A Transformation of Shanghai's Urban Fabric

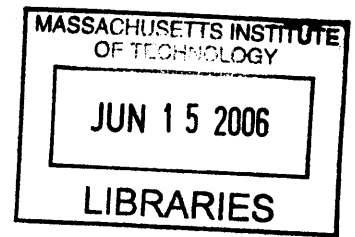by

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Bachelor of Architecture
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Submitted to the Department of Architecture
in partial fulfillment of the requirments for the degree of
Master of Science in Architecture Studies

at the

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by

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Submitted to the Department of Architecture
on May 25 th, 2006 in partial fulfillment of the requirments for the degree of
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Abstract >>>

Due to rapid development of the city, Shanghai has become characterized by drastic juxtapositions of building typologies and urban forms. Entire sections of the urban center are being replaced with large scale developments while the city overall expands into the periphery, replacing farmland with gated superblock developments. The city may be said to be losing identity as large sections of traditional urban fabric are being replaced. It is presented in this Thesis, that preservation of this identity is feasible by the implamentation of a plan for the transformation of urban fabric. This thesis investigates a methodology by which an appropriate stepped transformation of urban form arises out of the intense analysis and comparison of traditional and new development samples. The first part of this thesis is titled *Context* and traces the numerous levels of juxtaposition within the urban environemnt of Shanghai, based on observations during site visit and research conducted in the Fall of 2005 with the MIT research seminar, *Sustainable Development in Shanghai*. Elaborating on these observations and clarifying the distinct characteristics of each side being juxtoposed, the next section of this thesis is titled *Analysis*. This analysis takes each sample set and extracts the essential components in order to form a resource data set, refered to as the "kit of parts". The final section is titled *Transformation* and proposes a fabric that intends to preserve Shanghai's urban identity. Believing that factors of identity are embedded in the basic Lilong urban structure, an average model, representative of the Lilong form is used as the starting point for the transformation that follows. The fabric is arrived at by a designed transformation process of steps onto this inital average model, informed by the introduction of pieces from the kit of parts for both old and new developments. It is proposed that the final outcome of this transformation is inevitably tied to traditional urbanity while addressing modern standards of living as it's foundation is the average model of Lilong neighborhood and it's transformation is partially guided by elements of superblock development within the kit of parts.

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a transformation of Shanghai's urban fabric
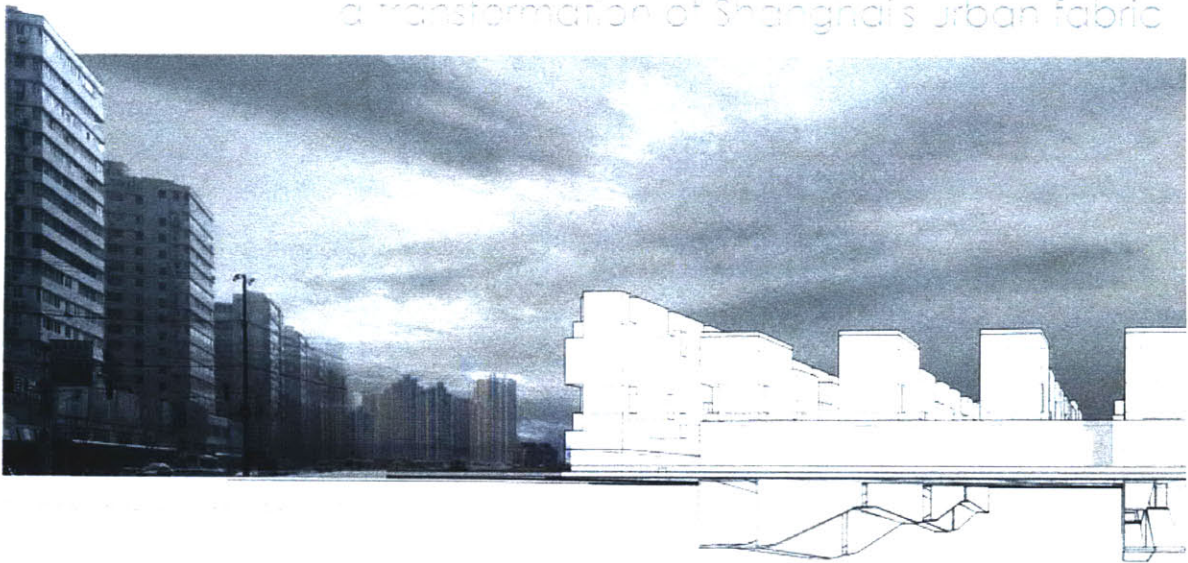
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Introduction >>>

Shanghai is a city developing under the city's self applied pressures to perform as a "Global City", offering high standards of living comparable to cities such as Tokyo, New York, London and Singapore. The area of Pudong now sports the renowned Jinmao tower. However, only 14 years ago the entire east bank of the river was "a large stretch of farmland with patches of desolate reed marshes."[1] The intense speed of Shanghai's development has bypassed an intermediate stage, thereby propelling the city forward, into an agglomeration of high-rise living in luxurious glass skyscrapers amidst remnants of unsanitary living conditions. The streets of Shanghai become dividing lines, thin slots of space defining the zone between extreme disparities, enforcing social disconnection. This contrast in standard of living is enforced by the middle income residents who are pushed to the city's periphery as the land value at the center of the city is too high for any developer not to build the housing typology that will yield the greatest profit most quickly. Therefore, the most profitable and expensive living conditions are transplanted into the old historic fabric of Shanghai, while the more affordable options find themselves at the peripheral edge.

These contrasts have earned Shanghai the nickname, "Dual City". Within the "Dual City", not only does contrast exist at the center, but also at the periphery of the city. These two instances are captured in the previous photographs (F 1.1 and F 1.2). This juxtaposition at the peripheral edge contrasts a new middle class against a rural class. Here, poor rural workers reside adjacent to construction sites filled with loud bulldozers relentlessly clearing out tracts of farmland for new housing

estates. This new housing reflects the developer's trend of grafting foreign objects onto the landscape, as signs for a new "Santa Barbara village" are placed around the fences of the site. This grafting is identified as the catalyst for lost identity, as the city is "transplanting" models of new development, whereas a more appropriate method may be "transforming" new models of development. This is the observation according to which the subsequent research unfolds.

"Since rapid real estate development began in the mid 1990's, more than four-fifths of Shanghai's longtangs have been demolished to make way for new high-rise buildings..."[2]

Standing at this division between old and new, one can't help but question what characteristics of Shanghai identity are lost during this leap. What are those fundamental rules of composing urban fabric that the developer lost in the shift towards new development models? With the city placed upon a spectrum, from extreme left to extreme right, the procedure is one of surgical replacement rather than that of a stepped transformation.

"Shanghai has it's own architecture...shikumen are distinctly Shanghai, or were. Many wonder if the pace of modernization and the wrecking balls, will leave any of the Shikumen, or old Shanghai intact."[3]

The replacement of old with new does not appear rooted in Shikumen typologies. Rather it is an arbitrary replacement, whose form is derived by calculations with a narrow set of parameters that

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economically benefit the developer and therefore, in essence, reflect the city's obsession with an image of "global city". This replacement within the fabric of Shanghai results in sharp contrasts, a composition of absurd adjacencies and various degrees of juxtaposition. Whether at the central core of Shanghai or it's developing peripheral, one is constantly found standing between two worlds, situated within a zone of separation, the dividing line. The argument presented here is that these new development models are the resultant form of parameters inconsequential to issues of social and cultural quality. No historical significance or "identity" of the city is preserved. Therefore the main question is: What is this transformation process by which Shanghai may preserve its distinct urban fabric while still developing at the speed and density which current developers require?

The subsequent design / research methodology aims to preserve of Shanghai's identity by one, setting the Lilong typology as the initial urban block upon which transformation into a new development model occurs and two; during this transformation process, integrating distinct architectural components extracted from the analysis of the traditional Lilong fabric. Therefore, the research begins with the analysis of both Lilong models and new superblock development models. Essentially, through dissection of sample sets for both models, the essential components of both models are identified and quantified. The extracted components from the Lilong samples form what is referred to as the "kit of parts", and the numbers which the proposed development should meet or exceed, are the extractions from the superblock developments. Therefore, both the "kit of parts",

and the development standards, becomes the input by which the transformation process is guided. The final urban form results from this mapping of a transformative process by which addition of components from the "kit of parts" and development standards occurs simultaneously.

The first section of this thesis, titled "context", will describe Shanghai as a global city and the resultant juxtapositions that occur on multiple scales within the urban environment. The scales of juxtaposition to be discussed are: the urban scale, architectural scale and the individual unit scale. The second section, titled "analysis", will trace the extraction of those architectural components from the Lilong samples, by which a kit of parts is formed and also the establishment of development numbers set by the superblock samples. The third section, titled "transformation", will address the juxtapositions discussed by mapping out the appropriate steps of transformation through which a new urban fabric is created.

part I >>>
context

superblock development | farmland

sub-urban > periphery

lilong neighborhood | superblock development

urban > center
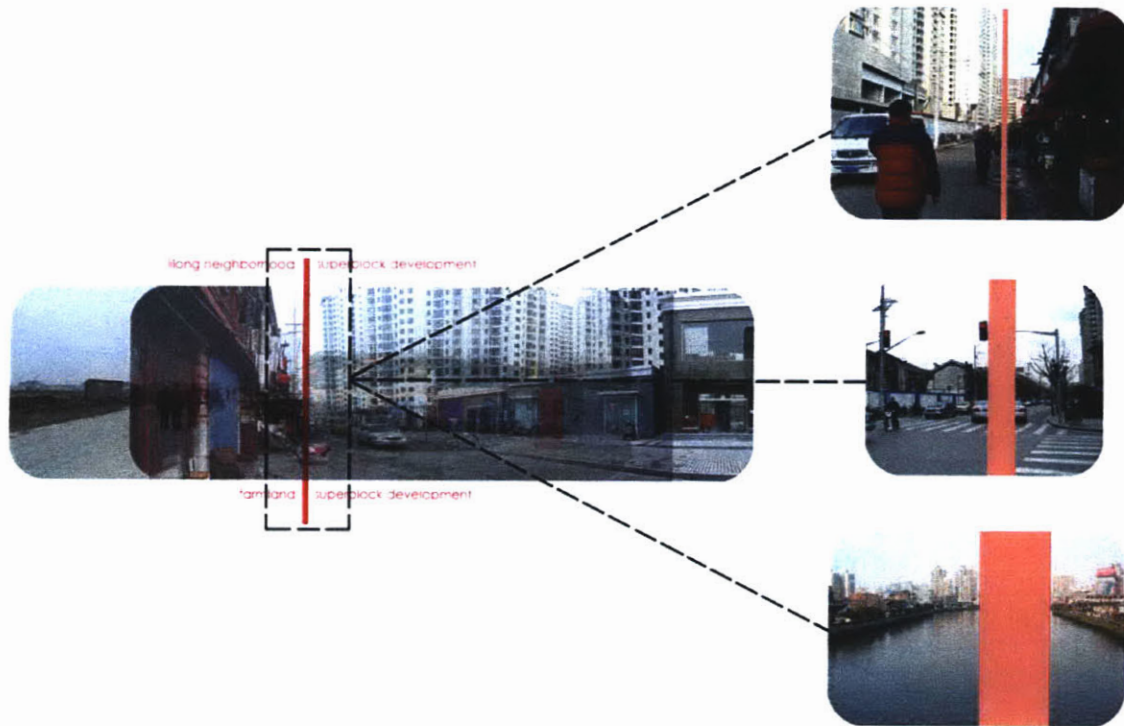
F 1.1 >>> *Photograph by Christine Caine*

Global City > "Livable" City

A global city is one defined by many as a metropolis whose flows are connected to the greater world. This convergence of global flows fades initial starkness of cultural differences and so each society finds itself searching deeper within itself in order to re-surface a notion of identity.

"With the impact of globalization, the Chinese are left to reflect on modernization. Does rapid urbanization of space necessarily imply modern and humanistic progress? Does Indifference to historical context and natural environment aid in our pursuit of the most fundamental human values? [1]

One begins to question if a city is able to preserve its historical nature while upholding an image as a "global city"? Jorg Durrschmidt, through his surveys of London titled "Urban Planning and Cultural Identity" correlates globalization to a detachment from "primacy of locality". [2] In the case of Shanghai, the city has not particularly detached

F 1.2 >>> Photograph by Christine Caine

from a notion of locality, but rather has shifted in the definition of the "locale" itself. Location has undergone a transformation from one defined by "community" to one defined by "branding" and the ability of developers to create sub-neighborhoods. Each development is marketed as a club or elite society into which residents are eager to buy in order to achieve this status. For example, the developer Vanke has successfully convinced their client that owning a unit within a "Vanke" development equates elite status. The "primacy of location" has evolved and become a reflection of marketing and belonging to an image of "paradise". In December of 2005, the MIT Sustainable Shanghai development group distributed a survey to the residents of Holiday Town. [3] Within the survey, residents were asked to provide the main reason for choosing to live in this particular development. The reasons given were: price, building style, good neighborhood, convenient services, good landscaping, Vanke management, reputation of Vanke, convenient

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to transportation, unit layout, school and other. When given the opportunity to check any of the listed reasons above, the top two choices were: first, "reputation of Vanke" and second "Vanke management". The importance of the developer's image supports the argument that primacy of locality is strong; however, in a new sense of branding and market strategy. The new definition of a primacy of locality hints at a larger process of "de-traditionalization" by which residents become severed from traditional frames of communal and social interactions. This has been proven not only by the disappearance of seemingly neighborly activities, but also has been described by those interviewed in a new sub-urban development of Shanghai.

Observation >>>
Sitting inside the cold apartment, I see traces of my own breath in the air as my head turns to scan the objects within the room. The apartment looks unusually bare as I look from the entry space through the hall and into the dining kitchen area. Beyond the open door to a side bedroom, dressed in her winter coat, the man's only daughter quietly fumbles with some paper and pencils at her desk. Returning to the front of the living room is seated in front of me, the resident of the apartment. Having observed me peeking in to the side room, he begins to explain that his daughter must work extremely hard in school and so even though it is a weekend, she isn't left time for socializing and playing with other children her age. He tells how "things are very different from when I grew up". Both he and his wife grew up in Denwei housing, playing outside and around the housing blocks while his parents or neighbors kept watch.

The character of the streets of Danwei, are successful in part by, as Jane Jacobs has coined, "eyes on the street".[4] In the worker's commune there were always "eyes on the streets", that is, there was neighborhood presence within which people kept an eye out for one another's belongings and safety. When one begins to place these "neighbors" into a tower, you increase the distance to the street, thereby making the "eyes" less visible and also increasing the response time. "Eyes" are weakened when people are housed vertically rather than horizontally, a mother on the 13th floor in comparison to one peeking out her window just 4 meters away?

The China Daily has reported Shanghai as the most "livable city" for the year of 2005. [5] This is ironic since the city is plagued by some of the worst traffic congestion and has a relatively high cost of living in comparison to surrounding cities. Therefore, this "livability" is proven irrespective of traditional functionality of daily life and those resultant patterns that accommodate it. Currently the government sets an area of 4 square meters per person as the minimum habitable space. [6] Far exceeding this number is Shanghai's average living space per person for the year of 2002 at 12.5 square meters per person. [7]

Minimum habitable space in New York, United states>>>
8 sq. meters
Minimum habitable space in Shanghai, China>>>
4 sq. meters

The societies at large within Asia have come to value the ability to make and earn money more

important than health and climatic comfort. In the same year of 2004, the United States voted Charlotte, North Carolina, the most Livable City.[8] Charlotte is not even one of the top ten largest cities of the United State. However, according to the most livable website, it is the nation's second largest banking and financial center. Factors of livability are comfortable climate, clean air and relatively low cost of living.

Shanghai boasts numerous high-rise towers that would not be classified as traditional by Chinese architectural aesthetics. Therefore, it may be inevitable that one will never feel truly at home when all the things that compose the city are those reflective of a global society. This leaves some residents of luxury towers, such as the one just described, feeling alienated even though they reside in a Chinese city. Rem Koolhas copyrights the term "Photoshop" to describe the random collage of architecture that composes the expanding Chinese city. [9] While Koolhas copyrights a phrase, contemporary artists portray a scene. One in particular, is Xing Danwen, whose most recent work is titled Urban Fiction. [10]

The work of Xing Danwen portrays a city where the inhabitants are being "copy and pasted" into a world that is not created by them. The individual is "pasted" into a foreign object, ironically a stranger even in their local context. Therefore, as Koolhaas may trademark his terminology of "PHOTOSHOP", I would rather coin this phenomenon the "copy paste" method of development. The model is "copied" from other societies and "pasted" into the Asian landscape.

"Asia has become a kind of immense theme park; Asians themselves have become tourists in Asia." [11]

The juxtaposition between people and places is the residual characteristic due to the city's rapid growth and subsequent global stature. As Durrschmidt argues, global cities are not merely "nodal points of flows of capital, finance and information, but also central to the flows of people and their social practices and beliefs." [12] If global cities are also nodal points of cultural flow, then one of two situations may result from Shanghai's advancement into a global city: the first situation being that the social practices and beliefs will be spread out of Shanghai and into outlying regions, or the second, that the social practices and beliefs of outlying regions will infiltrate the

F 1.4 >>> Urban Fiction, Xing Danwen, The Wall; Reshaping Contemporary Chinese Art, 2005

city of Shanghai. It is currently understood that the latter of these two situations is true. With the onset of modernism still relatively new to Shanghai's 15-year development history, adoption of outlying "culture" has allowed the city to more accurately emulate societies of post modernization. Therefore, by looking at the city of Shanghai, one may inevitably conclude that as the city continues to "globalize" it enhances ties to outlying regions, hence weakening ties to traditional culture.

urban fabric >
(Lilong vs. Superblock)

Lilong >>>

The diagrammatic spine form of Lilong neighbor-hoods is rooted in its construction efficiency and ability to achieve high levels of density. This spine layout was adopted because it saves space and is economically efficient. The basic spine shape has a central lane which is one long space spanning from exterior street to exterior street. Branching off this central spine are the side lanes, where one is able to access an apartment. Each side lane therefore has a row of apartment units lining it. Each row was then set approximately 5.2 meters apart with each row oriented south. This organization creates side lanes where the front of one home always faces the rear of the one in front of it. Creating a rear alley this space becomes a service area where wash sinks and household cleaning supplies are located. In later versions, plumbing was incorporated into the interior of the home, and then this area served as the area where one would park a car and then enters through a small "garden" enclosed space just before final entry to the house. With the spine as the basic urban form, the Lilong neighborhoods flourished socially. It is believed that this social environment was reinforced and facilitated by the patternerd void of these circulation spaces. The central lane provided an initial funneling of all inhabitants into a shared common space, through which residents must circulate in order to reach the appropriate side lane to enter their apartment. Therefore the circulation paths that emerge from this form are important for creating opportunity for resident interaction and in-creased interaction means a more active social environment. The space between the built forms is that which creates a complex urban social network as it focuses on the pedestrian scale.

Superblock >>>

The function of these super-block developments is to allow the developer to get the biggest "bang for his buck". For a developer, once ground is broken it is more cost efficient to build high-rise towers as structural elements are standardized and units begin to stack vertically. Therefore benefits are twofold: economic efficiency for the developer and social desirability for inhabitants. Desired high-rise living derives from associating low-rise with "older" living conditions, where the low and mid-rise housing is seen as dilapidated throughout the city. The new high towers, rendered in their foreign ornamentation, are seen as novelty items, representing luxury and a higher standard of living. The Shanghai Standard code dictates that the separation factor between built forms is 1.0 H, where H represents the height of the building on the south side. [13] Therefore, if a tower is 30 meters tall, then the space between that tower and its neighbor must also be 30 meters. This simple equation immediately eliminates any possibility for mimicking the traditional spinal layout of housing. Instead of a clearly defined circulation path which is the direct void space of built form, one is faced with circulation space which is seen as an object in itself, that begins to become malleable and placed as an overlay to the housing tower configuration.

Looking at the relationship between the form and function of both Lilong and superblock developments, a common theme emerges; efficiency. However, the Lilong captured efficient construction and high density in a much different urban pattern. This is why the basic components of pattern are taken from Lilong, but contemporary numbers and amenities such as parking and large scale retail, are informed by the superblock models. Assuming that these new trends of gated community blocks lack a sense of traditional culture and create isolated environments, one may then note the main arguments that many urban theorists have set forth concerning internalized spaces. Jane Jacobs notes how "streets and their sidewalks, the main public places of a city, are its most vital organs".[14] This statement reinforces the urgency for city dwellers to occupy the public street realm rather than isolate themselves with internalized activities behind gated walls. "The new high-rise housing area seems to miss the traditional street life that makes China's cities alive and vibrant entities...Gone are the traditional street merchants and the flea-market atmosphere of the compact Chinese streets that created such a closely knit and exciting social life, rich in comradery." [15]

With criticism of super-block developments, a counter argument may be to defend these typologies by claiming that they have no history to critique. The phenomenon of the super-block has not existed long enough for any substantial outcome to be read. However, some implications of how the society is beginning to react may already be seen. The first superblock development was already around fifteen years ago.

