CASE STUDY: VILLA 31
THE URBAN SLUM AS A MODEL FOR SUSTAINABLE DEVELOPMENT
ACKNOWLEDGEMENTS

RESEARCH SUPPORTED BY

Northeastern University Office of the Provost
2012 Provost Undergraduate Research Award

Northeastern University Honors Program
2012 Gladys Brooks Honors Award

UN AGRADECIEMENTO ESPECIAL PARA / A SPECIAL THANKS TO

Universidad de Buenos Aires, CEP
Marta Edith Yajnes

Universidad de Buenos Aires, FADU
The slums of rapidly growing cities in developing nations, specifically Villa 31 in Buenos Aires, Argentina, can provide positive lessons in urban sustainability and cultural vitality. Certain urban and architectural characteristics that incidentally occur in these settlements can form a basis for sustainable development.

*I began this process recognizing this is a radical thesis. I expected and encountered resistance to the idea from local architects and academics, mostly based on social, economic, and health implications. But, throughout conversation and first-hand experience, the thesis prevailed. I am by no means asserting that the villas are ideal for either the residents or for the city. Instead, the aim of this project is to recognize innovative and sustainable design tactics that are on display in slums, settlements, and other forms of ad hoc housing.
Change the dream and you change the city…change the narratives guiding suburban housing and the priorities they imply, including spatial arrangements, ownership patterns, the balance between public and private interests, and the mixture of activities and services that any town or city entails, and you begin the process of redirecting suburban sprawl.¹

- The Buell Hypothesis
LEED AND THE PROMOTION OF MORE

The problem with the American suburbs is both in economic and environmental sustainability. The profession of architecture has seen a recent shift towards this type of sustainable design. However, American practice tends to take the wrong route, and rarely looks at these issues in residential design and planning. Global resources are dwindling and “eco” has become the new chic, an aesthetic rather than a design goal. The United States current LEED system for crediting energy efficient buildings reinforces additive responses to building sustainably, that is, designers are rewarded points for adding more and more sustainable features. For example, LEED points are gained for specifying expensive and efficient building materials or for simply adding “hybrid-only” parking spots, instead of looking at design basics. Meanwhile, the areas of slum housing around many major South American cities are reductive by nature. Slum housing is often made of 100% recycled material, and under-utilized urban areas are re-populated instead of consuming new rural territories: these are core green design strategies that should be better incorporated into the developed world.

THE URBAN REALM AND THE URBAN SLUM

Now, for the first time ever, more of the world’s population live in cities. Here, wealth exists where big business booms and tourism thrives. Yet in close proximity, extreme poverty is also found. Globalization has forced most jobs to cities and governmental policies keep services only in urban areas. This attracts large numbers from surrounding rural areas. The issue of housing, informal and formal, for working class populations represents a significant urban challenge. A common settlement pattern has developed around the world, with similar styles of settlement and slum housing appearing in many metro areas.

South American cities are especially affected by this phenomenon. In this region, 26% of the population lives under slum conditions, the largest percentage of any other area in the world.\(^2\) To date, most research and theory on these neighborhoods has focused on their social and economic implications: despite the less-than-desirable living conditions, the cities’ poorest residents are economically bound to these neighborhoods. Thus poor populations have no choice but to build in residual urban conditions such as under bridges, beside railroad tracks, and around other forms of urban infrastructure.\(^3\) These buildings are conceived in a very different, non-deliberate fashion, producing an architecture made of the detrius of society, and in its aggregation, it produces an urbanism of opportunistic density. The inherent qualities of this type of building remind us of the essence of providing for basic human comfort.

---

BUENOS AIRES AND LAS VILLAS

As a rapidly growing city still recovering from a 2001 economic crash, Buenos Aires became an ideal place for this research. Today, over 300,000 (10%) of the city’s population lives in this type of housing, Las Villas Miserias.⁴

Argentina is no exception to the rapidly growing urban environment. The nation is 75% urban; its capital city, Buenos Aires, presents an extreme situation.⁵ It acts as a primate city meaning it as at least twice as large as the next largest city. There are no other Argentine cities that attract similar numbers of urban dwellers; the entire economy is based here. The city center itself has a population of 3 million, but Gran Buenos Aires contains 14 million, 38% of the entire country’s population, also qualifying it as a mega-city.⁶ The capital city is host to many slum and settlements: Gran Buenos Aires contains over 1,000 villas, which house over 700,000 people⁷

