

Reinhabiting Havana

by

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Re-inhabiting Havana

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Frank Javier Valdes

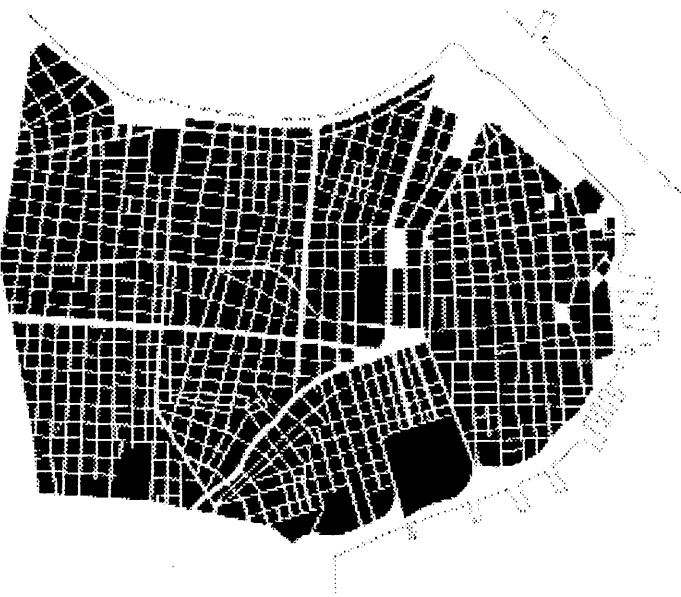
Submitted to the Department of Architecture
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ABSTRACT:

The project presented here is about the transformation of an extant fabric. The observation of the built environment in Havana revealed that people's interaction with their built environment have produced artifacts like the barbacoa. Their interaction is a creative attempt to resolve the need for more housing space. This makeshift construction may solve the problem temporarily. The thesis deals with the observation and documentation of this artifact in order to develop a new model for housing based from the barbacoa and its culture. This new model will increase the density of buildings, provide a prototype that can be adapted in different buildings types and help preserve a way of life in Havana.

Thesis Advisor: Julian Beinart

Title Professor of Architecture



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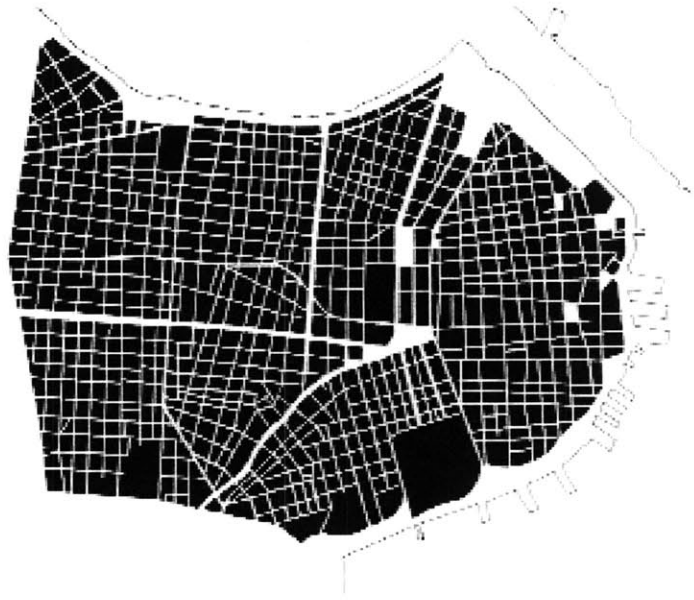
I would like to take this opportunity to give thanks to those people who made my thesis possible. Their input, information, criticism, food, hugs, comments, and help are greatly appreciated.

I would like to thank the architects and engineers of the group "*Oficina para Rehabilitacion Malecon*" in Havana, specially Domingo Perez Hernandez, for their support and information. This thesis would not be possible without them. Their research and input is what generated my interest in the Malecon. Professor N. John Habraken, his expeditious responses to my inquires by e-mail and his criticism on my work was valuable. I thank you for your research papers, you were always there willing to listen and guide me in the right direction.

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Re-inhabiting

Havana



Table of contents

One: Introduction

- Observations of a hidden layer. p.g.2
- Layers and uses of levels. p.g.6
- Historic evolution of the site. p.g.8
 - Urban Evolution of el Malecon: p.g.10
 - Constructive process, building characters and floor use.
 - The blocks and it's parcels. p.g.13
 - The buildings. p.g.14
 - Previous design attempts in the Malecon. p.g.17

Two: Synthesis of design

- Urban ecology:
 - Learning from the built environment. p.g.21
 - Housing in Havana. p.g.22
 - El solar. p.g.24
 - Ciudadelas. p.g.25
 - La barbacoa. p.g.26
- The design culture of the barbacoa:
 - Design development for the new barbacoa infill. p.g.29
 - Transformation of housing into more housing. p.g.30
 - Method of construction and materials. p.g.31
 - Proposal for empty lots in the Malecon. p.g.32

Three: Design strategy and prototype.

- Design process:
 - Design Discipline. p.g.34
 - Design. p.g.36

Four: Conclusion.

- The city of Alchemy p.g.38

Introduction

ONE



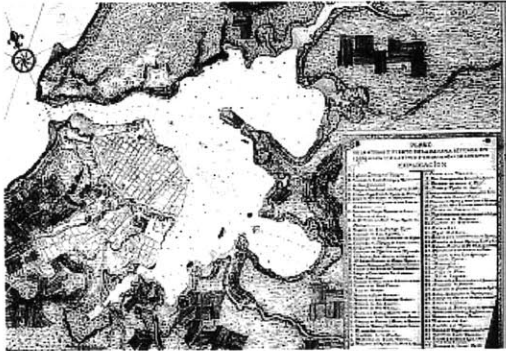


Colonial Building in Centro Habana: over population and land speculation rendered interior spaces tighter, more slender and compact than any other antillian city.

Introduction

“Experiments deal with intervention into what is explored. Observation leaves the world as we find it, and it is the beginning of all research. It is not just seeing: it is seeing with detachment—the suspension of knowledge and certainty. It is curiosity, before the question is asked. The answer is the end of observation and the beginning of theory. The theory leads to understanding, and understanding makes us see the world as we could not see it before. It allows us to see, which may lead again to observation. Observation leads to a record — a sketch, a photograph. But the record is not “an observation,” but rather the beginning of an answer”.

John Habraken



Map of the city of Havana: early 18th century

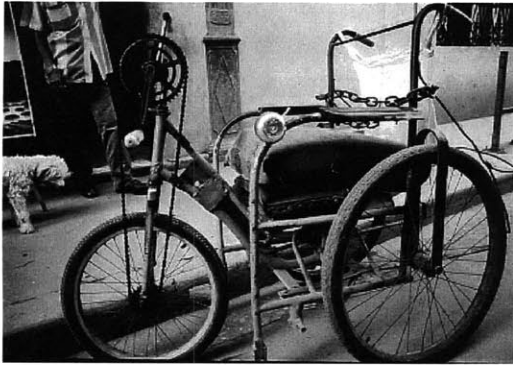


Hotel Inglaterra, Prado, centro Habana: a jewel of Cuban baroque style.

The work to be presented here represents an intermediate stage in the development of an idea. It is not conclusive; rather it is an attempt at the correct identification of a problem, the observation of the built environment in Havana, and a design exercise to introduce a new housing model to the city fabric.

Havana, like most other Latin American cities, developed its urban structure from the Laws of the Indies, which because of the circumstances surrounding its origin and its ability to grow and change through different social, economic, and political context, deserves intellectual interest. Havana today is not the city it was. Though frozen in time since 1959, it continues to grow and evolve, constantly reinventing itself. It is important to recognize the need to study the urban fabric of the city, and the forces behind that structure and how they interrelate through time. The observations are not of the physical structures alone so often addressed by most architectural and urban historians of Havana who at times are more inclined to elaborate on stylistic influences and the originality of ornamentation, rather than focusing on their common cultural architectural denominators. Mesmerized with cultural origins, most historians and architects have preferred to deal with the subject of The Laws of the Indies, the fortification systems, and civic and religious structures of the old city. Their observations though not completely illegitimate contained extensive descriptions and documentation. In search for styles, their own culture eluded them as their observation deluded them of any real architectural knowledge.¹

¹ The Journal of Decorative and Propaganda Arts, #22 "Cuba Issue".



Adaptive functionalism: A transformed bicycle. A vehicle creative adaptation.



An interior patio of centro Habana : An evolved environment, product of the peoples interaction with their built environment to accomodate much needed space.

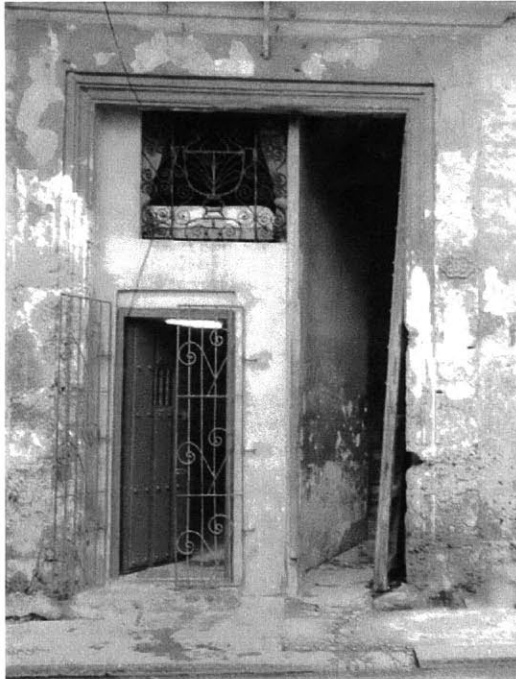
Observations of a Hidden Layer

Havana is the product of a system of functions and places shaped by architects and planners. But this city is not only shaped by professionals, it is a process that involves the public as well. These interactions by the public with their built environment create the urban artifacts that make the city unique, providing us with valuable information about the needs of the city and its inhabitants. These manipulations of the physical environment are in accordance to cultural needs for the creation of effective living environments.

Havana's colonial shell has allowed within its physical environment the development of a variety of new activities and forms. These new forms and uses are socioculturally coincident, collaborative and symbiotic within the already existing built environment. The sequential constraints of any new forms in the fabric of the city are of cultural and social origin, though interactive with the important issues of whether the physical environment tolerates newly define uses.

The colonial shell of Havana contains buildings with old patterns of use and complex histories, providing examples of physical environments with high degrees of latency. In these buildings there few fully designed environments, but rather artifacts, the product of human action. These evolved environments, adjusted piece by piece over time to changing demands of use or significance, elude any globally prescribed use and meaning while incorporating many stimulating and sustaining parts.

These new forms influence the character of the architectural space in which they evolve, and one is assured a different experience in each one. These new constructions are detached from the academic mainstream and attached to local conditions forcing its development, producing an architecture influenced by economic and social. These spaces develop unique characteristics within the urban fabric in which they arise. They depict a story, an urban evolution in the city, while at



A barbacoa in centro Habana: the new subdivision of space is framed by the original building entrance.

the same time establishing a context for the continuous approach to building. It is important through all observations that we recognize the effect that multiple and specific, economical and social conditions have on the shaping of a city's architecture.²

It is through this process, adaptive functionalism, that architectural ideas are disseminated, producing at least on the surface, at first a homogenous appearance of buildings producing in a seemingly unrelated context. The second stage offers an entirely hidden element existing in the interior, a vertical segmentation that fragments the space to accommodate multiple inhabitants, a type of scaffolding subdividing the space into barbacoas.

This type of innovative construction or transformation has always been part of Havana's urban inheritance, though largely unnoticed by historians. It is because artifacts like the barbacoa lack some of the outward manifestations of cultural ornament that it has not endeared itself to scholars. But in recent years, changes in the political landscape have influenced space planning as well as decoration. As slogans swarm most surfaces, architecture is forced to multiply inward. Pragmatism invaded tall rooms, for instance, forcing them to yield their heights for additional living space popularly labeled barbacoas. In the process of sheltering the populace of a newly created spatial level, the city is being relayered horizontally.

Segmentation, after all, has always benefited Havana. In this persistently brimming capital, inhabitants have grown accustomed to the vertical fragmentation of any available space. Grand entrances facing the sidewalk customarily fool the eye: designed to match the enlarged proportions of overbearing facades. They in fact, provide separate entrances to individual dwellings. Like most solutions of great design sensibility, this one minds both human and urban scales. With gates

2 Rossi, Aldo, *The Architecture of the City*-Introduction by Peter Eisenman



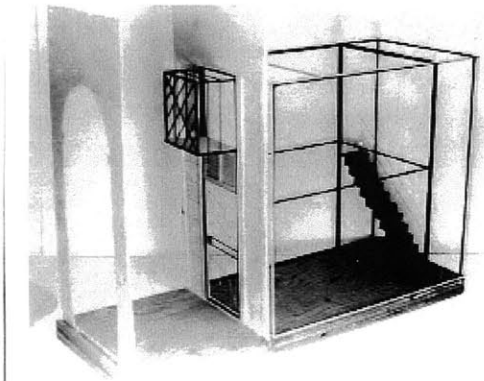
A grand entrance to a colonial apartment building in centro Habana.

that double as doors, and in turn, perform as fences, Havana is never short of strategies for handling the city's many fissures. The lesson learned from years of experimenting with adequate housing for a nation are plentiful. They may well constitute Cuba's most relevant architectural legacy. Ironically Havana's spatial creativity is better evidenced in cleverly resolved artifacts like barbacoas than in palatial but stylistically derivative residences.³

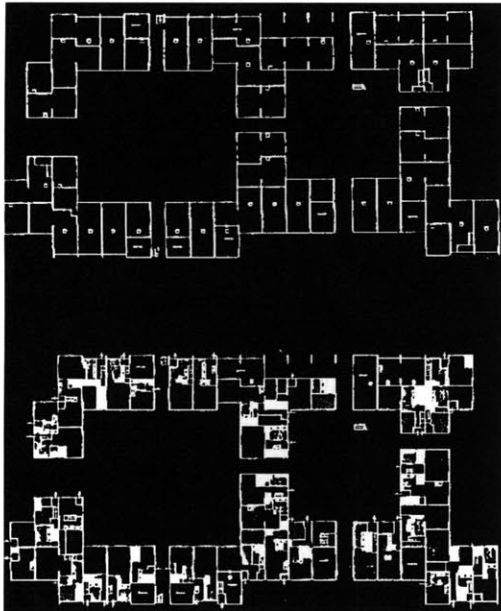
This is perhaps the phenomenon which Alejo Carpentier classified as the 'Third Style': that which has no style. This 'Third Style' is a 'process of symbiosis, of amalgams, of transmutations, both in the architectural and human scale.'⁴

3 Rigau, J and Stout, N, *Havana*. New York: Rizzoli 1994

4 Carpentier, Alejo, *Problemática de la actual novela latinoamericana*. In *Tientos y diferencias*, Havana: UNEAC



A study model of the spatial qualities of the barbacoa.



Floor plan of a support project in the Netherlands : N.John Habraken, *The uses of levels*.

The study of la barbacoa is an inquiry into urban transformations, a concern with a historical dimension in order to establish a historical status of buildings and urban plans in Havana for the present and foreseeable future. These types of interventions enrich spaces and urban life to buildings that have exhausted their previous function and are questioned for their poor performance and impermanence. The barbacoa acts according to three types of transformation in its layering process: a) The recycling of architectural elements, b) the reappropriation of urban fragments, and c) the transformation of inhabited buildings. At the same time a significant relationship with existing elements is encouraged, provoking a continuity between past and present.

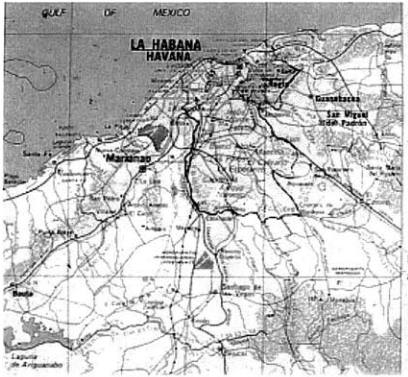
In his research on the uses of levels, John Habraken suggests that we step back, while reconsidering the premises from which we have operate. He disputes our current understanding of the built environment as obsolete, and presents a new model. The issues of his agenda are multiple. His emphasis on change is important, realizing that housing projects and neighborhoods must grow and develop over time. Also to be consider is urban geography, for local lifestyles and typology contain great discourse on cultural values which are different in each city. People need to connect to their heritage. Context is also important, because a building must fit into its urban fabric. After careful consideration of such issues a model based on the idea of 'levels' in the built environment can be introduced. The system is an 'infill' level inserted into a 'support' level (building shell), providing the building can accommodate comfortable spatial subdivision.⁵

5 Habraken, N.J. *The uses of levels*. Keynote address at the UNESCO Regional Seminar on Shelter. Seoul 1988

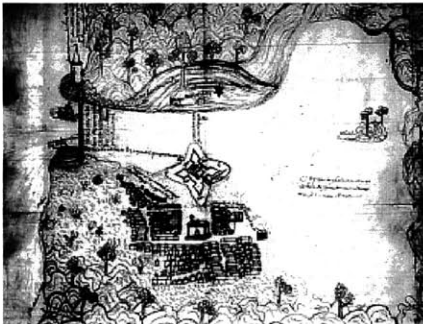
Synthesis of Design



TWO



Contemporary map of the city of Havana, 1996



The city of Havana, circa 1600

Historic Evolution of the Site

“Geography triumphs in cities whose name alone bespeaks a location. Take Rome and Paris. A single mention precludes the need for any added explanations. Any suffix would in fact be redundant- unless, of course, the distant relatives Rome, NY, or Paris Texas, were the localities being addressed. Land does not always become place, particularly when the plurality of shared names clouds identities: Spain and Argentina both boast their Cordoba; California and Costa Rica jointly claim a San Jose; and several countries honor Santiago (de Chile, de Compostela, de Cali, de los Caballeros, de Cuba). Toponomy, however, has granted us only one Havana”.

Jorge Rigau



Map of the Malecon area: from Prado to Belascoain, the 14 blocks on the waterfront.

Historic Evolution of the Site

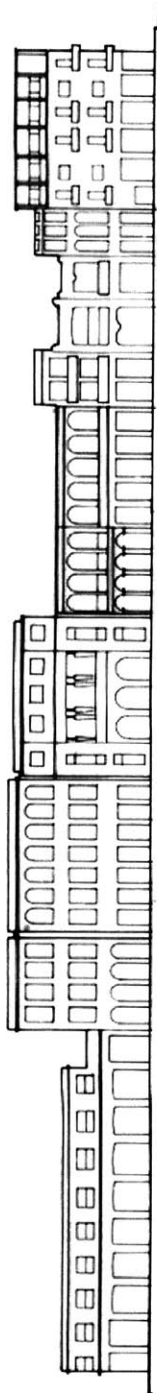
Urban evolution of the city and its relation to El Malecon.⁶

The city of Havana was founded in approximately 1519. Due to its exceptional geographic location as the doors to the new world, it became a point of reunion and reprovision of the royal fleet during its trips between Spain and its colonies, encouraging the foundation of the capital city of Havana.

