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**Interactive Dwelling: Public Space, Private Space  
and the Space In-Between**

Mone Smith

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Will Wittig, Associate Professor

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## **Abstract**

The central premise of this thesis is to begin to challenge preconceived notions of dwelling and to create a new way to dwell in a dense urban environment. One of the most important concerns for this project is the idea of interaction and how architecture itself can encourage individuals to interact with other members of a community. This project will explore ideas of private, semi-private, public, and semi-public space, while seeking opportunities to bring them together throughout the built form. Weaving, layering and intersecting spaces will begin to shape (reshape) relationships and program adjacencies in and around the built form. This market rate housing development will include a variety of functions to best understand how people interact on many levels: working, playing, eating, socializing, etc... This thesis project will also attempt to address and satisfy the basic needs of both the individual and the whole through finding a middle ground between the two realms of public space and private space and blurring them in a creative and unique way.

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## **Project Summary**

Although there are many social factors that affect human relationships that are not influenced by the physical environment, the project will explore the ways that architecture can encourage and facilitate various forms of social interaction. This thesis project is a market rate housing development building that aims towards increasing the level of social interaction among individuals of all ages in a specific community by creating a dense urban fabric. This project will provide recreational facilities, communal areas, shops, dining areas and housing units.

An architect is a person who translates the user's needs into the builder's requirements, yet somewhere in the process the user's "needs" have become a secondary element. How does society respond to this particular problem? It is the architect's job to find the most creative way to address the needs of individuals while still creating safe and thriving environments. One of the major problems with apartment buildings is the lack of private space. Many housing developments today have no sense of individuality and only address the basic needs of the collective whole.

This thesis project is an attempt to reinvestigate and decode the way people think about the basic role of dwelling in a community and how architecture can influence their existing notions and ideas. The use of materials, lighting, sound, changes in ceiling heights, connections between exterior and interior are all ideas that can be incorporated into the building to influence more social interaction by making spaces feel more inviting. Although the architecture alone cannot make people interact with one another, the design can provide more opportunities for unexpected interaction to take place.





## **Thesis Investigation**

Architecture is the human organization of space using physical material. Architecture can also be suggestive of or perhaps encouraged by a process that lies beneath the interaction between humans and civilization; and humans and the surrounding territory they live in.

Individuals within a specific culture have their own way of doing things, which in most cases, is very different from other cultures. They have unique views, rituals, religion, etc... The question to ask is how can we move towards an architecture that addresses the uniqueness of individual needs, while at the same time providing for the necessities of a community? A starting point is thinking about how we dwell in our own homes. Every person existing in this world has a very specific way of carrying out their daily rituals, but something very intriguing begins to take place when the existing notions of 'dwelling' are challenged and individuals that occupy a specific area have to allow themselves to adapt to an unfamiliar way of life. In this thesis project, program adjacencies and spatial relationships will begin to challenge the way people occupy spaces within and around the facility. Spaces, programs and activities will be woven together and layered to provide individuals with the more opportunities to interact by blurring the lines between public and private spaces.

The most challenging issue to address in this project will be harmony; demonstrating through architecture, that while satisfying the needs of the individual, one could also satisfy the needs of the whole.<sup>1</sup> This thesis project is an attempt to decode and challenge the role of basic dwelling and reinvestigate how architecture and urban design can improve our communities.

## **Social Interaction**

Social interaction is the way in which human beings communicate with each other, and in doing so, they form social bonds.<sup>2</sup> Social interaction is one of the many elements that begin to form societies whether it is positive or negative. Interaction is more than just talking; it encompasses a wide range of activities carried out daily by individuals of a specific community. According to sociologists, social interaction is the foundation of society.<sup>3</sup> Society is patterned on human interactions, and this is what makes members of specific group feel unique from other groups of society. This thesis project is hinged on the idea of human interaction and how architecture itself can influence a higher level of interaction among individuals within a specific community. Although there are many factors that effect human relationships (race, age, gender, ethnicity, status, etc...), it will begin to challenge the existing notions of how people live, play, socialize, etc... together in a dense urban environment.

## **To Dwell**

What does it mean to dwell? According to Webster's dictionary, to dwell means to live or stay as a permanent resident; to reside: to live or continue in a given condition or state.<sup>4</sup> A dwelling is more than just a roof, four walls and a warm place to relax. A dwelling is a place of personal expression where an individual can thrive in his or her own way. It is thought to be an area of private retreat for individuals who reside there. Dwellings may express the status or attitude of their inhabitants.

"Housing is different everywhere we go, and so it should be. But what every housing scheme has in common is an attempt, through the

design process, to create an environment that responds to social needs and aspirations.”<sup>5</sup> In the society we live in, there are individuals with needs that may be completely different from the next person. The design of housing units needs address a changing society and allow the occupant to identify with a specific dwelling. A typical apartment building does not provide any form of individuality; there is a typical hallway providing egress with units on either side. They are efficient, but do not address how residents will inherently occupy the spaces. This thesis project will explore the idea of interaction and how individuals within a specific community utilize these spaces designed for human interaction.

With so many unique varieties of families in this world today, there is no definite way for an architect to anticipate who will occupy his/her building. Not knowing brings about design challenges. Anyone can buy a home or rent an apartment and make it their own with decorations and furniture, but there are more often than not unusable spaces within the structure. Either the kitchen is too small and the family room is too big or the bathroom is too small and there is no need for the extra living space. Architects need to make every effort towards designing flexible buildings that satisfy the needs of a variety of circumstances and living arrangements.

### **A History of Mixed Use Development**

Mixed-use development was the most well-known style of development throughout a large majority of history. It was most popular in urban cities and towns because people walked on a daily basis for transportation, and it was more convenient to place an assortment of uses in proximity to one another. Mixed-used development fell out of favor during the Industrial Age because many of the buildings produced substantial industrial pollution, detrimental

to those who lived nearby. Zoning regulations, particularly in New York City, also worked against mixed-use buildings. This separation however, was extended to commercial uses as well, setting the stage for the suburban style of life that is common in America today. Although many families began to leave urban life for suburbia, many stayed and mixed use development continued to flourish. Architects began to evolve with time and generated new and innovative ways to address living in dense urban environments.

Le Corbusier, one of the most influential thinkers of his time, was a pioneer in theoretical studies of modern design and was dedicated to providing better living conditions for the residents of crowded cities. He thought he had found a prototype for public housing that would embody principles that could be incorporated into the design of these housing projects. He called these buildings Unités. His most famous is Le Unité de Habitation at Marseilles, France. Le Corbusier was commissioned by the French Housing Programme to design the Unité because of a public housing shortage after WWII. <sup>6</sup> This building was a mixed-use public housing project that was a reflection of human interaction. It was more successful as a project than his 1933 plan, the Ville Radieuse. The design was very well crafted, Le Corbusier thought of every detail of the building, down to the cross-section of the apartments. He paid close attention to proportion, rhythm and human scale.<sup>7</sup>

### **Mixed Use Development Today**

Mixed-use development refers to the practice of enclosing more than one type of use in a building or set of buildings. A typical mixed-use project often consists of ground floor retail with either housing or office space above. In some cases, many uses are mixed together in one or more buildings

at a project site. Some mixed-use projects are not limited to uses within one building and may include entire neighborhoods where different uses are mixed together in proximity. Many planners see mixed-use projects that have a housing component as an important factor in reviving decaying urban and industrial areas. Mixed-use buildings have drawbacks like single use buildings. A number of challenges can confront the developer and planner proposing mixed-use projects, including added complexity because of the multiple uses, restrictive zoning codes, increased construction costs, difficult-to-obtain financing, wary equity investors, and a lack of suitable locations.

### **Urban Housing Developments**

This thesis project will re-evaluate urban life through a new and innovative pattern of dwelling. A market rate housing development that provides a mixture of uses in the heart of a declining urban area can be beneficial to city life. Mixed-use buildings increase public health, consume less land than single land use buildings, and are more convenient to community members. This dense and diverse pattern of dwelling could also enliven the city and bring back more middle class residents. This facility will go beyond the usual misconceptions of apartment living by providing private, semi-private, public and semi-public areas for residents, but will also find a balance between the two so residents can personalize their space while still interacting with other members of the community.

The project is unique because it is a challenge not only to the designer, but to people in general. Can we as a culture begin to re-evaluate our existing notions of how we dwell in our homes and challenge our existing assumptions through architectural form?

## **PUBLIC vs. PRIVATE: Drawing the two realms together**

Where is the balance between the two realms of public and private space? How does one successfully design for the individual as well as the collective? What makes it stand out from any other mixed-use building that has housing units, retail spaces, and recreational facilities? What makes this building so unique? Mixed use development seems to be a logical response to satisfying the needs of both the individual and the collective because it provides the most benefits for both the existing surrounding community and the internal community as well. Finding a balance between public and private is a crucial element in this thesis investigation.

*"Urban design, and the housing which forms such a large part of our urban environment, is not just about buildings. It is also not just about what things look like, or about new developments. It is about the spaces between the buildings, the streets, the parks and the public facilities, the way new fits with old, and how all these dimensions work together to make a place."<sup>8</sup>*

This thesis project will begin to explore the idea of public and private space through spatial organization and by creating a relationship between the building and the surrounding spaces.<sup>9</sup> The idea is to create a new community within a community that is already established. This building will attempt to fit into the existing area by incorporating facilities that will not only serve residents of the new facility, but become useful to members of the existing community as well. Light, sound, materials and nature are elements that will be incorporated into the built form to give it personality and make it appealing to the public. Integrated parking and well designed security measures will provide a sense of individuality as well as a sense of collectiveness. Stairwells, ramps and mezzanine levels can be opportunities

to create social meetings and interaction places.<sup>10</sup> Outdoor spaces will be designed to be seen as public and private spaces by letting the layout of the building and the buildings edges define the exterior realms of public and private space. The building needs to be inviting and easy for people to move in and around.

According to Kevin A. Lynch, city planner, there are five major features of the physical landscape that people use to understand place: paths, edges, nodes, districts and landmarks.<sup>11</sup>

- Paths direct movement
- Edges are boundaries and provides limits to one's world
- Nodes are points of intense activity
- Districts are zones for each activity
- Landmarks are points of reference

In this thesis investigation many of these features will begin to merge together and challenge the way individuals think about spatial organization. But at the same, this does not mean chaos. If the building is too confusing, it will be undesirable to occupy.

The layout of the residential component of the building resembles that of a typical city block. Because this building is located in an urban area, inspiration was drawn from the layout of a typical city block. There is a street that divides the two rows of housing, a curb and sidewalk, a walkway to the residence, a porch and a home. The street, curb and sidewalk are seen as public spaces. The street and the sidewalk are places where social contact between local residents can be established.<sup>12</sup> These areas are where many forms of interaction take place and are lost in the typical apartment building layout. "Paying equal attention to housing and street alike means treating the street not merely as the residual spaces between housing blocks, but rather as a fundamentally

complementary element, spatially organized with just as much care...<sup>13</sup>

Communal spaces like community kitchens, laundry areas, play areas, and so forth will be woven into the street to integrate many forms of activity and create spaces for unintentional relationships to form. There are other semi public spaces woven into the pattern of the residential units above like the indoor gymnasium and fitness on the third floor that has an all glass façade facing the outdoor public space below. There is a physical separation, but a visual connection. There are also internal ramps surrounded by a glass façade that provides a sectional relationship to each level. Skylights also are incorporated to bring natural light into the long residential bars.

The design of the residential units will begin to concentrate on the idea of individuality. There are five types of units in this facility; studio, one bedroom, two bedrooms/one bath, two bedrooms/two bedrooms, and three bedrooms/ two baths. In this building, those areas where many forms of interaction takes place and are lost in the typical apartment building layout, are celebrated. The units themselves in this building begin to blur the lines between public and private space by jogging in and out of the "internal street." The idea of the "stoop" is incorporated as wing walls of various heights to provide visual interest and to allow residents to use them as they see fit whether it be a shelf, bench, storage area, etc...

There will also be private outdoor balconies in the rear for more private activities. The walkway can be seen as a semi-private space or intermediate space, it is not really private, but it begins the process of entry into an individual's private space.<sup>14</sup> The porch or stoop is considered to be a private area because one must receive permission from an occupant of a particular resident to gain access. People do not typically just sit on



someone else's porch and hang out without the owner's permission. This area is the last step before actually entering the private realm of one's personal space.

The concepts of weaving, layering and intersecting will begin to shape the character of particular spaces within the building allowing for a higher level of human interaction. These concepts will be incorporated into the building both on large and small scales: from the overall form of the building to the layout of specific spaces and programs.

### **Conclusion**

In the end this thesis investigation will demonstrate that both the basic needs of the individual and the collective whole can be met in a single building through the creative use of public, semi-public, private and semi-private space. This will inherently produce a higher level of social interaction in this specific community. This thesis investigation seeks to design an interactive building that will service the inner community and the surrounding community as well. The unique qualities of space in and around the building will be an important aspect of the design process.

*"Buildings, neighborhoods, and all of the spaces in between, matter to the people who use them as much as they matter to the designers that create them. Recognising the different voices and different views of all involved has to be a key component of developing projects that will prove sustainable, both as communities and as investments."<sup>15</sup>*

The proposed facility will be a well crafted building, designed to service a diverse population, with communal spaces incorporated that are open, accessible and properly integrated and provides a full mix of uses.

## Endnotes

1. Le Corbusier: "Architect, Painter, Poet" pg. 77
2. Anderson & Taylor: "Sociology, The Essentials" pg. 95
3. Anderson & Taylor: "Sociology, The Essentials" pg. 95
4. Webster's Dictionary
5. Lewis: "Front To Back" pg. 38
6. Le Corbusier: "Architect, Painter, Poet" pg. 77
7. Curtis: "Modern Architecture Since 1900" pg. 437
8. Lewis: "Front To Back" pg. 4
9. Lewis: "Front To Back" pg. 58
10. Yeang: "A Vertical Theory to Urban Design" pg.152-56
11. Yeang: "A Vertical Theory to Urban Design" pg.122
12. Hertzberger: "Lessons For Students In Architecture" pg. 49
13. Hertzberger: "Lessons For Students In Architecture" pg. 64
14. Hertzberger: "Lessons For Students In Architecture" pg. 40
15. Lewis: "Front To Back" pg. 27

## **Annotated Bibliography**

Baltanas, Jose. Walking Through Le Corbusier. 1<sup>st</sup> ed. New York, NY: Thames & Hudson, 2006.

This book featured many of Le Corbusier's most famous European buildings. This is a useful book because the photographs and literature provide the reader with an in depth look into Le Corbusier's way of thinking. This book was very useful for the section on the Unite d' Habitation, which was a very influential project of his.

Curtis, William J. R.. Modern Architecture Since 1900. 3<sup>rd</sup> ed. New York, NY: Phaidon Press Inc., 1996.

The chapter on Le Corbusier was the main focus for this particular book. It provided useful information into the design of the Unite d' Habitation.

Hamzah, T. R., and Yeang, Ken. The Master Architecture Series III T. R. Hamzah & Yeang. 1<sup>st</sup> ed. Mulgrave, Australia: The Images Publishing Group Pty Ltd, 1998.

This book provides the reader with an in depth analysis into the thought process of the design strategies incorporated into the designs and theoretical studies of Ken Yeang and T. R. Hazman.

Hertzberger, Herman. Lessons for Students in Architecture. 1<sup>st</sup> ed. Nijmegen: Uitgeverij 010 Publishers, 1991.

This book was a very influential one as far as looking at how people interact and how the architect can design to encourage this process to continue. Chapter 9 is the particular chapter that focuses on the "street" was the most useful for this project.

Jenger, Jean. Le Corbusier: Architect. Painter. Poet. 1<sup>st</sup> ed. New York, NY: Harry N. Abrams, Inc., 1996.

This book was useful in attaining research on the Unite d' Habitation. It provided an in depth analysis of the issues Le Corbusier faced while in the process of designing this building as well as outside factors that influenced many of his decisions.

Powell, Robert. Rethinking the Skyscraper: The Complete Architecture of Ken Yeang. 1<sup>st</sup> ed. New York, NY: Watson-guptill Publications, 1999.

This book provides numerous examples of projects designed by the Malaysian firm of Ken Yeang and T. R. Hazman, as well as the theoretical case studies. This book is an expression of Ken Yeang's green building design. He incorporates low-energy, passive techniques for lighting and heating, environmentally friendly materials for facades and interiors, well organized pedestrian connections, innovative multiple-use areas, and public zones.

Yeang, Ken. Reinventing the Skyscraper: A Vertical Theory of Urban Design. 1<sup>st</sup> ed. Great Britain: Wiley Academy, 2002.

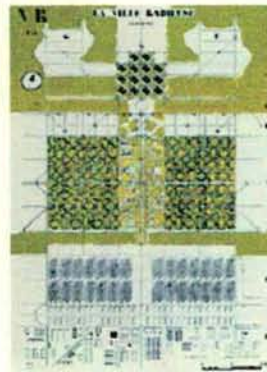
This book is important to my project because Yeang provides use with a new way of thinking about high rise buildings. He provides many theoretical ideas about vertical land uses, cities in the sky, public realms and neighborhoods in the sky, decompartmenting the skyscraper and mapping new techniques towards urban design. This book is valuable to those looking for a new way to think of designing high rise buildings because it is not just a bunch of fancy pictures, he breaks down everything necessary to creating a good environment in the sky. Just about everything in the book, he incorporates into his own buildings; factors like landscape, movement, accessibility and sustainability.

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**Project: The Ville Radieuse,  
Plan of 1933  
Also known as “The Radiant City”  
Architect: Le Corbusier**

The Ville Radieuse plan of 1933 was an attempt by Le Corbusier to express his ideas of what the Utopian city should be. He embodied his vision of an ideal society in these plans and it transformed into a unique piece of art. The Ville Radieuse as a whole was highly centralized and densely populated. His ideal plan was an entire city of towers that were raised above ground to leave the ground plane open for circulation and for leisure, i.e. parks and playfields. The ideal order was expressed through symmetry and geometry. Le Corbusier's Ville Radieuse contained:



- Broad roads to facilitate rapid traffic to and from the country side and place to place within the city. Le Corbusier anticipated there would be a lot of movement both by foot and vehicle. He may have seen that these two activities needed to be separated because walking is a simple, low-key mode of travel and it does not require infrastructure as other modes of traveling does. By creating this division of circulation, pedestrians were able to circulate on different levels.
- The traditional corridor street was completely destroyed. Le Corbusier decided to lift all of the buildings in the city above the ground, which inher

ently caused the traditional street function to move into the sky. The housing strips were also lifted above the continuous ground plane and placed on pilotis.

