

# YARDITECTURE New Walls for Trench Town

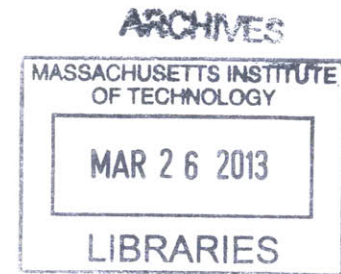
By **Christopher J Malcolm**

Bachelors of Design, Architecture  
University of Florida, 2010

Submitted to the Department of Architecture in partial fulfillment of the requirements for the degree of Master of Architecture at the Massachusetts Institute of Technology.

February 2014

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Degree of Master of Architecture.

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## Abstract

“The yard” -- the typical housing typology of low-income downtown, Jamaica where multiple households are contained within a surrounding wall. This thesis envelops itself in Trench town, Jamaica, the epicenter of what is known internationally as Jamaican culture, and to reinterpret the “yard” as a viable solution for sustainable urban growth. The housing type stems from historical times of slavery, where the 1744 Act of Jamaica was created in as a means to control slaves within large regions. This dictated that a seven-foot wall was required to be built around 6-9 shanties, leaving one entrance point as the sole access to inside the perimeter. This was intended to be a method of control, but instead became a way of cultural concealment from owners.

As a yard, Trench town has undergone several transformations between a formal and informal social/spatial construct, but all the while retaining the yard typology of a surrounding wall. During violence on the streets in the 70s, the government yards’ concrete walls have been broken in certain points, allowing a new internalized circulation, and creating a fluid labyrinthine field of not only living, but also a menagerie of working , and recreational spaces within the confines of the walls.

Instead of restricting access, the walls of the Jamaican yard acts as a membrane, a negotiator between yards. Thus, this thesis seeks to provide a new intervention for the two blocks of trench town that were destroyed in the 70s, in the forms of infrastructural walls as the essential framework for autonomous informal growth. Instead of traditional holistic social housing plans or site-and-services upgrading, this thesis seeks to provide the in-between--providing walls which enable urban growth via different typologies of walls and their relations to one another. In this way, new density, spatial intent, and overall better living conditions can be informed by providing the minimal resolution of autonomous urban structure--the quintessential wall, to be manipulated and expanded by the needs of the inhabitant.

Thesis Advisor: **Miho Mazereeuw**, Assistant Professor of Architecture & Urbanism, MIT

## Acknowledgments

*Although the following words cannot express my gratitude, I would like to sincerely thank the following who helped me with getting through thesis in one piece.*

### **My Family:**

Without the consistent support of my mother, father, and brother--thank you for the guidance, love, and care.

### **Miho:**

For bearing with my somewhat off-track ideas and obsessions, and always staying calm during times that I should be stressing. I appreciate the direction you guided me in, it got me to think outside of normal box, and my project truly benefitted from it.

### **Chris + David:**

For not only giving me the chance to meet the best contacts ever in Jamaica, but also making new friends. The research, experience, and fun I had while being down there with you guys is indispensable.

### **Shrimp:**

For getting me initially interested in housing and being an invaluable resource. We had some good times in Fiji and thesis. Although you hate architects, hopefully I made a good dent in that impression.

### **My friends:**

So many its difficult to name you all. To Li Huang, Jessica Lee ,the best thesis butt mates ever. Nick Polansky, Cecilia Ho, Clay Anderson, Alex Marshall, Neil Legband...we have had fun times at this crazy school. Need I say more?

Julian, Laura, and Alex Atwood, thank you for helping out in the bitter end with the model. I actually think it came out pretty dope!

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Thank you all.

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# Chapter 01

## **Introduction**

### The Informal / Formal Debate

This thesis first began with an interest in enveloping itself the realm of architecture built by non-architects i.e. informal architecture. In a time where urbanization and concentrated living conditions are becoming the majority, and 60% of housing development is being built informally, we as architects have a responsibility to reevaluate our roles as formally trained builders. Building is happening regardless of trained professionals being involved, so then, what is a professionals contribution to making aforementioned building more structurally sound, more organized, and more defined as a construct?



## The formal / Informal Debate

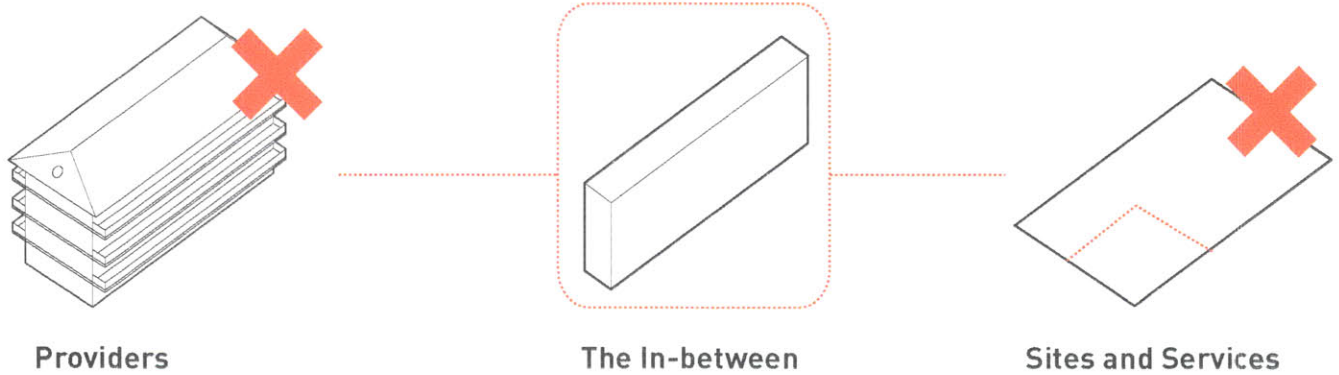
Many housing projects and schemes over time have been done to alleviate the housing crisis many parts of the world face, but an issue of control and flexibility is always an issue. All inclusive mass housing projects tend to be quite costly, slow to build, and often not considerate of that specific culture's ways of living or sharing space. The architect and urban planners have total control, which often only temporarily solves housing for a chosen few, leaving other inhabitants to fend for themselves further outside of the developed area. On the other hand, projects that merely "formalize" the site and services, i.e. site and services projects, exhibit problems on the other side of the spectrum. These projects tend to bring squatter / informalized developments up to code by providing proper lot distributions, water/waste services, electrical amenities, roads, etc. This method becomes cost effective due to its flexibility--the housing dwellings are built by inhabitants themselves, alleviating building costs and focusing on infrastructure. While it has benefits, the downside is the overall community's fabric does not retain a rigid framework for sustainable growth--in essence the control is slightly too loose and not enough of a logistical framework. Thus similar problems that occur within informal developments such as a lack of cohesiveness in building strategies, poor structural integrity, and etc can procreate in site and services projects. This strategy tends to give a majority of control to the inhabitants, leaving architects mostly out of the picture.

So the question then becomes, is there a middle ground to low-income development? One that does not give full control to architect nor inhabitant, but is a hybrid growth strategy? Can the architect not provide a full housing solution, but perhaps a housing artifact..a fragment in which can be used in a variety of ways and can be reinterpreted by inhabitants by not limiting or being fully open, but instead informing certain strategies. This thesis looks at this hybrid strategy as a potential solution for proliferating informal building by providing a supporting fragment of architecture, in this case the wall.

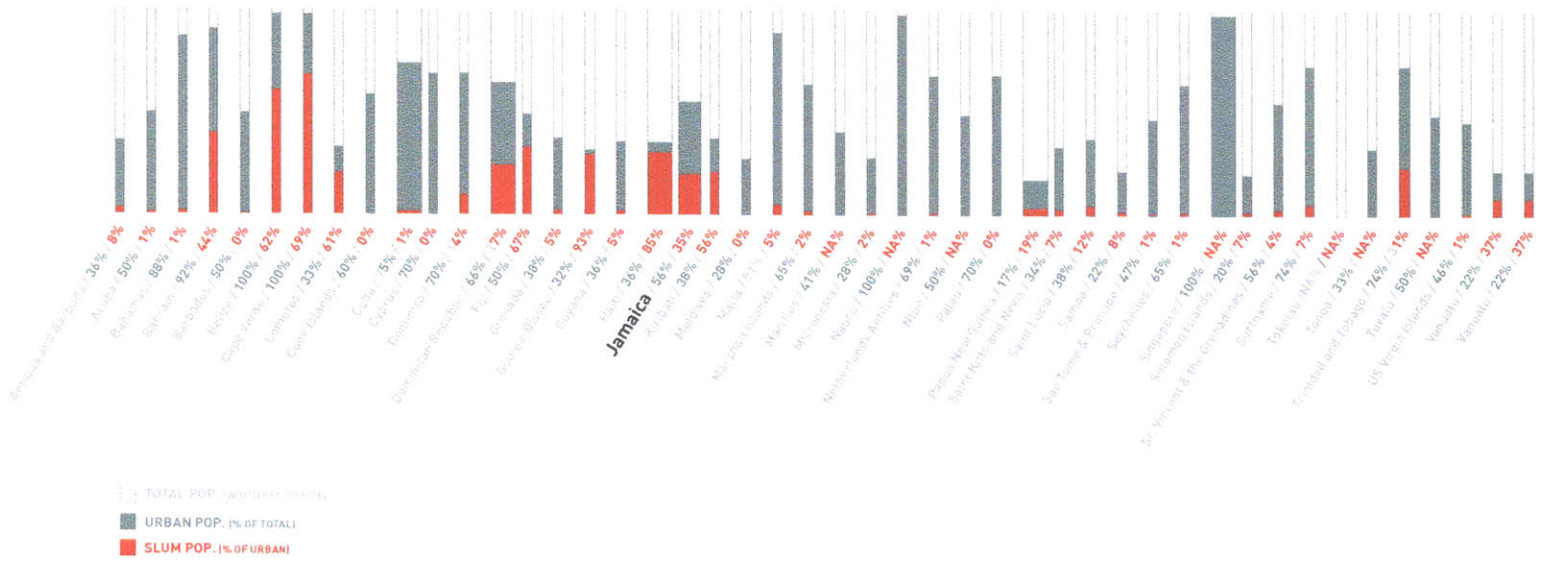
In contemporary architecture, many have denounced the necessity of the wall--deeming its use unnecessary. Corbusier's Domino epitomizing the ideology of the modern movement, where walls simply become programmatic dividers rather than the quintessential columns and slabs of the building. But the wall, especially in developing countries become the most important foundation of defining one's ownership of an area. Privacy, boundary, deliberation can be seen as the first , most decisive step in the building process. Before anything is built , a wall is almost always built around the perimeter--both in informal and formal construction processes. This thesis sees the wall then as the most essential, for its ability to define space, leaving practically all other architectural fragments dispensable.



# Support Types



Conventional support types are either too much, money and time-wise, or too little, lacking enough rigidity to produce an efficient growth model. This thesis proposes a middle solution, providing architectural artifacts as a framework.



# Currently 60% of urbanism is built informally.

Right now in Jamaica 53% of the population live in the urban metropolitan area, and 32% of this population is considered slums. The slum population globally is expected to double by 2020 and triple by 2050. Thus housing becomes one of the most important topics that architects today face, and what their role is in facilitating a sustainable urban growth by non-architects.

Small Island Developing States (SIDS) are low-lying coastal countries that suffer from growing populations, limited resources, remoteness, and susceptibility of natural disasters. Because of this relative to their small size, there is little to no opportunity to create economies of scale. Because of this Slums are highly prevalent in these areas of the world, and the formal / informal divide becomes extremely concentrated with seemingly no ability to address the issues of urban population growth, security, density, and economic prosperity.



**WELCOME**

**TO THE YARDS**

# TRENCHTOWN

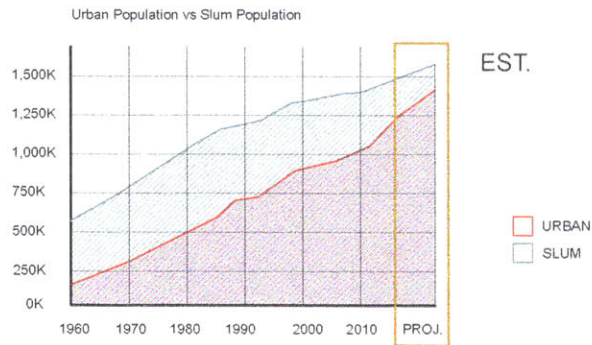


## The Area of Focus

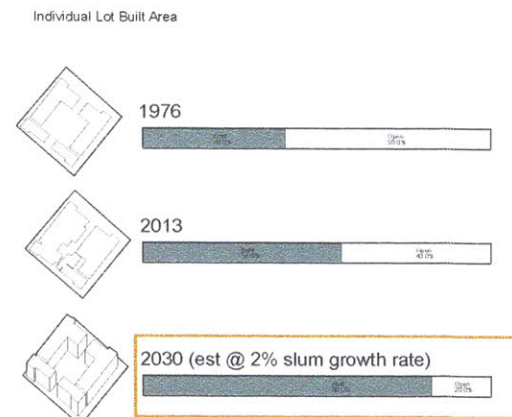
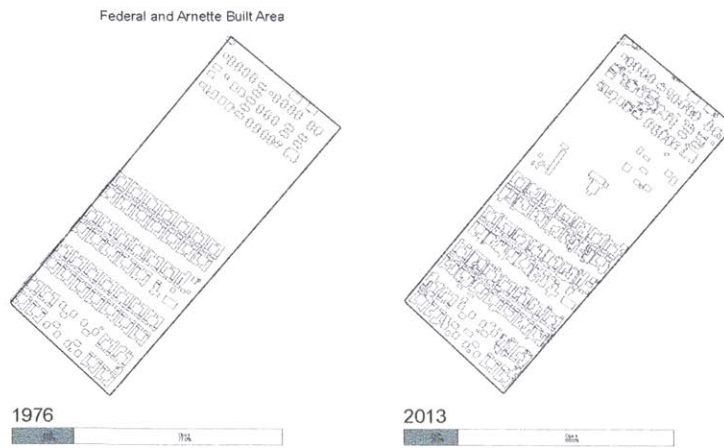
Much informal research and development has been done in large land-locked areas such as China, South and Central America, Africa, and more. This tends to occur where a city center is in a mode of extreme prosperity or growth, and thus the informal sector peripherally becomes a focus for the government or architectural investigations. But in this thesis, the urbanization of island states became the focus, more specifically Kingston, Jamaica, for they are often overlooked as urban centers or in need of investigation unless a natural disaster or an extreme industrial boom occurs. The fact that Jamaica has one of the largest slum populations living in urban areas (and growing), has a long history of formal/informal transitions, is prone to earthquakes and hurricanes, and is looking at updating its building code (which hasn't occurred in over a century) makes it a prime candidate for a new housing solution prototype. Furthermore, it is often overlooked due to its reputation as a tourist hot spot in the northern part of the island. The northern resorts cannot be more segregated from its southern urban counterpart, Kingston.

Kingston's "yards", the main areas of the city where low-income inhabitants reside, are growing and the demand for more housing, that can be developed quickly, safely, and more dense is necessary.

Small Island Developing States (SIDS) are low-lying coastal countries that suffer from growing populations, limited resources, remoteness, and susceptibility of natural disasters. Because of this relative to their small size, there is little to no opportunity to create economies of scale. Because of this Slums are highly prevalent in these areas of the world, and the formal / informal divide becomes extremely concentrated with seemingly no ability to address the issues of urban population growth, security, density, and economic prosperity. Kingston, Jamaica thus becomes a prime case study for investigation of how to hybridize informal / formal housing typologies because it's formation is a result of several socio-political-economic events, specifically furthering an existing segregated culture.



Slum Population is increasing faster than the total urban population, indicating a need for better low-income housing strategies.

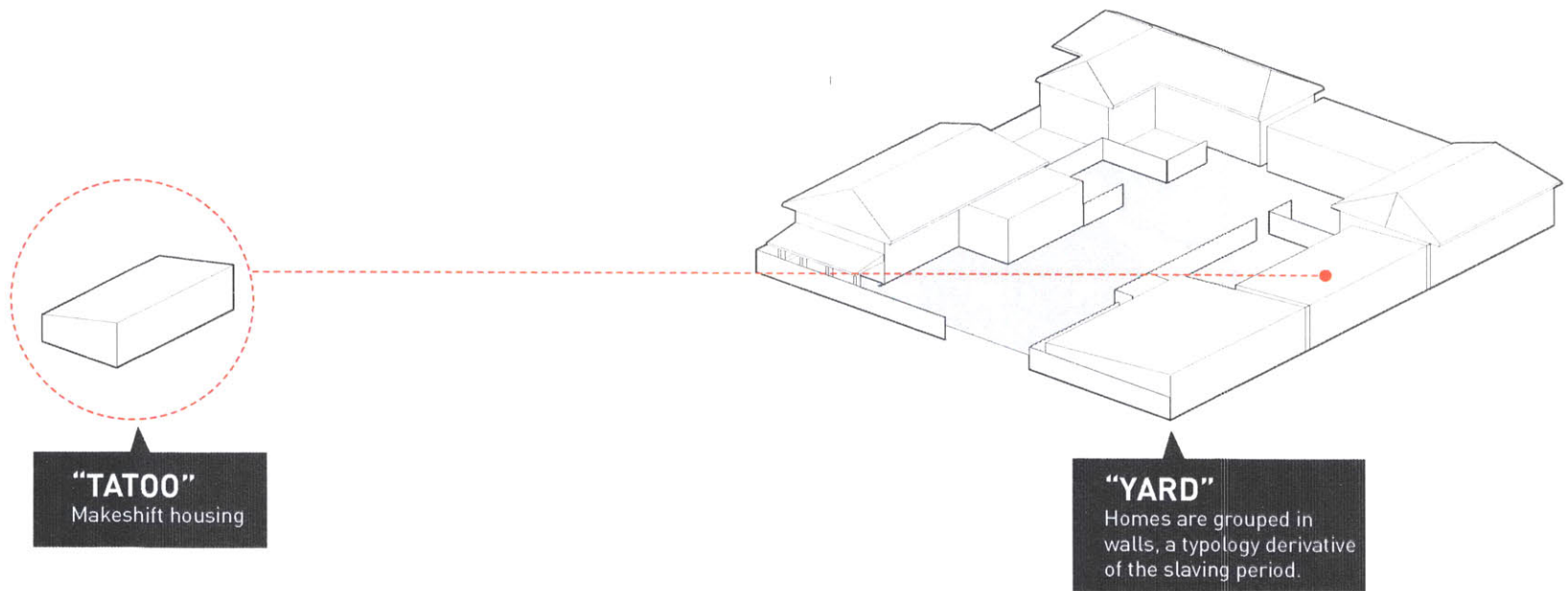


## The Yard

One of the most interesting conditions found in Kingston is the “yard” typology. “The yard” is the typical housing typology found in the low-income areas of downtown Kingston. This stems from historical times of slavery, where the 1744 Act of Jamaica was created in order to control slaves. It dictated, for example, that each slave shanty, a small one-room hut of unfinished wood and palm fronds...only have one door and one window. This door had to face the home of the plantation owner, which was known as the Great house. As a plantation grew, the number of shanties grew and the need to control one opening per each became too much. Thus, seven-foot walls were built around 6-9 shanties. And then, one opening again was applied to this wall, which would face the Great House .

This was intended to be a method of control, but instead became a way of cultural concealment from owners. Culture and history was able to be shared and passed down through this newly created “yard”. This typology in fact continues to shape the Kingston urban fabric today, where walls around a multitude of homes, have proliferated in the downtown area.





Generally 6-12 families live within a single yard. In an informal yard, Each family shares a single room construct made of make-shift materials, with rough dimensions of 10' x 10' x 10'. Back in the past, these rooms were known as "Tatoos".

# The Economic Decline





As on sugar estates, cry for independence

1951 Hurricane Charlie causes devastating results. Industrial housing development begins. Concrete city becomes preferred choice.

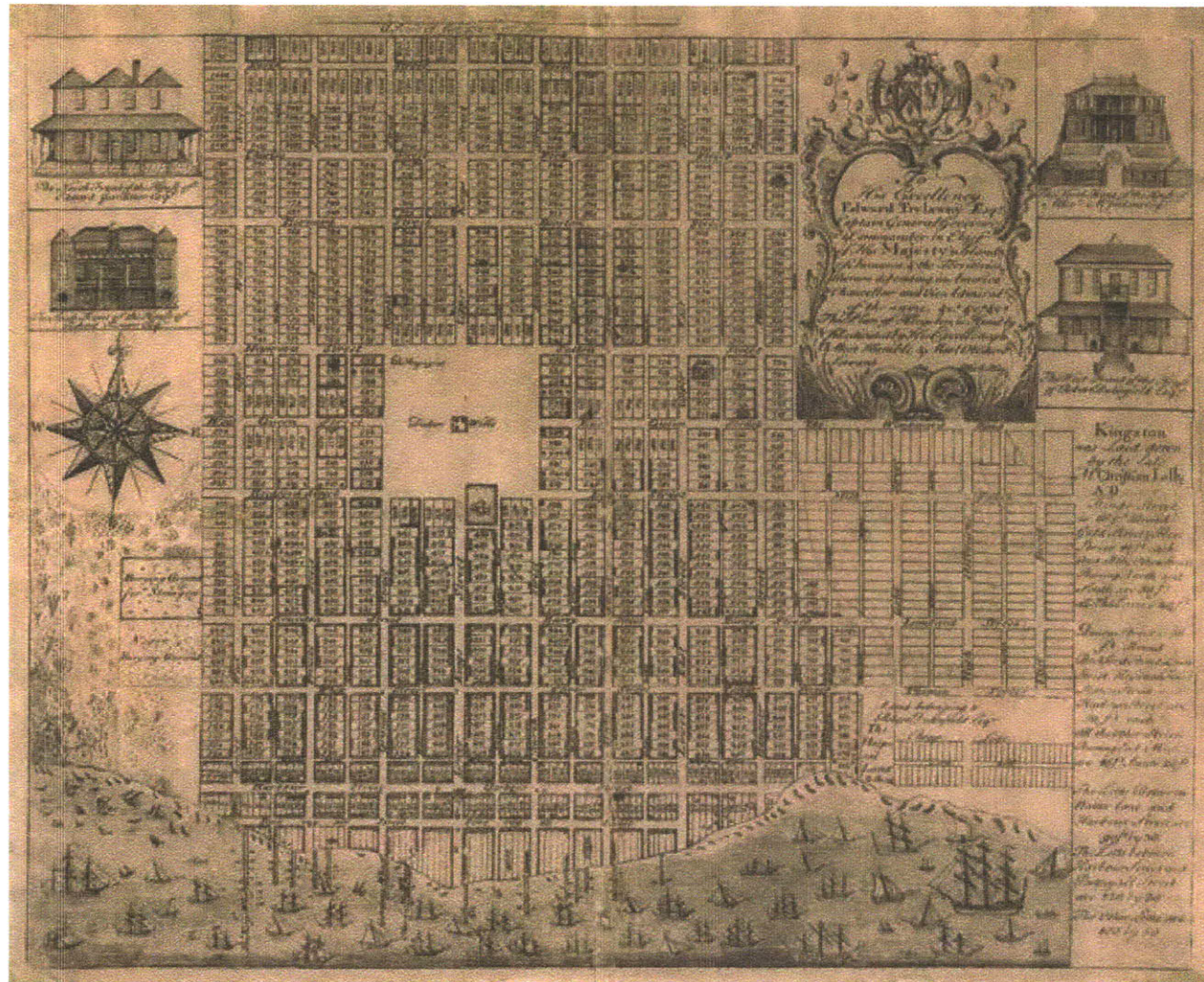
1962 Jamaican becomes independent and economy flourished.

1970 Oil Crisis. Prices Peak, and dependent industry fails.

1975 Economy implodes. Professionals emigrate north to New Kingston and to further suburbs.

INDEPENDENCE

ECONOMIC COLLAPSE



Original Colonial Plan of Kingston Jamaica.

20 Yarditecture: New Walls For Trench Town

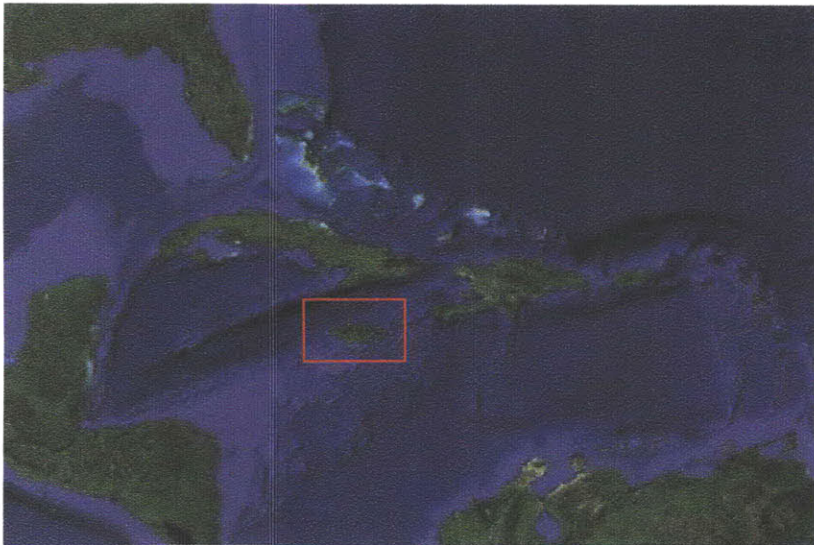
## History

Christopher Columbus claimed the land for Spain in 1494. It became a refuge for Jews who were expelled from France, and those who also had been expelled from Spain. Later on, the British captured Jamaica in 1644. As such, Jamaica has a rich mixture of European influences, but also a long period of slavery which has significant impact on the architectural vernacular. Slave cabins were constructed to only have one door and face the slave owner. When total amount of cabins exceeded 6-9, a wall was created around the cabins to create more control. In 1833 Slavery was abolished, but the enclosed shanty town typology continued to proliferate. In 1907, a major earthquake was completely detrimental to downtown Kingston. This directly influenced the creation of a new building act that introduced imported concrete as a more suitable building material. Buildings were also restricted to be built under 60 ft.

In the 40s - 50s, Pioneer Industry laws encouraged industrial development, and many began to flock to Kingston for jobs and urban living. Bauxite (Aluminum) Industry was quite economically beneficial to Jamaica in the 60s to 70s. Also the use of concrete increased from 20% of buildings to 80% by 1970, both formally and informally. Unfortunately economic turmoil struck in 1974 when the oil import bill increased 172%, more than quadrupling in price. The Bauxite industry was quite oil intensive but also one of the main sources of income for Jamaica at the time. This and poor political governing by the PNP (People's national party), has caused Jamaica to implode economically. Any remaining artisans and workmen move out of the country or to north of Kingston where more service oriented opportunities were available. Today Downtown Kingston is still in the subsequent economic debacle, with many vacant lots and sporadic densities of squatters.

Despite the current circumstances, density in the yards still continue to grow, but with a lack of current jobs, a mixed use solution may help to reinvent the yard, creating jobs via micro-economies that already exist in the fabric.

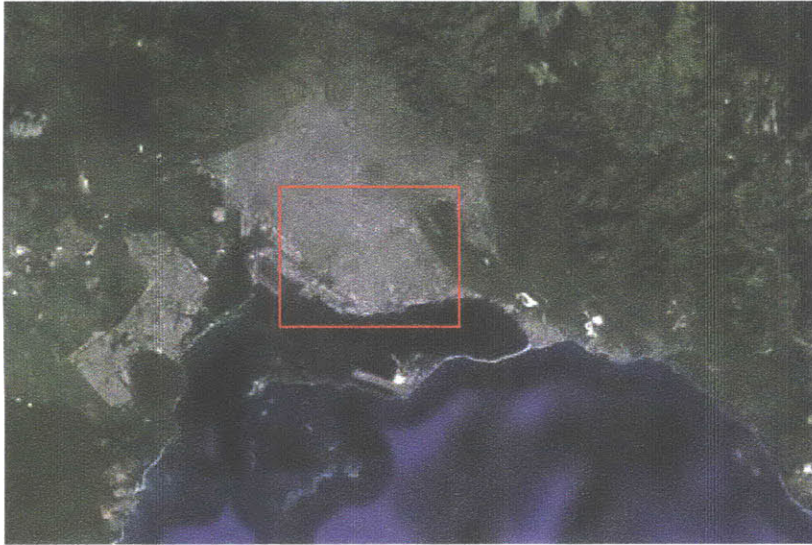
# Georeference



Jamaica



St. Andrew Parish



Kingston



Trench Town

## The “Great Divide”



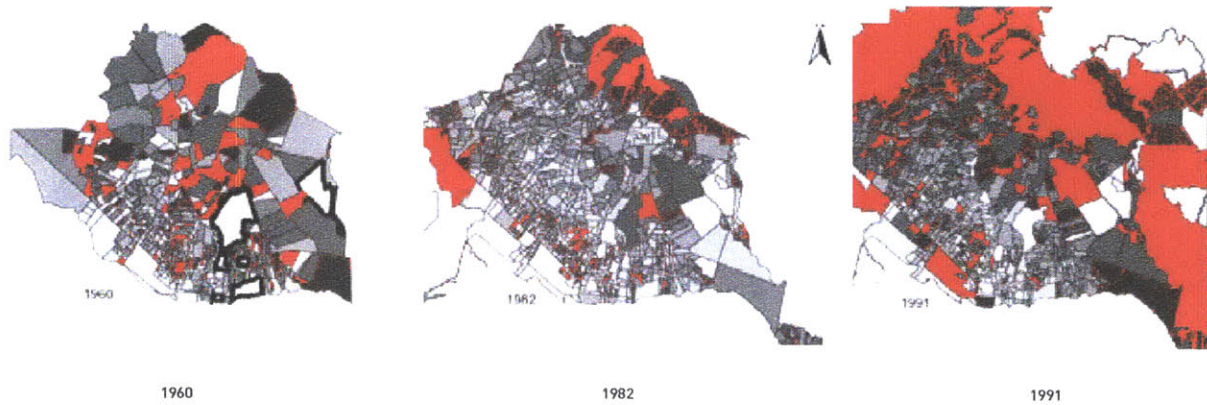
New Kingston, Jamaica



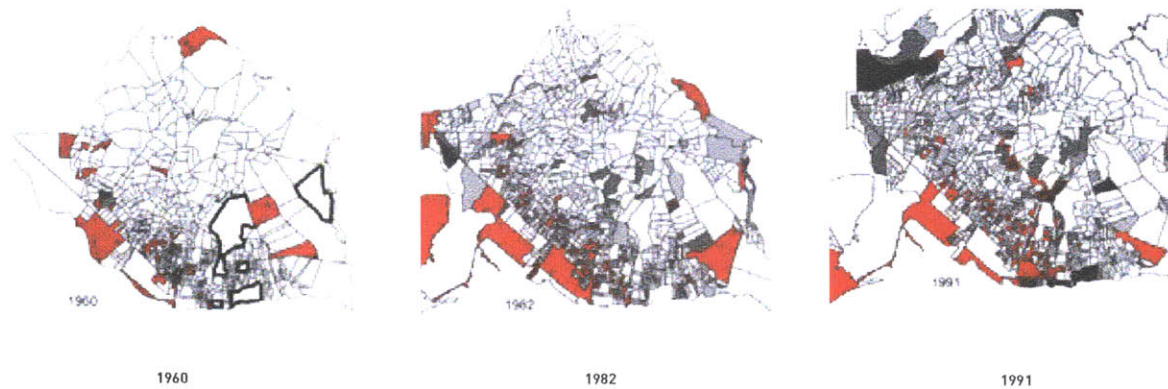
Yards of Downtown Kingston, Jamaica



KINGSTON, JAMAICA DWELLER OWNED HOUSING

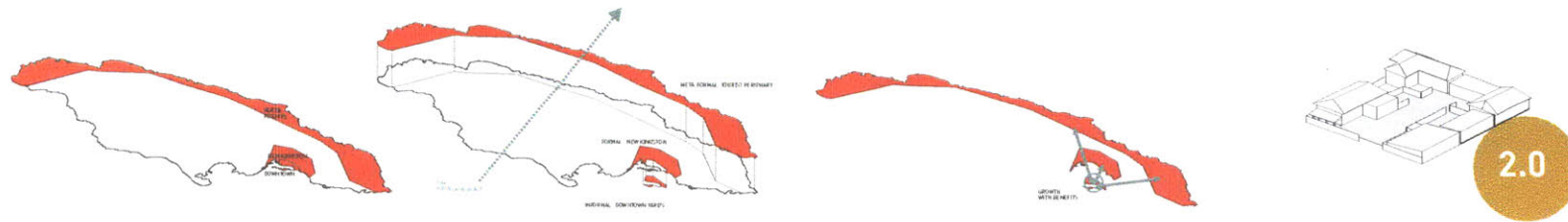


KINGSTON, JAMAICA SQUATTED LAND



Due to the violence and economic decline of the 70s, Kingston transitioned from a single functioning urban center to what can now be called the great divide-- The mass exodus of the high earning professionals to the north in New Kingston and surrounding Suburbs, leaving the downtown and surrounding communities to low income inhabitants. Furthermore high end luxurious tourism on in the northern island further segregate cultural roots by polar opposite locations. Post-political warfare, a stigmatism is still left on the downtown area, and this + economic depression leaves it to degradation.