These areas are home to some locals, but mostly immigrant populations. 30% of residents are of Argentine backgrounds, while the other 70% are made of immigrants mostly from Bolivia, Peru, and Paraguay.⁸ Large migrant numbers are due to Argentina’s free national healthcare and education systems. Yet, some access issues still exist in the informal settlements: 84.3% have access to a primary school within 10 block, only 57.6% to secondary school, 67.7% have access to clinics, but only 7% to hospitals.⁹ These areas also see extremely high rates of unemployment. 43.5% of villa residents are unemployed, while 16.7% find work within the neighborhood, and 35.7% in the city.¹⁰ Most of these jobs, however, are in the informal sector, where contracts don’t exist and wages are low. Common jobs of this type include construction, housemaids, selling souvenirs, making and selling food and clothing.¹¹ An age demographic shift in the villas also exists. Most villas have an average age that is over 15 years younger that of the entirety of Buenos Aires. This is mostly due to the influx of working-aged migrants, but high fertility rates and a lower life expectancy are also to blame.¹²

---

⁴ Ibid.
⁵ Ibid.
⁷ Ibid.
¹¹ Ibid., 34.
¹² Ibid., 41.
VILLA 31

Villa 31 lies in Retiro, a wealthy and central neighborhood. Retiro contains the main commercial center along with a major transportation hub, which incidentally serves as the site for the villa. Unlike other areas such as Rio or Caracas where topography forms a barrier to building in the developed city, Villa 31 presents an extreme case of urban infrastructure. The 15.25 hectare settlement, home to 90,000, is built on government owned land directly adjacent to the Retiro train and bus terminals; and a major 6-lane highway runs through the middle of the villa. Typical homes here are constructed of various materials. An outstanding 97% are masonry construction, with only 3% made of cardboard, timber, or sheet iron. 91.8% have concrete floors.\textsuperscript{13}
RESILIENCY AND EVOLUTION

“La espontaneidad es el origen de todas las ciudades.”

“Spontaneity is the origin of all cities.”
- Arq. Jorge Lestard

URBAN SCALE

Within their urban form, slums, settlements, and other forms of ad hoc housing are inherently resilient. Their ability to adapt to a variety of natural and super-imposed conditions is astounding. As often as these conditions are somewhat precarious, the development of slum areas still shows valuable lessons in occupying otherwise under-utilized space and conserving rural territories.

Studying the evolution of these territories is especially telling of their resilience. Oftentimes, and as shown in Villa 31, boundaries surrounding public and private space in the formal cities change, altering the space available for informal occupation in settlements. Due to the temporal nature of both occupancy and construction in these areas, however, the neighborhood easily adjusts to displacement and growth. At Villa 31, the construction of a highway directly through the settlement seemed to have minimal effect on villa life. This is contrary to the American response to this type of development, which can be seen in Boston’s Interstate 93 followed by the “Big Dig” project. Here, billions of dollars were ultimately spent correcting the problems caused by the expansion of a major interstate. If formal development can learn to adjust to these changes in a manner similar to the informal development found in Buenos Aires, cities can become more resilient.

A critical part of this development strategy is how navigation through these areas works. Rather than adhering to an imposed, unnatural circulation network, settlement areas generate a pseudo-grid organically. Ultimately this type of growth is more successful; it relies more heavily on the effects of human interaction with the built and natural environment as opposed to a module created by a planner with little connection to the area. Communal recognition of open space within Villa 31 also asserts the nature of humans to “play,” a vital part of urban living.

The organic evolution of settlement areas also proves fruitful in its abilities to respond to the human condition and the human means. Because residents don’t build beyond their means and provide for basic levels of comfort, space is easily manipulated and also rooted in self-awareness and pride. Due to this type of growth, in Villa 31 neighborhoods within the villa came into formation. Here, cultural vitality is at a greatest, where residents find a sense of identity not only within the villa but also within their sub-section. Even though the built environment may change, this idea shows that will power can sometimes supersede physical impositions.