In the second half of the XVI century, the city began its urban development, its first urban imprint which we come to know as “La Habana vieja”. Housing would be the crucial urban element in conjunction with religious buildings and the defense system, directly expressing the economic possibilities of the different social groups. Towards the end of the XVII century, the city had reached its capacity inside the city walls, slowly spilling out to different point in the vicinity. The closest littoral, was covered by thick vegetation making it one of the primary instruments of defense, called “monte vedado”. This natural defense wall was strategic for the protection of the city in conjunction with the castles of El Morro and La Punta. During the XVIII century this territory was given to agriculture, with the condition of maintaining it free of any construction. All construction outside the walled periphery followed the Zanja Real, which provided water and access to la Calzada del Cerro, where the rich began to look for residence.

In the middle of the XVIII century this littoral developed a new interest among the city dwellers, who had transformed the curved path into a delightful and elegant promenade: this road that lead from La Punta castle to the Torreón de San Lazaro, became the destination for the city dwellers to enjoy the sea breeze as they escaped the walled city of Havana. As the XX century approached there was a

6 Malecon [mah-lay-cone], m. Dike embankment, levee, jetty. Spanish/English Dictionary Velazquez.



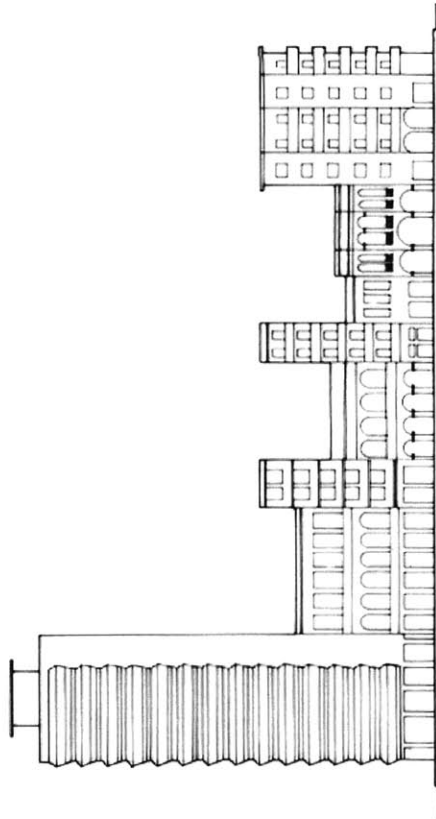
Historic Evolution of the Site

violent development caused by the sugar cane industry. The Spanish government re-enforced its administrative structure, as well as its, military, causing much construction; population increases and a feeling of economic prosperity.⁷

The urban development was done by a grid, assuming all geometric concepts as mandated by the Laws of The Indies, which established the norms and urban rules for the tracing of streets, lot dimensions and regulating the growth of the city. In 1819 the augmentation plan for the expansion of the city outside the walls is implemented with the goal to establish order to the urban growth. From there developed the area we come to know as Centro Habana.

In the XIX century, with the extraordinary increase of population outside the walls, the city traced itself a new route toward the west littoral. The abandoned territory which was situated in this direction, and was relatively unoccupied due to the scarcity of defense, was converted into privileged estates with ventilation and a healthy position in front of the sea. The new neighborhood was situated next to the sea, limited by its coastal border with a line of elongated house blocks (bounded on every side by a street) serving as the border for an avenue named Ancha del Norte or de San Lazaro. Towards the end of the XIX century, Havana found itself frozen due to the minimal investments of the Spanish government, whose resources were concentrated on fighting the recent revolutionary uplift. Once the revolutionary war ended, the American intervention dedicated much attention to the city of Havana. Construction began on the parcels of Vedado, quickly becoming the suburb of the bourgeois. This increase in population with a new strong definition of social groups, established the rules for settlement for immigrants from rural areas, both proletarians and high class.

7 Oficina para la rehabilitacion del Malecon:
"Diagnostic information-Presentation Journal 1996"



The urbanization of the coastal territory gravitated from the hands of the colonial domination, to the new intervening American government, resulting in for the continuation and realization of the Malecon, already known as Avenida del Golfo.

**Urban Evolution of El Malecon:
Constructive process, building characteristics, and floor use.**

The formation of the neighborhood limited by the littoral and the elongated lots that faces the Calzada Ancha del Norte o San Lazaro begins in the year 1819.

Between the sea and this neighborhood a vast space was left for military purposes which prohibited the construction of any building. This was no obstacle for new recreational habits which started in the 1830s: the salt water baths, catalyst for a series of wooden shacks in between the cuts of the quarry stones. At least four bath houses functioned on this edge, providing an activity that persists until today, though the wooden shacks are gone.

As the rest of Havana developed and continued to grow, the area of El Malecon remained vacant since no construction was allowed. It was inevitable that these 14 blocks of residential buildings would become the most important construction of the 20th century as well as the facade of Havana. Spain had established “The Law of the Ports of Spain” in 1880 and applied it to Cuba beginning on October 31, 1890. This article dictated that the coasts and ports for defense reasons were of public or national domain, therefore forbidding any possibility for building housing in the parcels between the street of San Lazaro and the coast.

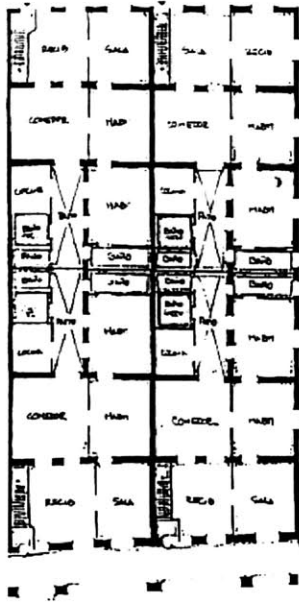


Portal: the arcaded walkway of Centro Habana: “City of Columns”, alejo Carpentier.

Historic Evolution of the Site

the mid-nineteenth century, but proved to be too restrictive to accommodate rapid urbanization in the turn of the century. The building codes of 1861 left their last mark in El Malecon, as the 14 blocks between Prado and Belascoaín displayed their continuous colonnaded facade respecting the written layout for the Colonial city. These building codes laid out by the Ordenanzas de la Construcción de 1861 gave the colonial city a unique look. This meant carefully monitoring even the smallest design of new buildings and road networks. As the major mandate in planning and building codes, the Ordenanzas were very successful leaving an indelible mark on the city fabric of Havana. Roads were classified in a hierarchy, and a Neoclassical style was imposed on the pórticos, which contrasted with the commanding Baroque style of the walled city. The most important roads were called calzadas, whose width could not be less than 25 meters. These calzadas were typically lined with porticoed public corridors called portales. These portales gave access to stores at the ground level, with dwellings in the floors above. This code specification created a unique texture in the urban fabric of the city outside the old walled city, whose portales were confined to buildings surrounding the main plazas.

The segment of El Malecon between Prado and Belascoaín was finished in 1919 and represented the first two decades of the republican era in Cuba. However, the importance of El Malecon laid more in its geographic location in Havana. Located in front of the splendid panoramic open ocean, with its characteristic corridor along the city edge, it became the most attractive promenade for any city dweller to contemplate nature and the new city's facade. Its key location and symbolism to the city has provided El Malecon with constant interventions and visions of beautification through its urban existence.



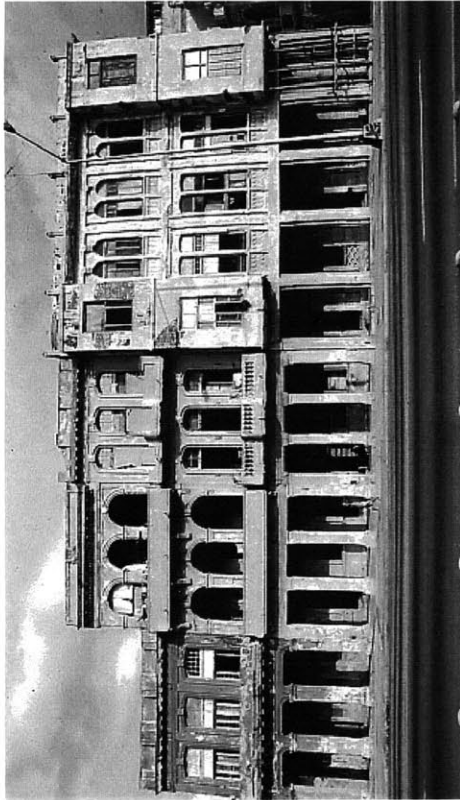
Typical building plan in the Malecon

The blocks and its parcels

The rectangular geometry of the blocks are derived from the layout of its surrounding streets, with a frontal dimension that varies from 60 to 80 meters and a depth of approximately 40 to 50 meters. The surface area of the blocks also vary between 2,000 and 8,000 square meters.

The partitioning of the blocks, whose lateral limits are in general perpendicular to San Lazaro street, gave way to 196 parcel, with a mean surface area of 266 square meters, allowing for a great variation between 70 square meters of the small ones, to close to 2,000 square meters from the large ones. (These last ones situated at the end of every block). With the exception of the parcels bordering the block or corner buildings with facades on two or three sides, and parcels having dual access from El Malecon and San Lazaro street (between both they amount to about 20 % of the total parcels), the majority only consists of one access way.

The frontal dimensions of the parcels may vary between 7 meters to 40 meters. The depths vary as well , from the 10 meters to 50 meters, the highest dimension- allows transversal access.



Typical facades of the buildings in El Malecon

The Buildings

The buildings of each block are associated with contiguous or party walls, as well as by narrow interior courtyards at times small enough to provide only air ventilation and light. There are also some parcels with out buildings, sometimes containing only parts of buildings, due to demolition or collapses. The addition of these buildings produce very compact blocks, with the facades perfectly confined to the exterior alignment of the streets.

In general most buildings consist of two or three storeys, with heights between 6 and 5.50 meters. These story dimensions add a strong sense of verticality to the facades, but its horizontal porticoed public corridor in the lower story possesses greater hierarchy, for this element alone unites all of the facades. The buildings in El Malecon possess a strong sense of urban unity due to the same 'spinal' attachment to the portales. This coexistence is important for the buildings, for they do not interact alone but are part of a larger urban affair. These fourteen blocks form a monolithic urban mass whose primary function is housing, but it is not only limited to that. The modern movement in the 50's attempted to change the functions and characteristics of El Malecon. Today only the fourteen story 'Deauville Hotel' remains in the area. (See Sert's master plan for Havana, p.g18). But some local businesses have recently flourished in the area, as well as, family restaurants, some office space, and cultural recreational societies.

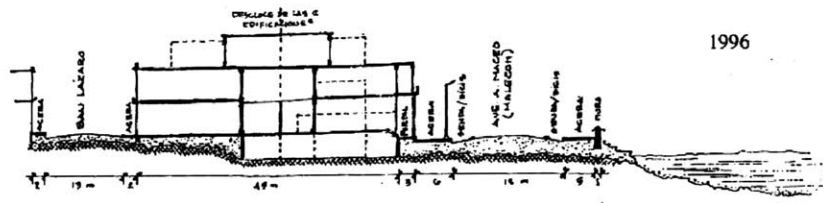
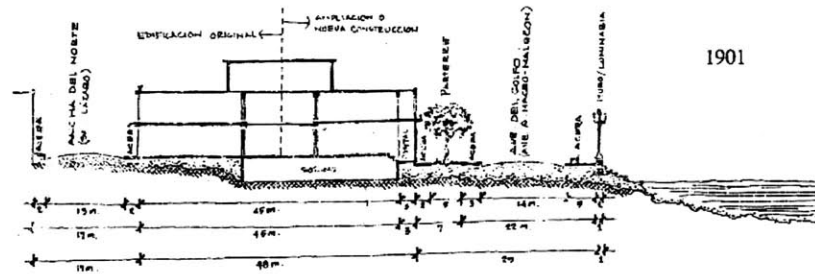
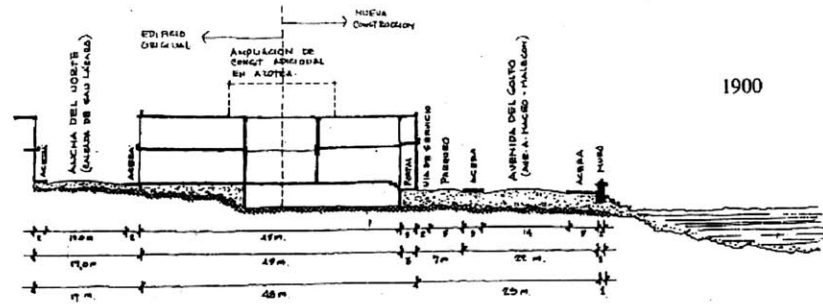
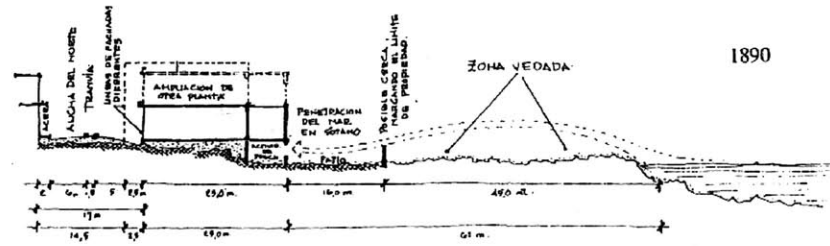
General Data for the area of El Malecon

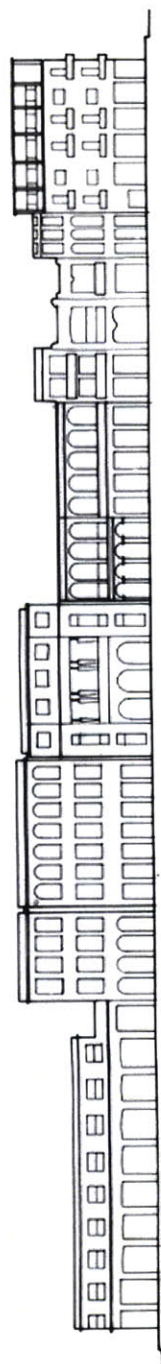
Gross Surface Area	11.50 he
Net Surface Area	14 blocks, 5.30 he
Street Surface Area	6.20 he
Number of Blocks	14
Number of Parcels	196
Number of buildings	173 (23 parcels are vacant)
Number of buildings for housing	162 (there are 11 other buildings being use for other functions)
Number of units	1,529
Number of dwellers	5,510
Gross Density	133 units / he, 479 people / he
Net Density	286 units / he, 1,033 people / he
Surface area occupied by buildings	130,080 square meters, built
Average building height	2.70 stories (excluding buildings with 6 or more stories)

Family Nuclei and their composition:

No. of people per family	No. of nuclei	No. of inhabitants	% of nuclei
1	68	68	12
2	133	296	24
3	132	396	23
4	109	436	19
5	51	255	9
6	28	168	5
7	17	119	3
8	5	40	1
9	8	72	1
10	4	4	1
11	4	44	1
12	1	12	.5
13	2	26	.5
Total	562	1,942	100

