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Working with Nature

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working with nature

Carolyn Brown
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School of Art Architecture and Historic Preservation
ARCH 641 Thesis Design studio
Fall 2011

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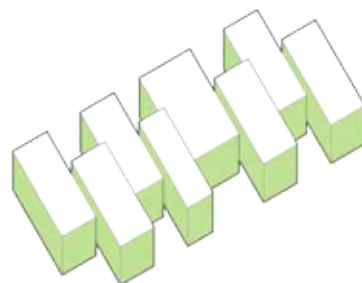
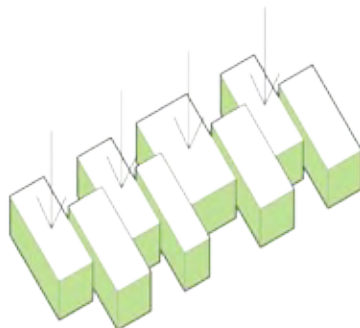
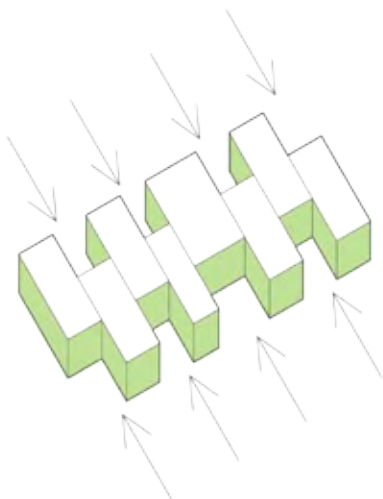
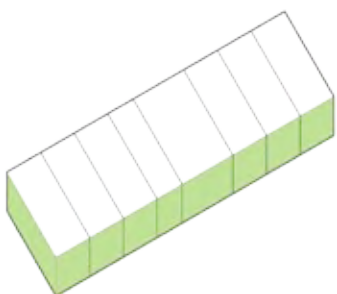


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introduction

What is nature?

To be simply put, nature is the totality of all things that are not human artifacts. However, what nature is has changed dramatically over the course of earth's history with man. With the progression of man, nature has been represented, viewed, and experienced in several different ways. Today nature can be manufactured, artificial, decorative, functional, and wild. Ever since man has been destroying and slowly losing nature he has tried to recreate a manufactured nature. Man is suppose to be apart of nature but we are growing out of touch. In today's technological world the idea of nature is transforming. The future of nature and its relationship with man is more than a beautiful and decorative display piece. It is several pieces that can create a more integrated and interactive social environment for man.

manifesto

Even today in a world full of technology and computer generated images the natural environment never ceases to amaze humankind. Nature still holds great beauty, mystery, and knowledge that we are still trying to discover. According to the hypothesis of biophilia, man has an instinctive bond with other living systems.

However, nature has lost this wonder in our world today. Man no longer values, appreciates, and respects nature. Progress has removed man from what use to be so important. Man views nature as a backdrop to our lives. Nature is seen today in the form of artificial landscapes that is only an accent to the object that is a building. Nature will always be present, but in what form will that be?

Today nature is becoming for sale. Our natural landscape is transforming into a commercial landscape. Nature is not only an exhibit it is a commodity to our physical and social functioning.

Man's relation to the natural world is ambivalent, he is in it and of it, yet he stands apart. Nature needs to stop being seen as man's Other. Nature is a vital part of our everyday lives weather we realize it or not, but there is still a gap between us.

How can man better relate to nature when we are constantly ignoring it? In order to close this gap there needs to be a new way to view nature and incorporate it into society, into the art of architecture, into the places were man inhabits most. Nature needs to become integrated, a functional part of society, that is not superficial.

problem statement

More people live in urban than in rural areas. Urban nature is critical for connecting half of the world's population with the natural environment. The problem is how people interact with nature. People need to stop ignoring nature and need to redefine nature in our lives today. Can we be truly connected to nature if our only natural experiences are annual visits to the Grand Canyon? In order to reconnect with nature, we must learn that we can interact and communicate positively with nature in the city where we live, working with nature creating a more integrated environment.

project statement

Today, in the architectural field the integration of nature is minimal, artificial, or temporary. Nature should not only be in the places we visit, it should be the places we occupy, inhabit, and work taking an active role in regenerating what man has destroyed.

Humans spend most of their time inside, with no or little connection to nature, especially in the urban setting of the city. People may go months without truly experiencing nature. The spaces that we spend the most time occupying are places of work, education, and study. Why do we separate nature from the places that we inhabit the most?

Nature needs to be used functionally in architecture today. It can no longer be on display within and around buildings. Nature will always hold beauty, but it can also be more than that. When visiting nature it is mainly about the beauty, but when introducing it into our everyday lives, and inhabiting nature it needs to become much more. It needs to become interactive and useful while still beautiful.

The solution is to bring nature into the work place. To create a new type of working environment that works with nature. That surrounds itself in nature through function. The idea is not to create a typical office building, but a work environment. A work environment that is defined using nature to create a place where one wants to work and work better, more efficiently. Nature is a way to redefine the future of work spaces and the future of the office building type within the city.

program outline + areas

program

11 Interior Courtyards: 4,500 sqft
5 Sunken Exterior Courtyards: 17,000 sqft
Library: 10,500 sqft
Cafe: 3,500 sqft
2 Cafeterias: 7,000 sqft
2 Kitchens: 16,000 sqft
8 Bathrooms: 6,400 sqft
Services: 7,200 sqft
Flexible Workspace: 36,500 sqft

flexible workspace = 36,500 sqf

Reception
Workstations/Work Areas
Meeting Spaces
Social Spaces
Circulation

occupancy = 300 people

architectural themes + intentions

When Frank Lloyd Wright revealed the Johnson Wax Building in 1939, it showcased a new way of looking at work. One room was filled with women, lined up in rows, typing. Work didn't necessarily mean loud, dirty factories, but it still involved sitting in orderly rows, doing orderly work for a demanding boss.

The architectural intensions are to redefine work space within the city by removing the idea of the standard office building and replacing that type with a new more productive work space that introduces nature as a functional element.

Today, in several cities people are moving into the cities to be closer to work and culture. While at the same time many office buildings are losing their purpose due to business downsizing and people working from home. The need for large office buildings is no longer a need for most cities and are being adapted into other uses such as residential space. There is a need for a new type of working environment.