# It's time for a new kind of yard.



A proposal of a new housing typology to not only rethink low-income housing, but also to contextualize Jamaican culture back to its roots.

## Yard 2.0

This thesis proposes to look at the yard as a typology that can be relooked at for future housing prototypes of Jamaica. It has had a long history on the island, inside the walls of the yards, Jamaican culture has been cultivated into what it is today. The communal aspect, internalization, and unique morphology makes it special to Kingston, and should be considered an essential part of Jamaican history. Much of the new urban fabric and architecture being built in New Kingston is of a suburban sprawling character. The yards and downtown Kingston have a historical significance as well as an urban fabric that was once dense and urban-- a condition that is the current trend worldwide. It makes sense to return to this type of development, considering the framework already exists, it is inherently of the culture, and provides possibilities of downtown rejuvenation.

Chapter 02

**Trenttown:**

**Extrapolating Parameters**

### Trenchtown as a focus

Trench town is one of many areas in Kingston home to both formal and informal yards. For the site of this thesis, This area was chosen due to its historical past, being an area that has transitioned from informal area to formal numerous times...currently a hybrid of the two. But also, it is also home to an unprecedented number of cultural / political / and musical influences to forming not only Jamaican culture but worldwide as well. While being in Jamaica, the fact that the government yards was a significant area was clear, making it the most culturally significant yard.

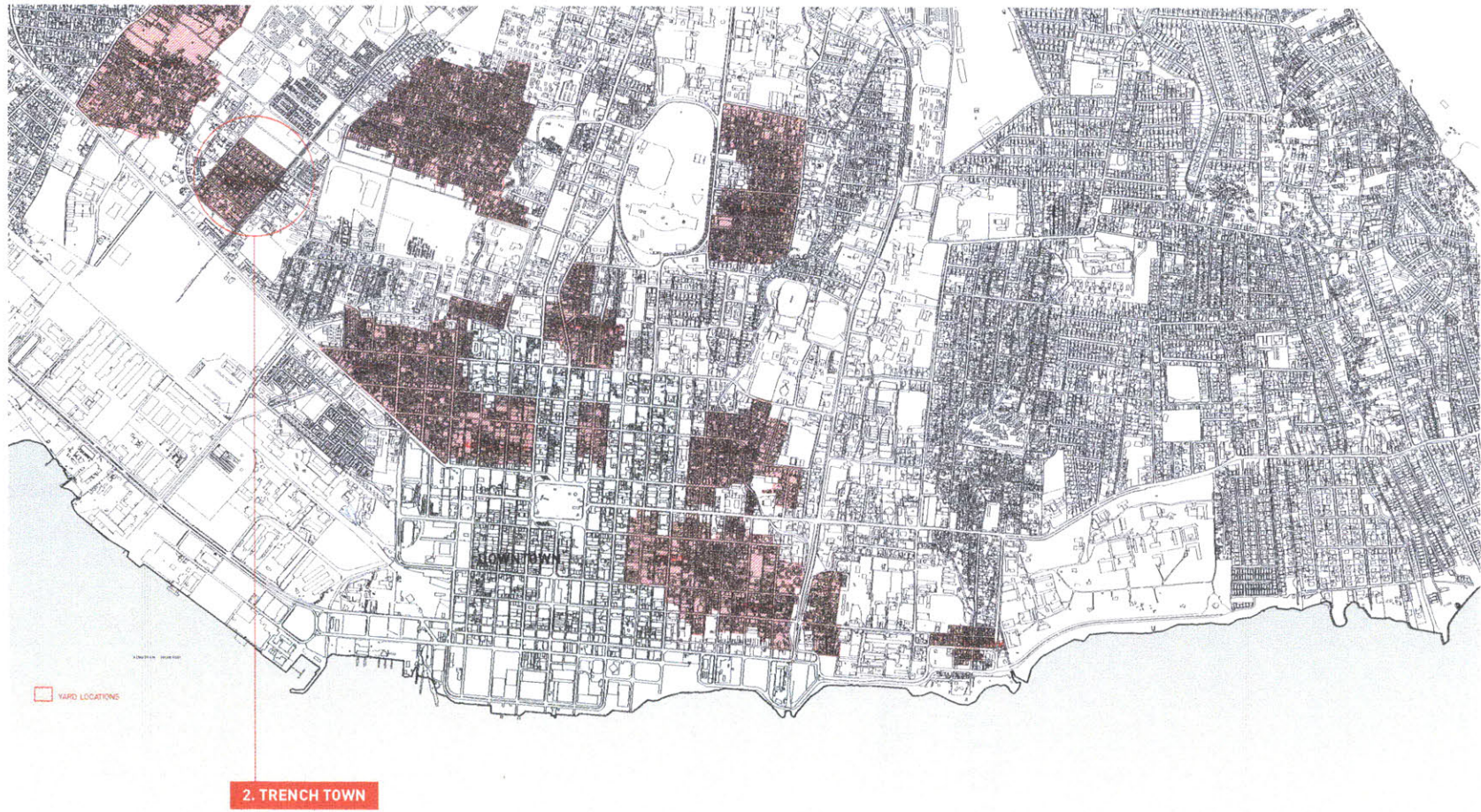
To propose a strategy, one must really understand the significant aspects of the yard. What is essential in definition, and what is not--but also how it can be improved via new insertions, exaggerated conditions, and informed restrictions. This section looks at the types, organizations, and programmatic breakdowns within the yards of trench town...the serve as a backbone for the development of design parameters for the architectural fragment proposed.

From the violence of the 70s, the blocks of 6th and 7th street were burned down, and can be seen as a location for the new housing typology.



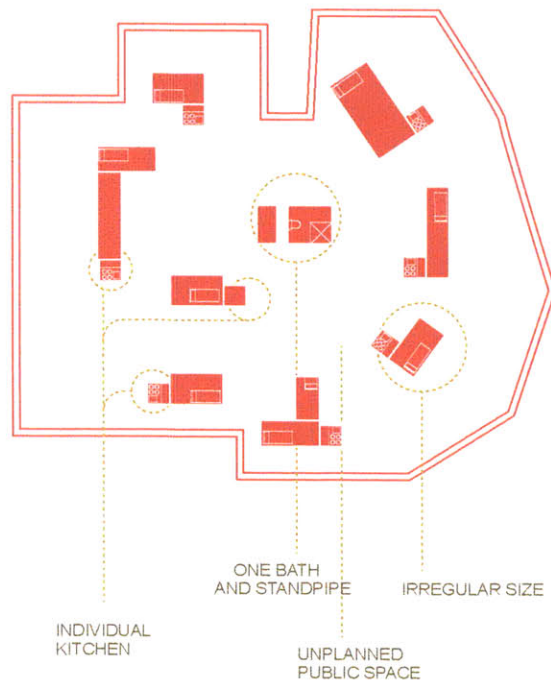
The government Yards of trench town are home to many of Jamaica's most widely known musicians, political leaders, and sports stars. It is extremely significant culturally as well as historically.



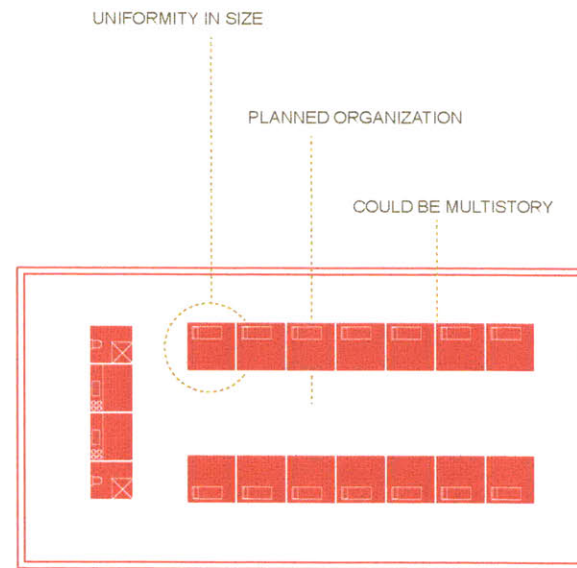


Map depicting the Yards of Downtown, and highlighted is location of trench town.

### TENANT YARD



### GOVERNMENT YARD



Two types of Yards, one generally informal (tenant) and one which is rented from the government.



## Types and Distributions

Erna Brodber's *A study of Yards in the City of Kingston* (1975) is one of the most in-depth case studies done on Kingston's Yards, a deep analysis into the spatial and social structure in which they make up. One major contribution that is outlined, is the difference between a Tenant and Government Yard. The diagram to the left is based off their original sketch.

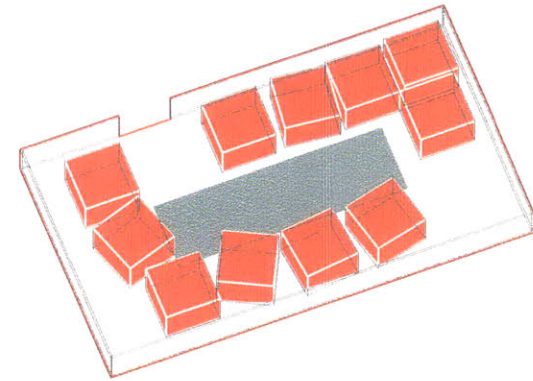
In essence, the government yard is a formal adaptation of the original informal construct. It is generally planned, uniform in room size, rented from the government, and generally shared amenities. This differs from a tenant yard, which is generally informal, is owned by a landlord or self organized, and not linear or aligned in any specific fashion.

Trench town is an exemplary example of both these types, and has gone through multiple transitions between the two.

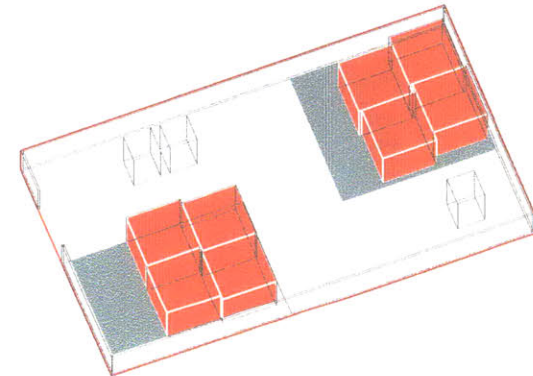
### Organization within the yard

Christopher Whymys-Stone, a Jamaican Architect outlines in his Masters thesis *A Residential Arrangement* the spatial distribution of homes within the confines of the yards. He defines three organizational types which can be seen here as Enclosure, Cluster, and Row type. What is evident in his findings, is the complexities of open space, how there is a certain degree of open space that is semi-private, and an amount that is more communal. For the new typology, a certain amount of flexibility and consideration of individualized outdoor space is necessary, considering most living is done outdoors.

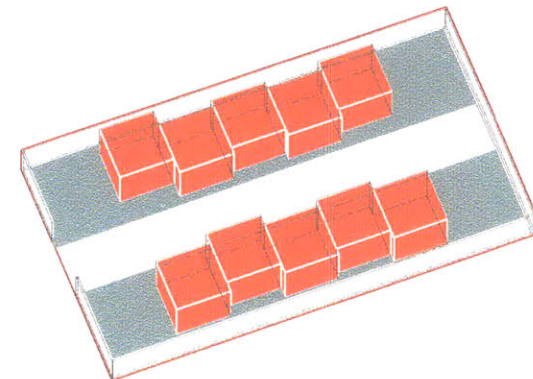
ENCLOSURE TYPE



CLUSTER TYPE

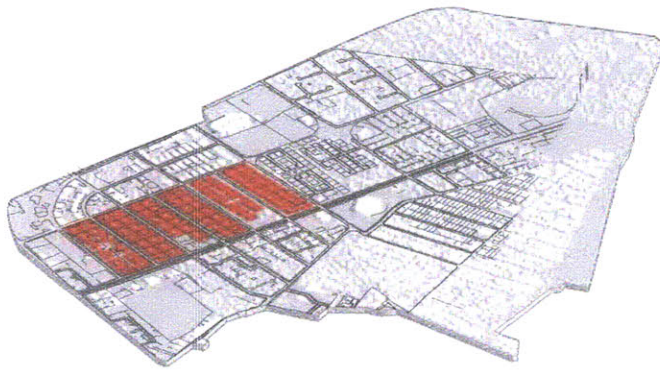


ROW TYPE



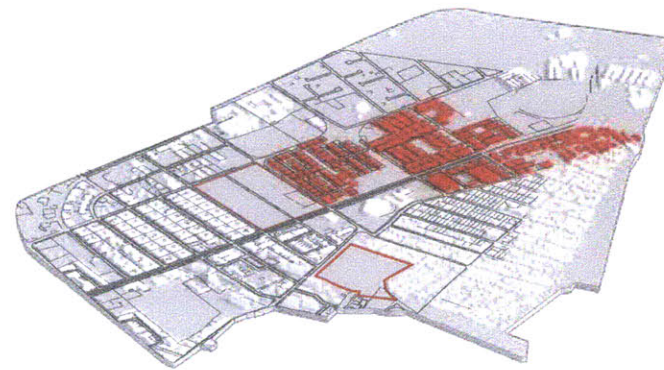
# TRENCH TOWN: A HISTORY

1957



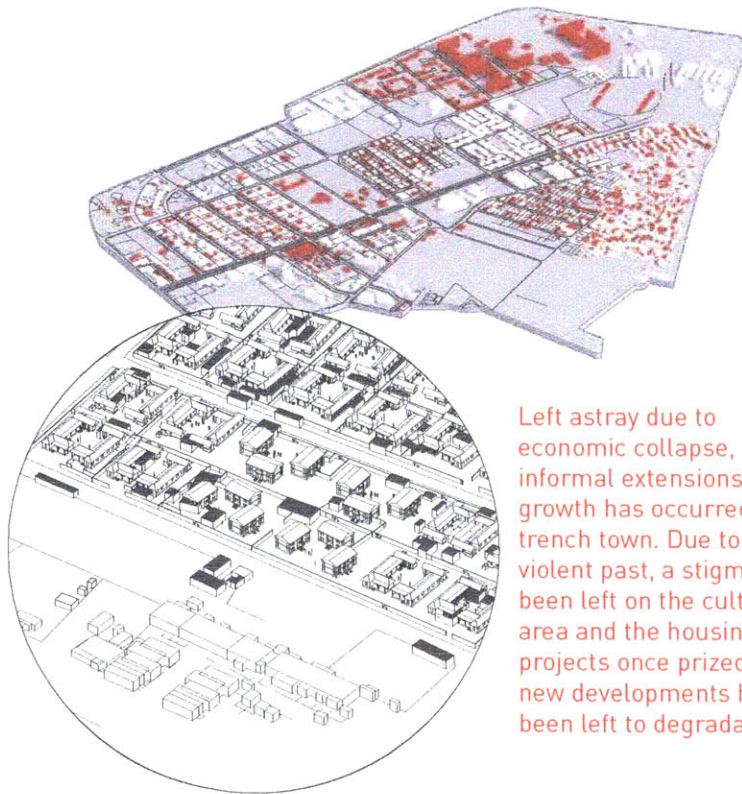
Original Government Yards were developed under JLP party, replacing original land that was originally squatted (informal) land. These yards are home to many famous musicians and politician such as Bob Marley, Bunny Wailer, Norman Manley, and Bustamante

1976



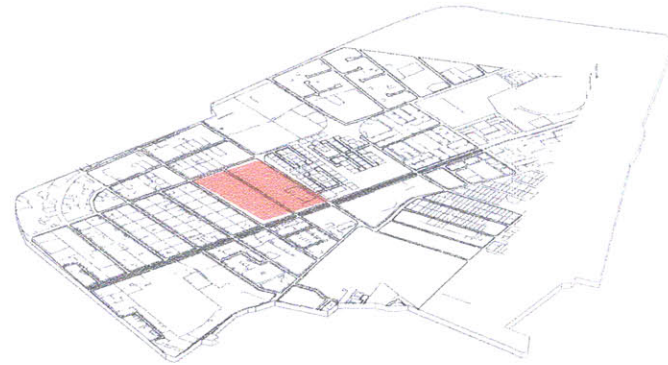
PNP, another political party, started to develop other housing projects north of the original government yards. Political tensions rose between north and south developments to the point of political gang warfare. Violence wiped out major portions of trench town.

2013



Left astray due to economic collapse, informal extensions and growth has occurred in trench town. Due to its violent past, a stigma has been left on the cultural area and the housing projects once prized as new developments have been left to degradation.

20XX



To redevelop 6th and 7th street, once can not only densify the growing low income population, but also bring back light to lower Kingston as a cultural epicenter--a new typology for internalized "Yarditecture".

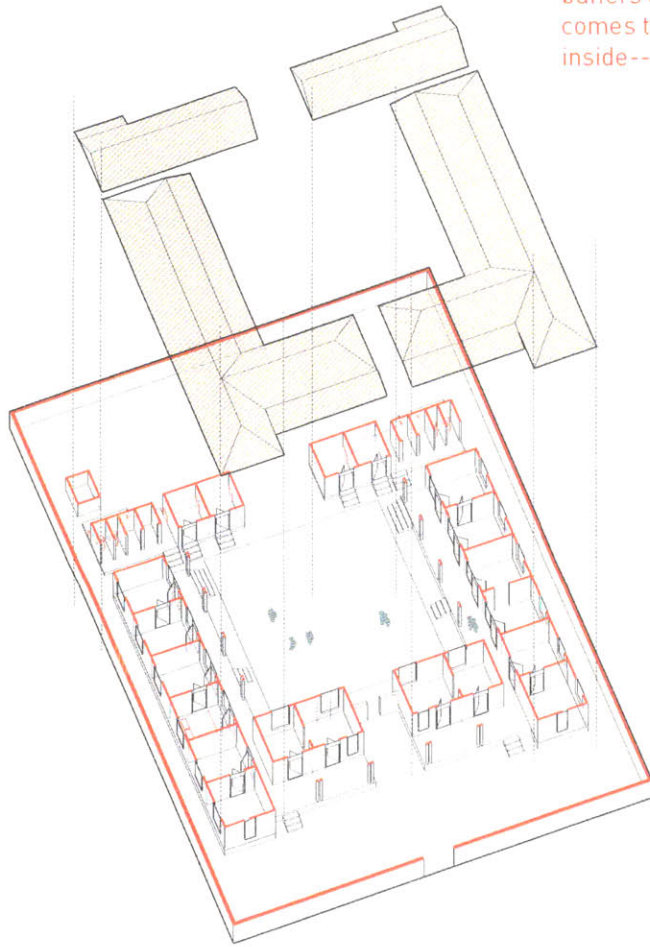
# INFORMAL CASE STUDIES



The following axonometrics are case studies. The left exhibits four different examples of informal yards. The right are two of the three variations (s-block and H-block) of housing in the government yards of trench town. Here you can see the differences between the two types of housing.

## FORMAL CASE STUDIES

While the actual housing units don't differ too much in size, one significant difference is the wall surround the units and the complexity of the space between units. The walls in the informal housing becomes more than just a boundary, but a complex membrane of openings, entryways, buffers and commercial programs. This gives great insight on what is quintessential when it comes to the yard. It perhaps isn't the unit itself, but the membrane that buffers the outside and inside--the wall as a device.

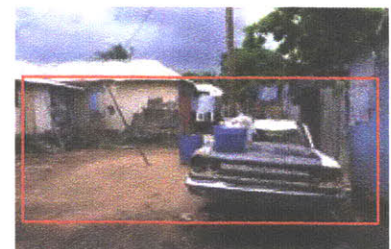
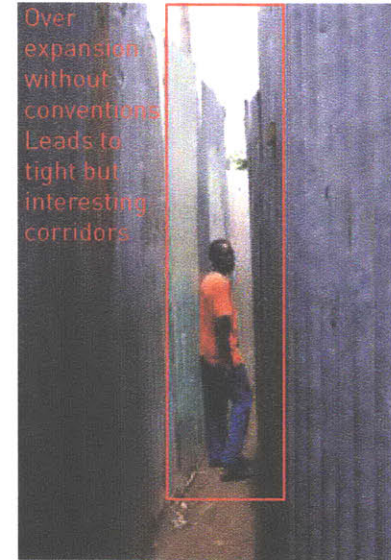
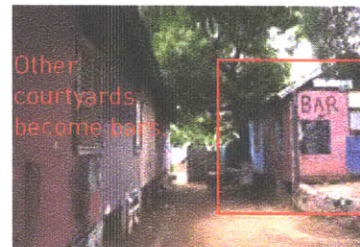
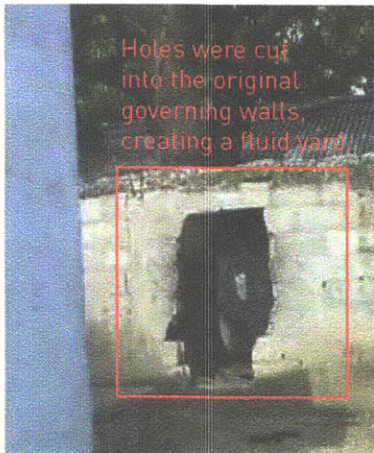
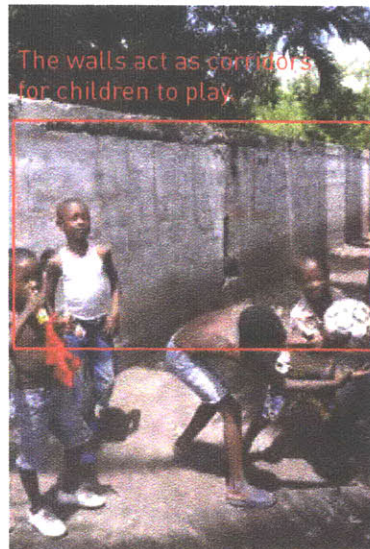
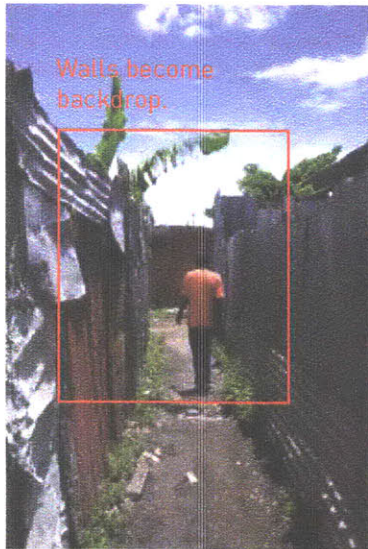


U-BLOCK TRENCHTOWN

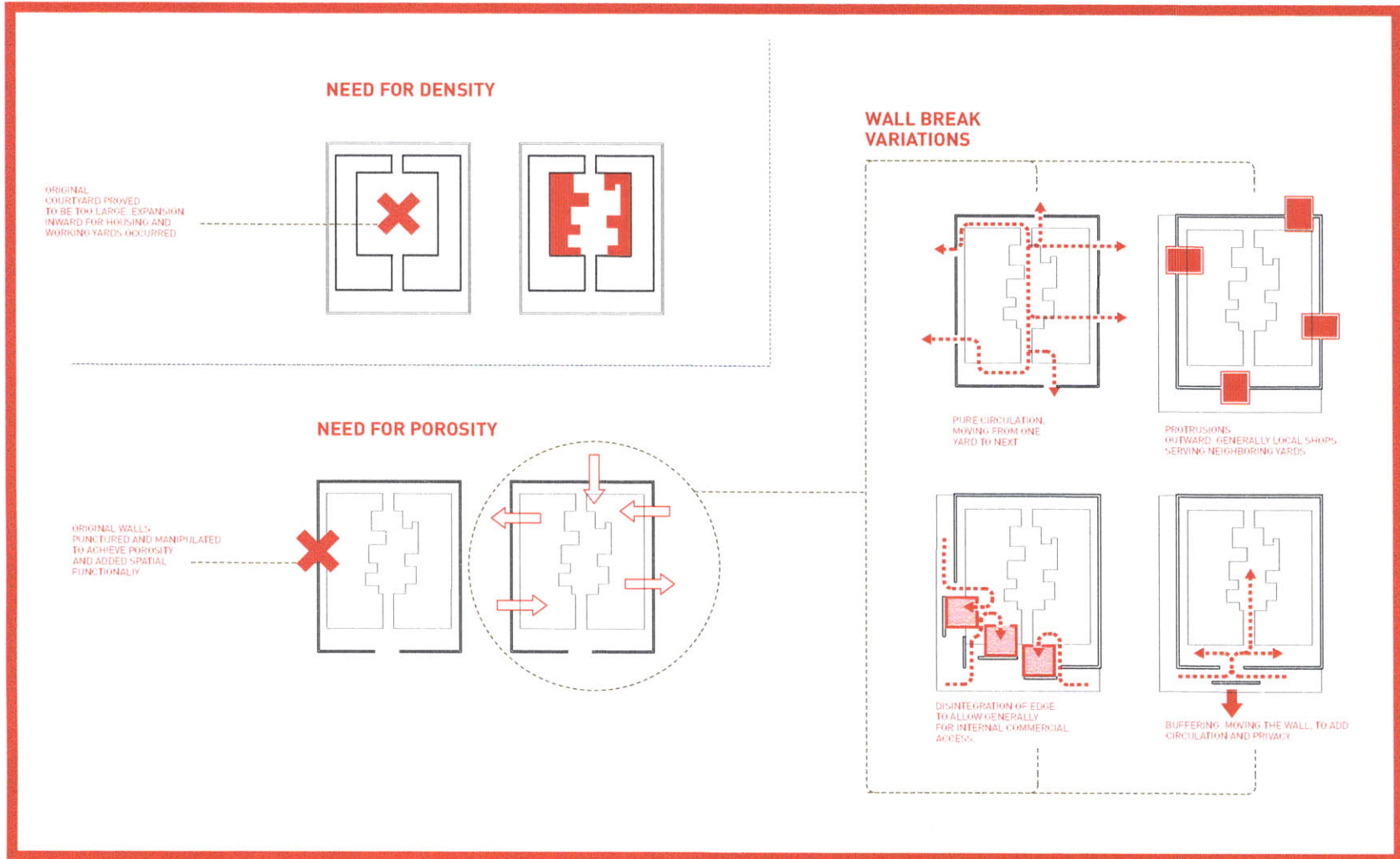


S-BLOCK TRENCHTOWN

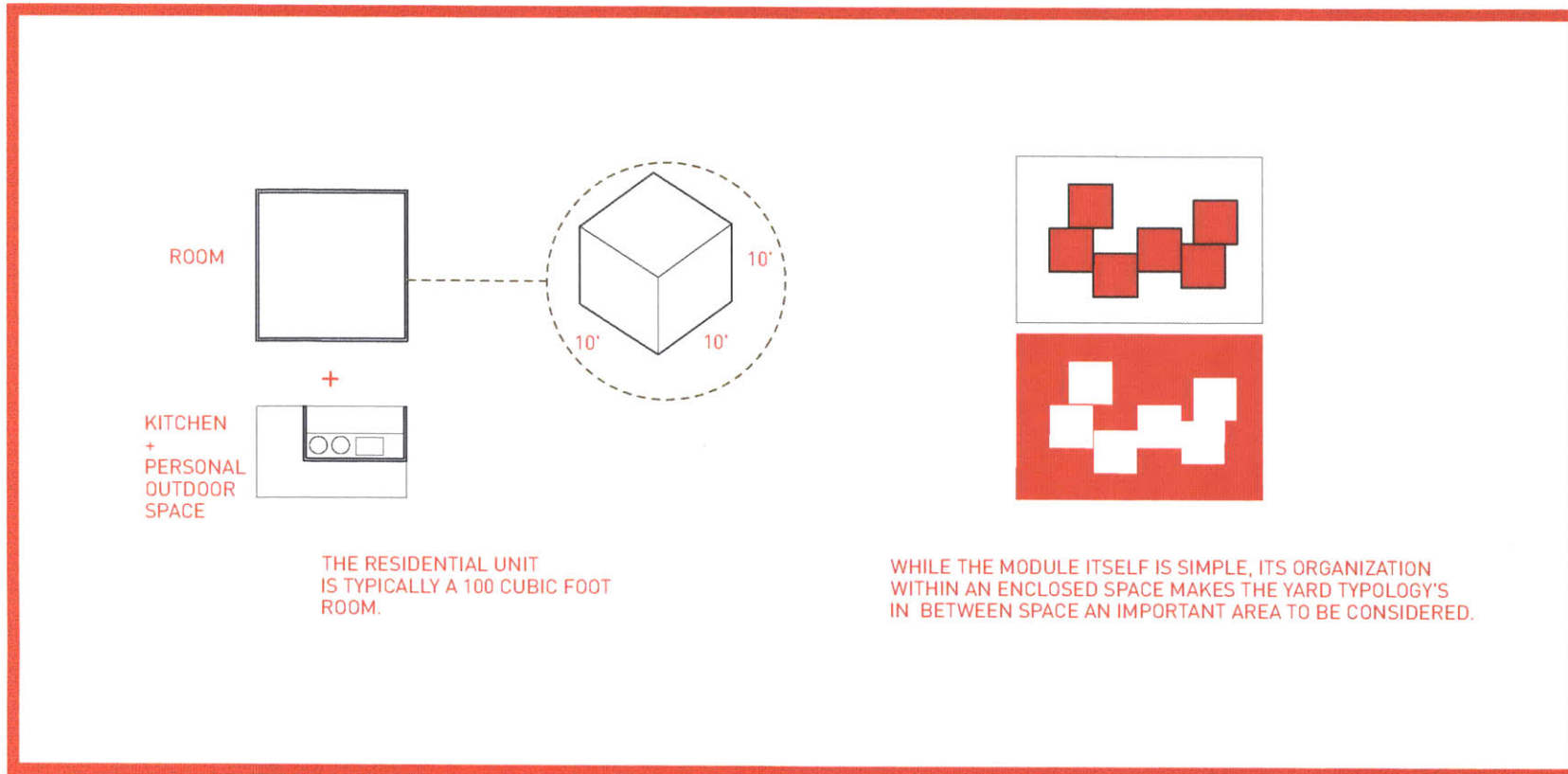
# FORMING THE PARAMETERS



# PARAMETER #1: MORE DENSITY + MORE POROSITY

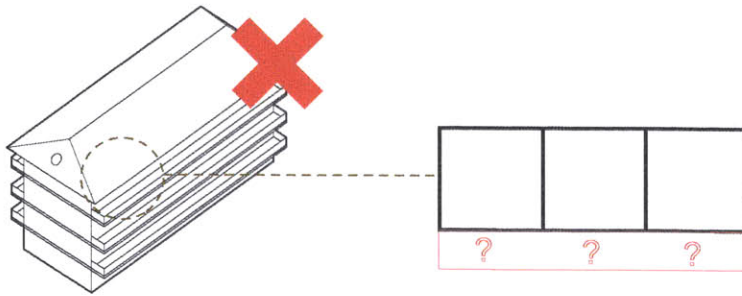


## PARAMETER #2: THINKING IN MODULES

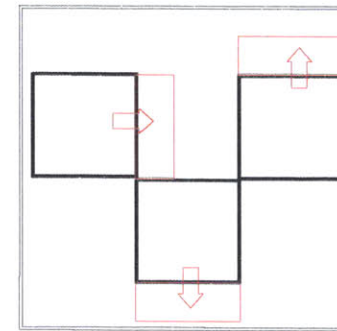




## PARAMETER #3: PSEUDO-PUBLIC SPACES



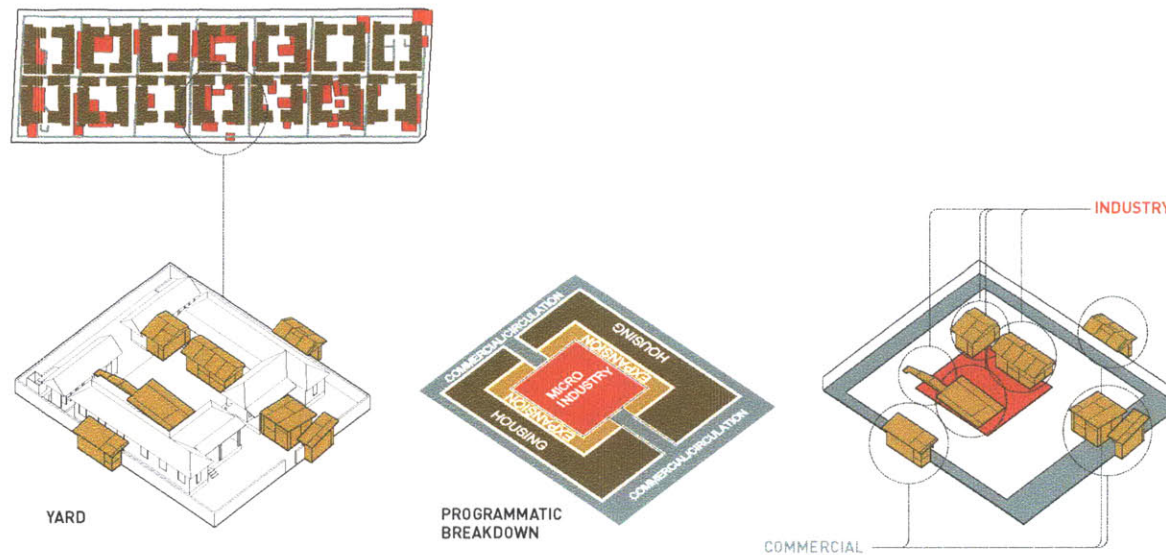
THE PROBLEM WITH MULTI-STORIES IS THAT THEY ARE PROVIDING DENSITY WITHOUT ANY WAYS TO DEFINE WHO MANAGES THE OUTDOOR SPACE



SUB-SPACE CAN BE SEEN AS THE SPACE OUTSIDE A HOUSING UNIT THAT CAN BE IDENTIFIED AS "OWNED" OR MANAGED BY THAT UNIT. HOW CAN DENSITY + THIS PSEUDO SPACE BE ACHIEVED?

