

Spatial and process strategies toward the formalization and integration of the informal settlement, Villa 31, in Buenos Aires, Argentina

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## ABSTRACT

One-third of the world's population resides in slums. Despite resistance to them, these places retain a certain practice of live and livelihood that exemplify the foundations for sustainable and vital settlement. The purpose of this thesis was to examine slum intervention precedent cases in an effort to derive a framework for upgrading Villa 31 in Buenos Aires. Spatial and process-related characteristics of each intervention were examined. Spatial refers to the physical elements of the built environment, while process refers to the planning and development process taken by actors affecting or being affected by intervention. The results revealed that physical intervention is ineffective when it does not accompany social strategies. I conclude that a solution utilizing John Abbott's recommendation for a combined approach to intervention, which involve characteristics of physical infrastructure provision, community action planning, and physical transformation through the holistic plan, would have the best results if applied in Villa 31. Recommendations are made for specific spatial and process intervention strategies that would improve conditions for its inhabitants. However, the scale of help required to carry out intervention would require governmental assistance to achieve meaningful change in this informal settlement.

**Key Words:** Villa 31, Buenos Aires, Argentina, intervention, upgrading, slum, informal settlements, physical infrastructure provision, community action planning, physical transformation through the holistic plan

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## Chapter 1: Introduction

*There's no way around the conclusion: the 21<sup>st</sup> century squatter cities are positively medieval. And there's no way around another conclusion as well: the history of cities teaches that squatters have always been around, that squatting was always the way the poor built their homes, that it is a form of urban development. (Neuwirth, 2006, p.179)*

It is estimated that of a world population nearing 7 billion, over half dwell in metropolitan regions (UN-Habitat, 2003). The industrialization of the global south has resulted in rapid migration to job centers, placing tremendous strain on local and national governments attempting to keep up with the associated housing and infrastructure requirements. It is estimated that roughly a third of the world's urban population currently reside in slums (UN-Habitat, 2003). Informal settlements are defined by lack of durable housing, sufficient living area, access to clean water or sanitation, and secure tenure (UN-Habitat, 2003). Yet, these places retain a certain practice of live and livelihood that exemplify the foundations for sustainable and vital settlement. Rich social networks, affordable shelter, and in some cases plentiful economic opportunities, exist, creating settlements that are attractive to newcomers.

It is important to comprehend informal settlements independent of the physical aberration they inflict upon the larger, formally built environment. Informal settlements have been described as the consolidation of ongoing 'private' investment and the effort of millions to provide a livable, appropriate, affordable living environment for themselves and their children, within the constraints of the available choices (Egyptian-German Participatory Development Programme in Urban Areas [PDP], 2009). Underneath and behind the often-distinct facades of the structures that make up their communities lies a social layer that is indistinguishable from the formalized urban areas. It is also worth noting that informal areas are not inhabited only by the poor (PDP, 2009).

Institutions and governments have attempted to address the issue of formal settlements for decades. There are now hundreds of precedent examples of intervention strategies, which have been employed worldwide. In the process, intervention strategies have been defined for their typological approaches, each attempting to best influence positive changes for settlement dwellers. These intervention strategies can be categorized into three thematic approaches;

physical infrastructure provision, community action planning, and holistic physical transformation planning (Abbot, 2002).

Among the numerous slums worldwide that have undergone interventions, there are four that I identify in this document that are regarded as successful examples for their approaches. These include Darb al-Ahmar in Cairo, Egypt; Comuna Nororiental in Medellín, Colombia; Ju'er Hutong in Beijing, China; and Morro da Providencia in Rio de Janeiro, Brazil. These four cases were chosen for their varying approaches to intervention given their differing political, social, and economic settings.

I use John Abbot's categorization from which to review these interventions. I further dissect the intervention strategies into the categories, spatial and process. Spatial refers to physical elements of the built environment such as structures, utilities, street/pathway networks, and open space. Process refers to the planning and development process, which involves actors affected by or affecting the actions necessary to undertake intervention. Actors involved include residents, local and national governments, non-governmental organizations (NGOs), as well as various external institutions.

Through this work I extract a common set of intervention strategies that were effective in the four sample cases, and utilize them in developing a set of strategies that could be used to evaluate and improve upon the existing upgrade plan for Villa 31, an 80 year old informal settlement located in Buenos Aires, Argentina. I posit that such a framework would help to create a higher quality of life for Villa 31 residents given such a tactical and proven approach.

Villa 31 was selected because it is facing increasing pressure for redevelopment due to its unique location on extremely valuable land along the waterfront of a wealthy, global, Latin American city. It ultimately exhibits many of the same issues that exist in informal settlements worldwide, such as poverty, self-help housing, and lack of basic services. Thus, it is a useful case study for understanding how such areas could be addressed, specifically in the rapidly urbanizing context of Latin American cities. I believe this derived framework may have some resonance for slum interventions elsewhere with similar physical, social, and economic contexts, to formulate and/or strengthen upgrade-planning strategies. I ultimately hope that the municipality of Buenos

Aires and those involved in the latest upgrade plan for Villa 31 will consider their current set of strategies and incorporate this new framework as they progress forward with the upgrading process.

Slum interventions have been attempted and executed across the world with no single solution. These approaches range from basic infrastructural improvements to significant modifications to the built environment. From art installations to high-rise public housing and mass transportation systems, each intervention attempted to improve the quality of life for citizens of these settlements.

Each informal community represents a unique environment defined by location and cultural characteristics. This complexity makes the search for a single, unique approach impossible to formulate. However, there exist examples of best practices in which elements of some approaches work better than others, depending on the context. These have been widely debated and analyzed for their qualities and effectiveness by professionals and academics for decades (See Chapter 2). The framework that I derive uses commonalities among four separate precedent interventions to formulate a generalizable framework from which strategies could be created for a unique intervention.

I begin this document with a detailed look at informal settlements in the country of Argentina. I will explore the political, social, and economic factors that have shaped informal settlements in this Latin American country. I will then focus on the Greater Buenos Aires Metropolitan Area (GBAMA) to illuminate the issue at the local level before focusing on Villa 31, the subject of this document. I will identify the spatial and process factors that have shaped the informal settlement throughout its history as well as those surrounding it to this day.

The literature review informs this document with respect to relevant research and literature that address the informal settlement phenomenon. It relies on academic publications including books and articles that address the topic, approach, and cases directly.

In addition, I incorporate governmental reports, United Nations reports and data, along with academic research that highlight significant qualitative and quantitative data. A similar set of literature as well as additional print media were utilized to interpret interrelationships and

structural factors that affect and shape Villa 31. Similarly, governmental reports, academic research, and periodicals were reviewed in an effort to construct an in-depth understanding of the four precedent intervention cases.

The methodology employed is described in Chapter 3, explicitly describing the research design carried out in the effort to distill best practice strategies for Villa 31.

Next, background materials that explore informal settlements within the context of Argentina and Buenos Aires are described. Previous research reports and various other media were used to understand the spatial and process factors that have shaped the settlement. I briefly review intentions for areas adjacent to Villa 31 in an effort to build an understanding of the context in which our primary case study exists.

Chapter 5 provides a detailed overview of the primary case study, Villa 31. The history is provided, exploring the process and spatial factors exerting influence upon Villa 31. I describe the fieldwork that I carried out in April and May of 2010, during my stay in Buenos Aires, detailing the nature of my visit and what I learned from the experience. Finally, I review previous plans for intervention along with the latest plan, which was created through an effort led by Fernando Castro, a professor of architecture at the University of Buenos Aires.

Next, four sample cases of slum interventions are presented. They are Darb al-Ahmar in Cairo, Egypt; Comuna Nororiental in Medellín, Colombia; Ju'er Hutong in Beijing, China; and Morro da Providencia in Rio de Janeiro, Brazil. I explore the intervention approaches that were employed in these communities through the spatial and process lenses.

I then provide a discourse regarding the lessons learned from the set of four upgrade plans. This discussion will provide a distillation of the four precedents that will be utilized in the formulation of a framework that can be used to enhance the existing upgrade plan for Villa 31.

Finally, Chapter 8 concludes with the derived framework for upgrading Villa 31. It presents a holistic framework, with both spatial and process approaches, which this settlement could take to increase its case for validity and enhance the quality of life for residents.

## **Limitations**

My conclusions are based upon a theoretical scenario. Thus, its execution can only be carried out in a best-case scenario. Given the cultural, political, and economic conditions surrounding Villa 31, such a scenario is unlikely to form. Each informal settlement exists in a unique environment based on policies dictated by the politics and culture of its host municipality and country. While there are commonalities associated with informal settlements, solutions aimed at improving conditions for their citizens cannot be accomplished without buy-in from those that dictate local politics. Furthermore, this document utilizes four examples from four different countries and three continents. While these projects are diverse in scope and location, they represent just a tiny fraction of attempts at slum intervention that have taken place over approximately the last four decades. While this exercise may provide a set of strategies for this particular informal settlement, most of the findings and recommendations set forth would not be directly useful for other slums due to the unique attributes associated with each.

#### **Direction for future research**

This document presents spatial and process recommendations for intervention. However, the spatial recommendations are particularly basic given the data that exists with regard to the built environment of Villa 31. A detailed survey of the built environment's existing conditions, down to the individual structure level, is necessary to begin prioritizing individual intervention projects.

Additionally, this document predominantly focuses on the spatial characteristics of Villa 31. While planning and development processes are included, the unique dynamic of the politics and social values of Buenos Aires are significant considerations. Further research is needed to develop a thorough process plan for adequate engagement of local government entities.

## **Chapter 2: Literature Review**

This chapter seeks to build an understanding of the slum development phenomenon through review of theory and modern literature. I begin by defining the topic, followed by review of upgrading theories that have developed over time. I also define informality, drawing comparisons between formal and informal, as these concepts are referenced throughout the document, primarily in terms of the built environment. These important theories help to shape our understanding of slum intervention models over the last fifty years or so and continue to challenge our interpretations of the built environment.

### **Slums Defined**

A slum is defined as “a heavily populated urban area characterized by substandard housing and squalor” (UN-Habitat, 2003, p.8). The term slum has its origination in old English and German words meaning a poorly drained place. This was in reference to cheap rental housing of the working class (D’Cruz & Satterthwaite, 2005). According to UN-Habitat, the term slum has become an all-encompassing word for various forms of informal settlements including squatter settlements and illegal subdivisions. Within these slum types are various building types, which range from shacks to permanent structures and where basic services are limited or non-existent (D’Cruz & Satterthwaite, 2005). The evolution of the word to include all forms of informal settlement types has contributed to a negative connotation of the term. The operational definition of a slum that has been recommended for future usage by the United Nations (UN) is an area that combines, to various extents, the following characteristics (restricted to the physical and legal characteristics, but excluding the more difficult social dimensions):

- inadequate access to safe water,
- inadequate access to sanitation and other infrastructure,
- poor structural quality of housing,
- overcrowding, and
- insecure residential status (UN-Habitat, 2003).

### **Informality**

Slums are often linked to informality of both the economic and housing sectors. In this document, I primarily refer to the housing sector. Informality implies “one which breaches formal conventions and is not acceptable in formal circles (UN-Habitat, 2003).” Informal housing, therefore, describes the types of structures common in slums, which often fail to comply with local construction standards. Inhabitants of such structures often lack “formal rights” to the land that they are occupying.

However, informal housing is a response to the markets failure to produce dwelling units in quantities and at a price that is acceptable to the poor (UN-Habitat, 2003). Their scale at a global scale, housing one-third of the world’s urban population, makes them a dominant building typology. According to Daniela Fabricus, informal settlements are the new paradigm of urbanism (Fabricus, 2008).

### **Upgrading Theory**

Although slum upgrading has been a pressing topic for local and national governments for over four decades, it was not until the release of the UN’s highly quantitative report in 2003 that provided a clearer picture of slums worldwide was the dire need for intervention understood. Debate has existed for decades on the best practices for alleviating slum conditions. Upgrading programs began primarily as provision of new housing, but moved toward greater autonomy for settlement dwellers. Governments pressured the World Bank to broaden its loans to housing and urban infrastructure, resulting in a shift of upgrading policies to a mixed approach that incorporated both housing and infrastructure. This important development shift ushered in the great debate about which approach was more successful (Abbot, 2002). This section provides a deeper look at this evolution of upgrading theories through the decades, along with their effectiveness in practice.

### **Modernization theory as foundation.**

Modernization theory is used here to lay the foundation for early upgrading schemes, particularly in the 1950s and 1960s. According to this theory, economic development is interpreted as a continuum with primitive development, similar to slums, at one end, and a quality of life similar to that in Western Europe and the North America at the other end. The common

goal here was to achieve a standard of living comparable to that of the West (Alemayehu, 2008). During this period, it was the dominant theory that many governments followed in an effort to strengthen their economies and move their societies toward a higher standard of living. Slums were viewed as manifestations of lower-class society, which ran counter to the modernization process. In many cases, such as in Rio de Janeiro and Buenos Aires, governments implemented eradication policies in an effort to remove these settlements. This merely resulted in the relocation of slum dwellers to other areas, oftentimes to the periphery of their respective urbanized regions. It became inevitable that this cycle of eradication and rebuilding was unsustainable as the problem was only relocated to other areas.

### **Self-help theory.**

By the 1970s, slums continued to develop and expand despite attempts at modernization, leading urban planners, architects, and policy makers to develop potential intervention models that could successfully address the issue of urban squalor. John Turner was particularly notable for his research that led to a shift in thinking, defined by recognition of the slum dweller's ability to produce housing given the necessary resources. Existing conditions would then be evaluated by the existence of housing rather than by pre-existing standards and materials, as measured in the formal sector (Abbot, 2002). Therefore, Turner promoted the improvement of living conditions within slums, arguing for what he identified as the use-value, as opposed to the exchange-value (Alemayehu, 2008). The World Bank implemented Turner's ideas, providing support and some level of control to the locals for implementing housing improvement projects. In many cases, the outcome was new housing developments on previously unoccupied lands, where tenure security and infrastructure were the key objectives (Alemayehu, 2008). The concept became known as the self-help theory.

### **Combined approaches.**

By the late 1980s, it became clear that the self-help model, as executed, was not sustainable due to the necessary scale of infrastructure (Werlin, 1999). The large-scale infrastructure that was required to keep pace with housing needs translated into expensive endeavors for local and national governments. This led to combined approaches to upgrading,

with housing provision and upgrading of existing settlements, where cost recovery became an important factor. However, even this approach is not without problems as Spence and Dudley (1993) noted gentrification and inherent displacement often result. In order for governments to obtain suitable returns on their investments, housing developments often benefited higher social strata, while improved conditions within slums led to increased property values, and thus, increased rents.

The combined approach also works on tenure security issues, which can be combined within the category of self-help approaches. Tenure issues can range from access to capital to the simple comfort of knowing that one's home will not be taken away in the foreseeable future. Settlers are more likely to invest in their homes and future prosperity when they feel secure in their homes (Neuwirth, 2006). Hernando De Soto (2000) argued that the provision of land titles would unlock "dead capital." By formalizing the property upon which the informal settlements exist, Soto was suggested that investment and economic growth could then occur and alleviate poverty conditions. Although the concept had been in existence for some years, it became popular following his research. However, this approach did not consider the vast resources necessary to carry out such a task. Nor did it consider the capacities of local governments given the complicated and expensive task. Further, based on interviews conducted while living in multiple slums around the world, Neuwirth (2006) concluded that the provision of land titles can jeopardize tenure security by introducing regulations and speculation.

#### **Upgrade classification.**

Classifying slum interventions remains a bit nebulous to date. A couple of classification approaches exist including those developed by Marie Huchzermeyer and John Abbott. Huchzermeyer's classification included just two types of intervention: externally designed comprehensive upgrading and support-based interventions. The first is defined as a capital-intensive intervention driven by either external agencies or by a governing body. The latter is defined by a community-driven approach in which the goal is not to provide for residents but to enable them (Abbott, 2002).

Abbott's approach, on the other hand, categorizes approaches into what he terms three thematic approaches: physical infrastructure provision, community action planning, and holistic physical transformation planning.

*Physical infrastructure provision* has the improvement of the physical environment as its main objective. Examples could be installation of water or sewer, residential units, or any other form of infrastructure. According to Abbott (2002), Choguill likens this approach to that of the policies recommended by Turner and utilized by the World Bank in the early days of slum interventions.

*Community action planning* (or micro-planning) is described as a participatory methodology, which involves a framework for community involvement through project initiation, planning, design, implementation, and maintenance phases. A workshop kicks off the effort, involving a diverse set of stakeholders where community members are equals to the professionals involved. The outcome of the workshops is to develop a prioritized plan of action for intervention. This approach began with the million houses program in Sri Lanka during the 1980s (Lankatilleke, as cited in Abbott, 2002).

Lastly, *physical transformation through the holistic plan* utilizes technology such as remote sensing, aerial photography, and Geographic Information Systems (GIS) to link physical layout with social and economic data in a settlement. This data is then used to devise a targeted intervention or set of interventions. Belo Horizonte, Brazil was the first example of where this intervention method was deployed (Abbott, 2002).

Abbott concludes that neither approach is entirely capable of meeting the requirements of each individual complex environment. He suggests that an integrative approach that takes into consideration the benefits and drawbacks of each might be the best possible solution to improving living conditions. In this work, I rely on Abbott's classification approach to evaluate and develop my framework for the intervention of Villa 31.

## **Chapter 3: Methodology**

This chapter depicts the methodology used to formulate the framework for distilling best practices from existing successful cases, which will offer insights for Villa 31. I explain the reasoning behind my selection of this particular informal settlement, followed by a description of the selection of precedent sample cases that are used to derive common elements that will be used to derive an intervention framework. Next, I review the information gathering process, followed by criteria used to synthesize the literature and information.

### **Case Study**

Villa 31 was selected as a case study because the site had piqued my curiosity during a visit to Buenos Aires. Its location, adjacent to popular neighborhoods of the city along with its scale, makes it impossible to not take notice. Additionally, one cannot spend a significant amount of time in Buenos Aires without reading or hearing about the infamous informal settlement. Ultimately, its geographic location amid the most expensive areas of the global megalopolis, along with the precarious political issues surrounding it, makes Villa 31 the ideal study case.