- There was no division between the elite and the working class; everyone lived in "Unites," which combined individual rationalized apartments and communal functions like gymnasiums and child-care centers. Each Unité had its own roof terrace, which is where the communal functions were located. The air between the building and the sky was an important part of the project. Le Corbusier felt that people should be out in the sun, enjoying it. It was one of the essential joys of living i.e. light, space, and greenery. Modern techniques of construction and production were to be used to create high concentrations of population so as to liberate the ground for traffic and greenery; in the process, the old distinctions between country and city were to dissolve away. (Curtis, pg. 440)

Le Corbusier's thinking was very influential, but unrealistic to some degree. He was somewhat naive in the way he thought this city would function. Using architectural form to increase social interaction was a good idea, yet there is only so much that architecture can do to make this happen. There are other factors that cause division within communities: class, race, socioeconomic background, culture, education, gender, ethnicity, sexuality, status, social stratification, etc... Creating a Utopian city does not necessarily ensure a better way of life for everyone; the architect can simply provide more places for interaction to take place, but ultimately individuals within the community have to actually create interaction. Le Corbusier's ideas are very influential. They are still being used by developers and architects even today as a foundation for projects in this century.

From the concepts and ideas of Ville Radieuse, Le Corbusier developed the "block" known as the Unité d' Habitation, which was a collective housing prototype that would become a blueprint for collective housing all over the world. There were five "Unités" that were actually built and the most famous of the five is the Unité d' Habitation at Marseilles (France). It was drawn directly from the plan of 1933 and is a representation of one of the "blocks" shown in the Ville Radieuse.



In Le Corbusier's plan of 1933, this image would be a representation of a typical group of "blocks" in the residential community. The original plan for the L' Unité d' Habitation at Marseilles was to have several housing units grouped together to encourage interaction among all of the Unités, but budgets only allowed for one to actually be built. One of the "blocks" in this image would represent L' Unité d' Habitation. This series of Unités was a response to the need for large-scale housing systems in France to alleviate the acute housing shortage after the destruction of the war. (Baltanas, pg. 113)



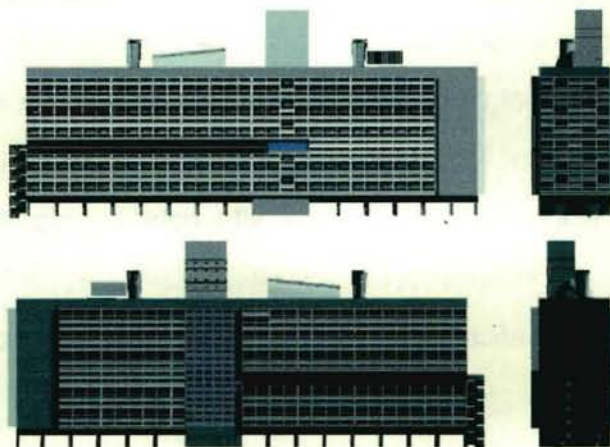
**Project: L' Unité d' Habitation at Marseilles  
(1947-52)**

**Architect: Le Corbusier**

**Project Title: Collective Housing Prototype**

The Unité d' Habitation is a collective housing prototype designed after over twenty-five years of research. The project was initiated by the French public housing program after the destruction of many homes during WWII. With the need for public housing, Le Corbusier used this project to test out his ideas on urban planning and modern architecture.

Le Corbusier was an ambitious thinker who took many risks in his designs. This precedent is important to this thesis project because Le Corbusier uses this project to attempt to demonstrate how modern building techniques and architecture can satisfy individual and collective needs in the same building. He tries to increase social and community interaction through the use of color, space, textures, and by providing many places for social activities to take place. Still, architecture alone cannot make people want to talk to one another, but as architects we



can provide as many opportunities for the community as possible.

The Unité d' Habitation is 165 m long, 56 m high and 24 m deep. It was built on a north-south axis and all the apartments face both east and west, except for those at the south end. The Unité was built on the grass in the middle of an extensive park covering 3.5 hectares. It is seventeen stories high and is designed to house up to 1,600 people. Due to the shortage of steel after the war, Le Corbusier had to resort to using concrete instead.



West Elevation



North Elevation



South Elevation

The Unité d' Habitation was built on top of two rows of pilotis. There were two rows of them and each row contained seventeen in pilotis to support the weight of the building. This causes the entire building to be raised 26ft high. The double row of pilotis supports the reinforced concrete framework, the service floor sits right on top of this framework. The pilotis contains drainage and waste disposal shafts. This area is called the artificial ground and contains 32 compartments filled with mechanical equipment. By placing the mechanical equipment on this level, this allowed easy access for repairs to the buildings systems.

Le Corbusier designed this building in section. He paid close attention to how he thought people would interact and designed the dwellings as interlocking units. Although the Unité is well designed in section, the elevation of the building is very harsh and the concrete made it look uninviting. It resembles a box on stilts with holes in it. The final result of the project is not as strong as the ideas and issues he raises. The ground plane is left free as he wanted it, but he does nothing with it. Le Corbusier anticipated that most of the interaction of the community would take place on the roof terrace, but if people do not enter the building, how do they get there?

The main lobby was designed very elegantly and looks very inviting once enter this building. Yet, this is a complete disconnect from what is happening just outside the glass doors. The ground-level from which people enter this space is not appeal or inviting. Unless one actually enters this area, they may never know it is this well designed. There should be some form of a threshold between interior and exterior space to make it feel unified.





The contrast between the intense sun outside and the subdued lighting inside emphasizes the difference between the two settings: nature and orthogonal geometry. There is a complete break right at the main entry of the building. Since there is much interaction that takes place at the ground level, there needs to be a place or area provided by the architect to allow for this interaction to take place.

The primary use for this space is pedestrian and vehicular circulation. This was, in my opinion, one of Le Corbusier's weaknesses because the exterior entry area is not pronounced enough to the public so it does not feel too inviting. There is nothing about the architecture to encourage any interaction amongst the community.

The L' Unité d' Habitation contains 330 dwellings of 23 different types. Le Corbusier incorporated a skip-floor system within this building which is expressed in section. This creates an interlocking form where the dwellings are. The elevators and stairwells are accessible at every third floor because two units together cover three floors. On these floors is where the entry to the dwellings are and also where the internal roads are located to encourage interaction of the neighbors. One unit enters on the top level of their apartment and the other, on the bottom level. There are internal roads on the seventh and eighth floors of the building that are exempt from the skip-floor system; they sit right above one another. These two floors include shopping for the residents. There are shops, a grocery store, a dairy, a meat market, a bakery, and a restaurant that delivers to the residents.

Each area of the building had its own distinct personality. Le Corbusier designed the internal corridor to become a replacement for the lost of the street, but this interior is inadequate because one loses the social interaction. Placing doors across from one another does not ensure that residents will communicate with each other. The "streets" on the seventh and eighth floors house shops and restaurants. On the exterior facade, these shops and restaurants are not visible. The vertical concrete shutters make the Unité look more like a prison than an apartment complex. Visibility to the outside public is significant to bring more people and money in to keep the building functioning.

Every dimension in this building is based off of Le Corbusier's Modulor System. This is a creation of his. The modulor is a system measurements. It was derived from the form of the man. It was used to create all of the modules of this building. The unit of measure-

ment generated from Le Corbusier's research was 4.19 square units. Many images of the Modulor was incorporated throughout the Unité.



Internal road on a residential floor. Le Corbusier uses color to make each entry way feel individualized within this community created.



Internal road that would be on the shopping floors.



A dwelling with the entry on the top floor

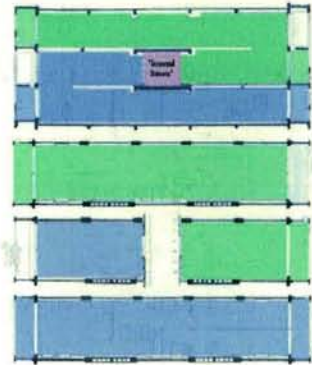


A bright red elevator in the hall

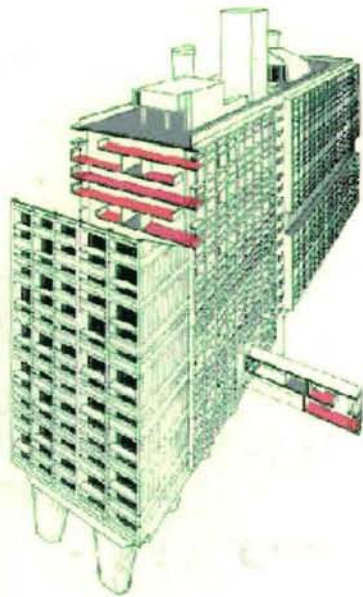
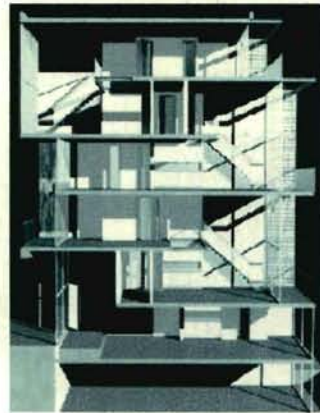


One of the duplexes

The internal roads are tucked away inside the building and are hidden from the public. This makes it hard for people to interact with one another because it is not a successful attempt at reinterpreting the traditional "street" that was lost from the ground level. These roads could have been oriented in a way to further encourage social interaction of the community by providing an area for the residents to collectively approach before entering their homes.



Cross section w/ floor plans of a typical apartment



Cross section of the South facade of the building

The roof becomes the place to be in this building. Le Corbusier expressed the roof as a new level of ground in the air, leaving the actual ground level bare with no intimacy: instead it looks uninviting. This building looks like a box on top of stilts. The roof terrace contains a gymnasium, running track, small swimming pool, a nursery school and an open air theater to promote a healthy life under open skies.

This was the only area of the building where Le Corbusier used curved elements. Although Le Corbusier put much thought into this area, the use of concrete makes the roof terrace look very harsh and mysterious. This may not be safe for children playing on it.



The ventilation stacks are aculptural and not just treated as an afterthought.



The swimming pool and open air theater.





## **Ken Yeang: "Reinventing the Skyscraper"**

Ken Yeang is an architect who specializes in the design of skyscrapers or high rise buildings. He is most famous for his ecological design theories. Yeang steps away from the normal way of designing skyscrapers and begins to re-examine what they are. Skyscraper architecture has remained essentially unchanged since its invention. (Yeang, pg. 11) Yeang introduces new theories about how we should design towers and the benefits of his approach. In the book, "Reinventing the Skyscraper: A Vertical Theory to Urban Design", Yeang discusses the many theories behind his style of architecture and how vertical urban design can satisfy the needs of a community just like horizontal urban design. The objectives of urban design can be applied to the skyscraper design by:

- Designing and creating a place with its own identity. The skyscraper can effectively address high-density development through various advantages such as reducing transportation costs, which can significantly reduce pollution.
- Ensuring an urban continuity and enclosure in providing a place where public and private spaces are clearly distinguished. Although most people at one point or another enjoy the company of others, they need still their privacy.
- Providing quality public realms as places with attractive, successful and accessible outdoor areas. Architecture should not be boring and predictable; there should be something about the

design to attract people to it, whether it is the design itself or another aspect of the design. Ken Yeang often incorporates landscape and outdoor areas within his buildings. This is a feature that can benefit the community and the environment. The structure of the high-rise does not have to be rigid and linear; it can be manipulated in a way to make the design more appealing.

- Providing ease of movement by creating places that are easy to get to and move through. No one likes traffic jams. When everything is flowing easy and running smoothly, people are happier. There is less confusion and confrontations among the people in the community.

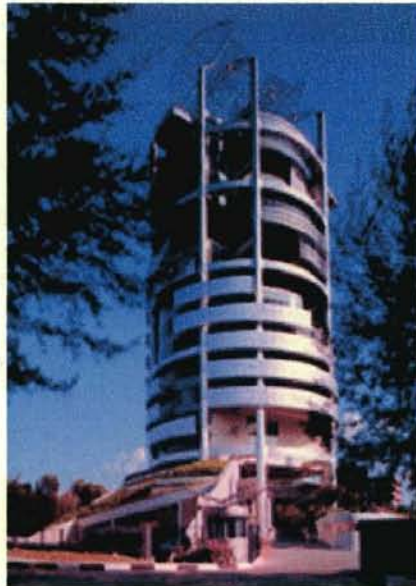
- Designing for legibility so that places are easy to understand and have a clear image. There should be some form of literature to let people know where they are in the building. Being lost is not a good feeling and if an architect wants people to visit their building, then they really think about this.

- Designing for adaptability so places can easily change. There needs to be some versatility in the plan because people often use specific areas for many different uses.

- Providing diversity through creating places with variety. If someone is bored in the building, then more than likely they will not return. And if they have to return, they will not enjoy it. The design should make people want to be there and take pride in being there.

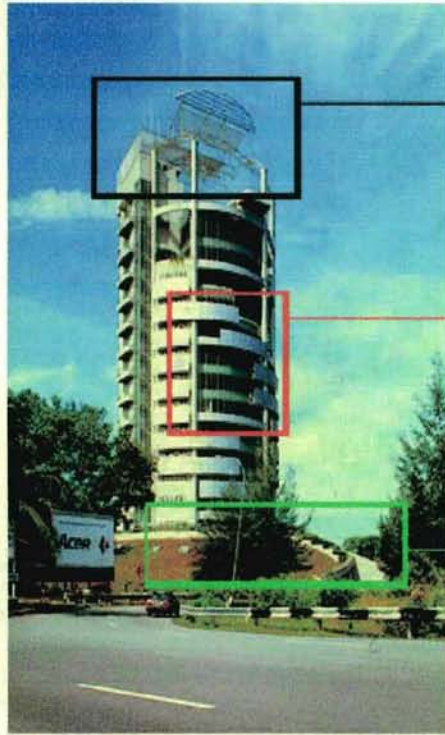
**Project: Menara Mesiniaga (1992)**  
**Subang Jaya, near Kuala Lumpur**  
**Architect: Ken Yeang**

Menara Mesiniaga is the headquarters building of an IBM franchise located in Subang Jaya, near Kuala Lumpur. It is a modest high tech fifteen-story corporate showcase that stands out from its immediate context. It has become a landmark. "The circular building has a tripartite structure that consists of a sloping landscaped base, a spiraling body with landscaped sky-courts and external louvers that shade the offices, and an upper floor (or fifth façade) that houses recreational facilities, a swimming pool and a sun-roof. The structure of the building is exposed and the tubular-steel structure that crowns the tower is intended for the future installation of solar panels to further reduce energy consumption. Building automation systems (BAS), an active 'intelligent building' (IB) feature, are used in the building for saving energy." (Powell, pg. 42)



"Yeang insured that this building would receive regular maintenance because some of his earlier buildings were not as successful in expressing his ideas due to irregular maintenance. The landscaping of the sky-courts and terraces receives regular maintenance. The idea of landscape spiraling up the outside of the tower and linking with the sloping base creates physically continuity and encourages species diversity." (Powell, pg. 42) The architect has provided the opportunities for employees to relieve some stress away from working on computers by creating sky-courts within the tower.

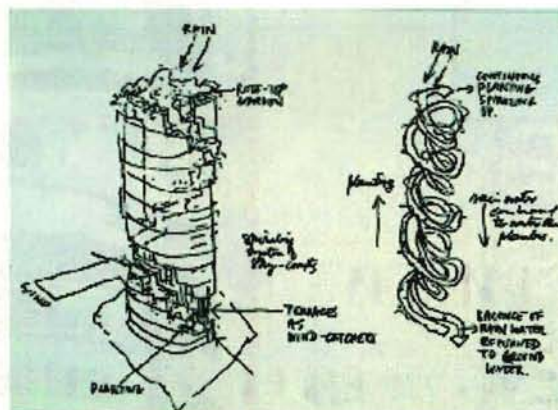
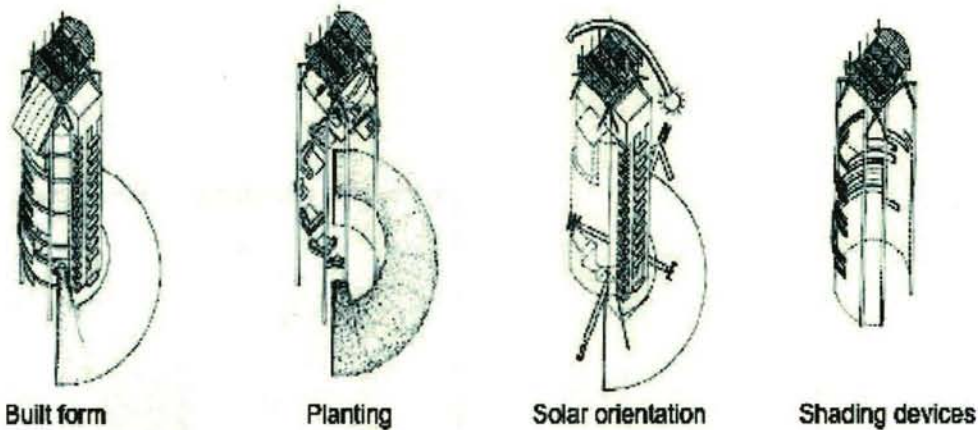
The façade of the building is designed to be an environmentally responsive 'sieve like' filter and not a 'hermetically sealed skin.' (Powell, pg. 42) Louvers of varying configuration relate to the orientation of the building to the sun and reduce solar gain. Deep insets in the façade permit the use of full-height clear glazed curtain walls on the north- and south-facing façades. The planar Corbusien image of Plaza Atrium and IBM Plaza is abandoned: Menara Mesiniaga looks distinctly high-tech, the external cladding being a steel and glass curtain wall. The placement of the core functions on the hottest (east) side of the tower contributes to the ecological sensitivity.



■ - Roof area that houses the sky-courts with a variety of sun shading devices.