The standard office space type is typically a flexible environment that integrates technology, comfort and safety, and energy efficiency to provide a productive, cost-effective, and aesthetically pleasing working environment. However the standard tall office building comes with several codes and regulations. Souto De Moura refers to this when working on his first office building project.

“A tower - a tall building - is an unusual commission...When I began the project, I behaved like a forcado - a Portuguese bullfighter who grapples with the bull face-on, stepping back, relinquishing ground to the ‘tower’, like in a face-to-face fight. When I realized that, and I thought I was ready to move forward, the fire brigade had defined the height, the consultants had defined the modulation, and the engineer had decided on the depth of the floors slabs. With a central core imposed by the safety regulations, the width of the building emerged from the possible effort that slab could bear.”

- Souto De Moura

With all these restrictions of office building design it is difficult to express a position on design. The standard office building includes the following spaces.

Offices

Offices (private or semi-private)

Conference Room

Employment/ Visitor Support Spaces

Lobby (central location for building directory)

Atria (common space, multi-purpose space for gathering)

Cafeteria

Private Toilets

Child Care Centers

Physical Fitness Area

Parking

Administrative Support Services

Administrative office

Operation and Maintenance Spaces

General Storage

The standard office building also comes in standard plan configurations. Ranging from 100% fully closed office space to 100% fully open office space. The 'usable area' is then compromised by the building core.

In standard office buildings it is common to have a core which contains fire stairs, elevator shafts, toilets, and machine rooms, structure is also commonly integrated into this core. The position of the core affects several factors.

Center Core Building

A center core building is the most typical office building type, particularly for high rises. The advantages of this type includes the following:

- Central structural core to resist wind loads, opening up the perimeter for light and views
- Mechanical services located in the center of the floor ease of construction
- Flexible arrangement for multi tenant situation

Side Core Buildings

A side core building is typical for smaller office floors or those built up to a party wall. The advantage of this configuration are as follows:

- The core can open to the exterior environment, allowing for natural ventilation of the common space.
- The core can shade the office space from the harshest sun.

The mechanical system can easily introduce fresh air at each floor.

- The usable area is homogeneous and can usually be organized into one space.

Multi-core Building

Multiple cores are common in low-rise buildings, those with very large floor plates, and those with narrow floor plates.

The advantages of a multi-core configuration are as follows:

- Travel distance to the core are short.
- The floor plate can be adjusted to difficult site conditions and contexts.
- Building elements can be smaller in scale.

Standard office building is becoming obsolete, technological changes are forcing corporations to recognize real estate as an under managed asset as occupancy cost is the second largest corporate expense after wages. The tall high rise traditional office building is no longer useful. In order to understand what your workplace is going to be like in five or 10 years, you need to think about what your work is going to be like.

Telecommunications advances may lead to a change in the space of several corporations, as more services can be performed with less office space.

What is Telecommuting?

Telecommuting is using information and telecommunication technologies to perform work at a location away from the traditional office location and environment. A telecommuter is someone who relies on communications technology to do much of his or her work at home, from the car, airplane, or even a hotel room. The distinguishing characteristic is that the work process involves the use of telephone lines and related communications equipment from the home or a nontraditional work site.

Public and private organizations are increasingly considering telecommuting as a way to address issues related to worker retention, employee morale, environmental regulations, and the cost of office space. Telecommuting has several benefits, especially benefits relating to sustainability.

Telecommuting Benefits:

- Reduce in automobile and urban transport use
- Space efficient/Flexible office activities
- Reduce costs and energy use
- More efficient work patterns
- Better attitudes and effects

Though there are several benefits to telecommuting, there are still some downsides, such as a loss in the social aspects of work, and a feeling of isolation or feeling left out.

In order to receive the benefits of telecommuting while preventing a loss in social aspects, the proposed project is a new type of work environment that will be a combination of home and office. A place that provides the necessary technologies that are needed to be a telecommuter. A place that is away from the office and home but still holds the social aspects of an office and comfort of home. An alternate office, a telecommuting hub that contains flexible office space for long term use, temporary use, or day to day use for different businesses and organizations, assisted by the social interaction with nature in an urban environment.

“The office building is one of the great icons of the twentieth century. Office towers dominate the skylines of cities in every continent... [As] the most visible index of economic activity, of social, technological, and financial progress, they have come to symbolize much of what this century has been about.”

- Francis Duffy

This is the twenty first century and a new office culture is needed. The proposed project is a flexible work space, possessing new technologies and a new work philosophy, changing the method of the work space type, driven by a better work environment creating more productive work. A flexible building that will take all the best qualities of an office and home creating a better work environment surrounded by nature.

site identification + rationale

cleveland, ohio

The selected **site** is located in Cleveland, Ohio's Downtown in the Warehouse District.

When looking for a site, it needed to have the following:

- Site needs to be Urban/Located in a city
- City needs a change in the work environment
- Site needs to include natural elements
- Site also needs to be lacking natural elements that need to be added to improve area



The city that was chosen is Cleveland, Ohio. Cleveland was selected because it is an old American city that is on its way back from destruction. The city plans on expanding and reviving its downtown area out towards the city's lake front.

The specific site is located along Lake Erie, providing views and exposure to the natural element of water and sky. However the site is also along a railway, highway, and small airport. This site needs the additional help of nature to improve the area and to be the start of the new expansion of the downtown along the waterfront.



2000 downtown land use + 2020 downtown land use

The site is currently located in a commercial parking lot, used during the week for parking for workers and on the weekends for event parking. The site is currently located near industrial buildings.

The future of downtown expansion along the waterfront includes office space and mixed use projects located on and around the selected site.







greenspace

There is no green spaces around the old Warehouse District in Cleveland. This are needs to be revitalized and needs green space. This is where the site will be located.



greenspace

Possible extension of building via landscapae with bringing green space across railroad on to existing parking lot between highway and railroad.



slope

Site has an existing slope that is a 30 ft drop on the sites northern boundary facing Lake Erie in front of the railroad.



Site has views of city's downtown.



Site is an existing parking lot.



Downtown is located south west of site.



Warehouses west of site.



View of downtown buildings from site.

Site is located in Warehouse District with exiting brick features.



View from slope on north of site.



Adjacent warehouse south of site.



Cobblestone roads lead to site.



Cobblestone detail

Site has a slope down to railroad over looking Lake Erie.



Slope north of site.



