Modernist housing estate “revival”: a paradigm to upgrade Latin America’s slums?

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Abstract. Charles Jencks famously stated that Modern architecture died in St Louis, Missouri on July 15, 1972. While his statement has been disputed, the historical ineptness of Modern architecture to solve the housing problems of the urban poor is generally accepted. This is supported by several unsuccessful high-profile modernist housing estates in the 20th and 21st centuries. Nevertheless, there has been a recent re-engagement with modernism in theory and practice, and notably in solutions to upgrade slums in Latin America. This has happened in the background of the United Nations Sustainable Development Goals (SDGs), specifically goal 11—Sustainable Cities and Communities—that aims by 2030 to “ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums”. This paper analyses a recent modernist large-scale slum upgrading intervention in Santo Domingo, Dominican Republic. The project relocated a vulnerable informal settlement of over 7000 people to a new housing estate. The paper draws on ethnographic methodologies to critically analyse the ex-ante rationale of the project and the ex-post situation of the community in terms of resident’s perception of the new housing estate. We argue that the project is revised version of modernism: contextualized to the time, culture, geography, and users. Almost four years post-intervention residents praise comfort aspects of the project, report higher sentiments of safety, and endorse the project as a model for future slum upgrading in the country. These findings align with emerging re-evaluations indicating that modernist housing estates are not as problematic as the literature has suggested and can still solve the housing issues of the vulnerable urban poor.

1. Introduction

Many scholars and practitioners have commented on the alleged ‘demise’ of Modern architecture. Among them, Charles Jenks famously suggested that Modern architecture died in 1972 with the demolition of the Pruitt-Igoe, a modernist social housing complex part of a slum clearance program in St Louis Missouri [1]. While Jenks’ statement has been contested and is controversial [2], the failure of the modernist housing estate as an appropriate solution to house the urban poor generally is not.

Modern architecture emerged in the 1920s and became popular after the 1950s. Buildings in this style (or movement) are often characterized by rationality, functionality, aesthetics of clean lines, light forms, refusal of historical styles, and lack of ornamentation [3], [4]. The style was presented in 1932 at the New York’s Museum of Modern Art (MoMA) Modern architecture: international exhibition as revolutionary and international. The exhibit displayed images and models of several Modern buildings by figures such as Le Corbusier, Walter Gropius and Mies van der Rohe. While several of these buildings have been around for years, the exhibition legitimized the Modern Movement [5], [6].
The acceptance of Modern architecture was fuelled more by the economic conditions of the post-war years than by its aesthetics. Its principles of rationality and repetition made it ideal to efficiently reconstruct post-war cities in need of large scale, rapid and low-cost housing [6]. Out of this reconstruction process emerged many modernist housing estates across Europe and in the United States. In terms of housing, these estates became the signature of the Movement.

The principles of Modern architecture were also deemed appropriate to solve the housing challenges of slums. In the United States, for instance, extensive slum-clearance programs used Modern architecture and urban design to propel urban transformations [7], [8]. Famous among these slum-clearance and urban renewal projects was the Pruitt-Igoe project in Saint Louis (figure 1). This project was demolished only 20 years after its inception due to low occupancy and high crime rates; it later became a symbol of the “failure” of the modernist housing estate.

Figure 1. Pruitt-Igoe housing estate, 1954 (Leinweber, Yamasaki & Hellmuth), and demolition in the 1970s. Sources: Paul Knittel and U.S. Department of Housing and Urban Development Office of Policy Development and Research

Latin America was also influenced by the axiological concepts of Modern architecture to solve the housing problems of the urban poor [9], [10], [11]. The region was home to multiple examples of modernist social housing in the second half of the 20th century. Among these was PREVI — Proyecto Experimental de Vivienda (Experimental Housing Project) — that in the 1960’s brought together to the slums of Lima a group of Modern architects with experience in social housing such as James Stirling from the UK, Atelier 5 from Switzerland, Charles Correa from India, Christopher Alexander from the US, among others. They were to propose housing solutions for the urban poor. In contrast to the high-rise modernist developments common in Europe and North America, the PREVI experiment rested on a model of low-rise and high-density incremental housing [11].