One positive sign that potentially the same type of community will arise out of these new superblock developments is that there are many senior organizations, which serve as a grounding point within the development. The fact that there is a strong organization initiated by the elder community and also that the greatest number of involvement (from surveys) comes from those over 60 years of age, shows that it may be a carry-over from the lives of those accustomed to living in Lilong or Worker's Housing. Are the new developments raising a culture of introvert parents and children? Once again, some say that this is a trend characteristic of the entire developed first world cities; therefore this reclusion could just be a sign that Shanghai is in fact keeping up with being a "global city".

juxtaposition / disconnect >

Shanghai can be analyzed by creating one chart, by which there is only one line drawn. All the attributes of the city are distinguishable as either placed to the left of this line, or the right. Generations are old and young, housing is Lilong or Superblock, city fabric is tight or loose, and population is rural or urban. The following text will begin by distinguishing numerous attributes of the city and it's inhabitants by this sharp differential in categorization, and then will begin to draw conclusions based upon the two opposing sides of Shanghai's dividing line.
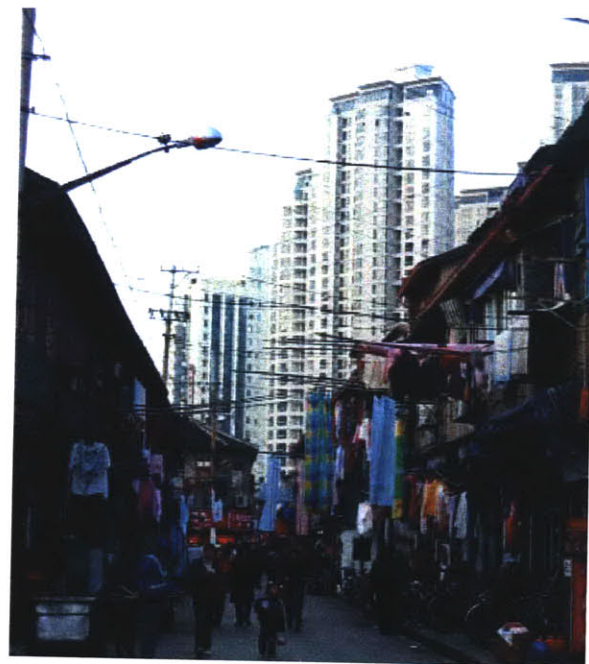
F 1.5 (right) >>> *Photograph by Christine Caine*
F 1.6 (below) >>> *Photograph by Christine Caine*
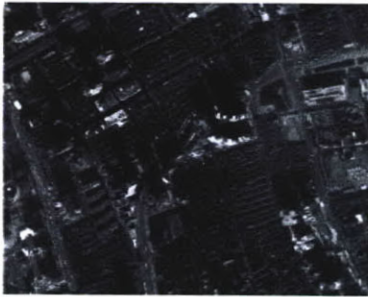
level I >>> the individual

F 1.7 >>> *Half White Collar, Half Peasant, Luo Zidan, performance, 1996. The Wall: Reshaping Contemporary Chinese Art*

Having the support of such published theories as Jorg Durrschmidt's "Everyday Lives in the Global City" and Tsung-Yi Michelle Huang's "Walking Between Slums and Skyscrapers", it is possible to present the argument that the expression of individual living in the various conditions within Shanghai, tell the most about the current state of the city, more than solely a political or economical analysis could provide. Therefore, this chapter will attempt to draw conclusions concern-

ing the phenomena of juxtaposition expressed throughout the city of Shanghai and formulate an overall attitude towards these phenomena by the analysis of these conclusions. Proper attention will be paid to the fabrication of a "kit of parts" for future development.

Understanding that the impressions below represent but a sliver of the population, it is still relevant to address and acknowledge the cross section of society whose happiness and frustrations are available to us as concrete case studies. Along the Huangpu River there exists an agglomeration of recently renovated warehouses into art gallery and artists work space. The area has been given the name M50 and currently houses about 20 or so different galleries.

In the galleries of M50, expressions of juxtaposition display themselves through art and related media. A generation of young couples and children who are unsure whether they "register" themselves as belonging, only this time it is not rural vs. urban but an internal conflict within the urban environment. One might question whether they belong to the urban environment at all. This once again ties to the notion of "Copy Paste".

One contemporary artist who is expressing his understanding of a changing society is Hu Yang and his vehicle is a compilation of photographs taken inside various dwellings through the city of Shanghai. The series is captured in a book titled "Shanghai Living".[16] When one skims through the survey of households, an image of a cosmopolitan city does not emerge. Instead one reads the sharp juxtaposition, which may be presented

F 1.8 >>> *Photographs from Shanghai Living*

from one page to the next, one apartment to the next. One apartment is modern and minimal; it's only two pieces of furniture amounting to the entire wealth of an entirely cluttered tight apartment room. One generation accumulating their wealth and literally living amongst it, and the other investing in modern icons of material wealth.

Hu Yang's photographs in "Shanghai living" reveals a certain acceptance and permanence from the older generation in such comments as:

"I believe in Buddhism and don't have high expectations for my life"
"I don't have dreams, I just want to get along with life"
"I don't have dreams because I know I don't have the ability to realize any dream" [17]

The pressures of development are felt at every level of the society. Potentially the older generations see the opportunity for relocation and the money that the government offers for the removal of their home as a positive progression.

Those unsatisfied with the poor living conditions view this as a better alternative and choose ignorance or acceptance over the fact that a class able to afford the new apartments will become the rightful owners of land that their home now rests upon. At the other extreme, in contrast to this willingness to relocate, is resistance to relocation. Just as everything else in Shanghai may be classified onto one side or the other, so to can the feelings towards relocation. Residents of Lilong are either sitting, anxiously awaiting relocation or compensation, or nervous with thoughts of leaving an environment within which they are comfortable.

Observation >>>
Upon hearing that we were studying housing in the area, he immediately bore a grand smile and waved his hand, motioning for us to follow him to his residence. He lived in an extremely modest sized apartment, not only to our western standards but also with respect to contemporary Shanghai. His sense of pride originated from his laborious installment of a western toilet and full

functioning bathroom. The addition of this piece to his unit was a luxury, distinguishing his unit from the neighbors. He wasn't embarrassed that he still lived in Lilong housing, but rather proud to show off his updates and improvements to the Lilong house.

"Life pace is too fast and I don't have any social security. I dare not say I contributed a lot to Shanghai's development, but I am working for this city. Every year we have to move for several times because we rent to live and the Shanghai government is pulling down these old buildings. I'm not satisfied with my present situation but have no way out."

"I don't know what to do with myself after the house is pulled down." [18]

Many contemporary artists express their confusion and fascination with the trend of Chinese cities, such as Shanghai, through various forms of painting, photography and mixed media. In the summer of 2005 an entire exhibition showed in Beijing and was titled, "The Wall: Reshaping Contemporary Chinese Art". This exhibition was the compilation of numerous Chinese artists, each commenting on some form of Chinese urbanization and current development.

"The workers represent the construction of the urban future, not only in terms of architecture, but also in terms of population." [19]

The dilemma of the sharp contrast between rural immigrant workers and urban, white collar workers is mainly attributed to the big push for industrial restructuring in Shanghai, as it desires to move from a manufacturing base to an advanced, more competitive service oriented hub. The conscious decision of the state to develop financially and allow the city to enter into the world market resulted in a development strategy that gave more importance to service industry rather than to manufacturing. The government "assigned high priority to the development of banking, insureance stock exchange, wholesale and retail trade, telecommunication, ship as enforcement of this development strategy. [20]

The photography of Wang Jin addresses the issue of rural vs. urban populations. His works titled "100% and 0%" are photos in which he attempts at capturing this dichotomy of urbanization and the rural population. In the work 100% (F 1.9) he forms migrant workers into a sort of pillar, captured in the photography as holding up the immense concrete infrastructure above. This reinforces the

F 1.9 >>> 100%, Wang Jin, April 1999 performance, The Wall: Reshaping Contemporary Chinese Art.

conglomerate structure of Shanghai. It is not a city of one unifying identity and has never been described as such.

The divide of inhabitants within Shanghai goes beyond West vs. East and X-pat vs. Chinese, Shanghainese vs. Chinese, but into those who have left for a significant number of years, versus those who have stayed located within the city. For example, the artist Gu Wenda is a Shanghainese artist who left residency in China with the opening of Chinas "doors". Since then, Westerners view Gu as being more Chinese and by the Chinese as more Western.

"This development is destroying historical context and cultural memory without regard to basic needs, such as transportation, education, and communication. On the other hand, this prosperous urbanized economy is what generations of Chinese have been waiting. The utopia of the past has become a reality. It is the psychological intersection of delight and regret. When this sort of complicated sentiment is represented in works of art, it is rendered as dislocation and rupture." [21]

The shift of urban fabric can be mostly contributed to the boom in the real estate market, as this is the initial force which: one, increased the demand for better living conditions, i.e. the high-rise gated community, and two, provided the investment mechanism to fuel further overseas investment. As the real estate market continues to grow and grow, the contrasts between urban fabrics have increased. Constantly growing, the ability to wipe out entire traces of existing fabric becomes more feasible.

"In the last decade the city's urban form has been vastly transformed by state-of-the-art high rise office Buildings as well as quality residential communities. Behind the backdrop of this transformation, a more interesting metamorphosis is becoming evident..." [22]

Shanghai displays juxtaposition also between the Bund area, which reflects Colonial rule, and the remainder of the city, which is the traditional Li-long fabric. The European colony replaced the existing warehouse buildings along the Huangpu River with buildings more suitable in reflecting the

Western style of architecture. Therefore, one can see disconnect in building typologies in a walk from the river westward into the thick of the urban fabric.

level II >>> the architecture

F 1.10 >>> *Photographs by Christine Caine. Shanghai proper, construction cranes near Xintaindi.*

Observation >>>
As I walked through the city of Shanghai, my eye could not stop stumbling over the harsh juxtaposition of crumbling walls of demolition set against shiny new glass curtain walls. The skyline became not only boastful of tall buildings, but also of the numerous construction cranes. The crane can be seen as a symbol of progression and improvement.

The Lilong housing complexes were commonly no more than three stories tall and the main alleys were normally 5.6 meters wide and its height defined by the three story tall housing blocks lining it. Therefore, looking at a pure section comparison between the Lilong and a new mid-rise and high-rise development, one can see that the human appears to be more "snug" in the urban setting. Although the modernists have argued that the later provides more adequate light and air, the earlier has proven to bring people in closer contact and allowed stronger communi-

ties to grow. The intimate street section of traditional Lilong housing is unable to be traced when placed between large towers spread significant distances apart from one another. "Height" has become a status symbol. Which city has the tallest skyline and which inhabitant resides in the highest apartment? The penthouse, the highest unit is the most expensive and most prestigious as it offers the best view of the city. As these towers grow taller, the distance between continues to increase and further weaken a groundscape of intimate pedestrian experience.

Traditional parts of the city display texture and variety not only in physical signs of age, but also in it's obvious layers of unit occupation and user intervention. These layers of intervention have added a textural quality giving the urban edge of the traditional city a dense thickness which is not characteristic of new developments.
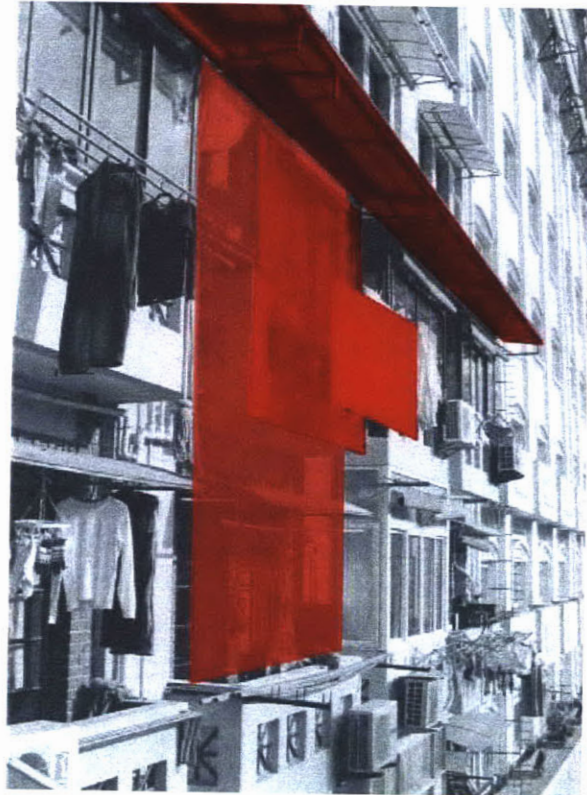
F 1.11 >>> Photograph by Christine Caine. Texture created by inhabitants intervention, facades of many layers.

level III >>> the city
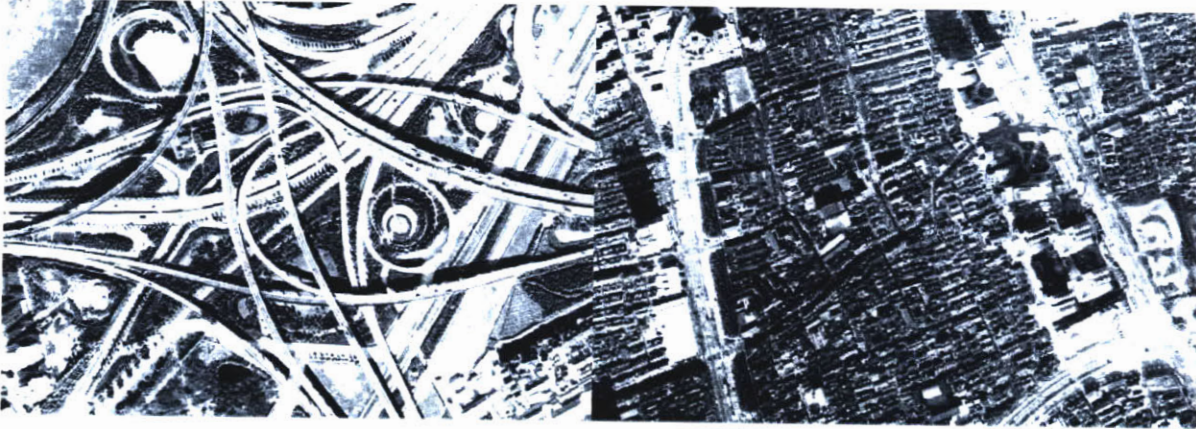
F 1.12 >>> *Same scale Google Earth images placed side by side. Left: aerial image of newly constructed infrastructure at the periphery. Right: aerial image of the north west quadrant of the old city center.*

The figure-ground of Shanghai, China, has changed enormously as the urban fabric of the newly constructed developments contrast sharply to that of the historical spine patterned voids of Lilong. The Lilong housing became a consistent model that rendered the city with an identifiable feel and texture. Currently, Shanghai has become characterized by the various "object" buildings which get randomly placed within pre-defined squares of the city grid, the void space of the city becomes more dominant in plan and diminishes the understanding of street space as

public community space. The concept of fabric has been inversed, where void as object has become building as object. Such "objects" are the JinMao tower and the Pearl Tower, both on the Pudong side of the river.

In the exhibition of "The Wall", there are a few artists who address the feeling that the contemporary city fabric is one which no longer belongs to those residing nearby. The sense of ownership is diminishing.

preservation >>>
memory vs. object

"The new high-rise housing area seems to miss the traditional street life that makes China's cities alive and vibrant entities...Gone are the traditional street merchants and the flea-market atmosphere of the compact Chinese streets that created such a closely knit and exciting social life, rich in comradery." [23]

"Identity requires a narrative of continuity" [24]

It is considered here that the importance of maintaining Shanghai's identity lies in the continuity of urban form. Urban form in turn is essential in the definition of social interaction and so the conclusion is made that the urban fabric essentially carries notions of cultural context. Therefore, a preservation of culture and identity may be achieved through the preservation of fabric.

Although the urban environment of the Lilong housing has proven sustainable in a social sense, the physical conditions do not measure up to those of newer construction. Much of the traditional urban fabric is plagued by unsanitary conditions and improper light and ventilation to many of the units. Therefore, the idea of preservation must be re-invented, as the physical preservation of the artifact is no longer a possibility due to its unsanitary living conditions. The proposal to follow presents an idea of preservation, which is a transformation of the traditional fabric, and therefore presents a model of preservation relative to memory rather object. This memory is imbedded in the fundamental organization and proportional scale of the Lilong typology. The new urban fabric will restore the essence of

the Lilong type and is assumed to hence foster a reminiscence of community within these older urban blocks.

In the case of Shanghai, potentially the harsh reality of this ratio of literal preservation vs. demolition can be balanced if the idea of "preservation" is reinterpreted. This means that preservation must be viewed as not solely addressing the artifact, but more so the essence of the environment created by this artifact. Thus, if cultural identity in terms of architecture is inevitably related to its past, can we come to some terminology for this city? If we agree that the characteristic of the city represented from its openness to the world and its ability to hybridize the different cultures – especially Chinese and Western – what is the approach in the language of architecture? [25]

"Xintiandi is a stage set of an idyllic past, created so that people in China can experience the same finely wrought balance of theme park and shopping mall..." [26]

"In this case, the locals tend to be members of China's elite professional class; dinner for two at one of Xintiandi's restaurants can easily cost sixty dollars or more, and a typical laborer's daily wage is less than five dollars. [27]

Development models such as Xintiandi are exclusive in their target audience. Therefore, this form of adaptive re-use offers a preservation that truly glorifies the object of the old city, rather than a lifestyle of living. Perhaps the proper preservation tactics need to be diversified among a numerous set of possibilities. There are different alternatives

of preservation and the preservation of memory is the one that the subsequent "kit of parts" strives to achieve.

It is undeniable that when an area which displays a wide variety of high end retail and restaurants, the adjacent areas will become high-end destinations for living as proximity to such amenities is desirable. Therefore, with the success of Xintiandi, the real estate value of the neighboring land has increased. This rise in value will ultimately mean the demolition of the Lilong housing now on site adjacent to the retail zone. As Paul Goldberger stated in The New Yorker, "In time, the inauthentic may drive out the authentic altogether." [28]

adaptability > malleability

F 1.13 >>> *Photograph by Christine Caine (informal fruit stand on Renmin Lu, near YuYuan Garden)*
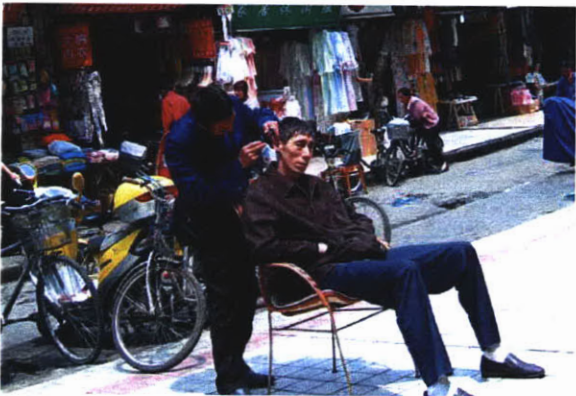
F 1.14 >>> *Photograph showing informal barber on street, source: www.*

observation >>>
Meandering through the tight knit streets of the dated Lilong housing, many informal services begin to find their place somewhere between the residence and the busy street. Such activities included a one-man barbershop, CD shops, seamstress and fruit and fish stands. Along many of the streets a blue tarp could be seen stretching out from the façade of the house, propped up at it's far ends by either a piece of bamboo or another such piece of wood comparably as thin. Underneath this covered space one could find a whole variety of functions, ranging from the local barber to a small fruit stand.

The occurrence of these informal gestures adds another layer to the façade of buildings and also to that of the street life. With the opportunity for new ideas in design of entire neighborhoods, can the informal be formalized? Can the designer allow for these informal activities to take place by facilitating the possibility of occurrence? Another example of an informality no longer seen in new housing developments is the enclosure of balconies. This enclosure is an adaptation that provides individuality to the facades of repetitive modular housing types.

A city must be able to accommodate change. As a city ages, it loses flexibility, allowing for potential devastation in the event of market fluctuation. Certainly, a city of "global" stature must strive for stability. Accommodating these potential expansions and contractions, not optimistically foreseeing only growth, but also protecting itself and allowing for shrinkage may achieve this stability. Preconceiving change and incorporat-

ing this into the built form of the environment is something Singapore has done with respect to it's housing stock. Studying the city of Shanghai, one can find four levels for intentional design flexibility. These instances are: retail, residential unit size, parking, and informal activity space. For example, if the retail space below is only designed in order to house large-scale retailers of corporate brands, the space would be left vacant in the event of failure of these businesses until another large store could fill it's place. However, if the space is properly designed for adaptability, it could readily be sub-divided and broken down into smaller rentable retail and commercial spaces, allowing for the function to change altogether if needed.

The placement of parking may be such that it is easily able to be converted from that which solely services the residents of the development, to that which services the greater community as a whole. For example, in the following transformation of urban fabric, one sees the parking entrance placed along all exterior edges. There is in fact, no vehicular access up from the parking garages to inside the dimensions of the block. However, there is still vehicular access available through the center of the site. With this location for vehicle entry, the parking garages may easily be converted from sole residential use, to include public paid parking for the larger scale retail and amenities located above.

endnotes >

[1] Minglu Gao, The Wall; Reshaping Contemporary Chinese Art, ALbright-KNox Gallery, Universtiy at Buffalo Art Galleries, and the Millennium Art Museum, Beijing, 2005.

[2] Jorg Durrschmidt, Everyday Lives in the Global City; The Delinking of Locale and Milieu, Routledge, New York, 2000.

[3] MIT Sustainable Development in Shanghai, China Seminar (Fall 2005)

[4] Jane Jacobs, The Death and Life of Great American Cities, Random House, New York, 1961.

[5] Qin Jize (China Daily) www.CinaDaily.com, "Shanghai chosen most livable city", 2005-03-28

[6] Klaus Segbers, Public Problems, Private Solutions? Globalizing Cities in the South, Ashgate Publishing Company, Burlington, 2005, PG 242.

[7] Klaus Segbers, Public Problems, Private Solutions? Globalizing Cities in the South, Ashgate Publishing Company, Burlington, 2005, PG 241.

[8] Most Livable Website (http://www.mostlivable.org/cities/charlotte/home.html) Charlotte, North Carolina rated most livable large U.S. city for the year of 2005.

[9] Rem Koolhas, Mutations; Harvard Project on the City, Barcelona : ACTAR ; Bordeaux, France : Arc en rêve centre d'architecture, [2000]

[10] Minglu Gao, The Wall; Reshaping Contemporary Chinese Art, ALbright-KNox Gallery, Universtiy at Buffalo Art Galleries, and the Millennium Art Museum, Beijing, 2005.

[11] Rem Koolhas, Mutations; Harvard Project on the City, Barcelona : ACTAR ; Bordeaux, France : Arc en rêve centre d'architecture, [2000]

[12] William J.V. Neill, Urban Planning and Cultural Identity, Routledge, New York, 2004, PG 13

[13] Shanghai Building Code (daylight factor)

[14] Jane Jacobs, The Death and Life of Great American Cities, Random House, New York, 1961, PG 29

[15] Kenneth Treister, Chinese architecture, urban planning, and landscape design : a series of essays, Series Monograph (Florida Architecture and Building Research Center), Published Gainesville, Fla. : College of Architecture, University of Florida, 1987, PG 53.

[16] Hu Yang, Shanghai Living, People's Fine Art Publisher, Shanghai, China, 2005.

[17] Minglu Gao, The Wall; Reshaping Contemporary Chinese Art, ALbright-KNox Gallery, Universtiy at Buffalo Art Galleries, and the Millennium Art Museum, Beijing, 2005.

[18] Klaus Segbers, Public Problems, Private Solutions? Globalizing Cities in the South, Ashgate Publishing Company, Burlington, 2005, PG 242.

[19] Minglu Gao, The Wall; Reshaping Contemporary Chinese Art, ALbright-KNox Gallery, Universtiy at Buffalo Art Galleries, and the Millennium Art Museum, Beijing, 2005.

[20] Klaus Segbers, Public Problems, Private Solutions? Globalizing Cities in the South, Ashgate Publishing Company, Burlington, 2005, PG 30.

[21] Minglu Gao, The Wall; Reshaping Contemporary Chinese Art, ALbright-KNox Gallery, Universtiy at Buffalo Art Galleries, and the Millennium Art Museum, Beijing, 2005.

[22] Klaus Segbers, Public Problems, Private Solutions? Globalizing Cities in the South, Ashgate Publishing Company, Burlington, 2005, PG 30.