Malecon Section

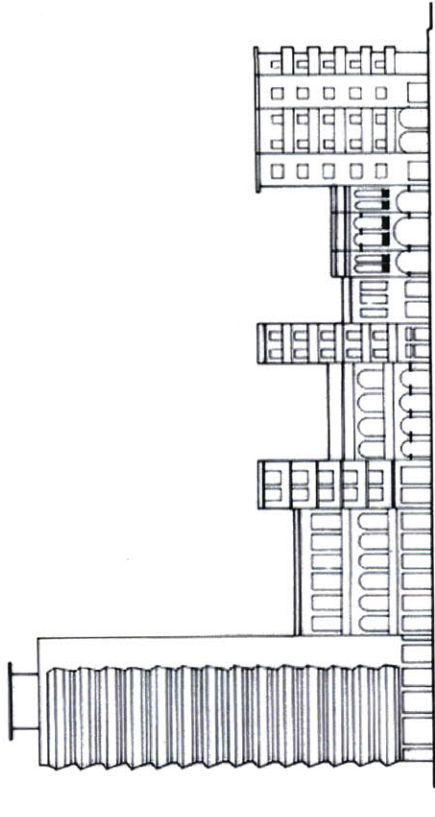




Facades

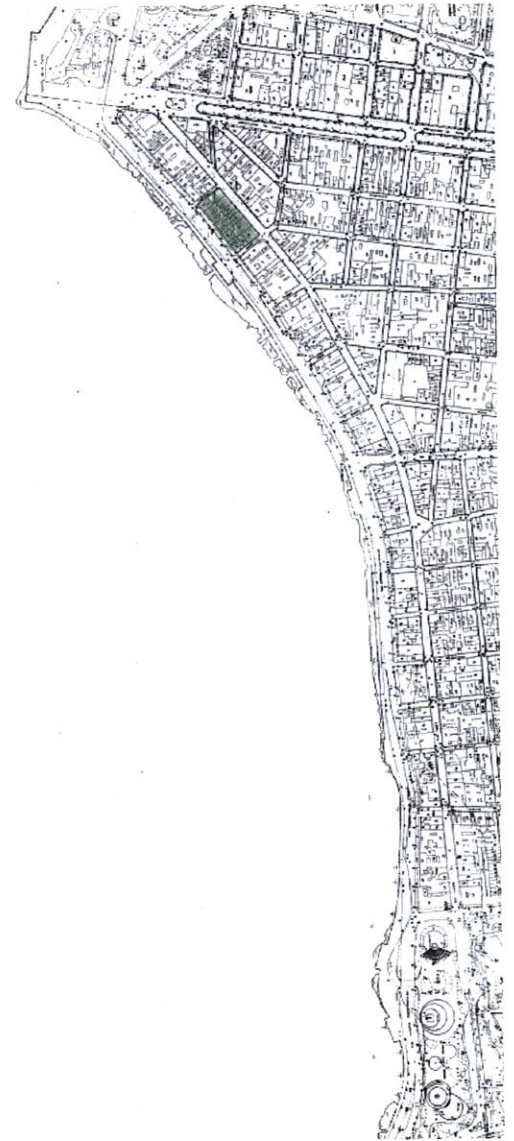
Malecon Block 1

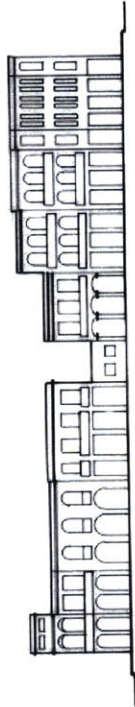




Facades

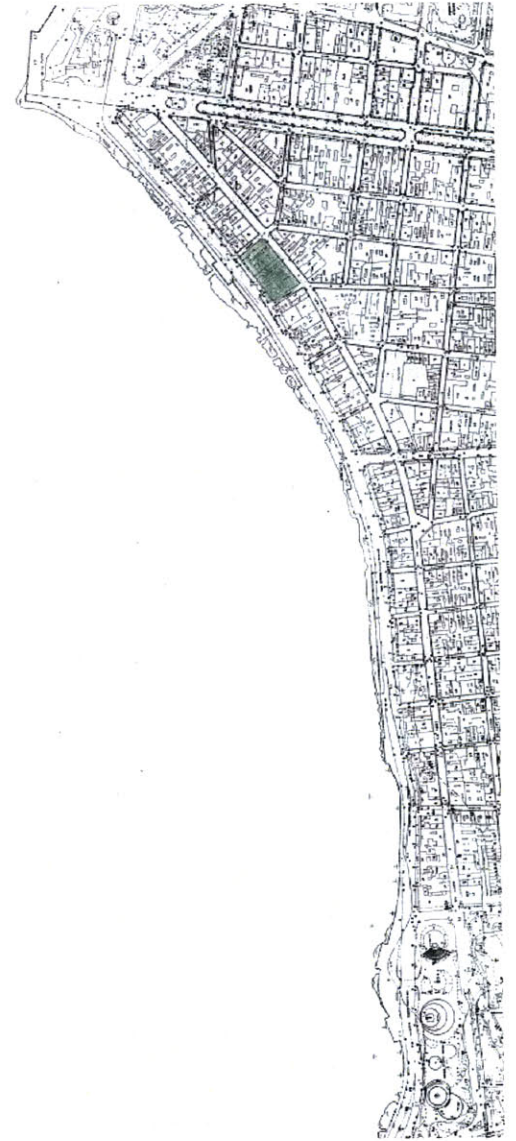
Malecon Block 2

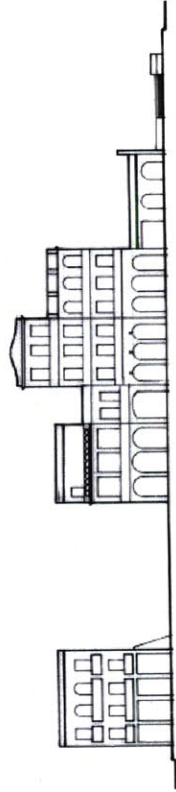




Facades

Malecon Block 3

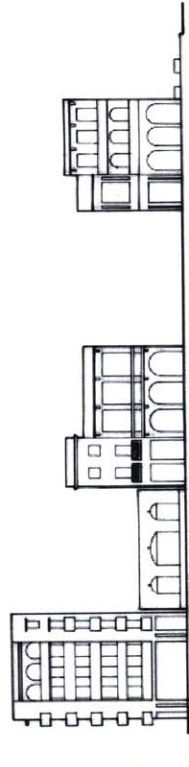




Facades

Malecon Block 4

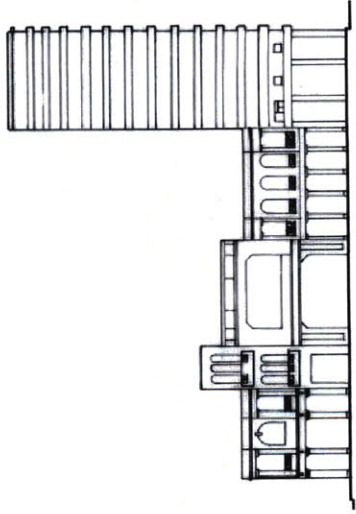




Facades

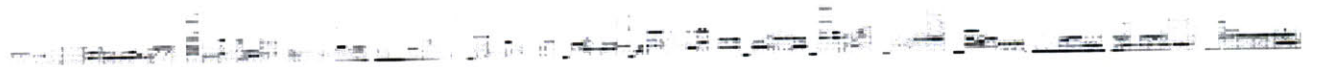
Malecon Block 5

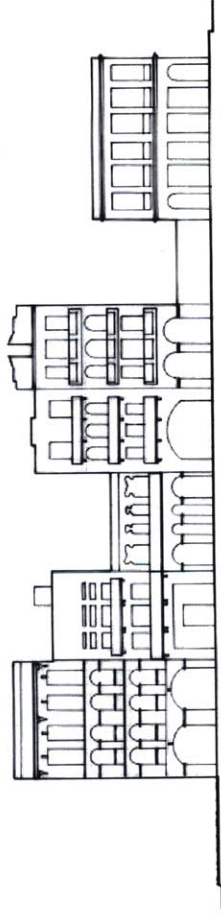




Facades

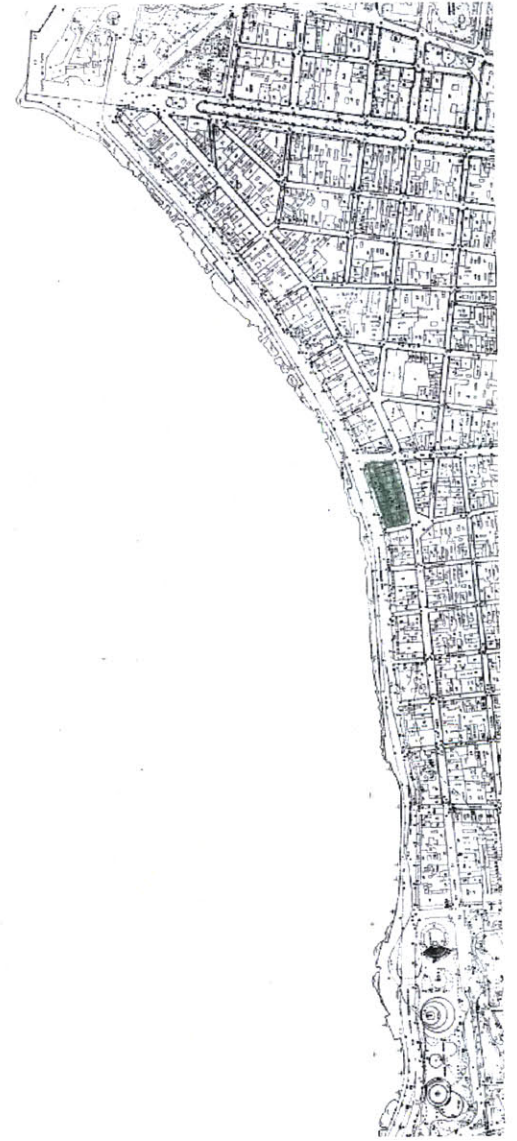
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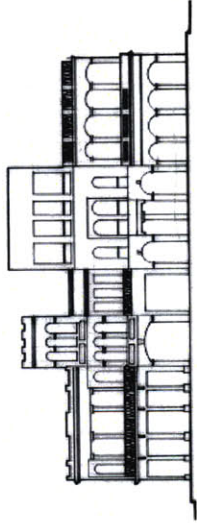




Facades

Malecon Block 7

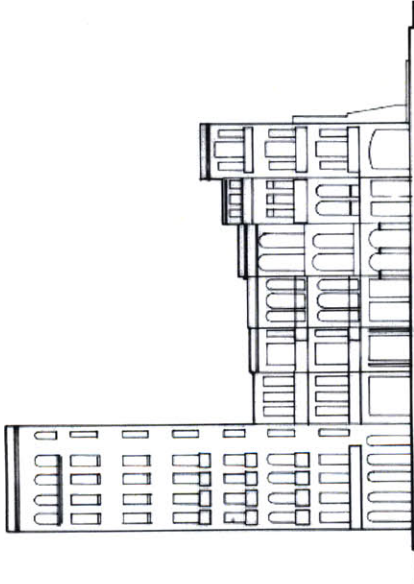




Facades

Malecon Block 8

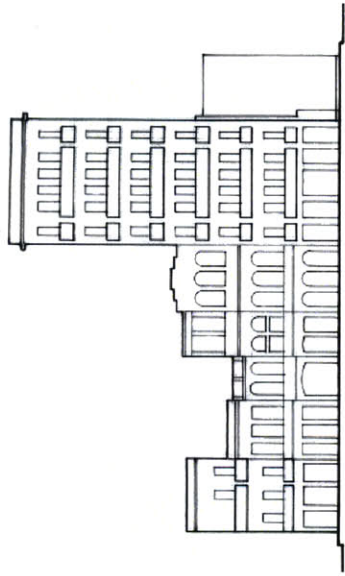




Facades

Malecon Block 9

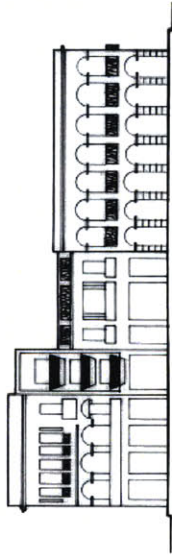




Facades

Malecon Block 10

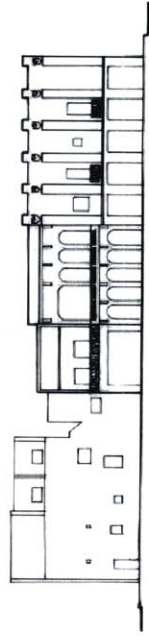




Facades

Malecon Block 11



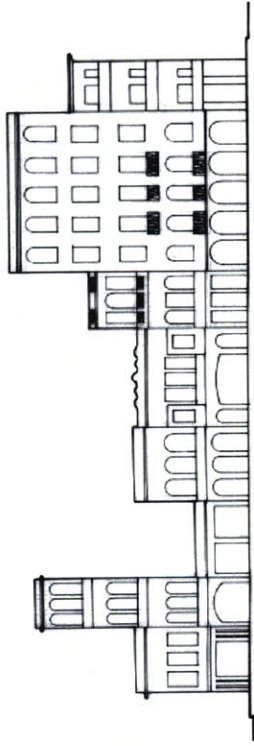


Facades

Malecon Block 12



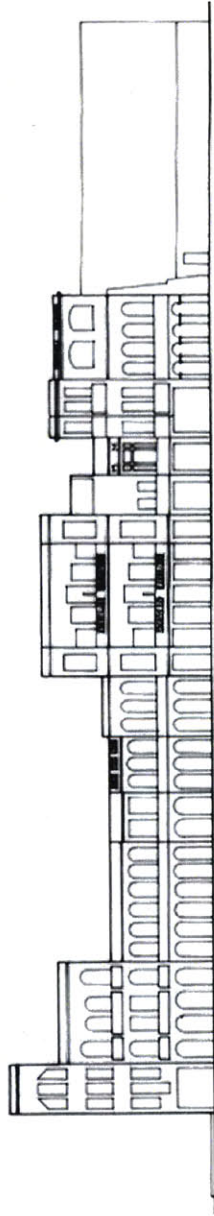
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Facades

Malecon Block 13

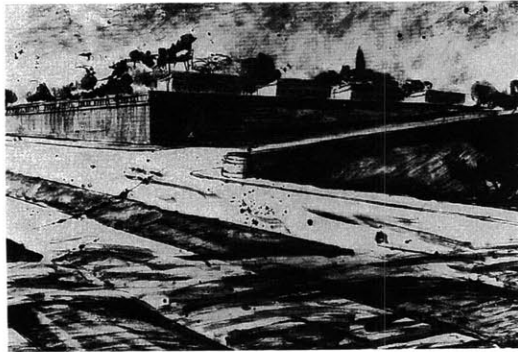




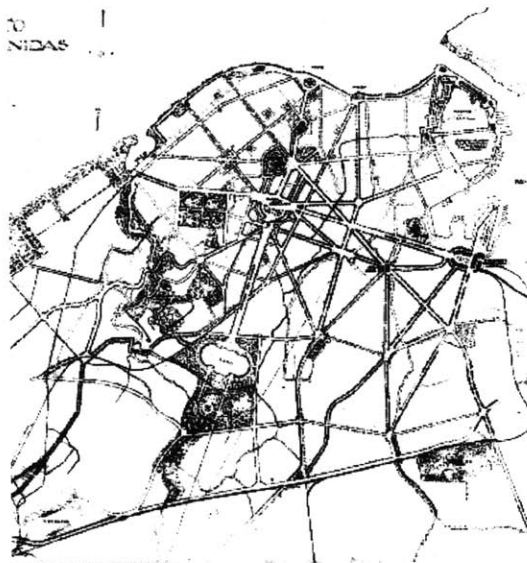
Facades

Malecon Block 14





Drawing of El Malecon by J.N Forestier, 1925



New system of streets and avenues in Havana by J.N Forestier, 1925

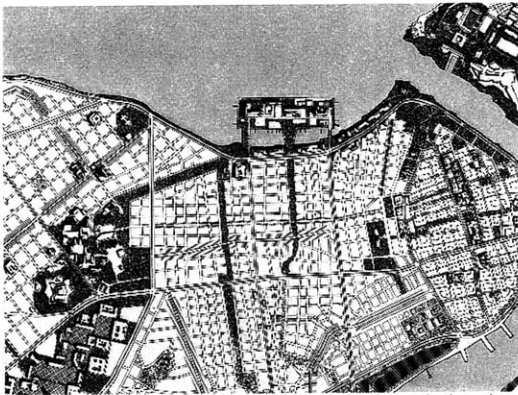
Previous design attempts in the Malecon

The intervention into the Malecon proposed in this thesis will by no means be the first. Previously architects and planners have attempted in their master plans to beautify, enhance, preserve or even destroy the historical and symbolic value of the area.

In the first decades of the XX century the state tried to substitute the modest colonial urban strip for the pomp and luxury of eclectic monumental buildings. The dictator of the time, Gerardo Machado called upon J. Claude Forestier to complete the Plan director de La Habana. This initiative was also supported by rich land holders, since they saw this new plan as a chance to increase their property values by locating avenues in their vicinity. The new plan by Forestier was a kind of urban reconstructive surgery, with its principle objectives: to homogenize the city, establish new zoning for the new areas of development, to define the functional centers and basic monuments and to develop a system of green areas encompassing the metropolitan area. Structuring itself from an axial system; redesigning the exterior surrounding of public buildings (Capitolio y Palacio Presidencial), creating a system of avenues and green areas within the traditional center, realizing the design of el Malecon, and some historic elements, the foresight of a Malecon along the coast of Miramar, and the creation of a metropolitan park. All of these aspects would of giving Havana a greater urban dimension, contradicting public opinion which speculate the scarcity of public space.

Forestier's Plan for Havana does not conclude with the fall of the dictator Machado or the concurrent world economic crisis of 1929. The initial project for the construction of El Malecon initiated by the bourgeois class slowly continued

8 Leclerc, Benedicte, *Jean Claude Nicolas Forestier.*



Artificial island with hotels, casinos and shopping centers set just off the Malecon, proposed by J.L. Sert. (1960), Plan Piloto de la Habana: L'Architecture d' Aujourd'hui, # 88.



City blocks design for Havana Vieja, Proposed by J.L. Sert.

its realization through different governments. During the 1950's, as a result of numerous American investments, a new urban impulse was generated, eventually formulating a new plan envisioned by Wiener and Sert for, Havana for 2 million people.⁹

In his plan Sert anticipated a considerable population growth, but perhaps a growth in the tourist industry. His plan not only contradicted the city of Havana, but his own writings in the book, 'Heart of the City', in which he emphasizes peoples lifestyle conforming to the social history of a city as the most important concept. His scheme for the Malecon created many changes and eradicated the historical shell completely. He began by eliminating the homogenous fabric of colonnades and eclectic architecture by introducing a series of high rise hotels and apartment buildings that violated the premises of a harmonious and historical city fabric. The elaborate scheme also introduced a manmade island in front of the Malecon.

The fundamental parameters for the new development of the capital city would be as follow: a definition of buildings by social classes, elucidate the productive areas(commercial avenues, train stations, tourist centers, etc), creation of new connecting roadways and the realization of peripheral neighborhoods. The new Plan by Sert was equivalent to Forestier's eclectic proposal: to make Havana into a modern capital, with a bourgeois look (as prescribed by the Spanish elite), though inevitably concealing its poor reality and vast misery in the rest of the country. The major emphasis of the Plan was directed towards the new commercial, administrative, recreational and tourist centers, the proposal for a new island in front of El Malecon and another in the heart of Old Havana and a new Presidential Palace in between El Morro and La Cabaña. Havana was spared of Sert's plan by the revolution in 1959.

9

Bastlund, Knud, *Jose Luis Sert: Architecture, city Planning & Urban Design*

By 1959 Havana was merely beginning its transformation, and much unforeseen change was to come in the decades ahead. The historical core increased in density with building subdivisions and the reconstruction of improvised lofts and attics. Remarkably, the population of Havana's historical core became attached to their dilapidated dwellings and neighborhoods and the new government stopped evictions and mandated that residents of these tenements houses not pay rent.¹⁰

10 Segre, R., Coyula, M., and Scarpaci J. 1997. *Havana: Two faces of the Antillean Metropolis*

Design Strategy & Prototype

THREE

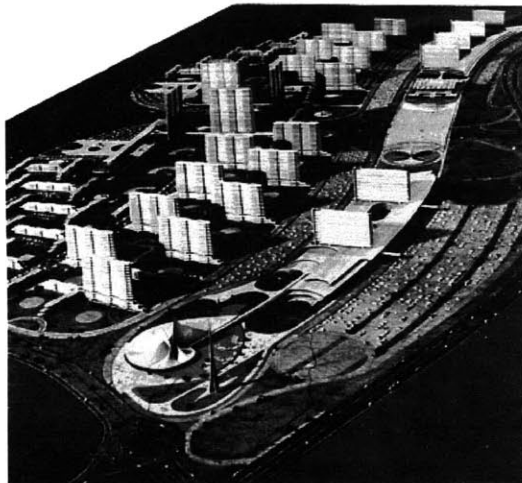


Urban Ecology:
Learning From the built Environment

“**O**ne hears about the end of history, and the end of ideology, and even the demise of architecture...maybe these outcomes will come about through the miraculous resurrection of a superior man, philosophy, and architecture”.

Luis Lápido

In this chapter I intend to continue the investigation of the barbacoa type and the development of such a type into a housing solution for the colonial city. My goal is to bring the physical environment and the culture of the user into greater congruence. Havana already provides us with a large history of housing tenements that have evolved in the city as a product of peoples interaction with their built environment. These countless models provide us with cultural prototypes that need further development.



Urban housing project for East Havana, 1960
Architects: Fernando Salinas and Raul Gonzales Romero.



Focsa building in Havana, 1956.
Architect E. Gomez Sampera

Housing in Havana

The state has attempted to supply an adequate housing stock in Havana, though constantly failing at doing so by ignoring its own local culture and pursuing foreign types to solve the problem. One of such attempts carries the name of “Process of mistake correction”. This construction phase in 1987 aimed to rectify previous mistakes and cover up many of Havana’s problems. A group of young architects embarked on an effort to renovate parts of the city. In the end perhaps more mistakes were made as the architects work failed to fit into their local surrounding and lacked any cultural attachment to the city. By focusing on ‘international styles’ of which they knew little, they replicated tired, old schemes. The end result was a style of construction and housing that was far removed from the reality of the existing conditions of an ailing socialist Caribbean city.

Housing assumed an important symboli presence in the city as each decade arrived. As new master plans for the city continued to evolve, none ever really developed fully. In 1982 Havana proposed and began construction of 64 high rise structures for housing. In general the buildings were situated in open areas, with little concern about blending into the city fabric. Some structures were located closer to the city center. In many cases these monolithic boxes aggressively ruptured the nineteenth century portales. These prefabricated housing types kept cost down, but sacrificed the rhythmic traditional city fabric. These prototypes were mechanically and faithfully reproduced according to original European designs. The style contradicted the architectural language of Havana, its building lacked any traditional accent or familiar spatial qualities. The absence of balconies, awnings, eaves, and bright colors contributed to the gray, dreary look of Havana’s newer housing. Their high degree of abstraction placed these building out context of place and time.

The 'Microbrigade' movement of housing construction was more popular with European and North American scholars for it held social and political value. But the problems faced by this movement could not be resolved by mere academic admiration. It was hard to imagine that Cubans who lacked shelter or needed improved facilities were expected to build their own house during their free time after an exhausting work day with little pay. The 'microbrigades' encourage migration to the countryside, by providing better living units and 'modern' conditions, but people still desired to live in the city. A reduction in population density in the central parts of Havana was expected. Although this plan was unsuccessful, the rate of new housing construction declined and no correcting measures have been employed to prevent migration to the capital.