■ - Solar panels

■ - Main entry area



Menara Mesiniaga is important to this thesis project because it is an influential building that integrates all of Yeang's previous research into the principles of the design of tall buildings. Because the building is in a tropical climate he had to make further adjustments to make it function productively. Yeang was very successful with this project because he paid close attention to every possible aspect. Designing with the climate in mind brings an aesthetic dimension to his work that is not to be found in typical glass-enclosed, air-conditioned, high rise buildings. Everything was very elaborately designed from the large scale overall form to the lights in the lobby spaces. Although the form was derived from the application of ecological principles, it is not over the top or too bulky.( some of Yeang's other proposals were)



Roof-top pool



Outdoor patio



Main entry lobby

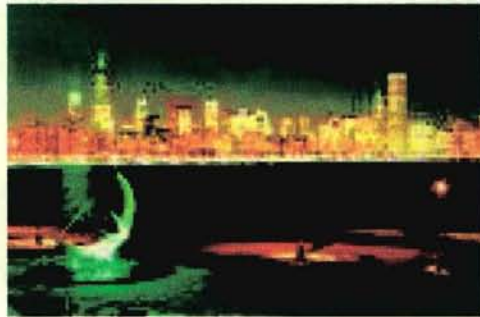




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**Johannesburg, South Africa**



**Chicago, IL**



**Detroit, MI**

## Johannesburg, South Africa

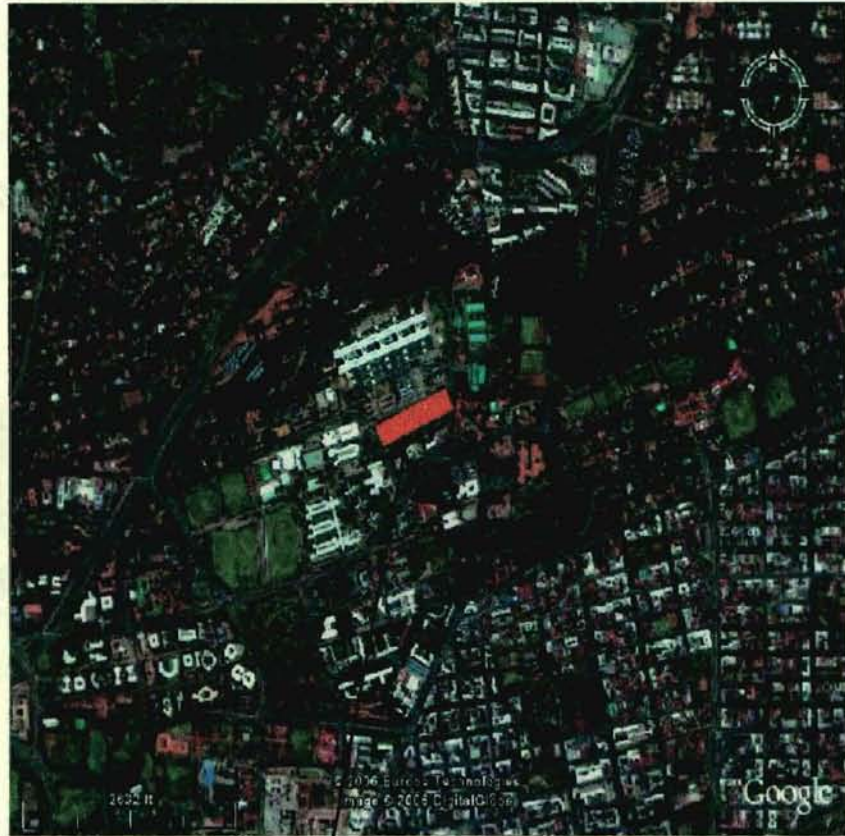
Johannesburg is the most populous city and wealthiest province in South Africa. It is the site of large-scale gold and diamond trade. The city is one of the 40 largest metropolitan areas in the world, and Africa's only global city.

Population: more than three million

Area: 4,257.94 sq mi

Density: 5,081.56 persons per sq r





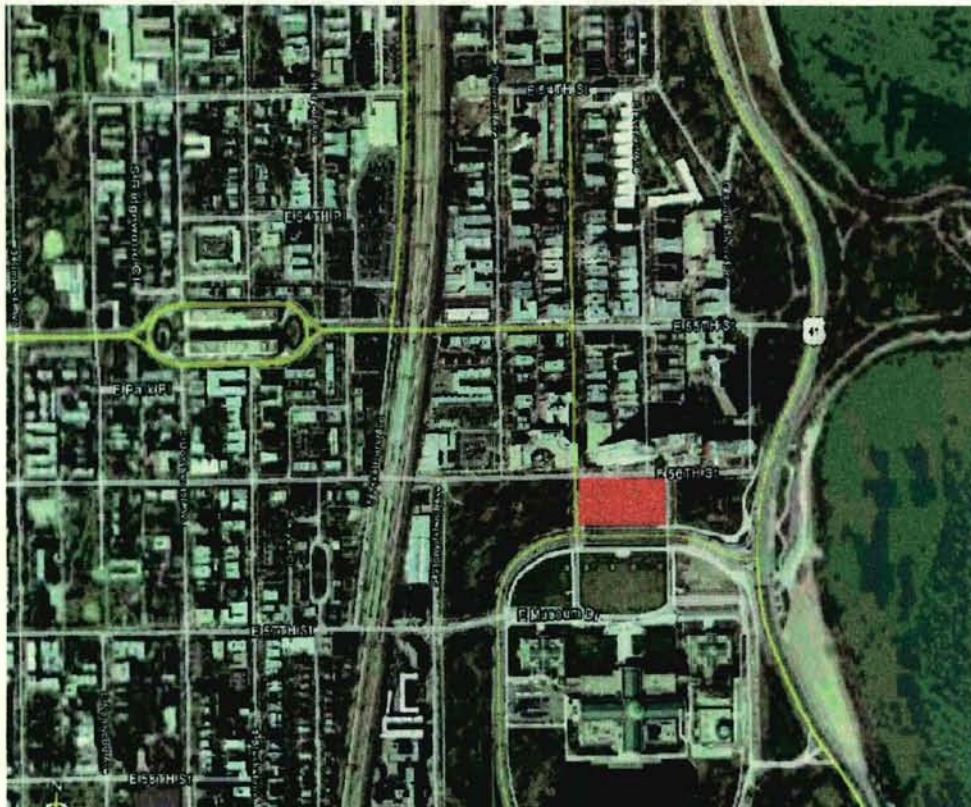
## Chicago, Illinois (Hyde Park)

Chicago is the largest city in the state of Illinois and the third-most populous city in the United States with a population of nearly 2.9 million people. Hyde Park is near the University of Chicago campus. Hyde Park is a neighborhood on the Southside Chicago and is the densest area in the city.

Population: 2,992

Area: 1.65 sq mi

Density: 18,133.3 persons per sq mi



## Chicago, Illinois (Downtown)

Downtown Chicago is home to many historic landmarks and is no stranger to tall building. Downtown Chicago known as "The Loop" is the second largest business district in the United States.

Population: 16,388

Area: 1.58 sq mi

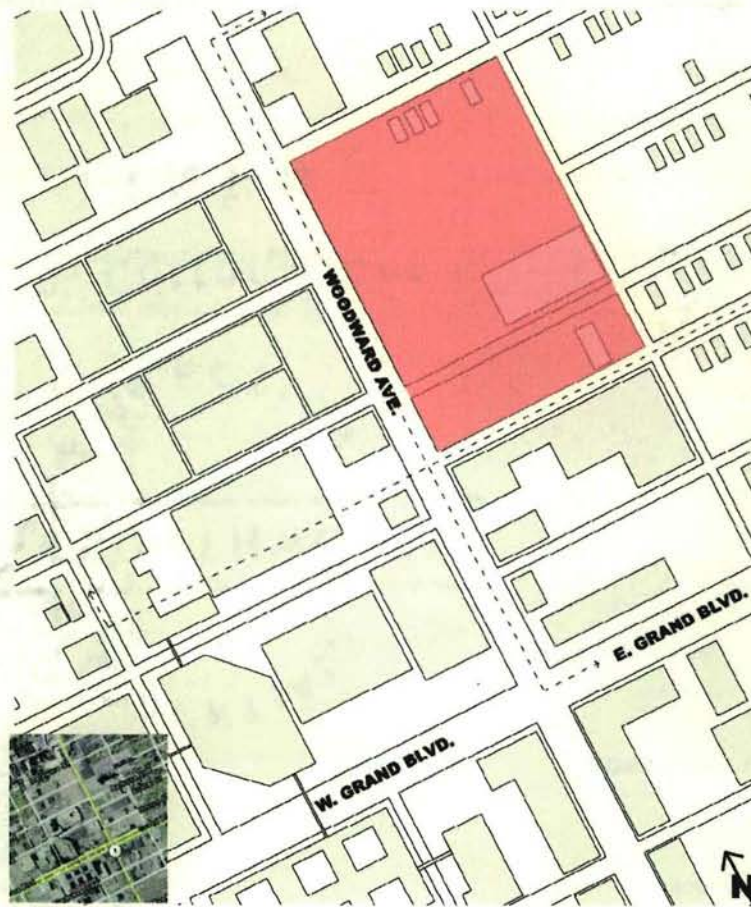
Density: 10,372.13 persons per sq mi.



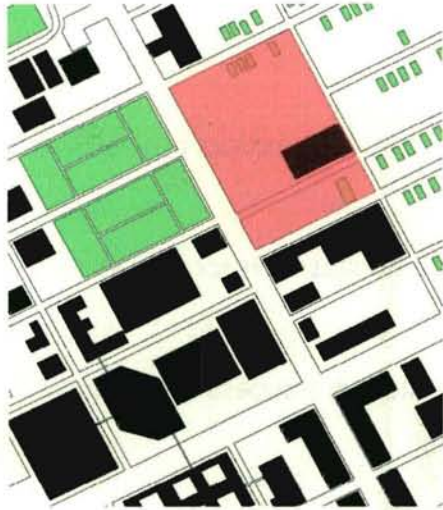


## Detroit, Michigan

The site in the end that was chosen to investigate this project is located in Detroit, MI, north of Downtown, in the New Center Area. This site was chosen as oppose to the previous three because it is located in an urban area, it is already established and contains a mixture uses throughout the area. Also, routine site visits made this site more accessible to study pedestrian paths and circulation.



Site Plan



**BUILDING USAGE**

- Proposed Site
- Residential Buildings
- Commercial/Mixed Use Buildings



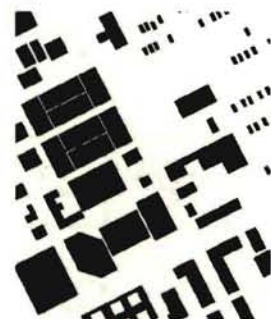
**SITE CIRCULATION**

- Proposed Site
- Buildings less than 5 stories high
- Buildings between 5 and 10 stories high
- Buildings 10 stories and higher
- Frequently used building entries



**LAND USAGE**

- Proposed Site
- Parking Areas
- Existing Vegetation



**Figure Ground**



**Open Land**







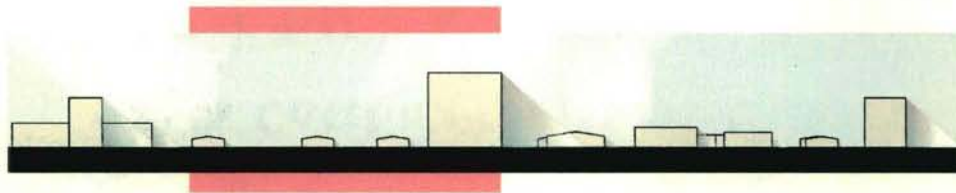
Looking out from the site



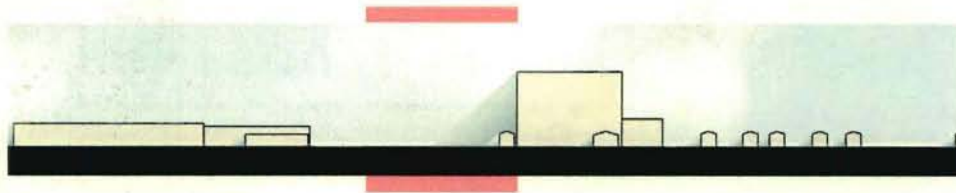
Woodward Ave. across from the site



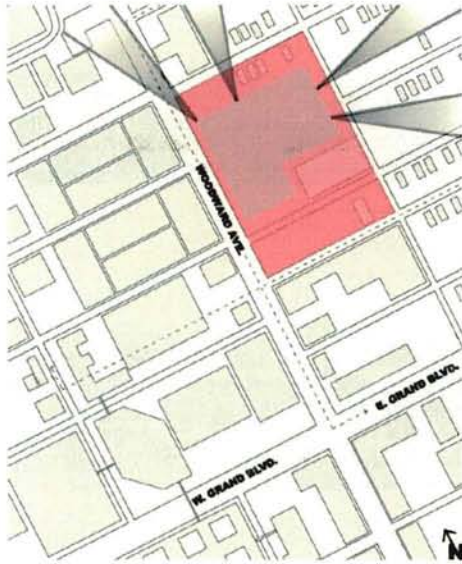
Woodward Ave. Looking into the site



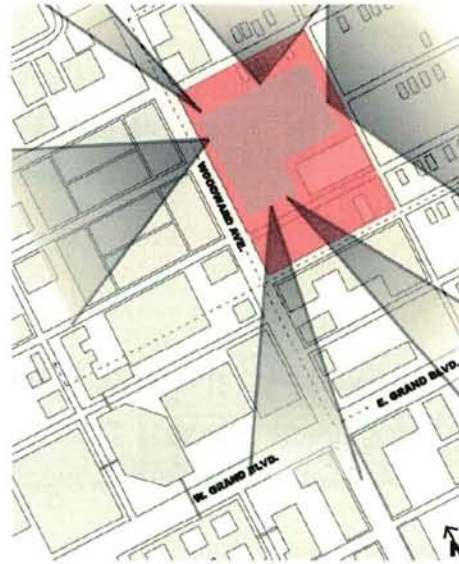
Woodward Ave. Section



Custer St. Section

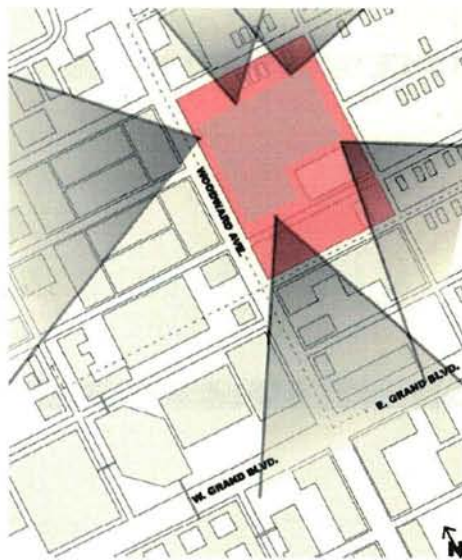


1ST FLOOR VIEWS

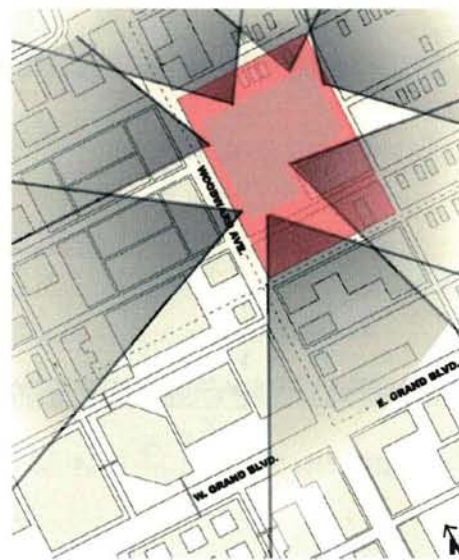


5TH FLOOR VIEWS

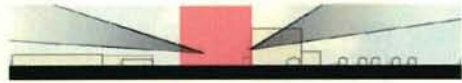
This series of diagrams began to explore the best site views on the site and question how these views can influence the design of the facility. In the end, these diagrams show that as the building grows vertically, the views out become more interesting.



10TH FLOOR VIEWS



20TH FLOOR VIEWS



1ST FLOOR VIEWS

5TH FLOOR VIEWS



Looking into the site



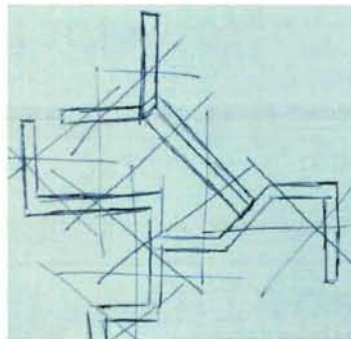
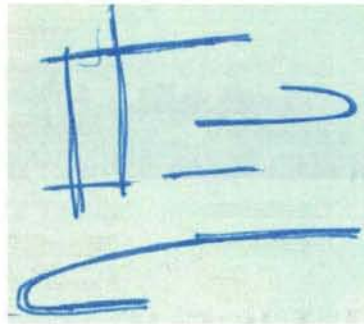
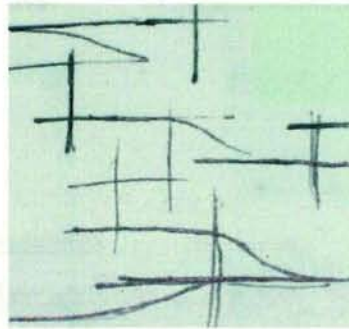
10TH FLOOR VIEWS

20TH FLOOR VIEWS



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## **PROJECT IDENTIFICATION**

The proposed facility is a mixed use development located in Detroit, Michigan. This building will address and respond to the complexity of everyday life and the basic needs of people through innovative architectural form. It is a re-examination of how people will possibly work, play and act together in a building designed to serve as a vehicle for human interaction. The spatial organization and layout of specific programs will attempt to foster a higher level of social interaction of the community within the building and the surrounding neighborhood.