Slopes down to railroads.



View of railroads down from site.



View of Rock-n-Roll Hall of Fame from site.

Site has views of Lake Erie beyond railroad and airport.



Fret trains passing near site.



View of Lake Erie.



View of Lake Erie.



View of airport near site.

precedent analysis

another.com

Architect: Nowicka Stern

Location: London, UK

Completed: 2000

Total Floor Space: 251 square meters

Employees: 40



Another.com's laid back feel of an office space with indoor lawn inspired the projects indoor/outdoor themes.

Final rendering of thesis project's exterior courtyard space



ing house

Architect: Meyer and Van Schooten Architects

Location: Amsterdam, NL

Completed: 2002

Area: 5,600 square meters



ING House's pockets of nature within the building inspired the design's interior courtyard work spaces.

Final rendering of thesis project's interior courtyard space



twba/chait/day

Architect: Clive Wilkinson Architects

Location: Los Angeles, California

Completed: 1998

Area: 120,492 square feet



TWBA's open floor plan inspired the organization of work space in the final plan design.

Final plan enlargement of thesis project's flexible/open work space



tbwa/hakuhodo office

Architect: Klein Dytham Architecture

Location: Shibaura, Tokyo, Japan

Completed: 2007

Area: 4,215 square meters



TBWA's forms, playfulness, use of light, and use of shapes protruding from the ground became a huge influence on the project's final form.

Final rendering of thesis project's elevation



pioneer

Architect: Enrique Browne

Location: Paine, Chile

Completed: 1996

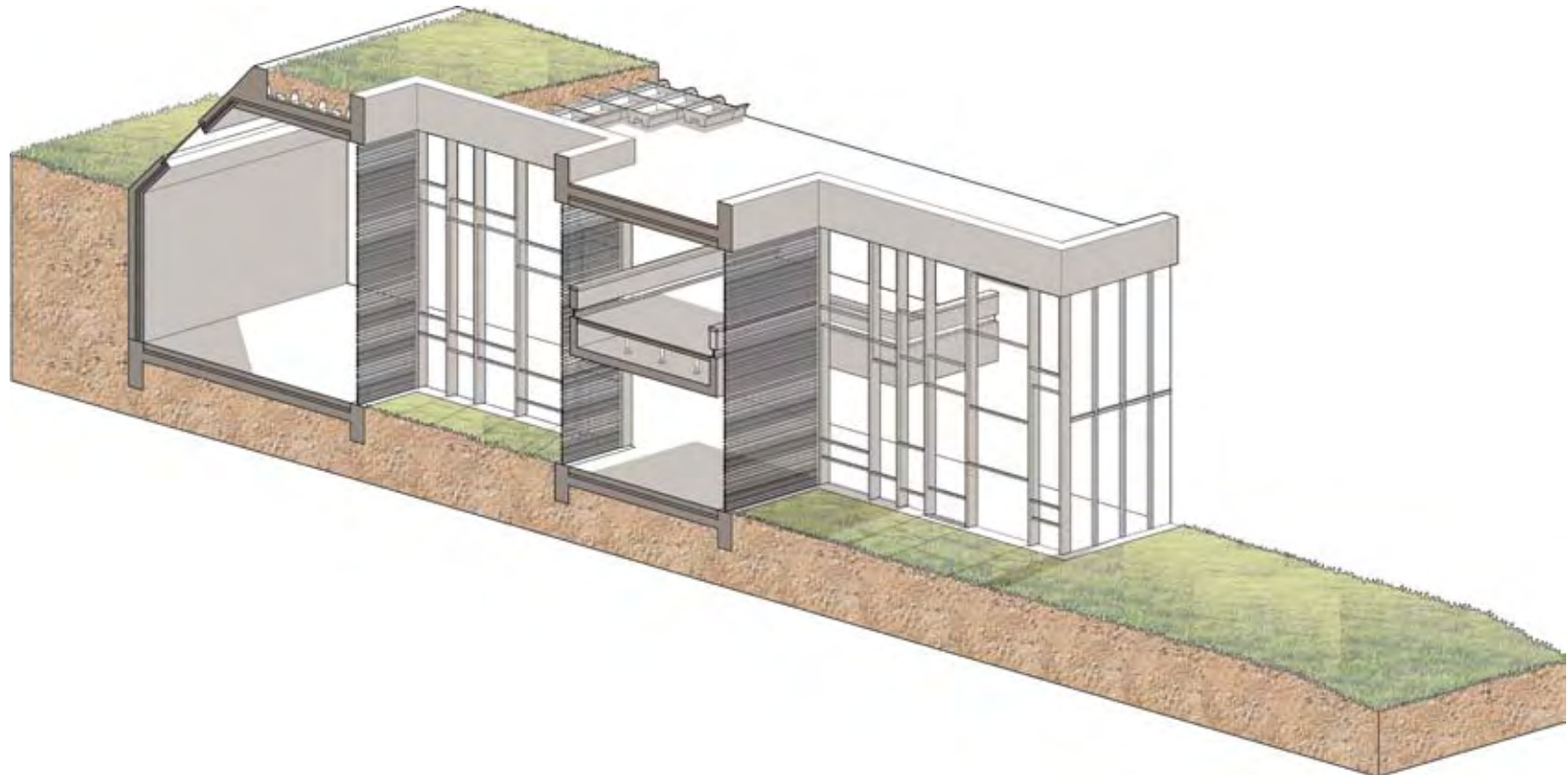
Total Floor Space: 698 square meters

Employees: 40



Pioneer's appearance of growing from the ground and interior underground spaces inspired the underground spaces and light quality.

Final assembly axon showing section cut underground



anmahian winton architects

Architect: Alex Anmahian

Location: Boston, Massachusetts

Completed: 2005

Total Floor Space: 25, 000 square feet



Alex Anmahian's small office renovation shows how even the smallest of exterior spaces can transform a building.

