia de una ciudad vertical de más de 100.000 habitantes o la de "Lomas de Urdaneta" y "Lomas de Pro-Patria" donde no hay espacio para continuar los servicios generales básicos.

places to study. As for recreation facilities and sports fields, there are only 29, which do not meet the needs of the group. There are concentrations of such a nature as that of "January 23", which signify the existence of a vertical city of more than 100,000 inhabitants or that of "Lomas de Urdaneta" and "Lomas de Pro-Patria" where there is no space to continue the basic general services.

P.26. PROBLEMAS FINANCIEROS. "Se indica la grave posición financiera en que se encontraban los proyectos en enero de 1959, especialmente por la falta de paga de alguno de los inquilinos. Se insiste en la conveniencia de que muchos de los servicios que actualmente brinda el Banco Obrero en sus urbanizaciones pasen a manos del Estado Venezolano [Y el BO NO ES PARTE DEL ESTADO VENEZOLANO].

P.26. FINANCIAL PROBLEMS. "The serious financial position of the projects in January 1959 is indicated, especially due to the lack of pay from some of the tenants. It insists on the convenience that many of the services currently provided by the *Banco Obrero* in its urbanizations pass into the hands of the Venezuelan State [AND the BO IS NOT PART OF THE VENEZUELAN STATE].

#		
	ALGUNAS RECOMENDACIONES.	SOME RECOMMENDATIONS.
34	*1. Campaña Educativa. (no es clara*	1. Educational Campaign. (It is not clear
43	*sobre qué), se menciona que "Es de singular importancia el hecho de que un considerable número de habitantes haya venido cubriendo puntualmente sus alquileres y se piensa que ellos e convertirán, por convencimiento propio, en magníficos auxiliares de los organismos que se empeñen a las campañas educativas.*	about what), it is mentioned that "It is of singular importance that a considerable number of inhabitants have been paying their rents on time and it is thought that they will turn, by their own conviction, into magnificent assistants of the organizations that engage in educational campaigns.
	2. Reavalúo de los apartamentos, para que tengan el valor justo¨	2. Revaluation of the apartments, so that they have a fair value¨
	3. Arreglo progresivo, para los pagos.	3. Progressive arrangement, for payments.
	4. Políticas de subsidios.	4. Subsidy policies.
	5. Normas de arreglo, para moroso.	5. Rules of settlement, for defaulters.

	6. Sistemas de cobros.	6. Collection systems.
	7. Arriendo de locales comerciales y cooperativas de consumo.	7. Leasing of commercial premises and consumer cooperatives.
	8. Sugerencia para enfrentarse al problema de la invasión de los superbloques, y morosidad se debe en mucho a la falta de relaciones entre los habitantes y el BO.	8. Suggestion to face the problem of the invasion of the superblocks, and delinquency is due largely to the lack of relations between the inhabitants and the BO.
	9. Oficina Especial Provisional, para traducir en medidas prácticas, efectivas y de aplicación inmediata todas las disposiciones del BO.	9. Special Provisional Office, to translate all the provisions of the BO into practical, effective and immediately applicable measures.
	10. Funcionamiento de la Oficina Espacial.	10. Operation of the Space Office.
# *91*	*Una gran mayoría [de los habitantes de los superbloques] procede de las zonas de "ranchos" que fueron erradicadas y para tal efecto el Banco estableció unas oficinas especiales. Las viviendas precarias afectadas por la erradicación fueran avaluadas y, según el varo de la tasación, a cada familia se le pagó en efectivo una suma determinada y otra suma quedó como garantía al ser ubicada en uno de los nuevos apartamentos. Este proceso motivó una serie de conflictos y produjo resentimientos y críticas de los erradicados, porque muchos consideraron que no fue justa la tasación y se lamentan de que fueran obligados a aceptar tal situación, mientras que otras familias aceptaron el hecho y declararon sentirse contentas en su nueva forma de vida.*	A great majority [of the inhabitants of the superblocks] come from the "*rancho*" areas that were eradicated and for this purpose the Bank established special offices. The precarious homes affected by the eradication were appraised and, according to the varus of the appraisal, each family was paid a certain sum in cash and another sum remained as collateral when it was located in one of the new apartments. This process led to a series of conflicts and produced resentment and criticism from those who were eradicated, because many considered that the appraisal was not fair and regret that they were forced to accept such a situation, while other families accepted the fact and declared that they felt happy in their life. new way of life.
# *105*	*La actitud de los habitantes con respecto a u vivienda es de todos modos alentadora, la han aceptado en términos generales y la siente suya. Está desapareciendo la actitud de*	In any case, the attitude of the inhabitants towards their home is encouraging, they have accepted it in general terms and feel it as their own. The attitude of hopelessness and

desesperanza y de resignación, ven con agrado toda posible mejora, toda innovación la desean y solicitan. El grado de adaptación del inmigrante rural es bastante satisfactorio. Al ver solucionado el problema de la vivienda, las aspiraciones del gripo se centran en la educación de los hijos, a fin de que sean profesionales, en tener ocupaciones de prestigio que les permita obtener rápidamente dinero; además, desean que siga el paternalismo del Banco Obrero o sea del Estado, que aumenten sus servicios generales, que haya mayor número de campos deportivos y de juegos infantiles, de jardines, etc.

resignation is disappearing, they welcome any possible improvement, they desire and request any innovation. The degree of adaptation of the rural immigrant is quite satisfactory. Seeing the housing problem solved, the group's aspirations are centered on educating their children, so that they become professionals, in having prestigious occupations that allow them to quickly obtain money; Furthermore, they want the paternalism of the *Banco Obrero*, that is, of the State, to continue, to increase its general services, to have a greater number of sports fields and children's games, gardens, etc.

\# 173

La construcción de superbloques puede concebirse como una de las tantas soluciones parciales al problema de la vivienda, pero en ningún modo es una respuesta definitiva al mismo, ni siquiera en la ciudad de Caracas, en la cual las altas densidades y la escasez de terrenos disponibles constituyen un serio problema de desarrollo urbano.

The construction of superblocks can be conceived as one of the many partial solutions to the housing problem, but it is by no means a definitive answer to it, not even in the city of Caracas, in which the high densities and the scarcity of available land they constitute a serious urban development problem.

Debe suspenderse todo tipo de construcción de superbloques por parte del Gobierno, en tanto no se tenga una política definitiva de vivienda en relación al desarrollo económico y social del país y dentro de una planificación y coordinación nacional.

All types of construction of superblocks by the Government must be suspended, as long as there is no definitive housing policy in relation to the economic and social development of the country and within national planning and coordination.

Otra razón fundamental para la detención de construcción de superbloques es la ausencia de una serie de consideraciones básicas para la normal operación de ellos. Hay una administración inadecuada y múltiples factores que no facilitan la vida en

Another fundamental reason for stopping the construction of superblocks is the absence of a series of basic considerations for their normal operation. There is an inadequate administration and multiple factors that do not facilitate life together, which profoundly affects the achievement of well-integrated communities.

común, lo que afecta profundamente el logro de comunidades bien integradas.

La construcción masiva de superbloques trae consigo una seria de problemas humanos que deben considerarse muy seriamente porque atentan contra el normal proceso de urbanización.

También es de considerar el alto costo por apartamento, costo que se aprecia al estudiar el monto de dinero invertido en la construcción de los superbloques; además, es necesario tener también en cuenta el alto costo de mantenimiento y conservación. Estos hechos nos indican que siendo tan grave y tan generalizado el problema de la vivienda en el país no es lo mas adecuado atenderlo racionalmente con semejantes inversiones. Por ello, más bien, parece que debe tenerse en mente buscar otros tipos de solución al problema de la vivienda teniendo presente las recomendaciones que se hacen en este informe.

The massive construction of superblocks brings with it a series of human problems that must be considered very seriously because they threaten the normal urbanization process.

It is also worth considering the high cost per apartment, a cost that is appreciated when studying the amount of money invested in the construction of the superblocks; in addition, it is also necessary to take into account the high cost of maintenance and upkeep. These facts tell us that the housing problem in the country being so serious and widespread, it is not the most appropriate to deal with it rationally with such investments. Rather, it seems that other types of solutions to the housing problem should be kept in mind, bearing in mind the recommendations made in this report.

170

RECOMENDACIONES Y CONDICIONES GENERALES

RECOMMENDATIONS AND GENERAL CONDITIONS

(1) Objetivos de una Política Nacional de Vivienda.

(1) Objectives of a National Housing Policy.

1. Considerarse aportes públicos permanentes para la vivienda.

1. Consider permanent public contributions for housing.

2. Crear un moderno sistema nacional hipotecario.

2. Create a modern national mortgage system.

3. Estimular la industria de la construcción.

3. Stimulate the construction industry.

4. Crear un sistema de incentivos, posiblemente en forma de seguro hipotecaria, para hacer posible el crédito más barato y la producción de

4. Create an incentive system, possibly in the form of mortgage insurance, to enable cheaper credit and the production of low-cost housing on a larger scale.

	viviendas de bajo costo en mayor escala.	5. Create a subsidized public housing program.
	5. Crear un programa de vivienda pública subsidiada.	6. Provide technical assistance for programs sponsored by other municipalities, non-profit associations and cooperatives.
	6. Dar asistencia técnica para programas auspiciados por otros municipios, asociaciones sin fines de lucro y cooperativas.	7. "High priority loan programs for technical and financial assistance and research should be established to provide cheap land with services to stimulate minimum standards of land use, rehabilitate *barrios de ranchos*, and provide for the production of manufactured homes. easy to build by self-help and self-help methods.
	7. "Deben establecerse programas de préstamos de alta prioridad de asistencia técnica y financiera y de investigaciones, para proveer tierra barata con servicios a fin de estimular normas mínimas del uso de la tierra, rehabilitar los barrios de ranchos y proveer la producción de viviendas prefabricadas fáciles de construir por métodos de ayuda mútua y esfuerzo propio.	8. Effective urban planning policy and control of land speculation.
	8. Política efectiva de planificación urbana y control de especulación de tierra.	9. Establish an efficient policy for the best use of the houses built by the Government.
	9. Establecer una política eficiente para la mejor utilización de las viviendas construidas por el Gobierno.	10. Create a national housing institution in close collaboration with the Central Office for Coordination and Planning to study the issue of housing.
	10. Crear una institución nacional de la vivienda con estrecha colaboración con la Oficina Central de Coordinación y Planificación para estudiar el tema de la vivienda.	
# 171	*(7) Consideraciones acerca de los servicios comunales.*	(7) Considerations about communal services.
	1. Deficiencias en cuanto a servicios y programas sociales como educación, salud, recreación, asistencia social y programas culturales.	1. Deficiencies in terms of services and social programs such as education, health, recreation, social assistance and cultural programs.
	2. Establecer relaciones entre BO y Ministerios (Educación, Sanidad y	2. Establish relationships between BO and Ministries (Education, Health and Social Assistance) to include programs.

Asistencia Social) para incluir programas.

3. ... "Debe tratarse de utilizar los servicios comunales para facilitar la integración de la población que vive en estas urbanizaciones con las de los sectores aledaños."

4. El BO debe estudiar los requerimientos de servicios de utilidad pública y gestionar con los prestadores de esos servicios para su dotación.

5. Los servicios comunales deben tener una alta prioridad en los proyectos de viviendas de alta densidad, es decir, cuando la demanda que haya por estos servicios no pueda ser atendida por los barrios circunvecinos.

6, Se debe evitar en forma drástica la construcción de ranchos en terrenos de las urbanizaciones del Banco Obrero porque atentan contra los servicios y facilidades comunales que deben construirse.

7. Se deben constituir comunidades que satisfagan de una manera adecuada las necesidades diarias de sus habitantes.

8. reconocer los servicios espontaneas existentes en los apartamentos de los superbloques, tales como talleres, ventas caseras, peluquerías, zapaterías, etc.

3.… "An attempt should be made to use communal services to facilitate the integration of the population living in these urbanizations with those of the neighboring sectors."

4. The BO must study the requirements of public utility services and manage with the providers of those services for their provision.

5. Community services should have a high priority in high-density housing projects, that is, when the demand for these services cannot be met by the surrounding *barrios*.

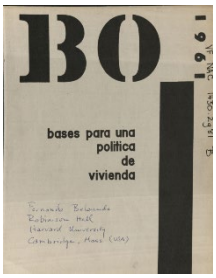
6. The construction of *ranchos* on land in the *Banco Obrero* urbanizations should be drastically avoided because they threaten the communal services and facilities that must be built.

7. Communities must be established that adequately meet the daily needs of their inhabitants.

8. recognize the spontaneous services existing in the apartments of the superblocks, such as workshops, home sales, hairdressers, shoe stores, etc.

2.4 1961

Banco Obrero. 1961. "Bases Para Una Política de Vivienda." Folleto. Caracas: Banco Obrero.



Categories:
Country-development family home housing investments making resources sites-services

# 10	*La construcción de viviendas en cantidades masivas tiene por lo demás una considerable importancia como actividad económica. Ella puede impulsar, sin duda, al sector de la construcción y a la industria de materiales y en éste sentido podría general nuevas actividades e inversiones que ocuparían a un considerable sector de mano de obra. Las razones expuestas nos conducen a expresar que consideramos imprescindible el [sic] establecer un justo punto de equilibrio que permita determinar, sin poner en peligro la satisfacción de los requerimientos del desarrollo, las posibilidades de inversiones en gastos sociales y dentro de ellos las cantidades que pueden razonablemente dedicarse para la vivienda.*	The construction of houses in massive quantities is otherwise of considerable importance as an economic activity. It can undoubtedly boost the construction sector and the materials industry and in this sense it could generate new activities and investments that would occupy a considerable sector of the workforce. The reasons given lead us to express that we consider it essential to [sic] establish a fair point of equilibrium that allows us to determine, without jeopardizing the satisfaction of development requirements, the possibilities of investments in social expenditures and within them the amounts that can reasonably be devoted to housing.
# 10	*Establecida la anterior conclusión nos plantea el problema de determinar hacia cuales sectores de la colectividad deben orientarse las inversiones públicas destinadas a la vivienda, con el doble propósito de hacerlas lo más posible recuperalbes [sic] y que su utilización permita abarcar el mayor número posible de familias en necesidad de mejorar sus condiciones de habitación.*	Once the above conclusion has been established, we have the problem of determining towards which sectors of the community the public investments destined to housing should be directed, with the dual purpose of making them recover as much as possible [sic] and that their use allows to cover the largest possible number of families in need of improving their living conditions.
# 12	*Sinembargo [sic], debe tenerse presente que si el Estado asumiese la responsabilidad de proporcionar una vivienda a cada familia venezolana es seguro que no podría cumplir con tal*	*However it should be borne in mind that if the State were to assume responsibility for providing a home to each Venezuelan family, it is certain that it would not be able to meet this*

	objetivo No existe en el mundo país tan rico que pueda hacerlo. Pero admitiendo que el Estado aceptara proporcionar una vivienda solamente a cada una de las familias económicamente incapaces de solucionar su problema habitacional con sus propios recursos, tampoco serán suficientes para alcanzar tal fin los recursos fiscales por cuanto los grupos económicos que no pueden obtener una vivienda sin ayuda, representa la mayoría del país.	*objective. There is no such rich country in the world that it can do so.*
# 12	*Además de la razón apuntada hay una de orden educativo en nuestro concepto muy importante y es que la cesión de la vivienda sin compromiso de pago que permita recuperar a largo plazo las inversiones constituye una donación gratuita atentatoria de la dignidad de los presuntos beneficiarios y contraria al acambio [sic] de actitudes que reclama el desarrollo integral del país. Es por ello que consideramos más digno y más beneficioso a los intereses del país el idear y poner en práctica una gama de programas que permitan aún a aquellos de más limitados recursos el ponerse en el camino para que con su propio esfuerzo obtener, comenzando por lo más modesto, (aún el rancho- bien ubicado y dotado de servicios indispensables) una vivienda que satisfaga normas mínimas de habillitabilidad [sic].*	In addition to the reason mentioned, there is an educational reason in our very important concept and that is that the transfer of the home without a payment commitment that allows long-term recovery of the investments constitutes a free donation that violates the dignity of the presumed beneficiaries and is contrary to the change of attitudes that demands the integral development of the country. That is why we consider it more dignified and more beneficial to the interests of the country to devise and implement a range of programs that allow even those with the most limited resources to get on the road so that with their own effort to obtain, starting with the more modest, (even the *rancho*- well located and equipped with essential services) a home that meets minimum standards of ability .
# 18	*Ya se dijo que la solución del problema de la vivienda es una empresa nacional que interesa a todos los venezolanos. Esta afirmación de principio sugiere la participación activa de todos los ciudadanos en la superación de la crisis. Una deducción inmediata de esta*	It has already been said that the solution to the housing problem is a national enterprise that interests all Venezuelans. This statement of principle suggests the active participation of all citizens in overcoming the crisis. An immediate deduction from this conclusion and the

	conclusión y la consideración de lo lomitado [sic] de los recursos monetarios familiares, hace pensar en la necesidad de desarrollar las posibilidades de emplear el esfuerzo propio y la ayuda mutua como medio de hacer posible la solución del problema, por lo menos en el futuro inmediato. El esfuerzo propio y la ayuda mutua debidamente canalizados por medio de térnicas [sic] desarrolladas con éxito en muchos paises, parece demostrar concluyentemente, que es posible obtener el concurso personal de las familias de menores recursos aportando la mano de obra en la construcción de sus propias viviendas y de los servicios públicos y comunales que ellas requieren.	consideration of the limit [sic] of family monetary resources, suggests the need to develop the possibilities of using one's own effort and mutual help as a means of making the solution of the problem possible, for at least in the immediate future. Self-effort and mutual aid duly channeled through techniques [sic] developed successfully in many countries, seems to show conclusively that it is possible to obtain the personal support of families with fewer resources by contributing labor in the construction of their homes. own homes and the public and communal services they require.
# 18 29	*Deberán preverse fondos para ser invertidos en la rehabilitación de barrios existentes o también en el desarrollo de nuevas zonas urbanas dotándolas de servicios mínimos, a fin de ir ubicando a la población haciendo previsión para que en el futuro cuenten con todos los servicios y facilidades comunales y sobre todo tratando que toda cantidad que se invierta contribuya, dentro de un proceso que se realizaría en un tiempo más o menos largo, a mejorar en forma efectiva las condiciones de vida de la población y a que los servicios y facilidades en ellas construidos se amorticen en un tiempo de uso normal. Tales fondos podrán ser total o parcialmente no recuperables.*	*Funds should be invested to be invested in the rehabilitation of existing neighborhoods or also in the development of new urban areas, providing them with minimal services, in order to gradually locate the population making provision so that in the future they will have all the services and communal facilities and above all trying that any amount invested contributes, within a process that would be carried out in a more or less long time, to effectively improve the living conditions of the population and that the services and facilities built in them are amortized in a normal usage time. Such funds may be totally or partially non-recoverable.*

2.5 1965-1975



Autoconstruction in 60 Años de Experiencia En Desarrollos Urbanísticos de Bajo Costo En Venezuela, Instituto Nacional de la Vivienda, 427–28. Caracas.

Categories:
Atuconstruction self-built materials technical-assistance labor community cost-reduction rooting

# 261	*Programa iniciado en 1965 siguiendo experiencias del CINVA en Bogotá. Ello se dio básicamente como prueba en algunos lugares de Valencia si mayor impacto mas allá de un grupo acotado de viviendas en Los Taladros (61 viviendas), El Cambural (678 viviendas) y La Isabelica (267 viviendas).*	Program started in 1965 following the experiences of CINVA in Bogotá. This was basically as evidence in some places of Valencia if there was a greater impact beyond a shortened group of homes in Los Taladros (61 homes), El Cambural (678 homes) and La Isabelica (267 homes).
# 304	*Autoconstrucción fue otro programa de apoyo a los barrios. El Banco Obrero proporcionaba un crédito en materiales, herramientas y ayuda técnica: (1) la mano de obra era por los beneficiarios, (2) el Instituto seleccionaba a los beneficiarios, (3) las viviendas se construían en terrenos ya urbanizados, (4) los planos y especificaciones eran suministrados por el Instituto. No se reportan este tipo de soluciones en Caracas.*	Autoconstrucción was another *barrios'* support program. The *Banco Obrero* provided a loan for materials, tools and technical assistance: (1) the labor was for the beneficiaries, (2) the Institute selected the beneficiaries, (3) the houses were built in land already developed, (4) plans and specifications were supplied by the Institute. These types of solutions are not reported in Caracas.
# 357	*El programa de autoconstrucción del Banco Obrero, desde 1965, se transforma en la UNIDAD DEL PROGRAMA DE AUTOCONSTRUCCIÓN, en 1975, entre su plantel de asesores estaban los arquitectos Héctor Morrell y Alfredo Cilento, el ingeniero Rafael Torrealba y los doctores Hilda Martínez y Leopoldo Martínez Olavarría.*	The Banco Obrero autoconstruction program, since 1965, was transformed into the SELF-CONSTRUCTION PROGRAM UNIT, in 1975, among its staff of consultants were the architects Héctor Morrell and Alfredo Cilento, the engineer Rafael Torrealba and the Hilda Martínez and Leopoldo Martínez Olavarría.

# 369	*Este programa comprendía dos modalidades. En la primera la relación era INAVI > Comunidad = programa de menor alcance, en la segunda era INAVI > Empresa Privada > Comunidad = programa de menor alcance. El objetivo era extender el programa a varios estados. Se muestra un listado de viviendas construidas con este programa entre 1975 y 1979, ninguno en Caracas.*	This program [self-construction included two modalities. In the first, the relationship was INAVI> Community = program of less scope, in the second it was INAVI> Private Company> Community = program of less scope. The goal was to extend the program to various states. A list of homes built with this program between 1975 and 1979 is shown, none in Caracas.
# 386-7	*El período 1979-1983 se basó en buscar el "bienestar social" mediante la dotación de viviendas de interés social. El mismo informe expresa que el enfoque de los programas BO/INAVI es autocalificado como "viviendita" pero considerando como "solución habitacional" a un amplio rango de acciones que van desde la construcción de nuevos desarrollos, hasta la refacción de viviendas incluyendo la autoconstrucción. En este período (1979-1983), muy similar al período de Rafael Caldera (1969-1974), sobresalen los programas de Créditos Populares.* *Se crea el programa TECHO PROPIO PARA TODOS (Presentado en Octubre de 1973) que establece que "Las metas en este quinquenio son las de dar soluciones habitacionales a más de 600.000 familias y lograr que, al concluir el quinquenio en 1984, el país disponga de una estructura habitacional, financiera e industrial de la constricción capa de producir 150.000 viviendas por año". Los postulados del programa se resumen en:*	The period 1979-1983 was based on seeking "social welfare" through the provision of affordable housing. The same report states that the focus of the BO / INAVI programs is self-described as "housing" but considering as a "housing solution" a wide range of actions that go from the construction of new developments, to the renovation of houses including self-construction. In this period (1979-1983), very similar to the period of Rafael Caldera (1969-1974), the Popular Credit programs stand out. The program ROOF OWN FOR ALL (Presented in October 1973) is created, which establishes that "The goals in this five-year period are to provide housing solutions to more than 600,000 families and ensure that, at the end of the five-year period in 1984, the country will have a housing, financial and industrial structure of the constriction capable of producing 150,000 homes per year ". The postulates of the program are summarized in: - Execution of Comprehensive Urban Development Programs. - The housing problem must be tackled from a comprehensive perspective,

- Ejecución de Programas de Desarrollo Urbano Integral.

- El problema de vivienda debe ser afrontado desde una óptica integral, desde enfoques nacional, regional y local.

- La vivienda es un medio indispensable para el desarrollo de la familia.

- Se realizarán esfuerzos para la simplificación de trámites en la obtención de viviendas.

- Las "soluciones habitacionales" abarcarán toda la gama posible de alternativas.

- Énfasis en viviendas de crecimiento progresivo partiendo de diseños simples.

- Las edificaciones multifamiliares deben ser de alta densidad y baja altura.

- Los habitantes deberán participar en los planes, con el fin de lograr la incorporación definitiva de los barrios estables a las ciudades, dotándolas de vialidad y servicio apropiado.

- Se establece que "La reubicación de los barrios, se efectuará sólo cuando estén situados en áreas de riesgos geológicos o por usos de carácter público. Se evitará el rompimiento de los nexos económicos y sociales, previendo su reubicación en áreas cercanas".

- Se fomentará la industrialización y racionalización de los sistemas constructivos.