### **Multiple Cases**

The design utilizes four precedent cases of intervention approaches as a means to critique and provide recommendations that aim to enhance the existing plan for the intervention of Villa 31, the primary case study. The four sample cases are: Darb al-Ahmar in Cairo, Egypt; Comuna Nororiental in Medellín, Colombia; Ju'er Hutong in Beijing, China; and Morro da Providencia in Rio de Janeiro, Brazil. Except for Comuna Nororiental, these precedent cases exemplify similar economic pressures to Villa 31 due to their locations upon valuable land in the center of megapolitan regions, offering contextual lessons for Villa 31. Comuna Nororiental, though still part of a large metropolitan region, is not located at the center of the Medellin region. But as you will see, the case provided a robust approach to intervention with spatial and process-related strategies worth analyzing for their usefulness in Villa 31. Additionally, each exemplified a variety of related issues such as scale and history,.

Each case was also chosen for its unique intervention approach. Darb al-Ahmar and Comuna Nororiental provide examples of a combined approach to intervention, which

incorporates elements of infrastructure provision along with community action planning. Where Darb al'Ahmar utilized open space as the foundation of its spatial intervention, Comuna Nororiental utilized public transportation as its linchpin. The Ju'er Hutong case exemplifies the infrastructure provision model of intervention, where spatial processes were the rule. The case utilized vernacular architecture to inform the design of new residential structures. Finally, Morro da Providencia was chosen due to its strikingly similar context within Rio de Janeiro as that of Villa 31 within Buenos Aires. The settlement is wedged in between the seaport and main train terminal. Intervention there attempted to utilize infrastructure provision within an urban design framework to enhance the living conditions for its inhabitants. Collectively, I aimed to derive commonalities among the interventions, due to their variety of applied strategies that would be applicable to Villa 31.

### **Information Gathering**

Information on the cases and case study was collected from academic literature review, relevant nonfiction literature, news media, and photographs. I also conducted two informal interviews with an architect and a school teacher of students from Villa 31. The architect, Flavio Janches, has completed work in various informal settlements located throughout the Greater Buenos Aires Metropolitan Area. I met with him to discuss the informal settlement phenomenon in the Buenos Aires to obtain a deeper understanding of the social dynamics and institutional constraints he had witnessed in his work. He also provided me an overview of an intervention effort that he led in a nearby slum. I visited Escuela Padre Mugica, a high school for students of Villa 31, where I spoke with Coral Ramos, a teacher, at length about the students of the villa as well as the political factors that frame opinions of Villa 31, internally and externally. I asked her questions about social issues affecting the students in an attempt to comprehend challenges facing students in their daily lives. This information helped me to gain a more thorough understanding of social issues within the settlement. I also spoke with several of the students to gather information regarding their living conditions, their perception of their neighborhood, and their knowledge of plans for intervention. Similarly, this aided in my understanding of the social make-up of the settlement and interpretations of their own community within the context of

poverty and slum intervention.

While in Buenos Aires, I was able to visually observe the settlement from a distance. On two occasions I was able to walk near the periphery of one side of the settlement. Taxi services also allowed me to view the settlement along two roadways, one that follows the southern edge of the settlement, and the freeway, which cuts through the center. However, I was unable to obtain direct access to the settlement's interior due to the dangerous conditions. I had been advised to find a community member willing to escort me safely, as there had been recent instances of violence inflicted upon visitors. Unfortunately, that effort was futile and I was unable to find such an escort to accompany me prior to my departure from Buenos Aires.

### **Synthesis of Literature**

The breadth of media utilized facilitated an understanding of the case study and the precedent cases. Each case research design aimed to develop a foundational comprehension of the social, political, and economic context of each case. For the case study, I will describe the fieldwork in depth in an effort to contribute additional context that will help to frame the social conditions affecting Villa 31 and plans for intervention. Next, intervention approaches for the precedent cases were examined to interpret the goals and strategies of each. They were viewed holistically, providing insight to spatial and process approaches. Finally, the outcome of each intervention case is reviewed so as to interpret and evaluate its effectiveness. By engaging in both the spatial and process approaches, I aim to derive a framework that utilizes a holistic approach for intervention. However, the process approaches are generalized, as the focus of this document is on an urban design framework that engages the physical aspects of intervention, but is informed by processes that engage inhabitants and governments.

## Chapter 4: Informal Settlements in the Context of Buenos Aires and Argentina



*Figure 1.* The informal settlement, Villa 31, in Buenos Aires, Argentina (Trujillo, 2010).

This chapter begins by providing background information for informal settlements in Buenos Aires and Argentina. It explores the socio-economic and socio-political complications that have shaped the growth of informal settlements in the city and country, so that a foundation of understanding can be constructed from which to interpret upgrading plan approaches for Villa 31, the primary case study of this document.

### **Argentina and Buenos Aires**

Latin America has seen some of the world's highest rates of urbanization. However, "slum growth is slowing in many parts, settlements are consolidating, and many countries are beginning to provide residents with access to land tenure and services" (Beardsley & Werthmann, 2008, p. 39). South America has been in the spotlight in recent years for the way in which some Latin American countries have attempted to alleviate omnipresent slum conditions in many of its largest urbanized areas. Venezuela, Colombia, and Brazil have been particularly proactive in their efforts to upgrade informal settlements, as I will later illustrate in detail.

Meanwhile, the nearby country of Argentina has been forced to deal with similar housing issues for decades, and only recently developed any official policy to alleviate the pressures resulting from slum growth. The early 20<sup>th</sup> century was kind to this formerly wealthy nation, as the country was ranked seventh worldwide for per capita income in the 1920s (Sanders, 1989). By

1914, Buenos Aires was the second largest Latin city in the world and it was the largest city in the southern hemisphere (Bastia, 2010). However, the proceeding decades were defined by governmental instability and eventual neoliberal policies that reduced this nation's fortune, as we will see later. Although the country lacks the financial eminence it once possessed, the country still acts as a jobs producer for the region with the autonomous capital, Buenos Aires, acting as its center of commerce. Argentina's population as of 2009 was 40,276,376 persons (World Bank, 2009). Representing nearly one-third of that population is the metropolitan area comprising Buenos Aires and its 27 surrounding municipalities with 12,795,000 persons (United Nations, 2007). Within that population, approximately 700,000 are thought to live in over 900 *villas de emergencia*, or emergency settlements, as some slums are referred to in Argentina (Beardsley & Werthmann, 2008). Some academics and officials believe this number to be greater than 1 million, based on various sources and discussions I encountered in my research. Locally referred to as *villas* (vee-shaas) for short, a significant majority exist in areas beyond the Federal District of Buenos Aires.

Argentina's informal settlements can be categorized into two types, *asentamientos* and *villas de emergencia*. *Asentamientos* are settlements that are the result of an instantaneous land invasion by groups of people who coordinate the invasion and often take action during the night. These settlements sometimes meet resistance from local authorities, forcing them to attempt a land takeover several times. When successful, the dwellers construct these settlements in such a way that they resemble the layout of formal communities with their grid-like street patterns. Over time *asentamientos* improve as dwellers invest incrementally when resources are available. *Villas de emergencias*, on the other hand, go back as far as the 1930s with the start of construction of Villa 31, the first such settlement (Bastia, 2010). They first formed during the European immigration period to house local workers. Over time, these settlements have transitioned to housing for the city's latest immigrants.

A majority of *villa* dwellers migrated from the hinterlands of Argentina as well as the nearby countries of Paraguay, Bolivia, and Peru. Very few of these settlements existed prior to the 1940s due primarily to better economic times (Keeling, 1996). Rapid growth in the outer-lying

communities, locally referred to as *partidos*, overwhelmed local and national governments after 1945, leading to a lack of housing and services. Spanish and Italian immigrants migrated to the Greater Buenos Aires Metropolitan Area (GBAMA) at an estimated rate of 200,000 residents per year, encouraging the development of squatter settlements (Keeling, 1996). Until more recently, informal settlements tended to occur along the banks of the Rio de La Matanza and Rio de la Reconquista rivers. Figure 2 illustrates a recent snapshot of villas and asentamientos, which have more recently tended to fill in the interstitial spaces throughout the GBAMA, outside of the Federal District, with little obvious pattern.



Figure 2. Villas and asentamientos throughout GBAMA (Beardsley & Werthmann, 2008, p. 38).

### **Politics, policy, and legislation.**

The 1940s saw intense growth in the *partidos* of Buenos Aires due to rapid immigration from foreign countries. The following decades were defined by governmental instability, which largely had squatter settlement policy that shifted between no policy and eradication, which was the case during the military regime of the 1970s. Rent controls that had been in place since the 1940s were abolished in 1976 in favor of a market approach that was meant to stimulate growth

in rental housing (van Gelder, 2007). Further, less housing was built than expected while rental rates increased, often forcing long-time, low-income residents into precarious living situations in expanding informal settlements, also known as *villas de miserias*, or neighborhoods of misery (van Gelder, 2007). "Increased rents, coupled with a drastic fall in real wages for much of the city's workforce, precipitated a 30% decline in the number of renters between 1976 and 1978" (van Gelder, 2007, p. 223). Thousands of individuals and families were forced into precarious living situations as a result.

The years 1976 to 1983 were defined by a military dictatorship that greatly impacted the way of life for Argentinians, and made life lethally dangerous for those living in informal settlements. In 1977, the introduction of the *Ley de Erradicacion de Villas de Emergencias*, an eradication policy, affected an approximated 270,000 informal settlement dwellers who were forcibly removed from their homes that were located in informal settlements and rendered homeless (Davis, 2007, p. 109). Buenos Aires was to host the 1978 World Cup and leaders sought to clean up the city's image in time for the highly observed international event. The informal settlements were seen as urban blight that required sprucing up before the world converged upon the city. Settlers were often removed from their homes while their dwellings were destroyed overnight. According to some reports, the bodies of some community leaders were left lying in the street as a message from the government that their communities were not welcome and resistance would not be tolerated (Timerman, 2010). It is believed that nearly 200,000 informal settlement dwellers were eradicated from the city during the late 1970s. By 1981, census data showed that only 30,000 informal settlement inhabitants remained within the borders of the Federal District. Many of those settlement dwellers ended up in the GBAMA, outside of the City of Buenos Aires (Bastia, 2010).

In 1983, Argentina elected Raul Alfonsin and the country returned to a democracy. A new law was established that effectively countermanded the *Ley de Eradicacion*. Those that had been evicted from the informal settlements were, by law, allowed to return. The City of Buenos Aires went even further and agreed to improve the conditions of the settlements by providing basic public services, although these promises were never kept (Keeling, 1996). Regardless, the

number of dwellers occupying the informal settlements within the Federal District increased to 50,900 by 1991 and 86,666 by the year 2000 (Bastia, 2010).

Urban planning and an effective framework to manage growth has been the Achilles' heel for this metropolitan region through the decades. Keeling (1996) described the region's planning capacity best when he said it is a jurisdictional mess consisting of overlapping government bodies. He concluded that a lack of continuity in planning and policy is exacerbated by public disinterest in planning matters along with economic issues, which leave little resources for urban planning.

#### **Barrio improvement program, Programa Mejoramiento de Barrios (PROMEBA).**

Argentina's first sizable attempt at alleviating slum conditions occurred in 1997. The country conceived of Programa Mejoramiento de Barrios (PROMEBA), a program aimed at improving the quality of life for residents of the *villas* and *asentamientos*. The programmatic structure was based on infrastructure provision with community action planning principles laced in, and also contained the following elements:

- land title regularization,
- provision of infrastructure and basic services, and
- enhancement of management capacity and participation.

The program is in the midst of Phase II, where Phase I included 175 projects that benefitted 59,345 households. Phase II is anticipated to include 100 projects, affecting 47,500 families by the year 2012.

National and international funding has been employed through a loan program from the Inter-American Development Bank (IDB) to finance PROMEBA (Cosgrove, Frese, Pennotti, & Smedley, 2005). National contributions originate from national gas taxes on combustible fuels and recuperated moneys from previous social housing investments. Implementation is achieved through a decentralized structure, allowing provinces and municipalities some flexibility to achieve the intended goals of the program given their unique peculiarities in culture and politics. In total, over US\$724 million have been invested between Phases I and II (Rojas, 2010).

#### **Economy.**

The first half of the 1980s was largely defined by an economic shift that coincided with political turbulence. By 1986, average working incomes were estimated to have been reduced by 30% in Argentina. Inequality had reached all-time highs in the latter half of the decade as incomes of the rich had increased from 10 to 23 times that of the poorest (Davis, 2007, p. 157). Carlos Menem was elected into the presidency in 1989 and took office six months early, after the previous president, Alfonsín, stepped down. The country was dealing with hyperinflation and labor unrest.

The Menem government in 1991 turned completely and unreservedly to globalization strategies. Abandoning the policies of the past, Menem opened up Argentina's economy to free-market forces, stabilized the currency with the Convertibility Plan (1 Peso = 1 US), aggressively pursued the privatization and deregulation of all public services, and began to disengage the state from the domestic economy. (U.S. Congressional Research Service, 2006, p. 2)

This economic policy proved vile to the country as the peso became overvalued. While this helped to quell inflation, the country's overspending led to high external debt levels (CRS, 2006). Menem was defeated in the 1999 presidential elections by Fernando de la Rúa, leading to improved optimism for the economically distressed country. However, conditions continued to worsen, reaching a low for Argentina when the government could no longer secure loans from the International Monetary Fund (IMF). Many citizens began to pull their money out of the banks, resulting in banks limiting monthly withdrawals for clients. By late 2001, the social unrest had escalated to rioting, resulting in 27 deaths and hundreds of injuries (CRS, 2006).

President de la Rúa fled office at this time and he was succeeded by a series of interim, Peronist presidents, who were rooted in previous President Juan Perón's style of nationalism and populism. Eventually a man by the name of Eduardo Duhalde became president on January 1, 2002. He was affiliated with the Peronists and the country went on to adopt a unified floating exchange rate in early 2002. Duhalde was able to secure loans that helped stabilize the country's economy. In May 2003, the left-wing Peronist, Néstor Kirchner, was elected president of Argentina with over 70% of the vote. He won by attacking the neoliberal rhetoric of his opponent, instead favoring debt reduction and negotiations for lower interest rates on loans from international creditors. In 2005, Argentina was able to restructure \$100 billion in defaulted bond debt, demonstrating the country's emergence from the economic crisis of 2001-2002. Although

economic growth for the country has hovered near 10% over the last decade, inflation has also continued to be an issue for the recovering state. The middle and lower classes have yet to experience significant improvement in their quality of life. As of 2005, 34% of the population was estimated to be living below the poverty level (CRS, 2006).

## Chapter 5: Villa 31



Figure 3. Villa 31 and Villa 31 bis together make up “Villa 31.”

This chapter is broken into three sections; context, field observations, and the current intervention plan for Villa 31. The context section works to construct an understanding of the built environment of Villa 31 in its current state. It illustrates the current political issues surrounding the settlement and the external forces shaping plans for intervention as well. Next, I provide a narrative of my experiences during my stay in Buenos Aires. It contains several relevant, social implications that have shaped the settlement in the past and continue to affect it today. Finally, I will provide a brief overview of previous plans for upgrading the settlement. I will detail how a previous plan from 2003 has informed the current one. This is followed by a detailed review of the existing plan for intervention, Anteproyecto Urban Barrio 31 Padre Mugica, in which I explore the spatial and process objectives.

### Context

If sports infrastructure – especially soccer stadiums – is considered, plus parks that are free and open to the public, plus deteriorated but free health and education services, one can understand why low-income and marginalized citizens have preferred to live in the Federal District, tripling the population of unregulated settlements in less than a decade. (Liernur, 2007, p. 12)

The breadth of services and public facilities offered within the Federal District of Buenos Aires, as compared to the greater metropolitan area, makes living here a privilege and a desirable commodity. Figure 3 illustrates Villa 31's site near the Rio Plata between the shipping port and Estacion Retiro train station. The informal settlement is a unique case in that it exists across a set of railroad tracks from the urban core of Buenos Aires.

This locational advantage was also a draw for those who founded Villa 31. Started during the Depression, it was created by unemployed Italian and Polish immigrants who chose this location due to its access to potential day labor at the port (unknown, 2009). Over the years, those Polish and Italian immigrants diffused into the Porteño cultural pallet while newcomers filled the settlement's residential units.

The settlement is physically constricted to a narrow strip of land located between the railroad tracks and the shipping port. The land is primarily owned by the national government, while a small portion is owned by the railroad company and



*Figure 4.* The pathway that leads from Villa 31 to Estacion Retiro (Lim, 2009).

Yacimientos Petroliferos Fiscales (YPF), the Argentinian oil company. Villa 31 is bisected by a freeway, which runs overhead for some portion and then transitions to ground level for the western portion, delineating Villa 31 and Villa 31 Bis. Villa 31 bis was built after the raised freeway was constructed and has seen the greatest amount of growth in recent years. In this document, I will refer to the settlement as a singular Villa 31, which incorporates the original portion of Villa 31 as well as Villa 31 bis.

The location is ideally situated near the urban center of the region, with regional connections on the subway system, locally called the *Subte*, and areas further to the northwest by train. Jobs, healthcare, and education are all relatively accessible from Villa 31 when compared to other *villas* and *asentamientos* located throughout Buenos Aires and the greater metropolitan area.

