



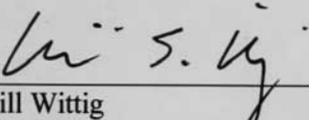
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GRADUATE SCHOOL
MASTER'S PROJECT

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF ARCHITECTURE

TITLE: Office Park

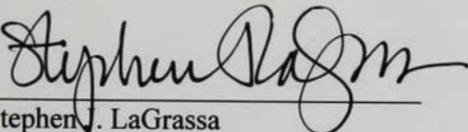
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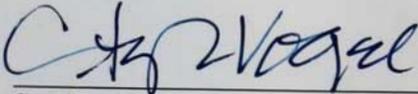
6 MAY 05
Date



Stephen J. LaGrassa
Assoc. Dean, Director Masters Program
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5/5/05
Date

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Stephen Vogel
Dean, School of Architecture

6 May 05
Date

OFFICE PARK

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MASTERS OF ARCHITECTURE

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AR510 & AR520

ASSISTANT PROFESSOR WILL WITTIG

2 MAY 2005

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The world in which we live provides a limiting range of experiences for our individual sensory needs as well as our social interactions as a community. Architecture has created a disconnection between humans and nature by segregating the two from each other in physical and visual ways. Architecture need to strive to create spaces that harness the qualitative attributes that nature provides us and re-establish a give and take relationship between nature and humans.

The typical office environment of today is a space that harnesses only the quantitative qualities that a space may have, in that it is a grid-like repetitive experience that lacks any type of connection with nature or any dynamic qualities. One of the results of this is a complete lack of connection to the natural environment. On the other hand a park is something that is produced by nature and is rich with dynamic qualitative experiences. How can architecture create a hybrid condition that serves a function while also serving our senses? Can the implementation of experiences that occur in a park into an office space create a new dynamic architecture that serves us as humans rather than simply shelter us from the elements?

The world in which we live can be described as being divided between two different types of spaces. The most prominent spaces are those that are responsive to quantitative and purely functional concerns. These spaces are designed using quantitative measures which in turn provide us with spaces that are limiting to our individual needs as well as our social interactions as a community. These spaces also tend to be harmful to the environment. The second kind of space is designed using a broader range of qualitative criteria, which typically provide a wide range of subjective experiences. An example of this type of space is a "green" space or one which is dominated by vegetation. This type of space might also include the incorporation sustainable design techniques which in addition to having positive impacts on the environment also connects humans to the dynamics of natural phenomenon and assists in creating an interaction with nature. In general, these spaces attempt to provide conditions that are responsive to all human senses and facilitate human social interaction.

The office environment for example is governed by a strict interpretation of functionalism which results in environments that are de-humanizing and lack qualitative richness. Typical office buildings are closely aligned with rational, mechanistic tendencies in western thought. These offices are often completely uniform and are primarily designed to organize and contain standard office furniture, rather than being designed for human inhibition. One of the results of this is a complete lack of connection to the natural environment. As a specific counter point to the office concept of the garden is a space that is also designed and constructed by humans, but emphasizes qualitative and temporal conditions that allow the human being to be phenomenologically connected to the larger world. The hypothesis of the project is that the concept of the office/park hybrid condition may serve as a starting point to investigate a re-humanization of the work environment. The goal of the project is to delicately remove or soften the boundary that exists in our working environments and explore ways in which the two types of space can overlap, interlock, or even form a pervasive hybrid. Architecture needs to establish a two-way give and take relationship which creates a third space, or a hybrid space.

For example, the typical office buildings of today are designed with the intent of cramming as many desks as possible into a confined space. These buildings are measured in success only by quantitative measures. These buildings are typically built with regular shaped floors that are stacked like pancakes on top of one another. This allows for few opportunities to let natural light and ventilation into the buildings. These structures will typically have ribbon windows wrapping the buildings, which will not include operable windows to allow the building's occupants to let fresh air in because these buildings are typically air conditioned and this would cause an increase in operating costs as the room temperature may rise with fresh air entering on hot days. Therefore if you are an individual that is working at a desk towards the center of the room, the chance that you will get hit by natural light or feel any air movement at all are slim. There is also a separation of building occupants. These buildings are built as one large room, with a great sense of community, but the possibility of interaction is destroyed by the six foot high cubicles that alienate the sights and sounds of co-workers. These same arguments could also be made for typical factories that cover enormous plots of land across the globe.

Our communities, in general, clearly have a definite separation between man and nature. Attempts should be made similar to those Tadao Ando made with the Azuma house. He describes it as having "spaces flanking an interior courtyard, there is an attempt to return the contact with light, air, rain, and other natural elements. In addition to providing light and serving as the focal point of family life, this small court is a spatial entity that attempts to compensate for the reduced physical space."^[1] This should be a major concern for our societies, as nature has positive impacts on all of our senses and nature offers many hints to how our communities could thrive. Not only are buildings being designed to seal off occupants from everything happening outside of the structure, our cityscapes are also hacking away at any form of landscape that once existed. The only real spaces that are left for individuals to enjoy nature are public parks. These are typically reserved locations that include picnic tables, playground equipment, and possibly a running track, and or, baseball and soccer fields. These parks are usually found on the perimeter of cities and not near the cores where they need to be placed so all residents have easy access to them. What would happen if these spaces were combined with work environments to form a "hybrid" condition?

The way that office buildings of today are being programmed leaves a noticeable void in our lives. Some of us spend eight or more hours a day, five days a week, in these office buildings. This means that for nearly half of the time that we are awake during the week, we are confined to these horrible working conditions.

This means that for nearly eight hours a day we have very little social interaction with those that are working right next to us. This is a problem because interaction and brainstorming are the best way to be creative. It is very important that we make attempts to change this. Ken Yeang states how "it is contended that with the digital revolution 'place' has never been more important. Today people can search the whole world to find the places most desirable to them. People will still occupy physical space although their work may become increasingly electronic, and they will continue to be gregarious and seek communities."^[1]

The office buildings that we create are also very inhumane. We are designing with the intent to only produce; we are not giving any thought of the people that are producing for us. Office buildings of today do not respond to the person as a whole. They are given a designated space to reside in, nothing more than that. Humans have five senses and architecture needs to address all of those five senses as they are equally important to each and every life. In some cases the levels of importance for a single sense are heightened by disabilities of one of an individuals other senses. For instance someone that is working in an office building that has very bad vision will benefit greatly from an environment that is well lit by natural light.

By softening the boundary that exists between nature and man we can start to design for the senses, and the building occupants. To do this we must integrate ourselves with nature, rather than segregate our lives. The new building programs may have uncontrolled vegetation growing on the inside. According to Ken Yeang, "to balance the increasing inorganic aspect of our built environment, we need to green and re-vegetate the surfaces of the man-made built environment."^[1] The programs of the building can take something from nature and be arranged more dynamically, and break away from the grid that creates a quantitative redundancy in our lives. These problems are stemming from a lack of inspiration in our architecture.

Corporations are asking architects to pump out sets of construction documents as quick as possible so they can cram their employees into a space that is very confining and set a computer in front of them. According to Brian Edwards professional collaborations are found at the center of productivity, efficiency, and sustainability.^[1] Architecture needs to take the lead and slow the process, and work with the individuals that will be working in and operating the building systems to get their.

One way this can be done is to throw out the now conventional machine produced buildings and begin to think back to the craft and detail principles that spaces were once built upon. Architects can begin to reinsert the beauty of these structures at the client meetings. One would argue that these buildings of the past would be too expensive to produce. In some cases that is probably true, but an argument could be made that these creations would last much longer than the highly mechanized buildings. These quality crafted buildings would be very appealing to many businesses, especially the types of businesses that are established to be around for generations, like many of the architectural firms in America.

Typical office buildings of today seldom take advantage of the sites that they will be built upon. The buildings are designed using quantitative measures and the terrain or cityscape is altered to those plans. The more qualitative approach would be to survey potential plots of land that the building will be built upon and see what its benefits are. Instead of leveling a sloped site, what could happen to the buildings program if there was a variance in floor heights? What types of dynamic conditions could be created? How could these subtleties in design have an impact on the buildings occupants? One example that takes into account ideas similar to these would be Tadao Ando's Rokko Housing I project. Here he "engages rather than alters the natural landscape" with the expectation that "life within these diverse units will concentrate around the terrace and the opportunity to communicate with nature."^[1]

Finding a new way to react to the given site of a future building is just one way to connect man with nature. That connection however, does not always need to be physical. Sometimes just a visual connection to what is happening outdoors can improve a person's mood. However, by opening the programs of these buildings up and creating a series of edges, this could create opportunities for individuals to have their own environments while at the same time having the ability to collaborate with their co-workers.

What if architecture were to create a "third" or hybrid condition; or a space that incorporates nature into the program of the building? Its design direction was based on a strict set of qualitative concerns that responds to the social and psychological concerns of its inhabitants? The possibilities are endless, and there are some buildings that have begun to explore how this can be done. One simple way that could soften this condition would be to separate spaces more delicately. For instance C.J. Lim uses a moveable rosemary partition in his one of his designs, giving off aromas and the possibility for use as a spice in the office kitchen or café.

One recent example of how a third space may evolve is the design of the EDITT Tower, for Singapore's Urban Redevelopment Authority. Hamzah and Yeang not only focus in on the affects the building will have on the environment and how to correct the negative ones, but they also are able to integrate nature into the program. Almost a third of the EDITT Tower is vegetated space. These spaces are responsible for cooling and improving air quality.

The architects also studied the surrounding ecosystems and used native plantings to install ecological continuity within the structure. Hamzah and Yeang also used an array of sustainable design strategies throughout the program of the tower. The EDITT tower has a transparent skin which allows for natural lighting along all of its sides. It also has operable windows which allows for occupants to naturally ventilate the spaces at all floor levels. The EDITT tower has water-recycling, water-purification, and sewage-recycling systems all on site, which results in the use of less than half the total amount of water usage for a building its size.

When the tower is built, it will be constructed using local materials, which will cut down on overall costs for the project. The EDITT tower has not only been designed with the intention of making the building sustainable, but also with concern for the community that it affects. Hamzah and Yeang designed the site to accommodate different means of public transportation. This makes the commute to work or home for occupants less costly and at the same time less stressful.

If we look at the way the program of the building is set up, we can see that the structure is very sensitive to the occupant's quality of life. The elevators and circulation spaces that are usually installed at the core of high-rises are now pulled to the façade, creating a visual connection with the natural environment. Another way in which the architects have created a better third space, is by modifying the typical program of a high-rise which is usually repetitive, and made it more dynamic by varying floor plans and incorporating more circulation routes, passageways, staircases, stairwells, lobbies, and public reception areas.

Another architect, CJ Lim, has made an attempt to alter the typical building, and create a much more dynamic design. Lim takes an interesting stand on how to design the urban landscape. In his media center proposal, he takes the stereotypical organization of a building's site plan, and inverts it. In other words, he explores the possibilities of how a site might react to having its natural spaces pulled to the core of the site and moving the built area towards the outside of the site. This giant indoor court accounts for over half of the overall plan. This sketch is very interesting, in that it tackles the same issues raised by this thesis, yet it

attempts to do so in the opposite manner than the typical approach. This building does not overload on green spaces, however Lim does mention the use of grass-covered hillocks that can be used as perches for computer stations as well as organizers for the buildings circulation.

Another principle used that is related to this thesis is the integration of the principles of nature into buildings. Here Lim uses the idea of flower-like shading pads that can be programmed to shift in accordance with the temperature inside the structure. In the winter months as heating becomes a problem, the pads could be shifted to allow more natural light in to heat the building during the day and in the summer do the opposite to keep cooling costs down.

A project that has been developed that deals with office spaces is the Institute for Forestry Research. It was designed by Stefan Behnisch with the intentions of combining offices, research laboratories, conference facilities, staff restaurants, and a library all in a single structure. The design was based on the minimization of consumed energy, saving of water, avoidance of using toxic products, and allocating space for a recycling program in the future. Local products were also used in the construction to reduce the cost and energy used to get the building materials to the site. The three-story building is compact and is spatially arranged along a continuous circulation spine which contains the laboratories, while three wings of offices extend off of the spine. Each of these gardens has a dual purpose. They serve not only as an ecological garden, but also as a climatic buffer for the building. These spaces are not truly indoors since the office spaces and terraces had to be protected as if they were outdoor spaces due to code restrictions. Working environments must maintain a regulated minimum temperature which restricted them from being directly incorporated into the garden spaces, although these garden spaces are the main means of circulation throughout the structure. This creates a zone of dual indoor and outdoor space.

These garden spaces have a tri-fold purpose. Not only do the plants cool the indoor space on hot summer days when the sun pounds on the building, and the heat from computers and other office machinery mount, they also help to humidify the air inside. These gardens also give the occupants pleasant views and recreation for the workers as they help to maintain the space. What makes these gardens so special is that they are directly related to the events in the office. These spaces give the scientists a means to conduct experiments on site. This particular office building is special, because it has been built around the needs of the occupant and has attempted to establish a give and take relationship between its inhabitants and nature. Each office has a door with a glass fanlight looking into the hallway and a

sliding glass door revealing one of the garden atria. These spaces have become lunch areas, meeting spots, and even study spaces. Another arrangement to note is how the offices were offset when stacked, to allow for terraces inside these garden spaces.

What can be done to our workplaces to re-establish the connection between man and nature? Nature can be defined by solely looking at the recreational park. Can the two unite to form a pervasive hybrid or third space?

First we can look at the typical workplace from an urban standpoint. The conventional office building is positioned along-side other buildings, but there is never much thought as to how the two could be joined or interact with each other to allow the occupants to socialize. Each structure has its own purpose and unless you have some need to enter the structure there is never really any sort of connection made. It is just a node on the pathway to your destination. The urban landscape could be altered to keep vehicular traffic on a perimeter and allow pedestrian traffic to thrive in pockets of built areas.

There are also programmatic alterations that could be made to the conventional office building. The standard program simply provides rooms in the building that allow for the operations of the company to occur (computers, printers, storage rooms, etc.), the operations of the building to occur (mechanical rooms, janitorial closets, etc.), restrooms, and sometimes a kitchenette. To make these buildings more sensitive to their occupants, the program could be altered so the office could become a mini-home, or perhaps even a mini-city, where occupants could do some of their necessary daily tasks outside of the office, at the office. This would also bring with it the possibility of making the office building more of a public space, instead of simply restricting it to the buildings employees.

There are an infinite number of programmatic elements that could be added to the typical office program that would have this effect. One could be a running track. This would allow for the connection between inside and outside to occur. Depending on the season, the track could be contained just to the interior of building, or the perimeter portions could be covered to function similar to summer months.

There are also a series of spatial and organizational moves that can be made inside of these buildings that would have a positive effect on the workers. Productivity levels would increase, in turn saving companies thousands of dollars annually. One move that could be made would be to pull all work stations to the

exterior of the building or create a building with a higher volume of edges. This will give workers the opportunity to have naturally lit workstations and even possibly natural ventilation. Studies have found that "natural light improves color perception, reduces eyestrain, and improves mood. According to researchers, people who work in natural light are more productive." It has also been determined that poorly ventilated buildings can induce fatigue.^[1]

Another change that could be made to the arrangement of the typical office program would be to arrange employees in a sort of 'pod' or space that could house between five and ten employees depending on what is appropriate for that office type. These pods could then be joined by public gathering spaces such as terraces, balconies, atriums, or even light wells. These pod-like spaces would be different from conventional work spaces, not only in the sense that they are community work areas, but they would also designate larger work zones per individual. The pods would serve the employees similar to an art gallery. Pieces of art are displayed in areas that are designed specifically for each piece. These spaces are typically over-scaled and emphasize the work on display. This concept would be used to showcase the worker, and give him or her the appropriate amount of space to function. Ken Yeang states that "we need to re-create public realms like Venice's Piazza San Marco in the sky."^[1]

The lack of vegetation in our office buildings, and for that matter our cityscapes, calls for action. One possibility would be to alter typical building details that we currently use and allow vegetation to infiltrate these buildings and their surroundings. These buildings could potentially have vegetation growing in the floors or even on the building. The possibilities of harvesting herbs and spices for the buildings inhabitants could establish a type of give and take relationship between nature and the inhabitants as well. These ideas are similar to those practiced by Ford Motor Company at the Dearborn Truck Plant. Here they farm and harvest honey bees.

The goal of this thesis is to explore the possibility of creating 'third' spaces, and finding ways to incorporate them into our architecture. Typical office buildings of today are designed with a lack of attention to the occupants that could make the building come to life. These buildings are designed using quantitative measures. They are designed with the emphasis on productivity and how densely populated the spaces can be made. Since the office building will be the vehicle for testing the theories of this thesis, a location that will assist in testing these principles is also necessary.

Some of the main questions that need to be answered are how can the new structure, which will be based on qualitative means, connect and improve its surrounding areas? Where and how will these connections be made? In the end the "hybrid theory" will need to have the ability to adapt to any condition that presents itself.

- [iii] David Gissen *Big and Green: Toward Sustainable Architecture in the 21st Century*. (Princeton Architecture Press, 2004) 9.
- [iv] Matthews, Kevin, "Azuma House," *Archi* 2001.
<<http://www.greatwall.com/bullring/azuma-house.html>>
- [v] Ken Yeang, *Reinventing the Skyline*. (London: John Wiley & Sons, 2002) 193.
- [vi] Ken Yeang, *Bellvue Hill: Structures*. (London: John Wiley & Sons, 2002) 182.
- [vii] Brian Edwards, *Green Buildings*. (New York: McGraw-Hill, 2003) 21.
- [viii] Matthews, Kevin, "Parks House I," *Archi* 2001.
<<http://www.greatwall.com/bullring/azuma-house.html>>
- [ix] "Bouge Constructions Team, Ford Motor Company, Ford Power Coach." (London: Wiley Academy & Sons, 2002) 12.
- [x] Ken Yeang, *Reinventing the Skyline*. (London: John Wiley & Sons, 2002) 193.

- [i] Robert Thayer Grey World, Green Heart. (New York: John Wiley & Sons, 1994) 132.
- [ii] Brian Edwards, Green Buildings Pay. (New York: McGraw-Hill, 2003) 23.
- [iii] David Gissen Big and Green: Toward Sustainable Architecture in the 21st Century. (Princeton Architectural Press, 2002) 9.
- [iv] Matthews, Kevin. "Azuma House." Artifice 2001.
<<http://www.greatbuildings.com/buildings/azuma-house.html>>.
- [v] Ken Yeang, Reinventing the Skyscraper. (London: John Wiley & Sons, 2002) 193.
- [vi] Ken Yeang, Reinventing the Skyscraper. (London: John Wiley & Sons, 2002) 182.
- [vii] Brian Edwards, Green Buildings Pay. (New York: McGraw-Hill, 2003) 23.
- [viii] Matthews, Kevin. "Rokko Housing I." Artifice 2001.
<http://www.greatbuildings.com/buildings/rokko_housing_one.html>.
- [ix] "Rouge Communications Team; Ford Motor Company" Ford Rouge Center. (London: Wiley Academy & Sons, 2002) 3.
- [x] Ken Yeang, Reinventing the Skyscraper. (London: John Wiley & Sons, 2002) 13.

Architect:
TR. Hamzah & Yeang

Location:
Singapore

Year:
1998-

Client:
Urban Redevelopment
Authority, Singapore

**Structural & Mechanical
Engineer:**
Battle McCarthy Consulting
Engineers & Landscape
Architects

Building Type:
Office/ Residential/ Retail

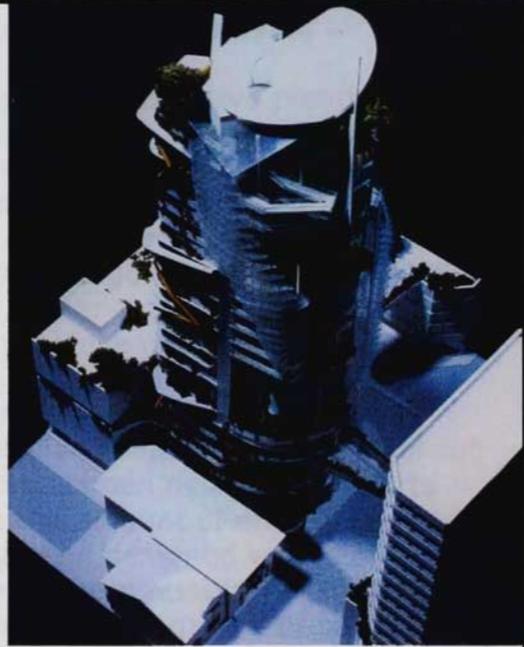
Energy Generation:
Renewable Energy Use
Energy Conservation Systems

Light & Air:
Daylight Illumination
Natural Ventilation
Operable Windows

Greenery, Water & Waste:
Interior & Exterior Gardens

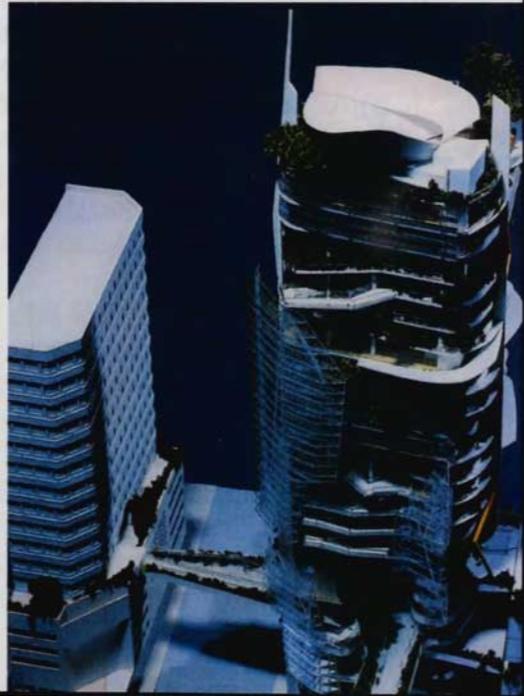
Construction:
Local/Regional Materials
Modular Construction
Techniques

Urbanism:
Environmental Planning
Public Transportation Access
Site Reuse



The design of the EDITT Tower, for Singapore's Urban Redevelopment Authority, is an important one, as it exceeds previous expectations of past high-rise structures in a multitude of ways. The goal of this thesis is to "soften or remove" the line or boundary that separates the qualitative spaces in our environments with the quantitative ones, which is in some aspects, is evident in this project. Hamzah and Yeang not only focus in on the affects the building will have on the environment, but they also are able to integrate nature into the program. This seems to be a standard practice, but when you factor in the amount of vegetation that they have integrated into a high-rise structure, it becomes special.

Almost a third of the EDITT Tower is



vegetated space. These spaces are responsible for cooling and improving air quality.

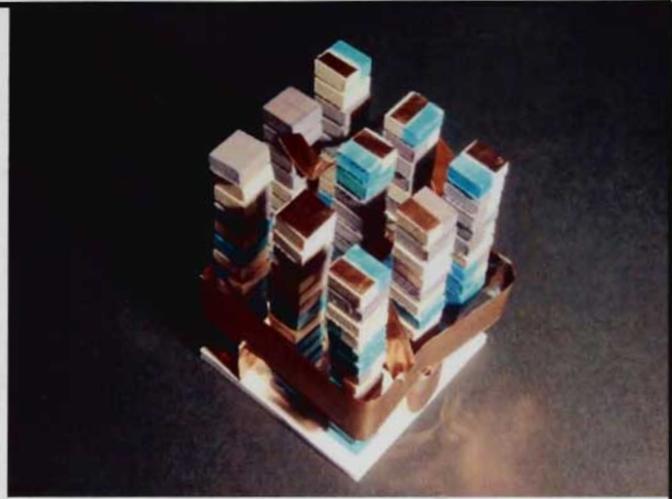
The architects studied the surrounding ecosystems and used native plantings to install ecological continuity within the structure. The architects also used an array of sustainable design strategies throughout the program of the tower. The EDITT tower has a transparent skin which allows for natural lighting along its sides. It also has operable windows which allow for natural ventilation at all floors. The tower has the ability to renew its energy while it also uses less than average amounts for a building similar in size. The EDITT tower has water-recycling, water-purification, and sewage-recycling systems all on site, which results in the use of less than half of the total amount of water usage for a building its size.

When the tower is built, it will be constructed using local materials, which will cut down on overall costs for the project. The tower also has been designed for parts that are modularly constructed which helps eliminate the amount of energy used to construct the building. The EDITT tower has not only been designed with the intention of making the building sustainable, but also the community that it affects. Hamzah and Yeang designed the site to accommodate different means of public transportation. This makes the commute to work or home for occupants less costly and at the same time less stressful.

If we look at the way the program of the building is set up, we can see that the structure is very sensitive to the occupants needs in a quality of life measure. The elevators and circulation spaces that are usually installed at the core of high-rises are now pulled to the façade, creating a visual connection with the natural environment. Another way in which the architects have created a better "third space," or space that intertwines qualitative and quantitative spaces, is by modifying the typical program of a high-rise which is usually repetitive, and made it more dynamic by varying floor plans and incorporating more circulation routes, passageways, staircases, stairwells, lobbies, and public reception areas.

There are a few areas where I believe the project still falls short. There are "third spaces" along the perimeter of the tower but they do not extend to the core of the tower. It is at the core of these structures, where typically stairs and elevators exist, that the lack of integration to the outside occurs. The use of atriums or perhaps even cutting into the façade would have been two different ways in which they could have softened the inside- outside boundary. They failed to plan for connections to other buildings with sky bridges at more levels, and for future expansions by making the skin of the building thin in all spots. There is also a lack of expression of what actually occurs inside the structure. The façade does not respond to different program areas; retail, offices, and residential spaces, are all treated the same way.

This model depicts an investigation of the EDITT Tower. The tower was broken up into nine sectors and colors were designated to every half sector both horizontally and vertically to depict what types of spaces occur in each half sector. The blue spaces are retail spaces, the gray spaces are office spaces, and the natural finish signifies residential space.