A rasgos generales el programa establecía cierta continuidad con lo

from national, regional and local approaches.
- Housing is an indispensable means for the development of the family.
- Efforts will be made to simplify procedures for obtaining housing.
- The "housing solutions" will cover the whole possible range of alternatives.
- Emphasis on homes with progressive growth starting from simple designs.
- Multifamily buildings must be of high density and low height.
- The inhabitants must participate in the plans, in order to achieve the definitive incorporation of the stable neighborhoods to the cities, providing them with roads and appropriate services.
- It is established that "The relocation of neighborhoods will be carried out only when they are located in areas of geological risk or for public uses. The breakdown of economic and social ties will be avoided, anticipating their relocation to nearby areas ".
- The industrialization and rationalization of construction systems will be promoted.

In general terms, the program established a certain continuity with the above, noticeable in the incorporation of stable neighborhoods into the orderly urbanization process and their provision of services and roads.
During the period, the development of Caugagüita in Caracas stands out.

anterior, apreciable en la incorporación de los barrios estable sal proceso de urbanización ordenada y su dotación de servicios y vialidad.

En el período destaca el desarrollo de Caugagüita en Caracas.

#		
398	*Este [autoconstrucción] fue el programa que mas se acercó a vincular a las familias y arraigarlas a las comunidades, además de organizarlas para perseguir sus propios beneficios.*	This [autoconstruction] was the program that came closest to linking families and rooting them to communities, as well as organizing them to pursue their own benefits.

2.6 1965

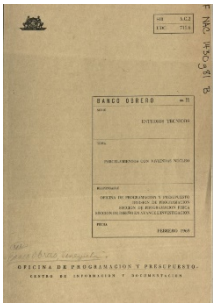


Banco Obrero. 1965. Política de vivienda. Banco Obrero

Categories:
execute minimum service units

#		
7	*Adicionalmente el Banco Obrero ejecutará o promoverá las siguientes realizaciones: a) Servicios Mínimos: los programas de servicios mínimos serán destinados a grupos familiares con ingresos inferiores a Bs 80 por cabeza y por mes (menores de Bs 450 de ingresos mensuales), y se establecerán en estrecho contacto con las municipalidades o entidades respectivas, quienes deberán aportar los terrenos necesarios a tal fin, corriendo por el Banco la ejecución de las obras de servicio básicas, así como el proyecto de administración de las unidades a construirse.*	Additionally, *Banco Obrero* will execute or promote the following activities: a) Minimum Services: minimum service programs will be destined to family groups with incomes lower than Bs 80 per head and per month (less than Bs 450 in monthly income), and will be established in close contact with the respective municipalities or entities, who must provide the necessary land for this purpose, with the Bank running the execution of the basic service works, as well as the administration project of the units to be built.

2.7 1969



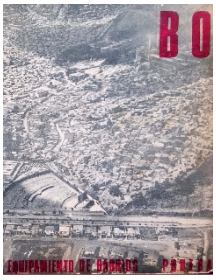
Banco Obrero. 1969. “Parcelamientos con viviendas núcleo.” Banco Obrero, Oficina de Programación y presupuesto.

Categories:
costs family land minimum-services plots program *rancho* temporary

# 7	*Al efecto, ya el Instituto en 1961 consideró como una primera alternativa poner en ejecución los PARCELAMIENTOS CON SERVICIOS MINIMOS, destinados a favorecer las familias con ingresos menores de Bs. 450 Mensuales. Se requería la colaboración de las municipalidades o entidades respectivas en cada población para el aporte de los terrenos necesarios, estando a cargo del BANCO, lo ejecución de los obras básicas, así como el proyecto, dirección y orientación de los desarrollos a construirse.*	To this end, already in 1961, the Institute considered as a first alternative to implement the PLOTS WITH MINIMUM SERVICES, destined to favor families with incomes less than Bs. 450 per month. The collaboration of the respective municipalities or entities in each population was required for the contribution of the necessary land, being in charge of the BANK, the execution of the basic works, as well as the project, direction and orientation of the developments to be built.
# 8	*El programa de PARCELAMIENTOS CON SERVICIOS MINIMOS, como se había concebido en 1961, consistía fundamentalmente en la ejecución de un parcelamiento con la dotación de los servicios públicos indispensables -agua, letrina o cloacas, electricidad- así como también se reservaban los terrenos en donde se construirían más adelante los servicios comunales: kindergarten, escuela, parque, centro asistencial, comercio, etc. En estos parcelamientos cada familia construiría una vivienda provisional -rancho- con ubicación transitoria en la parcela asignada; dicho rancho sería*	The PLOTS WITH MINIMUM SERVICES program, as it had been conceived in 1961, consisted fundamentally in the execution of a subdivision with the provision of essential public services -water, latrine or sewers, electricity- as well as the lands where they were reserved. they would later build community services: kindergarten, school, park, health center, commerce, etc. In these plots, each family would build a temporary house -*rancho*- with a temporary location on the assigned plot; said *rancho* would later be replaced by the permanent home.

	reemplazado más tarde por la vivienda definitiva.	
# 8	*Sobre estos programas de SERVICIOS MINIMOS, desarrollados por el Instituto en 1960-61 no se tiene prácticamente ninguna experiencia, yo que en los pocos que se realizaron no se siguieron fielmente las normas establecidas y no se pudo obtener conclusiones definitivas; sin embargo, se pueden hacer las siguientes observaciones.*	*Sobre estos programas de SERVICIOS MINIMOS, desarrollados por el Instituto en 1960-61 no se tiene prácticamente ninguna experiencia, yo que en los pocos que se realizaron no se siguieron fielmente las normas establecidas y no se pudo obtener conclusiones definitivas; sin embargo, se pueden hacer las siguientes observaciones.*
# 9	*UBICACION DE ESTOS PROGRAMAS. Se desarrollarán en aquellas ciudades del país con alto índice de crecimiento, donde sea posible la obtención de terrenos cuyas características físicas permitan la dotación de los servicios públicos sin costos axcesivos [sic] y especialmente en aquellos donde exista el problema de las invasiones ya que uno de los objetivos principales del programa es orientar y ordenar los nuevos establecimientos.*	LOCATION OF THESE PROGRAMS. They will be developed in those cities of the country with a high growth rate, where it is possible to obtain land whose physical characteristics allow the provision of public services without excessive costs [sic] and especially in those where there is the problem of invasions since one One of the main objectives of the program is to guide and organize the new establishments.
# 9	*De esta manera se ha tratado de tipificar al máximo posible los criterios que serían empleados en la elaboración de cada proyecto específico; utilizándose además como bases para la programación y estimación de costos (Veáse se cuadro resumen de costos.*	In this way, an attempt has been made to typify as much as possible the criteria that would be used in the elaboration of each specific project; also being used as bases for programming and cost estimation (See the summary table of costs.

2.8 1969



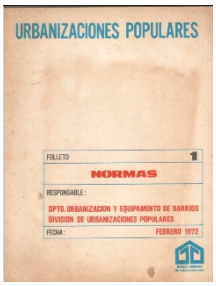
Banco Obrero. 1969a. “Departamento de Urbanización y Equipamiento de Barrios.” PRUEBA. Banco Obrero. Dpto. Urbanización y Equipamiento de Barrios.

Categories:
barrios conditioned equipment houses human improvement minimum order progressive

#		
4	*[Leyenda de una foto desde un barrio mirando al Valle de Caracas] “Náufragos amnésicos arrojados brusca y violentamente en las playas de una civilización tecnológica” Dr. Jose Luis Vethencourt.*	[Caption of a photo from a *barrio* looking at the Caracas Valley] "Amnesic castaways thrown abruptly and violently on the beaches of a technological civilization" Dr. Jose Luis Vethencourt.
5	*El presente trabajo no pretende establecer un plan rígido para el estudio y las soluciones al problema de los barrios de Venezuela. Conscientes de su complejidad y de su trascendencia en lo económico y en lo político, así como en todas las esferas de la sociedad global en la cual incide y por lo cual existe, trataremos de exponer los aspectos fundamentales de un plan preliminar para la URBANIZACIÓN y el EQUIPAMIENTO DE BARRIOS.*	The present work does not pretend to establish a rigid plan for the study and solutions to the problem of the neighborhoods of Venezuela. Aware of its complexity and its economic and political significance, as well as in all spheres of global society in which it affects and for which it exists, we will try to present the fundamental aspects of a preliminary plan for URBANIZATION and the EQUIPMENT OF *BARRIOS*.
	Este plan responde a nuestra consciencia de la necesidad urgente de dar prioridad a la acción sin menoscabar por ello el conocimiento teórico y nutrir éste con la práctica y con los hechos.	This plan responds to our awareness of the urgent need to prioritize action without undermining theoretical knowledge and nourishing it with practice and facts.
7	*Los programas y proyectos de vivienda y urbanismo se ajustarán a la demanda efectiva y potencial.}*	Housing and urban planning programs and projects will be adjusted to effective and potential demand.}

	- Se acondicionarán progresivamente las viviendas, con mitas a evitar la promiscuidad y el hacinamiento.	- The houses will be progressively conditioned, in order to avoid promiscuity and overcrowding.
	- Se dotará progresivamente a los Barrios, de los servicios infraestructurales requeridos para satisfacer las necesidades fundamentales	- *Barrios* will be progressively provided with the infrastructural services required to satisfy fundamental needs
# 15	*[Leyenda de una foto de gente reunida frente a un rancho] "Tenemos que despertarles la memoria, de que son seres humanos y de todo lo que pueden hacer con la humanidad" Dr. Jose Luis Vethencourt,*	[Caption of a photo of people gathered in front of a ranch] "We have to awaken their memory, that they are human beings and of all that they can do with humanity." Dr. Jose Luis Vethencourt,
# 17	*Para poder realizar la operación de mejoramiento de Barrios debe ejecutarse al mismo tiempo, una Zona de Urbanización y Equipamiento Progresivo (Z.U.E.P) ó de recepción de los servicios mínimos.*	In order to carry out the *barrios'* improvement operation, an Urbanization and Progressive Equipment Zone (Z.U.E.P) or reception of the minimum services must be executed at the same time
# 18	*CARACTERÍSTICAS DEL BARRIO MEJORADO*	CHARACTERISTICS OF THE IMPROVED *BARRIO*
	VIVIENDAS ACONDICIONADAS: Área mínima aceptable por persona – Ambientes diferenciados – a fin de evitar la promiscuidad.	CONDITIONED HOUSES: Minimum acceptable area per person - Differentiated environments - in order to avoid promiscuity.
	Núcleo sanitario – Mejoras de pisos – techos – pareces, etc. con objeto de crear las condiciones sanitaras mínimas requeridas para su habitabilidad.	Sanitary nucleus - Floor improvements - ceilings - you look, etc. in order to create the minimum sanitary conditions required for its habitability.
	DOTACIÓN PROGRESIVA DE EQUIPAMIENTO COMUNITARIO ADAPTAD A LA POBLACIÓN DEL BARRIO.	PROGRESSIVE PROVISION OF COMMUNITY EQUIPMENT ADAPTED TO THE POPULATION OF THE NEIGHBORHOOD.

2.9 1972



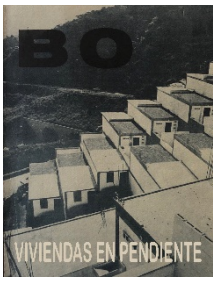
Banco Obrero. 1972. “Urbanizaciones populares. Normas.” Folleto 1. Banco Obrero. Dpto. Urbanización y equipamiento de barrios. División de urbanizaciones populares.

Categories:
acquire materials equipped extensions housing inertia popular preciousness rules urbanization

#		
2	*El otro aspecto es el de las Urbanizaciones Populares. Aquellos que todavía no pueden esperar de inmediato la adquisición de una vivienda construida por el sector público o por el sector privado, pero que tienen que vivir en alguna parte y que están dispuestos a montarse sobre un cerro, o ir al fondo de una quebrada a buscar un pedacito de tierra cualquiera, y a poner una estaca, unas tapas de zinc y de cartón para guarecerse allí mientras mejora su vivienda, van a encontrar terrenos acondicionados con los servicios esenciales, con calles y con las dotaciones indispensables para que la vivienda pueda representar y multiplicar el esfuerzo que en ella van a invertir. (Caldera, R. 1970)*	The other aspect is that of the Popular Urbanizations. Those who still cannot immediately wait to acquire a home built by the public or private sectors, but who have to live somewhere and who are willing to mount a hill, or go to the bottom of a ravine to look for any piece of land, and put a stake, some zinc and cardboard covers to take shelter there while you improve your home, you will find land equipped with essential services, with streets and with the essential endowments so that the house can represent and multiply the effort that they are going to invest in it. (Caldera, R. 1970)
3	*“Debemos abandonar el preciosismo en materia de vivienda. El querer dar mucho a quien no tiene nada, lleva generalmente a favorecer a unos pocos en detrimento de muchos. Demos algo a todos que rompa la inercia en que se encuentran iniciándoles en la marcha ascendente del proceso de superación de la condición infrahumana en que viven. " (Rodríguez Amengual, A. 1970)*	“We must abandon the preciousness in the matter of housing. Wanting to give a lot to those who have nothing generally leads to favoring a few to the detriment of many. Let's give something to everyone that breaks the inertia in which they find themselves initiating them in the upward march of the process of overcoming the subhuman condition in which they live. "(Rodríguez Amengual, A. 1970)

# 6	*[NORMAS GENERALES PARA LAS AMPLIACIONES DE LAS UNIDADES DE VIVIENDAS EN LAS URBANIZACIONES POPULARES] 2. LAS PRESENTES NORMAS DEBERAN CUMPLIRSE CON CARACTER OBLIGATORIO. Cualquier duda en la aplicación de las mismas deberá consultarse al Departamento de Urbanización y Equipamiento de Barrios de la Sucursal del INSTITUTO (Banco Obrero) más cercana a la Urbanización.*	[GENERAL RULES FOR THE EXTENSIONS OF HOUSING UNITS IN POPULAR URBANIZATIONS] 2. THESE RULES MUST BE COMPLIED WITH MANDATORY CHARACTER. Any doubt in the application of the same should be consulted with the Department of Urbanization and *Barrios* Equipment of the Branch of the INSTITUTE (*Banco Obrero*) closest to the Urbanization.

2.10 1974



Banco Obrero. 1974. Viviendas en pendiente. Caracas: Banco Obrero..

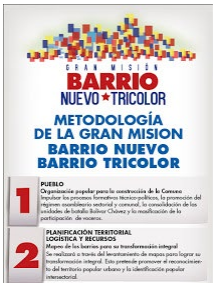
Categories:
construction consulting due expanded-house landslides progressively-project slope structural terrace-types-typology

# 25	*Catálogo de las tipología de VIIVENDAS EN PENDIENTE según proyecto del arquitecto Leandro Quintana (Asesoría Estructural: Ing. Aurelio Wamguemet y Ing. Orangel Rojas / Asesoría de Instalaciones: Ing. Antonio Sainz, Ing. Héctor Sánchez, e Ing. José Najul).*	Catalog of the types of HOUSES IN SLOPE according to the project of the architect Leandro Quintana (Structural Consulting: Eng. Aurelio Wamguemet and Eng. Orangel Rojas / Installation Consulting: Eng. Antonio Sainz, Eng. Héctor Sánchez, and Eng. José Najul).
# 26	*Área Metropolitana de Caracas donde originó la construcción desordenada de ranchos donde la familia se expone a hacinamiento e insalubridad, además del riesgoso de perder sus ahorros por deslizamientos producto de filtraciones en los suelos. La tipología de viviendas en pendiente permite construir en terrenos de hasta el 60%, además de*	Metropolitan Area of Caracas where the disorderly construction of *ranchos* originated where the family is exposed to overcrowding and unsanitary conditions, in addition to the risk of losing their savings due to landslides as a result of leaks in the soil. The sloping housing typology allows building on land of up to 60%, in addition to being

poder constituirse por etapas comenzando por el terraceo y una vivienda núcleo (38 m2) que puede irse ampliando progresivamente en base al trabajo de los adjudicatarios.

able to be constituted in stages starting with the terrace and a core house (38 m2) that can be progressively expanded based on the work of the successful bidders.

2.11 2009-2015



Gobierno de la República Bolivariana de Venezuela. 2013. Decreto para el creación del "Fundación Gran Misión Barrio Nuevo Barrio Tricolor." Vol. Decreto No. 604.

(a) VTV. 2020. "Barrio Nuevo, Barrio Tricolor lleva 11 años transformando el hábitat de las comunidades para el vivir bien." Venezolana de Televisión (blog). August 9, 2020.

(b) Ministerio del Poder Popular para el Ecosocialismo. n.d. "Barrio Nuevo, Barrio Tricolor cumple seis años como Gran Misión." Government Website. Accessed April 2, 2021

Categories:
barrio country mission president-program rank rehabilitation revolution social painting

# (a)	*La Gaceta Oficial 40.299 de fecha 21 de noviembre de 2013, que circuló este viernes, publica el decreto de creación la Gran Misión Barrio Nuevo, Barrio Tricolor y autoriza la constitución de la Fundación de este programa social, dirigido a la rehabilitación de infraestructuras y servicios de las zonas populares del país.*	The Official Gazette 40,299 dated November 21, 2013, which circulated this Friday, publishes the decree creating the Great Mission Barrio Nuevo, Barrio Tricolor and authorizes the constitution of the Foundation of this social program, aimed at the rehabilitation of infrastructures and services from popular areas of the country.
# (a)	*El Plan Barrio Nuevo, Barrio Tricolor fue creado en agosto de 2009 por el líder de la Revolución Bolivariana, Hugo Chávez, y este mes el presidente de la República, Nicolás Maduro, lo elevó a rango de Gran Misión, como se*	The Barrio Nuevo, Barrio Tricolor Plan was created in August 2009 by the leader of the Bolivarian Revolution, Hugo Chávez, and this month the President of the Republic, Nicolás Maduro, elevated it to the rank of Great

conocen en el país los programas sociales del Estado

Mission, as they are known in the country. state social programs

Prensa Despacho de la Presidencia / Caracas, 21/11/2019.- Este jueves, el jefe de Estado, Nicolás Maduro, a través de un mensaje publicado en su cuenta en la red social Twitter, resaltó los seis años de elevación a Gran Misión, Plan Barrio Nuevo, Barrio Tricolor (Gmbnbt), creado en el 2009, por el Comandante Supremo, Hugo Chávez, a fin de rehabilitar y embellecer las viviendas ubicadas en sectores populares del país.

Press Office of the Presidency / Caracas, 11/21/2019.- This Thursday, the Head of State, Nicolás Maduro, through a message published on his account on the social network Twitter, highlighted the six years of elevation to Great Mission , Plan Barrio Nuevo, Barrio Tricolor (Gmbnbt), created in 2009 by the Supreme Commander, Hugo Chávez, in order to rehabilitate and beautify the homes located in popular sectors of the country.

"Hace 6 años, se elevó a Gran Misión el Plan @Barrio_Tricolor. Sueño de nuestro Comandante Chávez que profundiza la organización popular, a través de la construcción de espacios para la Paz en las comunidades y que hoy, junto a la @MVzlaBella, consolida el Socialismo Territorial", escribió el Mandatario nacional en @NicolasMaduro.

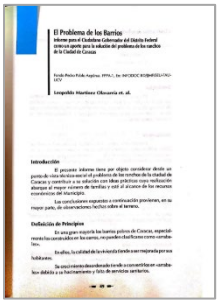
"6 years ago, the @Barrio_Tricolor Plan was elevated to a Great Mission. Dream of our Commander Chávez that deepens popular organization, through the construction of spaces for Peace in the communities and that today, together with @MVzlaBella, consolidates Territorial Socialism ", wrote the national leader in @NicolasMaduro.

Cabe destacar que mediante la Gran Misión Barrio Nuevo Barrio Tricolor, se dotan a las viviendas de puertas, ventanas, pintura, y techos.

It should be noted that through the Great Mission Barrio Nuevo Barrio Tricolor, the homes are equipped with doors, windows, paint, and ceilings.

Appendix Ic **Category Analysis on Planning Reports – UPGRADING**

3.1 1951



Laffé, Anfredo, Ricardo Zuloaga, Pedro Pablo Azpúrua, Leopoldo Martínez Olavarria, Gustavo Ferrero Tamayo, Juan Andrés Vegas, Julián Ferris, and Carlis Dupuy. 1951. "Informe Para El Ciudadano Gobernador Del Distrito Federal Como Un Aporte Para La Solución Del Problema de Los Ranchos En La Ciudad de Caracas." Report N/A. Caracas: Government of Federal District of Caracas.

Categories

barrios classification complete construction develop-existing housing improvement redevelopment solution-units

# 3	*Clasificación de soluciones. De acuerdo con el tipo de barrio creemos que existen tres soluciones fundamentales: a. Erradicación b. Mejoramiento c. Reurbanización*	Classification of solutions. According to the type of *barrio*, we believe that there are three fundamental solutions: a. Eradication b. Improvement c. Redevelopment
# 3	*Erradicación. Esta solución consiste en la eliminación de aquellos barrios que por su ubicación en la ciudad, sus condiciones sanitarias resultantes de la topografía u otras condiciones no modificables requieren el traslado de sus habitantes a zonas previamente fijadas y la destrucción de las construcciones existentes.*	Eradication. This solution consists of the elimination of those *barrios* that due to their location in the city, their sanitary conditions resulting from the topography or other non-modifiable conditions require the transfer of their inhabitants to previously established areas and the destruction of existing buildings.
# 3	*Mejoramiento. Esta solución consiste en rehabilitar únicamente los servicios públicos elementales, dejando que las viviendas sean mejoradas por sus mismos propietarios aprovechando de esta manera sus propias energías y convirtiéndolos en eficaces colaboradores en la solución del problema.*	Improvement. This solution consists of rehabilitating only elementary public services, allowing the houses to be improved by their own owners, thus taking advantage of their own energies and turning them into effective collaborators in solving the problem.

# 3	*Reurbanización. Estas solución deberá aplicarse en aquellos barrios donde no existe proporción entre el valor del terreno y las inversiones de los particulares; donde las mejoras de las vías y el aumento de las facilidades podrían más bien conducir a un empeoramiento de sus condiciones. La solución en este caso debe basarse en un estudio completo de nuevas unidades de vivienda conforme a normas urbanísticas prescindiendo parcial o totalmente de las construcciones que en ellos existen.*	Redevelopment. These solutions should be applied in those *barrios* where there is no proportion between the value of the land and the investments of individuals; where road improvements and increased facilities could rather lead to a worsening of their conditions. The solution in this case must be based on a complete study of new housing units in accordance with urban regulations, partially or totally dispensing with the constructions that exist in them.
# 3 4	*Solución recomendada. Este informe sólo trata de la solución enunciada en la aparte B o sea "Mejoramiento", cuyo programa es el siguiente: a. Trazado y construcción de vías elementales de acceso para vehículos. b. Construcción de veredas para peatones, previendo el paso de los futuros servicios sanitarios completos. c. Construcción de unidades de servicios sanitarios comunes dotadas de baño completo y lavadero para cada vivienda, servidos por redes de acueducto y cloacas. d. Parcelamiento y determinación de los límites de la propiedad asignada a cada vivienda, con prohibición absoluta de que se construya más de una casa por lote. e. Previsión de espacios para servicios vecinales tales como escuelas, parques, dispensarios, etc. f. Adquisición de áreas para el traslado de la vivienda que fuese necesario eliminar.*	Recommended solution. This report only deals with the solution stated in section B, namely "Improvement", whose program is as follows: a. Layout and construction of elementary access roads for vehicles. b. Construction of sidewalks for pedestrians, anticipating the passage of future complete restrooms. c. Construction of common sanitary services units equipped with a full bathroom and laundry room for each home, served by aqueduct and sewer networks. d. Parcelling and determination of the limits of the property assigned to each home, with an absolute prohibition against building more than one house per lot. and. Provision of spaces for neighborhood services such as schools, parks, dispensaries, etc. F. Acquisition of areas for the relocation of the home that needs to be eliminated.
# 5	*[Recomendaciones de Carácter General]:* *a. La determinación de sitios que deberán desarrollarse para satisfacer*	[General Recommendations]: to. The determination of sites that should be developed to meet the needs of workers' housing in the city of Caracas.

las necesidades de la vivienda obrera en la ciudad de Caracas.

b. La adquisición de terrenos destinados a parcelamientos provistos de los servicios públicos y sociales indispensables, los cuales deberán ser debidamente planificados para formar "Unidades Vecinales". Tales lotes deberán ser pagados a largo plazo por sus ocupantes.

c. El facilitamiento a los particulares para desarrollar parcelamientos en forma económica.

d. El estudio y clasificación de los barrios existentes, con el objeto de poder aplicar en cada uno la solución adecuada.