From the get go Latin America’s modernism was unique, producing National Modernisms: flexible and plural interpretations “no longer derived from the architecture of the northern hemisphere, but from a complex set of regional conditions” [12]. The local conditions, including vast informal settlements, have shaped the region’s convoluted engagement and current re-engagement with modernism. Paradoxically, while one of the criticisms of modernist housing estates from the 20th century in Europe (and even in Latin America) is that they are becoming the slums of the 21st century, Latin America is reengaging with revised versions of these estates. These new efforts are proving to be a solution to the current housing challenges of slums.

2. The death of Modern architecture?
The promises of the Modern Movement were seen suitable to house the masses, to revitalize damaged communities and to influence good living. Thus, it is appropriate to ask, “how did a socially concerned architecture came to be condemned, 50 years later, as soulless, bureaucratic and inhuman?” [13].


In the literature, the decay or “failure” of modernist housing estates has been generally attributed to socio-political and design-related causes. In the socio-political stream, this form of housing was often associated with communism [14] and state control [15]; highly negative ideologies in the post-war West. Additionally, scholars have argued that the violence and vandalism associated with some of these estates were the result of poverty, racial exclusion and unemployment [16], [17], [18] that characterized some of these communities. Furthermore, maintenance issues that induced deterioration were associated with lack of political will and funding [2] rather than with poorly constructed buildings.

In terms of architecture and urban design, the decay of the modernist housing estate has been attributed to original design features being cut or modified due to budget constraints, resulting in a lack of public spaces and bad finishes [2], [19]. In this regard, Priemus talks about some of these buildings presenting “draught, dampness, noise pollution, concrete defects, and poor finishes” [17]. The monochrome and monotonous schemes of most of these estates were also condemned as many considered unfit to the cultural landscapes they were placed [14]. The scale of the buildings was also often criticized as families reported not liking living in high-rise and repetitive buildings [20]. Furthermore, Newman linked the decay to the presence of “excessive indefensible public spaces”, such as large unprotected corridors and dark spaces [21]. De Vos goes even further to argue that modernist designs became too technocratic and that in the second half of the 20th century the mass production of social housing resulted in the loss of the original principles of the Modern Movement [19].

From this daunting background one might think—regarding the target of goal 11 of the SDGs: “By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums”—that the solution ought not to be modernist housing estates [22]. Our argument, however, based on extensive literature review and data collected from field research in Santo Domingo, is that these housing estates can still be a solution to house and upgrade vulnerable slums and should not be blindly discarded.

A revised form of modernism is appearing in several successful slum upgrading programs in Latin America; improving the articulation of cities and the housing conditions of the urban poor [15], [18], [23]. This is happening in the context of nascent research efforts re-engaging with modernism. Our research is part of these larger conversations on the “revival of mass housing” [24]. Past hegemonic literature and political debates that generalized and discarded the modernist housing estate are now being challenged by robust scholarship that incorporates the perceptions of residents [19], [22], [24], [25].

Most of the recent research that is bringing new light about the modernist housing estate has focused on European contexts. Little has been published about Latin American housing estates, let alone about recent housing estates for slums. Thus, this article investigates one of these recent—and successful—modernist housing estates: a new community called La Nueva Barquita, for people relocated from a slum in Santo Domingo, Dominican Republic.

3. Methods
The data presented in this paper was collected using mixed methods. Literature review and analysis of precedents was used to situate this research. Case study data was collected from on-site observation, visual documentation, and face-to-face structured surveys completed by a representative sample size of 102 families from October to December 2019. The survey, which is part of a larger research project, included both qualitative and quantitative-focused questions and each one took from 30 to 90 minutes. It asked participants about the ex-ante and ex-post situation of their families, that is, their socioeconomic and environmental conditions before and after relocation, and their perception of the new housing estate. For this paper we focus on questions from the survey on built-environment features of the new housing estate. The data was aggregated, with quantitative questions analysed using descriptive statistics and qualitative ones using a coding scheme for content analysis. Additionally, several in-depth interviews were conducted to experts on the case study including the lead architect, the city-planning office director, and members of the jury that selected the winning proposal. Both, the main survey and the interviews, were conducted in Spanish and translated into English.
4. Main case study: La Nueva Barquita

La Barquita was a barrio marginado—local term for slum—of about 1500 families (over 7000 people) that informally occupied land on the edges of the Ozama River and was regularly threatened by floods. A presidential decree declared the area inhabitable and a project was commissioned to relocate the community to an area of greater safety. While most slum upgrading guidelines advocate for in-situ interventions, in cases where communities are under constant threats of natural disasters relocation is required [23]. In 2013 an open local design competition was launched and attracted 14 design proposals. The winner was selected by an international jury with experiences dealing with informal settlements in Latin America alongside local experts.

