

ABSTRACT

Title of Document: URBAN INTERVENTIONS: ARCHITECTURE
AS A MECHANISM OF INCLUSION

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In the rapidly urbanizing world, it may seem normal to hear that while only 2% of the earth's surface is occupied by cities, 53% of the world's population lives in cities. What may seem alarming however is the fact that of that 53%, 33% of city dwellers today actually live in slums. To place matters into a more unsettling perspective, it is estimated that by 2030 over 2 billion people will live in slums.¹ With this comes a sense of urgency: how do we respond as architects to these realities?

The context of this thesis is based on what Jáuregui calls ***the broken city***: that is, the *"tension between the so-called 'formal' urbanization and 'informal' areas of uncontrolled sprawl."*² This realization makes the possibility of interventions in these types of places particularly complex: how does

¹ www.unhabitat.org

² Jáuregui, Jorge Mario. "Urban and Social Articulation: Megacities, Exclusion and Urbanity," in *Rethinking the Informal City: Critical perspectives from Latin America*. New York: Berghahn Books, 208.

design adapt to the logics that exist in place while allowing for a more connected city? Can architecture act as a mechanism of inclusion rather than exclusion, thus extending *the right to the city to all*? This thesis therefore investigates the various means by which architecture and urban infrastructure might be introduced into an urban informal settlement in Buenos Aires with minimal disruption of the “logics” of the place.

URBAN INTERVENTIONS: ARCHITECTURE AS A MECHANISM OF
INCLUSION

By

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...Y todos aquellos que colaboraron en mi viaje y experiencia en la Villa 31

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Chapter 1: INTRODUCTION

“Cities are political programmes made visible. They are mirrors of society and systems of governance of the country in which they are located... We are experiencing a crisis of responsibility between citizens and government...”³

In the rapidly urbanizing world, it may seem normal to hear that while only 2% of the earth’s surface is occupied by cities, 53% of the world’s population lives in cities. What may seem alarming however is the fact that of that 53%, 33% of city dwellers today actually live in slums. To place matters into a more unsettling perspective, it is estimated that by 2030 over 2 billion people will live in slums.⁴ With this comes a sense of urgency: how do we respond as architects to these realities?

The context of this thesis is based on what Jorge Jáuregui, a Brazilian architect whose work in favelas is well known, calls ***the broken city***: that is, the “*tension between the so-called ‘formal’ urbanization and ‘informal’ areas of uncontrolled sprawl.*”⁵ It can be argued that all cities by their very nature are fragmentary and diverse, yet what makes the broken city an alarming issue is the massive scale of these urban canyons between the wealthy and the poor, the represented and the neglected. The phenomenon of physical polarization that is becoming more and more evident in today’s megacities is significantly a result of lack of public investment, or the directing of

³ Wolfgang Nowak, foreword to *Living in the endless city: the Urban Age project by the London School of Economics and Deutsche Bank’s Alfred Herrhausen Society*, by Burdett, Richard, and Deyan Sudjic. 2011 London: Phaidon Press Ltd.

⁴ www.unhabitat.org

⁵ Jáuregui, Jorge Mario. “Urban and Social Articulation: Megacities, Exclusion and Urbanity,” in *Rethinking the Informal City: Critical perspectives from Latin America*. New York: Berghahn Books, 208.

investments away from particular areas, resulting in webs of neglect and bureaucracies that reinforce the polarized conditions. These conditions manifest themselves in projects such as the construction of divisive infrastructures, or the lack of projects that allow for social and physical mobility to the rest of the city.

Yet in informal settlements there are logics that have developed to sustain the thriving communities within. The problems within these communities cannot be ignored: there are issues of health and safety among many others, but these problems do not negate the fact that these settlements are urbanities with their own socio-political and urbanistic structures. This realization makes the possibility of interventions in these types of places particularly complex: how does design adapt to the logics that exist in place while allowing for a more fair and connected city? Can architecture act as a mechanism of inclusion rather than exclusion, thus extending *the right to the city to all*?

THE PARADIGM

The uncontrolled growth of informal settlements is an urban consequence of large economic shifts in the globalizing age. The forces that drive these realities are beyond the control of architecture, but they do present certain urban negative realities that architecture must inevitably address if it is to remain relevant in current conditions.

At a more fundamental level, it could be argued that the issue of uncontrolled informal sprawl is a consequence of postmodernization and globalization. Globalization has perhaps begun to redefine new world cartographies whereas the importance of the city is rising above the importance of the nation state as a political entity. The dispersion of economies around the world, also known as financial globalization, has allowed for a less “rooted” geography permitted by the decentralization of production. As a result cities today may be more connected to cities in other countries than to those within a nation. Although this has created new opportunities for many, it has also intensified the lack of access to these global networks by large sectors of society. This in turn has resulted in the extreme levels of marginalization that resolve themselves in the phenomenon of the broken city. The broken city can therefore be understood as “*an urban expression of a global pattern.*”⁶ As such, informality is a form of globalization, and it cannot be understood as being outside of the global, the formal or even the realm of the government. Instead, informality can be more accurately

⁶ Ibid, 208.

conceived as a *“liminal practice between the official and the unofficial frameworks.”*⁷

If cities are to be understood as areas of coexistence, as the manifestation of the multiplicity of humanity, then informal settlements often exist in the negation of this plurality. In other words, megacities are suffering from extreme levels of social exclusions that are experienced physically but also *“discursively,”* meaning *“...within the space the city occupies in the imaginary... an exclusion from city’s narratives...”*⁸ Both forms of exclusions have serious urban and social consequences that can be defined under the umbrella term of **urban deficits**, or the lack of places where differences can coexist simultaneously.⁹ This is evident in the undisputable fact that cities are becoming increasingly fragmented in the all too familiar urban typologies of the self-secluded gated communities and the excluded shantytowns.

Other negative realities of megacities today have to do with the reduction of the public realm into mere precincts of consumption meant to attract tourists, businesses, or targeted groups of economic and cultural power. The decisions about the development of these spaces are made by a few who hold the right to decide who gets represented and who does not in

⁷ Hernández, Felipe. “Social Cartography, Articulatory Urbanism and Public Architecture.” Lecture, from University of Maryland School of Architecture, Planning and Preservation, College Park, MD, October 5th.

⁸ Scoppetta, Cecilia. “The Essential Role of Informal Settlements in the Construction of Rent-Seeking Urban Policies.”

⁹ Jáuregui, Jorge Mario. “Urban and Social Articulation: Megacities, Exclusion and Urbanity,” in *Rethinking the Informal City: Critical perspectives from Latin America*. New York: Berghahn Books, 210.

the city. Thus these operations of urban renewal function as mechanisms of exclusion, further eroding the virtues and capacities of the public domain to exist as a place for pluralities.

This investigation has, at its core, the aspiration to counteract these realities and provide an alternative understanding of, and way to operate within, the tensions of the presupposed “formal” and “informal” dichotomies. Understanding that, by its very nature, cities are places where there are no harmonious resolutions, can the urban and architectural interventions promote a place of rich human entanglements that provides for dissensus or the simultaneous coexistence of multiple points of views?

VILLA 31: RADICAL ARCHITECTURE VS. AUTHORED ARCHITECTURE

In “*Radical Reconstruction*” Lebbeus Woods speaks of an architecture that can emerge after the destructions caused by a war. War, in his language, refers to forms of violence that have the effect of “...*reducing their multilayered complexity of meanings to one-layered tableaux embodying the monologic, monomaniac structure of hierarchy at its most logical and terrible extreme: the all-or-nothing polarity imposed by radical ideology and its rational overdeterminations.*”¹⁰ War therefore has a leveling effect: it is a normalizing force that reduces all diversity and replaces it with public and private hierarchical orders that negate the emergence of a more inclusive

¹⁰ Woods, Lebbeus. 1997. *Radical reconstruction*. New York: Princeton Architectural Press, 15.

society. In this context, the life and story of the Villa 31 in Buenos Aires, Argentina, can be understood as an emergent place that exists because of, and under the conditions of, war. In fact a defining characteristic of most informal settlements across the globe is that they suffer from neglect, a form of violence that parallels Woods' definition of "war".

The definition of "radical architecture" that Lebbeus Woods proposes, of free spaces that are owned by "*those who make them their own... those whose lives, day to day, consecrate space with their own densities of meaning,*" exists in opposition to what Jáuregui terms "Authored Space" in which the ownership comes from a top-down relationship rather than bottom-up. In his essay titled "*Urban and Social Articulation: Megacities, Exclusion and Urbanity,*" Jáuregui explains that in all megacities there are three different types of urban space that coexist in proximity to one another:

- *Spaces generated for traditional accumulation and substitution;*
- *Authored spaces;*
- *Spaces that escape public control.*¹¹

The first type of urban space is what we generally know and understand as constituting a neighborhood or barrio within a city. These are results of communities interacting and developing functions over time, and they are places where norms are continuously being "customized, renegotiated or substituted."¹² Taking the city of Buenos Aires in proximity to Villa 31 as a

¹¹ Jáuregui, Jorge Mario. "Urban and Social Articulation: Megacities, Exclusion and Urbanity," in *Rethinking the Informal City: Critical perspectives from Latin America*. New York: Berghahn Books, 210.

¹² *Ibid*, 210.

backdrop for the study of these types of spaces, we find evidence of such a space in the high income neighborhood of Recoleta, where it takes the form of the square block belonging to the gridded urban plan (figure 1).

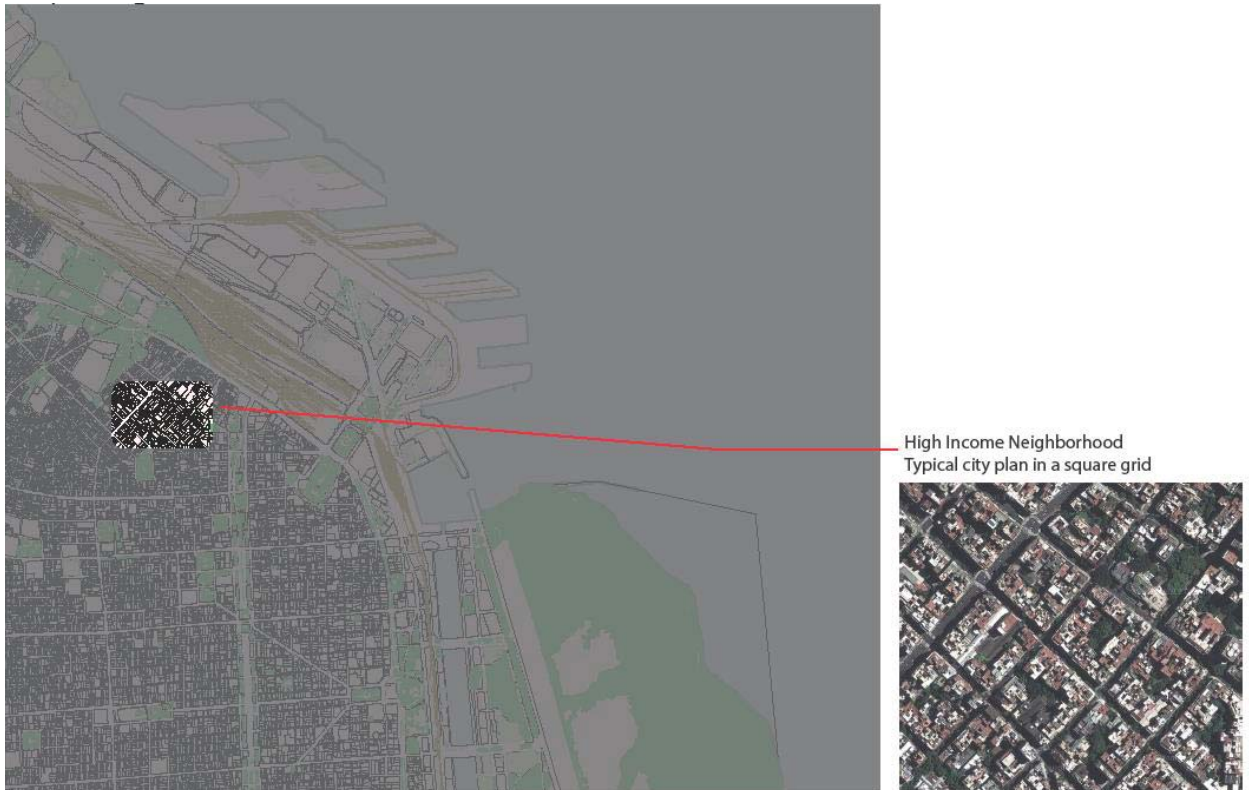


Figure 1.1: Recoleta neighborhood. A “Space generated for traditional accumulation and substitution” (source: author)

The second type of urban space is the “authored space” which is characterized by those spaces that respond to the demand of corporations and therefore are designed for one singular purpose such as an entertainment park, historical quarters or as exhibition centers. Because these spaces respond to the demands of those that hold economic and or cultural power, these places become commodities, forcing the image of the

city as “a series of franchise operations.”¹³ Given this definition, it can be argued that within the proximities of Villa 31 at least three major “authored spaces” exist:

The Plaza General San Martin is located only 5 minutes away from one of the entry points into the Villa 31 (Figure 2). It holds historical value in the city, where a clock tower designed by the English in 1916 stands in monumental scale within the plaza. The plaza is fronted by the historical rail station and it acts as an urban gesture facing towards the water. The plaza is a public space, but it exists mostly as a monumental representation of a desired past or dream of Buenos Aires becoming an anglosaxon grand city.

The government complex located south of the Plaza San Martin constitutes yet another type of “authored space.” Its theme is that of an institutional role where symbolic and actual power exists. A space occupied by tourists and politicians, no one lives in this complex and therefore, in the words of Jáuregui, no norms are being constantly negotiated, accumulated or substituted (Figure 3).

Lastly, Puerto Madero presents yet another form of “Authored Space.” Located east of the government complex, this consisted of a previously functioning commercial port which, having lost much of its economic vitality as a port, has been recycled to become a business and commercial center. The Puerto Madero reflects the types of public investments that tend to commodify space, for the renovation of the industrial buildings here was catered to tourist

¹³ Ibid, 210.

and business interests only (Figure 4). Beatriz Sarlo makes this reality even more evident in the following quote:

“Buenos Aires is now entirely defined by lines of poverty and affluence, except where the state still preserves something public like a park or a cultural center. Other ‘public’ spaces, like the new developments in Puerto Madero, are really restaurants and corporate-office clusters where noncorporate users find little hospitality or leisure facilities. The use of such space is consistently offered to the affluent; its public quality is quite nominal, because although there is no interdiction, there is no reason to go there either.”¹⁴

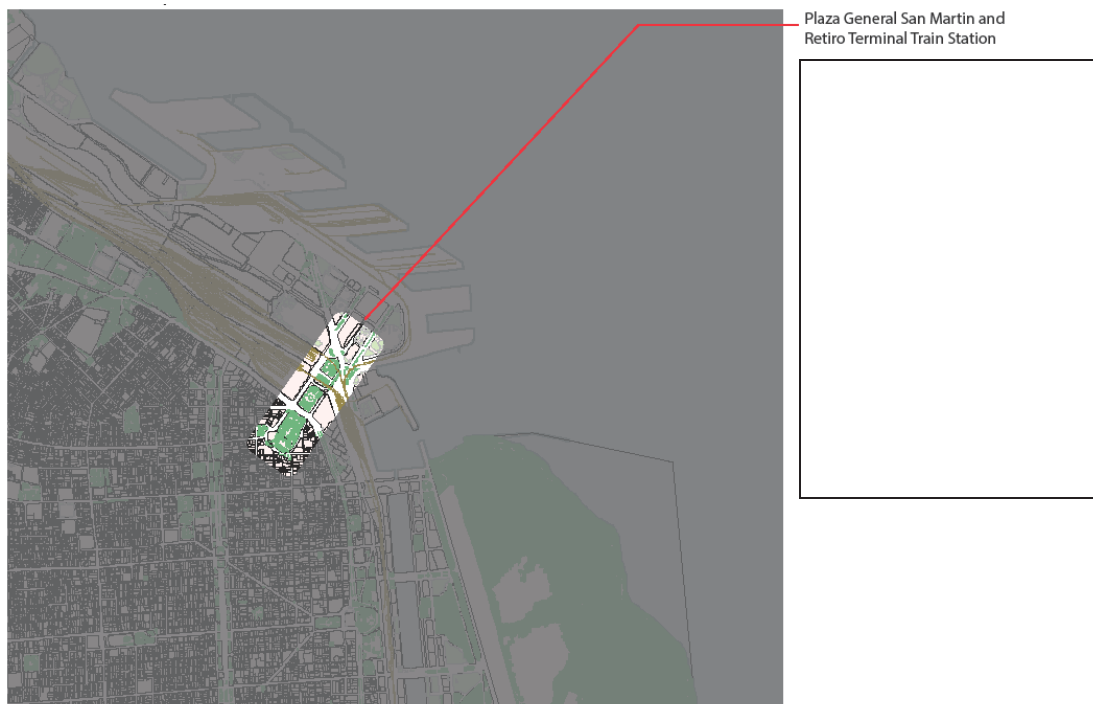


Figure 1.2: Plaza San Martín. “Authored Space.” (Source: Author)

¹⁴ Sarlo, Beatriz. “Cultural Landscapes. Buenos Aires from Integration to Fracture,” in *Other cities, other worlds: urban imaginaries in a globalizing age*. Durham: Duke University Press, 44-45.

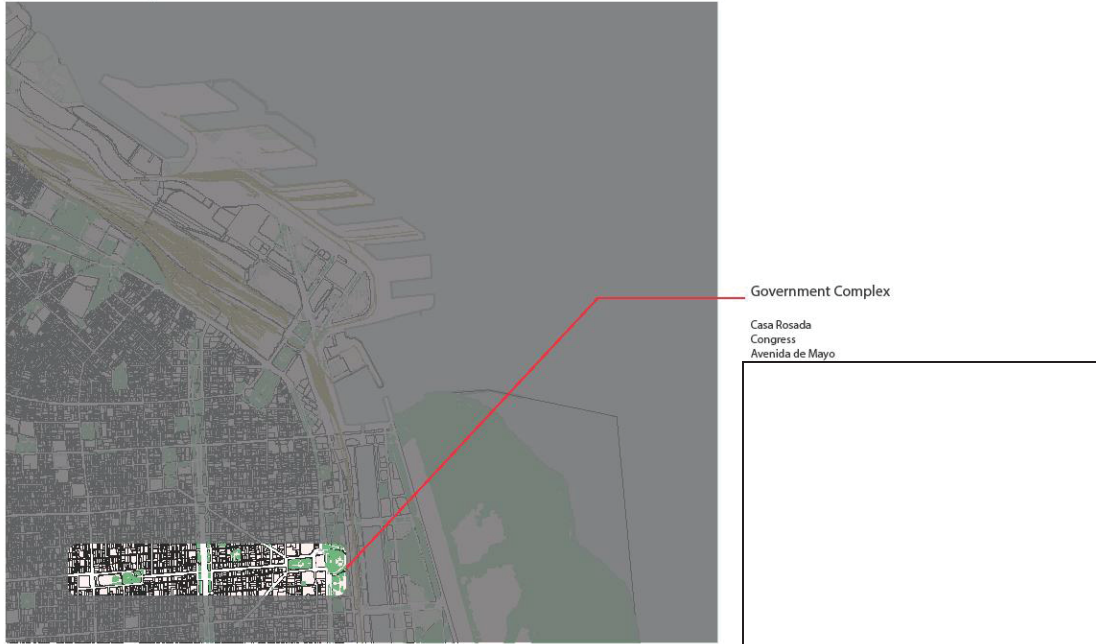


Figure 1.3: Government Complex "Authored Space." (Source: Author)



Figure 1.4: Puerto Madero "Authored Space." (Source: Author)

The last type of space that is categorized by Jáuregui as a fragment of megacities today are those spaces that escape public control. These are

defined as spaces that usually exist in the peripheries and become “archipelagos of exception with their own laws and social codes.”¹⁵ They are almost never recognized in city maps, for they are not considered official. Instead they exist as the “ ‘noir’ places of society”, as “intervals in the experience of moving across the city.”¹⁶ Villa 31 and 31BIS clearly fit into this category of space. Observing a city map suggests that this territory is empty and uninhabited, yet reality shows that there is a whole community of over 30,000 people living in this place (Figure 5).

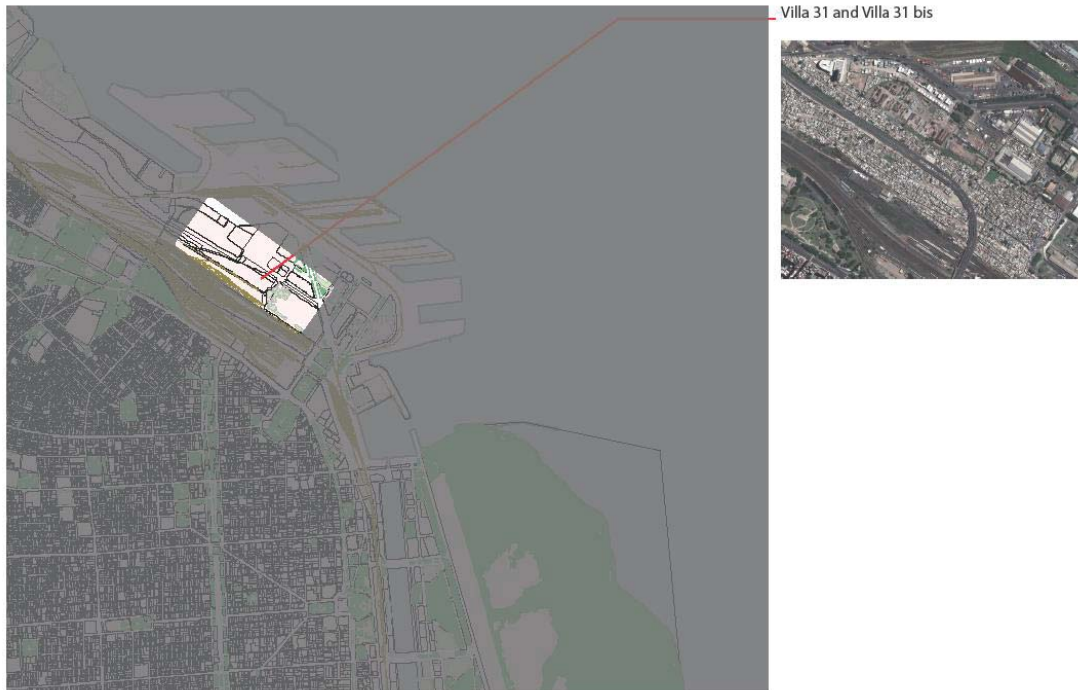


Figure 1.5: Villa 31 “Spaces that escape public control.”

¹⁵ Jáuregui, Jorge Mario. “Urban and Social Articulation: Megacities, Exclusion and Urbanity,” in *Rethinking the Informal City: Critical perspectives from Latin America*. New York: Berghahn Books, 213.

¹⁶ *Ibid*, 213.

This type of space fits into Lebbeus Woods' definition of "free spaces", where space is articulated and produced bottom-up and is therefore liberated from the codified languages that were imposed by institutions of power. The tension that exists in designing within these communities then is a result of questioning how architecture can intervene without erasing the heterarchical relationships and tissues formed within the barrios or favelas: How can we promote a hybridized architecture where the spaces are allowed to exist and function as fluid informal works? How can architecture refrain itself from becoming yet another fixed authored space that frustrates the emergence of inclusion?

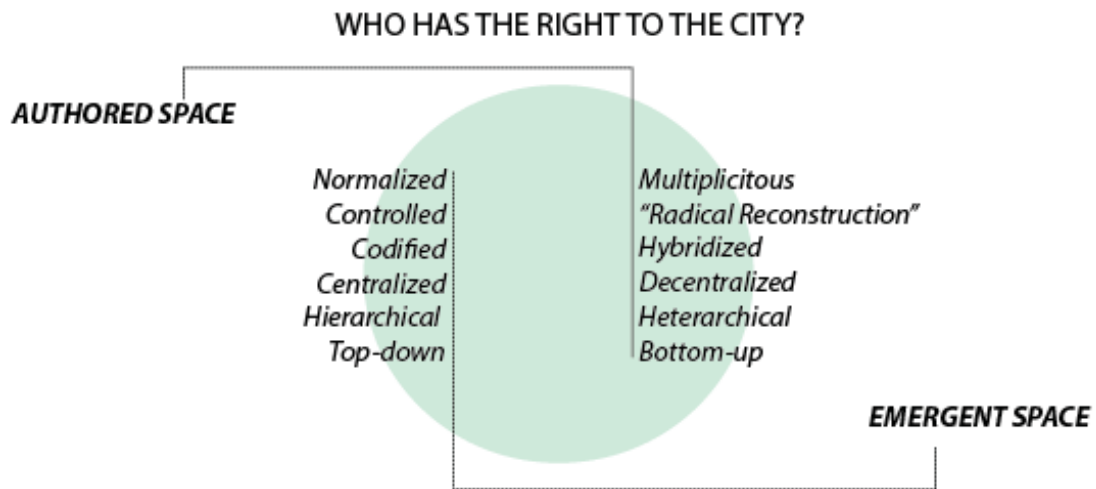


Figure 1.6: Conceptual Diagram "Authored Space vs. Emergent Space" (Source: Author)

THE LOGICS OF INFORMAL SPACE PRODUCTION

Informal settlements are urbanisms that emerge out of spontaneous developments. This statement does not imply that the developments are not planned. There are logics of production in the spaces and places that are generated within these communities. The reading of the structures of an informal settlement may seem strange to outsiders who encounter these settlements for the first time, for they cannot be understood within the framework of the “traditional” master planning processes.

Perhaps the single most important realization when approaching these settlements is that it begs for a different kind of urbanism that questions the modernist tradition of a totalizing, singular, ideal plan. Modernist efforts promoted a social project that could be defined as “utopian,” yet they often failed to adapt to and work within the existing conditions of each place. The utopian urbanism relied on a *tabula rasa* approach where any type of intervention could be imposed from above: “*Modernist architecture, just as the positivism that formed its foundations, was as single layered and hierarchical as the damaged cultural tissue it claimed to erase.*”¹⁷ Thus designs became a mechanism of erasure whereas the past was supposed to be cleansed and forgotten to give way to a new, better, idealized world. This type of approach has been widely discredited. Authoritarian plans rarely come into effect and fruition when the forces that go beyond architecture inevitably transform its

¹⁷ Woods, Lebbeus. 1997. *Radical reconstruction*. New York: Princeton Architectural Press, 15.

potentials. In particular, applying a singular “solution” to an informal settlement would reinforce the status-quo of the inequalities and the neglect of the existing communities.

Although this realization seems to allude at a sense of impossibility when approaching these neighborhoods, architects and urbanists who work within these “dystopias” today view it as an opportunity. The peripheral conditions of these places offer the opportunity to work outside the traditional framework of developer driven “branded” architecture. Although architecture is in itself a hierarchical act with political and formal consequence, when working in the context of informal settlements and urban connectivity, it is essential to question the top-down method of space production and adapt to the existing conditions.

At its basic level, the difference between the “corporate logic” that exists in the production of our market driven spaces is that one is a linear, top-down approach where the owner (banks, corporations, cultural institutions, etc.) finances the developments with a client—not a user or citizen, in mind. The space is produced for an individual or group that will sell or rent the space. As a result, there is no particular consideration for the quality of space for users, and space becomes a product to be consumed. On the other hand, the “informal logic” is one where the settlements are self-produced, and so the user and the producer are one and the same. This logic therefore escapes the normalized productions happening in the formal city.

LOGICS OF PRODUCTION

Corporate Logic vs Informal Logic

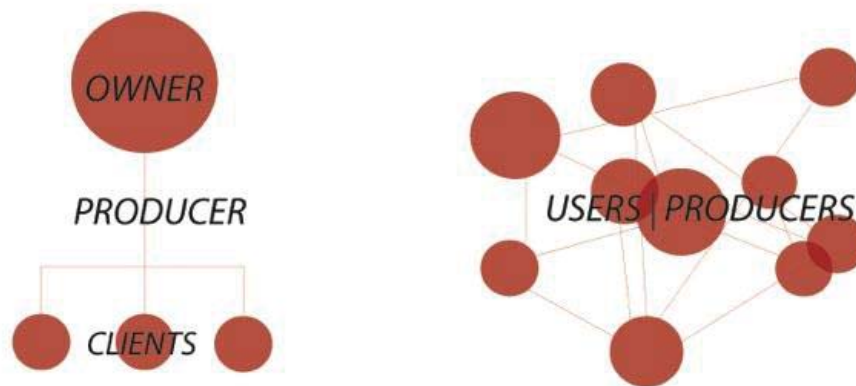


Figure 1.7: Conceptual Diagram “Corporate logic of space production vs. Informal logic of space production” (Source: Author)

Understanding this distinction requires that interventions within the context of informal settlements take into account the informal logic of production of spaces. This is not only because of the ethical dilemma that surfaces when working within previously neglected communities, but also because it is the only way to challenge the top-down planning processes that have defined and normalized the formal city. Too often we are inculcated with the necessity of understanding the problems of informal settlements, but not as often are we keen to becoming aware of the virtues of these places. If the existing structures of each settlement, each neighborhood, is not thoroughly “read” and considered, architectural and urban interventions run the risk of becoming yet another normalizing mechanism that acts as an operation of erasure much like the Modernists’ utopian plans. Inherent in the process of

rescuing and applying the emergent space production processes is the questioning of the authorship of architectural works. This may be the most important way to provide an alternative to **“authored space”** becoming the leading form of urban space in today’s market dominated cities. Richard Roger’s once said, *“Form follows profit is the aesthetic principle of our times.”* Informal settlements, and working within these communities, can liberate space by directly challenging this paradigm.

To illustrate this idea further we strike a comparison between the authored works of artists and those of architects. Architects and Artists can be compared given that they are both involved in the processes of cultural production. However, much of the criticism of the typical formal city architecture comes from the loss of that autonomy of the architect in the building process. In other words, architects have become so circumscribed by the financial exigencies of the developers, as well as so removed from the process of building, that there is often no room left for experimentation with space making. The architect designs plans and sections and the contractors build the spaces, and the developers oversee the final products.

An artist, on the other hand, tends to apply techniques without an a priori prejudice as to what the final outcome of the product will be. Instead the work emerges from the process of design and making. When more closely analyzed however, artists themselves reveal a gradient of normalized vs. emergent, authored vs. radical work processes. A single artist working for a corporate client in a studio setting is often working for a particular goal such

as the commissions or gallery demands, and so his or her work becomes a constructed authorship work. On the other end of the spectrum, artists working in full collaboration in a studio setting produce works that emerge from a multiplicity of ideas. Somewhere in the middle lie those processes where there is some hierarchy dictating the production, but this hierarchy acts in response to the collaboration of multiple artists producing the work. An example is the case of the paper prints of Roy Lichtenstein, where the artist Chuck Close had more oversight over the content of final prints, but the products emerged out of a six-hour collaboration among seven artists.