Architect:
CJ Lim

Building Type:
Media Center

Location:
*

Energy Generation:
Energy Conservation Systems

Year:
April 26, 2002

Light & Air:
Daylight Illumination
Natural Ventilation
Operable Windows

Client:
*

Greenery, Water & Waste:
Interior Gardens

Structural & Mechanical Engineer:
*

Construction:
Recycled Materials
Modular Construction
Techniques

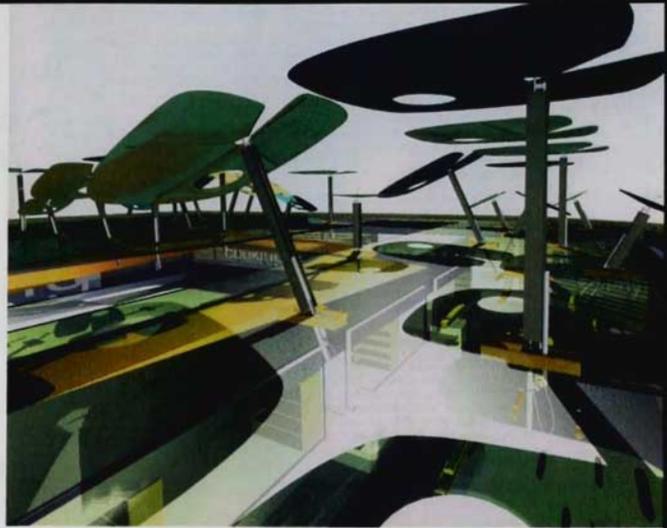
Urbanism:
Environmental Planning
Site Reuse



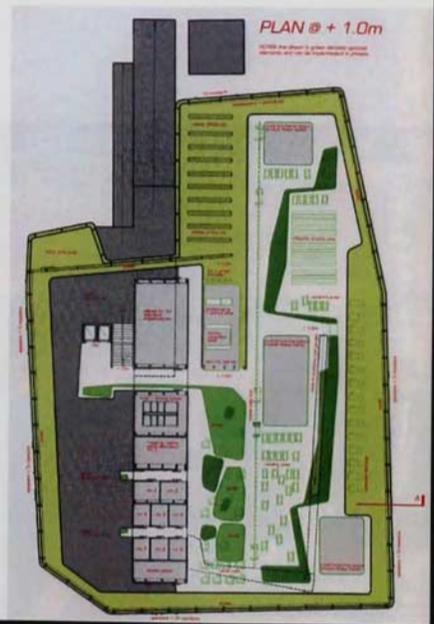
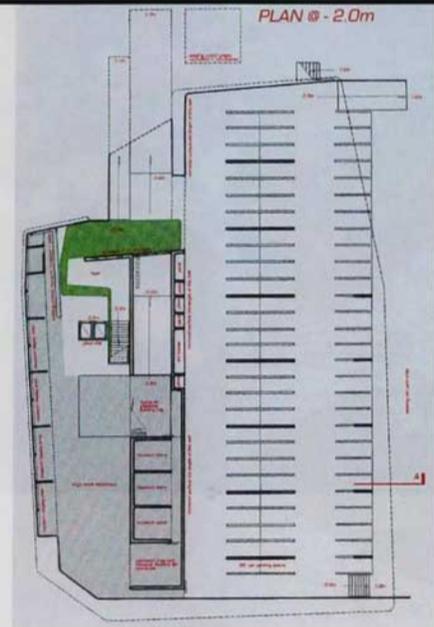
CJ Lim takes an interesting stand on how to design the urban landscape. In this proposal, he takes the stereotypical organization of a building's site plan, and inverts it. In other words, he explores the possibilities of how a site might react to having its vegetated spaces pulled to the core of the building and moving the 'quantitative' spaces towards the outside of the space. This giant indoor court accounts for over half of the overall plan. This sketch is very interesting, in that it tackles the same issues raised by this thesis, yet it attempts to do so in the opposite manner than the typical approach.

This building does not overload on green spaces, it does mention the use of grassy hillocks that are used as perches for computer stations as well as organizers for the buildings plan.

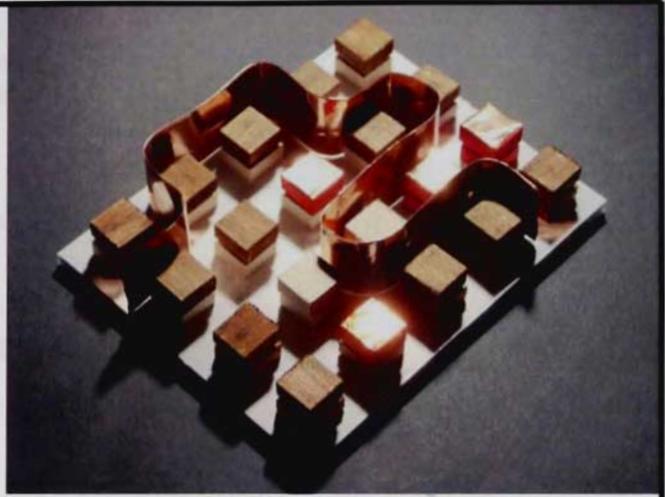
A principle that this thesis is trying to display, is how can the principles of nature be integrated into buildings. Here Lim uses the idea of flower-like pads that can be programmed to shift in accordance with the temperature inside the structure. In the winter months as heating becomes a problem, the pads could be shifted to allow more natural light in to heat the building during the day and in the summer do the opposite to keep cooling costs down.



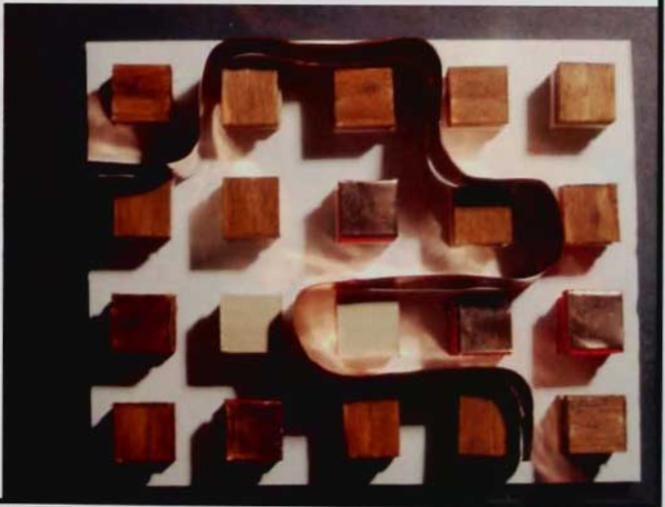
This project has a few areas where I feel changes could be made to make the design more successful. The idea of having the recycled paper cladding is a good one, but I think if the structure was semi-permeable, or perhaps even translucent as opposed to opaque, so that shadows of internal action could be seen, that this might create a bit more interest on the site. There is also no mention of accommodations for public transportation. The only thing shown in plan is a giant asphalt parking lot which is typical to the landscape of low-rise buildings.



This model depicts an investigation of CJ Lim's building. The building was broken up into twenty sectors and colors were designated to every sector both horizontally and vertically to depict what types of spaces occur in each sector. The red spaces are private spaces, the brown spaces are public spaces, and the natural finish signifies circulation space.



The second part to this investigation was to study the relationship that these sectors took both horizontally and vertically. The copper flashing was then implemented into this model to show the most probable areas and patterns where "hybrid spaces" exist.



PROGRAM PRECEDENT: INSTITUTE FOR FORESTRY AND NATURE RESEARCH

19

Architect:
Stefan Behnisch

Location:
Wageningen, The
Netherlands

Year:
1998

Client:
The State of The
Netherlands

Landscape Architect:
Copijn Utrecht

Building Type:
Offices/ Laboratories

Energy Generation:
Energy Conservation
Systems

Light & Air:
Daylight Illumination
Natural Ventilation
Operable Windows

**Greenery, Water &
Waste:**
Interior & Exterior Gardens

Construction:
Local/Regional Materials
Modular Construction
Techniques

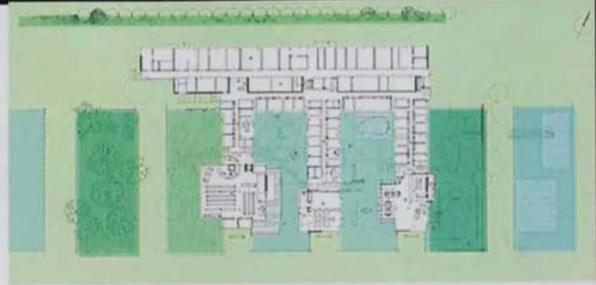


The Institute for Forestry Research was designed with the intentions of combining offices, research laboratories, conference facilities, staff restaurants, and a library all in a single structure. The design of this structure was based on the minimization of consumed energy, saving of water, avoidance of using toxic products, and allowing for recycling in the future. Local products were also used in the construction to reduce the cost and energy used to get the building materials to the site.



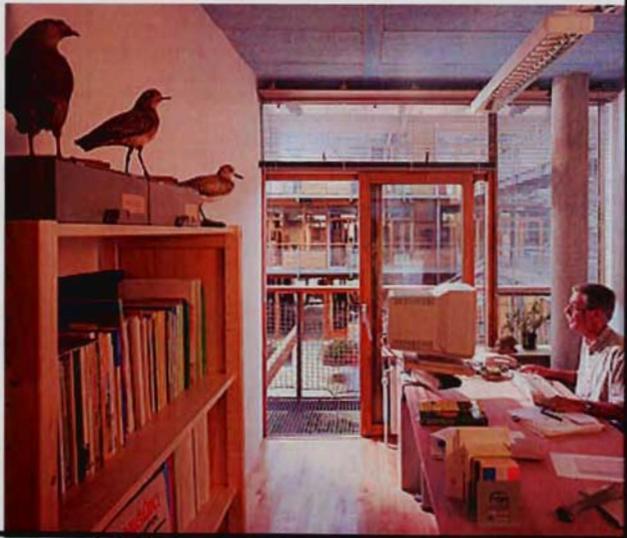
The three-story building is compact and is spatially arranged along a continuous circulation spine which contains the laboratories, while three wings of offices extend off of the spine. Each of these gardens has a dual purpose. They serve not only as an ecological garden, but also as a climatic buffer for the building. These spaces are not truly indoors since the office spaces and terraces had to be protected as if they were outdoor spaces due to code restrictions. Working environments must maintain a regulated minimum temperature which restricted them from being directly incorporated into the garden spaces, although these garden spaces are the main means of circulation throughout the structure.

These garden spaces have a tri-fold purpose. Not only do the plants cool the indoor space on hot summer days when the sun pounds on the building, and the heat from computers and other office machinery mount, they also help to humidify the air inside. These gardens also give the occupants pleasant views and recreation for the workers as they help to maintain the space. What makes these gardens so special is that they are directly related to the events in the office. These spaces give the scientists a means to conduct experiments on site.



This particular office building is special because it has been built around the needs of the occupant and has attempted to establish a give and take relationship between its inhabitants and nature. Each office has a door with a glass fanlight looking into the hallway and a sliding glass door revealing one of the garden atria. These spaces have become lunch areas, meeting spots, and even study spaces. Another arrangement to note is how the offices were offset when stacked to allow for terraces inside these garden spaces for the workers to communicate in or simply think inside the garden.

There are a few ways in which the building falls short. Since it was designed using a number of "green" concepts, the spaces have been made highly pragmatic and orthogonal. The occupants should be introduced to a more dynamic space where there are intriguing details, opposed to simply substituting creativity with a spiral staircase as opposed to a linear one. Another area of concern is how the office is situated along a spine. It seems as though it is a bit restricting in movement and that it would be more beneficial to have the spaces designed around a common plaza much like St. Mark's in Venice, at a much smaller scale of course. These garden spaces also are restricted by boundaries and need to be given the opportunity to be dynamic and extend into the actual office spaces.



Architect:
William McDonough

Location:
Holland, MI.

Year:
1995

Client:
Herman Miller

Structural & Mechanical Engineer:
*

Building Type:
Office/ Manufacturing

Energy Generation:
Energy Conservation Systems

Light & Air:
Daylight Illumination
Natural Ventilation
Operable Windows

Greenery, Water & Waste:
Exterior Gardens

Construction:
*

Urbanism:
*



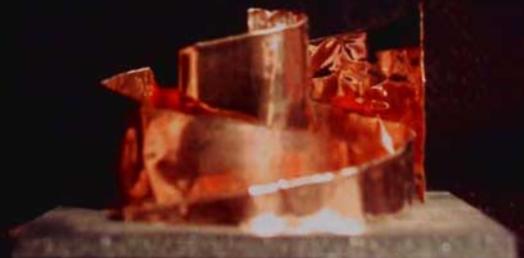
At a distance the Herman Miller office building blends into its surrounding environment. The visual and physical integration of interior and exterior landscapes of this factory facility and its site optimize the comfort, health and communication of its occupants. The use of natural ventilation and day-lighting allows for a cost effective and humanized working environment. The building is bisected by "the Street," which is an open corridor that runs the length of the building. This public space creates connections across all departmental lines and is one reason researchers analyzing the "Greenhouse" have found "strong evidence that enhanced habitability is associated with increases in psychological and social well being."



The images to the right are attempting to show how the boundary between spaces may be blurred. Two of the images use color to distort the image and blur the boundary. One image, the sunflower, is intended to be an image that anyone can identify with. The color distorts the image, yet one can still recognize what it is. The second image distorted by color is intended to be something that not everyone could identify, and the color only expands the possibilities. The images are also blurred using a screen on one half as well as using a piece of translucent paper on the other half.

The models on the bottom half of the page are intended to show the possibilities of blurring boundaries in a three-dimensional setting. One model use strands of copper that represent space, and how they can overlap, weave, and bend to blur the individual pieces.

The second model shows how spaces can progress to varied heights or elevations, and curve into each other to blend to form a single piece. These concepts can be used to form dynamic spaces that otherwise seldom exist in typical offices today.



PRECEDENT ANALYSIS: TECHNOLOGY CENTER 24

Architect:
Kiessler & Partner

Location:
Gelsenkirchen, Germany

Year:
1995

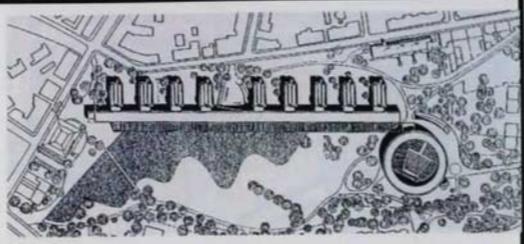
Client:
State of North Rhine-
West-Falia

Structural Engineer:
Sailer, Stepan, & Bloos

Building Type:
Research & Technology

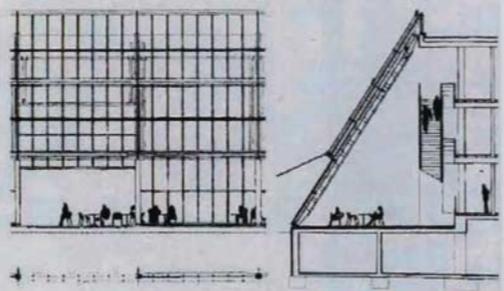
Energy Generation:
Renewable Energy Use
Energy Conservation Systems

Light & Air:
Daylight Illumination
Natural Ventilation
Operable Walls



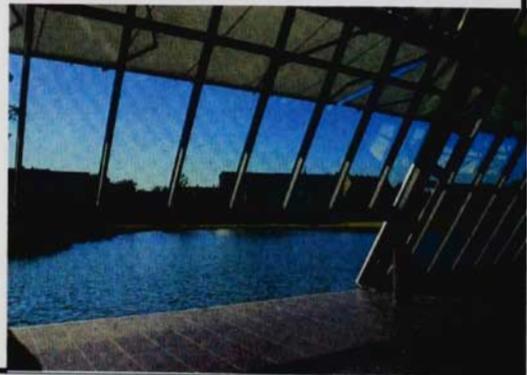
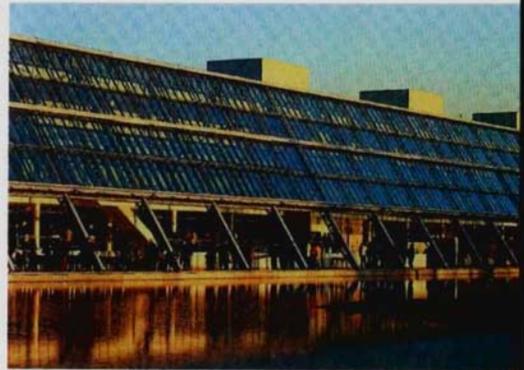
The Technology Center expresses in its building system elements of programmatic design that are similar to those expressions that this thesis embodies. The arcade that runs along the north-south axis of the structure has a curtain wall that essentially opens like an overhead door on a slight angle, which allows for air to enter the building in mass quantities. This arcade is so large that in essence creates an outdoor space when it is desired.

The structure that supports the glass is composed of steel. These members give the building a light, airy feel to it which is the type of structure this thesis will try to use for the finished structure. The panels that can slide to open are also at a scale similar to the scale that this thesis proposes. Items are oversized to humanize the spaces.



The research center's glass arcade is successful in the fact that it has the ability to completely open up along its span and allow for a connection with nature while still functioning as a building. The use of steel and glass allows for a maximum amount of light to enter and will allow the building to last for a long time. It is also advantageous due to the fact that when the wall opens it allows for natural ventilation to occur, because the cool air entering the building at the base of structure will push out the hot air at the top of the structure.

However, there are several things that could be done to the structure that would allow for a more dynamic experience. If the glass walls had smaller operable windows that were built in, this would allow for a localized opening during the cooler days when users may not want entire façades opened. There is also a lost opportunity with the artificial lake adjacent to the structure. It would have been nice to see the structure somehow form a bridge or have an additional element that forms a type of island that allows occupants to walk out onto the lake when the arcade walls are opened.



Architect:
Design Antenna

Building Type:
Museum

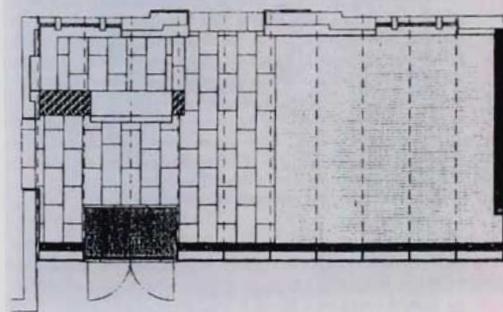
Location:
Kingswinford, UK

Light & Air:
Daylight Illumination

Year:
1994

Client:
Dudley Metropolitan
Borough Council

Structural Engineer:
Dewhurst Macfarlane &
Partners



The Museum of Glass is a structural marvel. The innovation that the architect and the structural engineer used to make this project a success express similar ideas that this thesis is attempting to convey. Instead of allowing for a physical connection with nature this building allows for a visual connection.

The way in which the glass box is assembled, gives it a light feeling. Since the structure is almost solely constructed with structural glass, the views to the outside are uninterrupted. The glass is covered in a baked on ink that cuts down on the amount of solar heat gain which would make the space even more comfortable. Having a translucent structure allows for the occupants to experience all of the elements indoors.



The Glass Museum has both strengths and weaknesses to its overall composition. To have made a translucent box out of glass is a feat in itself. This really demonstrates the craft involved in architecture and allows building occupants to understand and appreciate how such a structure is assembled. However there are some steps that could have been taken in the design of the structure that would have allowed for a wider range of experiences to occur.



Design Antenna could have planned for the seasons. Who would want to sit in a glass box all day when it is nice outside? During the summer days it would be nice if there was access to nature other than thru the single glass door that the program provides. It would have been a good idea to have glass pivot panels for the more pleasant days. The way in which sun patterns change also creates a problem for this structure. It is visible in the pictures that in the later stages of the day, the sun would be beaming into the eyes of building occupants. This would be particularly unpleasant for workers of the museum. The Glass Museum should have some sort of retractable screening device that would account for the changing seasons.



Architect:
Eric Owen Moss

Building Type:
Mixed Use

Location:
*

Light & Air:
Daylight Illumination

Year:
*

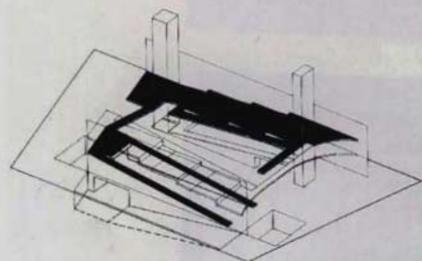
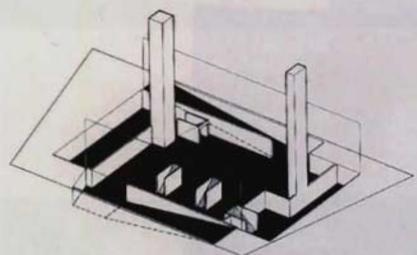
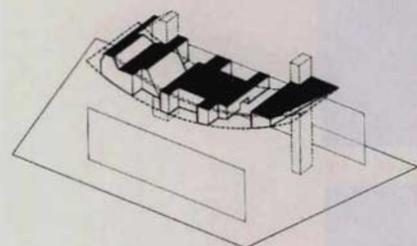
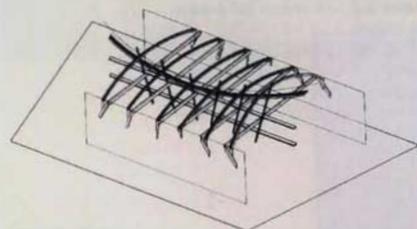
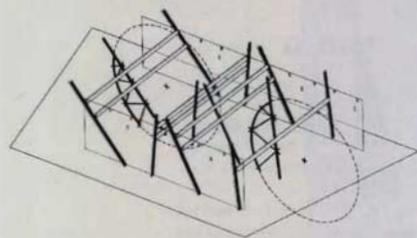
Client:
*

Structural Engineer:
*

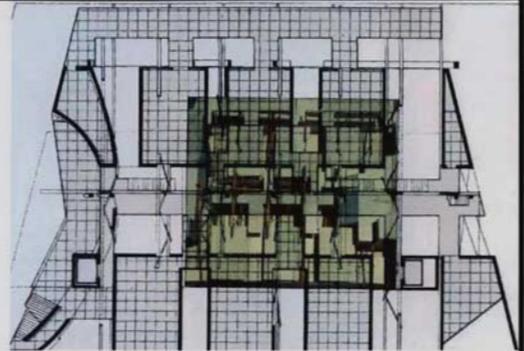
Eric Owen Moss's Ibiza Paseo design is one of significance when compared to the principles that this thesis embodies. This building was slated to have similar programmatic elements that this thesis will accommodate. The first floor is a pedestrian street, with restaurants and retail spaces. The repetitive box forms are for office spaces.

Although this project has not been built there is visible evidence in the sketches and models of the lightness that this building portrays. The series of drawings to the right are the stages that the building was designed in to add a layered effect.

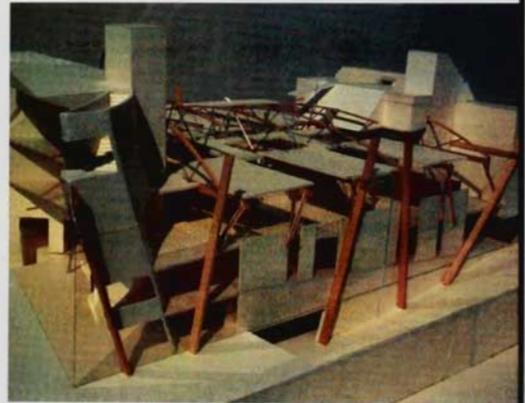
Although they tend to imply that there are solid heavy materials used to construct it at times, the way the structure is emphasized on the exterior, is so exaggerated that it gives the structure the light look that is present.



The schematic design for this structure has parts that are conceptually strong, and other parts that do not seem to fit in with the overall concept. The structure implies that thin trusses will be used to support the structure which benefits the light feeling of the spaces. There are also a series of slivers that occur along the building façade that would allow natural light to penetrate the interior. Having the 'street' run through the first floor would allow for cool breezes to pass through and cool the space.



However, there are some visible weaknesses to the structure. The picture in the middle of the page conveys the lightness, then when the six boxes are built up to cap the building off, that feeling is seemingly lost. Another weakness is the awkward angles that the columns on the exterior are arranged on. They make it seem as though they are not functioning which in turn makes the building look too grounded and heavy.



SKETCH PROBLEM: "OFFICE-PARK"

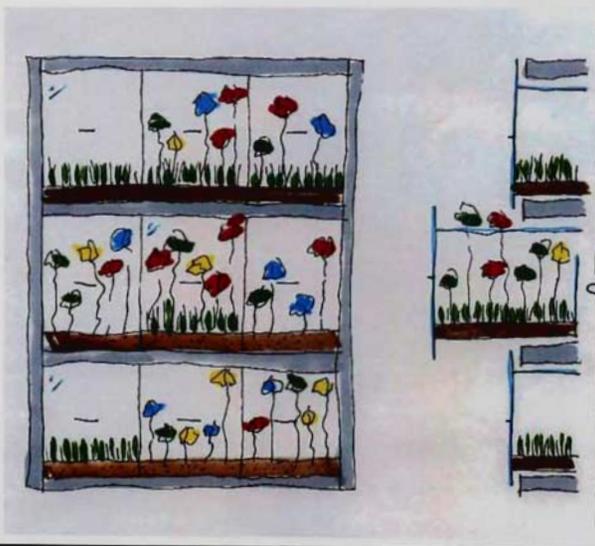
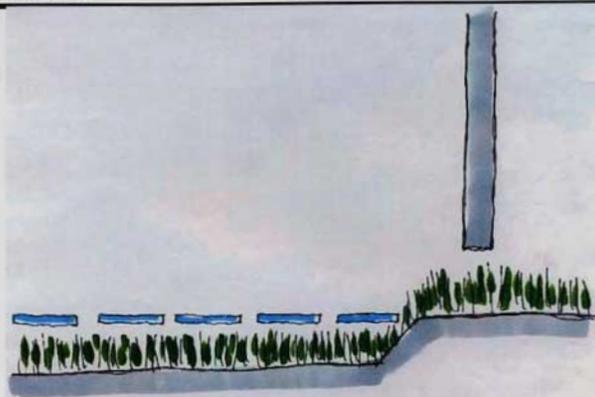
30

This exercise was the first step in exploring what this thesis was trying to convey. The Fischer Administration building on the University of Detroit Mercy's campus was the given site. Only the first floor and plinth of the structure were to be studied. The investigation was to take the first floor of this building, which is a space that is considered to be quantitative and try and find ways to humanize it.

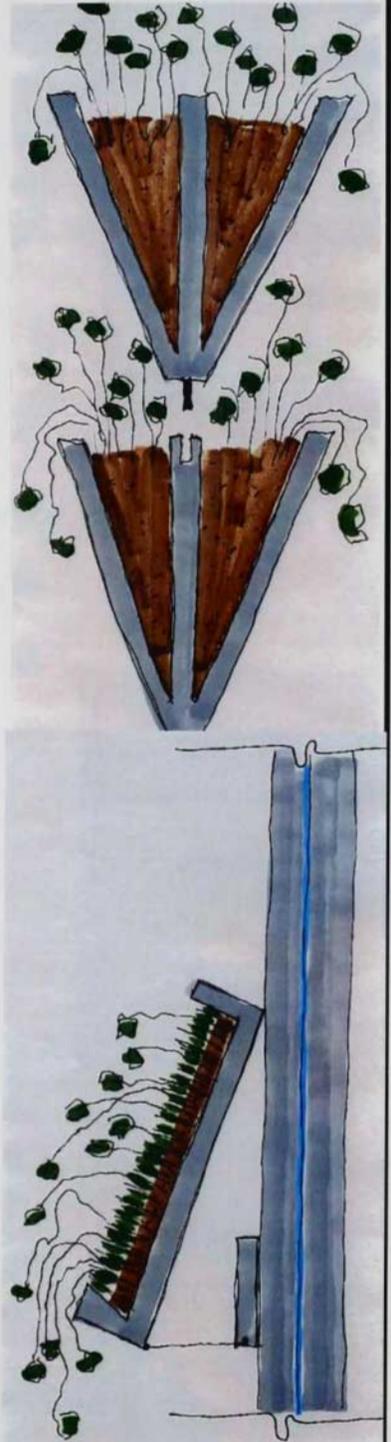
One of the major concerns about typical office buildings today, and also in this case, is that natural light cannot penetrate to the cores of these structures. There is also a lack of connection with the built environment and the natural environment. Therefore the details on the following pages were conceived to explore ways to induce these connections.