The winning bid resulted in a new built-up housing estate in a vacant site on the other side of the river, close enough to the previous settlement that social structures were not completely broken. The area left vacant from the clearance of the old slum settlement is now becoming a large fluvial park paired with sports facilities such as baseball fields and basketball courts. The new park will provide public spaces for the adjacent informal settlements, act as a natural barrier to floods, and prevent future squatting in the area (figure 2).

![Figure 2](image)

Figure 2. Left: Ex-ante situation of La Barquita next to the river. Right: The vacant land post-relocation, 12 hectares, is being developed as a fluvial park [26].

The new community, La Nueva Barquita, spreads over 52 hectares and consists of more than 100 buildings totalling 1780 housing units in the form of flats, as well as public infrastructures such as schools, a hospital, shops, sports areas, plazas, a church, and even a skate park (figure 3). The new community also provides constant access to basic services such as water, electricity, and sanitation which were lacking in the previous settlement. Forty construction companies, that hired a total of 1100 workers from the community, participated in the construction of the new housing estate which according to Ministry of the Presidency of the Dominican Republic had a total cost of RD $4000MM (about US $73MM).

Most buildings are four storeys high and have flats that range from 68 to 76 square metres, larger than most housing schemes for the urban poor around the world. The circulation halls and staircases are placed on the edges of buildings and are semi-open in order to make them visible at all times. The new housing estate also has three low-impact water-treatment plans for wastewater and three linear kilometres of bicycle paths, showing that these infrastructures—usually only part of wealthy “formal” areas—are also possible in projects for the barrios.
4.1. A contextualized Modernity
On the surface, the design of La Nueva Barquita presents similarities to the housing estates built in the 20th century in Latin America and other parts of the world. It follows many principles of Modern architecture: concrete walls and slabs, clean lines, pure forms, lack of ornamentation and repetition. Gustavo Luis More, the editor of Archivos de Arquitectura Antillana (AAA), an important architectural publication in the Caribbean, commented on how the project follows some principles of modernism:

“There are similarities [with the Modern housing estates from the 20th century], 4-storeys blocks rationally scattered in the terrain, a grid that favours nature; those are the same concepts. It is what I am saying; Modern architecture continues today”. (Interview with G.L.M.)

However, this is a contextualized Modernity: a form of ‘Critical Regionalism’ [27] or a revised ‘National Modernism’. While many high-rise estates from the 20th century were considered inhumane and not fit for families, this project uses mid-rise buildings (4 storeys) paired with playgrounds, parks, and plazas. While several modernist housing projects were considered pale and out of place, this project integrates colour as a key element of its aesthetic. Colour is important in Latin American cultures as exemplified in one of modernism main figures, Mexican architect Luis Barragan. He used splendid displays of colours to highlight his pure and minimalistic geometries [28]. Additionally, the project values diversity instead of blind repetition. Not all buildings are equal and there are several mixed-use typologies in the main streets with shops or services on the ground level. The new housing estate is also well-connected to the rest of the city by an efficient bus system that rounds the estate every ten minutes. Furthermore, although many modernist housing estates often lacked public spaces, this project integrates multiple green areas and public spaces in the form of gardens, parks, sports areas, plazas, and creative typologies such as bicycle paths, an amphitheatre and a skate park. Significantly, according to Esteban Gonzalez, lead architect of the winning proposal, the public space per capita ratio in La Nueva Barquita is the highest in the Dominican Republic.

“I said, well, if we are going to make a city, we are going to make a good one. So, the ratio of public spaces (green and sports areas)/construction, is the highest in the country…There is a
4.2. Safety, comfort and endorsement

While the previous settlement was vulnerable to flooding, residents feel safer in La Nueva Barquita. The survey conducted revealed that 85% of respondents experienced floods in the previous settlement, with 65% experiencing it more than 10 times. The community did not feel safe to resist natural disasters in the previous slum settlement, with 73% reporting feeling unsafe. Conversely, in the new community respondents have higher perceived safety to natural disasters, with only 7% reporting feeling unsafe while 80% of respondents said they feel safe in the new estate. Being further from the river, living in a permanent and well-designed concrete structure, and having a community connected to evacuation routes were some of the reasons respondents attributed to feeling safer.