Similar to this comparison, we can understand the differences between informal construction processes and the normative city. The people constructing the spaces and homes in the informal settlements are negotiating space continuously rather than building based on a predetermined plan or section drawing. The spaces are always being transformed and reconfigured as an open-ended process, and so the producer, designer and user is one and the same, holding authority over the final work. In fact, when speaking with one of the neighbors of Villa 31, one of the interesting comments he made was that people in the barrio would never build a new floor or a new construction without consulting their neighbors first, either to ask for permission or to ask for ideas as to how to build it. Thus it can be said that this process is collaborative, leading to multiple ideals, and not hierarchical. On the other hand, the process of production of the normative city is often one of dictated manufacturing processes, where buildings are

seen as products and so the users are not involved in the production of these spaces. When this occurs, design is predetermined and is a singular idea coming from a place of control. This is not to say that the construction process in the informal settlements are completely autonomous, for their construction is a result of necessity, not pure unbound experimentation. In informal settlements people buy, scavenge, and build with whatever materials they can find and often imitate the constructions of the normative city. Yet this differentiation is useful in order to understand the benefits that exist in the informal settlements, which is often completely lost in the normative, formal, city.

The questions that arise under this predicament are, what does an architecture that fits in the crevice between the “formal” to “informal” architecture look like? How does it operate and come to be? Can it act informal even if it cannot escape itself being a formal work?

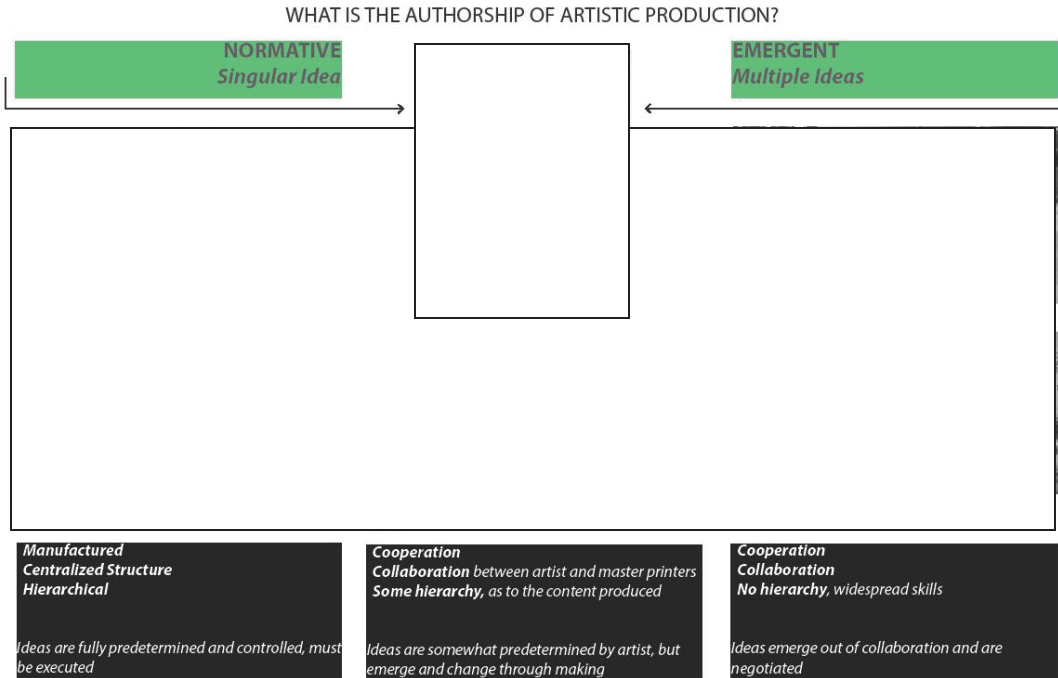


Figure 1.8: Conceptual Diagram “Authorship of Artistic Production” (Source: Author)

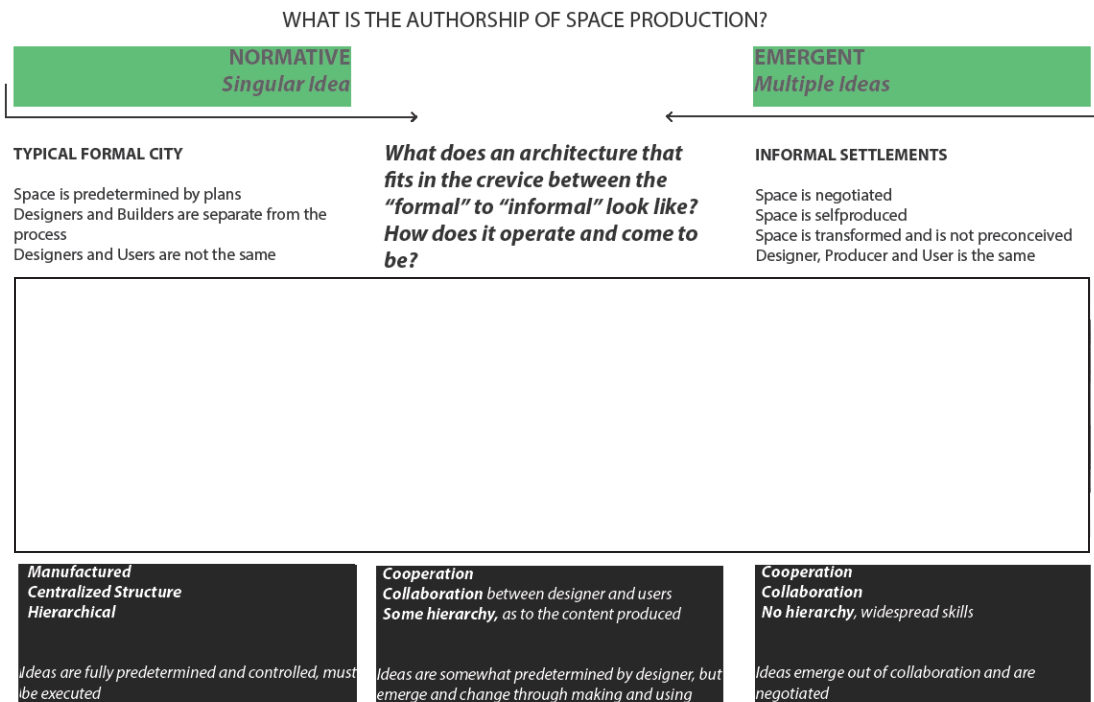


Figure 1.9: Conceptual Diagram “Authorship of Space Production” (Source: Author)

[SCAR]CITIES_DESIGNING WITHIN THIS CONTEXT

“The scar is a deeper level of reconstruction that fuses the new and the old, reconciling, coalescing them, without compromising either one in the name of some contextual form of unity”¹⁸

To be truly informal, spaces and places need to be appropriated by different people. This calls for an architecture that goes beyond the production of form to engage with larger issues, elevating the role of architecture to perform as a spatial agent. Urban articulations within the tensions of the formal and the informal require a deep understanding of the edges, or the lines that separate one from the other. Thus urban interventions need to be considered primarily in their capacity to connect. Buildings therefore are considered as contact zones, activating dual zones that fuse the two sides without erasing the traces of development of the existing communities. The new interventions, in their capacity to create new centralities, should not negate the previous interventions nor should they enhance the limits created by the existing boundaries. Instead, they should allow for a reconstruction that transforms boundaries into borders, areas of heightened heterogeneous exchanges.

The following examples or case studies constitute some of the most successful projects that have addressed the complexities of working within these realities:

¹⁸ Woods, Lebbeus. 1997. *Radical reconstruction*. New York: Princeton Architectural Press, 16.

Favela Barrio Project_Jorge Mario Jauregui

The Favela Barrio Project was an initiative developed in the informal settlements of Rio de Janeiro. The project was led by architect Jorge Mario Jauregui and it has, since then, become one of the most successful projects to have had an impact in upgrading infrastructures and public spaces in favelas, the term for Brazilian informal settlements.

The project recognized the pockets of urban exclusions that these informal settlements constituted within the rest of the city, and worked to configure amorphous public spaces into defined spaces, and introduced infrastructure and services that could generate work, sports, as well as cultural facilities, all while establishing the connections between the formal and informal fabrics. As the architect explains it, this type of intervention is based on working within two perspectives: “one strategic (urban scheme), and another tactical (intervention plan).”¹⁹

Projects such as the Favela-Barrio program remove the physical and social barriers that so strongly divide cities today, not only by introducing infrastructure but by articulating public spaces and including catalyzing programs such as schools, housing, sports facilities, and transportation hubs, that respond to the specific infrastructural needs or deficiencies of each neighborhood. A series of these small interventions throughout the neighborhoods are connected by the public spaces and corridors, acting as nodes within the larger network of the city. This node and network association constitutes what the architect defines as the two necessary perspectives

¹⁹ Ibid.

(strategic and tactic), a methodology that is a corollary to urban acupuncture theory.

In the interventions constituting the Favela-Barrio project, the creation of such nodes are seen to perform as catalytic structures that extend their urban effects to the neighboring areas, thus beginning to blur the lines of separation between the formal city and the informal settlements. As a result of these punctual interventions, other unplanned places start to acquire “urban responsibility” and these new centralities begin to be recognized as being part of the formal city.²⁰ This process is therefore different from the traditional master planning processes. Instead, it is a methodology that relies on punctual interventions that take the attitude of minimal and careful removal and relocation of housing when necessary to open up new access corridors, while re-articulating amorphous open spaces that respect the existing traces of development rather than imposing completely new formal geometries. This type of process results in a series of these organic open rooms that create systems of movement and interaction throughout the neighborhoods.²¹

In taking a closer look to one of these interventions, the Centro Setorial, these techniques become immediately evident. Here the intervention consists of the insertion of new programs to existing ones, resulting in a mixture of sports fields, facilities, day care, a public square and the introduction of a new street for regional access. This multi-programmed place

²⁰ Ibid.

²¹ Quiros, Luis. “Emerging from Dystopia: Latin America’s Latest Lessons” 2013.

acts as a hub or a node of activity and interaction that is catered to the needs of the specific district.

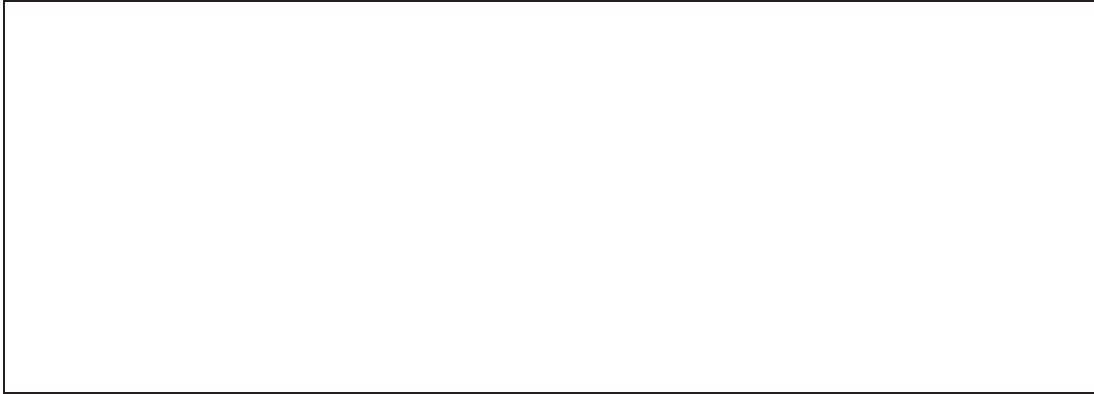


Figure 1.10: Favela Bairro Reading of Site_Primary Nodes, Secondary Nodes, Areas of Transition (Source: Jorge Mario Jauregui <http://www.jauregui.arq.br>)

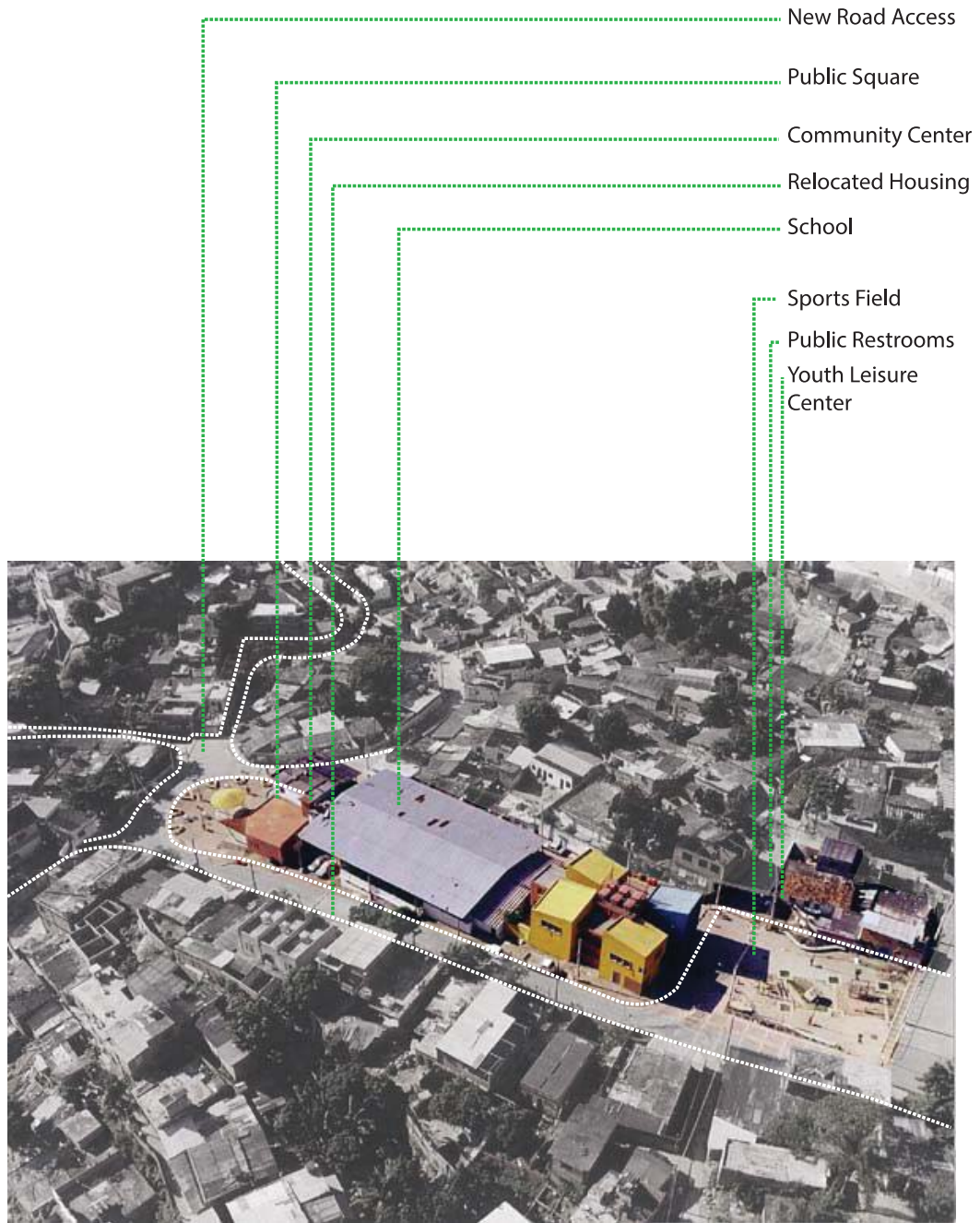


Figure 1.11: Favela Bairro Project Intervention (Source: Jorge Mario Jauregui and author diagram overlays)

Grotao Community Center_ Urban Think Tank

The work of Urban Think Tank often reflects very similar priorities and strategies for approaching design within informal settlements. Their process consists of a multidisciplinary approach that aims to identify unused open spaces as opportunities to introduce much needed physical and social infrastructure. Much like Jauregui's work, their propositions are always hybrid-programmed constructions that are place specific yet resonate and are connected to the larger city as well as global networks. These new insertions into the texture of informal settlements result in new landscapes or nodes that begin to connect the informal with the formal, reflecting on a kind of "syncretic city."²²

The Grotao Community Center and Park in the city of Sao Paulo is an example of such a project where the priorities were to insert infrastructure, water, sewage networks, lighting, services, and public space all within a singular intervention that would add transportation access from this hub to the rest of the city. Given that only one road connects back to the circulation systems of Sao Paulo, the Grotao Community was virtually a disconnected peripheral neighborhood, making access for the citizens to employment, education, and other resources the main priority.

Other urban challenges of the site were also embraced as opportunities to re-signify them with value, a drastic change of image. The

²² Brillembourg, Alfredo. "Find your comfort level." Lecture, from University of Maryland School of Architecture, Planning and Preservation, College Park, MD, October 4th.

concavity of the site for example, has been a result of erosion and dangerous mudslides over time, a condition that prevented any developments in place. The architects stabilized the ground, eliminated erosion, and introduced a terraced landscape that invited the inhabitants to enter the site. Urban agriculture is introduced into this terracing so that it can be cultivated for food production and through this, instigate social interaction. The form of this void therefore was transformed into an arena and productive landscape that is appropriated and activated by the interaction of the inhabitants.

The building element itself also introduced previously unimagined programs that were vertically layered to take advantage of the limited space. The architects describe the hub as mainly “a musical education factory... a catalyst in this area, expanding music programs into the favelas while beginning to form a new network that serves the youth from all levels of society.”²³ This music machine includes classrooms, practice rooms, recording studios, and performance halls, but most importantly, it is part of a bus station, soccer pitch and community center that creates strong relationships not only within the favela but with the rest of the city.

Much like Jauregui’s work, in the development of new access roads and a new bus station there is an attitude to minimize the displacement of homes, and if necessary to do so, to design an area for replacement housing for those displaced from these zones. The introduction of commercial spaces at the first level allowed for yet another economic program to be included in

²³ Brillembourg, Alfredo. “Find your comfort level.” Lecture, from University of Maryland School of Architecture, Planning and Preservation, College Park, MD, October 4th.

this new hub. Lastly, the choice of this site is also a result of careful reading of the site as a potential node where existing paths of movement converge and result in an emerging centrality that the architects simply redefined by re-programming the space.

Street Children Home Project_ Urban Think Tank

The Street Children Home project is another intervention that exemplifies the main strategies of recovering unused spaces to capture their potential by re-programming them. The program consists of an orphanage on the ground floor, a rooftop sports field in-between the orphanage below and the highway above, and an adjacent educational woodworking shop. The parcel of land was one of the city's many non-places or *terrain-vague* (spaces underneath freeway bridges are neither public nor private in Caraca's maps) that the architects thought of as an opportunity to insert necessary social infrastructure.²⁴

The mixtures of programs are inserted into the left over spaces created by large infrastructural pieces in the city. UTT claims "as architects, we too must capitalize on pockets of opportunity." And so the 30-plus street children dormitory, the gardens where corn can be grown, and the basketball and soccer field above revitalize a space that would otherwise not exist in the image of the city. Flexibility is another essential element in the programming strategies, as the woodworking shop is designed to be able to act as trade

²⁴ Quiros, Luis. "Emerging from Dystopia: Latin America's Latest Lessons" 2013.

school that stimulates entrepreneurship to the informal street vendors that occupy the space daily. In essence, the infrastructural insertion under the public highway becomes in itself a direct challenge to the city's policies to address land ownership as well as the government's involvement in social and economic development, while simultaneously becoming a rich work of cultural communication.²⁵

²⁵ Quiros, Luis. "Emerging from Dystopia: Latin America's Latest Lessons" 2013.

SITE_HISTORIES

In Buenos Aires, by the easternmost edge of the city, exists an urban setting where industry, transportation infrastructure, tourism, extreme wealth and extreme poverty converge, yet are forced to exist in segregation from each other. It is a landscape sliced into binary oppositions: those who are represented vs. those who are neglected, projected vs. made invisible, formal vs. informal. On one side of the railroad tracks lies the most expensive neighborhood of the city, Recoleta, while across the tracks are a series of informal settlements. Villa 31 is the most historic and iconic of these slums, in existence since the late 1930s.

Villa 31, like all informal settlements, grew out of necessity. Here, ingenuity and inventiveness permeates the production of space: some people invade abandoned shipping containers and transform them into temporary shelters; others take abandoned railroad lines and use the scavenged material for the construction of their homes. Many abandoned factories and unused government lands become the starting points of these communities. It is an architecture that recycles and re-appropriates, thus embedding materials and spaces with new meanings. A look at the histories of the community immediately reveals the tensions between the “City” and the “Villa 31.”

The story of the landscape of what has become Villa 31 began in the early 20th century where the intense economic growth of Argentina led to the construction of a new port area, “Puerto Nuevo,” in the northeastern coastal

region of Buenos Aires city. Between the years of 1880 and 1910 Argentina experienced an inflow of four million European immigrants into the country, this being the clear evidence of the spur of economic growth in this region of the world. The New Port Area, built largely by these newly arrived immigrants on new infill land, opened in 1919. This was at the time one of the largest infrastructural public projects of the city.

By 1929 the economic downturn that affected the rest of the world had a devastating impact in Argentina as well. Many of the European immigrants that had moved to this country with the hopes of obtaining work were left without the previously promised construction jobs. By 1931 the government took action to ameliorate these conditions by providing refuge in abandoned sheds in these new port lands. However only four years later the government would take the opposite action and demolish all the precarious housing that had been developed for this purpose. Given the need to settle somewhere in this new country, the growth of these precarious housing settlements could not be controlled, and by 1950 there were at least six internal neighborhoods that informally developed on the site.

The period of the 1960s was one where the growth in Villa 31 took exponential magnitude, and the “reality” of these established neighborhoods could no longer be debated, even though the rest of the city ignored its existence. The 1970s are known in most countries of Latin America as a “Revolutionary” period, and it was during this time that an iconic member emerged in Villa 31. Father Mugica was a catholic priest who, against the

official views of the city, decided to “legitimize” the existence of Villa 31 by establishing a church within the neighborhoods in order to work for the poorest families of the city. Given that informal settlements are areas where, unlike the “official” Latin American cities, the presence of the government and the church is non-existent, this was a revolutionary message for the city. It was also during this decade that the settlement approached a population of 16,000 inhabitants, and the formal city could no longer easily continue to ignore its presence.

This confluence of events combined with the political climate of the 1970s instigated a violent response from the government against the settlements in Villa 31, not an atypical response everywhere in Latin America during this time. In 1971 the government planned to eradicate the Villa 31 and displace its inhabitants, and by 1976 40% of the inhabitants had been moved to the new housing tower projects called Conjunto Habitacional de Ciudadela.²⁶ During the *coup de etat* of 1976, the military government applied a method of forced eviction where homes were bulldozed and people were moved away from the settlement in trucks, until the Courts prohibited the destruction of homes in 1983.

Other methods the government partook in as a method to approach the situation came about in 1991 with the “Plan Arraigo” law, which allowed the government owned land to be sold to the occupants. However such a law had

²⁶ Cravino, María Cristina. 2009. *Entre el arraigo y el desalojo, la Villa 31 de Retiro: derecho a la ciudad, capital inmobiliario y gestión urbana*. Los Polvorines, Prov. de Buenos Aires, Argentina: Universidad Nacional de General Sarmiento, 25.

only a nominal effect on giving property rights or addressing the situation given that the land was not parceled or subdivided.²⁷

In 1996 yet another action rendered the existence of the Villa 31 “non-important”, as the city began the construction of a new highway that travelled over the settlement to connect the downtown to other regional cities, literally bypassing the neighborhoods below. In exchange for the eradication that was necessary for this project the municipality offered a credit, a subsidy or housing by the CMV (Comision Municipal de Vivienda). Following this infrastructural investment, the national government began to sponsor a new megaproject by the name of “Proyecto Retiro” that sought to re-urbanize 75 hectares in the port and train tracks area, which included the lands where Villa 31 and 31BIS were established. It would consist of a new multimodal node in the city, and it would include hotels, a major transportation hub, luxury condominiums among other grand projects. Such proposals clearly indicated that eradication remained the most probable policy for the communities of the settlement.

This historical recount demonstrates the clear tension under which the legitimacy of Villa 31 and 31BIS exist in the city of Buenos Aires. Although these are historical neighborhoods, the lack of legal rights to the land combined with shifting market interests, have remained the main obstacles to their stability. The question will always be phrased from two extremes: from the point of view of the residents, who see their location in those lands as a

²⁷ Ibid, 46-51.

right that has been built historically, and from the point of view of other sectors, who view this location as a privilege that must be rectified, bestowing the people of Villa 31 another location for their inhabitation.²⁸ But it is also important to consider as part of the conversation not just the concept of housing, but one of “*the right to the city*,” meaning the people’s ability to change, transform and produce the urban space. In David Harvey’s words, “the freedom to make and remake our cities ourselves is, I want to argue, one of the most precious yet most neglected of our human rights.”²⁹

²⁸ Ibid, 13.

²⁹ David Harvey. 2008. *The Right to the City*. New Left Review 53, 25.

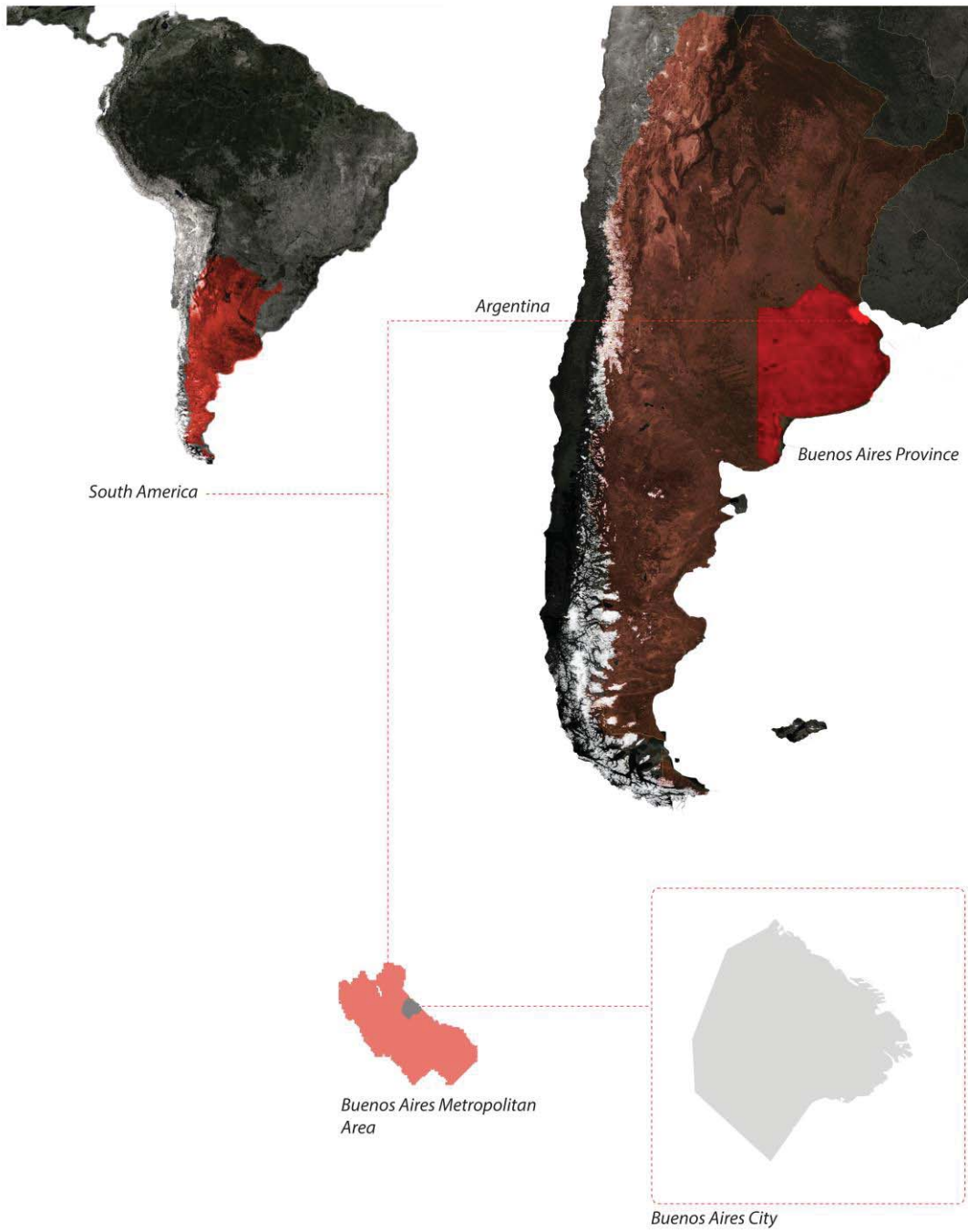


Figure 5.1: Location of Site (Source: Author)

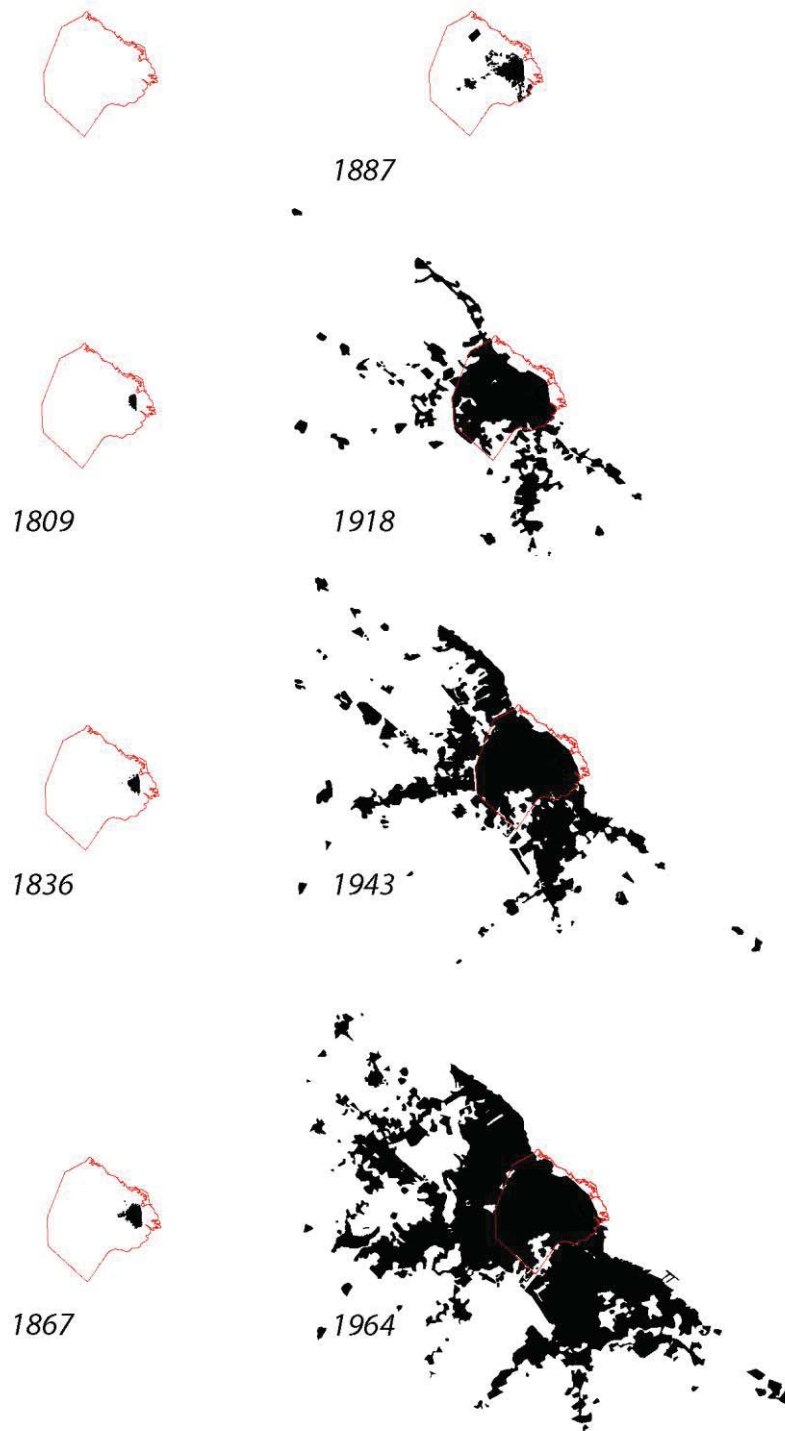


Figure 2.2: Buenos Aires as a megacity_growth through time (Source: Author)