EVOLUTION

1940

Slum settlement starts to take place at an extremely dense and unorganized rate.
EVOLUTION

1974

The government orders slum-clearance, ultimately demolishing the entire villa.
1978

Inhabitants begin the re-occupation of the villa.
EVOLUTION

1995

Contemporary villa development began to adhere to recognizable urban patterns. Smaller blocks met with interior streets at various scales, and the figure-ground became not too distinct from other areas of the formal city.
EVOLUTION

2000

Pres. Arturo Illia, a 6-lane highway, is completed, running directly through the villa.
EVOLUTION

2008 AND TODAY

Villa growth after 2000 is outstanding. A traditional barrier now acted as a catalyst for nearby growth. Speculatively, this new addition of further urban infrastructure [in the form of mega-highway] solidified area as exclusively informal development. As the appeal of land decreases to the formal sector, it becomes more desirable to the informal since the threat of being pushed out is diminished. Since then, Villa 31 continues to be the most desirable area for new immigrants. Here, an informal rental market drives villa life, with rent at times even comparable to formal outlying areas of the city.
Images borrowed and edited from:
URBAN RESILIENCE

The ability for settlements to exist around certain urban infrastructure is outstanding. As often as these conditions are somewhat precarious, the development of these slum areas still shows lessons in how to occupy otherwise under-utilized space.

URBAN INFILL

Resiliency of these settlements is extremely apparent in their ability to infill unoccupied lands. As seen here, these spaces adapt well both industrial and smaller scale zones. As the barrier separating public from private land changes and the formal city changes with it, ad hoc housing has the inherent ability to change with it.

INFRASTRUCTURE ADJACENCY

Villa 31 shows an outstanding interaction with urban infrastructure. Development along and underneath Pres. Arturo Illia is extremely prominent.
CIRCULATION NETWORK

The underlying morphology of the settlement also includes a pseudo-grid pattern. Again like the formal city, primary and secondary streets are formed. Different, however, is the circulation interaction with open space. Instead of going around plazas there is a strong interaction with them. Open space then becomes the node for circulation routes.
NEIGHBORHOOD DEVELOPMENT

Although spontaneous in nature, settlement patterns within Villa 31 have an underlying morphology. Acting similar to the formal city, cultural and chronological boundaries are formed between different sectors of the villa. Self-identity of residents within these areas contributes to the cultural vitality of the settlement with a strong sense of community existing on various scales.
ADAPTABILITY AND AGGREGATION

“Siempre ha estado en la villa como desorden, caos en lugar de entenderlo como un orden diferente, pero no es algo sin forma.”15

“It has always been that the villa has been seen as disorder, chaos instead of understanding it as a different order, but not something formless.”

- Arq. Javier Fernández Castro

ARCHITECTURAL SCALE

Zooming in more towards the architectural scale, the idea of adaptability is ever-present. The unplanned development that occurs in settlements is by nature quite intelligent. Core design ideas that architects attempt to bring in to revitalize urban areas are exemplified by these settlements, proving that human nature and academic research can often coincide.

As the urban area adapts easily to various site conditions, the architecture in these areas proves also incredibly flexible. As witnessed in Villa 31, a recognizable building type typifies the area. Low to mid-rise construction plays host to both residences and businesses, creating a dense fabric of mixed uses. Although the situation of dense inner cities has historically been the cause of concern, the villa model adapts effortlessly to suit the needs of its residences. Because those within the neighborhoods create the area, all aspects of life are considered in construction and occupation. 15-20% of residents within Villa 31 primarily find work outside the formal city, where they provide every day services for villa residents.16 Laundromats, barber shops, small convenience stores, and storefronts selling home-cooked meals and baked goods all populate various commercial districts scattered throughout the site.

In relation to density, it is important to note the discussed model is the urban slum. Even within Buenos Aires, low-density settlements just outside of the capital federal exist and also bring larger sanitation issues forefront, not offering any model for emulation. Villa 31 becomes somewhat an anomaly: the “best” slum. Building construction is fairly advanced as many residents work within the construction industry, and most residences are masonry or concrete with few wooden or corrugated metal structures.

16 Weeda, The slums of Buenos Aires, 41.
OCCUPANCY

On the architectural scale, residences are flexible and easily adapted to occupancy change. In part due to a cultural understanding and also an entire lack of housing codes, a prototypical building design typifies these settlements. A domino-like frame of heavy construction presents itself, with then infill when possible. The town home-style units are then built gradually when the means present itself. It is common for extended family to move into an already existing structure. It is either added to or adjacencies are bought to accommodate the new residents. Through the buildings life cycle this continue to house extended family or can change to accommodate new families and individuals.