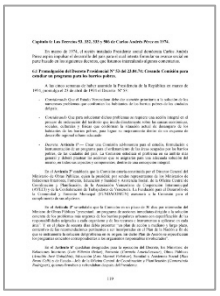
b. The acquisition of land destined to parcels provided with the essential public and social services, which must be duly planned to form "Neighborhood Units". Such lots must be paid for in the long term by their occupants.

c. Facilitation for individuals to develop parcels economically.

d. The study and classification of existing *barrios*, in order to be able to apply the appropriate solution in each one.

3.2 1974

Gobierno de la República de Venezuela. 1974. Decreto para el creación del "Programa de Ordenamiento de la Áreas Ocupadas por los Barrios Pobres de las Ciudades del País." Vol. Decreto No. 332.
Categories:
barrios creation decree occupied official poor presidential program regulation



#		
N/A	*Decreto para el creación del "Programa de Ordenamiento de la Áreas Ocupadas por los Barrios Pobres de las Ciudades del País" - Gaceta Oficial No. 30.472 - 13 agosto de 1974 - Decreto Presidencial No.332*	Decree for the creation of the "Program for the Regulation of Areas Occupied by Poor *Barrios* of the Country's Cities" - Official Gazette No. 30,472 - August 13, 1974 - Presidential Decree No. 332

3.3 1978



Fundacomún. 1978. Primer Inventario nacional de barrios: estudio diagnóstico de los barrios urbanos de Venezuela. [1. ed.]. Caracas]: Fundación para el Desarrollo de la Comunidad y Fomento Municipal.

Categories:
barrios category city classification density dwellings homes number percentage public quantity service unit urban

#		
2	*Este levantamiento de información generan cuadros con informes detallados de los barrios a nivel nacional.*	This information gathering generates tables with detailed reports of the *barrios* nationwide.
#	*A NIVEL CIUDAD:*	AT CITY LEVEL:
12	** Celda 1: Identificación y codificación.*	* Cell 1: Identification and coding.
	** Celda 2 (Unidad: Cantidad): Número de barrios, superficie, número de viviendas, población, densidad de viviendas, densidad de población, promedio de habitantes por familia.*	* Cell 2 (Unit: Quantity): Number of *barrios*, surface area, number of dwellings, population, density of dwellings, population density, average number of inhabitants per family.
	** Celda 3: (Unidad: Cantidad): Número de barrios estudiados por tipo de diagnóstico, por ejemplo, observación general, censo familiar (CF), encuesta socio-económica (ESE), etc.*	* Cell 3: (Unit: Quantity): Number of *barrios* studied by type of diagnosis, for example, general observation, family census (CF), socio-economic survey (ESE), etc.
	** Celda 4 (Unidad: Porcentaje): Ubicación de los barrios respecto al perímetro urbano, es decir, barrios dentro del perímetro urbano, adosado al perímetro urbano, de 1 a 5 km del perímetro urbano, a más de 5 km o barrios sin información (NI).*	* Cell 4 (Unit: Percentage): Location of the *barrios* with respect to the urban perimeter, that is, *barrios* within the urban perimeter, attached to the urban perimeter, from 1 to 5 km from the urban perimeter, more than 5 km away or *barrios* without information (NEITHER).
	** Celda 5 (Unidad: Porcentaje): Datos de propiedad de la tierra; es decir, propiedad nacional, estadal, municipal, privada, mixta o barrios sin información (NI).*	* Cell 5 (Unit: Percentage): Land ownership data; that is, national, state, municipal, private, mixed property or *barrios* without information (NI).

** Celda 6 (Unidad: Porcentaje): Relación entre los barrios de la ciudad indicando el grado de contigüidad o aislamiento, clasificados en barrios aislados, barrios contiguos a otros, y barrios conglomerados.*

** Celda 7 (Unidad: Porcentaje): Topografía plana, ondulada, mixta o barrios sin información (NI).*

** Celda 8 (Unidad: Porcentaje): Características Geotécnicas de barrios ubicados en terrenos estables, inestables, combinaciones de ellas o barrios sin información (NI).*

** Celda 9 (Unidad: Porcentaje): Barrios anegadizos o no en épocas de lluvia. También se incluyen barrios sin información (NI).*

** Celdas 10, 11, 12, 13: Servicios de Infraestructura (Acueductos, Cloacas, Alumbrado Público y Electricidad Domiciliar). Se clasifican los "barrios considerados" en el estudio (Unidad: Cantidad), su superficie (Unidad: No especificada), el porcentaje de área cubierta en esa consideración (Unidad: Porcentaje), para luego clasificar si el servicio es regular, irregular, sin servicio o barrios sin información (NI) (Unidad: Cantidad).*

** Celda 14 (Unidad: Cantidad): Viviendas y estado de construcción indicando el porcentaje de viviendas buenas, malas y regulares.*

** Celda 15: Servicios Comunales, tales como pre-escolares, primarias, salud, guarderías, comedores escolares, reparte de leche, mercados, orden público, transporte colectivo, correos, teléfonos, aseo urbano, etc.*

* Cell 6 (Unit: Percentage): Relationship between the city's *barrios* indicating the degree of contiguity or isolation, classified into isolated *barrios*, *barrios* contiguous to others, and conglomerate *barrios*.

* Cell 7 (Unit: Percentage): Flat, wavy, mixed topography or *barrios* without information (NI).

* Cell 8 (Unit: Percentage): Geotechnical characteristics of *barrios* located on stable and unstable land, combinations of them, or *barrios* without information (NI).

* Cell 9 (Unit: Percentage): Flooded *barrios* or not in times of rain. B*arrios* without information (NI) are also included.

* Cells 10, 11, 12, 13: Infrastructure Services (Aqueducts, Sewers, Public Lighting and Home Electricity). The " *barrios* considered" in the study are classified (Unit: Quantity), their surface (Unit: Not specified), the percentage of area covered in that consideration (Unit: Percentage), to later classify whether the service is regular, irregular, without service or *barrios* without information (NI) (Unit: Quantity).

* Cell 14 (Unit: Quantity): Homes and construction status indicating the percentage of good, bad and fair homes.

* Cell 15: Community Services, such as pre-schools, elementary schools, health, nurseries, school canteens, milk distribution, markets, public order, public transport, post office, telephones, urban cleaning, etc.

3.4 1985



Fundacomún. 1985. Segundo Inventario nacional de barrios: estudio diagnóstico de los barrios urbanos de Venezuela. [1. ed.]. Caracas]: Fundación para el Desarrollo de la Comunidad y Fomento Municipal.

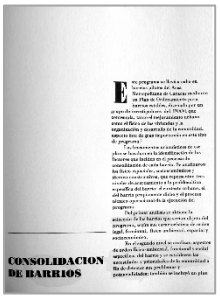
* the image on the cover corresponds to the second volume of the first inventory (1978), in the context of this investigation it was not possible to locate the original document.

Categories:

barrios category city classification density dwellings homes number percentage public quantity service unit urban

#		
2	*Actualización de Primer Inventario Nacional de Barrios (1978*	Update of the First National Inventory of *Barrios* (1978

3.5 1984



INAVI. 1989. “Consolidación de Barrios.” In 60 Años de Experiencia En Desarrollos Urbanísticos de Bajo Costo En Venezuela, Instituto Nacional de la Vivienda, 427–28. Caracas.

Categories:
barrios community consolidation development established execution housing improvement plan priorities urban.

#		
2	*El Programa CONSOLIDACIÓN DE BARRIOS se llevó a cabo en barrios pilotos del Área Metropolitana de Caracas mediante un Plan de Ordenamiento para barrios estables, que contempla el mejoramiento urbano*	The BARRIO CONSOLIDATION Program was carried out in pilot *barrios* of the Metropolitan Area of Caracas through a Management Plan for stable *barrios*, which contemplates urban improvement as well as the physical of

como el físico de las viviendas y la organización y desarrollo de la comunidad.

the houses and the organization and development of the community.

\# 12

Esta metodología basada en el Programa de Asentamientos Urbanos de MIT dirigido por Horacio Caminos fue dirigida por el propio Caminos y con la experiencia de los arquitectos Salvador Peña, Melba Arabia, y María E. Barrios.

This methodology based on the MIT Urban Settlements Program directed by Horacio Caminos was directed by Caminos himself and with the experience of the architects Salvador Peña, Melba Arabia, and María E. Barrios.

La metodología se basó en la identificación de los factores que inciden en el proceso de consolidación de los barrios. Se analizaron los físico-espaciales, socioeconómicos y técnico-constructivos, que representan tres niveles de acercamiento a la problemática de los barrios: el contexto urbano, el del barrio propiamente dicho y el proceso técnico-operacional de la ejecución del programa.

The methodology was based on the identification of the factors that affect the *barrios* consolidation process. The physical-spatial, socio-economic and technical-constructive ones were analyzed, which represent three levels of approach to the problems of the *barrios*: the urban context, that of the *barrios* itself and the technical-operational process of the execution of the program.

- Del primer análisis se obtiene la selección del barrio que sería objeto del programa, según características de orden legal, funcional, físico-ambiental, espacial y socioeconómico.

- From the first analysis, the selection of the *barrios* that would be the object of the program is obtained, according to legal, functional, physical-environmental, spatial and socioeconomic characteristics.

- En el segundo nivel se analizan los aspectos de orden físico- ambiental, funcional y social específicos del barrio y se establecen las necesidades y prioridades de la comunidad a fin de detectar sus problemas y potencialidades; también se incluyó un plan detallado de actividades de mejoramiento urbano y de organización y desarrollo de la comunidad, así como a la definición de una sectorización del

- At the second level, the specific physical-environmental, functional and social aspects of the *barrios* are analyzed and the needs and priorities of the community are established in order to detect its problems and potentialities; A detailed plan of urban improvement activities and the organization and development of the community was also included, as well as the definition of a

barrio que permitiera su desarrollo en varias etapas.

- El tercer nivel, que corresponde a la ejecución del programa en sí, consiste en la instrumentación de los aspectos físicos y operativos relacionados con la planificación, ejecución y control del avance de cada etapa del desarrollo, se nutrió de los datos arrojados por ellos procesos de formalización y diagnostico social que establecieron la estructura organizativa especial y funcional que permite llevar a cabo el programa la evaluación y control de avance de obras y ejecución de obras d mejoramiento urbano.

En la práctica, este programa encontró una serie de dificultades, desde su aceptación pro la comunidad hasta la entrega de la obra construida. Hubo también contradicciones en su concepción, entre las instituciones oficiales que participaron en él, con la Gobernación, INAVI, Fundacaracas, el Centro Simón Bolívar y los Consejos Municipales.

Los lineamientos urbanos del plan estipulaban la necesidad de concentrar los mejoramientos habitacionales sen un ámbito urbano establecido para evitar que se beneficiaran sólo pocas viviendas en lugar de la comunidad en su conjunto, lo que dificulto la contratación e inspección de los mejoramientos y exigió mayores recursos y mas personal. Las ejecuciones aisladas no permiten la conformación de una imagen urbana consolidada, que constituye parte de la esencia del Programa de Consolidación de Barrios.

sectorization of the *barrios* that would allow its development in various stages.

- The third level, which corresponds to the execution of the program itself, consists of the instrumentation of the physical and operational aspects related to the planning, execution and control of the progress of each stage of development, it was nourished by the data thrown by them processes of formalization and social diagnosis that established the special and functional organizational structure that allows the program to carry out the evaluation and control of the progress of works and execution of urban improvement works.

In practice, this program encountered a series of difficulties, from its acceptance by the community to the delivery of the built work. There were also contradictions in its conception, between the official institutions that participated in it, with the Government, INAVI, Fundacaracas, the Simón Bolívar Center and the Municipal Councils.

The urban guidelines of the plan stipulated the need to concentrate the housing improvements in an established urban area to avoid benefiting only a few houses rather than the community as a whole, which made it difficult to contract and inspect the improvements and required more resources and more personal. Isolated executions do not allow the formation of a consolidated urban image, which is part of the essence of the *Barrio* Consolidation Program.

Otro problema fue la falta de planificación conjunta entre Gobernaciones y Concejos Municipales, que contrataban las obras de equipamiento, por un lado, y el de INAVI, y otras instituciones, que planificaban los mejoramientos habitacionales, por el otro, lo que tramo como consecuencia,

a. MAYOR GASTO. primero, la dispersión de los recursos del Estado y,

b. FALTA DE PRIORIDADES. Segundo, la ausencia de prioridades en las accione basadas en las necesidades del barrio, porque cada organismo trabajó de acuerdo con su especialidad y sin la visión de conjunto concebida en los lineamientos del plan.

Another problem was the lack of joint planning between Governors and Municipal Councils, which contracted the equipment works, on the one hand, and that of INAVI, and other institutions, which planned the housing improvements, on the other, which consequently stretched,

to. HIGHER EXPENSE. first, the dispersion of state resources and,

b. LACK OF PRIORITIES. Second, the absence of priorities in actions based on the needs of the *barrios*, because each agency worked according to its specialty and without the overall vision conceived in the plan's guidelines

Otro problema es la injerencia político-partidista presente en la escogencia de las viviendas a los beneficiarios.

Another problem is the political-partisan interference present in the choice of housing for the beneficiaries.

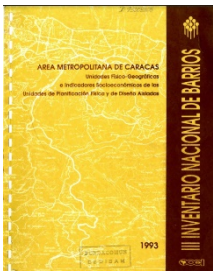
La consolidación de barrios, de acuerdo, de acuerdo con los planes de mejoramiento, se realizaba por etapas que se entregaban a la comunidad para que ésta continuara con la gestión interinstitucional para la ejecución de las etapas posteriores.

The consolidation of *barrios*, according to the improvement plans, was carried out in stages that were delivered to the community so that it could continue with the inter-institutional management for the execution of the subsequent stages.

Otro inconveniente fue la carencia de información básica sistematizada entre los organismos involucrados. Así como falta de apoyo técnico para darle continuidad a las ideas.

Another drawback was the lack of basic systematized information among the organizations involved. As well as lack of technical support to give continuity to ideas.

3.6 1993



Fundacomún. 1993. Tercer Inventario nacional de barrios: estudio diagnóstico de los barrios urbanos de Venezuela. [1. ed.]. Caracas]: Fundación para el Desarrollo de la Comunidad y Fomento Municipal.

Categories:
barrios category city classification density dwellings homes number percentage public quantity service unit urban

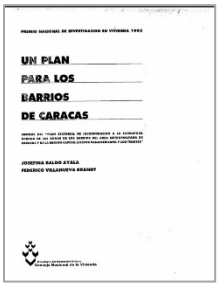
# 3	*Este Inventario, en su proceso de elaboración, se dividió en varias fases, las mismas que proporcionarán a los usuarios información de acuerdo a sus requerimientos, ya que los estudios van desde la visión de zonas de barrios llamadas Unidades de Planificación Física, hasta las Unidades de Diseño Urbano, como primera fase, las cuales permiten conocer con mayor profundidad la problemática socio-económica y de servicios en que éstas se encuentran. En fases subsiguientes se llegará a nivel de barrios, para diferenciarlos de otros asentamientos urbanos de bajos ingresos que pueden requerir de atención social y se especificará el nivel de características socio-económicas y de los servicios de los mismos.*	This Inventory, in its preparation process, was divided into several phases, which will provide users with information according to their requirements, since the studies range from the vision of *barrio* areas called Physical Planning Units, to the Units of Urban Design, as the first phase, which allow to know in greater depth the socio-economic problems and services in which they are. In subsequent phases, the neighborhood level will be reached, to differentiate them from other low-income urban settlements that may require social care, and the level of socio-economic characteristics and their services will be specified.
# 6	*A nivel local, al igual que para los otros niveles de gobierno, la información proporcionada por el III Inventario Nacional de Barrios permite a sus autoridades, elaborar planes y programas tendentes a satisfacer la demanda de sus comunidades bajo criterios técnicamente sustentables y racionalmente jerarquizables.*	*A nivel local, al igual que para los otros niveles de gobierno, la información proporcionada por el III Inventario Nacional de Barrios permite a sus autoridades, elaborar planes y programas tendentes a satisfacer la demanda de sus comunidades bajo criterios técnicamente sustentables y racionalmente jerarquizables.*

# 8	*Como resultado del intercambio de opiniones entre ambas instituciones [FUNDACOMUN y OCEI], se decidió que lo más conveniente era realizar el III Inventario como un trabajo conjunto, a objeto de optimizar el uso de los recursos materiales, humanos y financieros; todo ello con el propósito de lograr, en un tiempo corto y a un costo razonable, un producto final útil en el sentido de disponer de información oportuna, con un grado de precisión y de detalle que sirviera a los distintos organismos nacionales, regionales y locales para la toma de decisiones, en cuanto a la planificación y ejecución de las actividades inherentes al mejoramiento de los aspectos económicos y sociales de las personas que habitan los barrios, incluyendo aspectos relacionados con las viviendas tales como accesos, urbanismos y dotación de servicios.*	As a result of the exchange of opinions between both institutions [FUNDACOMUN and OCEI], it was decided that the most convenient thing was to carry out the III Inventory as a joint effort, in order to optimize the use of material, human and financial resources; All this with the purpose of achieving, in a short time and at a reasonable cost, a useful final product in the sense of having timely information, with a degree of precision and detail that would serve the different national, regional and local organizations to decision-making, regarding the planning and execution of the activities inherent to the improvement of the economic and social aspects of the people who live in the *barrios*, including aspects related to housing such as accesses, urban planning and provision of services.
# 10	*Definición de Barrios: Son asentamiento residenciales de desarrollo progresivo, construidos a partir de invasiones de terrenos que no pertenecen a sus residentes, y sin un plan, o más específicamente sin un proyecto, que cubra los requerimientos que debe contemplar cualquier urbanización producida reguladamente en la misma ciudad y época.*	Definition of *Barrios*: They are residential settlements of progressive development, built from invasions of lands that do not belong to their residents, and without a plan, or more specifically without a project, that covers the requirements that any urbanization produced in a regulated manner must contemplate. same city and time.
	Tal definición coincide con la de los asentamientos denominados "SQUATTERS" empleada en la actualidad por HABITAT, y recomendada pra su uso internacional por las Naciones Unidas y con la definición operacional que teóricamente fundamentó el prumer	Such definition coincides with that of settlements called "SQUATTERS" currently used by HABITAT, and recommended for international use by the United Nations and with the operational definition that theoretically founded the first National Inventory of

	Inventario Nacional de barrios realizado por FUNDACOMUN en 1978.	*barrios* carried out by FUNDACOMUN in 1978.
# 10	*Definición de "Unidades de Planificación Física" equivalen en cada ciudad, a grandes zonas relativamente continuas de barrios, cuyas necesidades en materia de articulación con el resto de los sistemas y de las redes urbanas, así como sus necesidades de equipamientos, sólo podrán detectarse a este nivel de agregación, realizado convencionalmente para la elaboración de Planes de Desarrollo Urbano Local.*	Definition of "Physical Planning Units" are equivalent in each city to relatively continuous large areas of *barrios*, whose needs in terms of articulation with the rest of the urban systems and networks, as well as their equipment needs, can only be detected by this level of aggregation, carried out conventionally for the elaboration of Local Urban Development Plans.
# 10	*Definición de "Unidades de Diseño Urbano", componentes de cada Unidad de Planificación Física, y eventualmente aisladas e intersticiales al tejido de la ciudad, tienen por su parte una escala equivalente a la de una urbanización de desarrollo controlado. Este es el tipo de unidades que pueden ser objeto de un proyecto específico de diseño urbano, que comprende distintos tipos de obras de habilitación."*	Definition of "Urban Design Units", components of each Physical Planning Unit, and eventually isolated and interstitial to the fabric of the city, have for their part a scale equivalent to that of a controlled development urbanization. This is the type of unit that can be the object of a specific urban design project, which includes different types of habilitation works. "
# 10	*Definición de "Unidades de Diseño Aisladas", se definen como zonas continuas de barrios cuya escala y características no pasan de las propias de una Unidad de Diseño Urbano, que no van a verse afectadas directamente por la habilitación urbana, mediante acciones internas y de integración con el resto de la estructura urbana, de otras zonas mayores que denominamos Unidades de Planificación Urbana. Es decir que las Unidades Aisladas requieren estudios, proyectos y obras de habilitación física*	Definition of "Isolated Design Units", are defined as continuous areas of *barrios* whose scale and characteristics do not exceed those of an Urban Design Unit, which will not be directly affected by urban development, through internal and integration actions with the rest of the urban structure, from other larger areas that we call Urban Planning Units. In other words, the Isolated Units require studies, projects and physical habilitation works.

#		
16	*"La esencia descriptiva de la conformación de las Unidades de Planificación Física y de Diseño Urbano está esbozada en breves comentarios, realizados al comienzo de la presentación de la información cartográfica de cada una de las Unidades. A través de estos comentarios se pretende describir de manera técnica, pero sencilla, la ubicación de cada una de las zonas de barrios, los límites y características de su emplazamiento, el total de población que las componen, así como su superficie y densidad demográfica. Asi mismo, se presenta una lista de los barrios que conforman cada Unidad de Diseño Urbano y la fecha aproximada de su Fundación."*	"The descriptive essence of the conformation of the Physical Planning and Urban Design Units is outlined in brief comments, made at the beginning of the presentation of the cartographic information of each of the Units. Through these comments it is intended to describe in a way technical, but simple, the location of each of the *barrios* areas, the limits and characteristics of their location, the total population that compose them, as well as their surface area and demographic density. Likewise, a list of *barrios* is presented that make up each Urban Design Unit and the approximate date of its Foundation. "

3.7 1994-1998



Baldo, Josefina, and Federico Villanueva. 1998. Un Plan Para Los Barrios de Caracas. Premio Nacional de Vivienda 1995. Caracas: Consejo Nacional de la Vivienda. Ministerio del Desarrollo Urbano

Categories:
areas barrios developments growth habilitation housing physical plan policies process program projecting rancho road services settlements urban works

#		
6	*Hasta ahora, el Plan para los barrios de Caracas ha sido la base para la elaboración del III Inventario Nacional de Barrios de Fundacomun-OCEI, así como para el Programa Promueba Caracas, con aportes del Banco Mundial y futuros aportes del Banco Interamericano de Desarrollo.*	Until now, the Plan for the *barrios* of Caracas has been the basis for the preparation of the III National Inventory of *Barrios* of Fundacomun-OCEI, as well as for the Program Prombate Caracas, with contributions from the World Bank and future contributions from the Inter-American Development Bank.

# 13	*Los desarrollos urbanos espontáneos, no controlados o autoproducidos, que en Venezuela se denominan barrios de ranchos, constituyen la más importante y dinámica forma de ocupación del espacio en el planeta. A partir, de estructuras sumamente precarias de carácter provisional, los desarrollos tienden a permanecer y a consolidarse a lo largo del tiempo, mientras las viviendas se convierten en el principal, si no único, patrimonio económico y existencial de sus habitantes.*	Spontaneous, uncontrolled or self-produced urban developments, which in Venezuela are called *barrios de ranchos*, constitute the most important and dynamic form of space occupation on the planet. Starting from extremely precarious structures of a provisional nature, developments tend to remain and consolidate over time, while homes become the main, if not the only, economic and existential heritage of its inhabitants.
# 13	*Al ignorar el hecho de que la urbanización es, en sí misma, un fenómeno de cultura -como en su momento señaló Max Weber-, las políticas del Estado frente a los barrios con carencias de infraestructura, de vialidad, de servicios, etc., han oscilado entre su desalojo y eliminación (como en la célebre "batalla contra el rancho") o la "congelación" de los mismos, al negar su reconocimiento y todo intento de mejora, pasando por las operaciones circunstanciales de remodelación cosmética: intervenciones todas con la oposición o la indiferencia de la población residente. En la actualidad, sin embargo, las magnitudes que han alcanzado estos asentamientos y las negativas experiencias previas, hacen totalmente inútiles aquellas políticas y colocan en primer plano la alternativa de completar su proceso de crecimiento y desarrollar plenamente la fase de urbanización, cumplidas en lo esencial, las de parcelación y edificación.*	By ignoring the fact that urbanization is, in itself, a phenomenon of culture -as Max Weber pointed out at the time-, the State's policies towards *barrios* with lack of infrastructure, roads, services, etc., They have oscillated between their eviction and elimination (as in the famous "battle against the *rancho*") or their "freezing", denying their recognition and any attempt at improvement, passing through circumstantial cosmetic remodeling operations: interventions all with the opposition or indifference of the resident population. At present, however, the magnitudes that these settlements have reached and the negative previous experiences, make those policies totally useless and place in the foreground the alternative of completing their growth process and fully developing the urbanization phase, essentially fulfilled. , those of subdivision and building.