Final section enlargement showing open exterior courtyards



elemental

Architect: Alejandro Aravena
Location: Iquique, Chile
Completed: 2004
Housing Units

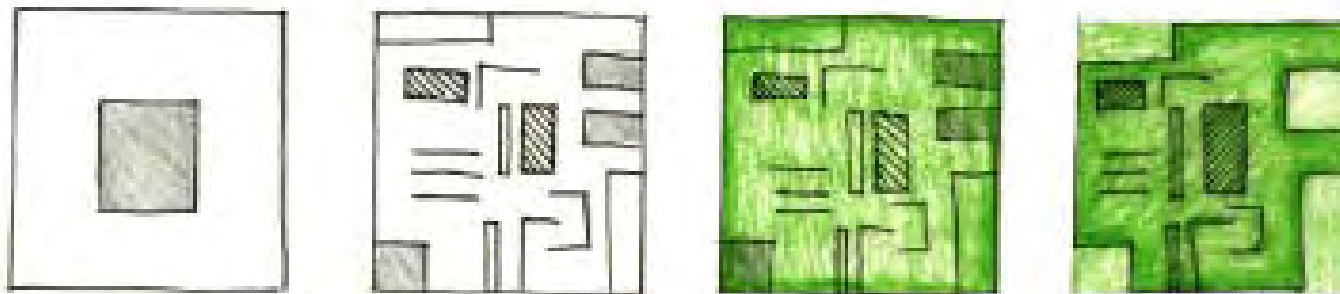


Elemental's housing units show that negative space can be filled in or used as exterior outdoor space, making the space flexible and allow options to expand the interior or leave as exterior space.

Final elevation enlargement showing positive and negative space that is both interior and exterior

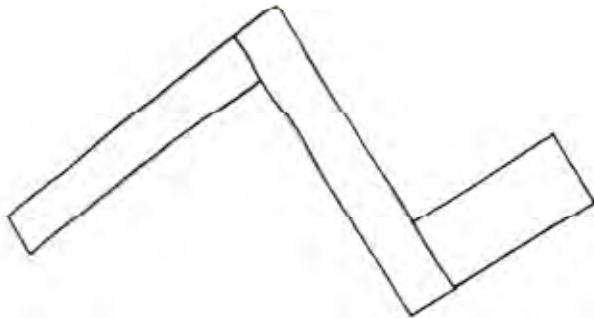


design process + sketches

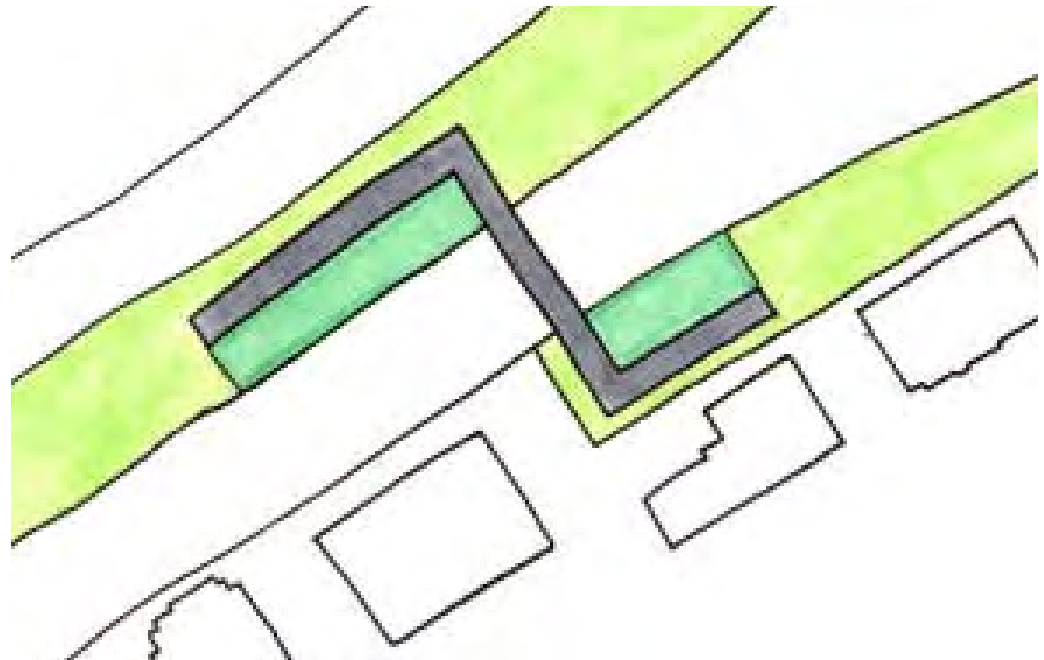


This diagram represents the evolution of the standard core office building in plan and its transformation to a more flexible and dynamic office space that is surrounded by nature.

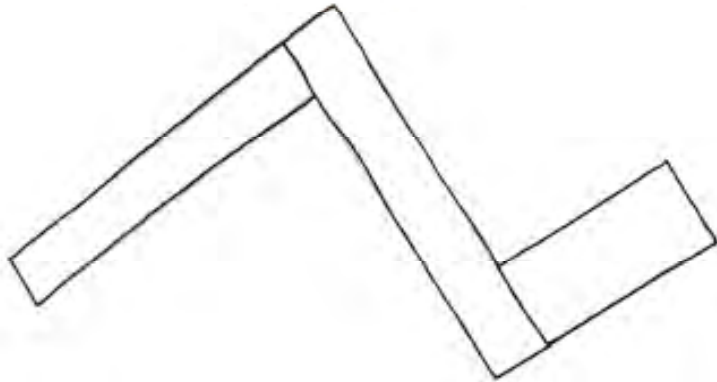
The initial idea of the project was based on the form. The form was created by the existing site features. The project was going to extend from one side of the railroad to the other, bridging over the railroad. This gesture will create a link between these two new green spaces created for the old Warehouse District for the city.



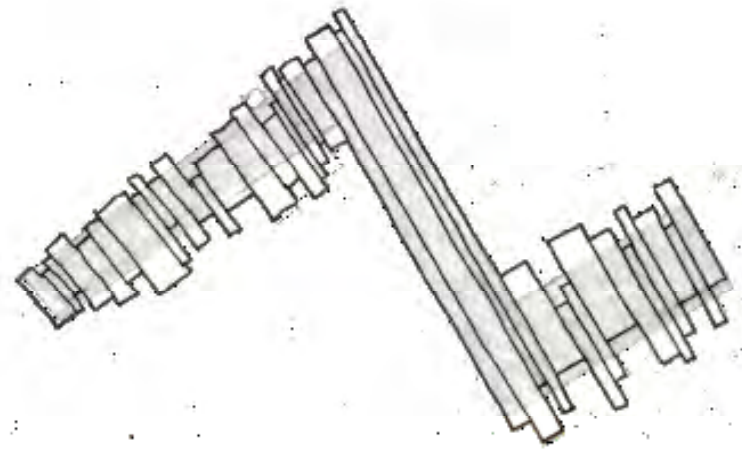
The initial form became three bars. Two bars linked by a third bridging bars.