Although Havana today continues to experience much construction, it deals only with the needs of tourism or the preservation of the city, it does little to enhance the conditions of housing among the neediest 'habaneros'. The proliferation of tenement housing continues and catalyst artifacts like the barbacoa evolve at a rapid rate. Weighted by constraints attendant to land speculation and building regulations, multifamily accommodations became the epitome of design restraint in Havana. Pragmatism fueled creativity, an element ignored in the expression of most houses of the bourgeoisie, where style might have been domesticated but remained unrooted. Architecture inspired by appearances but deprived of essence ultimately becomes inconsequential - ironic that vanity can ultimately be rewarded by invisibility. In classic fashion, the low income 'invasion' of the colonial core produced a succession of migrant groups who could occupy the housing of the generation before them.



Solar, "Modern Hygiene". Omoa Este, Cerro



Street entrance to Modern Hygiene solar, Omoa Este, Cerro.

Urban Ecology:
Learning from the Built Environment

El Solar

Ironically, the city's spatial creativity is better evidenced in cleverly resolved vertical fragmentations of the existing urban blocks into solares or barbacoads, than in palatial but stylistically derivative residences. These local innovations are evidently more contextual to place and time than the imported, readapted styles from the old world which do not serve a spatial function anymore but claim a sterile monumentality, serving a larger cosmetic agenda as angels of urban inheritance. Initially, improvised strategies prevailed in creating the tenement houses. As the wealthy slowly moved away from the city's historic center, (to the new uncongested suburbs of Vedado and Cerro), their empty colonial houses were internally subdivided and rented to the less affluent. Spatial fragmentation for purposes of speculation transformed the solariegas of wealthy single families into beehives that forced multiple families into shared habitation. Those visiting the island at the turn of the century could not refrain from denouncing the inhumane, unhealthy nature of such dense enclaves. They witnessed the earliest versions of the solar, now its new name, granted "institutions status in destitute Havana" by local novelist Cabrera Infante. Solares in Havana, as in similar typologies in Latin America, developed as communities of considerable size, enclosed within the patios or back lots of buildings. Developed internally, they maximized the space of the large urban blocks of Vieja and Centro Habana, many times as "liners" to more dignified buildings facing the sidewalk. The city erupted with this new urban segmentation and a new typology of densification was born with a local costume.



Passageway at El Alcazar, Hospital 611, Cayo Hueso, Centro Habana



Courtyard of Arcos building, a ciudadela.

Urban Ecology:
Learning from the Built Environment

The solar was the first non-programmed solution to housing in Havana, the product not of architects, but of public demand and densification. Not solving the housing problem per se, but enriching the local tradition, it became the basic unit for urban living in the dense urban shell of Centro and Vieja Habana. Trends such as “el solar”, have been assimilated with the exuberant development of eclecticism and historicism by writers, artist, and the people who live there. These ephemeral settings enrich the local eclectic architecture, and establish themselves as new local traditions for Havana in the 20th century.

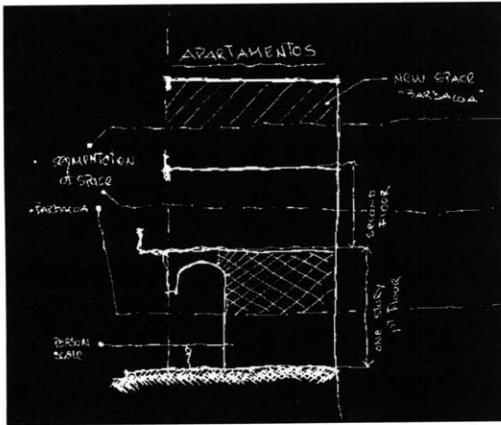
Ciudadelas

Ciudadelas constitute a more sophisticated version of solares. Literally translated as “citadels”, they are independent buildings inserted inside very large urban blocks, shielded completely from the public realm but sporting their own facades nevertheless. Havana has numerous ciudadelas, who inevitably owe their existence to the adaptation of the solar. Its urban esthetics continue to respect the larger urban fabric in which they exist, but their interior spatial arrangement learned from the segmentation of the solariegas and their inefficient overuse of space in a very dense fabric. The ciudadelas now sport an adequate distribution of space for multiple low income families, who still yearn for the cultural and social qualities offered by the adapted architecture of the solar.

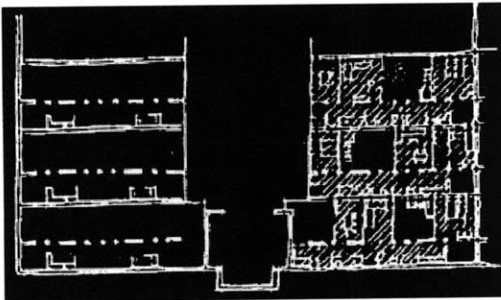
La Barbacoa

Today housing has found a different setting for its development, the center of the city. The combination of dwelling and ground floor business/shop in multistory buildings gave way to the apartment house, adapted directly into Spanish as apartamentos. In recent years, changes in the political landscape have influenced space planning as well as decoration. As slogans crowned most surfaces, architecture was forced to multiply inward. Pragmatism invaded tall rooms, for instance, forcing them to yield their heights to additional sleeping quarters, popularly labeled *barbacoas*. Makeshift cots or board beds, for lack of better materials, supported on props, these *barbacoas* temporarily solved Havana's need to house its growing population without the expense and effort of construction. In the process of sheltering the populace in a newly created spatial level, the city was relayered horizontally. If the solar was a superimposition into an existing urban block, *la barbacoa* is Havana's new catalyst of form. In this situation it is useful to step back and reconsider commonly accepted premises. There is no such thing as an instant environment, and Havana shows us that housing can grow and develop over time adapting itself to local lifestyles and typologies.

The point of investigation in this thesis is how *la barbacoa* can serve as a model for making new housing. This housing will not only deal with the new esthetics of the artifact and its contextuality, but improvements in structure, light, air, affordability, flexibility, and materiality among other things. The net effect of the new design prototype will be to develop a system of infill that is completely independent of the original scale of facade. The system is not dependent on a similar floor plan layout, it is adaptable to different varieties of building forms (plans) in the Malecon. The individual or overall infill unit can be changed and improved over time to meet individual user needs. This alternative prototype in the Malecon



Analytical section of a typical building in the Malecon and the possibility of subdivision.



Support infill system, section. N. John Habraken

also aims to preserve city life and resist the possible alternative to tourism. It also preserves the valuable city fabric, as well as maintaining a stable population and provides adequate housing units. This change in housing thinking is associated with new spaces, new forms of thinking, the availability of resources, the traditional lifestyles of the residents and expectations of the future residents. The use of la *barbacoa* as a design type tries to find variety in other forms, as well as a healthy symbiotic relationship between the old building and its new infill level.

Habraken's concept of 'levels' discussed in the previous chapter, is an urban theory that is completely applicable to a city as Havana, using the *barbacoa* as a model of design. The *barbacoa* provides the city with a new added horizontal layer of levels. Here we must understand what happens to a level when it changes to another. The *barbacoa*, for instance, respects the layout of the city streets, and the division of lots in the blocks. But within its own context, (the apartamentos), it acts freely, infilling the heights of the space according to the diverse needs of its dwellers. Change at the level of the buildings does not affect the higher level of urban design consisting of the urban blocks and continuous facades, but a change in the urban design would undoubtedly affect the lower levels of buildings by breaking any continuity in the city's fabric. All of these are in accordance with the everyday function of the city.

The *barbacoa* take precedence over the individual, the site and the city are both combined, sociability is fostered through the enhancement of the public realm, there exist an effective transition between private and semiprivate spaces; in a sense, a democratization of the dwelling by allowing the built environment to inform the architect and urban designer about the approach to design while endorsing a daring architectural expression. None of that could be said about the more recent housing efforts in Havana where, for the last decades, the good intentions of the socialist regime have unfortunately failed at providing all the urban

and communal ingredients demanded by the city and its community that were achieved earlier in places like the solares and the ciudadelas. Showered with praises (and rightly so) for social and political considerations, the housing projects built by “microbrigadas” -under neighbor-assistance, self-help programs—echo architectural models long ago deemed obsolete internationally: lone tower like building that foster isolation and are both unconcerned with improving the quality of urban space and despondent about the importance of the public realm. It is sad and regrettable that, to this day in places like Havana, imported references in architecture and urban design like the grand schemes by Jean Claude Nicolas Forestier or the modern movement, still carry more weight than any local precedents. It is thought that these or any local traditions are better left ignored, for they do not offer any reference to the city or add any hierarchy to its architecture. Havana’s ample, turn-of-the-century housing heritage proves much more stimulating as a spatial legacy than any of the city’s hyperbolized gift-wrap architecture, or most of its recent, allegedly regenerated design. To anyone interested in listening, solares, ciudadelas and *barbacoas* in general speak to a richer, more vital, and relevant, and a truly better contemporary language of design.

Barbacoa





Barbacoa
Barbacoa



Design development for the new barbacoa infill.

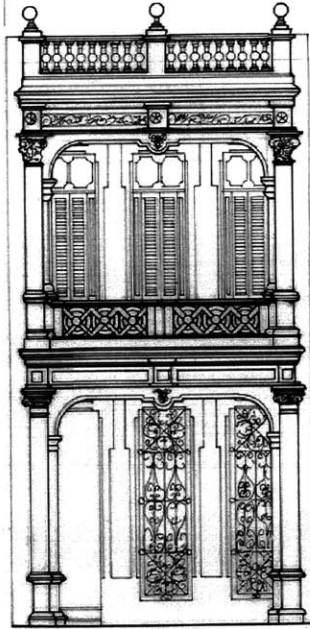


Facade of a typical 'apartamento' in the Malecon with barbacoas.



Typical barbacoas in centro Habana.

The new design level in the area of el Malecon is not completely arbitrary, but dependent of its parent artifact 'la barbacoa' for space definition and aesthetic qualities. The issues for design are also very specific to the site and the culture of the city. The development of la barbacoa always occurs in the 'apartamentos' typology of centro and old Habana. These apartamentos share a variety of elements that aid to the development of barbacoas. The apartamentos of late 19th century and early 20th century varied from two stories to four stories, each floor accommodating a single family. The building always consisted of a small patio or light well, not a courtyard like the palacios or solariegas which gave development to a different typology, the solares. The patio dimensions ranged from 12 feet to 20 feet in width and 25 feet to 45 feet in length. The height of each original story is 18 to 20 feet. The facade usually acting as such a mask, where the interior layout was completely independent from its outside skin. Therefore the most important qualities to maintain are the facade for continuous urban harmony and the original dimensions of the patios. The perimeter walls are masonry approximately 2 feet thick, which can serve for structural support of the new added system. The segmentation of these buildings into more space distributes barbacoas, some facing the patio and the others facing the front or back facades. The new design prototype to be inserted in the building shells of the Malecon tries to maintain characteristics and spatial layout qualities of the more primitive attempt by the people. The main issue to remember with the new added level is that it is not preservation or restoration of the building to its original state, but using the building's space to its full capacity by increasing the dwelling units. This could be better considered a form of adaptive functionalism, accommodating the most use inside the shell. The most important spatial quality of the barbacoa is the proliferation of living space. The subdivision of the space occurs vertical-



Original facade of a building without a barbacoa.

ly eliminating the original story height of 20 feet to spaces of 9 feet . These new levels contradict the original circulation of the building, and new added stairs are needed inside the individual apartments as well as a new location for the public one. The new stair inside the apartment serves to access its new level, usually consisting of the most private space, the bedrooms. The lower story is left to accommodate living, dining and kitchen areas.

Transformation of housing into ‘more’ housing

This urban intervention into the Malecon area is not a attempt to change the function of the district for housing, but the preservation of its existing housing function. This transformation of housing is different form functional change as it occurs in laces like New York city, where an industrial or business district changes its function to become a housing district. This change is usually a zoning one, to provide luxurious loft living. Eventually as economies fluctuate, it is turn back to business or other thing. The preservation of the Malecon district, is the preservation of a monument, a monument to housing an its persistence from the colonial era through the present socialist regime. The barbacoa is the evolution of housing into different housing. As Rossi explains in his “Architecture of the city”, housing is a permanence in the city. A residential district may persist over many centuries. The new added level design from the barbacoa may change form, but not the function of the area. The intervention inevitably attempt to resist change of the district into a tourist commercial one, it maintains urban life. It also serve as critique on the restoration of historical centers into stages for tourist pleasures by proposing a new object.

Method of construction and materials:

The patio

Due to the limited dimensions of the patio it will need adjustments to aid in the cooling of the interior apartments facing that interior space. The floor of the patio will utilize some combination of earth, dark porous brick, pebbles set in mortar, or unglazed tile. All of these hold enough moisture and thus increase the time over which evaporative cooling will occur. Carps or ‘toldos’ can be used over the patio to act as ‘thermal sails’. Like large trees they can cast shadows, but unlike a tree it can be swept away in the early evening to facilitate both ventilation and cold sky radiation, all night long. These devices can change the micro climate inside the patio, adding more control to this interior landscape. The key characteristic of some of these ‘toldos’ is their translucent quality, providing evenly diffused light over the space, rather than the unshaded contrast of bright sunlight and deep shadow.¹¹

Building Material

The material to be used for the infill system is Hebel AAC. Hebel autoclaved aerated concrete (AAC) is a lightweight, structural, precast building material of uniform cellular structure that can be used for residential or commercial construction. The Hebel AAC integrated construction system includes masonry-like unit construction and concrete panel construction. This product is achieved by a combination of sand, lime, cement, gypsum, water, and an expanding agent, which forms a porous microstructure in the concrete. This material does not require any special or new construction tools. It is easy to use on site and anyone

11 Reynolds John S. and Lowry William P., *“The Garden in the Building: observations of Cordova’s courtyards”*.

can saw or hammer nails and anchors into it using normal woodworking tools. Hebel AAC weighs as little as on fifth the weight of standard concrete. The system of Hebel construction also delivers excellent thermal protection for hot climates.¹²

Proposal for empty lots in the Malecon: Master plan

The intervention into the 14 blocks of the Malecon also considers the 23 empty parcels that at one time or another had building that today been demolished. These areas can enhance and improve life in the district. The planning of possible recreational facilities in these lots strengthens the community. The empty lots and the re-inhabited buildings should function as one and be symbiotic of each other. Multiple functions can be introduced into these areas. The lots have all different formats corresponding to the original form. The predominant ones are rectangular, with its smallest sides facing the main streets (15 of those face towards the Malecon. The surface area of these parcels oscillate between 95 and 1300 square meters with an average of 414 square meters. The lots can facilitate green areas, recreational space for sports, parking, and open markets. A possible change to the main boulevards may be implemented to reduce vehicular traffic in front of the housing blocks. This change may come in the elimination of one traffic lane for street parking.

12 <http://hebel.com/Hebel.AAC.htm>

Use	Number of parcels	Surface area (m2)	%
<i>Open markets</i>	10	2,021	26
<i>Green areas</i>	7	2,737	35
<i>Parking</i>	4	1,629	20
<i>Recreational</i>	2	1,490	19
Total	23	7,877	100

Design Discipline

The thesis presented here does not deal with the attempt to extend and enlarge nor the development of the waterfront of the Malecon. The project developed for this thesis is about the transformation of an extant fabric. The application and design of a new infill system in the site of the Malecon is not an urban design level, but of architecture transformations enriching and intensifying the urban fabric. What is learned can then be applied on the urban design level.

The thesis here developed from an observation of the built environment in Havana in 1994. The interaction of people with their physical environment. In the colonial shell of Havana known as 'centro' vertical subdivisions of the interior of existing buildings has become the contemporary solution for the allocation of space. These new added rooms add density to the city and the buildings they inhabit. This vertical subdivision creates a new horizontal layer to the urban fabric of the colonial city. These makeshift constructions by the people are labeled 'barbacoa', [bar-ba-co'-ah]. The Spanish dictionary defines the word as being a sort of interior scaffolding to hold up a roof or a floor. This construction is only free to act on the interior of the building, using the perimeter masonry walls as support. Many buildings in the district of centro Habana display symptoms of barbacoa's existing inside. This is immediately evident from the outside. The facade reveal the new added level through its grand window punctures. These perforations are then bisected by the barbacoa floor slab. The window's dimensions are not affected by this proliferation, its geometry persist. The rhythm of the continuous facades is not interrupted by any abrupt transformation on the outside, but it is evident that a secondary reading on each individual building is present. The new horizontal layer created by la barbacoa adds a new level to the existing urban fabric. The first layer is that of the urban fabric consisting of the blocks, continuous facades and arcades.



Typical view of a subdivided story. A barbacoa has been inserted. Bedroom space top level.



Typical view of a subdivided story. A barbacoa has been inserted. Bedroom space top level.

Design Process

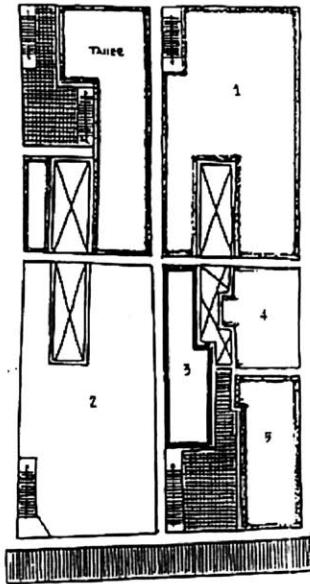
The next level is that of lots, parks, and individual buildings, each being part of the whole, but always autonomous from the rest. The new level now that of the barbacoa, an infill system that exist autonomous from its host, but is indeed part of the whole as well.

After the observation and documentation of this new artifact, the transformation of these old building became clear. They are not obsolete, and the barbacoa offers an insight into their future use and form of these buildings. As well as the providing us with information on how people interact with their built environments. The barbacoa is not a parasite or catalyst of slum dwelling. It is the first stage to transfigure and re-inhabit a city and its building which have outlived their previous function. Their form serves as an imprint (the plans of existing buildings) providing us with parameters from which to work to add new infill levels of housing. The thesis design process aims to increase the density of these buildings according to the barbacoa, but at the same time provide more adequate and comfortable units. In turn by re-inhabiting centro Habana, the city continues to promote urban life for the local 'habanero'.¹³

It should be clear that the new infill system or its kin, the barbacoa, can only develop in the grand colonial 'apartamentos'. Their colonial scale and floor heights usually 5 to 6 meters per story are indispensable.

It is important to understand the culture and context of artifacts such as la barbacoa. This information provides insight into the reason of why such artifact evolve. The barbacoa does not develop outside the district of centro Habana, nor are they ever erected in building that are not housing. Buildings that serve as host for barbacoa infills share usually similar typologies in form and function. Though different in stylistic aspects these buildings all contain the ingredients discussed earlier for the development of barbacoa's; height, loci, function, and form, among

13 Habanero: person from the city of Havana.



Plan showing patio location and relationship to living units. Existing condition in the Malecon.

Design Process

other things. I should reiterate in this chapter that the solution presented here of the new infill for housing is only applicable to Havana. Though similar issues of urban transformations exist in other cities, they should be studied within the context of their own culture and political systems. A housing resolution somewhere is not always successful somewhere else when displaced from its original context and applied to a different site. Housing is a local problem needing local solutions.