### **KEY COMPONENTS**

- L Housing units
- L Community/Recreational spaces
- L Retail spaces

## **ARTICULATION OF INTENT**

The complex serves as a platform for investigating the effects that architecture has on human interaction and daily activity. The mixed-use housing development will be designed in a way to facility inadvertent and intentional interaction through careful, thoughtful design. The primary goal of this thesis investigation is to provide a facility that will bring together housing units as well as recreational facilities, retail and communal spaces to assist residents with everyday life activities while feeling safe and secure in one's own personal space and home. The chosen programs are important to the thesis statement because interaction takes place on many different levels. It is important to the thesis to examine more than

one form of interaction. These components allow for exploration into how people interact on a large and small scale. The interior arrangement of spaces, through the use of layering, weaving together, and overlapping, will inherently influence a greater feeling of collectiveness. Opportunities to intensify the level of interaction lie in the transitional spaces that will be a link to the major components of the program. These transitional spaces will be well designed areas incorporated into the building to foster a higher level of interaction. By providing these spaces and weaving them into the building's layout, more opportunities for interaction can be generated.

## **ENUMERATION OF ACTIONS**

Each of the following actions may or not require specific lighting conditions, material and sound barriers, more or less visibility and natural materials. The design needs to be flexible so that spaces have a purpose and function, but can adapt to changes in how individuals occupy them. The following verbs are descriptions of activities that will take place within this mixed-use building.

### **Sitting**

- Sitting for long periods of time enjoying views and/or the weather.
- Sitting for long or short periods of time to relax.
- Sitting with others having a conversation at restaurants, homes and communal areas.
- Sitting down watching television or playing games.
- Sitting with other parents watching children play.
- Sitting areas are expected to be used frequently, so they need

good lighting, a color scheme that will enhance the mood of the residents, and they need to have good views to the exterior environment.

- Sitting in communal hall space talking to other residents

#### Talking

- Talking to other residents on exterior roof decks
- Talking to other residents in communal streets
- Talking to sales personnel
- Talking to family members
- Talking other members of the community
- Talking on the phone

#### Eating

- Eating in housing units
- Eating outside in a dining area
- Eating indoors at a restaurant area
- Eating in communal kitchen areas

#### Sleeping

- Sleeping in one's housing unit
- Sleeping on a private outdoor balcony
- Children sleeping in controlled play areas

#### Cleaning

- Cleaning within housing units
- Cleaning retail, office and community areas
- Cleaning one's self (grooming)
- Cleaning communal spaces inside the residential streets
- Cleaning outdoor communal spaces

### Playing

- Playing with family or other residents.
- Playing sports outside in the hot summer sun or cold winter wind.
- Playing and participating in activities in recreational areas for exercise.
- Children playing within the residential streets
- Playing in the upper level gymnasium overlooking the outdoor public space

### Running

- Running in and around the swimming pool
- Running in the gymnasium
- Running outside around the complex
- Running through the residential streets

### Walking/ Standing

- Walking through shopping areas with good lighting
- Walking through communal areas to engage in conversation with other residents. Good lighting, sound barriers and color choice will be important to mood of the residents.
- Standing in a hallway, on an elevator, or in an open space talking to other residents.
- Standing outside enjoying the weather.
- Standing at the vending machine
- Standing in line at a retail shop

### Shopping

- Shopping in other community areas
- Shopping within the building will need good lighting and



temperature control.

- Shopping areas will have individuals standing and sitting having conversations.

#### Working

- Working in retail shops
- Working near or around complex

#### Cooking

- Cooking family meals in communal kitchens
- Cooking within residential units
- Cooking outdoors on barbeque grills
- Cooking in restaurant areas

#### Reading and/or Writing

- Reading books in housing units at a desk or on a couch
- Reading books in outdoor public and private areas
- Reading books to children while washing clothes
- Reading the paper on a public exterior patio

## PROGRAM QUANTITATIVE SUMMARY

### Interior Spaces

<b>Housing:</b>	<b># of Spaces</b>	<b>Sq Ft</b>	<b>Total Sq Ft</b>
Studios	30 units	550 sq ft	16,500 sq ft
1 bathroom			
1 Bedrooms	45 units	650 sq ft	29,250 sq ft
1 bathroom			
2 Bedrooms	55 units		45,500 sq ft
1 bathroom	25 units	800 sq ft	
2 bathrooms	30 units	850 sq ft	
3 Bedrooms	30 units		33,000 sq ft
1 bathroom	20 units	1,050 sq ft	
2 bathrooms	10 units	1,200 sq ft	
<b>Total</b>	<b>(160 units)</b>		<b>124,250 sq ft</b>
<b>(Total Gross sq ft + 20%)</b>			<b>149,100 sq ft</b>
<b>Retail:</b>	<b># of Spaces</b>	<b>Sq Ft</b>	<b>Total Sq Ft</b>
Restaurant Space	2 areas	10,000 sq ft	10,000 sq ft
Dine- In			
Retail shops	10 areas	3,600 sq ft	36,000 sq ft
<b>Total</b>			<b>46,000 sq ft</b>
<b>(Total Gross sq ft + 20%)</b>			<b>55,200 sq ft</b>
<b>Communal Spaces:</b>	<b># of Spaces</b>	<b>Sq Ft</b>	<b>Total Sq Ft</b>
Swimming Pool	1 area	5,000 sq ft	5,000 sq ft
Gymnasium	1 area	6,000 sq ft	6,000 sq ft
Mini Theater	1 area	10,000 sq ft	10,000 sq ft
Communal Areas	15 areas	5,000 sq ft	75,000 sq ft
Laundry Areas	6 areas	3,000 sq ft	18,000 sq ft
Community Kitchen	2 areas	3,000 sq ft	6,000 sq ft
<b>Total</b>			<b>124,000 sq ft</b>
<b>(Total Gross sq ft + 20%)</b>			<b>148,800 sq ft</b>
<b>Total Interior sq ft</b>			<b>353,100 sq ft</b>

**Exterior Spaces**

Parking	300 +	75,000 sq ft	75,000 sq ft
Recreation		30,000 sq ft	30,000 sq ft
<hr/>			
Total			105,000 sq ft
(Total Gross sq ft + 20%)			126,000 sq ft

**Project Total sq ft 479,100 sq ft**

## SPACES DETAIL SUMMARIES

### **Space:** Residential Unit (Studio)

Quantities required

<b>Unit Capacity</b>	<b>Number of Units</b>	<b>Net Square Feet / Unit</b>	<b>Total Net Area</b>
1 individual	30 units	550	16,500

### **Purposes / Functions**

This space will provide living quarters for 1-2 individuals.

### **Activities**

Cooking, eating, sleeping, etc... This dwelling will see any activity that would take place in a home.

### **Spatial Relationships**

Units should be located near recreational facilities and other residential units. These units should also have good views to the exterior and interior activities. Access needs to be visible and close by.

### **Special Considerations**

Every unit should easily be accessed by a stairwell and elevator to accommodate all of the residents. There should also be easy access to parking areas that are well lit and visible for security purposes. Sleeping areas should be kept away from main entry area of units. There should be adequate space for cooking, eating, living, sleeping and bathing so occupants can function comfortably.

### **Equipment / Furnishings**

1. Refrigerator and stove provided.
2. Adequate closet storage

### **Behavioral Considerations**

Spaces should be flexible to adapt to several different forms of living arrangements.

### **Mechanical / Electrical Systems**

Mechanical system should be supplied from above and locally control by tenants. There should be an adequate number of electrical outlets in each unit.

### **Space: Residential Unit (1 Bedroom)**

Quantities required

<b>Unit Capacity</b>	<b>Number of Units</b>	<b>Net Square Feet / Unit</b>	<b>Total Net Area</b>
2 individuals	45 units	650	29,250

### **Purposes / Functions**

This space will provide living quarters for 2 individuals comfortably.

### **Activities**

Cooking, eating, sleeping, etc... This dwelling will see any activity that would take place in a home.

### **Spatial Relationships**

Units should be located near recreational facilities and other residential units. These units should also have good views to the exterior and interior activities. Access needs to be visible and close by.

### **Special Considerations**

Every unit should easily be accessed by a stairwell and elevator to accommodate all of the residents. There should also be easy access to parking areas that are well lit and visible for security purposes. Sleeping areas should be kept away from main entry area of units. There should be adequate space for cooking, eating, living, sleeping and bathing so occupants can function comfortably.

### **Equipment / Furnishings**

1. Refrigerator and stove provided.
2. Adequate closet storage

### **Behavioral Considerations**

Spaces should be flexible to adapt to several different forms of living arrangements.

### **Mechanical / Electrical Systems**

Mechanical system should be supplied from above and locally control by tenants. There should be an adequate number of electrical outlets in each unit.

**Space: Residential Unit (2 Bedrooms)**

Quantities required

<b>Unit Capacity</b>	<b>Number of Units</b>	<b>Net Square Feet / Unit</b>	<b>Total Net Area</b>
2-4 individuals	55 units	800-850	45,500

**Purposes / Functions**

This space will provide living quarters for as many as 4 individuals comfortably.

**Activities**

Cooking, eating, sleeping, etc... This dwelling will see any activity that would take place in a home.

**Spatial Relationships**

Units should be located near recreational facilities and other residential units. These units should also have good views to the exterior and interior activities. Access needs to be visible and close by.

**Special Considerations**

Every unit should easily be accessed by a stairwell and elevator to accommodate all of the residents. There should also be easy access to parking areas that are well light and visible for security purposes. Sleeping areas should be kept away from main entry area of units. There should be adequate space for cooking, eating, living, sleeping and bathing so occupants can function comfortably. Living areas may need to be larger to accommodate larger families.

### **Equipment / Furnishings**

1. Refrigerator and stove provided.
2. Adequate closet storage

### **Behavioral Considerations**

There will more than likely be children in this type of a unit, so sound and noise becomes an issue for both inside the unit and other units close by.

### **Mechanical / Electrical Systems**

Mechanical system should be supplied from above and locally control by tenants. There should be an adequate number of electrical outlets in each unit.

### **Space: Residential Unit (3 Bedrooms)**

Quantities required

<b>Unit Capacity</b>	<b>Number of Units</b>	<b>Net Square Feet / Unit</b>	<b>Total Net Area</b>
5+ individuals	30 units	1,050-1,200	33,000

### **Purposes / Functions**

This space will provide living quarters for more than 5 adults comfortably.

### **Activities**

Cooking, eating, sleeping, etc... This dwelling will see any activity that would take place in a home.



### **Spatial Relationships**

Units should be located near recreational facilities and other residential units. These units should also have good views to the exterior and interior activities. Access needs to be visible and close by.

### **Special Considerations**

Every unit should easily be accessed by a stairwell and elevator to accommodate all of the residents. There should also be easy access to parking areas that are well light and visible for security purposes. Sleeping areas should be kept away from main entry area of units. There should be adequate space for cooking, eating, living, sleeping and bathing so occupants can function comfortably. Living areas may need to be larger to accommodate larger families.

### **Equipment / Furnishings**

1. Refrigerator and stove provided.
2. Adequate closet storage

### **Behavioral Considerations**

There will more than likely be children in this type of a unit sound and noise becomes an issue for both inside the unit and other units close by. Spaces should be flexible to adapt to several different forms of living arrangements.

### **Structural Systems**

Units should have bearing walls to act as sound barriers from unit to unit.

### **Mechanical / Electrical Systems**

Mechanical system should be supplied from above and locally control by tenants. There should be an adequate number of electrical outlets in each unit.

### **Space: Retail Rental Space**

Quantities required

<b>Unit Capacity</b>	<b>Number of Units</b>	<b>Net Square Feet / Unit</b>	<b>Total Net Area</b>
20 individuals	10	3600	36,000

### **Purposes / Functions**

This space is a public community space open to everyone. This area will be used to draw people into the site. The goods and services provided by the retailers will be an asset to the project because it will be more convenient for individuals who live here to get to them.

### **Activities**

There will be people from the community, as well as outside customers shopping for goods.

### **Spatial Relationships**

For the retail component of this project to function, these spaces need to be located in an area with easy access, good lighting, security and visibility. They need to be inviting and welcoming. They should be located on the first level with access to a main road.

### **Special Considerations**

There should be a public restroom somewhere close by so shoppers can use the facilities because every customer will not be a member of the immediate community. Natural lighting is a very important component.

### **Equipment / Furnishings**

Occupants will provide required furnishings, but storage areas will be provided.

### **Behavioral Considerations**

Spaces should be flexible to adapt to several different forms of retail products.

### **Structural Systems**

Structure should be concealed to allow renters to decorate freely.

### **Mechanical / Electrical Systems**

Mechanical system should be located in the ceiling to prevent any obstructions.

### **Site / Exterior Environmental Considerations**

Retail should be located close to the sidewalk so anyone walking down Woodward Ave. will feel welcome to enter. Vegetation, lighting, seating, and materials should be incorporated in a way that is inviting and well planned. There should be rear access to a dumpster and loading area which is located in the on site parking area on the south entrance.

**Space: Restaurant Space**

Quantities required

<b>Unit Capacity</b>	<b>Number of Units</b>	<b>Net Square Feet / Unit</b>	<b>Total Net Area</b>
75 individuals	2	5000	10,000

**Purposes / Functions**

This space is also a public community space open to everyone. This area will be used to draw people into the site. These spaces will be dine-in restaurant spaces so they need more space for preparation, seating, storage and equipment.

**Activities**

Individuals can come here to eat and enjoy live music from local artists.

**Spatial Relationships**

These spaces may be more beneficial if they are located near the retail businesses. They also need to have good visibility to the outside community. It is not essential that they are located on the first level, but they should not be hidden.

**Special Considerations**

There should be a public restroom located within each restaurant. Natural lighting may not be as important depending on the type of restaurant, but sound barrier and material selection is a very important issue.

### **Equipment / Furnishings**

1. Storage closets
2. Kitchen area for food preparation
3. 2 Restrooms- (men's and women's)

### **Behavioral Considerations**

Spaces should be flexible and adaptable.

### **Structural Systems**

The structure can be a simple grid system so that the columns can help to define spaces without using walls as forms of barriers.

### **Mechanical / Electrical Systems**

Mechanical system should be located in the ceiling to prevent any obstructions and quite to allow customers to eat without a lot of background noise. There should also adequate lighting from the ceiling to leave floor spaces open for flexibility of furniture.

### **Site / Exterior Environmental Considerations**

Locating a restaurant on the main road is a good strategy because it will get noticed by people driving by in their cars who may not be aware of its existence. Vegetation, lighting, seating, and materials should be incorporated in a way that is inviting and well planned.

**Space: Indoor Gymnasium**

Quantities required

<b>Unit Capacity</b>	<b>Number of Units</b>	<b>Net Square Feet / Unit</b>	<b>Total Net Area</b>
Unknown	1	7500	7500

**Purposes / Functions**

This space is an indoor community space for residents, but members from the surrounding community are welcomed when accompanied by a resident. There will need to be a visual connection linking this recreational space to other recreational spaces.

**Activities**

Individuals can come here to play sports, run on the tracks or to just be spectators.

**Spatial Relationships**

This space should be in the vicinity of other recreational spaces with easy access for residents.

**Special Considerations**

There should be a physical separation for safety reasons, but this space does not want to feel disjointed from the other activity spaces. The walls should be made of some kind of translucent material stronger than glass, but less rigid than brick.

**Equipment / Furnishings**

1. Storage closets 500 sf

2. Basketball hoops
3. 1 set Bleachers 500 sf
4. Locker rooms (2)
5. Mech. Room

**Behavioral Considerations**

This space needs to be durable and able to withstand a lot of force.

**Structural Systems**

Systems need to be some form of a truss system in the ceiling that can span a long distance so that the floor can be open for physical activities.

**Mechanical / Electrical Systems**

Mechanical system should be located in the ceiling and efficient; noise from the system is not a significant issue because this space will be loud anyway. Gym should be lit from above.

**Space: Community Theater**

Quantities required

<b>Unit Capacity</b>	<b>Number of Units</b>	<b>Net Square Feet / Unit</b>	<b>Total Net Area</b>
100 individuals	1	10,000	10,000

**Purposes / Functions**

This space is a public community space open to everyone. This area will be used to draw people into the site. This theater will serve as a vehicle for interaction among individuals from within the community and outside visi-

tors looking to enjoy a movie.

### **Activities**

This space will be a meeting place for individuals to enjoy movies together and socialize.

### **Spatial Relationships**

This space should be located near the retail shops to encourage moviegoers to stop in a shop for goods. They need to be inviting and welcoming. They should be located on the first level with access to a main road.

### **Equipment / Furnishings**

1. 100 Elevated cushioned seats
2. Cup holders
3. Stage
4. Storage Room
5. Janitors closet
6. Restrooms

### **Mechanical / Electrical Systems**

Mechanical system should be located in the ceiling to prevent any obstructions. Mechanical system should be a quiet system because the theater is a quiet space, and the background noise will distract viewers.

### **Site / Exterior Environmental Considerations**

Entrances should be located close to the sidewalk so anyone walking down Woodward Ave. will feel welcome to enter. Vegetation, lighting,



seating, and materials should be incorporated in a way that is inviting and well planned. There should rear access to a dumpster and loading area.

**Space: Laundry Areas**

Quantities required

<b>Unit Capacity</b>	<b>Number of Units</b>	<b>Net Square Feet / Unit</b>	<b>Total Net Area</b>
Unknown	1	10,000	10,000

**Purposes / Functions**

This space is a public community spaces open to residents.

**Activities**

This space will be a meeting place for individuals washing clothing.

**Spatial Relationships**

This space should be located near the residential units and allow for other activities to be integrated like a play area for children who's parents are doing laundry, or a lounge area to watch television while washing clothing. The space needs to be inviting and welcoming.

**Equipment / Furnishings**

1. Washers and Dryers
2. Storage
3. Mech. Room

### **Structural Systems**

System should be able to support weight of equipment because there will be a lot of force being exerted from the movement of the machines.

### **Mechanical / Electrical Systems**

This area needs to run on separate system.

### **Space: Community Kitchen Areas**

Quantities required

<b>Unit Capacity</b>	<b>Number of Units</b>	<b>Net Square Feet / Unit</b>	<b>Total Net Area</b>
Unknown	2	5,000	10,000

### **Purposes / Functions**

This space is a public community spaces open to residents to cook meals for other residents and others members of the community.

### **Activities**

Food preparation

### **Spatial Relationships**

This space should be located near residential areas and other community spaces where residents can dine.