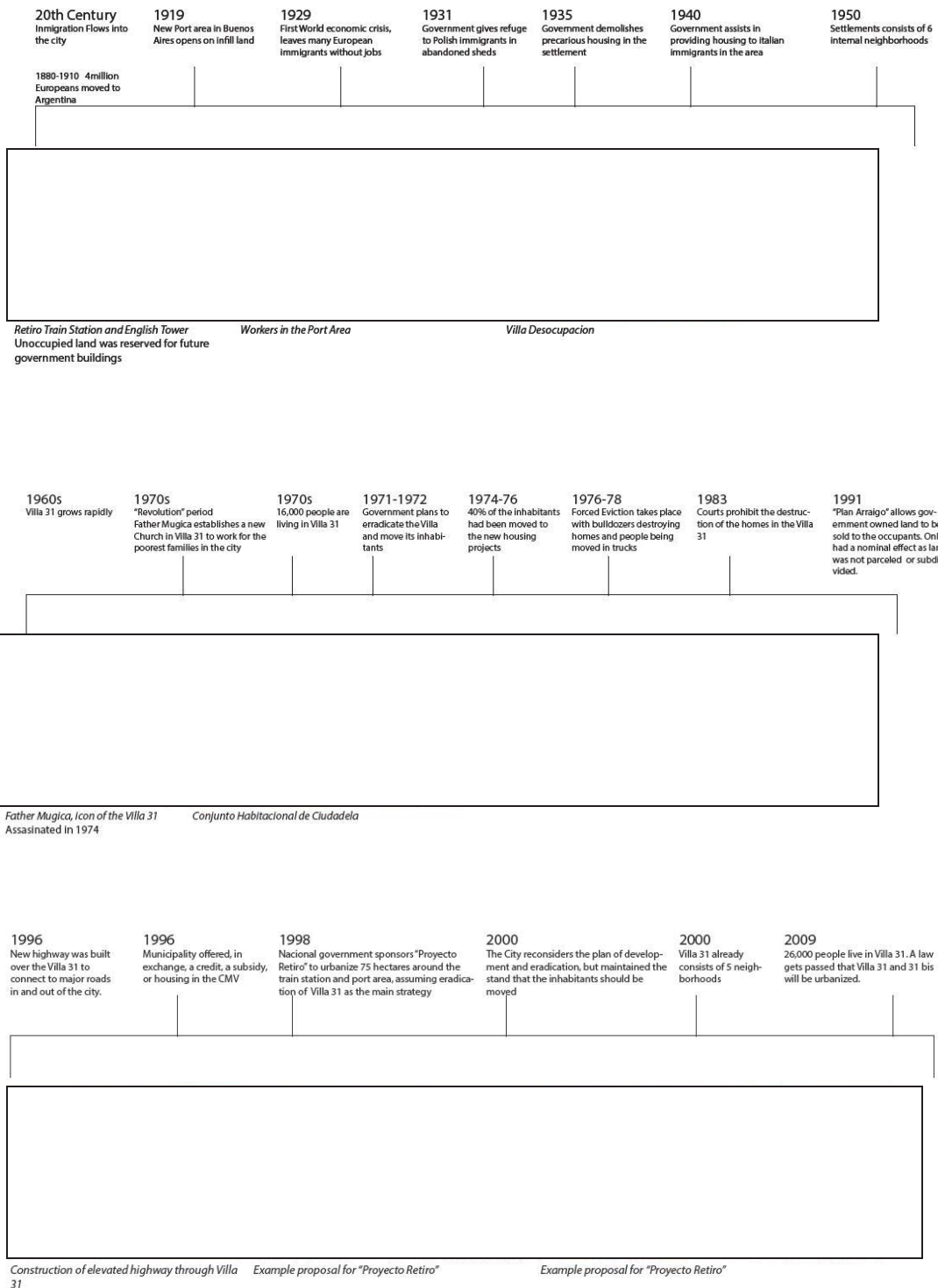


Figure 2.3: Time line of Villa 31_Negotiations between the city and the people (Source: Author)

THE TERRITORIES OF INTERVENTIONS

“...we advocate the need to approach urbanism, architecture and the social sciences in a democratic spirit, sensitive to dissonances and diversity and able to act in the complex ways necessary to respond to the realities of megacities”³⁰

*“Porosity is a transversal and transcalar concept: ecological, concerning mobility and social issues, epistemological. The porous city is a common image on which **exchanges** among disciplines, actors and individuals can be built” 106).³¹*

“Make great plans, realize small ones: comprehensive ideas nourish particular ones. By designing the city, the architect comprehends the building, the room, the chair. Each architect should design the whole city, and more than once. Then these designs should be put aside, and eventually forgotten.”³²

The realities of megacities are complex and rooted with disparities.

This demands that any attempt to intervene within not be seen from a singular lens, but instead strategies that span multiple scales should be analyzed and considered. Approaching these settlements with the assumption that a singular solution can be provided falls into the trap of oversimplifying the conditions at hand, thus delivering a proposition that acts as an imposition.

Working in this realm requires re-thinking propositions as punctual interventions, understanding that projects act more as moderators or

³⁰ Jáuregui, Jorge Mario. “Urban and Social Articulation: Megacities, Exclusion and Urbanity,” in *Rethinking the Informal City: Critical perspectives from Latin America*. New York: Berghahn Books, 210.

³¹ Viganò, Paola. 2010. De metropool van de eenentwintigste eeuw: Het ontwerp van een poreuze stad = the metropolis of the twenty-first century: The project of a porous city. *OASE: Tijdschrift Voor Architectuur = OASE: Architectural Journal* (80): 91-107.

³² Woods, Lebbeus. 1997. *Radical reconstruction*. New York: Princeton Architectural Press, 31.

interfaces rather than finished solutions that fall into the category of “authored spaces” coming from a place of control.

It is therefore more beneficial to understand the series of interventions as points in a matrix or as nodes in a network. In broader network theory, the relationships between each node, sometimes described as the ties, are more important than the individuality of each node. For example, information in digital networks is organized into an infinite number of cross-references, or “links.” As a result, the structure is open, non-hierarchical and in continuous change, with no particular center to it, much like the emergent developments of the informal settlements. As a result, emergent processes can be understood as byproducts of the nodal view of the world.

Similarly, today we situate ourselves within a multitude of networks: social networks, ecological networks, cultural networks, digital networks, economic networks, among many. We live in a more connected, glocal world. The processes that globalization have allowed us to experience have led to multiple connections happening simultaneously around the world regardless of their physical connection to the place. National boundaries become less defined as Third World and First World conditions meet in the same city, in the same neighborhoods. The interventions within Villa 31 therefore should embrace this cultural awareness, promoting ideas that instead of emphasizing their pure independence and hierarchy, gain their identity by its emerging references and ties to the rest of the networks. This is in line with Jane Jacob’s argument that “developments can’t usefully be thought of as a ‘line,’

or even as a collection of open-ended lines. It operates as a web of interdependent co-developments.”

This notion of emergent processes can also be found in the methods of operation within “urban acupuncture” theory. The theory developed by Manuel de Solà-Morales and highly developed by Finnish architect Marco Casagrande is based on the conception of urban interventions at a small scale with the potential to transform the larger urban context. Projects are envisioned at the small-scale but with larger socially catalytic effects for the city. The work of Urban Think Tank is a direct derivative of this methodology, as they see each intervention as a node within the larger networks of the city and the globe:

“Architects can identify new thresholds and can manage cross-scale interactions to avoid catastrophe in the public realm (...) think of this use of ‘acupuncture’ as way as to relieve or concentrate pressure points in the city. The capacity for architects to create a fundamentally new system by using a method that utilizes ecological, economic and social factors makes for a viable practice of architecture...Our projects are networked and aim to build a robust structural network within this throbbing urban nature that endures the unpredictable and rapid way the city will develop using the concept of natural development to create harmony with the natural environment.”³³

This question of *cross-scale* then becomes essential to envisioning the application of interventions within the site. Scale here refers both to the dimension of size and time. The scale of the “now” calls upon projects that require quick action such as do-it-yourself projects, temporary installations,

³³ Brillembourg, Alfredo, Klumpner, Hubert, Mitchell, Sam. “Captain Pan-America: Re-Thinking Urban Ecology,” in Last Round Ecology, SLUM Lab, Sustainable Living Urban Model. vol 16/17. 2011 (75-83)

and they tend to be of small scale. The scale of the “later” on the other hand refers to planning processes that requires a lot more time for its maturation and therefore fall into the realm of the “ideal” urban plans. To be able to articulate and reorganize the existing textures within informal settlements in order to catalyze productive change requires urbanism and architecture to act in complex ways that reflect on a holistic approach. Urban, Architectural, Ecological, Social, Economic, and Cultural territories need to be considered in the application of these urban strategies (See Figure 3.2). Fundamentally, the major question that each singular intervention must always address is its capacity to *“define the ‘connective’ function of projected buildings and social spaces.”*³⁴

To start reading the existing conditions of Villa 31, the following metrics reflect upon some of the important factors at play. It is important to clarify that these metrics must be approached with a margin of error in mind, for informal settlements are constantly and rapidly changing. Lastly, often times the “official” numbers are not as reflective of the reality as they could be, given that the information recording processes are not as accurate as they can be in the formal city.

³⁴ Jáuregui, Jorge Mario. “Urban and Social Articulation: Megacities, Exclusion and Urbanity,” in *Rethinking the Informal City: Critical perspectives from Latin America*. New York: Berghahn Books, 211.

Some Metrics

<i>People</i>	<i>Physical Nature</i>	<i>Ratios</i>
300,000 = 10% of the city's population lives in informal settlements	15.25 hectares settlement	85,171 people / km ²
30,000 people 6 neighborhoods	97% masonry 3 % cardboard, timber or sheet iron 91.8% concrete floors	Compared to 14.973 /km ² in the formal city
15-20% find work outside the formal city, services within the Villa		Compared to NYC Upper East Side Peak density 58,530/km ² Avg density 9,272/km ²

Figure 3.1: Initial gathered metrics of Villa 31. It is important to acknowledge the significant margin of error given the constant and rapid change experienced in informal settlements (Source: Author)

SCALE "Porosity is a Transceller Concept..."

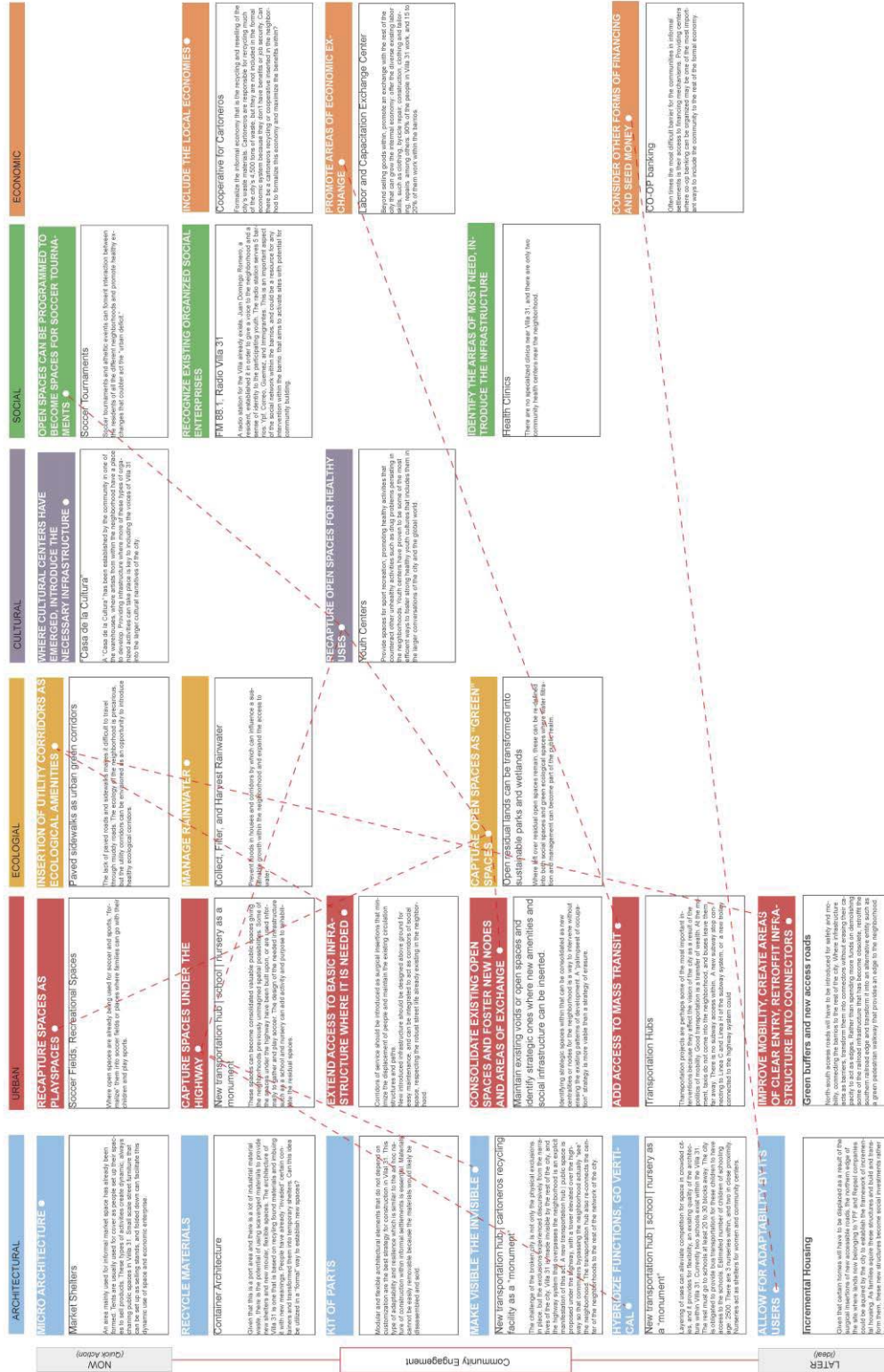


Figure 3.2: Matrix analyzing the holistic methods to approach urban interventions in informal settlements, specifically in Villa 31. The scale of the "now", and the "later" must be considered, and community engagement should be an integral piece of all propositions. (Source: Author)

URBAN TERRITORY

Overview:

Villa 31 and 31BIS developed over the government owned land in the North East edge of the city. Villa 31 has become the most iconic and emblematic of informal settlements in Buenos Aires for, unlike the rest of the *Villas* in the city, this is the only one that is not located in the south. Villa 31 formed itself between the waterfront edge of the port named Puerto Nuevo and the railroad tracks that terminate in the head station of *Retiro*. The neighborhoods within are surrounded by heavy infrastructure, including the railroad system, the terminal bus station, and the industrial port, yet none of these transport infrastructures directly benefit the community itself. The terminal bus station services long regional trips outside of the city, the port manages the ship container industry, and the railroads bring people in and out of the city. Actual transportation that allows for mobility to and from the “formal” city however is lacking significantly. No public buses reach the neighborhood itself, except for a series of buses that can be taken outside of *Retiro*. These allow for significant mobility access to those living on the eastern ends of the settlement, in the Barrio Guemes. No subway stop comes into these neighborhoods. Similarly, taxis rarely enter the neighborhoods, and so most people must walk outside of the neighborhood to reach forms of transportation.

Infrastructure in this sense acts largely as a divider rather than a connector. People are often forced to cross the railroad tracks in inconvenient

locations to be able to access their neighborhoods. The elevated highway that was built in 1996 clearly bypassed the neighborhood, and forced many residents to move out of their homes.

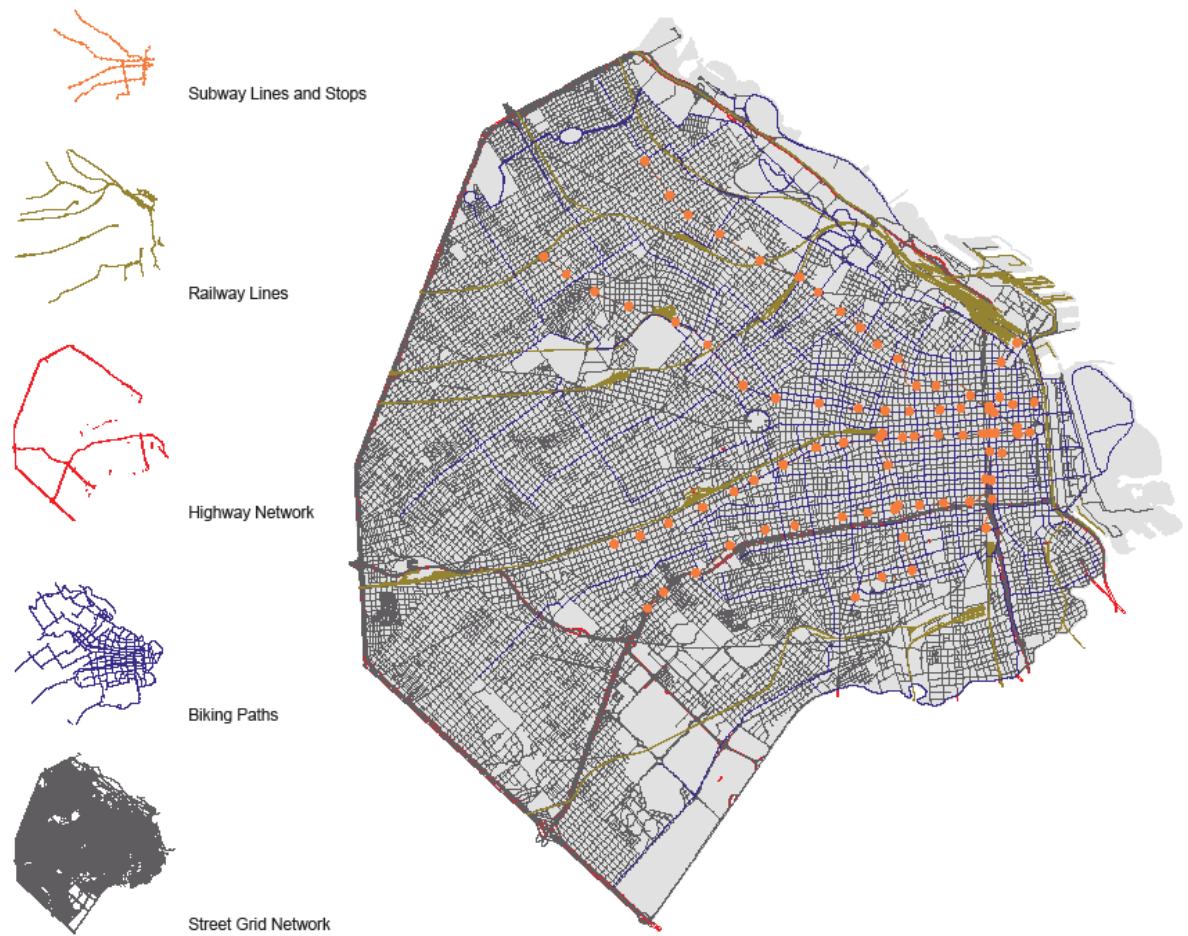


Figure 3.3: Layers of mobility infrastructure of Buenos Aires (Source: Author)

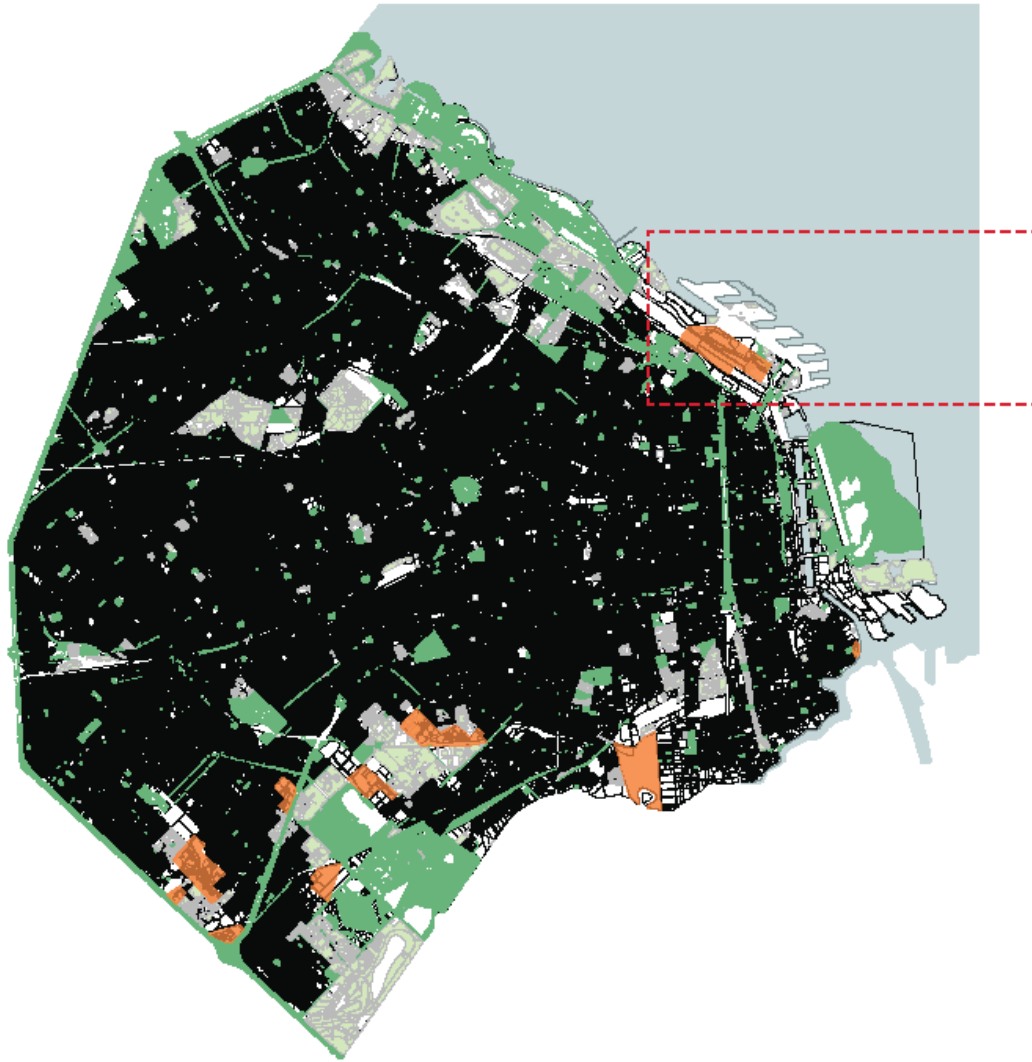


Figure 3.4: Mapping the informal settlements in Buenos Aires. An overlay of the public open spaces, private green spaces, and street network reveals the pockets of “non-spaces” in the city. However, looking deeper into these areas reveals that whole communities inhabit many of these places. These orange markers are the informal settlements of Buenos Aires. (Source: Author)

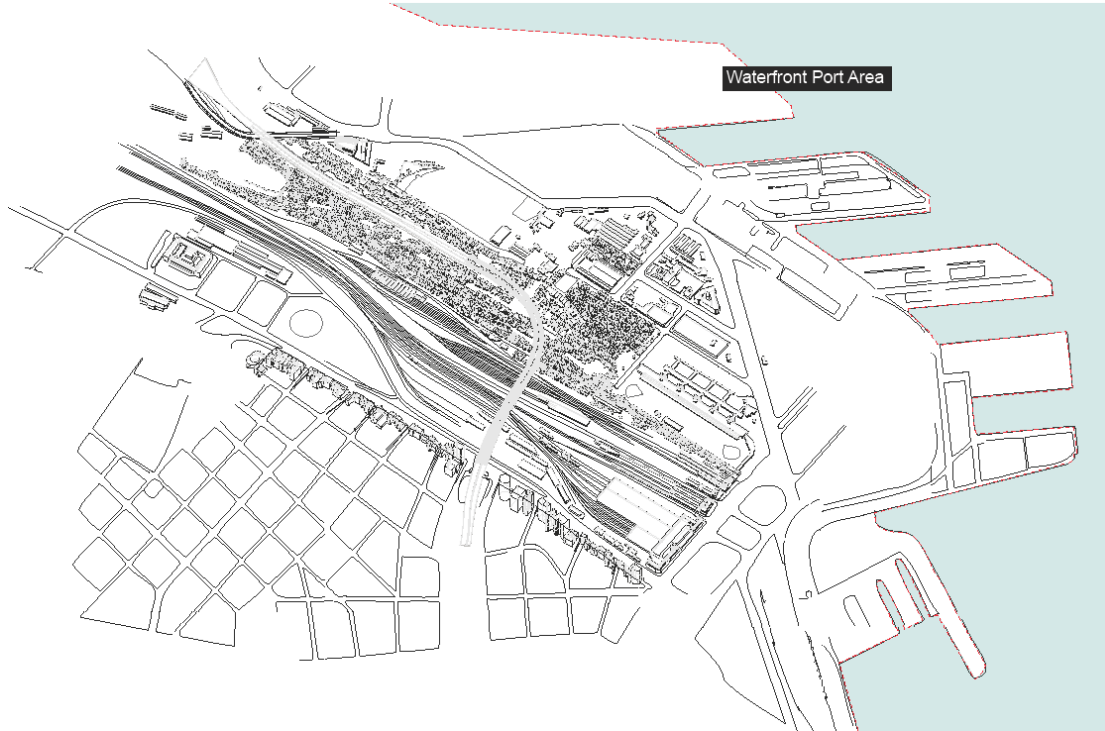


Figure 3.5: Waterfront Area (Source: Author)

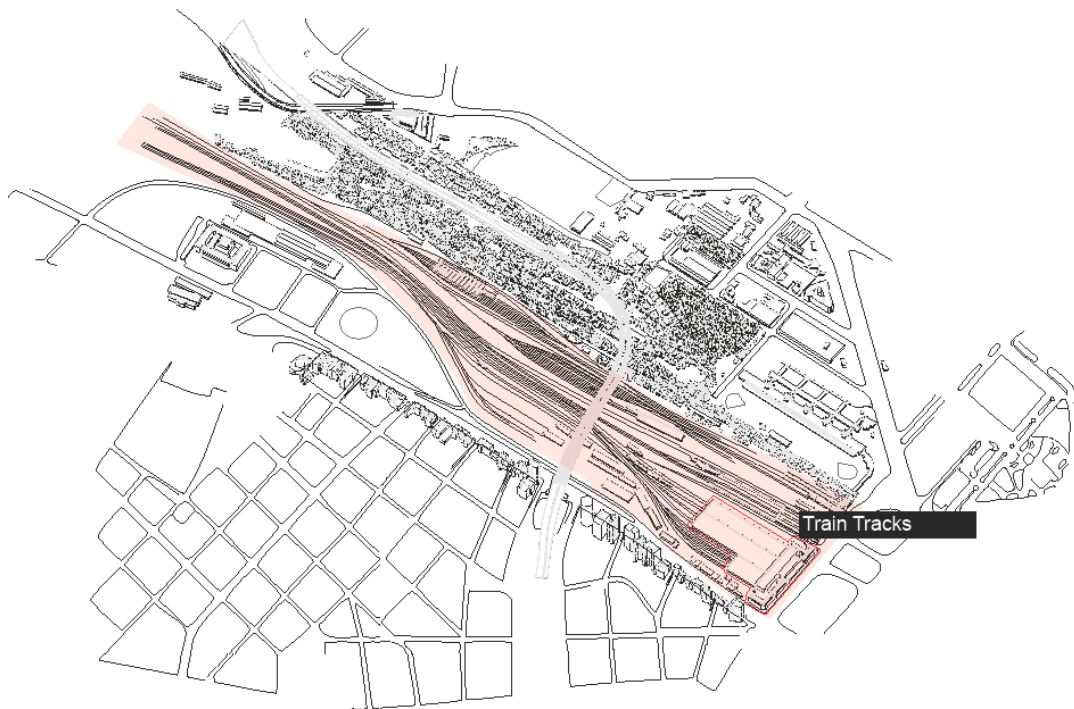


Figure 3.6: Train Tracks (Source: Author)

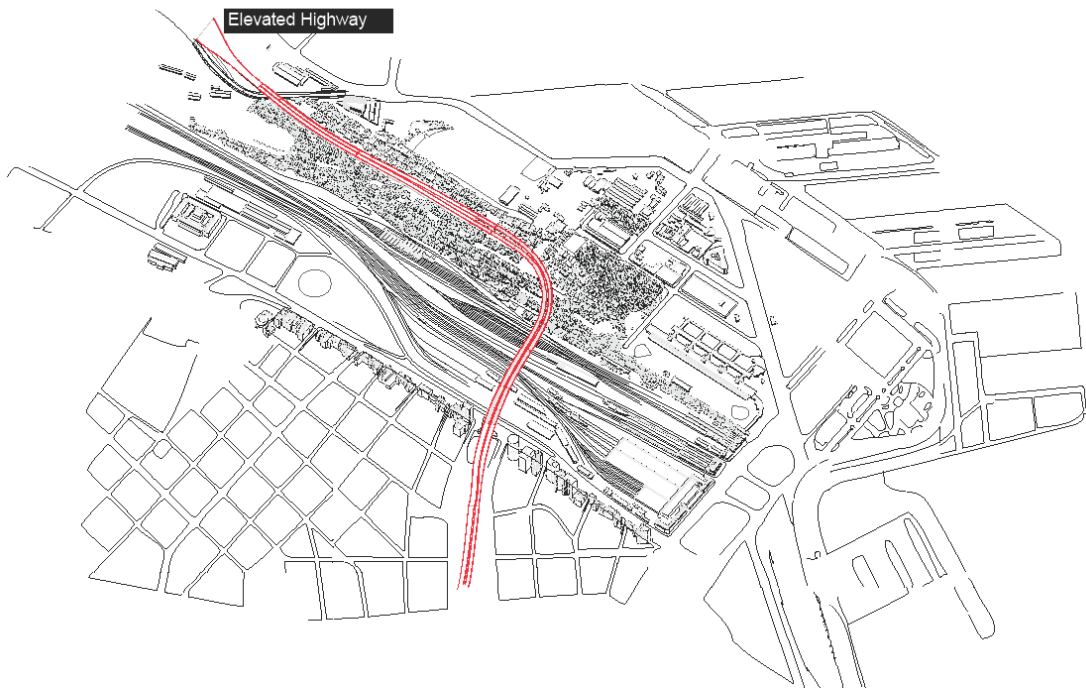


Figure 3.7: Elevated Highway (Source Author)

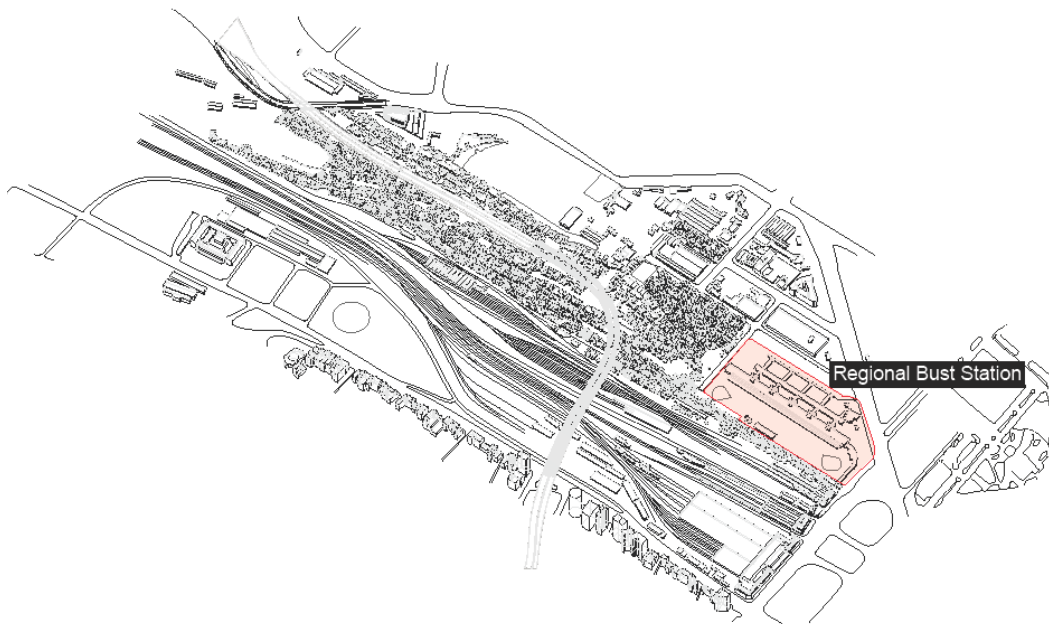


Figure 3.8: Regional Bus Station (Source Author)



Figure 3.9 Settlement Patterns: (Source: Author)

Strategies:

The following is a series of initial strategies that were developed as a synthesis of the collected and analyzed information about Villa 31. These strategies were defined prior to visiting the site, and they are meant to provide the guideline or methodology by which interventions should take place in informal settlements. The fact that they are defined as strategies rather than finite projects allows for them to be applied and transformed depending on the changing specific circumstances of the place.