# 13 14	*Esta política exige movilizar todos los recursos disponibles para lograr el reconocimiento oficial de los barrios de ranchos y su total incorporación a la sociedad urbana contemporáneas. Y una de sus primeras acciones consiste en planificar, programar, proyectar y ejecutar las obras de urbanización que permitan la adecuada inserción de los barrios en el medio ambiente construido, así como la superación de sus carencias internas en cuanto a los niveles de urbanización: tal es el proceso que se denomina habilitación física de los barrios.*	This policy requires mobilizing all available resources to achieve official recognition of *barrios de rancho* and their full incorporation into contemporary urban society. And one of its first actions consists of planning, programming, projecting and executing the urbanization works that allow the proper insertion of the neighborhoods in the built environment, as well as overcoming their internal deficiencies in terms of urbanization levels: such This is the process known as the physical habilitation of the *barrios*.
# 14	*Esos Programas de actuación están referidos, por una parte, a Unidades de Planificación Física (UPF), es decir, zonas relativamente continuas, compuestas por grandes agregados de barrios de ranchos y con problemas de habilitación física a esa escala (relativos a obras de ingeniería correctiva y preventiva frente a riesgos geológicos, conexiones viales, acueductos de aducción, emisarios cloacales principales, y otros servicios infraestructurales, así como a servicios comunales de ámbito intermedio); y, por otra parte, a Unidades de Diseño Urbano (UDU), es decir, zonas comparativamente menores, conformadas por uno o más barrios, o partes de barrios, y con una escala de problemas similar a la de urbanizaciones, que permiten desarrollar proyectos integrados de habilitación física (contemplando la ampliación y adecuación de la red vial interna de las Unidades, la reconstrucción de sus servicios de infraestructura, la creación de servicios*	These Action Programs refer, on the one hand, to Physical Planning Units (UPF), that is to say, relatively continuous areas, made up of large aggregates of *barrios de ranchos* and with physical habilitation problems at that scale (related to engineering works corrective and preventive against geological risks, road connections, adduction aqueducts, main sewage outfalls, and other infrastructural services, as well as intermediate community services); and, on the other hand, to Urban Design Units (UDU), that is, comparatively smaller areas, made up of one or more *barrios*, or parts of *barrios*, and with a scale of problems similar to that of urbanizations, which allow the development of projects integrated physical habilitation (contemplating the expansion and adaptation of the internal road network of the Units, the reconstruction of their infrastructure services, the creation of local community services and the construction of houses to replace those

comunales locales y la construcción de viviendas para sustituir a las afectadas por las obras que se proyectan).

affected by the works that are projected) .

18 *En el "Taller Vivienda" se logró adaptar los métodos y procedimientos de evaluación de urbanizaciones desarrollados en el programa Urban Settlement Design in Developing Countries, para el caso de los desarrollos no controlados existentes en Venezuela. Este programa, que se ocupa de asentamientos urbanos en más de 25 países, se realiza en la Escuela de Arquitectura y Planificación del Instituto Tecnológico de Massachusetts (MIT) desde 1965.*

In the "Housing Workshop" it was possible to adapt the methods and procedures for evaluating urbanizations developed in the Urban Settlement Design in Developing Countries program, for the case of uncontrolled developments in Venezuela. This program, which addresses urban settlements in more than 25 countries, has been conducted at the School of Architecture and Planning at the Massachusetts Institute of Technology (MIT) since 1965.

18 19 *El proceso de formulación del Plan requirió, en primer lugar, la delimitación precisa de las Unidades de Planificación Física y de las Unidades de Diseño Urbano; en segundo lugar, la correcta determinación de las características y niveles de urbanización de cada una de las Unidades anteriores (con respecto a la vialidad vehicular y peatonal, al emplazamiento y accesibilidad, a la edad de los asentamientos, a su área, población y densidad, a las subcuencas hidrográficas, a la geología de los terrenos, etc.), incluyendo la evaluación de sus tendencias de crecimiento demográfico, territorial y de cualidad; en tercer lugar, la confrontación analítica entre las características y niveles de urbanización obtenidos y los que se consideran científicamente adecuados, generando las conclusiones operacionales para definir las necesidadas de habilitación física.*

The process of formulating the Plan required, in the first place, the precise delimitation of the Physical Planning Units and the Urban Design Units; secondly, the correct determination of the characteristics and levels of urbanization of each of the previous Units (with respect to vehicular and pedestrian roads, location and accessibility, age of the settlements, their area, population and density , to the hydrographic sub-basins, to the geology of the lands, etc.), including the evaluation of their tendencies of demographic, territorial and quality growth; thirdly, the analytical comparison between the characteristics and levels of urbanization obtained and those that are considered scientifically adequate, generating the operational conclusions to define the need for physical habilitation. Parallel to these first three phases, and through project and technological expertise, a set of

	Paralelamente a esas tres primeras fases, y mediante experticias proyectuales y tecnológicas, se elaboró un conjunto de relacionadores entre carencias urbanas y magnitudes de obras, que permitió, en cuarto lugar, empleando análisis de costos derivados de las mismas experticias y de obras en ejecución, la transformación de las necesidades de habilitación física en programas de intervención, con obras específicas y estimación de inversiones a realizar, para lograr distintos y superiores niveles de urbana.	relationships between urban deficiencies and magnitudes of works was elaborated, which allowed, in the fourth place, using cost analysis derived from the same expertise and works in progress, the transformation of physical habilitation needs into intervention programs, with specific works and estimation of investments to be made, to achieve different and higher urban levels.
# 170	*Los futuros desarrollos de urbanizaciones y viviendas que absorban el crecimiento de las zonas de barrios sólo aparecen de modo indicativo en este Plan Sectorial, que se limita a la determinación de los indicadores de la demanda agregada de nuevos asentamientos en su ámbito. Pero, no puede dejar de apuntarse que una de las principales políticas para la urbanización y vivienda de los pobladores urbanos de más bajos ingresos es, precisamente, la referida a prever, proyectar, orientar y asistir a la creación de nuevas urbanizaciones que puedan absorber el crecimiento de los barrios y evitar su proliferación incontrolada en las áreas urbanas.*	Future developments of housing developments that absorb the growth of *barrios* areas only appear as an indication in this Sector Plan, which is limited to determining the indicators of the aggregate demand for new settlements in its area. But, it cannot fail to point out that one of the main policies for urbanization and housing of the lowest-income urban dwellers is precisely that referred to foreseeing, projecting, orienting and assisting in the creation of new urbanizations that can absorb the *barrios* growth and prevent their uncontrolled proliferation in urban areas.
# 214	*Si en el proceso de habilitación física existe una participación real y activa de las comunidades involucradas, verdaderos "clientes" finales del proceso, aunada a una eficiente Oficina Local de Asistencia Técnica (que haya previsto soluciones reales a los problemas técnicos), existirán condiciones óptimas de confianza y reconocimiento de necesidades técnicas*	If in the process of physical habilitation there is a real and active participation of the communities involved, true final "clients" of the process, coupled with an efficient Local Technical Assistance Office (which has provided real solutions to technical problems), there will be optimal conditions of confidence and recognition of technical needs to be

para poder desarrollar actividades de control urbano y de mantenimiento.

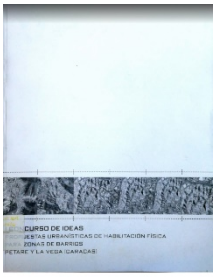
able to develop urban control and maintenance activities.

\# 391

La elaboración del Plan Sectorial tuvo un carácter experimental y duró poco más de un año. Lograrlo en tan corto tiempo fue posible gracias al trabajo acumulado por muchas personas, dentro y fuera del equipo del Plan Sectorial, así como al extraordinario esfuerzo del propio equipo y sus desinteresados colaboradores. El Plan corresponde al momento actual y al "estado del arte" de la habilitación física en zonas de barrios y, en ese sentido, podrá ser superado, especialmente, porque la gris teoría no tiene los colores del árbol de la vida, es decir, de la práctica.

The elaboration of the Sector Plan was experimental and lasted little more than a year. Achieving it in such a short time was possible thanks to the work accumulated by many people, inside and outside the Sector Plan team, as well as the extraordinary effort of the team itself and its selfless collaborators. The Plan corresponds to the current moment and to the "state of the art" of physical accommodation in *barrios* areas and, in that sense, it may be surpassed, especially because the gray theory does not have the colors of the tree of life, that is, of practice.

3.8 1999



Baldo, Josefina, Jordi Borja, and Manuel Lopez. 1999. I Concurso Nacional de Ideas: Propuestas Urbanísticas de Habilitación Física Para Zonas de Barrios. Petare y La Vega (Caracas). Edited by Baldo, Josefina and Federico Villanueva. Caracas: Consejo Nacional de la Vivienda

Categories:
barrios developments growth habilitation housing physical competition program projecting road services settlements

\# 5

Cuando hablamos de los sectores de más bajos recursos, de los sectores que habían quedado desatendidos, y de la necesidad de diseñar una política que abarcase a ese gran número de habitantes, nos referimos a la incorporación al nuevo programa de

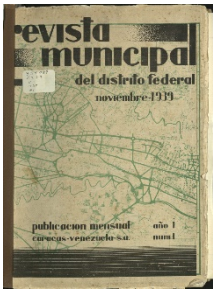
When we talk about the lowest-income sectors, the sectors that had been neglected, and the need to design a policy that encompasses this large number of inhabitants, we refer to the incorporation of the needy people into the new housing program. of new

vivienda tanto de la gente necesitada de nueva vivienda, como de la que vive en zonas deterioradas, en barriadas populares o en la calle. Por lo tanto, se trata de una política que responde, por un lado, a un principio fundamental de solidaridad y justicia social, y por otro lado, a la importante consideración de que la productividad de un pueblo depende de las condiciones de su hábitat y que para poder competir en el mundo contemporáneo se necesita elevar el nivel de vida de la mayoría de la población.

housing, such as one that lives in deteriorated areas, in popular neighborhoods or on the street. Therefore, it is a policy that responds, on the one hand, to a fundamental principle of solidarity and social justice, and on the other hand, to the important consideration that the productivity of a people depends on the conditions of its habitat and that in order to compete in the contemporary world it is necessary to raise the standard of living of the majority of the population.

Appendix Id Category Analysis on Planning Reports – URBAN PLANS

4.1 1939



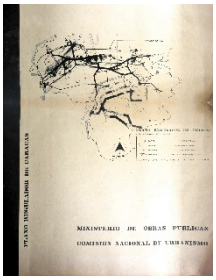
Monumental Plan of Caracas

Authors: Maurice Rotival, Jacques Lambert, Henri Prost, and Leopold Wegenstein

Gobierno del Distrito Federal. 1939. "Revista Municipal del Distrito Federal." Revista municipal del distrito federal, no. 1 (October).

#		
39	*En cuanto a las masas populares, principalmente integradas por campesinos, que no estaban evidentemente acostumbrados a los alejamientos modernos sino a la vida del campo, de donde ellas proceden en su mayoría, viven en la actualidad en condiciones sumamente desfavorables y poco higiénicas. Para remediar este estado de cosas es necesario la creación de barrios obreros con sus campos de deporte, jardines, espacios libres, etc., como los que se han construido durante estos últimos tiempos en algunos sitios de la ciudad.*	As for the popular masses, mainly made up of peasants, who were obviously not used to modern estrangements but rather to life in the countryside, where they mostly come from, they currently live in extremely unfavorable and unsanitary conditions. To remedy this state of affairs, it is necessary to create working-class neighborhoods with their sports fields, gardens, open spaces, etc., such as those that have been built in recent times in some parts of the city.

4.2. 1951



Caracas Regulatory Plan

Authors: Francis Violich

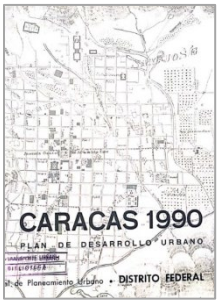
# 6 - 8	*Las cifras anotadas indican claramente la gravedad del problema de la vivienda, en sus dos principales aspectos: el hacinamiento en viviendas originalmente unifamiliares, y el desplazamiento con la formación de barriadas insalubres o indeseables". (p.6) "La condición más dramática de la habitación, la constituyen las 34.000 viviendas de los cerros, quebradas e islotes insalubres o indeseables. Es más, este problema es sin duda alguna, el más alarmante de más difícil solución de cuantos atañen a la ciudad.*	The figures noted clearly indicate the seriousness of the housing problem, in its two main aspects: overcrowding in originally single-family homes, and displacement with the formation of unhealthy or undesirable neighborhoods. "(P.6)" The most dramatic condition of The habitation is made up of the 34,000 homes on the hills, streams and unhealthy or undesirable islets. Moreover, this problem is without a doubt the most alarming and most difficult to solve of all those that concern the city.
# 10	*El estallido de la ciudad, se tradujo igualmente en el de la actividad comercial desorganizada. Se han instalado en locales comerciales en número excesivo en todas zonas, barrios y núcleos urbanos, utilizándose al efecto locales de mínima área, mal ubicados, que alteran la actividad normal de la zona o barrio y atraen la formación de nuevos elementos comerciales.*	The outbreak of the city also resulted in disorganized commercial activity. They have been installed in commercial premises in excessive number in all areas, neighborhoods and urban centers, using for the effect premises of a minimum area, poorly located, which alter the normal activity of the area or neighborhood and attract the formation of new commercial elements.
	Gravedad del problema de la vivienda:	Severity of the housing problem:
	- Hacinamiento de las viviendas originalmente unifamiliares.	- Overcrowding of the originally single-family homes.
	- Desplazamiento con la formación de barriadas insalubres e indeseables	- Displacement with the formation of unhealthy and undesirable neighborhoods
	- 34.000 ranchos censados en Caracas corresponde al aumento de nuevos grupos familiares entre 1941-1950.	- 34,000 *ranchos* registered in Caracas correspond to the increase in new family groups between 1941-1950.

# 11	*El proceso de crecimiento urbano, ha llevado a la industria de la construcción a ocupar el primer puesto entre las actividades urbanas, situación que se mantendrá durante un lapso suficientemente largo*	The urban growth process has led the construction industry to occupy the first place among urban activities, a situation that will continue for a sufficiently long period of time.
# 12	*La condición más dramática de la vivienda está compuesta por las 34.000 viviendas en los cerros, quebradas e islotes insalubres e indeseables. Además, este problema es sin duda la más alarmante de las más difíciles de resolver de las que preocupan a la ciudad.*	The most dramatic condition of the dwelling is made up of the 34,000 homes on the hills, *quebradas,* and unhealthy and undesirable islets. Moreover, this problem is undoubtedly the most alarming of the most difficult solution of those that concern the city

4.3 1951-1958

Caracas Regulatory Plan – Zoning Ordinances: See Appendix G.

4.4 1969



Caracas General Plan 1990

Author: **Municipal Office of Urban Planning (OMPU)**

OMPU. 1969. "Caracas 1990. Plan de desarrollo urbano. 1era etapa del estudio (informe abreviado)." Distrito Federal, Caracas: Consejo Municipal del Distrito Federal, Oficina Municipal de Planeamiento Urbano.

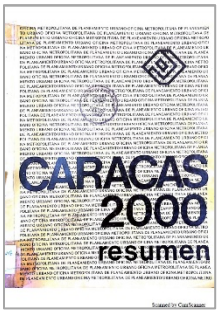
# 32	*La proporción de ranchos se ha mantenido comparativamente estable, alrededor de un 20%, mientras los otros tipos de vivienda muestran igualmente una situación bastante estable en cuanto a su proporción respecto al total de viviendas.*	The proportion of *ranchos* has remained comparatively stable, around 20%, while the other types of housing also show a fairly stable situation in terms of their proportion with respect to the total number of houses.

# 33	*Así aparece que las familias con ingresos inferiores a Bs. 1.000, que hoy en día están prácticamente fuera del mercado de la vivienda, habitan en ranchos en su casi totalidad.*	*Thus, it appears that families with incomes below Bs. 1,000, which today are practically outside the housing market, live almost entirely in ranchos.*
# 38	*De acuerdo a los supuestos de 1990, el porcentaje de ranchos respecto al total de viviendas se reducirá del 22% en 1966 al 17,7%; el porcentaje de casas seguirá igualmente su tendencia decreciente al bajar del 28,7% en 1966 al 15,9% en 1990, los apartamentos representarán el 51,5% del total, lo que contrasta con el 34% registrado en 1966. Los otros tipos de vivienda no sufrirán mayores alteraciones porcentuales.*	*According to the assumptions of 1990, the percentage of ranchos with respect to the total number of dwellings will be reduced from 22% in 1966 to 17.7%; The percentage of houses will also continue its decreasing trend, falling from 28.7% in 1966 to 15.9% in 1990, the apartments will represent 51.5% of the total, which contrasts with the 34% registered in 1966. The others types of housing will not suffer major percentage changes.*
# 44	*...las áreas de ranchos resultan de factores más o menos identificables, pero tienen un proceso de desarrollo distinto a la mayor parte de las áreas urbanas organizadas, en el sentido de que tienden a mejorar progresivamente y, consecuentemente, a estabilizarse, a menos que sobre ellas se tome una acción especial de renovación y transformación; ...*	*... rancho* areas result from more or less identifiable factors, but they have a different development process than most organized urban areas, in the sense that they tend to progressively improve and, consequently, to stabilize, unless that a special renewal and transformation action be taken on them; ...

4.5 1979

Caracas Plan 2000

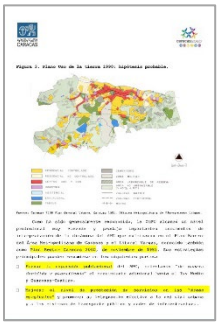
Author: Municipal Office of Urban Planning (OMPU)



OMPU. 1979. “Caracas 2000. Resumen.” Caracas: Oficina Metropolitana de Planeamiento Urbano..

#		
58	*Con respecto a la vivienda marginal, a mediano plazo la acción gubernamental debe estar principalmente dirigida a detener el deterioro de la situación con medidas como: reorientación del flujo de migrantes potencialmente marginales para ser asentados en centros de recepción previstos dentro de las políticas de ordenamiento territorial de la Región Metropolitana y en áreas previamente acondicionadas que deben ser erradicadas; programas de mejoras progresivas en las zonas que pueden ser rehabilitadas, especialmente en accesibilidad, servicios sociales, adiestramiento y sistemas de información sobre empleos. A largo plazo, una vez ganado cierto grado de control sobre el crecimiento de la marginalidad, deberá actuarse decisivamente sobre las zonas que deben ser erradicadas por sus condiciones de inestabilidad física o por la imposibilidad de dotarlas de los servicios indispensables. Esta acción tendrá necesariamente que ser acompañada por programas importantes de renovación urbana y de nueva urbanización, destinados a proveer viviendas y centros de trabajos y de servicios.*	With regard to marginal housing, in the medium term, government action should be mainly aimed at halting the deterioration of the situation with measures such as: reorienting the flow of potentially marginal migrants to be settled in reception centers provided for within the land use planning policies. of the Metropolitan Region and in previously conditioned areas that must be eradicated; progressive improvement programs in areas that can be rehabilitated, especially in accessibility, social services, training, and employment information systems. In the long term, once a certain degree of control over the growth of marginalization has been gained, decisive action must be taken on the areas that must be eradicated due to their physically unstable conditions or due to the impossibility of providing them with the essential services. This action will necessarily have to be accompanied by important programs of urban renewal and new urbanization, destined to provide housing and work and service centers.

4.6 1983



Plan Rector Caracas 2000

Author: Municipal Office of Urban Planning (OMPU)

OMPU. 1983. "Plan Rector Caracas 2000." Caracas: Oficina Metropolitana de Planeamiento Urbano.**

**Due to lack of access to the primary source, this plan was consulted in the *Plan Estratégico Caracas Metropolitana 2020* (Figure 4.7).

# N/A	*Sus estrategias principales pueden resumirse en los siguientes puntos:*	Its main strategies can be summarized in the following points:
	- Frenar la expansión poblacional del AMC, orientando "de manera	- To stop the population expansion of the AMC, orienting "in a
	decidida y planificada" el crecimiento adicional hacia el Tuy Medio	decided and planned "the additional growth towards Tuy Medio
	y Guarenas-Guatire.	and Guarenas-Guatire.
	- Mejorar el nivel de prestación de servicios en las "áreas	- Improve the level of service provision in the "areas
	marginales" y promover su integración efectiva a la red vial urbana	marginal "and promote their effective integration into the urban road network
	y a los sistemas de transporte público y redes de infraestructura.	and to public transport systems and infrastructure networks.
	- Evitar la aparición de nuevas "áreas marginales" enfatizando el	- Avoid the appearance of new "marginal areas" emphasizing the
	papel urbanizador del sector público, en particular desarrollando	urbanizing role of the public sector, in particular developing
	"áreas de recepción dirigida" para los nuevos habitantes de la	"Targeted reception areas" for the new inhabitants of the
	ciudad, que garanticen su localización dentro de la trama urbana en	city, which guarantee its location within the urban fabric in
	terrenos dotados de los servicios y equipamientos fundamentales.	land equipped with basic services and equipment.
	- Desestimular la densificación en áreas con problemas de	- Discourage densification in areas with problems of
	accesibilidad y de servicios y asegurar la preservación de las	accessibility and services and ensure the preservation of
	áreas de reserva natural y las ecológicamente frágiles.	natural reserve areas and ecologically fragile ones.

4.7 2020



Plan Estratégico Caracas 2020

Author: Instituto Metropolitano de Urbanismo Taller Caracas

Instituto Metropolitano de Urbanismo Taller Caracas. 2012. Avances Del Plan Estratégico Caracas Metropolitana 2020. Caracas: Alcaldía Metropolitana de Caracas.

# 12	*[Palabras del Acalde Carlos Ocariz] Asimismo, entender a los barrios como parte integrante de la ciudad, ha sido el motor para que la Alcaldía de Sucre oriente importantes inversiones en las mejoras y adecuación de los servicios en estas zonas, minimizando su dependencia de las zonas formales y motorizando su productividad económica.*	[Speech from Mayor Carlos Ocariz] Likewise, understanding the *barrios* as an integral part of the city has been the driving force for the Mayor's Office of Sucre to direct significant investments in the improvement and adaptation of services in these areas, minimizing its dependence on the formal zones and motoring their economic productivity.
# 28-29	*[En GESTIONES PRECEDENTES DE LA ALCALDÍA DEL ÁREA METROPOLITANA DE CARACAS. La gestión del Alcalde Alfredo Peña] Incorporación de los barrios al tejido urbano formal (...) Desarrollo de los estudios de las unidades de planificación física y unidades de diseño Urbano previstos en el plan de habilitación de barrios.*	[In PREVIOUS GOVERNMENT PLANS IN THE MAYORALTY OF THE METROPOLITAN AREA OF CARACAS. Mayor Alfredo Peña] Incorporation of the *barrios* to the formal urban fabric (…) Development of the studies of the physical planning units and urban design units foreseen in the *barrios* upgrading plan.
# 29	*[En GESTIONES PRECEDENTES DE LA ALCALDÍA DEL ÁREA METROPOLITANA DE CARACAS. La gestión del Alcalde Juan Barreto] El Programa Transbarrio (Transformación Integral de los Barrios Populares Urbanos), del cual no se conoce ningún caso efectivamente realizado, parece un intento de reemplazar el abandonado Programa de Habilitación de Barrios que*	[In PREVIOUS GOVERNMENT PLANS IN THE MAYORALTY OF THE METROPOLITAN AREA OF CARACAS Mayor Juan Barreto] The *Transbarrio* Program (Comprehensive Transformation of Urban Popular Barrios), of which no actual case is known, seems to be an attempt to replace the abandoned Neighborhood Empowerment Program that was carried out by the National Housing Council

	adelantara el Consejo Nacional de la Vivienda (CONAVI) entre 1999 y 2000, mientras que el SUVI es equivalente al de "viviendas de sustitución" que acompañaba al citado programa del CONAVI. Aparentemente consistía en tres tipologías únicas, preconcebidas en el IMUTC, de una de las cuales la llamada Casa Ave- se llegaron a construir algunas unidades.	(CONAVI) between 1999 and 2000, while the SUVI is equivalent to that of "replacement housing" that accompanied the aforementioned CONAVI program. Apparently it consisted of three unique typologies, preconceived in the IMUTC, one of which the so-called Casa Ave- some units were built.
# 42	*En el caso de Caracas la anomalía más evidente son los barrios populares de autoconstrucción o informales, que han crecido como aglomeraciones exclusivas de viviendas conectadas tardíamente y mal a los servicios de la ciudad, prácticamente sin equipamientos urbanos (escuelas, parques, ambulatorios, no se hable ya de bibliotecas o espacios para el deporte) y carentes de centros generadores de empleo, todo lo cual lo deben buscar sus habitantes casi siempre fuera del barrio, muchas veces a gran distancia (horizontal, pero también verticalmente).*	In the case of Caracas, the most obvious anomaly is the popular self-construction or informal neighborhoods, which have grown as exclusive agglomerations of homes that were late and poorly connected to city services, with practically no urban facilities (schools, parks, outpatient clinics, no talk about libraries or spaces for sports) and lacking employment generating centers, all of which its inhabitants almost always have to look for outside the *barrio*, often at a great distance (horizontally, but also vertically).
# 142	*[En línea estratégica CARACAS ACCESIBLE Y EN MOVIMIENTO] Proyectos relacionados con el sistema Metro (...) Implementar sistemas de Metrocable en otros sectores de barrios de la ciudad, de acuerdo con las necesidades y prioridades de sus habitantes.*	[In ACCESSIBLE AND IN MOVEMENT strategic line] Projects related to the Metro system (…) Implement Metrocable systems in other sectors of the city's *barrios*, in accordance with the needs and priorities of its inhabitants.
# 144	*[En línea estratégica CARACAS ACCESIBLE Y EN MOVIMIENTO] Acondicionar espacios para garantizar la movilidad no motorizada de forma continua y segura en los proyectos para la habilitación física de barrios.*	[In CARACAS ACCESSIBLE AND MOVING strategic line] Prepare spaces to guarantee non-motorized mobility in a continuous and safe way in projects for the physical upgrading of *barrios*.