[23] Kenneth Treister, Chinese architecture, urban planning, and landscape design : a series of essays, Series Monograph (Florida Architecture and Building Research Center), Published Gainesville, Fla. : College of Architecture, University of Florida, 1987, PG 53.

[24] William J.V. Neill, Urban Planning and Cultural Identity, Routledge, New York, 2004, PG 10.

[25] Dehua Li & Yongyi Lu, China, Architecture in Terms of Cultural Identity: What is the Case in Shanghai?, 2004 conference titled "Architecture and Identity".

[26] Paul Goldberger, The New Yorker, Shanghai Surprise: The radical quaintness of the Xintiandi district, Issue of 2005-12-26.

[27] (Albert Chan, a manager at Shui On) from the New Yorker article, Shanghai Surprise: The radical quaintness of the Xintiandi district, Issue of 2005-12-26.

[28] Paul Goldberger, The New Yorker, Shanghai Surprise: The radical quaintness of the Xintiandi district, Issue of 2005-12-26.

part II >>>
analysis

urban center
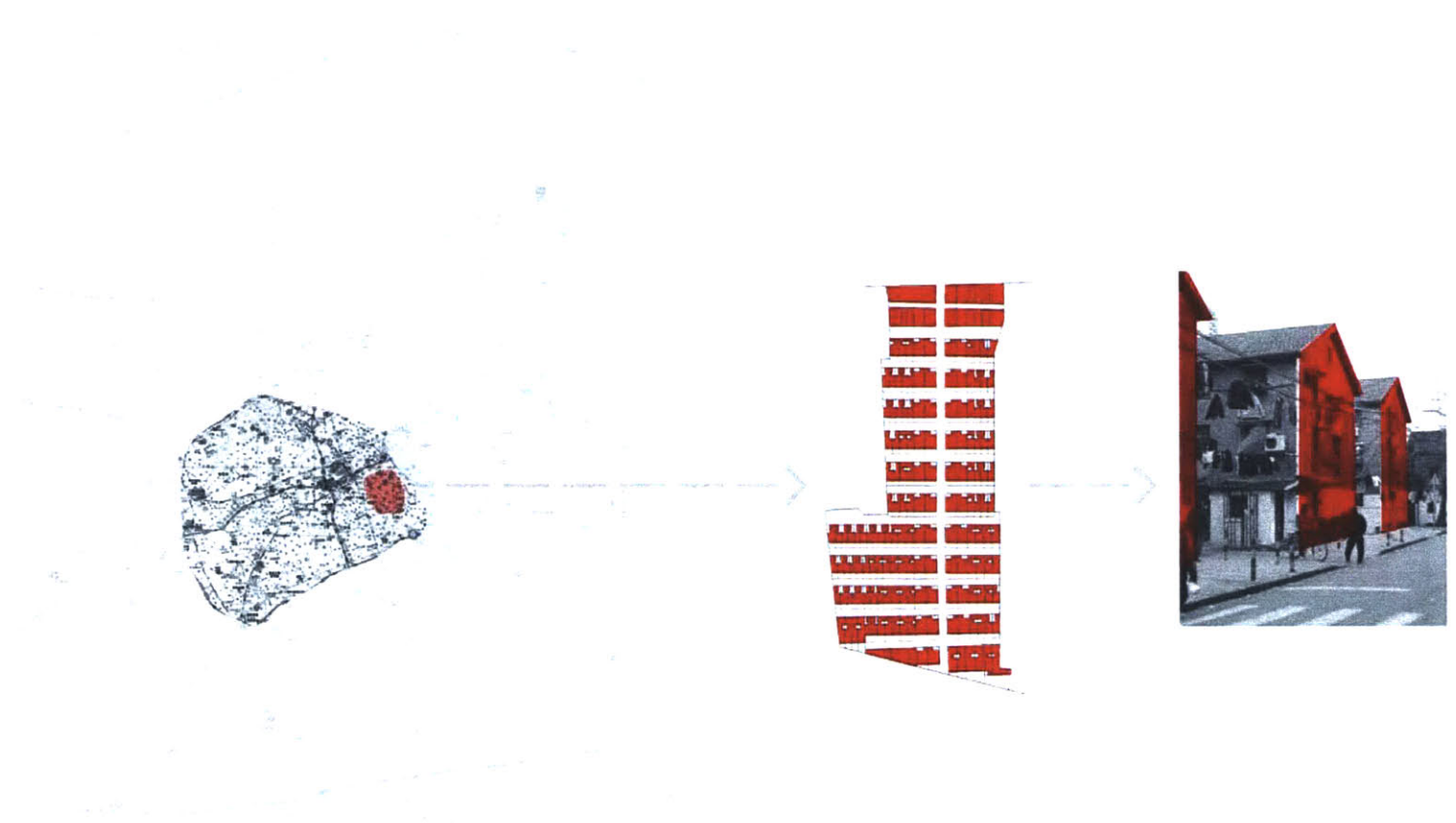
active public
urban edge

intimate interior

unsanitary living
conditions
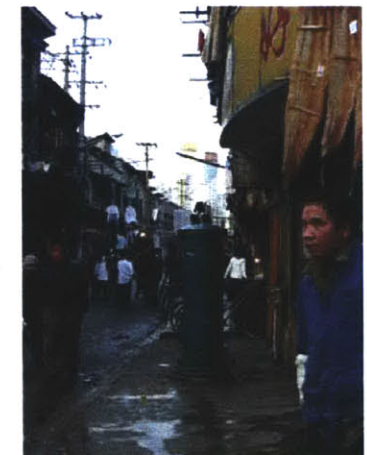
sub-urban periphery

inactive public
urban edge

undefined
interior streets

modern
amenities

reference data >
sample set A & B

In order to properly draw conclusions concerning the typology of housing models studied, more than one model was needed to be analyzed in order to ensure that no urban characteristic could be identified as individual or as specific to any one case study.   Therfore, a sample size of three projects was used to compose both groups for analysis.   Three samples were collected from the city's center and are Shinkumen Lilong, while the other three samples are from the city's peripheral and are of large-scale gated development typology. Therefore, the reference data is continuously drawn from sample set A: (Lilong) and sample set B: (super block).

After choosing these six projects to form the two sample sets, each was then placed side by side at a uniform scale in order to exploit further the sharp contrast in neighborhood scale.   After this scale comparison, an inventory of numerical data was listed for each, which included site area, building height, number of units, FAR, unit width, unit depth, depth of semi-private entry space, and circulation dimensions of both pedestrian and vehicular nature.

The analysis process is one which abstracts the spaces and voids of the two contrasting sample sets, and quantifies the volumes of characteristics specific to each typology. By isolating each distinct urban element from one another it is possible to understand how each system is working independantly in itself and also in conjunction with other systems. The elements that become isolated are building mass, carved void space out of these masses, circulation space, semi-public space of entry and the overall site boundary.

sample I

site area: 2.57 hectares
depth of dwelling: 12.9 m
entry space depth: 3.7 m
unit width: 7 m
percent void: 14%
side lane: 5.4 m
central lane dimension: 6.5 m
building height: 3 flrs
# of units: 182 units

+

sample II

site area: .8 hectares
depth of dwelling:15.6 m
entry space depth: 3.5 m
unit width: 4.2 m
percent void: 6 %
side lane dimension: 6.8 m
central lane dimension: 4.5 m
building height: 3 flrs
# of units: 70 units

+

sample III
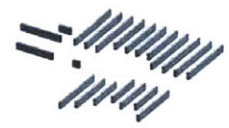
site area: 3.2 hectares
depth of dwelling: 10 m
entry space depth: 3.0 m
unit width: 3.7 m
percent void: 22%
side lane dimension:3.4 m
central lane dimension: 5.8 m
building height: 2 flrs
# of units: 664 units

=

average model

site area................................1.14 hectares
depth of dwelling.............12.8 m
entry space depth.............3.4 m
unit size................................150 m²
percent void.......................14%
side lane dimension........5.2 m
central lane dimension.....5.6 m
building height...................3 flrs
# of units...............................420 units

sample set A >

	sample I		sample II		sample III	
voids:		1,200 m²		250 m²		4,000 m²
building mass:		21,800 m²		4,900 m²		15,300 m²
entry space:		3,500 m²		1,000 m²		5,000 m²
alley space:		7,500 m²		2,500 m²		8,800 m²
site outline:		25,800 m²		8,400 m²		32,100 m²

sample set A >

gate   balcony   side lane   central lane   edge wall   entry wall   urban edge
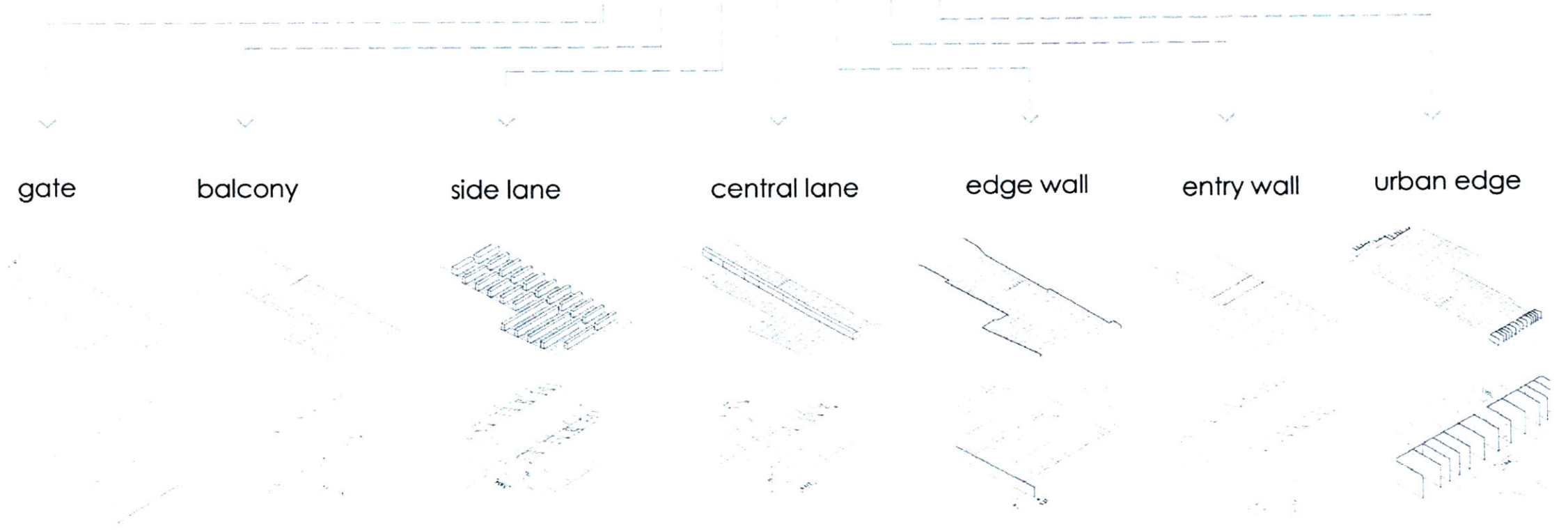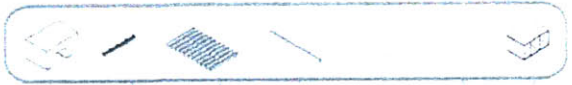
sample I

site area: 30 hectares
FAR: 2.4
depth of dwelling: 12.5 m
local street width: 14 m
city street width: 51 m
# of dev. phases: 4

sample II

site area: 42.3 hectares
FAR: 2.03
depth of dwelling: 11 m
parking ratio: 1 spot / unit
local street width: 20 m
city street width: 60 m
# of dev. phases: 6
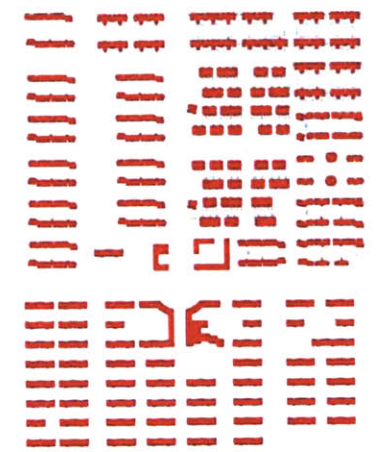
sample III

site area: 24 hectares
FAR: 2.5
depth of dwelling: 10 m
local street width: 21m
city street width: 34 m
# of dev. phases: 6
population: 6.100

sample set B >   sample I   sample II   sample III

building mass:
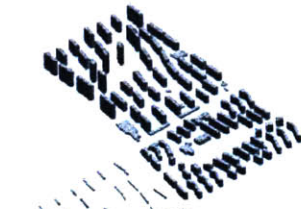
entry space:
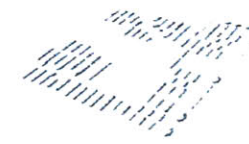
pedestrian circulation:
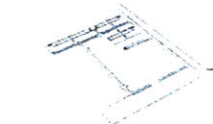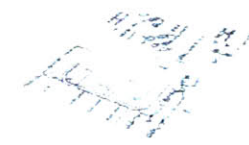
vehicular circulation:
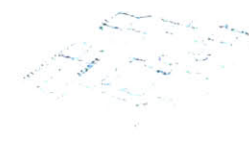
site boundary:
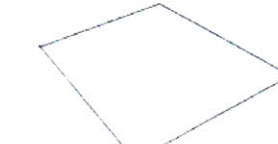
sample set A > (lilong)

The analysis of these three models reveals a distinct set of formal components which prove to be the fundamental characteristics of the traditional city fabric. By explosion of all these forms into dimensions of defined programmatic space, the consistent elements where quantified and placed into what is called the "kit of parts". The elements extracted are: the gate, balcony, side lane, central lane, entry wall, edge wall and urban edge. A visual mapping of these components and also a description of there spatial quality and functional use will be described throughout the transformation process, prior to their initial insertion to the process.

sample set B > (superblock)

Undergoing the same mapping process, different extractions emerge. The elements extracted are; big box retail, education facilities, green space, parking, community space and service space. Unlike the architectural components which mapping of Lilong revealed, this analysis resulted in extraction of programmed spaces which find themselves more formally defined than within the Lilong developments. For example, mapping of the superblock reveals a clear allocation of space for activities regarding community organization. However, this does not mean that the Lilong neighborhood did not incorporate these activities, but that these activities where integrated more into the spatial layout of the entire block. The Lilong's strength and richness lies in it's natural overlapping of program. The central lane is cross programmed to include space of entry and con-

nection, but also one of informal forms of retail, security guard and gate, plus temporary parking, plus space for community type gathering. With cross-programmed space, there is more activity. For example, the central lane during the day is bustling with people either entering and exiting from their specific side lane, or by those simply passing through to connect to the opposite urban edge or even by the elders of the neighborhood whom sit adjacent to the man on guard at the gate.

In essence, the Lilong mapping yields extractions of volumetric and organizational definition, while the superblock typology yields rigidly defined programmed spaces such as parking and educational facilities. The superblock developments are advantageous because they respect and supply living conditions concurrent with modern standards.

The extracted elements which compose the kit of parts from sample set A are flexible parts as they may be cross-programmed, proving most valuable for the earlier discussed notion of adaptability.

sample set B >

	city standard	average development numbers

green space — 2 m² / — 12.7 m² /

education — 1.8 m² / — 2.3 m² /

retail — .23 m² /

parking — 1 SPOT /

community — .048 m² /

sample set A >

sample set B >   > > >
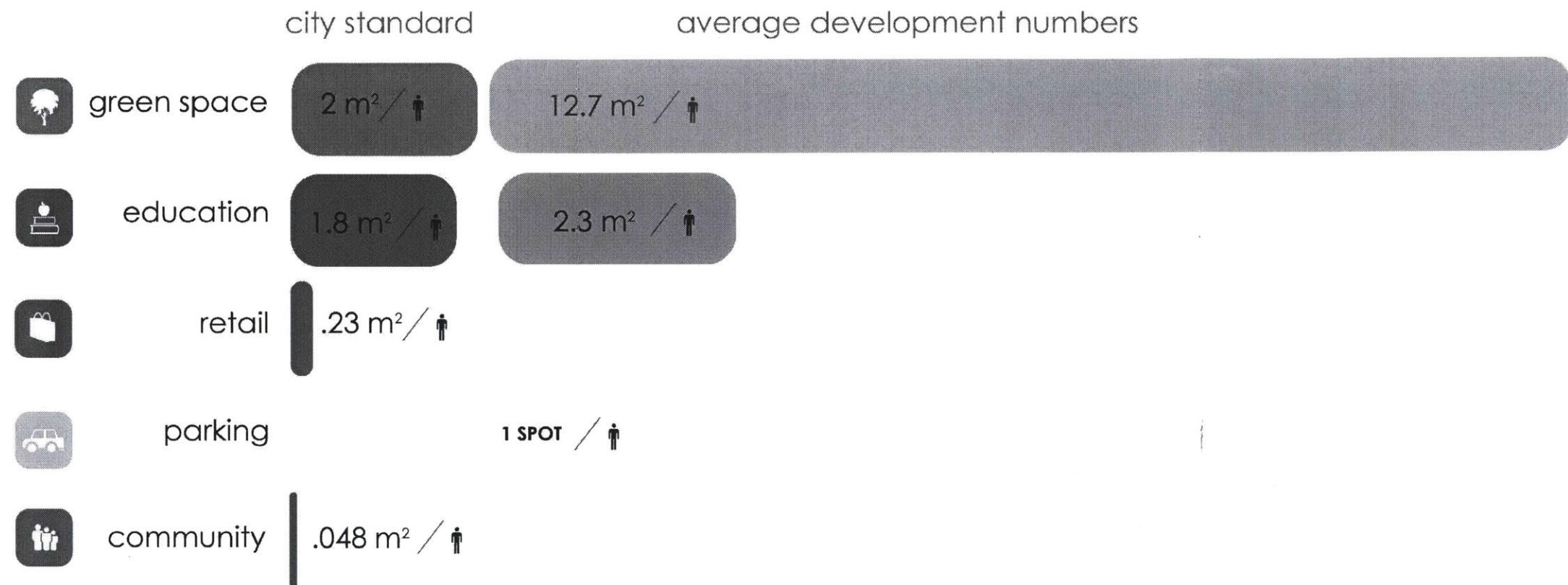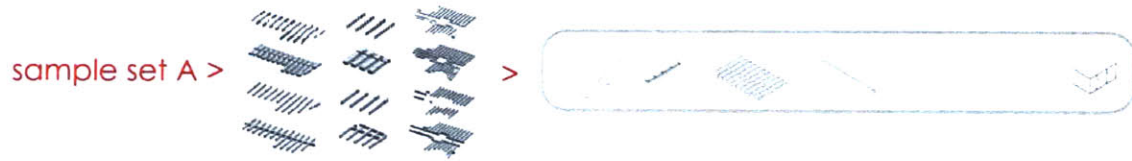
kit of parts =

part III >>>
transformation

transformation process >

The following transformation takes the form of sixteen steps. The sequence of these steps is critical at the beginning stages of volume subtraction and replacement, however, become more flexible in nature as one progresses towards the final steps of various programmatic insertions. For example, the initial site division and model placement, duplication and stacking are potentially flexible steps when this system is once again studied and placed into a specific context, however their placement within this particular exemplary sequence is fixed. In contrast, steps 11-16 may be implemented in any particular order and still yield similar urban forms as a result.

Along the sequence of transformation it becomes visible how pieces of the "kit of parts" begin to enter into the process and inform each particular move. For example, in step 14 one can see how the proposal hybrids parts from both sample sets as it takes the traditional edge wall and places a contemporary notion of "green" space on top of this wall. Therefore, the introduction of this edge wall addresses both the modern amenities provided by superblock developments and traditional architectural components that Lilong developments provide.

