URBANITY AS A PROJECT OF MODERNIZATION.

URBAN DESIGN AND PROGRESSIVE HOUSING STRATEGIES IN LIMA, 1954-1984

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Through the encounters of the formal and the informal in the city, Peruvian architecture culture has set the basis for an appropriated modernity, for a new paradigm of development that is waiting for new a materialization of public architecture and urbanism in this new century. Particularly, in the architecture of mass housing[1], these encounters expose the social, political, and economic conflicts and ideals of the population, as much as integrate them into the social space, territory and material culture.

Modern architecture in Lima has played a crucial role in the negotiation and linkage of ideas and forms of inhabitation between the functional and the marginal city. The role of state agencies (CNV, FNSBS, INVI, JNV, among others) that designed and built the housing projects reinforce the significance of "everyday" archi-tecture and design in modern urban culture[2]. Particularly, in the state sponsored housing projects, these encounters expose both its tensions and potentials. (fig. 1)

This essay reviews the process of housing modernization process in Lima, in which two supposedly opposite worlds have architecturally merged to achieve a new urbanity. The ideas presented in this research, reveal that Peruvian modernity, deals with the encounter of a rationally systematized spatial organization with a spontaneously squatted and self-built architecture.

1
Mass housing, or collective housing, refers to the idea of a large scale housing projects (1 000 or more housing units) which are looking for mutual benefits, share spaces and interests in the collective environment, and aim to create community sense.

2
The concept of the everyday is associated to the ideas of the "ordinary" and "as found", proposed and developed by architects and artists of the Independent Group during the 1960s in the United Kingdom. It is particularly relevant at this point to mention the intellectual efforts of Alison and Peter Smithson in articulating a "realistic aesthetic" into modern architecture, and then, disseminating these ideas through their books, lectures and articles (Robbins, 1990; Lichtenstein and Schregenberger, 2001).

FIG. 1. *VIEW FROM THE EASTERN PERIPHERY TO THE FINANCIAL DISTRICT OF LIMA*, 2013. © PHOTO: OMAR LUCAS.

It reviews the emergence of informal urbanism and the reassessment of self-help and informality within the design disciplines. By doing this, the essay reassesses this unique encounter of bottom-up and top-down processes, and exposes how architecture builds urbanity and consequently provides the physical setting for social empowerment.

The text also reveals and depicts five different architectural and city-making strategies through housing projects that have shaped the image of modern Lima. These ideas have created neighborhoods that promote incremental urban development with limited resources, as well as represent the most successful forms of urbanization that have been able to link the formal and the informal city, encouraging social and urban encounters.

TUGURIOS, BARRIADAS AND UNIDADES VECINALES

The perpetual underdevelopment of infrastructure, lack of education, healthcare and jobs in the Andean cities (as a result of the continuous economic upheavals in Peru's economy), produced large migrations to coastal cities and became one of the most important problems in Peru since the mid-century decades. Lima, the country's capital city, experienced a continued growth of squatter settlements and felt the housing crisis most acutely. The proliferation of *tugurios* (inner city slums) and *barriadas*

3
There are contributions that have exposed the development of housing policies in Lima, among the most relevant are: Driant, 1991; Sánchez Léon and Calderón Cockburn, 1980; Calderón Cockburn, 1990; Collier, 1978; Matos Mar, 1977.

FIG. 2. *AERIAL VIEW OF SAN COSME HILL IN LIMA*, 1949. © SOURCE: ARCHIVO DEL SERVICIO AEROFOTOGRÁFICO NACIONAL.

(peripheral squatter settlements) present significant problems to reach decent living standards. Since the early 1950s, an enormous population in Lima has been living in squatter settlements in the city outskirts, which grew as immigrants pushed their homes out into the desert in search of empty areas[3].

This problem was pointed out as early as the 1940s by architects, politicians and journalists, but the efforts made were not effective in solving the increasing problem. The country's urbanization was happening spontaneously, with massive migration from rural areas particularly to Lima. Between 1940 and 1972, Lima grew from nearly 660 000 to 3 420 000 inhabitants, by approximately 500 %. Housing programs in Lima started back in the 1930s with the construction of worker neighborhoods. They occurred simultaneously to the "professionalization" of architects through the establishment of the Society of Architects[4].

Attempting to fill the gap between the growing population of the capital city and its housing deficit, in 1945 architect-planner and Lima Deputy Fernando Belaúnde Terry led the development of the Housing Plan for Lima based on the a interpretation of the neighborhood unit idea[5] (Kahatt, 2015). *Unidades Vecinales* were the core of Lima's 1945 Housing Plan that planned to eradicate slums and rebuild ruined city blocks after relocating the population into these new housing projects. (fig. 2)

4
The *Sociedad de Arquitectos* was established in Lima in 1937. The same year, its young first secretary, Fernando Belaunde founded the journal *El Arquitecto Peruano*, which he directed until his presidential election in 1963 (Zapata, 1995).

5
The *unidades vecinales* – as defined in the Lima Housing Plan – are autonomous neighborhoods that generate their own urbanity, since they allocate nearly 1 000 families (more than 5 000 people). The civic center included all city services such as schools, churches, shopping centers, clubs, parks and plazas, other collective spaces within a pedestrian-scale precinct that should never crossed by vehicular traffic. They had the aim not only to provide housing facilities, but also the sense of community in the modern city (Kahatt, 2015).

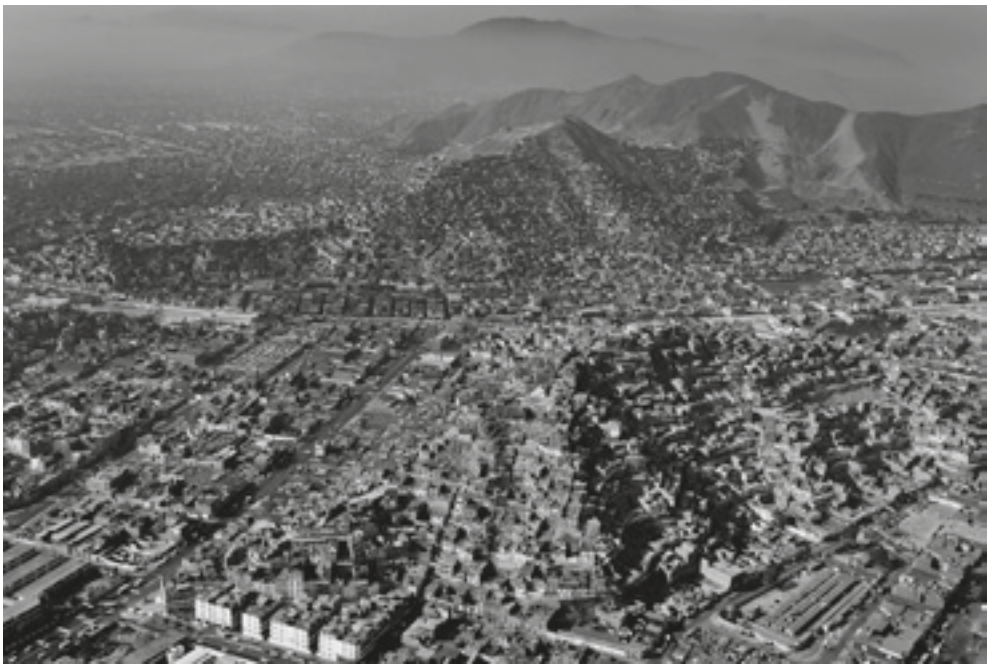


FIG. 3. *AERIAL VIEW OF SAN COSME HILL IN LIMA*, 2010. © PHOTO: EVELYN MERINO REYNA.