Design

The design process began with the analysis of different plans (typologies) present in the area of el Malecon. The buildings which best accommodate the barbacoa and the new infill system are of the late 19th century to the early 20th century (up to 1930's). They all share a similar typology as well, an interior patio for light and air. The patio is an important element for the consideration of design. This semi-private open space is an extension of the street into the building only accessible to dwellers of the building. This architecture typology is part of a long spatial history of Havana, and must be preserved for it is also an important part of everyday urban life. In the proliferation of barbacoa construction, these patios have been dissected multiple times losing their original form and dimensions. This element is a key issue in the design of the new infill system. The original dimension of the patio will be respected while the rest of the interior walls are torned down. These walls are no longer adequate, their form and function are obsolete. New technology and materials can prove more efficient for new walls (see Hebel light weight concrete).

Once the shell is empty and only the perimeter walls and facade remain, the new system is inserted. A base grid of 12 feet by 10 feet is overlaid on the plan to determine the layout of the new spaces. The patio area will remain open for air,

Design Process

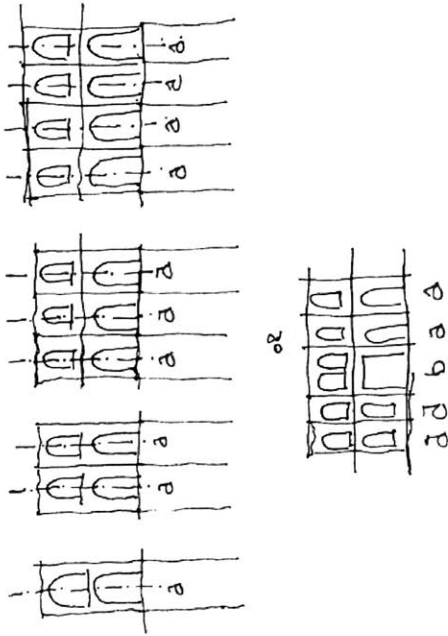
Three buldings

9

29

61

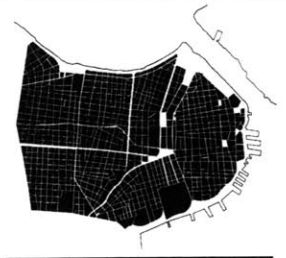




Typical facade rhythm in the Malecon.

Design Process

light, and circulation. A main public circulation is needed for vertical distribution to the original floor heights of 18 feet and 36 feet in a three story building. The secondary circulation for individual units serves the intermediate levels, 0 to 9 feet, 18 feet to 27, and 36 feet to 45 feet in a three story building. The arrangement of the functional spaces of each unit will be layout according to the grid, and its distribution concords with that of the barbacoa. The bedrooms are located on the intermediate mezzanine level and all other spaces on the lower level. The grid system is not arbitrary. Its dimensions derive from the proportions of the buildings already in the Malecon. The original buildings were laidout according to systematic parcel division establish by the building codes of 1861. Most of the lot dimensions are therefore interrelated: **a**, **aa**, **aaa**, **aaaa** or **aabaa**, and so forth. All new spaces derived for the new infill system exist only within the parameters of the grid: bedrooms, living rooms, dining rooms, kitchen area, and bathrooms (half a grid), only in the one bedroom units are the kitchen and dining area combined. The intermediate level in each unit will be design so as to provide the best air circulation possible in each unit. This will be achieved by putting a 4 to 5 inch metal grating between the wall and the intermediate level. Also the bedroom walls will contain apertures with louvers for better air circulation but provide control for sound.



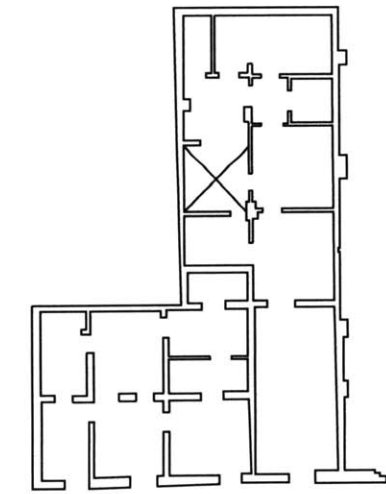
Re-inhabiting Havana

**Alternative Housing
Resolutions for the area
of EL Malecon**

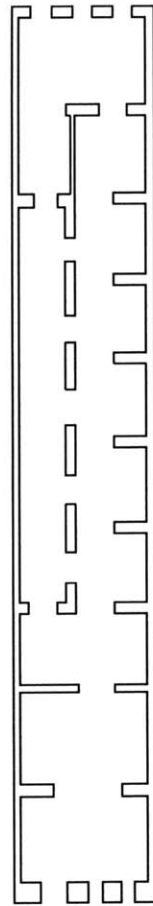
Existing buildings

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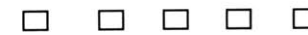
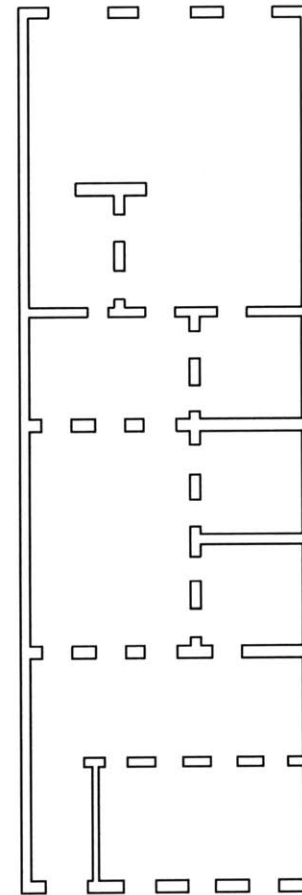
Frank Javier Valdes



Building # 9

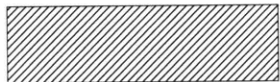


Building # 29



Building # 61

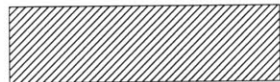
Urban Level



Tissue



Building



Infill

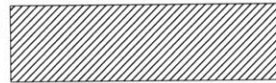


Furniture



Original Colonial Shell

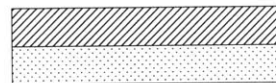
Urban Level



Tissue



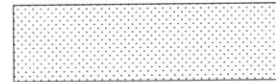
Building



Infill

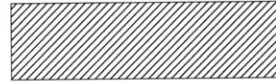


Furniture



La Barbaoca
Outdated Function

Urban Level



Tissue



Building



Infill



Furniture



Designed Housing
Model-Added Level

Original State



User Intervention



New Infill System



Re-inhabiting Havana

**Alternative Housing
Resolutions for the area
of EL Malecon**

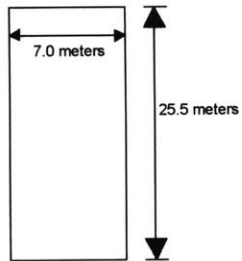
**Analysis of
transformation:**
peoples interaction
with their built
environment.

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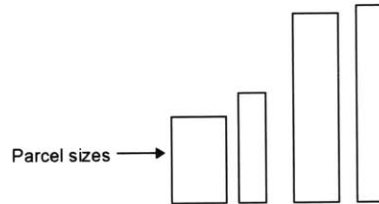
Frank Javier Valdes

Analysis of typical building shell in the Malecon area.

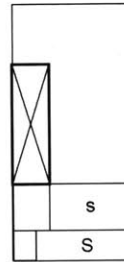
1.-Size of parcel



Long and narrow, with always the shortest proportion facing the front of the house.

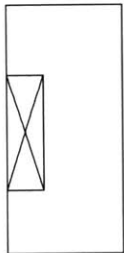


4.-Sala - Saleta
Living room



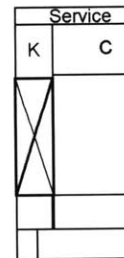
The living room was in the front next to the 'zaguan', seldomly followed by a smaller living room. The main living area needs its link to the outside through the windows.

2.-Patio and traspatio



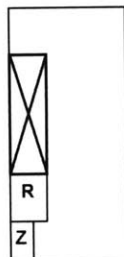
Derived from the actual proportions of the parcel, long and narrow, situated laterally providing enough light and ventilation for the building units

5.-Comedor - cocina y servidumbre
Dining area- kitchen y service



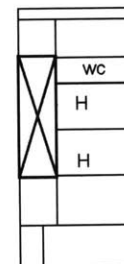
The dining room is generally at the beginning or end of the courtyard. Usually connecting to the kitchen and close to the service areas in the houses of greater hierarchy.

3.-Zaguan - recibidor
Entry hall - foye



This space is usually in the front off the side creating a transition point between the public space and the interior private space (from portal to patio), sometimes directly or through a primary 'recibidor' space.

6.-Habitaciones - WC
Bedrooms - Bathrooms



In order to achieve the greatest intimacy the bedrooms are located in the central area and in front of the patio. This location provides the rooms with adequate light and air circulation. The bathroom is located immediately after the bedrooms.



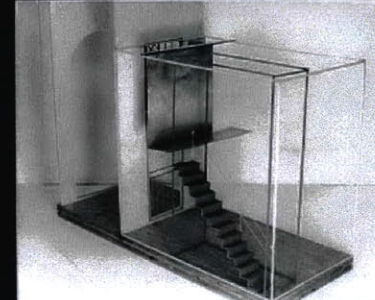
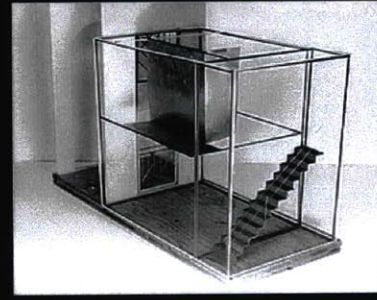
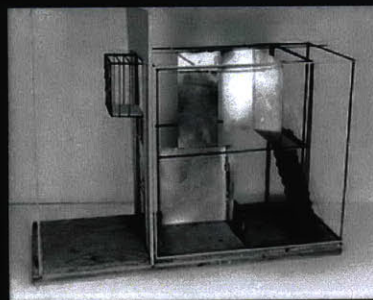
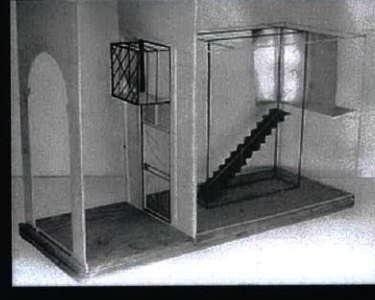
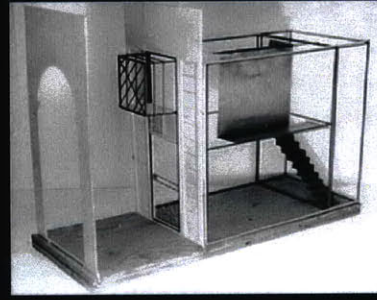
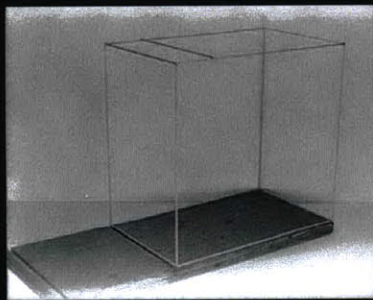
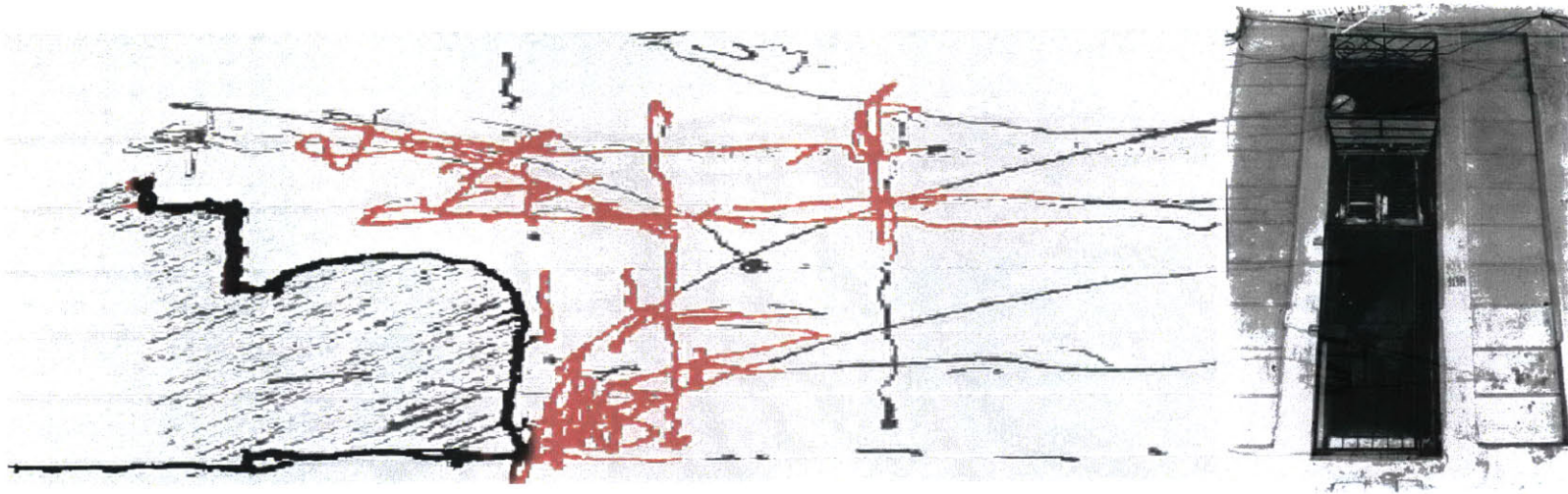
Re-inhabiting Havana

Alternative Housing Resolutions for the area of EL Malecon

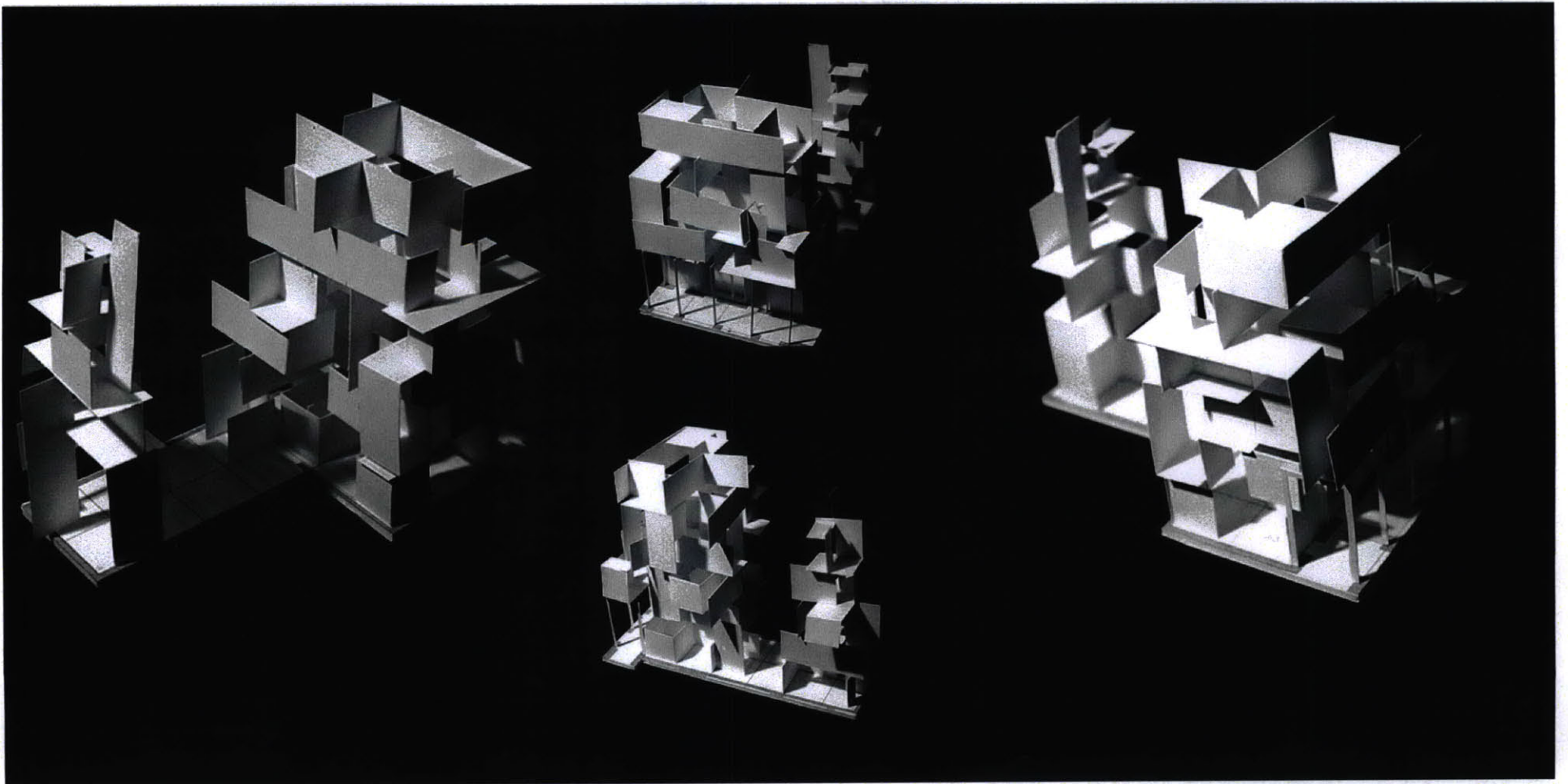
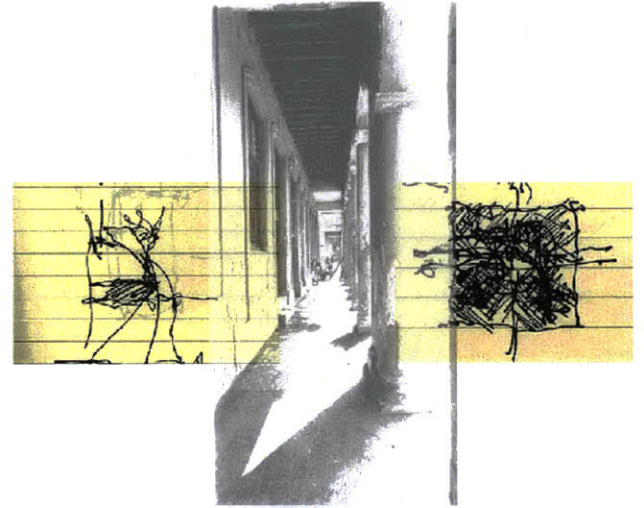
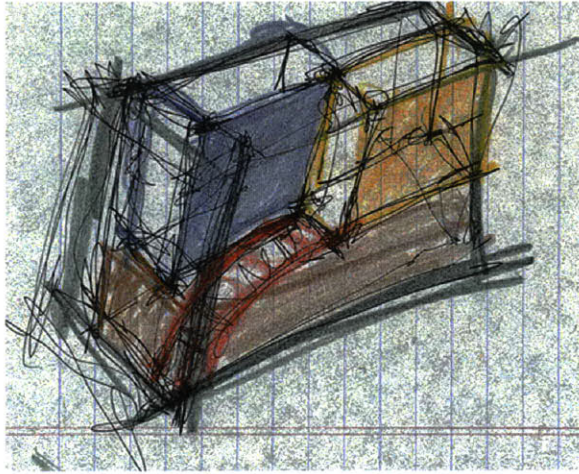
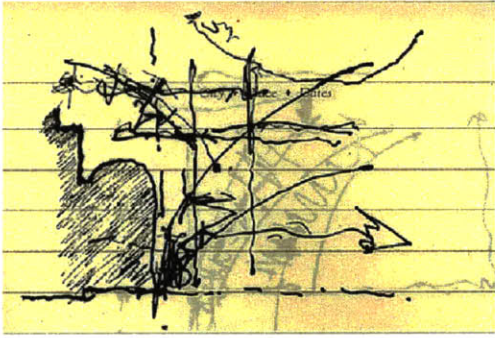
Building Analysis