It was to be expected that the new community would feel safer, but something unexpected was the good environmental quality of the new estate. Many modernist housing estates have been poorly rated by its residents, as a recent article put it “most of these buildings, in fact, offer thermal performances that are inadequate to current requirements in terms of energy efficiency, human comfort as well as to seismic safety” [29]. However, the representative survey carried out on 102 families discovered high levels of acceptance of the project almost four years after moving in. In terms of comfort elements—often commended in modernist housing estates—most of the respondents considered factors such as the flats’ internal temperature, noise protection, natural ventilation, humidity, natural lighting, size, general quality, and general comfort as either “good” or “very good” (figure 4). We cannot assume that the high ratings are only related to the project being Modern in style. Nevertheless, as the project does not have mechanical systems regulating comfort aspects, it is clear that the layout, aesthetic and formal configuration of the project (following modernist principles) is significantly responsible for the way the buildings perform, and thus the way they are perceived. Of the comfort factors asked, noise protection (51%) and internal temperature (63%) received the lowest sum of “very good” or “good” performance, while natural ventilation (89%), apartment size (91%), and general comfort (91%) received the highest.

![Figure 4. Survey respondents’ assessment of comfort factors of their flats in the upgraded community.](image-url)

Further highlighting the acceptance of the project’s functionality, aesthetics and overall concept, when the survey asked participants in future projects to improve informal or vulnerable communities, in your opinion; what should architects do?, over 63% of respondents in this open-ended question explicitly answered with “the same as here”. A further 11% mentioned building community
infrastructure already part of La Nueva Barquita such as “build parks” or “build a hospital”; 14% explicitly suggested building completely different communities, most of them suggesting “build individual houses instead”; and 11% of respondents focused on social aspects that architects have little control over such as “create more job opportunities”. This endorsement of the project is not only the result of living in formal, safer and new houses—there are several examples around the globe where slumdwellers prefer to go back to live in the slums than staying in formal new houses—rather, we argue, this approval is the result of the high environmental quality of the housing estate.

The findings discussed above align with recent research that comments on the disconnect between the hegemonic academic discourses on modernist housing estates and the results on the ground. As a recent paper put it “there is a gap between the experts’ ideas about the estates as alienating and less-attractive landscapes, particularly among urban planners, architects and psychologists, and residents’ narratives of the estates as home” [24].

5. Conclusions
The modernist housing estate has been the subject of extensive analysis in the architecture and urban planning historiography. Nascent research interested in re-evaluating these estates has uncovered how, while many presented problematic aspects, past literature puts an “often-exaggerated critique and harsh rhetoric” on these estates [25]. The localized nature of these estates does not allow generalizations, thus different readings from the perspective of their residents are needed.

Paradoxically, the conditions of slums that modernism tried and failed to reform in the 20th century are the same that are propelling now a re-engagement with modernist mass housing in Latin America. In this region, modernist housing estates have had a ‘revival’ and many are highly praised by residents. La Nueva Barquita is one of these. The project was designed to relocate and improve a vulnerable slum community; and while it was not pre-planned as ‘modernist’ the need for construction efficiency resulted in the use of many of the principles of modern architecture (symmetry, repetition, lack of ornamentation, pure forms). In this regard, we found that the new community is integrated to the formal city, aesthetically and environmentally pleasing, and highly endorsed by its residents.

The high public-space/construction ratio, diversity of typologies, the use of colour, connectivity by efficient public transport, and good design and environmental quality of flats were indicated by residents as reasons for the high acceptability of the project. It is important to note that the survey conducted also revealed some existing problems in the community such as persistent low-income levels. While these are important issues that demand attention, they are not directly related to architectural features of the project. Even with these, residents feel proud of the community and recommend it as a model for future slum upgrading projects in the country.

We admit that not all Latin American cities have the need or the resources for large-scale relocation of slum dwellers to housing estates. Slum upgrading demands a contextualized and not generalized analysis; in-situ improvements are sometimes preferred. There are also limitations of making a direct connection between the residents’ positives views of the project and it being modernist in style. Nevertheless, it is clear that the contextualized aesthetics, morphology, and functional characters of Modern architecture can still be effective and efficient guiding principles to solve complex program conditions to house or re-house people living in slums. In the background of the SDGs, especially the targets of goal 11, our case study showed that the modernist housing estate can be a solution to propel urban transitions needed to improve vulnerable slums with adequate, safe and affordable housing.

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