# 152	*[En línea estratégica CARACAS CARACAS SEGURA E INTEGRADA] Esta red de espacios públicos de carácter metropolitano conformados por distintos elementos urbanos: aceras, plazas, parques, bulevares, debe permear en el ámbito local de las urbanizaciones y barrios de la ciudad con propuestas de menor escala-acupuntura urbana- que integren estos espacios al sistema metropolitano de espacios públicos (...) Priorizar ejes metropolitanos de manera de conectar centralidades, espacios públicos y áreas empleadoras, así como zonas potenciales de transformación urbana donde se produce la transición entre los barrios y la ciudad (...) Conformación de equipamientos integrales en barrios. Para ampliar la cobertura de los espacios públicos en el ámbito de la ciudad se plantea abarcar las zonas de barrios, con la incorporación de equipamientos integrales CRECE por sus siglas* *de Cultura, Recreación, Educación, Crecimiento y Emprendimiento.*	[In SAFE AND INTEGRATED strategic line] This network of public spaces of a metropolitan nature made up of different urban elements: sidewalks, squares, parks, boulevards, must permeate the local area of *barrios* and other housing neighborhoods of the city with proposals of minor scale-urban acupuncture- that integrate these spaces into the metropolitan system of public spaces (…) Prioritize metropolitan axes in order to connect centralities, public spaces and employer areas, as well as potential areas of urban transformation where the transition between neighborhoods and city (…) Creation of comprehensive facilities in neighborhoods. To expand the coverage of public spaces in the city, it is proposed to cover neighborhood areas, with the incorporation of comprehensive facilities CRECE by its acronym
# 157	*[En línea estratégica CARACAS CARACAS SEGURA E INTEGRADA] La vivienda y su hábitat se proyecta como una necesidad de integrar a los pobladores de las zonas de barrios a la ciudad y sus servicios para mitigar los altos índices de violencia, la falta de conciencia cívica, la deficiente prestación de servicios y, en algunos casos, las condiciones de riesgo a las que están expuestos los ciudadanos y ciudadanas que en ellas residen, para preservar la armonía y calidad de vida de las personas en el ámbito urbano.*	[In SAFE AND INTEGRATED strategic line] Housing and its habitat is projected as a need to integrate the residents of *barrio* areas into the city and its services to mitigate the high rates of violence, lack of civic awareness, the deficient provision of services and, in some cases, the risk conditions to which the citizens who reside there are exposed, in order to preserve the harmony and quality of life of people in urban areas.

# 158 - 159	*[En línea estratégica CARACAS CARACAS SEGURA E INTEGRADA] Habilitación de barrios caraqueños - Planificar, programar, proyectar y ejecutar las obras de urbanización que permitan una adecuada inserción de los barrios en el medio ambiente construido, así como la superación de sus carencias internas en cuanto a los niveles de urbanización: tal es el proceso que se denomina programa de habilitación física de barrios, razón por la cual debe de considerarse la vivienda en barrios como un patrimonio económico de peso en cada aspecto que se menciona a continuación:* *- Financiamiento y producción social del hábitat* *- Garantizar servicios para todos* *- Promover una gestión urbana democrática y participativa* *- Consolidar el desarrollo productivo en los barrios* *[se desarrollan detalles de los objetivos y estrategias de la Habilitación Física de Barrios en los siguientes temas] Financiamiento y la producción social del hábitat (...) Garantizar servicios para todos (...) Promover una gestión urbana democrática y participativa (...) Consolidar el desarrollo productivo en los barrios.*	[In SAFE AND INTEGRATED strategic line] Upgrading Caracas *Barrios* Plan, schedule, project and execute urbanization works that allow a proper insertion of *barrios* in the built environment, as well as overcoming their internal deficiencies in terms of the levels of urbanization: such is the process that is called the neighborhood physical habilitation program, which is why housing in neighborhoods should be considered as an economic asset of weight in each aspect mentioned below: - Financing and social production of habitat - Guarantee services for all - Promote democratic and participatory urban management - Consolidate productive development in neighborhoods [Details of the objectives and strategies of the Physical Empowerment of Neighborhoods are developed in the following topics] Financing and social production of habitat (…) Guarantee services for all (…) Promote democratic and participatory urban management (…) Consolidate development productive in the *barrios*.
# 166	*[En línea estratégica CARACAS AMBIENTALMENTE SOSTENIBLE] Determinación de áreas vulnerables. Ejemplo: Cuenca Agua de Maíz [Esta línea estratégica no hace mención directa al tema de intervenciones en barrios]*	[In ENVIRONMENTALLY SUSTAINABLE strategic line] Determination of vulnerable areas. Example: Agua de Maíz Basin [This strategic line does not directly mention the issue of interventions in *barrios*]

# 172	*[En línea estratégica CARACAS PRODUCTIVA Y EMPRENDEDORA] Identificar y reconocer las potencialidades innovadoras en los ciudadanos y ciudadanas del Área Metropolitana de Caracas, que brinden soluciones socioambientales sostenibles, con sentido de pertenencia y obedeciendo a los saberes y conocimientos que de su realidad tiene consciencia el ciudadano metropolitano*	[In PRODUCTIVE AND ENTREPRENEURIAL strategic line] Identify and recognize the innovative potentialities in the citizens of the Caracas Metropolitan Area, which provide sustainable socio-environmental solutions, with a sense of belonging and obeying the knowledge and knowledge that the metropolitan citizen
# 173	*[En línea estratégica CARACAS PRODUCTIVA Y EMPRENDEDORA] Equipamientos integrales CRECE. Proyectos estratégicos metropolitanos que generarán nuevas oportunidades de desarrollo humano y económico para poblaciones ubicadas en los sectores populares de la ciudad, sirviendo como espacios de apoyo y orientación en diversas áreas (...) Objetivos: Mitigar las desigualdades urbanas acercando a los sectores menos favorecidos infraestructura de calidad que les provea servicios que actualmente no disfrutan en sus zonas de residencia, así como espacios públicos para la recreación, el encuentro social y el ejercicio de la democracia.*	[In PRODUCTIVE AND ENTREPRENEURIAL CARACAS strategic line] Comprehensive equipment CRECE. Strategic metropolitan projects that will generate new opportunities for human and economic development for populations located in the popular sectors of the city, serving as support and guidance spaces in various areas (...) Objectives: Mitigate urban inequalities by bringing the less favored sectors closer to infrastructure of quality that provides them with services that they do not currently enjoy in their areas of residence, as well as public spaces for recreation, social gathering and the exercise of democracy.
# 177	*[En línea estratégica CARACAS GOBERNABLE] Estrategias (...) Vivienda, con énfasis en los programas de habilitación física de barrios y de urbanización anticipada*	[In GOVERNABILITY strategic line] Strategies (…) Housing, with emphasis on the programs for physical upgrading of *barrios* and early urbanization
# 179	*[En línea estratégica CARACAS CIUDADANA] Diseñar un Programa de Construcción de Ciudadanía, como política pública, que mantenga movilizada a la población en torno a una visión del futuro de la Caracas Metropolitana, a la reunificación de la*	[In CITIZENSHIP strategic line] Design a Citizenship Construction Program, as a public policy, that keeps the population mobilized around a vision of the future of Metropolitan Caracas, the reunification of the city and its actors based on the dialogue, its

	ciudad y sus actores con base en el diálogo, sus valores y tradiciones, a la superación de las divisiones y la convicción de que para transformar a la ciudad es necesario el esfuerzo de todos los caraqueños como un colectivo.	values and traditions, overcoming divisions and the conviction that to transform the city, the effort of all Caracas residents as a collective is necessary.
# *183 - 186*	*Propuestas de Intervenciones en la Estructura Urbana del AMC (...) Planes de renovación urbana (...) Áreas de expansión (...) Habilitación de los barrios caraqueños (...) Rehabilitación de las urbanizaciones populares (...)*	Proposals for Interventions in the Urban Structure of the AMC (…) Urban renewal plans (…) Expansion areas (…) Rehabilitation of Caracas *Barrios* (…) Rehabilitation of popular urbanizations (…)
# *209*	*[En PROGRAMA DE ACTUACIONES PARA EL ÁREA METROPOLITANA DE CARACAS] Concurso Publico Nacional de Anteproyecto para la Integración Urbana del Centro "Simón Díaz". UN ESPACIO, UNA IDEA, UNA LUZ. Ganador: AREPA Arquitectura, Ecología y Paisaje C.A. Diciembre 2010 [Se acompaña del render de un hermoso proyecto modelo para la integración urbana de los barrios].*	[In PROGRAM OF ACTIONS FOR THE CARACAS METROPOLITAN AREA] National Public Contest of Preliminary Project for the Urban Integration of the "Simón Díaz" Center. ONE SPACE, ONE IDEA, ONE LIGHT. Winner: AREPA Architecture, Ecology and Landscape C.A. December 2010 [It is accompanied by the rendering of a beautiful model project for the urban integration of *barrios*].

Appendix J **Public Housing Built by Federal Agencies** 1928-2015

Venezuela

PERIOD	POPULATION (P)	Source	No. HOUSING (H)	V/P*1000	Source
1928 – 1945	3,850,771	a	2,465	0.64	a
1946– 1958	7,131,175	b	39,639	5.56	b
1959 – 1963	7,523,999	c	37,122	4.93	c
1964 – 1968	9,122,761	c	112,130	12.29	c
1969 – 1973	10,721,522	c	191,818	17.89	c
1974 – 1978	12,619,129	c	142,293	11.28	c
1979 – 1983	14,516,735	c	188,673	13.00	c
1984 – 1988	16,311,000	c	262,291	16.08	c
1989 – 1993	18,105,265	c	231,865	12.81	c
1994 – 1998	20,579,738	c	258,409	12.56	c
1999 – 2005	23,054,210	c	101,504	4.40	c
2006 – 2011	28,800,000	c	182,800	6.35	c
2011 – 2015	31,017,064	d	221,620	7.15	e
	Total:		**1,972,629**	**9.61**	

Sources:

(a) VIII National Population Census (Oficina Central del Censo Nacional 1953)
(b) IX National Population Census (Oficina Central del Censo 1961)
(c) (González del Castillo 2016, 232)
(d) Average between census periods
(e) (J. A. Sosa 2018)

Caracas

PERIOD	POPULATION (P)	Source	No. HOUSING (H)	V/P*1000	Source
1928 – 1951	709,602	a	9,771	13.77	f
1951 – 1958	983,559	e	19,689	20.02	f
1959 – 1963	1,257,515	b	2,137	1.70	f
1964 – 1968	1,559,076	f	14,099	9.04	f
1969 – 1973	1,860,637	b	25,332	13.61	
1974 – 1978	1,965,690	e	15,076	7.67	f
1979 – 1983	2,070,742	e	7,622	3.68	f
1984 – 1988	2,087,202	e	2,948	1.41	f
1989 – 1998	2,103,661	b	6,476	3.08	h
1999 – 2005	2,134,395	c	649	0.30	i
2006 – 2015	2,296,821	d	35,802	15.59	j
			139,601	**8.17**	

Sources:

(a) VIII National Population Census (Oficina Central del Censo Nacional 1953)
(b) XII National Population Census (Oficina Central de Estadística e Información 1991)
(c) XIII National Population Census (Venezuela. Oficina Central del Censo Nacional. 2005)
(d) XIV National Population Census (Venezuela. Instituto Nacional de Estadística 2014)
(e) Average between census periods
(f) (INAVI 1989)
(g) Estimated data from Map 2000 (See Appendix E)
(h) Estimated data from Map 2015 (See Appendix E)
(i) (Soonets 2018)

Appendix K **Spatial Opportunities- Analysis and Design Test in Petare**

Design-Test Stakeholders

propetare

Community Support - ProPetare:

Community Members: Jonathan Martínez, Pedro Méndez Dager, with the direct participation of community leaders Alvis Pasión, Ana Karina Vital, Evelyun Piñate, Lolimar Mejia, Nancy Chávez, Yusneizy Gabriela Garcia, among other Petare residents whose names we were not authorized to release.



Architectural Design Tests - Studio X - DA3313, Simón Bolívar University September-December

Professor José Guillermo Frontado

Studentes: Adriana Gonzalez, Claudia Lasso, Daissy Zambrano, Daniela Garcia, Frelsy Espinoza, Ray Gil, Roraima Ascanio, Samuel Vera, Thalia Colmenares, and Valentina Silva participated in this.



Local Government simulation - Boca Proyectos

Planners: Yabeth Bautista, Jesús Goncalves, María Isabel González, Sofía Piñeiro, and Ninoska Correia, Iliana Germán and Manuel Barrios.



City Form Lab

Mapping and accesibility software

UNA – Urban Network Analysis Toolbox (open software)

MIT - Massachusetts Institute of Technology. City Form Lab. Professor Andres Sevtsuk.



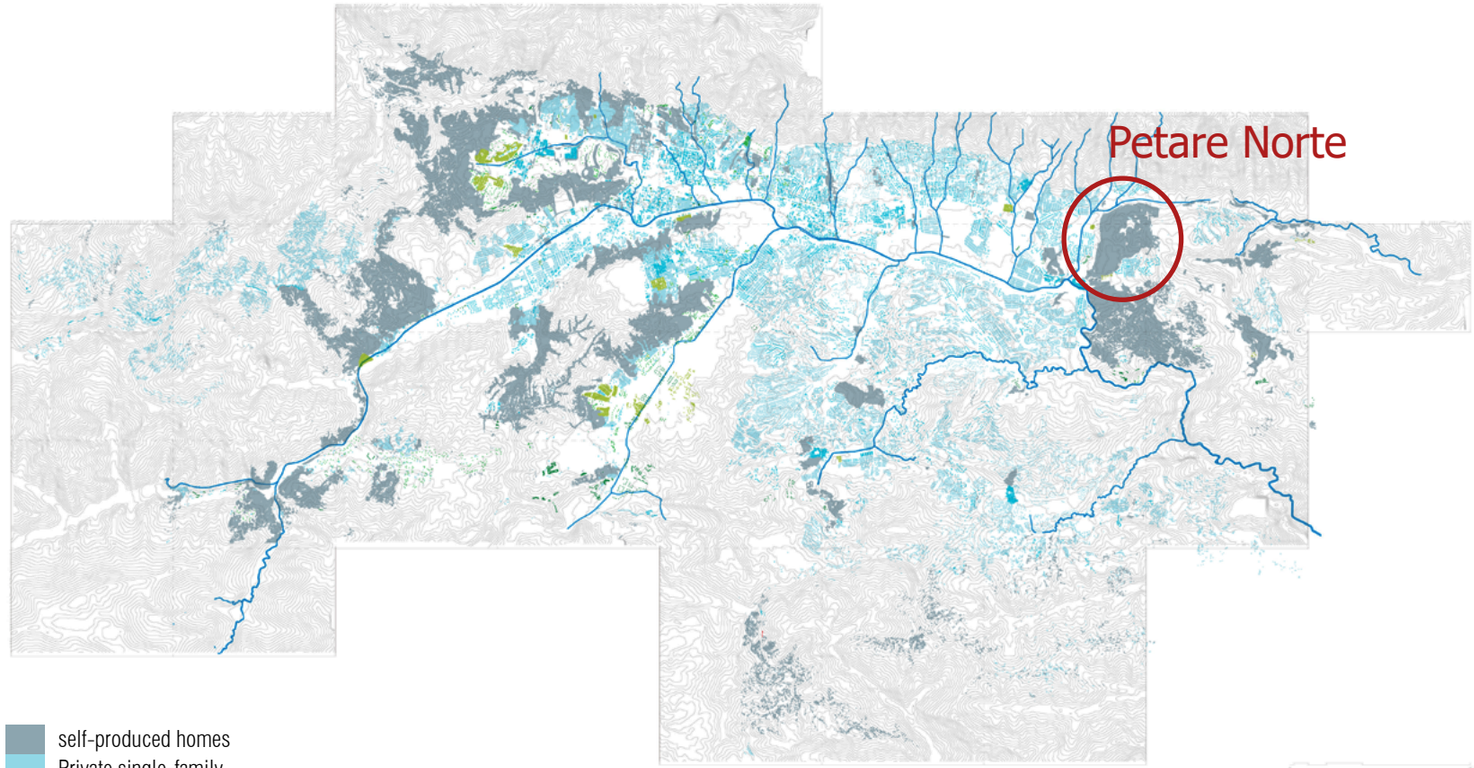
Academic Advisor:

Ignacio Cardona





45% of population / 25% of geography

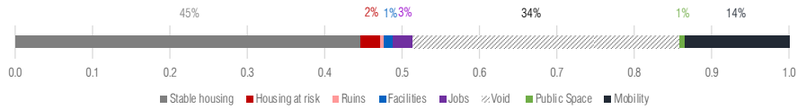


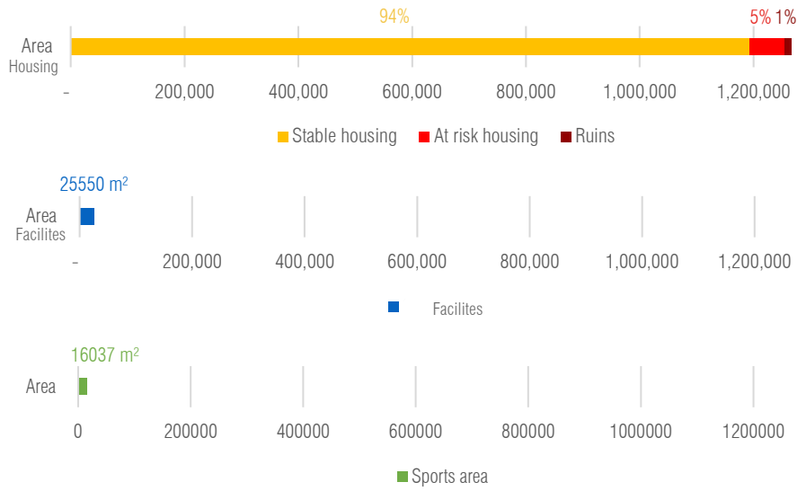
Petare Norte

Survey

Current Situation

Surface Distribution





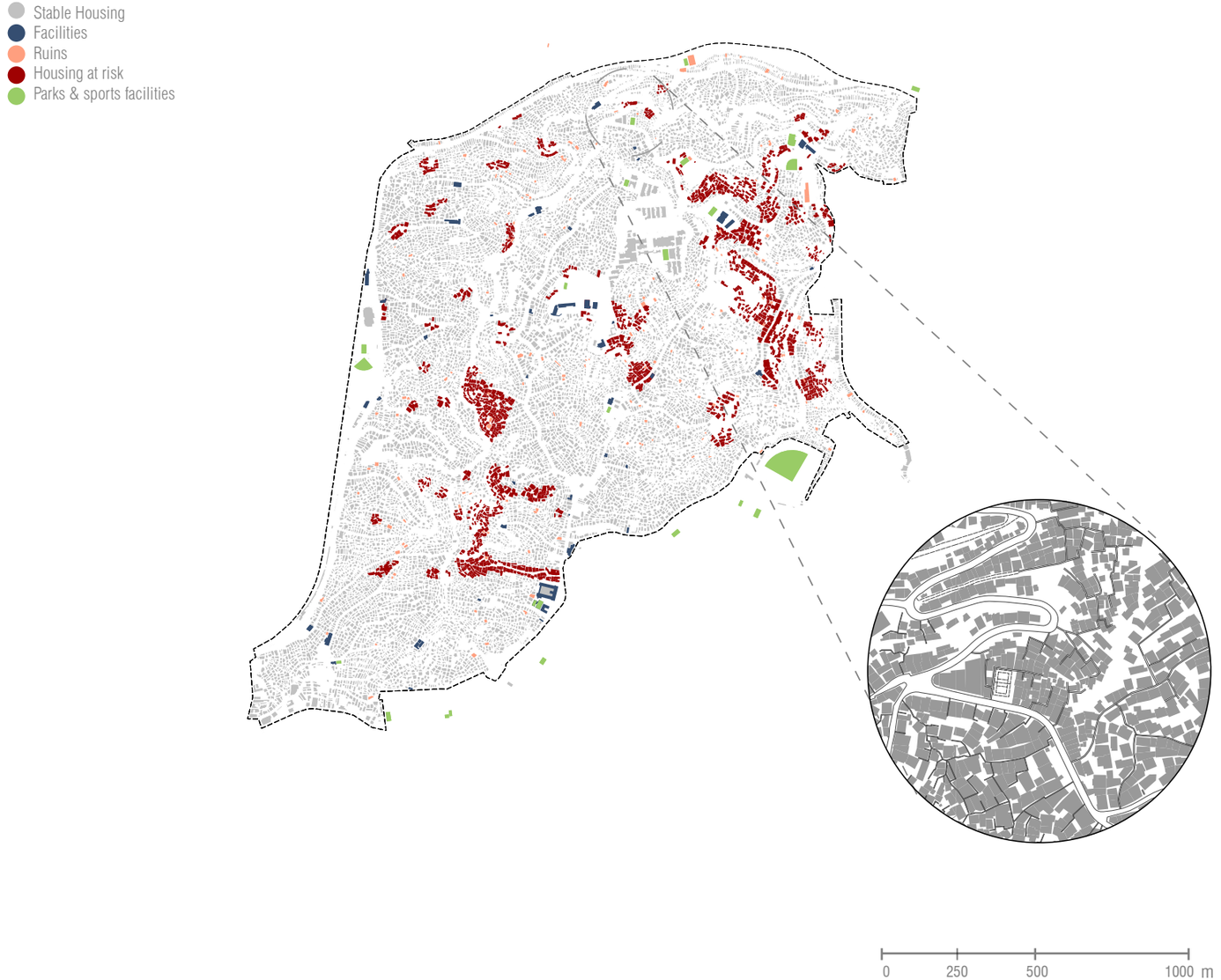






Sources: 1.-pjcarlosocariz.blogspot.com /2008/03 2.-http://revistasic.gumilla.org/2018 3.-El Pitazo.com