The detail on the top of this page is the "Living Floor." It is a perforated clear floor that allows vegetation to grow beneath occupants. Natural ventilation will draw out aromas to fill the office.

The detail on the bottom is the "Filed Garden Wall." This could be a dual interior and exterior wall that houses plantings and or files papers. The exterior piece is perforated to allow the occupant to open a drawer and not only let outside air in, but also pull in the aromas of the plantings with it.

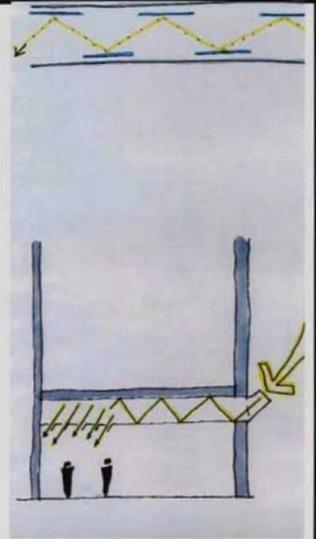


The "Custom Divider" is an alternative to the cubicle, occupants can modify the size shape and height of their space. Vegetation will buffer other phone conversations.



This detail is "Vegetated Cladding." These would be cladding panels that consist of harvested greenery modified into installation panels, possibly being seasonal plantings.

The top drawing is a "Mirrored Light Shaft." It consists of a system of mirrors that transport natural light to the core of the building. The openings would have louvers so the occupant could customize the lighting.

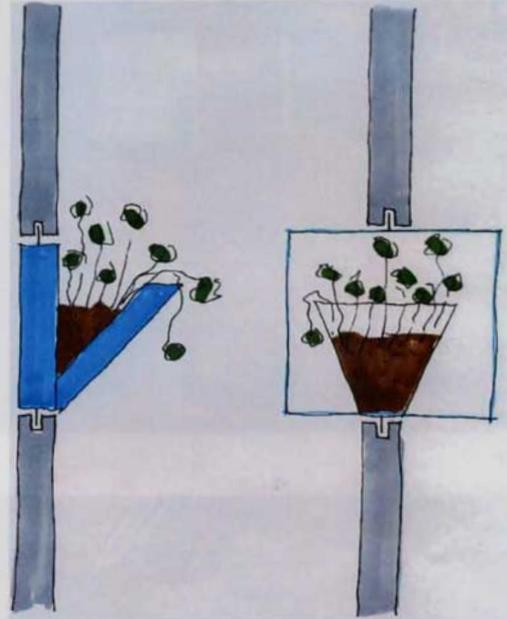


The "Acoustical Veggie Tile" detail will give the typical office room more depth and variety while cleansing the air inside the structure.



The detail, "Plant Chair" is extracted from the floor and the plants very below it allowed to grow "in" the chair, creating an interesting visual condition.

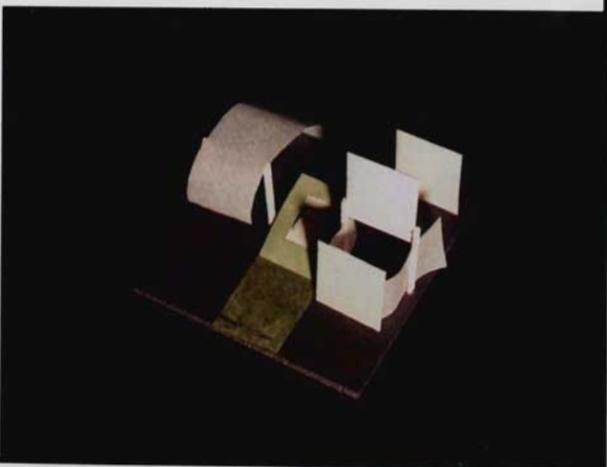
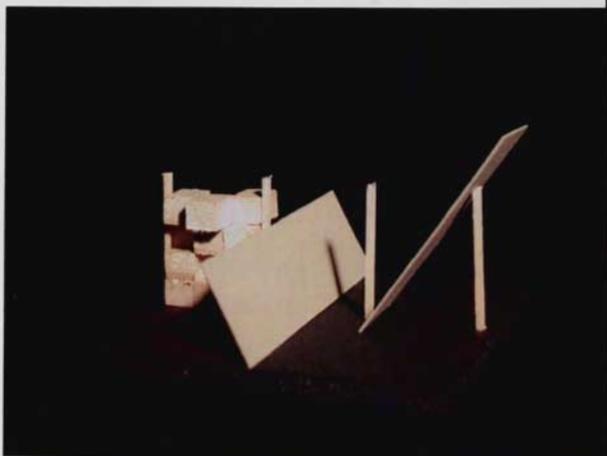
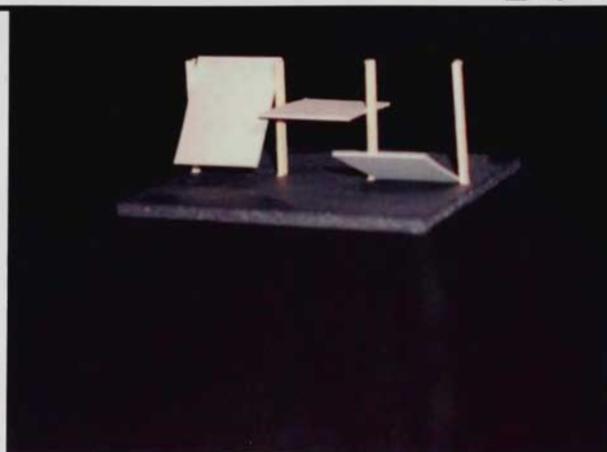
This drawing, "Pivot Cladding" allows for natural ventilation and vegetation to enter the building. It can be maintained by natural light and rain water. These could be food bearing plants.



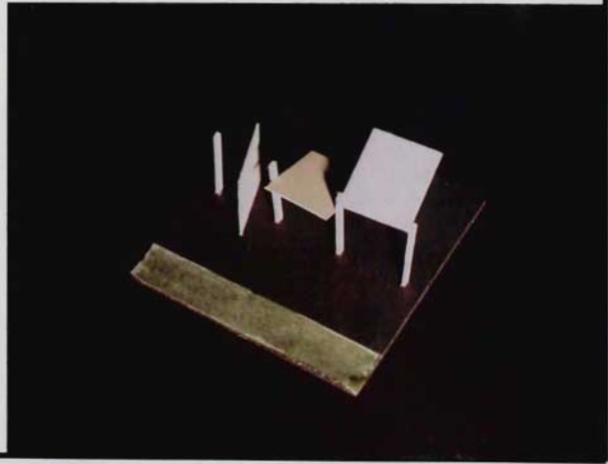
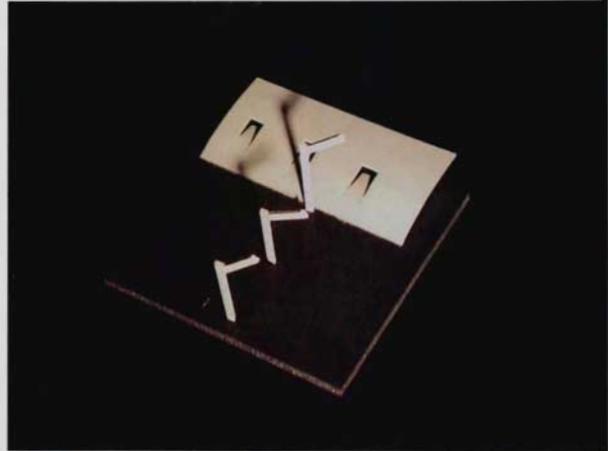
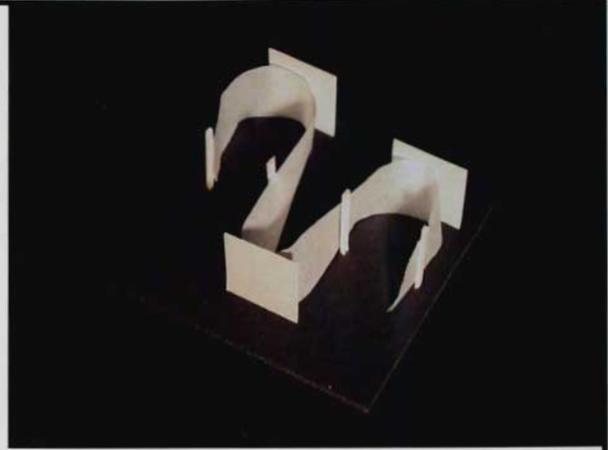
This detail, "Floor Chair" is extruded from the floor and the greenery below is allowed to grow "in" the chair, creating an interesting visual condition.



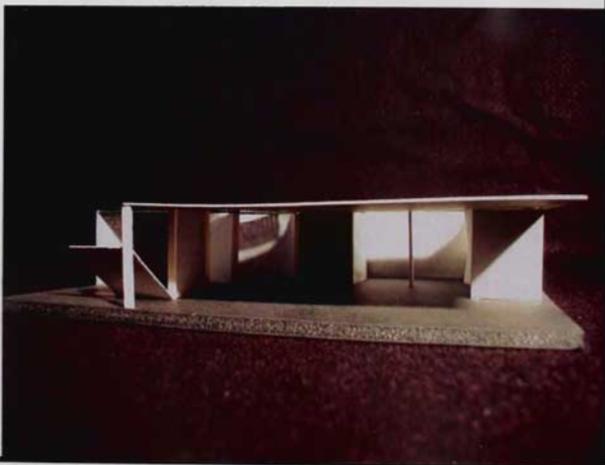
After creating the series of details on the previous pages, the next step of the process was to try and combine these details and alter the way in which the building was currently programmed. The first floor of the Fischer building has columns set on the perimeter every twenty feet on center. The bass wood in these sketch models represents those columns. The first set of details studies only a three column area.



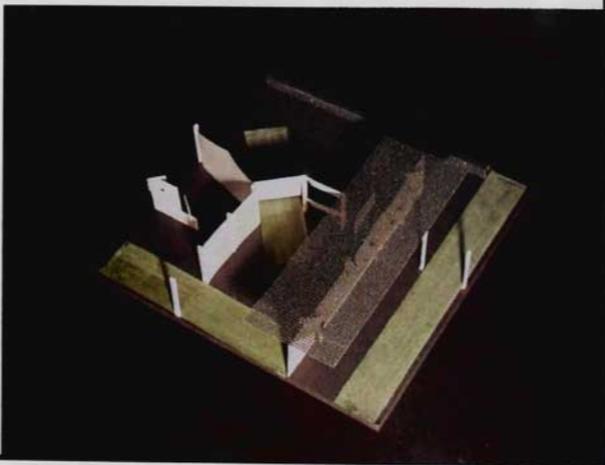
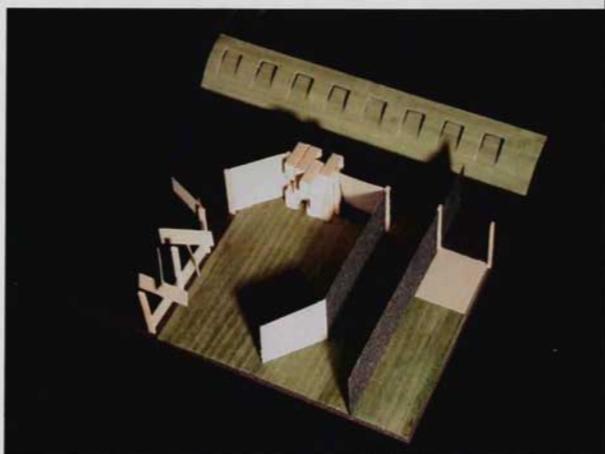
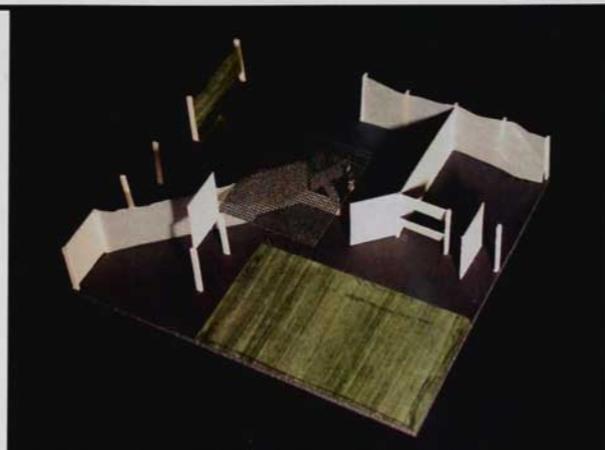
The second set of models that were constructed were similar to the first set, but they were made of a different material. The first set was made of a material that was very soft and pliable, and the second set was made of a material that was very hard and rigid. The purpose of this was to see how the material affected the structure of the model.



The second series of models that were constructed used the same details as the previous set, however this set was focused on a corner condition of the building and plinth. The ultimate goal of this series was to try and blur the edge of the structure and try and create a new condition where there is not a defined edge to the structure.



The third and final set of studies were similar to the previous set, in that they were examining the corner condition of the structure, however they are produced at a slightly larger scale and they go to even farther extremes to blur the edge created by the structure. The existing structure has been altered not only by adding the created details but also by pulling the inside spaces away from the existing structure, but also by pulling the outside spaces in towards the core of the building.



These photos begin to show the type of lightness these spaces can possess even though they have floors stacked like pancakes above them.

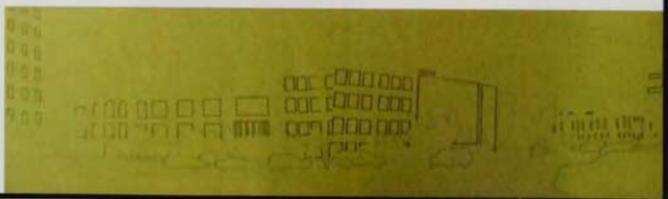


The site chosen for this project is located in heart of downtown Ann Arbor. It lies on the southwest corner of Washington and Thayer. This area is heavily influenced by U of M's campus and includes a mixture of retail, office and residential buildings.

On the south side of the site there is a parking structure. To the west, the site butts against the backsides of a recently constructed 8 story apartment complex with a restaurant occupying the first floor, and several other shops adjacent to it.

This area of Ann Arbor is dense, yet there are still some small parks and courtyards used mainly by students to circulate from building to building. There is a mixture of both foot and vehicular traffic in the area. It is a common occurrence to see someone riding a bike to get to class or for enjoyment, and it is also just as common to see individuals running for exercise.

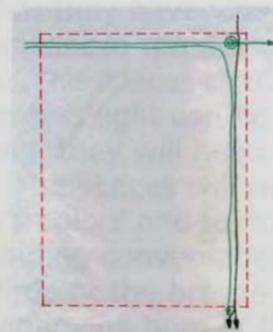
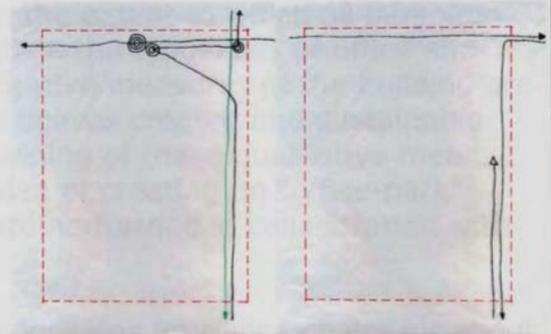
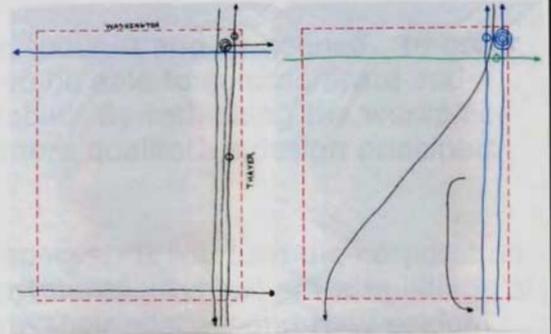
Since this site is located in a fairly dense pedestrian friendly city, with a temperate climate, this will create a number of different situations that would affect the design of the structure, and will create a good vehicle for the design project. The density will also assist in allowing the program of the project to sprawl out and attach, include, or re-program surrounding spaces and structures.



To determine the best possible site for this thesis, the site at Washington and Thayer was compared to neighboring sites with the abstract study at right. The study was designed to determine which site had the highest amount of pedestrian traffic during the afternoon hours.

The red dashed line on each page marks the general perimeter of the site. Each sheet represents roughly five minute of time. Then as a pedestrian passes, he or she is marked using a line and arrow. The color of the arrow annotates whether they were walking (black), running (green), or biking (blue). The line ends with an arrow the tells what direction the person passed thru the site in.

The circles annotate when an individual stopped on their route. The points are marked with one, two, or three circles. One meaning that they stopped for one to ten seconds. Two circles means that they stopped for eleven to thirty seconds. Three circles means that they stopped for a period of time longer than thirty seconds.



The typical workplace is one that needs to be re-thought and re-defined. In order to maintain a high level of efficiency workers need to be able to communicate and collaborate easily and at the same time be comfortable. By rethinking the workplace with these ideas, this thesis will try to incorporate more qualitative design principals into the structure.

The new workplace will have fewer segregated spaces. It will turn the corporation into a community rather than a compilation of departments. Typical office buildings of today offer little in terms of incorporating nature into their spaces, and they seldom use sustainable methods in their designs. This new archetype will provide an environment rich with opportunities for creativity. This project will search to find a way to make the occupant feel comfortable anywhere on the site. Whether they are inside or out, they should feel as though they do not want to leave. If they are sitting in a waiting room, they should not want to get up. If the employee is diligently working at their desk they should feel a connection with nature even when dealing with stress. The project will be evaluated based on the extent to which all inhabited spaces can be seen as humanistic spaces that combine the typologies of office and park, or a space in which the qualitative and quantitative measures of the building are intertwined to form a hybrid. The amount of green spaces created and sustainable techniques introduced along with the overall intertwining of these qualitative means will determine how successful the project is. The idea of creating an "office-park" implies a lack of structure, a place in which tasks are performed in collaboration with others in a playful or soothing environment.

~Occupants will be sitting at their desks in upright positions, in rolling chairs for about 7 hours a day. This will not be a straight 7 hours as they will get up to use the restroom, eat lunch or grab a coffee or water, use other office equipment not readily available at their desks, and to hypothesize and present solutions with co-workers. Typically they will be talking on the telephone or working on computers. They will perform small body movements by moving in their chairs to retrieve books or documents, or to converse with fellow employees. The positions in which they sit will want to be elevated above their work stations so that they have visual connections with their surroundings. This will also become important in the design when a seated person interacts with an individual that is standing. The spaces that these tasks are performed in will have to be moderately lit, since excess light can be bad for viewing monitors. These spaces will not want to be confining, they will need cooler temperatures, since the equipment gives off heat. The spaces will want to have high ceilings and comforting colors and textures, nature's colors and textures. These areas will need sound absorbing materials to keep surrounding conversations and noises muffled. Access to nature's sounds, like chirping birds or the breeze in the trees would be very soothing and complimentary to the annoying hum of the machines.

~Occupants of this complex will be standing in hallways or conference rooms, discussing phone conversations, or presenting proposals to the executives of the company or perhaps clients. These situations may continue for mere seconds or possibly even for hours. In areas that this occurs the spaces will want to be similar to the sitting spaces in that they want to be cool and large in scale so that the occupant does not feel confined. However, these spaces will need to have materials that reflect the sound so their voices are clearly heard. These areas will also need flooring materials that cushion the feet of the occupant because he or she could be standing and moving while they converse or make presentations.

~Since you cannot smoke in public buildings of this kind, employees will be venturing outdoors to light up, some probably every hour. The consideration for this space is two-fold. These areas need to have some shaded areas that the smoker can take refuge under during the hot or rainy days. These areas will also need to provide protection from the wind in the winter months. These people will probably remain outdoors for at least 3 minutes, when they will then venture back to their desks to continue working. These spaces should be very dynamic to help evoke conversation between individuals as they may take breaks in pairs or small groups and also inspire creativity with views to the surrounding cityscape.

~People will be walking from space to space inside the building. There will not be an instance when they will want to feel confined. In its entirety the space should be an open space. The use of different flooring materials to differentiate zones in the building will be beneficial to the occupant. It will introduce change in a tactile form to the occupants. The idea of never having a dead-end view is one that needs to be incorporated into its circulation pattern.

~People that enter onto the site should have a variety of spatial conditions to pass through or by. They should be given both open and covered spaces. They should be given the option of standing or sitting in these spaces for an undisclosed amount of time. The goal would be that they enjoy the scenes that the building creates and remain on the site for hours. The site should provide them with visual references to the surrounding greenery. This may be done visually as well as physically; the terrain could shift in elevation and even in substance. They may be consuming food, listening to music, or reading a paper while they stand, sit, or possibly lay. This will set up social interactions where people will converse, and children may laugh and play games.

~In the vicinity of the site, people will notice the buildings, but will they understand them? They will wait for the bus to stop, or they will be sitting at a red light waiting for the right to proceed to their destination. These people will be tired because it's early in the morning or because they have just left a full day of work and are going home. The best way to impact their memories is to have a building that is ever changing. Perhaps the building changes colors with the time of day or season. Maybe it even has sustainable devices that move and make the skin come to life. Perhaps these movements create noises that spark interest to the passers-by. In a sense, the building could be used as a marketing tool.

The ideal qualities that a given site would have for this thesis to be tested would be one in which you might find in almost every lot in a dense city. The location should be one that has proximity to other office buildings, preferably high-rise buildings. It should be situated in a dynamic cityscape with high traffic areas, both pedestrian and vehicular. The site that would best fit this thesis is one that has a variation in climate throughout the year.

QUANTITATIVE STATEMENT

PUBLIC

ENTRANCE
 WORK SPACE
 COLLABORATION
 CIRCULATION

SERVANT

KITCHEN
 STORAGE
 MECHANICAL
 I.T. DEPT.

INDIVIDUAL

KITCHEN
 I.T. DEPT.
 CIRCULATION
 ACCOUNTING
 ENTRANCE
 COLLABORATION
 STORAGE

PRIVATE

MECHANICAL
 ACCOUNTING
 COLLABORATION
 WORK SPACE
 KITCHEN
 STORAGE
 I.T. DEPT.

SERVED

CIRCULATION
 COLLABORATION
 ENTRANCE
 WORK SPACE
 ACCOUNTING

COLLECTIVE

COLLABORATION
 WORK SPACE

QUANTITATIVE STATEMENT

SPACES WILL BE DIVIDED AMONGST SEVEN FLOORS AND A RE-PROGRAMMED PARKING STRUCTURE.

	76986GSF
ENTRANCE	760sf
(2)ENTRY VESTIBULE	150sf
(2)RECEPTION DESK	80sf
(2)RESTROOMS	150sf
OFFICE SPACE	22500sf
(3)OFFICE SPACE FOR 30 EMPLOYEES	7500sf
COLLABORATION	3700sf
(4)CONFERENCE ROOM/ SPACE	300sf
(5)WORK/ TEAM ROOM/ SPACE	500sf
MECHANICAL	914sf
ELEVATOR SERVICE ROOM	64sf
PHONE/ ELECTRICAL ROOM	50sf
HVAC	800sf
KITCHEN/ CAFÉ	4900sf
COOKING/ CLEANING SPACE	100sf
CAFÉ	800sf
DINING SPACE	4000sf
STORAGE	1000sf
(5)JANITOR STORAGE ROOM	200sf
BUSINESSES	4100sf
DAY CARE	2000sf
BANK	1500sf
BARBER	600sf
PUBLIC SPACES	14500sf
GYM	1600sf
TRACK	5000sf
POOL	1500sf
MEDITATION SPACES	2000sf
(M+F)LOCKEROOMS	4000sf
(M+F)RESTROOMS	400sf
CIRCULATION	16612sf
FIRE STAIRS, ELEVATORS, CIRCULATION STAIRS, HALLWAYS, BALCONIES, ATRIUMS (@ 30% TOTAL PROGRAM)	
APARTMENTS	8000sf
(4)APARTMENT	2000sf
PARKING	EXISTING
99 SPACES	

SPACE NAME	CAPACITY	# OF UNITS	NSF/UNIT	TOTAL NET AREA
ENTRANCE	X	2	380	760

PURPOSES / FUNCTIONS

THIS SPACE WILL BE A WELCOMING CENTER FOR EVERYONE THAT ENTERS THE BUILDING. SINCE THE BUILDING IS MULTI-STORIED THERE WILL BE AN ENTRANCE SPACE ON EACH FLOOR

ACTIVITIES

THESE TWO SPACES WILL BE USED AS NODES. ONCE THE PEDESTRIAN GAINS ACCESS TO THE STRUCTURE, THEY WILL THEN HAVE TO MAKE A DECISION AS TO WHERE TO GO FROM THERE.

SPATIAL RELATIONSHIPS

THIS SPACE WILL WANT TO BE AT THE CORE OF THE STRUCTURE. EACH FLOOR ENTRANCE WILL NEED TO BE POSITIONED SO THAT OCCUPANTS MUST PASS BY THE RECEPTION DESK FOR SECURITY PURPOSES. ANOTHER BENEFIT OF PLACING IT HERE, WILL ALLOW OCCUPANTS TO EASILY FAN OUT IN ANY DIRECTION WHEN THEY REACH THE APPROPRIATE FLOOR. THIS WILL ALSO ALLOW THE OCCUPANTS TO INTERACT WITH MORE OF THE BUILDING.

SPECIAL CONSIDERATIONS

THE ENTRANCE IS THE FIRST INTERNAL PART OF THE BUILDING AN OCCUPANT EXPERIENCES. THIS SPACE MUST SET THE ONE FOR WHAT IS TO FOLLOW. THIS SPACE WILL WANT TO BE OPEN AND HAVE LONG, DYNAMIC VIEWS. THESE AREAS MAY BE ACCESSED BY ELEVATORS, STAIRS, AND POSSIBLY RAMPS.

EQUIPMENT / FURNISHINGS

FURNITURE SHOULD BE OUT OF THE CIRCULATION PATHS AND IN GROUPINGS. ALL FURNISHINGS WILL BE PERMANENT.

BEHAVIORAL CONSIDERATIONS

OCCUPANTS WILL USE THESE SPACES AS NODES OF CIRCULATION. THESE AREAS WILL SERVE AS PIVOT POINTS FOR INHABITANTS MOVING THROUGHOUT THE STRUCTURE.

<u>SPACE NAME</u>	<u>CAPACITY</u>	<u># OF UNITS</u>	<u>NSF/UNIT</u>	<u>TOTAL NET AREA</u>
OFFICE SPACE	30	3	7500	22500

PURPOSES / FUNCTIONS

WORKERS WILL BE ARRANGED INTO SMALL GROUPS; THERE WORK SPACES WILL BE GROUPED TO HAVE THE ABILITY TO COLLABORATE WITH ONE ANOTHER, BUT IT WILL BE DONE IN A MANNER THAT STILL ALLOWS FOR SOME PRIVACY TO OCCUR. THESE OFFICES WILL ALSO CONTAIN A SPACE FOR NECESSARY MACHINERY, SUCH AS PLOTTERS AND COPY MACHINES. EACH OFFICE WILL ALSO CONTAIN A RECEPTION SPACE.