In 1946, the *Corporacion Nacional de Vivienda* (CNV) – the National Housing Corporation[6] – was created in order to plan, design and build affordable housing throughout Peru and stop the unprecedented growth of squatter settlements. This initiative was part of the urbanistic legislation promoted by Belaúnde, as the first adoption and adaptation of modern planning implemented in the attempt to solve urbanization and housing problems.In this modernization process, the *unidad vecinal* (derived from the neighborhood unit and other European modern planning ideals) was deployed by the western-oriented government agencies to face the deficit, while on the other hand, the poor population took a radical approach: the *invasion*, which consisted of a self-organized squatter settlement. The latter was used by the country's own migrating population to open up possibilities for owning a house and for achieving an urban and modern life.

Symmetrically opposed in their origin but identical in their goals the construction of the first *unidad vecinal* and the first *invasion* materialized simultaneously in 1946. This materialization consolidated these two strategies as the most efficient, pragmatic and direct responses to the country's housing crisis each in its own way; one as a rational process, and the other as a desperate action. The momentum produced in Lima by *Unidad Vecinal 3* and the *San Cosme Hill* squatter settlement as contrasting instruments of development, is a key element for understanding the emergence and singularities of Peruvian modernity.

6
The *Corporación Nacional de la Vivienda* - CNV, the National Housing Corporation (1946) was merged with the *Instituto Nacional de Vivienda* - INVI, the National Housing Institute (1960) to create the *Junta Nacional de la Vivienda* (JNV) - the National Housing Board in 1962.

The attitude of appropriation of "foreign" urban ideas and ideals, combined with limited local resources, transformed them all, creating a bran of a rapid urbanization process. (fig. 3)

NEW ARCHITECTURAL THEORIES AND THE REASSESSMENT OF *BARRIADAS*

In the 1950s, after the completion[7] of several neighborhood units and residential clusters in Lima and many other cities in Peru, the housing crisis worsened (Valega, 1950). The work of CNV, along with *Fondo Nacional de Salud y Bienestar Social* (FNSBS) was not enough for providing housing to thousands of families that continuously arrived to Lima. Peruvian architects working for the CNV started to explore new strategies to overcome the lack of housing and adequate urbanization conditions for the 'great numbers'. Their work was focused on the improvement of Lima's *barriadas*, which were becoming the largest neighborhoods in the city. In doing so, they not only transformed the conception of *barriadas* from an "urban cancer" to an "urbanization model", but also researched on auto-construction methods (self-help) and community structuring (clustering lots in neighborhood). They came up with the so-called *lotes y servicios* strategy (later known in the international development policies as "sites and services") to integrate emerging shantytowns into the city[8]. Between 1955 and 1961 the population living in *barriadas* jumped from 10 % to 17 %. It was evident now that the government was always falling behind the needs of the people and the speed of urban growth.

In 1956, the government launched a consulting group to determine problems and solutions for the housing crisis. The *Comision de la Reforma Agraria y Vivienda* (CRAV, 1956-1958) housing team was led by architect Adolfo Cordova and advised by architect Eduardo Neira and anthropologist José Matos Mar. Due to the fact that the housing deficit was a product of the country's deep structural problems, CRAV agreed on the idea that the *barriada* was the best and only urbanization model that would suit the poor in Lima. Therefore, the commission report promoted the idea of *lotes y servicios* developments (CRAV, 1958: 66) – minimum units with basic services as power, water and delimited areas – and self-help as the best way to overcome the government's lack of economic resources to provide mass housing[9]. This expandable unit was called *vivienda elemental* (elemental house) and was built by the government expecting to be completed progressively by their owners with technical assistance[10]. The CRAV also believed that self-help would engage people with their houses (CRAV, 1958: 61).

7
Neighborhood units took many years to be completed and the amount of units built was insignificant when compared to the housing deficit. According to Manuel Valega, managing director of the CNV, in 1950, 58 % of Lima's population lived in slums or squatter settlements (Valega, 1950).

8
The World Bank endorsed this approach during the 1960s as an official housing policy for the third world countries, mostly thanks to the influence of John Turner, who worked as a consultant to the institution in those years (Chavez *et al.*, 2000).

9
According to the CRAV Housing Report, directed by A. Cordova, the government should provide support for *barriadas* improvement, considered a solution to the Peruvian housing crisis (CRAV, 1958).

10
This idea was tested in an open competition organized by *El Arquitecto Peruano* journal and published in July 1954; it was also projected by the *Corporacion Nacional de Vivienda* and published later in March-April issue of 1955.

11
Jose Matos Mar (1921 – 2015) was the most important

As early as the mid-1950s in Lima, without being that theoretically conscious, the "open form" for architecture and urban design was accepted by many practitioners, not only by architects working in the shanty towns, but also by government officials, who were looking for new answers to the housing crisis. It was already evident that fully finished modern housing projects were not enough for responding to housing demands. Besides, social scientists had also promoted the inherent idea of participation in the local (Andean) community, making it therefore widely accepted. As stated by Claire Bishop, the user "shares the 'authorship', which is interpreted as a democratic gesture and an egalitarian community; … a tacit relation among the collectivity in the elaboration of meaning" (Bishop, 2006: 12).

In addition to these "recommendations", Jose Matos Mar[11] studied the *barriadas* of Lima, Arequipa and Chimbote and concluded that the government should promote the integration of squatter settlements into the city. He argued that, even though they live in marginal areas, they are fully active within the economic structure, since they do the least attractive works in the city (Matos Mar, 1977[12]). Furthermore, by 1956 Manuel Valega, Managing Director of CNV initiated the first site and services project Ciudad de Dios and had identified many other sites where to implement this idea[13]. In this way, site and services strategies emerged within the work of CNV and the work of CRAV some years before the arrival of John Turner in Peru and the internationalization of squatting theories in the 1960s. As Harris and Bromley have demonstrated, Turner's ideas seemed radical and were significant in the world, but his contribution lies not in their invention, but rather in their elaboration and internationalization, influencing development agencies worldwide[14].

The architect Eduardo Neira invited John F.C. Turner to come to Peru in 1957 to work on the *barriadas* and emergency areas of Lima. Working and discussing ideas with the architects at CNV, CRAV and with USAID anthropologist William Mangin in Lima, John F.C. Turner drew many of his ideas from these experiments[15]. He valued the social fabric of urbanized areas far more than the actual process of design and construction of cities. According to Turner,

That the mass of the urban poor in cities like Lima are able to seek and find improvement through home ownership […] when they are still very poor by modern standards is certainly the main reason for their optimism. […] The intense dialogue that takes place between the squatters planning and invasion, and the continuing dialogue of its development and administration are, with rare exceptions, totally lacking in the modern housing process. (Turner, 1968: 360).

anthropologist in Peru of the xx[th] century. Founder of the *Instituto de Estudios Peruanos*, he dedicated his life and work to understand the transformation of Peru's modern identity, from a colonial structure to a modern and eclectic one. He was the first in notice the relevance of the *barriadas* in the social and economic structure of Lima and also the first to propose their physical integration into the urban network. His pioneering work offeried a positive view of the squatter settlements and other modern phenomena in Lima. *Desborde Popular y Crisis del Estado* (1984) and *Perú. Estado desbordado y sociedad nacional emergente* (2011) are among his most relevant recent publications.