## The “Autonomous” Yard

Upon navigating the government yards, one stumbles upon an interesting programmatic organization. Originally the courtyard in the middle served as a preserved open space for each individual yard. Likewise there was a open buffer periphery between the units and the enclosing wall.



Since the 70s, a transition has occurred where some courtyards have been transformed into what can be considered “working yards”-- moments where micro-industries and commercial enterprises have since entered the courtyard. Many industries can be found nestled within trench town such as lumber yards, scrap metal shops, auto body shops, bars, and restaurants.

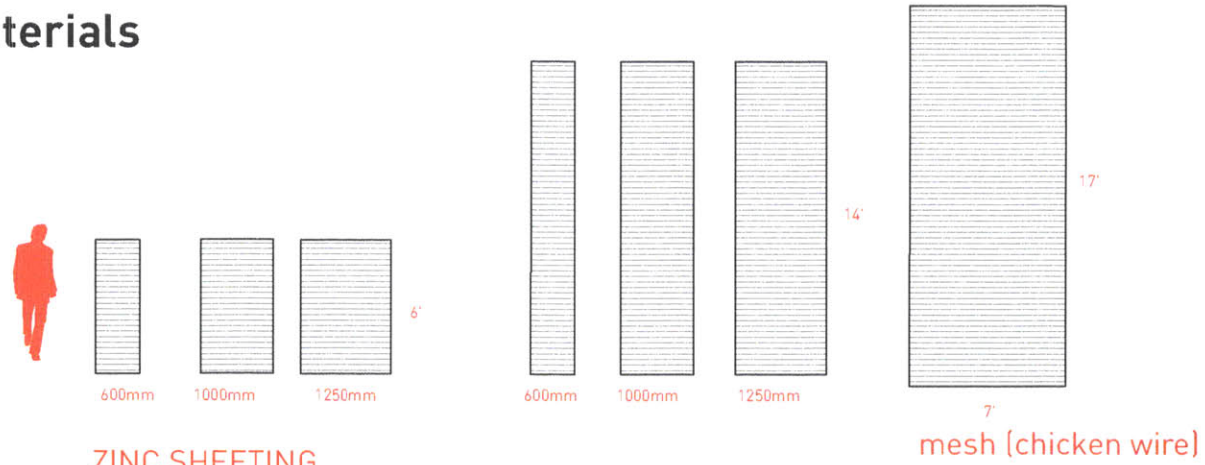


## Yard Economies

This give us a hint that perhaps the yard can benefit from more than just housing. Perhaps the potential lies in partial giving the opportunity of an autonomous nature. Spaces can be larger than general housing to promote opportunistic extensions, beyond just that of housing. In a way this makes the yards more an embodiment of what it truly is, an archipelago or labyrinthine set of various spatial conditions and programs.

Left: Examples of various micro enterprises found in the yards of Trench town.

# Common Materials

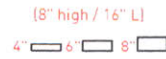


ZINC SHEETING

mesh (chicken wire)



cement 94 lb



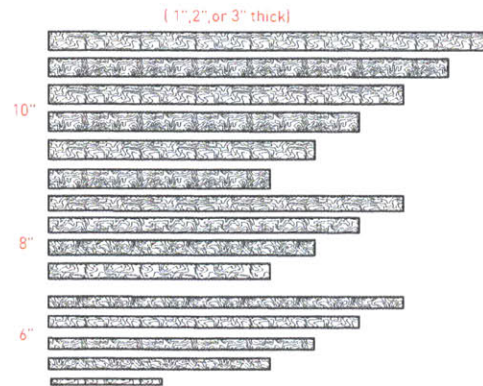
concrete cmu



brick

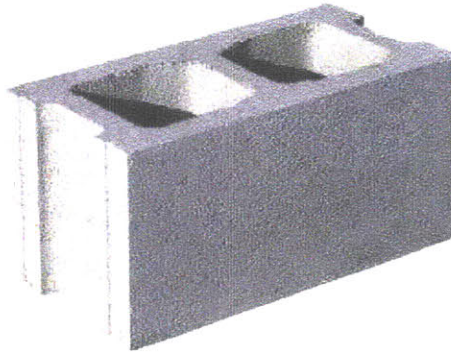


plywood



lumber

## What Can We Do With A CMU Block?



Understanding that the economic restrictions of building a low-income solution, The tactic of limiting the material palette became essential from the beginning. One can see on the left, the general material palette of the yards--with concrete CMU block, zinc, and lumber being dominant.

With the concrete cmu being the most popular building material, and also structurally the most viable, The question thus became what can the CMU block do? Beyond just conventional pragmatism, how can one make Concrete masonry beautiful, inventive, and versatile? Material Explorations both in simple and complex manner was vigorously investigated alongside the more large scale urban design.

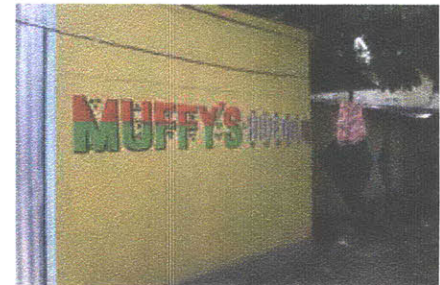
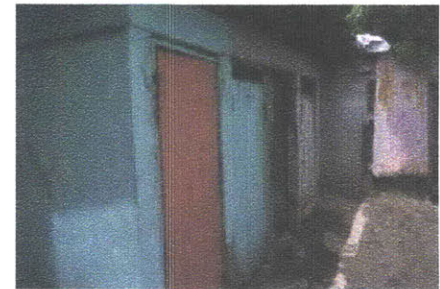
# Chapter 03

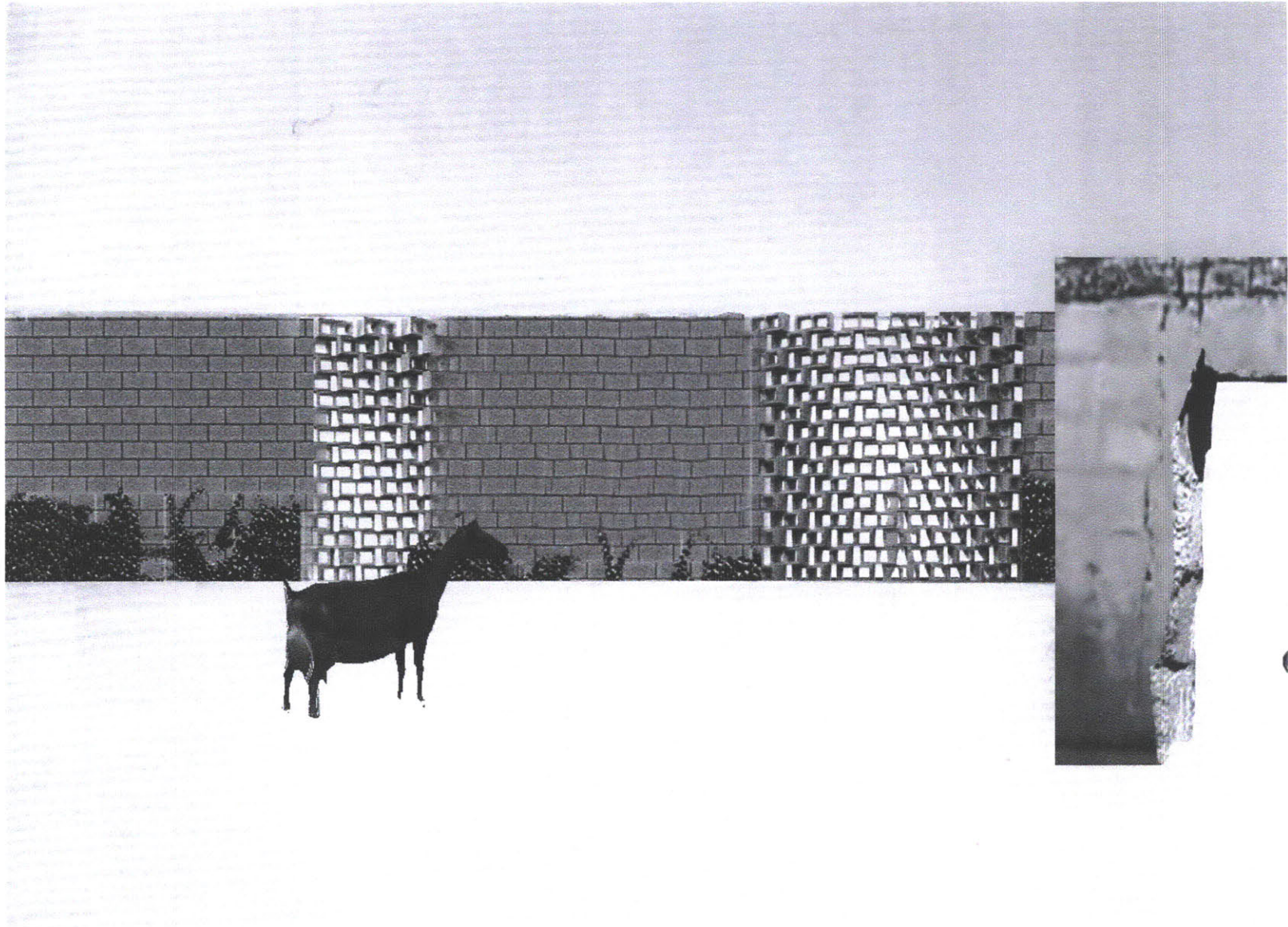
## **What Can A Wall Do?**

### What Can A Wall Do?

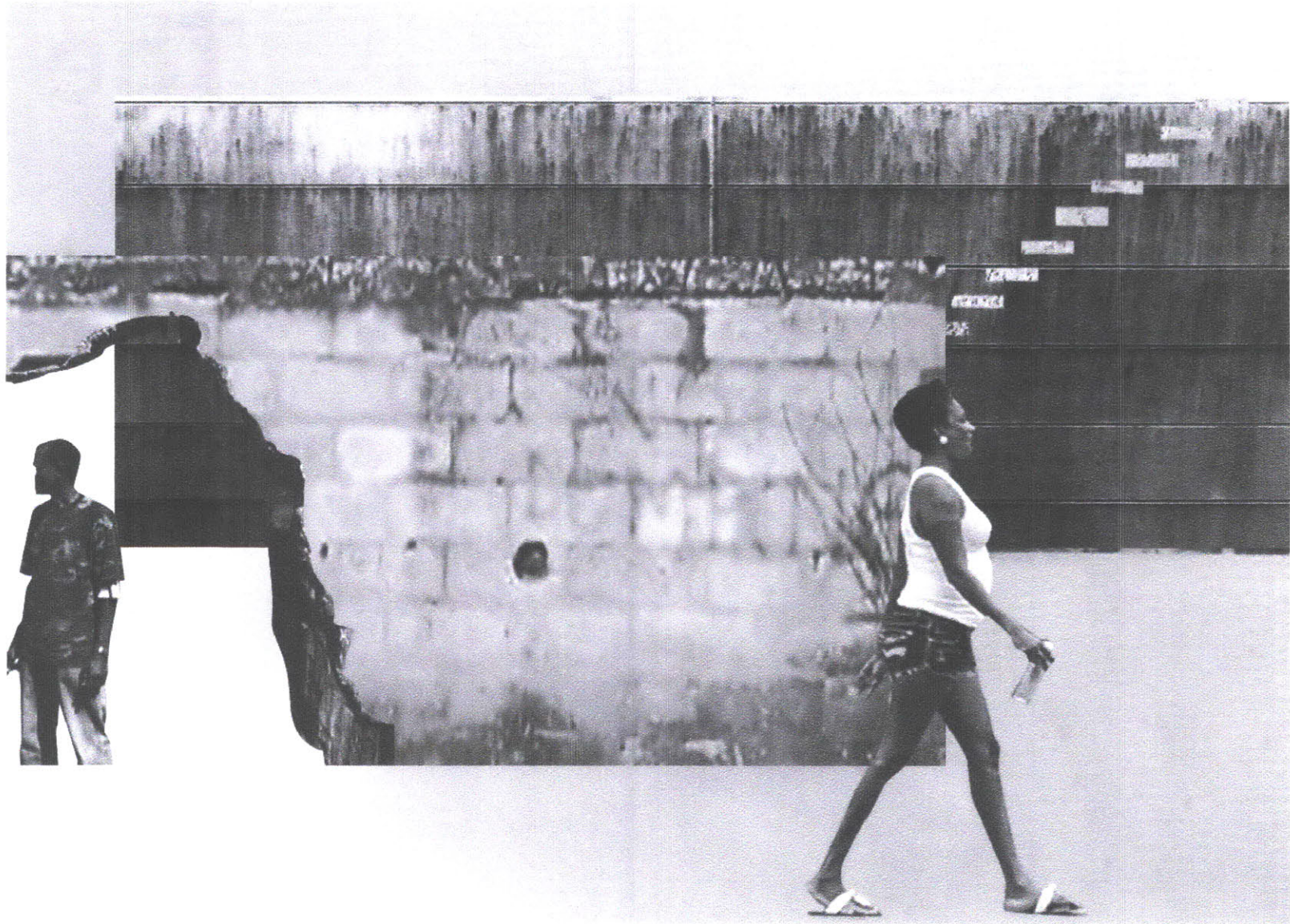
Once understanding the design parameters of the existing yards, the take away is that the wall becomes the most significant element in defining the yard. In this respect, we come back to the question, what can a wall do? The argument here is that it not only can define types of spaces, but it also can serve various pragmatic functions--ones inherently built into the wall itself i.e. wet walls, stair cores to promote density, service walls, structural walls, storage walls, and etc. The proposal then becomes that the architect supplies a series of walls that inherently inform the program of the space. Together with a various taxonomy of walls, some being purely infrastructural, while others becoming porous or articulated to serve as aesthetic or public definition.

Perhaps with just this, it serves as the skeleton, the framework of a community by supporting walls and where they are placed. Everything else then becomes infill of the inhabitants. The walls themselves are the project, the formal construct.



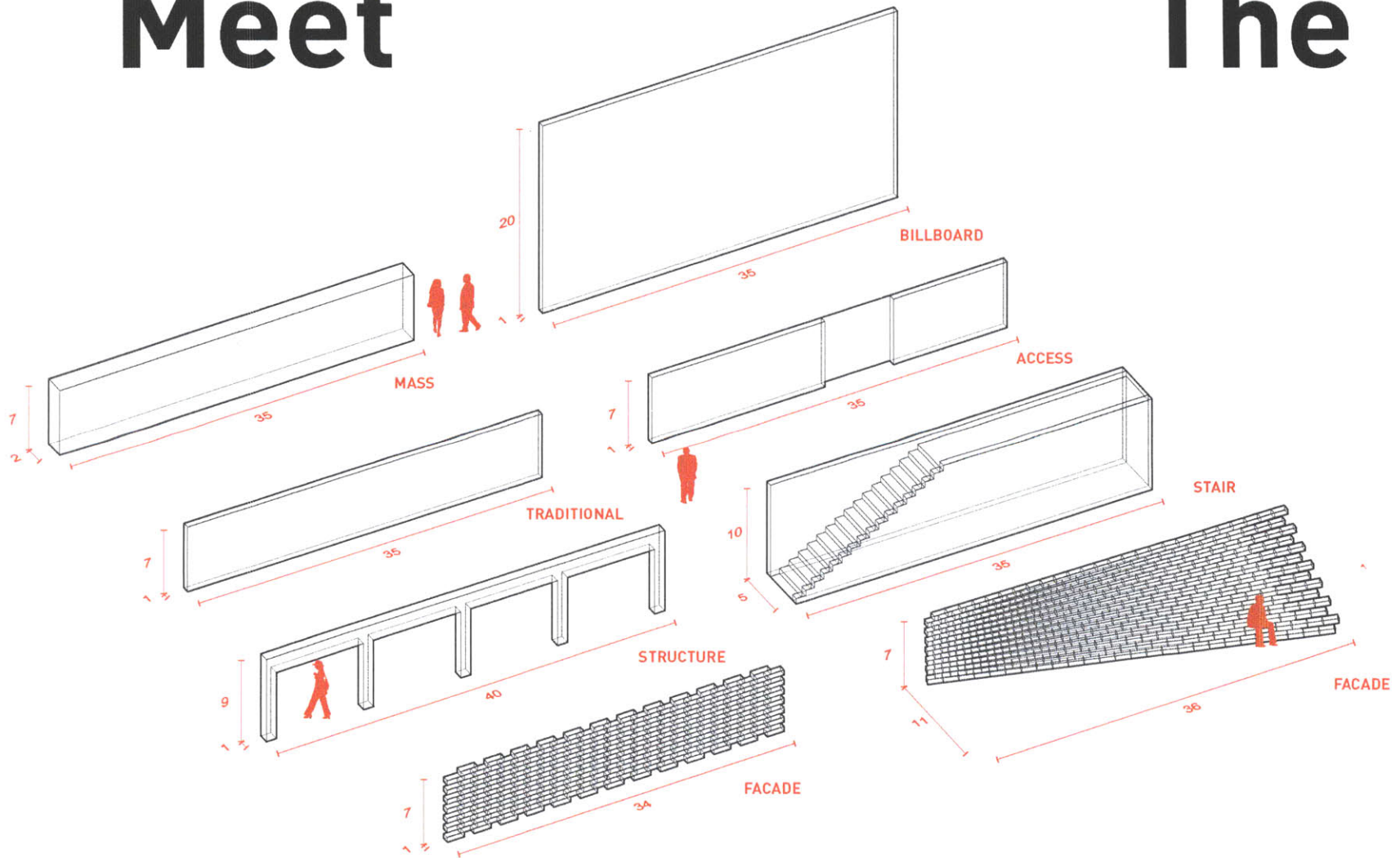






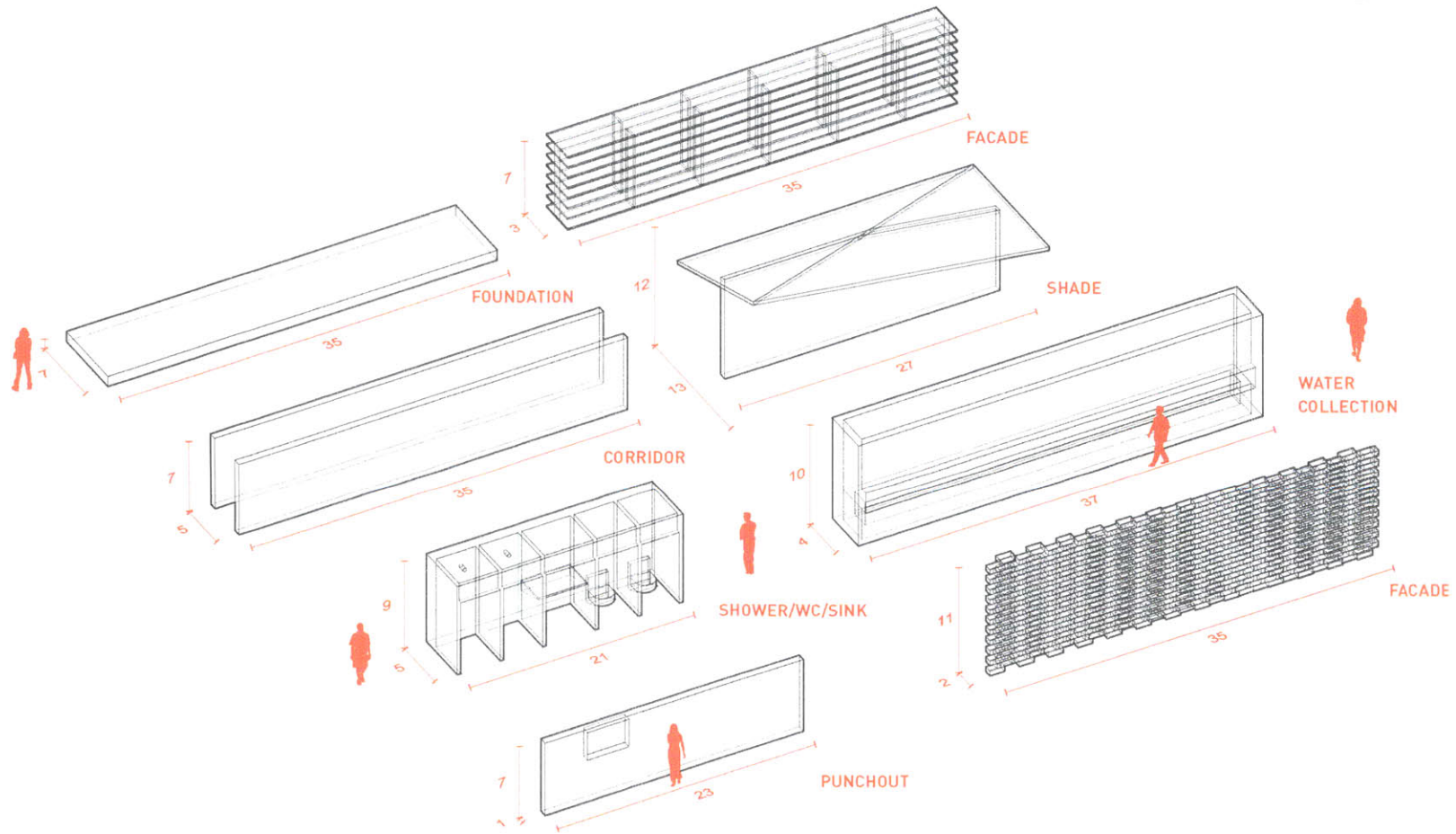
# Meet

# The



# Infrawall

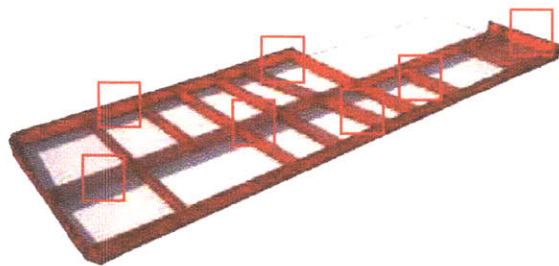
# Family.



## From Discrete to Interconnected

The Internalization concept was used as the main spatial organization in the design. We use the current condition of the government yards as a backbone, but exaggerate the condition in a more deliberate sense creating two types of “yard” - the internal connected yard, made up of small and large zones and then external yard pockets that address the street condition.

This does a multitude for the two blocks, creating more privatized internal space, encouraging residential communities, and creating a more public directed series of small to large external spaces--catering towards the development of micro-industries.



### CONVENTIONAL DIVISION

IN THE 70S DURING POLITICAL WARFARE. HOLES WERE CARVED INTO THE INTERNAL WALLS.



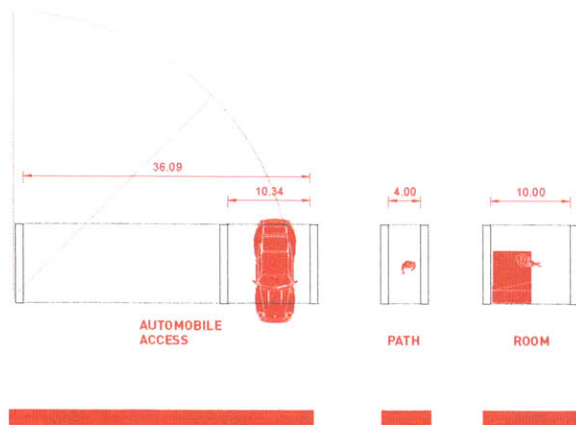
### FLUID YARD

NOW, SIMILAR TO THE CONVENTIONS OF AN INFORMAL YARD, THE SPACE BECOMES ONE INTERNALIZED LIVE / WORK / PLAY SPACE.

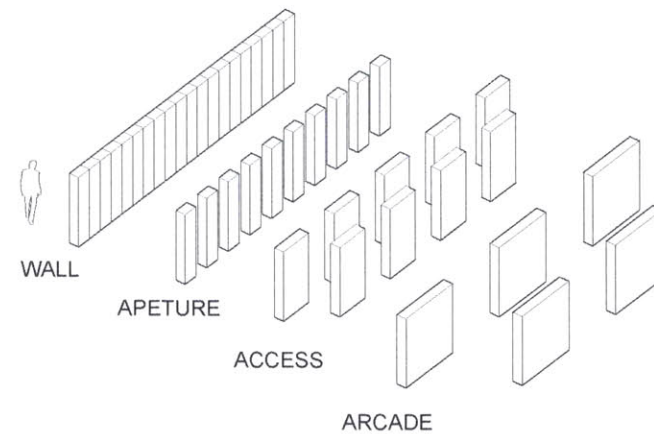
These scales of external spaces were determined by general sizes of programmatic spaces in a formal setting, i.e. sizes of shops, repair areas, working lumber yards, etc. In this respect, a community surrounding an external yard would dictate the program of the surrounded area. Thus, a rich set of communally decided program would be set within the residential community, creating job opportunities, and a micro-economy more indicative of a formal mixed-use development.

## Informing spatial intent

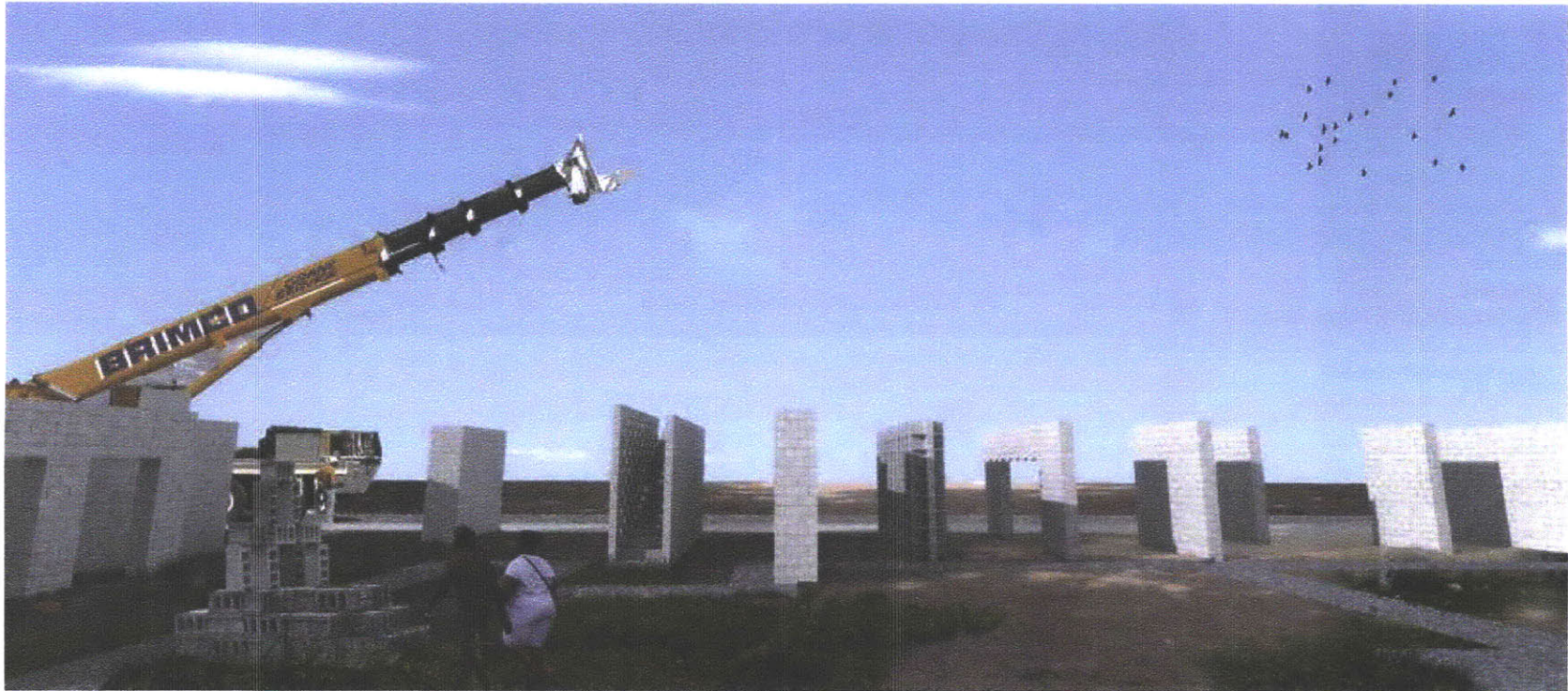
We use the wall as not only a singular entity, but the spaces between the walls as programmatic indicators. For instance, at one point a space between wall may be small enough only for circulation, which gives that space an informed program. A larger space then may inform a room, then even larger may be commercial, or public. The space placed between walls imply function, without necessarily decreeing it a specific program. In this way, the site is “zoned” for specific functions, but is flexible enough for deviations and future transformations--a truly hybrid planning system.



Informing via Spacing between walls.



Informing via Scale of Openings.



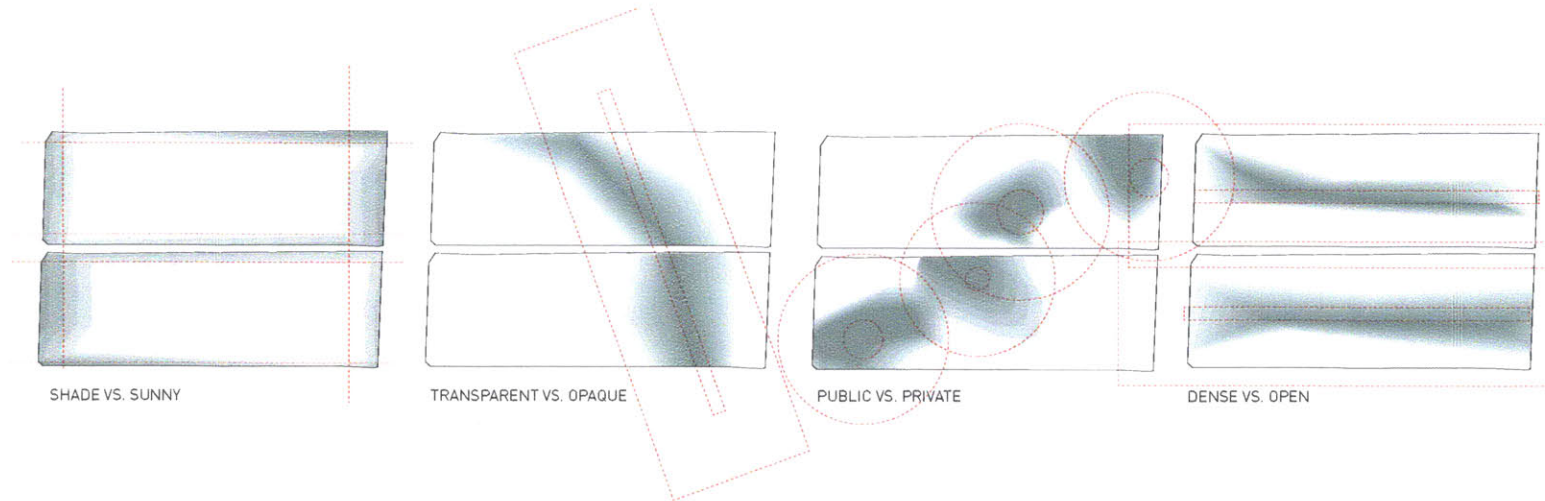
Initially, walls are assembled on site, creating a field of various infrastructural and porous elements. At this point inhabitants would begin to move in. Perhaps, additional blocks would be supplied on move in day.