ACTIVITIES

EMPLOYEES WILL WORK IN BOTH PRIVATE AND COLLABORATIVE MANNERS. PHONE CONVERSATIONS WILL NEED PRIVACY, WHILE COLLABORATION WILL NEED FLEXIBILITY. OCCUPANTS WILL WORK TOGETHER BOTH SITTING AND STANDING, AND WITH SOME STANDING WHILE OTHERS SIT. USE OF PLOTTING AND COPY MACHINERY WILL ALSO OCCUR AT HIGH LEVELS.

SPATIAL RELATIONSHIPS

THESE OFFICES WILL NEED TO BE CENTRALLY LOCATED TO ALL OF THE AMENITIES THE BUILDING OFFERS. ACCESS TO THE ATRIUMS, BALCONIES, COURTYARDS, FOUNTAINS, ETC. WILL WANT TO BE IN CLOSE PROXIMITY TO ALL WORKERS. EACH STATION SHOULD HAVE AT A MINIMUM A VIEW TO THE OUTSIDE OF THE BUILDING. THERE WILL ALSO NEED TO BE AN INTRA-BUILDING RELATIONSHIP BETWEEN ALL OF THE OFFICES. THIS MAY OCCUR ALONG A VERTICAL AND HORIZONTAL SPINE.

SPECIAL CONSIDERATIONS

OCCUPANTS WILL WANT TO HAVE ACCESS TO THE OUTSIDE ELEMENTS. ACCESS TO LIGHT, SOUND; AIR, ETC. WILL BE A NECESSITY FOR EACH WORKSTATION. NATURAL LIGHT WILL BE THE PRIMARY SOURCE OF LIGHT IN THE WORK STATIONS. THE PARTS THAT ASSEMBLE THIS SPACE WILL NEED TO FLEXIBLE, MALLEABLE, AND STABLE ALL AT SAME TIME. ALL ELEMENTS SHOULD BE EXAMINED FOR CONSTRUCTING A CREATIVE ENVIRONMENT.

EQUIPMENT / FURNISHINGS

FURNITURE SHOULD BE COMFORTABLE AND MANEUVERABLE.

BEHAVIORAL CONSIDERATIONS

EMPLOYEES WILL SPEND CONSIDERABLE AMOUNTS OF TIME IN THESE SPACES; THEY NEED TO BE HUMANIZED SPACES.

SPACE NAME	CAPACITY	# OF UNITS	NSF/UNIT	TOTAL NET AREA
COLLABORATION	X	4	1500	6000

PURPOSES / FUNCTIONS

THESE SPACES CONSIST OF BOTH PUBLIC AND PRIVATE AREAS. EACH FLOOR WILL NEED CONFERENCE ROOMS TO ALLOW FOR PRIVATE MEETINGS. EACH FLOOR WILL ALSO NEED TO HAVE TEAM ROOMS FOR EACH FLOOR'S POD. A SYSTEM OF COURTYARDS, BALCONIES, AND ATRIUM SPACES WILL CONNECT THESE PIECES TO FOR A WHOLE. THESE SPACES SHOULD HAVE A CLOSE TO A 1 TO 1 RATIO WITH THE WORK SPACES.

ACTIVITIES

INSIDE OF THE CONFERENCE AND TEAM ROOMS, THERE MAYBE CONFERENCE CALLS OCCURRING, OR SIMPLY FACE TO FACE INTERACTION. THERE WILL ALSO NEED TO BE AMENITIES TO ALLOW FOR AUDIO AND VISUAL PRESENTATIONS TO OCCUR. THE BALCONIES, ATRIUMS, AND COURTYARDS, WILL ALLOW EMPLOYEES TO GET AWAY FROM WORK WITHOUT LEAVING THE BUILDING. THESE SPACES MAY ALLOW FOR MEDITATION, GARDENING, OR SIMPLY INTERACTION WITH NATURE, AND FRESH AIR.

SPATIAL RELATIONSHIPS

THESES SPACES WILL NEED TO OCCUR BOTH ALONG THE INTERIOR AND PERIMETER OF THE STRUCTURE. THE SPATIAL RELATIONSHIPS NEED TO RELATE BOTH HORIZONTALLY AND VERTICALLY. MEANS OF DIRECT AND INDIRECT ACCESS TO NATURE MUST OCCUR IN THESE AREAS.

SPECIAL CONSIDERATIONS

THE ATRIUMS, COURTYARDS, AND BALCONIES ARE GOING TO BE GREEN SPACES. FOR THESE SPACES TO THRIVE THE BUILDING ENVELOPE MUST ALLOW FOR NATURAL LIGHT TO FLOOD ALL OF THESE SPACES, AND POSSIBLY EVEN RAINWATER.

EQUIPMENT / FURNISHINGS

THESE SPACES WILL NEED TO HAVE A VARIETY OF COMFORTABLE SEATING ARRANGEMENTS. THE IMPLEMENTATION OF FOUNTAINS, PONDS, AQUARIUMS, ETC. WILL BE BENEFICIAL TO THE INSPIRATION OF THE OCCUPANTS.

BEHAVIORAL CONSIDERATIONS

INHABITANTS WILL SEEK THESE SPACES AS AREAS OF RETREAT AND POSSIBLY FOR PRIVATE MEETINGS.

<u>SPACE NAME</u>	<u>CAPACITY</u>	<u># OF UNITS</u>	<u>NSF/UNIT</u>	<u>TOTAL NET AREA</u>
MECHANICAL	X	4	300	1200

PURPOSES / FUNCTIONS

THESE SPACES WILL BE USED TO HOUSE ALL OF THE NECESSARY MECHANICAL AND ELECTRICAL WORKINGS OF THE BUILDING. THIS WOULD ALSO INCLUDE THE MECHANICAL ROOM FOR THE ELEVATOR.

ACTIVITIES

THESE ROOMS WOULD BE SELDOM ACCESSED. WHEN THEY ARE, IT WOULD SIMPLY BE FOR SERVICE OR MAINTENANCE OF THE BUILDINGS SYSTEMS.

SPATIAL RELATIONSHIPS

THE MECHANICAL SPACES DO NOT PROVIDE THE OCCUPANTS WITH ANY QUALITATIVE MEANS. THEY SHOULD BE HIDDEN INSIDE OF THE BUILDINGS PLAN AS BEST AS POSSIBLE. THEY DO NEED TO BE POSITIONED SO THAT SERVICE CAN HAVE FULL ACCESS TO THEM. THESE ROOMS MAY WANT TO FORM A SOLID CORE VERTICALLY THROUGH THE BUILDING FOR MEANS OF VERTICAL SERVICE.

SPECIAL CONSIDERATIONS

THESE ROOMS MAY WANT TO FORM A SOLID CORE VERTICALLY THROUGH THE BUILDING FOR MEANS OF VERTICAL SERVICE.

EQUIPMENT / FURNISHINGS

THESE ROOMS WILL HOUSE THE NECESSARY BUILDING HVAC COMPONENTS. THE AREAS

WILL NEED TO HAVE REGULATED TEMPERATURE AND HUMIDITY LEVELS.

BEHAVIORAL CONSIDERATIONS

EASY ACCESS WILL CREATE A PLEASING WORKING ENVIRONMENT FOR SERVICEMEN.

<u>SPACE NAME</u>	<u>CAPACITY</u>	<u># OF UNITS</u>	<u>NSF/UNIT</u>	<u>TOTAL NET AREA</u>
ACCOUNTING	2	1	200	200

PURPOSES / FUNCTIONS

THIS SPACE WILL BE A WORKING ENVIRONMENT FOR TWO EMPLOYEES. THE AREA WILL NEED PHONE, FAX, COPY, AND COMPUTER ACCESS. THE EMPLOYEES WILL RUN PAYROLL AND COLLECTIONS FOR THE FIRM HERE.

ACTIVITIES

THE TWO WORKERS WILL MAKE PHONE CALLS AND CRUNCH NUMBERS WITH THEIR COMPUTERS OR CALCULATORS. THEY WILL ALSO NEED TO FILE PAPERS FOR RECORDS KEEPING.

SPATIAL RELATIONSHIPS

THIS ROOM WILL NEED TO HAVE CLOSE ACCESS TO THE STORAGE / IN HOUSE FILING SPACE. THEY WILL NEED IMMEDIATE ACCESS TO OLDER FILES FROM TIME TO TIME.

SPECIAL CONSIDERATIONS

THIS ROOM WILL ALSO NEED TO HAVE DIRECT AND INDIRECT MEANS OF INTERACTING WITH NATURE. SINCE THE PROGRAM CONSISTS OF ONLY TWO EMPLOYEES, THE SPACE SHOULD OCCUR ALONG THE BUILDINGS PERIMETER TO ENHANCE ITS ENGAGEMENT OF THE SITE.

EQUIPMENT / FURNISHINGS

THE ACCOUNTING OFFICE NEEDS TO HOUSE TYPICAL OFFICE FURNITURE. DESKS, CHAIRS, AND FILES WILL BE PLACED HERE BUT IN A WAY THAT DOES NOT FORM A WALL BETWEEN EMPLOYEES. THE FURNISHINGS NEED TO BE ARRANGED IN A MANNER TO CREATE COMMUNITY.

BEHAVIORAL CONSIDERATIONS

MOVEMENT IN THIS SPACE WILL BE FAIRLY MINIMAL.

<u>SPACE NAME</u>	<u>CAPACITY</u>	<u># OF UNITS</u>	<u>NSF/UNIT</u>	<u>TOTAL NET AREA</u>
KITCHEN/ CAFE	100	1	4900	4900

PURPOSES / FUNCTIONS

THE KITCHEN WILL BE USED TO STORE FOOD BROUGHT TO WORK BY EMPLOYEES. IT WILL ALSO SERVE AS BOTH AN AREA TO HEAT ITEMS, COOK ITEMS, FULLY PREPARE MEALS, AND DINE. THIS SPACE WILL ALSO INCLUDE A PRIVATE CAFÉ WHERE COOKED FOOD AND BEVERAGES CAN BE PURCHASED.

ACTIVITIES

THIS SPACE WILL BE USED AS A BREAKFAST, LUNCH AND DINNER SPACE. THIS SPACE WILL BE AVAILABLE FOR OFFICE EMPLOYEES AND STUDENTS AND WORKERS IN THE AREA.

SPATIAL RELATIONSHIPS

THE KITCHEN WILL NEED TO BE POSITIONED AWAY FROM THE MAJOR WORKINGS OF THE OFFICE. FILLING THE OTHER SPACES WITH AROMAS FROM THE FOOD WILL NOT BE VERY PRODUCTIVE. THIS SPACE SHOULD BE SPREAD THROUGH THE PUBLIC SPACES OF THE BUILDING TO INDUCE SOCIAL INTERACTION.

SPECIAL CONSIDERATIONS

WITH ACCESS TO THE OUTDOORS, OCCUPANTS COULD CREATE GARDENS WHERE THEY COULD HARVEST THEIR OWN HERBS AND SPICES THAT WOULD ONLY ENTAIL THE COST FOR THE SEEDS.

EQUIPMENT / FURNISHINGS

THE KITCHEN WILL BE DIVIDED INTO A COOK/ PREP SPACE AND A DINING SPACE. THE FURNITURE AND EQUIPMENT SHOULD BE ARRANGED ACCORDINGLY.

BEHAVIORAL CONSIDERATIONS

MOVEMENT IN THIS SPACE WILL BE DYNAMIC. OCCUPANTS WILL BE MOVING IN ALL DIRECTIONS AND THERE NEEDS TO BE A SPATIAL FREEDOM ABOUT THE PLAN.

<u>SPACE NAME</u>	<u>CAPACITY</u>	<u># OF UNITS</u>	<u>NSF/UNIT</u>	<u>TOTAL NET AREA</u>
STORAGE	x	4	400	1600

PURPOSES / FUNCTIONS

THE STORAGE SPACES CONSIST OF SEVERAL COMPONENTS. THESE SPACES CONSIST OF FILING SPACE, JANITOR SUPPLY AND STORAGE, GENERAL SUPPLIES, AND A SPACE FOR ARCHIVES. THESE WILL EACH BE A NECESSITY AT EACH FLOOR.

ACTIVITIES

THE GENERAL SUPPLY ROOM WILL BE ACCESSED BY ALL EMPLOYEES AND SHOULD BE IN PROXIMITY TO THE PLOTTERS AND COPIERS.

SPATIAL RELATIONSHIPS

THE FILING AND ARCHIVE SPACES SHOULD BE SIMILARLY CONFIGURED TO THE MECHANICAL SPACE. THEY WILL BE SOLID CORES THAT WILL BE SELDOM ACCESSED. THE JANITOR'S CLOSETS WILL ALSO NEED TO BE SITUATED SIMILARLY TO THE MECHANICAL SPACE.

SPECIAL CONSIDERATIONS

THE JANITOR'S CLOSETS WILL BE MAINLY ACCESSED AT NIGHT WHEN THE CLEANING SERVICE DOES ITS ROUNDS.

EQUIPMENT / FURNISHINGS

THESE ROOMS WILL CONSIST OF SHELVING AND FILING CABINETS. TEMPERATURE AND HUMIDITY SHOULD ALSO BE REGULATED IN THESE ZONES.

BEHAVIORAL CONSIDERATIONS

THESE SPACES WILL HAVE A LOW VOLUME OF TRAFFIC. THEY NEED HAVE AN OPEN PLAN AND POSSIBLY DESKS TO LOOK OVER DOCUMENTS.

<u>SPACE NAME</u>	<u>CAPACITY</u>	<u># OF UNITS</u>	<u>NSF/UNIT</u>	<u>TOTAL NET AREA</u>
I.T. DEPT.	2	1	300	300

PURPOSES / FUNCTIONS

THIS ROOM WILL PROVIDE THE I.T. TEAM WILL AN AREA TO BUILD AND SERVICE OFFICE MACHINES. THEY WILL ALSO HAVE THE SERVER LOCATED IN THEIR SPACE.

ACTIVITIES

THE EMPLOYEES WILL MAINLY RUN SOFTWARE TESTS OF THE OFFICE SYSTEMS. SOME HARDWARE CONSTRUCTION WILL OCCUR.

SPATIAL RELATIONSHIPS

THIS SPACE WILL NEED TO BE CENTRALLY LOCATED TO ALLOW FOR EASE OF ROUTING TO INDIVIDUAL STATIONS.

SPECIAL CONSIDERATIONS

THIS AREA NEED TO BE EXTREMELY CLEAN. THE AIR SHOULD BE FILTERED AT A HIGHER LEVEL AND TEMPERATURE AND HUMIDITY CONDITIONS SHOULD BE REGULATED AND MONITORED. THIS SPACE PROBABLY SHOULD NOT BE CARPETED TO AVOID HIGH STATIC LEVELS. THIS SPACE ALSO NEEDS TO BE WELL LIT.

EQUIPMENT / FURNISHINGS

THIS SPACE WILL NEED TO HAVE TWO WORK STATIONS. ADDITIONAL STORAGE UNITS SHOULD BE INSTALLED TO STORE SMALL PARTS AND TOOLS FOR THE SERVICING OF MACHINE AND EQUIPMENT.

BEHAVIORAL CONSIDERATIONS

THIS SPACE WILL NEED TO ACCOMMODATE A HIGH LEVEL OF CHAIR-ROLLING.

SPACE NAME	CAPACITY	# OF UNITS	NSF/UNIT	TOTAL NET AREA
CIRCULATION	X	4	1600	6400

PURPOSES / FUNCTIONS

THE CIRCULATION AREAS IN THE BUILDING ARE COMPRISED OF SEVERAL DIFFERENT SPACES. THE BUILDING WILL NEED TO HAVE TWO FIRE STAIRS, AN ELEVATOR, A CIRCULATION STAIR, AND A SERIES OF HALLWAYS OR NETWORKS.

ACTIVITIES

THESE ZONES WILL ALLOW OCCUPANTS TO FILTER THROUGH THE BUILDING WITHOUT OBSTRUCTION. WALKING AND CONVERSING WILL OCCUR.

SPATIAL RELATIONSHIPS

THESE ZONES WILL NEED TO BE WOVEN INTO THE BUILDING'S PLAN ON ALL LEVELS. THESE SPACES MAY EVEN CREATE HALF OR SUB-LEVELS. THE CIRCULATION ZONES NEED TO BE DISPERSED AND VISIBLE FROM AROUND THE SITE TO INTRIGUE PASSERS-BY.

SPECIAL CONSIDERATIONS

THESE ZONES SHOULD BE LIT NATURALLY. TRAFFIC WILL MOVE IN ALL DIRECTIONS AND SURROUNDING SPACE SHOULD BE DESIGNED TO ELIMINATE BLIND CORNERS.

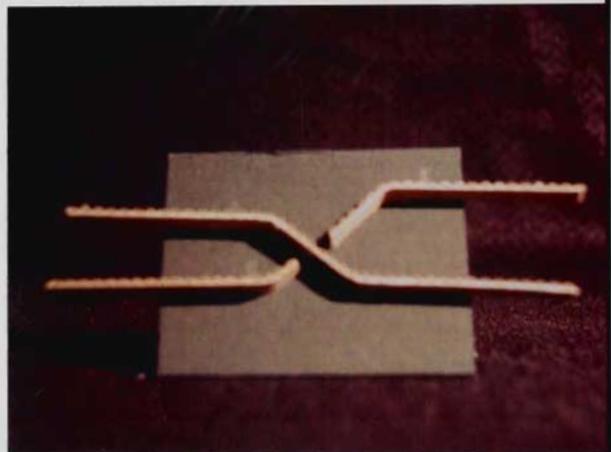
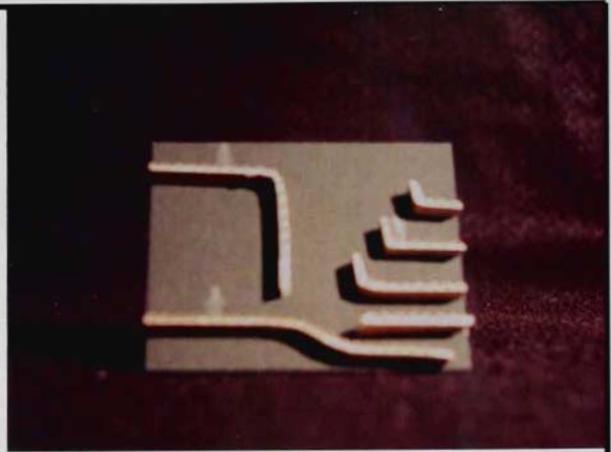
EQUIPMENT / FURNISHINGS

THESE SPACES SHOULD USE A VARIETY OF MATERIALS TO CREATE A TACTILE POTPOURRI.

BEHAVIORAL CONSIDERATIONS

IT SHOULD NOT BE DIFFICULT TO NAVIGATE THESE DYNAMIC PATHS.

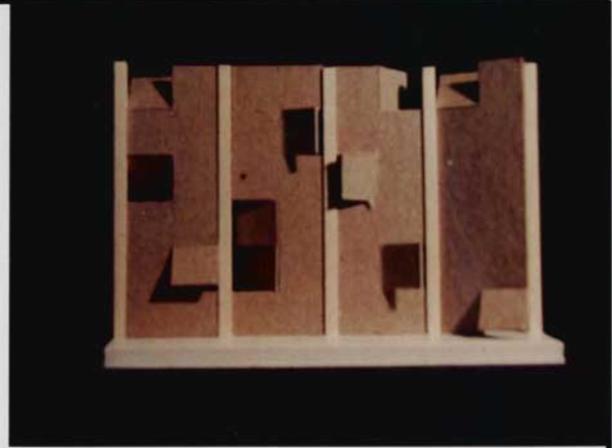
The Springboard was intended to combine all of the work done up to this point and create an architecture. In terms of defining what a qualitative space should be in an office, the first step was to look at how the floors and walls will interact with each other. What would the effect be on the structure if the building became a multi-storied space with balconies, atriums, and ramps that intersect each other.



This model is the design to suggest more of a visual connection that can be produced by altering the wall. An opaque wall could be bent to allow light to enter into a structure or to join spaces indirectly.

The last sketch depicts how the wall could be thought of as a system of curtains. The louvers could be rotated to form a solid wall, they also could be rotated to form a semi-private screen that allows visibility and audible penetration through the wall but does not allow occupants to pass through. The louvers could also be pushed to one end and allow for full movement through each space.

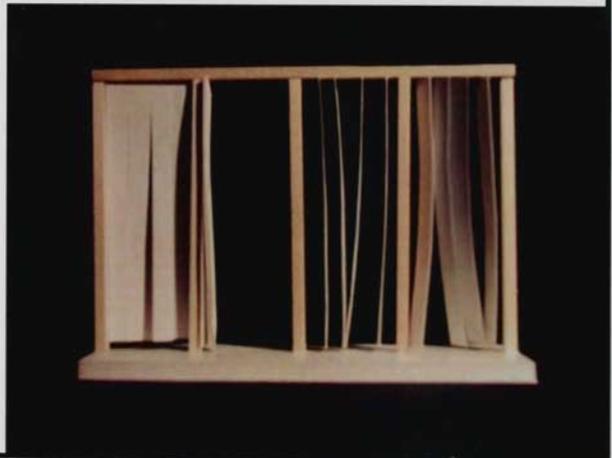
These models were an exploration in how a part of the wall system may function in this newly designed space. The model on the top of the page begins to suggest that the wall is porous, in that it would have panels that could be hinged so they could tilt, and rotate to allow for an inside-outside connection. Although it suggests an opaque material, the material is shown to be comprised of a number of pieces.



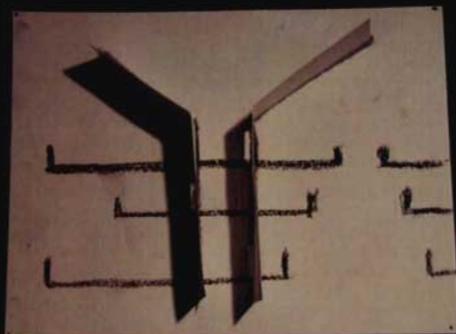
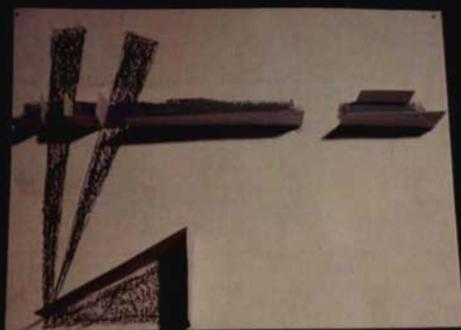
This model in the begins to suggest more of a visual connection that can be produced by altering the wall. An opaque wall could be bent to allow light to enter into a structure or to join spaces indirectly.



The last sketch model displays how the wall could be thought of as a system of curtains. The louvers could be rotated to form a solid wall, they also could be rotated to form a semi-private screen that allows visibility and audible penetrations through the wall but does not allow occupants to pass through. The louvers could also be pushed to one end and allow for full movement through each space.

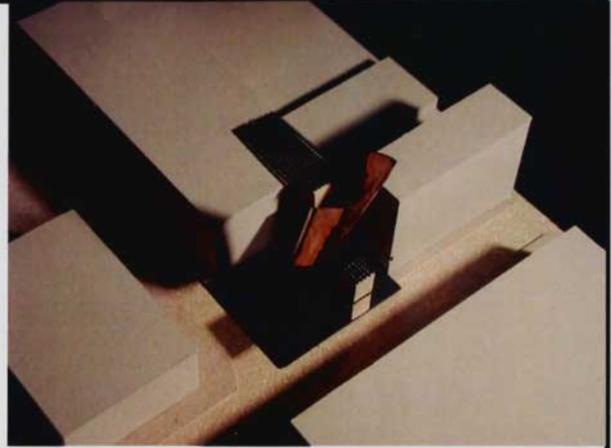


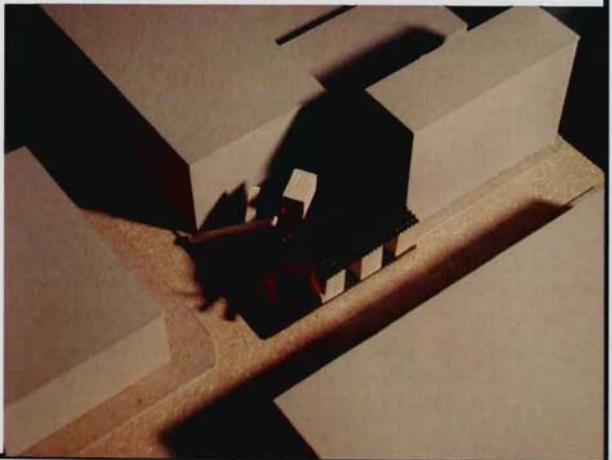
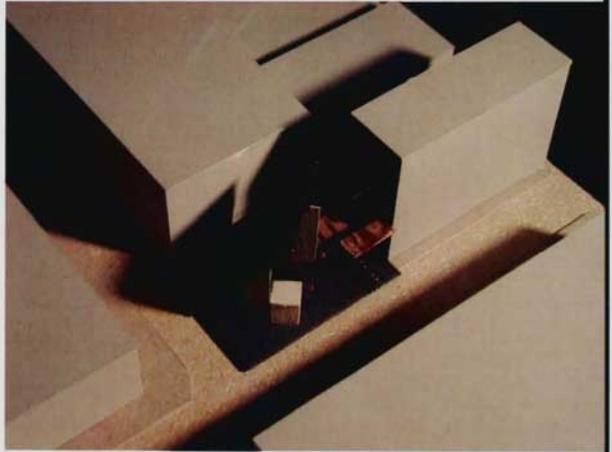
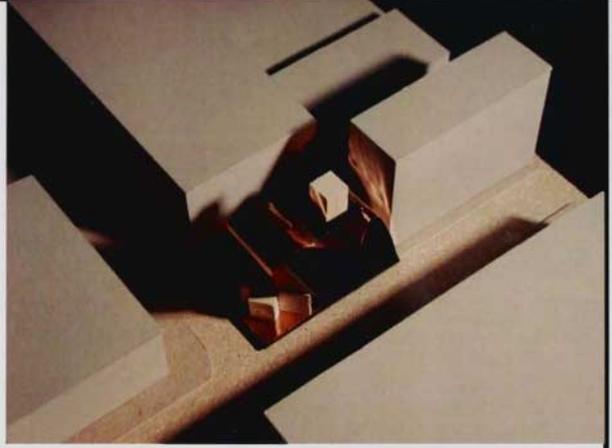
These drawings were composed from a series of earlier sketches produced. The light lined drawings that these were created from were traced and then a speculation was made as to how the sections might look on profile. The different shade of gray attempted to show a depth and the paper extrusions speculated as to how the walls, floors, and ceilings might be construed.