- Extend the access to basic infrastructure where still needed within the *barrios*

- Corridors of service should be introduced as surgical insertions to minimize displacement of people and to maintain the existing circulation structures and paths.
- New introduced infrastructure should be designed above ground for easy maintenance, and can be integrated to act as corridors of social space, respecting the robust street life already existing in the neighborhoods.
- Add access to mass transit that allows for greater accessibility
 - Transportation projects are perhaps some of the most important interventions because they affect the vision of the city as a result of the politics of mobility.
 - Good transportation is a transfer of wealth.
 - Adding physical mobility is a key aspect of allowing for social mobility.
- Improve mobility and create areas of clear entry and movement into and within the Villa 31
- Identify strategic spaces that, with a new design, can consolidate existing centralities and therefore acquire distinct identities that can result in a new spatial structure
- Capture spaces under the highway for their potential as community spaces
 - These can become consolidated valuable public spaces giving previously unimagined spatial possibilities to the neighborhoods
 - As Urban Think Tank claims, *“the task of imbuing these lineal spaces with activity, life and purpose usually requires a new stimulus—linking spaces, introducing amenities or simply rehabilitating surfaces.”*³⁵
 - In Villa 31 people are often using these spaces to build homes or as areas to play sports and gather
- Consolidate existing open spaces and foster new nodes and areas of exchange
- Where infrastructure and walls act as barriers, transform them into connectors without erasing their capacity to act as edges
 - Linear parks as green buffers can seek to give form and limit to sprawl while also acting as a movement edge

³⁵ “UTT Tool Box,” http://www.u-tt.com/pdf/UTT_ProjectToolBox.pdf

- Incremental housing should be developed for the displaced homes. Incremental housing, as ELEMENTAL claims, acts as a social investment instead of a social expense.³⁶

Application:

NOW (*Quick action*) and LATER (*Ideal*):

- Where open spaces are already being used for soccer and sports, “formalize” them into soccer fields
- Consolidate the emergent open spaces in the fabric of the Villa as well as the principal paths by paving them
- The boundaries near the train station and the abandoned industrial buildings can be turned into a negotiated edge of a green buffer and movement path through the Villa, thus connecting it to the rest of the city
- Transportation hub: A new subway stop connecting to the *Linea C* between the *Retiro* stop, and the *Linea H*, could be the most significant long term change to integrate Villa 31 to the rest of the city
- Incremental housing developed on the northern edge of the settlement, where obsolete Port occupied land can be negotiated and used for new relocation of housing
- Once new areas of housing are established, new movement corridors running North South will have to be introduced for emergency vehicles to enter, but the displacement of homes should be minimal

ARCHITECTURAL TERRITORY

Overview:

The architecture of informal settlements is one that develops from necessity and ingenuity. Construction is often developed intuitively and based

³⁶ Aravena, Alejandro. 2013. *Elemental: Incremental Housing and Participatory Design Manual*. Hatje Cantz Verlag GmbH & Co KG, 19.

on low-technology methods. Practicality is key in the existing buildings at Villa 31, and so construction is based mainly on cinderblock and concrete-frame techniques. The material choice and building technique has a logic to it as well, for it allows for the buildings to grow over time. As families accumulate more money, they tend to invest in their homes by building more rooms and floors. Given the restrictions of this structural method, a major quality of informal settlements is that the height of their buildings is usually capped to a maximum of five floors. In Villa 31 the majority of buildings have between one and three floors, with some buildings of four and five floors located towards the eastern end of the settlements where the older communities exist.

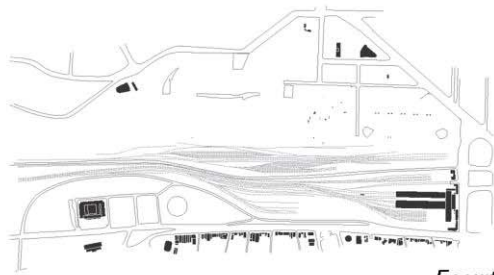
An ingenious practice that can be found within Villa 31 is the use of old railroad track beams as a construction material for many of the homes. Given that the government is absent in this setting, the people of Villa 31 are forced to appropriate found materials and objects. In fact, there is in Buenos Aires a court judgment that prohibits the infiltration of construction materials into the settlement as a way to control and limit the expansion of the neighborhood. Although a recent article published in *La Nacion* newspaper claims that 269 trucks have been detained as they were trying to illegally bring in more construction materials, nothing has really stopped the smuggling of sand, bricks, and cement by people constantly carrying the materials in smaller wheelbarrows.

Beyond practicality, there is a sense of pride and ownership in each home that is developed. The people living in informal settlements may begin

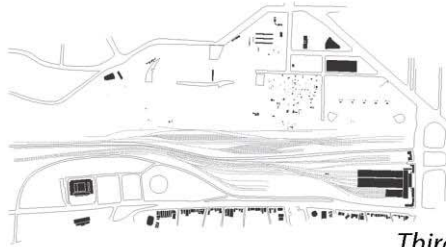
each structure as scaffoldings covered in cheap recycled materials, but they are doing so with the foresight that they will upgrade as they accumulate more wealth. As a result there is a continuum that can be traced between the formal and the informal, where elements such as TV dishes and decorations that imitate and act in the same way as in the formal city abound.

The most inspiring element of the informal settlements for architects and urbanists is their existence as a result of resilience and adaptability. They are formed largely because of lack of access to mechanisms of financing for housing options within the formal city, but also because of the programmatic limits within the formal city. In other words, there is an element of choice when it comes to building in Villa 31, for it allows people to design homes and spaces that can adapt to the arrival of more extended family members, that can function as both living units as much as work or commercial spaces, and that can be constantly upgraded or changed based on people's needs and desires. The architecture of Villa 31 is therefore one that is developed hands on and that is constantly mutating and adapting to changing circumstances. It is the kind of architecture that reclaims open spaces such as streets and corridors that are used as plazas, markets, playgrounds and civic spaces often simultaneously or at different times. It is an architecture that hybridizes because it is not prescribed to a singular typology, and as a result generates a more vigorous street life than what one often finds in today's planned communities. Notions of public and private are therefore hard to define as

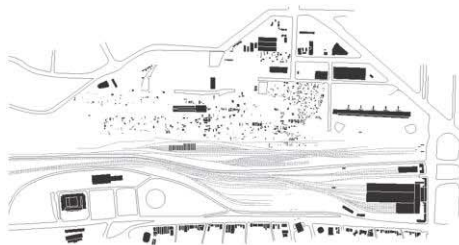
interior and exterior spaces are used for multiple purposes at different times,
thus resulting in an urbanism that is incredibly dynamic.



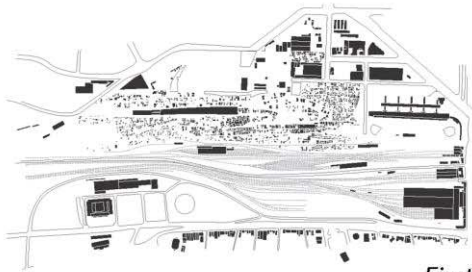
Fourth Level



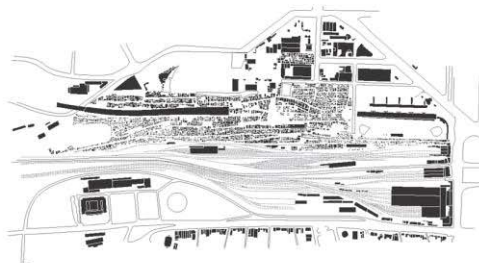
Third Level



Second Level



First Level



Street Level

Figure 3.10 : Figure Grounds at each level reveal areas that are more consolidated (Source: Gustavo Cardon, Universidad de Palermo)

Strategies:

- Kit of Parts:
 - Modular and flexible architectural elements that do not depend on customization are the best strategy for construction in Villa 31. This type of adaptability and resilience which is similar to the ad hoc nature of construction within informal settlements is essential. Materials cannot be easily removable because the materials would likely be disassembled and sold.³⁷ This strategy is derived from the Urban Think Tank Kit of Parts.

- Hybridize functions and Build Vertical
 - Mixing uses and functions can alleviate the competition for space in the overcrowded *Barrios*
 - Hybridizing functions allows for flexibility, a quality of the heterogeneous, “un-authored” space that is not codified to a single typology

- Flexibility and adaptation by its users
 - Spaces allow themselves to be appropriated by the users, thus challenging the top-down approach of imposed designs

- Foster coherence while articulating the multiple logics of the place

- Micro Architecture

- Recycle Materials

- Make Visible the Invisible:
 - The challenge of the broken city is not only the physical exclusions in place, but also the psychological exclusions experienced from the collective understanding of the city. Villa 31 is made invisible by the rest of the city, and the highway system that overpasses the neighborhood is an explicit manifestation of this act.

- Buildings as “contact zones”
 - Use buildings to activate things, as dual zones
 - Facilitate interaction

- Indeterminate architecture

³⁷ “UTT Tool Box,” http://www.u-tt.com/pdf/UTT_ProjectToolBox.pdf

- In flux, able to adapt to the changes in human need, cultural, social and economic trends form and space are at the service of those who appropriate it, the users, and ceases to become a predetermined, finite object that inscribes one singular meaning that comes from a place of control

Application:

- *Recycle Materials_Container Architecture:*
 - Given that this is a port area and there is a lot of industrial material waste, there is the potential of using scavenged materials to provide new shelters and new modular, flexible spaces. The architecture of Villa 31 is one that is based on recycling found materials and imbuing it with new meanings. People have already “invaded” certain containers and transformed them into temporary shelters. Can this idea be utilized in a “formal” way to establish new spaces?
- *Micro Architecture_Market Shelters:*
 - An area mainly used for informal market space has already been formed. Tents are usually used for cover as people set up their spaces to sell products. These types of activities create dynamic, always changing public spaces in Villa 31. Small-scale street furniture that can be set up as selling stands, and folded down can facilitate this dynamic use of space and economic enterprise.
- *Make Visible the Invisible_New mobility and paved corridors and vertical elements*
 - Elements that tower over the highway, so that commuters bypassing the neighborhood actually “see” the neighborhood can re-define the image of the Villa 31. The connectivity of new paving paths can also allow for the navigation and way finding from neighborhood to neighborhood, all the way out to the formal city’s edges. This extends an invitation to the formal to meet the informal within.
- *Hybridize functions and Build Vertical_New transportation hub | school | nursery*
 - Layering of uses can alleviate competition for space in crowded cities, and it provides for flexibility, an existing quality of the architecture within Villa 31. Currently two schools exist within the Villa 31. The rest must go to schools at least 20 to 30 blocks

away. The city is obligated to provide bus transportation for these children to have access to the schools. Estimated number of children of schooling age: 2500. There are 3 nurseries within, and two in close proximity. Nurseries act as shelters for women and community centers.

- Allow for Adaptability by its Users_ *Incremental Housing*
 - Given that certain homes will have to be displaced as a result of the surgical insertions of new accessible roads, the northern edge of the site where lands belonging to YPF and Repsol companies could be acquired by the city to establish the framework of incremental housing. As families acquire these structures and build and transform them, these new structures become social investments rather than social expenses.

ECOLOGICAL TERRITORY

Overview:

The ecological systems of the Villa 31 are in precarious conditions.

Perhaps one of the most important things the neighborhoods within require is a consolidation and or improvement of the existing public spaces. Given that the settlement was established informally, roads were not part of the territory. As a result, many of the necessary services the densely built neighborhoods need cannot be provided through the ad hoc network of passages.

Emergency vehicles cannot enter the neighborhoods. The lack of sidewalks within most of the neighborhood also makes it particularly difficult to travel through the muddy roads, and people often claim they are embarrassed to arrive at work with muddy shoes. When it rains heavily houses flood because there is no significant rainwater management system. Utility systems have been partially introduced to the Villa 31 through the operations of the Ministerio de Espacios Publicos, and maintained by the *Unidad de Gestión de*

Intervención Social, the entity established two years ago by the mayor of Buenos Aires to address the supervision of projects related to the improvement of living conditions in the Villas.

By now most the neighborhoods of Villa 31 have water and sewage. The electricity system is informal in many areas, as people tap into other legal infrastructures existing on the peripheries. Given that much of the system is not maintained and it is not quality infrastructure, this creates many hazards and complications for the residents of Villa 31.

Strategies:

- Insertion of Utility Corridors as Ecological Amenities
- Manage rainwater
- Promote sustainable ecologies by creating access roads for immediate needs, while minimizing disruption and allowing for relocation of displaced homes
 - Access has to be provided in phases, given that certain homes will have to be relocated
- Capture Open Spaces as “Green Spaces”

Application:

- Insertion of Utility Corridors as Ecological Amenities_*Paved sidewalks as urban green corridors*
 - The lack of paved roads and sidewalks makes it difficult to travel through muddy roads. The ecology of the neighborhood is precarious, but the utility corridors can be envisioned as an opportunity to introduce healthy ecological corridors.
- Collect, Filter, and Harvest Rainwater
- Prevent floods in houses and corridors by which can influence a sustainable growth within the neighborhood and expand the access to water.

- Capture Open Spaces as “Green Spaces”_ *Open residual lands can be transformed into sustainable parks and wetlands*
 - Where left over residual open spaces remain, these can be re-defined into both social spaces and green ecological spaces where water filtration and management can become part of the public realm.

SOCIAL TERRITORY

Overview:

The Villa 31 consists of six neighborhoods within, defined by both ethnic differences as well as the amount of time people have been settled in place. The communities have existed for several generations, and as such, significant levels of social cohesion and negotiation are visible within. Among the many examples is the radio station called Radio Villa 31 FM 88.1, which was founded and managed by Juan Domingo Romero, serving 5 *barrios*, or neighborhoods, within: YPF, Correo, Guemez, Immigrantes and Comunicaciones. The radio station acts as a way of connecting the community, giving a voice to the youth who participate in it, as well as allowing for the larger community to establish identities and sense of belonging, something often negated and ignored by the rest of the city.

One of the social infrastructure deficits in the Villa is the lack of specialized clinics, and only two community health centers exist near the neighborhood. In addition, there are currently 3 nurseries within the neighborhood, and two are in close proximity. In Villa 31 nurseries act as shelters for women and as simultaneous community centers. Lastly, there are currently two schools existing within the Villa 31. The rest must go to schools at least 20 to 30

blocks away. The city is obligated to provide bus transportation for these children to have access to the schools. The estimated number of children of schooling age is 2500.

Strategies:

- Open spaces can be programmed to become spaces for soccer tournaments
- Foster a strong healthy youth culture: “architects can lead a process of urban and social transformation in the cities of developing countries. This transformation is an ongoing and value-adding movement based on education and skill-building. A network of permanent youth centers, open to all young people, will give youth the skills and opportunities to be leaders and to nurture and develop their community. The aim is to encourage youth to participate in athletics, while also bringing them into the global conversation about the major practical, intellectual, cultural and ecological questions facing our increasingly urban world.”³⁸
- Recognize existing organized enterprises
- Identify the areas of most need and introduce the infrastructure

Application:

- Soccer tournaments and athletic events can foment interaction between the residents of all the different neighborhoods and promote healthy exchanges that counteract the “urban deficit.”
- The radio station, for example, is an important aspect of the social network within the barrios, and could be a resource for any intervention within the barrio that aims to activate sites for potential for community building.
- There is a serious need for health clinics within the Villa given that there are no specialized clinics, and there are only two community health centers near by

³⁸ “UTT Tool Box,” http://www.u-tt.com/pdf/UTT_ProjectToolBox.pdf

ECONOMIC TERRITORY

Overview:

The definition of “slum” becomes hard to apply to Villa 31 when today it is estimated that about 90% of the people there actually work. This is the case of many informal settlements in Latin America. In fact, the formal city and Villa 31 exist in a relationship of reciprocity. This is evident in the simple fact that most of the people living in the neighborhood actually work in the formal city. The relationship however is asymmetrical given that, although people living in the Villa 31 go into the formal city, the people in the formal city never really approach the informal settlement. In fact, most people claim that when they are asked by other people in Buenos Aires their place of residence they almost never say they actually live in Villa 31 because they know that they will immediately be categorized by the many prejudices that exist about its inhabitants. As a result this reinforces the sense of invisibility for its inhabitants.

Beyond the economic connection with the rest of the city, it is estimated that 15 to 20% of the people find jobs within the Villa 31 based on small businesses such as selling cakes, fixing shoes, hairdressing, etc. All the same services and products that are in the formal city can be found within including retail shops, cafes and restaurants. There are also informal markets that developed within the neighborhood. Although these may happen throughout the main corridors of the neighborhoods, there is an open space

on the easternmost edge of the settlement that has been reappropriated over time to become a central focus within the larger network of the neighborhood.

Other forms of semi-informal economies that have developed in Buenos Aires are the so-called “*cartoneros*,” literally meaning “the cardboard people.” These are people who every night starting at 6pm leave the informal settlements of Buenos Aires to collect and sell recyclable materials that they find in the wealthy neighborhoods of the formal city. The city produces roughly 4,500 daily tons of waste that the *cartoneros* sort through in order to find materials that can be sold for recycling purposes such as paper, cardboard, metal and glass. The city of Buenos Aires currently recycles less than 10% of its waste, and a large portion of this is a result of the *cartoneros*’ work. Former passenger trains have been transformed by removing all of its seats to be used by the *cartoneros* carrying the large carts full of the scavenged materials. These materials are then taken into newly formed collectives that sell the materials or turn it into new products. The *Tren Blanco* cooperative is one of these cooperatives. It purchases plastics that are then shredded and packaged to be sold and sent to as far away as Japan.

The city has semi-formalized this activity as the municipality has developed an “urban recycling policy” that allows for what they call “Urban Reclaimers” to be registered and therefore become part of the Urban Hygiene policies. Since 2007, there are 15,526 people registered as these “Urban Reclaimers.” In addition, the city has established “green centers” such as the *Tren Blanco* cooperative as infrastructures that allow for the activities of

selecting, baling and gathering the recycled materials for selling purposes.

This form of organization therefore walks the line between that which is formal and informal, given that the city is providing some form of recognition and allowing for the organization of these groups of people. Yet *cartoneros* do not pay taxes and they do not have healthcare, childcare or job security. Thus the city relies largely on the informal sector to sort out its waste.

Strategies:

- Include and incentivize the local economies
- Promote exchanges with the rest of the city that can grow the internal economy: offer the diverse existing labor skills, such as clothing, bicycle repair, construction, clothing and tailoring, among others
- Co-op banking:
 - Often times the most difficult barrier for the communities in informal settlements is their access to financing mechanisms. Providing centers where co-op banking can be organized may be one of the most important ways to include the community to the rest of the formal economy.

Application:

- Establish a cooperative for the “*cartoneros*”
 - Formalize the informal economy that is the recycling and reselling of the city’s waste materials. Cartoneros are responsible for recycling much of the city’s 4,500 tons of waste, but they are not included in the formal economic system because they don’t have benefits or job security. Can there be a cartoneros recycling or cooperative inserted in the neighborhood to formalize this economy and maximize the benefits within?
- Provide for a labor and capacitation exchange center
- Establish a center for co-op banking to be organized and offered as a form of financing within the Villa

CULTURAL TERRITORY

Overview:

A “Casa de la Cultura” has been established by the community, and it functions in one of the warehouses. Its goal is to allow for the development of new artists within the community. Providing infrastructure where more of these types of organized activities can take place is key to including the voices of Villa 31 into the larger cultural narratives of the city.

Other forms of cultural activities within include the Radio where youth participates to maintain a voice for the community. It has been organized by Juan Domingo Romero who serves 4 barrios: Ypf, Correo, Guemez, and Immigrantes.

Strategies:

- Where cultural centers have emerged, introduce the necessary infrastructure
- Recapture Open Spaces for Healthy Uses

Application:

- Where cultural centers have emerged, introduce the necessary infrastructure_“*Casa de la Cultura*”
- Recapture Open Spaces for Healthy Uses_Youth Centers:
 - Provide spaces for sport recreation, promoting healthy activities that counteract other unhealthy activities such as drug problems persisting in the neighborhoods. Youth centers have proven to be some of the most efficient ways to foster strong healthy youth cultures that includes them in the larger conversations of the city and the global world.

LEGAL TERRITORY

Overview:

It is important to mention key aspects of the legal and policy aspects that circumscribe the current situation of Villa 31 and 31 BIS:

At the moment, there is almost no state presence within the neighborhoods.

The only presence that can be seen are the few people working in the UGIS (in charge of assisting with emergency infrastructure issues) and some Ministerio de Desarrollo Social social interventions. Sometimes a couple of police officers are seen walking around and inside the neighborhood as well.

In terms of policy and expenditures towards the settlement, only the government of the Autonomous City of Buenos Aires has a budget to invest in the Villa 31 and 31 BIS. This occurs through the *Plan de Mejoras*, which consists of 38 million pesos (roughly 4.7 million dollars) as it is set for this year. The projects these budgets encompass include the following:

underground sewage, potable water distribution, storm water drain systems; sidewalk pavings; public space upgrades. The *Plan de Mejoras* delineates that all work done with this budget must be carried out by cooperatives from the Villa 31.

Lastly, it is important to mention that Law 3341 signed in 2009 established the urbanization of Villa 31 and 31BIS, but the actual fulfillment of this mandate remains unclear and unresolved, given the political complexity of land ownership. As previously mentioned, the lands on which Villa 31 is settled belong to the National Government, yet it exists within the Autonomous City of Buenos Aires. Only the city has a program and a budget set aside to

ameliorate issues within the Villa, but there have been no significant moves to fully “urbanize” (as defined under the law) the neighborhoods. The intergovernmental disagreements and conflicts as to the future of this settlement has prevented to this day the execution of any plan to transfer land titles to the community of Villa 31 and 31 BIS.

SITE ANALYSIS

“...Urban articulations are also instrumental in the provision of public infrastructure and socio-political prestige. Although forced to act in accordance with market rules, the task that faces architects and urbanists is how to use urban strategies to generate quality spaces that do not erase the traces left by the development of territorial communities. To be responsible, an articulation must ask how we can point urban strategies in the right direction so as to articulate the city of fluxes with the city of places.”³⁹

The following series of diagrams reflect upon the analysis derived from the initial study of the site:

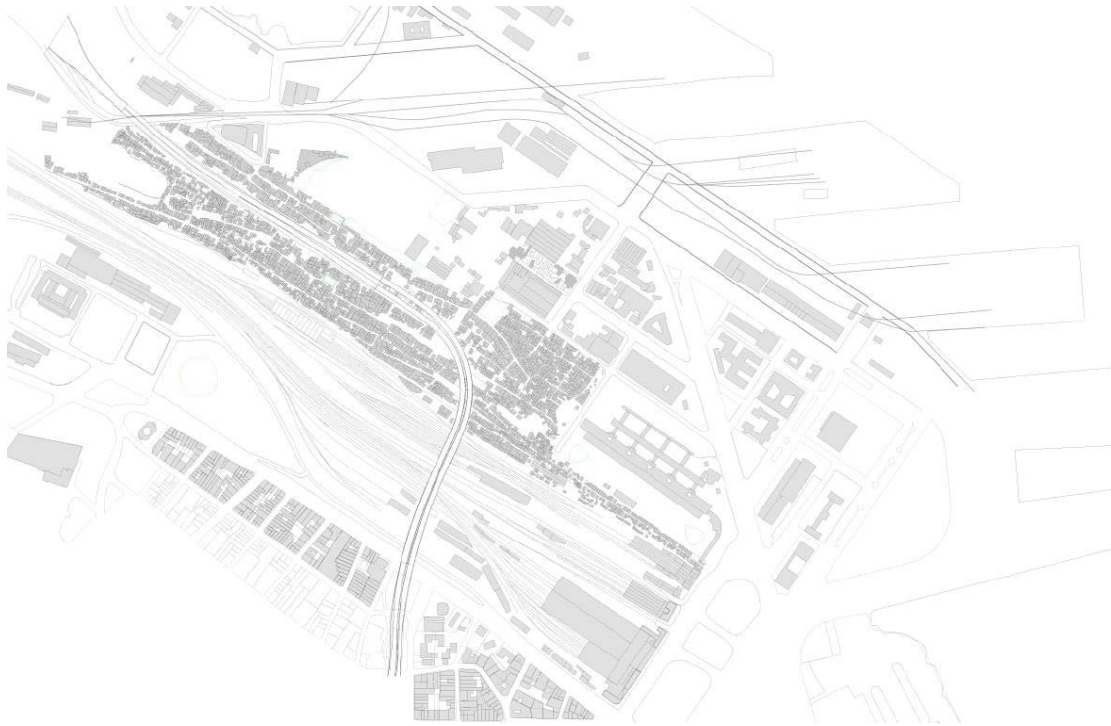


Figure 4.1: Existing Figure Ground (Source: Author)

³⁹ Jáuregui, Jorge Mario. “Urban and Social Articulation: Megacities, Exclusion and Urbanity,” in *Rethinking the Informal City: Critical perspectives from Latin America*. New York: Berghahn Books, 211.

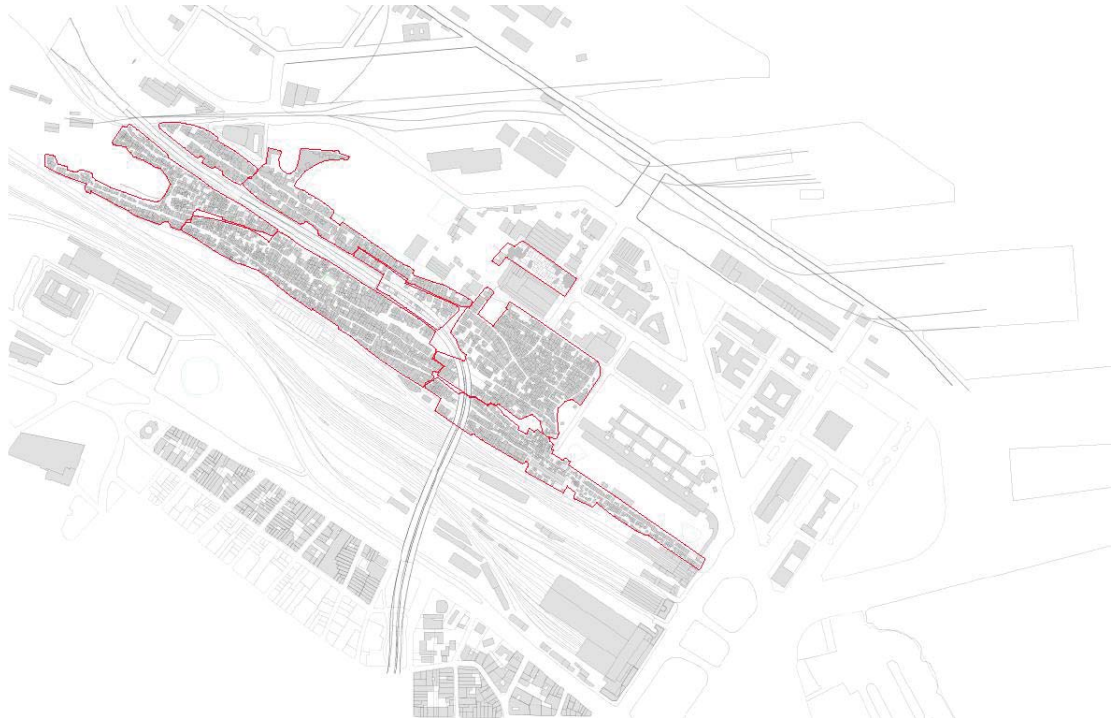


Figure 4.2: Existing Neighborhoods (Source: Author)

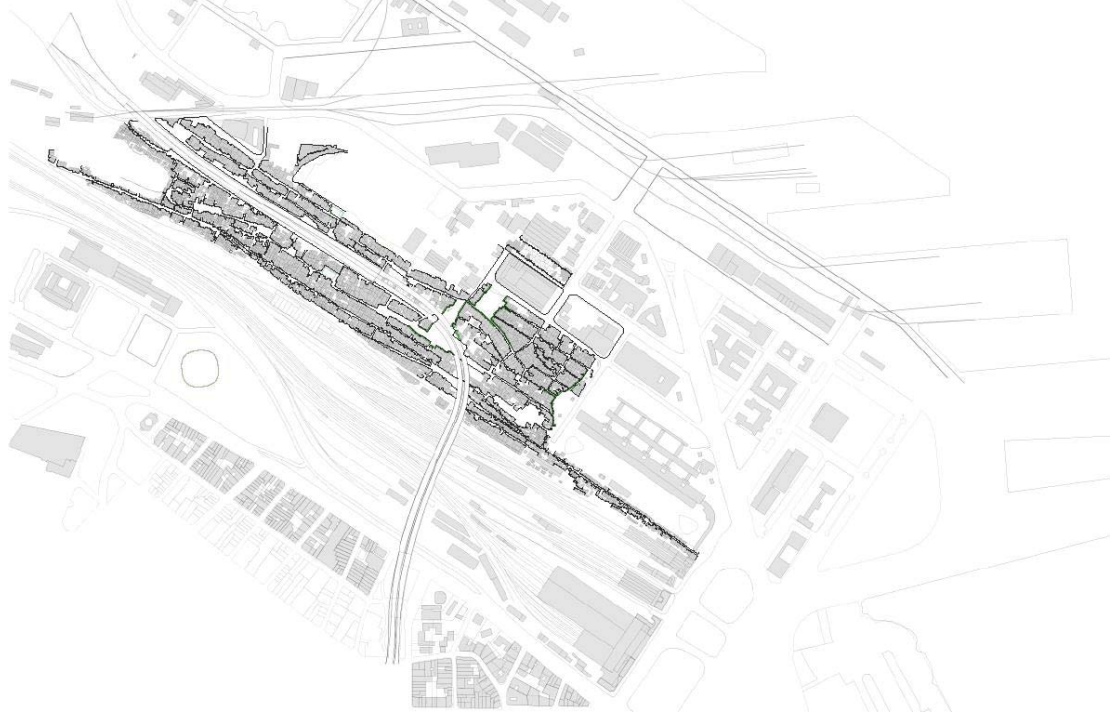


Figure 4.3: Existing Paths and Streets (Source: Author)