Over time, inhabitants would infill and customize their own walls--even perhaps building second stories where stair walls facilitate the addition. Thus, eventually, the internal yard becomes more enclosed like that of a traditional Jamaican Yard.

## 6th + 7th Street Analysis

Now understanding the wall as being the essential element, the building block of the yard 2.0., it is then necessary to see the current status of the site in which we will intervene on. Although it was destroyed in the 70s, since then, a community center, working yard, and residential yard has formed on the site. This along with foot paths and existing flows help to inform our next steps on how we place certain walls.



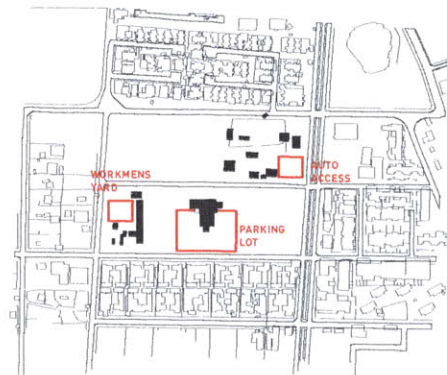
Extrapolated urban gestures used to position walls on site.





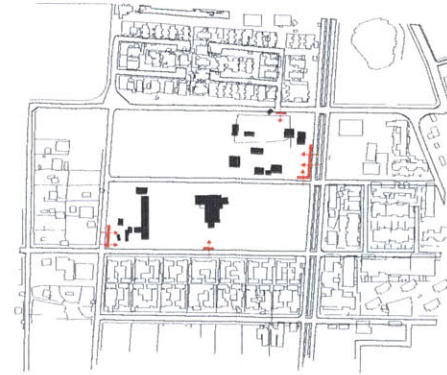
**Current Program:**

Program on site consists of residential area, community center, and working yard. These program seem to tether at corners, near other public/infrastructural program.



**Worked Zones:**

The three areas depicted show areas where ground is manipulated or is in high use. The large area is a parking lot, the top-right, is automotive entry, and the furthest right is a working area.



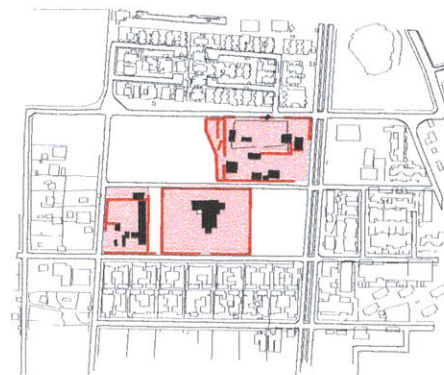
**Entries:**

Entries to the yard are on the periphery, generally hugging corners minus community center.



**Footpaths:**

Showing circulation that occurs on 6th and 7th. Generally, circulation tends to slip between community center and residential neighborhood.



**Fenced Zones:**

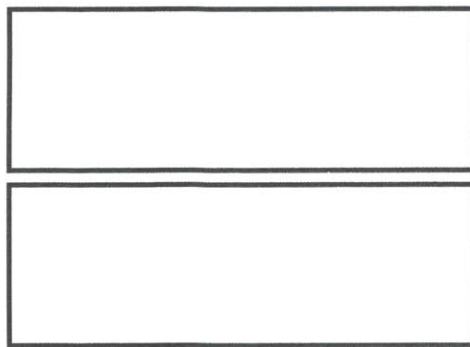
Above is depicting fenced areas, and their corresponding zones. The residential area (top most), has a fenced in garbage collection area to the far left.

## Site Operations



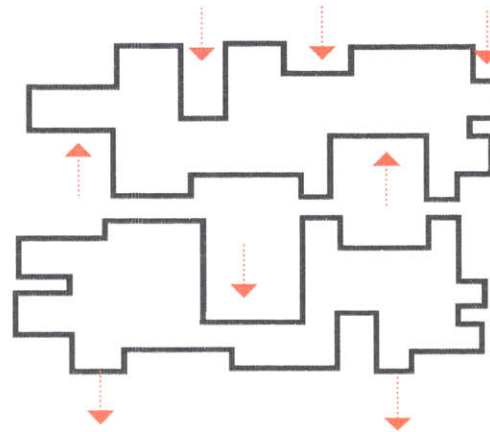
Conceptual Aerial of 6th and 7th Street Blocks, initial post-infill possibility.

From the previous analysis of 6th and 7th street, we are able to understand the current conditions, flows, and developments. Together with our analysis of parameters extracted from 1st - 5th street yards, we create a new urban form . reminiscent yet unique from its preceding neighboring yards.



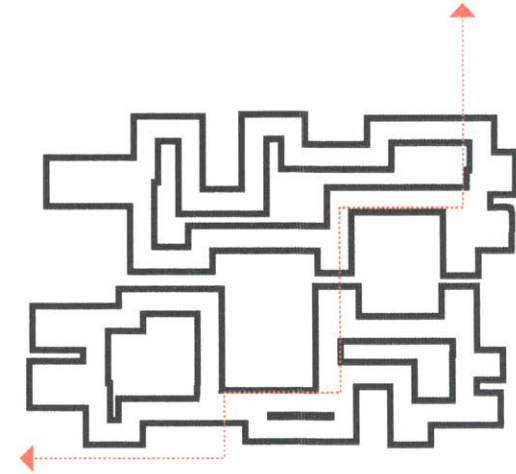
### 1. Full Block:

We start with the full block as a ring of infrastructural walls.



### 2. Micro Industry Pockets:

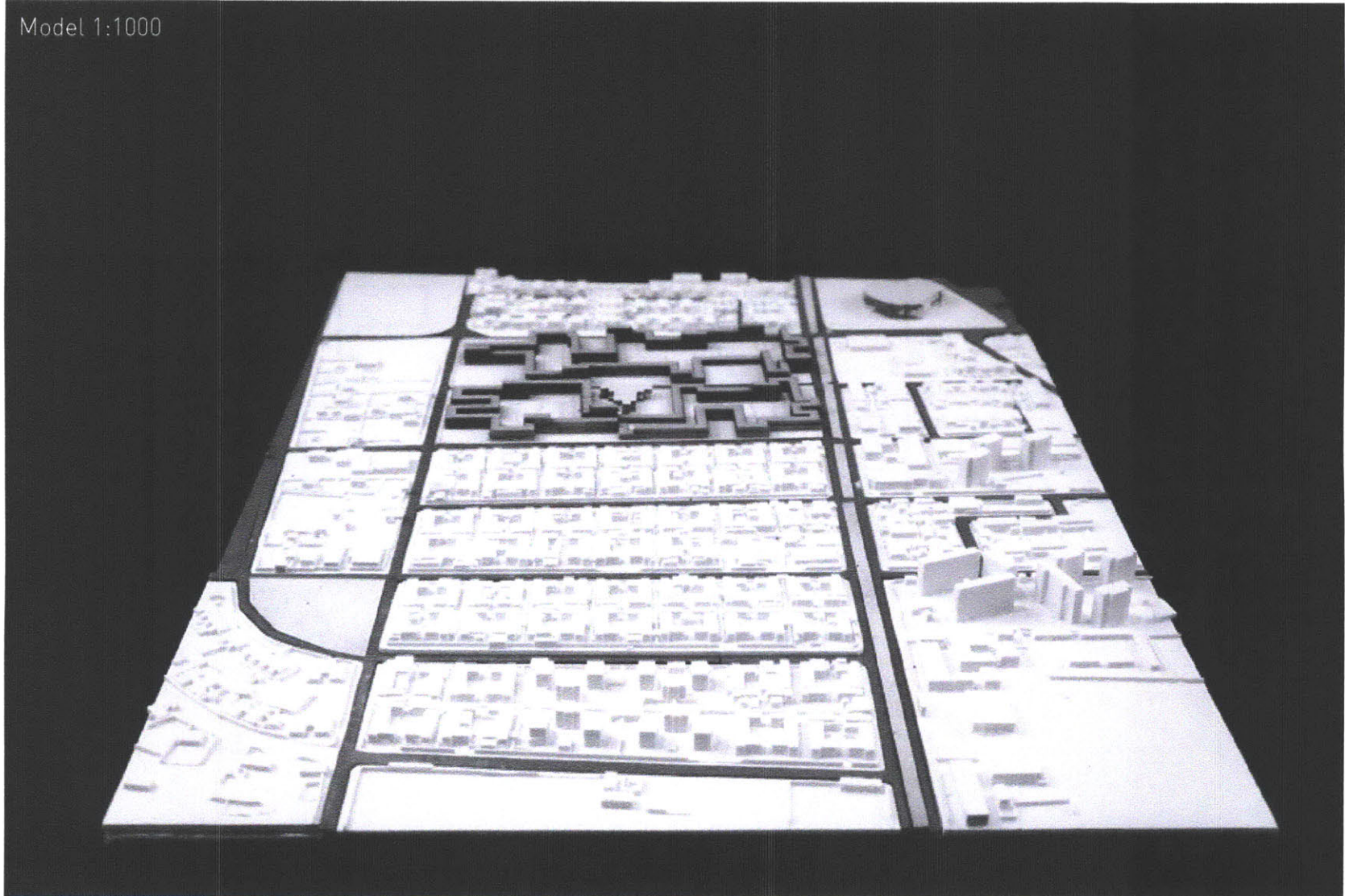
We manipulate the ring to engage the street creating exterior yards for mixed use program, and a continuous interior.



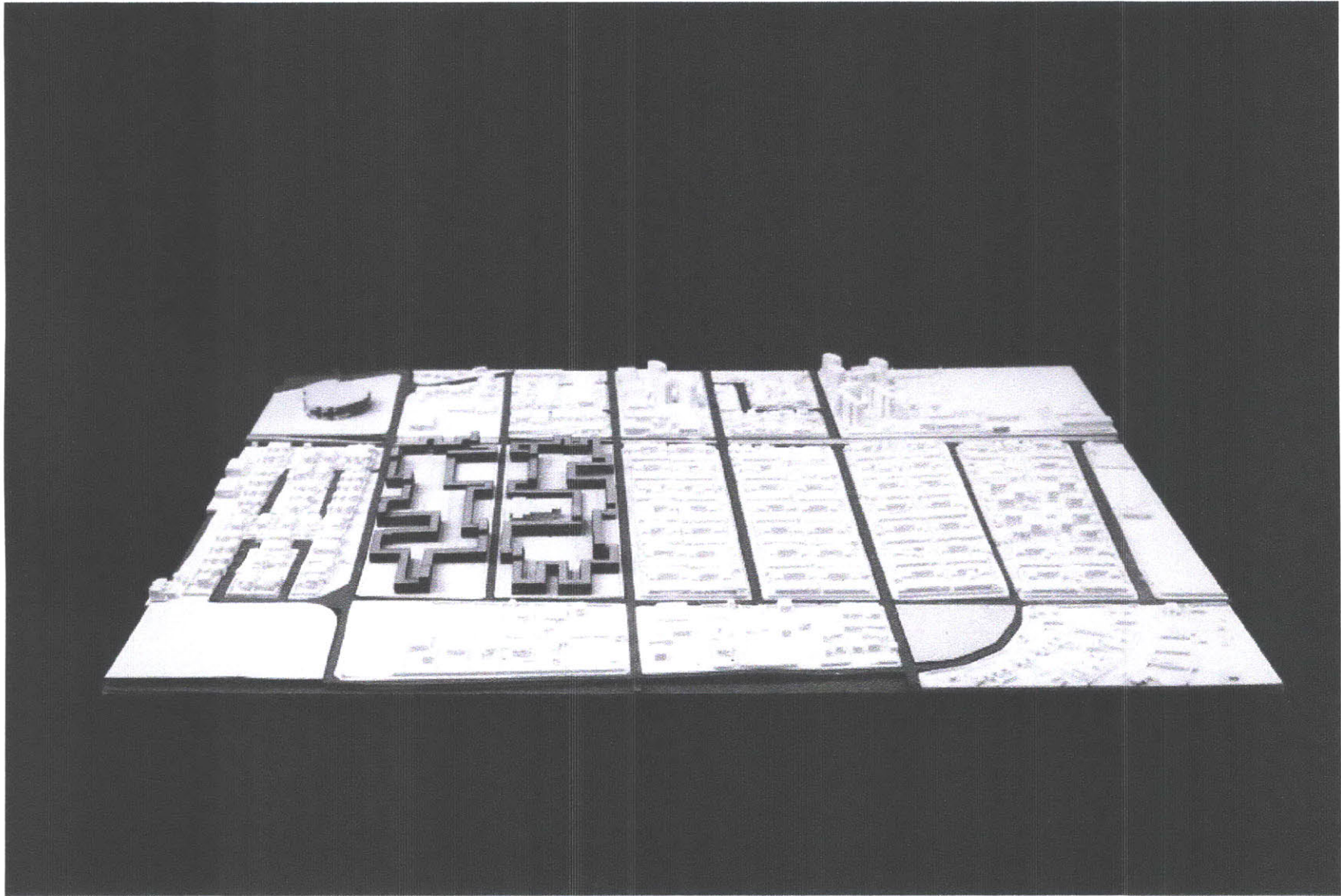
### 3. Expansion:

The benefit of the ring + wall strategy is that expansion is factored in. Expansion occurs both outward and inward, and can continue until circulation would be inhibited. Public corridor is nested as shown by arrow.

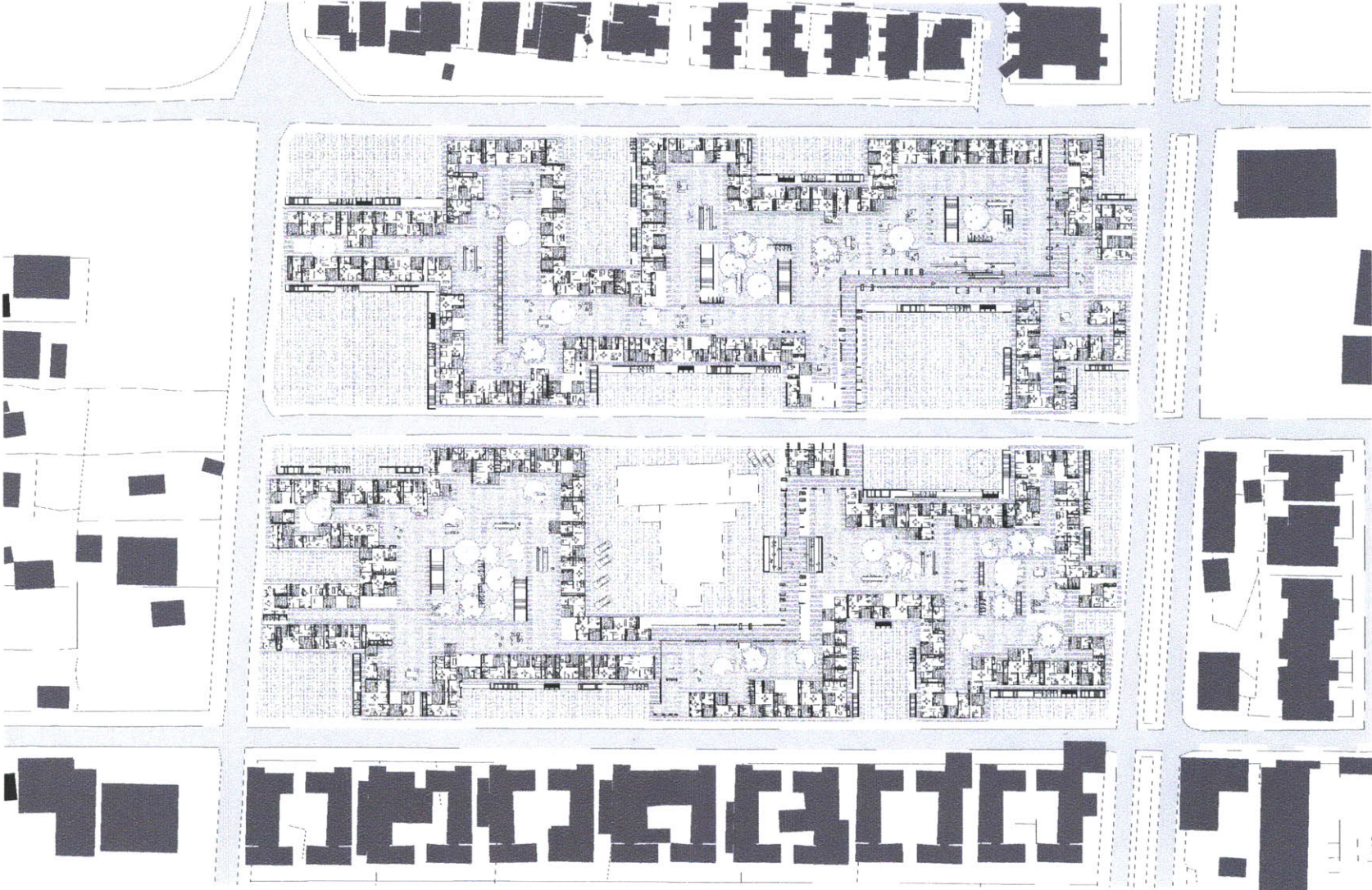
Model 1:1000



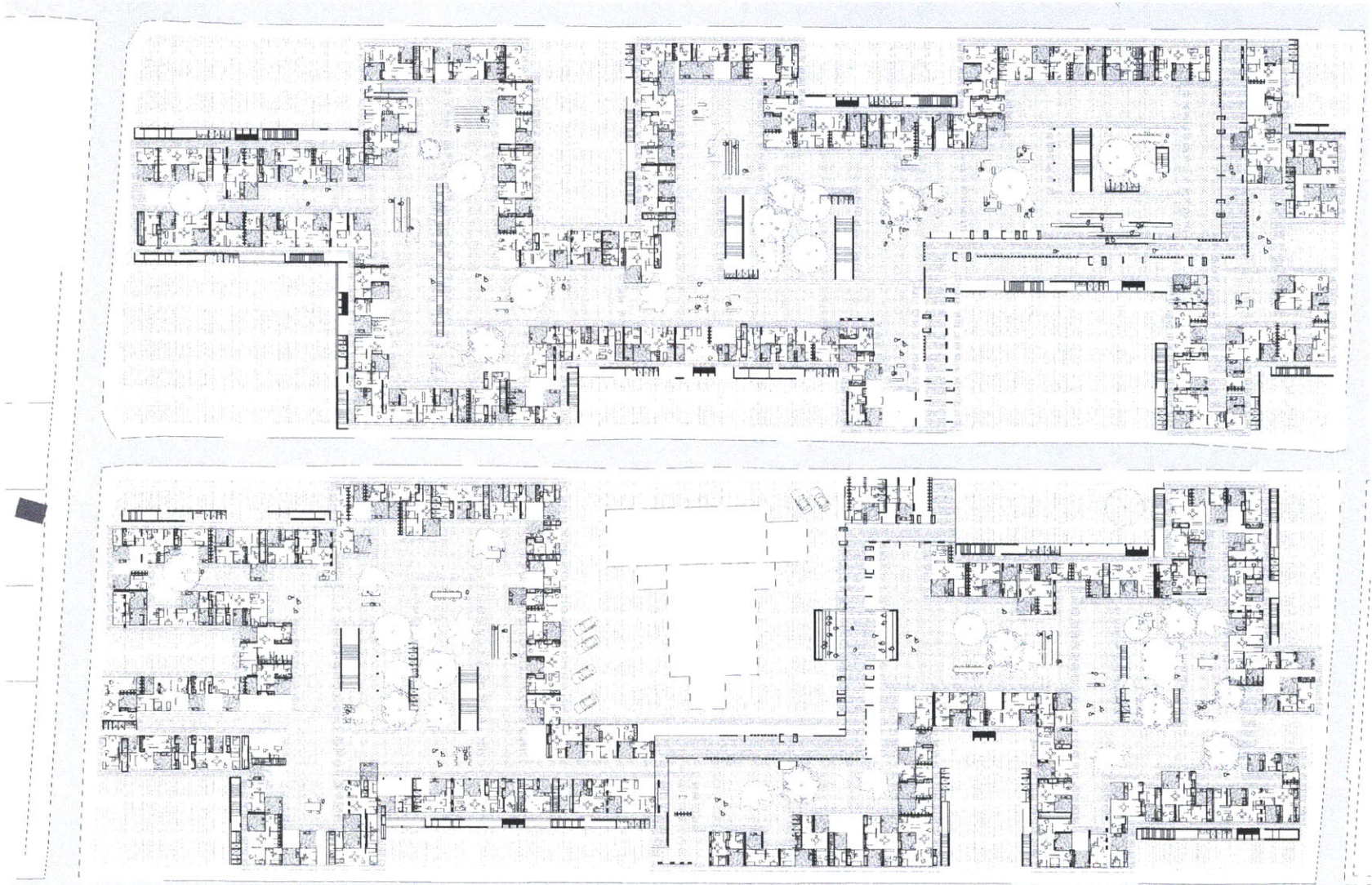
**60 Yarditecture:** New Walls For Trench Town

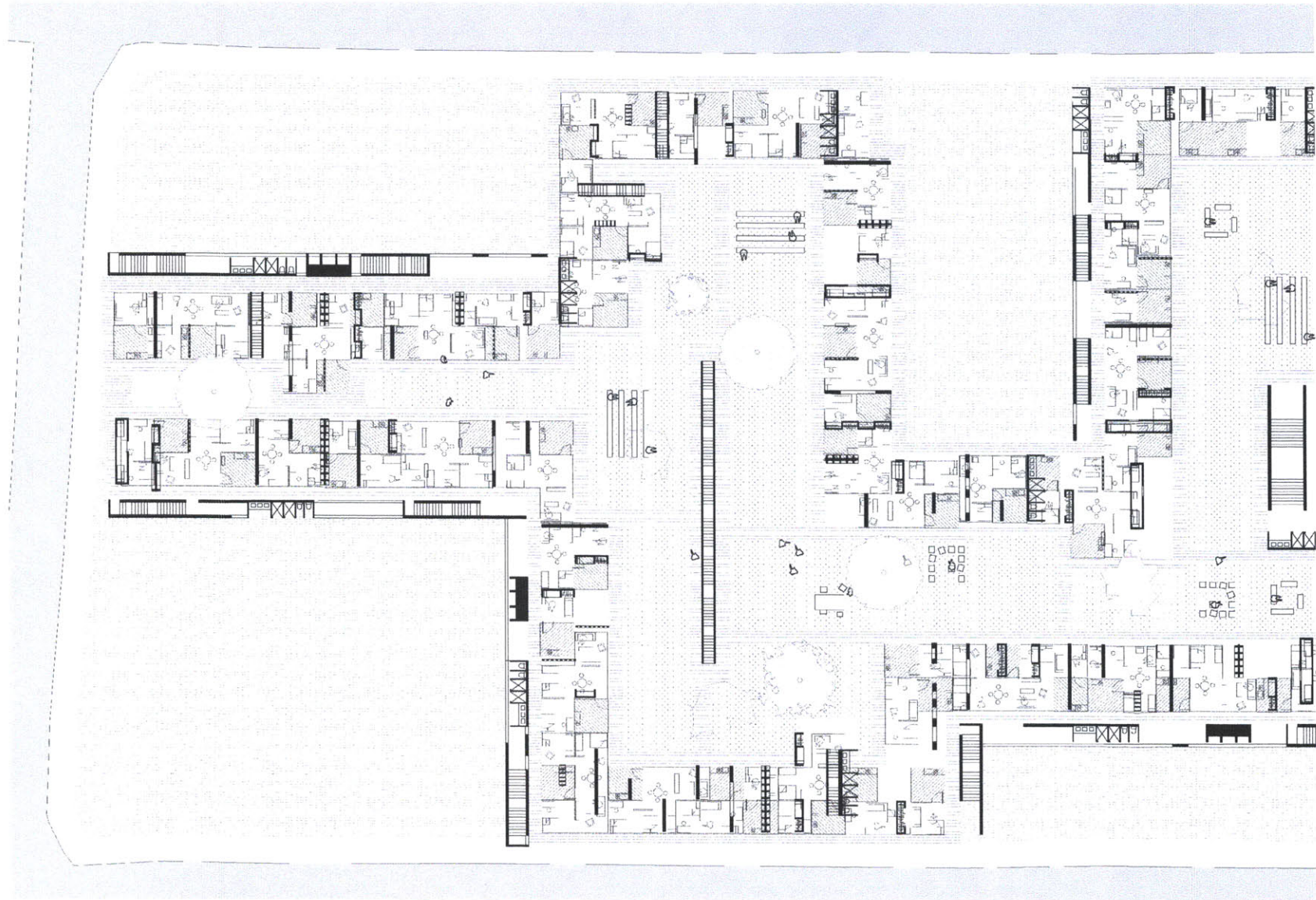


# Plan

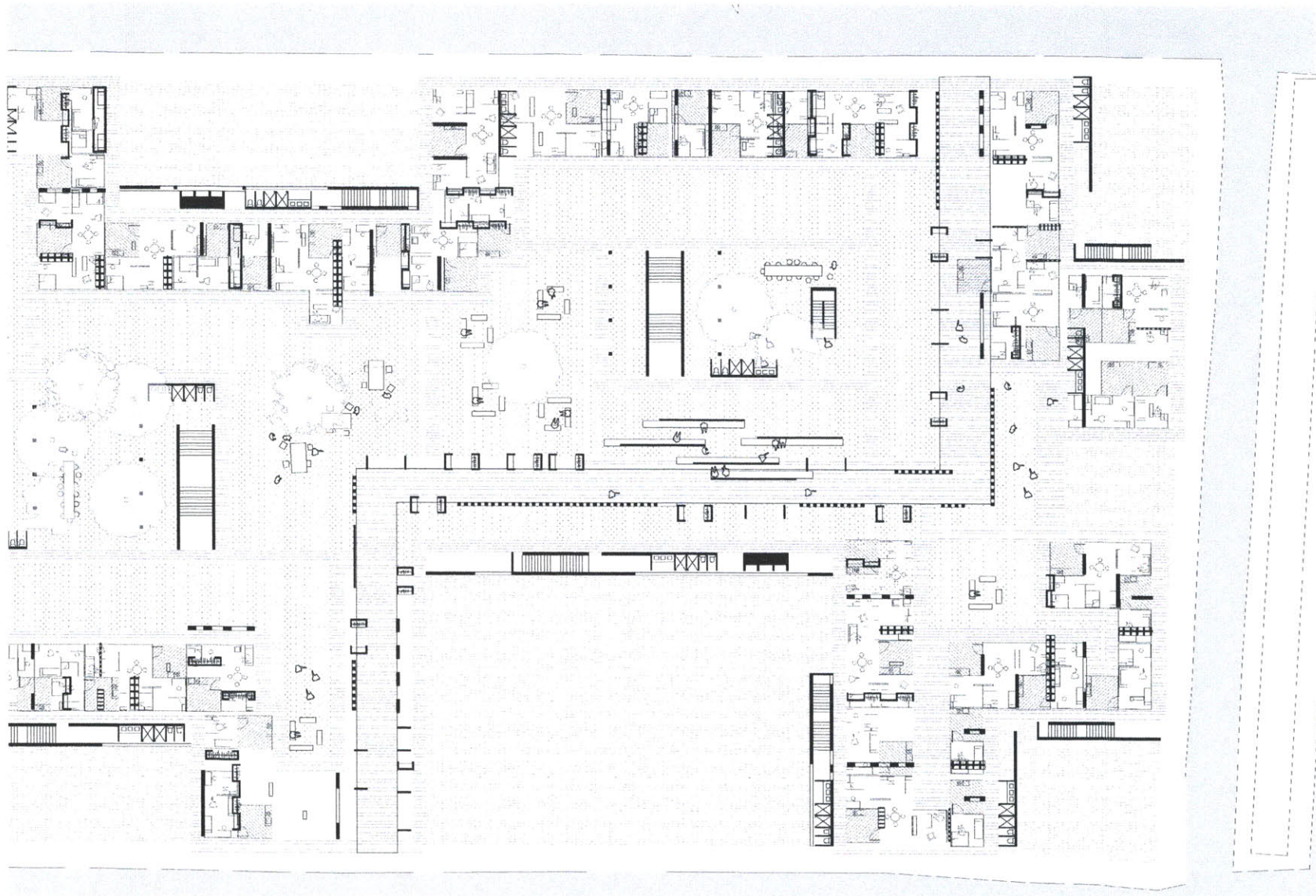


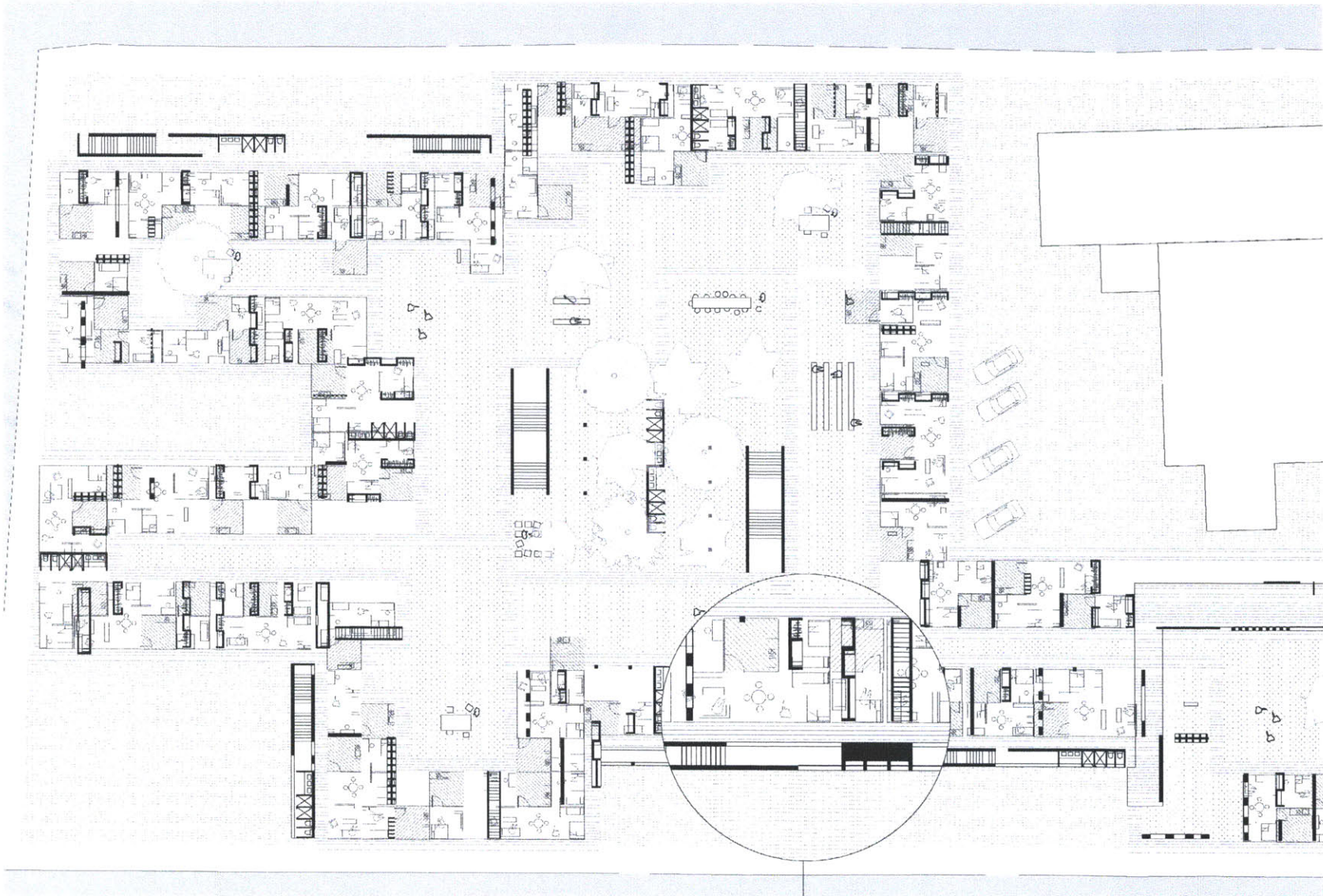
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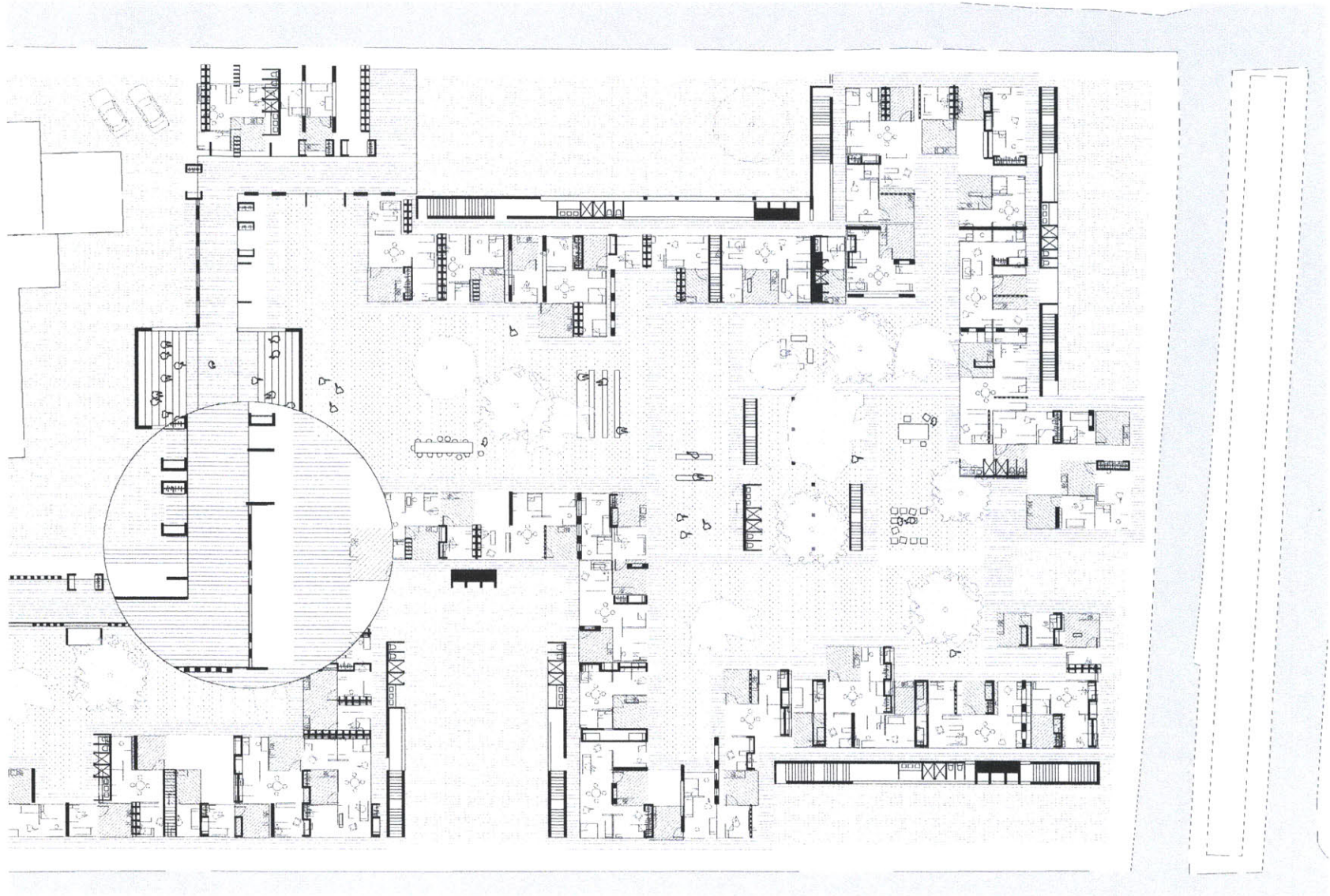