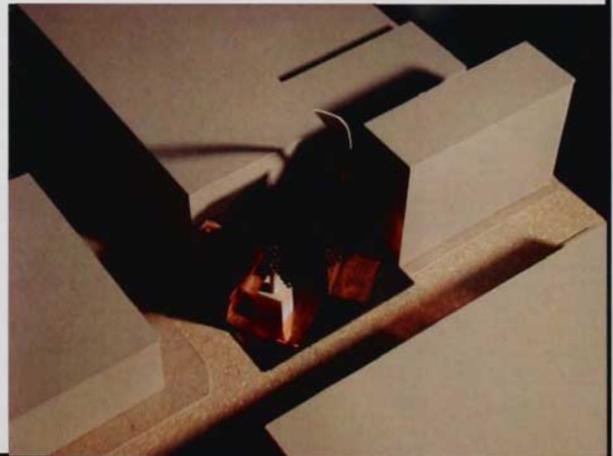
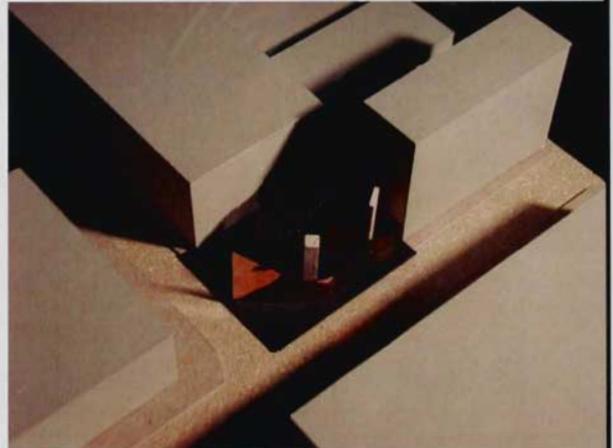
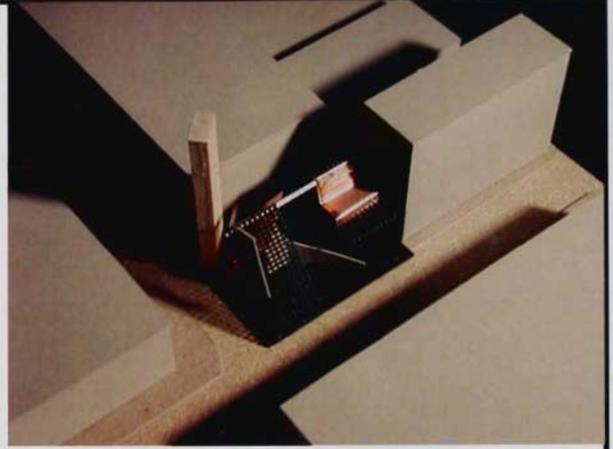
The subsequent step in the process was to look at how the building would engage the site. The first series of models are very sculptural. They do not clearly identify floors or walls, rather, they begin to suggest how the programmatic elements might be placed inside of the site.

The copper material used in these models suggests a gestured movement or circulation space. The screen suggests an area that is open for collaboration and socialization. Lastly, the balsa wood suggest solid spaces or spaces that will be sealed and enclosed, such as mechanical rooms or janitors closets.

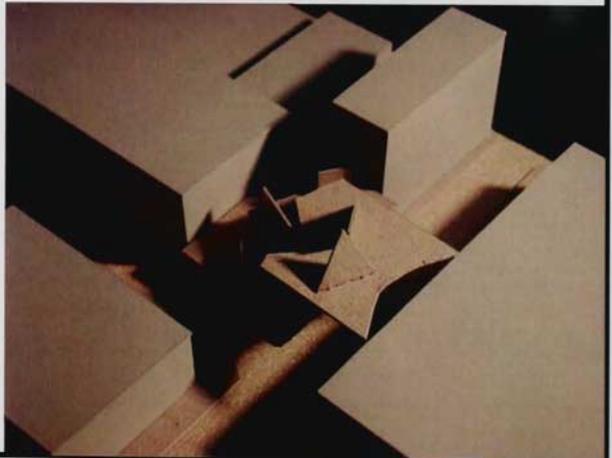
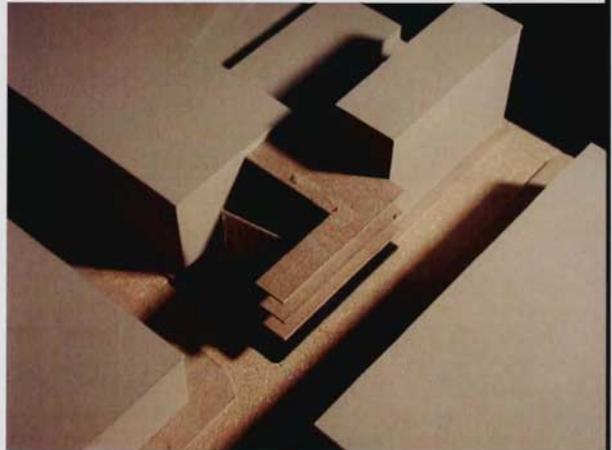
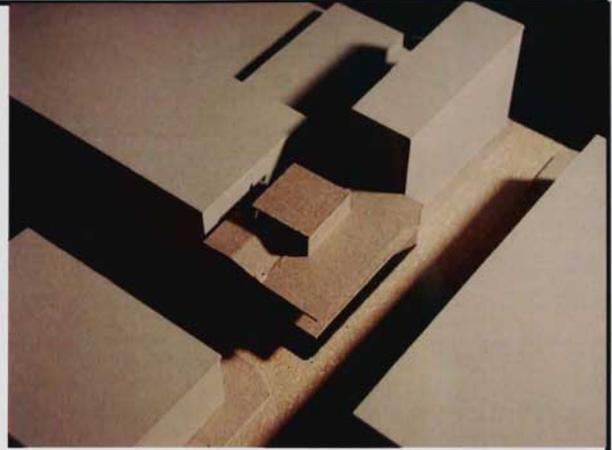




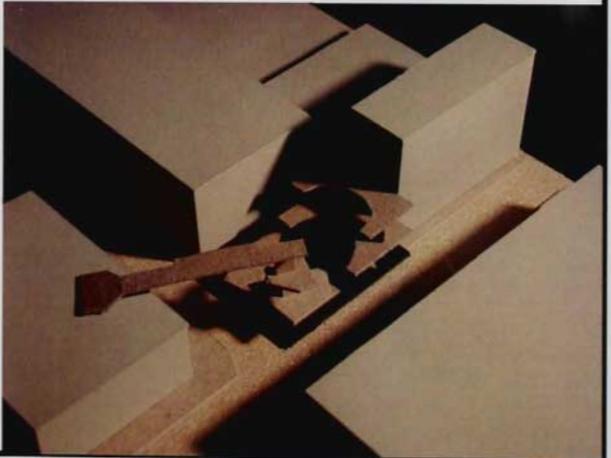
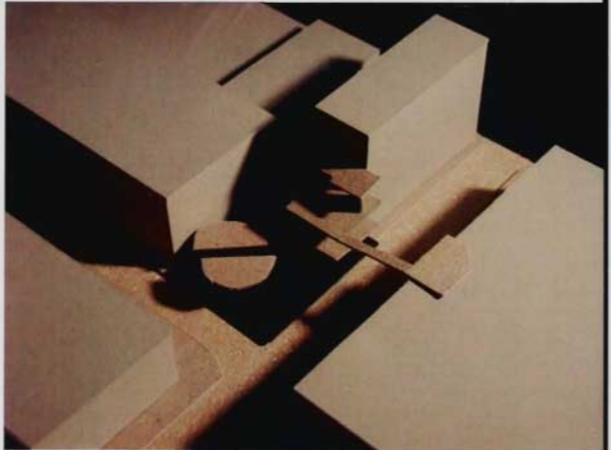
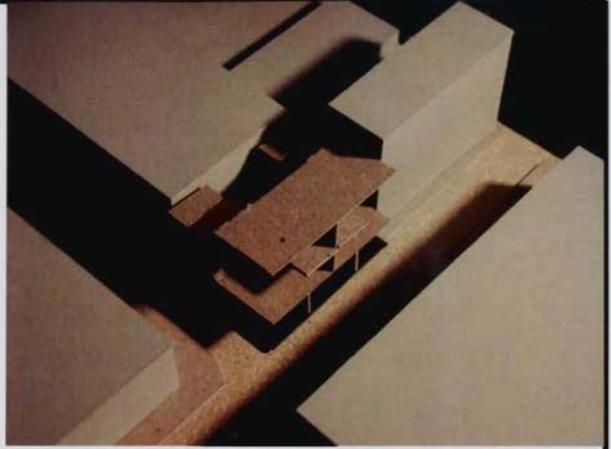
The following pictures show the next set of models that were produced. These models were built without giving any consideration to how the diagrammatic elements would be structured. The models were constructed using a monofore material and the focus was solely on the linear planes of the structure and the relationship of the building to the surrounding structure.



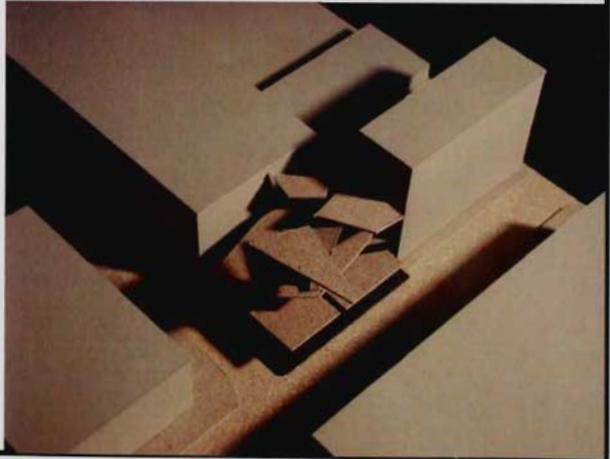
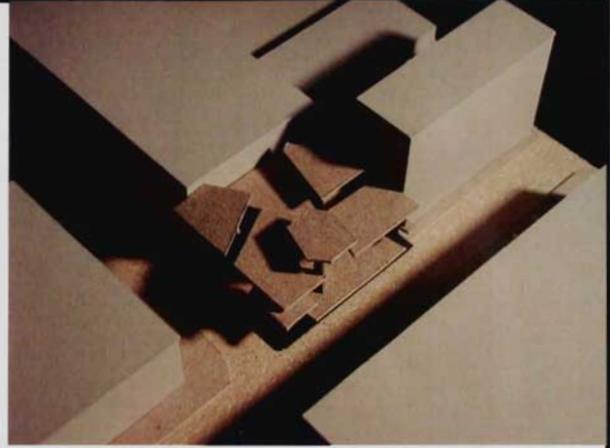
The following pictures show the next set of models that were produced. These models were built without giving much consideration to how the programmatic elements would be structured. The models were constructed using a monotone material and the focus was solely on the floor plates of the structure and the relationship of the building to the surrounding structures.



These models begin to establish connections to surrounding structures. The project may implement re-programming of existing structures. This may be one of the effects the new structure has on surrounding existing elements.



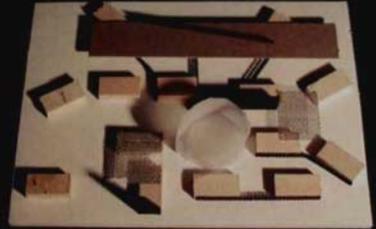
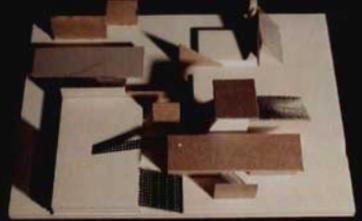
The final two models demonstrate how the office space will want to work with a dynamic floor system. This creates an environment that is more aesthetically pleasing to the building occupants.



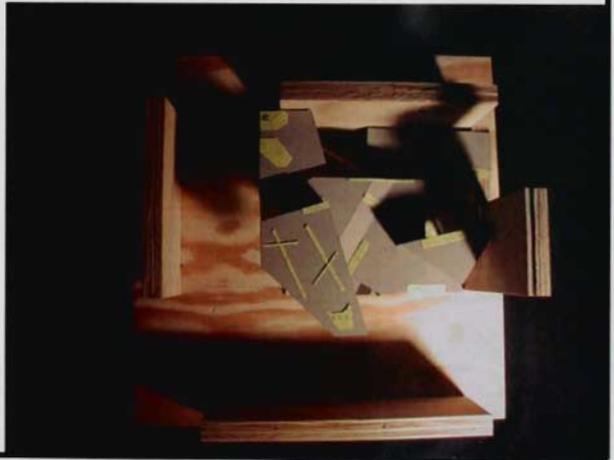
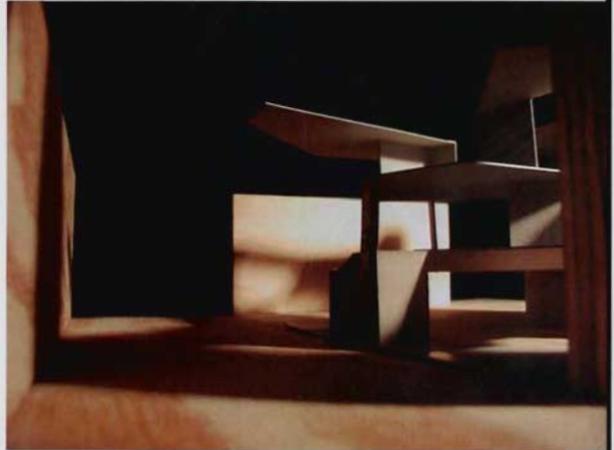
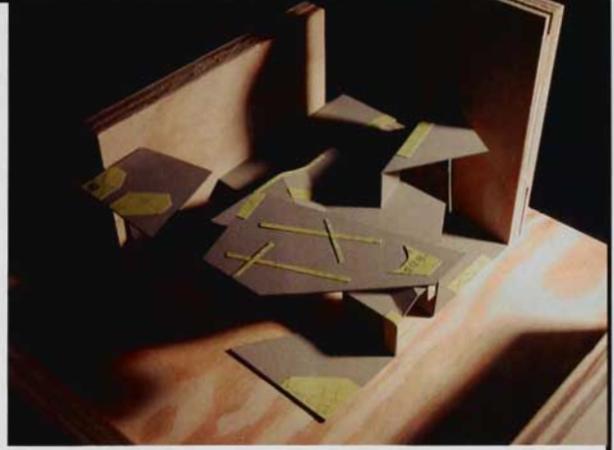
These models were composed at a larger scale and do not relate to the site context. The materials used once again begin to suggest movement, solid spaces, and spaces that are social or semi-permeable.

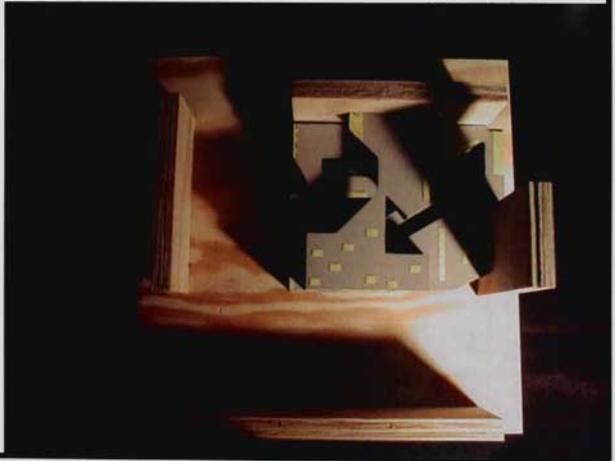
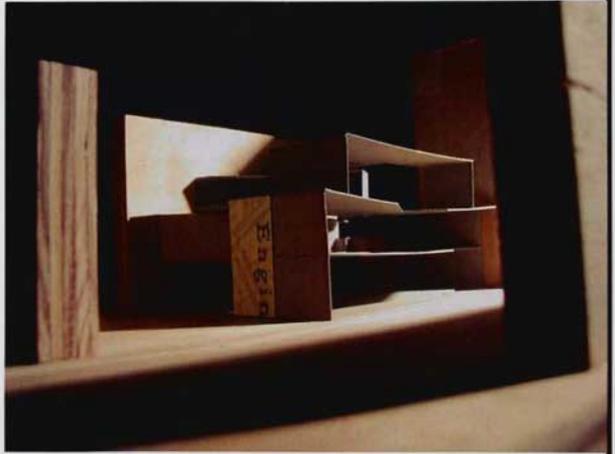


The final set of study models were composed using a more monotone set of materials that do not suggest a programmatic element but rather suggest the overlap, separation, or interlocking of spaces.

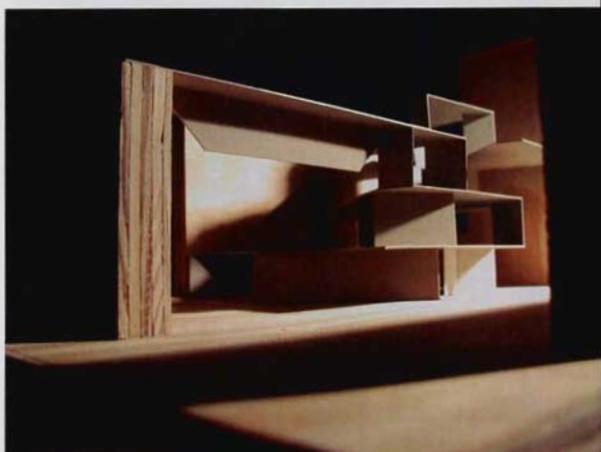
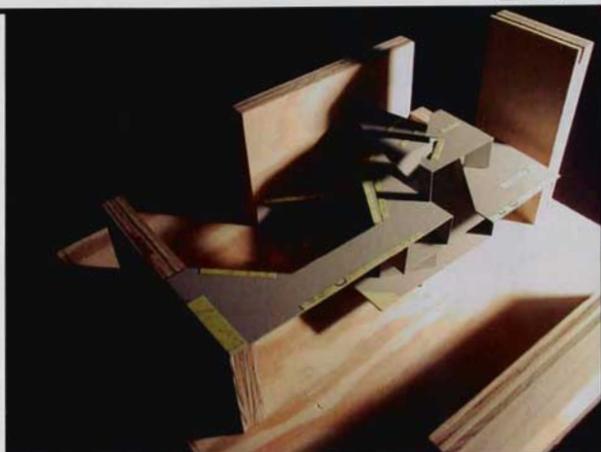


These presentation models were constructed at $1/16'' = 1'-0''$. These models are a culmination of all things explored and learned from the previous sets of models and drawings. The models show how the floor plates would vary, and also begin to suggest how the new structure will attach to surrounding structures and infiltrate or use their spaces. The green paper displays where the vegetated spaces will occur in the structures and the frequency at which they are incorporated.

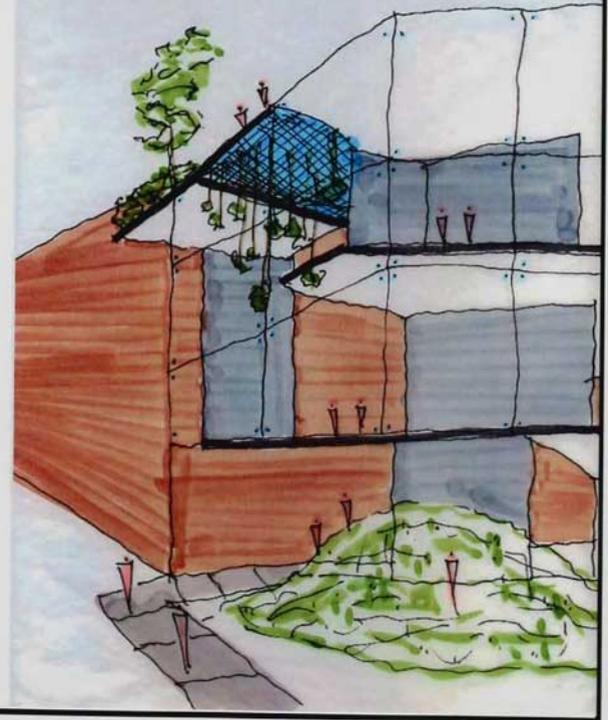
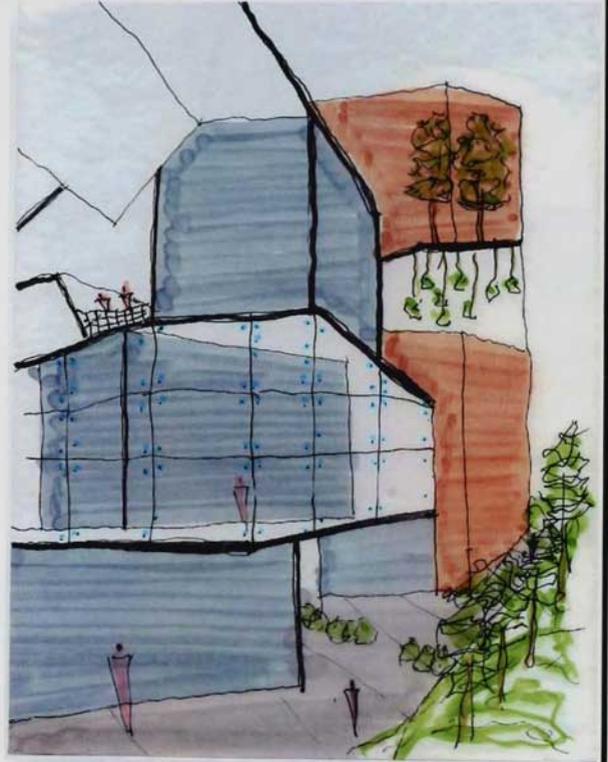




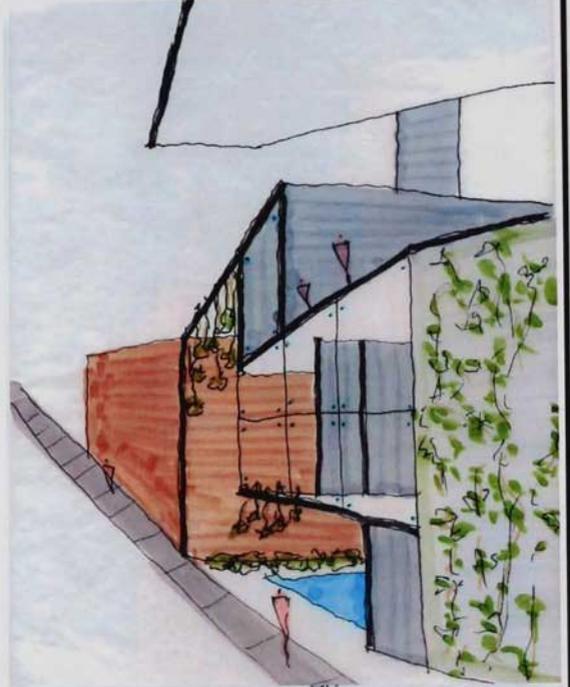
The following perspectives bring the previous sets of models to life. They begin to portray where the indoor and outdoor spaces will connect and how the building will shift its walls to allow the outdoor spaces to infiltrate the air space and how the indoor spaces can be joined to the exterior to allow for natural light.



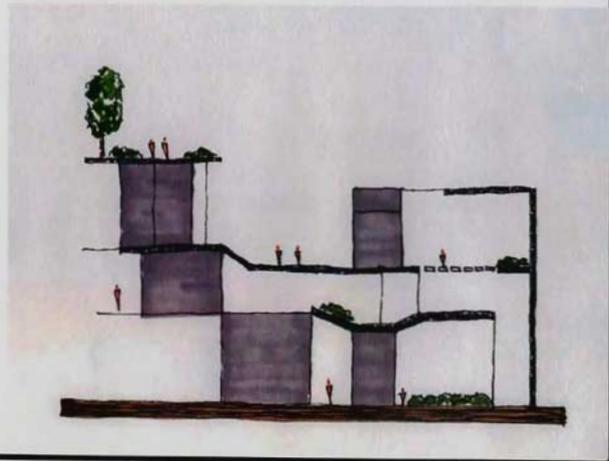
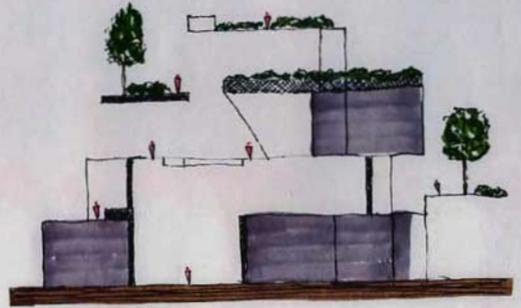
The following perspectives bring the previous sets of models to life. They begin to portray where the indoor and outdoor spaces will connect and how the building will shift its walls to allow the outdoor spaces to infiltrate the structure and how the indoor spaces can be pushed to the perimeter to take in more natural light.



Lastly, the sections provided here and on the following page were taken from existing sections in the presentation models. They show a glimpse of the way office space will take off and the way in which collaboration can exist between floors. Vegetation is seen next to all areas of the building.

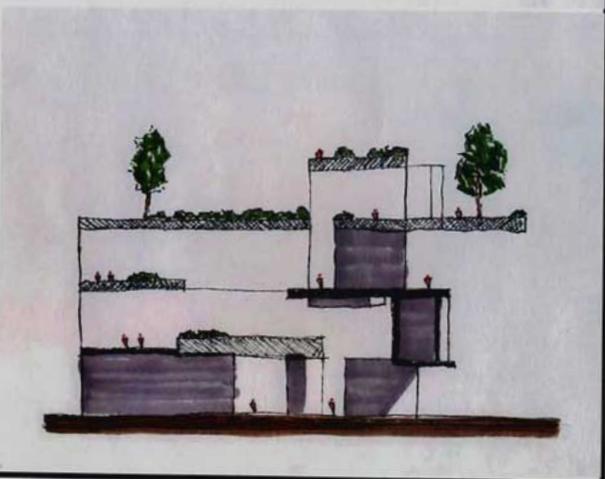


Lastly, the sections produced here and on the following page were taken from existing sections in the presentation models. They show a lightness that the new office space will take on and the way in which collaboration can exist between floors. Vegetation is also seen in all areas of the building.



SCHEMATIC DESIGN

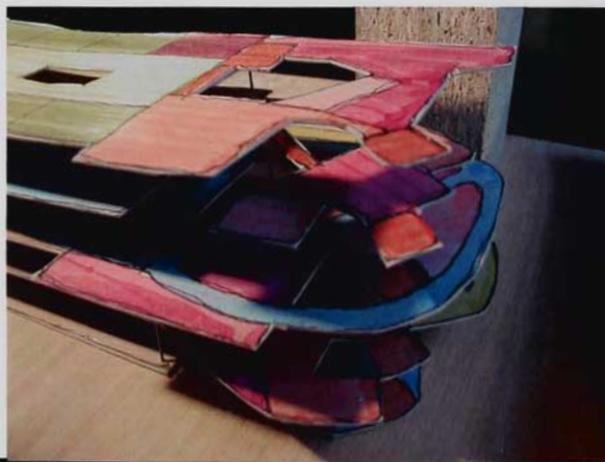
The schematic design phase began by developing a series of preliminary site plans for the project. These were then refined into a series of schematic plans that showed the general layout of the building and the surrounding landscape. The schematic design phase allowed us to explore a wide range of possibilities and to develop a clear vision of the project before moving on to the final design.



The schematic design phase began by speculating a more precise form for the project. These torn paper models were the first of a series of sketches that were done to find the appropriate shape. The looseness of these models allowed me to find a dynamic sense that would have been difficult to find in a more precise model.