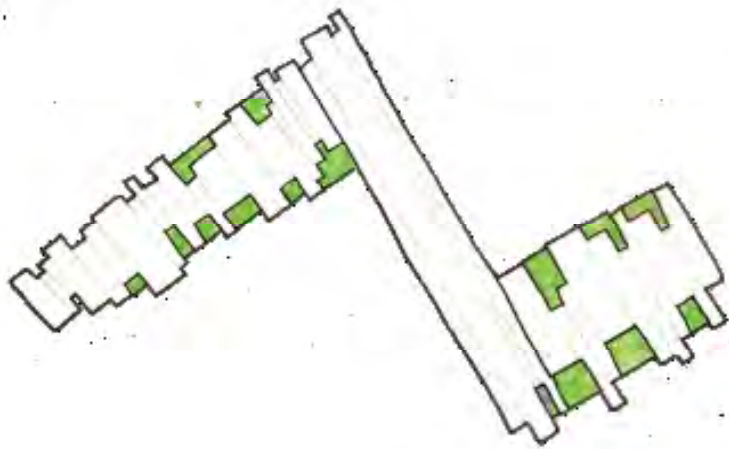
These early sketches show how the basic form that will link two green spaces was manipulated to create pockets for nature, bringing green space within the building also creating a rhythm and hierarchy to the plan.



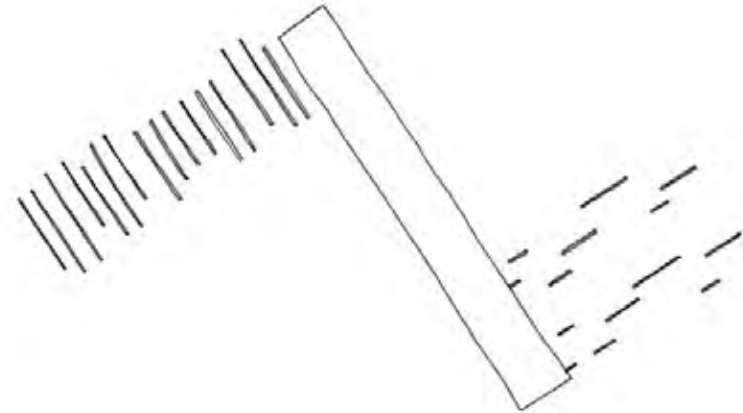
The form.



Form is pushed and pulled creating different spaces.

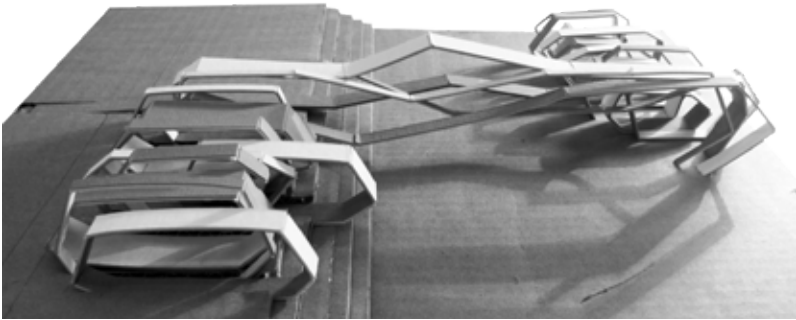


Push and pull creates pockets of exterior space.

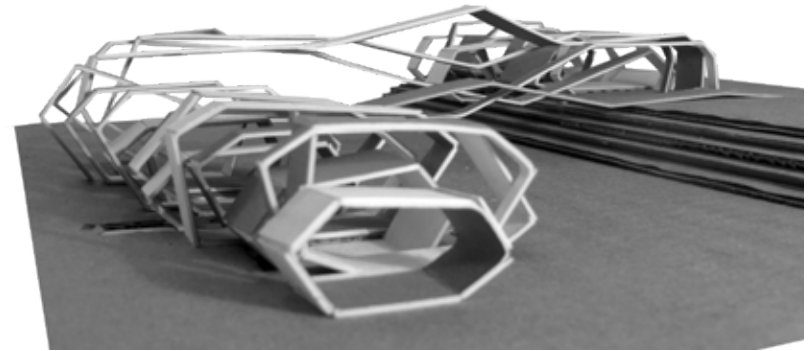


Character and rhythm of three bars.

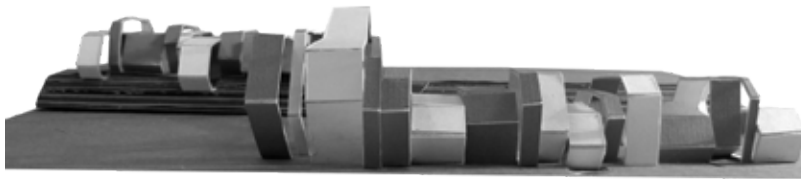
These models show the similar idea of the sketches but in three dimensions. The form of the section was developed based on bringing in more nature, light, and views. This model shows how the three bars connect and oh the bridge links the two spaces together.



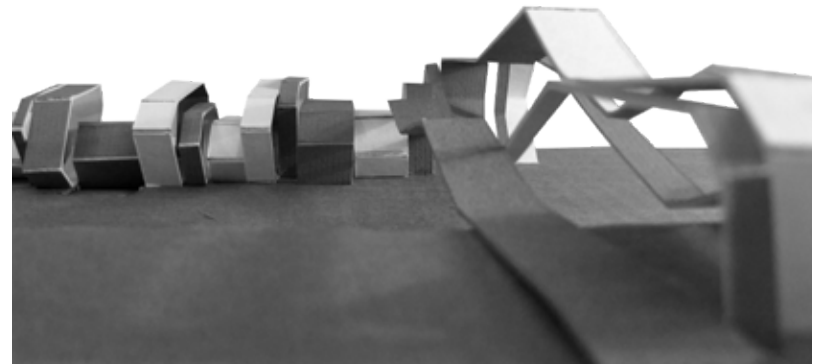
Bridge connects the upper and lower levels of topography.



The form of section gives a deteriorated look to the building. The building becomes more transparent, more into nature bringing in light and views.