“Mis dos tíos vivieron aquí, quienes me hicieron mi casa, trabajaron en el edificio y la casa fue construida en forma gradual.”

“My two uncles lived here, they made me my house, they worked in the building and the house was built gradually.”

– Villa resident

17 Villa resident, interview with author, June 9, 2012.
MIXED USE

Also integrated into the prototypical building is the opportunity for small storefronts. A key idea of contemporary planners and urban designers, mixed-use developments naturally occur in settlements as both a means of financial support for shop owners and supply for neighbors. Identifiable retail streets and districts are present; the villa becomes a self-sufficient autonomous unit within the larger urban context.
VIEW FROM ONE STOREFRONT TO ANOTHER
HIGH DENSITY

The relative density of settlement areas is quite high and at a small scale. The figure ground appears much different than the modernist approach to low-class housing and also the American suburb. The direct party wall condition requires less material and self-insulates. Although these levels of density coupled with lack of services can create undesirable living conditions, ideas behind density are still valuable.
CONCLUSION

CONTROVERSY

Upon these findings it is important to acknowledge the societal issues surrounding slum development. Through the narrow lens of the alien academic, this report cannot begin to fully understand life within and around the villa. Throughout my interactions with both villa residents and porteños it is clear that [as is] these areas are distinct problems, not ambitious urban and architectural solutions. Those within the formal sector see these areas as an urban disease; public and private companies alike try to hide this embarrassing truth. I was able to visit a school within the villa, where students were writing poems and short anecdotes resisting a wall proposed to surround the settlement, further isolating it from the formal city beyond.

Discriminatory rental practices and uneven distribution of goods and services bind many immigrants and poor citizens to these areas; all have a desire to get out. Electricity is stolen, sewer systems barely exist, and villa life is nowhere near easy. If given the choice, most villa residents would prefer to pay a bill; the desire to have any sort of formal deed is a longtime wish of many. What I expected to find as a resourceful use of energy turned out to be one of the most inefficient uses of city resources. Due to the informality of services and lack of proper building insulation, although stolen, energy use is extremely high. Buildings may have embodied efficiencies in materials, but life does not.

RECOGNITION

Within this discussion it is also important to recognize the efforts of many local architects and organizations towards making these areas a better place to live. I had the amazing opportunity to travel to San Martin, just outside the city, where architecture students at the University of Buenos Aires were working with a local non-profit to update homes in a suburban villa, directly involving and educating residents in the process. I met with many architects whose primary objective was to better these areas, both in the urban environment and in building construction. The dedication and service of these individuals is outstanding. Even as their work focused on curing the urban disease, they all welcomed intellectual discussion on this thesis, helping me further analyze certain aspects and eventually support the argument.

JUSTIFICATION

The previous dialogue on this research project is the result of a long process of justification of a radical thesis. A common thread among the interviews in Buenos Aires was that the necessary first step to better the slums is to formalize the settlement. Once services can be provided and a healthy level of living obtained, the urban and architectural strategies presented can show their true potential. By supporting the ideas brought forth, we must also acknowledge that direct imitation of settlement areas is not the solution. But by utilizing these design ideas in concept, the developed world can begin to learn to live more environmentally and economically sustainably.

The following images provide support from contemporary architects.
MVRDV & THE WHY FACTORY

THE VERTICAL VILLAGE

Looking specifically at Asian cities, MVRDV and The Why Factory explored the dichotomy between the urban village [formal and informal] and the contemporary housing tower. Aiming to provide a vertical example of the traditional village, their analysis of the positive qualities of these settlements suggests the lessons we can learn in relation to:

Density, Individuality, Critical Mass, Flexibility, Collectivity, Evolutionary Growth, Diversity, Human-Scaled, Publicness, Informality, and Identity.18

SUPPORT

DIONDISIO GONZÁLEZ

FAVELA SERIES

As a critique of plans for slum-demolition in São Paulo, Brazil, González proposed utilizing the existing structures. An artful and polemical interpretation, his argument entails the recognition and celebration of these settlements as formal and legal dwelling.
WORKS CITED