Figure 4.4: Large Open Spaces (Source: Author)



Figure 4.5: Medium Open Spaces (Source: Author)

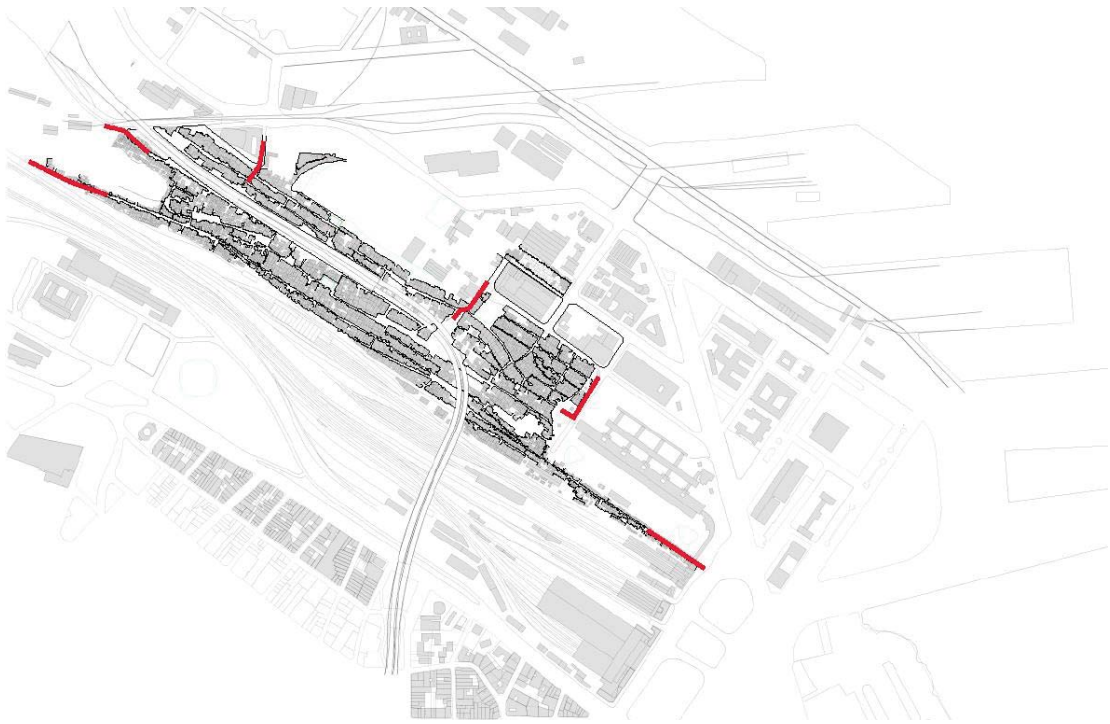


Figure 4.6: Six Entry Points (Source: Author)

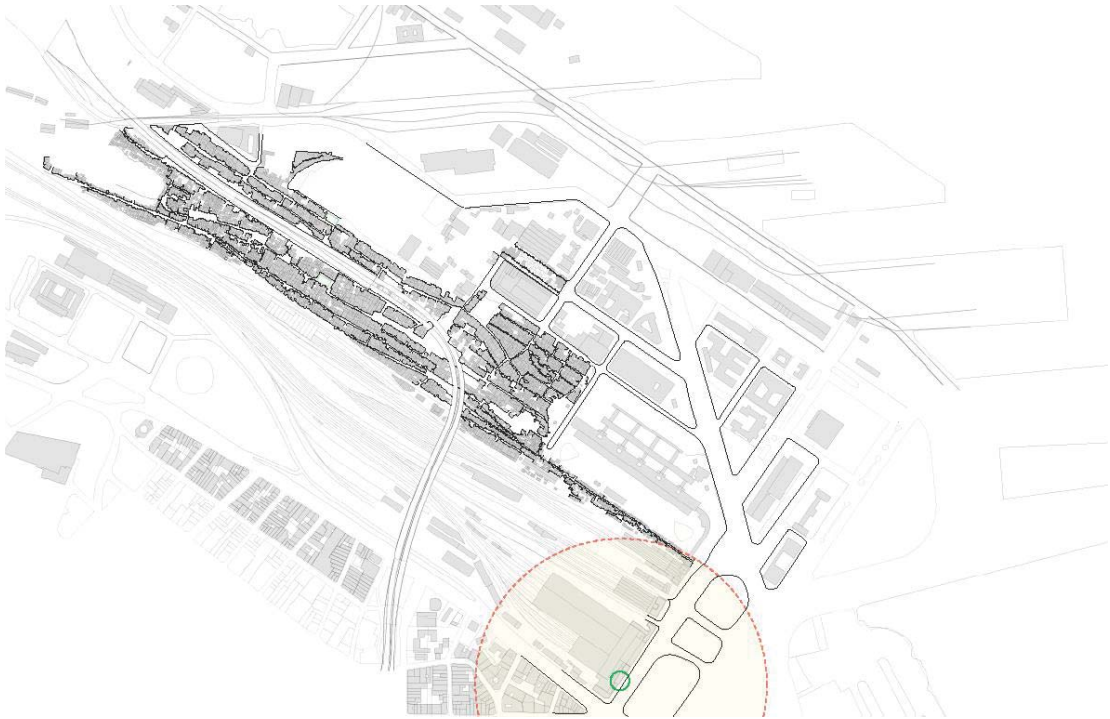


Figure 4.7: Five minute walk from metro access (Source: Author)

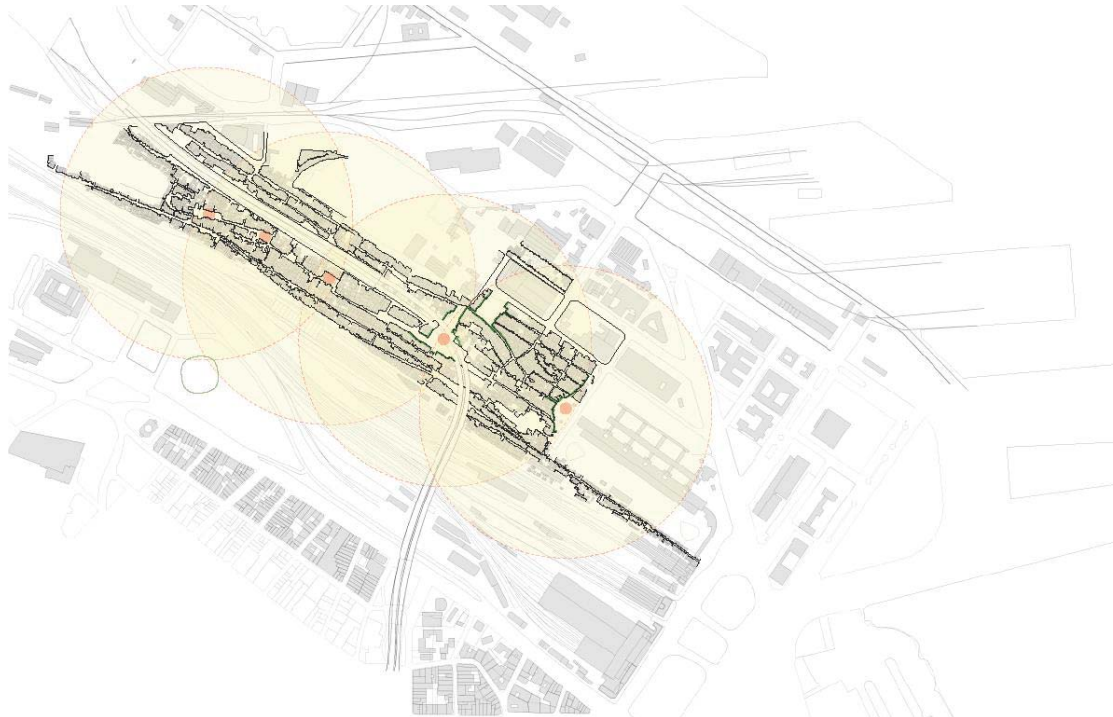


Figure 4.8: Five minute walks from each open space within the neighborhood (Source: Author)

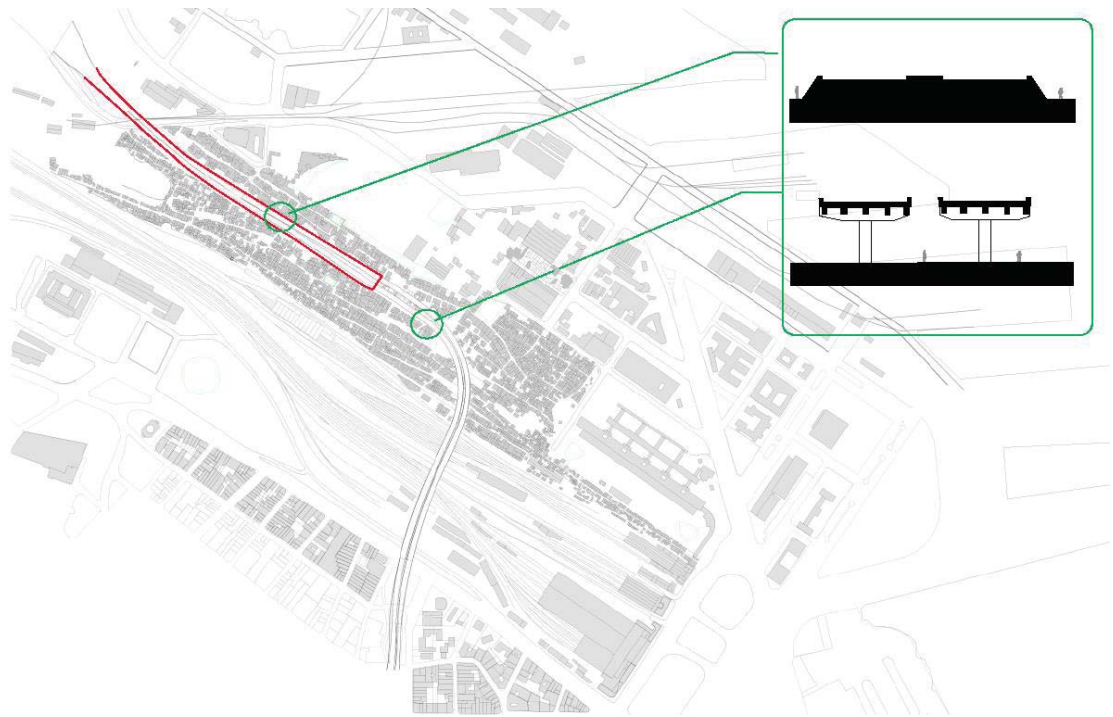


Figure 4.9: Highway boundary conditions (Source: Author)

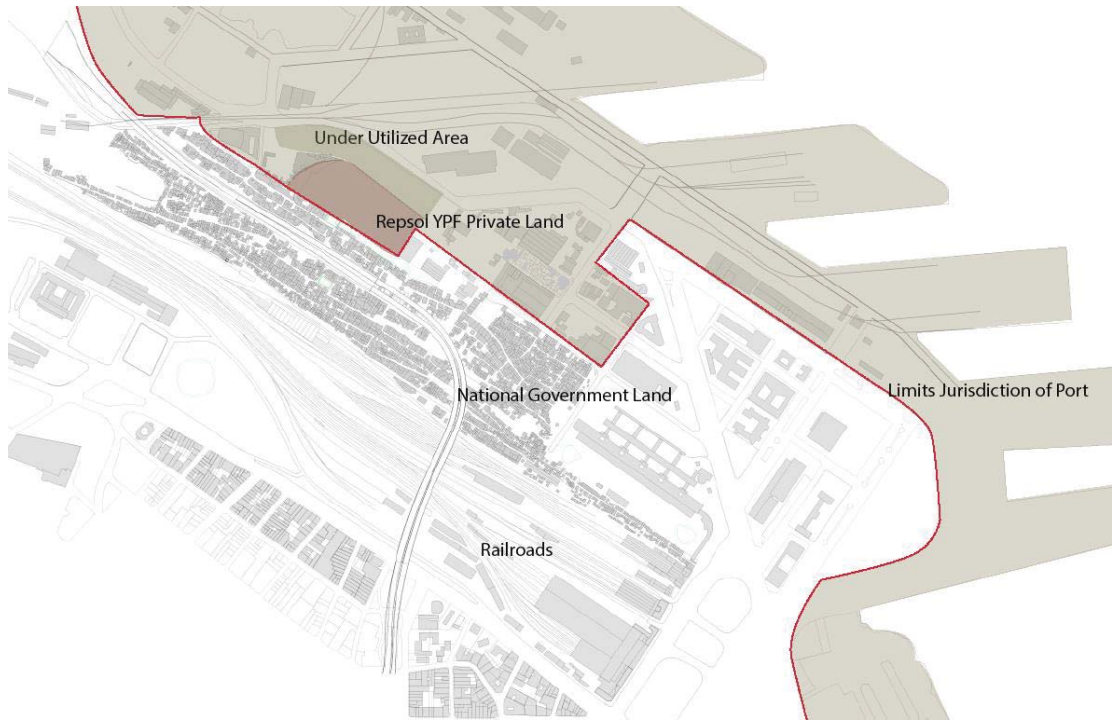


Figure 4.10: Public Lands, Port and National Government owned land (Source: Author)

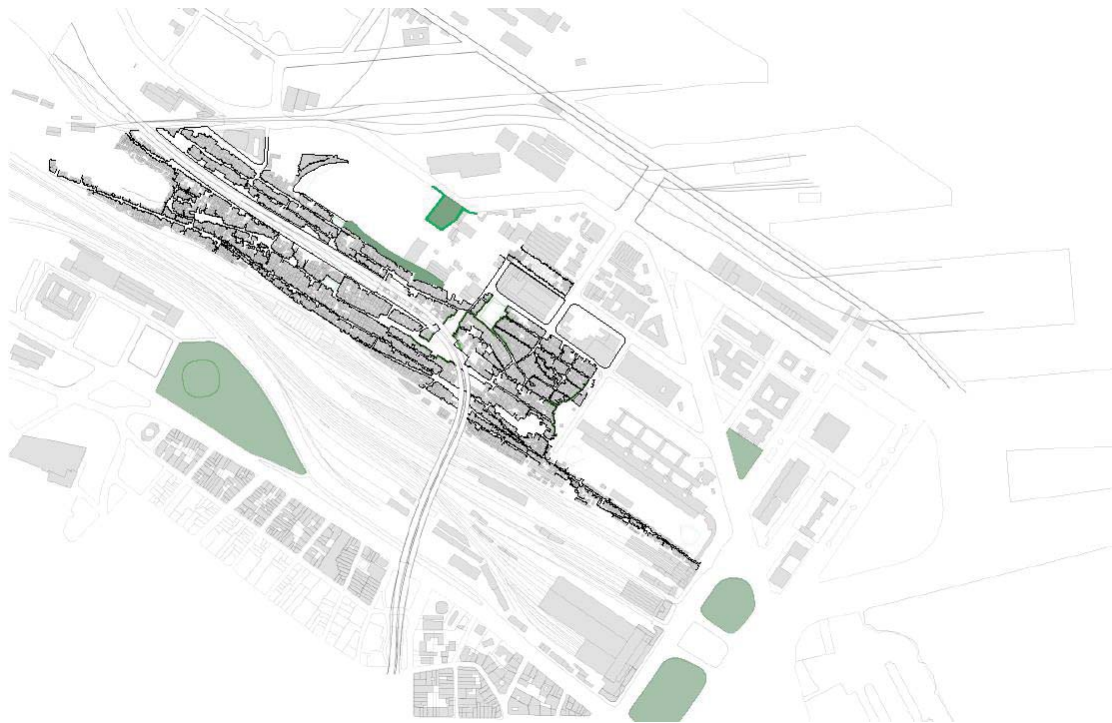


Figure 4.11: Landscape Green Spaces (Source: Author)

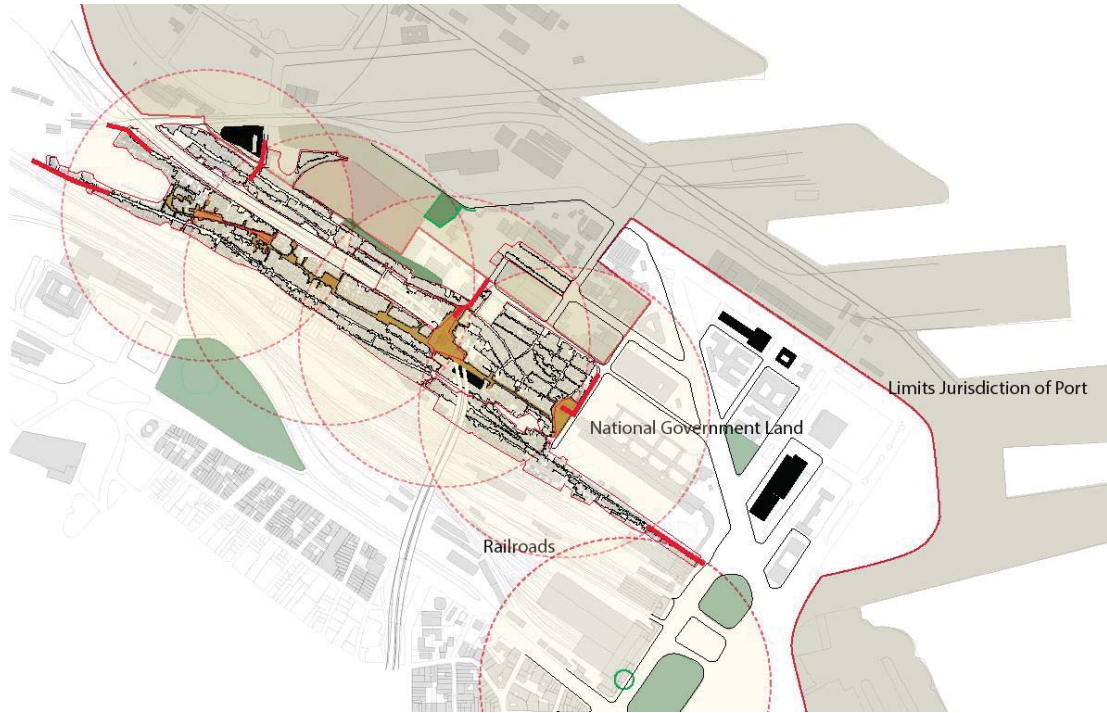


Figure 4.12: Site Analysis Overlay (Source: Author)

The following are the most significant conclusions from the site analysis:

- *The site is surrounded by infrastructure, yet poor connectivity to public transportation*
- *There are consolidated open spaces within, at 5 minute walk distances*
- *There are only six points of entry into the neighborhoods*
- *Porosity North to South is limited greatly*
- *There are no quality green spaces inside the Barrios*
- *The site is surrounded by industrial lands, container storage areas, and only a small portion of private land*

Given that this type of research this project attempts to break through some of the psychological and physical barriers that have divided the formal city from the informal sectors, it was extremely important to visit the site and carry through on-site interviews with local neighbors of Villa 31. The visit revealed findings that could not otherwise have been known. Although many of the conversations and experiences from these visits may go beyond the scope of this paper, it is important to clarify that most people that were interviewed have lived in these neighborhoods for over two decades and have built their homes with a lot of time, work and investment. The incredibly dense social networks that define the communities were also clearly evident in the activities and conversations that were shared during the visit. The type of community that has been built suggests that, as previously argued, it may be more accurate and fair to consider these informal neighborhoods as legitimate form of urbanity that require an alternative form of urbanism that takes the attitude of facing the “urban megalopolis as a new mode of nature not to be conquered but understood and manipulated.”⁴⁰

⁴⁰ Brillembourg, Alfredo, Klumpner, Hubert, Mitchell, Sam. “Captain Pan-America: Re-Thinking Urban Ecology,” in Last Round Ecology, SLUM Lab, Sustainable Living Urban Model. vol 16/17. 2011 (75-83)



Figure 5.1 Interviews on Site (Source: Author)

Other important factors were discovered during the on-site visit that drove the final prioritization of projects for the urban proposal. One of the key elements that were found on site are the existence of informal bus businesses that allow for the community to travel to and from the settlement. In fact, there is a service road in between some of the major railroad tracks, and it seems that a few neighbors have bought old buses and run a transportation business through this service road (See Figure 5.2). Closer to the western edge of the neighborhoods is where the communities are the most landlocked, far away from any form of access to public transportation. It was here where a passageway that broke through the railroad business' built wall was discovered. An informal path through this wall, through the railroad tracks and

over to the service road exists. It is common to see children coming back from school crossing these railroad tracks to get back into their neighborhoods.

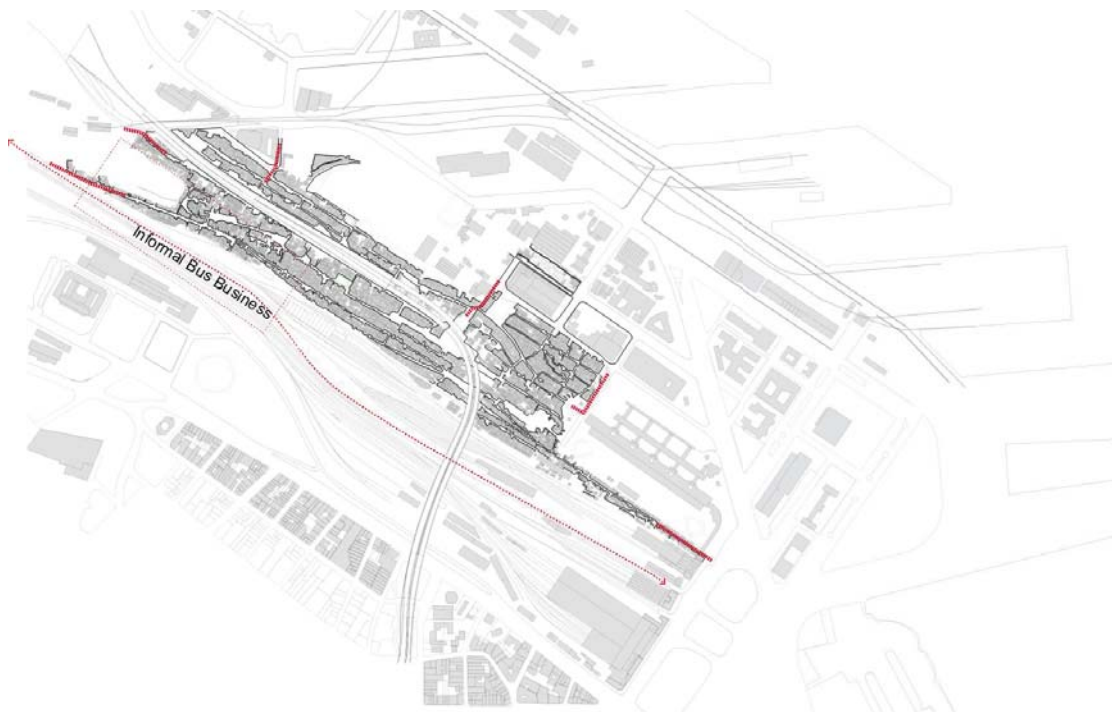


Figure 5.2: The politics of mobility: The south-east end of the settlement is by far the most vulnerable region of Villa 31 and 31BIS. An informal bus business has emerged to offer access to those living in these ends of the settlement. (Source: Author)

This information is also coincident with another major factor that was discovered on site: it was evident that the neighborhoods located south west were in much poorer and vulnerable conditions than those in the North and towards the eastern end. The type of construction in these neighborhoods showed that the newest arrivals into the community are settling here. There are many more children in the streets, and the conditions seem to be much more precarious. It was evident that this distinction is a result of the difference in access to physical mobility. The fact that the eastern neighborhoods have much more direct access to transportation, while those on the south west do

not, makes it so the level of opportunities is not homogenous throughout the settlement.

Given this realization, it became important to consider that the first investment for urban upgrading should take place in these neighborhoods. Much like the work done in Medellin, where the city obtains highly detailed census data to map what is called the “social index,” it would be important to carry through the same methodology in Villa 31 and 31BIS. Although such research is beyond the scope of this project, the realization that there are much more vulnerable areas within the same settlement is key in order to realize where the major problems are, and therefore where the majority or specific investment should be targeted to ameliorate the existing conditions.

This mobility factor could be addressed by allowing access for the communities in the south-east region. Access to the rest of the city is a problem that needs to be addressed from a larger infrastructural project. In fact, one of the policies of the city of Buenos Aires may directly address this concern: there is, at the moment, the proposal for two new metro stops at the edges of the Villa 31 settlement (See Figure 5.4). The city has for a while planned to “close the loop” of the subway routes with the Linea H in order to provide alternative paths to reach different neighborhoods of the city, without having to always make a transfer in downtown. Thus the Linea H intersects all other lines, alleviating the congestion that occurs in the historical center. In the last few years there have been proposals to extend two extra stops to the northern edges of Villa 31. This in itself would benefit the more than 30,000

people living in these neighborhoods, and it would drastically change the opportunities to access the city, jobs and educational facilities.⁴¹

As a result of these two major discoveries (one of the regional scale, the other of the internal neighborhood scale), it became evident that the urban proposal should become an accessibility route that would connect the northern end point where the new metro is proposed and the southern end point where the informal bus route currently exists (See Figure 5.3). Such a mobility corridor would have the catalytic impact of allowing for access both North and South, and it would address both the smaller, immediate scale of the informal bus route as well as the larger, ideal scale of the future metro infrastructure. Such a corridor could be the first intervention that provides the framework and the strategies that could be reapplied to the rest of the site in the future as ways to increase mobility and access for emergency vehicles over time, reconnecting the formal city with the informal settlement.

⁴¹ Castro, Angeles. *Proponen que el subte H tenga una estacion en la Villa 31 de Retiro*. La Nacion. June 06, 2013. (<http://www.lanacion.com.ar/1589087-proponen-que-el-subte-h-tenga-una-estacion-en-la-villa-31-de-retiro>)

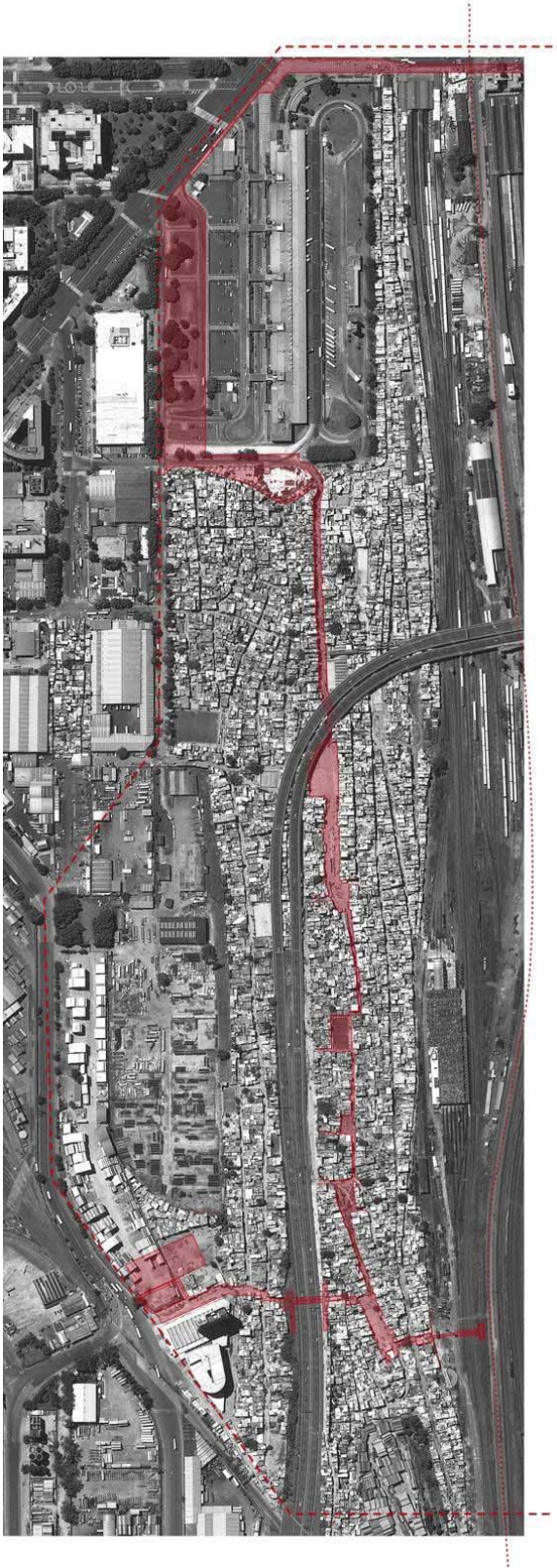


Figure 5.3: Network proposal: mobility corridor from north to south will be a catalytic change in terms of physical mobility (Source: Author)

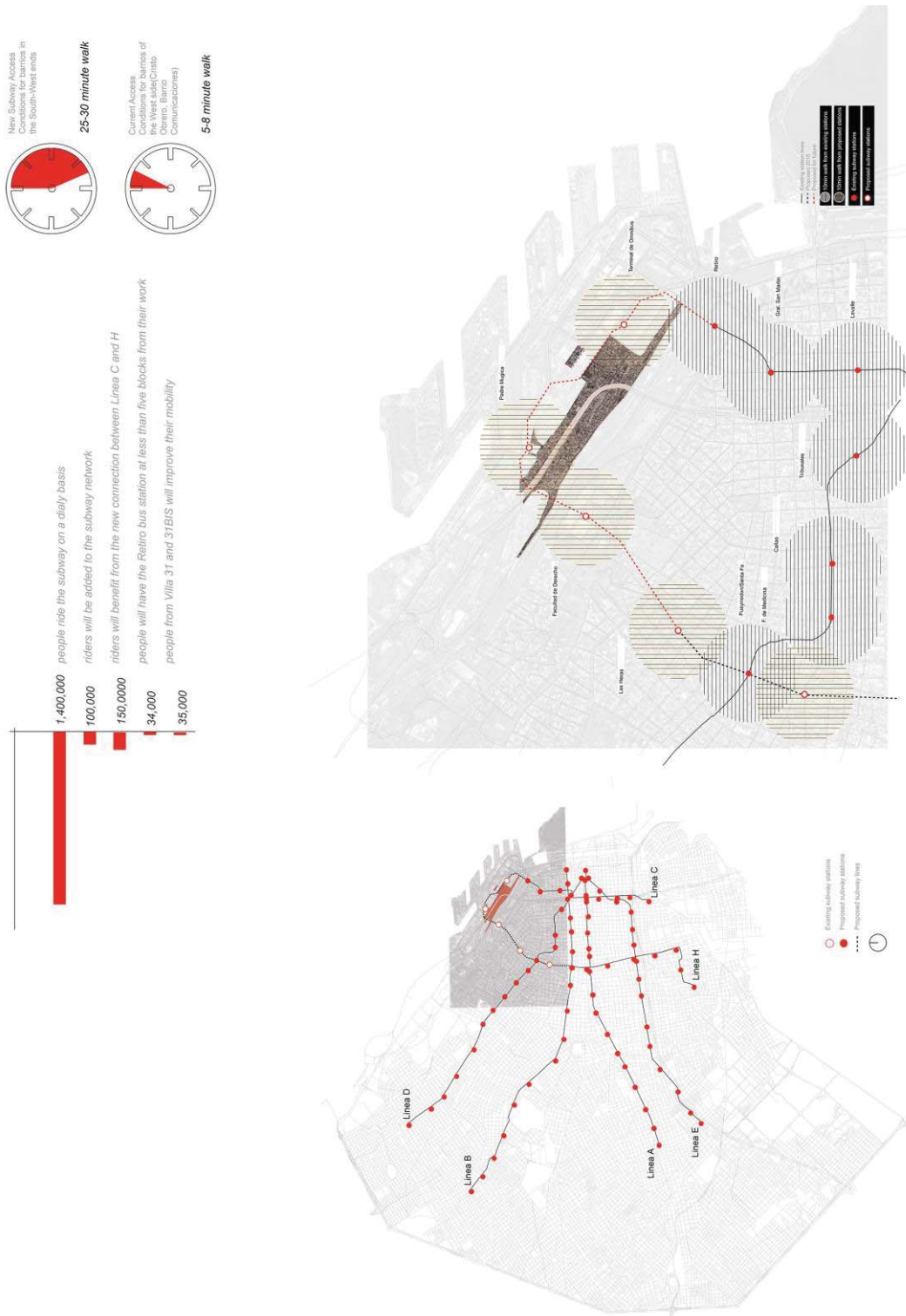


Figure 6.4: Changes brought about by new metro stations (Source: Author)

Lastly, another key site research elements that was uncovered in the visit addresses the conditions of the existing public spaces. It was noticeable that many of the previously dirt covered open spaces had been paved and small soccer fields or playgrounds had been built in these areas. After interrogating some city officials it was confirmed that part of the investments the *Espacios Publicos* ministry of the city of Buenos Aires made included the upgrade of some of these open spaces (See figure 5.5). Today, they have become the playgrounds and the meeting spaces for all of the community members. The social significance of open spaces in informal communities is essential, for the outdoor spaces are precious given the incredible density of built structures, and because these are the areas where socialization and gathering takes place. Investing in remediating these spaces to maintain them over time has a significant impact in consolidating the communities surrounding them. These are multi-programmed spaces that become plazas, areas for trash pick-up, meeting spaces, areas for vehicles to turn around, and sports venues as people come out to play soccer.