In order to fully understand the implacations that each introduction of these parts has, every step is equipped with it's own description and each inserted part from the kit of parts is introduced with it's description and visual mapping from existing Lilong housing prior to the step in which it is inserted. When appropriate, the step is followed by a rendered perspective in order to clearly portray the pedestrian quality of the proposed urban environment resultant of this particular step within the transformation.

start

1   2   2a   3   4   5   6

finish

16   15   14   13   12   11   10   9   8   7
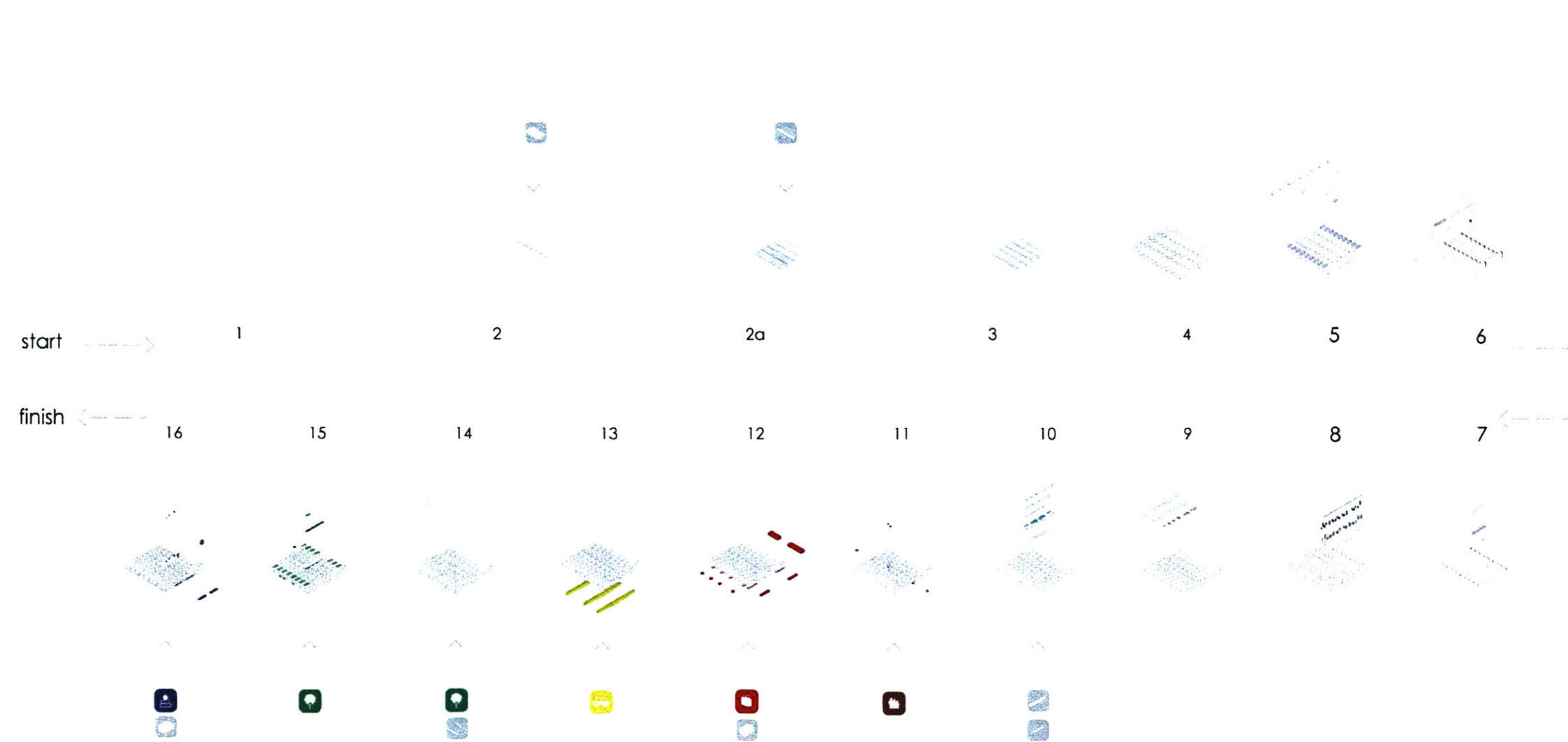
step 1 > divide site

The initial site area of 42 hectares is divided evenly into six sub-divisions, the average number of development phases as per sample set B. As each division becomes a phase of development, the integration of amenities during each becomes important for ensuring an even distribution of amenities at final maturity of the neighborhood.

total site area: 42 hectares

42 / 6 = **7 hectares** each phase

city street

neighborhood street

city street

local street

neighborhood street

city street

neighborhood street

city street
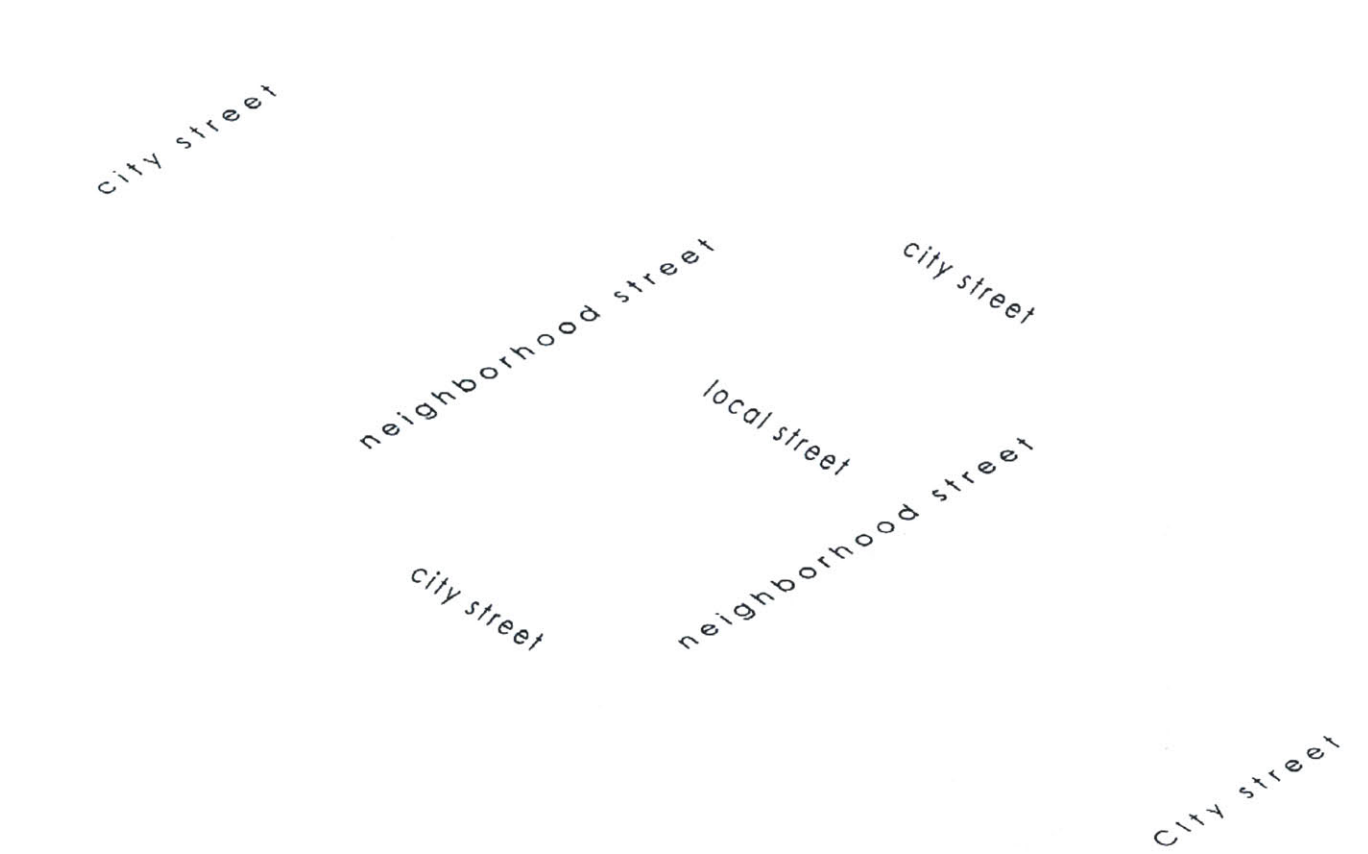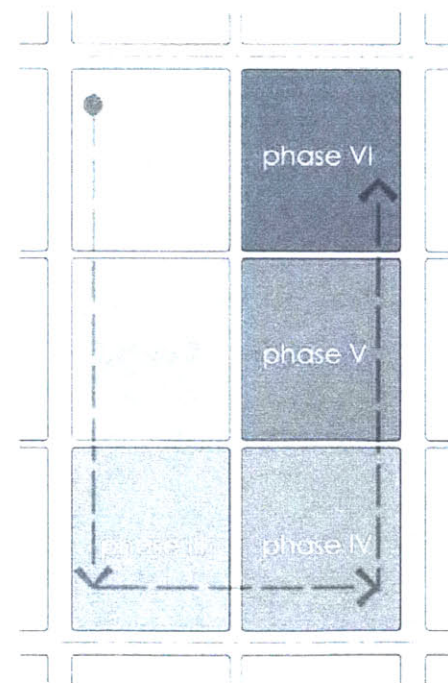
central lane >>>

image: Christine Caine (Lilong neighborhood in Shanghai proper)

The central lane serves as the place of common circulation where each resident is received from the urban edge. The path of travel is forced so that each inhabitant must enter into this central lane prior to funneling into the appropriate side lane where their unit is located. This circulation pattern contrasts greatly to superblock typologies, as the developments lack a definition of common gathering space at this level. Although in superblock developments, everyone must enter through a common gate, similar to Lilong's gate, the difference lies in the circulation paths thereafter. The majority of inhabitants enter superblock developments by vehicle and for those who do in fact still enter on foot, the development offers no such human scale space of "collection". Proportions set to those within a vehicle mainly rule these large-scale developments, whereas a comfortable sense of enclosure is left by the pedestrian in the central lane.

step 2 >

site the average model

Take resultant average of Lilong sample models and place it onto average superblock development site of 42 hectares. This average model represents a population of traditional Lilong neighborhoods and is therefore only one twelth the population that current superblocks accomodate.
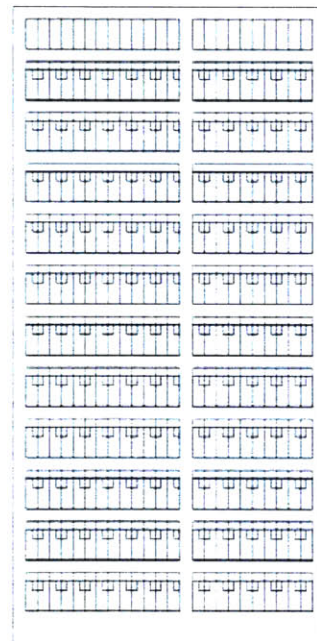
FAR > 1.5   LOT COVERAGE > 50.7%   UNIT COUNT > 210 UNITS
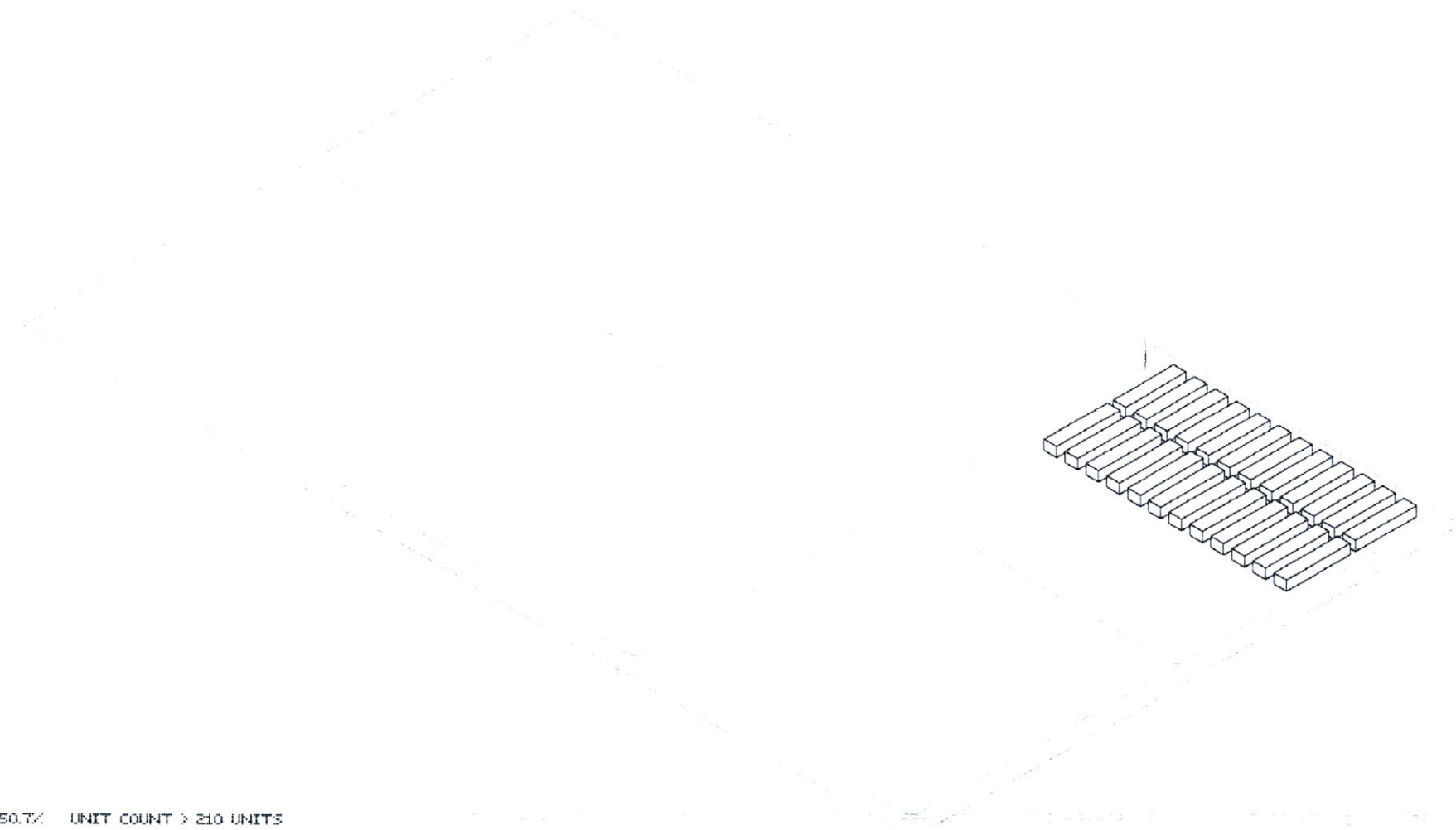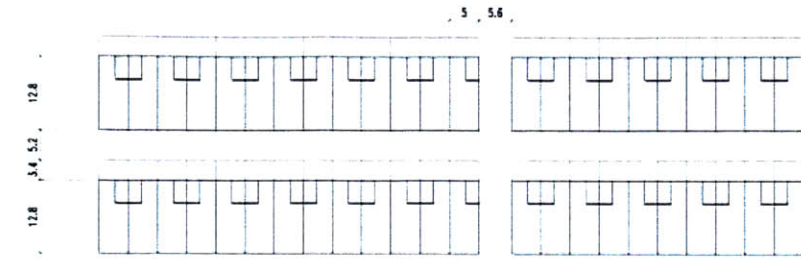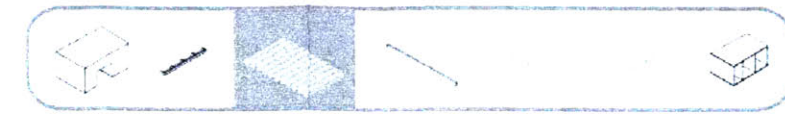
side lane >>>

image: Christine Caine (Left: gate to side lane at Lilong)
(Right: side lane used as service space)

The side lanes feed off of the central lane at regular intervals which creates a distinct urban form of a spine. The side lane is the space to which every resident must branch into in order to enter any unit. These side lanes are internal streets which only on specific occasions puncture through to the external street edge. In the event of a side lane leading to the outside street, a tall iron gate is placed at the threshold in order to control public flow into these lanes.

In some cases, this lane is widened by the dimension added by addition of a partially enclosed entry space.

In most all cases, the space of the side lane is typically used as a service space, where one washes clothes, hangs laundry and parks a bicycle.

step 2a > place the second model

With an average site area of 42 hectares and an average number of development phases at 4-7 phases, the site will be divided into 6 equal blocks for development. Therefore, there needs to be two models placed side by side in order to fully cover the width of development area for one phase. Each housing row expands from ___ meters in length, to ___ meters. The space between each model now becomes the center lane and each previous center lane becomes a secondary lane. This new center lane will allow for on grade parking and serve as the traditional arrival point as the vertical access towers connecting to the garages are placed along this lane.
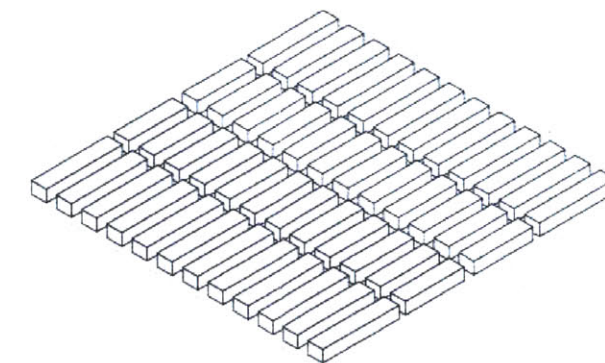
FAR > 1.42   LOT COVERAGE > 47.0%   UNIT COUNT > 420 UNITS

step 3 > stack up models
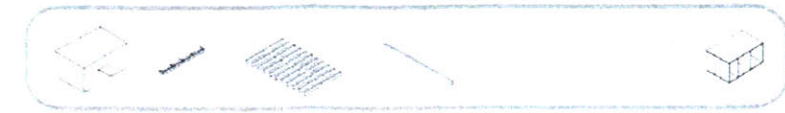
The solid form of the housing is stacked upon itself in order to match the number of units averaged per square meter from sample set B. This stacking results in new housing rows of six stories height in comparison to the traditional 2 1/2 - 3 stories.
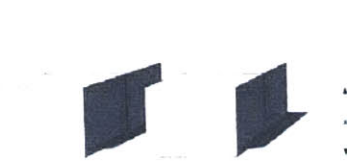
35 units per row x 12 rows = **420 units/ layer**

420 (1 layer) + 420 (1 layer) = **840 units**

840 units per phase x 6 phases = **5,040 units**
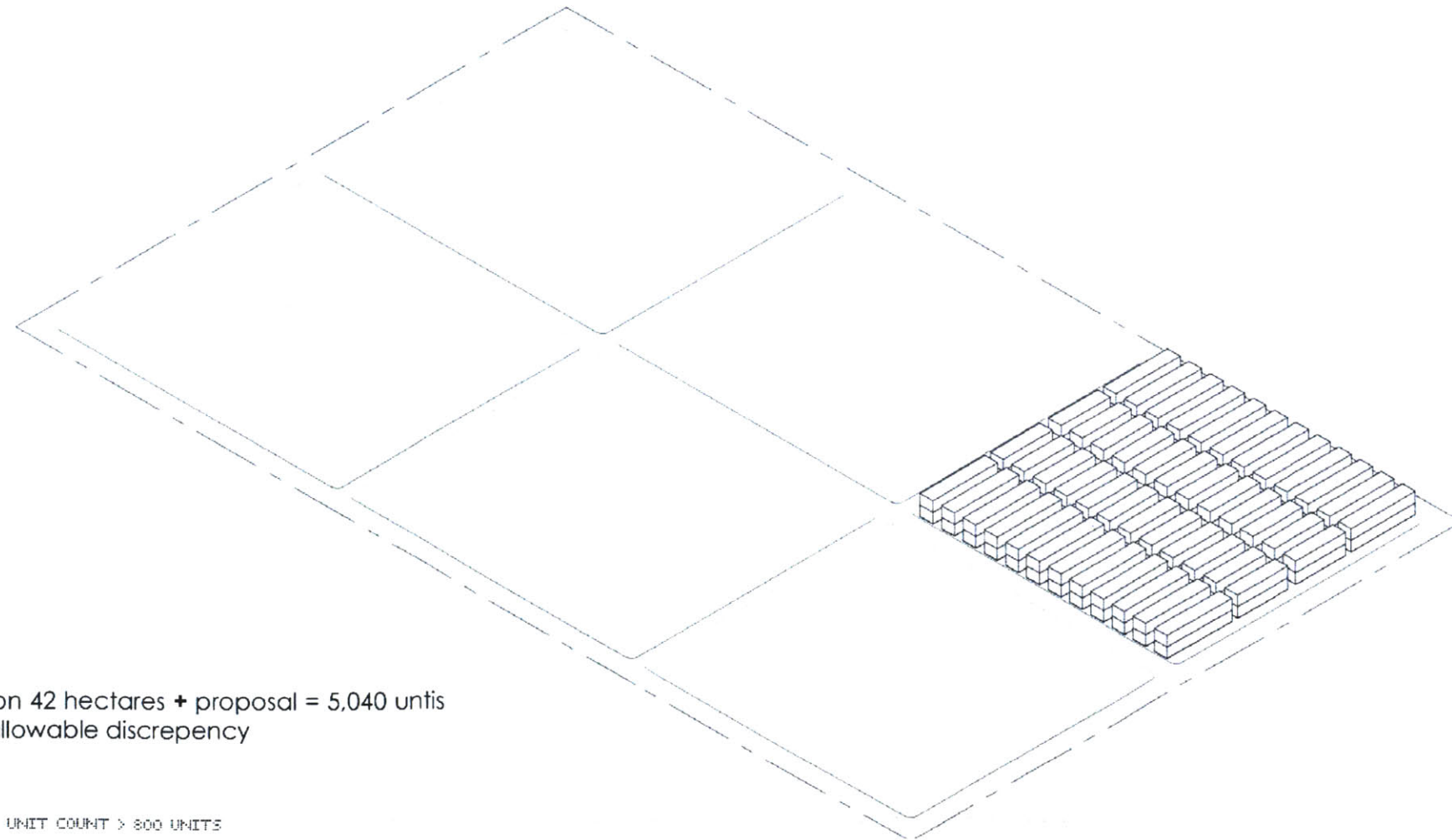
holiday town = 4,239 units on 42 hectares **+** proposal = 5,040 untis
on 42 hectares = 801units allowable discrepency

FAR > 2.8   LOT COVERAGE > 47.0%   UNIT COUNT > 800 UNITS

step 4 >

increase space between rows
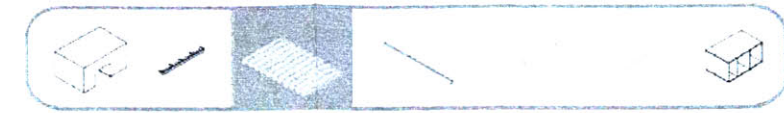
The space between each housing row is doubled as a result of step 3. Each row has doubled its height and therefore must move further away from the next in order to allow proper light and air flow to the bottom units of each row.

This increase in spacing forces the block to hold two less rows of housing. Therefore, this housing must be relocated within the block.