12
Las barriadas de Lima: 1957 was first published as *Migration and urbanization. The "barriadas" of Lima: an example of integration into urban life* by the United Nations Economic and Social Council. It was presented in 1959 to a Latin American Seminar on Urbanization problems, and in 1966 to the United Nations. It was first published in 1966 by UNMSM (Universidad Nacional Mayor de San Marcos).

13
Ciudad de Dios was the first large scale "invasion" which took place south of Lima on Christmas Eve 1954, and has been pointed as the origin of the so-called *Cono Sur* in Lima. Due to the large amount of people involved in this desert squatter settlement, it forced CNV to design the first "site and service" project in Lima.

14
In the mid-1950s Turner found a considerably active group of architects and sociologists working on *barriadas*. Cordova was leading the research team at CRAV, CNV architects were working on "site and service" projects under Manuel Valega, and Matos Mar

FIG. 4. *CIUDAD DE DIOS SQUATTER SETTLEMENT, SOUTHERN LIMA (HACIENDA SAN JUAN)*, JANUARY 1955. © SOURCE: ARCHIVO DEL SERVICIO AEROFOTOGRÁFICO NACIONAL.

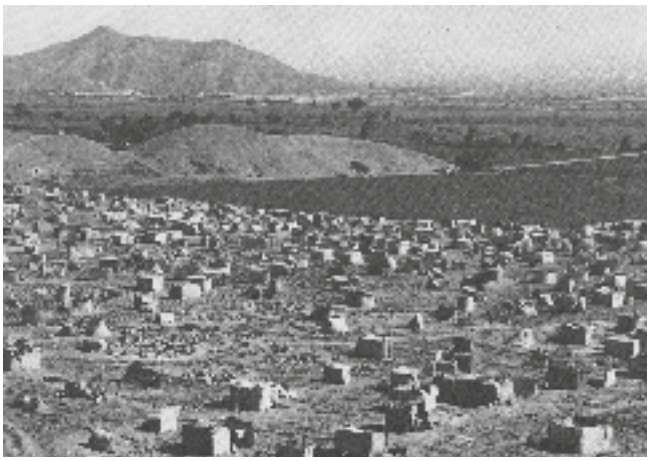


FIG. 5. *FIRST SETTLEMENT DURING THE SQUATTING PROCESS, WITH SHACKS ON THE GROUND, ORGANIZED BY A RAPID LAYOUT WITH LIME.* SOURCE: JENCKS, 1971: 76 (FIG. 64).

was doing surveys and social studies in the *barriadas*. Bromley correctly asserts that "the urban housing problems and solutions were not discovered by English or American visitors. They were well known to some Peruvian experts, but the expatriate researchers played the lead role in bringing Peru to a global audience… Several English language publications appeared later on the subject, such as Harris and Hosse's *Housing in Peru* (1963) and Dietz, Kothand Silva's *Housing in Latin America* (1965)." (Bromley, 2003: 275).

15
A year before passing the act recognizing as legal urban areas hundreds of *barriadas* in Peru, Prime Minister Beltran established a National Housing Institute (INVI) in 1960 to develop *Ciudad Satelite de Ventanilla*, the first satellite city based on the *vivienda elemental* concept. Turner worked and learnt many of his ideas in this context (Bromley, 2003: 287).

16
B. Rudofsky's admiration for "primitive and vernacular" expressions coincided with many European and American artists in their attention to "primitive

For Turner, the *barriadas* represented people's fundamental autonomies: "freedom of community self-selection", "the freedom to budget one's own resources" and "the freedom to shape one's own environment" (Turner, 1968: 357). All these conditions were choices for the people, and their freedom to build was the best way to reach freedom in the contemporary industrialized and commodified society. In direct reaction to the mass consumer society of western modern cultures, Turner wanted to revamp the value of the "popular" and the "authentic" in vernacular settlements. Similarly to the 1964 MoMA exhibition, *Architecture without Architects*, curated by Bernard Rudofsky (1964), Turner emphasized the rejection to the "tyranny" of modern urban environments[16]. Indeed, Turner declared that the "true" architecture of democracy was in the freedom of people to build and give shape to their own houses as they did in much of the so-called Third World countries. (fig. 4 and 5)

Turner's ideological project was to both legitimize the squatter towns and improve their urban landscape. According to Turner, community development follows the development of its environment; therefore, houses, streets and meeting places are integral and necessary components of economic development. As CNV and CRAV had pointed before, informal settlements in Lima were the only solution for mass housing and urbanization for the poor. But in Turner's point of view, *barriadas* did not need assistance at all. Together with co-authors Catherine Turner and Pat Crooke, he concluded that urban squatters knew better than anyone else – including architects, agencies and governments – how to address their needs (Turner et al., 1963: 390-393[17]).

cultures". The rejection of the society of spectacle, for standardized production and mass consumer society during the post-war period, was a common interest shared by Turner, Rudofsky and the CoBrA group among others.

17
In this same article Turner declares that after investigations throughout Latin America, he realized that Peru's housing crisis was part of a natural process of development and concluded that the upheavals and crises in Peru were typical of other countries in the region.

In this context, the legalization of *barriadas* was an imminent fact. The urgency caused by the rhizomatic squatters' invasions, which instantly turned into barriadas, was worsened and the housing deficit increased.[18] In light of these problems, the government had to respond with an effective tool to organize the population, incorporating a wide range of ideas from both local traditions and international modern culture.

In response to the shortage, the government passed the Act 13 517 in 1961. Known as *ley de barriadas* (squatter settlements law), it not only 'legalized' squatter settlements but also established a policy for their improvement and integration into the formal city[19]. The squatter settlement law was not only a legal instrument to consolidate the informal city; it was first and foremost an urban design code for the city, a device to coagulate formal and informal city-making processes.

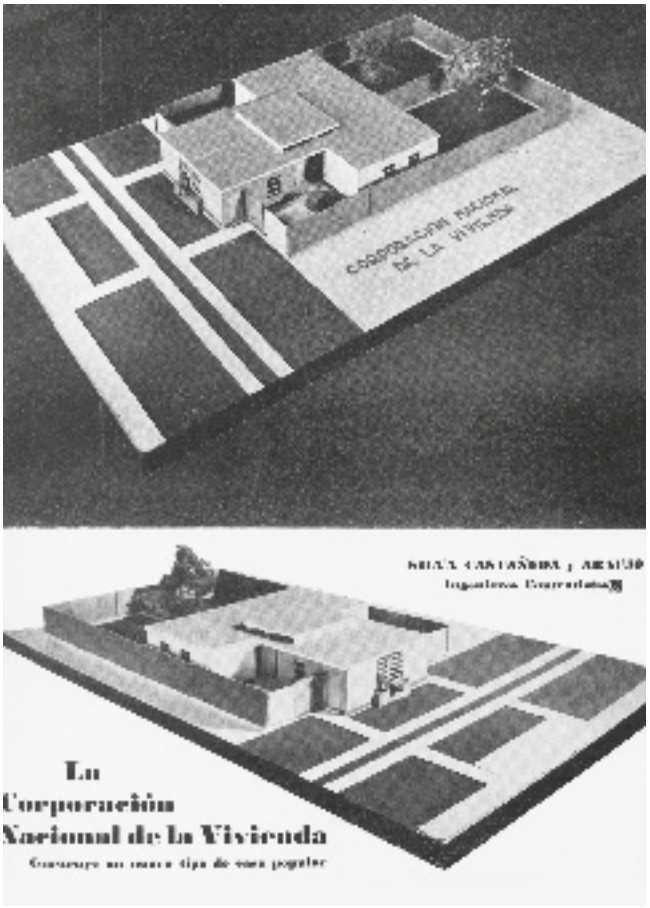


FIG. 6. *PROTOTYPE MODEL FOR A PROGRESSIVE HOUSE (INCREMENTAL GROWTH) DEVELOPED BY CNV IN LIMA.* SOURCE: "LA CORPORACIÓN NACIONAL…", 1955: 6.