### **Equipment / Furnishings**

1. Counter Space
2. Refrigerator

3. Range
4. Sinks
5. Disposal
6. Freezer
7. Storage
8. Mech. Room

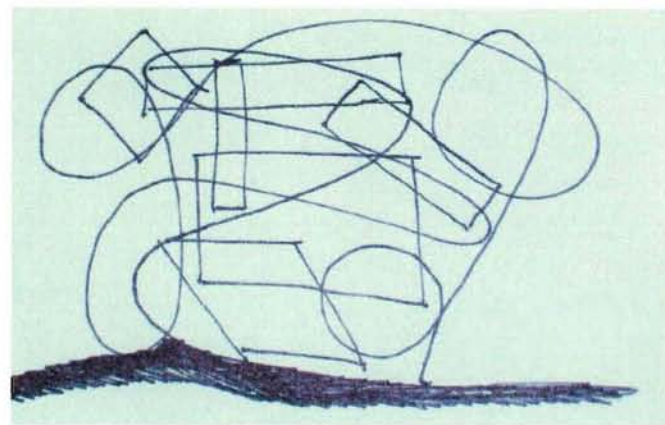
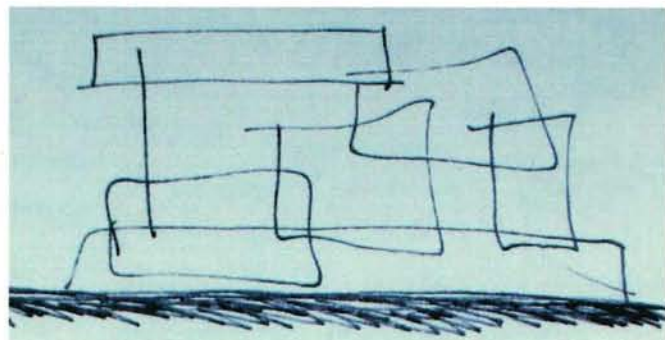
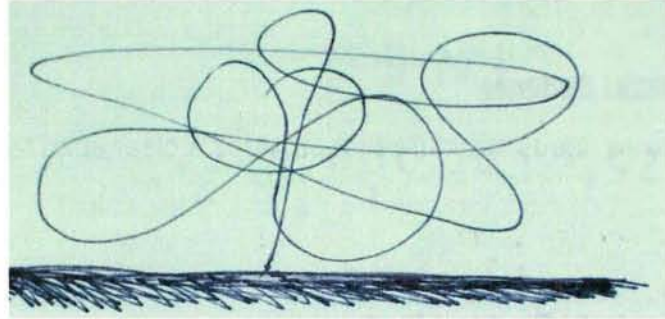
### **Structural Systems**

This area needs structure that provides a clear span to prevent elements like columns from interrupting the flow of the space.

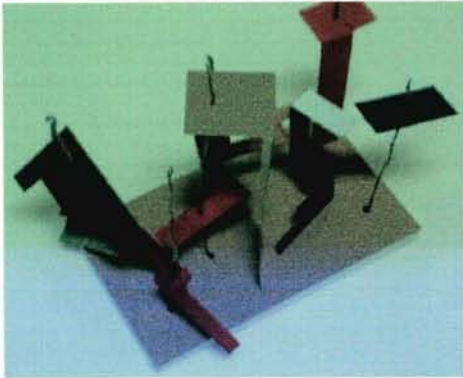
### **Mechanical / Electrical Systems**

This area needs to provide exhaust and ventilation.

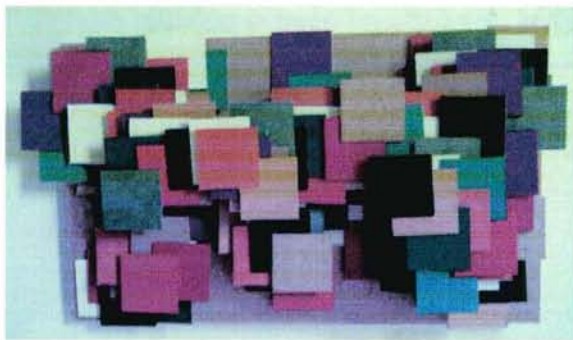
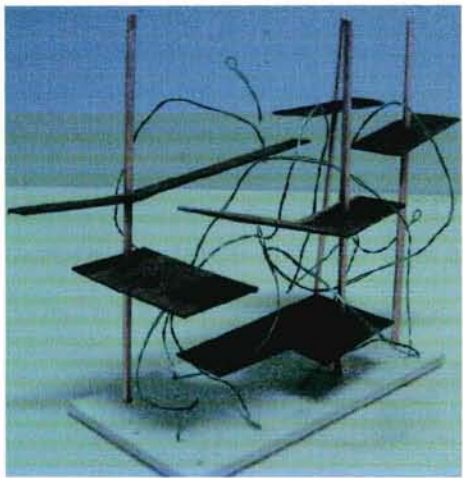
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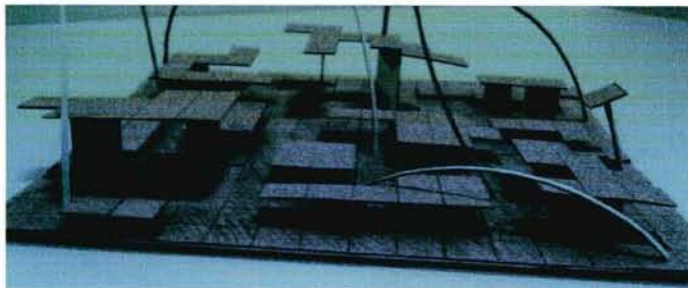
During the spring board process the goal was to translate the ideas and concepts that have been developing throughout the work being produced in studio and moving forward towards an architectural invention. Without knowing exactly what the building is or look like, it was important to began to explore ideas whether they were successful or not and to allow them to inform the decisions made later on in the process of design. The following abstract studies were created from the exploration into what the many possibilities of weaving, layering and intersecting could be. In the end, they all worked together to inform the innovative building design and an interesting thesis project.



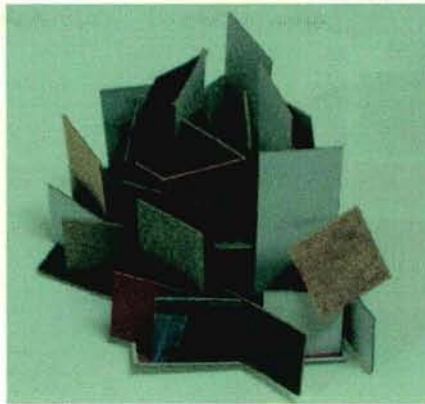
This series of models begins to explore the concept of layering both in 2-D and 3-D. The idea of layering can be expressed in several different ways and these are a few studies. The first two models are explorations through space.



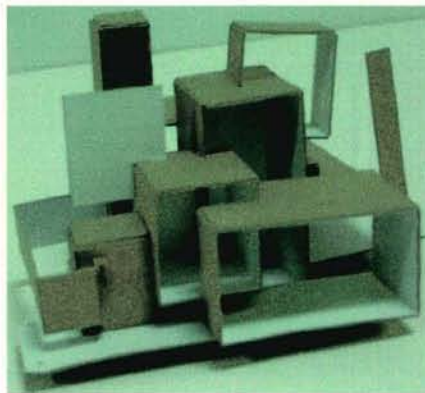
This particular model is studying the reaction of planes and what spaces can be generated from the process.



This layering study explores the idea of many buildings being layered as a group.



This model is a planar study of intersecting planes in various formations to explore an idea of organized chaos

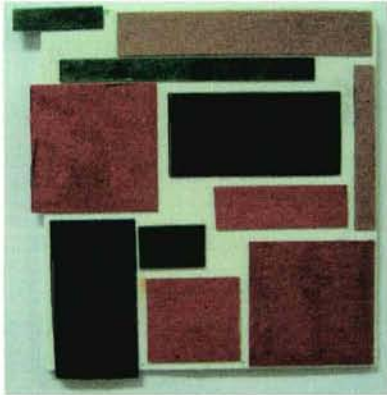


This model takes the idea of intersecting to the next level of planes and space.

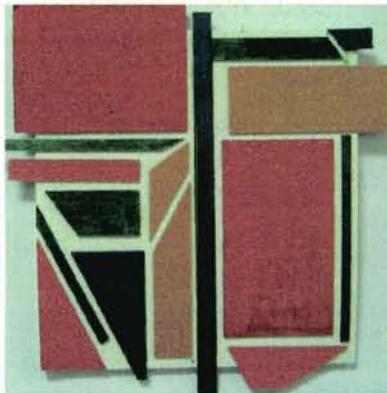


This model is a study of the sectional condition that can be created.

This series of models explores the idea of intersecting spaces and programs and their effect on each other.



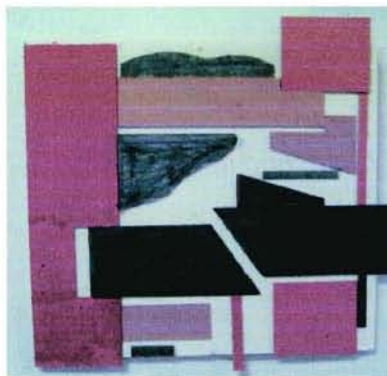
Rigid, Rectangular study



Angular Study



Curve Study

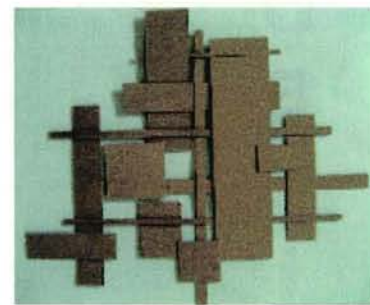
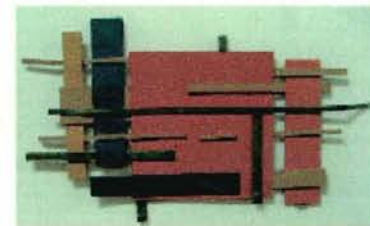
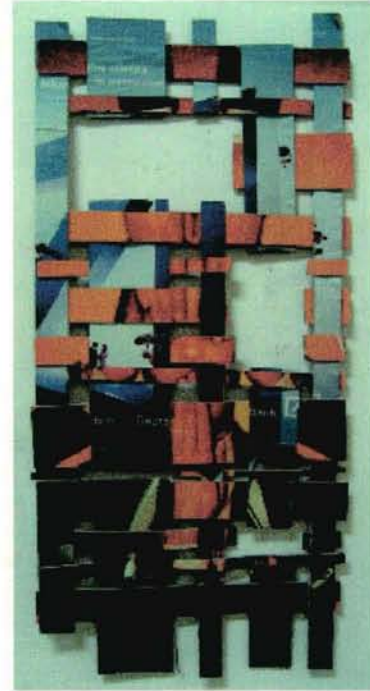


A mixture of all three studies

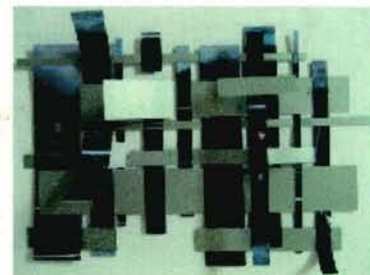
This series of diagrams is trying to explore spatial conditions. The way spaces are organized will be a critical element in the thesis investigation.



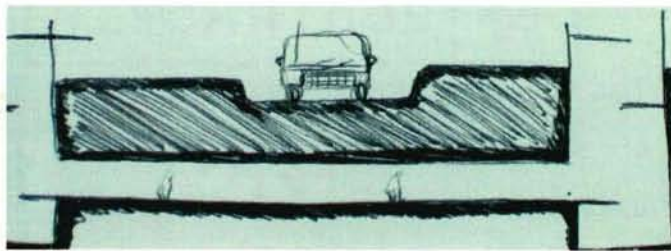
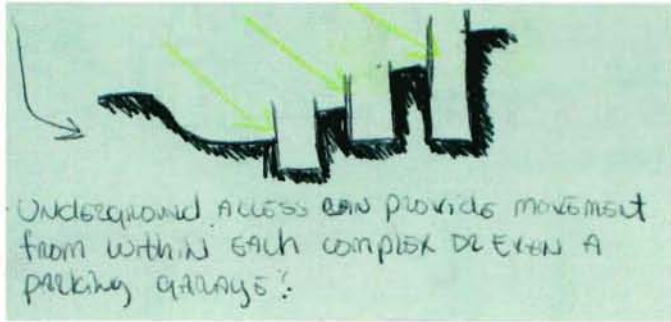
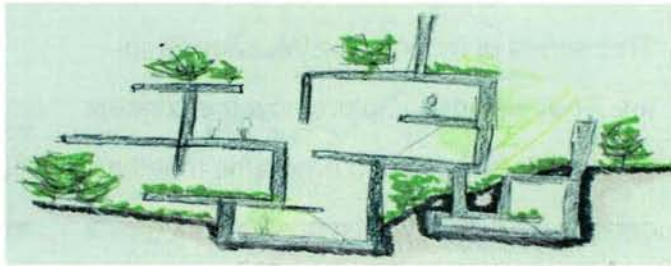
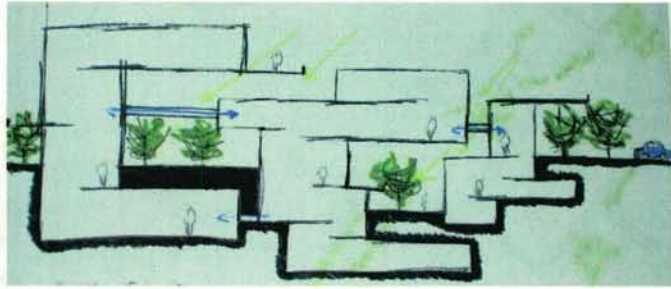
This series of models are Weaving Studies. They begin to explore how the concept of weaving spaces and programs together can create different relationships and generate more interaction.



This study begins to take the concept of weaving from a 2 dimensional idea to a 3 dimensional form.

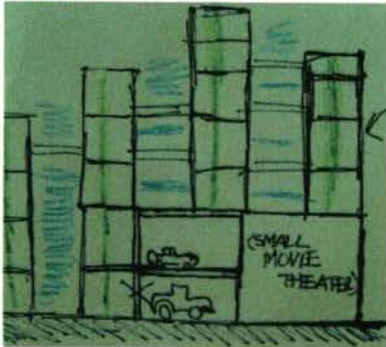
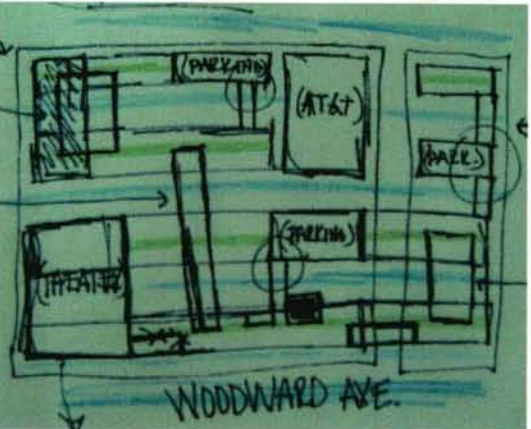
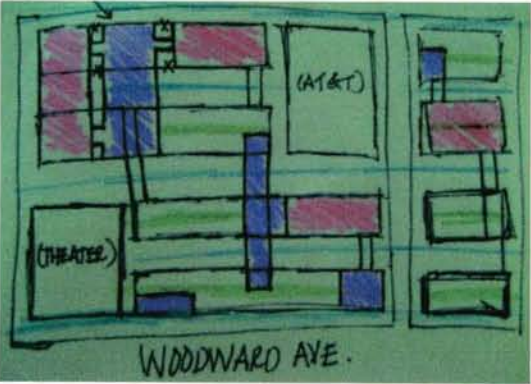
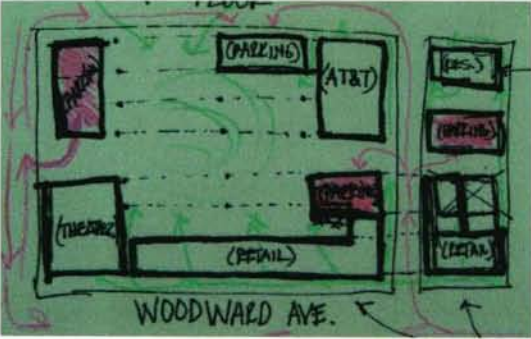


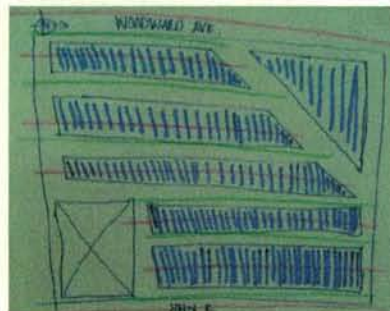
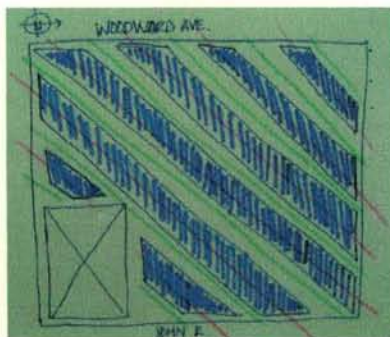
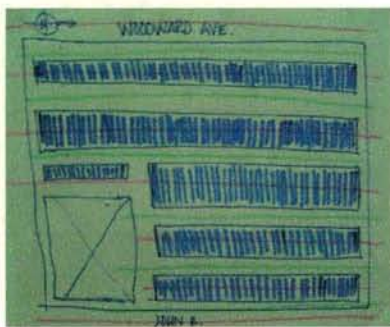
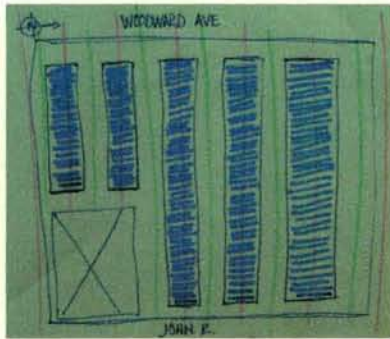
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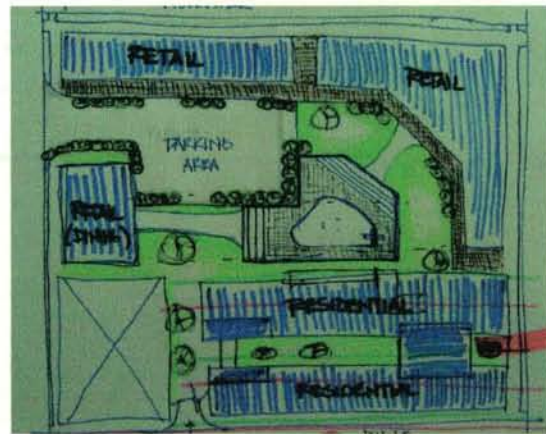
During the schematic design phase the goal was to work towards developing an architectural response for this thesis investigation while allowing the abstract study models to influence how the form of the building itself develops and keeping in the back of my mind the ideas of weaving, layering and intersecting planes and spaces. This phase was trial and error, taking what works and using it if possible and what does not work let it go, but always being willing to try and explore ideas.