2x

remaining rows

12 11 10 9 8 7 6 5 4 3 2 1

FAR > 2.37   LOT COVERAGE > 39.5%   UNIT COUNT > 660 UNITS
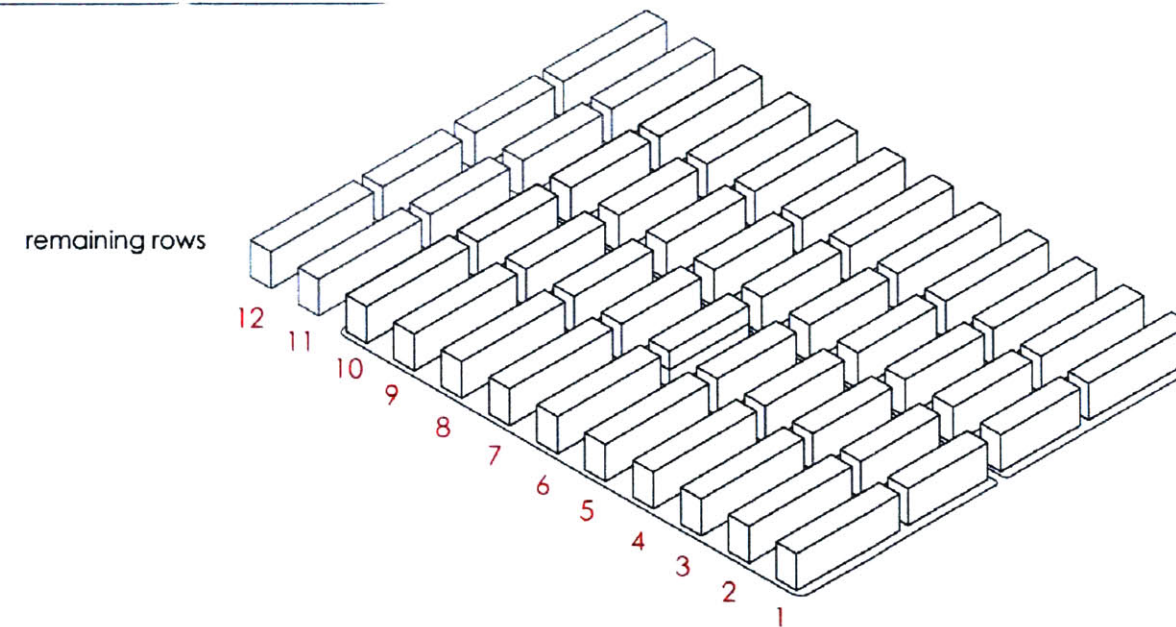
step 5 >

relocate lost two rows

Two of the lost housing rows are automaticaly placed at the north edge of the site, creating a northern edge of a triple height stack. The rest of the lost housing rows are consolidated and then divided by 18 in order to be evenly distributed on all other rows besides the northern most row.

lost rows

consolidated

divided by 18

placed

FAR > 2.6   LOT COVERAGE > 39.5%   UNIT COUNT > 800 UNITS
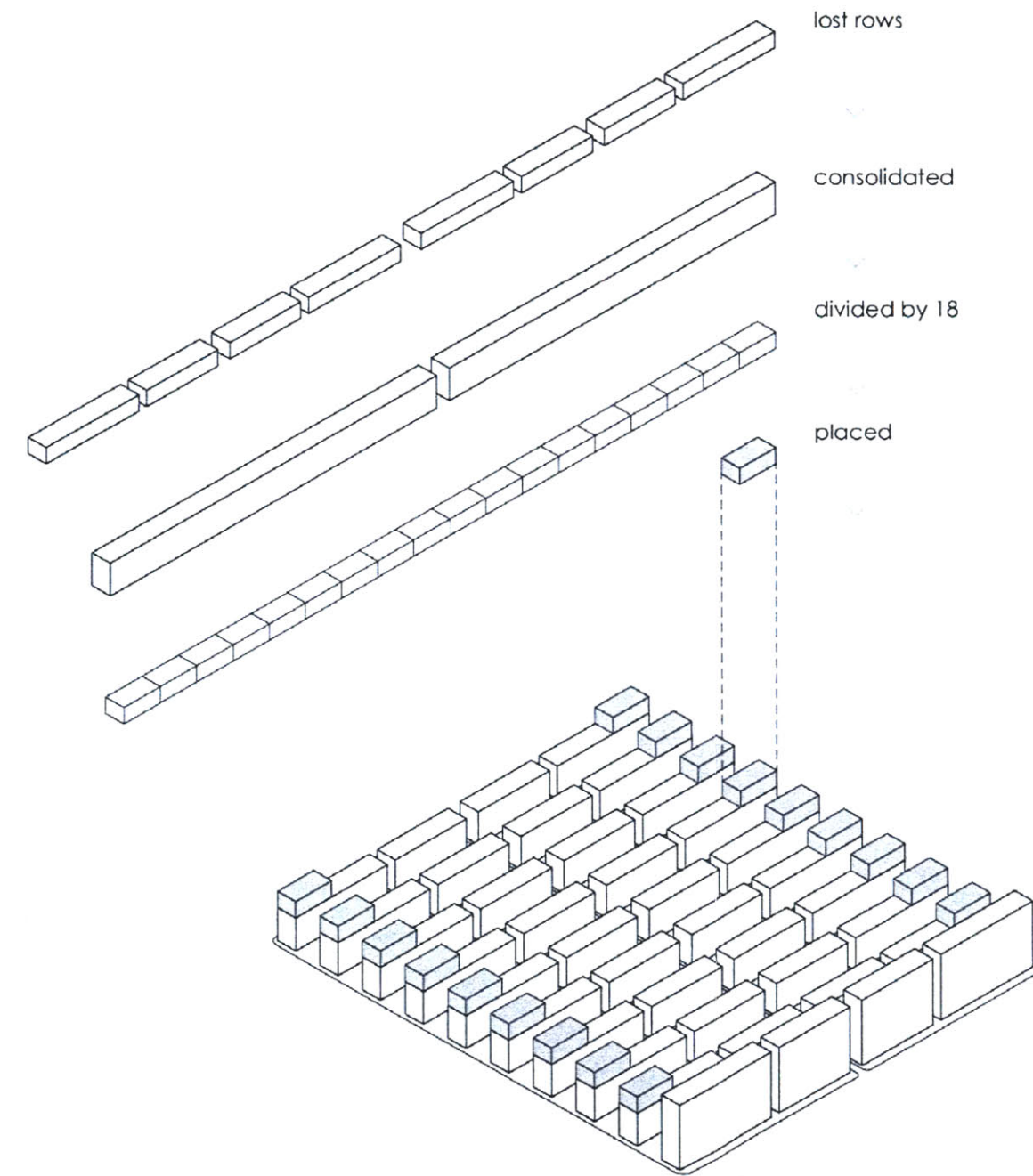
step 6 >

relocate lost rows
above side lanes

The bottom three stories of housing are removed in order to accommodate the subsequent insertion of ground floor retail space. This removed volume is consolidated into one unified volume and then re-divided into 18 pieces, in order to be evenly distribute into the side lanes of the housing. This insertion of an overhead volume retains the open passageway, while creating a more intimate covered alley.

remaining rows

consolidated

divided by 18

halved
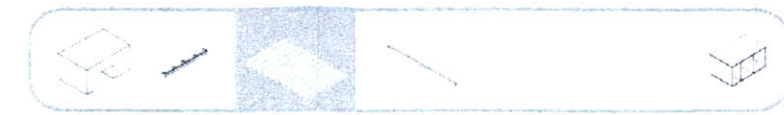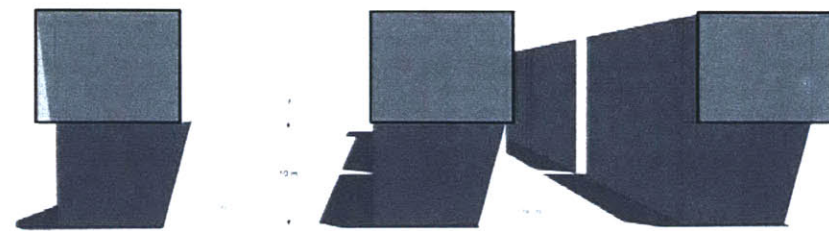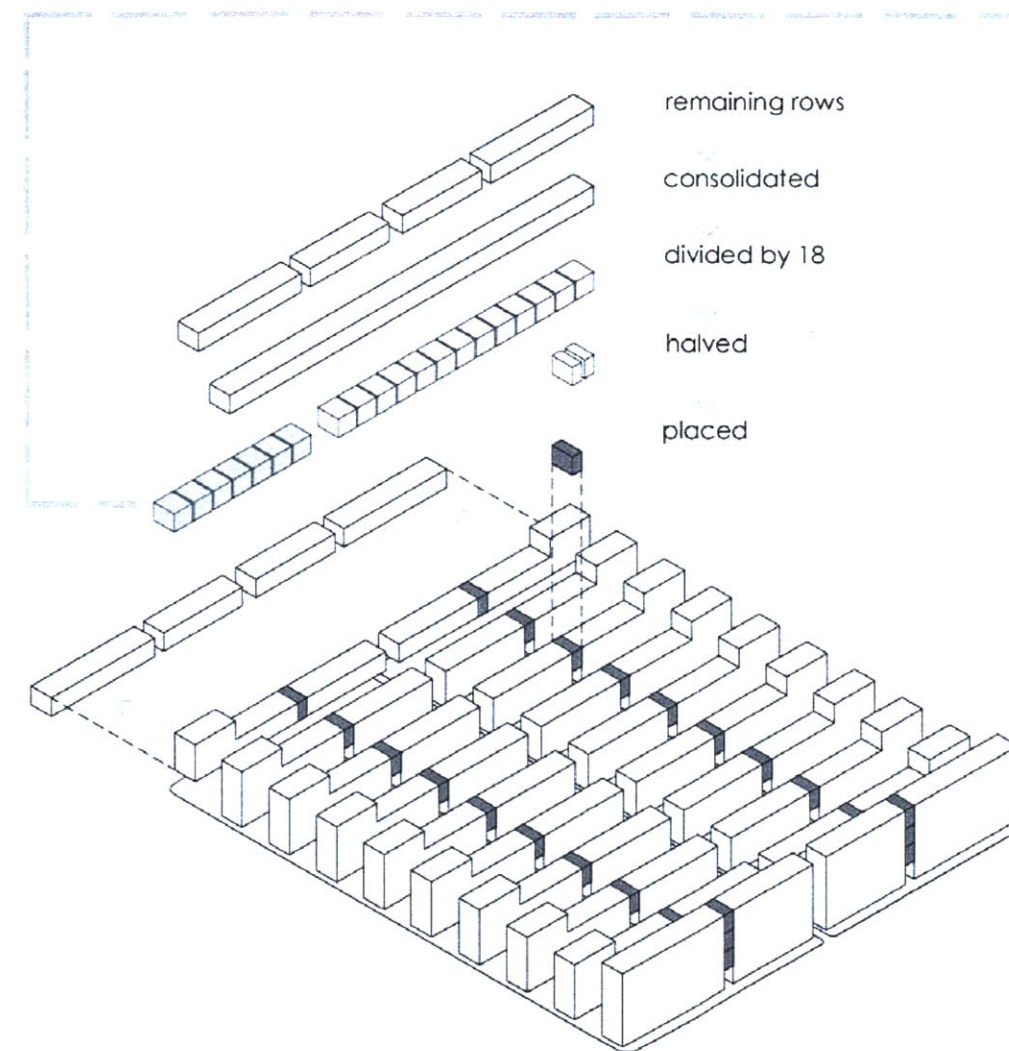
placed

FAR > 2.65   LOT COVERAGE > 39.5%   UNIT COUNT > 786 UNITS

step 7 > relocate remainder

The leftover from the removed housing for retail is once again consolidated and then divided by 18 in order to be placed on top of the shorter housing rows.

remaining rows

consolidated

divided by 18

placed

FAR > 2.7   LOT COVERAGE > 39.5%   UNIT COUNT > 800 UNITS
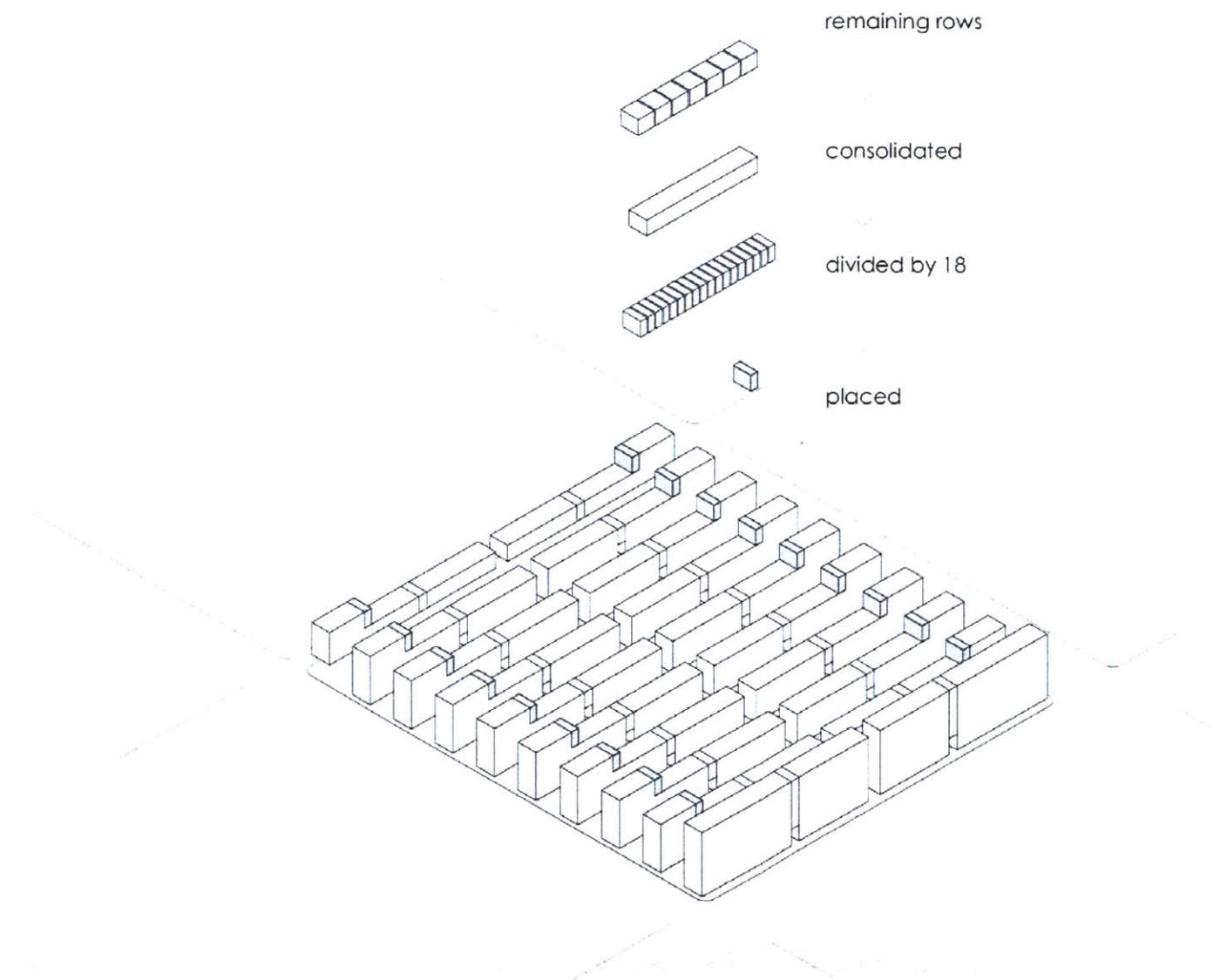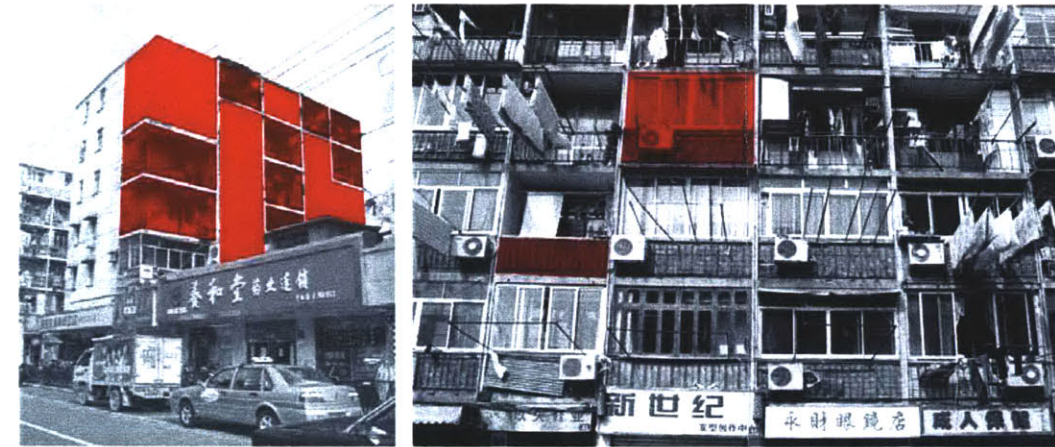
balcony >>>

images: Christine Caine, left: housing in Pudong
right: close up of housing facade in Pudong

In Lilong housing, the balcony plays an important role as service space. This function is proved lasting as the balconies of new mid and high-rise housing towers are cluttered with household cleaning items and supplies. As an alternative to this utilization as service area many residents choose to enclose this space, forming an extension of interior space, adding usable floor area to their unit. Many makeshift techniques are employed in order to shelter this area from the natural elements. The example shown above is enclosure of the bottom half with brick, to about one meters height and then topping it with sliding glass panels in order to allow for ventilation.

entry wall >>>
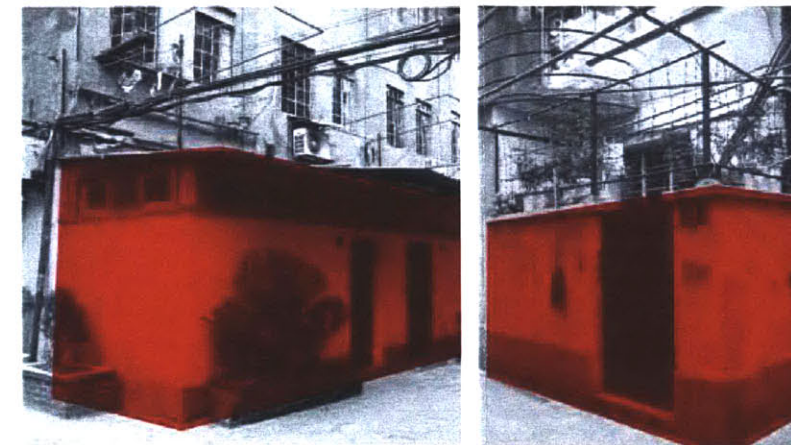
The entry wall is an enclosing element found within the side lanes, which defines a private entry zone of outdoor space for each unit. This zone is often used as a garden space and also as storage space for items such as bicycles and cleaning supplies.

This wall enhances the procession from exterior to interior, as it is a semi-enclosed space of transition from public to private space. The wall is adaptive in nature, as many residents chose to enclose this space with an over-head roof and others even create a balcony level above this space.

step 8 > carve out north elevation

The void spaces typical to the carved facade of Shikumen lilong are extruded to a height of the six stories instead of three. as a result of the initial stacking of the traditional model as per step 3. These voids are then reconfigured in order to accomodate the new unit layout within each housing row. This results in a new texture of carved surface in the north facade of each housing row.

carved void

first flr carved

reconfigured

re-inserted

subtracted

step 9 >

punch holes for better light and ventilation
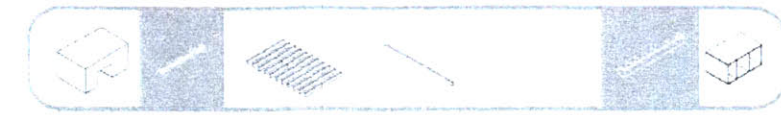
As a result of step 2 (stack up models), the process of step 8 must also occur two times. However, this second set of void spaces are no longer simply carves on the north facade as they rotate to become voids which puncture holes through the building form and allow for light and air flow directly through the building. This porosity also allows for the upper units to enjoy adjacent outdoor space similar to that of the first floor units.

initial row

punch holes

punch outs

link directly to step 10
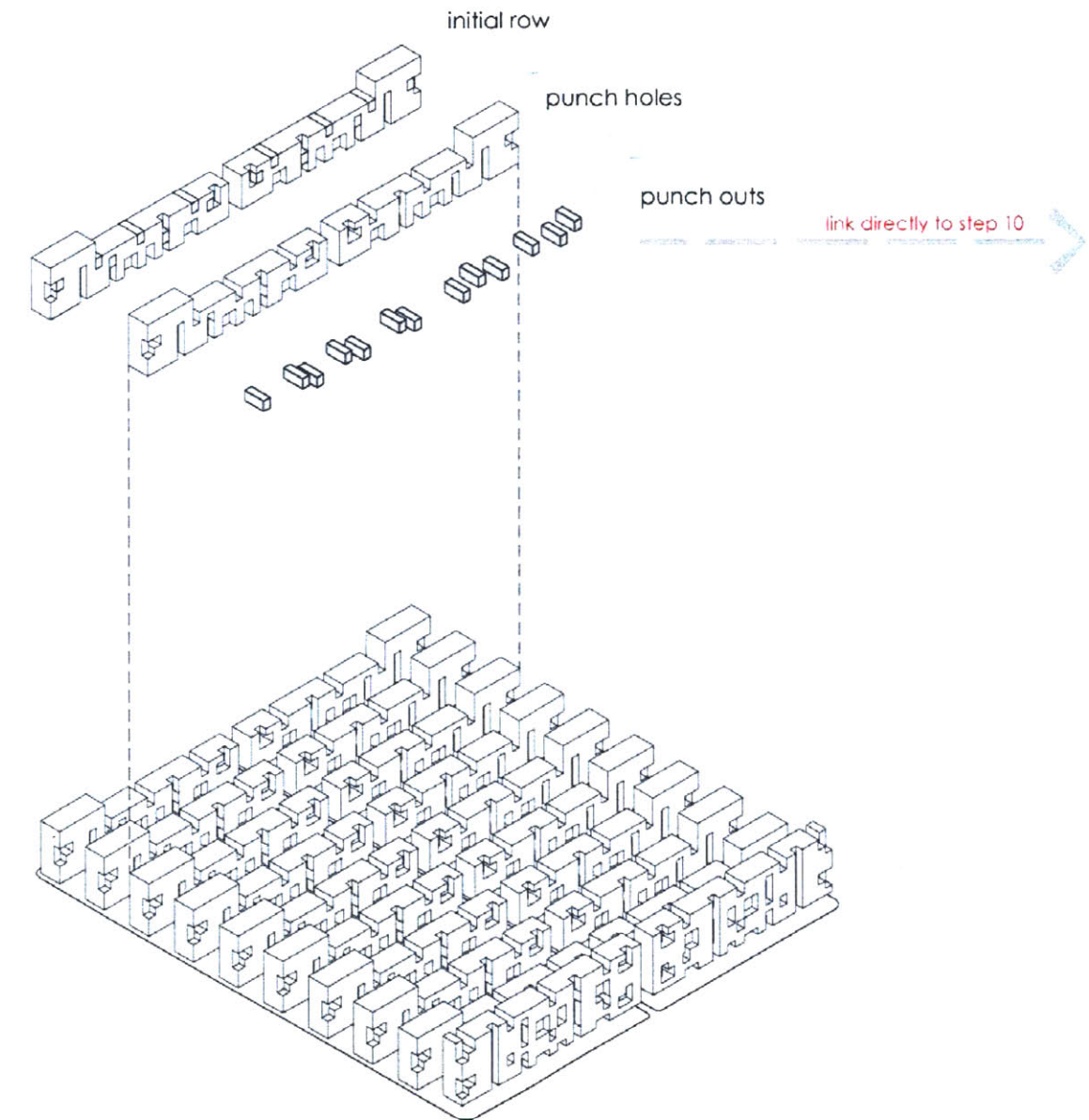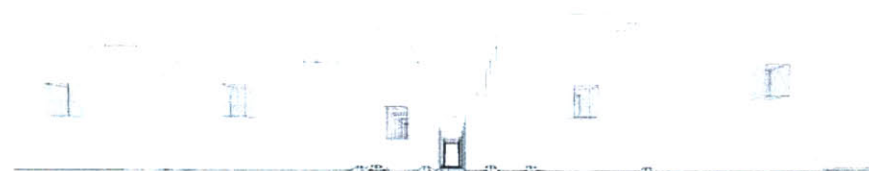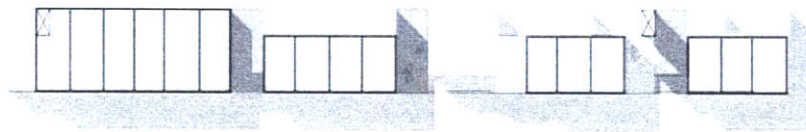
FAR > 2.52   LOT COVERAGE > 36.6%   UNIT COUNT > 786 UNITS

step 10 >

place punch outs on top of rows

After punching holes through each housing row, the result is a residual volume comprable to one living unit dimension. Therefore, the exact amount of volume lost by this puncture is restored to the total unit count for the block, by adding this volume to the top of each row.