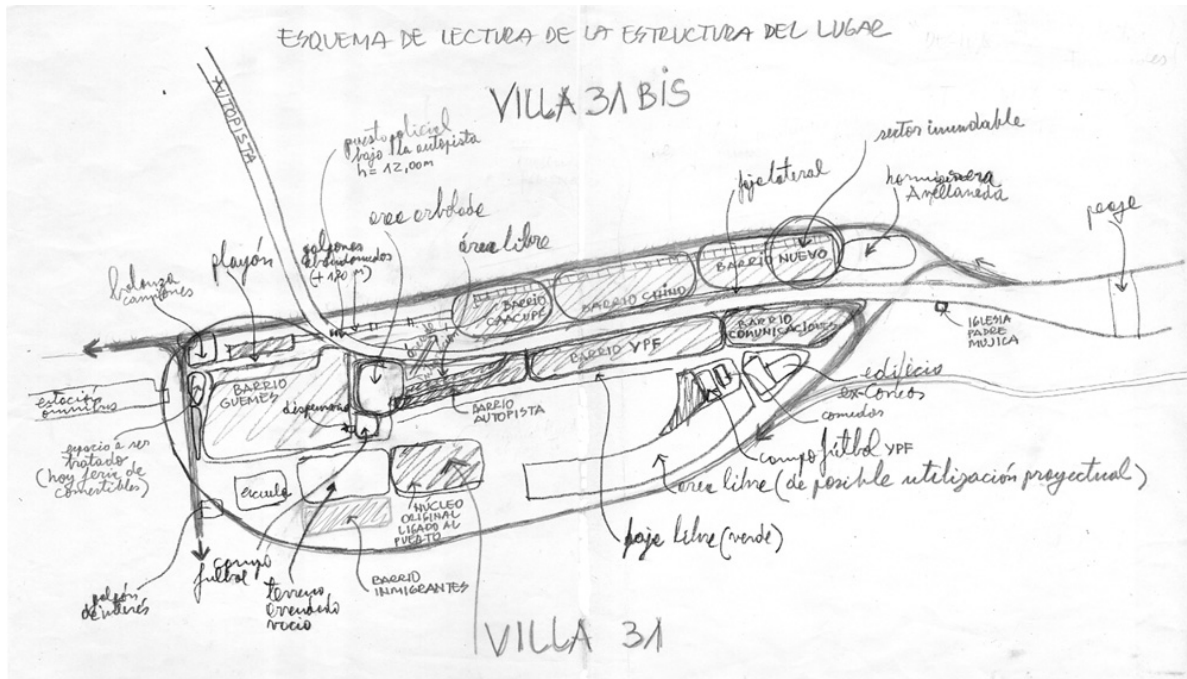


Figure 5. Sketch of the neighborhoods that compose Villa 31 (Juaregi, n.d.).

Based upon City of Buenos Aires data, the population of Villa 31 increased from 12,204 people to 26,403 between 2001 and 2009 (City of Buenos Aires, 2009). However, some entities claim there are currently more than 120,000 (La Cooperativa de Mujeres Artesanas da la 31, 2010). Figure 5 illustrates the seven designated neighborhoods, or *barrios*, which comprise Villa 31, including Inmigrantes, Guemes, YPF, Comunicaciones, Autopista, 31 II, and Barrio Chino.

The approximately 96-acre settlement is composed of structures that vary from one to six levels in height, with various construction materials that range from concrete and brick to plywood and tin. Argentinian anthropologist, Cristina Cravino, conducted research on Villa 31 and obtained significant data with regard to the physical and social structure within the settlement. Over 96% of the houses contain masonry walls, greater than 90% contain either paving stone or sheet iron roofs, and 91.8% have concrete floors. Less than 4% of housing units are built out of cardboard, timber, or sheet iron walls and soil floors. Houses within Villa 31 bis are more likely to contain

fewer levels, and are often built more precariously than Villa 31 (Cravino, 2006). Figure 7 illustrates the variety of construction materials used to construct homes, in this case beneath the elevated freeway.



Figure 6. Villa 31 bis (Pensando la Bronca, 2010).

Villa 31 bis is also more likely to contain less infrastructure than Villa 31 (Cravino, 2006). Fewer roads are paved

and the area is generally more prone to flooding in Villa 31 bis. Additionally, a significant 57.4% of residents do not have sewer services (Cravino, 2006). However, on a positive note, a vast

majority of residents said their homes contained electricity, water, and telephone services. Cable television services were divided in half between those that had cable and those that did not (Cravino, 2006). The same study found strong economic activity within the informal settlement; 94% of the respondents claimed they can meet their daily needs by



Figure 7. Various construction materials (Lim, 2009).

purchasing goods within their neighborhood. For larger purchases such as clothing and household items, 64.3% claimed they could purchase such items from within the settlement or nearby. Using this data along with employment data, a strong economic sector is quite apparent within the settlement. While this particular data set showed a high 43.5% unemployment rate, 16.7% were in fact employed within Villa 31. The employment data however is partially biased by the predominance of female responders; 76.8% of those who participated in the surveys were female. Regardless, this data illustrates the strong economic activity and potential of the informal settlement (Cravino, 2006).

While the adjacent Recoleta neighborhood has always been recognized as wealthy, the influence exerted on surrounding areas has had significant social ramifications for the structure of the city. Wealthy, light-complexioned residents have colonized the area for decades, managing to keep the subway out of their *barrio*. This affects the circulation of citizens throughout Greater Buenos Aires, as access to this wealthier area is somewhat limited. Only recently has construction started on extending the subway further into the vicinity. Money, usually from overseas, has flooded the area, funding the redevelopment and revitalization of the Puerto Madero, Barrio Norte, and Palermo neighborhoods. This fact is apparent in the numerous high-rise condominium and hotel towers that have sprung up throughout these adjacent areas over the last 10-15 years. Walking the streets reveals the existence of significant populations of expats who have been drawn to Buenos Aires by the weakened peso and a generally high quality of life, particularly in these *barrios*.



Figure 8. Villa 31 and vicinity.

Puerto Madero's development is viewed as such a tremendous success that the city wants to continue and expand. The adjacent port area that surrounds one side of Villa 31 is targeted for the development of Puerto Madero II. Initial plans call for a new tourist ship terminal, public spaces, residential areas, and a heliport (Administración General de Puertos, n.d.). The marketed consumer for Puerto Madero I clearly illustrate the intended consumer to which Puerto Madero II will also likely be marketed.

Figure 9 is a photo of recent development in Puerto Madero I including the Hilton Buenos Aires, high-end condo towers, and upscale shops and restaurants. This places Villa 31 in an increasingly precarious situation. These factors contribute to a complex set of variables worthy of consideration when contemplating long-term intervention strategies.

Mauricio Macri, the current mayor of Buenos Aires, promised to clear Villa 31 during his election campaign in 2007. The informal settlement is currently composed primarily of migrants from Paraguay, Bolivia, and Peru (Epstein, 2009). He condemned the settlement, associating it with violent criminals and unsafe structures. Fortunately for Villa 31 residents, President Kristina Kirchner has supported the rights of the community to exist, resulting in a political deadlock. That the lands upon which Villa 31 exist are primarily owned by the national government lends some amount of comfort to supporters of the settlement. Until 2009, any plans for the area required city approval, contributing to the political draw. Finally, in December of that year, the Buenos Aires legislature passed Law 3343, sanctioning the intervention of Villa 31 (Perten, 2011).



*Figure 9. Puerto Madero development (Trujillo 2010).*

### **Field Observations**

This section provides a narrative of my observations during my study abroad in the city of Buenos Aires for a quarter during the spring of 2010. It traces my experience as it relates to Villa 31, framing part of the social conditions that surround the informal settlement. This background is

then used to inform my critique of the existing upgrade plan as well as provide recommendations on how to improve and expand upon the plan.

I went to Buenos Aires to improve my Spanish language skills and to collect data and research the local informal settlement phenomenon. Additionally, I was there to learn more about the history and ongoing conflict surrounding Villa 31 given its unique location and extended history. Having visited the city and country once previously, I had developed a curiosity toward its history, especially considering its social and cultural attributes that are famous around the world. Villa 31 occupies land, creating a bit of an island in an otherwise built up and historic part of the cosmopolitan city. Most visitors to the metropolitan area likely become aware of the informal settlement at some point as it abuts points of interest, forcing visitors to drive through it on their way into the city via the freeway, or when taking the train from Retiro Station to points northwest such as Tigre. I was not exempt from this during my visit. This section is a narrative of my observations

As a visitor, it is difficult to not feel welcomed by *Porteños*, as the locals are referred to, a generally gregarious population always curious to learn your opinion of their city. But they never have qualms about sharing critical opinions of their hometown, which almost always included the adjectives, dirty, dangerous, loud, and congested. This is in direct conflict with the local pride that is inherent in its inhabitants, as *Porteños* display a relative pride in their city and its cosmopolitan flavor. But that pride was shadowed by an understated, fatalistic undertone in their outward opinion to outsiders. I never concluded whether that undertone extended to the opinion they share with one another.

I spoke with many citizens from various communities around the greater Buenos Aires Metropolitan area to obtain their opinions about the *villas* and existing plans to upgrade them. Nearly every time I broached the subject I was looked upon strangely and asked why I would travel such a long distance to study and research such horrendous places. The predominant belief is that these places harbor illegal aliens who are there to siphon money from the government and commit crimes. Paco, a locally rampant drug that is a byproduct of cocaine, is believed to be used and pedaled predominantly by the youth of the *villas*. One individual went as

far as stating that the government should drop a bomb on each and every one of the *villas* to eradicate the city of its social ills.

This opinion is shockingly prevalent and can be traced to two sources. The first is the local media, which contribute to this perception of the *villas* being places of dire social ills. The continual coverage of events in and around the *villas* reinforces this stereotype. The second is the implicit racism exhibited by much of the populace. Similar to the situation in the United States and its immigration challenges with Mexico and Latin America, Argentinians appear to hold a similar mistrust of the immigrating Paraguayans, Bolivians, and Peruvians. Some believe that these immigrants come to their country to take advantage of government supported aid and take the jobs of Argentinian citizens. These typically dark-complexioned citizens are the scapegoats for the economic and social issues that have faced the nation for decades and were, ironically, created by none other than the ruling Argentinian class and exacerbated by globalization and the neoliberal policies that have worked to undermine the working class.

This observation was consistent with some of my research. The implicit racism can be traced back to the 1800s when the president at the time proposed to transform and modernize the country by populating it with white Europeans (Bastia, 2010). The indigenous people and the Argentinian cowboys were considered to be lower races and the immigration of Anglo-Saxon immigrants sought to progress the country: so the theory went. These policies, seemingly, had a lasting effect based upon my personal experience.

Finding someone connected to the informal settlements was quite a challenge. Foreigners were ambivalent to the poverty in the city as they were typically in Buenos Aires to learn Spanish, sightsee, and party at the famous *boliches* (nightclubs). Locals, on the other hand, were predominantly misinformed about the informal settlements and their residents and treated them with disdain. I eventually found two sources that finally led me to sources of knowledge related to the settlements. Before I departed Seattle for Buenos Aires, I emailed Christian Werthmann, a professor from the University of Harvard, who had recently published several articles regarding informal settlements and included some information about the local situation. He was able to put me in contact with local professionals involved with slum upgrading plans in

Buenos Aires, including Fernando Castro, who is leading the latest effort in Villa 31. While these professionals were able to provide me with relevant information pertaining to upgrading in Buenos Aires and Argentina, I was never able to find an individual who was capable of escorting me to the villa. However, I was finally put in contact with a teacher of Escuela Padre Mugica, a school that serves children from Villa 31, who was kind enough to invite me to the school to see the facility, which was located near the bus terminal beyond the borders of the informal settlement. My two visits allowed me time to speak with faculty as well as some of the students.

During a general discussion with the students, they told me a little about the living conditions within Villa 31. In general, they lived with several generations of their families in homes consisting of between five and eight family members. These particular students were from older portions of the informal settlement, including Guemes and Y.P.F., which contain electricity and water. Many of them were aware of plans to upgrade their community but there was a definite pessimism about it. I attributed it to the history of unfulfilled promises by the government. When asked what they'd like to see the most in their community, they said they would like to see more security as well as educational and health facilities within the settlement. There were not happy to walk such a distance beyond their neighborhoods to attend school.

The faculty I spoke with praised the students for their desire to be educated, despite the challenges inherent in their environment. They expressed a lack of confidence concerning the upgrade plans for the community, which I attributed to the history of empty promises as mentioned in Chapter 4. When queried about safety issues within the villa, I was told that there was some element of drug activity that contributed to the somewhat unsafe conditions. Recent events involving violence inflicted upon outsiders led the faculty to recommend that I not visit Villa 31 without a local who could accompany me.

### **Intervention**

Below I provide a review of the previous intervention plan for Villa 31, followed by a review of the current plan, AUB31. I will break the plan down into spatial and process objectives, illustrating the way in which the plan appears to conform to what Abbott describes as a holistic intervention approach on the surface, but is more in line with physical infrastructure provision.

### **Previous plan.**

By 1996, the city's intentions were to entirely rebuild the area and displace the inhabitants of Villa 31. Those plans never came to fruition and the next plan was dramatically more sensitive to the historic informal settlement. In 2003, it was estimated that the informal settlement contained a total of 3,955 families, or approximately 12,000 residents. Villa 31 and Villa 31 bis, were inhabited by 2,791 and 1,164 families, respectively (Juaregui, n.d.). That year saw an upgrade strategy for Villa 31 by the Rio de Janeiro-based architect, Jorge Juaregui. His plan was predominantly spatial, focusing on two levels that he referred to as the macro and the micro. The macro dealt with the community within the context of the city and region and their interrelationship. It was concerned with enhancing network connections with the formal city and creating gateways to the informal settlement. The micro was concerned with physical conditions within Villa 31, and included facilities dedicated to process-related uses. It proposed the replacement of Villa 31 bis with a series of public spaces and facilities. Displaced residents would then be offered new housing that would be constructed within the borders of Villa 31. Process-related functions such as a child-care facility, a health center, and a center to deal with workforce solutions were proposed. Additional spatial interventions included the rehabilitation of an existing chapel named after a famous, historic resident, Padre Mugica, the addition of green open space, street furniture, and vegetation (Juaregui, n.d.). Ultimately, this plan was never realized, as it never achieved the necessary political support, but many of its concepts were resurrected in the intervention plan that followed.

### **Anteproyecto Urban Barrio 31 Carlos Mugica (AUB31).**

By 2009, the demographics of the informal settlement had changed dramatically. The population more than doubled to over 26,000 residents, according to official census data. Villa 31 bis had grown to contain more inhabitants than the older Villa 31. This greatly modified the physical approach to the 2003 plan. Plans for Puerto Madero II also weighed heavily upon the decision making, and particularly the ultimate design of the Villa 31 upgrade plan as I will discuss later.

Proposed in 2010, AUB31 is currently between the design and implementation stages. It is named after a significant, historic figure in the community. Fernando Castro, a professor of architecture at the University of Buenos Aires, has led this effort along with his students.

***Spatial.***

The plan followed the logic of the 2003 plan by directing interventions toward the macro and micro levels, but this plan introduced a middle level, the median. The macro level was concerned with the interrelationships between the settlement and the City of Buenos Aires, particularly those areas adjacent, such as the airport, seaport, and the Retiro station. The median level observed space articulation, the community's relationship with nearby infrastructure, public spaces, and accessibility. Finally, the micro level looked at the internal structure of the neighborhood, interpreting pre-existing conditions, incorporation of new programs, and the extension of basic infrastructure services. The plan contains a set of guiding objectives:

- encourage the connectivity of the urban structure,
- ensure accessibility,
- introduce green space and enhance existing public space,
- respect the history and pre-existing configuration,
- drastically improve the image,
- seek community participation, and
- produce cohesion.

Figure 14 on page 37 contains a comprehensive list of spatial strategies and a map that indicates the location of each intervention. Connectivity and accessibility enhancements are to be made through a series of proposed projects. The first is a ramp that would link the front of the settlement directly to the bus terminal, illustrated by the vignette in Figure 10. Next, Figure 14 indicates a proposed bridge meant to connect Villa 31 bis with Recoleta, providing the community with a second primary connection to the formal city. The plan also proposes an enhanced and defined system of connections for automobiles and pedestrians in which 9<sup>th</sup> Street would be promoted as the main axis, and secondary connections are proposed to complement the main connector axis. The goal is to increase connectivity between the community and significant

facilities. Another connectivity strategy includes a new, primary route that leads to the bus terminal and serves as the northern border to Villa 31, delineating between the neighborhood and the port area (Figure 14, #9).



Figure 10. A vignette of the connecting ramp (AUB31, 2010).

Open space objectives, indicated in Figure 14, are to be met through a renovated Padre Mujica church, which would include an enhancement to surrounding open space, along with a central park square beneath the freeway for social gathering. This park would be adjacent to a new structure for commercial uses, which is meant to activate the new public space. The plan also includes the provision of commercial space near the center of the settlement. However, this would necessitate the removal of residential structures and the relocation of inhabitants.



Figure 11. The Movement building (Google Earth, 2011).

Additionally, another project calls for the renovation of the Movement Building, shown in Figure 11. The large structure would be, reconfigured to house various public services. New housing is proposed in the form of several high-rise structures that attempt to consolidate some of

the displaced population. Figure 12 illustrates a concept for the residential structure typology, while Figure 13 illustrates the location of such structures along the northern periphery of Villa 31.



Figure 12. Proposed high-rise housing (AUB31, 2010).

Finally, the plan calls for the provision of infrastructure and utility services. The exact amount and location of such services are not provided in the plan document, however. It is unclear if there has been any quantification of the extent deemed necessary.

Combined, these projects are meant to accomplish the plan's objectives, while respecting the settlement's history, its pre-existing configuration, and enhancing its image. The various spatial interventions proposed address a variety of spatial issues such as connectivity, built form, and infrastructure. In Chapter 7, I will evaluate these recommendations, utilizing lessons gleaned from the precedent cases to critique them.

### ***Process.***

The plan identifies just two process-related objectives, the production of community cohesion and solicitation of public participation. To date, community participation has been integrated into the development of the plans since 2003. Students and professionals worked with Villa 31 inhabitants to compile social and spatial data for the plan. Later, community representatives were utilized to critique the architects' plans, in an iterative design process that has continued to refine the plan to what exists today. The yet-to-be-initiated implementation stage is intended to provide opportunities for construction employment and later, maintenance.

However, details regarding how this is to occur and the level of inhabitant involvement are vague (Perten, 2011).



*Figure 13.* Aerial rendering of AUB31 (AUB31, 2010).

The plan states that it is intended to provide the framework for a comprehensive plan that will ultimately improve the quality of life for inhabitants of Villa 31. The plan declares that it is merely a vision that is intended to encourage further discourse and evaluation. However, at this time it would appear that some of these recommendations might be implemented once funding is identified. Overall, the process objectives of the plan only pertain to the inhabitants of Villa 31. Meanwhile, the plan has implications at the federal and municipal government levels, but does not address how those entities should engage in the process. Chapter 7 will provide analysis of this approach, based upon the precedent cases.