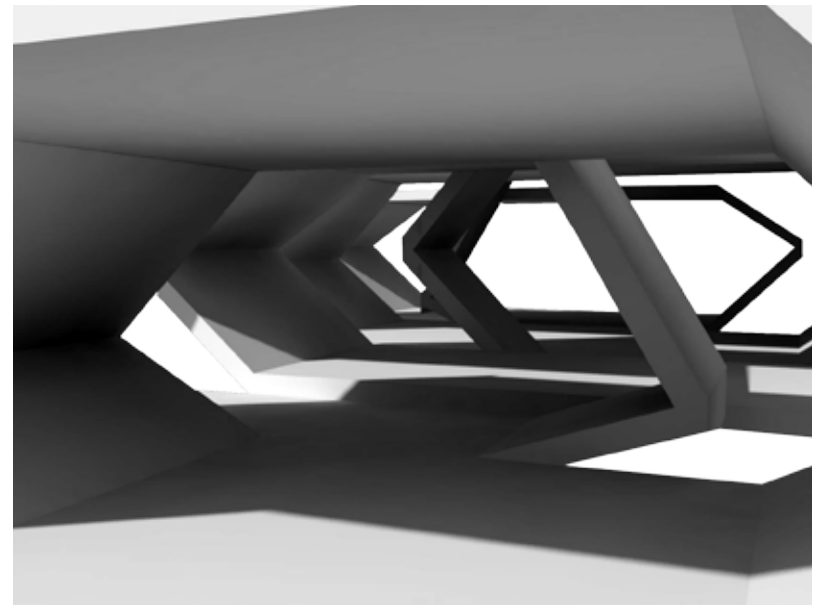
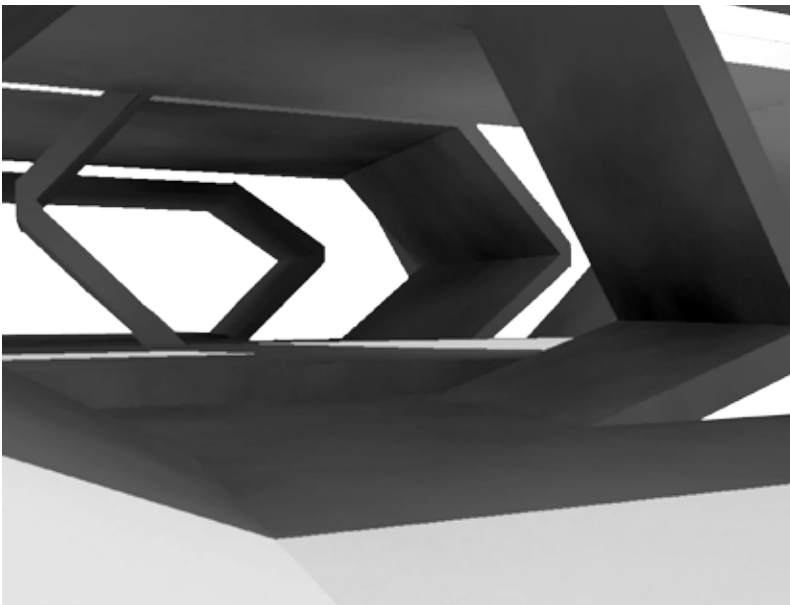


Elevation study showing hierarchy of spaces.



Pedestrian bridge located online bridging element.

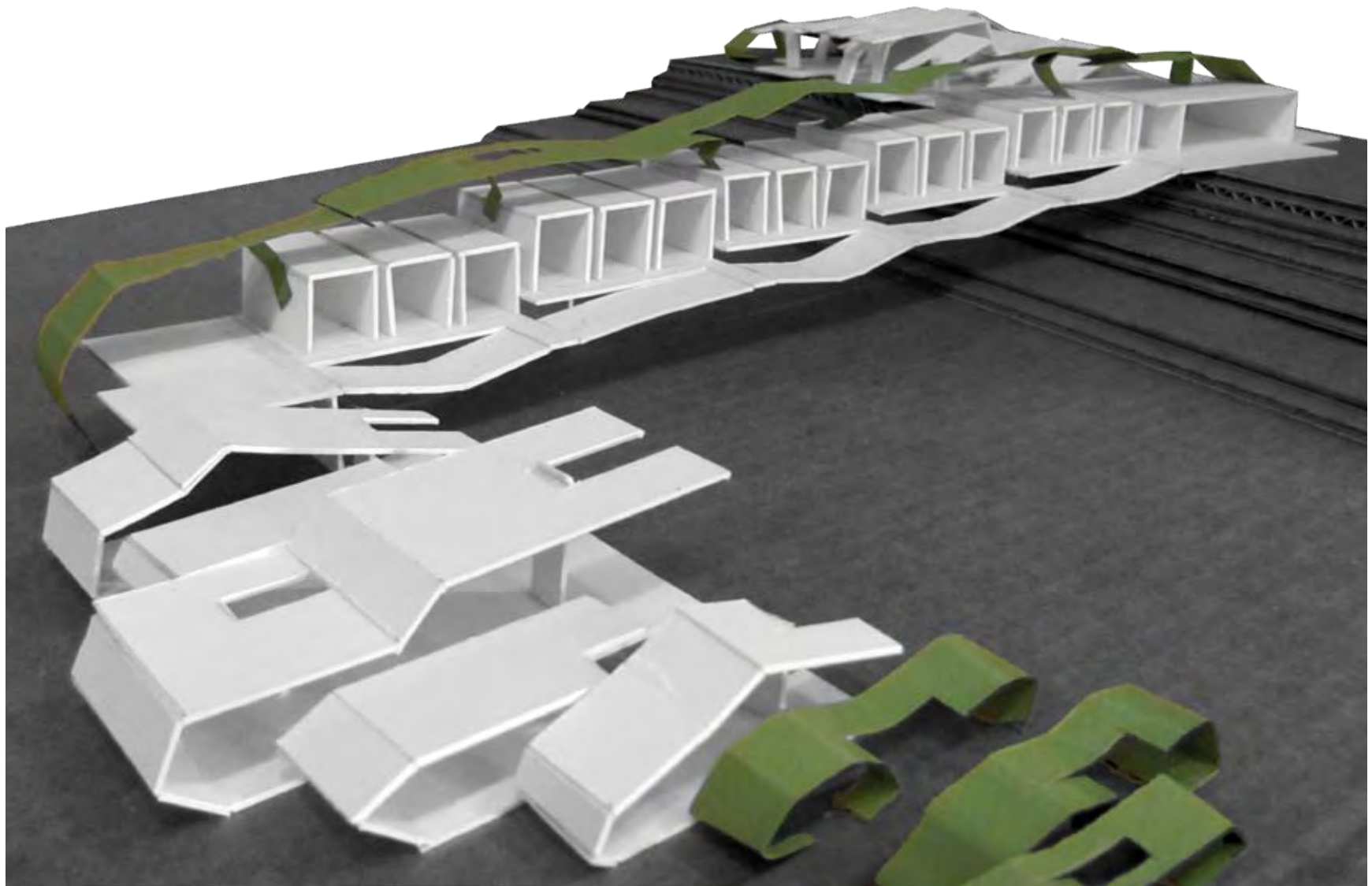
Concept Collage showing form and characteristics of section bringing in nature, light, and views. The building becomes transparent and is blurring the line between interior and exterior.