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Barbacoa Analysis





Re-inhabiting Havana

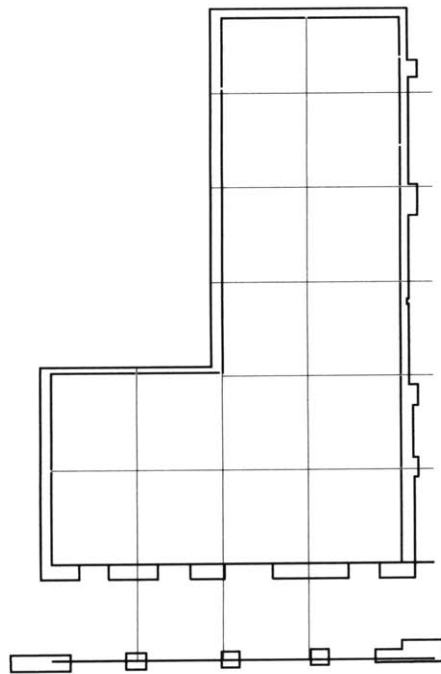
**Alternative Housing
Resolutions for the area
of EL Malecon**

**Synthesis of design
for Building # 9**

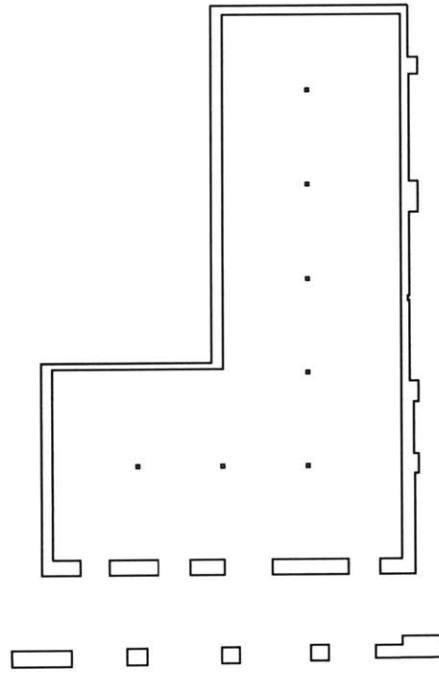
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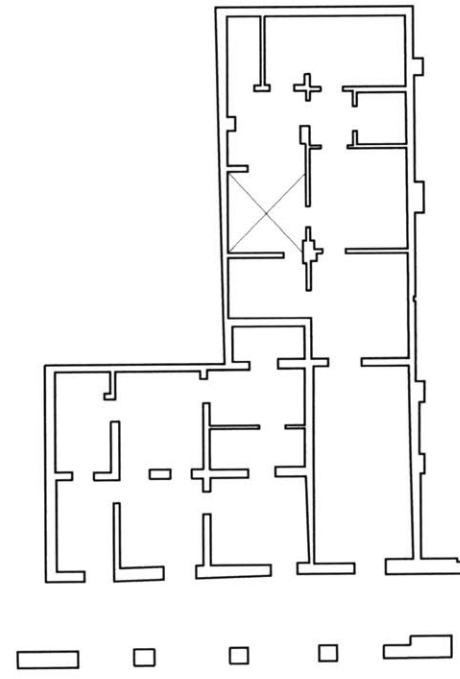
Infill Grid



Empty Shell

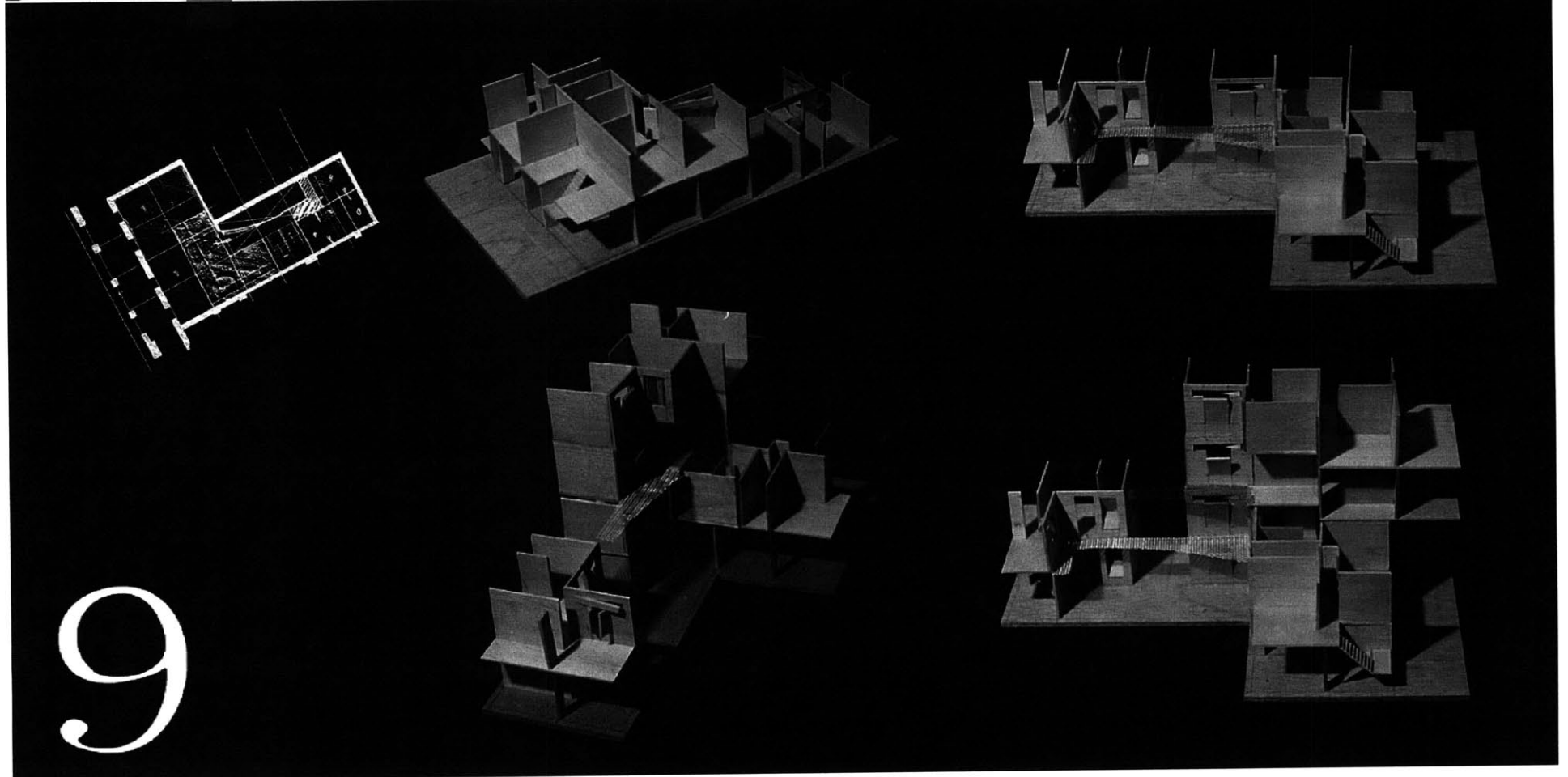
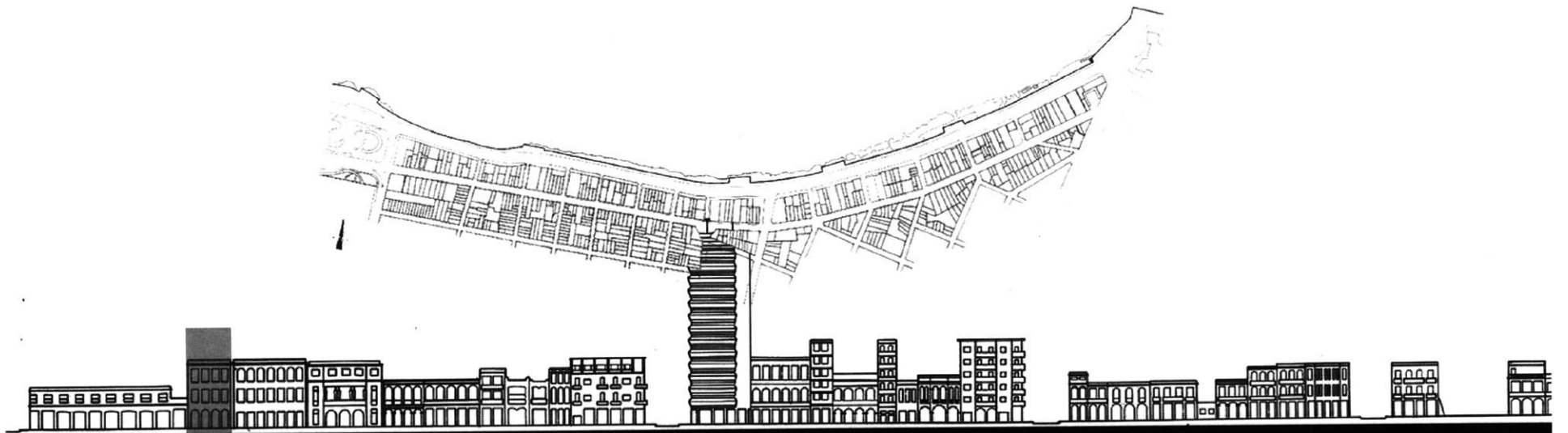


Existing Building

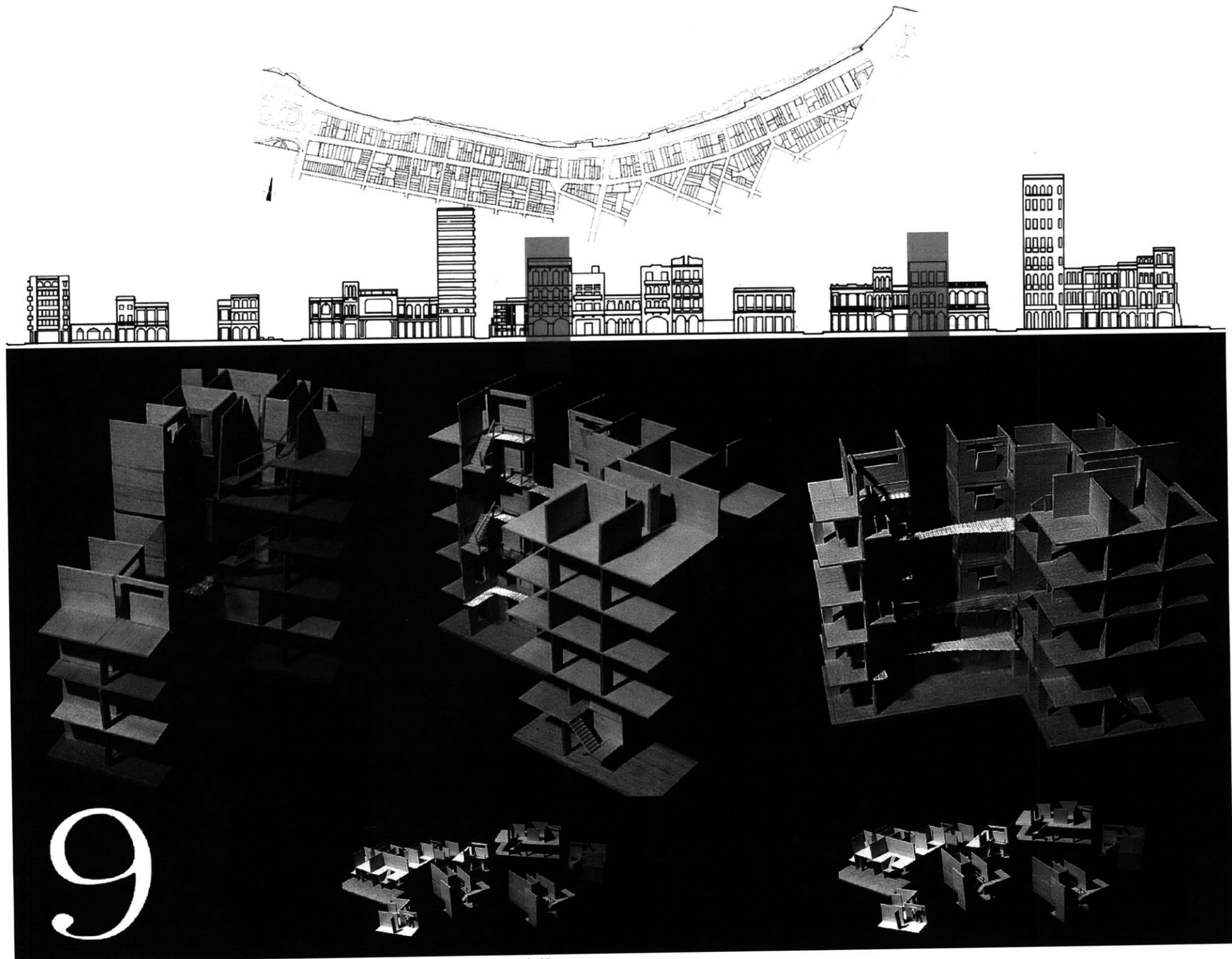


Building number 9





9



9



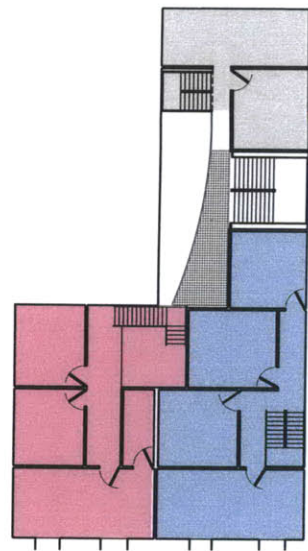
Re-inhabiting Havana

Alternative Housing Resolutions for the area of EL Malecon

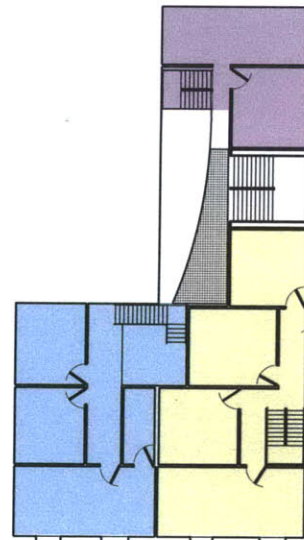
Building # 9

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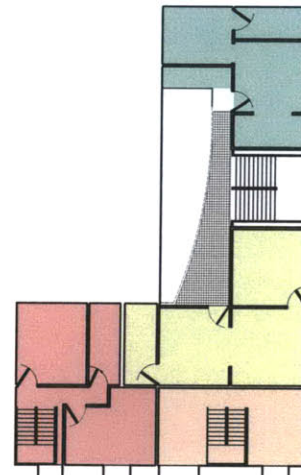
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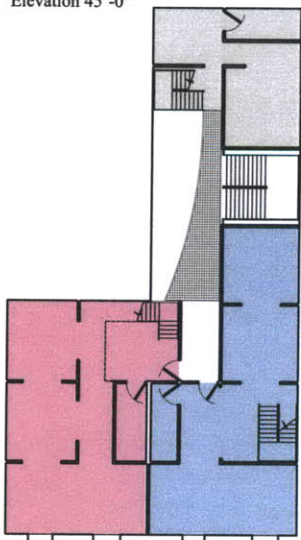
Elevation 45'-0"



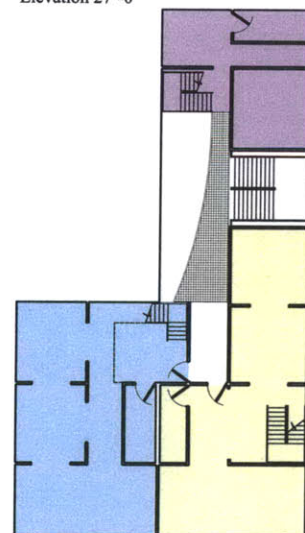
Elevation 27'-0"



Elevation 9'-0"



Elevation 36'-0"



Elevation 18'-0"

Malecon



Malecon



Elevation 0'-0"

- Apartment 1E facing interior patio 1 bedroom (small)
- Apartment 1D facing interior patio 1 bedroom
- Apartment 1B facing Malecon 2 bedroom
- Apartment 1A facing Malecon 2 bedroom
- Apartment 1C facing interior patio 1 bedroom (small)
- Apartment 2C facing interior patio 2 bedroom
- Apartment 2B facing Malecon 4 bedroom
- Apartment 2A facing Malecon 3 bedroom
- Apartment 3C facing interior patio 2 bedroom
- Apartment 3B facing Malecon 4 bedroom
- Apartment 3A facing Malecon 3 bedroom



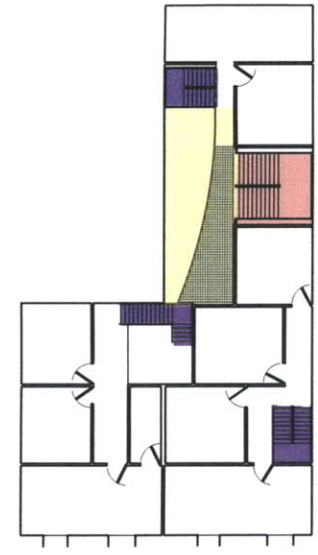
Re-inhabiting Havana

Alternative Housing Resolutions for the area of EL Malecon

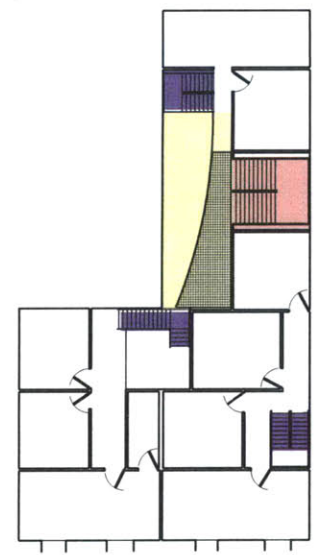
Building # 9

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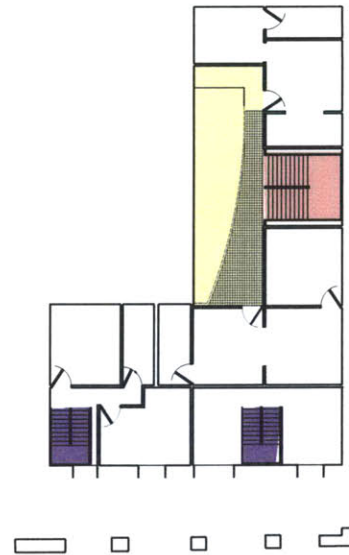
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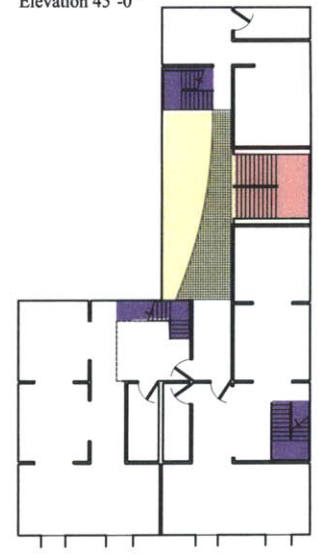
Elevation 45'-0"