This framework allowed architects and urban designers to project and develop different strategies within its boundaries. It also ensured two essential elements for a democratic society: an open urban structure – based equally on blocks, clusters and linear arrangements – and design participation – achieved thorough phasing and self-help construction. (fig. 6)

Following the principles of the *ley de barriadas*, new ideas emerged to construct urban encounters, using urban design elements to provoke urbanity. These strategies reveal the merger of two different responses that were manifested in cultural productions which, each in their own way, reflected the search for a Peruvian modernity. Five cases are considered to illustrate the approaches aiming to satisfy such quest: *Ciudad de Dios* deploys social infrastructure to galvanize the urban; *Ciudad Satelite de Ventanilla* lays out a grid for pedestrian use; *Proyecto Experimental de Vivienda – PREVI* organizes clusters to promote community sense; *Villa El Salvador – CUAVES* connects urban places to generate a social network; and *Huaycán – PEH* arrange central squares to ensure an urban sequence.

18
Belaúnde's first Presidential period (1963-1968) prioritized large-scale housing projects for Lima's working class neighborhoods and the middle-class. He requested the newly founded *Junta Nacional de la Vivienda* (JNV) to finish the *unidades vecinales* of Lima's Housing Plan and start the design of the middle-income housing projects of *Residencial San Felipe* and *Residencial Santa Cruz*. The *Residencial San Felipe* was Belaúnde's flagship project for Lima's residential neighborhood Jesus Maria, and featured 15-storey freestanding towers. It represented Belaúnde's aspiration for a modern society and country at its best.

19
The inclusion of squatter settlements as a legal component of the urbanization process by means of Act 13517 is due mainly to Pedro Beltran, Prime Minister of the Manuel Prado Government.

SOCIAL INFRASTRUCTURE AS URBAN CATALYST: *CIUDAD DE DIOS*[20]

Project condition

Lima's *invasiones* emerged in the late 1940s and became one of the fastest forms of urbanization in Lima, occupying hills, riverfronts, *haciendas*, and desert areas in the outskirts of the city. On December 24th 1954, hundreds of families squatted arid areas near Hacienda San Juan, 15 kilometers south of Lima, claiming for a place to build their houses and to get a chance to participate in the city and the society. State agency CNV – directed by Santiago Agurto and Manuel Valega – responded quickly to these unusual circumstances with a new strategy that proposed a different form of city building. This new idea reflected the limited resources of the population, as well as their ability to self-build their houses. (fig. 7.0)

Urbanization and housing system

The Ciudad de Dios urban project encompassed 1428 housing units organized in two zones (A and K), which shared public services and commercial facilities in the central spine. The latter included planned spaces for a market, church, municipal hall, theater, post office, community spaces, retail, and commercial facilities. All these spaces encouraged the interaction between neighborhoods and also

20
Architects: Santiago Agurto Calvo, Manuel Valega S. (leading architects), Luis Vásquez, Oswaldo Nuñez, Fernando Chaparro, Jorge Páez, Mario Bernuy, Alfredo Perez (team). Project date: 1955. Site Area: 50 hectares. Dwelling units: 1 428. State agency: *Corporación Nacional de la Vivienda* - CNV. Location: San Juan de Miraflores, Lima.

attracted future residential expansions. The deployment of educational and sports facilities in the center of each superblock also stimulated the gathering of residents in the residential core. (fig. 7.1)

The open streets allowed for neighborhood additions by the state housing agencies, as much as it promoted new squatters to occupy empty adjoining areas. Later on, the construction of Los Heroes Avenue brought the metropolitan scale into the neighborhood. Neighboring these central areas, the long housing blocks were systematically organized around central spaces, creating parks according to the site's topography. The blocks presented different lengths, but always maintained a basic paired structure (deep lots back-to-back) and an overall width. The housing presented one unique typology, based on the *existenzminimum* idea, but expected to grow progressively over the time, as learned from the informal city. The lots presented an average dimension of two hundred square meters (ten per twenty meters) and its dwelling units were placed at the front side (with a five meters setback) in order to define the street façade. (fig. 7.2)

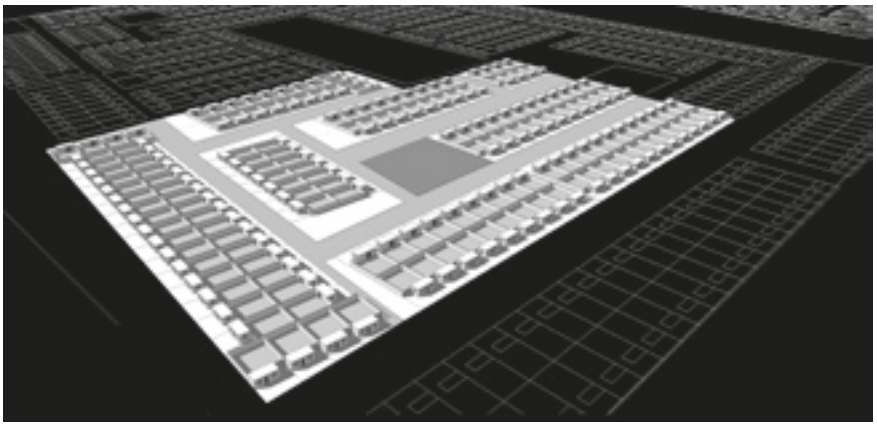
Forms of development

The relocation of Ciudad de Dios squatter settlement into the CNV's urban project started in the late 1950s, even though it was not completed. The neighborhood lacked water, sewage, street paving, and all public structures that would be built later in the 1960s. Nevertheless, many people moved to Ciudad, and developed their living environment progressively. The ones that never moved out from the squatter settlement across Atocongo

FIG. 7.0. *CIUDAD DE DIOS IN THE DISTRICT OF SAN JUAN DE MIRAFLORES, LIMA*, 2014. © PHOTO: EVELYN MERINO REYNA.

FIG. 7.1. *AERIAL VIEW OF CIUDAD DE DIOS*, 1962. © SOURCE: ARCHIVO DEL SERVICIO AEROFOTOGRÁFICO NACIONAL.

FIG. 7.3. *TYPICAL STREET SECTION IN CIUDAD DE DIOS*, 2014. © PHOTO: SHARIF S. KAHATT.