Figure - Ground

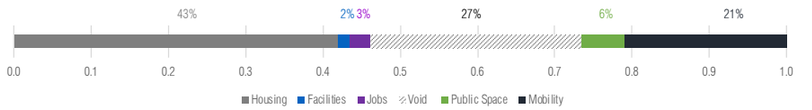


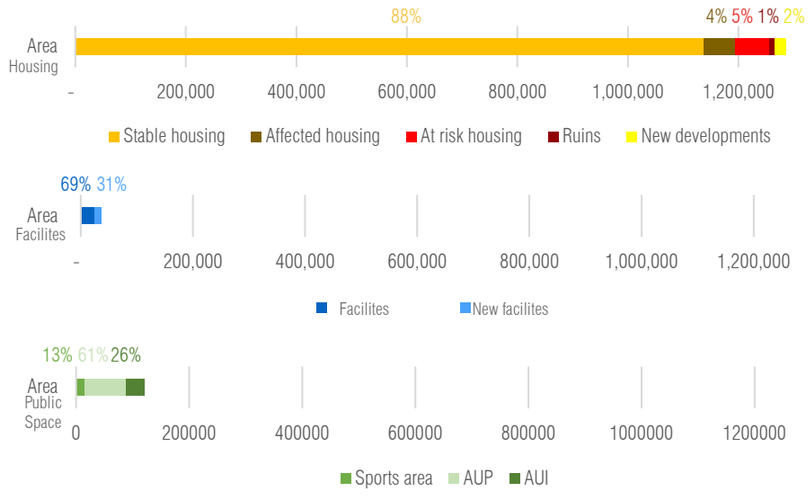
Petare Norte

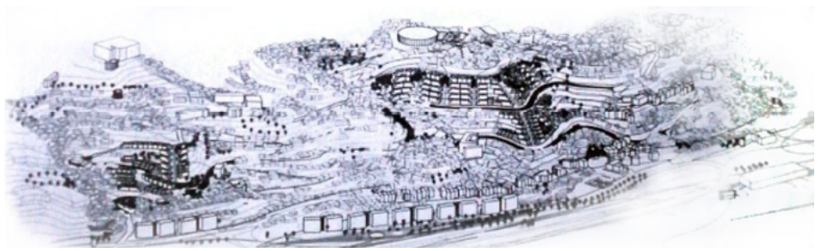
Plan Habilitación Física de Barrios

Barrio Upgrading Plan

Surface Distribution





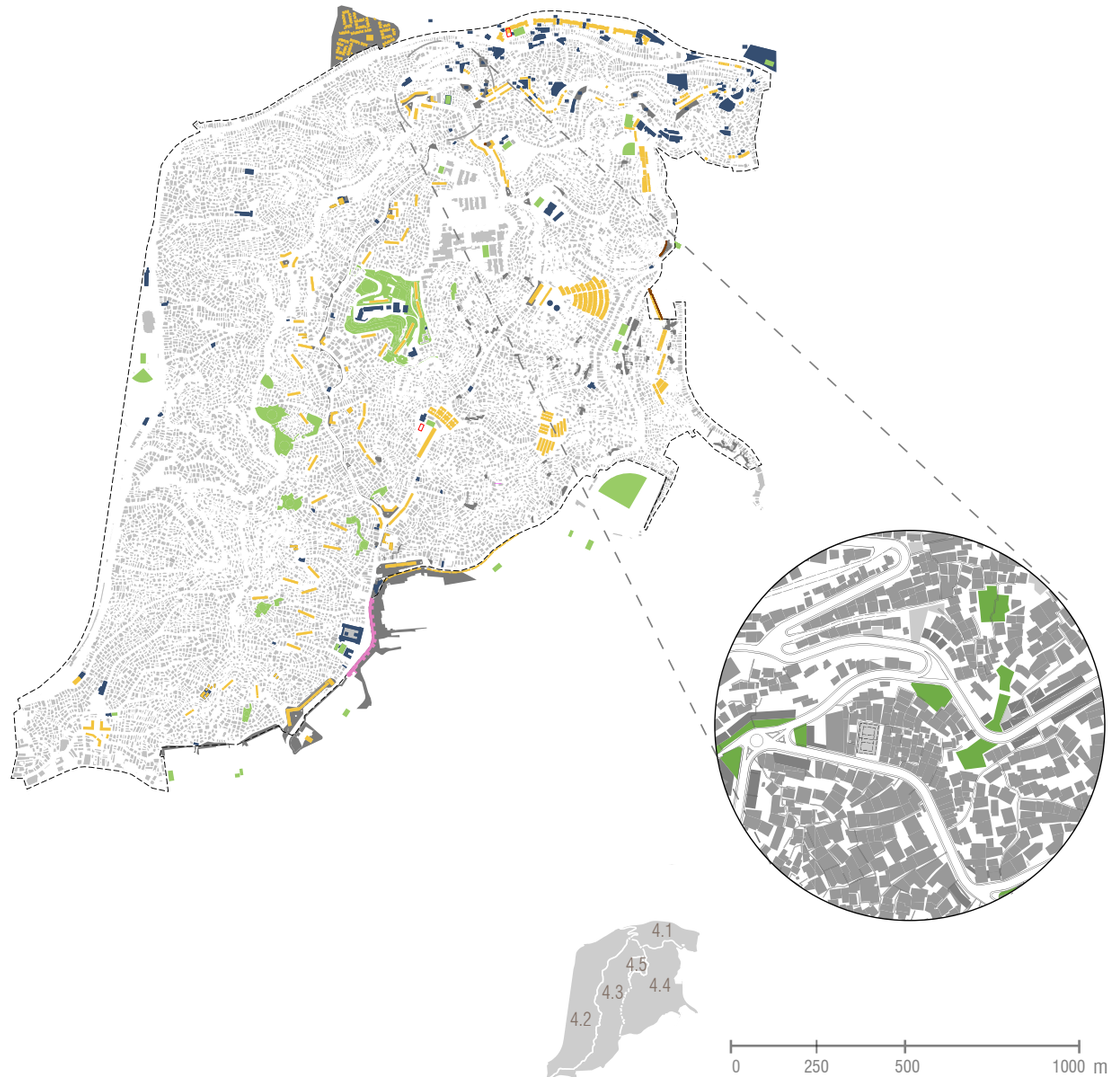


Proposal

SOi variables

radius: 1000 m. *weight:* population. ßeta: 0.002 alpha: 1

- Stable Housing
- Market
- Social Housing
- Facilities
- Parks & sports facilities
- Plazas and boulevards



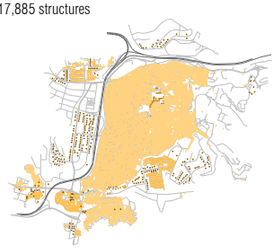
Sources: Concurso de Ideas. Propuestas para la Habilitación Física de Zonas de Barrios. Petare y La Vega (Caracas) Consejo Nacional de Vivienda(1999) pg 35 Propuesta ganadora para UDU 4.1. Maria Eugenia Collel (Octopussy)

Petare Norte

SOi Actual

Facilites

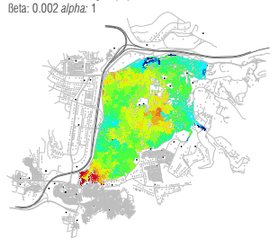
Origins: Houses
17,885 structures



Destinations: facilities
52 structures

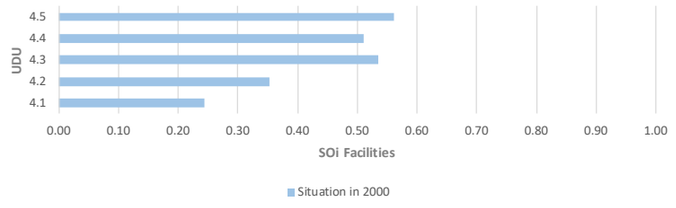


Gravity analysis
radius: 1000 m. *weight:* population.
ßeta: 0.002 *alpha:* 1



Tipology	Structures	Dwellers	Gravity (avg)	Max. Gravity	Min. Gravity	SOi (avg)
Private building	17848	71524	3755.73	8673.35	13.67	0.43
Public building	37	5550	4854.01	5978.63	2462.55	0.56
Total general	17885	77074	3758.01	8673.35	13.67	0.43

Access / UDU	UDU 4.1	UDU 4.2	UDU 4.3	UDU 4.4	UDU 4.5	General
Gravity (avg)	2151.41	3054.66	4665.10	4432.40	4865.73	3757.73
SOi (avg)	0.24	0.35	0.54	0.51	0.56	0.43





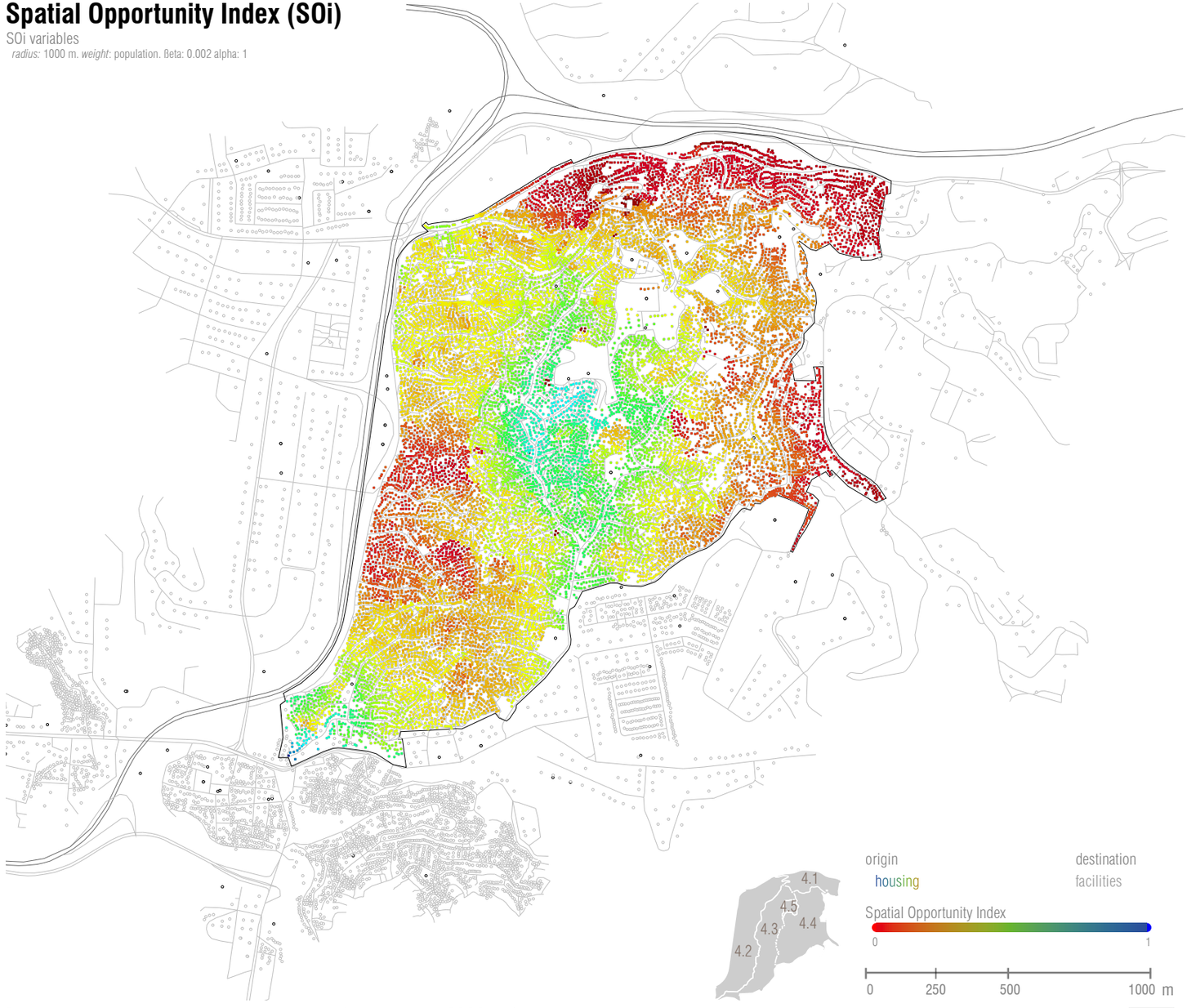




Sources: 1.-https://www.worldtravelserver.com/travel/es/venezuela/airport_avila_heliport 2.-https://iamvenezuela.com/2016/04/iglesia-dulce-nombre-de-jesus-de-petare/ 3.-IMUTC / https://www.infotecarios.com/biblioteca-crece/

Spatial Opportunity Index (SOi)

SOi variables
radius: 1000 m. *weight:* population. ßeta: 0.002 alpha: 1

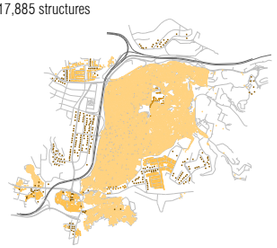


Petare Norte

SOi Plan HFB

Facilites

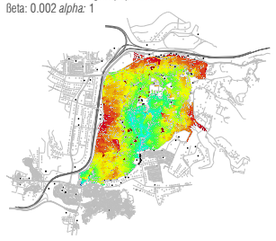
Origins: Houses
17,885 structures



Destinations: facilities
52 structures

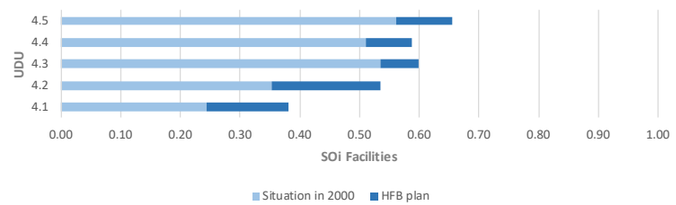


Gravity analysis
radius: 1000 m. *weight:* population.
ßeta: 0.002 *alpha:* 1



Tipology	Structures	Dwellers	Gravity (avg)	Max. Gravity	Min. Gravity	SOi (avg)
Private building	16721	67016	4219.28	8473.76	44.82	0.55
Public building	37	5550	5496.71	6847.87	2482.62	0.66
HFB single-family	389	1556	4868.59	6309.47	1997.57	0.59
HFB multifamily	233	17475	4594.52	7340.75	536.12	0.54
Total general	17380	91597	4241.65	8473.76	44.82	0.55

Access / UDU	UDU 4.1	UDU 4.2	UDU 4.3	UDU 4.4	UDU 4.5	General
Gravity (avg)	1807.00	6264.00	4012.00	5159.00	39.00	17281.00
SOi (avg)	0.38	0.54	0.60	0.59	0.66	0.55





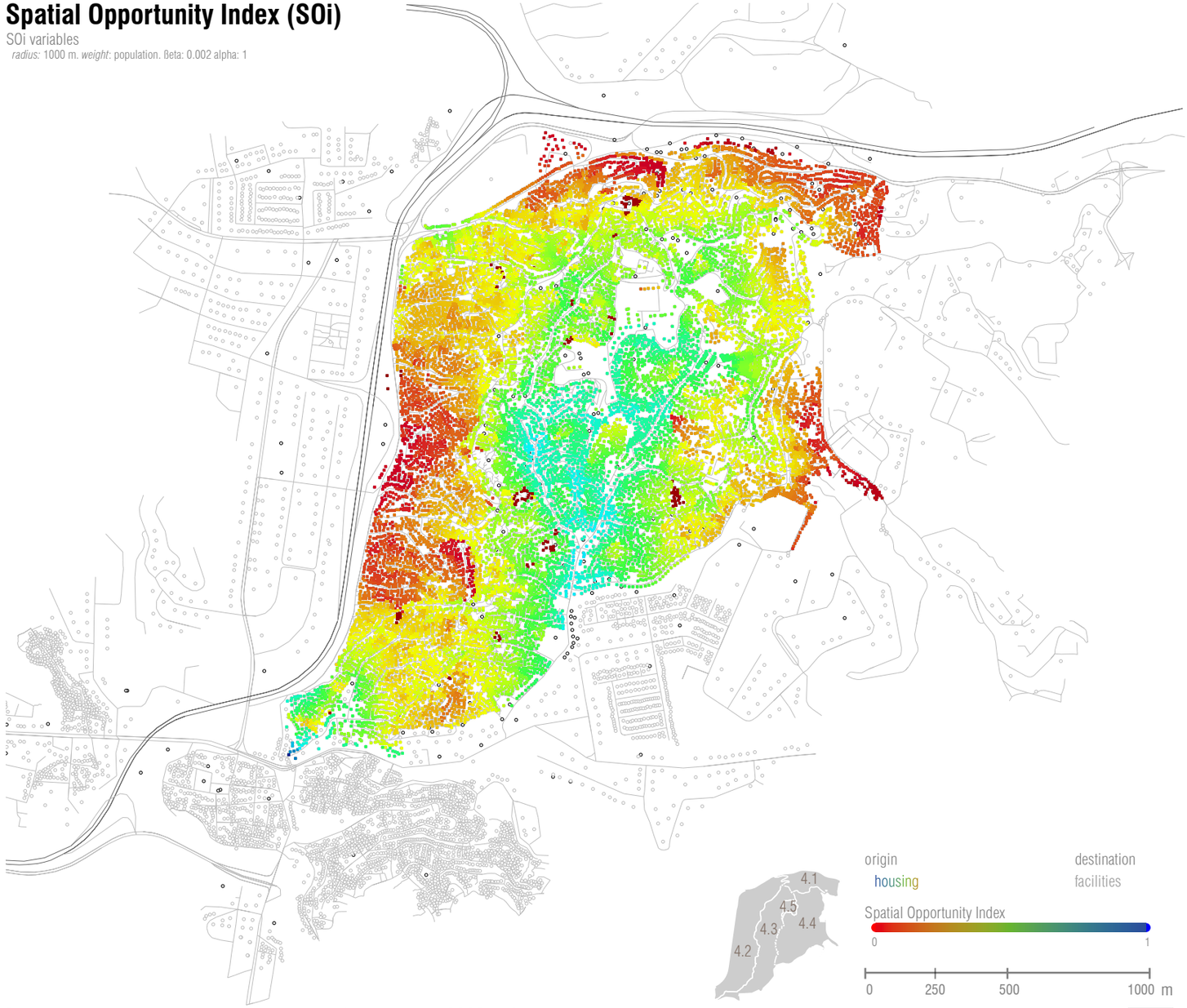




Sources: 1.-https://www.worldtravelserver.com/travel/es/venezuela/airport_avila_heliport 2.-https://iamvenezuela.com/2016/04/iglesia-dulce-nombre-de-jesus-de-petare/ 3.-IMUTC / https://www.infotecarios.com/biblioteca-crece/

Spatial Opportunity Index (SOi)

SOi variables
radius: 1000 m. *weight:* population. ßeta: 0.002 alpha: 1



Petare Norte

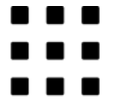
SOi Accupuntural Enabling

Facilites



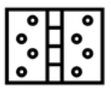
Fluffing:

Displacement of structures at risk conditions to generate new public spaces with secondary facilities.



Micro Institucional Grid:

Restructuring the territory and reinforcing the presence institutional over existing structures



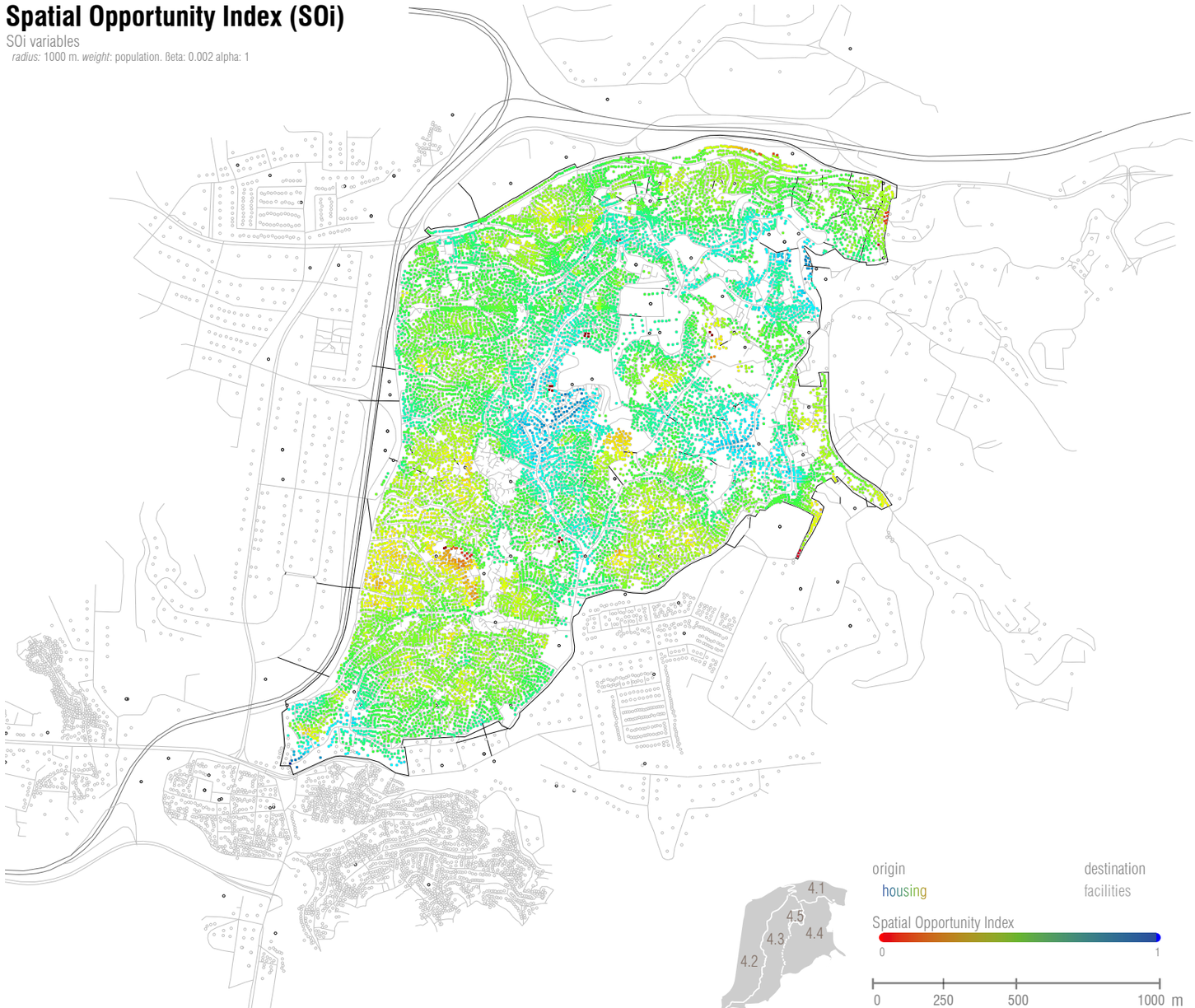
Hinge Projects:

Metropolitan facilities on the boundaries.
Weight: 5000 people following MINDUR 151 Resolution.

Spatial Opportunity Index (SOi)

SOi variables

radius: 1000 m. *weight:* population. Beta: 0.002 alpha: 1



Design Tests - Networked Institutions

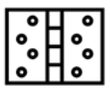
Facilites



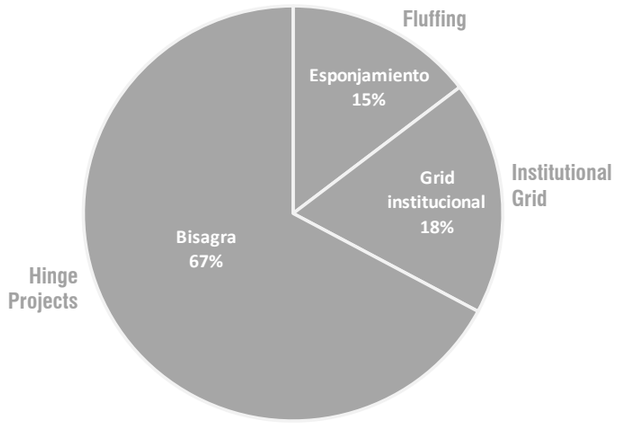
Fluffing:
Displacement of structures at risk conditions to generate new public spaces with secondary facilities.