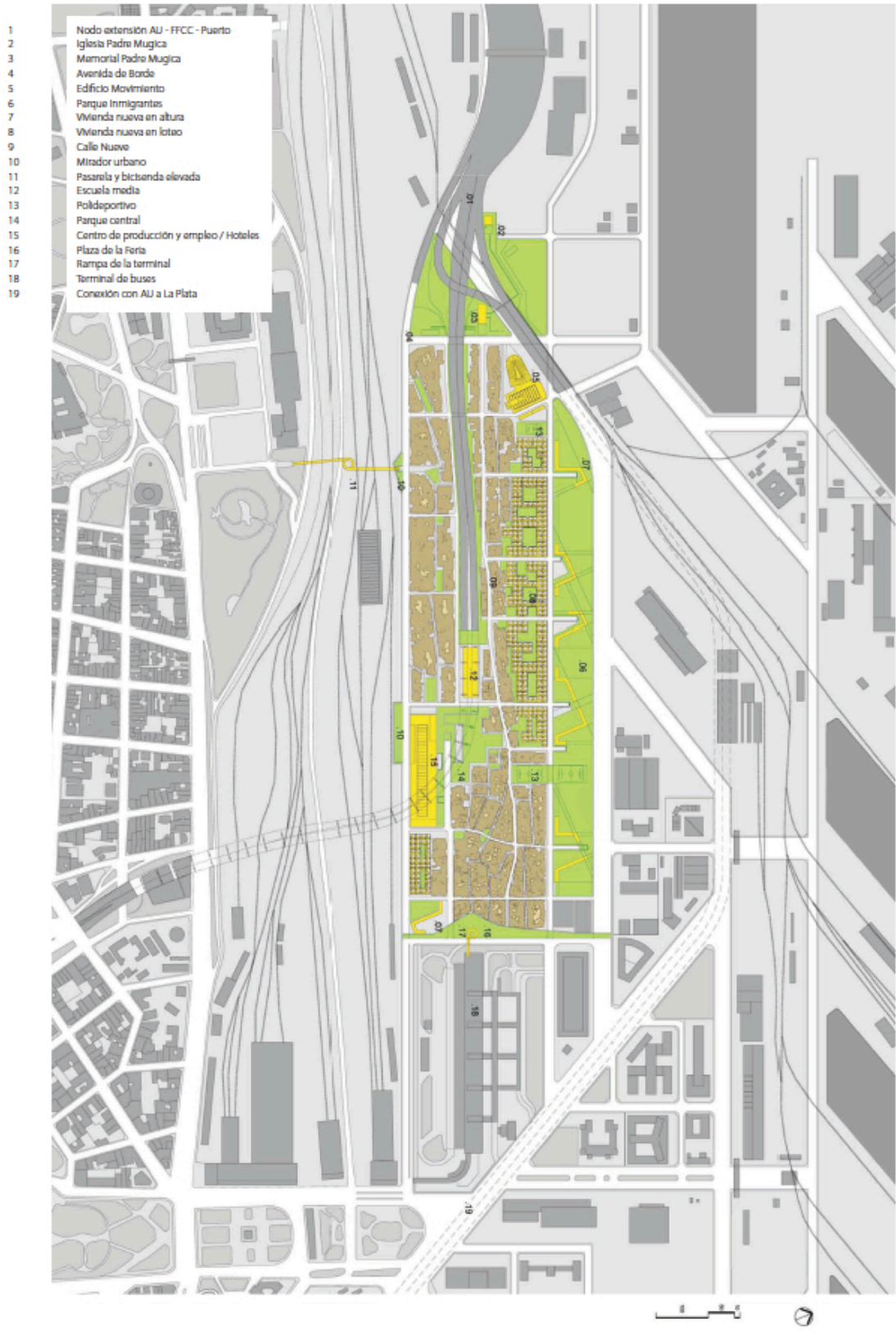


Figure 14. AUB31 proposed projects (AUB31, 2010).

## **Chapter 6: Precedent Slum Intervention Cases**

This section presents four cases of slum intervention that have been executed and evaluated, each contributing to best practices of modern intervention strategies for their innovative approaches at their respective time of completion. The four case studies include the Ju'er Hutong in Beijing, China; the Comuna Nororiental in Medellín, Colombia; Darb al-Ahmar in Cairo, Egypt; and Morro da Providencia in Rio de Janeiro, Brazil. Each of the interventions that took place in these communities provides precedence from which to draw lessons in order to create a framework for Villa 31 intervention. I will describe characteristics exhibited by the intervention and the way they align with Abbott's categorization themes.

Each sample case is organized into three sections: context, spatial and process approaches, and outcome. The context section provides a historic background of each respective city's development, with particular attention paid to the development of slums over time. An overview of the existing conditions within the neighborhood prior to the execution of the intervention is also provided. Next, the intervention program is examined in detail under spatial and process categories. Finally, the outcome section provides a discussion of the results, including quantitative data and critiques of the executed intervention.

## Ju'er Hutong - Beijing, China



*Figure 15. New apartments in Ju'er (Sadler, 2007).*

Similar to Villa 31, the Ju'er Hutong is located near the historic center of the city. The process of upgrading the historic settlement is an example of a top-down approach that involved minor community input. The intervention was a prototype for the upgrading of similar hutongs located throughout Beijing. The project contains valuable process-related lessons in financing and public engagement, as well as spatial lessons with regard to the preservation of vernacular architecture. The Ju'er Hutong is an excellent example of what Abbott categorizes as physical infrastructure provision intervention.

### **Context**

The location of modern Beijing was settled and populated by the first millennium. But it wasn't until the Ming Dynasty, when its third emperor renamed the city "Beijing" in 1403. That year he also deemed it a co-capital to Nanjing, where they shared that title for 18 years before

Beijing became the sole capital. The same emperor spent the years between 1406 and 1420 building his palace, known as the Forbidden City. His habitation of the palace officially ushered in the city's prominence as the capital city of China. These events set the city on a course for what exists today.

The Beijing Metropolitan region is located in the northeastern part of China and it is governed as a municipality under the direct administration of the national government. The city is divided into 16 districts and comprises an estimated 19,612,368 people, based on 2010 estimates (National Bureau of Statistics of China, 2011). Until quite recently, the pattern of development within the metropolis followed the grid pattern, which emanates from Forbidden City. *Hutongs* (alleys) and *siheyuan* (courtyard houses) exist within the grid-like network of streets, as has been the pattern since the Yuan dynasty, which held power between 1279 and 1368 (Acharya, 2008).

Following Mao's death in 1976, the communist-controlled government under the leadership of Deng Xiaoping transitioned from a planned economic system to a mixed economy, which is partly planned and partly market. This marked the beginning of the reform era for the historically isolated, communist country. The market responded with increased industrial production, resulting in large-scale rural-urban migration. Urban populations increased from 170 million to 456 million between 1978 and 2000, increasing from 18% to 36% of the nation's population (Lin, 2004). While this process was advantageous for job growth, it had deteriorating consequences on the urban living conditions. Several related factors contributed to such deteriorated conditions. Prior to the reform era, the central government placed little priority on housing investment, despite migration patterns to urban areas. There was little value in housing investment as opposed to industrial sector growth. Such lack of investment by the government was coupled with a lack of incentive for occupants of public housing to invest in necessary upgrades. There were no penalties charged to the occupant for negligence, either. Meanwhile, exacerbating these conditions was urban population growth that eventually resulted in severe housing shortages, particularly in coastal cities. This ultimately precipitated the construction of informal settlements as informal housing began to appear within the historic city. Self-built

housing was estimated to comprise over a quarter of all the living space within Beijing's old neighborhoods, often taking up space within the traditional *siheyuan* (Lu, 1996).

**Project description and goals.**

The partial market economy resulted in the emergence of a real estate market, transitioning toward the treatment of land and buildings as commodities. Growing revenues in the real estate markets precipitated efforts by the government to improve conditions within the inner city (Zhang & Fang, 2003). Beijing's first commitment to upgrading the living conditions of those residing in the older portions of the city came in 1987. The initiative began with four pilot projects that were used by the Beijing City Planning Institute to conceive of a plan called the Old and Dilapidated Housing Renewal Program (ODHR) in 1990 (Zhang & Fang, 2003). The goal of the ODHR program was to facilitate housing renewal in an effort to provide improved living conditions for residents of the inner city (Fang, 2000). One such pilot program was initiated in the Ju'er Hutong, located in the Dongcheng (East) District of Beijing.

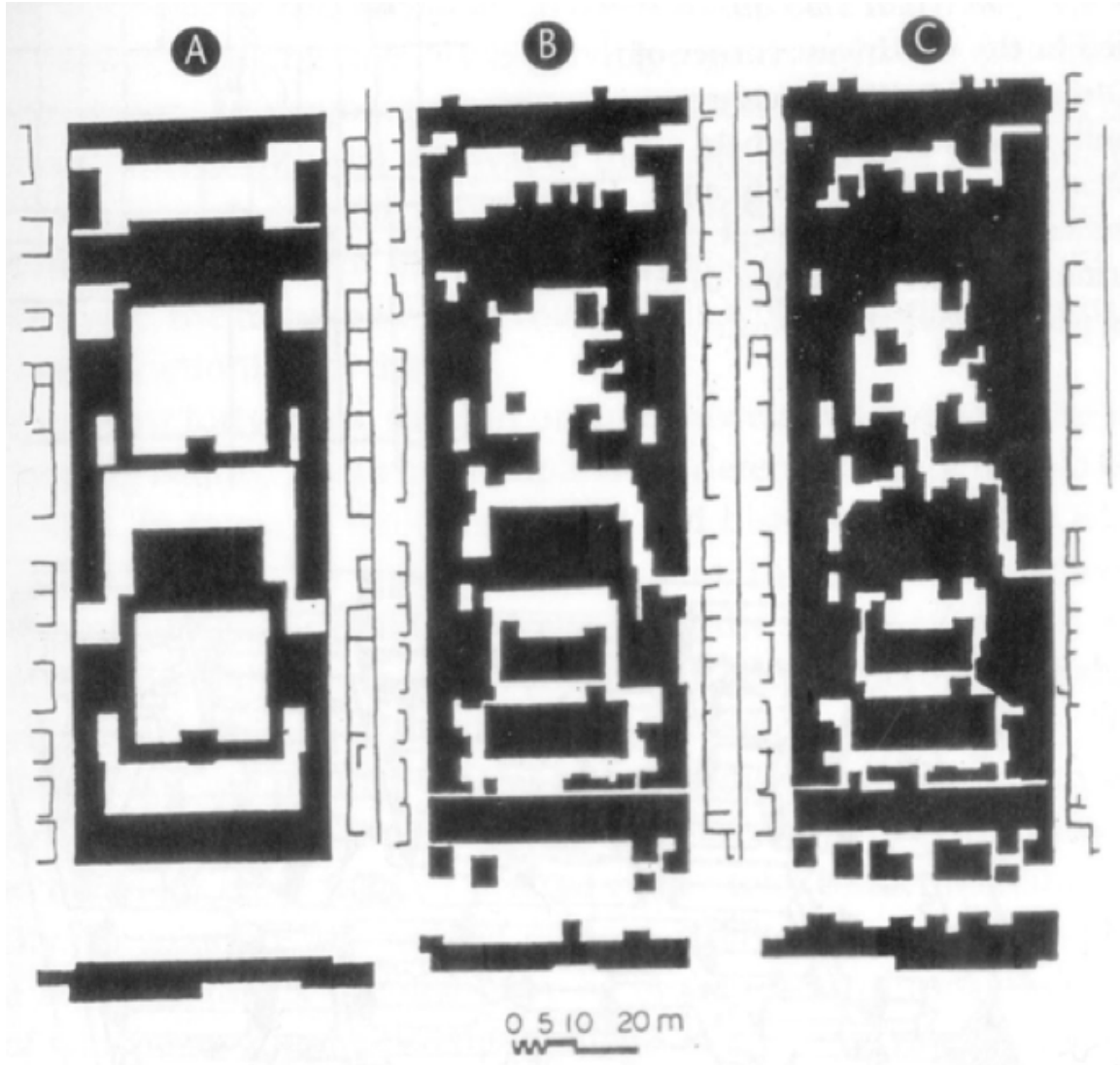


Figure 16. Ju'er Figure-Ground in the 50s, 70s, and '87 (Wu, 2001).

**Spatial.**

The 0.21-hectare first phase had been identified for its small scale and slum conditions (Lian, 1995). The *siheyuan* is a “rectilinear walled compound” (Abramson, 2001, p. 10) that lies behind a large wall that faces the street, or *hutong*. Beyond the wall typically lies a series of interconnected courtyards around which are built up with residential compounds. Structures are rarely taller than one story and are typically a shade of gray (Abramson, 2001). A survey completed in the 1980s found that 83% of Ju'er was built up with housing, and only one-third of the dwellings received any sunlight (Wu, 2001). Residents had an average of just 7.8 square meters of floor area per capita. Figure 16 (above) is the figure ground illustration of a siheyuan in

the 1950s, 1970s, and finally in 1987. The diagram clearly shows the overcrowding conditions present in the inner city, particularly in Ju'er.

Portions of Ju'er were below street level, leaving areas susceptible to flooding by storm water runoff. There was a general lack of basic facilities, including kitchens, toilets, gas lines, and water supply taps (Lian, 1995).

Professor Liangyong Wu, an architect, designed a housing concept based upon the historic courtyard design that was capable of accommodating multiple families within modern facilities at higher density levels (Zhang & Fang, 2003). While the historic structures were typically not more than one story, Wu designed taller structures in an effort to achieve higher density goals. Vernacular architecture was mimicked to maintain the integrity of the historic settlement patterns that are unique to Beijing, while accommodating basic facilities, such as water, sewer, and proper storm water drainage throughout the site.

***Process.***

The Ju'er pilot project was a prototype that was funded by the municipal government in an effort to find a unique intervention approach that could be replicated throughout the city. The East District Development Company (EDDC), a state owned enterprise, was appointed by the district government to execute the project (Zhang & Fang, 2003). Each government district was given some level of freedom to develop creative financing for their projects. In the case of Ju'er, funding for the project came from three sources: municipal government subsidies, money from the dwellers, and money from employers (Zhang & Fang, 2003). Representatives from the district government, as well as inhabitants and work units, made up a housing cooperative that was established to find additional financing, manage, and maintain the new housing project (Zhang & Fang, 2003).

The initial goal was to maintain the original residents within the new residential units. The EDDC aimed to achieve this by charging significantly less for returning residents than they would for newcomers as a way of encouraging the original residents to remain (Davey, 2000). Wu was the architect that completed the redesign of the Ju'er siheyuan. He obtained inhabitant input for the design (Zhang & Fang, 2003).

## Outcome.



*Figure 17: Ju'er courtyard housing: a new siyehuan prototype (Cultural China' n.d.).*

The project manifested in the construction of 46 new residential units. Thirteen of the original 44 households returned to Ju'er, while 17 households traded away their rights with other inner-city residents of other neighborhoods. The remaining 14 moved out of Ju'er (Zhang & Fang, 2003). Ultimately, the financing paid for the project as the 46 additional units received market rates. The following phase was designed and implemented at a greater density. This time, only 23.5% of the original dwellers remained, while the rest of the units were primarily sold at market rates. At this point, the project had received multiple awards and the program pushed into Phases III and IV, affecting more than a thousand households (Zhang & Fang, 2003).

While the courtyard houses maintained the vernacular architecture of the existing structures as well as some of the existing historic structures and trees on site, doing so added to the overall cost. Some of these measures that aimed toward preservation contributed to the total

costs of design and construction. The added cost ultimately prohibited some of the original residents from returning to Ju'er. For those few inhabitants that were capable of remaining within Ju'er, they were rewarded with a higher quality of life, but a greatly modified social network of neighbors.

## Comuna Nororiental - Medellín, Colombia



*Figure 18:* Medellín from Parque Biblioteca España (jgeis, 2011).

Also in Latin America, Comuna Nororiental contained many of the same traits as Villa 31 in general prior to intervention. However, unlike Villa 31, Ju'er Huntong, and as you'll see, Morro da Providencia, this informal settlement is located far from the center of the city. It exists upon steep topography, providing additional mobility challenges. Intervention within this informal settlement exhibits many replicable characteristics related to each of Abbott's three categorization themes, physical infrastructure provision, community action planning, and physical transformation through the holistic plan.

### **Context**

Founded by the Spanish in 1616, this northwestern Colombian city emerged out of significant exporting activity. Gold and coffee were the city's primary exports in its early years. The industrial revolution came to the city in the late 19<sup>th</sup> century transforming it, its social institutions, and thus the quality of life for its inhabitants. By the early 20<sup>th</sup> century, the city contained such things as universities and a subway transportation system. The early part of the

1900s is characterized by entrepreneurship, turning the city into a destination for jobs seekers from throughout the region. In a country of some 42.8 million inhabitants, it is estimated that 32.3 million live in cities (Calderon, 2008). The Medellín metropolitan region was estimated to be home to some 3.62 million inhabitants (Demographia, 2011). The city is the second largest city in the country of Colombia.

The metropolitan area is located in a valley called the *Valle de Aburra*, named after the Aburra natives who inhabited the area for thousands of years. The tight river valley presents topographical challenges to infrastructure delivery. Three dominant factors have contributed to the present situation in which it is believed that slums account for over 30% of the built environment (Escobar , as cited in Calderon, 2008). First, like many Latin American cities, globalization resulted in declining industrial work in a process that began after WWII. Second, sociopolitical violence has been omnipresent over the last four decades, resulting in increased migration to cities. A world-renowned drug trade created violent conditions in the countryside, which then migrated to Colombia's urban areas. Medellín became the epicenter for the drug cartels that often set up in poor neighborhoods. The city became known as one of the most dangerous places in the world during the 1990s. Finally, the national and local governments were ineffective and generally incapable of dealing with the growing housing issue. Two full decades were nearly void of state institutions and programs to help alleviate such dire conditions (Fajardo, as cited in Calderon, 2008).