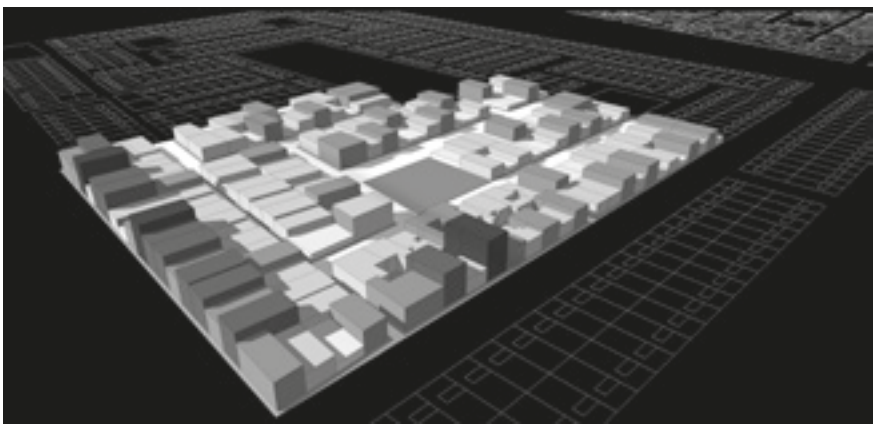


FIG. 7.2. *RECONSTRUCTION IN AXONOMETRIC VIEW OF HOUSING CLUSTER (THEN AND NOW).* © SOURCE: SHARIF S. KAHATT, 2014.

FIG. 8.0. *CIUDAD SATELITE DE VENTANILLA IN THE DISTRICT OF VENTANILLA, LIMA*, 2014. © PHOTO: EVELYN MERINO REYNA.

FIG. 8.1. *AERIAL VIEW OF VENTANILLA*, 1963. © SOURCE: ARCHIVO DEL SERVICIO AEROFOTOGRÁFICO NACIONAL.

road were later absorbed by the renewal projects of the 1960s such as *Urbanización* San Juan and Atocongo among others. The main infrastructure of Atocongo Road has been one of the major elements of the transformation and development of this area. Lots adjoining the road were transformed into commercial buildings, while the market became a hub for entrepreneurs and businessmen in the area. The neighborhood's streets, defined by the 5-meter setbacks, have completely changed over time. Many lots were subdivided into two properties promoting vertical growth, changing the proportion of the street due to frontal expansions. Moreover, some of the residential streets have been closed down for security reasons, but the atmosphere of the neighborhood is still in good shape, and the area is prosperous and keeps growing. (fig. 7.3)

PEDESTRIAN PATHWAYS AS URBAN GRID: *CIUDAD SATELITE DE VENTANILLA*[21]

Project Conditions

Due to the overwhelming growing population of Lima that produced the rise of squatter settlements in the northern outskirts of Lima, the Peruvian government promoted, designed and built a new satellite city 25 kilometers north of Lima in an arid site through the INVI Housing Agency, that was directed by Luis Marcial. Prime Minister Pedro Beltrán promoted the project and it was sponsored by the "Alliance for Progress" program and financed by the Inter-American Development Bank. This new incremental housing project was a model of development encouraged by the government and therefore subsidized by the state for low-income families, who were able to enroll into credit programs. The *Ciudad Satélite de Ventanilla* project contemplated therefore several housing phases, services, industry, and other metropolitan uses. (fig. 8.0)

21
Architects: Luis Marcial (leading architect), Oswaldo Jimeno, Enrique Ciriani, Miguel Alvariño, Jorge Páez, Jacques Crousse, Victor Smirnoff (team), John Turner (consultant). Project date: 1961. Site area: 65 hectares. Dwelling units: 1 813. State agency: *Instituto Nacional de Vivienda* - INVI. Location: Ventanilla, Callao.

Urbanization and housing systems

The overall urban project included nearly 20 000 housing units, industries, and commercial areas as well as a natural beach with sports and recreational facilities. The first phase included 1 813 expandable units surrounded by parks and plazas, and interconnected through walkways with stores, schools, and kindergartens, among other services. The urbanization system was based on long linear blocks that created pedestrian pathways to promote social interaction. The open grid allowed for growth, evolution, and continuities; not only through the extension of streets and pathways, but also through the creation of new patterns connected to the grid. (fig. 8.1)

The three housing typologies are based on the minimum dwelling concept, but planned to grow incrementally over time, as recommended by the CRAV in 1958. Type A is a C-shape unit that separates the basic activities of the family and places an inner patio at the front. Type B is a T-shape unit that proposes an intermediate space separating the humid area from the bedrooms and living; and type C is a rectangular volume that compresses all activities together. These typologies are deployed in pairs, and respond in different ways to CRAV's *casa elemental* concept. This idea proposed an average lot of 160 square meters at the front of which a small dwelling unit of 60 square meters would configure the street structure. An area of nearly 100 square meters served as an open area, waiting for progressive growth. (fig. 8.2)

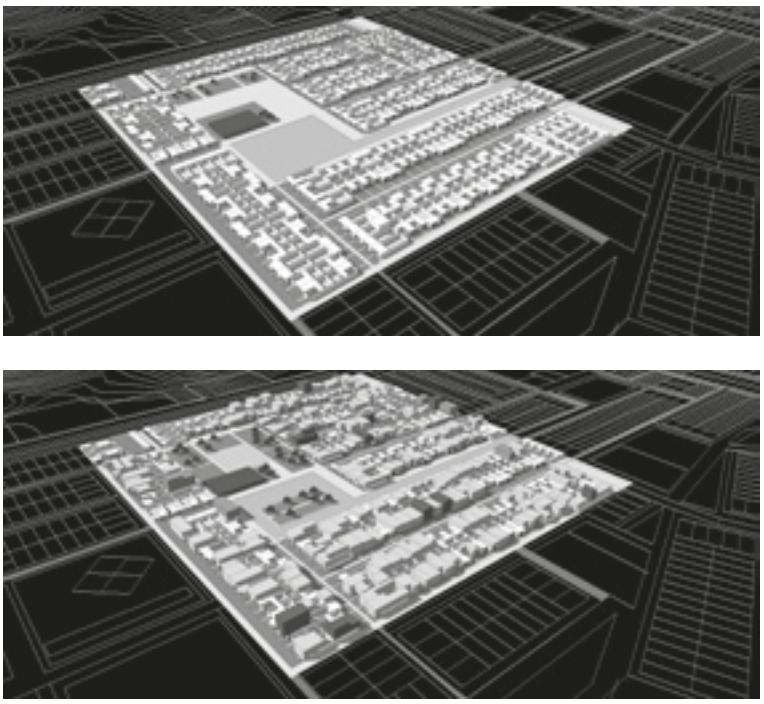


FIG. 8.2. *DIGITAL RECONSTRUCTION IN AXONOMETRIC VIEW OF HOUSING CLUSTER (THEN AND NOW).* © SOURCE: SHARIF S. KAHATT, 2014.

FIG. 8.3. *TYPICAL PEDESTRIAN PATHWAYS SECTION IN VENTANILLA.* © PHOTO: SHARIF S. KAHATT, 2014.