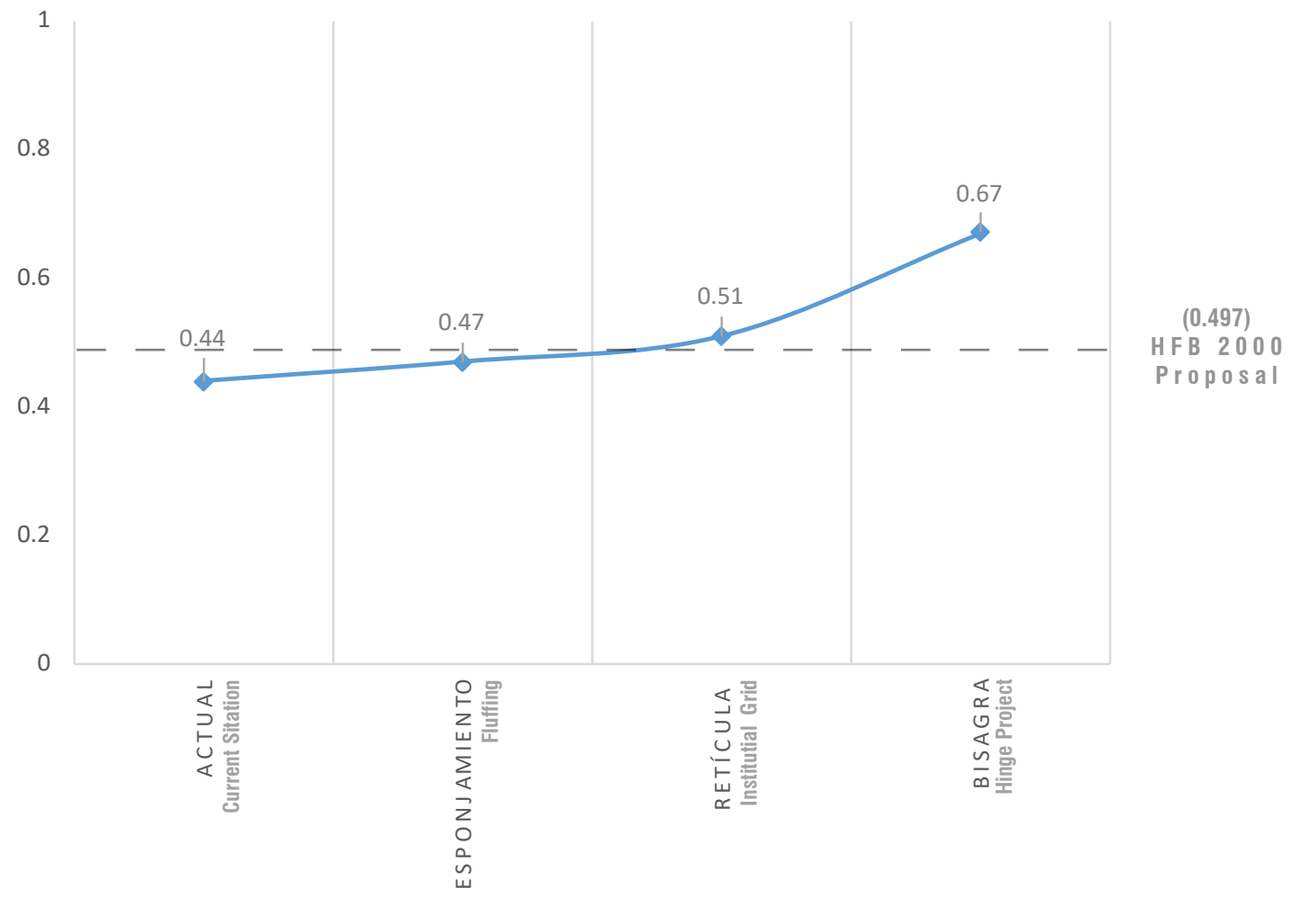


Micro Institucional Grid:
Restructuring the territory and reinforcing the presence institutional over existing structures



Hinge Projects:
Metropolitan facilities on the boundaries.
Weight: 5000 people following MINDUR 151 Resolution.





Petare Norte

Design Test 1 - Networked Institutions

Facilites



Fluffing:

Displacement of structures at risk conditions to generate new public spaces with secondary facilities.

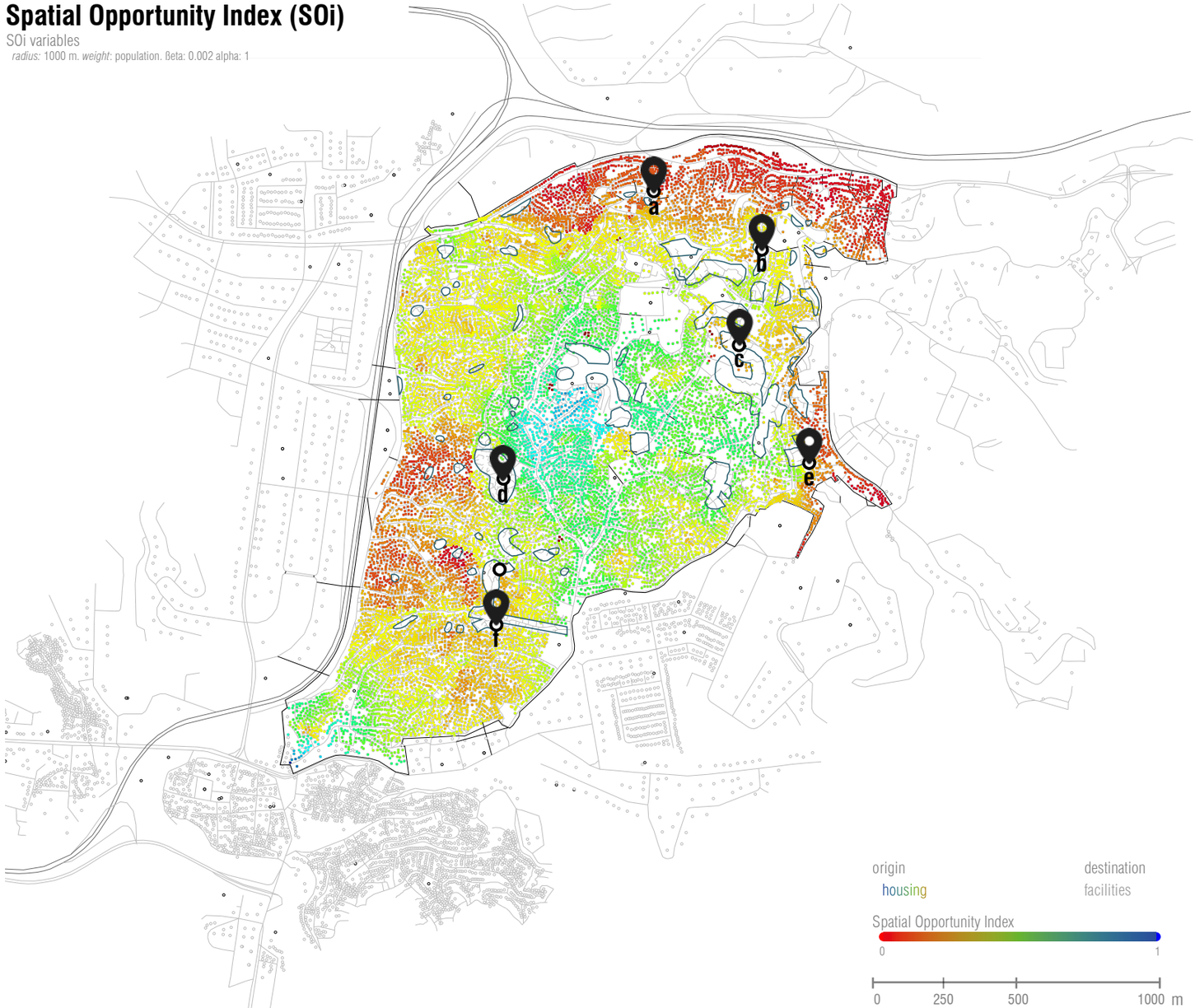
Al Dis[lacement of 878 housing structures at risk conditions (4.85% of Petare)

61,000 m2 of new areas for public space with secondary facilities (22 times the current availability)

Spatial Opportunity Index (SOi)

SOi variables

radius: 1000 m. *weight:* population. Beta: 0.002 alpha: 1



Petare Norte

Design Test 2 - Networked Institutions

Facilites

Micro Institucional Grid:

Restructuring the territory and reinforcing the presence institutional over existing structures

41 new building in a 250x250m grid

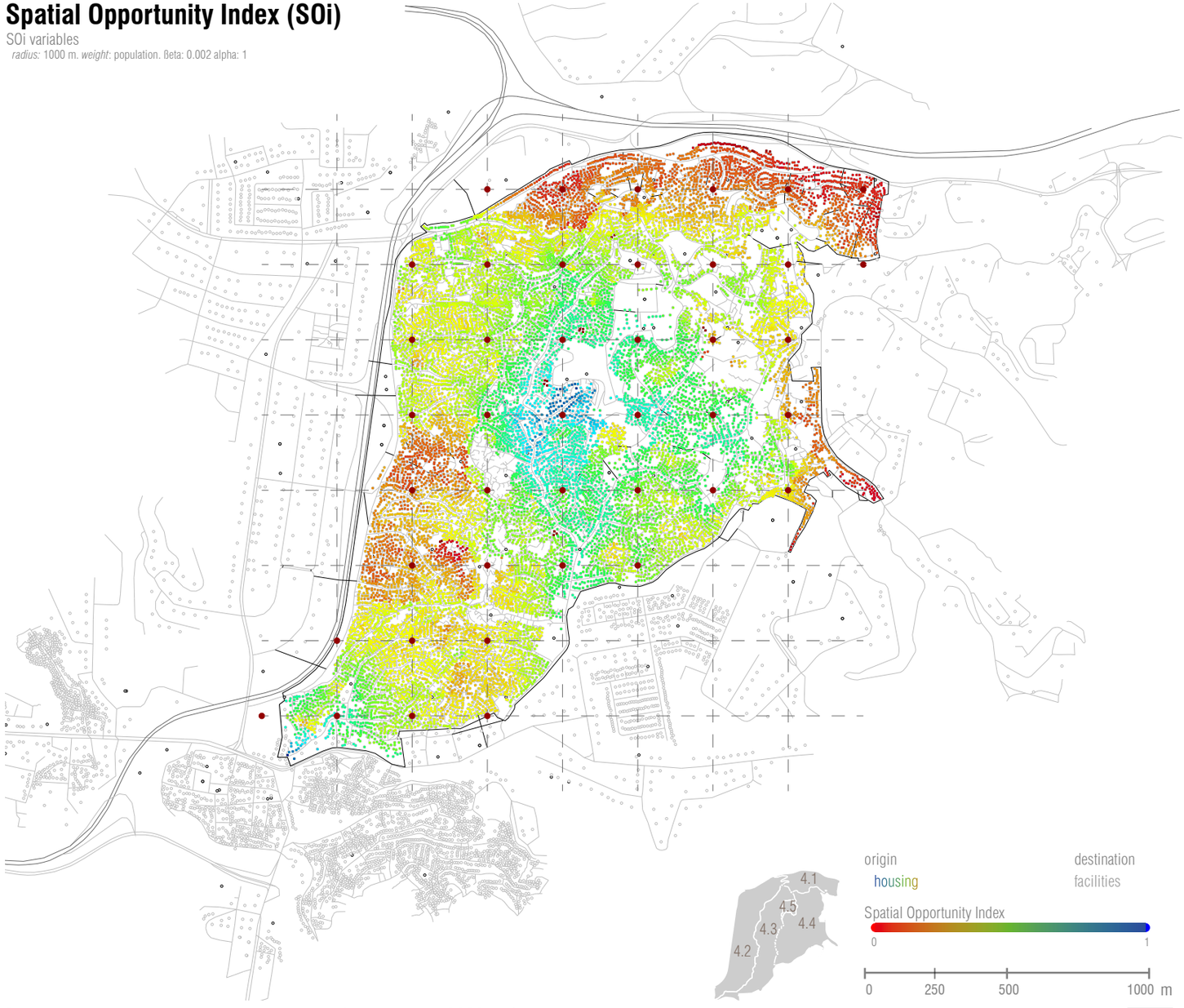
Public faciliteis located at the ground floor of existing houses.

Weight: 100 people following MINDUR 151 Resolution.

Spatial Opportunity Index (SOi)

SOi variables

radius: 1000 m. *weight:* population. Beta: 0.002 alpha: 1



Petare Norte

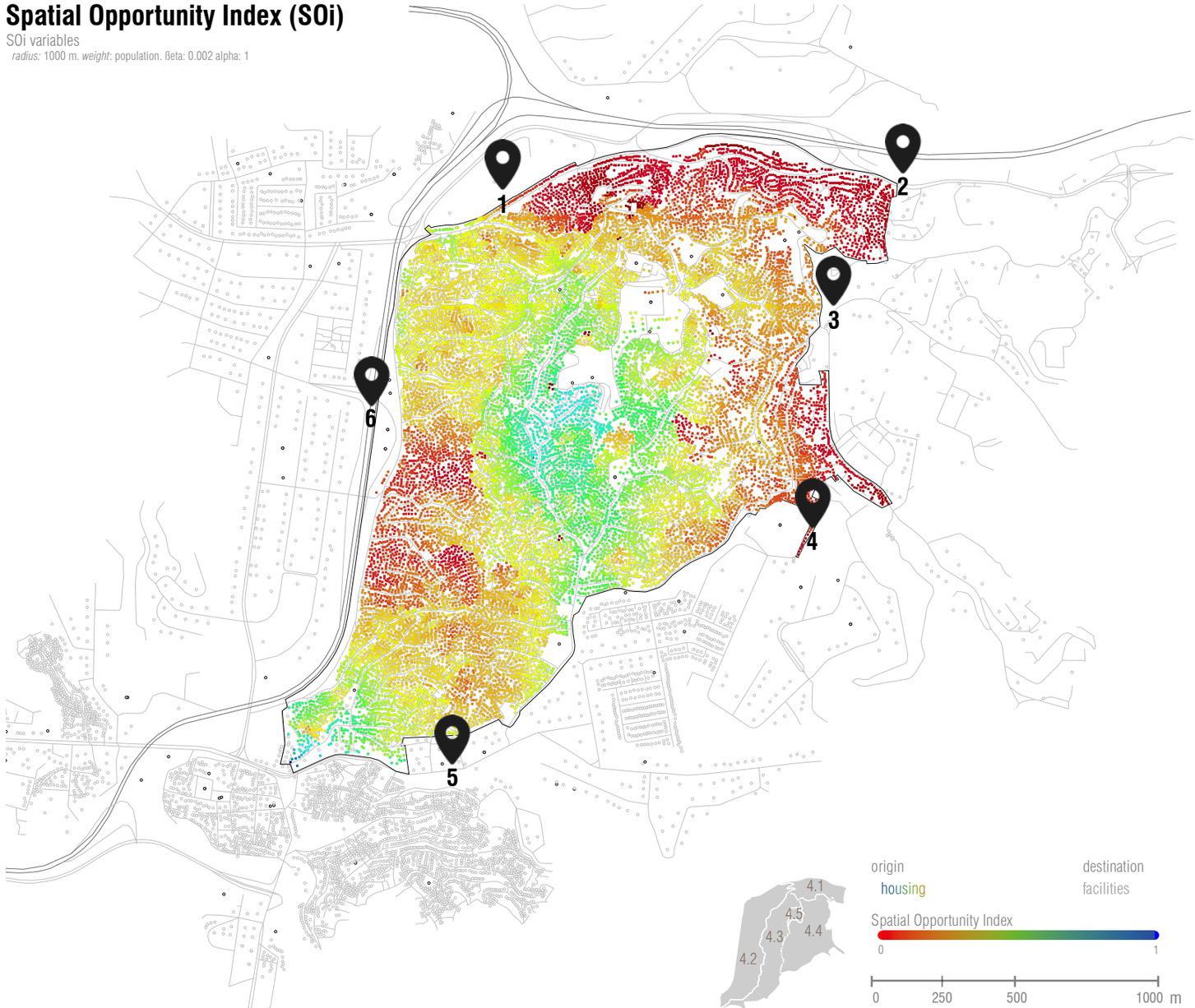
Design Test 3 - Networked Institutions

Facilites

Hinge Projects:

Metropolitan facilities on the boundaries.
Weight: 5000 people following MINDUR 151 Resolution.

1.- Makro La Urbina
2.-Autopista Gran Mariscal de Ayacucho
3- Casa Borges
4.- Polideportivo Palo Verde
5.- Las Vegas de Petare
6.- Autopista Francisco Fajardo



Petare Norte

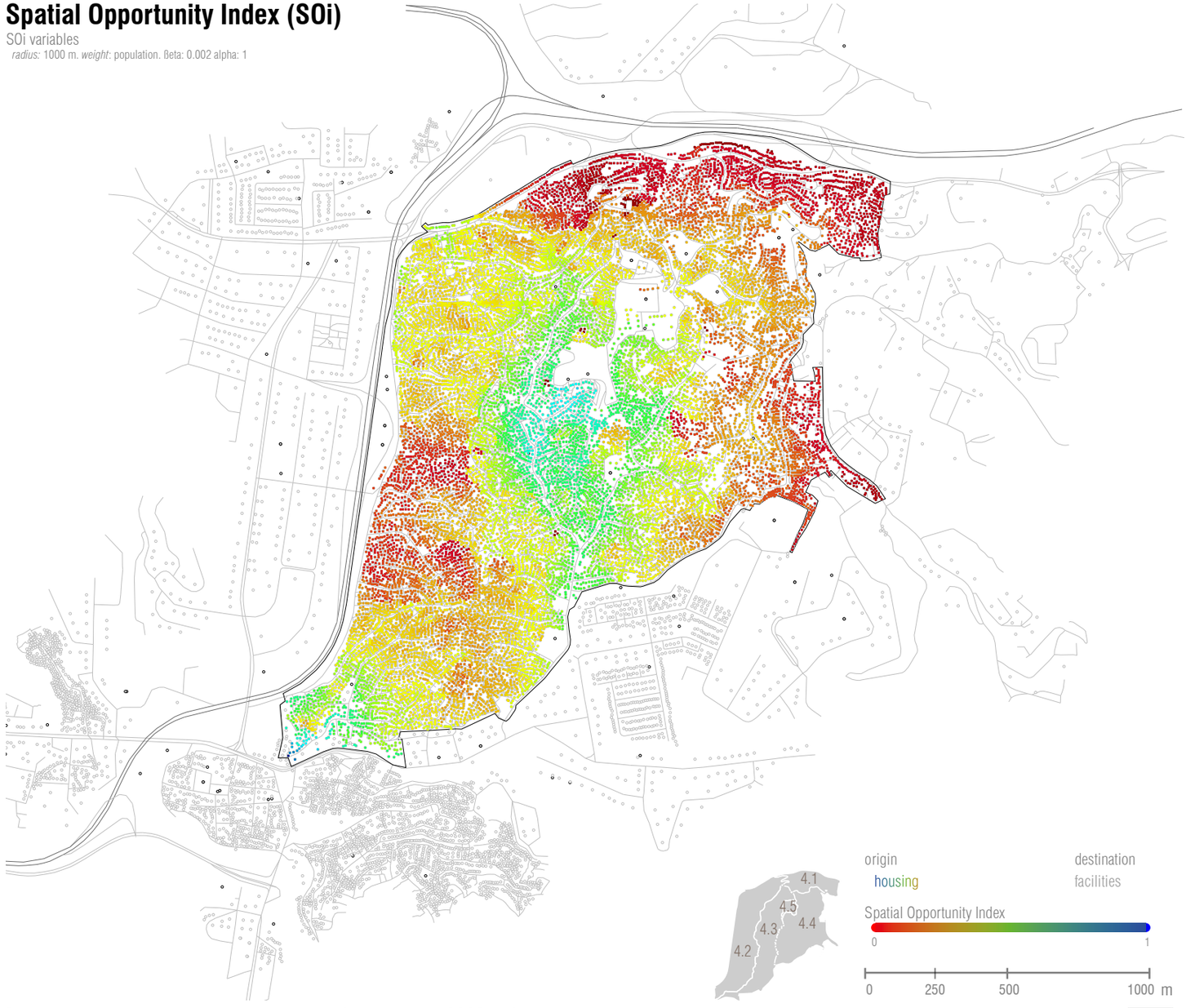
Existing Condition

Facilites

Spatial Opportunity Index (SOi)

SOi variables

radius: 1000 m. *weight:* population. ßeta: 0.002 alpha: 1



Support team in Petare

Petare Norte

Design Tests - Networked Institutions

Facilites

Fluffing:

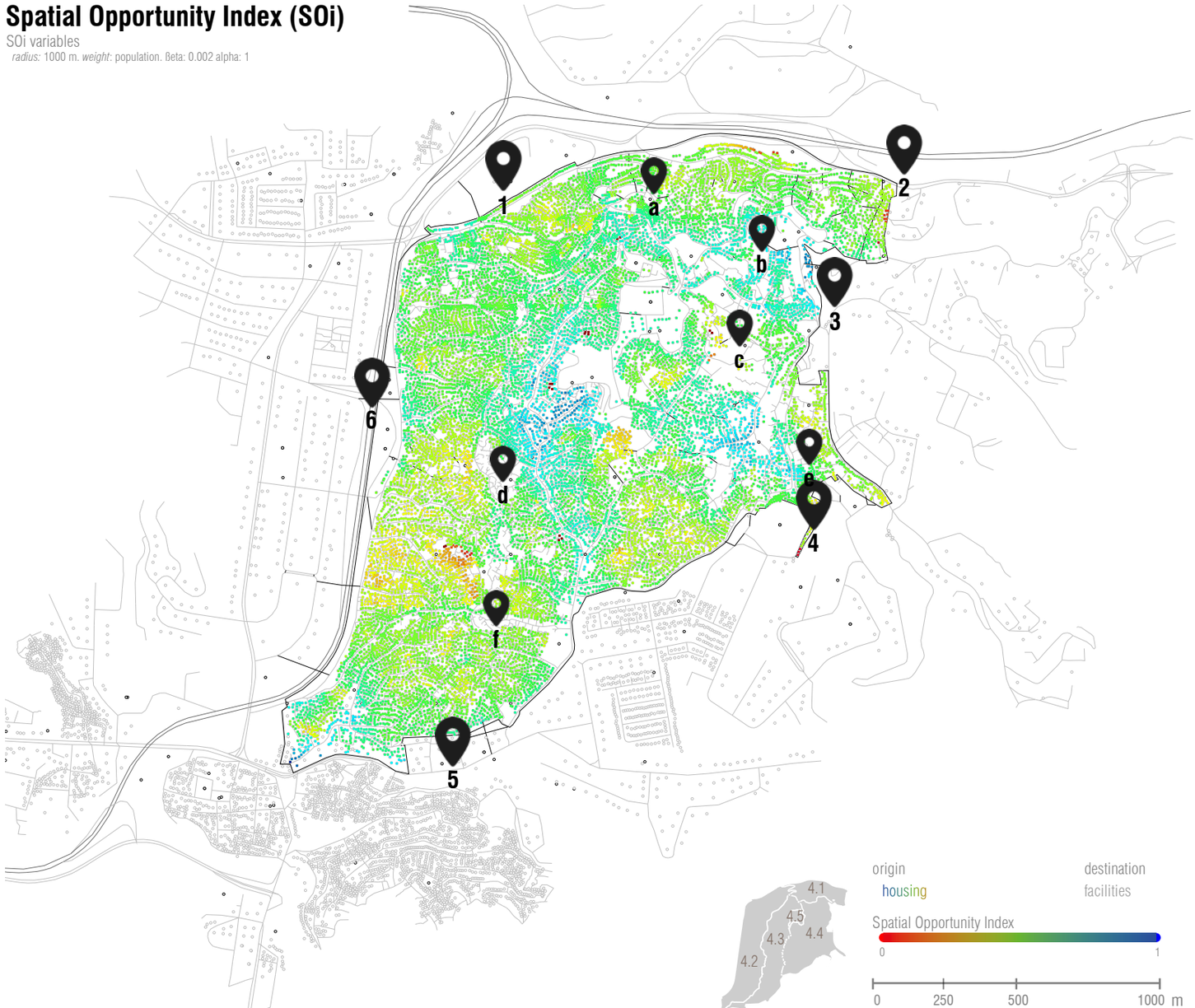
Displacement of structures at risk conditions to generate new public spaces with secondary facilities.

Micro Institucional Grid:

Restructuring the territory and reinforcing the presence institutional over existing structures

Hinge Projects:

Metropolitan facilities on the boundaries.
Weight: 5000 people following MINDUR 151 Resolution.