Most slums in Medellín are concentrated to the northern portion of the city known as *Comuna Nororiental* and *Comuna Noroccidental*, or Northwest District and Northeast District (Calderon, 2008). Figure 19 (pg. 48) illustrates Comuna Nororiental in relation to metropolitan Medellín. In the early years of slum development within the city, land owners would develop their lands illegally in patterns of the formal city. These were referred to as *barrios piratas*, or pirate neighborhoods. These settlements eventually exhibited overcrowding conditions with little or no services. Pirate neighborhoods were banned in the '70s, resulting in increased informal settlements within more precarious areas that were prone to landslides and flooding (Calderon, 2008).

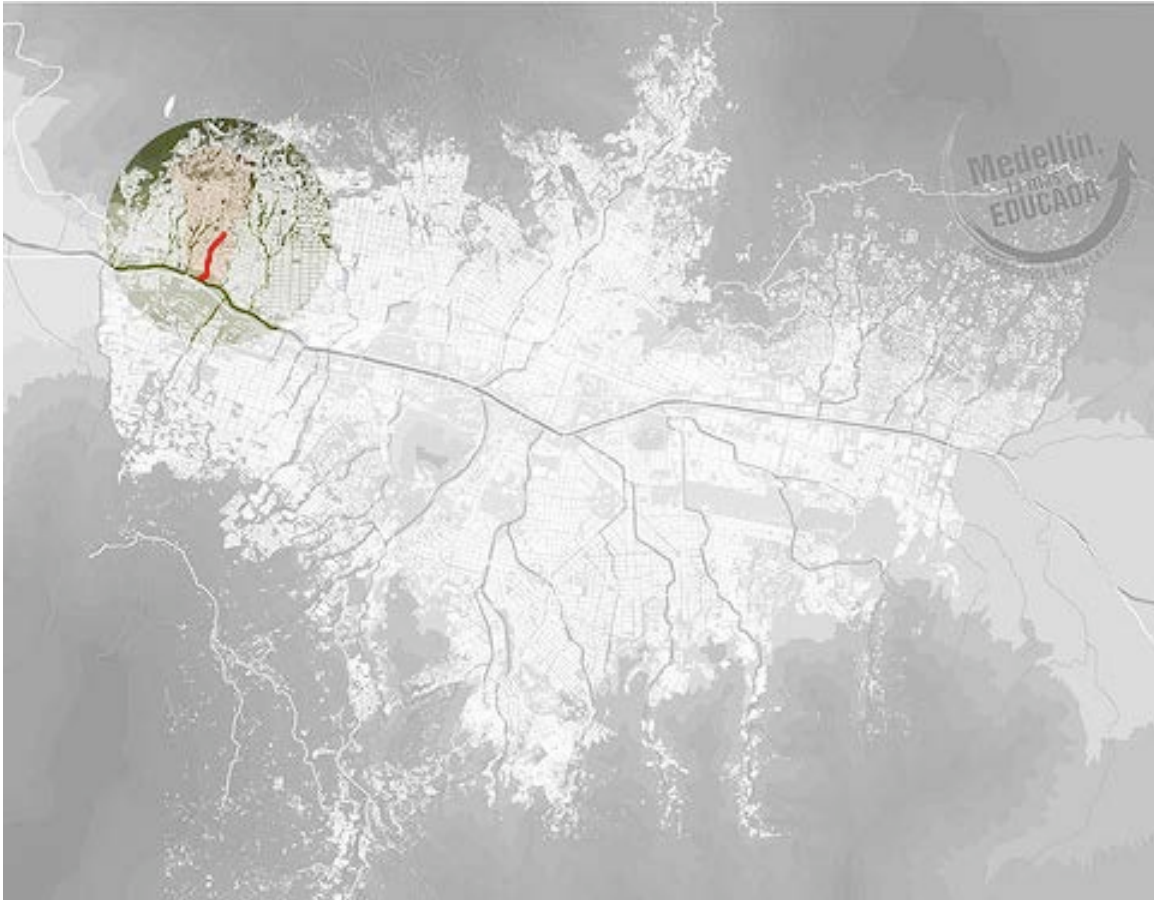


Figure 19: The location of Comuna Nororiental within metropolitan Medellín (left = North) (jgeis, 2011).

Until the 1990s, approaches to alleviating slum conditions had run the gamut of negligence, clearance, repression, paternalistic interventions, and clientilism (Calderon, 2008). The year 1993 saw the introduction of the first comprehensive upgrading program, called *Programa Integral de Mejoramiento de Barrios Subnormales en Medellín*, or Holistic Upgrading Program for Subnormal Neighborhoods in Medellín (PRIMED). It was a coordinated effort involving three main players: the City of Medellín, the government of Colombia, and the government of Germany, with the United Nations for Development and the Social Solidarity Network RSS also playing minor roles.

The program contained four dominant principles that were interconnected:

1. community,
2. territory,
3. state, and
4. rational investment.

The program contained an independent and decentralized structure that was solely responsible for planning, coordinating, and administering projects through its satellite offices, which were located in the targeted areas. The ultimate objective of PRIMED was to improve conditions in 70 slum settlements for some 200,000 inhabitants through services improvements and community participation (Blanco & Kobayashi, 2009).

While the program was mentioned as a successful model for slum upgrading by the UN, it was also criticized for its many shortcomings. The biggest among them being that it largely resulted in physical projects that did not result in the type of social development that was hoped for. Coordination among the various levels of government was more difficult than anticipated, and it was in that lack of participation, largely by the local governments, that the program fell short of its objectives (Blanco & Kobayashi, 2009).

#### **Project description and goals.**

*Comuna Nororiental*, located in the northeastern part of the city, had been stigmatized for its slum nature and by the concentration of violence related to the drug trade. The years 2004-2007 marked Medellín's Development Plan, aimed at improving the lives of slum dwellers throughout the city. One of its strategic programs, the Integral Urban Project (PUI), was defined as and exhibits qualities of Abbott's holistic intervention model, "based on community participation, inter-institutional coordination, housing promotion, public space and transport improvements, collective facilities upgrading, and environmental recovery" (Blanco & Kobayashi, 2009). The first of these PUIs was applied to an area within *Comuna Nororiental*, in

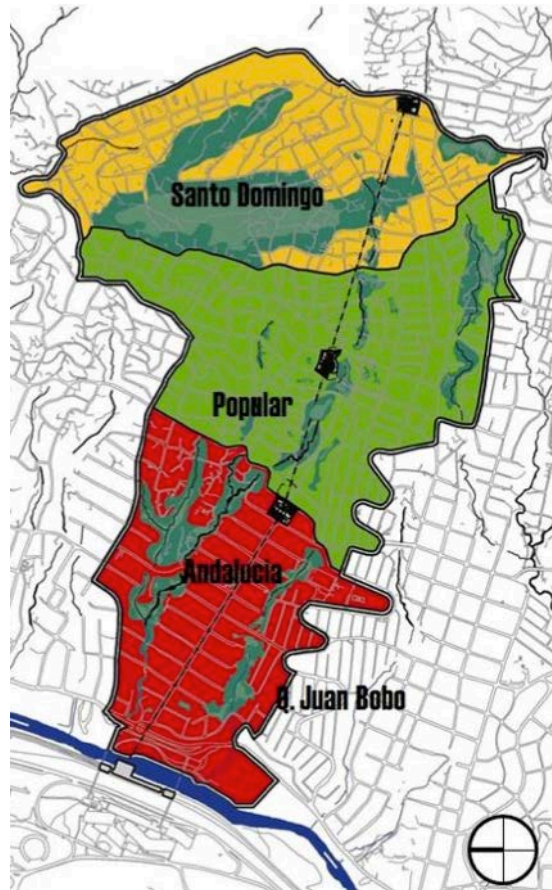


Figure 20: The neighborhoods of Santo Domingo, Popular, and Andalucía make up Comuna Nororiental (Calderon, 2008, citing EDU).

the districts that contained the aforementioned section of northwestern Medellin that was in desperate need of physical and social intervention. The PUI contained three primary components:

- institutional coordination,
- a social component, and
- a physical component.



Figure 21. Metrocable (Omar, 2011).

### ***Spatial.***

The project area was estimated at 130 hectares containing approximately 200,000 residents (Calderon, 2008). The social issues within Comuna Nororiental were exacerbated by the area's isolation from the rest of the city due to its topography issues, which contributed to unreliable transportation services. The physical component aimed to enhance the built and natural environment within the settlements, through planning, design, and implementation of various projects. This component was ultimately determined by the community, who helped to derive the four subcomponents: housing, public space and connections, community facilities, and natural environment recovery (Calderon, 2008). The housing subcomponent aimed to provide

adequate housing for inhabitants as well as legalize tenancy. Public space projects, such as the one shown in Figure 22, aimed to create new public spaces as well as improve existing spaces. Connections were meant to be improved through public space enhancements, such as internal pathways as well as through a reconfigured transportation network, which included the introduction of a gondola system (shown in Figure 31) meant to link Comuna Nororiental with the metro subway system. A community facilities subcomponent intended to create new public facilities, as well as perform maintenance and rehabilitation procedures on existing facilities. Finally, environmental recovery objectives intended to improve the natural conditions of the area, so as to improve the ecological system of the neighborhood. These projects dealt with waste management, erosion control, and reforestation (Calderon, 2008).



Figure 22. Newly realized public space (jgeis, 2011).

### **Process.**

The Enterprise of Urban Development (EDU), a state institution, and the City of Medellin led the PUI effort. Institutional coordination aimed to develop and organize multidisciplinary groups so as to streamline processes and avoid duplication of efforts (Blanco & Kobayashi,

2009). These groups included many stakeholders such as inhabitants, professionals, academics, and NGOs among others. Inhabitant participation was sought in an effort to build support and generate dialogue between the residents and the many institutions. What began as workshops to develop a vision for the community later turned into skills training and job placement, as intervention projects moved from the design phase to construction. The primary goal was to generate a sustainable system of cooperation and empowerment among and between the inhabitants and institutional entities.

### **Outcome.**

The total intervention costs were estimated at US\$29,596,982 (EDU, cited in Blanco & Kobayashi, 2009). Eight street improvement projects were completed. Twenty new parks and squares were created, while four others were improved. Four community path connections totaling 3.235 linear meters were constructed. Five community facilities such as libraries and schools were either improved or constructed in addition to the



Figure 23. Parque Biblioteca España (Vargas, 2007).

construction of 700 new dwellings and over 1,400 housing improvements. One notable project that resulted from this PUI was a library in Santo Domingo, the *Parque Biblioteca Santo Domingo*. Shown in Figure 23, it is an architecturally significant feature that was partially paid for by the Spanish government. The library has attracted international praise from the design community, enhancing tourism opportunities for Santo Domingo and the City of Medellín.

The PUI model is lauded for its participatory approach to slum intervention. Community members were engaged throughout the process, from the diagnosis phase through construction and maintenance. During the initial meetings, committees were created and utilized to corroborate and contribute through each phase. Additionally, workshops were held to give community members the chance to participate and contribute to the overall intervention scheme.

The outcome of the PUI within *Comuna Nororiental* was influenced greatly by the US\$23 million Metrocable gondola system, which opened the year that the PUI project began (Ogden City, 2006). Metrocable, the city's aerial tramway, was constructed and opened in 2004, connecting the neighborhoods of *Comuna Nororiental* to the city's main transit lines. This ushered in a new era of slum integration to the formal City of Medellín, allowing new access between the formal and informal areas. Public spaces created in the PUI project directly complemented the Metrocable stations by introducing quality public spaces to these newly formed social gathering spaces. This integrated design encouraged a blurring of the delineation between formal Medellín and the informal settlements of *Comuna Nororiental*.

The introduction of such a significant infrastructural project helped to create and make viable commercial spaces for entrepreneurs. The commercial spaces then worked to activate the open spaces and enhance social gathering opportunities.

The varying projects comprise a more complex intervention approach that has had lasting impacts on the communities that make up *Comuna Nororiental*. The PUI model stands as one of the most comprehensive slum intervention approaches that have been executed to date.

## Darb al-Ahmar - Cairo, Egypt



*Figure 24.* Al Azhar Park and adjacent Darb Al-Ahmar neighborhood (left) in Cairo, Egypt (Global City Forum, n.d.).

Darb al-Ahmar is a historic neighborhood in central Cairo. This study case is unique in that it was a historic community that devolved into slum conditions over time. Similar to Comuna Nororiental, intervention within the neighborhood was complemented by the construction of significant infrastructure in an adjacent area. Infrastructure provision assisted in the execution of physical and social intervention objectives. The intervention framework contains examples of Abbott's physical infrastructure provision and community action planning categorization themes.

### **Context**

The Fatimid General, Gawhar al-Siqilli, established the city as a fort and named it al-Mansuriyyah in the year A.D. 969. Four years later, it was given a new name, Al-Qahira, which means "the victorious," and in 1168, became the capital city of the caliphate. As the country's political and economic center, the megalopolis that makes up Greater Cairo now contains an

approximated 16 million inhabitants (PDP, 2009). This number is often disputed, however, and some local experts believe this figure lies closer to 20 million inhabitants or more (PDP, 2009). Cairo's population comprises nearly a quarter of the country's entire population.

Meanwhile, 65% of the population is believed to presently live in informal settlements making this typology the norm across Greater Cairo (PDP, 2009). These settlements began to take shape after the Second World War, largely due to the industrialization that occurred at that time. Migrants from across the country and particularly Upper Egypt and the Delta flocked to the capital in search of jobs, resulting in stress upon the housing market. Although it wasn't until more recently that the government of Egypt began to recognize this settlement typology, known locally as *aashiva'l*, which implies their unplanned or illegal nature (UN-Habitat, 2003).

Informal settlements began appearing, increasingly, on the periphery of the city during the 1960s. Agricultural lands tended to be the preferred location as landowners found more value in selling property than growing crops (PDP, 2009). Despite decrees from the national government, informal settlement growth on the fringe continued at an increasing pace as housing failed to keep up with the influx of migrants. It was also at this time that informal settlements began to occur on agricultural lands owned by the state. The late sixties and early seventies saw two wars that resulted in dwindling funds for public housing that exacerbated the problem. It is estimated that during the 1970s, 84% of total constructed units in the city were illegal (PDP, 2009).

In 1977, the government of Egypt introduced the New Towns policy aimed at alleviating housing issues by providing housing in the desert to try and preserve agricultural lands. Unfortunately, these remote new towns have tended to be unaffordable to the demographic that the government intended as the target market. In addition, lack of services available in their remote locations have contributed to ongoing informal settlement growth patterns into the 21<sup>st</sup> century, overtaking the population of formal Cairo, as citizens have preferred to inhabit informal settlements nearer to services. There is now evidence of 1.5 million Cairenes sleeping on rooftops, while an estimated one million people are believed to live among the Mameluke tombs in what is known as the City of the Dead (Davis, 2007). Though this has been somewhat of a

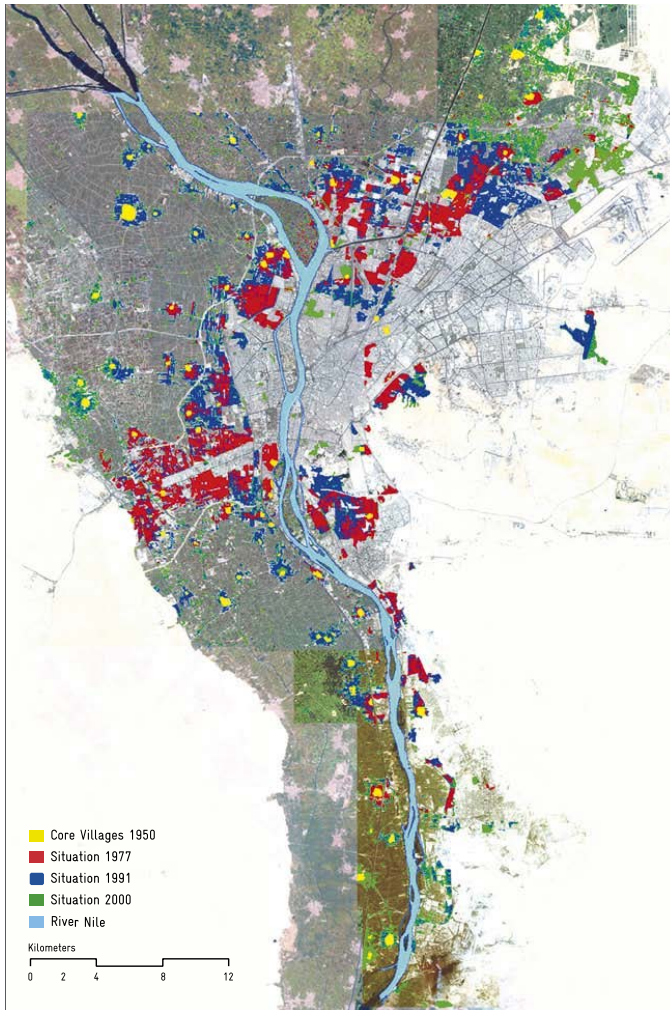


Figure 25. Informal settlement growth in Cairo (PDP, 2009).

tradition for decades, these are yet other examples of the way housing requirements are being met throughout the interstitial spaces of the built environment within Cairo. Figure 25 illustrates the evolution of informal settlements in and around Cairo, illustrating the significant proportion that they account for within the built environment.

Within the historic city exists a district of some 100,000 residents called Darb al-Ahmar (Morbidoni, 2010). Once a wealthy neighborhood of Cairo, the area had fallen into a state reminiscent of a slum by the 1990s. This community was described

as one, which suffers from poverty, inadequate infrastructure, and a lack of community services, with average annual per capita incomes equivalent to approximately US\$193 (Morbidoni, 2010). It lies adjacent to what had been a mound of rubble for hundreds of years and had also derived a reputation for high crime rates and drug activity (Siravo, 2004). Although this stereotype was somewhat disputed when a survey was completed by the Aga Khan Trust for Culture, which found that most adults have lived in the district for 30 years or more, are “gainfully” employed, and crime is negligible (Siravo, 2004). What the community also had going for it are 65 registered monuments, including the nearby al-Azhar Mosque and Cairo’s historic principal tourist bazaar, the Khan al-Khalili (Siravo, 2004).