Forms of development

The project was never completed as planned. Due to political and economic reasons the project stopped after the construction of Urbanización Civil (known as Ventanilla) and Urbanización Grau. Without implementing services, infrastructure and other basic elements to achieve a totally independent urban life, and remained a suburban development of Lima. Ventanilla was nevertheless occupied throughout the 1960s and from then onwards started to develop progressively. Families began to occupy houses and to build additions at the front, back and top of the units. Neighborhood organizations worked collectively on urban and infrastructure improvements such as bringing water, sewage, and other basic services. In addition, several parking lots have been transformed into parks, plazas, and sport facilities, whereas new health, commercial, and educational facilities have been built at the neighborhood's entrance. Since the 1980s, squatter settlements and informal growth has emerged in the surrounding areas becoming the predominant form of urbanity. The urban structure of Ventanilla has however been able to articulate the area and set the standards of sound living conditions. (fig. 8.3)

COMMUNITY CLUSTERS AS URBAN DRIVER: *PROYECTO EXPERIMENTAL DE VIVIENDA* - PREVI[22]

Project conditions

Due to the uncontrolled rise of squatter settlements in the outskirts of Lima and the enormous housing deficit, the PREVI competition was promoted by

the Peruvian President and architect Fernando Belaúnde Terry. Implemented between 1968 and 1975, the competition was financed by Peru's *Banco de la Vivienda* and sponsored by the United Nations Development Program office in Lima. Its main objective was to outline solutions for the overwhelming informal urbanization of developing countries and to create new models for low-cost housing. In this context, the goal of PREVI's director British architect Peter Land, was to explore current thinking on prefabrication and mass-housing production and adapt it to the constraints and socio-cultural context of a developing city such as Lima. For this, the competition process included 13 selected Peruvian and 13 invited foreign architects. (fig. 9.0)

Urbanization and housing systems

All these conditions were elaborated in the competition brief, which later became the theoretical structure for the development of the PREVI-Lima project that combined all competition proposals. The PREVI urban project presented 2 000 housing units on a desert site of nearly 50 hectares next to the Pan-American Highway, 8 kilometers north of Lima's downtown. The PREVI plan was thought for an initial settlement of 8 400 inhabitants, growing to a population that could eventually surpass 12 000. The project adopts therefore a high-density and low-rise concept, minimizing built space and maximizing public spaces in different forms, such as parks, plazas, and *alamedas* (landscaped pedestrian spines). The housing system is organized in clusters of about 20 units, creating public spaces with a community sense. (fig. 9.1)

The arrangement of these clusters, placed along the pedestrian spine, guarantees a pedestrian scale and traffic separation in the neighborhood. The housing typologies considered in the project responded to the different typologies presented in the competitions and organized in the first phase of the development. The lots are no smaller than 80 square meters, nor larger than 150 square meters, with a built area between 60 square meters and 120 square meters. All units are one- and two-story patio houses, which could be expanded up to three-stories high (*casa que crece),* based on a standardized low-cost material for mass production. The project also considered different family sizes and interpreted Lima's traditional public spaces – plazas, church atria, *paseos* and *alamedas* – in order to encourage social interaction. (fig. 9.2)

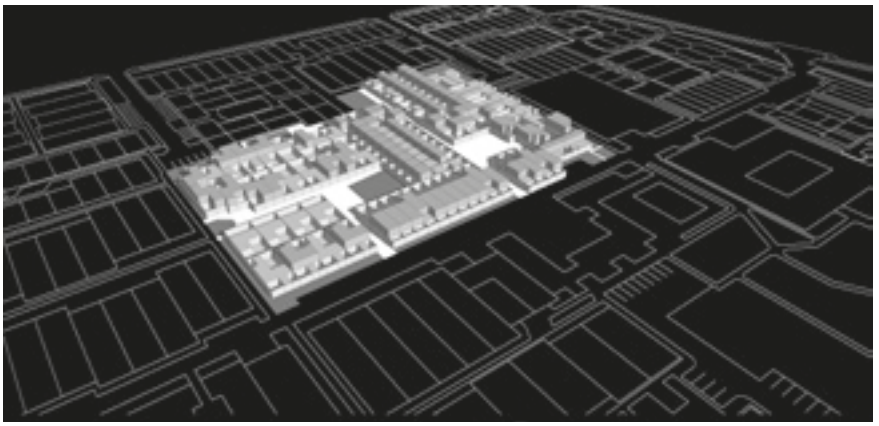
Forms of development

PREVI was never completed as planned. Due to political and economic reasons the project stopped after completion of the first phase with nearly 500 units, leaving the second, third, and fourth phase for future transformations. Without having a fully developed urban life in the surrounding areas, PREVI continued to depend on Lima's services. PREVI was anyhow occupied throughout the late 1970s, and started to develop progressively from the 1980s onwards.

22
Architects: Peter Land (leading architect), Miguel Alvariño, Alfredo Montagne, Carlos Jara, Hugo Ruibal, Raquel Barrionuevo, Javier Santolalla (team). Project date: 1970. Site area: 50 hectares. Dwelling units: 2 000. State agency: *Banco de la Vivienda del Perú*, United Nations Development Program - UNDP. Location: Los Olivos, Lima.

FIG. 9.0. *PROYECTO EXPERIMENTAL DE VIVIENDA- PREVI IN THE DISTRICT OF LOS OLIVOS, LIMA*, 2014. © PHOTO: EVELYN MERINO REYNA.

FIG. 9.1. *AERIAL VIEW OF PREVI, 1975.* © SOURCE: PERSONAL ARCHIVES OF ARCHITECT PETER LAND.



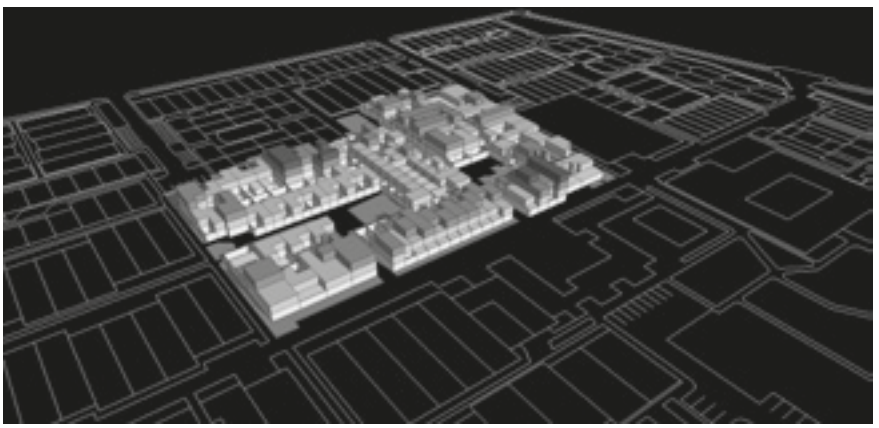


FIG. 9.2. *DIGITAL RECONSTRUCTION IN AXONOMETRIC VIEW OF HOUSING CLUSTER (THEN AND NOW).* © SOURCE: SHARIF S. KAHATT, 2014.

FIG. 9.3. *TYPICAL COMMUNAL AREA, A PLAZA AND A SMALL PARK IN PREVI.* © PHOTO: SHARIF S. KAHATT, 2014.

For this reason, many commercial activities appeared on the ground floor offering services and eventually encouraging vertical growth. When residents started occupying the houses, these were transformed by their needs resulting in new additions at the front, back and top of the units. Additionally, neighborhood organizations worked collectively to appropriate public spaces. They for instance territorialized open space by means of religious idols, nursed the parks, and created new sports areas. By contrast, several plazas were fenced to prevent outsiders to access them, and many gardens have been illegally privatized. Even though many spaces have changed, the main pedestrian spine and the principal open spaces still act as a superstructure that ensures the connection between public spaces and operates as a place for social interaction. (fig. 9.3)

LINKED VOIDS AS URBAN NETWORK: *COMUNIDAD URBANA AUTOGESTIONARIA VILLA EL SALVADOR* - CUAVES[23]

23
Architects: Miguel Romero Sotelo (leading architect), Ricardo Gomez de la Torre, Jorge Romero S., Eduardo Zevallos (team). Project date: 1971. Site area: 2 429 hectares. Dwelling units: 47 232. State agency: *Junta Nacional de La Vivienda* - JNV. Location: Villa El Salvador, Lima.