However, it was evident that the plaza on the eastern edge of the settlement had not been invested upon, and it remains an unpaved, dirt space that floods when there are strong rains. As a result, it was inevitable to think of this plaza as another key node for the tactical urban interventions that could be afforded in the North to South mobility corridor that is proposed as the first step of intervention.

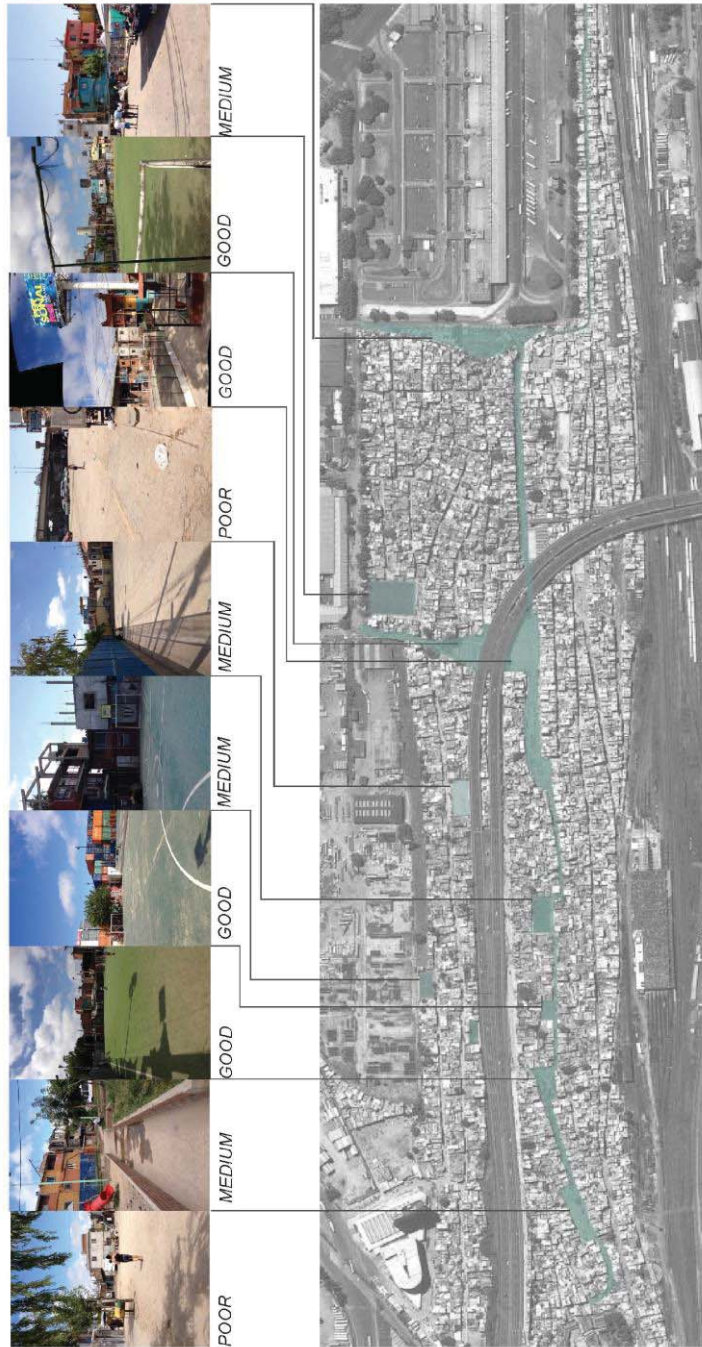


Figure 7.5: Current state of public spaces (Source: Author)



Figure 8.6: Images of open spaces inside and at the edge of Villa 31 and 31BIS (Source: Author)

FINAL STRATEGIC RESOLUTION

The following diagrams describe the tactical interventions that are carried through, following the strategies defined in the previous section:



Figure 6.1: Tactical interventions 01: Near the new metro station, expropriate a small piece of land to establish the institutional buildings, such as the community bank and center for microcredit loans. Access to credit is an essential part of developing the economic stability of a community over time (Source: Author)

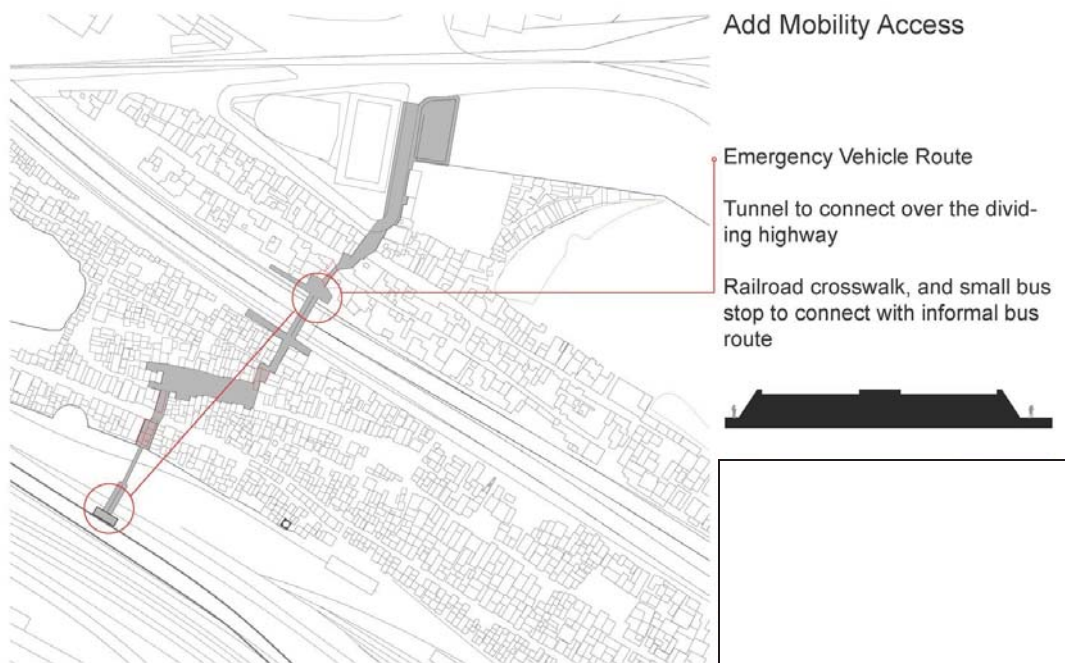


Figure 6.2: Tactical interventions 02: Add access North to South for emergency vehicles and pedestrian access. This will require the strategic and surgical removal of certain homes (Source: Author)

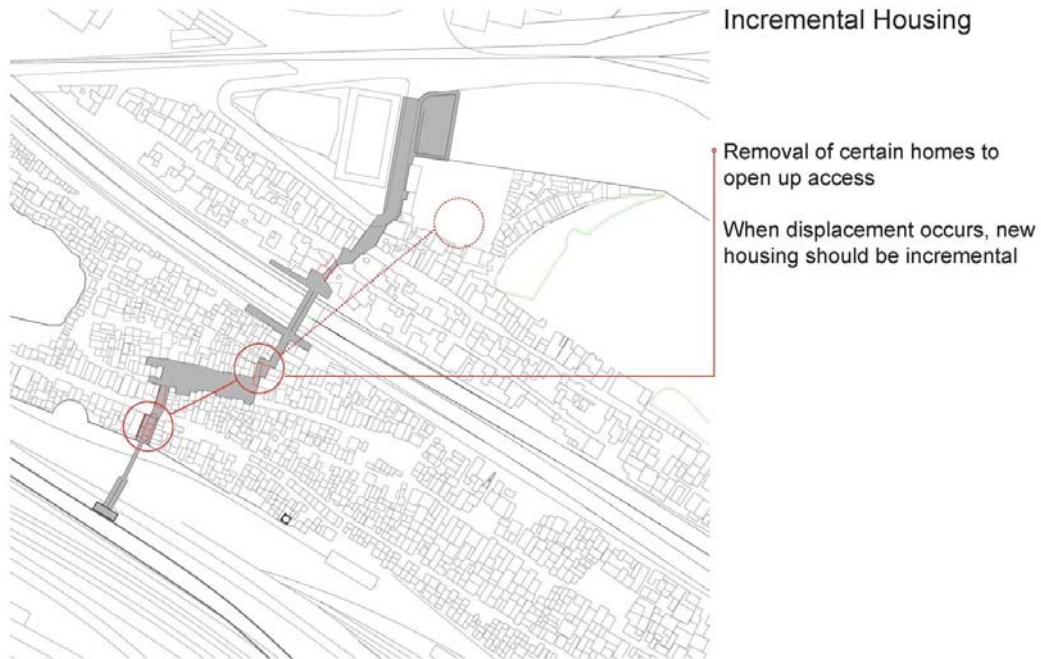


Figure 6.3: Tactical Intervention 03: The removal of certain homes results in displacement. When possible, this should be done minimally, and families should be relocated to nearby areas. In this case there is the opportunity of the open space to be the site for incremental housing as a replacement for the removed homes (Source: Author)

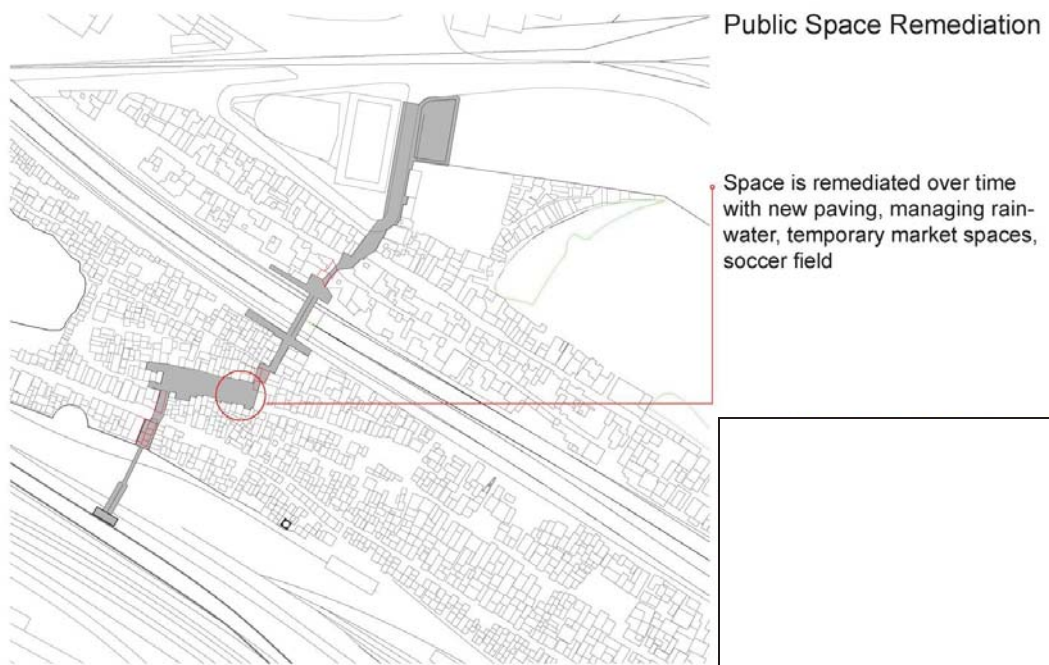


Figure 6.4: Tactical Intervention 04: The plaza is currently unpaved but highly used. Public space remediation has the potential to consolidate and maintain the importance of these open spaces as communal, social, gathering spaces. (Source: Author)

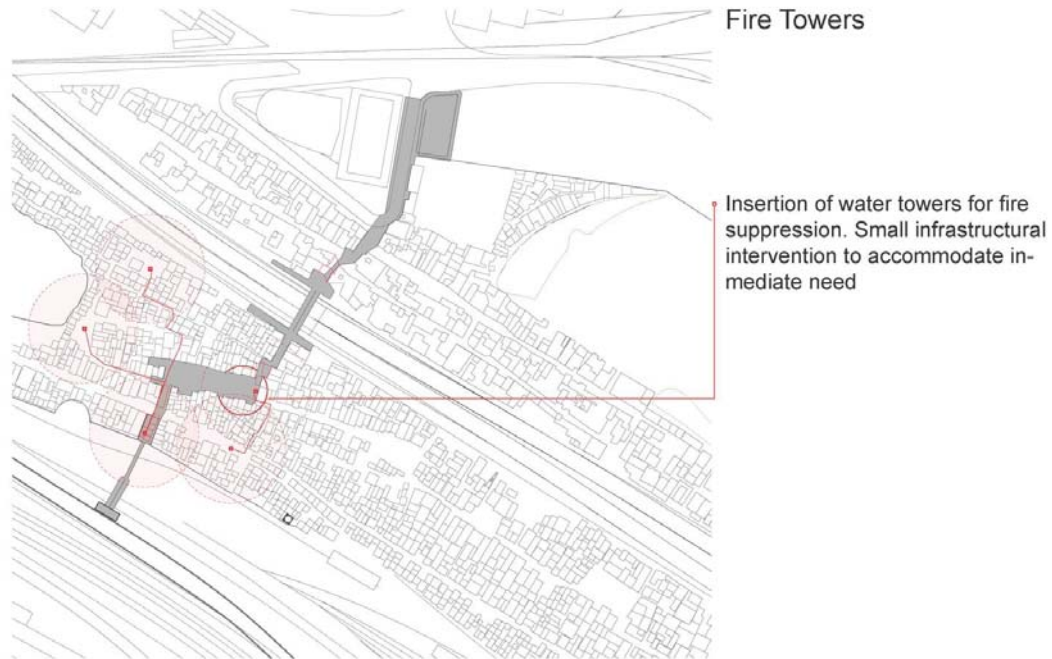


Figure 6.5: Tactical Intervention 05: Addressing immediate concerns and needs is essential in informal settlements. In this case the lack of access for fire trucks combined with the high occurrence of fires requires the strategic thinking of a way to solve this problem while not displacing large portions of the population. The insertion of fire suppression towers as forms of urban infrastructure but also as elements of community engagement and urban way finding devices addresses the multiple scales of the issue as well as the virtues of the place. (Source: Author)

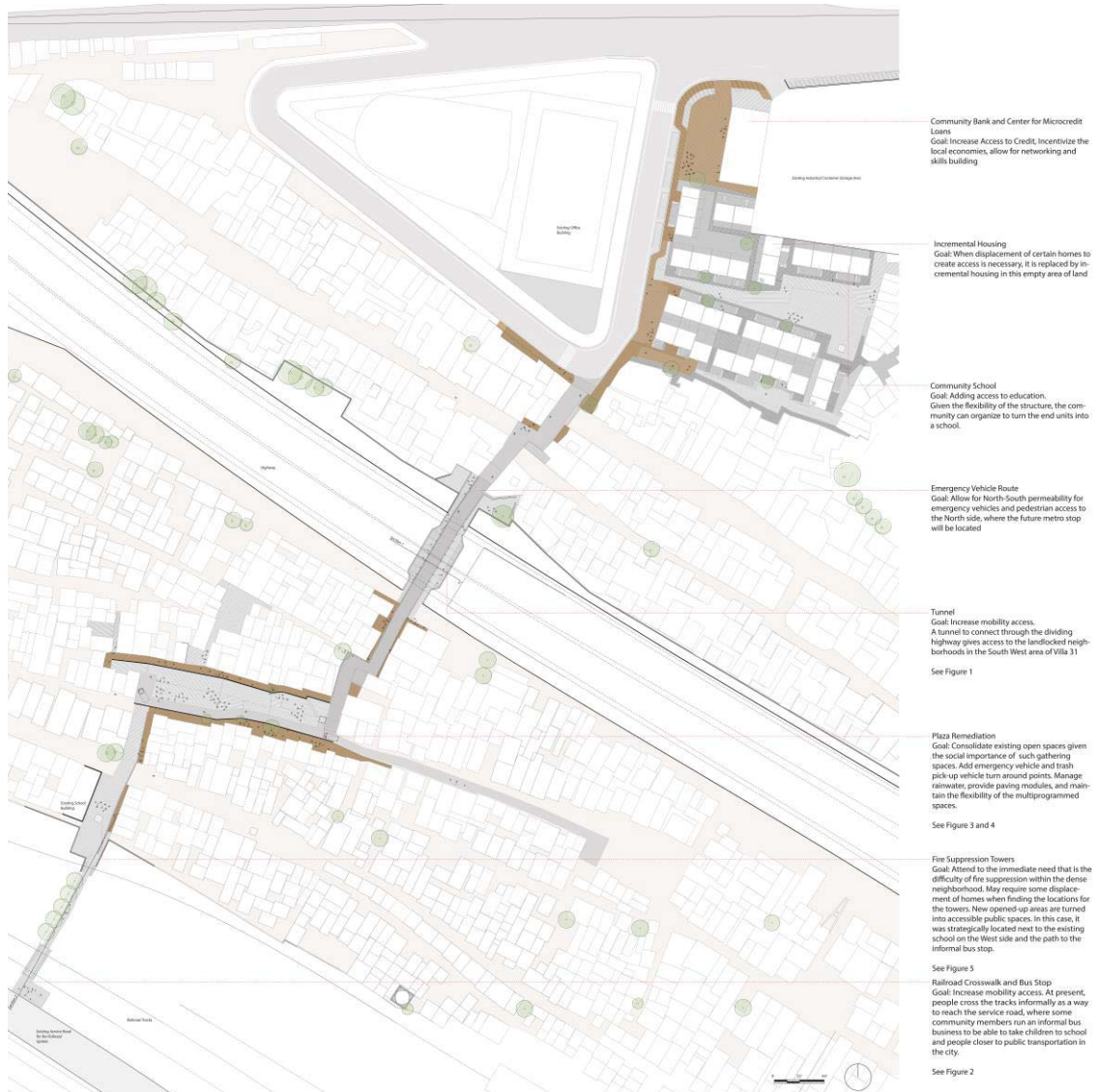


Figure 6.6: Siteplan highlighting the key interventions along the overall network. (Source: Author)

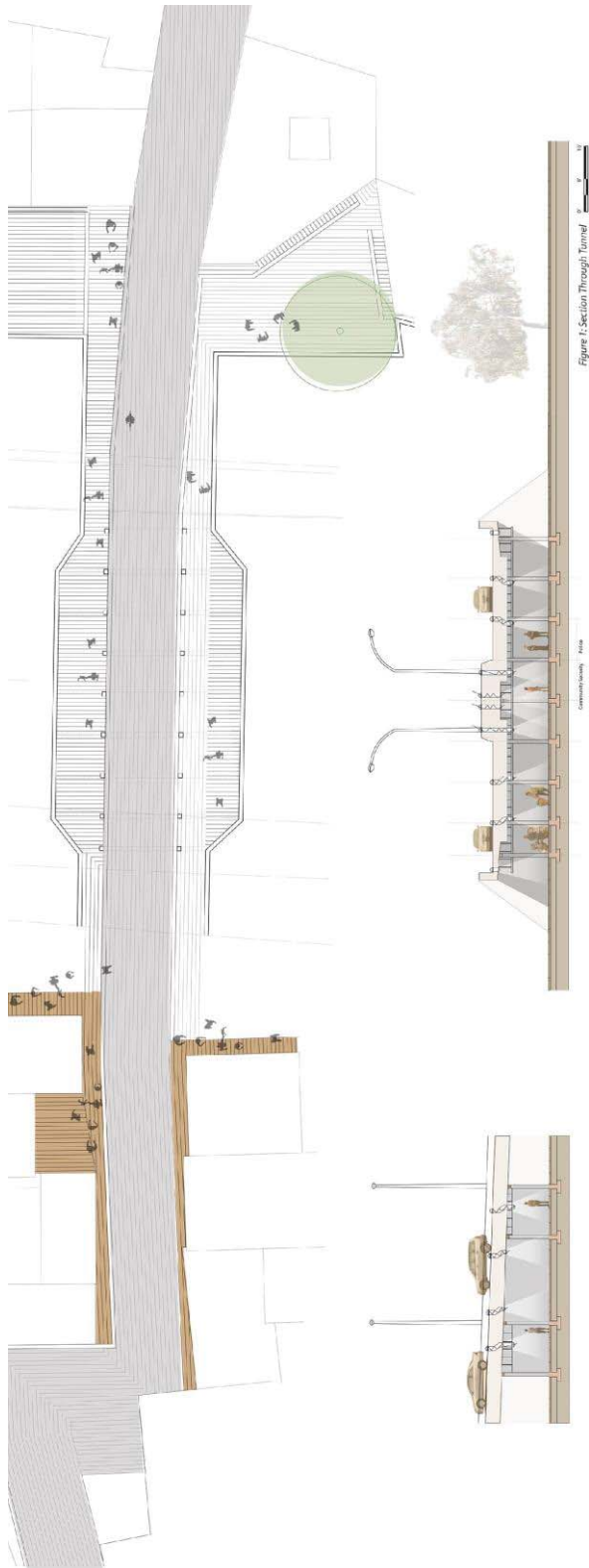


Figure 6.7: Section through tunnel under the highway. This will allow for North to South connectivity. Ample space and lighting from solatubes is considered for safety. Program such as community security entities as well as police entities are added within, as a way to promote security and conversation between the formal and the informal communities (Source: Author)

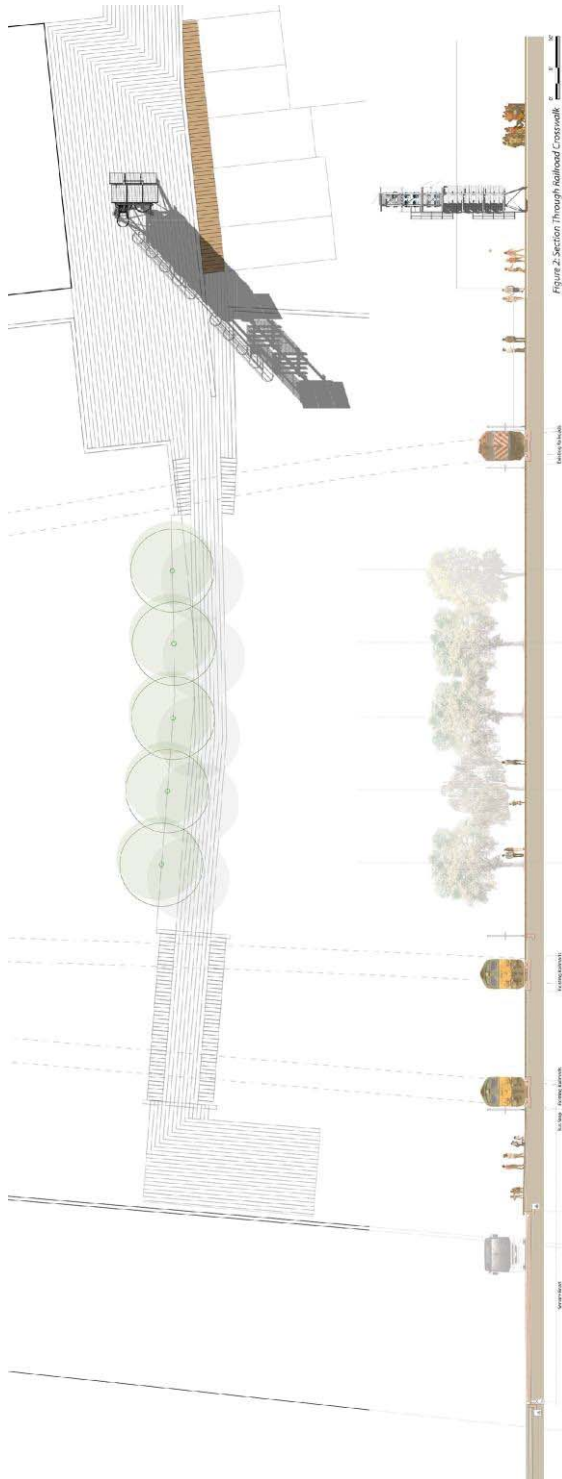


Figure 6.8: Section through the path leading to the informal bus route: The current conditions are dangerous given that people must informally cross the train tracks to reach the service road. The urban intervention proposes paving this path, opening it up as a public space, adding trees for shading, and adding cross signals over the trains tracks, therefore formalizing the physical access. The new plaza is a result of removal of homes next to the school, which was carefully considered. This can extend the vehicular access to this end of the settlement. A tower is placed both for wayfinding, and for infrastructural purposes. The

space next to an existing school has the potential to connect the existing educational infrastructure with the access for children to be picked-up to go to schools that are outside of the settlement (Source: Author)

Strategy 1: Public space remediation **PLAZA**

As previously emphasized, the importance of public spaces is key in informal settlements. The proposal here consists of allowing for the multi-programmed nature of the existing plaza, while simultaneously upgrading the territory with modular sidewalk pavings that the community can place themselves. The importance of sidewalks is significant, because managing the dirt roads that flood during rain storms can allow people to move within and out of the neighborhoods. The proposed paving strategy is to pick up from the local conditions and provide different modules of paving, both porous and nonporous that help to identify different zones of activity for emergency vehicle movement, commercial encroachment zones, green areas, and soccer fields. It is important to strike the comparison that, the morphology of informal neighborhoods is defined by the module of the brick given that people build their own homes, and so extending on this condition or strategy, these movement networks and public spaces will be rearticulated by the design of the paving modules.

The goal is to preserve the existing open spaces, which tend to be of very low priority at first in the growth period of these neighborhoods but become precious in time given that any open space in such dense

neighborhoods becomes the living rooms of all the families in the area. Therefore, the spaces are remediated and re-articulated rather than imposing new types of spaces or typologies. The surface treatment is designed for flexibility, multiple uses, capable of stimulating local economy, community involvement, public gathering. It becomes a synergy between stimulating economic activity and defining or remediating public space.

As the paving modules and site remediation strategy is reapplied beyond this initial public space, it gains a rippled effect, capable of adapting to, and redefining other movement networks in the neighborhoods, especially those areas that will require the strategic removal of existing homes to allow for North-South mobility access.

Lastly, as the new paving incentivizes the appropriation of space and wayfinding, this begins to allow the formal city to infiltrate into the informal neighborhood, thus breaking some physical and psychological barriers that exist between the two.