This series of diagrams is exploring ways in which pedestrian circulation and vehicular circulation can be incorporated into the built environment without interfering with the community activities taking place on the site. The initial idea here is to somehow have the parking structure on the second level above retail, but below the residential units.

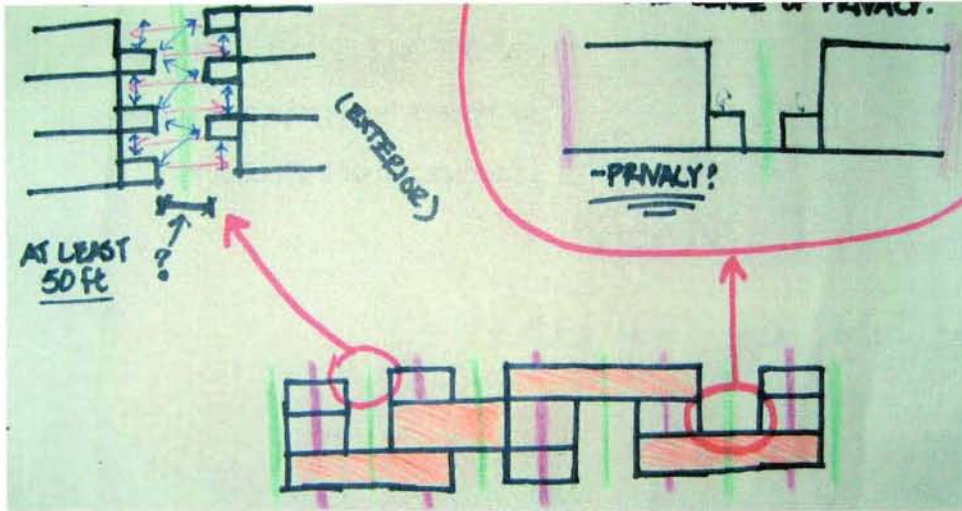




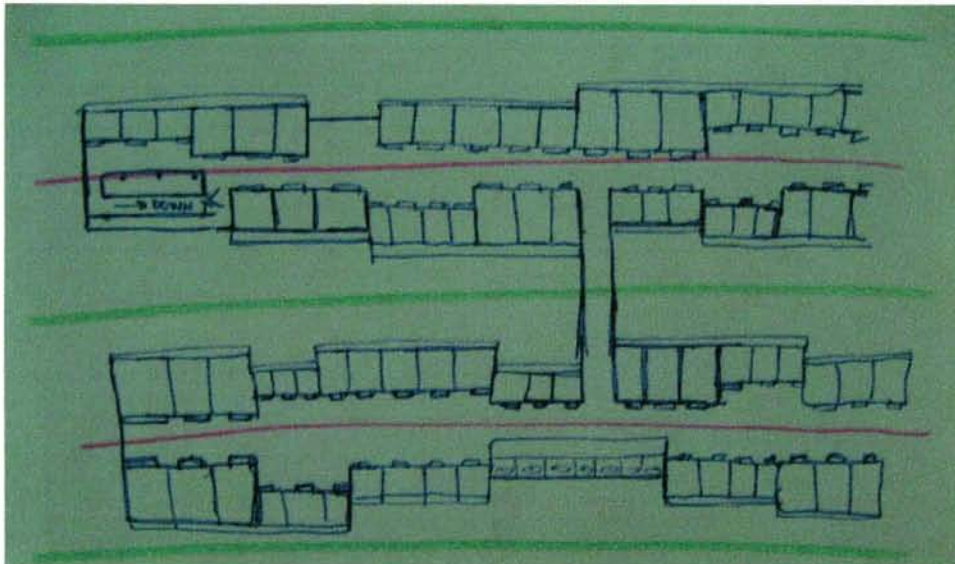
The following drawings are a series of Plan Diagrams that begin to explore the layout and spatial organization of the building.

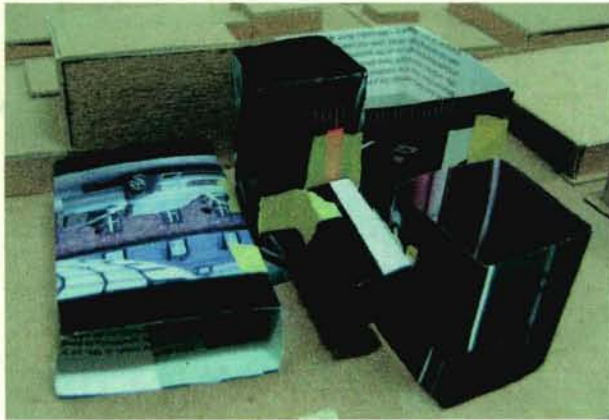
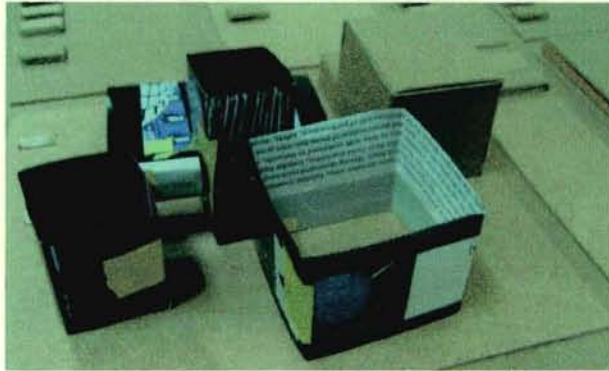


Beginning stages of a site plan that brings together public and private spaces to generate many forms of interaction.

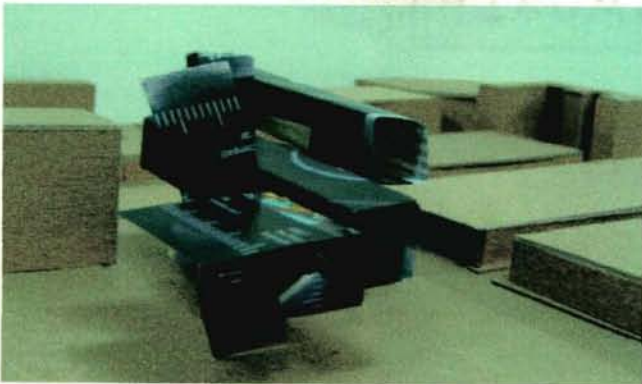
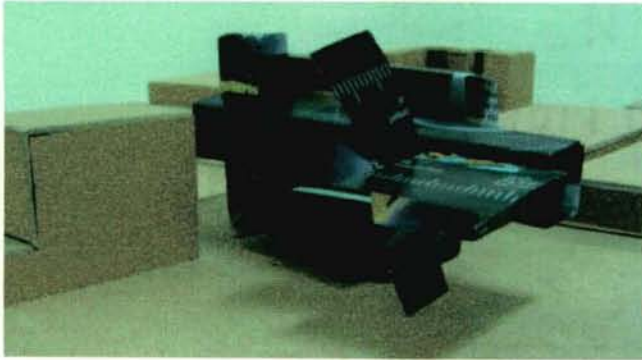
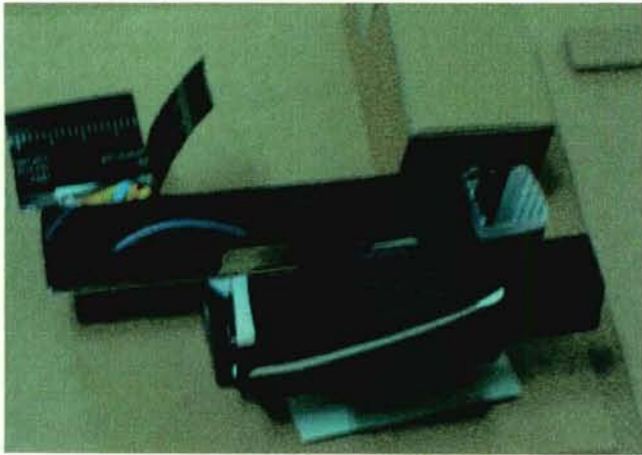


Diagrammatical studies of how the residential units will function in section (above) and plan (below). The idea of public and private space becomes significant in the residential bars.



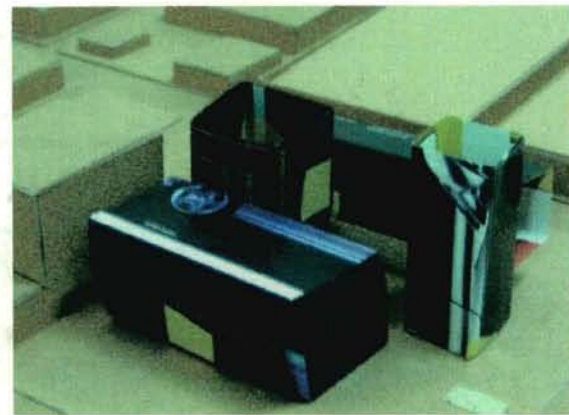


Site model study, exploring the idea of intersecting spaces.

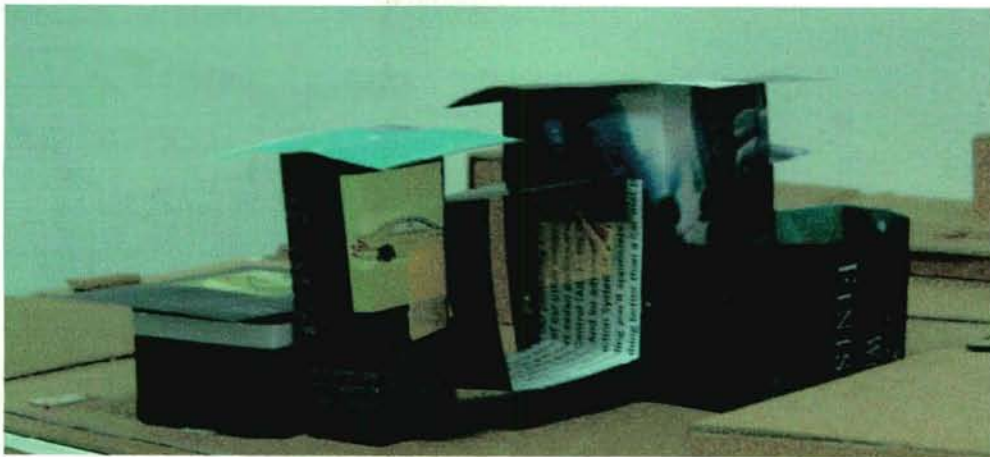
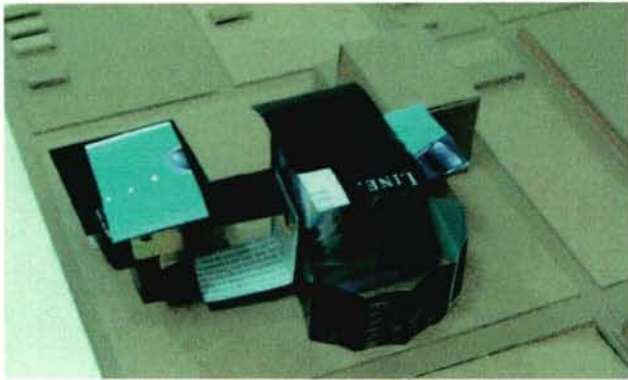


Site model study, exploring the idea of layering forms.



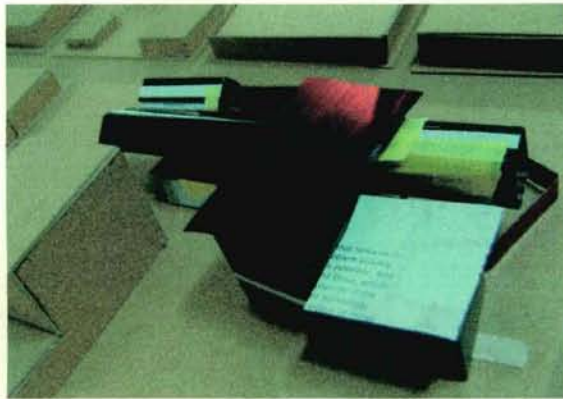
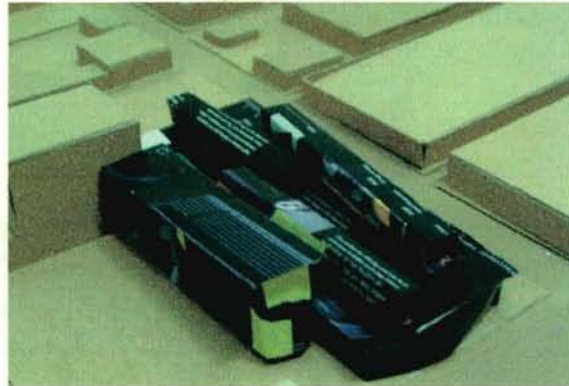


Site model, exploring the idea of spatial relationships.



Site model form study that begins to study the idea of weaving in vehicle space.

Site model that introduces the idea of residential bars being layered on top of one another

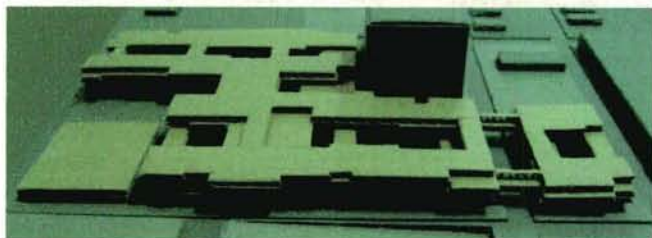
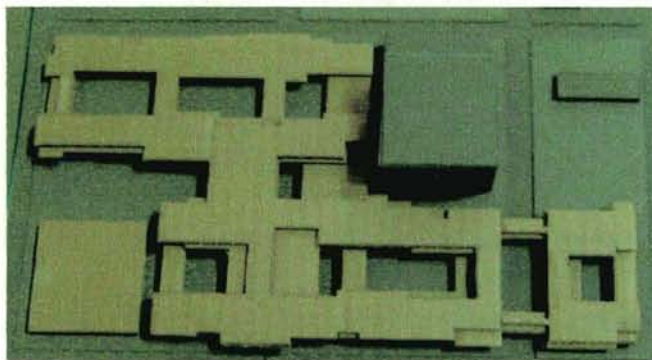


Site model that explores the idea of site circulation and pedestrian movement around the buildings edges.

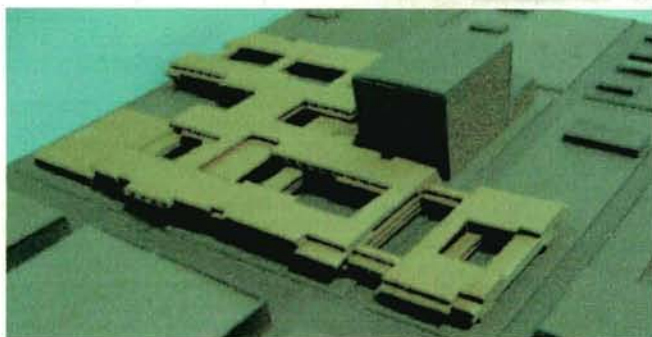




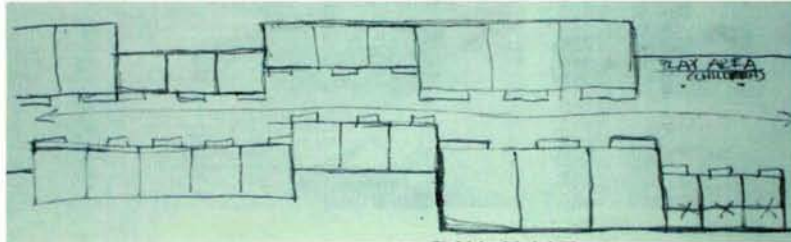
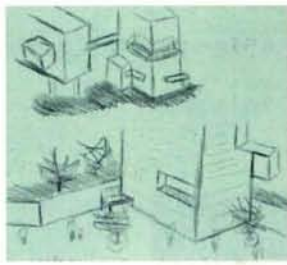
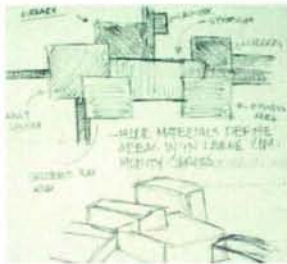
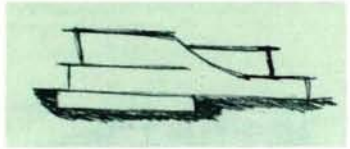
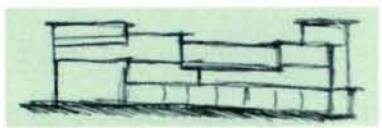
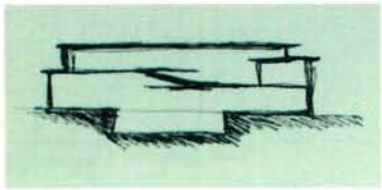
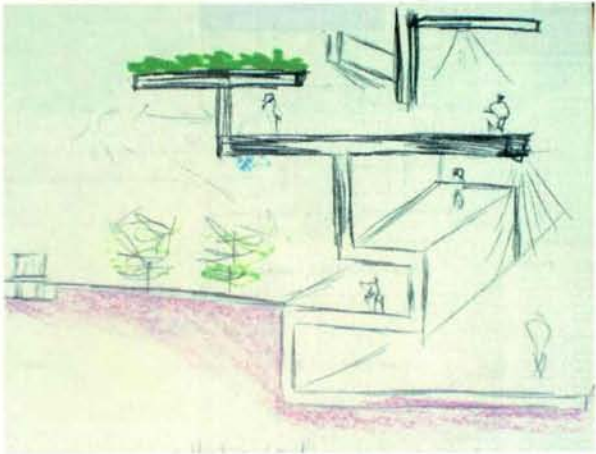
Site model study, exploring the idea of intersecting planes.