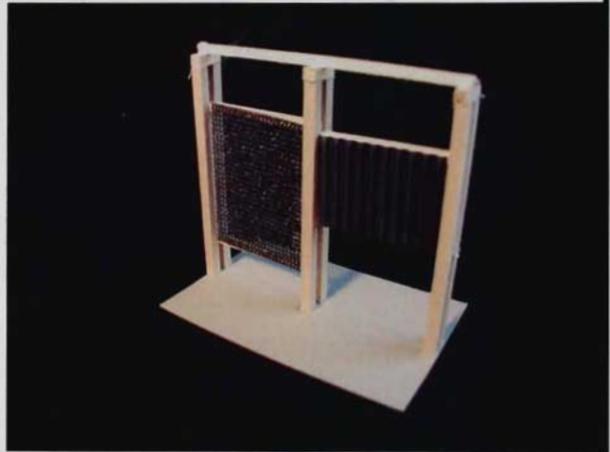
This chipboard model allowed me to construct a model that not only made the previous study become more of a defined spatial arrangement, but by applying the colored paper, I was also able to diagram how the program could fit into the building.



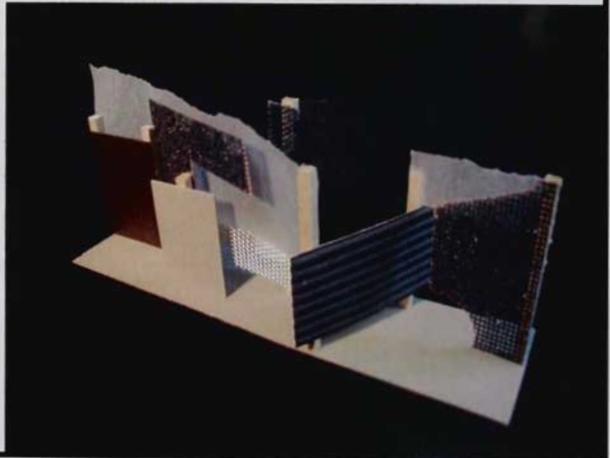
This model was the first study model created to explore the possibilities of the "wall." I became to challenge the wall and try and find ways to separate without segregating workers. The first attempt expressed a frayed wall that prevented movement between spaces but did not restrain sight or sound very much.



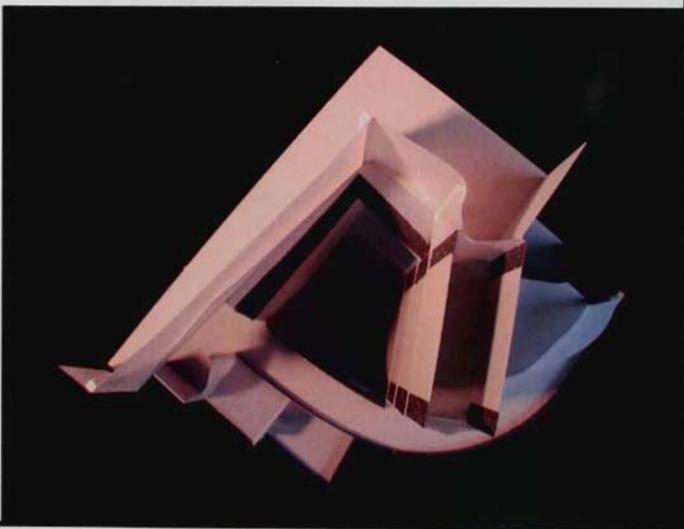
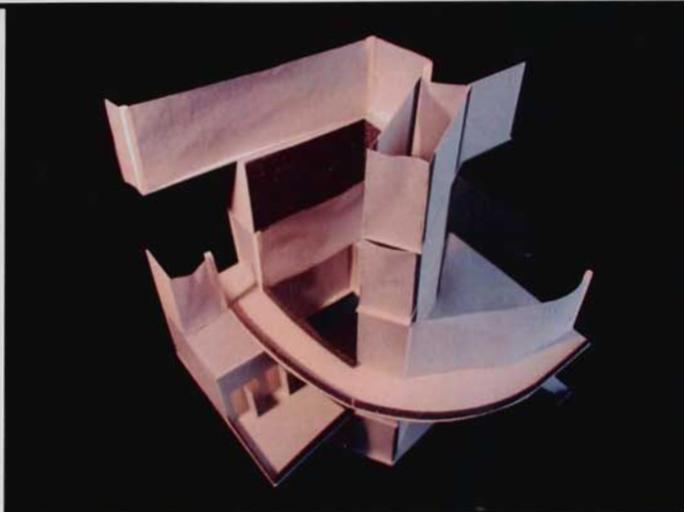
The second study began to speculate how a space could be divided with operable panels with different physical qualities. These could be shifted vertically to provide acoustical or visual separation when desired.



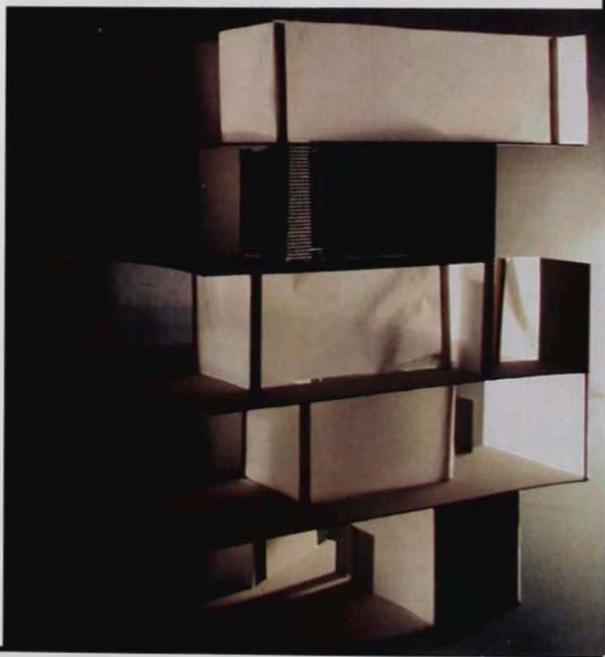
This model began to explore the possibilities of using scrap material to produce a dynamic barrier that separated spaces, but simultaneously allowed light and sound to pass through at some level.



This sketch model was an exploration of a small section of the building. It ultimately led to some light studies.

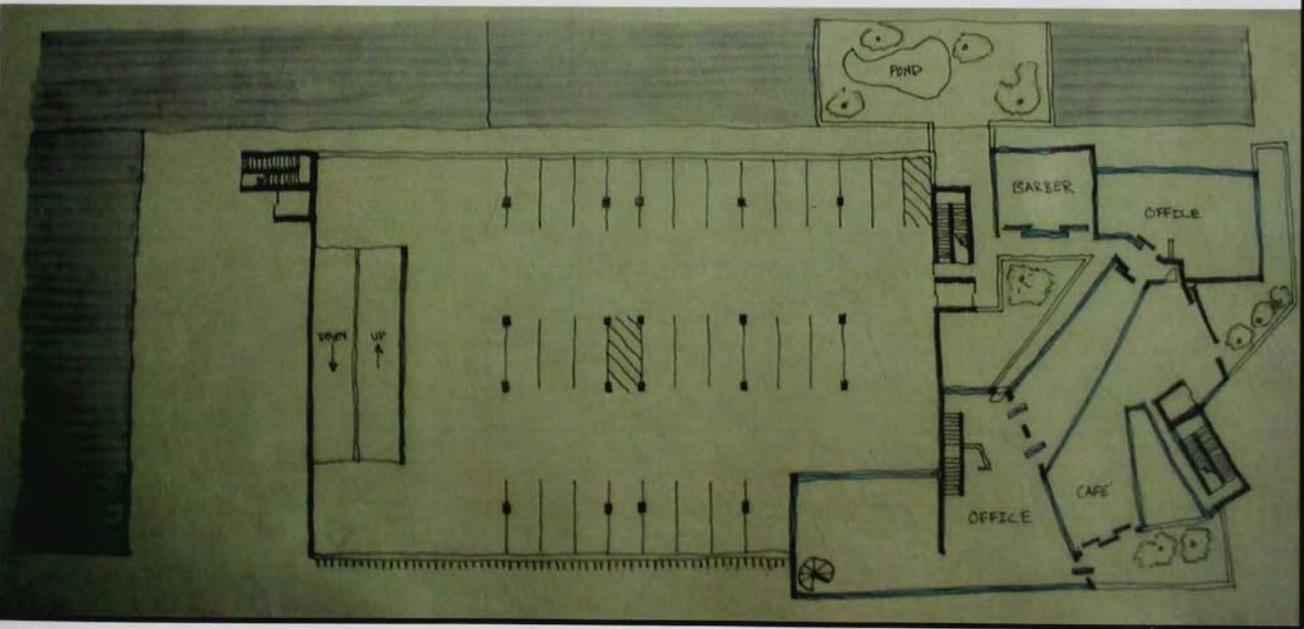
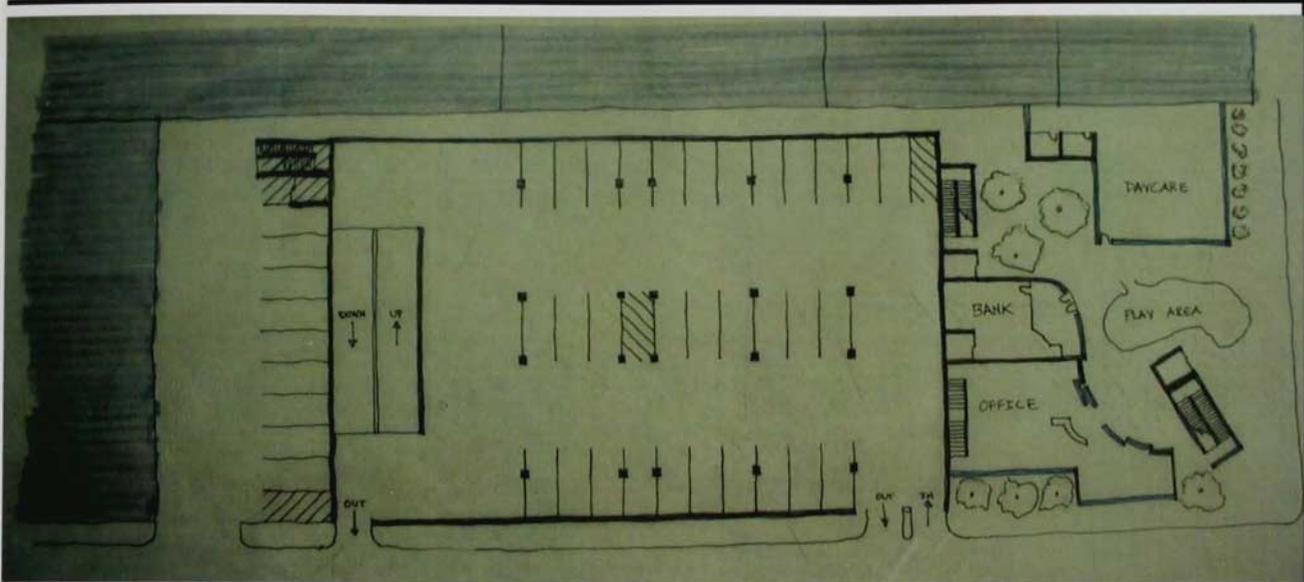


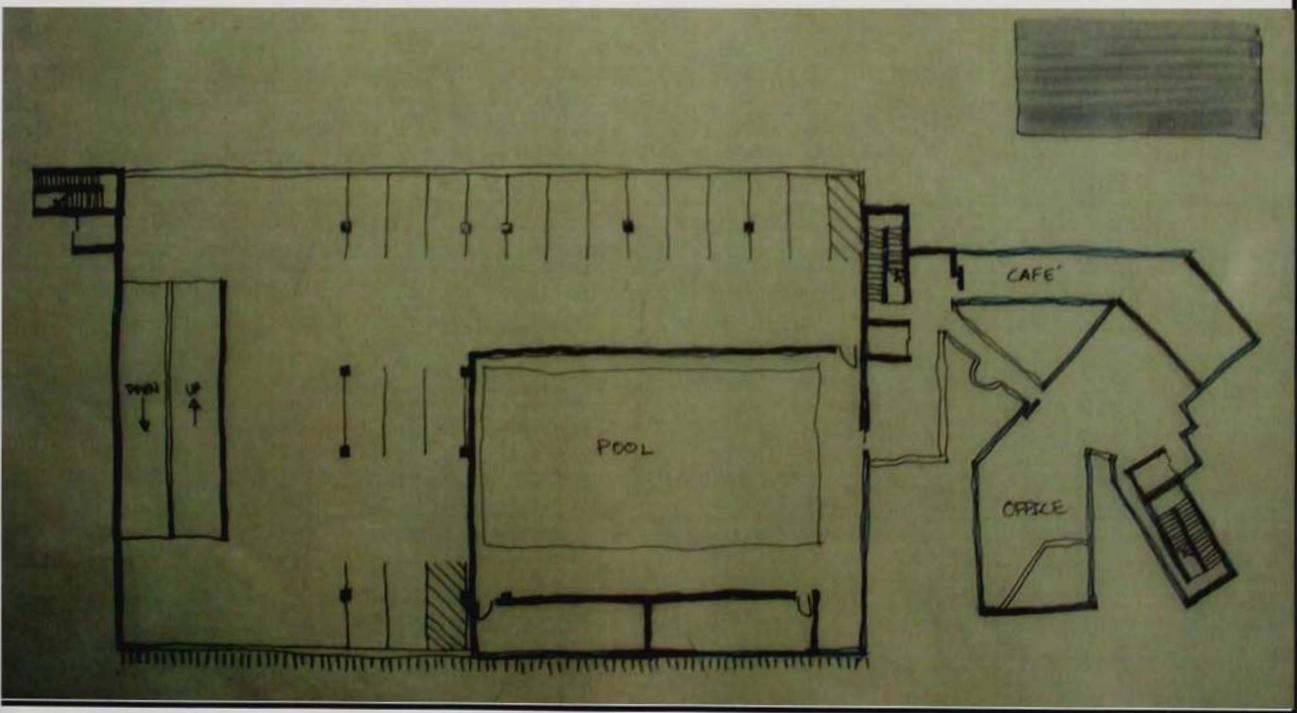
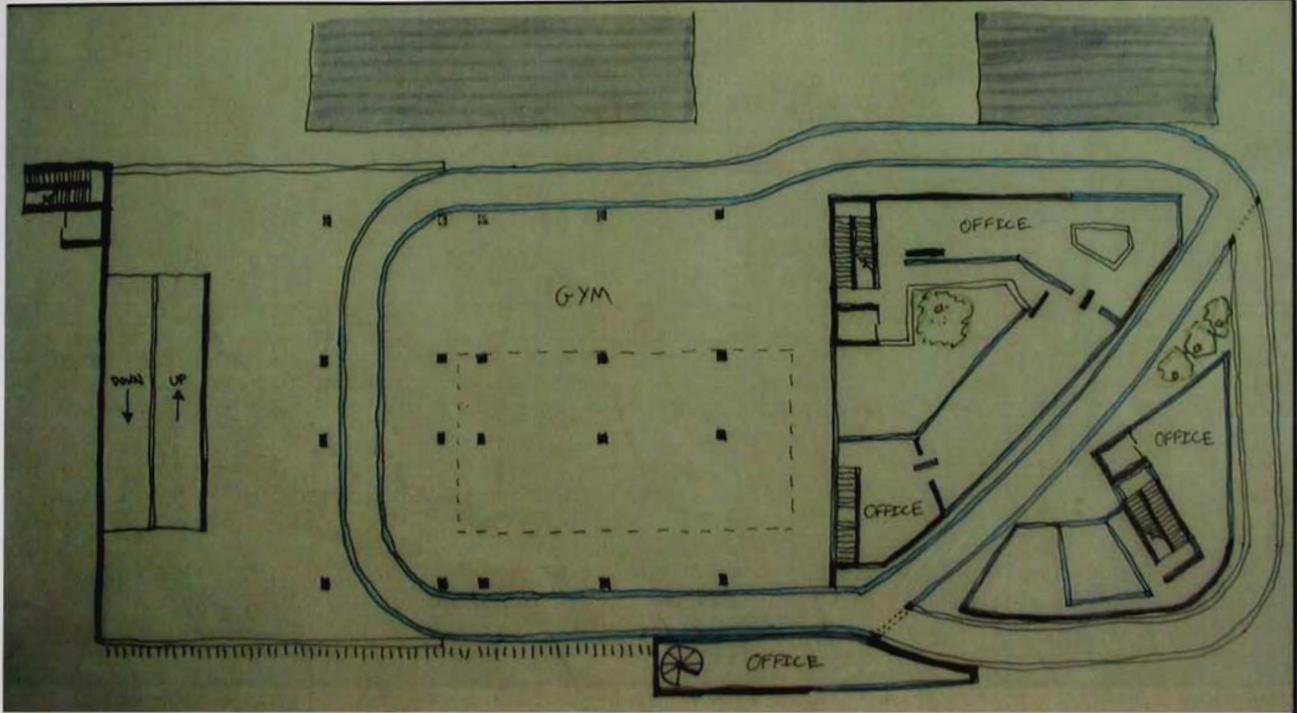
The particular model was an attempt to express the necessity of the building and what types of volumes and forms the structure would be most effective in providing.

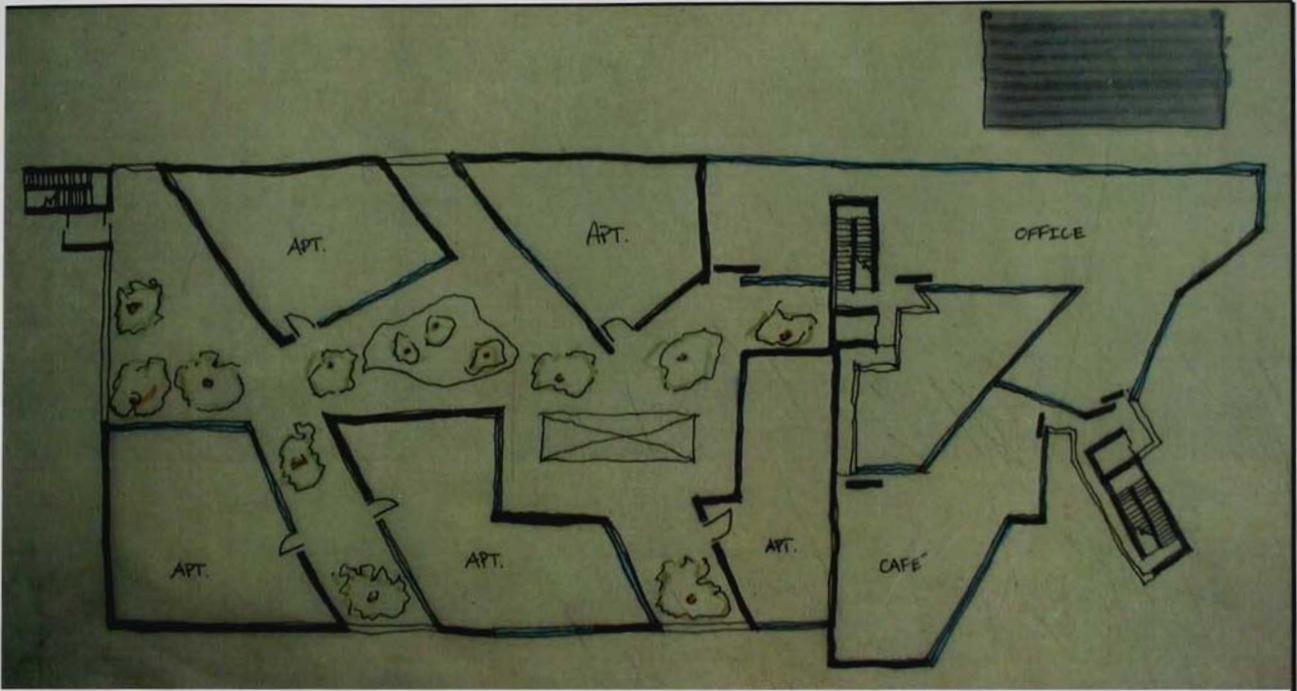


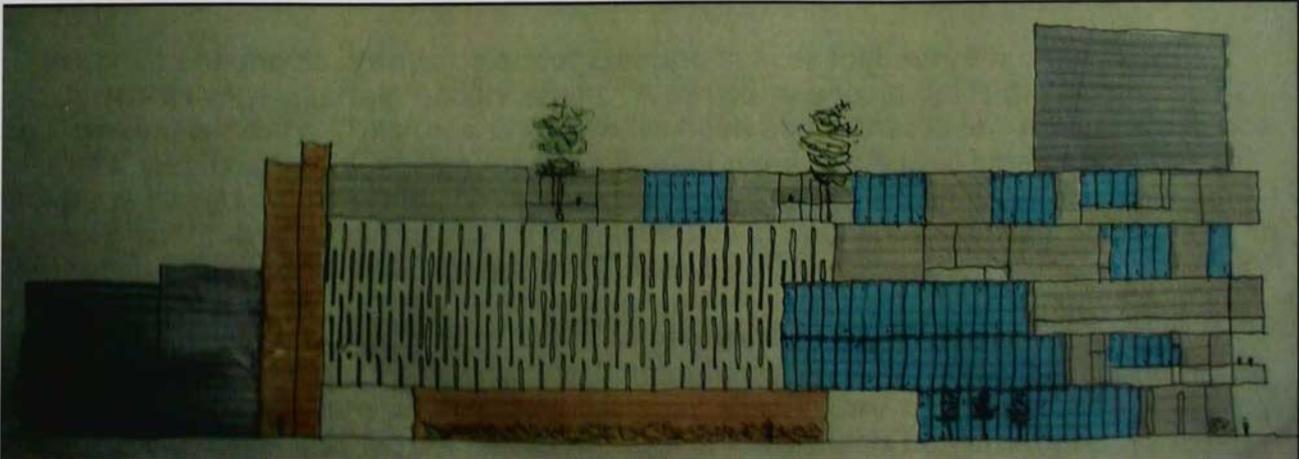
This particular model was an attempt to express the materiality of the building and what types of textures and forms the different programmatic elements would be given.







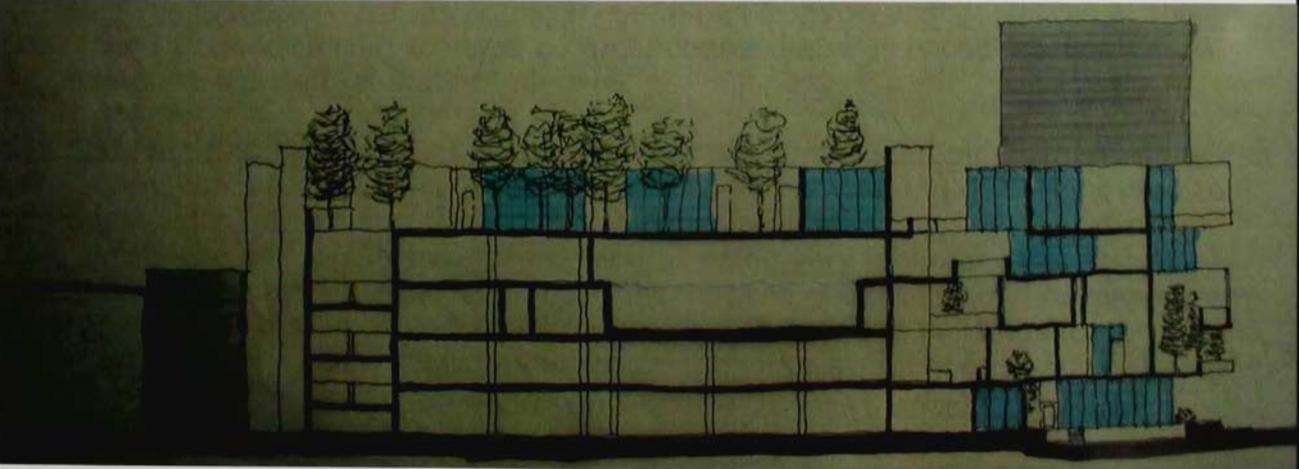




This drawing shows the overall composition, from the building details.

The design process has attempted to create a building that "lives" in the sense that its pieces are separate, like the arms and legs of a human. There has been an attempt to ventilate the building, and the concept of the bar or party. The integration of vegetation has been studied, much like the way a human can grow. If a building is thought of as an extension of nature, it is likely that the building will be a more natural and comfortable environment.

I began with a goal of implementing vegetation into the program as the primary solution for solving the problem of office buildings in today. That was the fact that office buildings of today are very wasteful and are based strictly on quantitative measures. There was a heavy emphasis on how the building would be built and the substantial differences in performance. As I progressed, I learned that the vegetation was just a response to the current situation in many office buildings, rather than being an integral solution for the problem. There were also buildings that



Architecture should always be about creating spaces that serve humans and provide them with a certain quality of life. A structure should uplift the human spirit and evoke a curiosity. This thesis has always been about that idea. A park is a space that has been created by nature, and the human hand has added small amenities to make it a more humanized space such as a drinking fountain, since nature does not always provide all the necessities for human survival in every instance. The park is an architecture that works with not against humans.

It is my belief that architecture needs to re-establish a craft that once existed. Buildings used to be made solely by the human hand, and now, machines are becoming more and more pervasive. I feel that architecture can re-obtain that craft by producing buildings that are not so repetitive. This thesis has attempted to explore this idea from the overall composition, to the building details.

The design phase has attempted to create a building that 'lives,' in the sense that its pieces are operable, like the arms and legs of a human. There has been an attempt to ventilate the building, like the pores of the human body. The integration of vegetation has been induced, much like the hair on a human can grow. If a building is thought of as an extension of ourselves, a unity shall be formed that will induce a unity between humans and architecture.

I began with a focus on implementing vegetation into the program as the primary solution for solving the problem of office buildings of today. That problem is the fact that office buildings of today are very inhumane and are based strictly on quantitative measures. There was a heavy emphasis on how the sun revolved around my site, and the seasonal differences experienced. As I progressed, it seemed that the vegetation was just apologizing for the current situation in many office buildings, rather than finding an alternative, or solution for the problem. There were also buildings that surround the site that were restricting those things from occurring. It was at this point that I decided to shift towards an architecture that was based solely on moves that related to the natural state of my site.

I first began to think about how most offices are surrounded by a sea of asphalt so that its occupants have a place to park. Since there is a parking deck right next to my building site I decided to take on that building and treat it as a piece of my program. Since parking structures are seen as being very inhumane because they have low ceilings and every little natural light that can enter I decided to re-program the structure into a more humanized space. I maintained the buildings footprint but increased the floor to ceiling heights to match the office at 16' floor to floor. It was also necessary to re-direct traffic through the deck.

The next step was to remove the metal slats that were acting as a skin to the structure. This was keeping light from entering the space and preventing any kind of air flow throughout the decks. Then I began to try and think of ways I could alter the program in order to make it a space for humans and not just cars. I decided to implant a lap pool into the surface of the fourth floor accompanied by changing room with a lobby space. The structure of the pool rested on the floor below which is where the pools mechanical room was also positioned.

Just inserting a pool into the garage was not going to really change anything unless the pool was humanized. I decided to add skylights to the roof that would allow natural light and ventilation in at the residential level on the top of the deck. The pool also had glazing on the east and west walls to allow light to enter at the fourth level. A green roof and trees were added to the roof where loft apartments were also added. I also used the roof of an adjacent building on the east of the site to add a green space for second floor occupants to experience the outdoors.

This really started to get me thinking about how I could use a mix of programs to humanize all of the spaces. I began to think about what are the necessities for creating a humanized building. I decided by having means to eat, exercise, and contact one's spiritual side, aside from the typical programmatic elements to an office, this would establish a programmatic mix that would drive the project. It was from this point that the track, meditation spaces, and café's began to talk to each other and mesh into a comprehensive program.