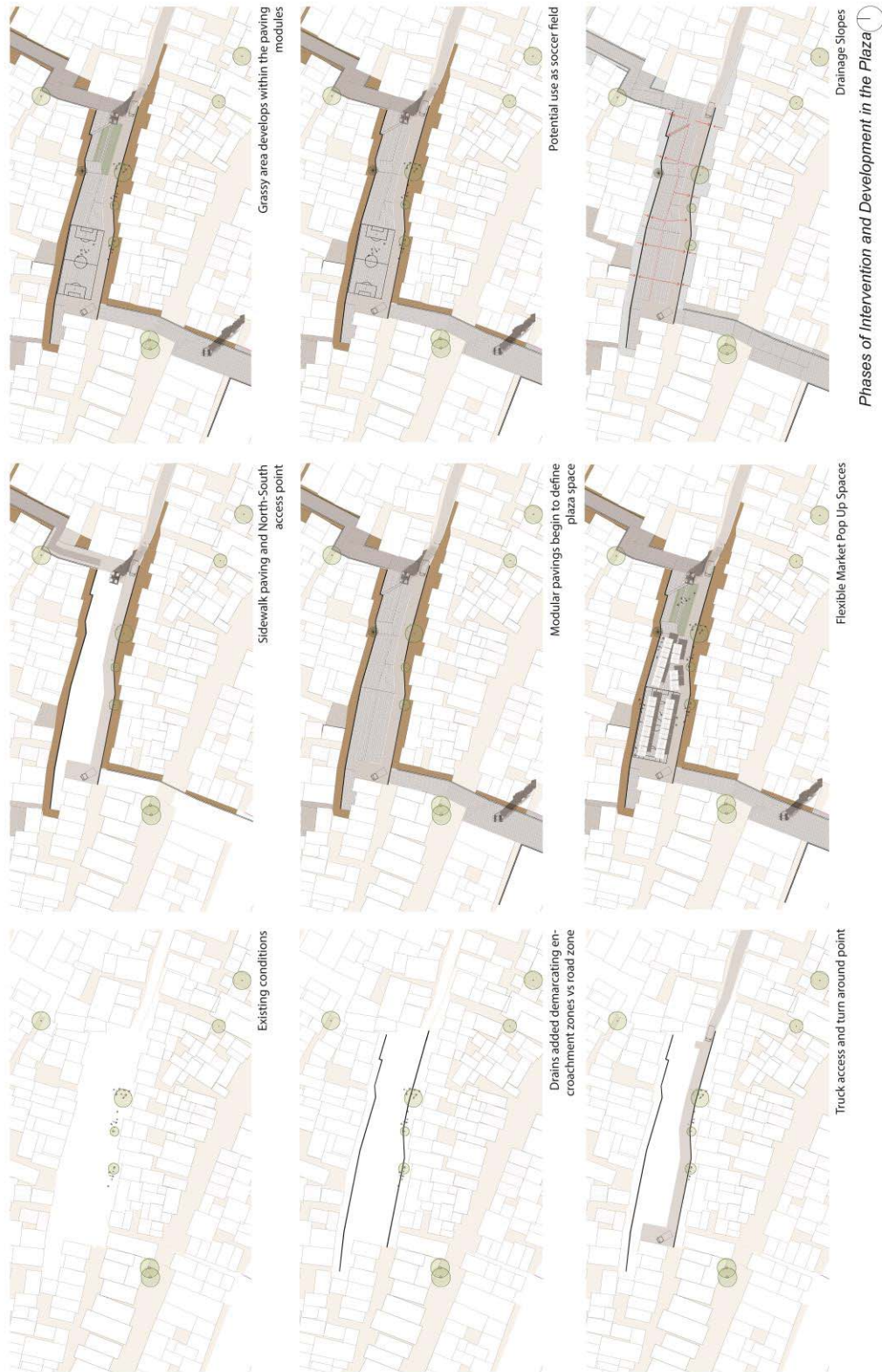


Figure 6.9: Remediation of public space in phases: The articulation of the plaza emerges from picking-up on the existing conditions of the place, including the existing trees and the commercial zones on the ground floors. It is particularly important to consider how the elements can be inserted over time, as the community collects more wealth to invest in the

place. Inserting a truck turn around point is essential as well, as these have to be strategically located throughout the settlement to allow for points of trash pick-up and emergency access. The space should be flexible to allow for multi-use, without imposing any singular use. (Source: Author)

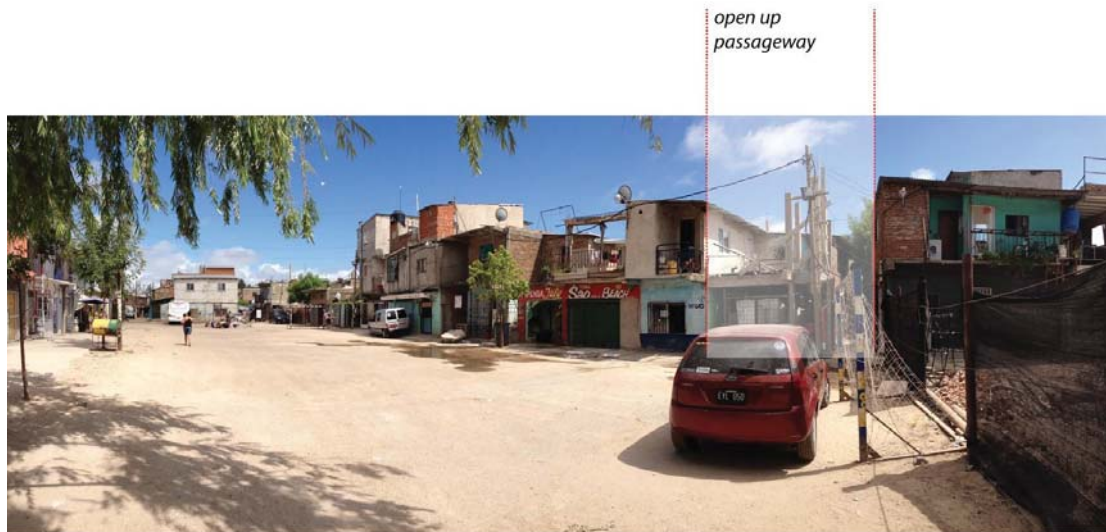


Figure 6.10: View of plaza with location of removed homes (Source: Author)



Figure 6.11: View of plaza demarcating areas of proposed sidewalk paving (Source: Author)



Figure 6.12: Plaza as market space: The paving modules delineate the areas where the market can take place temporarily. Market pop-up elements allow for easy assembly, and market carts allow even the elderly to carry their merchandise. (Source: Author)

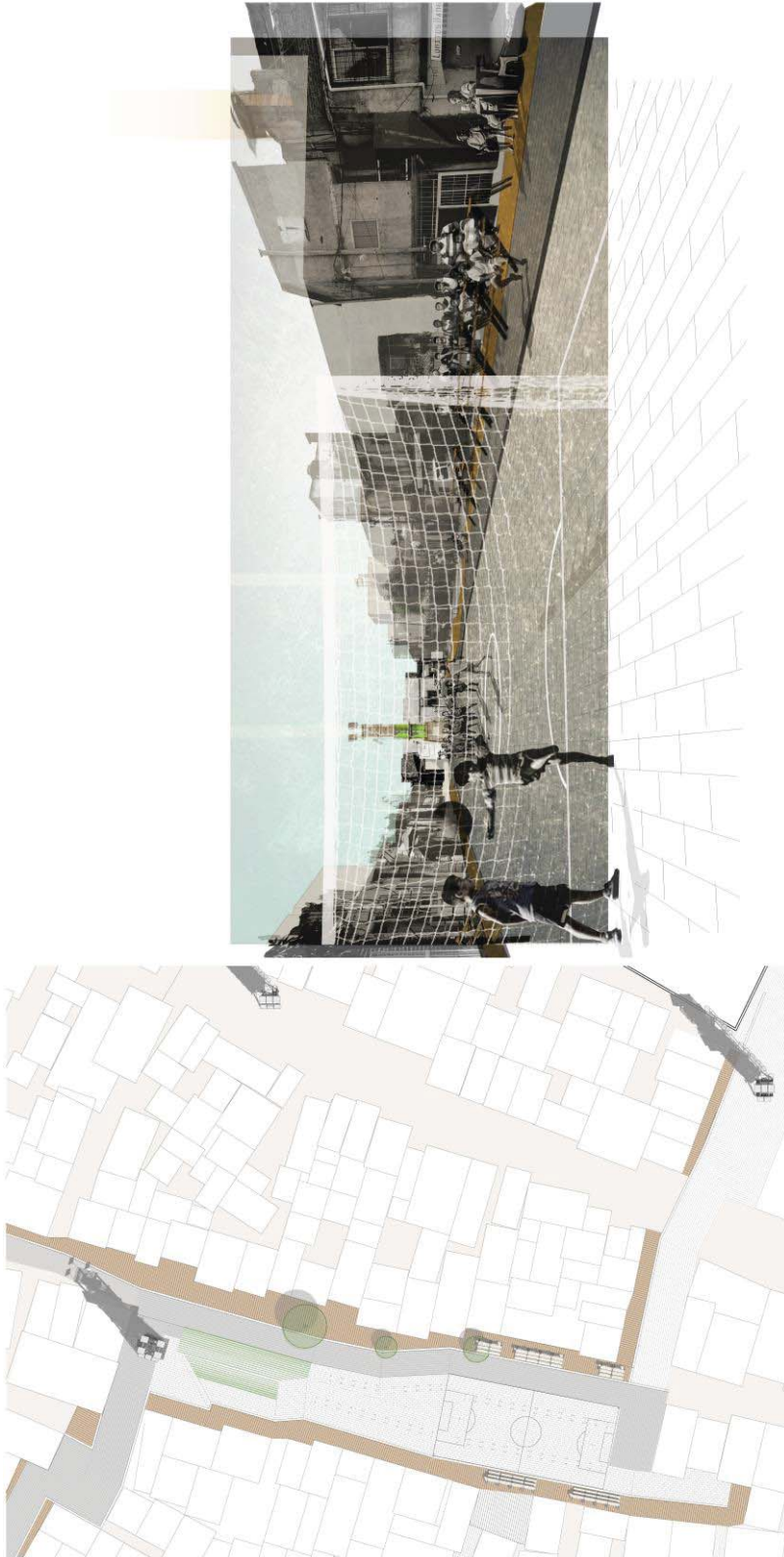


Figure 6.13: Plaza as soccer field: The paving modules delineate the areas where soccer can take place temporarily. The market stalls become stadium seating for events and community gathering (Source: Author)

Market Stall Assembly

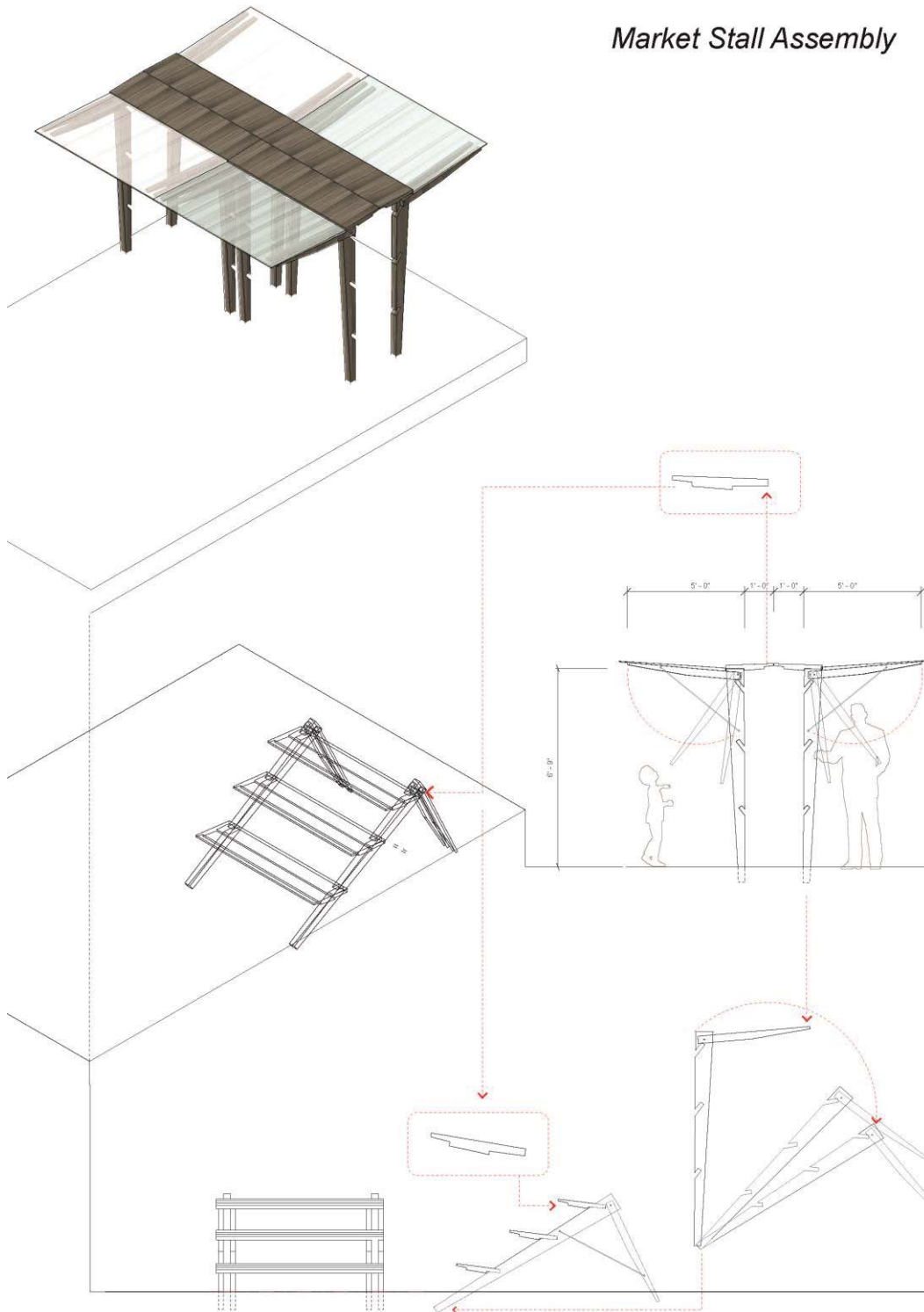


Figure 6.14: The market stalls are also design for flexibility. They are assembled easily and re-assembled to become stadium seating for events and community viewing (Source: Author)

Strategy 2: Attend to immediate concerns
FIRE SUPPRESSION TOWERS

In combination with the strategy of the public space remediation is the building and location of water towers dispersed throughout the neighborhoods. These small but important elements attend to an immediate concern of the site, which is the frequent fire casualties that spring throughout.

These pieces of urban infrastructure emerge out of a problem that exists in place, which is the difficulty for fire trucks and emergency vehicles to navigate many of the narrow streets within the dense neighborhoods. During one of the interviews to the two men that work on site every day attending to emergency infrastructural problems, the question raised was what they saw as the hardest or most problematic condition at the moment. One of them answered that it was fires. Fires can occur easily due to the poor electrical wiring resulting from people tapping into generators. He claimed, when this happens, everything they own is lost, because everything people have accumulated over time is all in that one place.

The fire towers therefore emerge to solve this problem, but they are conceived as being part of community engagement. Instead of bulldozing neighborhoods to create streets like the ones existing in the normalized city, here the strategy is to minimize displacement, and to create a constellation of these small footprint water towers that can solve the problem while again, extending on the virtues that already exist in place. This takes on the attitude

that there is validity in the construction of the existing narrow street systems within the neighborhoods. Much like those of medieval Europe, here the streets came second to the buildings, but they are rich spaces where a lot of different activities, commercial, play, vehicular movement, take place. They were built over time, and they have become much of the social texture of the place. The towers therefore simply provide a way finding element within this type of urban texture. They can add identity to particular points in the neighborhoods, thus becoming elements of place making (See Figure 6.15).

The form of the towers was derived, once again, by considering the virtues of the community because they are designed made of smaller structural members that do not require cranes to be used for their construction. The idea is that they can be built easily and incrementally by the same community. Based on the existing use of water tanks in site, the same module can be used to stack up the water vertically. Each tank can hold the same amount or more water than that which emergency tanker trucks carry when water needs to be brought into the community. Solar PV arrays can provide the energy necessary to power the high pressure water pump when necessary.

Depending on the different ways the water tanks and the structural elements are stacked, the towers begin to take variation of forms. Their location also adds different meaning to their form. If located at a plaza, the tower becomes more civic in nature. They can demarcate a place for

meetings to take place, for example. City officials can be invited to come meet the community delegates in front of the tower, and thus carry the negotiations and demands that often take place far away in the city hall, in the actual settlement. This is socially significant because it allows for the formal to meet the informal at the “middle” so to speak. Other towers, like the one near the plaza at the southern edge, can demarcate the area for children to be dropped-off to take them to the buses that will take the children to schools in the city.

Thus the towers become symbols of stability, communal activity and way finding.

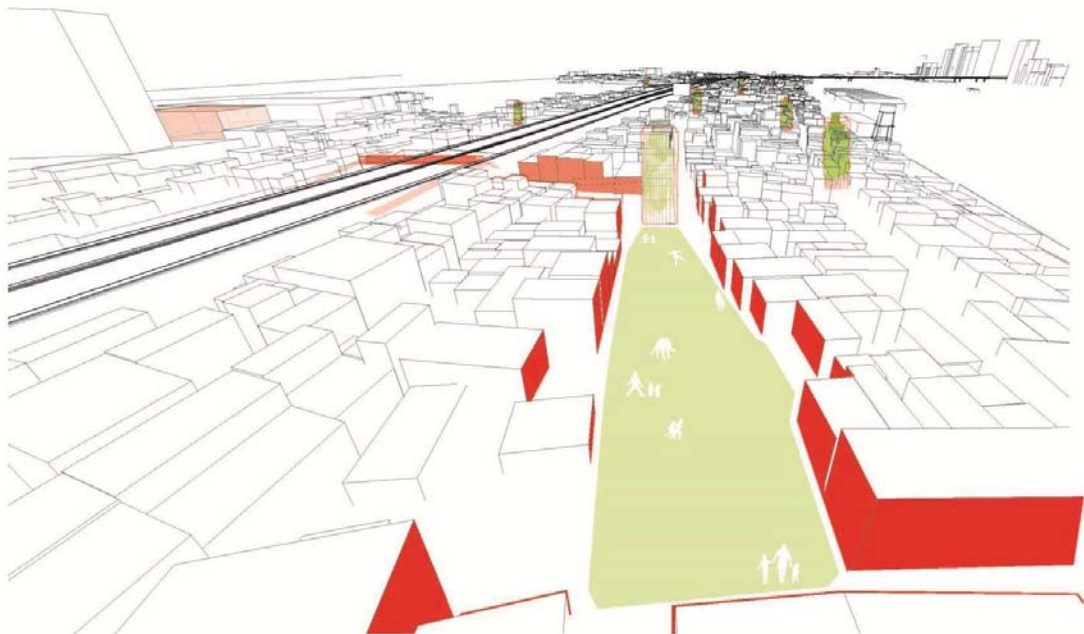


Figure 6.15: Diagram showing towers as elements of way finding (Source: Author)

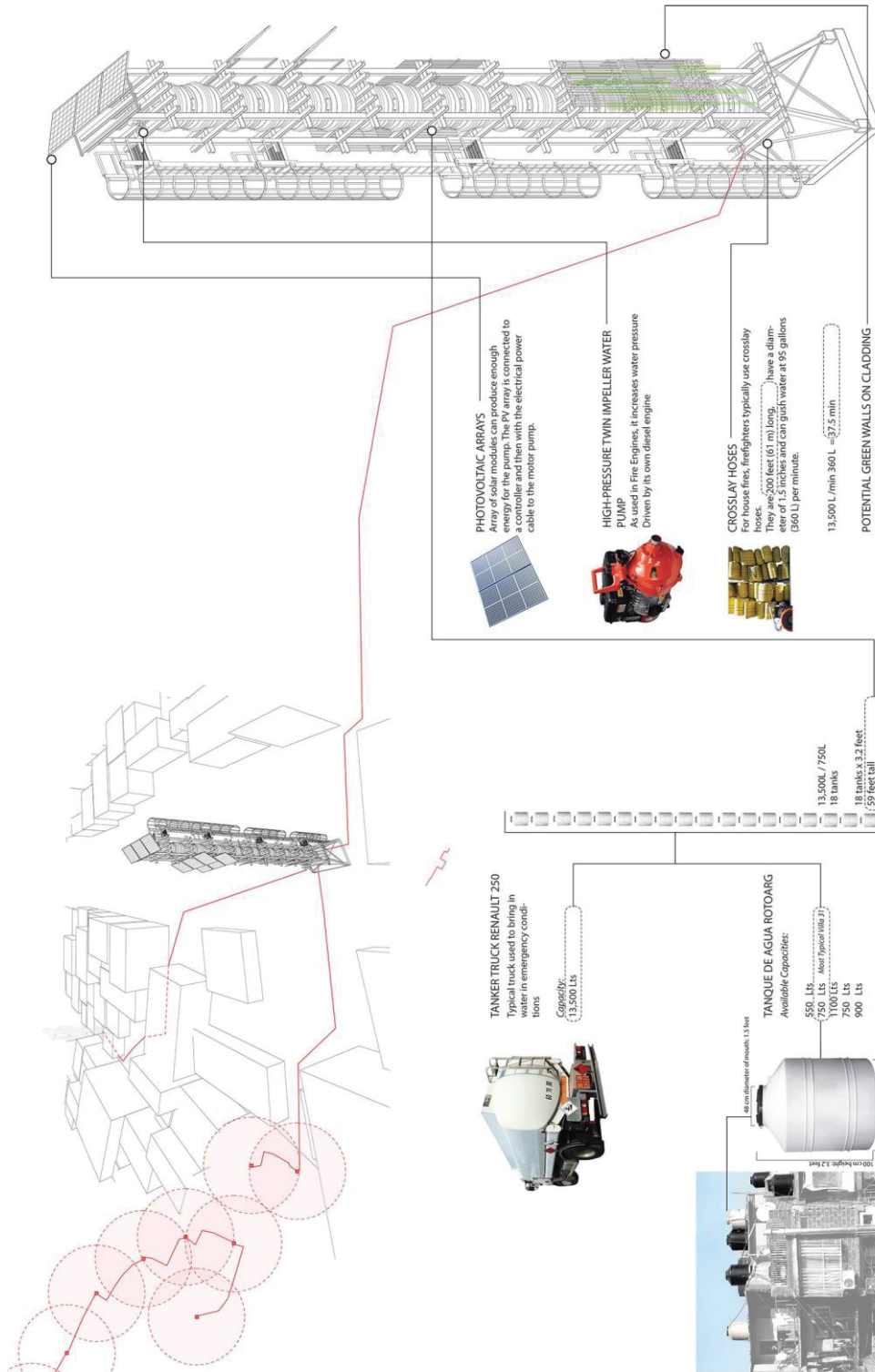


Figure 6.16: Diagram showing the elements required for the function of the tower as fire suppression water towers. (Source: Author)

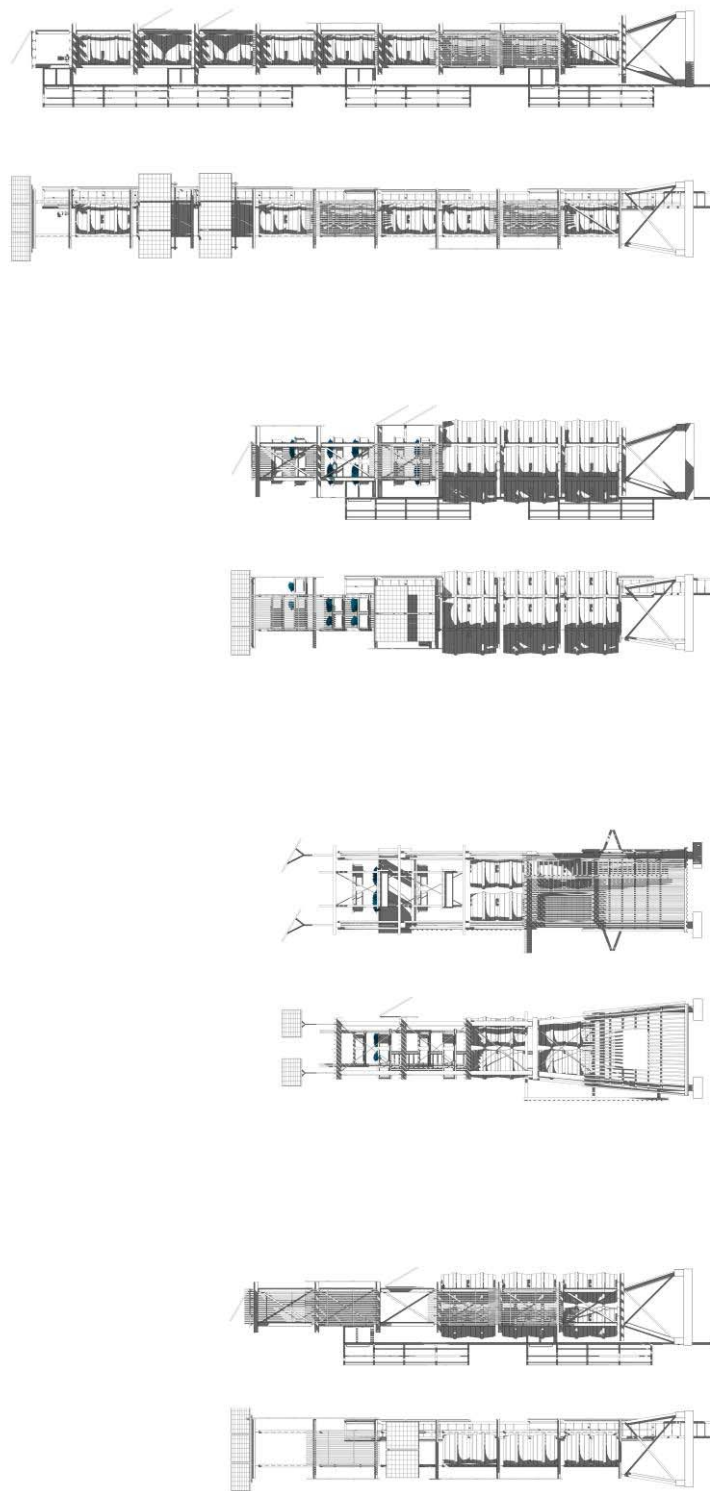
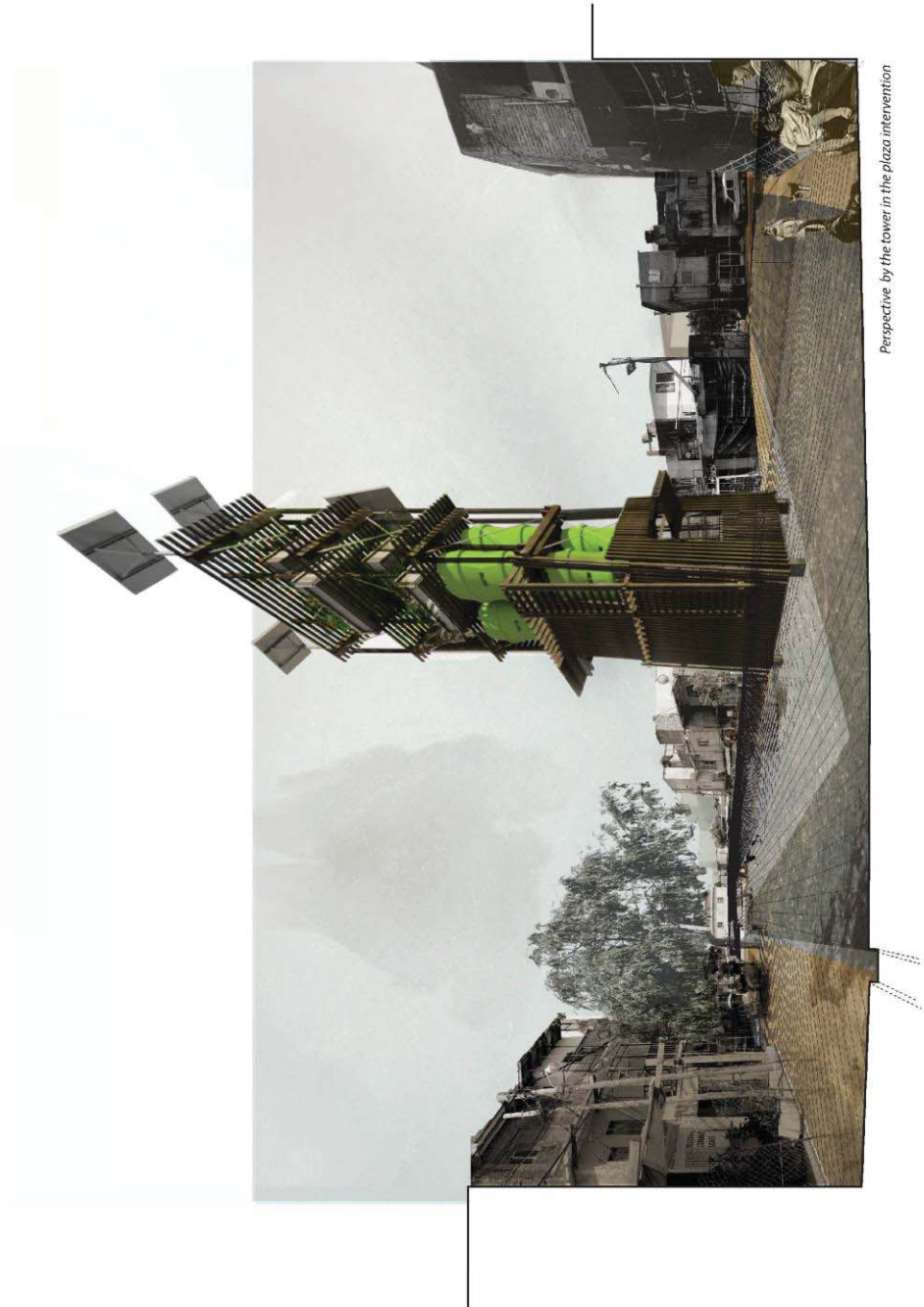


Figure 6.17: Elevations of the water towers (Source: Author)



Perspective by the tower in the plaza intervention

Figure 6.18: View of water tower in remediated plaza (Source: Author)

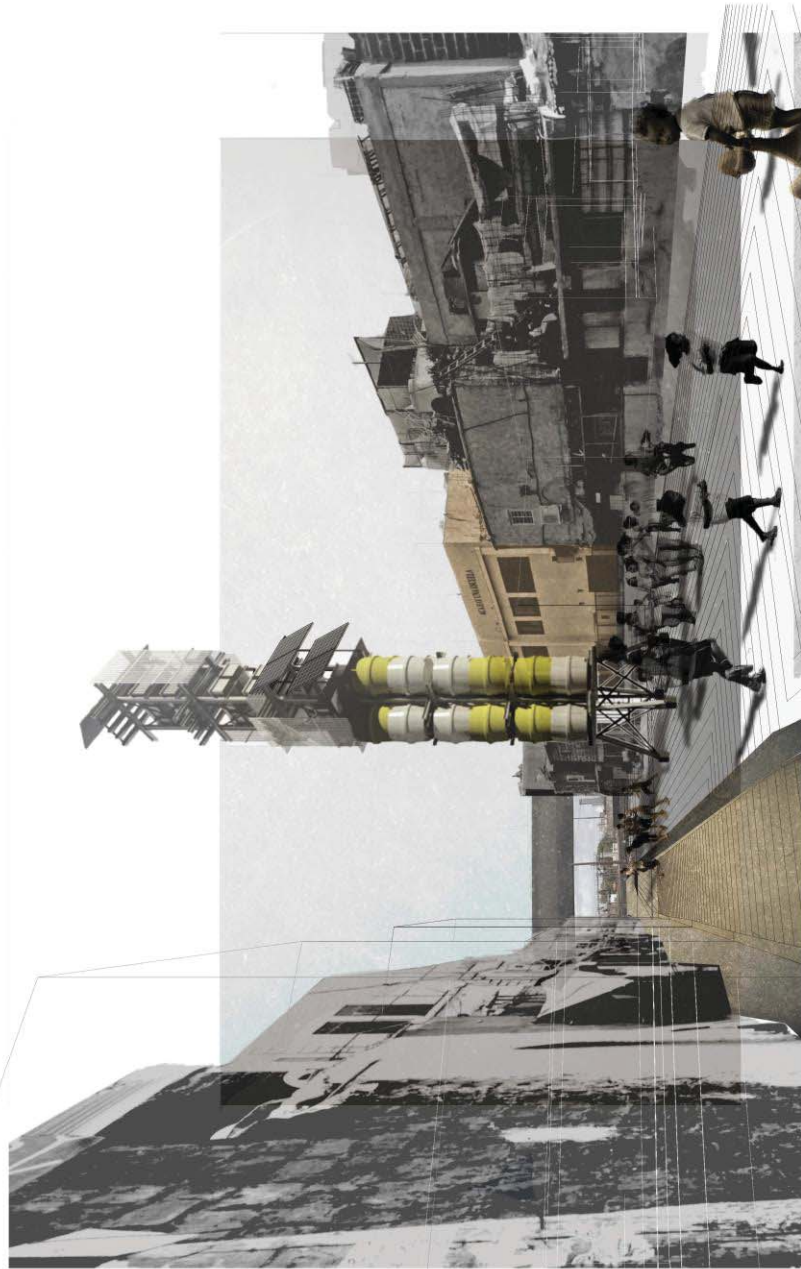


Figure 5: Perspective of tower by the existing school

Figure 6.19: View of water tower by the school plaza (Source: Author)