Insertion / placement >
In order to comply to Shanghai building code for daylighting, these volumes are placed atop the row at the northern edge in order to comply to the rule of:

daylight distance factor: 1.0 H

*(H being the height of the building on the south)
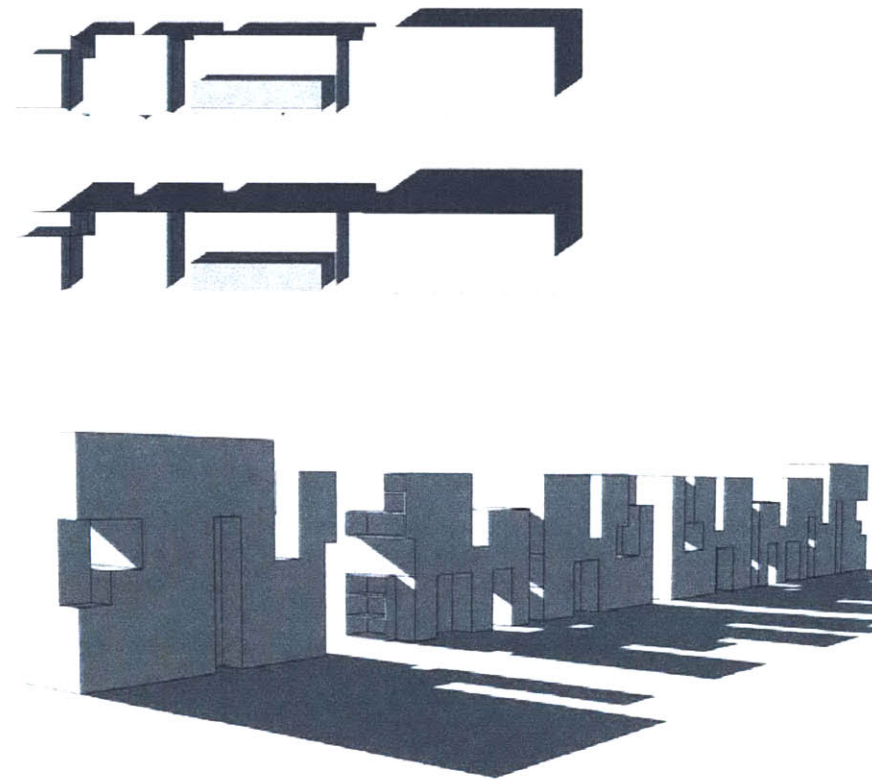
FAR > 2.54   LOT COVERAGE > 36.6%   UNIT COUNT > 800 UNITS

halved

re-configured

consolidated

placed on top

resultant row
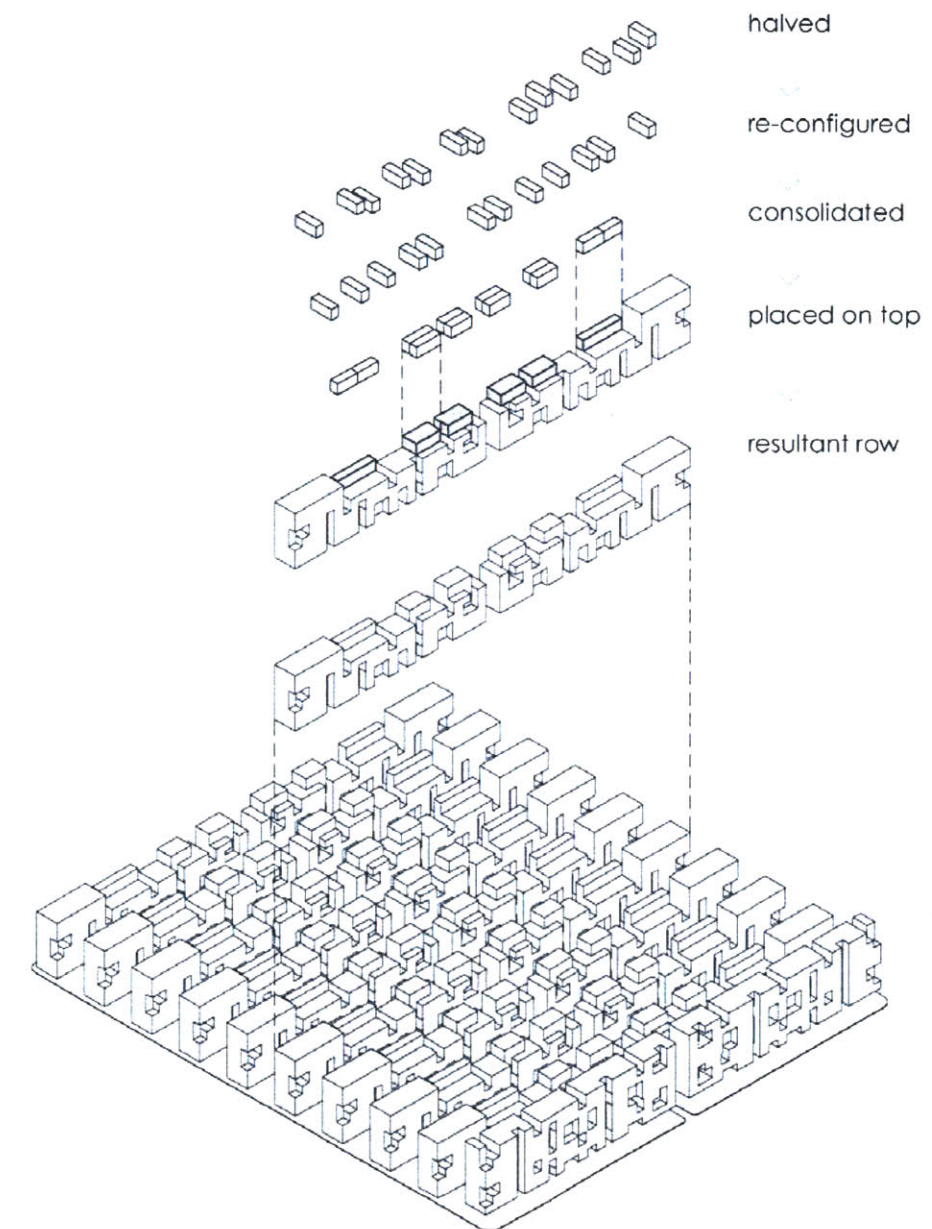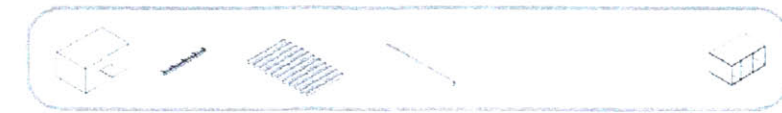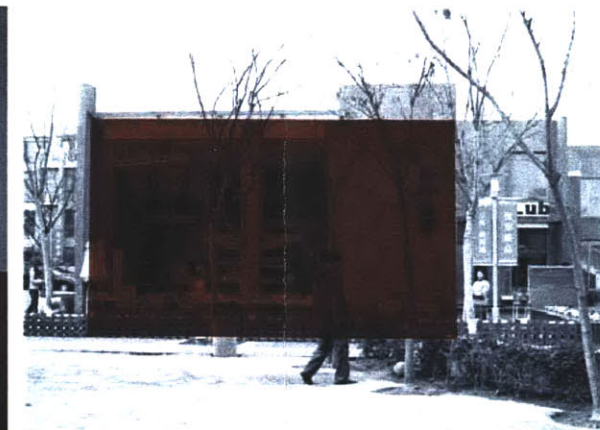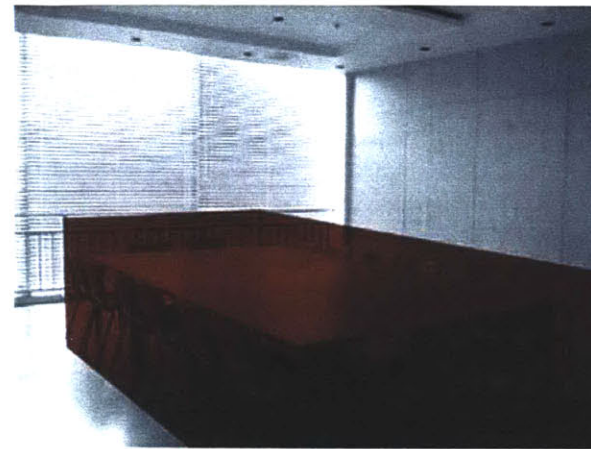
community space >>>

images: Christine Caine (Vanke, City Gardens, Shanghai)

The city of Shanghai requires 24 m^2/1k community space. Typically, this space is in the form of conference / meeting halls and small outdoor seating spaces. The placement of these facilities varies from the interior of the block to the exterior edge.

step 11 > insert community space

Community space is inserted along the central axis at the entry gates and at the mid-point along the interior of this lane. As spaces common to the entire community, it is the most logical placement as all residents enter and exit through this central lane.

community | .048 m

45 m²
45 m²

150 m²

150 m²
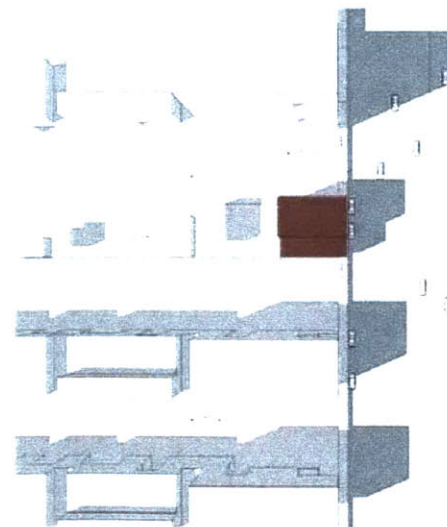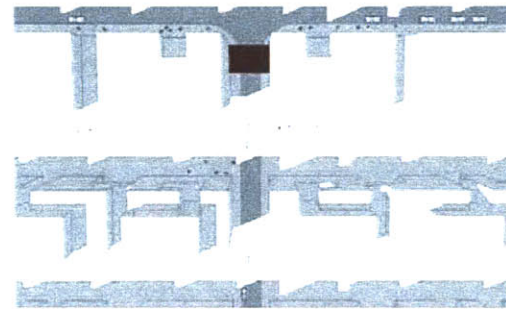
FAR > 2.5   LOT COVERAGE > 36.5%   UNIT COUNT > 776 UNITS
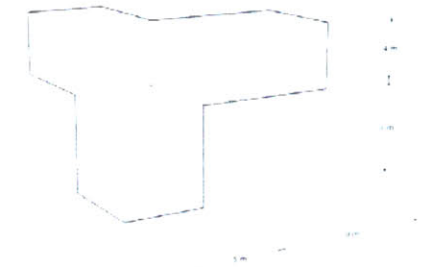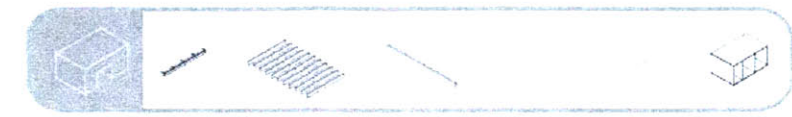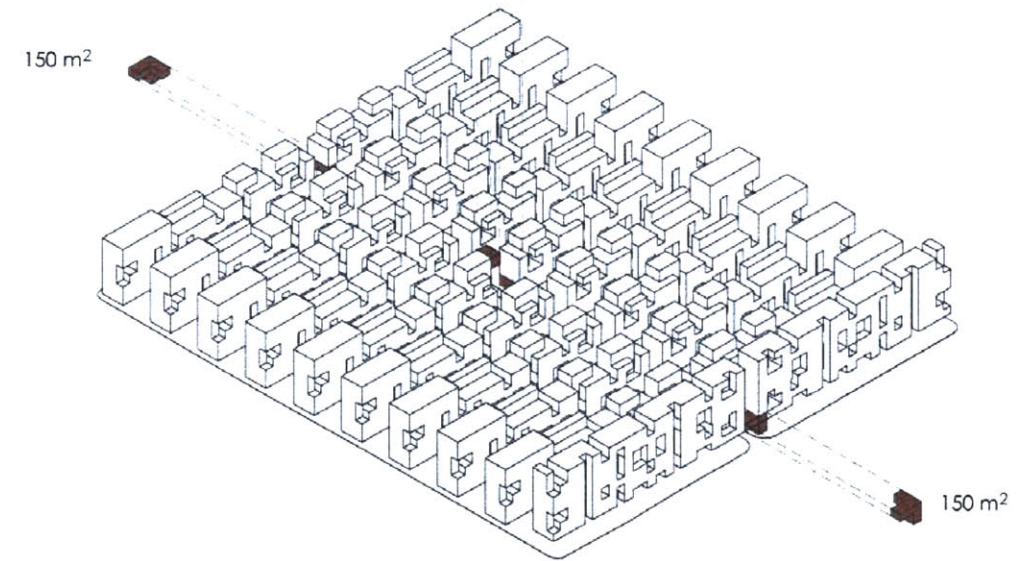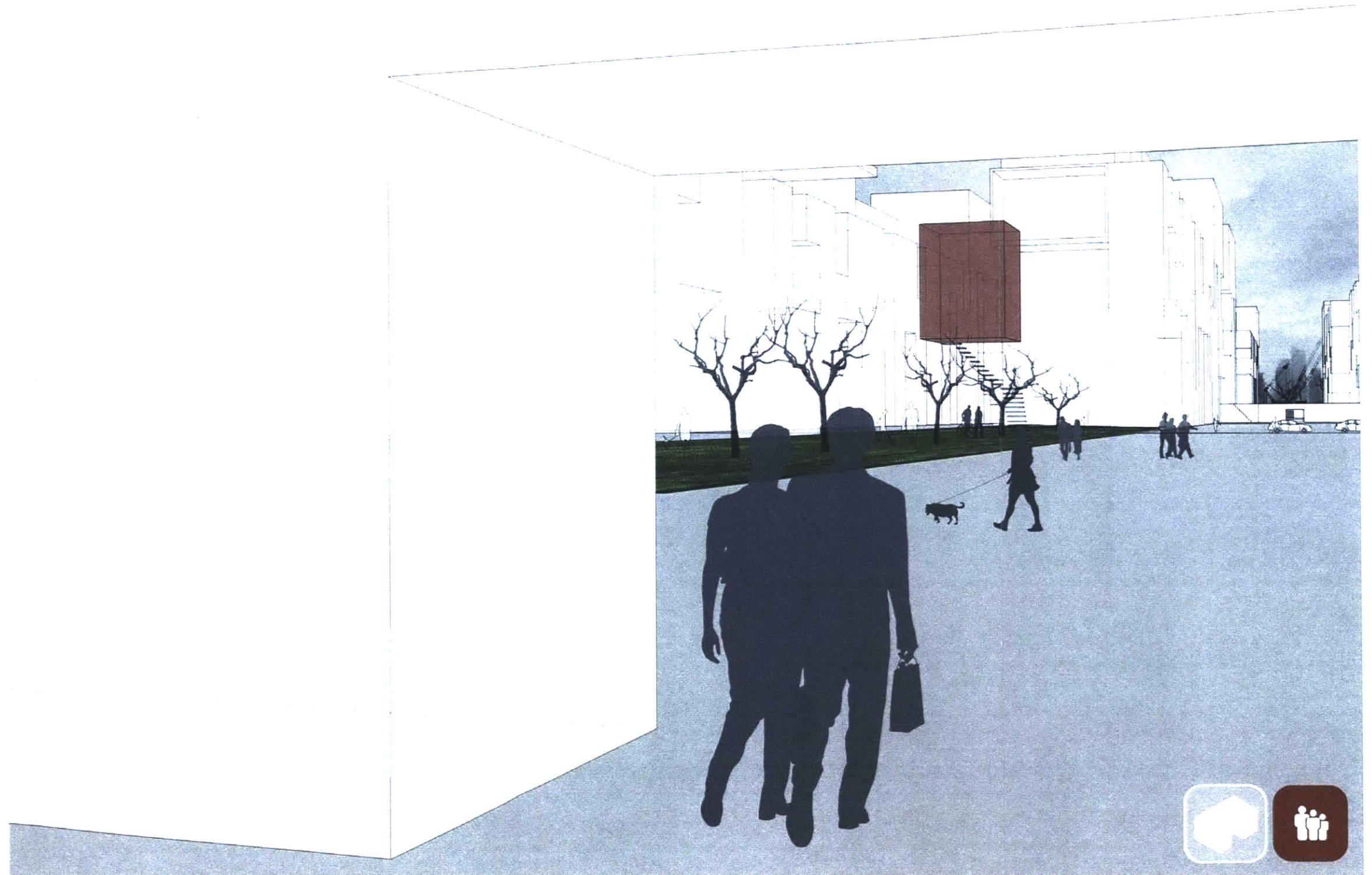
retail >>>

image: Christine Caine (street at Vanke, Holiday Town Shanghai)

The city of Shanghai already supports numerous foreign brand names and large-scale retailers and the increasing number of these proves a trend that will continue.

"Total stocks of retail facilities including shopping center, department store and big box retail centers in Shanghai city now stand at 3.5 milllion sq. meters" for the year of 2005. (Colliers International Half-yearly Research Report, Shanghai, August 2005)

step 12 >

insert retail space

The retail space requirement by Shanghai standards is 120 m² / 1k people.

In step 1, division of the site created four edges of various characteristics. The city street edge is characterized by a vehicular road whose dimensions usually range from 45-60 meters in width as determined by the city of Shanghai. In contrast, the width of the interior neighborhood road is determined by the developer and therefore may be of smaller dimensions.
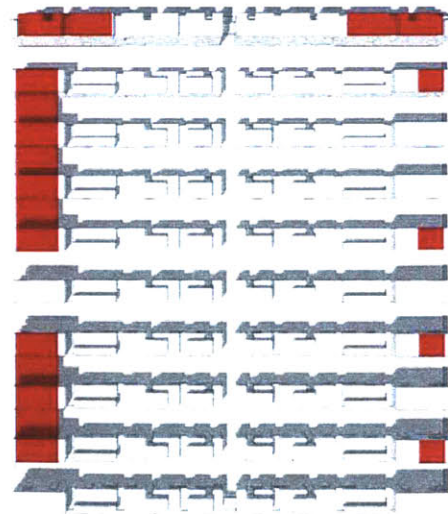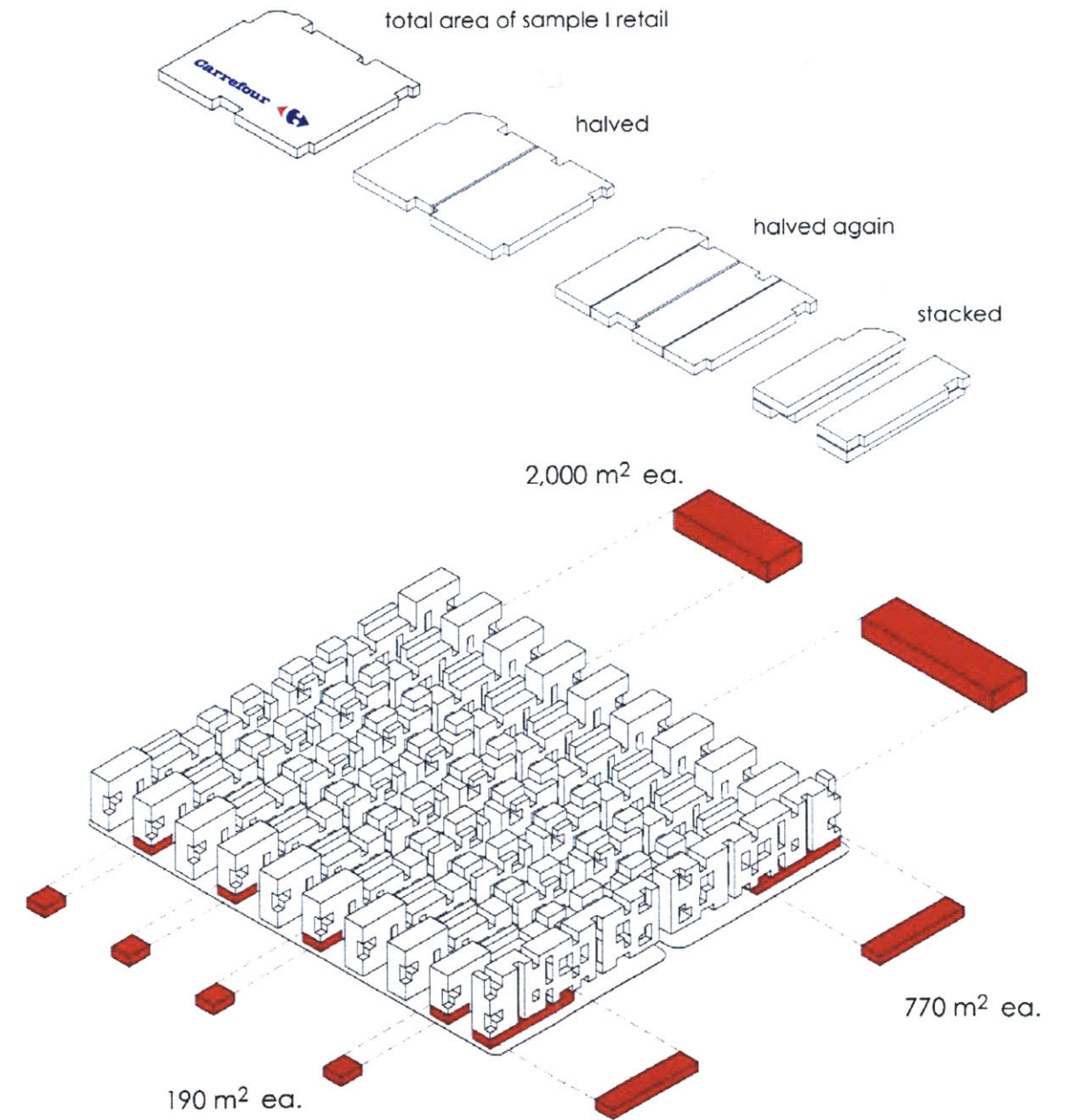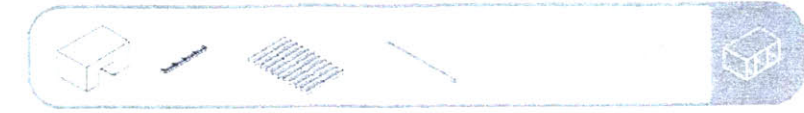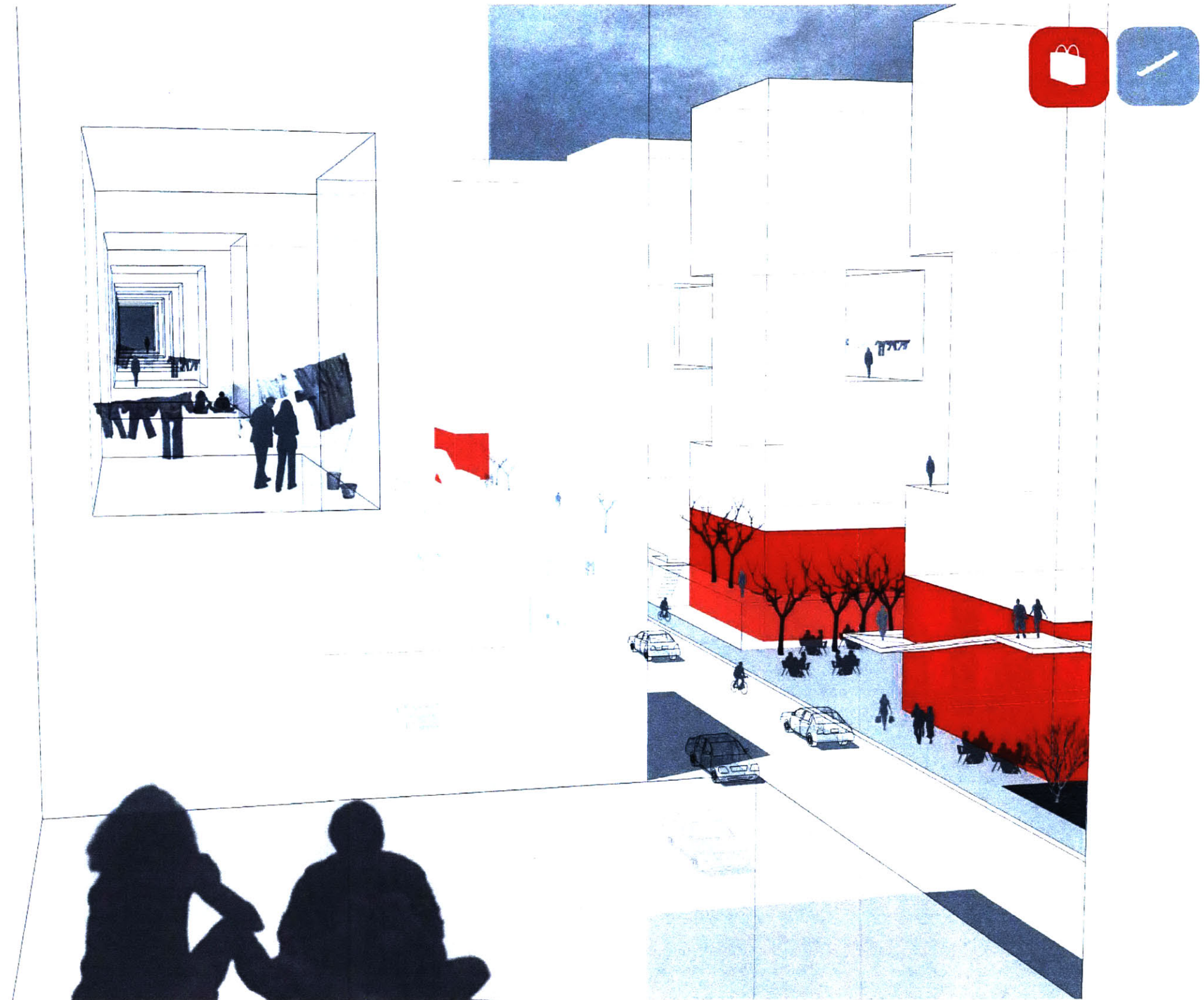
retail 23 m²

type I:
Holiday town restaurants

type II:
Everest town supermarket

type III:
Lilong edge retail

total area of sample I retail

halved

halved again

stacked

2,000 m² ea.