***Project description and goals.***

In 1984, the Aga Khan Award for Architecture organized a conference dealing with growth issues in Greater Cairo. It was through this conference that they determined the city was in desperate need of green space, as its proportion of green space to persons had become one of the lowest in the world. His Highness, the Aga Khan, aimed to address this need when he chose to finance a new park in central Cairo. A key feature of the park was the incorporation of three water reservoirs that would be installed below ground level within the park. Over the course of several years the land was prepared and the tanks were eventually installed in the mid-1990s. The scope of work for the project now included not only the construction of a sizeable green space, but the social and physical revitalization of the Darb al-Ahmar neighborhood as well. The extensive strategy included the following six goals:

- encourage socioeconomic development,
- invest in community organizations,
- gear physical planning to the requirements of the district,
- rehabilitate housing,
- improve public open spaces, and
- reuse monuments and historic buildings.

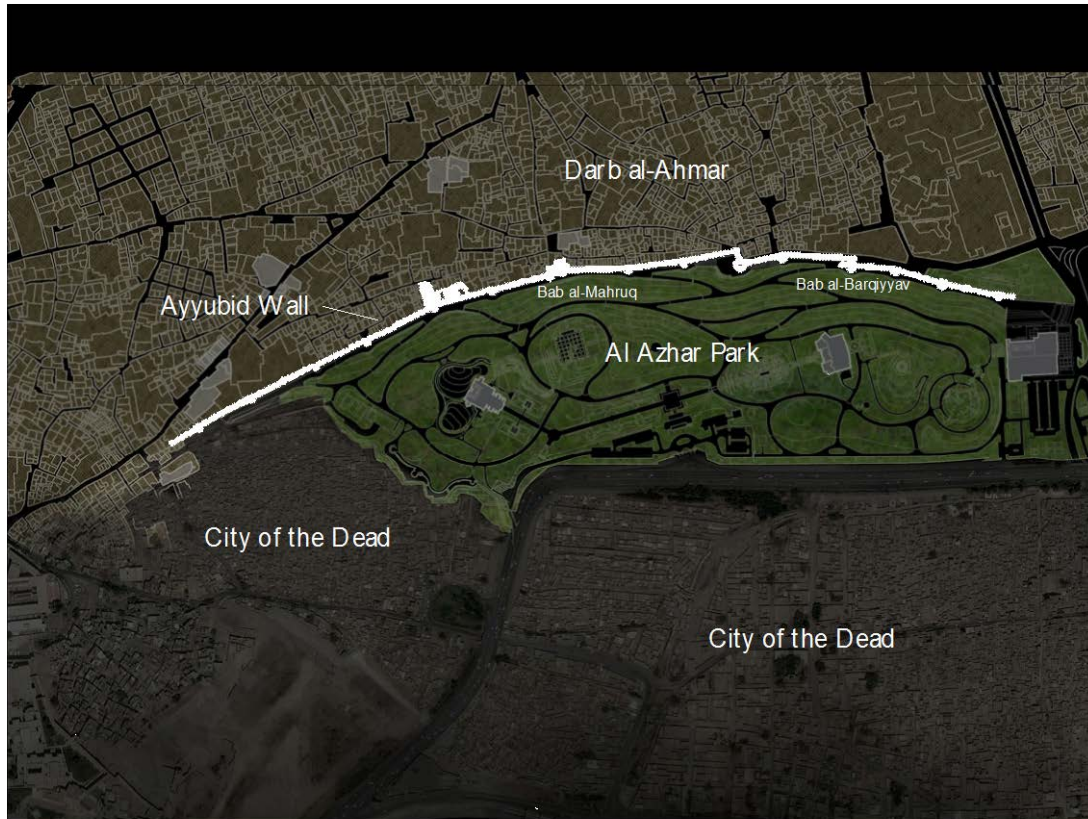


Figure 26. The three physical subjects of intervention: Darb al-Ahmar, Ayyubid Wall, and Al-Azhar Park (Global City Forum, n.d.).

### ***Spatial.***

The park, wall, and Darb al-Ahmar neighborhood, shown in Figure 26, made up the three physical components of the intervention plan. Restoration of monuments and historic buildings within the neighborhood were incorporated into the strategy as they represented some of the finest historic structures in Greater Cairo. Housing needs within the community were tied to the physical strategy for improving the quality of the built environment through rehabilitated structures, replacement structures, and mending of the urban fabric, with the introduction of new housing structures upon vacant properties. Housing rehabilitation was meant to improve living conditions for residents in an area where greater than 30% of structures in the area were subject to demolition orders. Surveys were conducted to determine what structures could be rehabilitated and which needed replacement, ultimately aiming to safely house existing residents who overwhelmingly preferred to remain in their community (Siravo, 2004). Similarly, the survey

helped identify a variety of public spaces that could be rehabilitated in an effort to create quality open space for the community. Intervention that would improve these elements was the ultimate goal to improve the quality of life for inhabitants of Darb al-Ahmar. Along with the construction of the adjacent Al-Azhar Park, the rehabilitation of the historic Ayyubid Wall, which forms the eastern side of the park and abuts the Darb al-Ahmar neighborhood, would also contribute to raising the quality of life. The discovery of the Ayyubid Wall during site preparations for the park turned out to be a not insignificant archeological discovery as it represented a key feature in the Islamic heritage of Egypt (Bianca, 2007). Its 15-meter high walls, likewise, became a key feature in the revitalization project, providing a dramatic backdrop to the park as well as inserting additional historic culture elements into the foundation of the overall project.

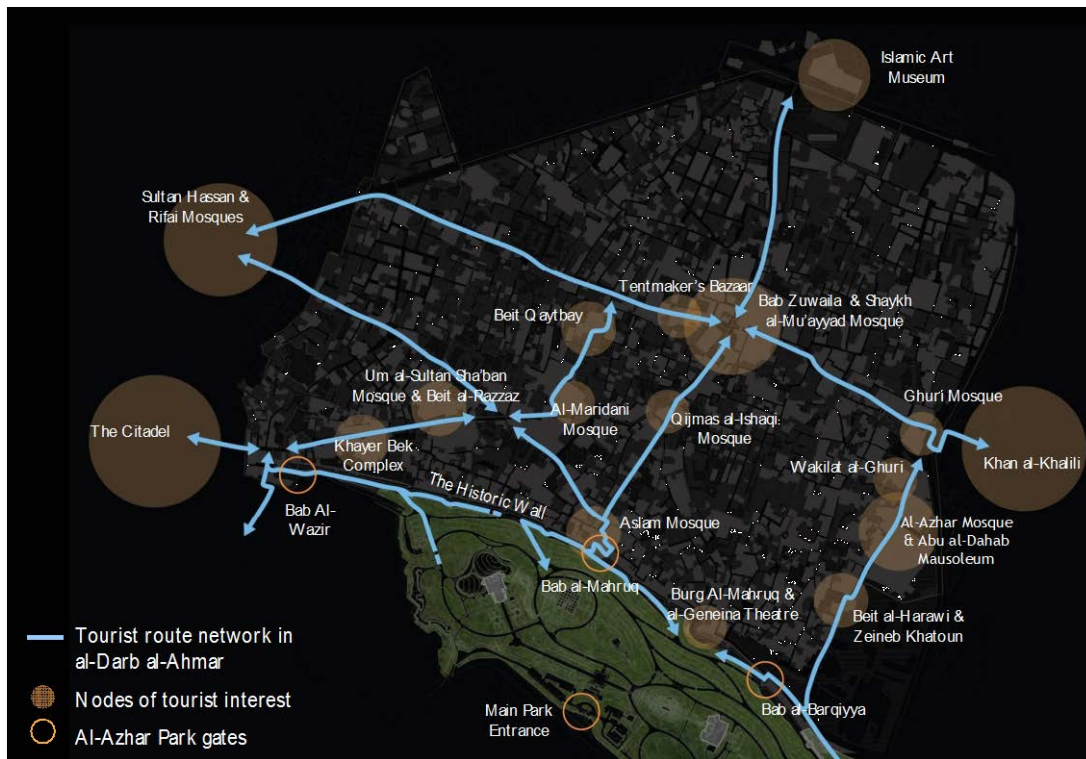


Figure 27. Urban design framework for physical intervention within Darb Al-Ahmar (Global City Forum, n.d.).

**Process.**

Funding came from several sources including the Aga Khan Trust for Culture, the Egyptian-Swiss Fund for Development, the Ford Foundation, the German federal development bank, the Canadian International Development Agency, and the World Monuments Watch (Morbindoni, 2010). The Historic Cities Programme (HCP) was set up as the operational branch of the Aga Khan Trust for Culture (AKTC). The HCP was responsible for funding and implementing the intervention projects. The park project inspired the HCP to expand the scope of work to include the revitalization of the historic, adjacent neighborhood utilizing a comprehensive approach (Siravo, 2004).

The goal was to integrate the park and the rehabilitated wall into the social, recreational, and educational life of Darb al-Ahmar inhabitants. Opportunities for tourism were intended to be created through the creation of Al-Azhar Park and an upgraded Darb al-Ahmar that would lead to economic development opportunities from tourism. Physical intervention within Darb al-Ahmar was intended to provide a means for empowering the community to oversee that the interventions met the needs of the area, with special attention given to the importance of the historic area and its many monuments. Socioeconomic development was to be achieved by the creation of a job placement and counseling services office within the neighborhood to help connect individuals with job opportunities. This office was meant to provide training so that community members could participate in construction projects (Siravo, 2004). The new skill sets were meant to prepare inhabitants for future employment opportunities. Additionally, a lending program was set up to support the businesses and individuals. Next, organizations such as business associations, development agencies, and health centers were promoted as a means to encourage community involvement and self-governance. The hope was to create community leaders that would foster self-governance, who would then work to maintain the improved conditions of the community (Siravo, 2004).

**Outcome.**

The US\$30 million Al-Azhar Park opened in 2004 to rave reviews and welcomed up to 20,000 visitors per day. Within two years of opening, the facility had become self-sustaining

through visitor fees, which were staggered, charging more for foreigners and less for citizens of Darb al-Ahmar (Bianca, 2007). The park was designed to attract the masses, catering to the various user groups that might use the facility. The goal was to maximize revenue generation. Most importantly, the park demanded an increase in attention to a forgotten part of historic Cairo, enhancing the image of an area that had fallen into disrepair.

More than US\$4 million was spent within Darb al-Ahmar for housing projects and monument restorations by late 2004 (AKTC, 2005). Between 2004 and 2008, an additional US\$3.25 million was spent on various other projects. Approximately 50 houses a year have been upgraded using a revolving micro credit program. Nineteen public housing facilities, a health center, and a business center were created in addition to the restoration of an old school building (AKTC, 2005). The program provided skills training for inhabitants to help in the physical redevelopment of the Park, Wall, and their neighborhood.

## Morro da Providencia – Rio de Janeiro, Brazil

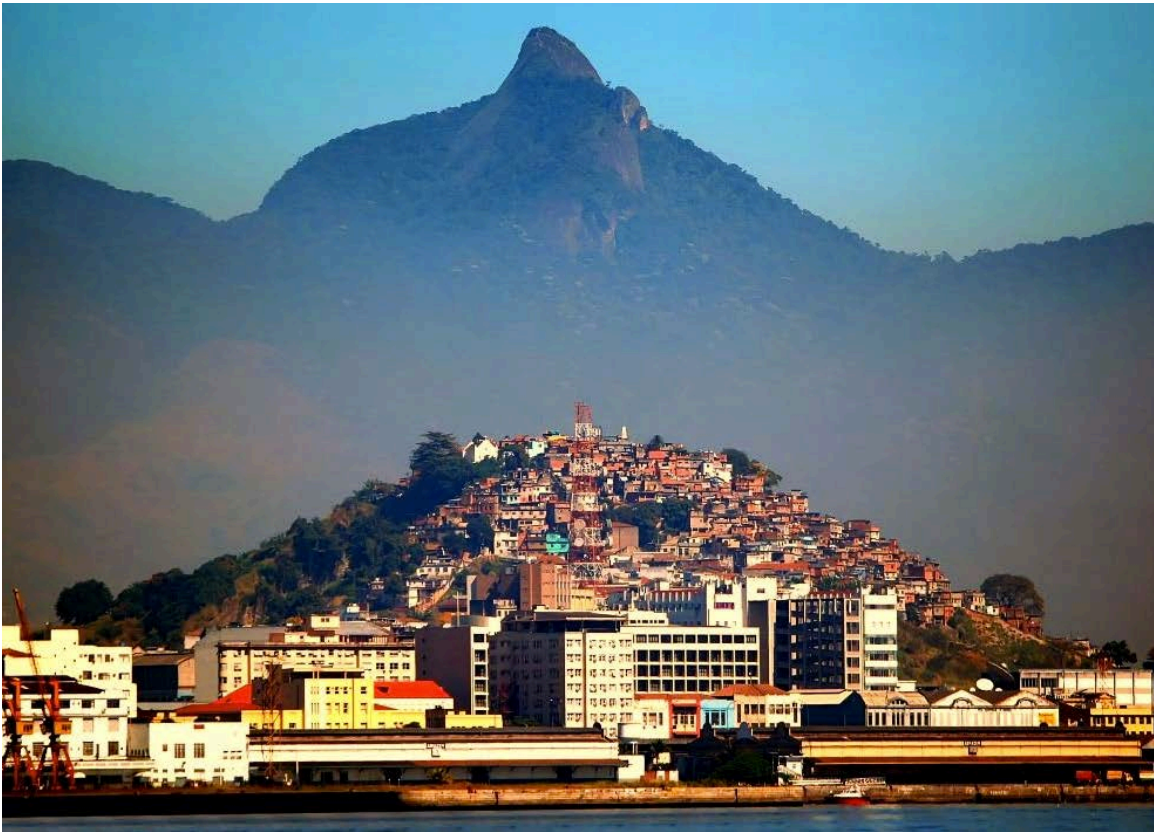


Figure 28. Morro da Providencia favela, Rio de Janeiro (Sawuelbruno, n.d.).

Located on a hill, the Morro da Providencia informal settlement, or *favela*, overlooks central Rio de Janeiro and Guanabara Bay. Despite its central location, inhabitants here are faced with similar issues of integration with the surrounding formal city, along with high adjacent land values as Villa 31. This sample case is a spatial intervention due to requirements of its funders; the intention was to generate economic development that would induce social improvements. This spatial intervention is aligned with Abbott's physical infrastructure provision category.

### Context

The Portuguese, at the entrance of Guanabara Bay, founded what is today Brazil's second-largest city, Rio de Janeiro, in 1565. Contemporary Rio de Janeiro comprises over six million inhabitants within its city limits, while the metropolitan area is estimated at more than 14 million. Similar to the settling of Buenos Aires, the city was originally relocated to aid in the

protection of urban citizens from native tribes. The sugarcane industry shaped the city's development for over two centuries, thereafter, as the city was arranged to aid in its trade (Nacif, Hella, & Magalhaes, 2003). The 18<sup>th</sup> century saw an expansion of trading activity as gold and gems were being mined nearby. The year 1808 ushered in a new era for the growing city as the royal family relocated from Salvador, heralding the beginning of Rio de Janeiro's time as the capital of Brazil (Xavier & Magalhaes, 2003).

As a result of economic growth, infrastructure improved immensely during the 19<sup>th</sup> century to enhance trade of coffee and other exports, as Rio de Janeiro became a significant port for international maritime trade. By midcentury, the city had constructed a network of trains and trams to transport citizens. The transportation network allowed for further expansion of the city, pushing development further to the periphery (Xavier & Magalhaes, 2003).

Slavery was abolished in 1888, setting the city on a path that has had lasting effects on the city's social configuration. Drove of former slaves fled the agricultural lands for coastal cities. In Rio de Janeiro this resulted in housing shortages and significant social segregation and stratification. The city saw its first favelas, or slums, in the central city in the Morro da Povidencia neighborhood. Ex-soldiers and ex-slaves were its first inhabitants. By the late 1800s, the central city had become crowded with citizens, largely from a lower social stratus. Pereira Passos, the mayor of Rio de Janeiro from 1902 to 1906, set out to clean up the city by reconfiguring its central areas.

In similar fashion to Buenos Aires, Rio de Janeiro took cues from Paris by incorporating wide boulevards and new structures to replace the crowded environment that existed within the inner city. The plan also included the demolition of many of the hillside neighborhoods that had been built by poor citizens as well as the relocation of many industrial areas to further, outer lying areas of the city. During this period, over 3,000 households were destroyed, sometimes with relocation, but most often eradicated (Soares & Soares, 2005). The effort led to increased real estate prices further from the city center and forced many poor settlers into the streets and to the periphery of the city. The poor responded by occupying precarious locations along the hills that surround the inner city and suburbs. Favelas were largely accepted, publicly, until the 1970s, as

they were perceived to be temporary housing for many migrants who moved to the city looking for work (Santos, 1981).

However, it was near this time period that modernization began to take hold. As subdivided suburban lands began to fill up with informal settlements, the ruling class of Rio de Janeiro became less apathetic to their existence within the inner city and thus began the movement of eradicating the favelas, particularly near the city center where land speculation was highest. Evictions and demolition accelerated and defined the policies of the 1970s during a period of military dictatorship. An estimated 100,000 households were eradicated between 1968 and 1975 (Soares & Soares, 2005).

Finally, 1985 accompanied a return to democracy for Brazil and differing policies aimed at the favelas. Slum clearance policies were aborted and the informal settlements began to be treated as positive contributions to the capitalist society. The commoditization of lower-skilled citizens led to the improved perception, believing that the population segment played a vital role in a strong local economy. By the 1990s, favelas were granted the status of legitimate communities (Soares & Soares, 2005). Regardless of the policies of the military and democratic governments, favelas had continued to grow in total population throughout greater Rio de Janeiro. Poverty affected some 32.5% of the population by the end of the 1980s, with 3.65 million citizens classified as poor by 1990, and favela populations grew by 50.7% (Lago, as cited in Fiori, Riley, & Ramirez, 2001). Figure 29 illustrates the widespread geography throughout which favelas exist within the city of Rio de Janeiro.