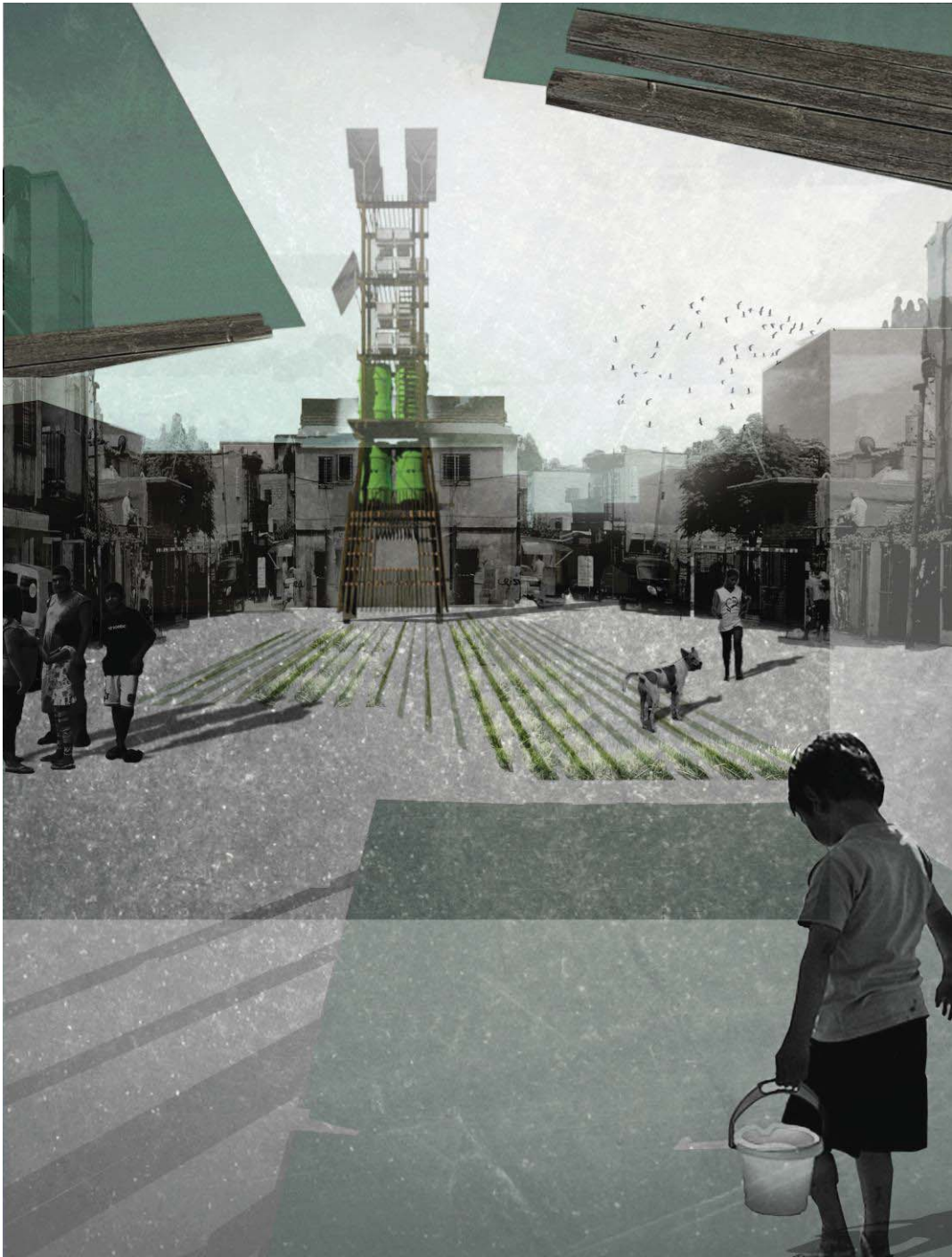


Figure 6.20: View of water tower by the remediated plaza (Source: Author)

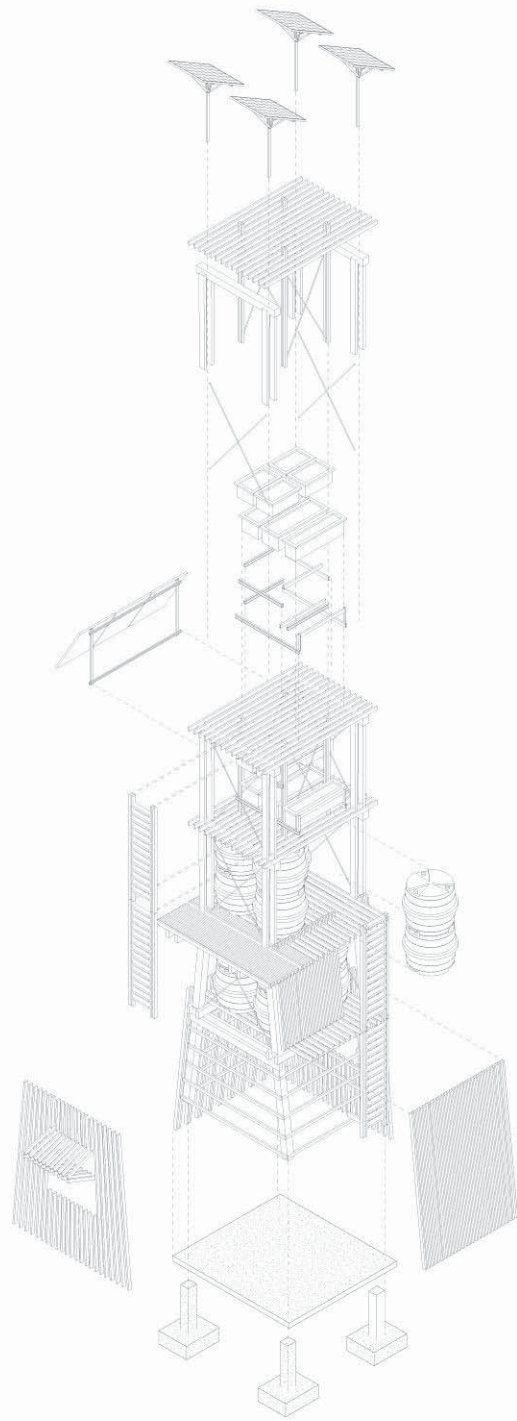


Figure 6.21: Exploded axonometric of the tower elements: it was designed for people to build incrementally within the tight corridors of the settlement (Source: Author)

Strategy 3: Minimize displacement Incremental Housing

The Incremental Housing component is a strategy applied for when displacement needs to take place. In essence, the city builds “half a house” and the community builds the rest of the house over time and as they accumulate funds. This allows for the building to not be a finished product, but to act as a spatial agent, empowering the users to build their space according to their needs and desires, engaging in the process and making an investment in their home, which is something that is not often achieved in traditional social housing projects.

The housing is therefore thought to provide a series of rules that act as suggestions for configurations of growth over time, allowing the inhabitants to negotiate amongst themselves if they want to rent or buy a piece of the framework from their neighbors. A new homeowner can therefore grow laterally or vertically, with the structural wet walls acting as the limitations to unbound growth in each direction. Change is therefore anticipated in the primary design elements. For example, the stairs can be on a track, so they can move laterally if a homeowner decides they do not need to grow vertically. The wall panel systems are designed to be modular, and also built over time, so that each user can decide on the different format of living space. Most often the ground floor of informal housing tends to be converted into commercial uses once the family gathers enough income. Here too it is

anticipated that the homeowner may grow laterally and open a new shop on the ground floor.

The goal is therefore to empower the users to engage in their spatial environments, and to allow for the creativity and negotiation that exists in the way informal neighborhoods are built over time.

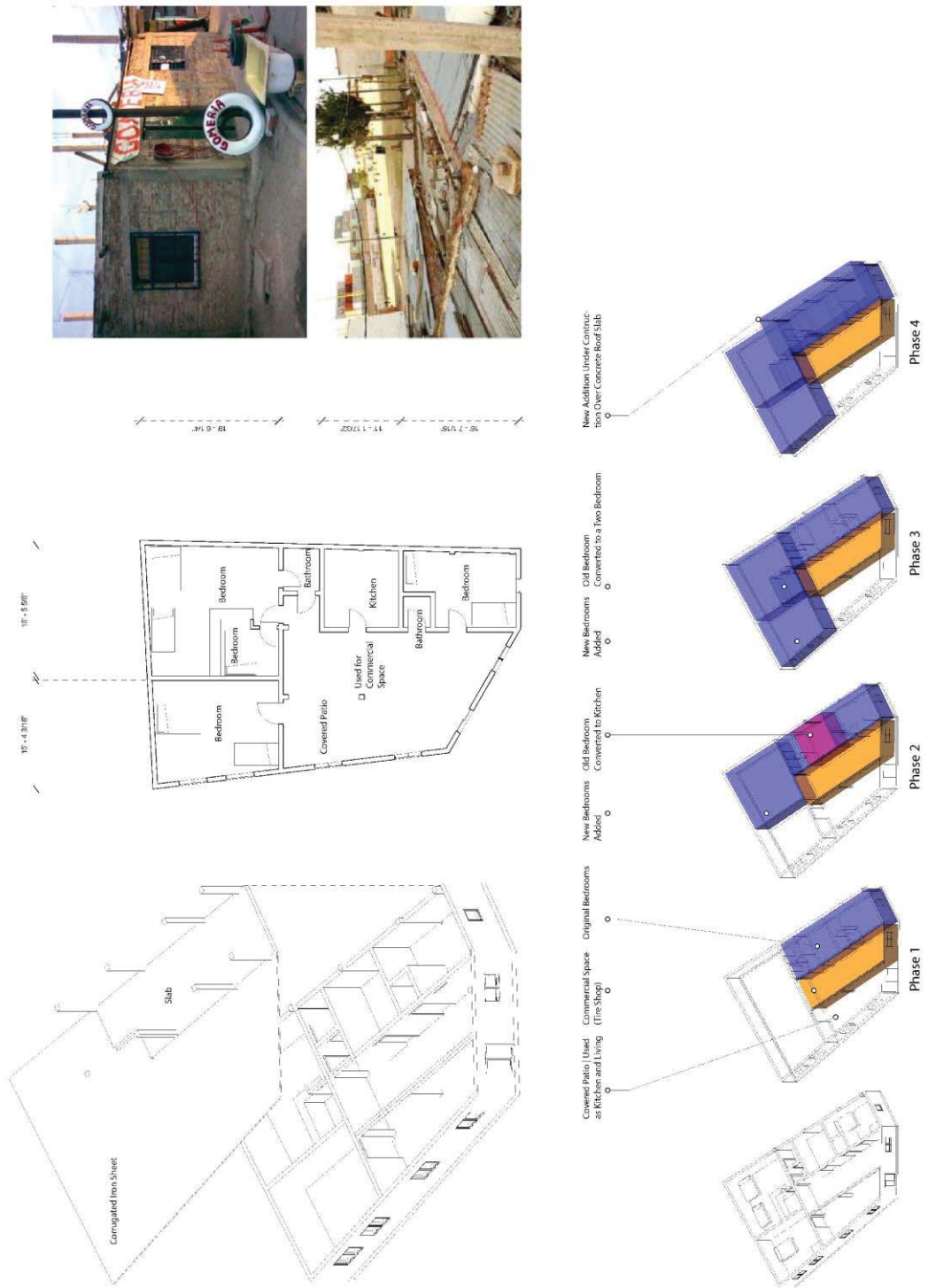


Figure 6.22: An analysis of an existing house near the proposed site for incremental housing reveals the incremental nature of all housing in the settlement (Source: Author)

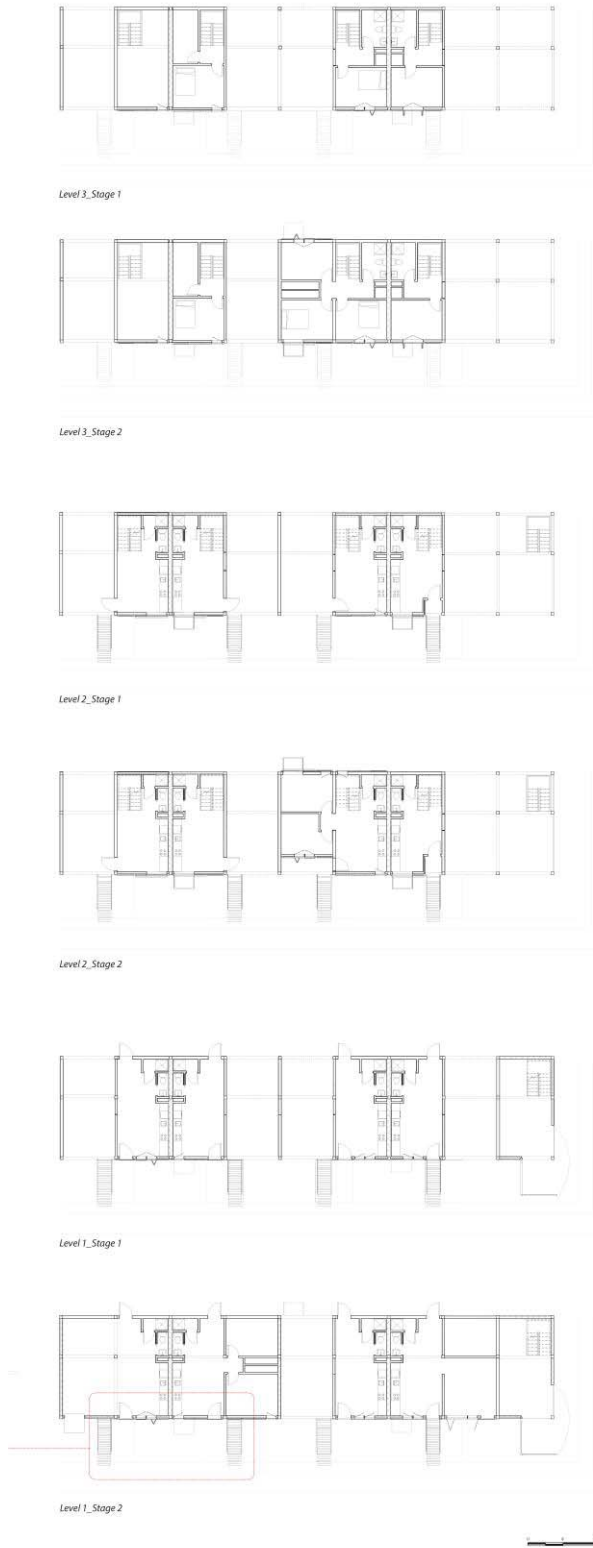


Figure 6.23: Proposed housing configurations and their expected growth over time (Source: Author)

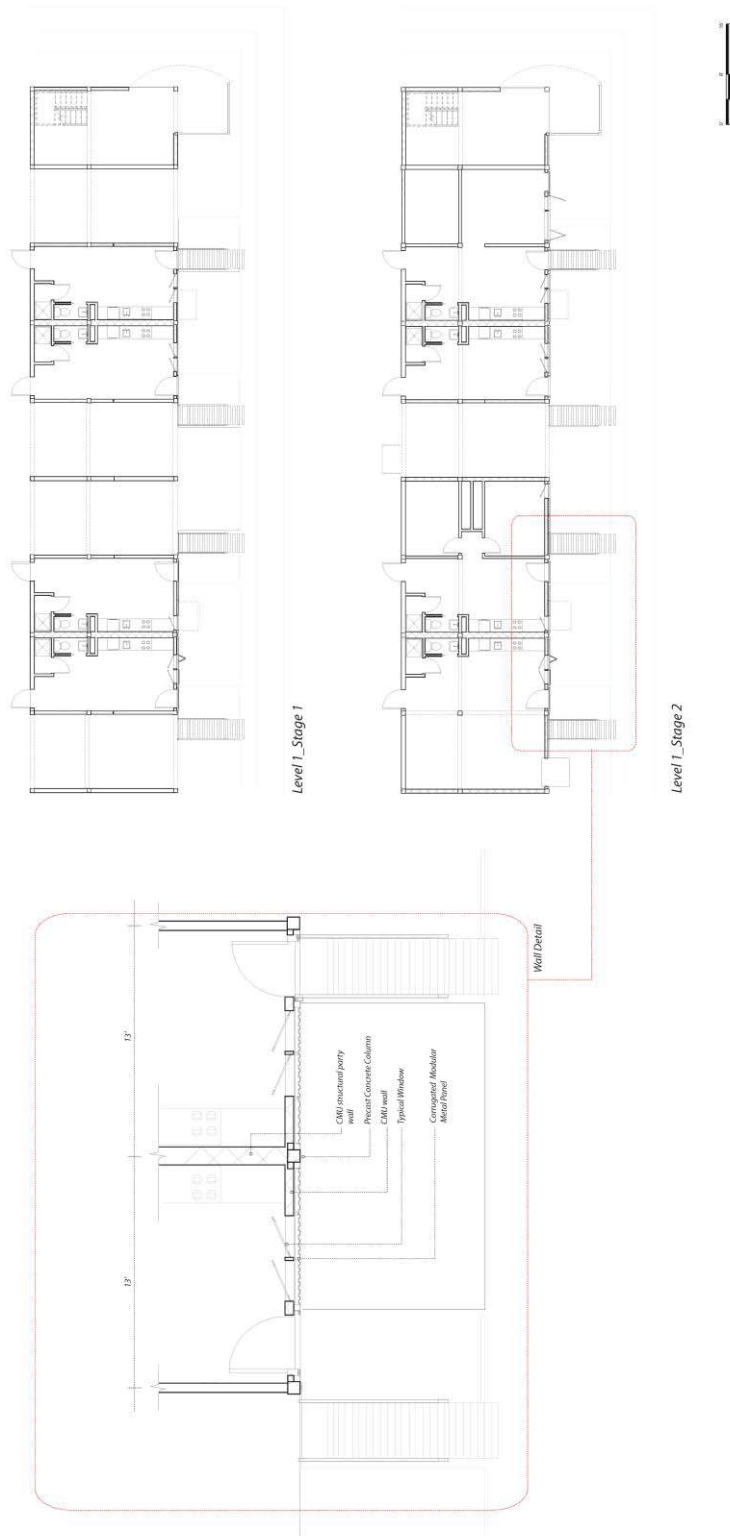


Figure 6.24: Detail of wall composition (Source: Author)

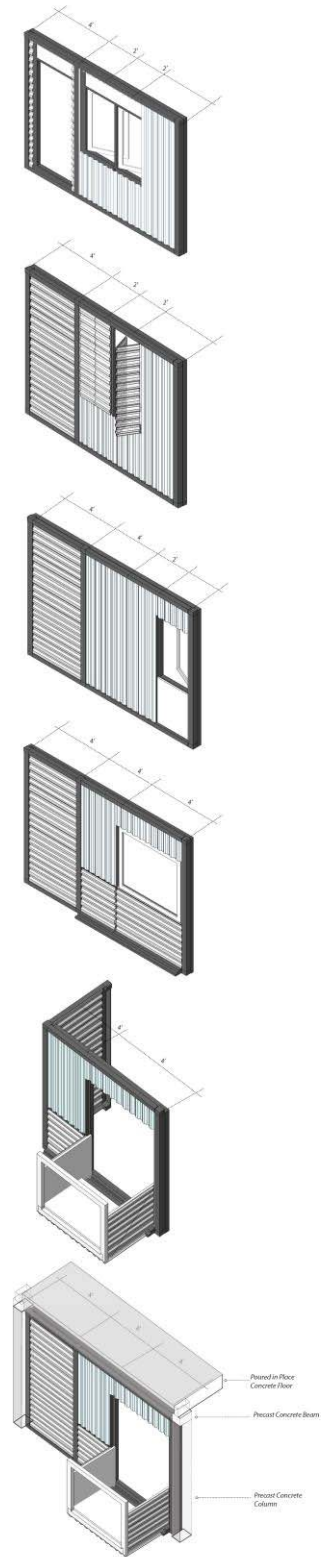


Figure 6.25: Modular and incremental wall panel composition (Source: Author)



Figure 6.26: Siteplan showing arrangement of housing units. The forces driving their layout included a response to the existing homes, their front conditions, and movement paths, the importance of open spaces (which research and precedents show a maximum of 20 to 25 families surrounding any open site is the most manageable for the maintenance of the space) and the morphologies of the other existing open spaces in the site (Source: Author)

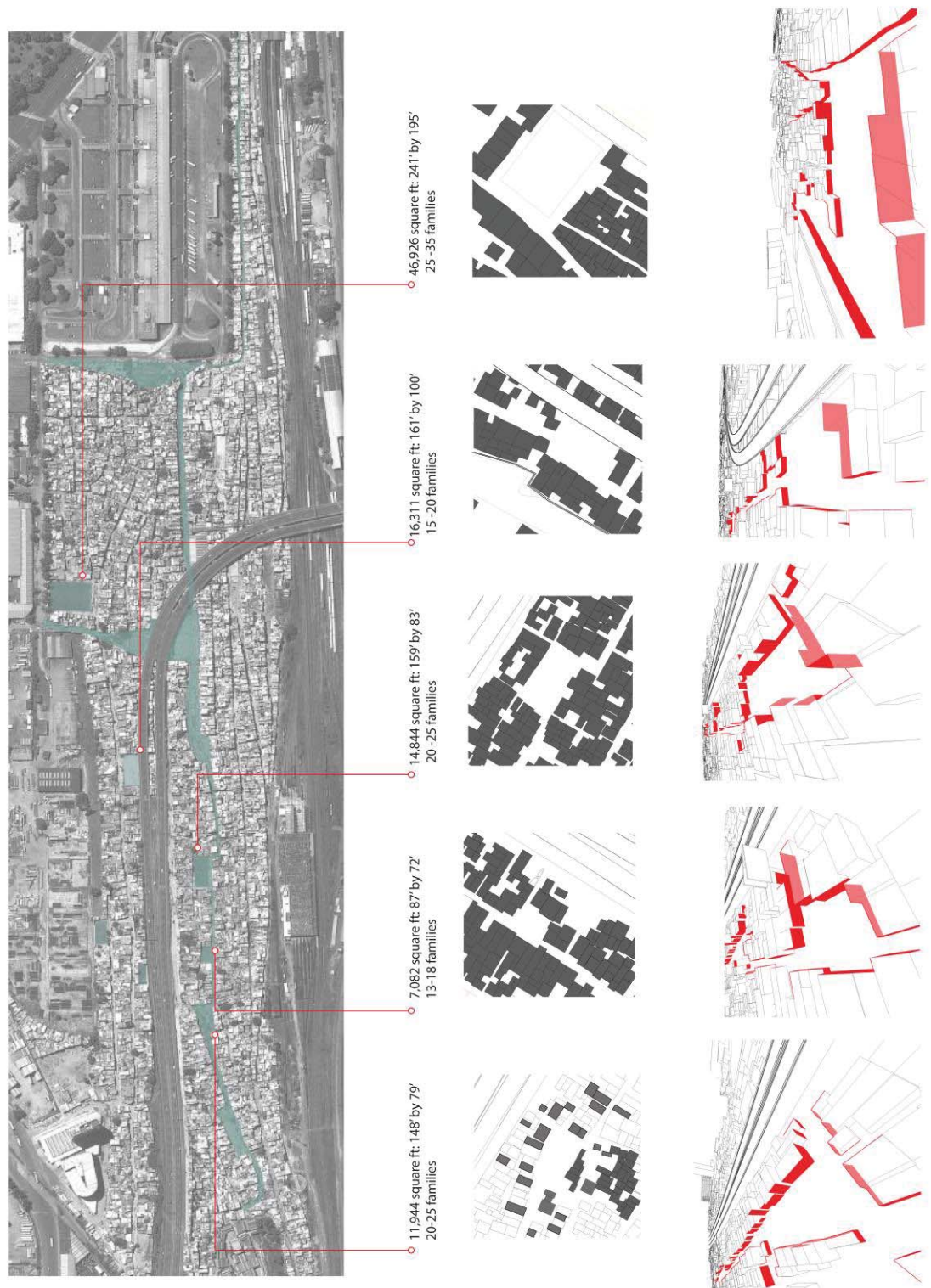


Figure 6.27: Diagrammatic research of existing open spaces, their edge conditions, and the sizes of the public spaces (Source: Author)



Figure 6.28: Perspective of proposed incremental housing (Source: Author)

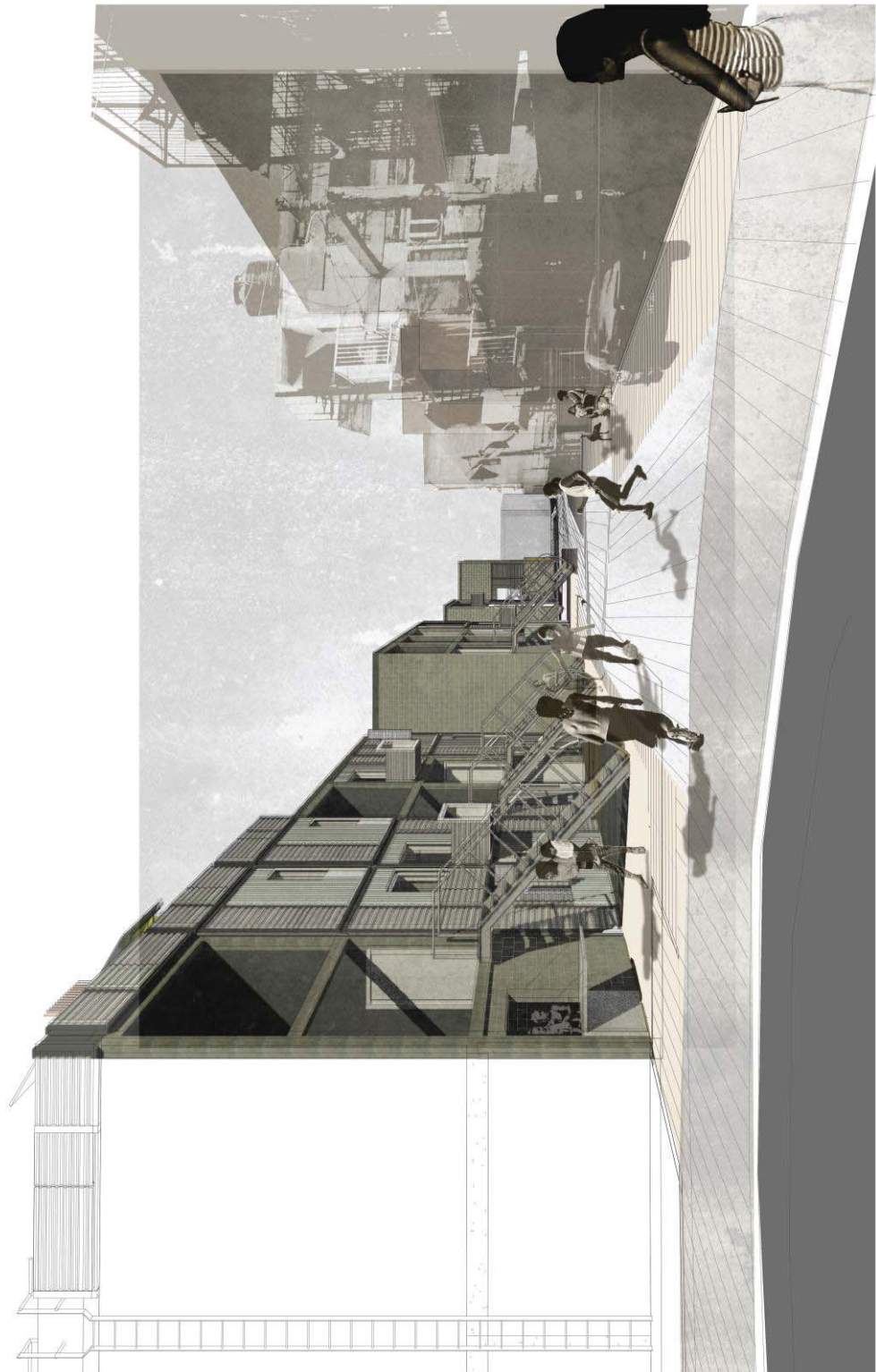


Figure 6.29: Perspective of proposed incremental housing and the “city as a playground”
(Source: Author)

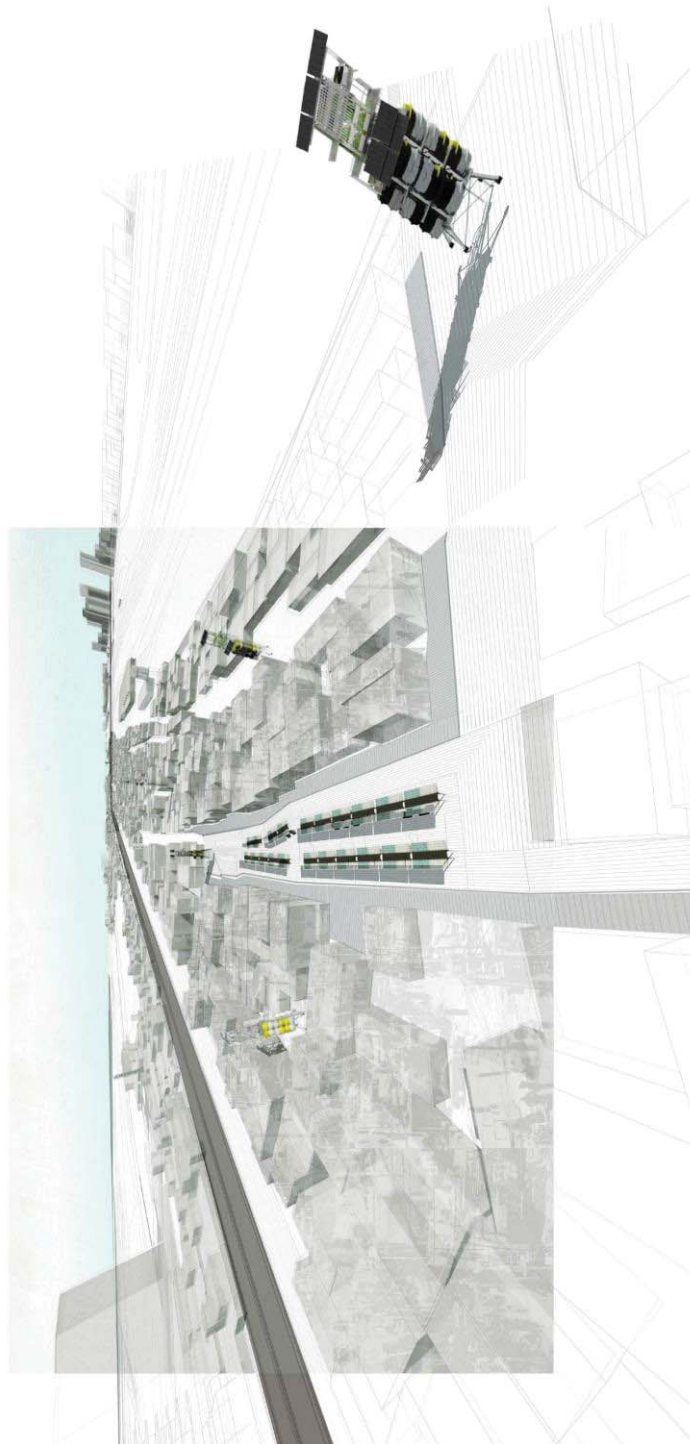


Figure 6.30: Aerial view of plaza and towers (Source: Author)

CONCLUSIONS:

The challenge of intervening within informal settlements is one that goes beyond the solution of perceived problems, but it asks architects to shed some of the typical expectations of conceiving of buildings as finished objects, and forces them to understand the spatial agency that is capable with each proposal. It requires the designer to challenge him or herself to think about interventions as a way to operate rather than as a finite product, and to think about the processes of community engagement and flexibility that make architecture an open ended process. The following quote by the SPATIAL AGENCY website describes this phenomenon the following way:

In Bruno Latour's terms, critical attention is shifted from architecture as a matter of fact to architecture as a matter of concern. As matters of fact, buildings can be subjected to rules and methods, and they can be treated as objects on their own terms. As matters of concern, they enter into socially embedded networks, in which the consequences of architecture are of much more significance than the objects of architecture.⁴²

The aspiration of this project was to test architecture and urbanism's ability to instigate this way of thinking, and through the process, to learn about, and learn from, communities that have long been neglected yet represent much of our humanity. If cities really are mirrors of society, places where pluralities can manifest themselves, then it should always be questioned whether we are in fact moving towards an inclusive society and towards an inclusive discipline.

⁴² <http://www.spatialagency.net/>

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