770 m² ea.

190 m² ea.

parking >>>

images: Christine Caine (Vanke Holiday Town on grade
parking for mid-rise housing)

Each of the sample set developments provides a parking ratio minimum of one spot per unit. This parking allocation is not only above grade but also below grade parking. All parking is solely accessible by those within the development, no public parking space is provided. Except for along the sidewalks of the main street edges within the site. The introduction of parking area becomes crucial to the feasibility of the new design proposal.

"All over China, cars are shaping the physical landscape: historic neighborhoods have been torn to the ground to build new roads; forests of roadside billboards have sprung up; and the sprawling outskirts of major cities are undergoing makeovers as big-box retailers such as Wal-Mart move in."

step 13 >

insert parking space

Parking is inserted directly underneath each housing row in order to minimize the distance that a resident must walk from their unit to any given parking space. Each parking structure acts as a root to a housing row, as it buries three stories below grade. Each structure has two vertical circulation towers which access directly to the side lanes, making the maximum walking distance 66 m (approx. a five minute walk at 2.5 miles/hour). As for the exterior edges of the site and the central lane, street parking is provided.
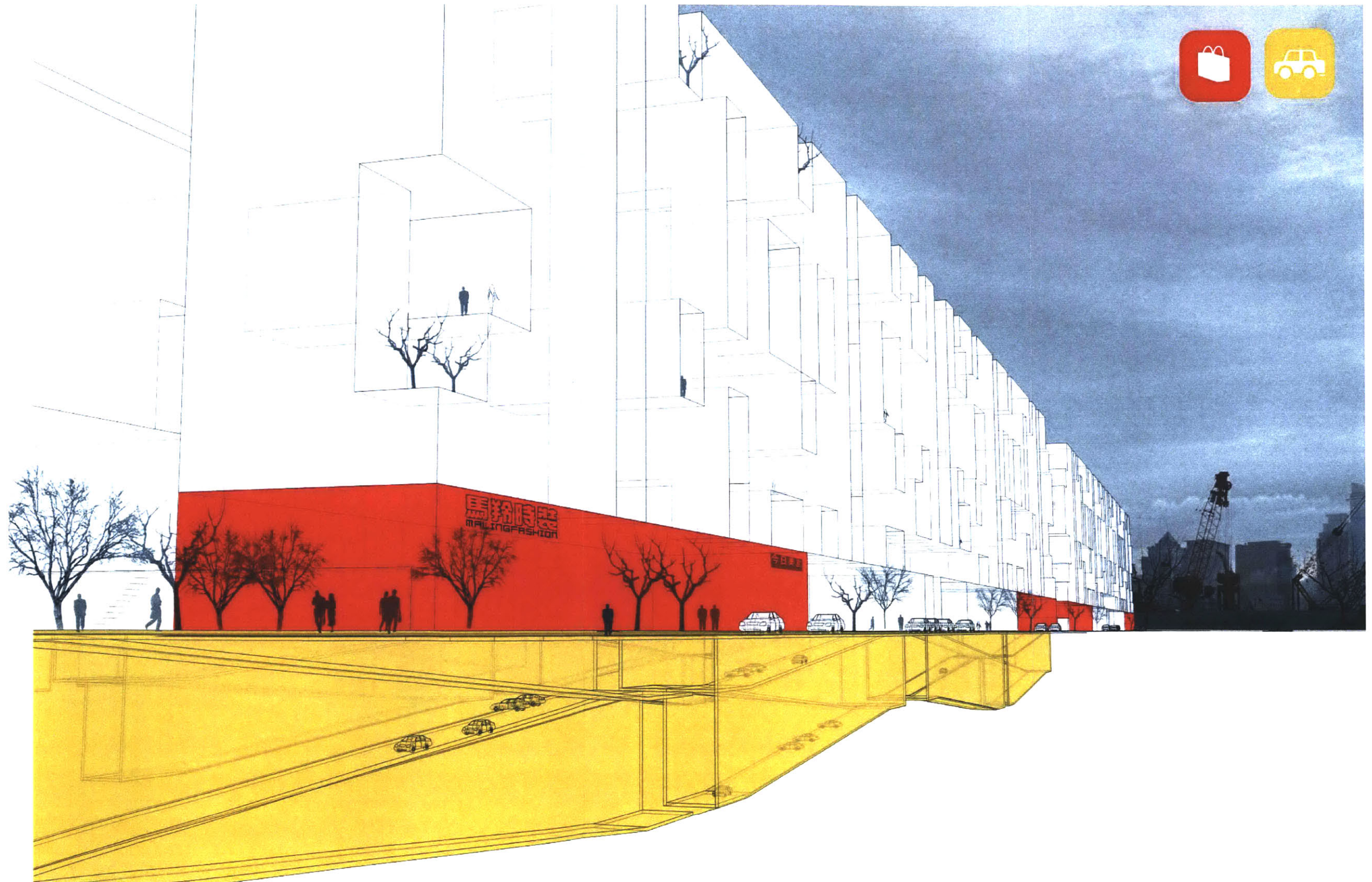
@ 2.5 miles/hr > .041 miles in 5 min.

.041 miles = 66 meters

66 meters = 5 min. max walking distance from residential unit to parking spot

ratio >>> 1:1.2
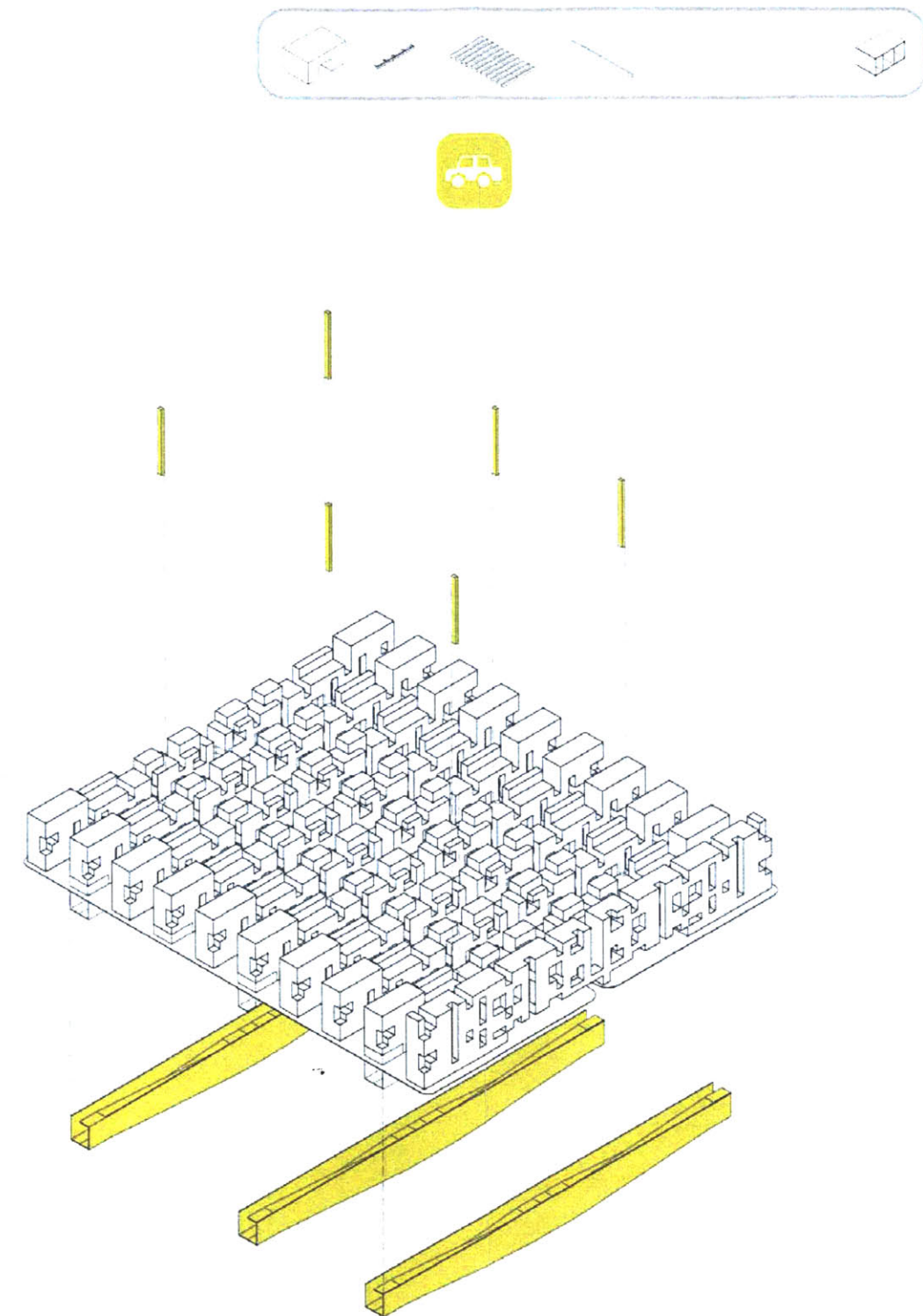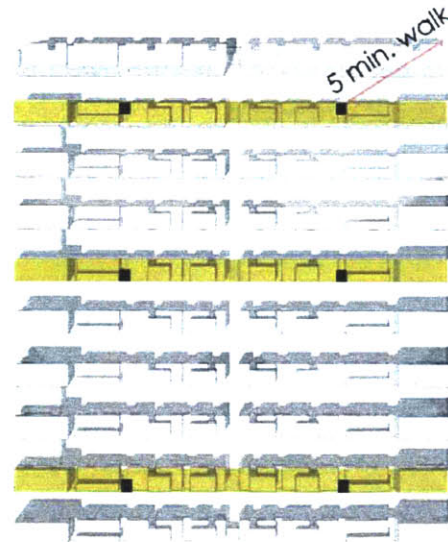
FAR > 2.53   LOT COVERAGE > 38.2%   UNIT COUNT > 494 UNITS
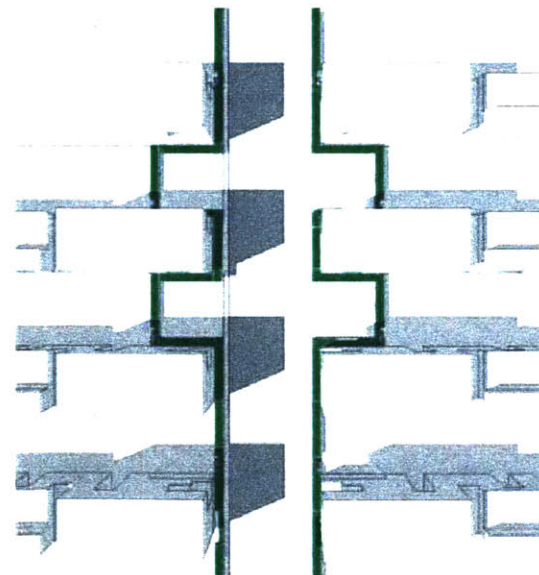
edge wall >>>

image: Christine Caine, Lilong neighborhood, Shanghai

The edge wall of a typical Lilong is an architectural element that defines the overall boundary of the site and maintains privacy to the residents as it contains the space of the side lanes. It allows visual privacy, as its height is most typically 2.8-3 meters tall. Often times, this surface is seen decorated with such household items as brooms and mops and washrags. Proving that every surface and space is fully utilized and personalized by the inhabitants of the Lilong. The edge wall serves as a "cap" to the end of each side lane, allowing each lane to become a safely enclosed internal neighborhood street where children can play freely and residents needn't worry about theft of personal belongings placed into these lanes.

step 14 >   add edge wall

The traditional edge wall is inserted along the east and west edges of the site. As a result site division, step 1, a single block is now composed of an edge that faces an external edge characterized by heavy vehicular traffic and the other is an interior neighborhood street edge. With this difference in street typologies the edge wall adjusts accordingly. At the interior neighborhood street edge the "edge wall" begins to bend and be manipulated in order to wrap around and above the ground floor retail spaces. As both edges include retail spaces, the two house different scales of retail and therefore the edge wall reacts differently to each.

At the exterior developer's edge, the wall maintains as a more rigid enclosing element since it serves as the dividing line between a more extreme contrast of public to private transition. Therefore, the wall at this exterior edge remains staight and maintains a 3 meter thickness.

local street edge retail

green skin

edge wall

public street space

FAR > 2.55   LOT COVERAGE > 33.3%   UNIT COUNT > 434 UNITS
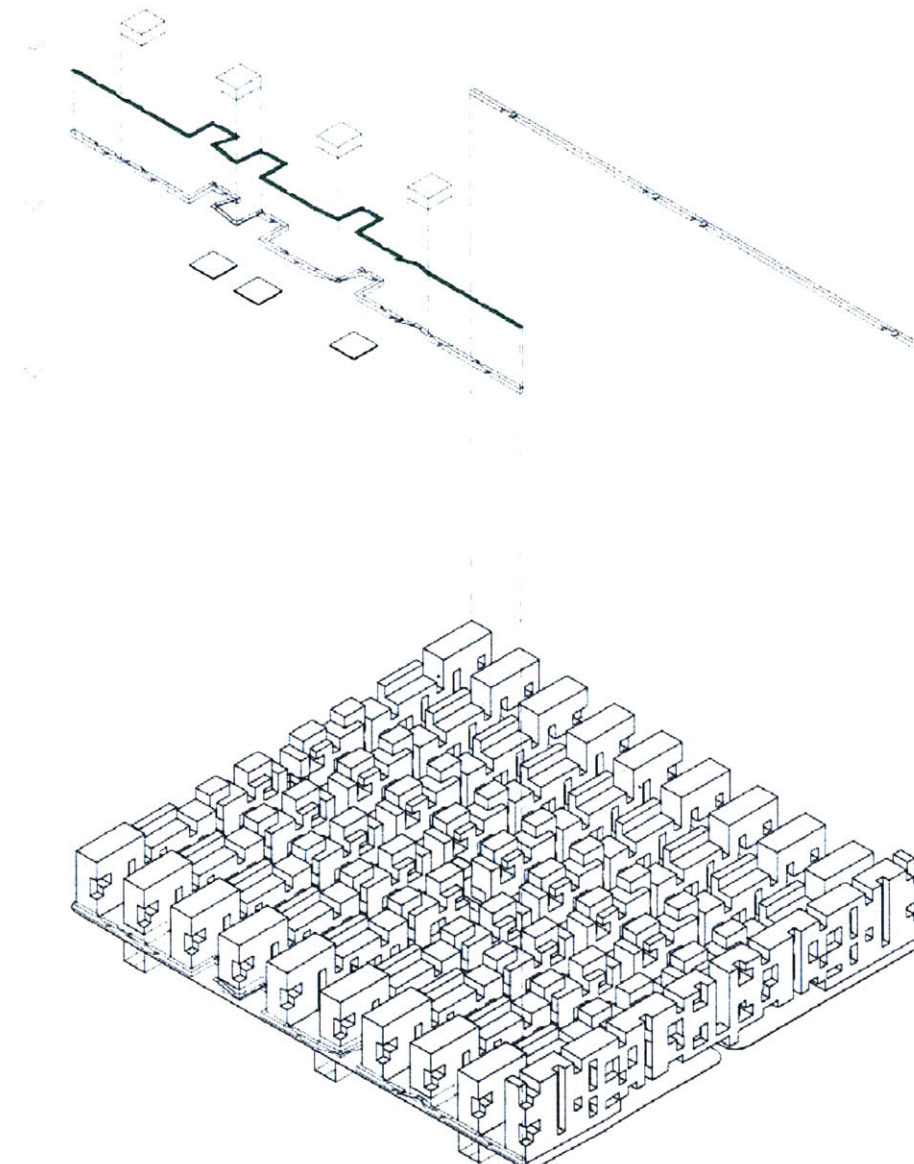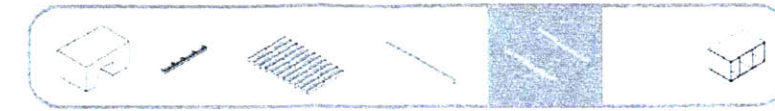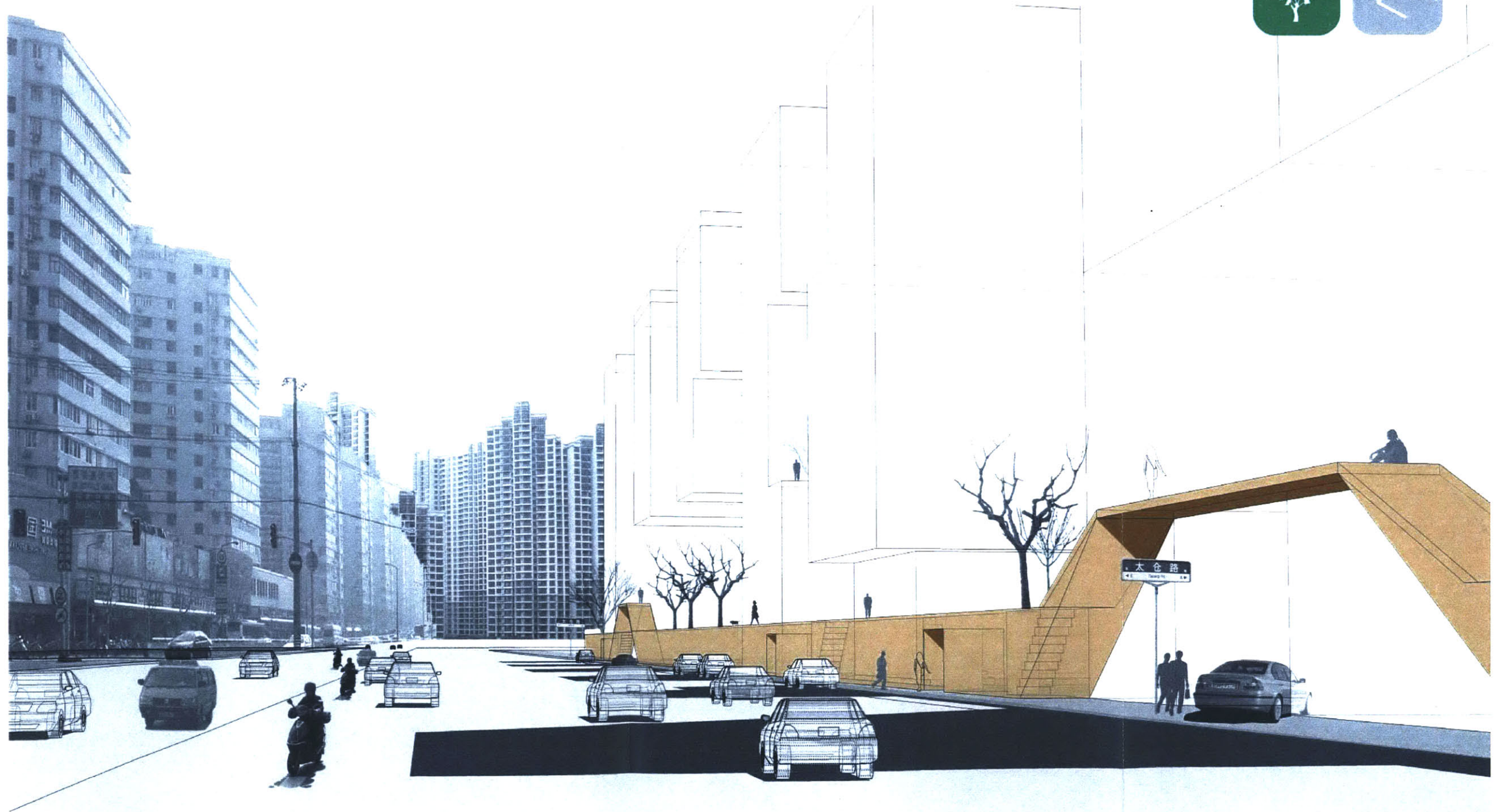
green space >>>

Images: Christine Caine Left :Vanke, Holiday Town (green space which lines the back of entire site)
Right: Vanke, White Horse (space between housing)

The superblock developments provide large open green spaces that either meet or exceed the standard set by the city of Shanghai. These spaces are well used by the residents and provide a common park space for leisure and athletic activities. However, the smaller green spaces between buildings have proven under utilized and become bland residual space.

step 15 >   insert green space

The Shanghai standard for green space is 2 m² per person, however developers currently provide an average which is approximately six times this amount: 12.7 m2 per person.