First building form study that emphasizes the idea of weaving and reaching out towards the community.

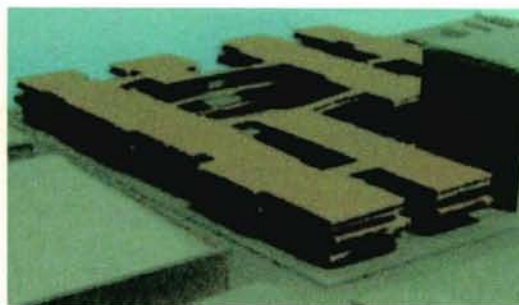
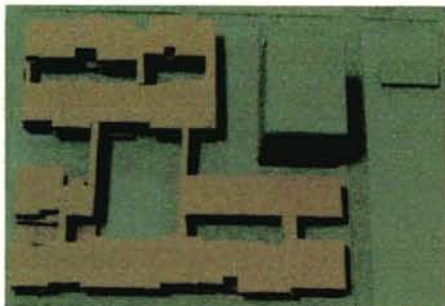


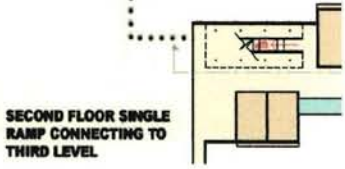
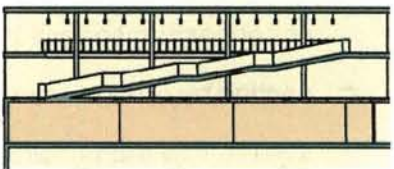
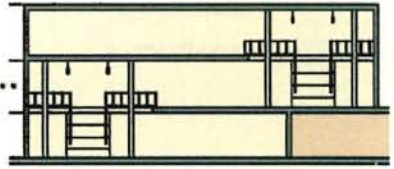
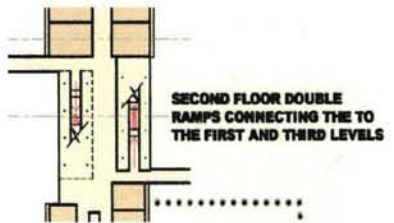
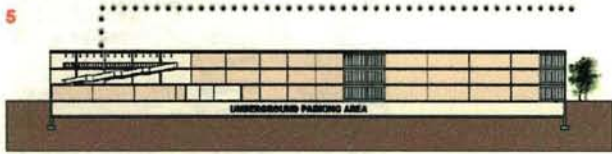
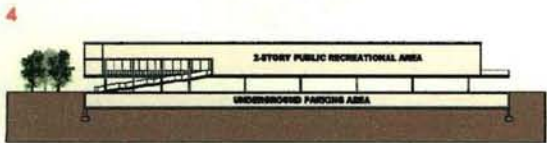
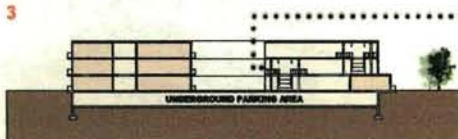
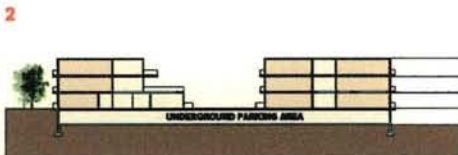
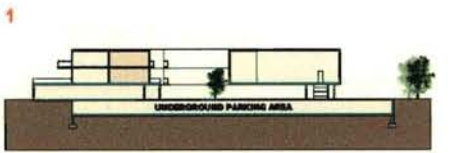
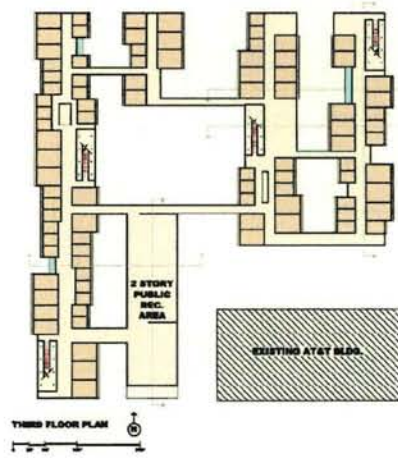
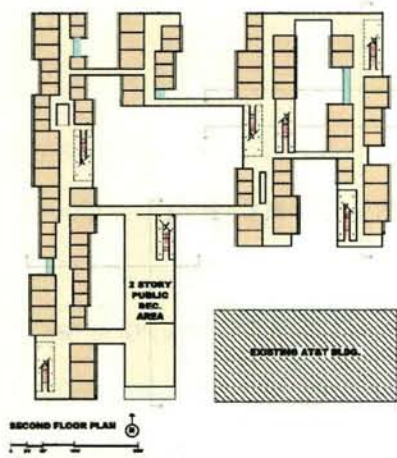
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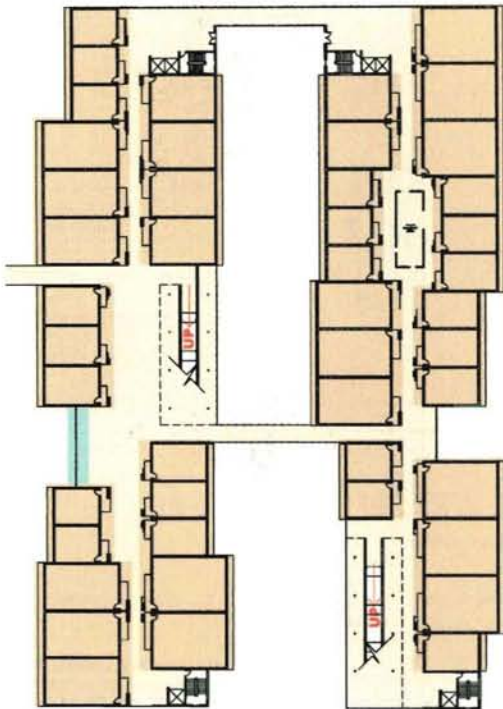


First Phase of Building Design. Through several model studies and research, this design begins to engage the thesis by drawing people together and creating more places for interaction to take place both in and around the building.





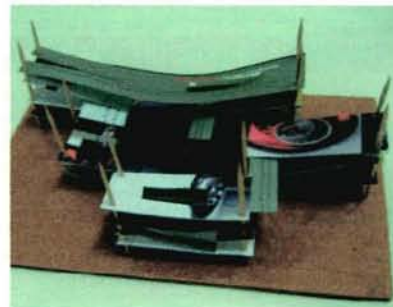
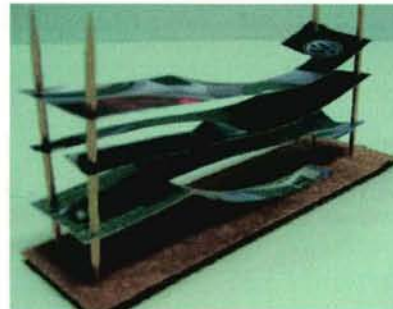
### BUILDING DETAIL



This building detail was taken from the first floor. It is a blow up of a portion of the floor plan to show how the interior street works in relation to the residential units, interior communal space and the exterior.

- OUTDOOR SPACE WITH IN BLDG.
- PUBLIC SPACE
- PRIVATE SPACE

This model explores the idea of connecting spaces together in section by incorporating a ramping system into the building.

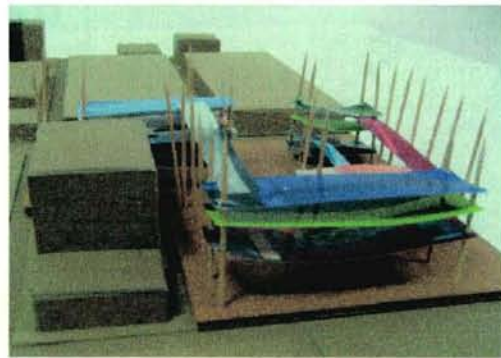




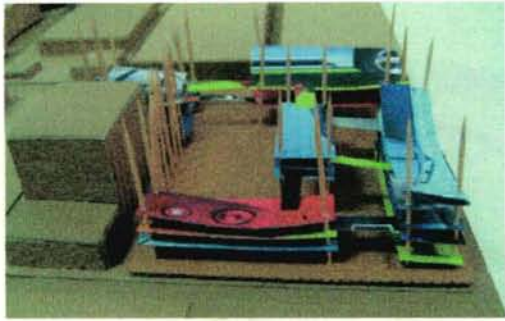
Due to a lack of disconnect between the earlier stages of building design and the basis of the thesis investigation, the following series of paper site models were created as a re-evaluation of the previous form of the building. They began to truly focus on the concepts of weaving, layering and intersecting in more depth so that the final product of this thesis project can be a more improved overall form.



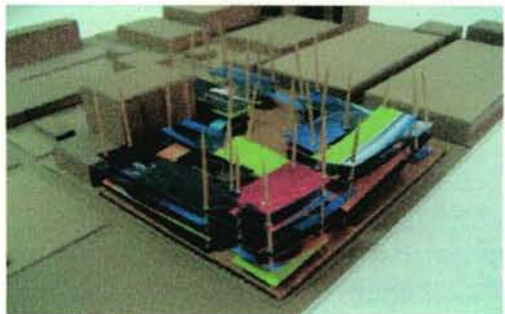
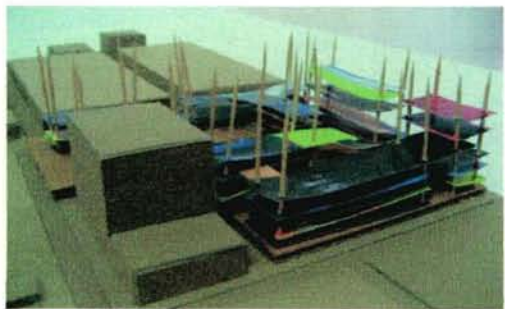
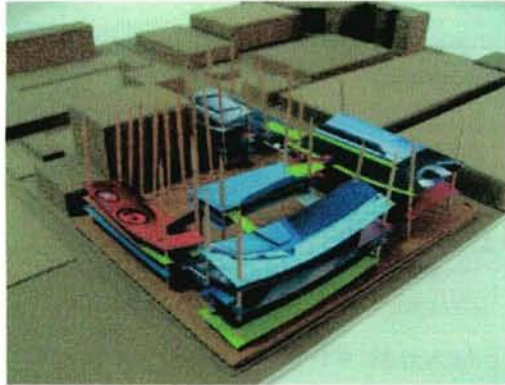
Site Model #1



Site Model #2

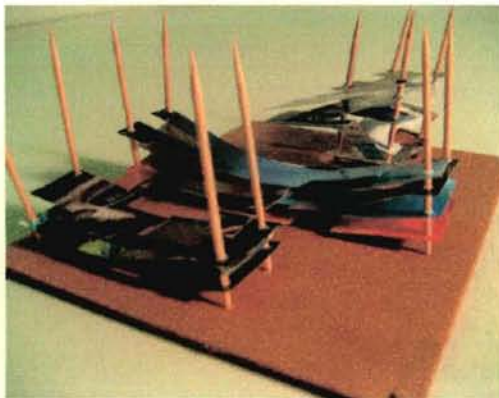
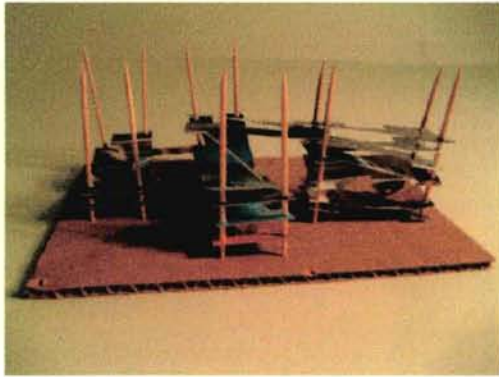
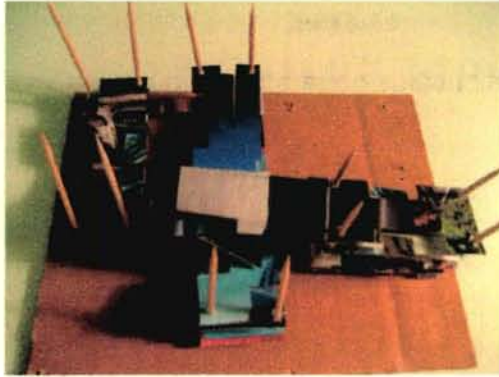


Site Model #3



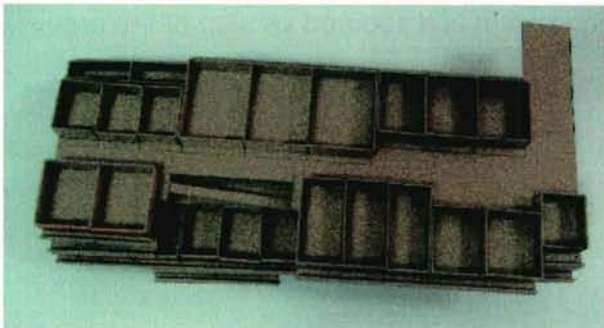
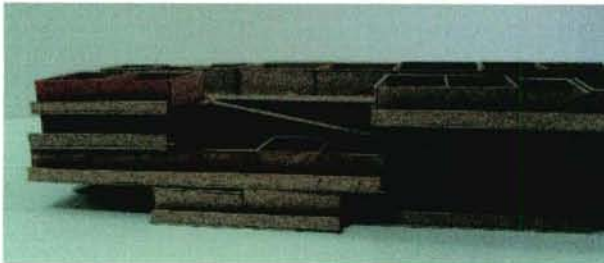
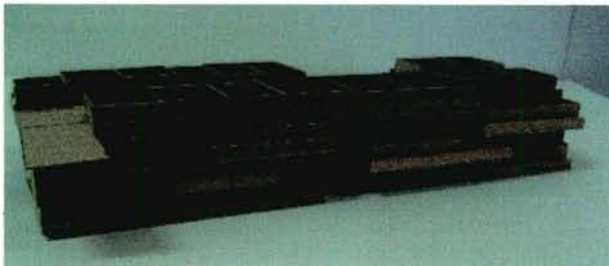
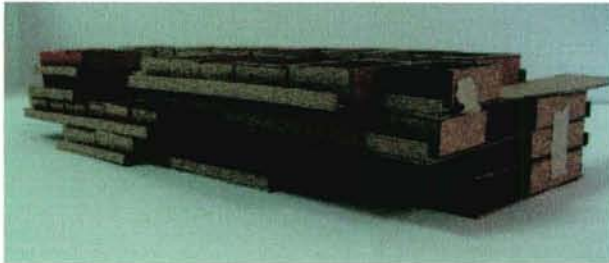
Site Model #4

Model #4 is the final model in this series. It takes all of the aspects of models 1-3 and incorporates those ideas into one study model.



This particular model exploration is a zoomed version of the previous site models and begins to study the relationship of the units, communal spaces (internal and external) and internal ramps.

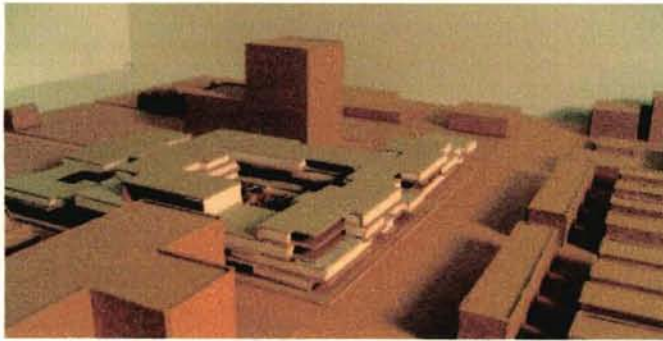
This model is zoomed into one of the residential bars and begins truly examine and understand the relationships generated from the jogging in and out the residential units and the layering of the building from floor to floor. It was important to always zoom in and out of the project so a greater understanding could exist on many levels from the largest to the smallest elements.



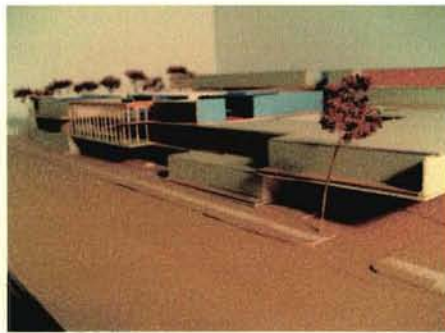
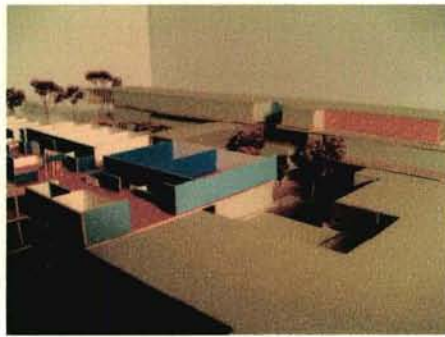


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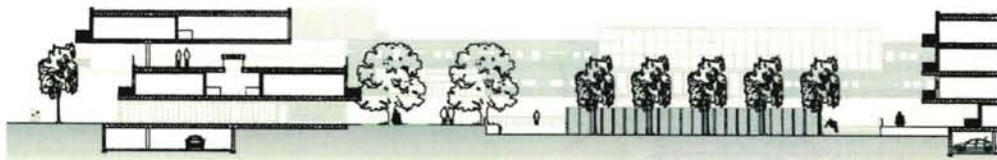
Final Site Model



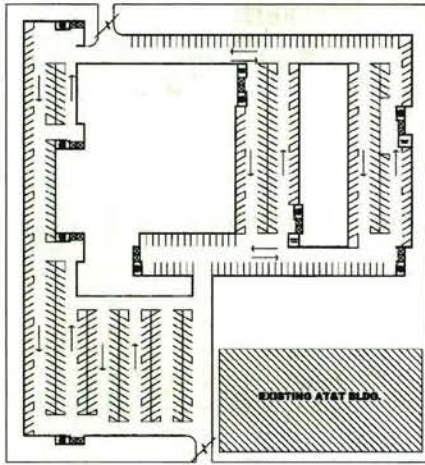
Due the overall size of the project, this model is a more detailed zoomed in model the focuses on one residential bar and shows how the building would function overall.