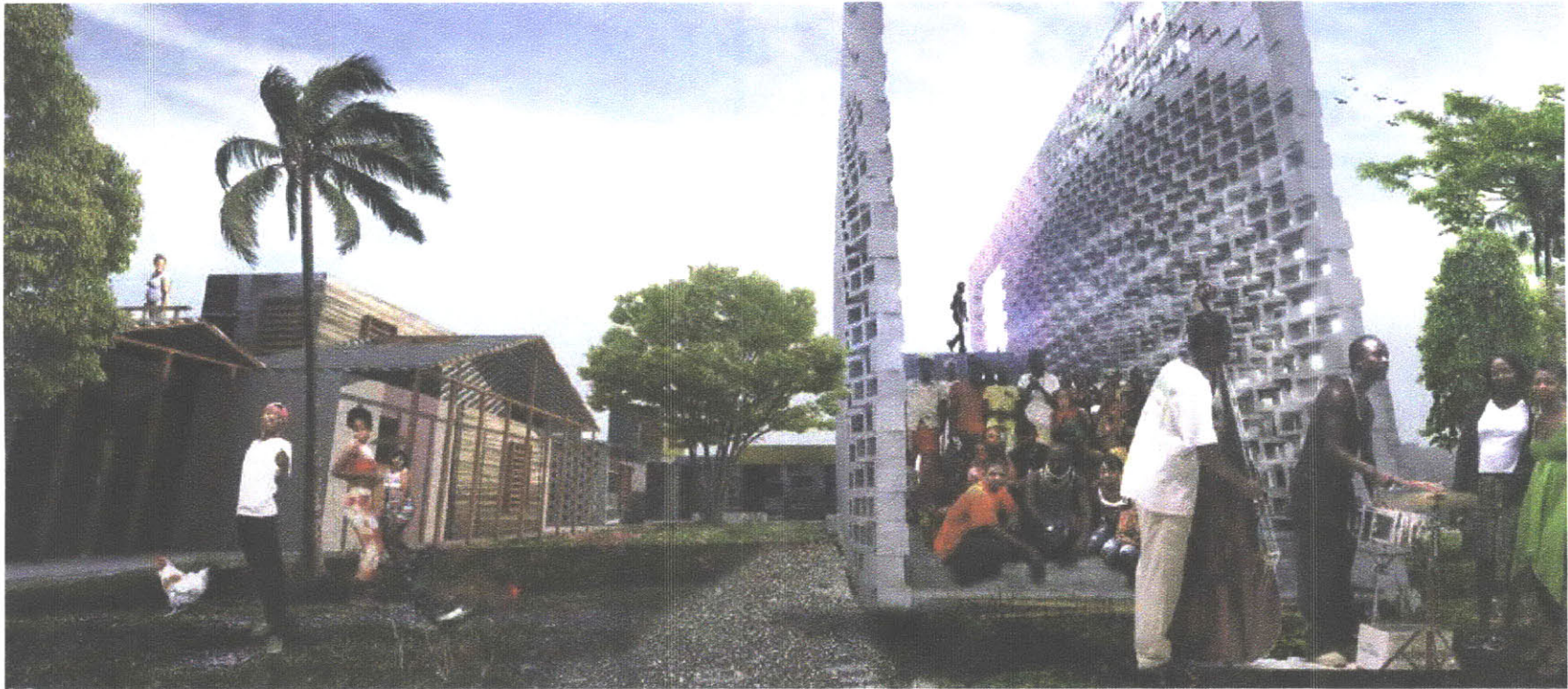




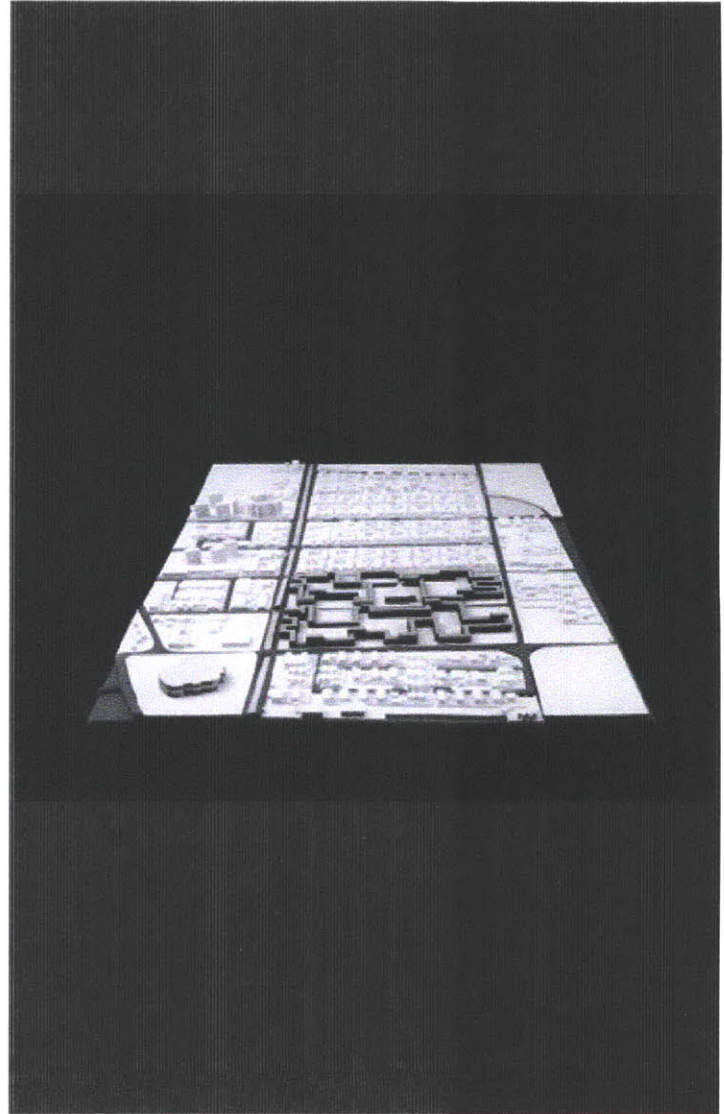
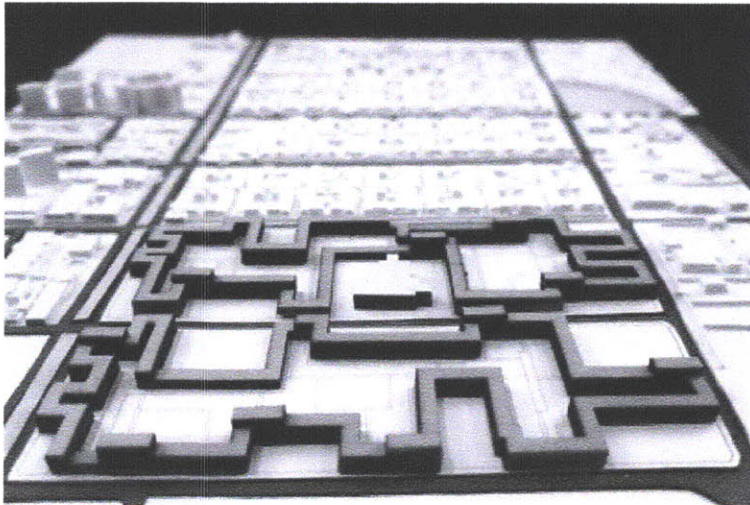
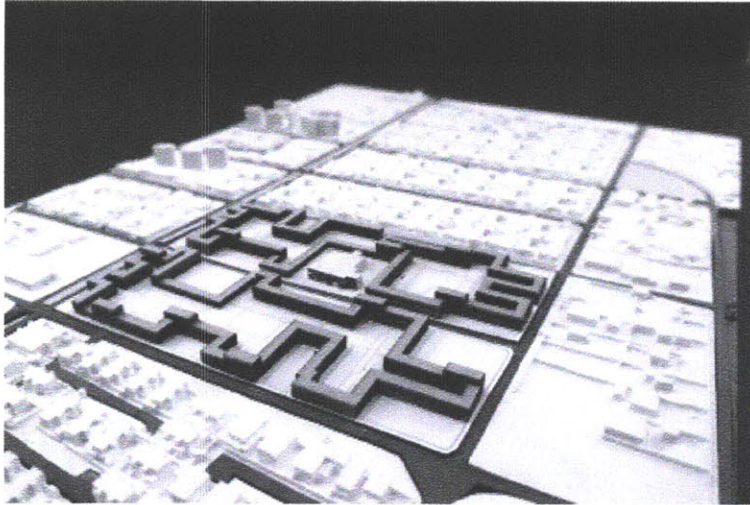
Pedestrian Corridor



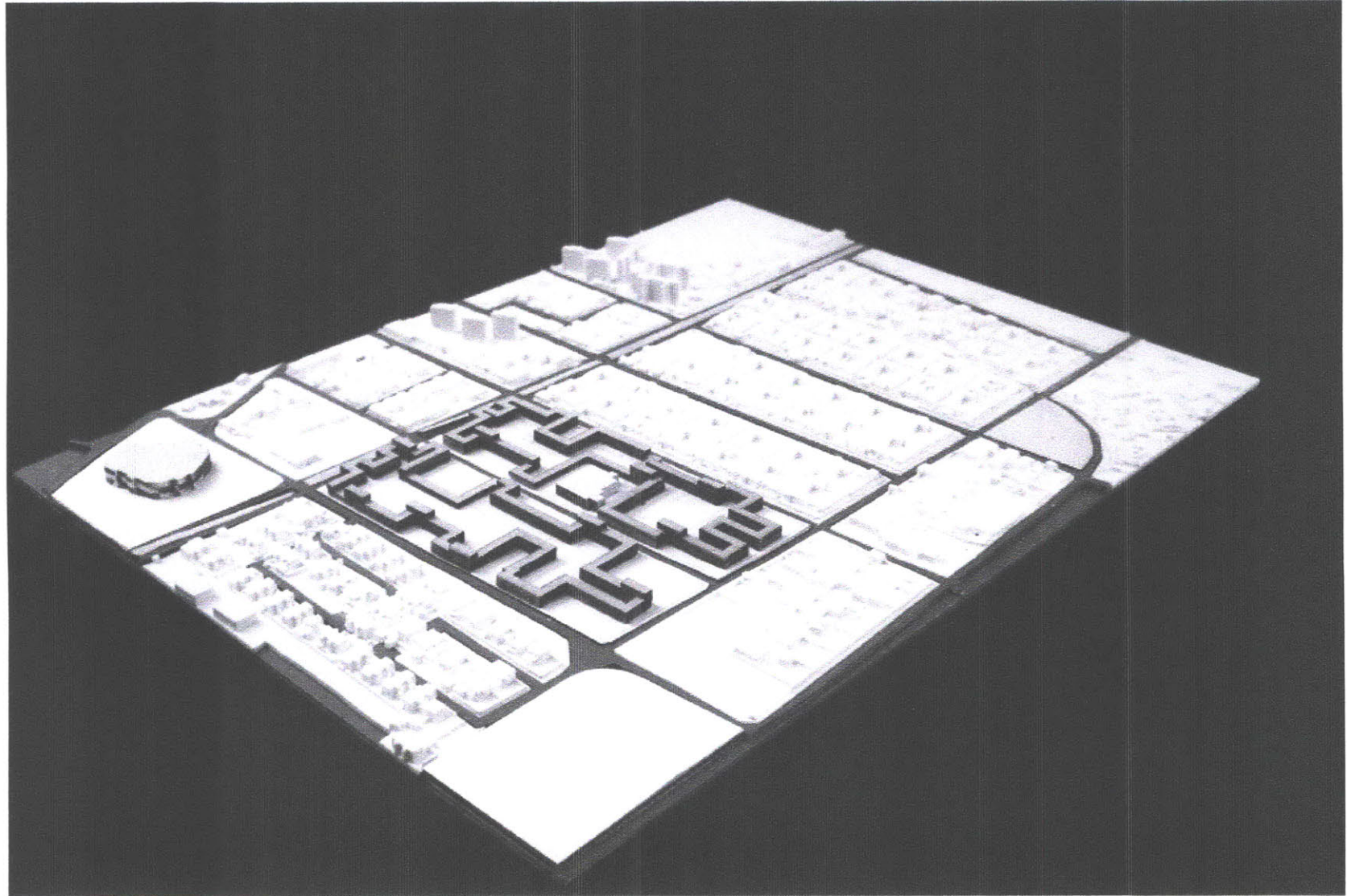
The Public corridor connects 5th to 7th Street, creating a public connection between the two current existing housing projects. The hope that this brings security via public connections, while reinforcing existing circulation flows and adding a commercial/recreational artery. In this image we see walls that are spaced and defined to house small bodegas and shops.



This is a large stair wall located generally in center areas of the internal yards. The idea is that eventually the defined stair core will encourage double height constructions. But as depicted, stairs and other elements can be used in a variety of methods--seating, performance, etc.

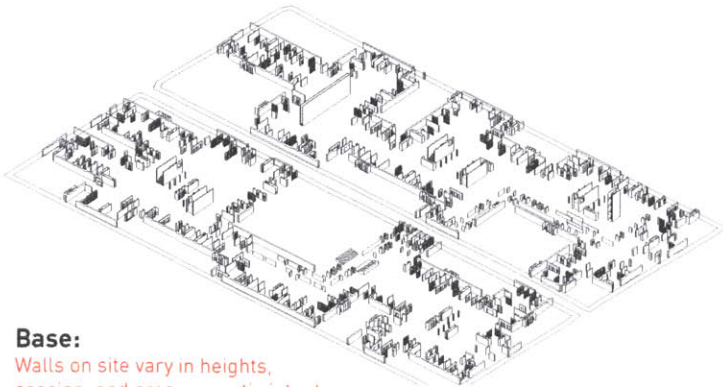


**70** Yarditecture: New Walls For Trench Town

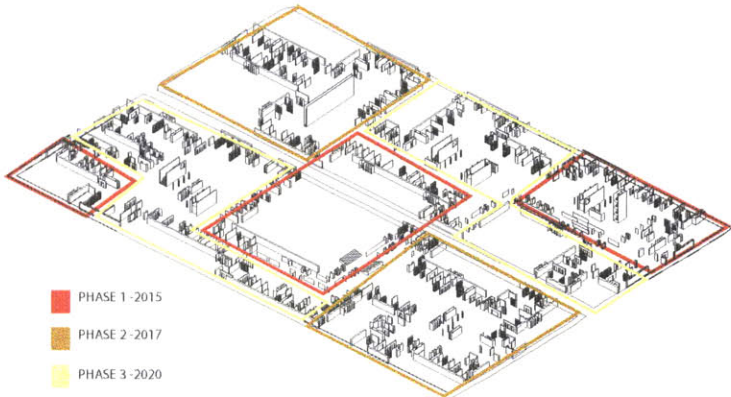


# Wall Distribution

Based off initial analysis and extrapolated parameters, walls are programmed and positioned to encourage certain areas to have specific program, higher densities, or other beneficial functions.

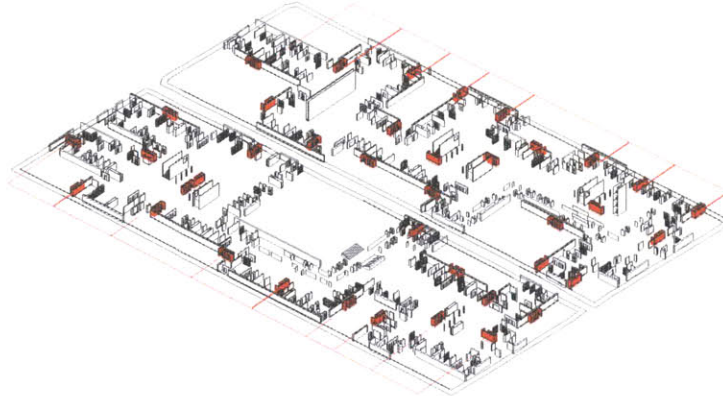


**Base:**  
Walls on site vary in heights, spacing, and programmatic intent.

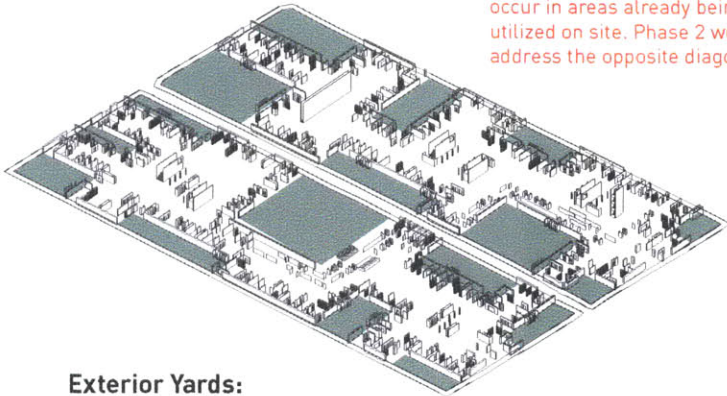


PHASE 1 - 2015  
PHASE 2 - 2017  
PHASE 3 - 2020

**Phasing:**  
Phasing for the walls would first occur in areas already being utilized on site. Phase 2 would address the opposite diagonal.



**Wet Cores:**  
Distributed to provide for every 5 households. Even distribution and added density provides for 50 wet walls.



**Exterior Yards:**  
Exterior yards vary in size, based off corresponding dimensions of commercial enterprises, micro-industries, restaurants, and recreational spaces. Surrounding community decides how these spaces are used.



Below are the logistical diagrams, explaining phasing and aforementioned placement of walls.



**Market Path:**

In order to provide guaranteed circulation and security via public oversight, a pedestrian corridor is provided.



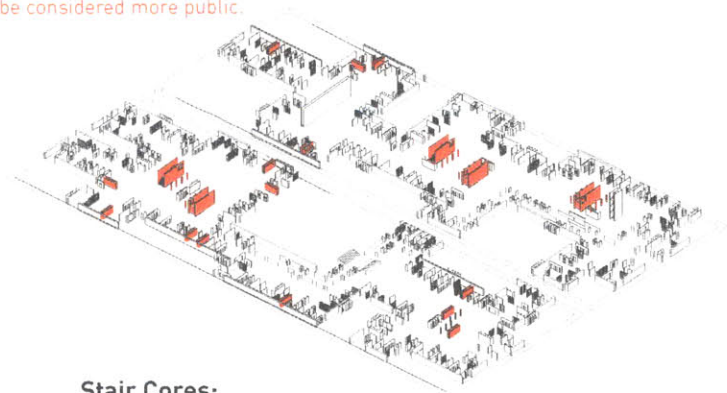
**Anomalies:**

Special Walls, generally recreational walls act as signage or icons to signify public space. The idea is that because they are unique, the space around them will be considered more public.



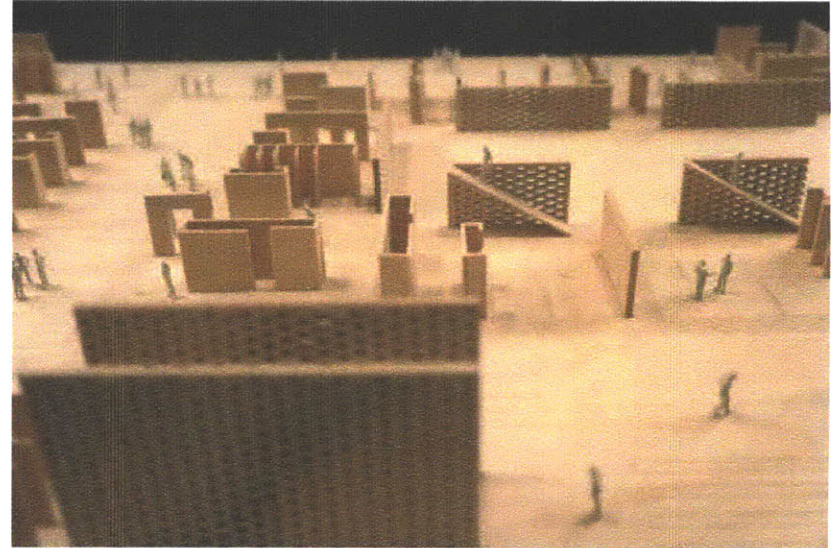
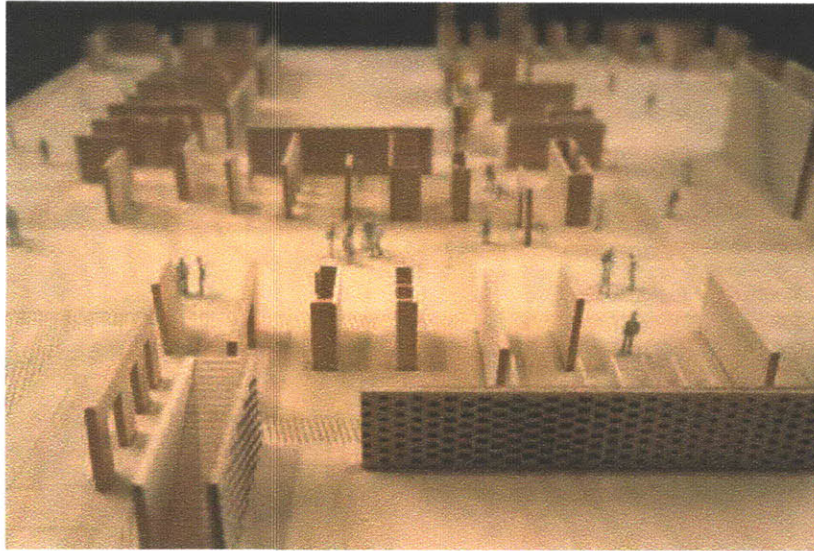
**Heating / Ventilation / Services:**

Walls near external yards are equipped with additional services to encourage programs that will take advantage of commercial and industrial entrepreneurialism.

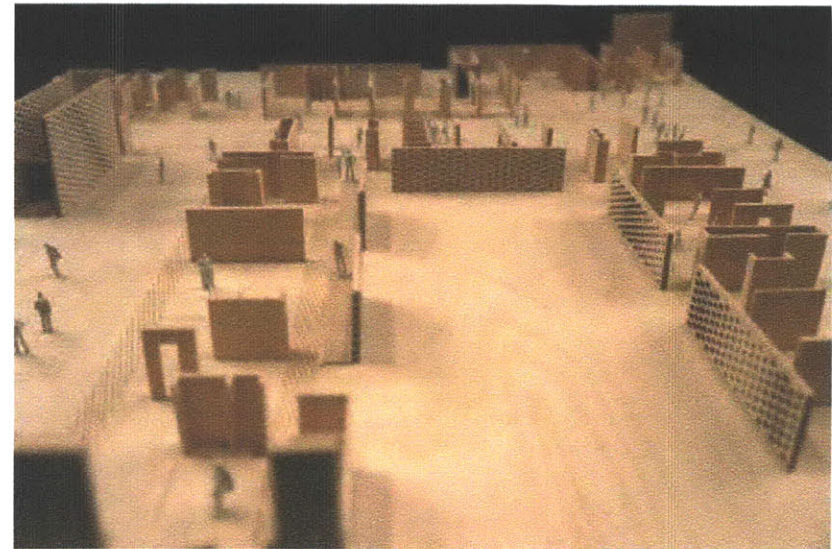


**Stair Cores:**

Stair cores are distributed near wet walls and external yards, encouraging densification in these areas.

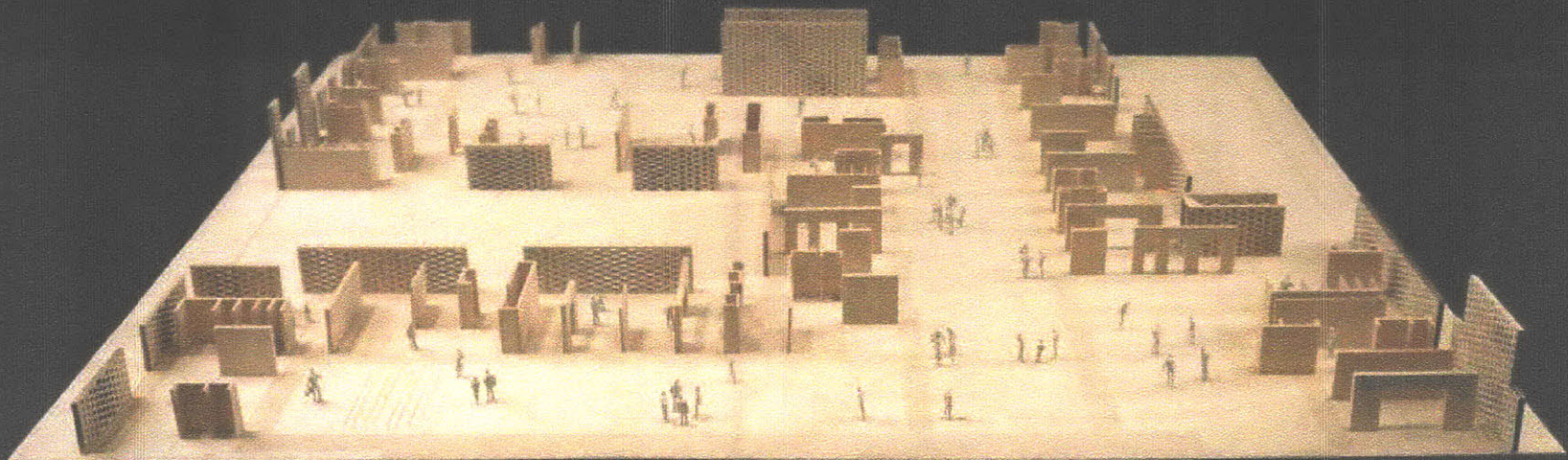


This model depicts the built work of the architect, the infrawalls in which inhabitants will infill and expand upon. It is a fragment of 6th - 7th street block, showing the internal yard and two external pockets.