The project then became more of an attempt at introducing not only vegetation, but also natural light in atriums and light wells, natural ventilation through the building, not just along the perimeter, sustainable devices such as the water-wall and second skin, and also soft, dynamic materials such as the use of a leather partition wall that attempt to define instead of divide. The definition of "wall" has become a point of focus for this thesis. Typical office buildings of today consist of rooms or spaces that are separated by stud-walls that start at the floor and continue up to the ceiling. Then to hide the joint between wall and ceiling, a false ceiling is installed to hide this detail and tighten the feel of the space. It has been attempted in this project to expose the structure of the building and let the occupants understand how the structure works as system. I have also begun to challenge the "wall" and what its definition should be in relation to office buildings. What would happen if a defining structure began at the ceiling and extended downward, but not all the way to the floor? What would be the ramifications if a wall were transparent and filled with water, creating a mirage, rather than an opaque plane? These are ways in which I feel the next set of design decisions need to expand.

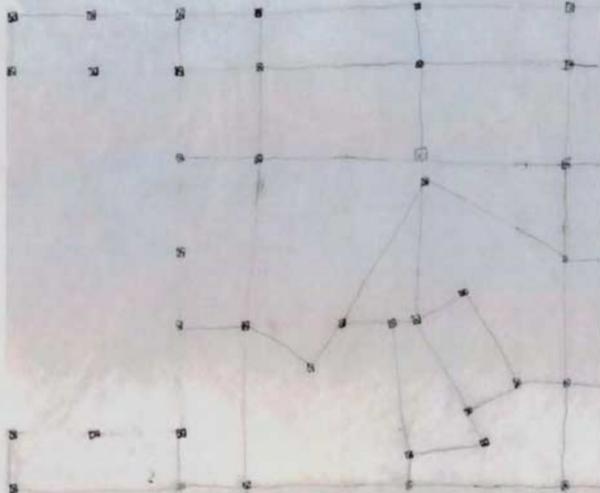
The process is so vast and detail oriented that I feel there is some disconnect between the systems of the building, and the features that are installed into it. For instance, one area of concern I have, is the relationship between the furniture that is installed in the building and the structure of the building. To finish the design development phase, I feel that an emphasis needs to be placed on the integrating structure of the building and its features and furniture into one cohesive unit, which in a sense, lives and breathes with its occupants.

On a larger scale I feel that there is little regard for how the building relates to its surrounding structures. It is well nestled into the site, but there are few programmatic elements that tie it into the fabric of the city that is already in place. If there is a way in which the new office building could invade the surrounding structure, I feel that the proposal would carry that much more weight.

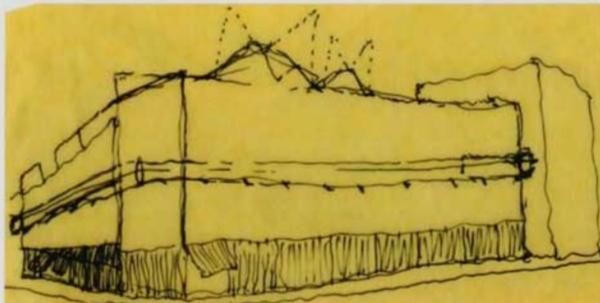
This drawing begins to clarify how the lobby will allow natural ventilation to occur, as hot air exhaust from the atrium can.

The following pages of this section show examples of how the details of the project were explored and defined. The top drawing is a portion of the building's structural grid. It designed to be light and airy, opposite the structure of the parking deck.

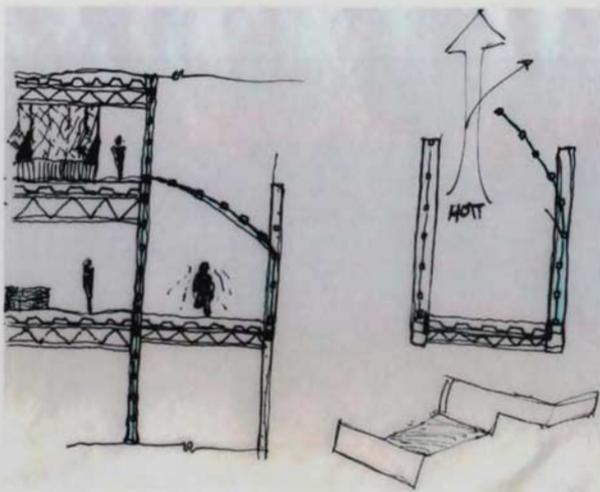
The following pages of this section show examples of how the details of the project were explored and defined. The top drawing is a portion of the buildings structural grid. It designed to be light and airy, opposite the structure of the parking deck.



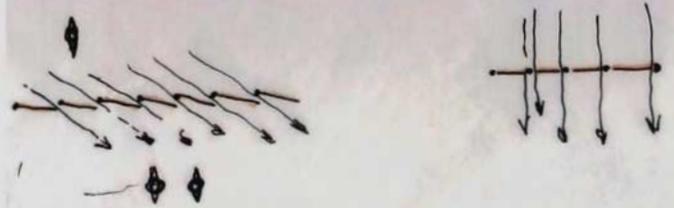
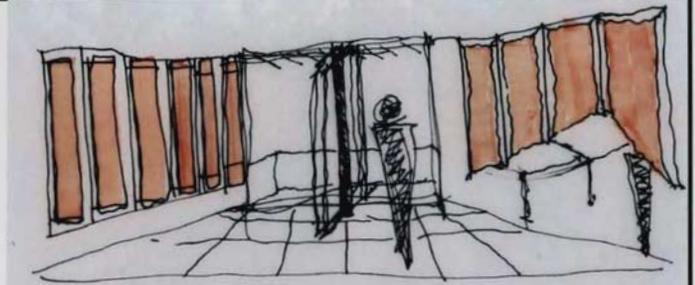
This drawing begins to imply how the lobby will allow natural ventilation to occur, at let that exhaust from the atrium cap.



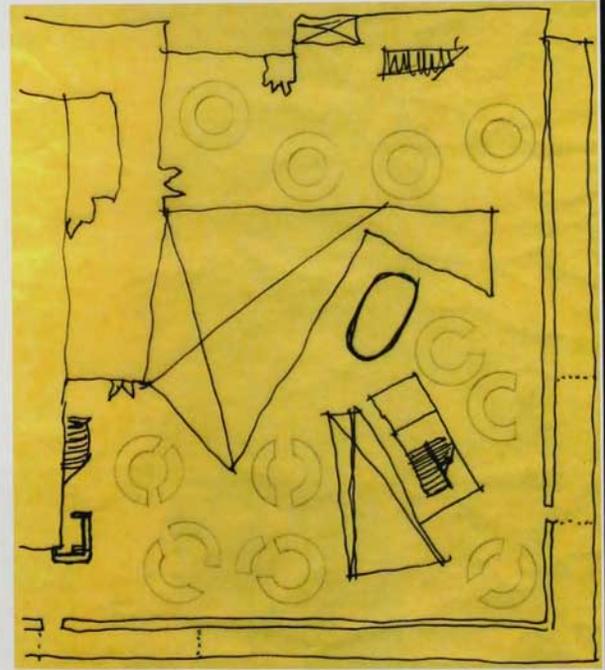
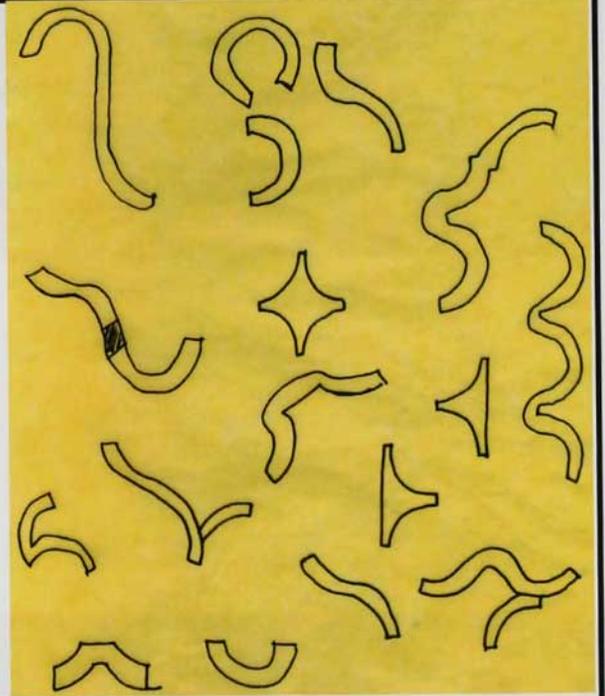
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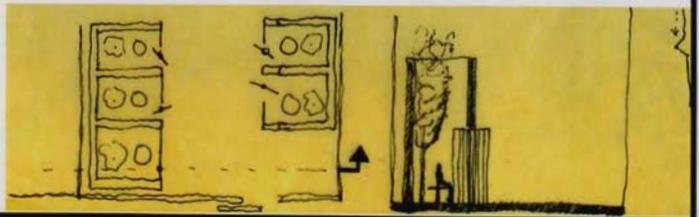
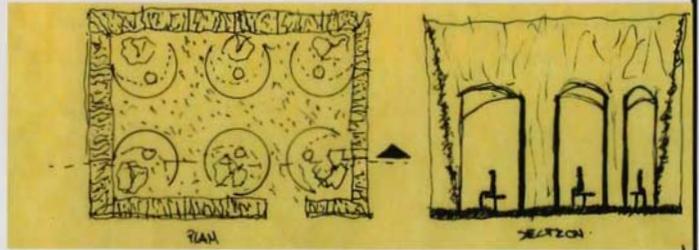
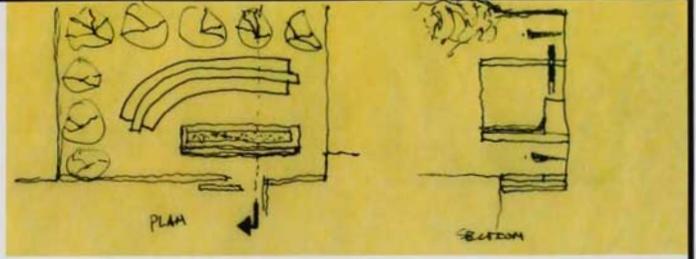
These sketches depict how the fabric or leather wall might function to give some form of separation of programmatic functions.



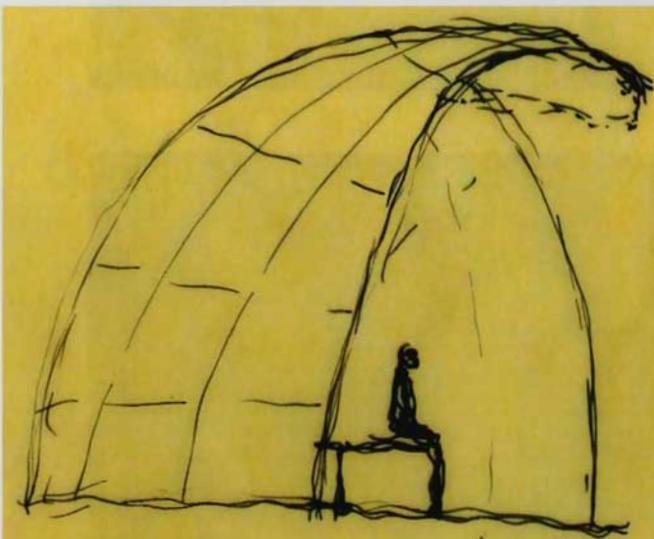
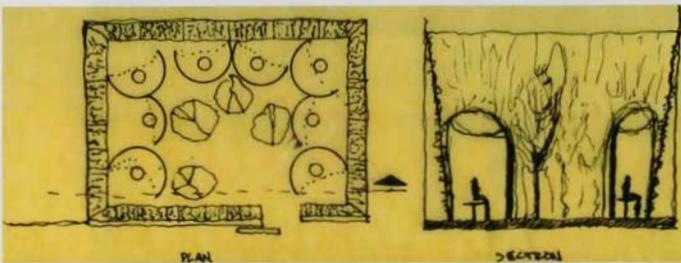
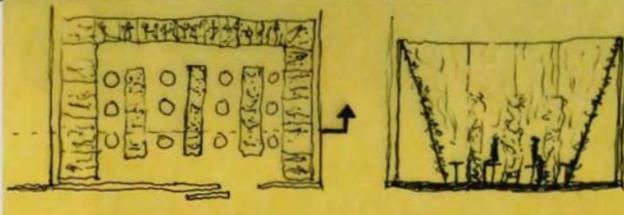
These drawings begin to speculate how new office furniture may function. I began with a series of circle's, since the circle is an undefined shape. I wanted the furniture to take a form that was undefined with now set work space, and allow the occupants to construct the space rather than the mechanistic parts.



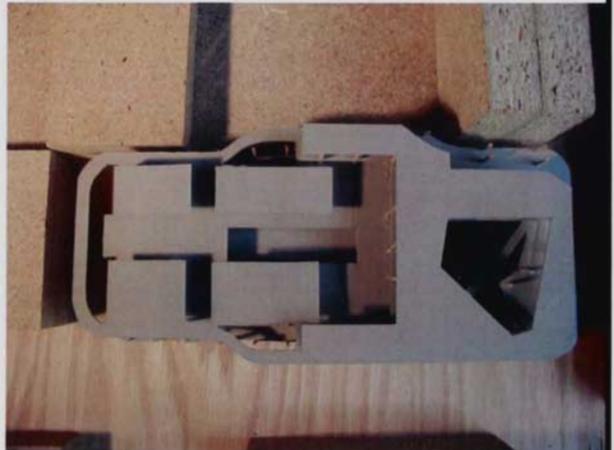
The make-up of the meditation space was explored in the following sketches.



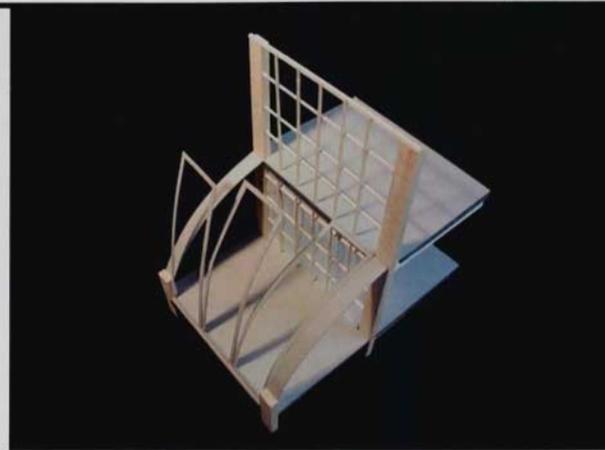
The model was developed to investigate how the layout of the building would be influenced by the geometry of the roof and the walls.



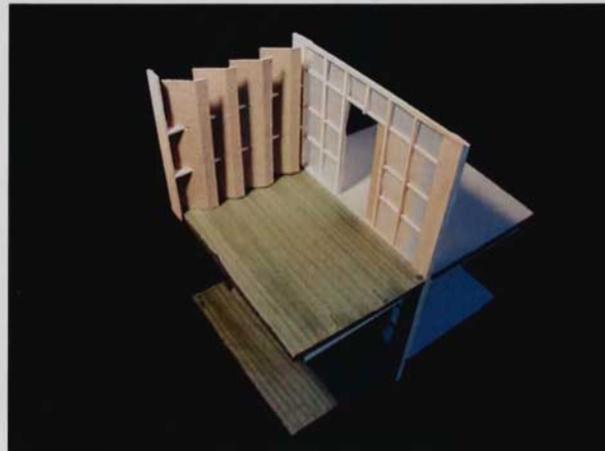
This model was a mock-up to investigate how the loads of the building would be transferred from the seventh floor down into the earth.



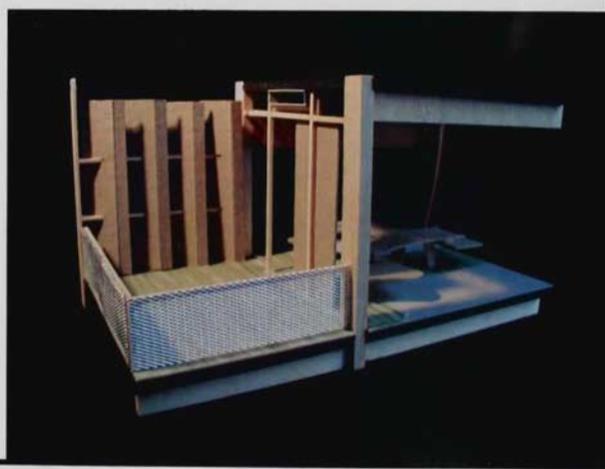
A speculation as to how the running track may function as a dual indoor and outdoor space.

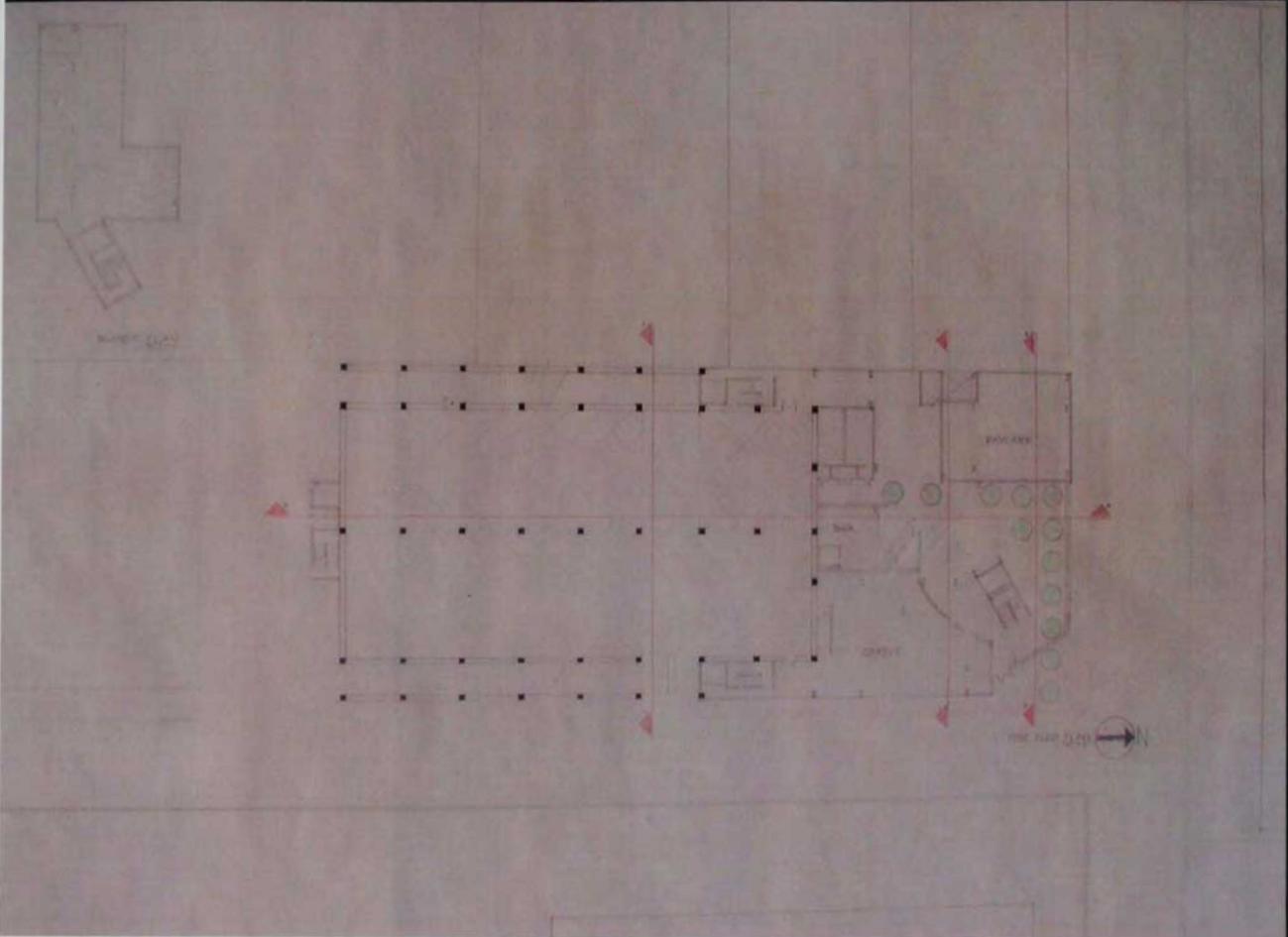


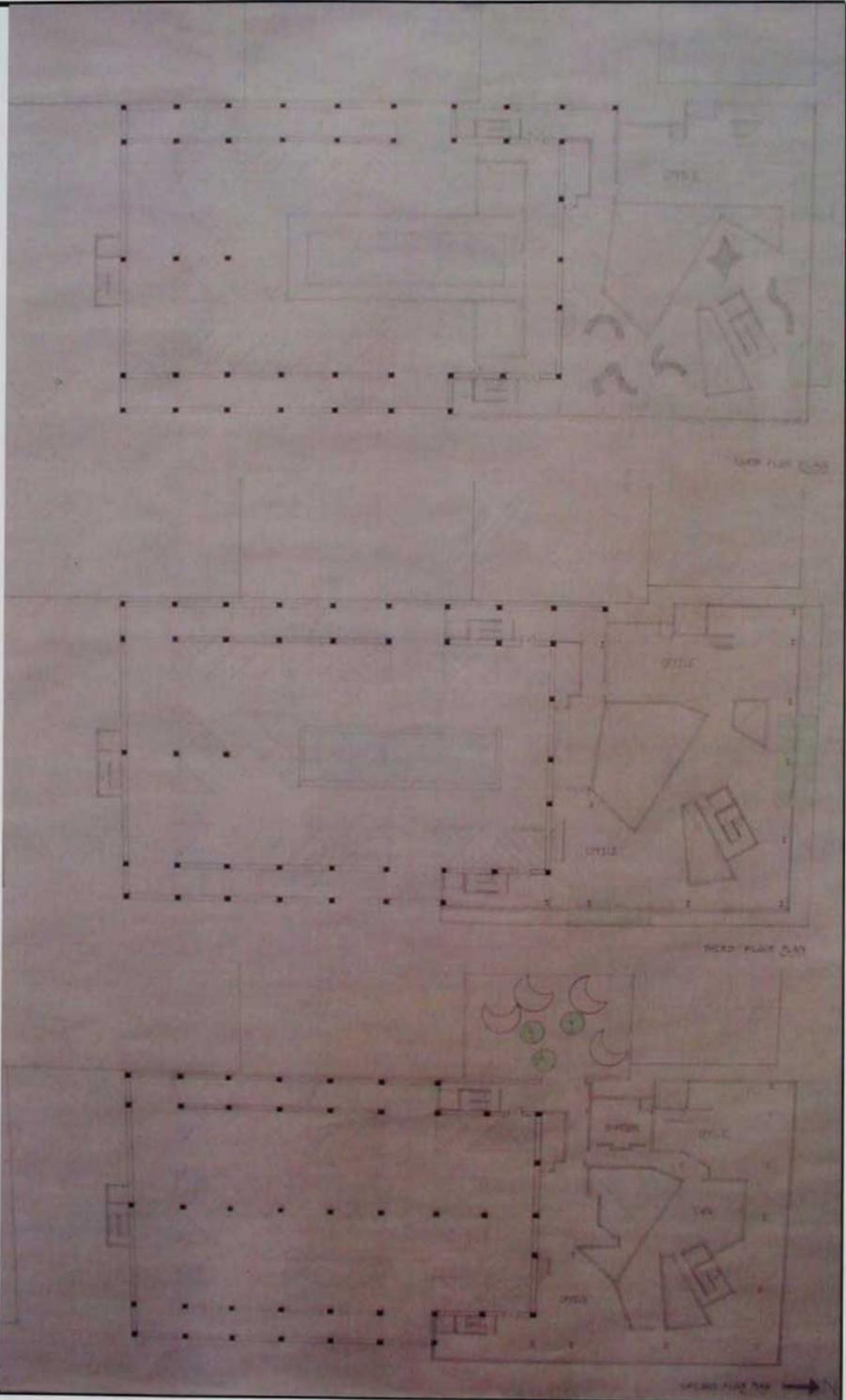
This model tries to dissect how the second skin of the building may look and function.

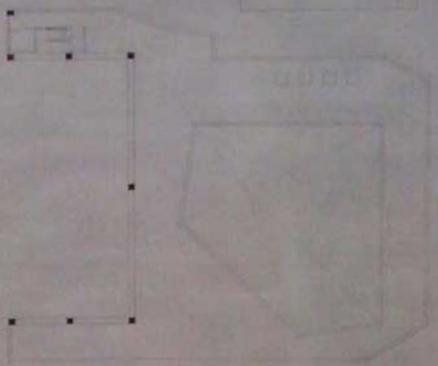


This model brings a number of building systems together into one cohesive thought. It investigates how the skin, living floor, light shaft, workspace, and fabric wall may all function as one system.