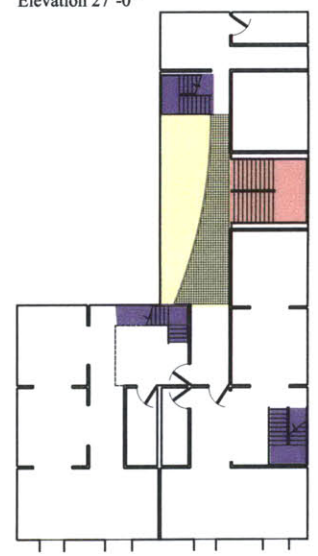
Elevation 27'-0"



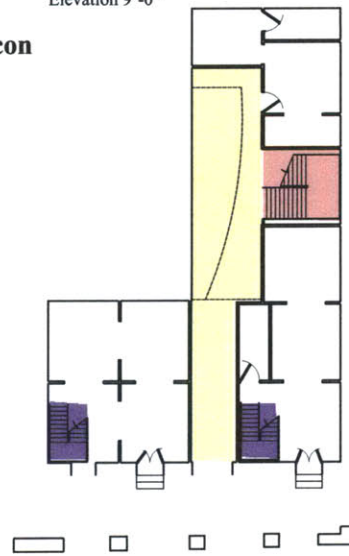
Elevation 9'-0"



Elevation 36'-0"



Elevation 18'-0"





Elevation 0'-0"

Malecon

Malecon

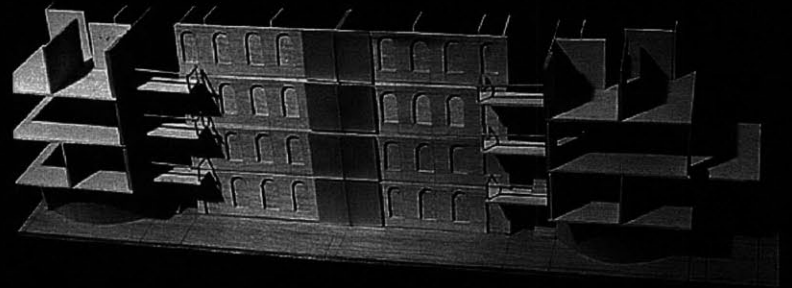
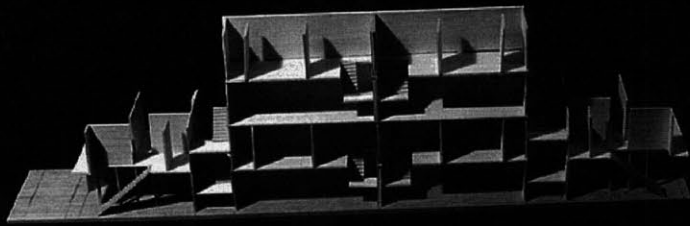
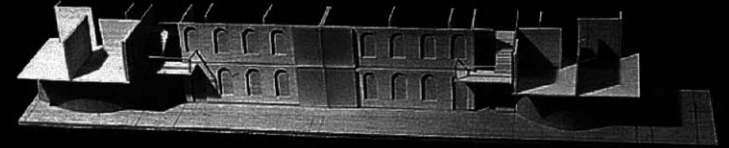
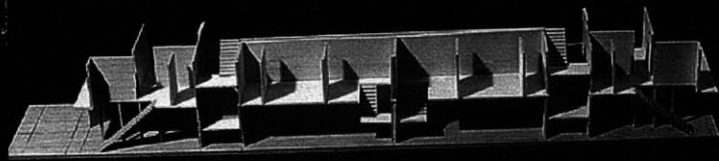
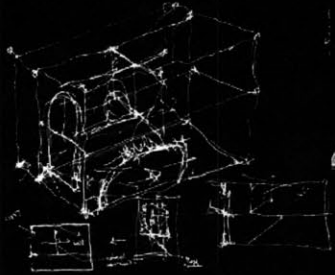
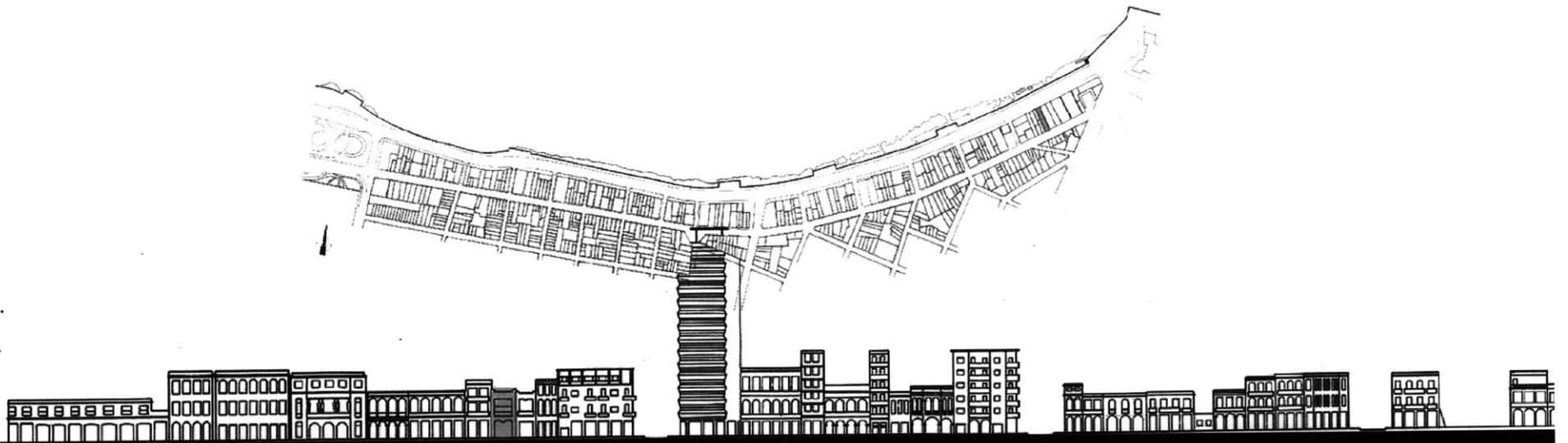
 **Public Patio**

 **Private circulation for each unit**

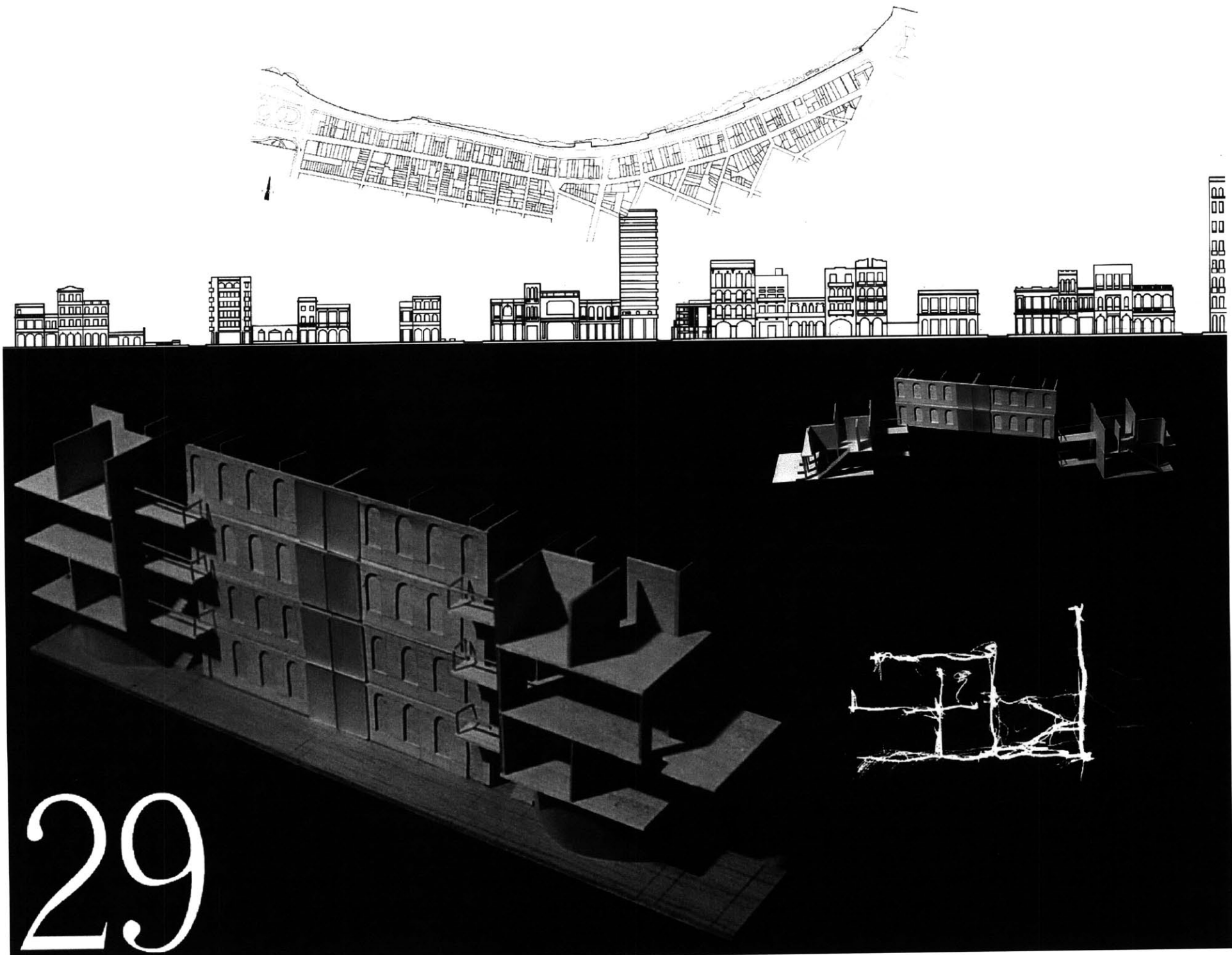
 **Public circulation from elevation 0'-0" to 18'-0" and from 18'-0" to 36'-0"**

Building number 29



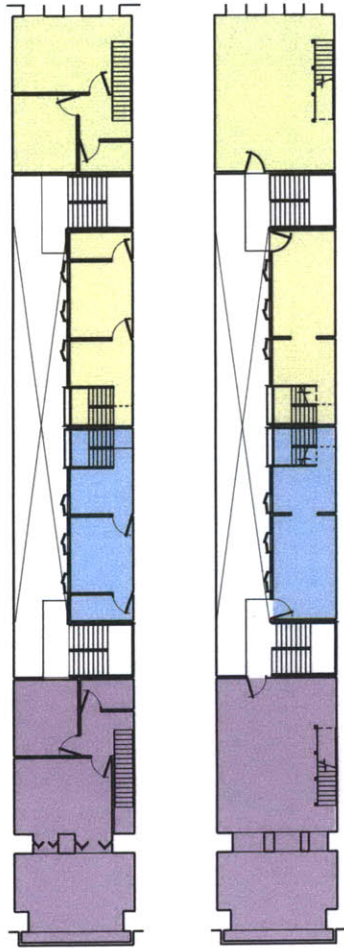


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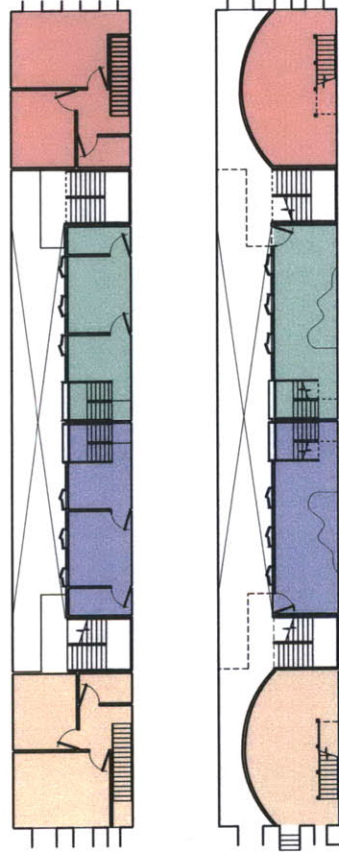
29

San Lazaro



Elevation 27'-0''

Elevation 18'-0''



Elevation 9'-0''

Elevation 0'-0''

Malecon

- Apartment 1A
facing San Lazaro
2 bedroom
- Apartment 1B
facing interior patio
1 bedroom
- Apartment 1C
facing interior patio
1 bedroom
- Apartment 1D
facing Malecon
2 bedroom
- Apartment 2A
facing San Lazaro
2 bedroom
- Apartment 2B
facing interior patio
1 bedroom
- Apartment 2C
facing interior patio
1 bedroom
- Apartment 2D
facing interior patio
2 bedroom



Re-inhabiting Havana

**Alternative Housing
Resolutions for the area
of EL Malecon**

Building # 29

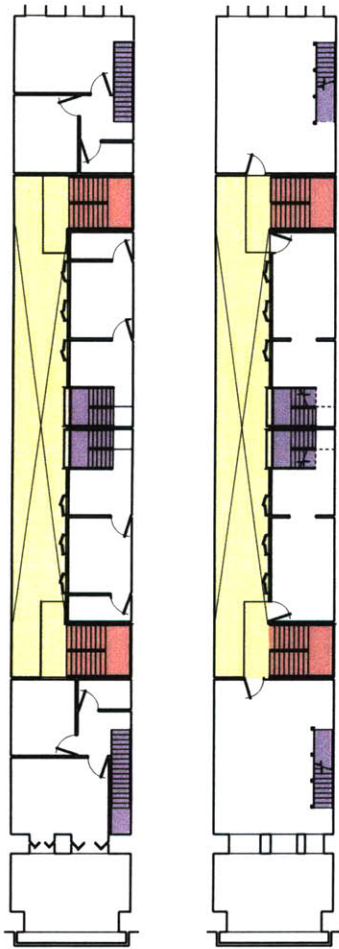
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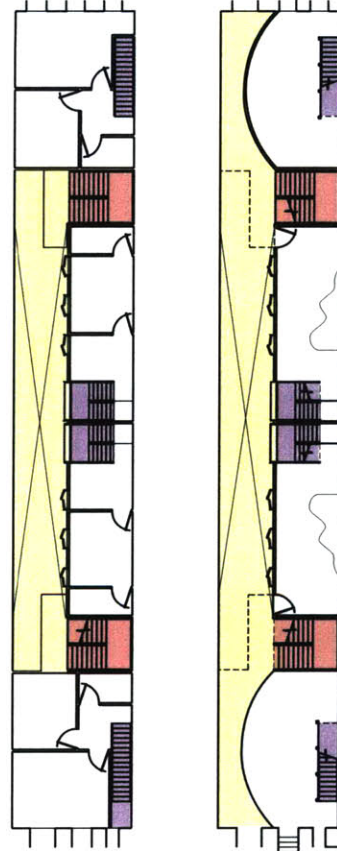


San Lazaro



Elevation 27'-0''

Elevation 18'-0''




Elevation 9'-0''

Elevation 0'-0''

 **Public Patio**

 **Private circulation for each unit**

 **Public circulation from elevation 0'-0'' to 18'-0''**

Malecon



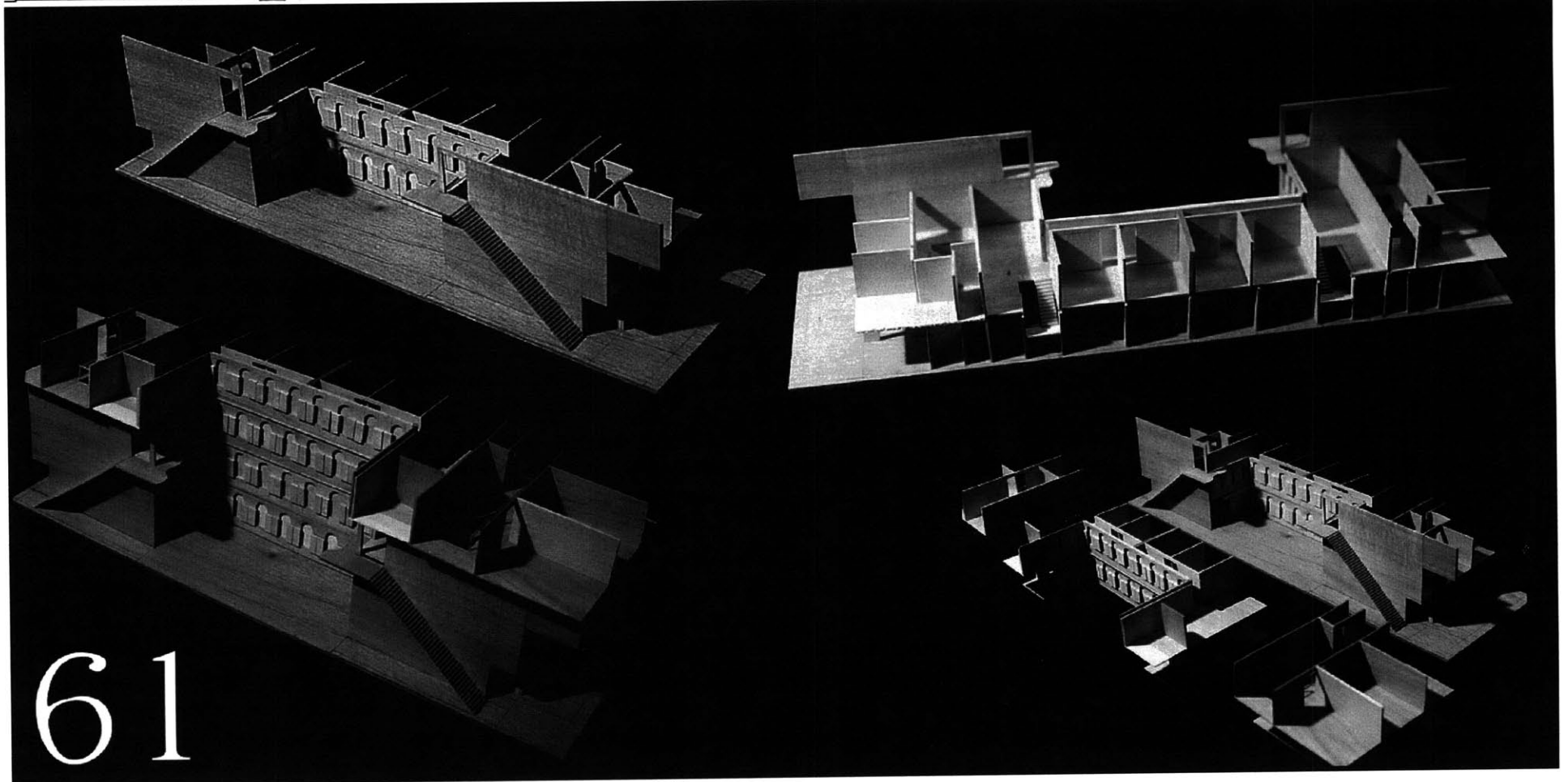
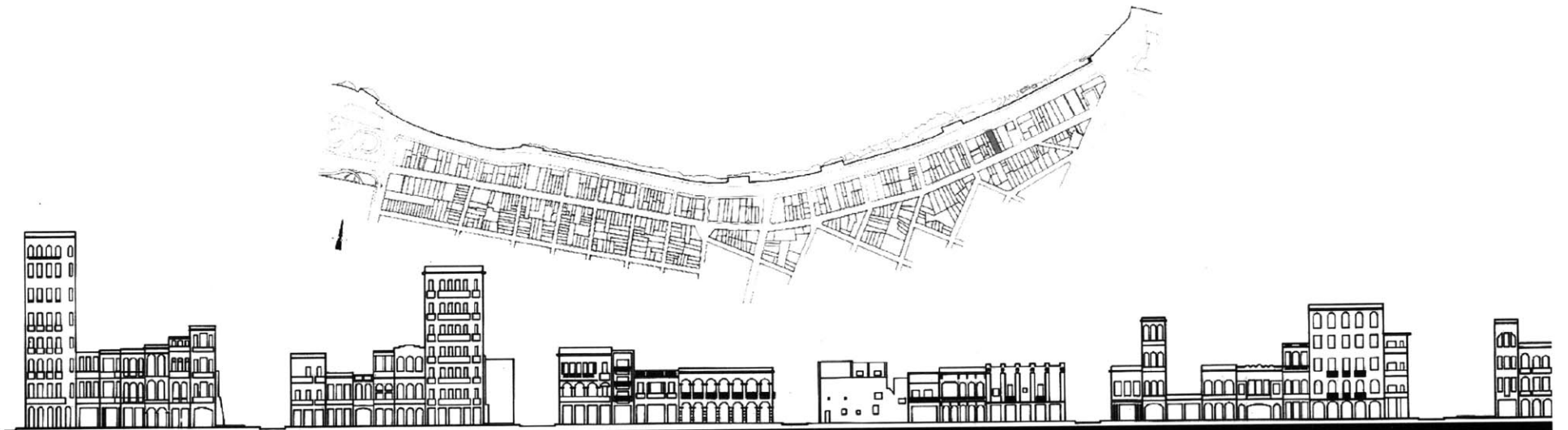
Re-inhabiting Havana