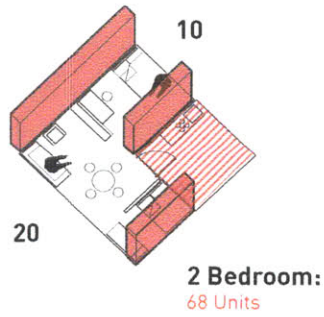
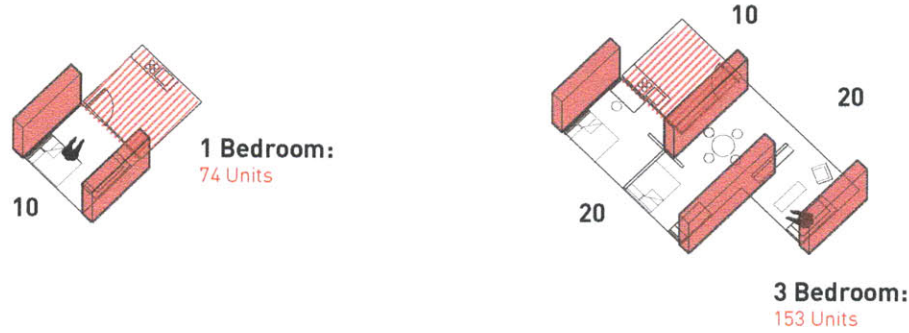


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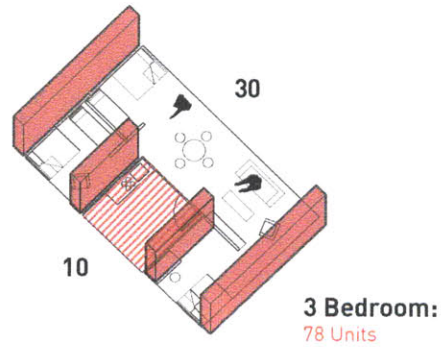
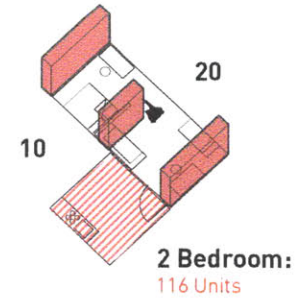
Model 1:100

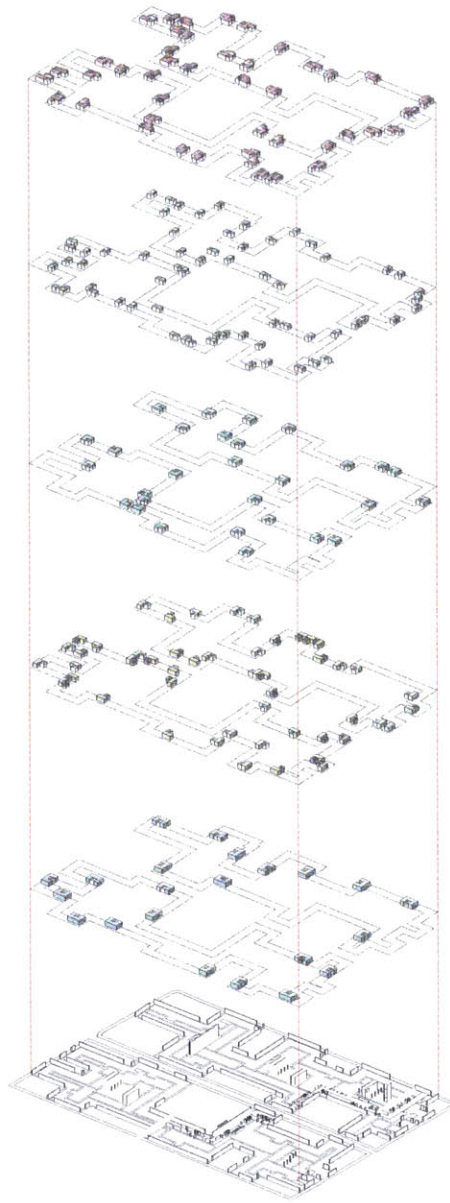
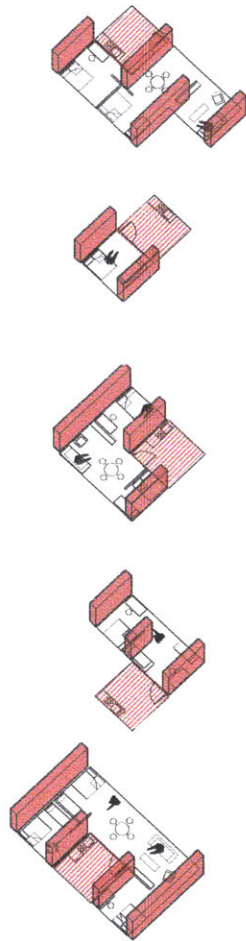


# Wall Distribution



# 589 units.





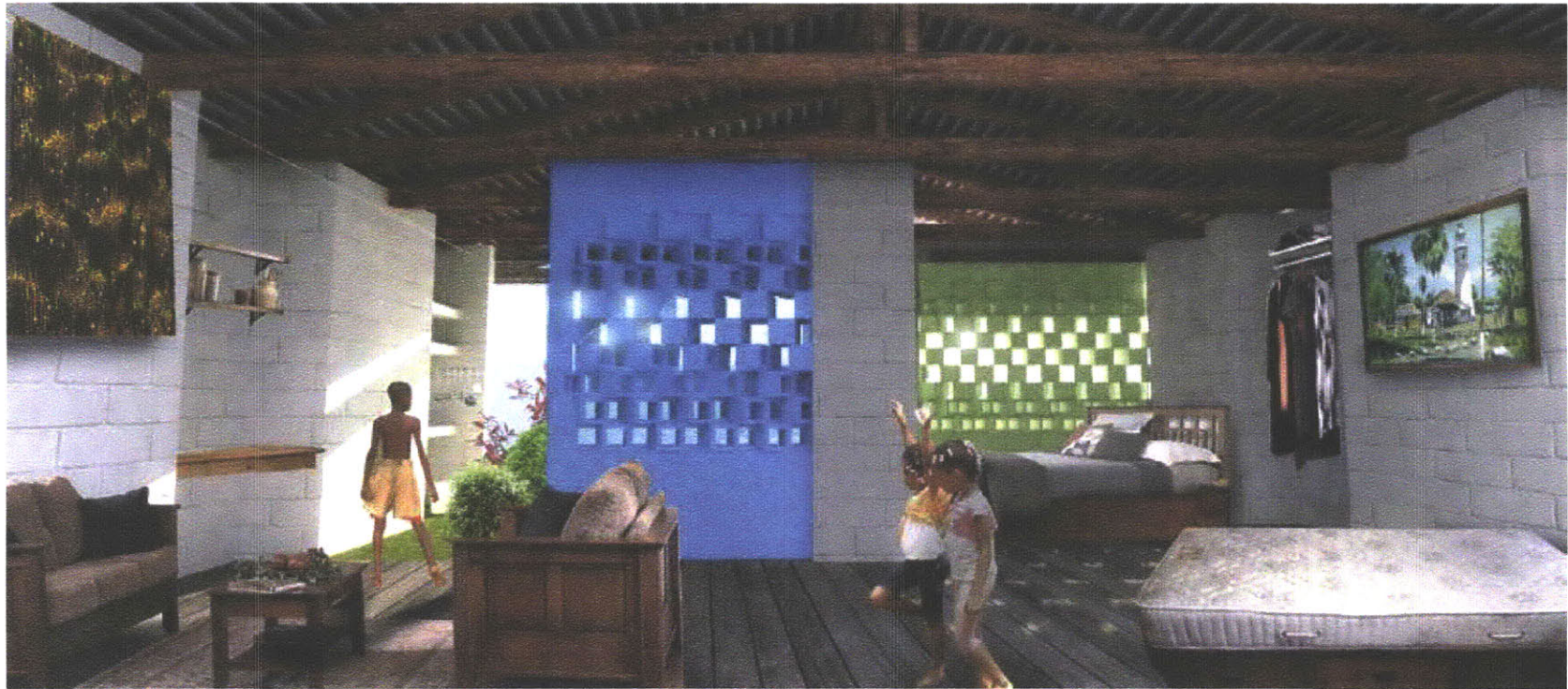
## Wall Distribution

Units took full advantage of the 10' x 10' module. Larger units are merely extensions of smaller units, allowing little to no awkward nooks between households. Additionally, because outdoor living and cooking outside is so essential to Jamaica, each unit design is equipped with a 10' x 10' outdoor space.

Units are determined by a 10' span module, but the way one claims their lot is by the amount of walls and the location of the walls they desire. In this way, a family can decide to buy 4 walls or 10 walls, fitting the need of their family. Later on, as development continues, families can buy each out or sell their allocated wall space, providing a flexible growth model.

Besides the space between each wall, walls themselves serve a variety of pragmatic functions--storage, kitchen nooks, rooms, stairs, structural supports are just a few. In this way, a wall that is provided is more than just a division, but a device or core of a household.

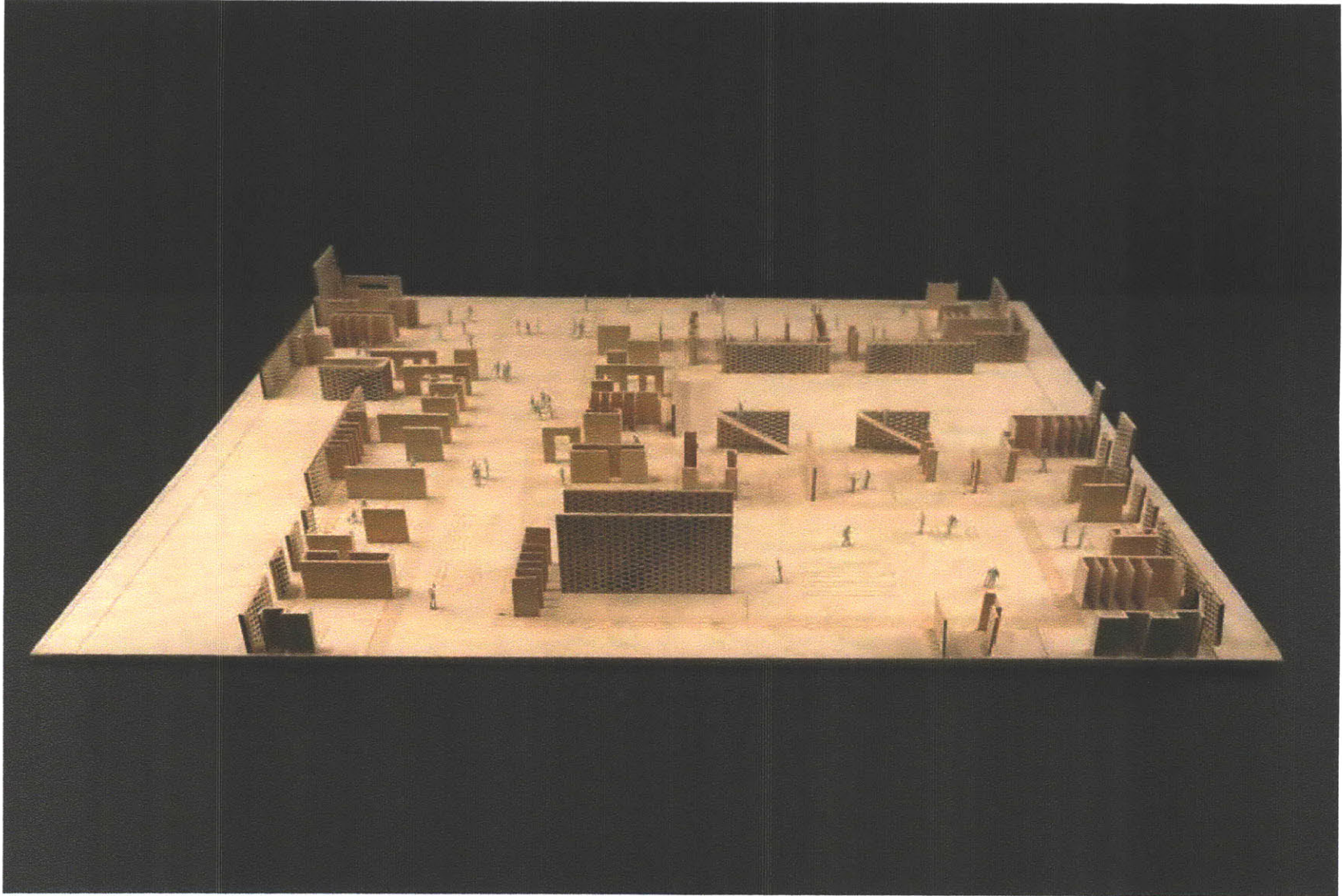
489 projected units made of a 10' x 10' module. This + 100 projected 2 story units makes the total 589. This surpasses the current density of two original blocks, which would be 384 units and also would match the 20% growth model the area would assume.



This is a 3 wall sized unit i.e. a 2 bedroom. Note the nooks and openings that allow for storage and pragmatic uses.

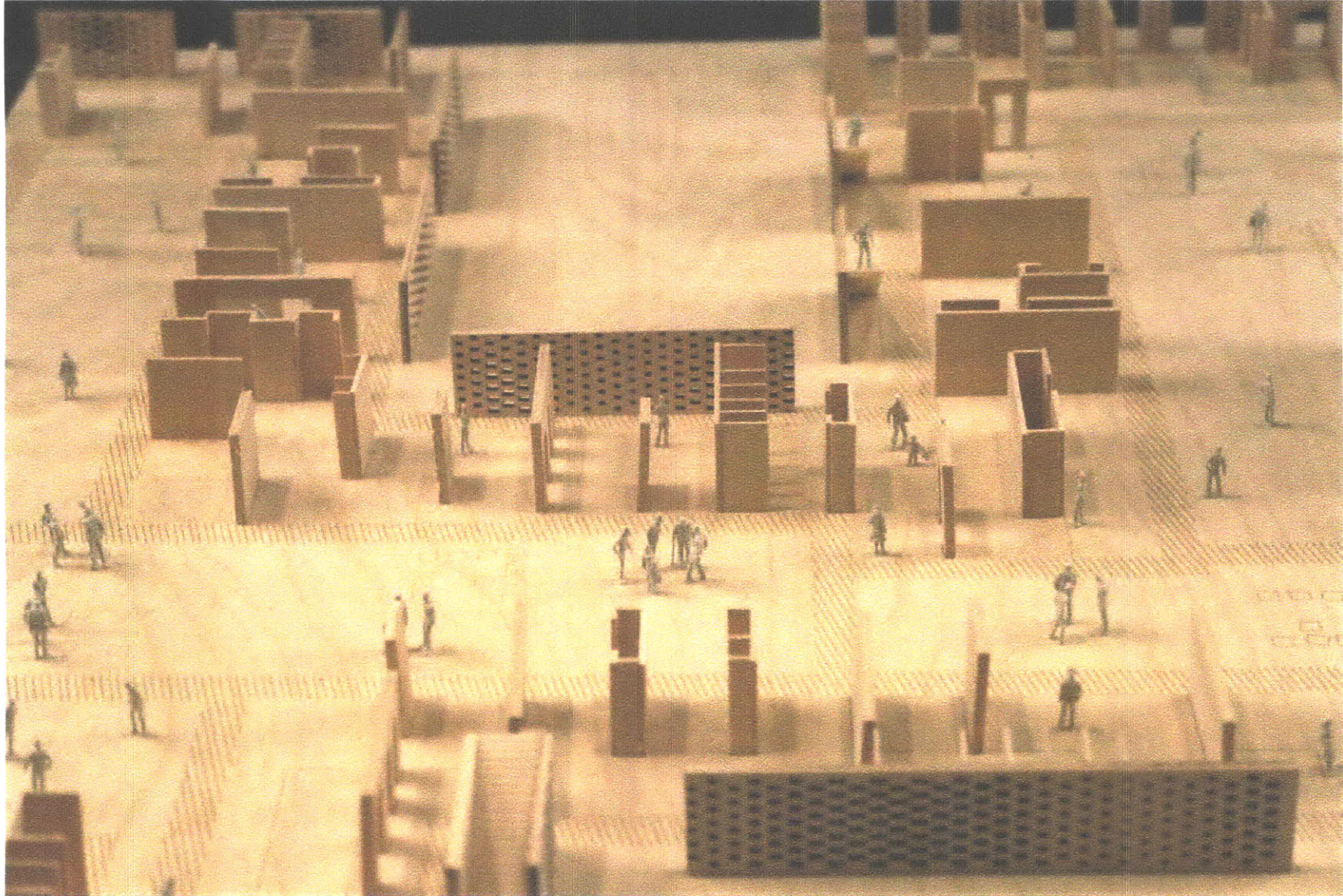


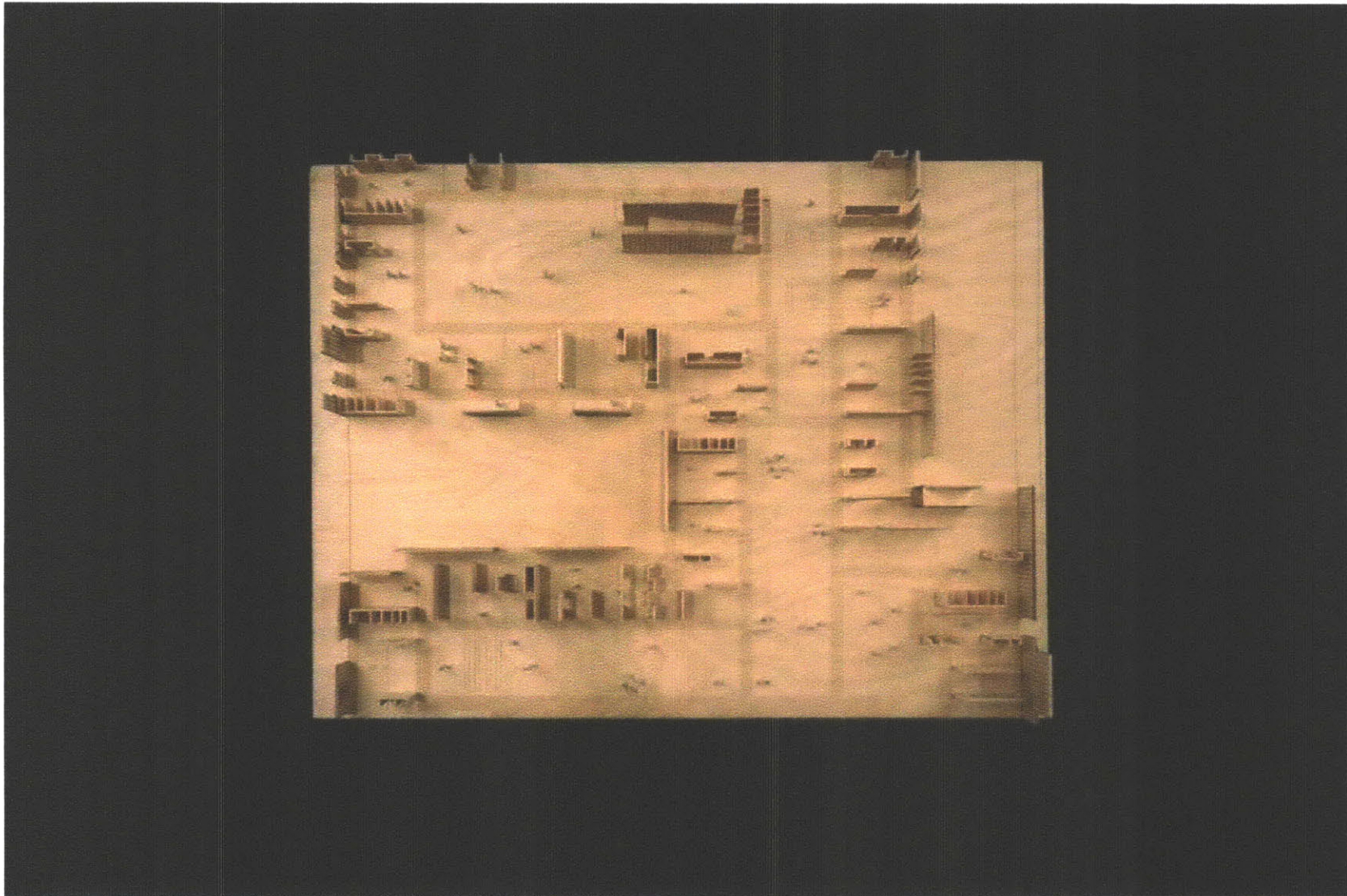
This is the simplest unit, a studio space between two walls. Even this considers a private outdoor space. By merely placing a spanning roof, the space already becomes inhabitable.



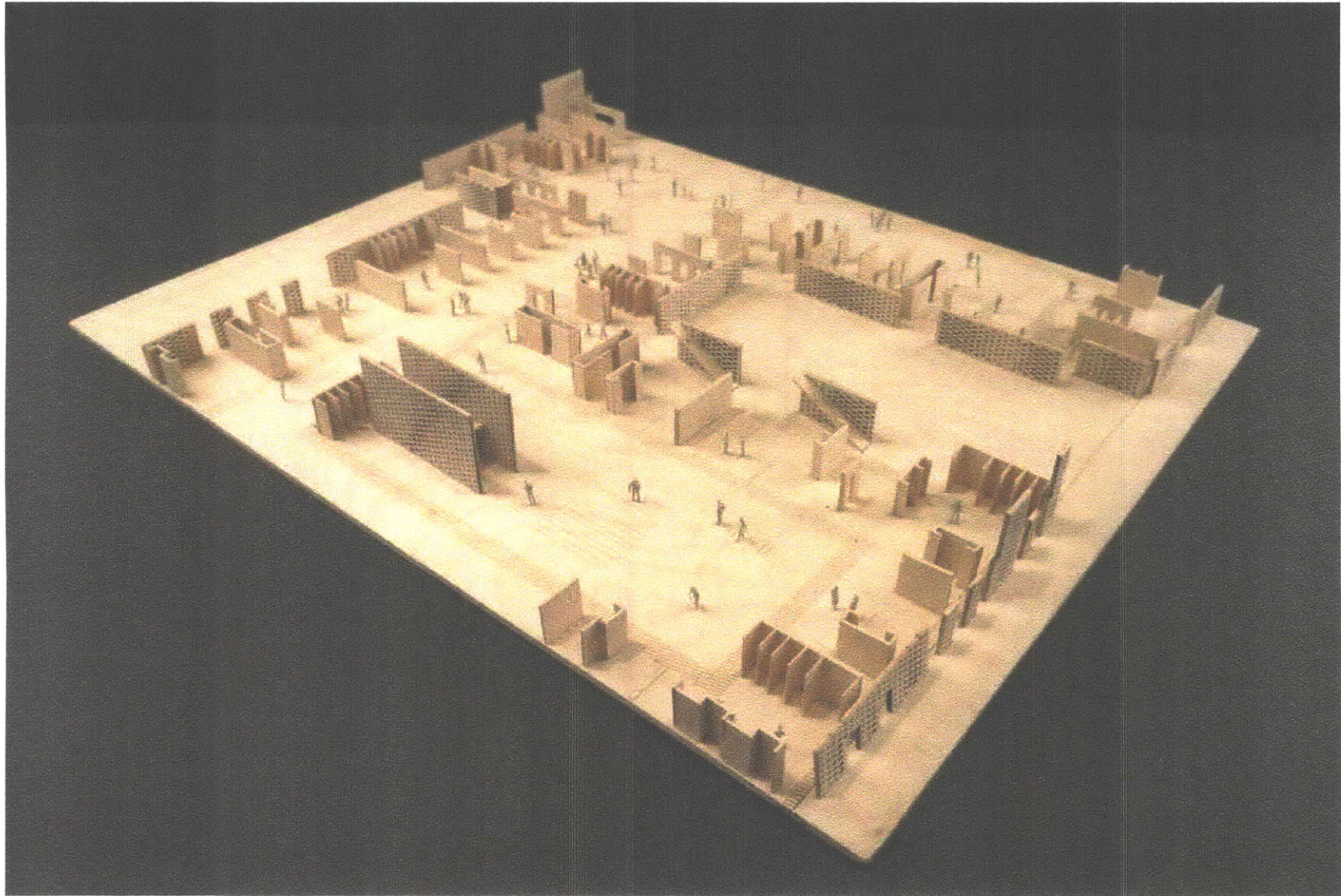
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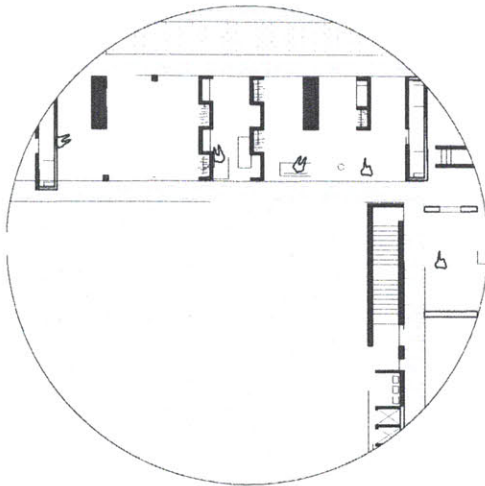




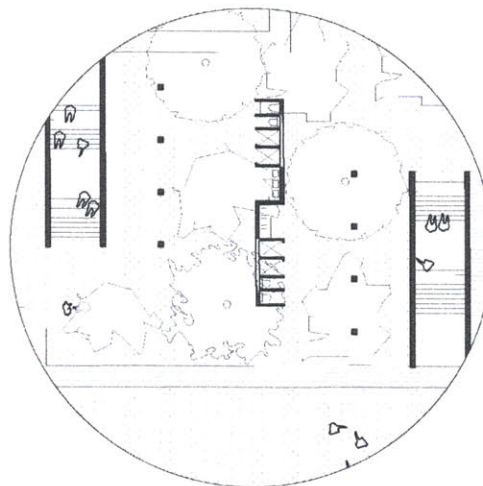
82 **Yarditecture:** New Walls For Trench Town



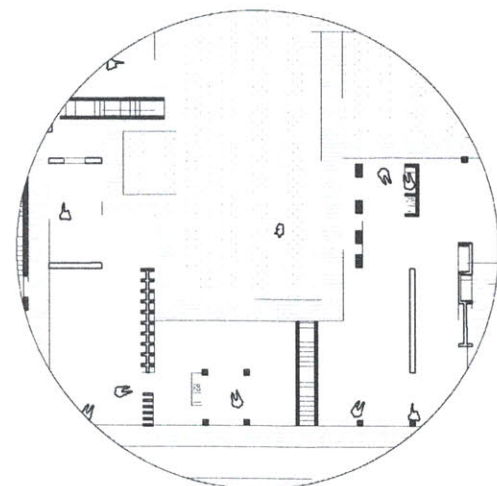
## A Growth Scenario: 1/3



**External Yard:**  
External yard is currently left as open space. The inhabitants have yet to move in and determine the use of the area.



**Courtyard:**  
Staircores become objects, not yet utilized until inhabitants start to move in.

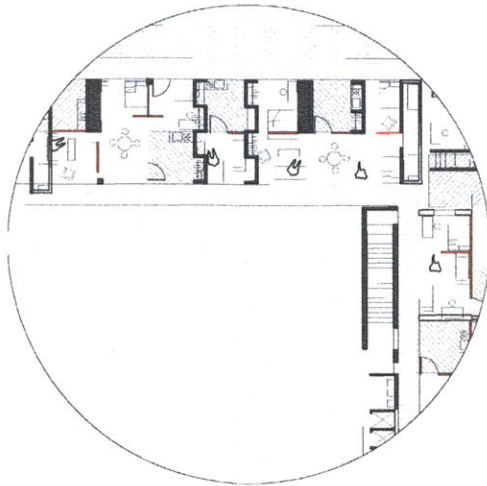


**Residential Units:**  
Units currently are just walls. Inhabitants have yet to move in.



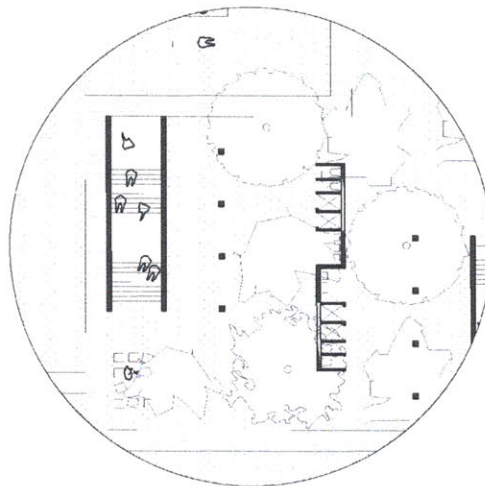
Initially walls and foundation are provided as initial infrastructure and spatial definition. Inhabitants are provided with a lot and share party walls.

## A Growth Scenario: 2/3



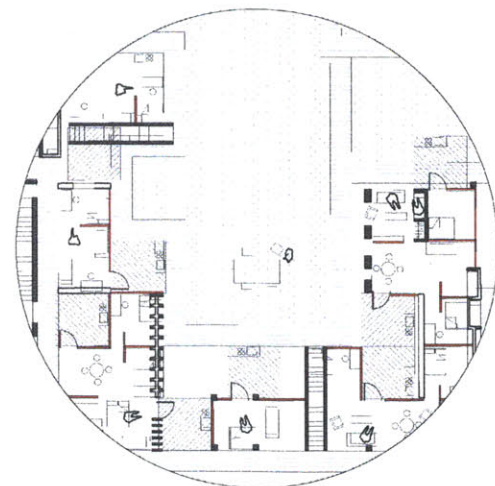
### External Yard:

External yard use becomes a debate between the community that now surrounds the area.



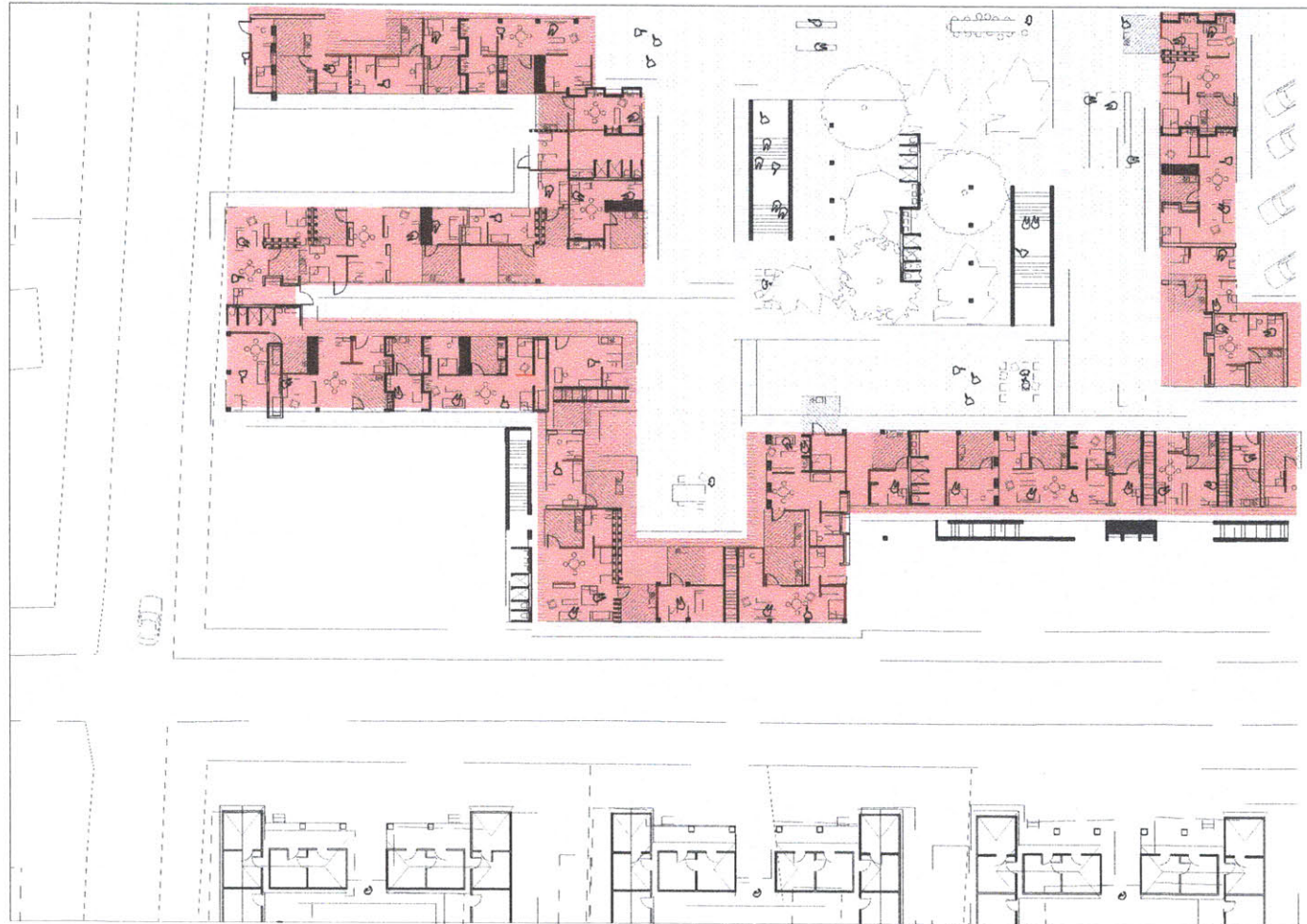
### Courtyard:

Staircores become recreational spaces, two story buildings are not yet implemented in this area.



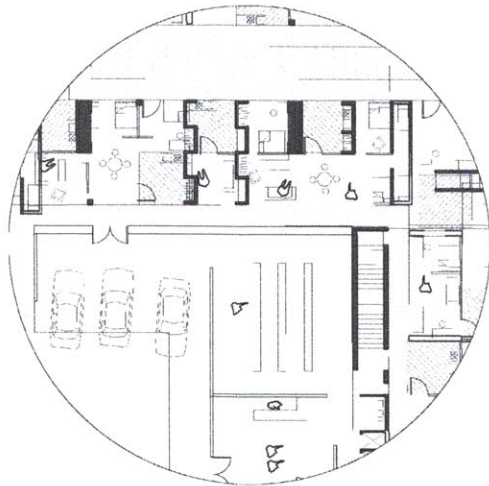
### Residential Units:

Units become inhabited, residents start to establish infill walls and furniture.



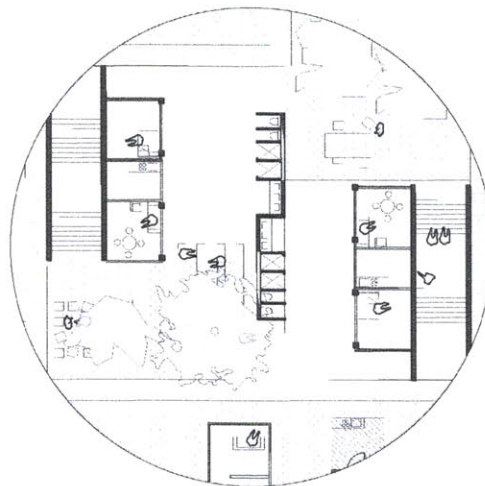
Inhabitants infill partition walls within the structural walls. To their choosing. This allows for flexibility of layout, and opportunity for taking over adjacent lots and expansions. Structural walls are not only for definition and structure, but also act as storage, utilities, and circulation.