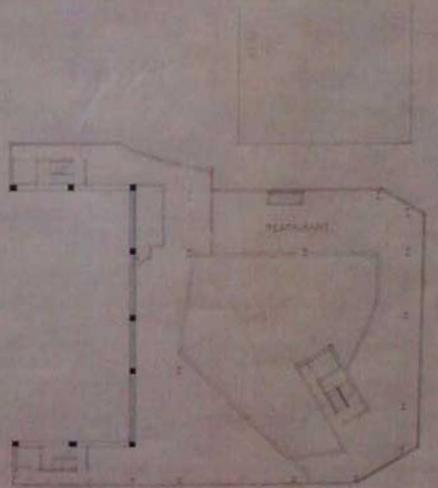




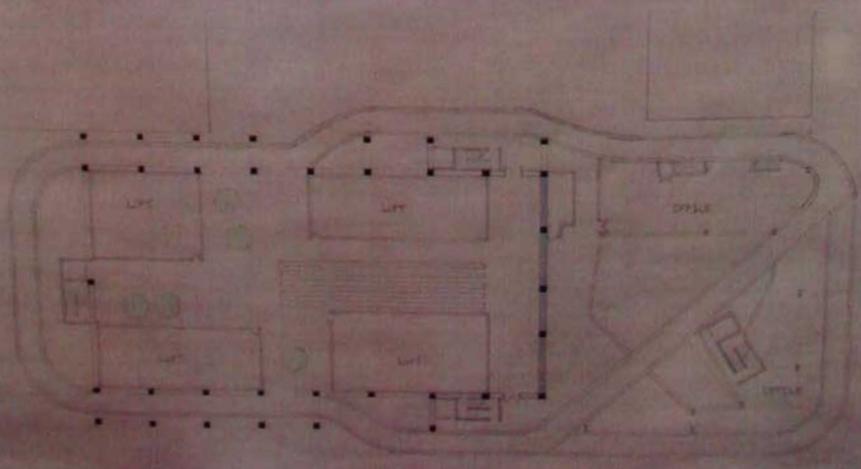




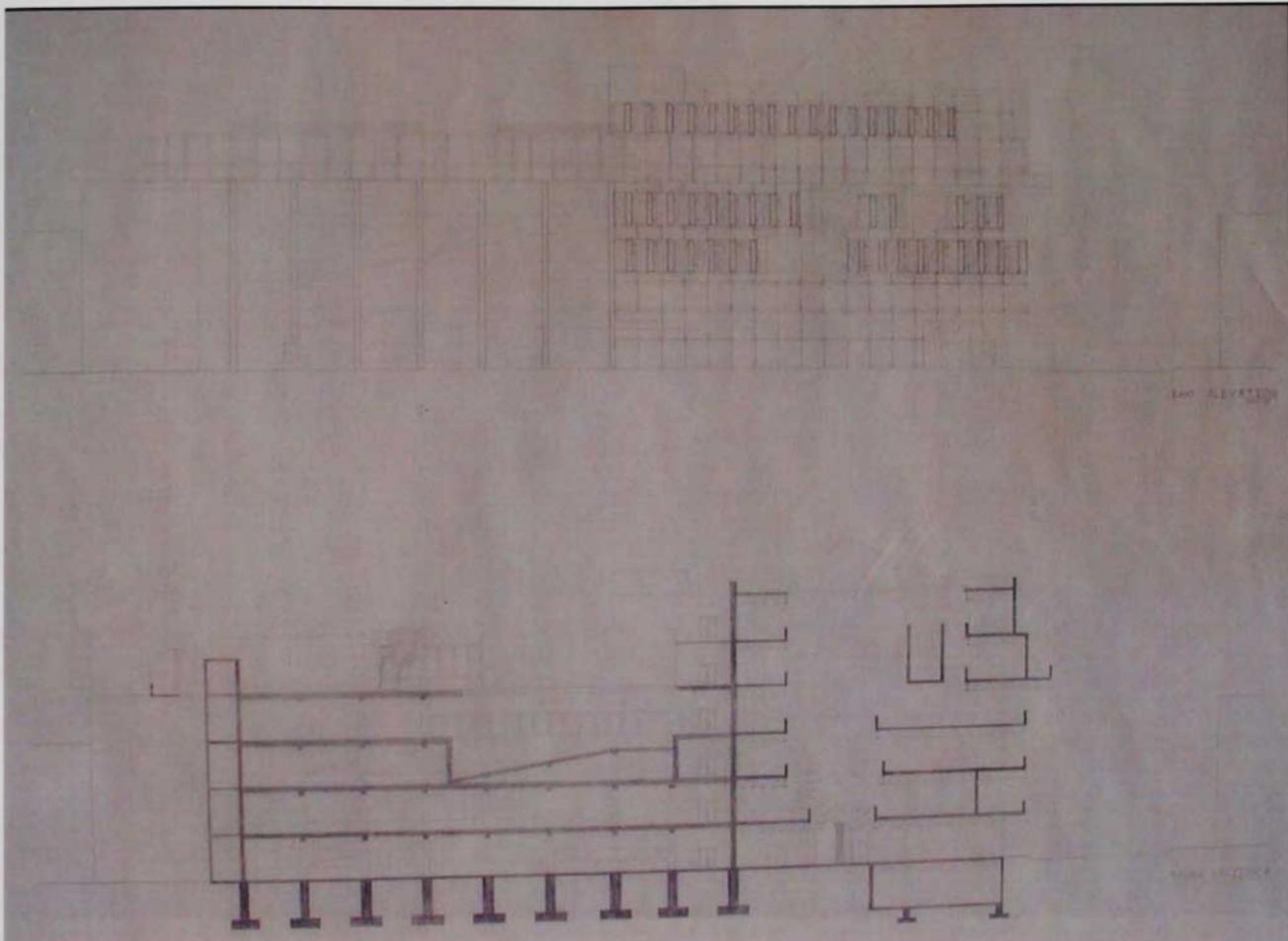
TOP FLOOR PLAN

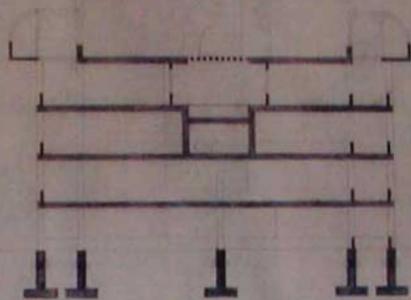


2ND FLOOR PLAN

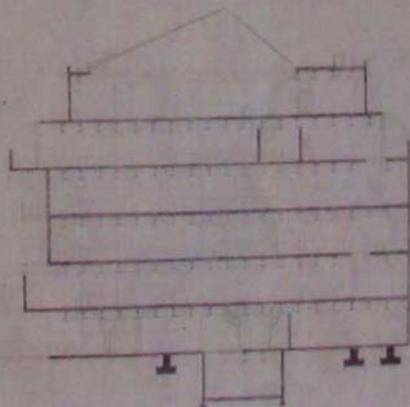


1ST FLOOR PLAN

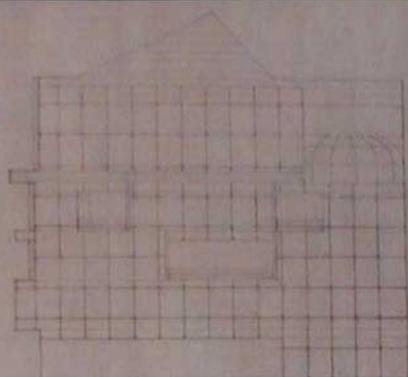




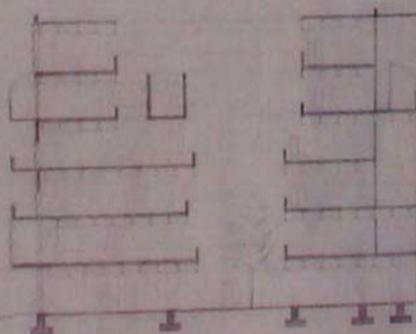
PLAN 1/2000



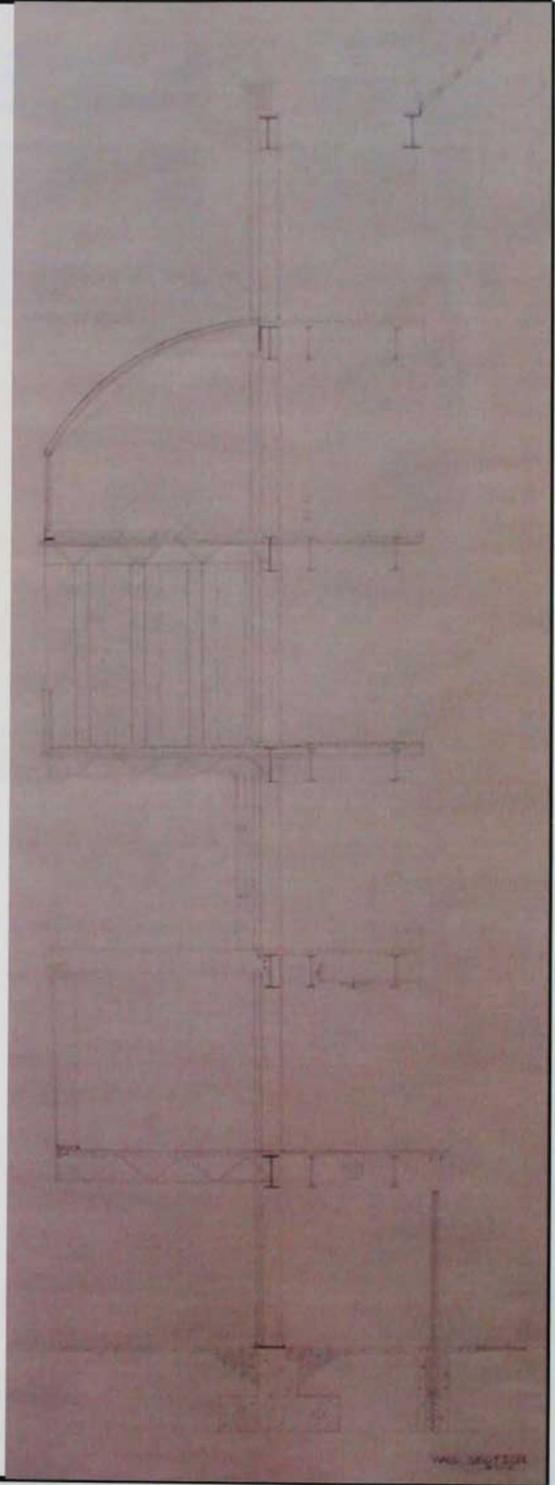
PLAN 1/2000



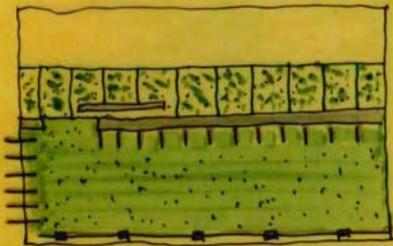
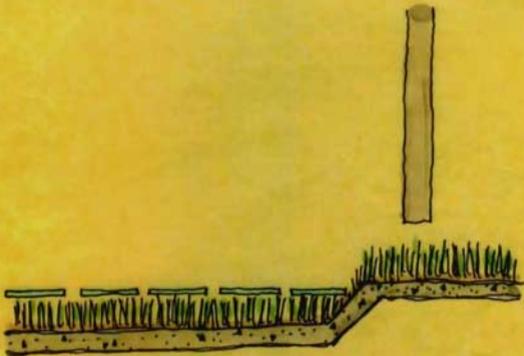
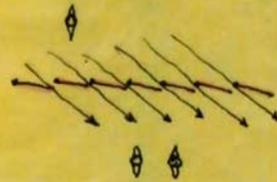
North Elevation

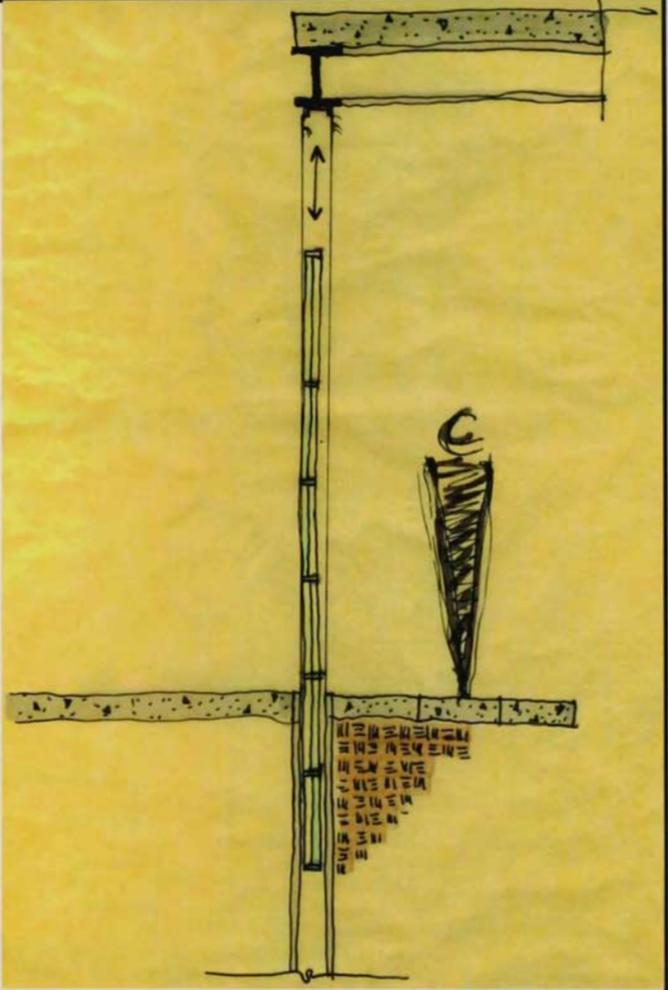
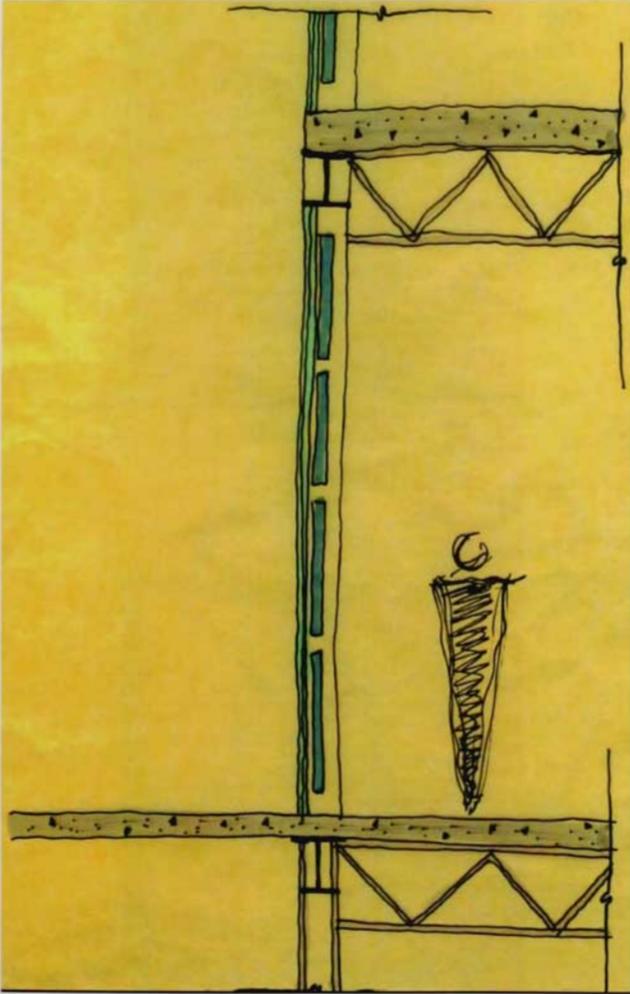


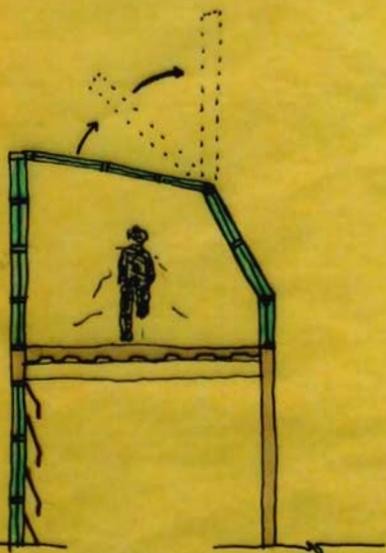
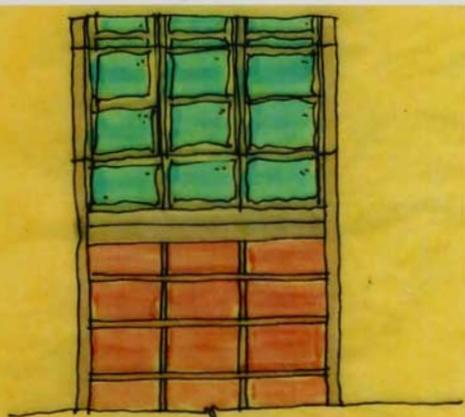
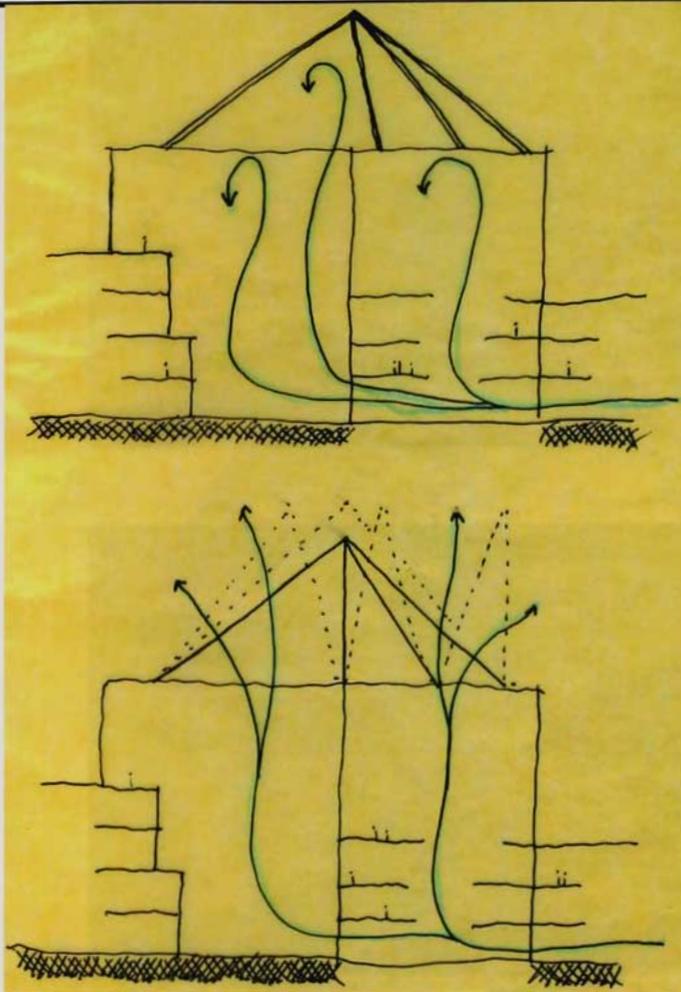
South Elevation



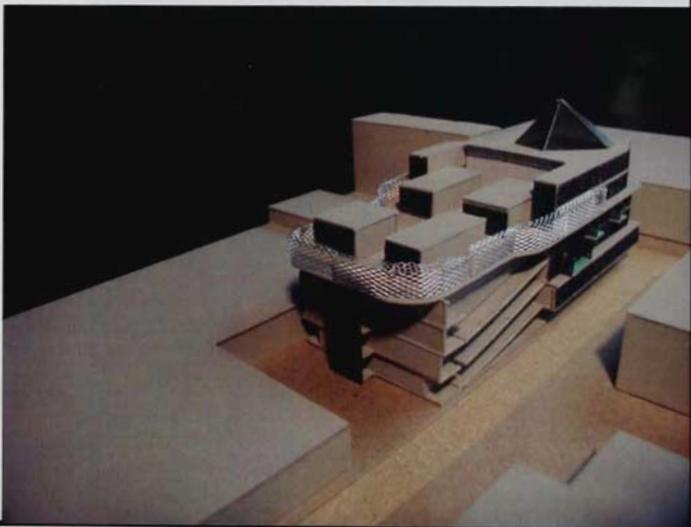
WALL SECTION

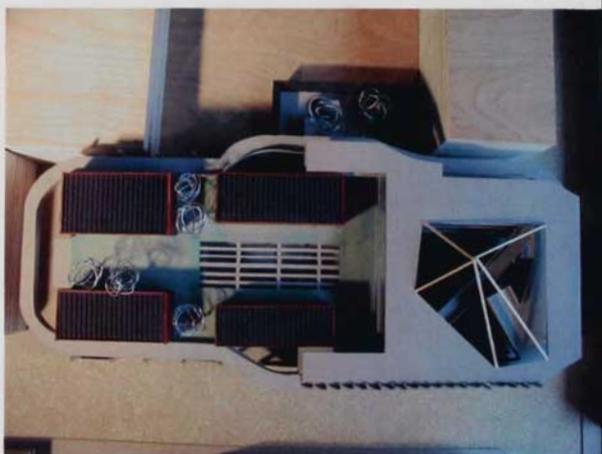
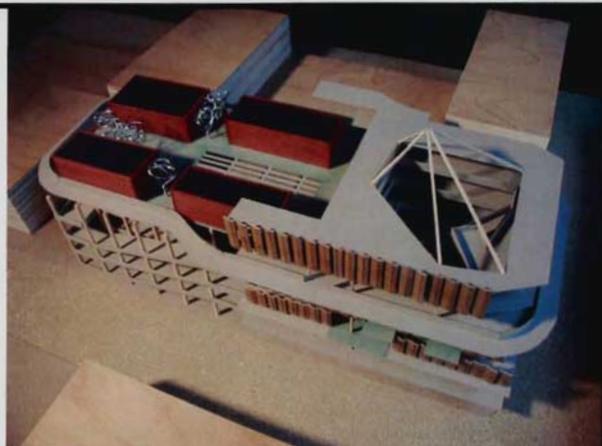






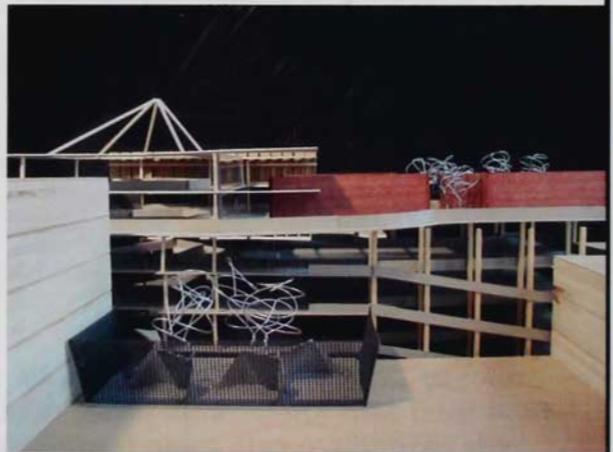
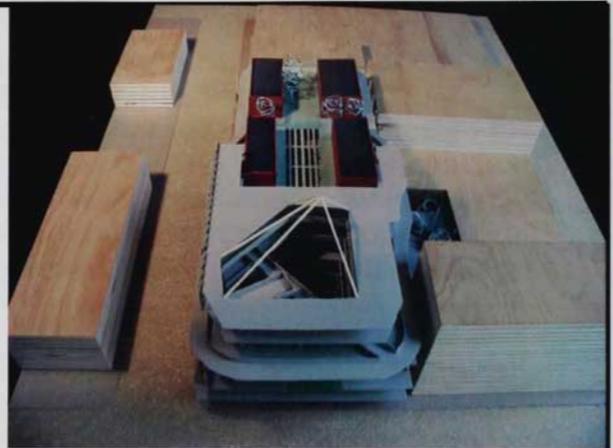












By administering a more sensible approach to architecture, the typical office buildings of today can in fact be altered to facilitate a humanistic working environment with some rather simple yet thoughtful changes. The final design for the office building has strived to achieve several criteria. The project has constantly looked for a way to create a less uniform and rigid spatial condition. By inserting irregular light wells that allow for views in section, and designing furniture that can create varied spatial conditions and allow more flexibility to its users this building has changed the office environment.

This structured has also strived to express itself to its surroundings. Rather than forming a mute container this building has an exposed structure that is light and airy. Instead of covering up the ends of joists or the edges of the decking, this building exposes all of that though its occupants behind a glass curtain wall, and in some spots structural glass spaces.

Typical office buildings do not have any connections to the outside world other than the skin of the building being exposed to the elements. Humans need these connections with natural ventilation, light, and vegetation and this project has established those connections in thoughtful and effective ways. The buildings pieces work together in a system to allow outside air to flow through the building. The glass cap on top of the atriums has many small flaps that can be opened to allow the hot air out of the building, which will draw in cool fresh air at the lobby level when the glass wall is sunk into the ground.

The building responds to the sun by having glazing strategically placed to follow the sun rather than an arbitrary pattern. It also includes light shafts that filter light into the middle zones of the plan. The use of structural glass also maximizes the amount of light that can enter the space by eliminating and solid structural elements that would block the light.

The new office building also incorporates a vast amount of vegetation. The vegetation is not simply for aesthetic purposes though. Not only does it refresh the air inside the building, but it also can reduce glare on the computer monitors, like it is used in the atrium space for. The ivy wall shades the north side of the building from direct light to reduce glare. The introduction of a living floor that extends itself into the collaboration spaces is just one way that the boundary between inside and outside becomes blurred. In the lobby there are also trees that are growing, and when the glass wall is dropped into the ground it creates an in between type space. The water wall can also be thought of as a 'living thing' as it collects night time air to keep the building cool in the hot summer months. The green roof of the parking deck also helps to cool the structure rather than allowing the sun to bake the top floor

of the structure.

This building also disconnects the rigid mechanical typology that these types of buildings take on by allowing users to have more control over the space. The introduction of operable panels on the running track, the dropping wall in the lobby, and the flower-like pedals at the atrium cap are ways that the users can alter their spaces and allow a desired amount of air to enter the building.

The idea of incorporating different programmatic elements into the structure that would not normally be associated with each other is what ties the pedestrians into the building. By incorporating work, exercise, food, and spirituality all into one building there has been a diversification to what can occur which has led to a more humanized space. At the office level, incorporating fabric walls that hang from the ceiling rather than being built up from the floor, and increasing worker square footage, while making the spaces more undefined, another state of harmony has been found.

This project has only scratched the surface as to what possibilities lay ahead for the future office building. There will always be room for improvement. Building elements will constantly need to be evaluated in order to stay current to technology and lifestyles of the time. It's the monitoring of these elements and the reflection of "what makes a building humanized" that will continue to better our lives.

- Lim, C.J., *How Green is Your Garden?* New York; John Wiley & Sons, 2003.
 Book containing creative designs that with modifications could be actually be built and incorporated into a variety projects.
- Gissen, David, *Big and Green: Toward Sustainable Architecture in the 21st Century.* Princeton Architectural Press, 2002.
 Contains brief summaries of green structures that have been successfully built and those on the verge of being built.
- Guy and Graham, *Ethics and the Built Environment.* New York; Warick Fox 2000.
 A good analysis of our duties as architects, and a break down of what to consider when designing.
- Papanek, Victor, *The Green Imperative.* London; Thames & Sons, 1995.
 Explores the idea of designing for all senses and a look at a more spiritual connection with the gray and the green. This includes analysis of architectural works and packaging and product design.
- Roberts, Jennifer, *Good Green Homes.* New York; Warick Fox, 2003.
 A listing of green homes and brief descriptions of how they all act and react to their environments.
- Yeang, Ken, *Designing with Nature.* New York; McGraw- Hill, 1995.
 Book containing diagrams proposed by the author on how nature does and should be incorporated into architecture on a theoretical basis.
- Yeang, Ken, *Reinventing the Skyscraper.* London; John Wiley & Sons, 2002.
 A book that examines the Skyscraper and the different types that currently exist, and proposes ways to improve on them.
- Ford Rouge Center.* Rouge Communications Team; Ford Motor Company. London; Wiley Academy & Sons, 2002.
 An article that defines what a "high performance" building is and how Ford tried to create one with their new Truck plant.
- Thayer, Robert, *Grey World, Green Heart.* New York; John Wiley & Sons, 1994.
 A book that defines where Green architecture best thrives, and what factors must be considered for this to happen.

Crosbie, Michael, *Green Architecture*. Rockport; Rockport Publishers, 1994.

This book has a number of projects that have successfully used multiple sustainable concepts in their designs, while remaining aesthetically pleasing and functional.

Edwards, Brian, *Green Buildings Pay*. New York; McGraw-Hill, 2003.

Talks about financial benefits of green buildings.

Kevin Matthews. "Azuma House." Artifice 2001.

<<http://www.greatbuildings.com/buildings/azuma-house.html>>.

Gives a detail sheet of famous architecture.

Moss, Eric, *Architectural Monographs No. 29*. London; Academy Group LTD, 1993.

A book that highlights significant proposals and buildings by Eric Owen Moss.

Krewinkel, Heinz, *Glass Buildings: Material Structure and Detail*. Birkhauser; Publishers for Architecture, 1998.

This books describes and displays significant tectonic innovations with glass. The projects range from a simple canopy to a complex curtain wall.