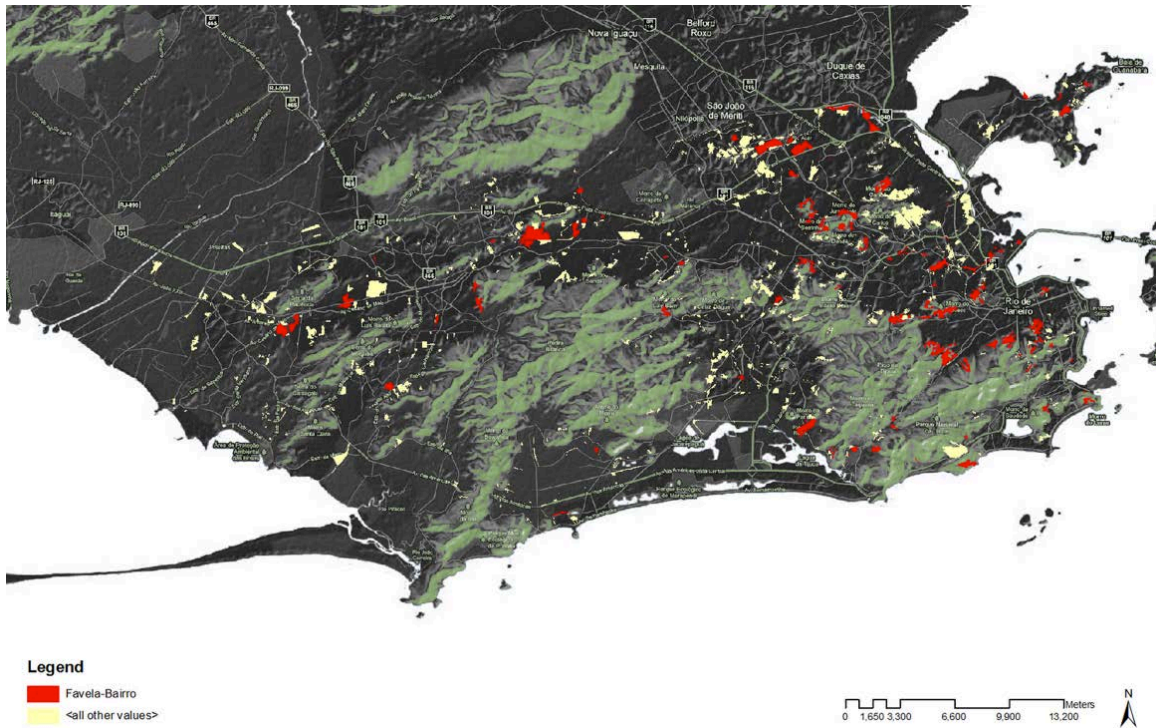


Figure 29. Favelas (indicated in red and yellow) located throughout Rio de Janeiro (Samper, 2011).

*Morro da Providencia* is the oldest *favela* in Rio de Janeiro. Settled by sailors in 1898 near the *Cais do Porto* (Wharf of the Port), this community is very similar to Villa 31 in that it is located in between Rio’s main train station and a seaport. The favela’s identity and well-being is directly tied to the port, which has always provided economic means in the way of jobs for locals. The perception of the favela is strongly tied to violence between police and rival drug gangs. This perception reigns significantly for all the favelas of Rio de Janeiro.

**Project description and goals.**

Favela-Bairro was the derivative of the *Plano Diretor*, an initiative to upgrade the favelas in 1992. It aimed to improve living conditions for the urban poor and was instituted over a number of years. The ultimate goal of Phase I was to improve the living conditions for those residing in slums containing between 500 and 2,500 households (Soares & Soares, 2005). Through infrastructural investment, the concept sought to integrate the favelas into the greater city fabric

by formalizing the informal settlements. Infrastructure, services, and public facilities were key features of the plan.

A competition invited architecture firms to develop innovative, physical approaches to intervention in 18 different favelas. The first phase for intervention targeted 54 favelas. The program sought to legitimize the favelas. However, the provision of housing was absent from the goals. As stated by Beardsley and Werthmann (2008), “Favela Bairro does not concentrate on the upgrade of individual buildings; it concentrates on the improvement of public space” (p. 41). This was the result of the funding priorities of the International Development Bank (IDB) loan as social programs were left to the local municipality to fund and implement (Soares & Soares, 2005).



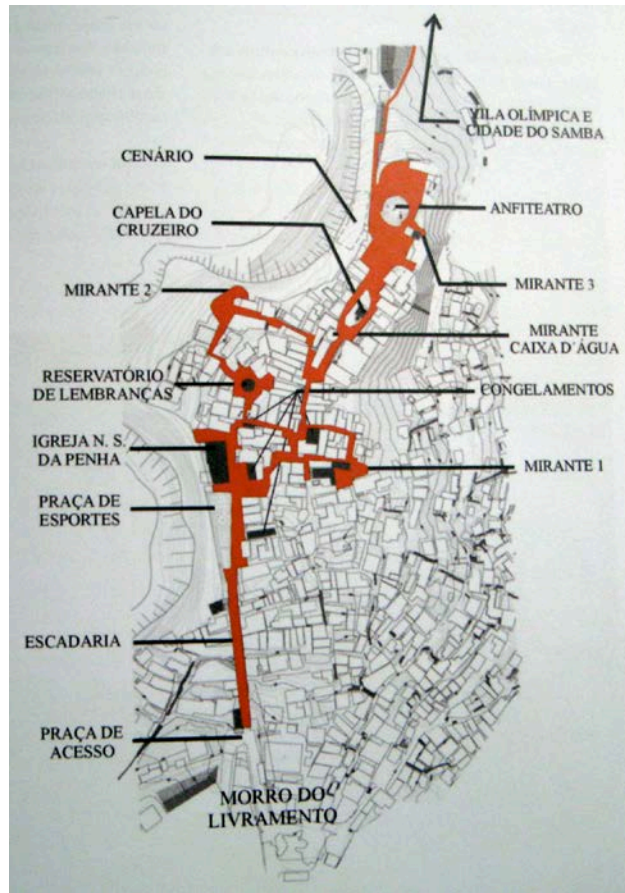
Figure 30. Morro da Providencia, located between the seaport and the main train station (Navarro, 2010).

One such intervention occurred within the Morro da Providencia favela, shown in green in Figure 30, and was called, “Museum Open to the Sky (or, *Museu a Céu Aberto*).”

### ***Spatial.***

Morro da Providencia comprises approximately 94,000 square meters on the north slope, south slope, and the top of a hill. Existing structures within the informal settlement range from wood construction to concrete and stucco buildings (Fabricius, 2008).

*Museu a Céu Aberto* involved the restoration of historic structures, including a church, chapel, water tank, and a single home (Werthmann, 2008). This home was an exception as it is where the grande dame of Carnival lived for many decades. A museum was established on the second level of the home to commemorate its significance. A centrally located stairway, along with pathways that link the historic structures, was also renovated. The concept aimed to present visitors with a living history of the neighborhood. Basic water and storm



water infrastructure was put in place as the pathways were upgraded. Four scenic overlook plazas were also constructed at the top of the favela (Peterson, 2008). One of the plazas necessitated the demolition of five houses to provide a sweeping view of the bay and proximate wharf. Another plaza was constructed at a large enough scale to accommodate sports and events. A canopy was included in the construction. Finally, signage was put in place to assist with visitor way-finding (Peterson, 2008). Figure 31 illustrates the overall concept plan for Museu a Cau Aberto.

Figure 31. Urban design strategy for Museu a Céu Aberto in Morro da Providencia favela (Navarro, 2010).

scenic overlook plazas were also constructed at the top of the favela (Peterson, 2008). One of the plazas necessitated the demolition of five houses to provide a sweeping view of the bay and proximate wharf. Another plaza was constructed at a large enough scale to accommodate sports and events. A canopy was included in the construction. Finally, signage was put in place to assist with visitor way-finding (Peterson, 2008). Figure 31 illustrates the overall concept plan for Museu a Cau Aberto.

**Process.**

The entire Favela-Bairro program was financed by the International Development Bank (IDB), which provided a loan in the amount of US\$180 million. The amount was nearly matched by the municipality, who contributed another US\$120 million (Soares & Soares, 2005). The total amount spent per family within Morro da Providencia was equivalent to approximately US\$7,063.

This amount was significantly greater than the average price of US\$3,500 per family for the entire Favela-Bairro program (Soares & Soares, 2005).

*Museu a Céu Aberto* was a winning entry to the competition. The Urban Cell Program, led by Lu Peterson, worked with design professionals to propose the museum concept, which went to construction in 2004. It was believed that this intervention would lead to increased socioeconomic and cultural development for residents. They thought that this project would attract large numbers of tourists to the *favela* to learn about its history and take in the incredible views afforded from the scenic plazas.

Inhabitant involvement was limited to interviews, which were conducted prior to the design process, in an effort to obtain the memories of older residents who understood the significance of the historic structures (Peterson, 2008).

#### **Outcome.**

Each of *Museu a Céu Aberto*'s construction objectives was met through the rehabilitation and construction of the proposed projects within Morro da Providencia. Paths leading to each of these sites received upgrading in the way of white stone paving that sought to guide would-be tourists to points of interest within the community. Additionally, basic services, such as water and sewer, were installed throughout the *favela*.

However, lack of social interventions has created a scenario in which the socioeconomic and sociopolitical issues within Morro da Providencia have remained static, despite the expensive, physical intervention that took place. By 2008, the community has been blocked to outsiders as violence had erupted between the drug-related organizations located in the favela and security forces. Ultimately, physical interventions improved the conditions of the built environment, an overarching goal of Favela-Bairro. But the intention was to create deeper ties between the favelas and formal Rio de Janeiro. The heavy reliance on physical interventions in Phase I later resulted in a shift to stronger policies and investment in social/non-physical intervention such as child education, health, and community building programs during proceeding phases.

## Chapter 7: Lessons Learned

The case studies ranged in scope, exhibiting characteristics of each of Abbott's three thematic intervention approaches: physical infrastructure provision, community action planning, and holistic physical transformation planning. As Abbott stated, the best approaches are those that contain combined intervention strategies, which contain elements of each of the approaches. In this chapter, I distill these combined approaches under spatial and process categories. The spatial category will analyze the precedent cases through the elements of connectivity, built form, and infrastructure. The process category will evaluate the roles that inhabitants and agencies played in the intervention processes.

### **Spatial**

Formalizing the informal is a common theme when considering slum upgrading. This implies intervention is aimed to improve not only the functionality of a settlement but also its appearance. Various spatial strategies were employed in each intervention to varying degrees in an effort to achieve such an objective.

#### *1. Connectivity*

Each intervention included connectivity enhancements aimed at improving internal and/or external mobility for inhabitants. This includes open, or public, space, which operates in conjunction with the connective tissue and makes up the connectivity network. On one end of the continuum was Ju'er, which improved the urban fabric by thinning out the density of structures, thus, enhancing the connectivity network within the *siyehuan*. At the other end of the continuum is Comuna Nororiental in Medellín, which leveraged its greatest weakness – the remoteness of the site and lack of reliable connections to the larger transportation network. The intervention eliminated this weakness by introducing mass transportation in the form of a gondola system that directly connected some of the most remote areas of the community to the citywide metro system.

The intervention also improved the connectivity within Comuna Nororiental by upgrading pathway connections. Although no significant transportation systems were constructed in Morro da Providencia or Darb al-Ahmar, the upgrading of the connectivity network that links activity nodes within the respective settlements aimed to enhance overall connectivity for inhabitants.

Metrocable in Comuna Nororiental similarly created a network of spaces that were prioritized for intervention. Open spaces that connected the commercial and residential structures surrounding Metrocable stations were designed for enhancing social gathering opportunities and commerce.

Enhanced mobility within informal settlements, as well as between the settlements and their neighboring formal cities, proved to be necessary, beneficial provisions for each intervention. Upgrading of connections can elevate one's experience when moving through these corridors and open spaces.

AUB31 contains connectivity recommendations such as a bridge to the bus terminal, another over the railroad tracks to Recoleta, and improved connections within and adjacent to the settlement. Comuna Nororiental shows us that improving connectivity with the formal city is a positive objective. While topography does not inhibit circulation as in Comuna Nororiental, the railroad tracks impose a barrier upon Villa 31. A second connection to formal Buenos Aires would alleviate circulation issues.

On the other hand, Darb al'Ahmar and Morro da Providencia exemplify the prioritization of pathways to be upgraded. Conversely, AUB31 illustrates an arbitrary and grid-like pattern of routes to be improved. The identification of activity nodes and connectivity network deficiencies should preclude the provision of enhanced mobility solutions.

## *2. Built Form*

All four precedent cases utilized intervention frameworks that prioritized upgrading of the built environment. In the cases of Morro da Providencia and Darb al-Ahmar, historic structures were prioritized for renovation, which then defined and prioritized connectivity objectives. Conversely, the introduction of transportation infrastructure in Comuna Nororiental provided the impetus for prioritizing structural upgrades. The Ju'er Hutong case was unique in that it involved entirely new construction.

Overall, the rehabilitation of existing structures and the construction of new ones played a primary role in each intervention. Three of the four interventions saw the provision of new residential units, while three out of four interventions involved structure stabilization work meant to alleviate safety concerns. The Darb al-Ahmar case provided a prototype for evaluating the

quality of the built environment through surveys. AUB31 only makes recommendations for the provision of new residential structures at the periphery of the existing settlement boundaries, yet provides no framework for structure rehabilitation beyond Padre Mugica church and the Movement Building. Despite the typically expensive endeavors, structural improvements and/or replacement on a community-wide scale are necessary requirements to providing an adequate and safe built environment within haphazardly constructed slums.

Quality, aesthetic design was utilized in Darb al-Ahmar, Morro da Providencia, and Comuna Nororiental to formalize and further blur the delineation between informal settlements and the formal city. Aesthetic enhancements were made to existing structures and design was carefully considered for new construction. The same can be said of the new *siheyuan* in Ju'er, where a new housing prototype was created. Intervention in Comuna Nororiental and Darb al-Ahmar raised the level of design with the creation of significant facilities (a library and a regional park, respectively), which have been lauded worldwide for their designs. These have even elevated the tourism industries of each municipality, where tourists have flocked to visit the new facilities. These interventions exceeded utilitarian design by utilizing contemporary, aesthetic forms, further contributing to thwarting perceived notions of what an informal settlement should look like. High quality aesthetics can be achieved in each and every spatial intervention within Villa 31.

Finally, history and culture were pivotal elements in three of the four interventions. Morro da Providencia and Darb al-Ahmar prioritized the renovation of historic structures as basic foundations for their intervention frameworks. Meanwhile, Ju'er used vernacular architecture of the historic *siheyuan* to inform the new structures' design. Each approach resulted in the creation of unique solutions that maintain a sense of place and contribute to the improvement of the built environment.

AUB31 has as its guiding objective the respect for history and configuration of Villa 31. However, the plan only adheres to this objective in its recommendation for the rehabilitation of the Padre Mugica church and Movement Building. As in Morro da Providencia and Darb al-Ahmar, the historic structures should provide the basis for an urban design framework aimed at

identifying and prioritizing connections between significant structures. The structures should be identified by the inhabitants using a survey method.

### *3. Infrastructure (water, storm water, sewer)*

Slums are typically located in precarious locations that present environmental hazards for inhabitants and make infrastructure service delivery a challenge. In all but Darb al-Ahmar, the provision of infrastructure services was made a basic goal. Comuna Nororiental and Morro Providencia were examples of topographically challenging locations where infrastructure provision was difficult. Ju'er proved that a lack of topography could create similar issues, particularly coupled with low floor elevations, which resulted in poor drainage. In each case, overcrowding exacerbated the precarious conditions, presenting health hazards for inhabitants. While the design and construction of such infrastructure will rarely, if ever, make the cover of architectural periodicals, it is paramount to the creation of healthy communities. Literature pertaining to slum intervention provided little more than a few sentences dedicated to providing details that quantitatively and qualitatively describe such infrastructure provision. However, eliminating infrastructure deficits is an expensive endeavor that is nearly always beyond the financial means of settlement inhabitants, requiring the financial support of governments. AUB31 does call for the provision of infrastructure and utility services.

### **Process**

The case samples provided important lessons in incorporating process objectives in intervention plans. Those objectives require consideration for the various actors that are affecting or are affected by intervention. Within this discussion, I provide discourse for the process objectives involving inhabitants as well as government actors, who are the primary actors in slum intervention.

#### *1. Inhabitants*

Informal settlement inhabitant involvement in intervention processes varied greatly in the precedent cases. While minor involvement of the inhabitants occurred throughout the intervention processes in Ju'er Hutong and Morro da Providencia, the other two cases exhibited thorough opportunities for engagement. In the case of Favela-Bairro, social strategies concerning the

inhabitants were incorporated into the intervention process in later phases, as a result of the shortcomings of such interventions as the one in Morro da Providencia. Comuna Nororiental, however, utilized the most complex inhabitant involvement strategies in which the social and institutional approaches were intertwined in such a way that forced local inhabitants' interaction with local governments, NGOs, and other involved institutions. Included were strategies that aimed to engage inhabitants in decision-making processes as well as components of the physical design. Similar strategies were deployed in Darb al-Ahmar, although to a lesser extent. The aim was to engender a sense of ownership among settlement inhabitants. These two cases exhibited examples where community action planning approaches aided in the design of spatial interventions.

The process objectives of AUB31 merely call for facilitating community cohesion and the solicitation of public participation. Comuna Nororiental and Darb al-Ahmar exemplify best practices for inhabitant involvement, utilizing many of the principles of community action planning to encourage involvement and ownership throughout and beyond the intervention process.

## *2. Government*

Each of the four sample cases were the direct result of intervention programs that were promoted and funded by their respective federal governments, as well as supported by local governments and international agencies. It was recognition of the issues affecting the informal settlements and the determination of the local and national governments to improve the quality of life for those communities that led to significant investments in slum upgrades. Comuna Nororiental as well as Darb al-Ahmar both exceeded US\$30 million in large-scale public facilities that were in addition to the millions spent on physical and social projects within the settlements. Political will allowed for scalable interventions. The resulting scales of the programs were largely responsible for their implementation and would not have been possible without the political and financial support of governments.

AUB31 proposes large-scale interventions, which indicates involvement by the government. However, the processes for involvement and level of involvement are not articulated in the plan. As indicated by each of the precedent cases, government involvement is necessary in order to

obtain the necessary financial to facilitate meaningful, large-scale intervention.