## A Growth Scenario: 3/3



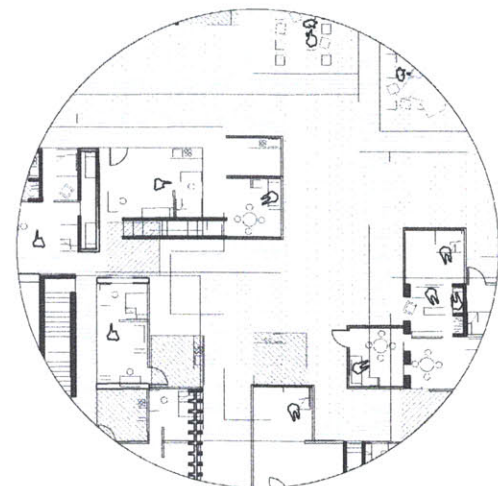
### External Yard:

External yard, in this case, became an auto body shop. Portion of the surrounding inhabitants use this as establishing a steady income.



### Courtyard:

Two Storey buildings now begin to occupy the interior courtyard.



### Residential Units:

Residents over time begin expanding their home inwardly. The large internal space was made to accommodate this action.





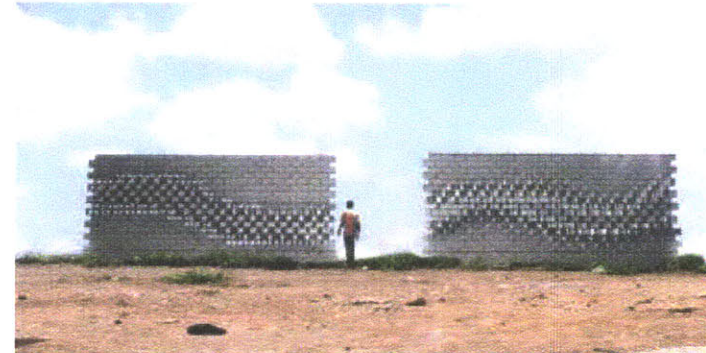
Large pockets on the outside are equipped with large circulation and special utilitarian walls. This provides opportunity for micro industry and retail to emerge, embracing the street but also retaining the yard condition. Residential expansions inward also occur, which begins to fill the interior, filling the interior space, yet courtyard definition in the middle sets a limit to growth.

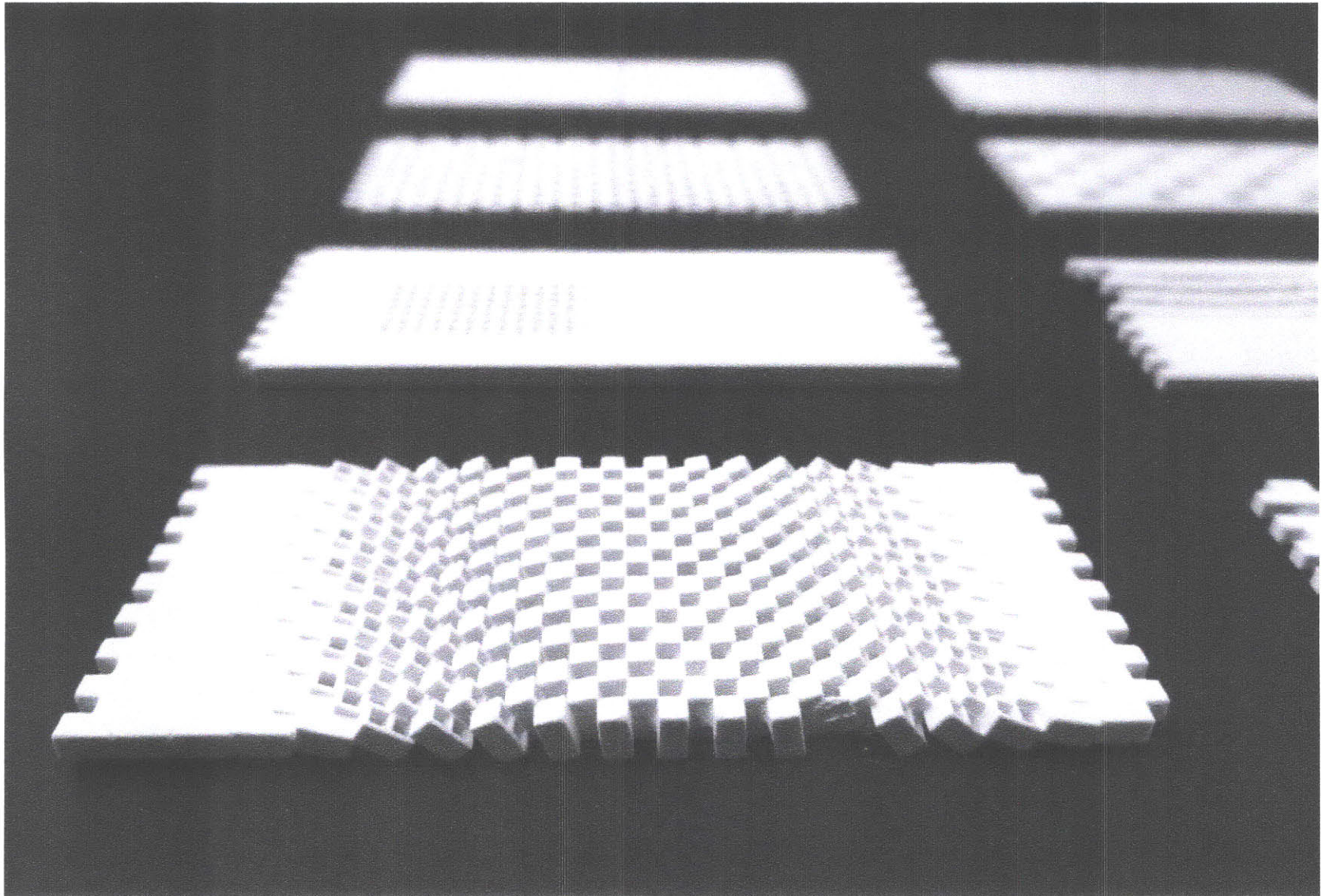
## Wall Atrication

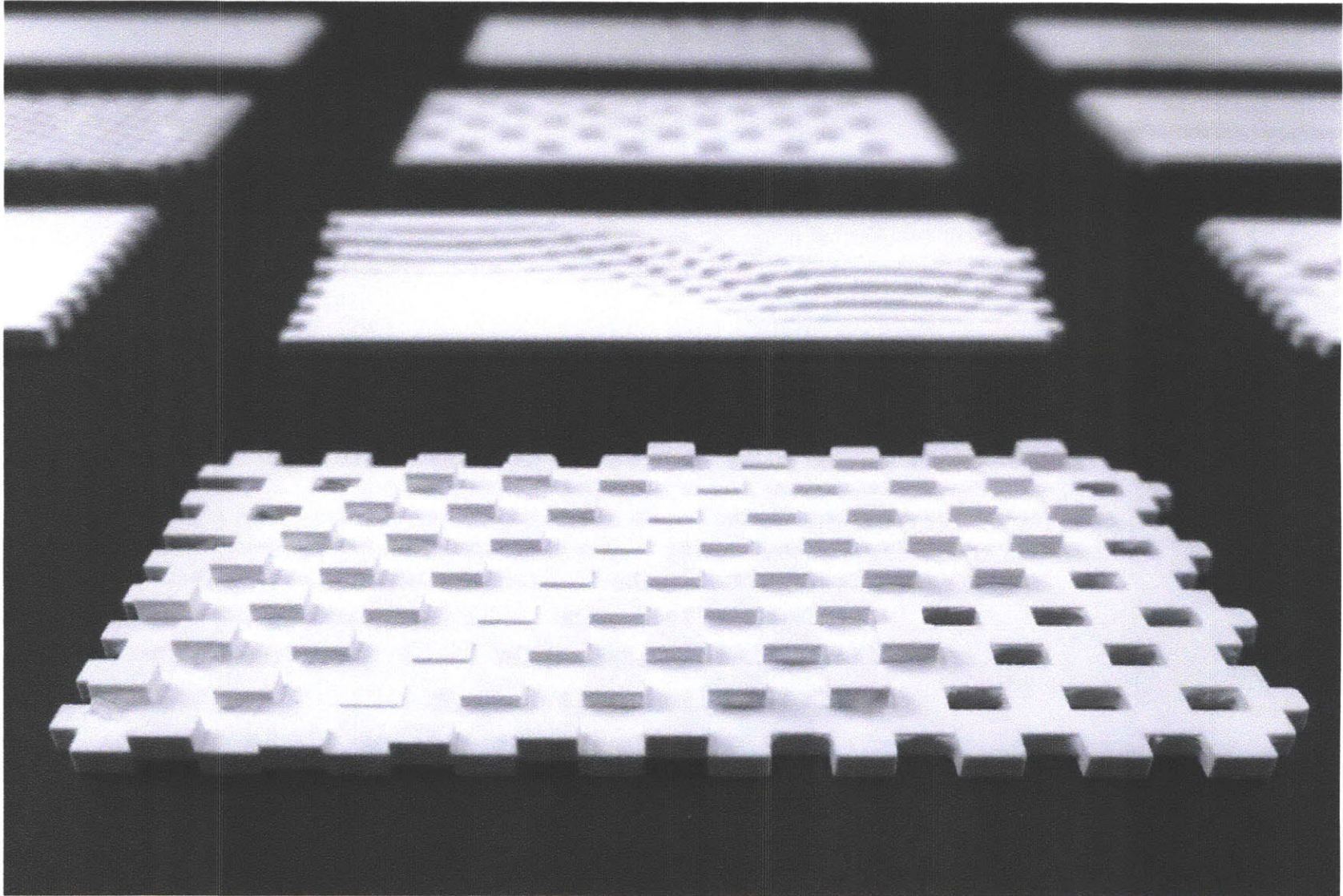
As mentioned in the research and parameters section, materiality and limiting the palette was intentional and a rigorous investigation. So far, the use of materials as infrastructural or spatial organizers has been shown, but one cannot forget improving the aesthetics and variability of the wall.

Walls in Jamaica are places of signage, innovation, public space. It is thus obvious that the wall should be celebrated in its aesthetics, responsiveness to light, porosity in a similarly unique way. Studies in various transformations were implemented.

Right: Various Cmu transformations. From top to bottom, the translations are rotate, push, and flip

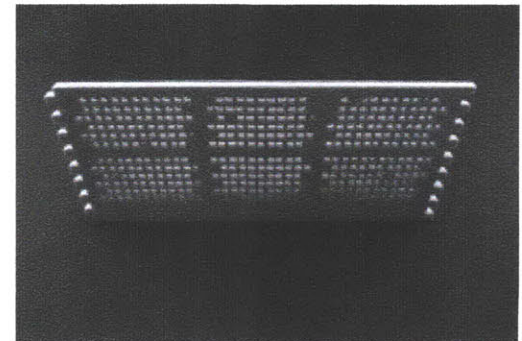
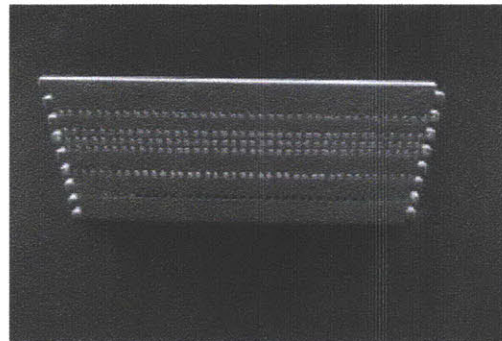
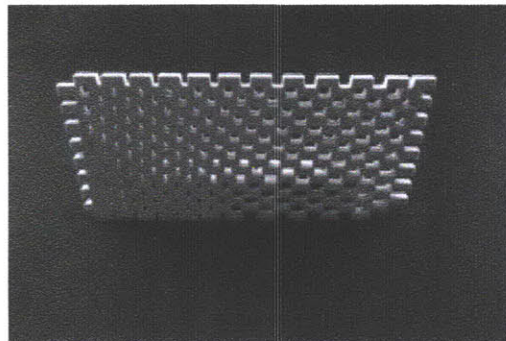
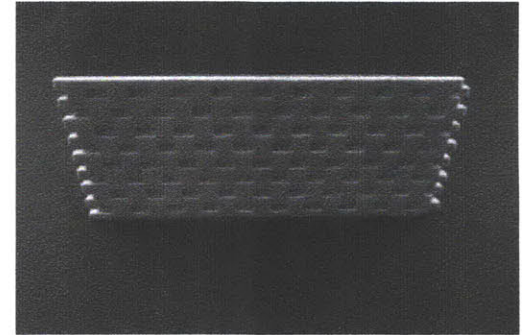
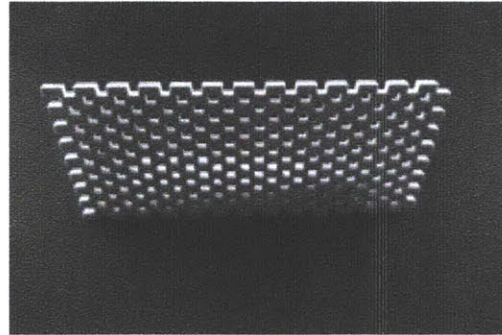
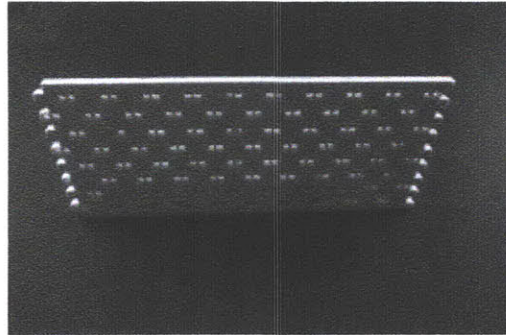
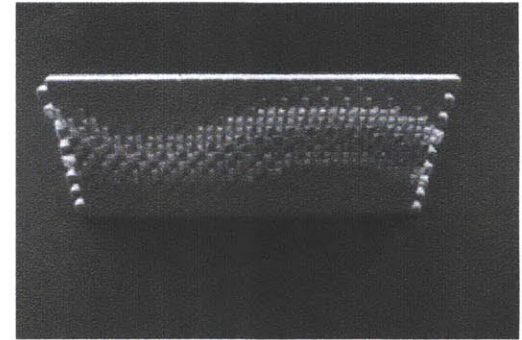
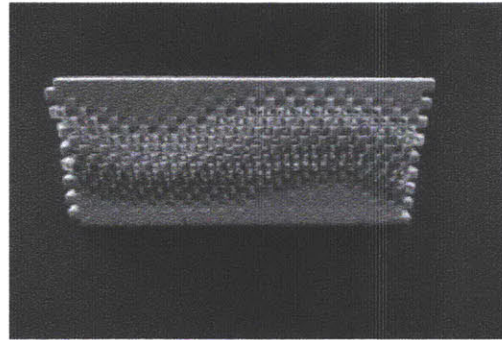
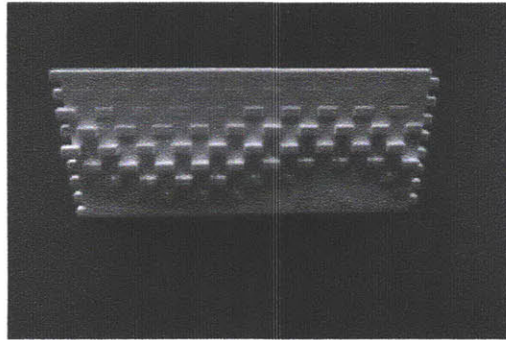


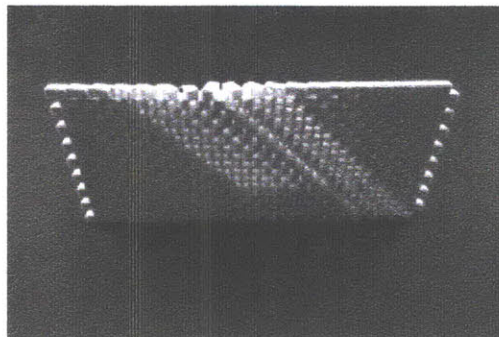
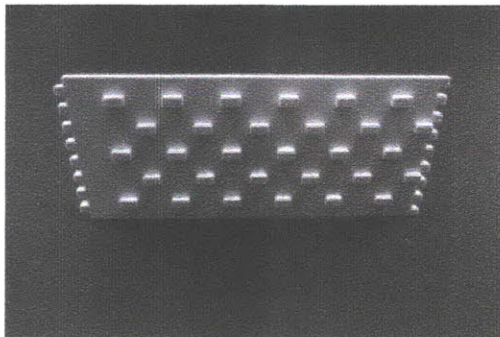
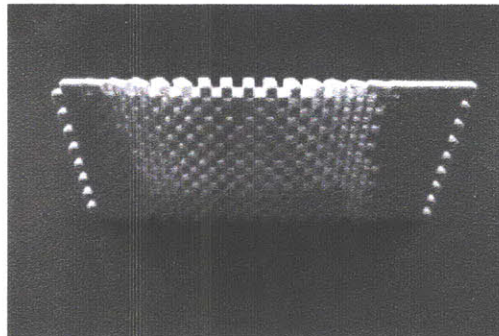
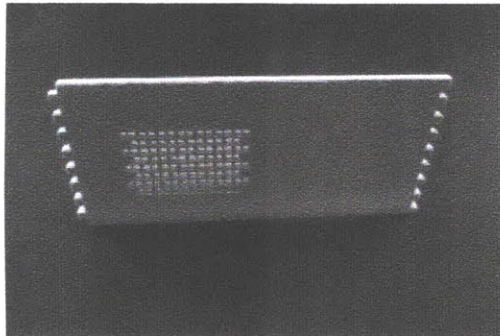
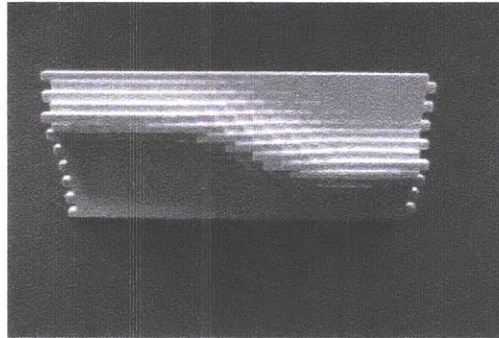
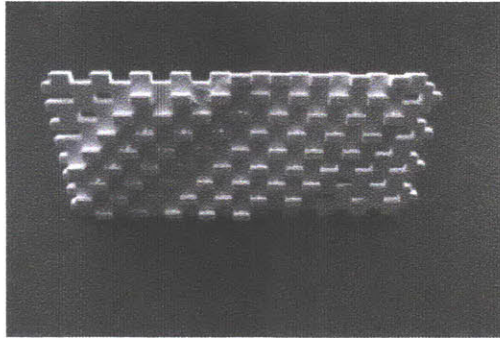




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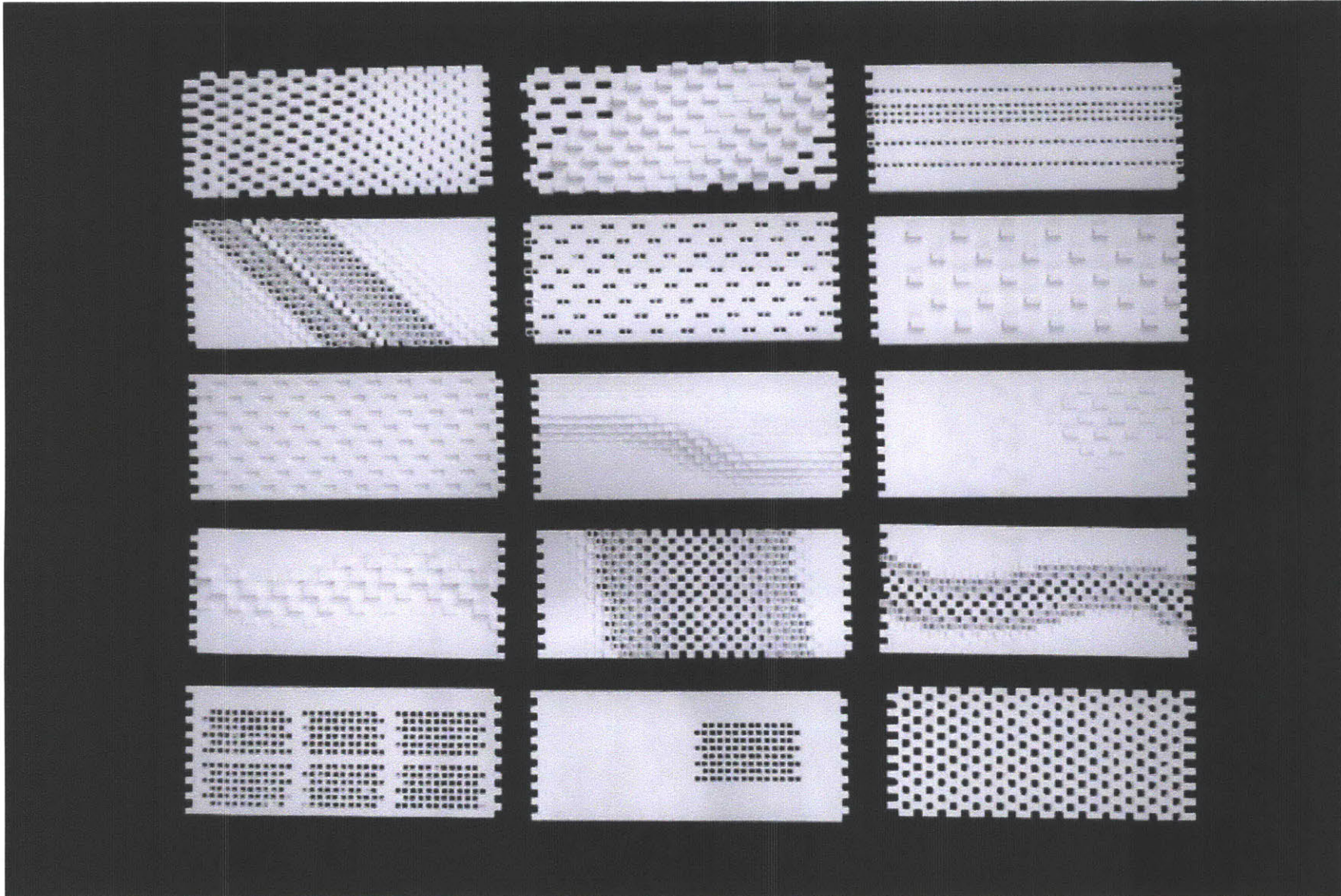




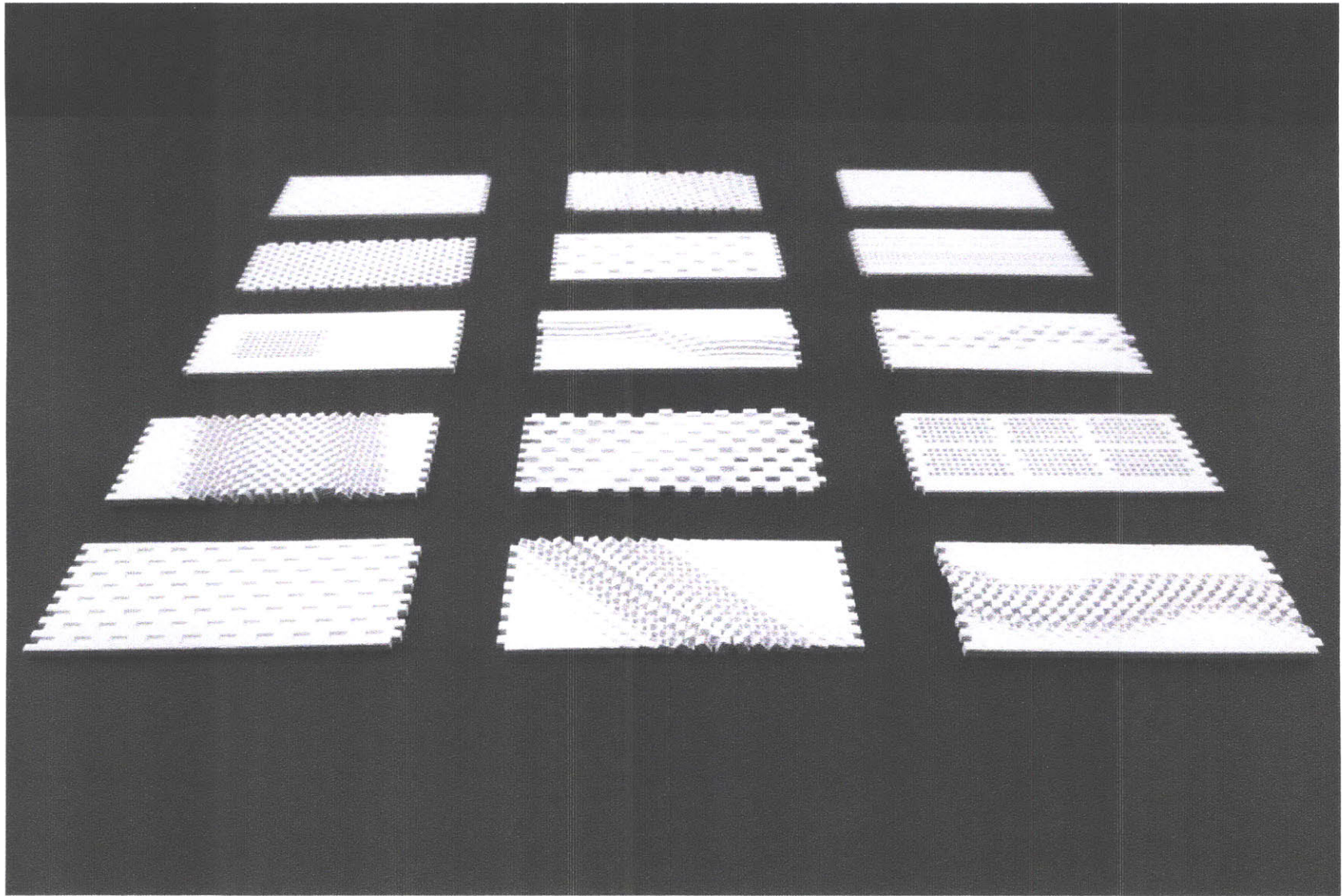
## 15 Walls

This series was done in order to test not only different aesthetic enhancements of a basic concrete wall, but also aperture studies. Rotation for example can limit views into or out of a specific space, but allow views elsewhere. Simple pushing in and out can create dynamic shadows and opportunities for planters or seating.

There is a range of complexity. Some must require professional work, or the use of mechanized systems. Others are quite simple and can be done manually. This range is intentional in that it reinforces the formal / informal relationship that is the root of the proposal.





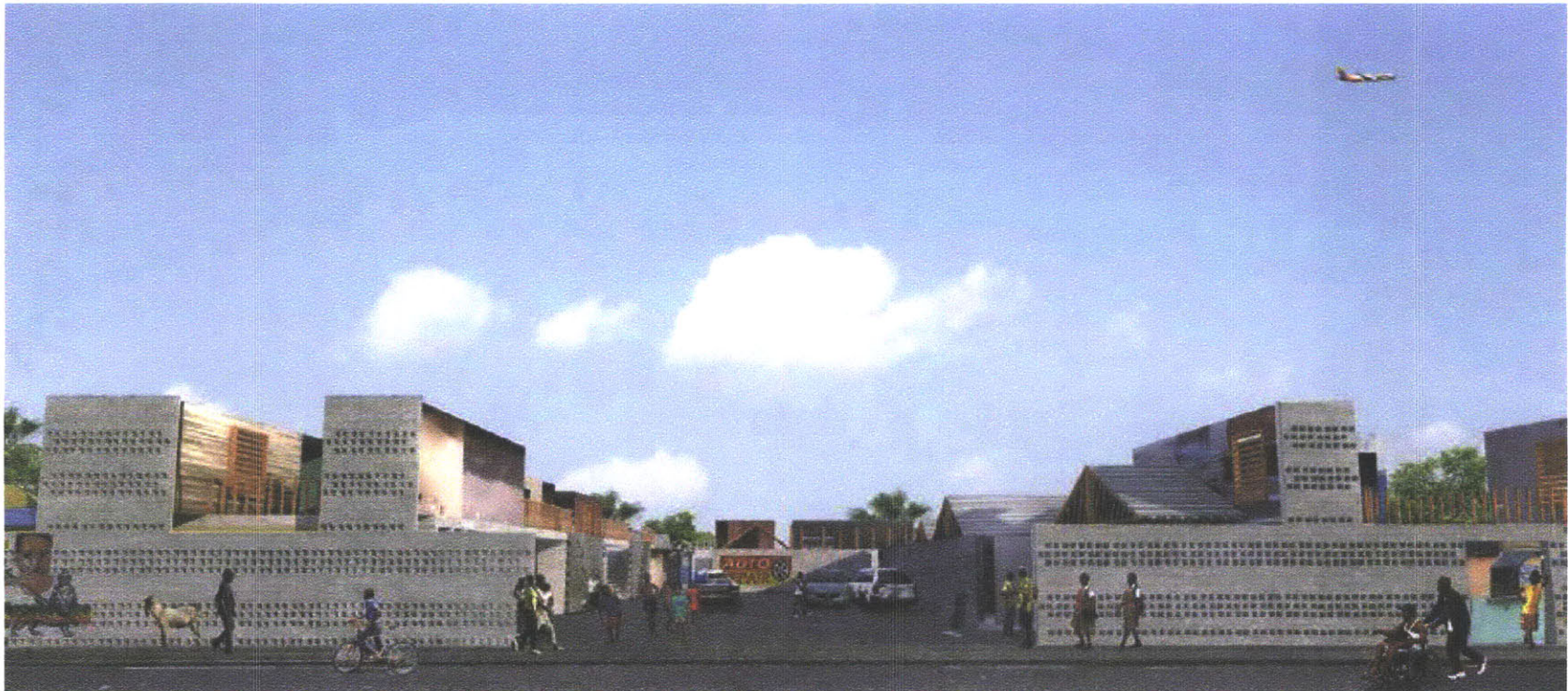




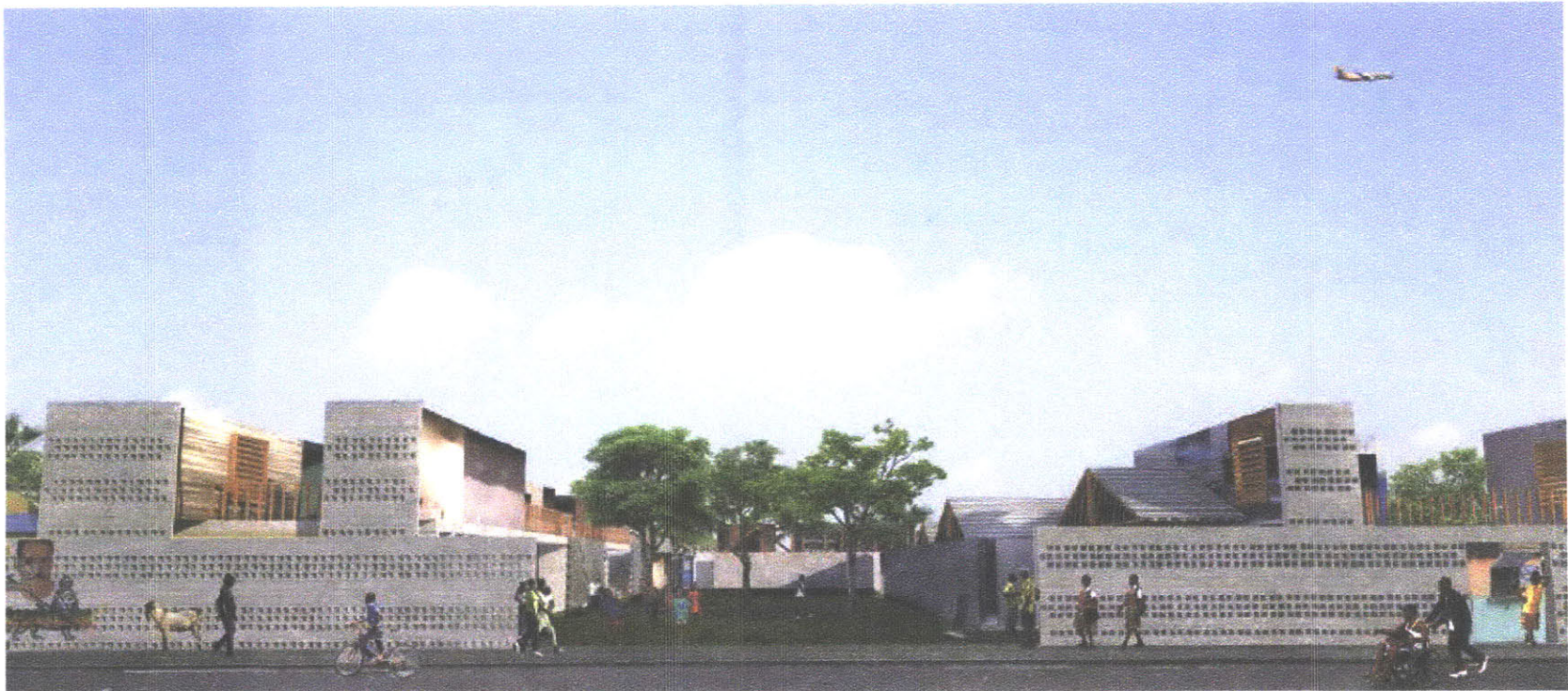
Staircore walls become utilized, allowing denser moments to occur paired with public recreational amenities.