This proposal matches the typical approx. 12 m² per person, however does so by shifting a significant amount of this green above grade level. The city standard of 2 m² green space per person is inserted at grade level and the remaining 10 m² per person is incorporated into the roots of the urban edge and edge wall surfaces, rather than taking up more land area.

total area of green space

divided by 15
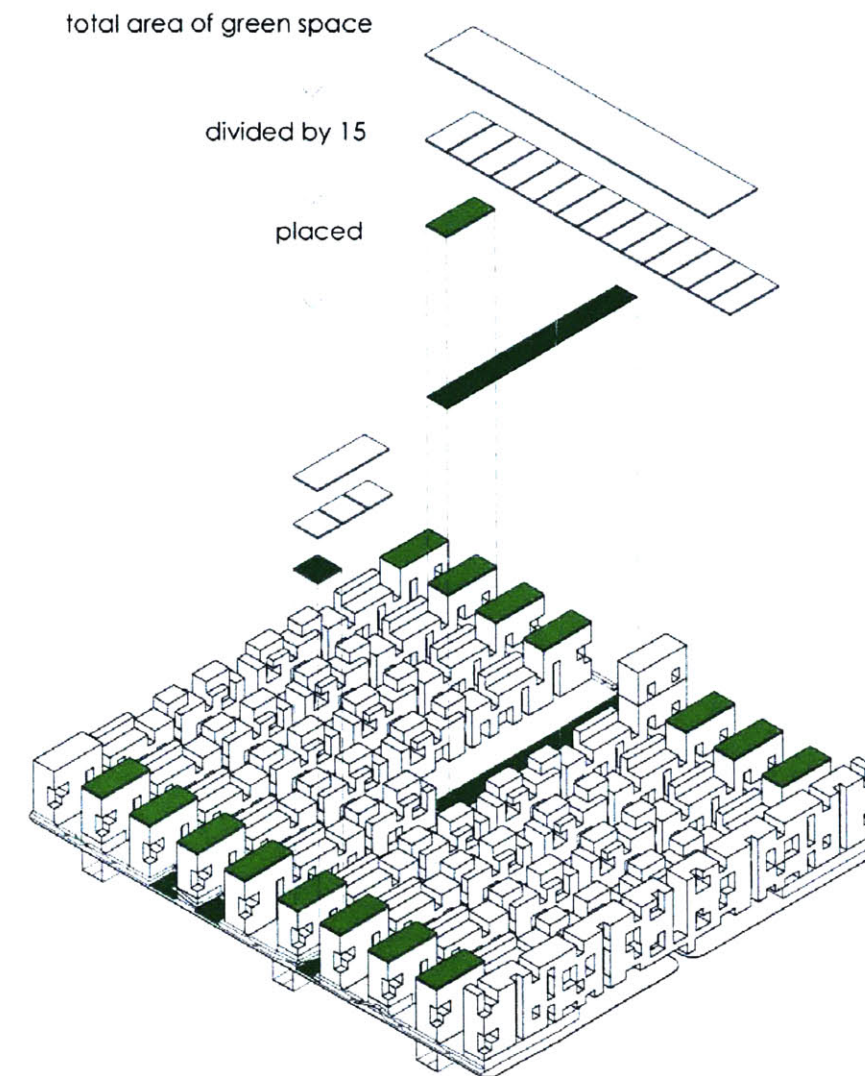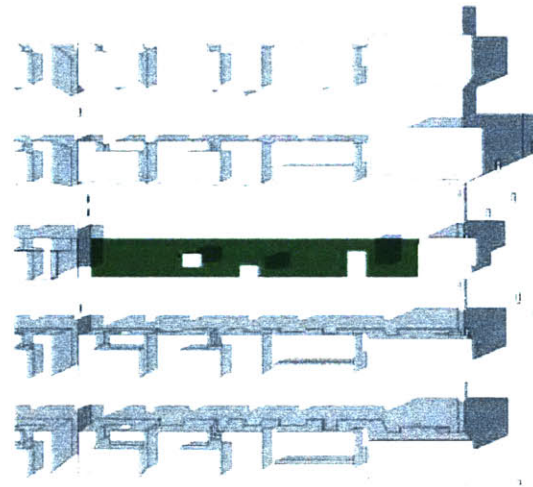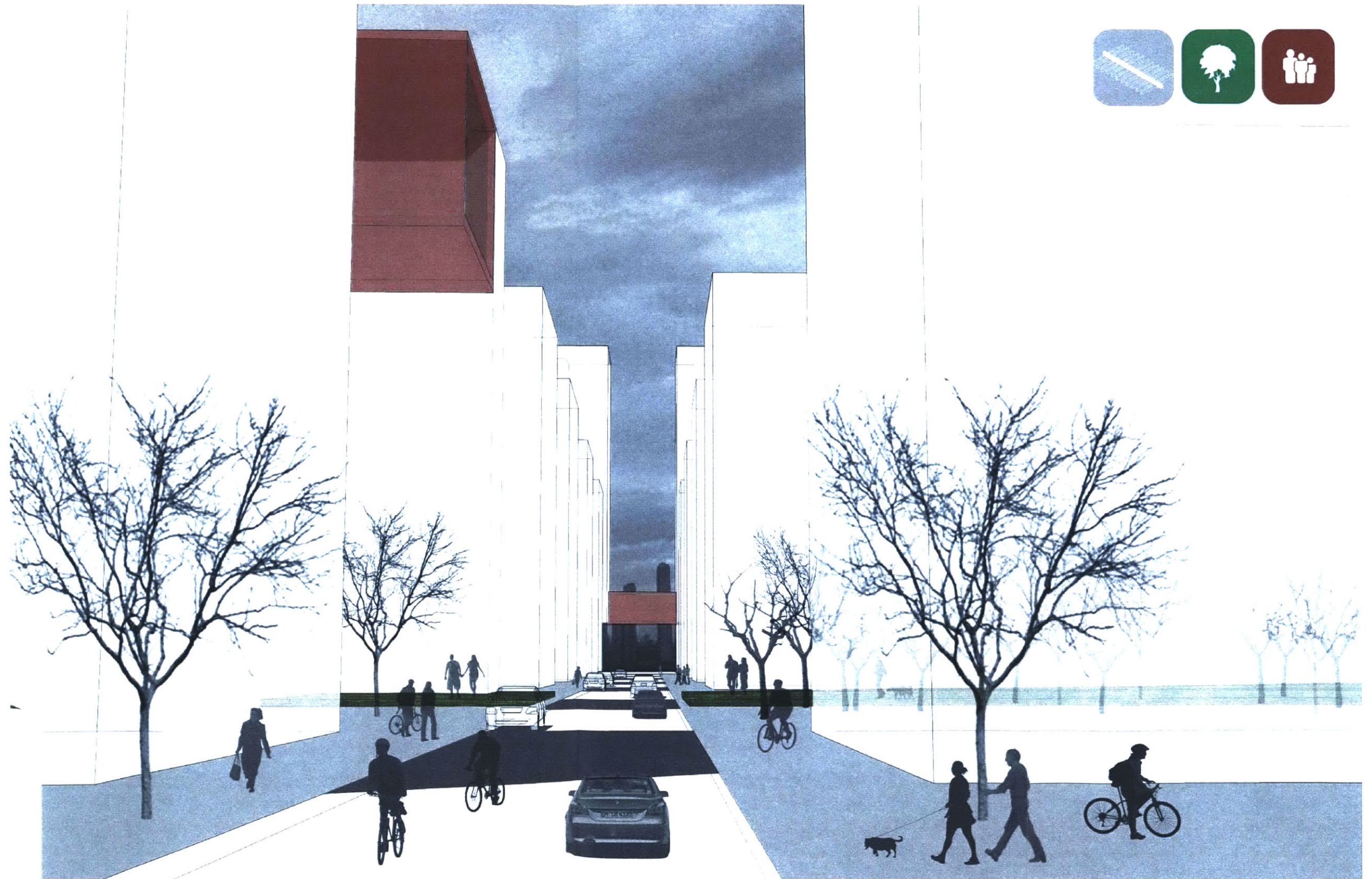
placed

education >>>

Image: Christine Caine (Vanke, Holiday Town. School placed on exterior street edge)

As a result of the City Standards, an educational facility space of 1,000 m²/1k people must be provided. Therefore, with the average population within one super-block development measuring about 4-5,000 inhabitants, approximately 4-5,000 m² of educational facilities is necessary.

step 16 >   insert education space

The city of Shanghai requires that a school be located within a controlled amount of populated area. Therefore, each phase of development must not satisfy the total requirement, rather the development area overall (42 hectares) must fulfill this requirement. Therefore, each phase may incorporate either one aspect of the educational facilities or a certain percentage of the spaces.

**CITY STANDARD :   415 M² PER PERSON (KINDERGARTEN)
547 M² PER PERSON (SECONDARY)**

kindergarten space
total : 1,000 m²

secondary school space
total : 1,300 m²
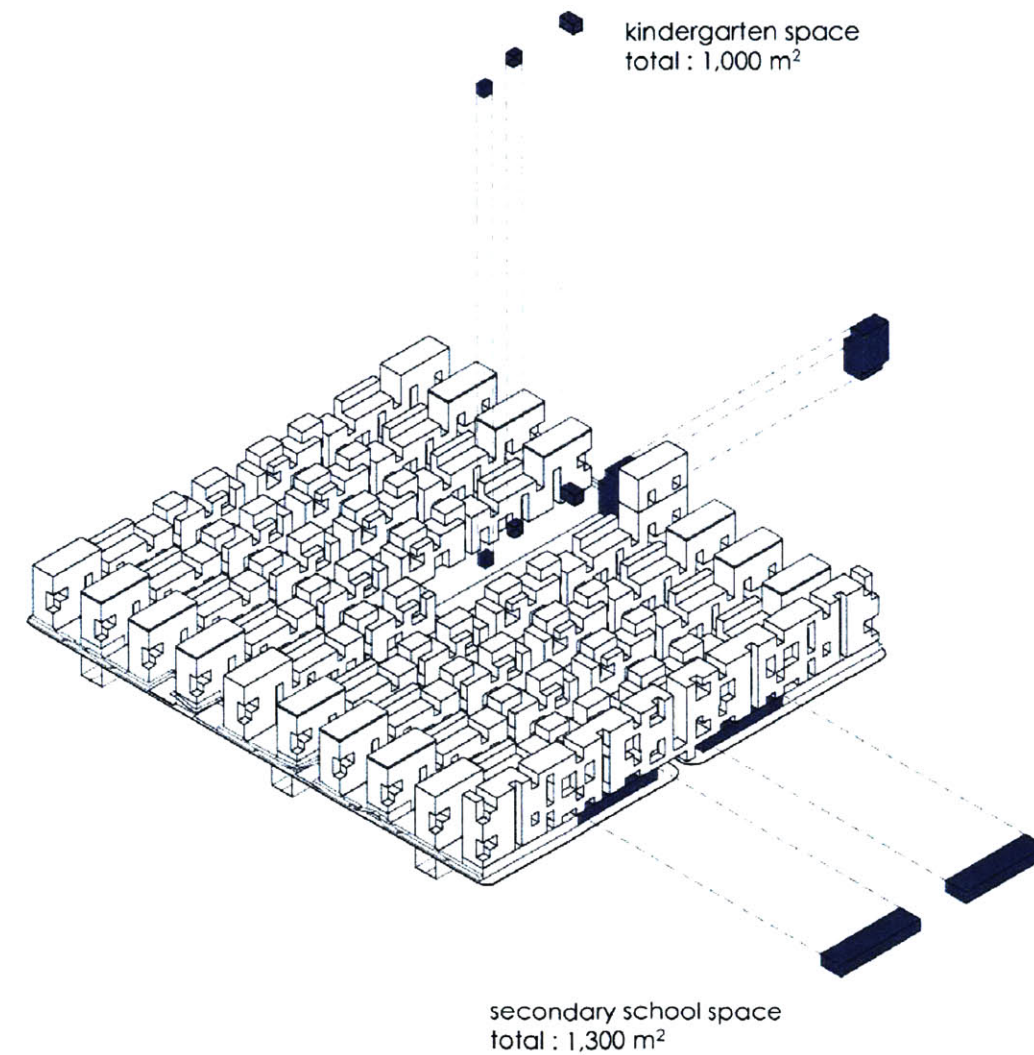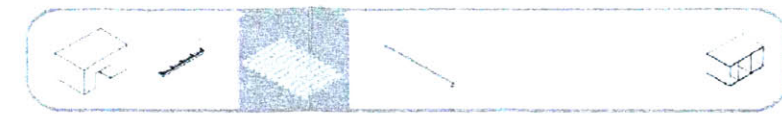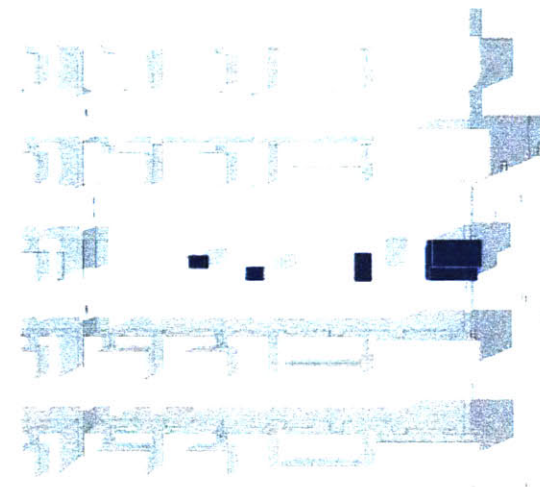
FAR > 2.55   LOT COVERAGE > 39.9%   UNIT COUNT > 494 UNITS
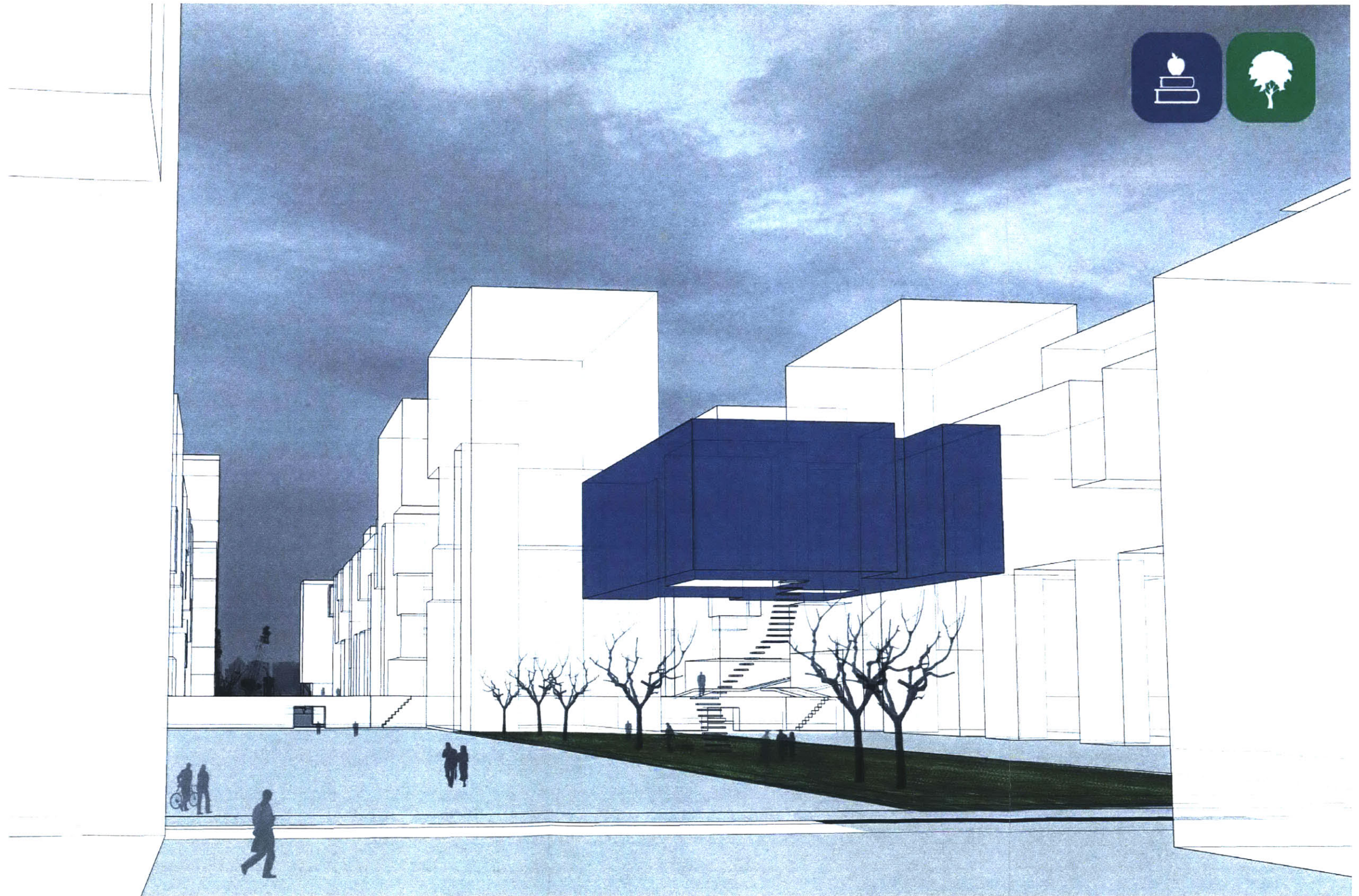
conclusion >

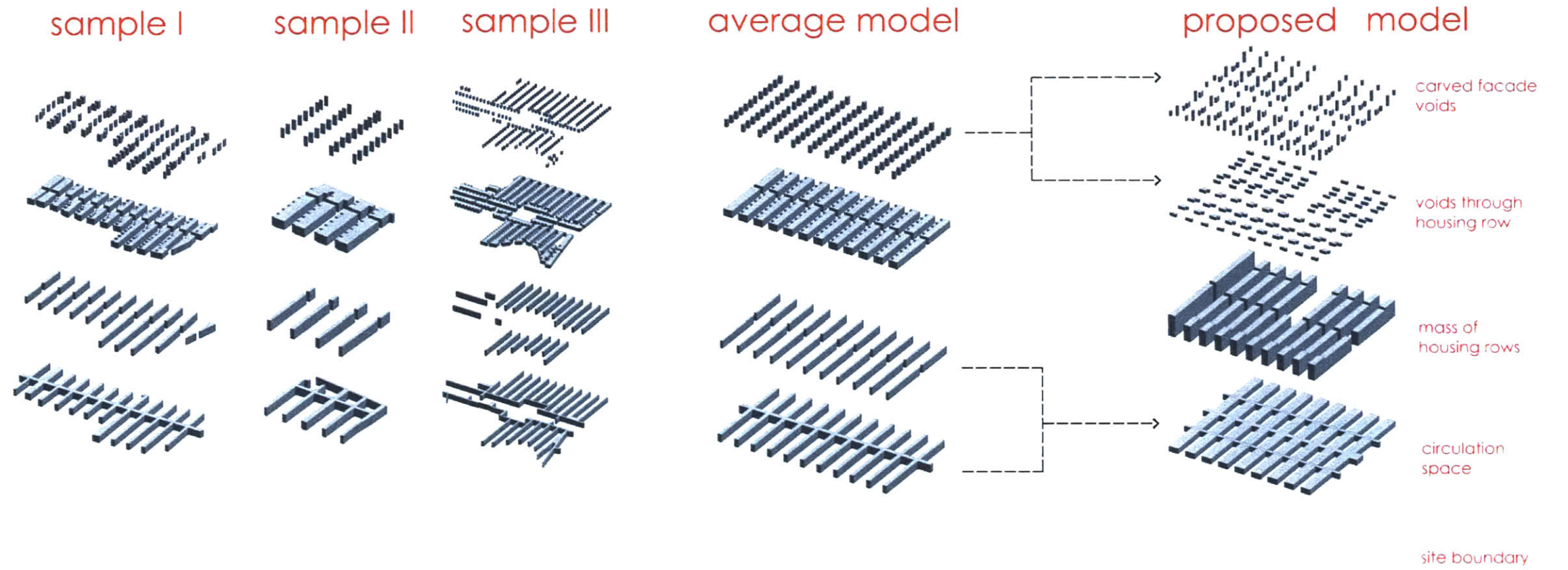The transformation process presented is an alternative method of development for Shanghai that preserves identity by embedment of traditional components of urban fabric. The primary form of the spinal block configuration is legible in the final form as it serves as the initial urban mass upon which a transformation of addition and subtraction takes place. Constantly a game of negotiation, the transformation hybrids the characteristics of both new and old models of development.

This proposal is a statement against the current development of the city where each building becomes object. The legibility of a consistent fabric is disintegrating as each new skyscraper or housing development establishes it's own pattern or it's own randomness as it drops into the larger frame of the urban block. Sitting tall and boisterous, the object(s) sit back from the boundary of it's block. As a result of placement at the center of the block, the city becomes plagued by poorly defined street scapes which further creates an environment of inconsistency. The sprinkling of these objects into large urban blocks does not achieve a fabric in the sense that there is no consistency or pattern by which an identity of place is assigned.

The transformation process proposed results in a simple repeating form of housing rows however allows for variation to enter into the form of each housing row itself, rather than variation in placement of each row in relation to the other. Variation at this level occurs in carving void space out of each row and with the numerous possibilities of unit replacements with insertion of parts from sample set B. These variations are modest in their resulting levels of variation and similar is the level of variation which takes place at the scale of the urban form. An example of urban form variation is seen with availability to remove up to 494 units in order to place green space at grade. This removal may take an entire housing row (equivalent to 240 units) or divide the required amount of grade level green space into smaller portions. With the first option, variation is limited to removal of any of the twelve potential rows composing the block, while the second option allows a vast number of potential variations. These subtle differences allow for flexibility with respect to variation in placement of the preceding or succeeding steps, while maintaining a distinct organizational urban form.

The research methodology explored with this Thesis is one which sets up a framework for a full circle design process to occur. The result of each transformation process may be plugged back into the initial mapping stages of the analysis process in order to evaluate and compare the proposal in relation to the two extremes of development. Due to the nature of the transformation, the resultant form is always a gradient, a hybrid form which lies somewhere midway between the black and white contrast of the Lilong neighborhood and superblock developments.

sample I sample II sample III average model proposed model

carved facade
voids

voids through
housing row

mass of
housing rows

circulation
space

site boundary

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