## CHAPTER 8: Conclusion and Recommendations

### Conclusion

This document set out to observe four precedent interventions and explore their approaches, with the ultimate purpose of identifying those common intervention approaches that could be applied to a framework for Villa 31. AUB31 constructed a general framework for intervention, but its design largely relies on spatial strategies, some of which are arguably misguided. John Abbott suggested that a framework, which contains elements of community action planning, physical infrastructure provision, and physical transformation through the holistic plan, would be a superior strategy. Villa 31 would best benefit from such an approach, which utilizes community action planning approaches that involve inhabitants, incorporates technology that helps to identify and map physical and social issues, and works with inhabitants, planners, designers, and government officials to derive strategies that will identify and prioritize projects for intervention.

### Recommendations

#### *Spatial*

##### *Connectivity*

Mobility for residents of Villa 31 is constrained both internally and externally. Internally, the settlement is hindered predominantly by the condition of pathways. There is a general lack of lateral pathways throughout the settlement. Future development of the port area will increase the need for stronger lateral connections.

Externally, the railyards of Estacion Retiro hinder connectivity between the informal settlement and formal Buenos Aires. Connectivity improvements should be made to improve mobility for inhabitants mobilizing from the settlement to places beyond. Improved connectivity to formal Buenos Aires will contribute to blurring the delineation between the formal and informal.

Connectivity improvements should be identified and prioritized based upon an evaluation of activity nodes. Connections between high activity nodes or important destinations should take precedence, similar to the Darb al-Ahmar and Comuna Nororiental cases. I include open space under the connectivity category as it can operate as connective tissue within urban space. I

suggest an upgrade to existing public plazas and open spaces that lie throughout Villa 31 as a means of enhancing mobility and also to create attractive public spaces. Where space is available and currently utilized as such, open spaces should be upgraded to provide recreation space and social engagement opportunities. Figure 35 contains a conceptual framework for the upgrade of numerous open spaces and potential activity nodes.

### *Built Form*

Informal settlements, similar to their formal counterparts, are the evolution of civilizations containing many layers of history that are worthy of preservation and celebration. While portions of Villa 31's built form are newer, other areas have existed for over 80 years. Its current form tells a story about the history of the settlement and its inhabitants. While structures built of scrap pieces of cardboard and tin may not provide the most safe or resilient materials, Villa 31 is predominantly defined by its multistory, brick and concrete structures that are the creation of skilled laborers. The suggestion that these structures are unsafe is merely another insinuation by those that would rather see the community destroyed. While some of the structures could use stabilization upgrades, implications that suggest the entire built environment is ready to crumble are false. Identification of precarious structures should occur through a survey process, similar to the Darb al-Ahmar case. The restoration of identified structures should take precedence. This process should also help to identify structures that are significant to the community. These structures should also be prioritized for restoration.

The current plan, AUB31, contains a significant housing provision element that is proposed to be in the form of new high-rise residential structures. Shown in the aerial rendering in Figure 13, these Corbusian-like residential towers are shown amid grassy fields. This strategy has seen terrible results, particularly in the United States, where the resulting consequences have been studied extensively. Concentration of poverty within large structures with limited means of ingress and egress contributed to often-dangerous conditions for residents. Sufficient density can be achieved successfully without the utilization of high-rise structures. Surveys should be conducted to evaluate the quality and safety of residential structures within Villa 31. The results will inform intervention decisions as they pertain to renovation and new construction requirements.

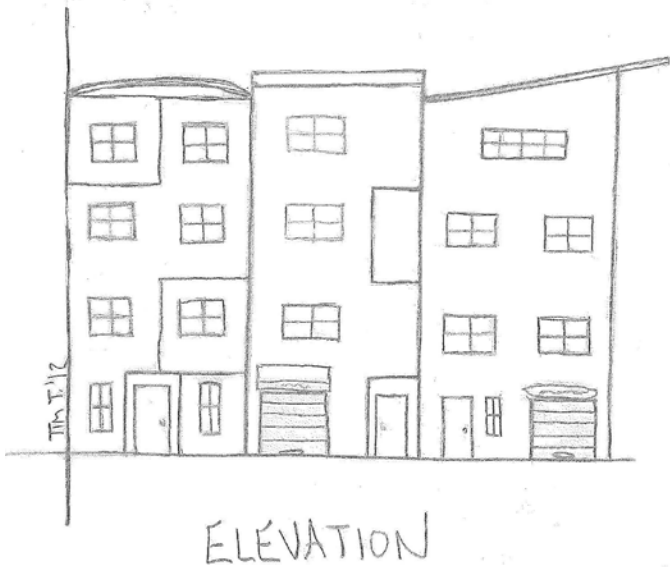


Figure 32. Elevation of conceptual residential structures.

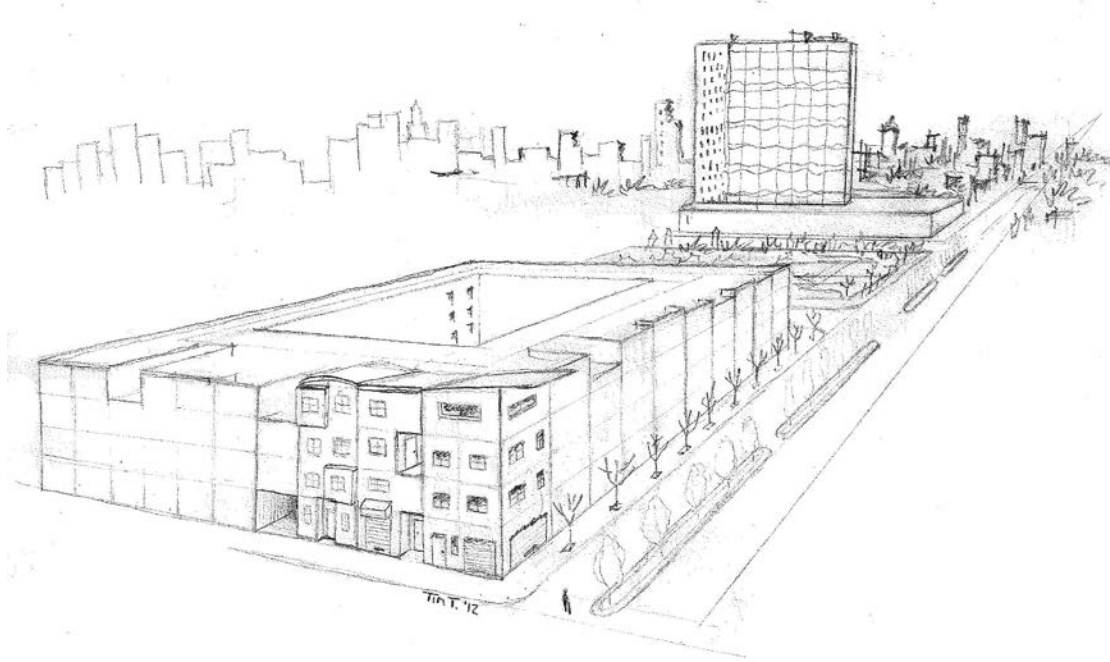
Housing provision and any new construction should maintain the scale of structures that already define Villa 31, which consist predominantly of three, four, and five-story buildings. Continuity with the existing pattern of development would highlight and validate the built form of the informal

settlement. Formalization of informal communities should not imply the projection of a formal city aesthetic, either. It should promote enhancements that upgrade the existing built environment. The Ju'er Hutong case exemplifies the design of a prototype housing typology that is informed by the vernacular architecture of the siyehuan. AUB31 proposes new housing along the northern periphery of the settlement. This location works well as it presents an opportunity to provide a transition between the historic settlement and the port.

Figure 32 presents a conceptual alternative to that of the high-rise housing of AUB31. This residential typology concept can range in height similar to that of the existing settlement and includes individual entrances for each dwelling unit. Each unit measure 20 feet by 20 feet and includes options for articulated facades, varying rooflines, and street front retail space.

Figure 33 illustrates a perspective aerial of a potential block development in which open space would be provided in the interior courtyard. Access to the interior units would be through a passage that can be accessed directly from the street. The units are designed back-to-back to provide individual access. This building typology and block layout provides an opportunity for individual improvements to residential units and provides a layout that establishes open space areas and connectivity. Note 9 in Figure 35 illustrates potential areas

where this housing typology could be located.



*Figure 33.* Conceptual illustration of possible housing typology in Villa 31.

Quality, aesthetic design should be utilized to further blur the delineation between Villa 31 and formal Buenos Aires. Design should be carefully considered for both renovation and new construction in a way that challenges perceived notions of what an informal settlement should look like, while maintaining primary elements of the existing character. Such a scheme would highlight the existing community's built environment and, thus, validate its existence in a positive, contemporary fashion. Parque Biblioteca España, located in Comuna Noriental, is the perfect example of a well-designed intervention project.

Opportunities for incorporating artistic elements that celebrate Villa 31 include gateways, or prominent locations where pathways and streets lead directly into the settlement. Figure 34 illustrates a sculptural element located at such an entrance to Villa 31. Such a gesture helps to celebrate the community by incorporating aesthetic features that proudly help to enhance a sense of place.

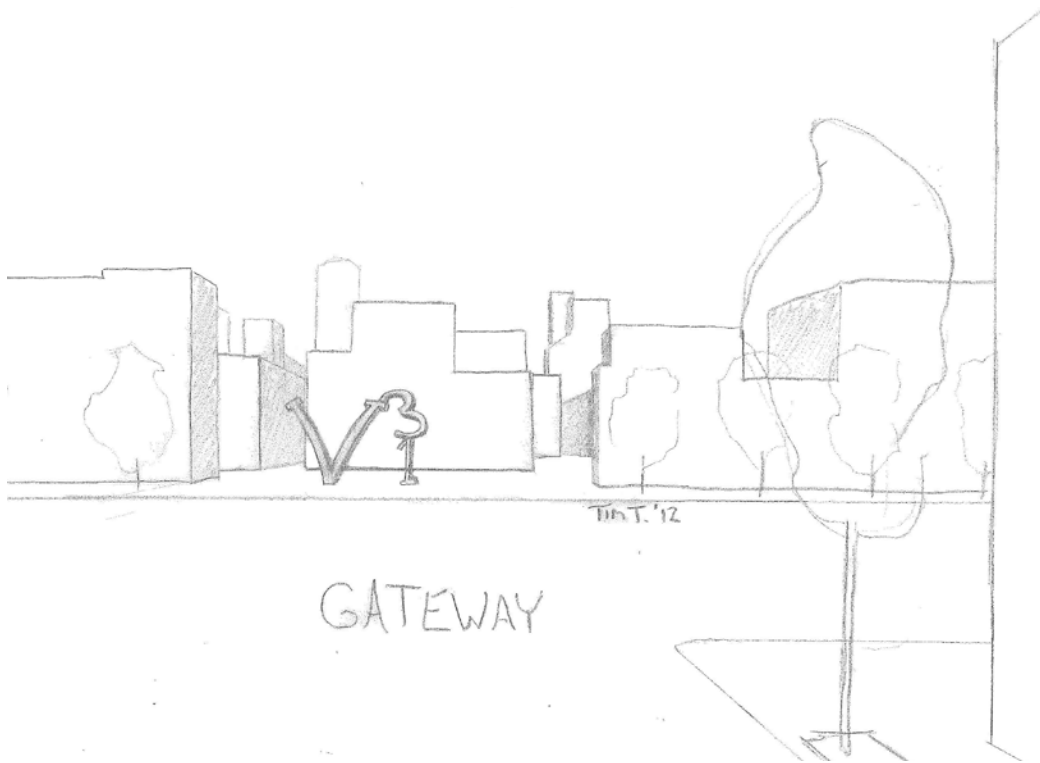


Figure 34. Conceptualized sculptural gateway element.

I can sympathize with the students that I met at Escuela Padre Mugica, who expressed their desire to attend classes within their settlement, instead of traversing the settlement, bus station, and busy arterial road to attend school. The same can be said for other social services, which are located within the formal Buenos Aires. Education, healthcare, and workforce training facilities should be located within or directly adjacent to Villa 31, similar to what occurred in the Darb al-Ahmar case.

#### *Infrastructure (Water, Sewer, Stormwater)*

The advancement of technology in the way of basic infrastructure, particularly within urbanized areas, has played an understated role in the safety and health of urbanized regions. Based upon Cristina Cravino's quantitative data, electricity, water, and telephone services exist over much of Villa 31, while sewer services reach just over half of the residents (Cravino, 2006). Lack of sewage and stormwater infrastructure contribute to unhealthy environments for inhabitants. While infrastructure provision is not described in depth in any of the precedent cases, it was an integral part of each intervention. The water, stormwater, and sewer infrastructure

network should be extended to all areas of Villa 31 and Villa 31 bis.

Morro da Providencia tied the installation of infrastructure to the upgrading of pathways, which linked activity areas and significant structures. This is an efficient, system approach. Infrastructure provision should be utilized as a means to upgrade connectivity and open space where infrastructure easements coexist.

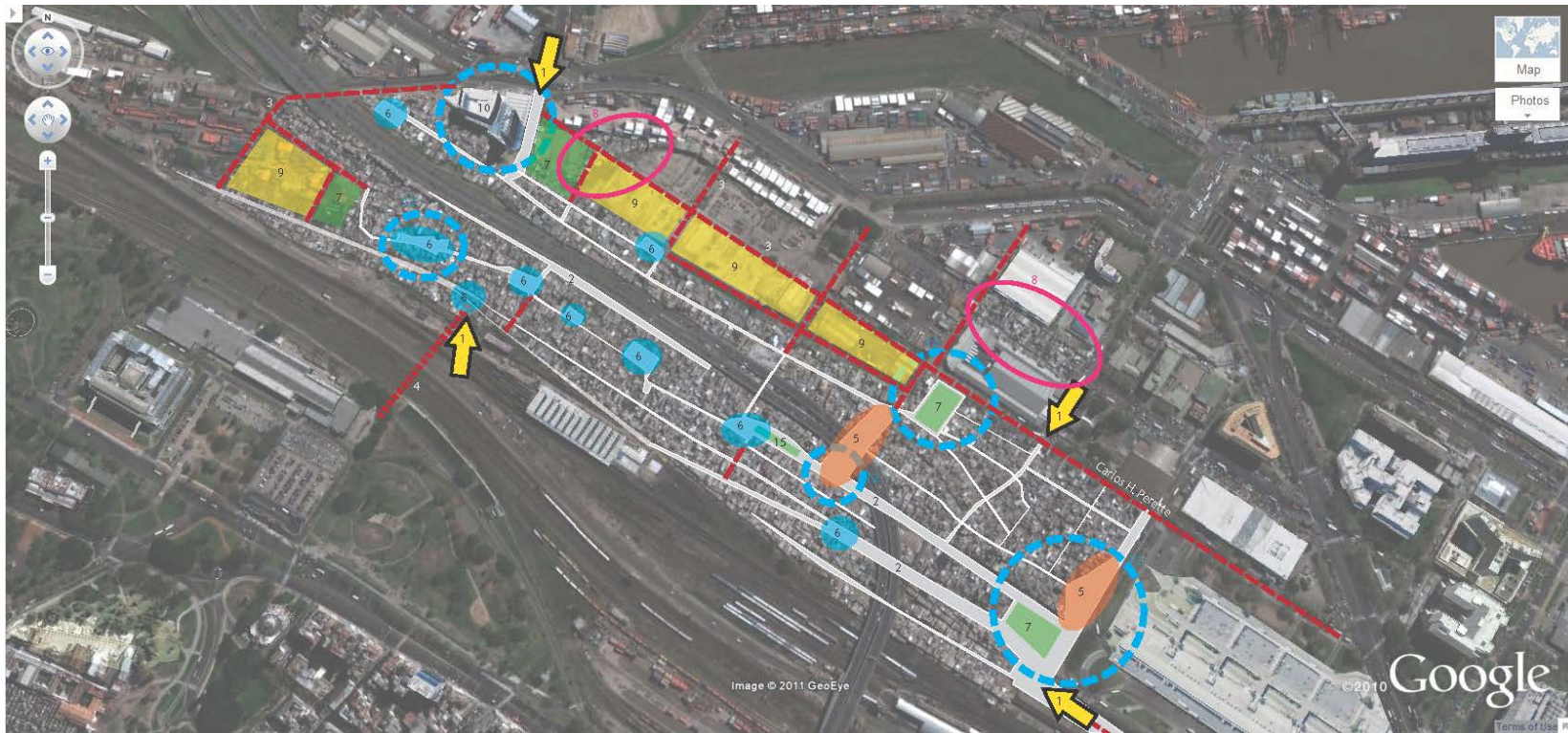
### *Process*

#### *Inhabitants*

Inhabitant objectives should involve intervention plans that involve them throughout the process, from the visioning phase, through the construction phase and beyond. Anteproyecto Urbano Barrio 31 Carlos Mugica (AUB31) provides a vague strategy for social intervention that requires further consideration and additional planning. Inhabitant participation proved particularly robust in the Darb Al Ahmar and Comuna Noriental cases where elements of community action planning approaches were applied.

#### *Government*

Herbert Werlin (1999, p.1531) stated, "Plans can never substitute for good urban planning and public administration." Governmental willpower is a vital element of meaningful intervention on a large scale. A plan that entails infrastructure upgrading is dependent upon the support of governmental agencies capable of generating the financial resources necessary to carry out such an endeavor. Three of the precedent cases were examples of multi-million dollar (US) interventions. The key to carrying out each of these was support from their respective federal and municipal governments who secured the necessary funding.



- | CONNECTIVITY |                       | OPEN SPACE |                                | STRUCTURES |                             |
|--------------|-----------------------|------------|--------------------------------|------------|-----------------------------|
| 1            | Gateways              | 5          | Commercial node opportunity    | 8          | New housing                 |
| 2            | Existing pathways     | 6          | Upgraded plazas                | 9          | Areas for relocation        |
| 3            | New streets           | 7          | Recreational parks/open spaces | 10         | Renovated Movement building |
| 4            | New pedestrian bridge |            |                                |            |                             |
|              |                       |            |                                |            | Major activity nodes        |

Figure 35. Potential conceptual spatial intervention strategies for Villa 31 (Trujillo, 2012).

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