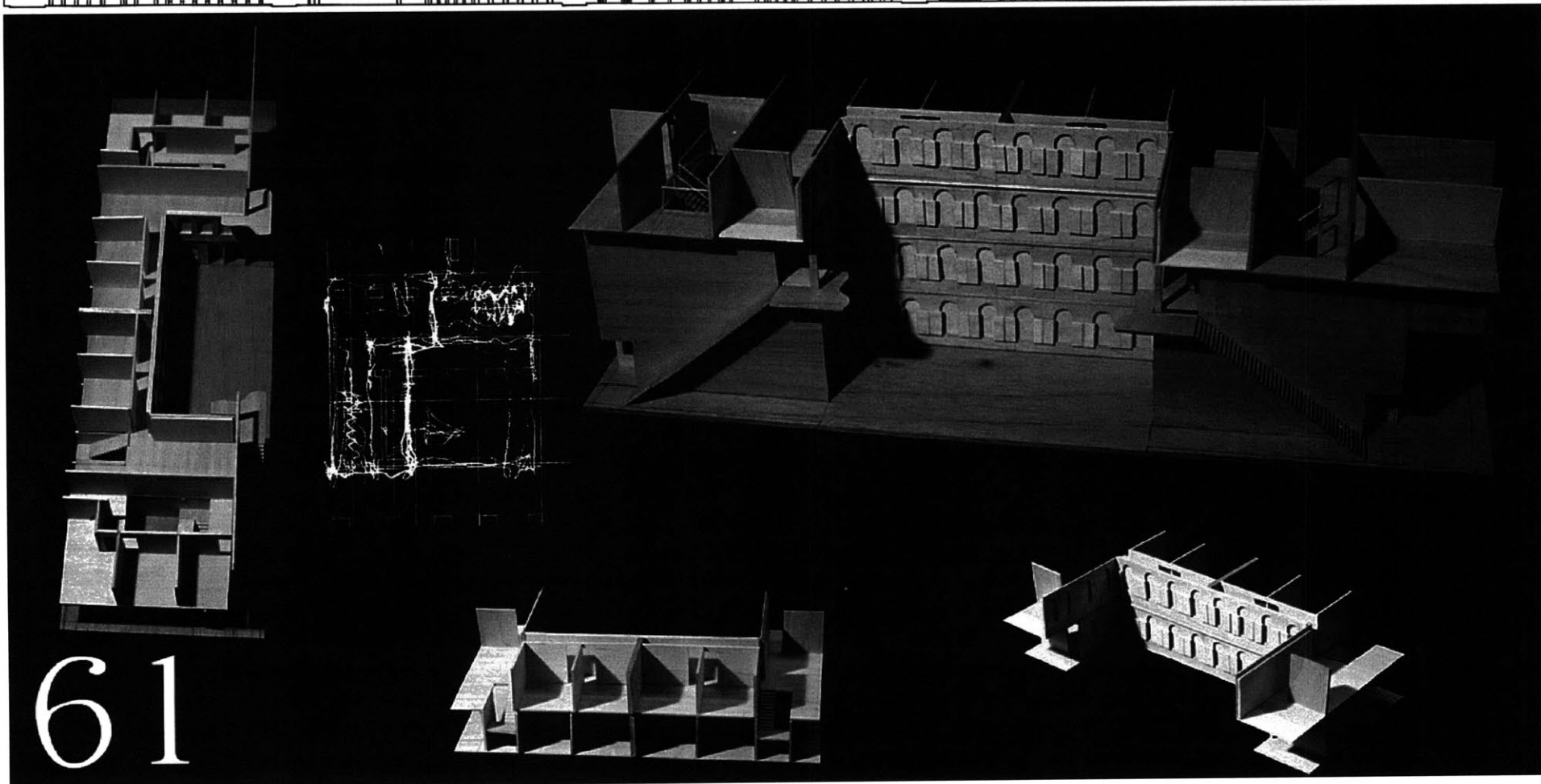
Alternative Housing Resolutions for the area of EL Malecon

Building # 29

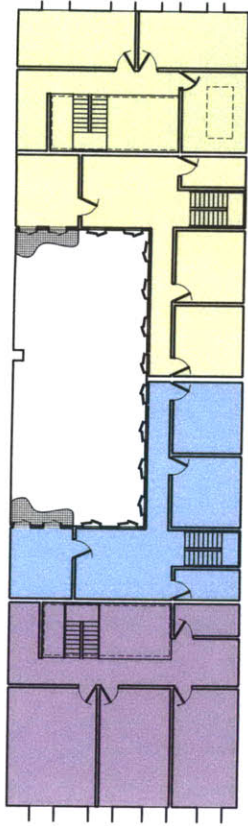
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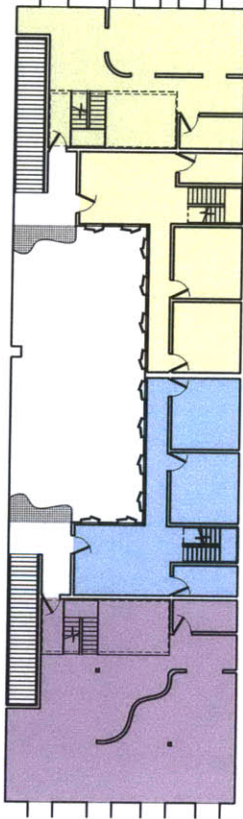




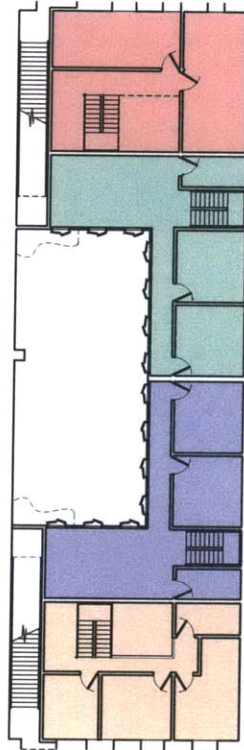
San Lazaro



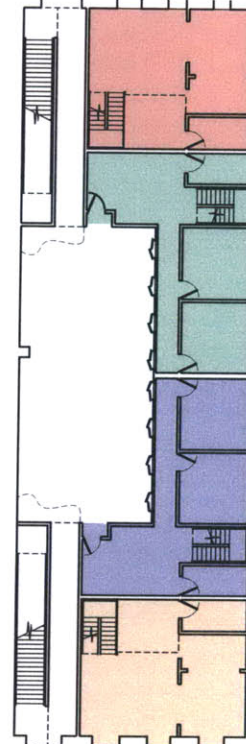
Elevation 27'-0"



Elevation 18'-0"



Elevation 9'-0"



Elevation 0'-0"

- Apartment 1A facing San Lazaro 2 bedroom
- Apartment 1B facing interior patio 2 bedroom
- Apartment 1C facing interior patio 2 bedroom
- Apartment 1D facing Malecon 3 bedroom
- Apartment 2A facing San Lazaro 3 bedroom
- Apartment 2B facing interior patio 3 bedroom
- Apartment 2C facing interior patio 3 bedroom
- Apartment 2D facing interior patio 3 bedroom

Malecon



Re-inhabiting Havana

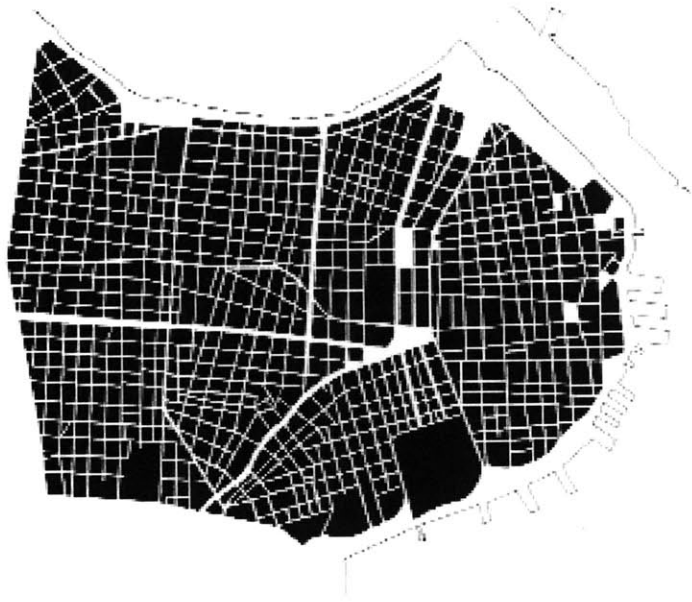
Alternative Housing Resolutions for the area of EL Malecon

Building # 61

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Conclusion



FOUR

AS the end of the millennium draws to a close, it has become common place to identify global problems that create local difficulties. The housing shortage in the historic center of Havana forced the government to implement unusual tactics to resolve the problem. Converting vacant stores into apartments only proved problematic, disrupting any possible retail activity to emerge. In dire need of space people focused their attention to their buildings for answers. In the absence of any building code enforcement, new occupants adapted their new spaces as they pleased, which many times resulted in radically changing the facade of buildings, and arbitrary replacing stained glass and other windows with bricks, drywall, or concrete blocks. At the same time, the high ceilings of the old residences made it possible for the new occupants to build a 'loft-style' mezzanine called *barbacoa* to maximize the number of occupants per dwelling (see graph in page 16). The existence of an artifact such as *la barbacoa* though at first seems problematic, it provides possible solutions. A new model can be designed to take the place of the *barbacoa*. One that is more efficient, comfortable, and better designed. This new infill system derived from observations of the built environment, (*la barbacoa*) can serve to rehabilitate and reinhabitate Havana.

Many questions are raised on this thesis. What future direction should the city take as the twenty-first century approaches? To become the living museum of the past, lacking all urban and social life as Old San Juan, or should it take the next step and evolve into a new city. A city that is more concern with the living standards of its inhabitants than a tourist agenda that can displace the people from the city center and cripple it.

Though the facades of many buildings are tired, the appearance of the *barbacoa* shows the persistence of the city and its dwellers. Community participation is necessary for a project of this nature to take place. The passage of the ‘General Housing Law of 1984’ (*Ley general de la vivienda*) enabled permanent residents of state structures to assume ownership of their units. This law was created to give incentives and a sense of belonging in order to improve the maintenance of many of Havana’s buildings.

Assessment of resources and the opportunity of a new housing infill system design according to *la barbacoa*:¹⁴

Existing characteristics	Risk if nothing is done	Opportunities of intervention
- 60% of the nations precarious housing stocks in Havana	- Further deterioration	- Better construction material/ housing
- 100,000 uninhabitable housing units, 1/2 the city’s stock is in average or poor condition	- Potential displacement of the residents through joint or foreign investment	- Preserving the city not as a museum but preserving a way of life and rehabilitating the existing housing stock

14 Table 10.1, *Havana: Two faces of the Antillean Metropolis*. Roberto Segre, Mario Coyula, and Joseph L. Scarpaci. Wiley. 1997

It is important to understand the reality of such a venture as well as the economic state of the city. Housing construction in Cuba was weakened by the difficulty of oil imports which has put Havana building industry to a halt. Oil shortages terminated any prefabricated housing production. Building efforts were therefore focused to the more deteriorated parts of Havana using local resident labor. This technique can prove efficient for the building of infill system in the Malecon. Initial funding would have to come from an outside source first. Organizations like 'La junta Andaluca' have already began rebuilding efforts by donating material and architects from Spain. Other agencies such as Habitat for Humanity or UNESCO may contribute to the constructions of the infill system in the Malecon. In 1993 the faculty of architecture at the university of Havana in collaboration with the Technical University of Hamburg conducted research on the Atares neighborhood. Their findings revealed the creativity in residents finding innovative solutions that catered to household needs.¹⁵ But what are we doing about it.

Havana remains one of the most beautiful Latin American cities whose value resides not only in its magnificent landmarks, the homogeneity of its street plan, the exuberance of its parks and the transparency of its galleries of colonnades. Because of such persistence of styles, Jorge Rigau called Havana "The City in Alchemy". Even though Havana has been gutted and left unpainted and abandoned it remains a living testimony of the many societies that inhabited and enriched it. Despite the severe crisis that plagues Havana, the city affords both culture and shelter, and will remain the concrete symbol of daily life. What the investigation of *la barbacoa* offers is an observation of the built environment and how such an observation can provide a new language of design for housing.

15 Ortega, L., et al. 1996. Barrio de Atares. In H.Harms, W. Ludeña and P. Pfeiffer, Eds, *Vivir en el centro. Vivienda e inquilinato en los barrios centricos de la metropolis de America Latina*. Hamburg-Harburg: Technische Univeritat, pg. 95-134

The city of Alchemy

Designing an infill system from *la barbacoa* helps maintain the present urban level, without changing the urban fabric which maintains a dialogue with the street and the rest of the city. The infill system does not damage the facade of any building for it is a complete interior manifestation. Only in the interior of buildings is it free to act, distributing vertical levels for the appropriation of new space. *La barbacoa* continues a rich tradition of space development in Havana, we should not ignore it but learn from it. Even if time has wounded many of its architectural jewels, and ruined structures, artifacts like the barbacoa do not always signal a culture lost, but a culture gained.

Bibliography

Habraken, N. John, *The appearance of the form: four essays on the position designing takes between people and things*. Awater press. 1985

Habraken, N. John, *Supports: An alternative to mass housing*. Praeger Publishers. 1972

Habraken, N. John. *The Uses of Levels*. Keynote address at the UNESCO Regional Seminar on Shelter. Seoul 1988

Dekker, Karel, *Supports can be less costly*. ARO Consulting. 1989

Turner, John F.C, *Housing by people: Towards autonomy in building environments*. Pantheon books. 1977

Hall, Edward T., *The Hidden Dimension*. Doubleday & Company, Inc. 1951

Hall, Edward., *Beyond Culture*. Anchor Press/Doubleday. 1976

Pawley, Martin, *Architecture versus housing*. Praeger Publishers. 1971

Ministry of housing and buildings in the Neatherlands, *Should we build and live in houses or flats ?* The Hague. 1965

Lynch, Kevin, *What time is this Place?* p.g .24-28. MIT press. 1972

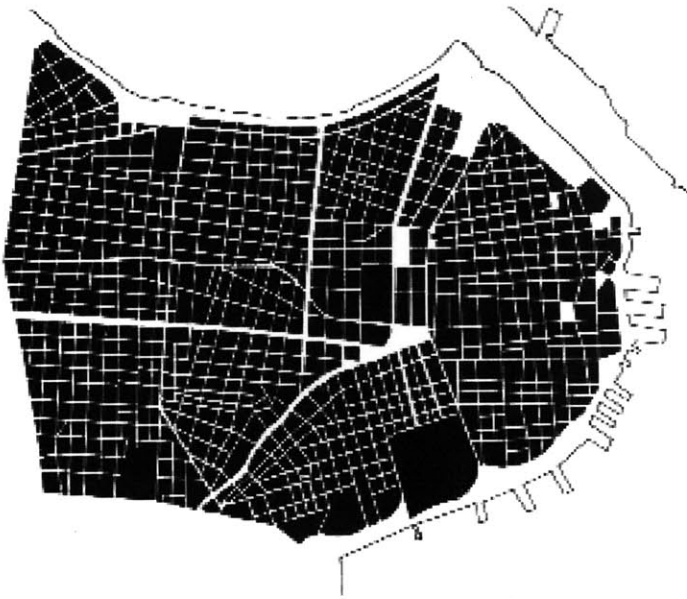
Rowe, Peter. G, *Modernity and Housing*. MIT press. 1993

Brand, Stewart., *How Buildings Learn*. Penguin 1994

Gans, Herbert J., *People and Plans: essays on urban problems and solutions*

Perez de Arce, Rodrigo, *Urban Transformations*.

Cordoliani, Elizabeth, *The ephemeral city: Two world fairs*. MIT SMarchS thesis



Bibliography

The Journal of the Decorative and Propaganda Arts, #22 "Cuba Theme Issue"

Rossi, Aldo, *The architecture of the City*- Introduction by Peter Eisenman

Rigau, J and Stout, N. 1994 *Havana*. New York: Rizzoli

Carpentier, Alejo. 1974. *Problematica de la actual novela latinoamericana*. In *Tientos y diferencias*, Havana: UNEAC.

Oficina para la Rehabilitacion del Malecon, "Diagnostic information-Presentation Journal 1996".

Leclerc, Benedicte, *Jean Claude Nicolas Forestier*.

Bastlund, Knud, *Jose Luis Sert: Architecture, city planning & urban design*.

Segre, R., Coyula M., and Scarpaci J. 1997. *Havana: Two faces of the Antillean Metropolis*.

Reynolds John S. and Lowry William P., "The garden in the building: observations of Cordoba's courtyards". Abstract paper.

Publications:

Preservation, Old Havana: restoration. Sept/Oct 1997

Architectural Record, February 1997. pg. 90-97

The New Yorker, January 26, 1998. pg. 50-61

Casabella, February 1981, year XLV. No. 466

The New City, University of Miami Journal, volume No.1

Places: A quarterly Journal of environmental Design, N.John Habraken: The control of complexity, volume 4, number 2



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