Project conditions

On May 11th 1971, nearly 9 000 families (approximately 45 000 people) squatted the desert area known as Tablada de Lurin to establish their houses, but were immediately relocated by the government to southern Lima. Following the urban project of Miguel Romero Sotelo – architect at the JNV – the population took possession of the lots and started to urbanize the deserted area made available for them. Following the concept of the satellite city, the *Comunidad*

FIG. 10.0. *COMUNIDAD URBANA AUTOGESTIONARIA DE VILLA EL SALVADOR IN THE DISTRICT OF VILLA EL SALVADOR*, 2014. © PHOTO: EVELYN MERINO REYNA.

FIG. 10.1. *AERIAL VIEW OF VILLA EL SALVADOR*, 1983. © SOURCE: ARCHIVO DEL SERVICIO AEROFOTOGRÁFICO NACIONAL.

Urbana Autogestionaria Villa El Salvador (CUAVES) was organized by Sotelo in three zones (residential, industrial, and agrarian) and planned as a new democratic model of a self-organized community that would self-build progressively. In this project, the formal and the political were structured by a repetitive pattern that organized the population at all levels. Accordingly, the resulting *modulo urbano* (urban module) emerged as the encounter of society, state and architecture to overcome scarcity. (fig. 10.0)

Urbanization and housing systems

The CUAVES urban project is a product of an urban and a political ideal of this period. The public space of the residential module plays therefore a key role in the organization of the community, acting as a social engine, and its linkage produced a network of urban life. These programmed and landscaped voids allow for cultural development and social interaction within each neighborhood. From the plaza of a residential module to the park of the district – according to the different scales of open areas – the linked voids articulate the social and political structure, as much as the urban development of CUAVES. (fig. 10.1)

The structure of the module is based on the repetition of a singular superblock, which consists of 24 identical lots of 140 square meters forming a square of 288 meters-long sides. This in turn includes 16 elongated blocks surrounding a central open space, ensuring dwelling spaces for 384 families and a community space that could allocate recreational, educational, or social activities. This urban module is repeated 185 times to create the entire community, providing the right size and structure to support the socio-political system established at VES. This module, also presents some variations associated to the topography and scale of infrastructure. Sometimes it is divided into two, to allow markets, schools and sport facilities to be integrated in the grid (fig. 10.2)

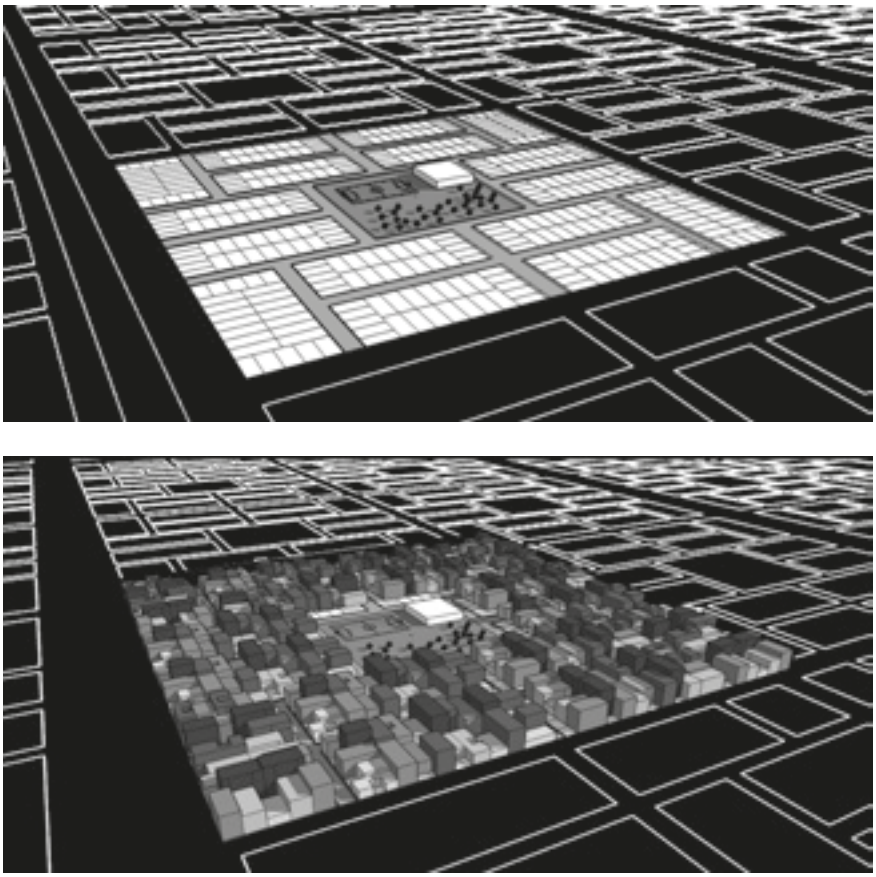


FIG. 10.2. *DIGITAL RECONSTRUCTION IN AXONOMETRIC VIEW OF HOUSING CLUSTER (THEN AND NOW).*
© SOURCE: SHARIF S. KAHATT.

FIG. 10.3. *TYPICAL COMMERCIAL STREET SECTION AND CORNER IN VES.*
© PHOTO: SHARIF S. KAHATT, 2014.

Forms of development

Villa El Salvador has developed into a prosperous district of the city. Within the project, four residential modules generate a large neighborhood that shares a cluster of public services and social infrastructure that combines all typical family needs for a sound urban life. Within pedestrian reach, the spaces offer most essential activities including many local services. Similarly, there are spaces reserved for schools and other educational facilities to attend the neighbors. Residential plazas allocate facilities built by the neighbors that address their needs at a local scale. Although most of the lots are used as dwellings, most of which have grown vertically, they now present many other uses such as shops, storage, and workshops. Likewise, small stores and local services have appeared at ground level in the lots facing inner streets and plazas; whereas the lots facing the main avenues have changed into commercial uses operating at a metropolitan scale. Additionally, the avenue medians now serve as linear parks, plazas; recreation areas, markets; temporary health centers, and multipurpose platforms. (fig. 10.3)

INNER CORNERS AS URBAN MATRIX: *PROGRAMA ESPECIAL HUAYCÁN* - PEH[24]

Project conditions

During the 1980s, the economic and housing crisis worsened, getting to a point where squatting desert or agricultural areas was the most recurred solution by immigrants arriving to Lima and other urban poor. President Belaunde's housing policies to regulate urban growth by controlling new squatter settlements in the city were ineffective. The economic upheavals produced an unsteady political climate that allowed these actions to happen. In this context of crisis, the Municipal government of Mayor Alfonso Barrantes, decided to partake in the search for new, fast, and effective answers to solve the popular demands for mass housing. As a result, Lima's government launched the *Proyecto Especial de Huaycán* (PEH), a participatory design project that was able to address the claims of thousands of people demanding the Huaycán ravine lands to build their homes. (fig. 11.0)

Urbanization and Housing Systems

The planning initiative was taken by the PEH office that designed an urban project based on a community pattern of superblocks named as the *Unidad Comunal de Vivienda* (UCV). A process of communally organized work ensued. The urbanization system of PEH – lead by Eduardo Figari and a team of architects – started with the organization of the population in groups of 60 families on average. They would jointly plan the UVC, the community spaces, and the work to be undertaken over time. The UCV presents an average area of 1 hectare and is defined by a row of houses built along its outer limits and organized by a crossroad that generates the central space.