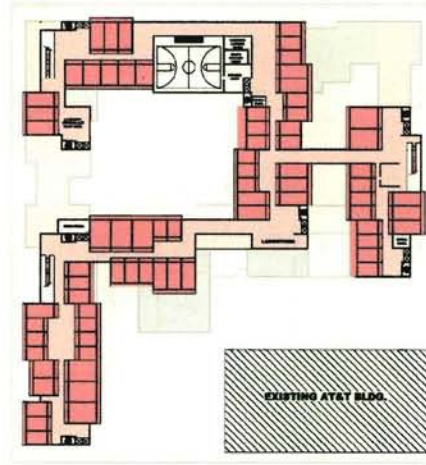
SITE PLAN AND FIRST FLOOR PLAN 1:40



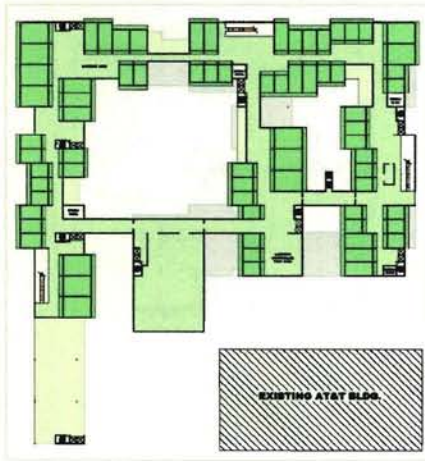




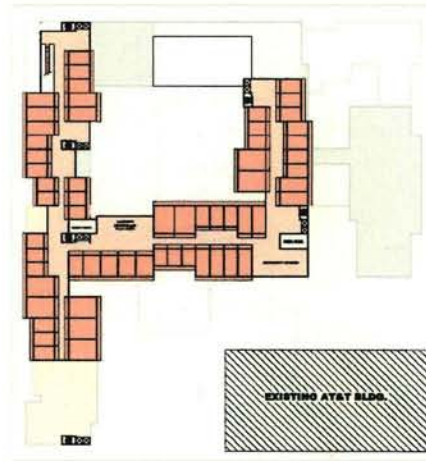
UNDERGROUND PARKING AREA 1/64" = 1'-0"



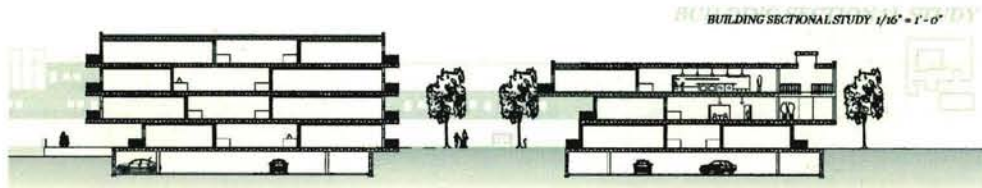
THIRD FLOOR PLAN 1/64" = 1'-0"

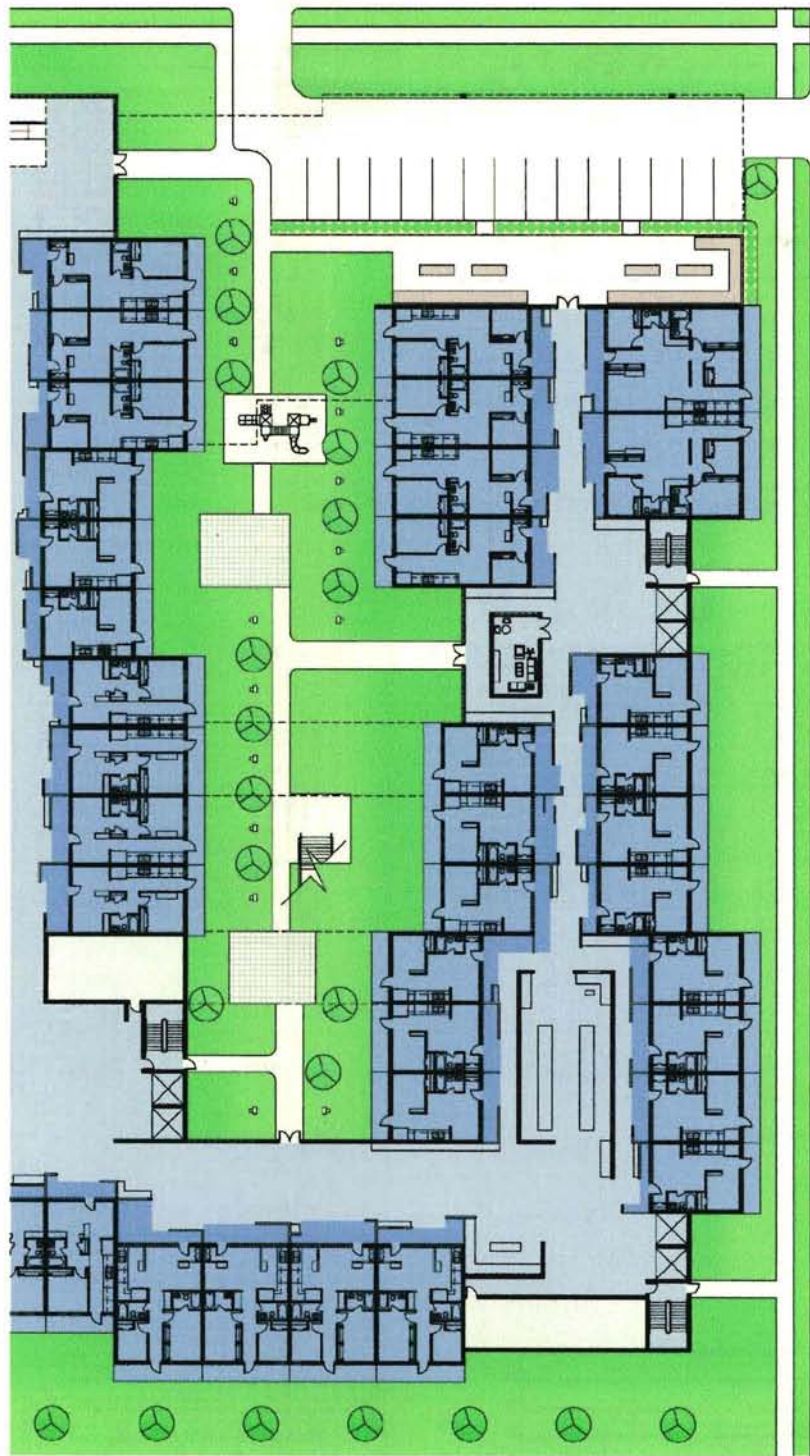


SECOND FLOOR PLAN 1/64" = 1'-0"



FOURTH FLOOR PLAN 1/64" = 1'-0"



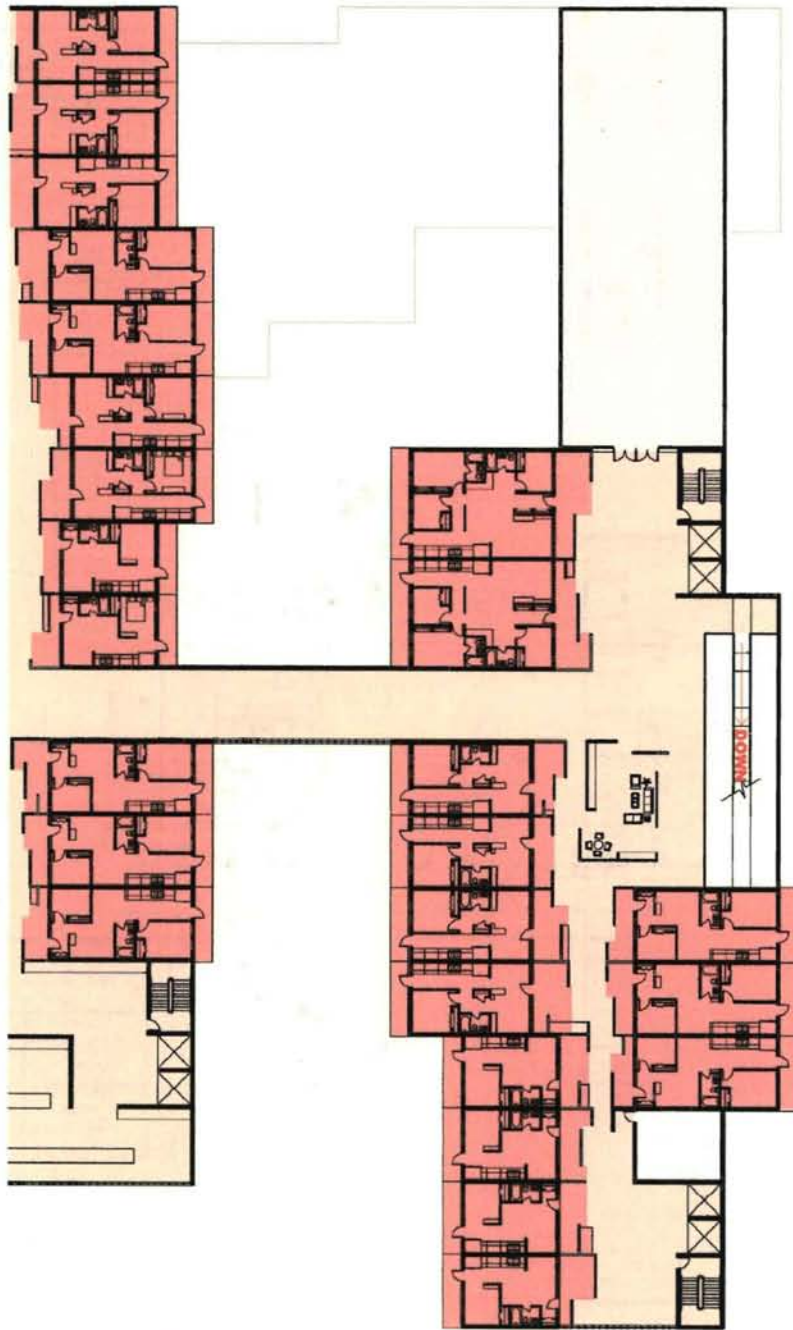


FIRST FLOOR PLAN DETAIL 1/16" = 1'-0"





SECOND FLOOR PLAN DETAIL 1/16" = 1' - 0"



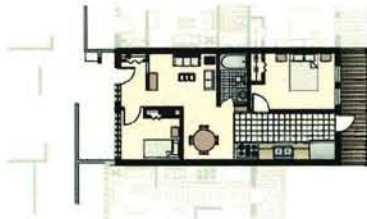
THIRD FLOOR PLAN DETAIL 1/16" = 1'-0"



STUDIO 1/8" = 1'-0"



1 BEDROOM UNIT 1/8" = 1'-0"



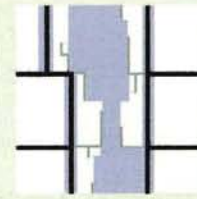
2 BED / 1 BATH UNIT 1/8" = 1'-0"



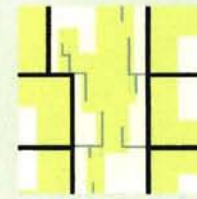
2 BED / 2 BATH UNIT 1/8" = 1'-0"



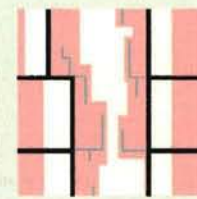
3 BED / 2 BATH UNIT 1/8" = 1'-0"



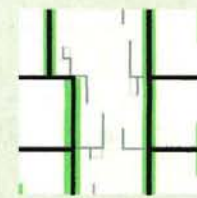
PUBLIC SPACE



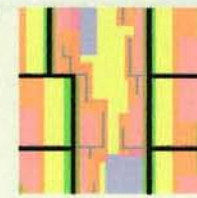
SEMI PUBLIC SPACE



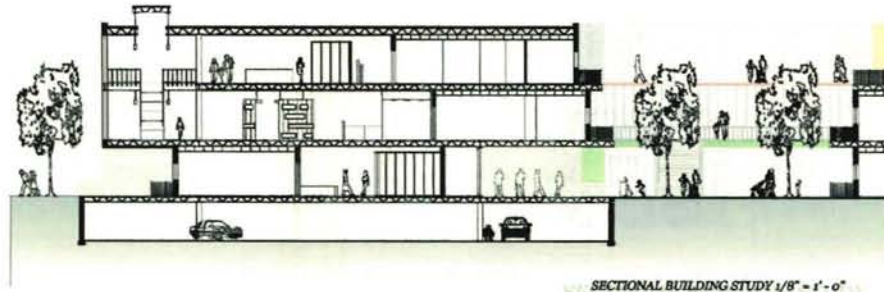
SEMI PRIVATE SPACE



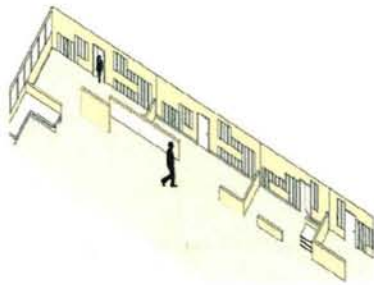
PRIVATE SPACE



VIRTUAL SPACE



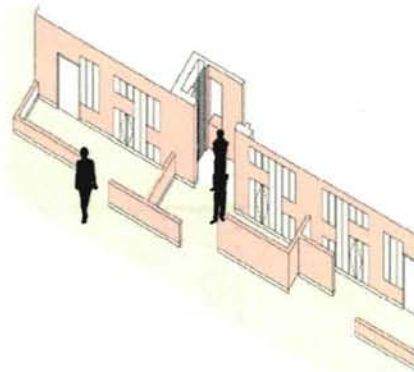
SECTIONAL BUILDING STUDY 1/8" = 1'-0"



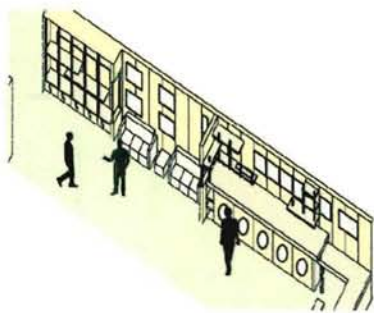
SECOND FLOOR RESIDENTIAL AREA



INTERIOR VIEW OF 1 BEDROOM UNIT



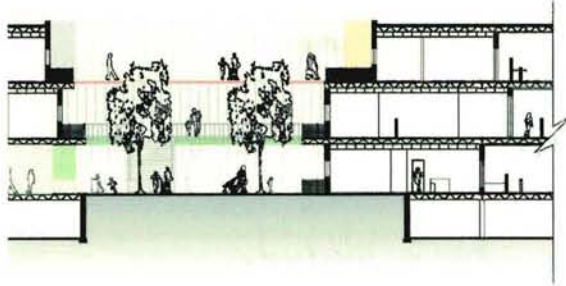
INTERIOR VIEW OF RESIDENTIAL WEAVING STUDY



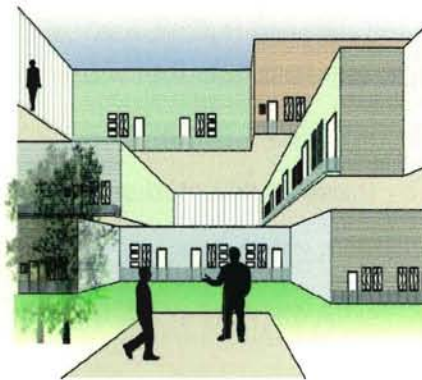
SECOND FLOOR LAUNDRY / CONTROLLED PLAY AREA



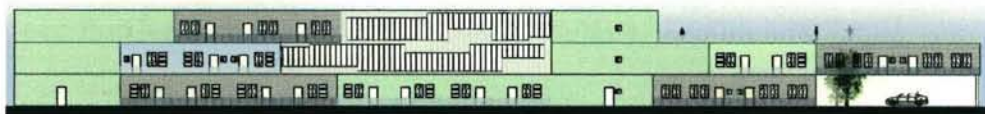
INTERIOR VIEW OF RESIDENTIAL AREA



**VIEW FROM STREET**



**VIEW TO PRIVATE OUTDOOR GARDEN**



*EAST ELEVATION STUDY 1/16" = 1' - 0"*

The concepts of weaving, layering and intersecting are prevalent throughout the entire thesis project from the macro to the micro level. No part of the building is identical, but it is organized in a way that it does not become chaotic and overwhelming.

## Conclusion

This thesis investigation began as an open ended idea about human interaction and how architecture can influence it. Throughout the school year, this thesis project evolved into an architectural building designed to facilitate a higher level of interaction and community involvement while satisfying the needs of both the individual and the whole. It began as a mixed use facility that incorporated a wide range of functions to allow individuals to interact in various ways and times, but as the idea of a more permanent form of interaction became much more intriguing, the focus moved towards a market rate housing development. This thesis investigation began to challenge preconceived notions of dwelling and create a new way to dwell in a dense urban environment.

During the early stages of the design phase, many abstract models were created to study, reinterpret and re-evaluate concepts that were later used to influence the form and layout of the building itself. The idea of the residential "bar" or "street" was influenced by these earlier studies and became a very important part generating the form of the building. The most prevalent concepts that continued to be conveyed were weaving, layering and intersecting before really knowing what the built form would look like. These key terms began to shape (reshape) relationships and program adjacencies in and around the building.

This thesis project began to adopt an architecture that will purposefully and unintentionally foster a higher level of interaction amongst members of the community in and around the building. It aimed to be different from



the typical apartment building by designing for the community. Some of the ideas used in co-housing are also incorporated into this project: community kitchens, community laundry areas, controlled play areas, TV rooms, etc... Because the separation of public and private spaces is very common in many housing developments, this thesis project attempts to blur the lines between public and private space by weaving, intersecting and layering semi-public and semi-private spaces into these areas. Because of the close attention paid to spatial organization and program adjacencies within and around the structure, the lines of separation between public and private are less significant and the spaces themselves become magnets for interaction.

The weakest areas of this thesis project, which would be the next step in the design process, are the exterior development of the materials being explored and the sectional relationships from floor to floor. There was more time devoted to the plans and layout of the building than these areas got in the process. Even with that being said, the final project did support the thesis question: how can architecture challenge the preconceived notions of dwelling while satisfying the needs of both the individual and the whole? Through the making of "things" and the willingness to try, this thesis exploration did what it set out to do; serve as a vehicle to heighten the level of human interaction and challenge the way individuals perceive the idea of dwelling.