Exterior shot showing a corner condition in which the external yard has been transformed into a lumber yard. Various other pockets have been used as commercial ventures.



An external yard is used as an auto shop.



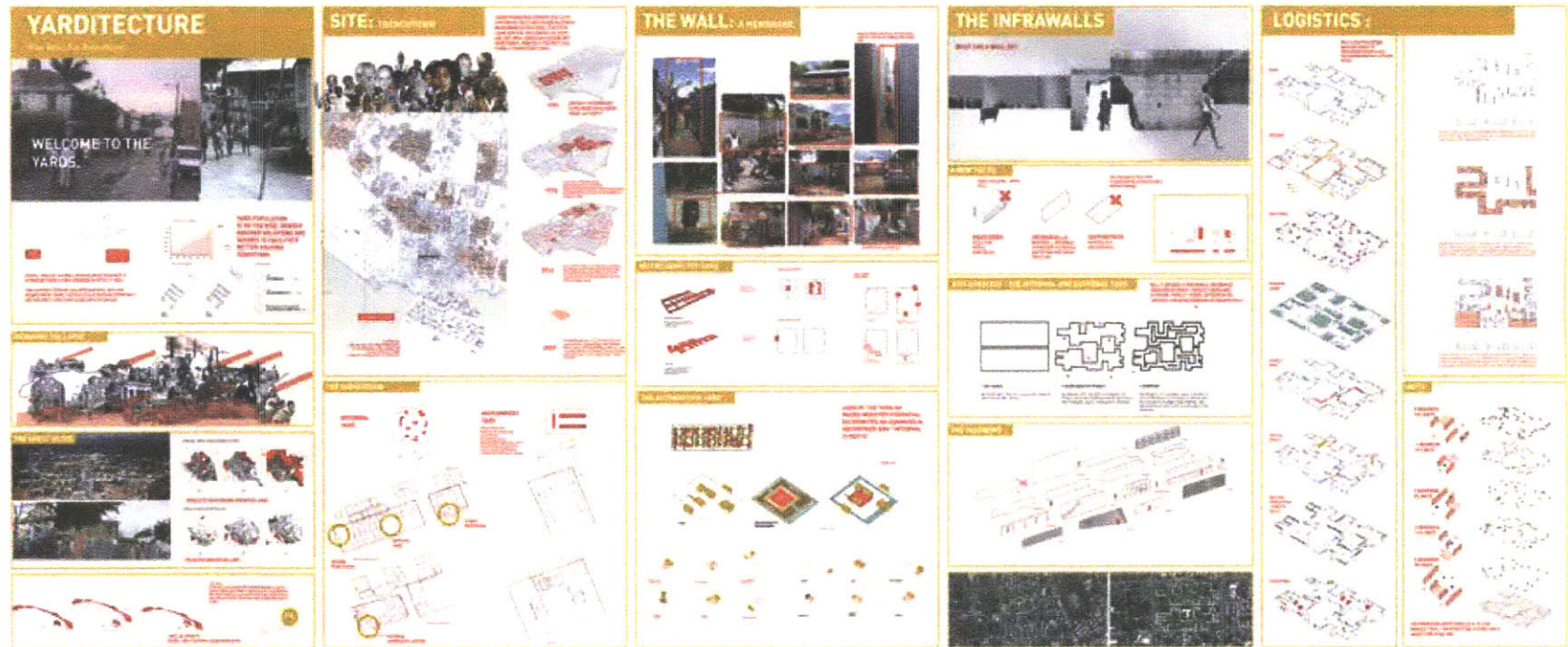
The same external yard could also be decided to remain vacant by the surrounding inhabitants. This allows for a variability unique to different areas of each yard segment.

# Chapter 04

## **Appendix**



# Final Boards : Thesis Defense 12/19/13

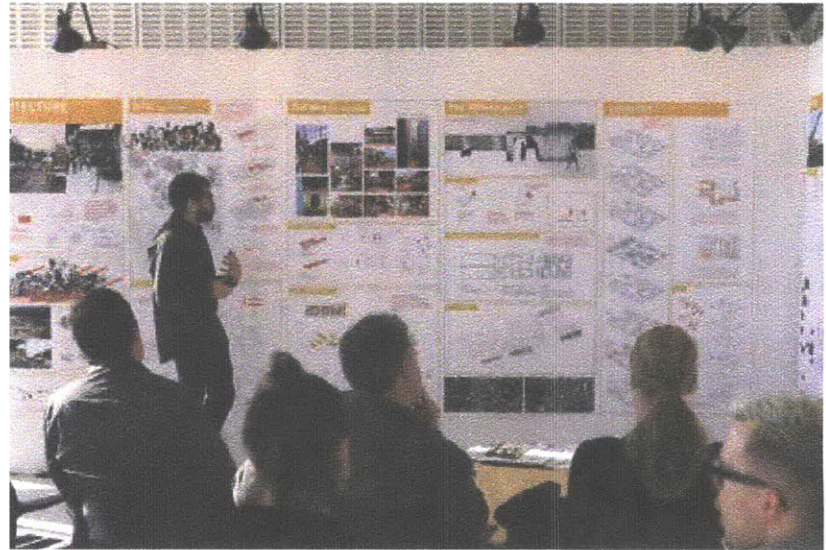




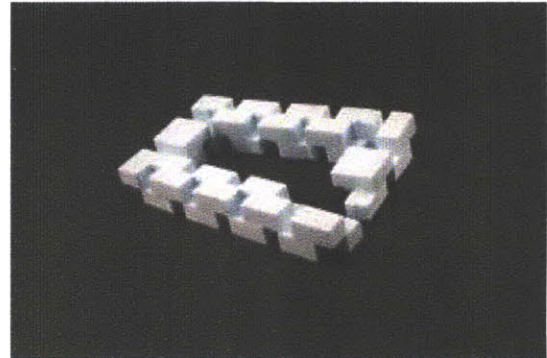
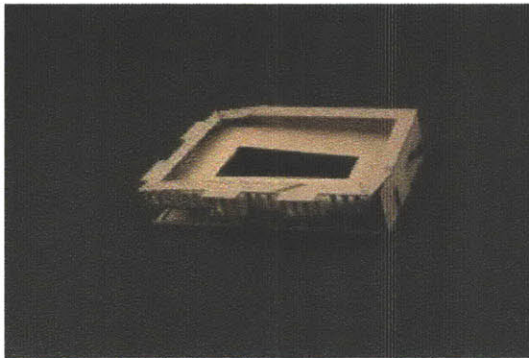
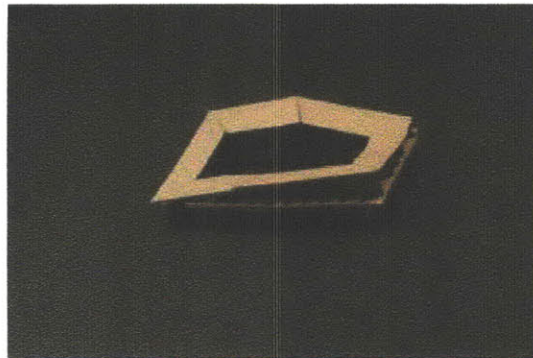
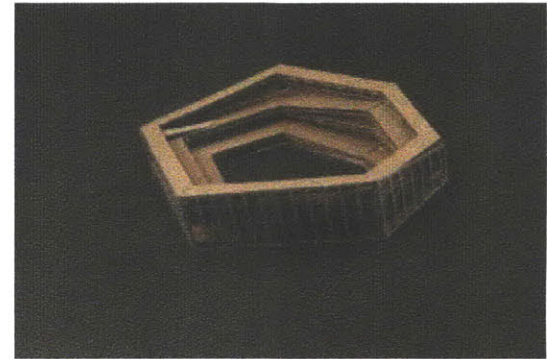
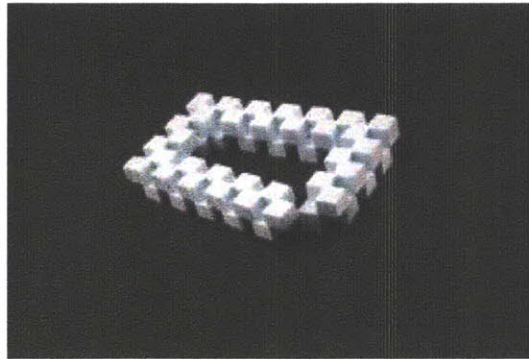
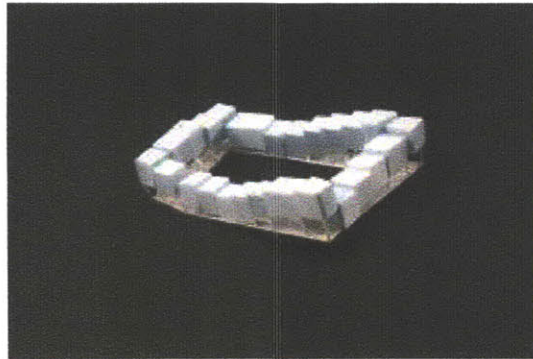


# Presentation: Thesis Defense 12/19/13

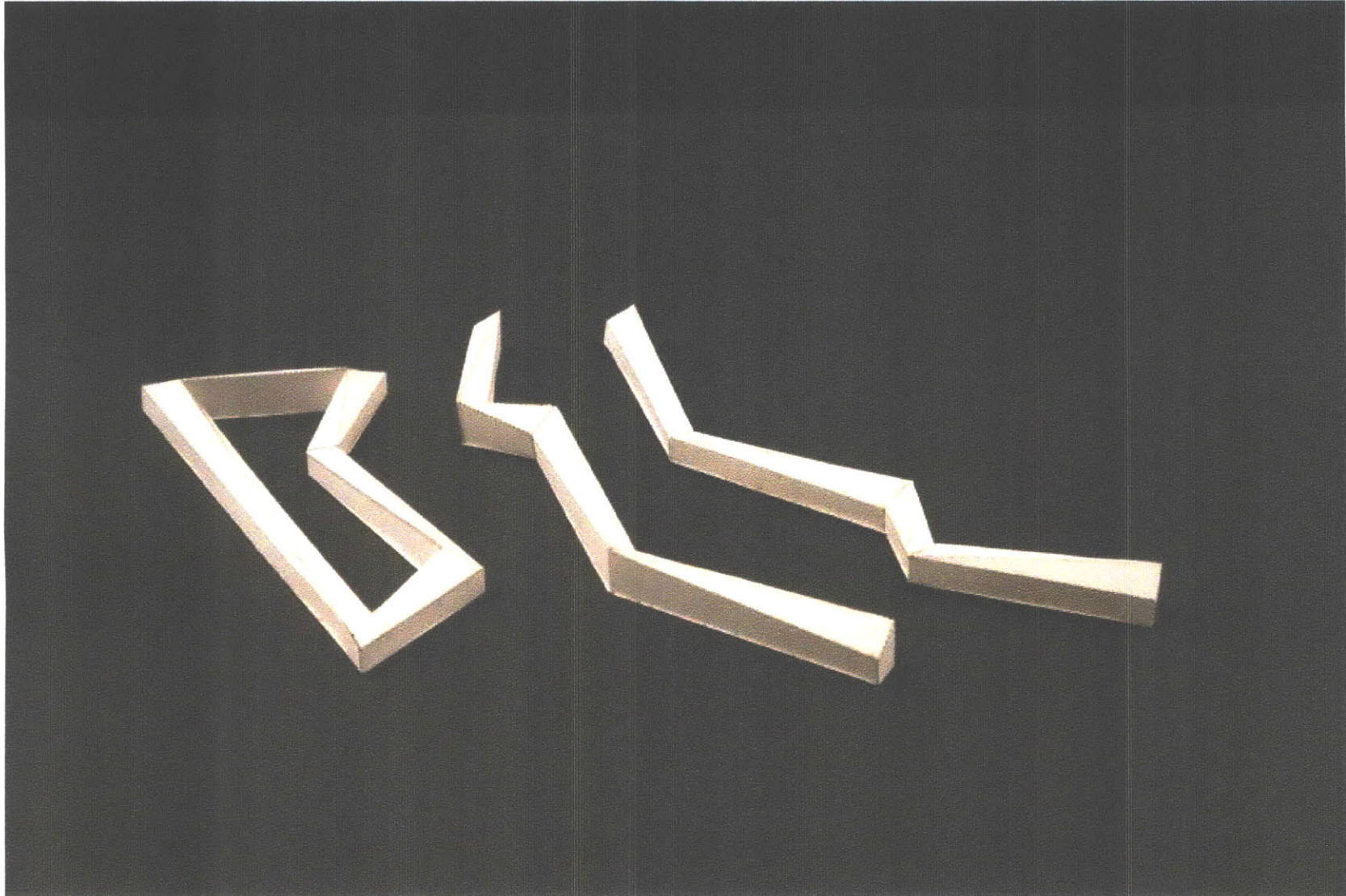




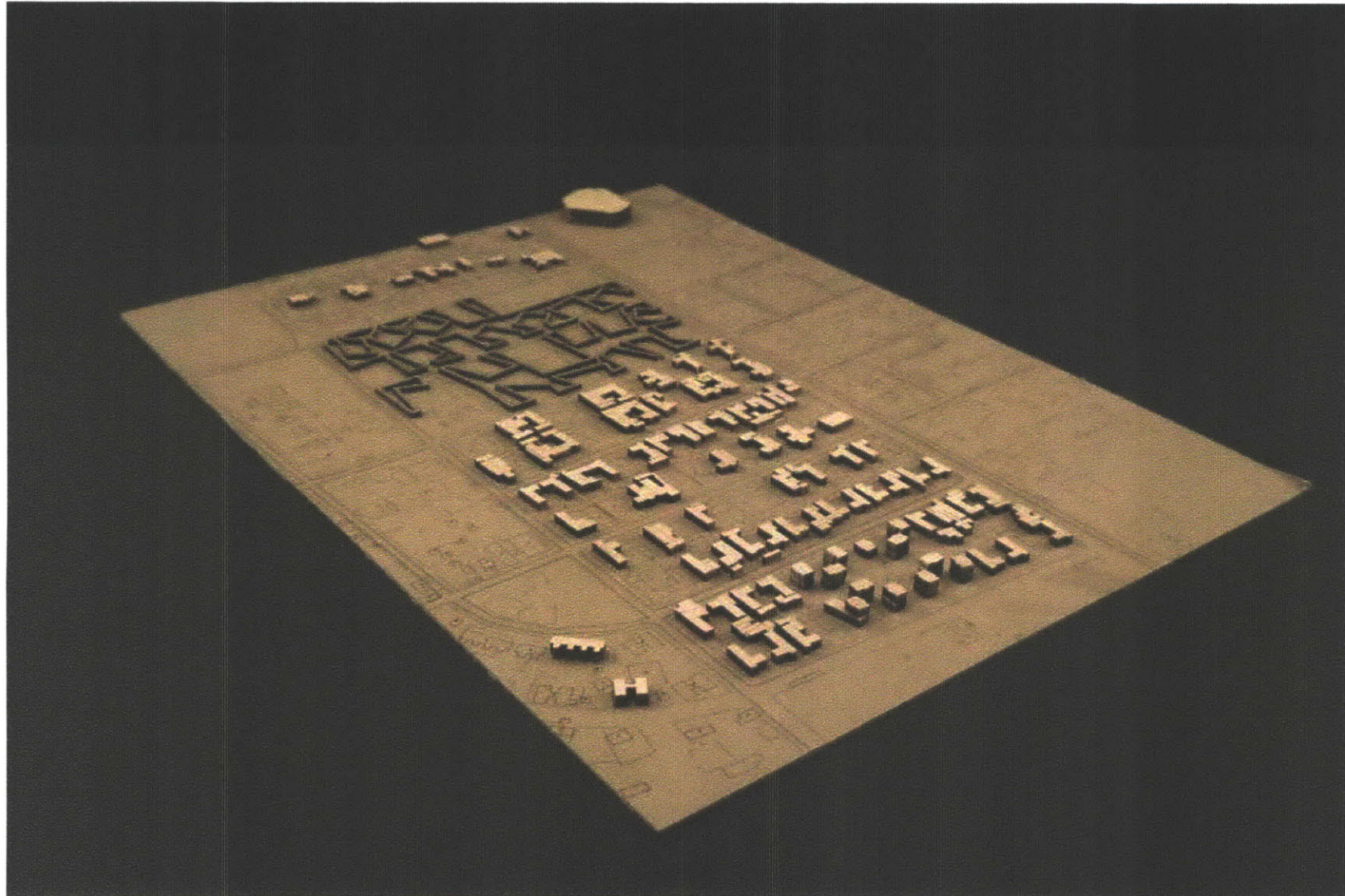
## Process Models



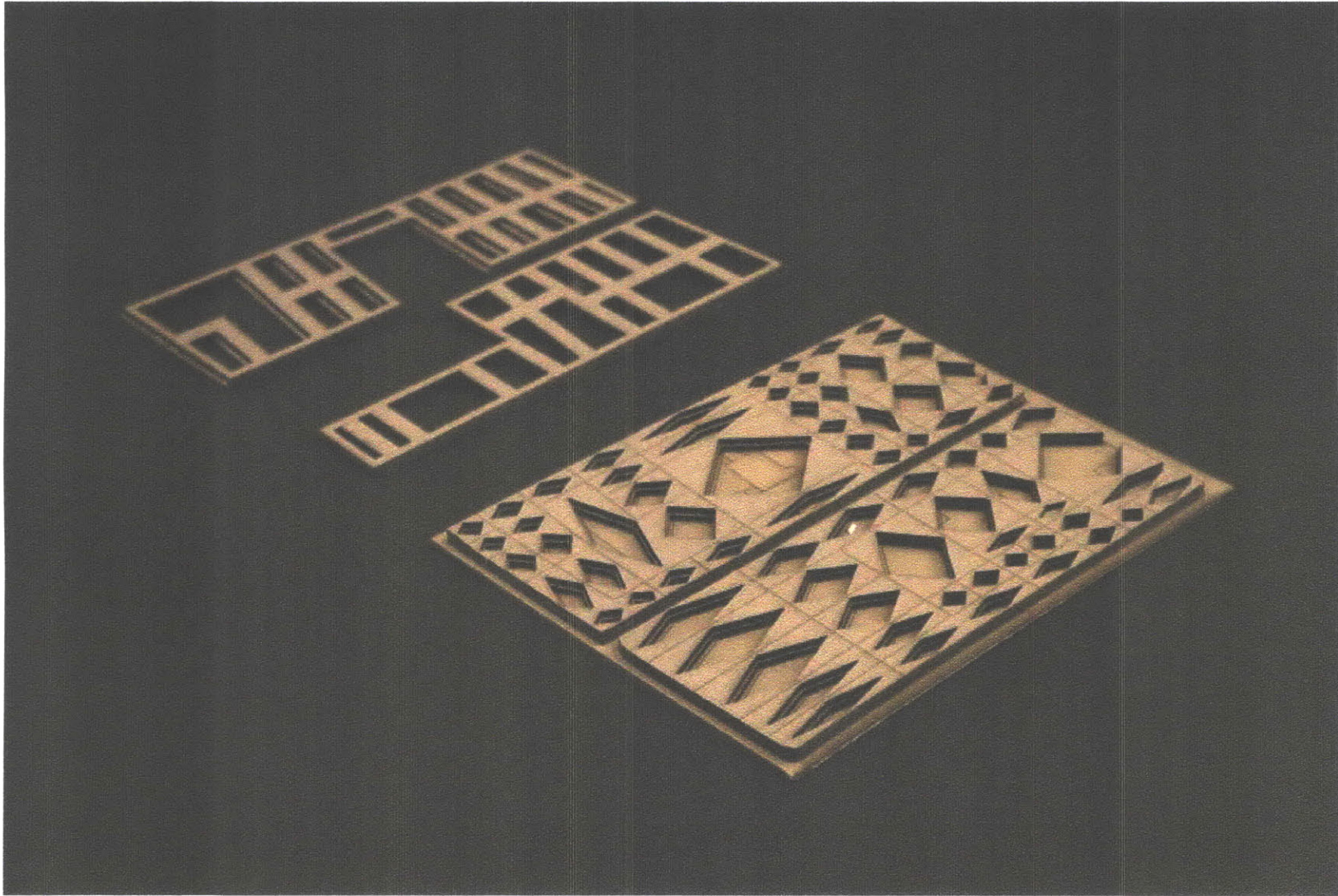
Various studies were done early on, when the idea was to develop the yard as a repeatable module--instead of addressing the block wholistically.



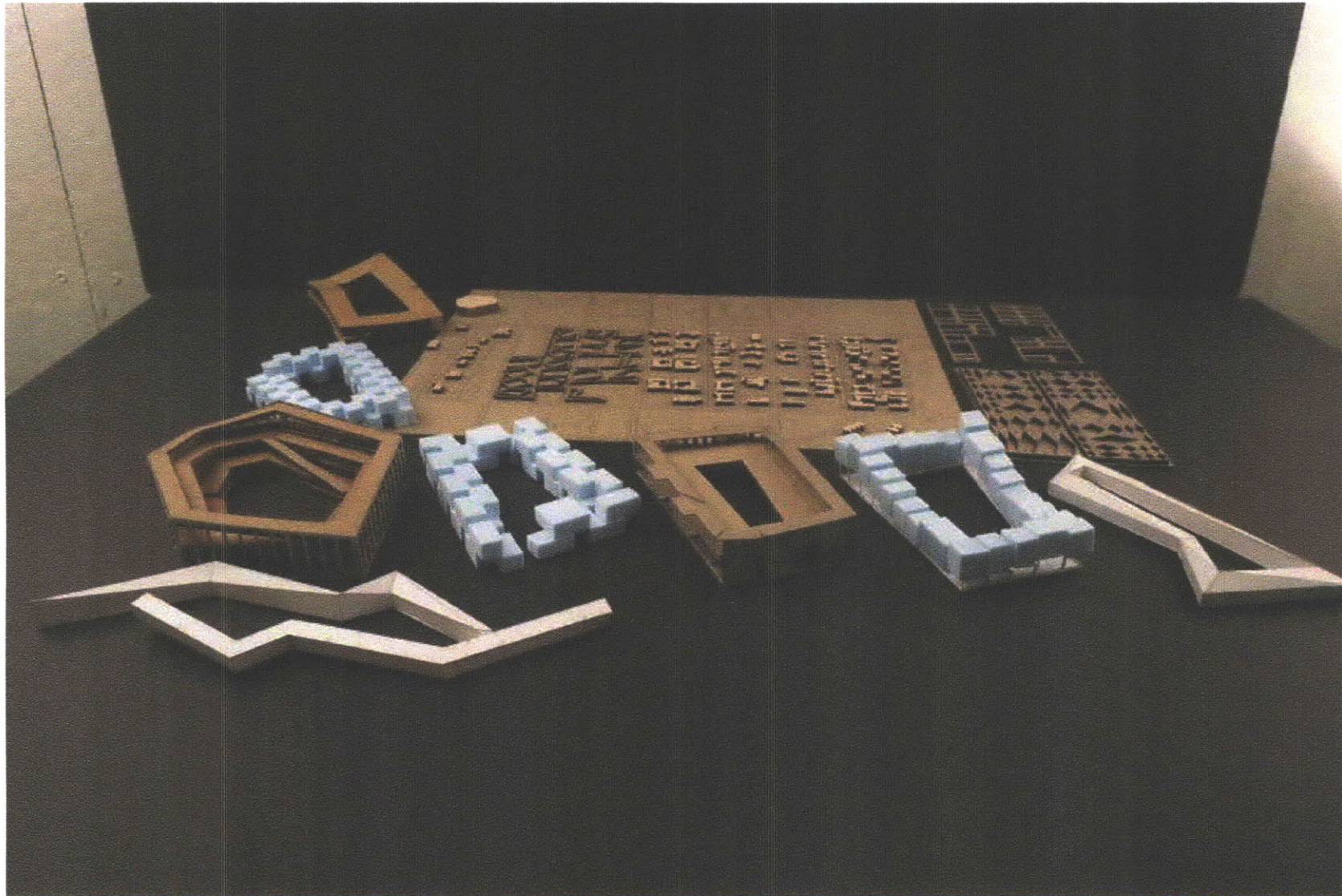
Various studies were also done on having a all-encompassing roof structure...for the purpose of continuity and pragmatic intentions.



Study model . 1: 1000. This specific investigation led to the final scheme, that of a external and internal yard condition.

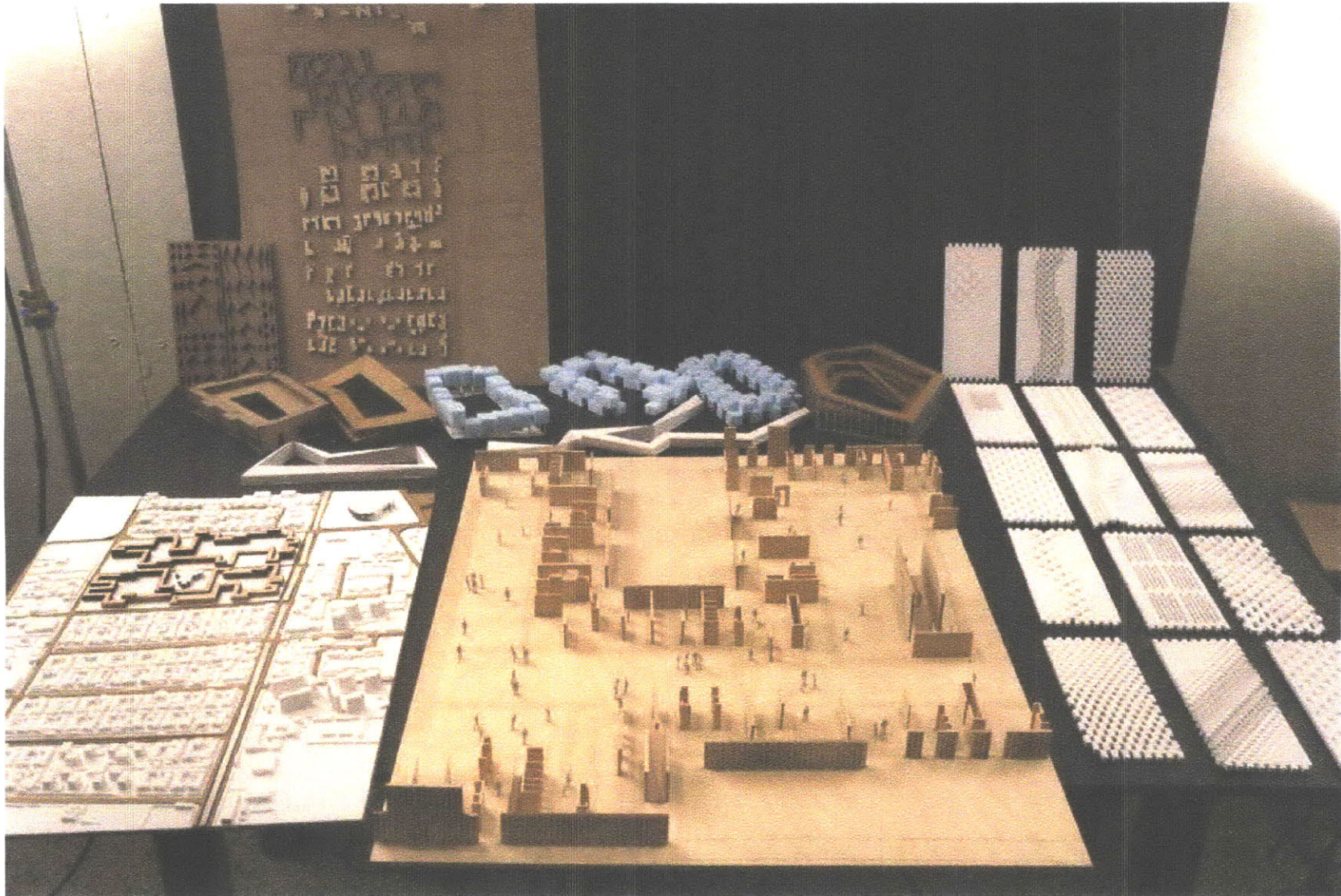


Study model . 1: 1000. These were earlier schemes. Left: Extrusion / Inhabiting the walls themselves. Right: An infastructural roof scheme.



Study Models.





All models.

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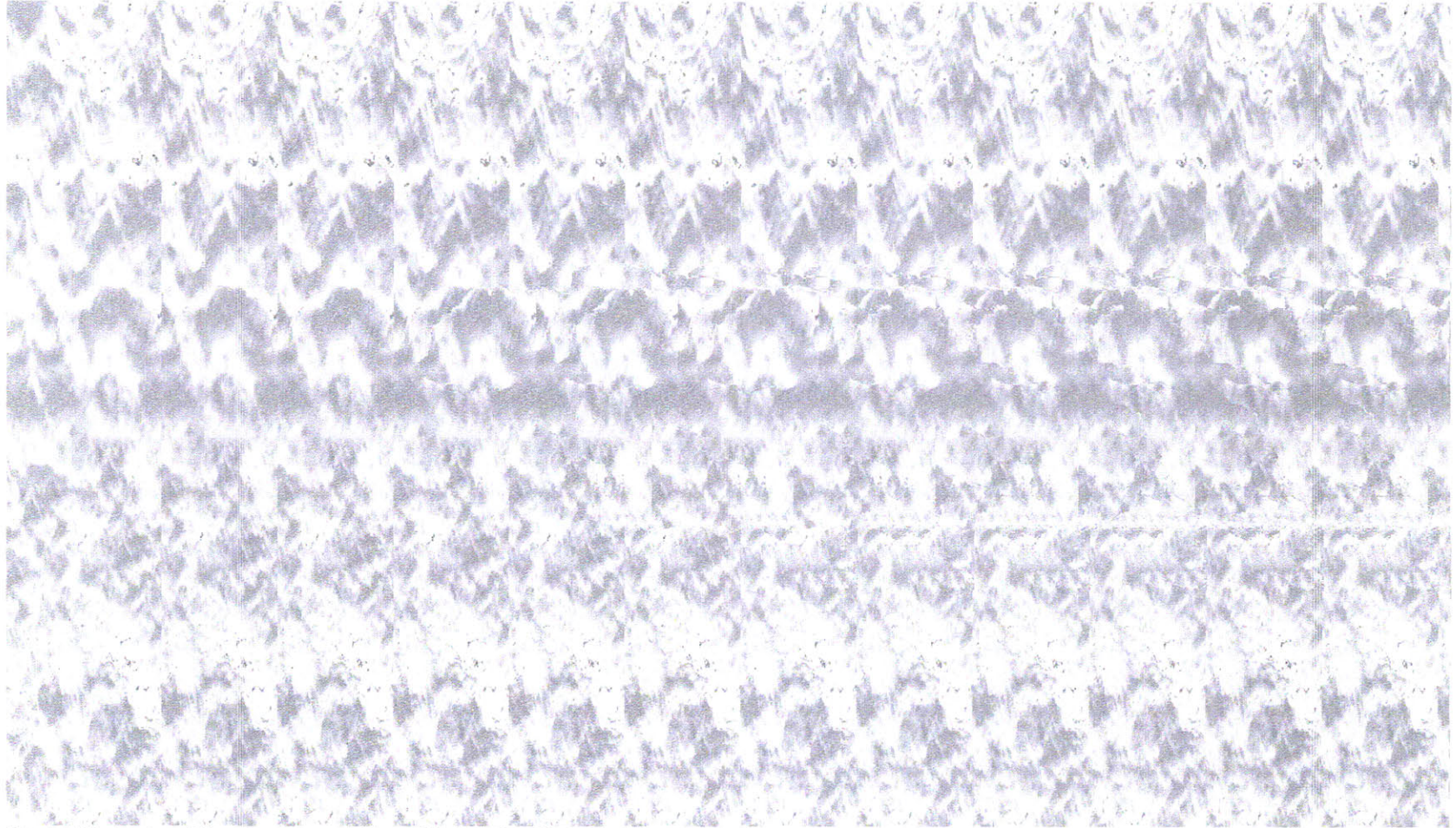
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