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Architects: Eduardo Figari Gold (leading architect), Reynaldo Ledgard, Carlos Roel M., Silvia de los Rios, Mirna Alzamora, Yolanda Meza (team). Project date: 1984. Site area: 462 hectares. Dwelling units: 24 000. State agency: *Municipalidad de Lima*, *Programa Especial Huaycán* (PEH). Location: Ate, Lima.

FIG. 11.0. *PROGRAMA ESPECIAL HUAYCAN IN THE DISTRICT OF ATE, LIMA*, 2014. © PHOTO: EVELYN MERINO REYNA.

FIG. 11.1. *AERIAL VIEW OF HUAYCÁN*, 1985. © SOURCE: ARCHIVO ARQUITECTO EDUARDO FIGARI.

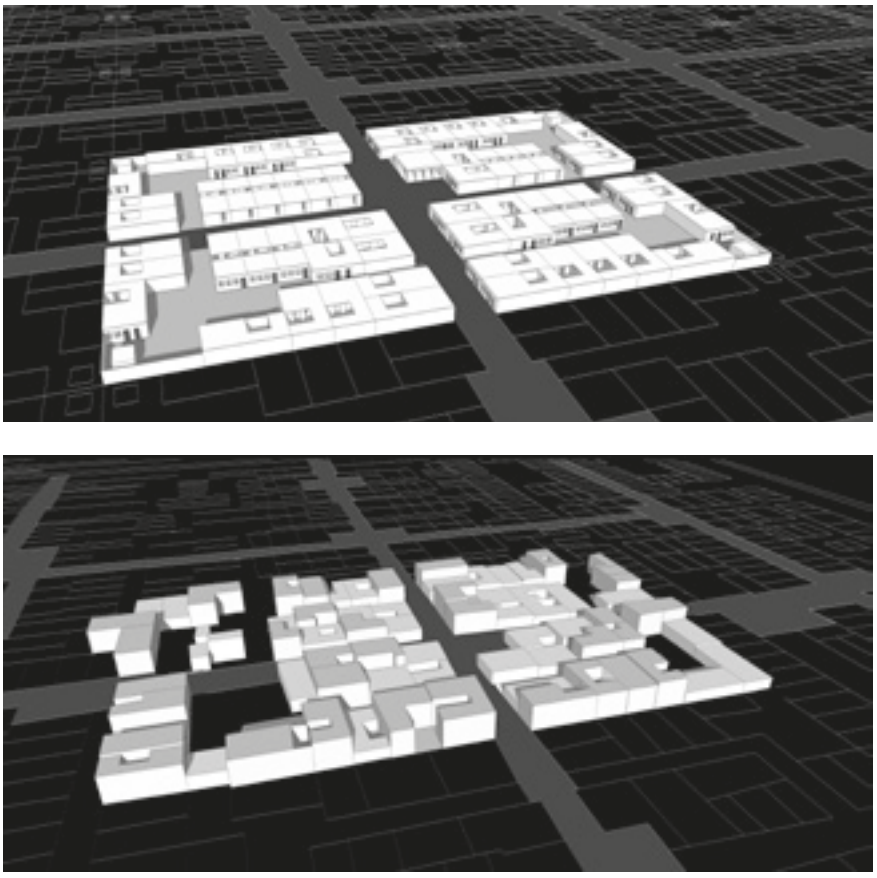

FIG. 11.2. *DIGITAL RECONSTRUCTION IN AXONOMETRIC VIEW OF HOUSING CLUSTER (THEN AND NOW)*. © SOURCE: SHARIF S. KAHATT, 2014.

FIG. 11.3. *TYPICAL STREET SECTION IN HUAYCÁN.* © PHOTO: SHARIF S. KAHATT, 2014.

This inner corner becomes the place to allocate community buildings and public facilities. (fig. 11.1)

These actions not only reinforced the corner as a core of urbanity and social life in the neighborhood, but they also ensured urban encounters in every UCV. Similarly, aligning housing façades to the sidewalks ensured the streets as places of social exchange and interaction. In this way, the pattern of development structured by the UCV, not only created a neighborhood identity that bridged the sense of community and the need of privacy; it also helped the whole area grow with equality. Within the superblocks, the lots vary between 90 and 120 square meters and were planned according to the typologies proposed by the architects to occupy up to 60 % of the area. (fig. 11.2)

Forms of development

The Huaycán community, as many other neighborhoods in Peru, has developed its urban and social conditions due to the merger of society, state, and architecture, transforming specific circumstances into forms of development. Recognizing local knowledge and self-help organization, the community managed limited resources to build community facilities such as public spaces, schools, churches, and a city hall. The organization was led by a team of architects who would direct the assemblies and guided the decision of what and how to build. All these processes include the work of different agents as much as the absolute dedication of the neighborhood organizations throughout time, respecting agreements and goals.

As Figari explained, the idea of progressive in Huaycán not only embraces the construction phasing, but also the social process of UCV's creation as an urban cluster. Similarly, the participation of all agents encouraged a design process contemplating concepts of flexibility, temporality, and mobility. Although the blocks are fully consolidated and have evolved into a variety of urban forms, the original ideas driving the project are still evident in the urban structure. Nowadays, Huaycán grows gradually and presents itself as a place for prosperity. (fig. 11.3)

FRAMEWORK AND STRATEGIES: PROGRESSIVE HOUSING FOR THE CITY

Lima has experienced a complex process of modernization that has produced a particular condition of development. This hybrid modernity, as Nestor Garcia Canclini (2005) and Felipe Hernandez (2002) have highlighted, has embraced, merged and negotiated with two opposing movements, namely the western and the local. It has exposed its multiples fissures and tensions in all its cultural expressions. Thus, today Lima presents itself as a modern city that has absorbed the colonial, the vernacular, and the spontaneous, and produces urban forms that depict these encounters, never as a synthesis, but as a coordinated cluster of forms and experiences.

In the last century, Peru's modernization process has been based on the appropriation, adaptation and merger of ideas, resources, society and territory. In this context, in the last 5 decades, there has been a particular association between state and architects working together, and therefore, the housing projects accumulate decades of design research and adaptation of different experiences, from Garden City and *existenzminimum* ideas, to the reconsideration of vernacular traditions and open-ended form. Although there is not a perfectly straight line of consistence and knowledge, connecting all the projects discussed in this contribution, there are several common layers of experience merged in these extraordinary efforts to create urbanity. Through the encounters of the formal and the informal in the city, Peruvian modernity has set the basis for a reinvention of architectural and urban design tactics.

Built upon the framework of Act 13517 these projects expand and unfold new design approaches. The five different strategies presented in this essay innovatively develop structural urban forms. These neighborhoods are not a new cultural synthesis; they all struggle in the overlapping of cultures and make manifest in their configuration a permanent process of negotiation and transformation (Hernandez, 2002). In this way, the hybridization of self-help, of "site and service" urbanization and of the neighborhood unit concept created all these different urban strategies that provoke open-ended urban forms and that engender a new form of modern urbanity.

Recent drastic changes in the social and economic climate and the political landscape worldwide have given clear signs of the end of a period based on endless consumption and unlimited resources. In light of these transformations and noting the lack of awareness of the most "celebrated" projects of the last decades – particularly before the economic crash of 2008 – the ideas developed in Lima appear as very relevant for today's world cities. In particular, Lima (as many Latin American cities) is still in need of ideas and strategies to overcome the ongoing housing shortage. Looking back, therefore, might provoke a great leap forward.

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