Sharing the SOi model with different Stakeholders

1 Community Leaders

2 Planners and Designers

3 Local Government

4 Private Companies

5 Academic Advisor



Accupunctural Enabling - Petare Norte

S2 - Institute of Techonolgy

Location: Autopista - Zona Industrial Mariches

Educational & Productive
Size: 10000 m² aprox
Weight: 5000 people

Design Test:
Claudia Lasso & Daissy Zambrano
Simón Bolívar University (Caracas)

Professor: Guillermo Frontado

Academic Advisor: Ignacio Cardona

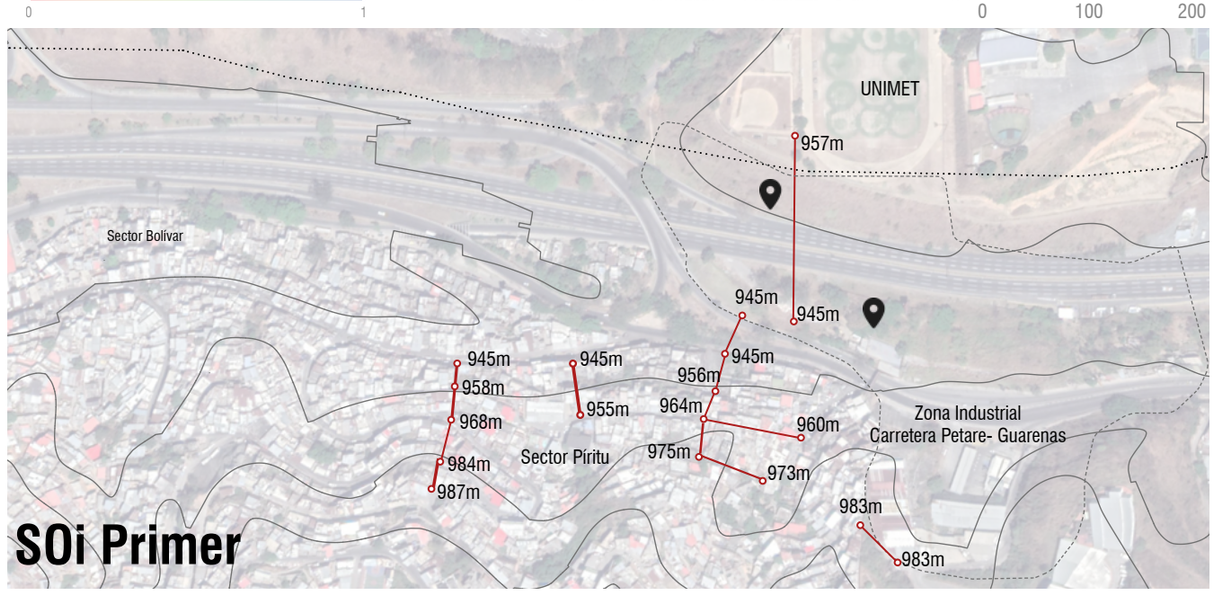
Critics:
Yabeth Bautista, Jesús Goncálvez,
Maria I. González & Manuel Barrios.

origin
housing

destination
facilities

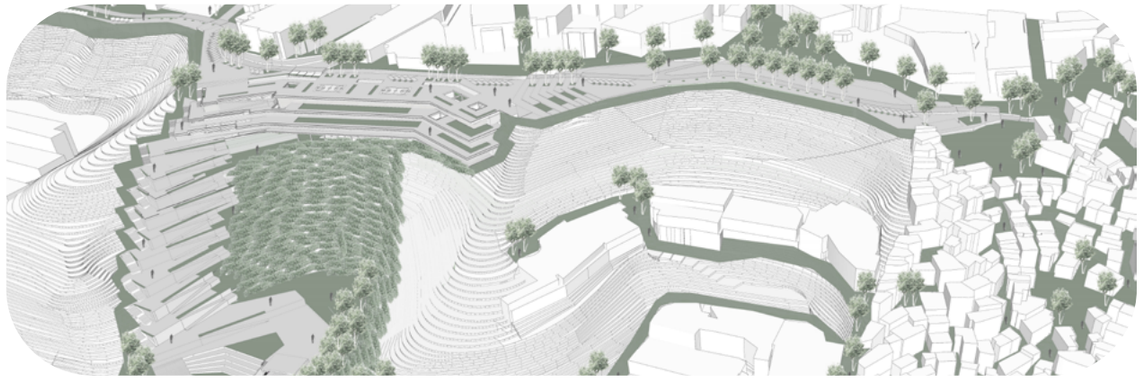
Spatial Opportunity Index
0 — 1

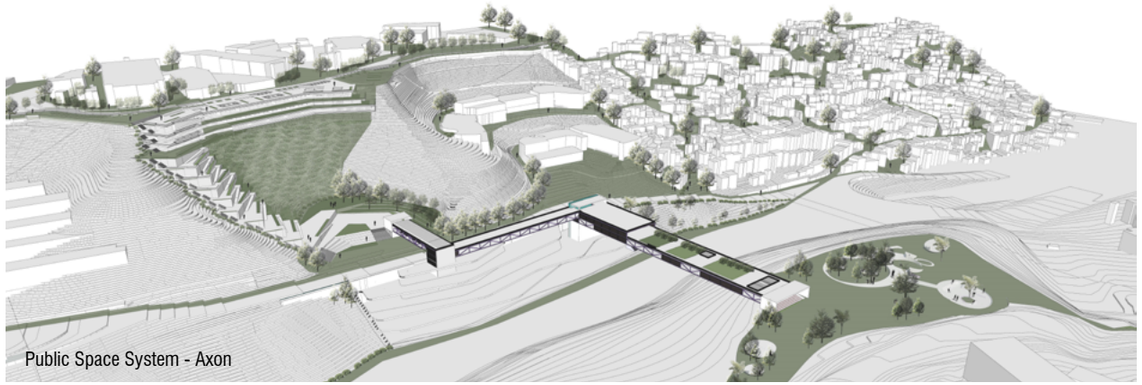


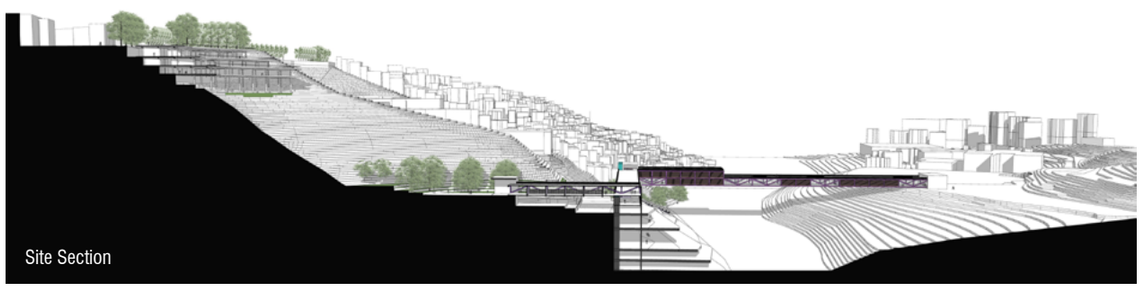


SOi Primer

Desing-Test:




Public Space System - Axon


Site Section

Accupunctural Enabling - Petare Norte

S3 - Cultural Center

Location: Mansión Los Borges-Sabenpe

Art, Culture & Education
Size: 10000 m² aprox
Weight: 5000 people

Design Test:
Adriana González & Roraima Salinas
Simón Bolívar University (Caracas)

Professor: Guillermo Frontado

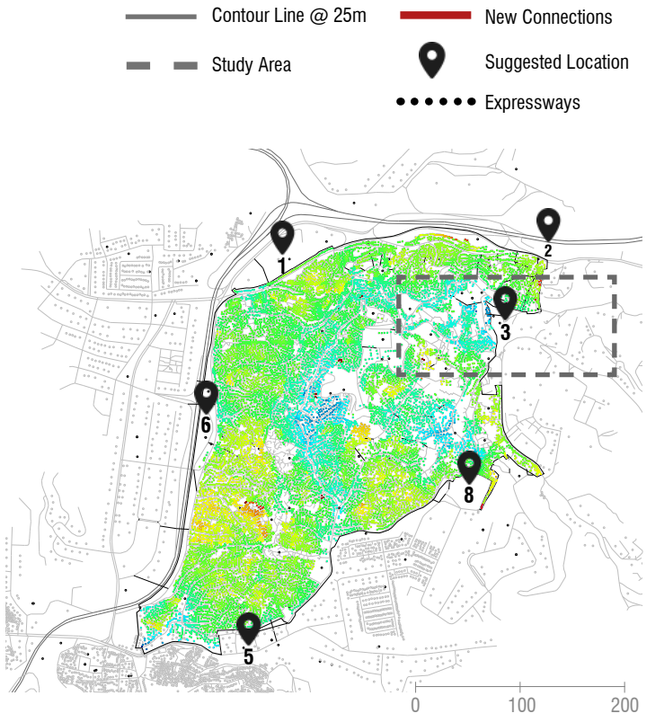
Academic Advisor: Ignacio Cardona

Critics:
Yabeth Bautista, Jesús Goncálvez,

origin
housing

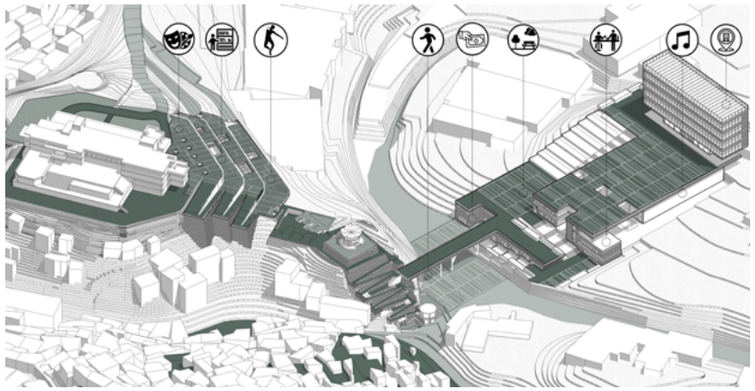
destination
facilities

Spatial Opportunity Index
0 1





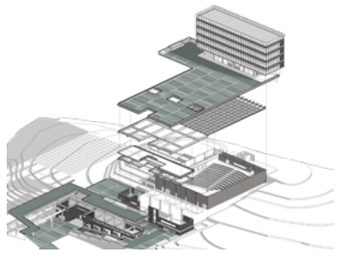
Desing-Test:



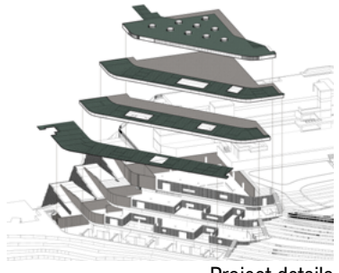
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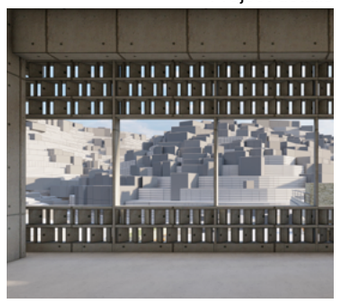


Site Plan



Project details





Facade details



Section

Accupunctural Enabling - Petare Norte

S4 - Sport Park

Location: Polideportivo Palo Verde

Community Center
Size: 10000 m² aprox
Weight: 5000 people

Desingn Test:
Valentina Silva & Samuel Vera
Simón Bolívar University (Caracas)

Professor: Guillermo Frontado

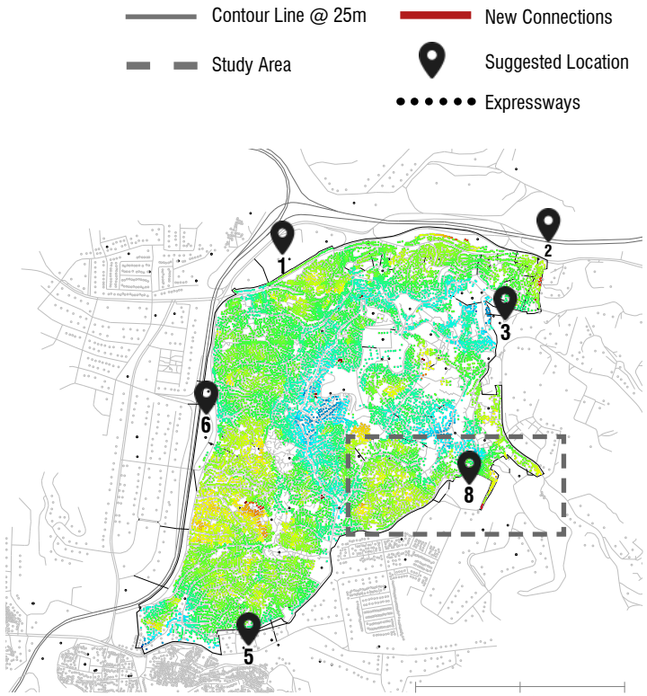
Academic Advisor: Ignacio Cardona

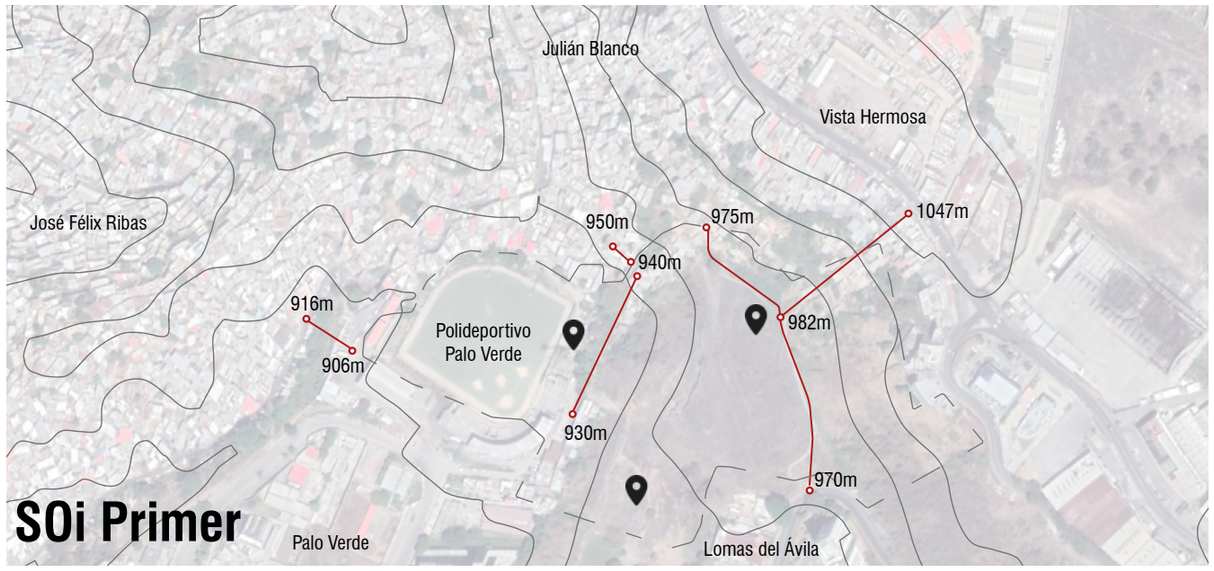
Critics:
Yabeth Bautista, Jesús Goncálvez,

origin
housing

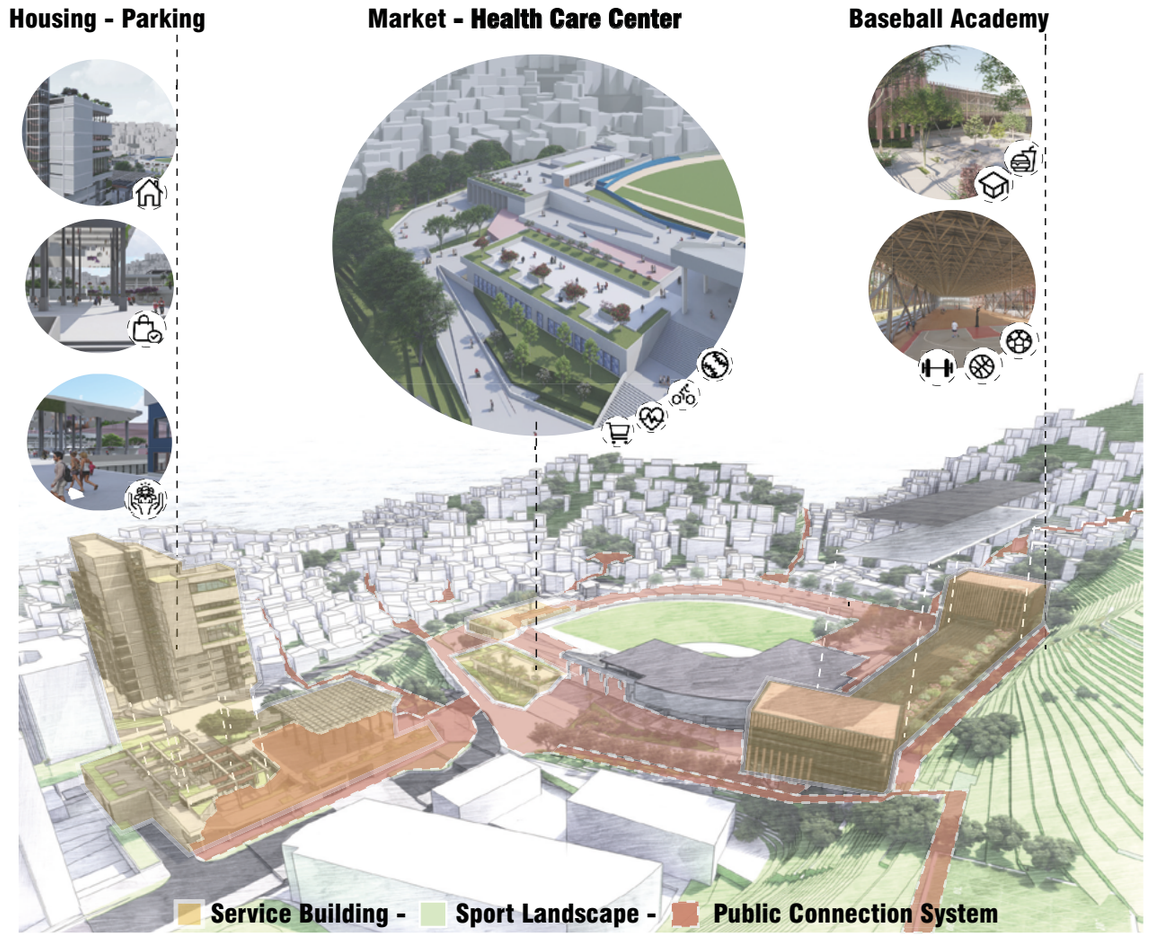
destination
facilities

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Desing-Test:





Vehicle Road Map
- High speed
- Moderate speed
- Low speed
- Neighborhood boundaries
- Connection points



Land-uses
- Residences
- Retail
- Educational
- Religious
- Sports Fields
- Industries



Buildings
- Axis of intervention
- Focus Area
- Soft Buildings
- Unused Areas
- Connection points



Landscape
- Sport Areas
- Creeks
- Slopes

Accupunctural Enabling - Petare Norte

S6 - Public Market

Location: Autopista - Estadio Luis Sojo

Public Market
Size: 10000 m² aprox
Weight: 5000 people

Design Test:
Thalia Colmenares & Frelsy Espinoza
Simón Bolívar University (Caracas)

Professor: Guillermo Frontado

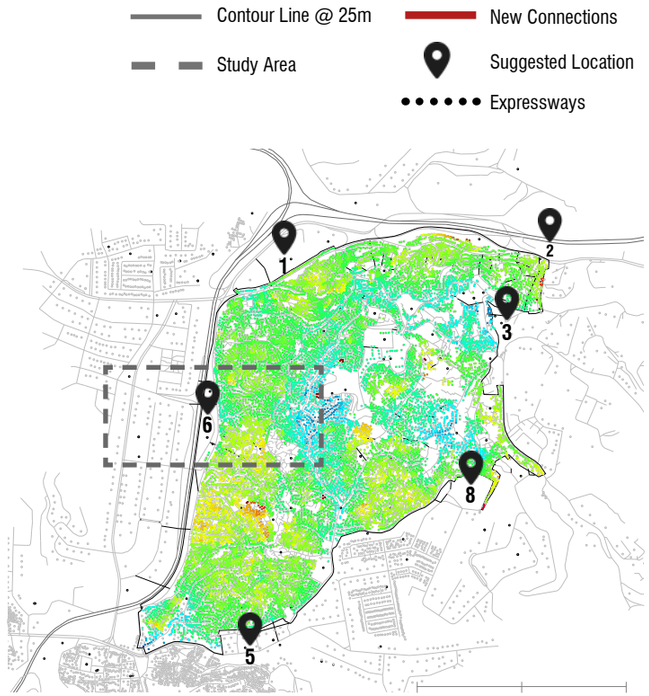
Academic Advisor: Ignacio Cardona

Critics:
Yabeth Bautista, Jesús Goncálvez,

origin
housing

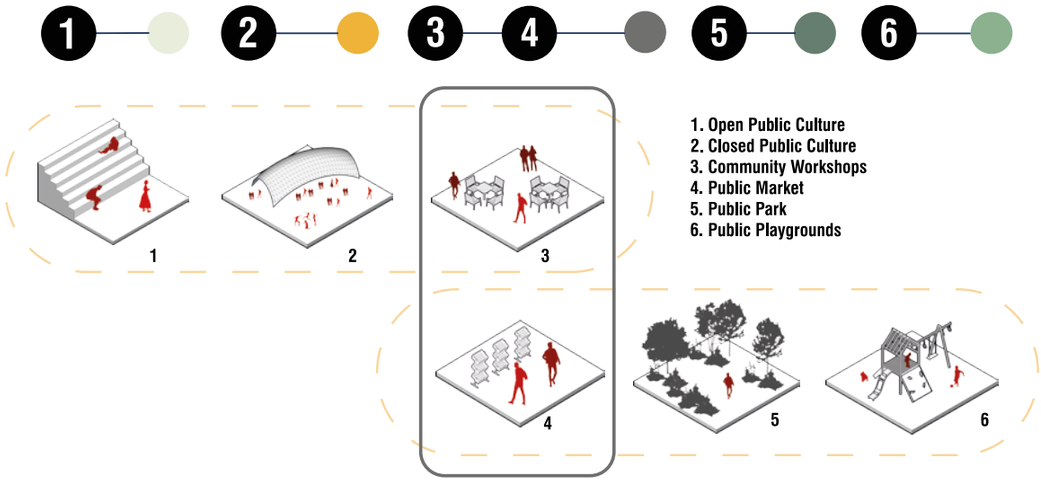
destination
facilities

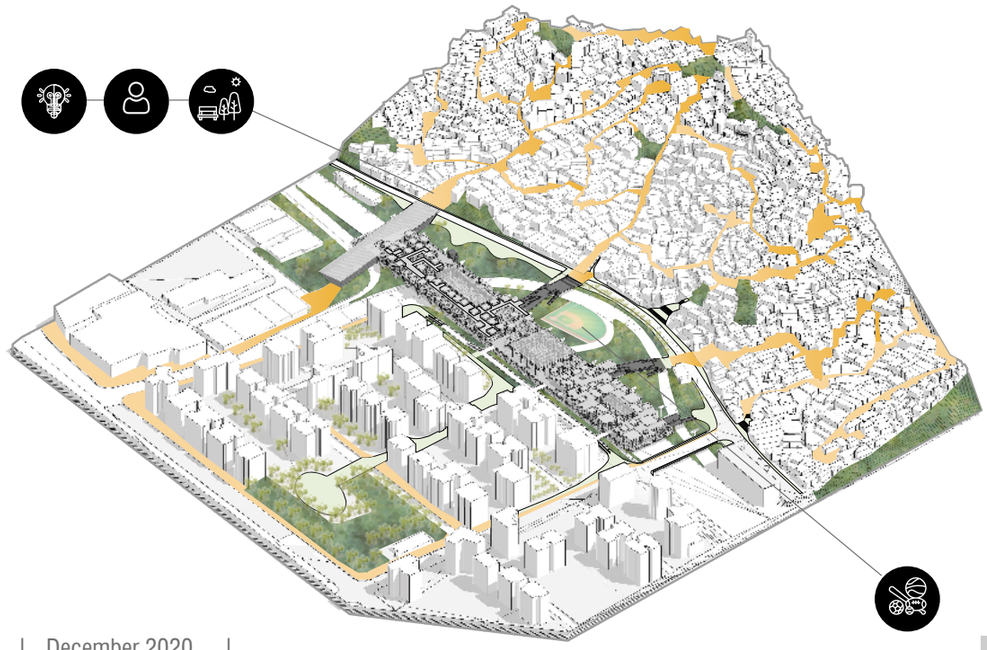
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Desing-Test:






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