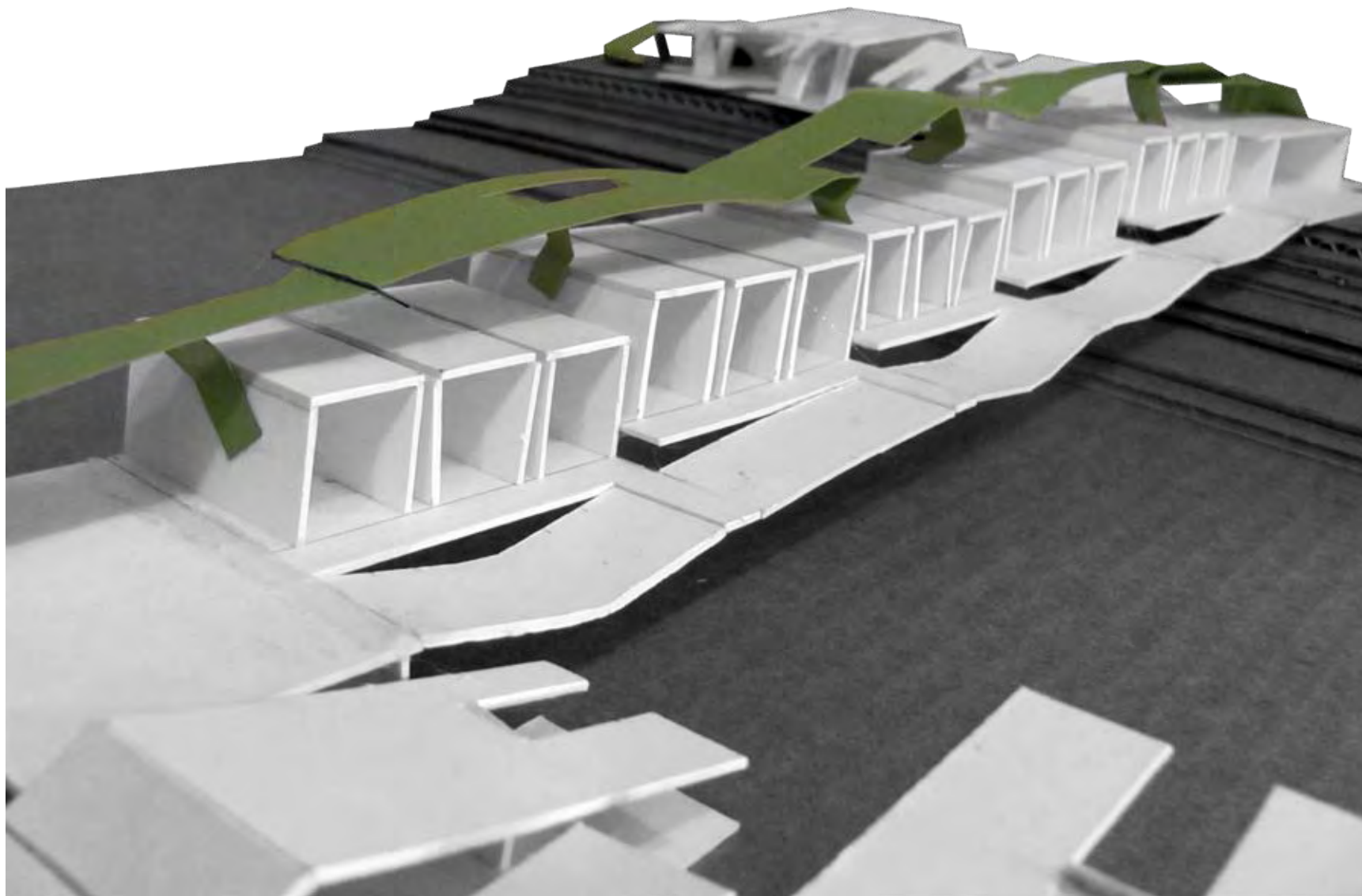


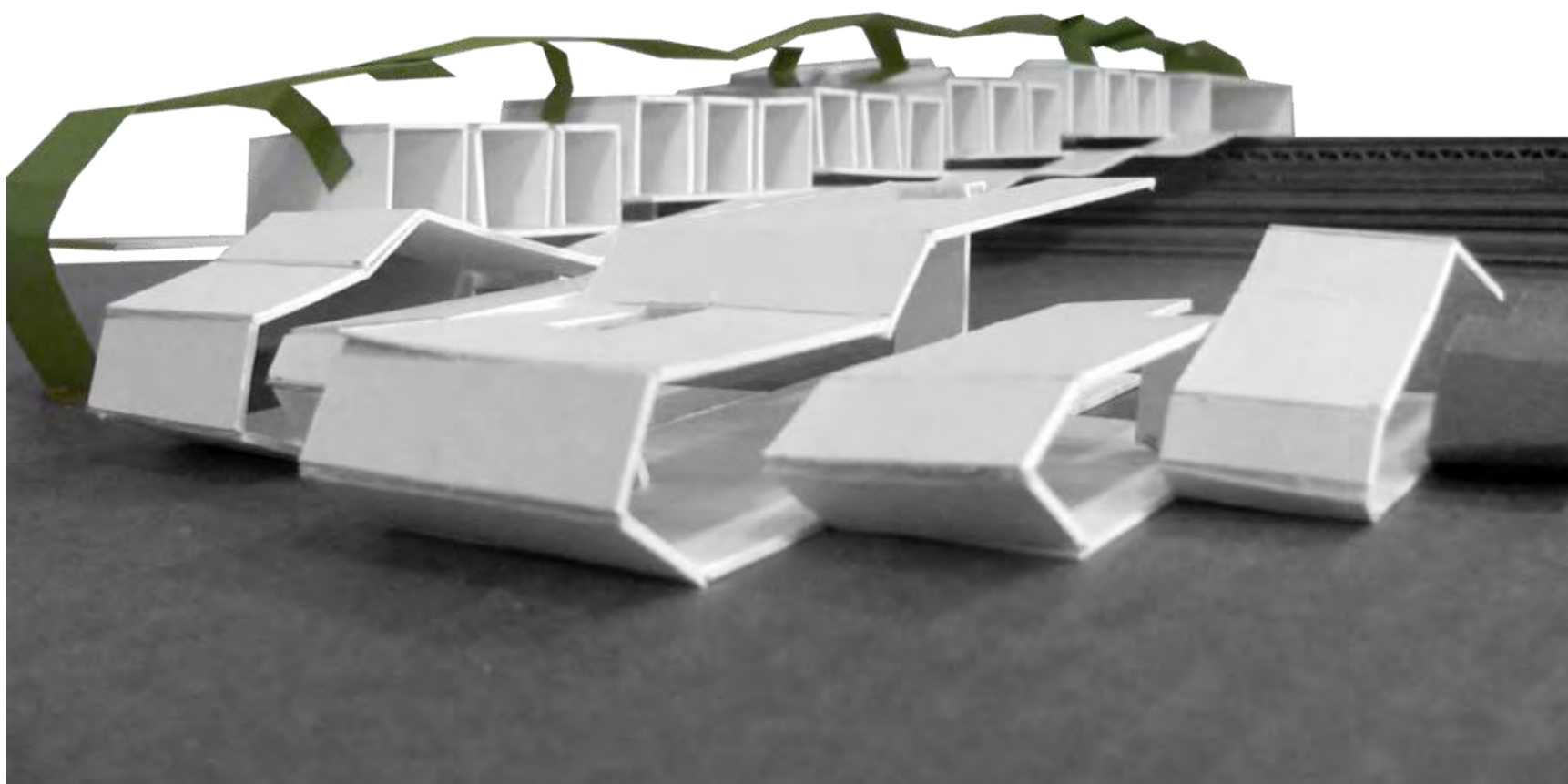


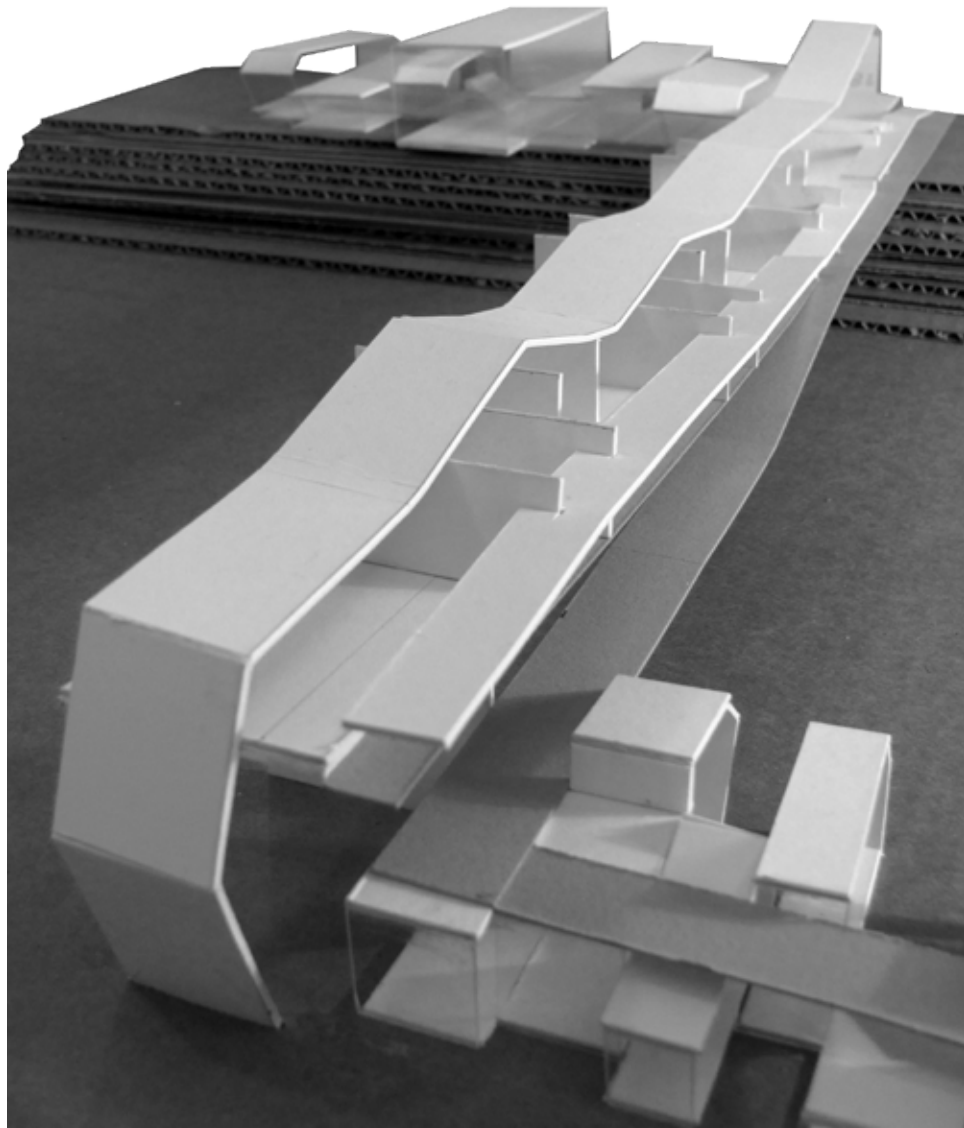
Concept Collage showing a pedestrian bridge over railroad with views towards Lake Erie. Bridge becomes small housing units for temporary workers of the building showing roof terrace with sun shade. Views of the lake and city from roof terrace will be ideal.



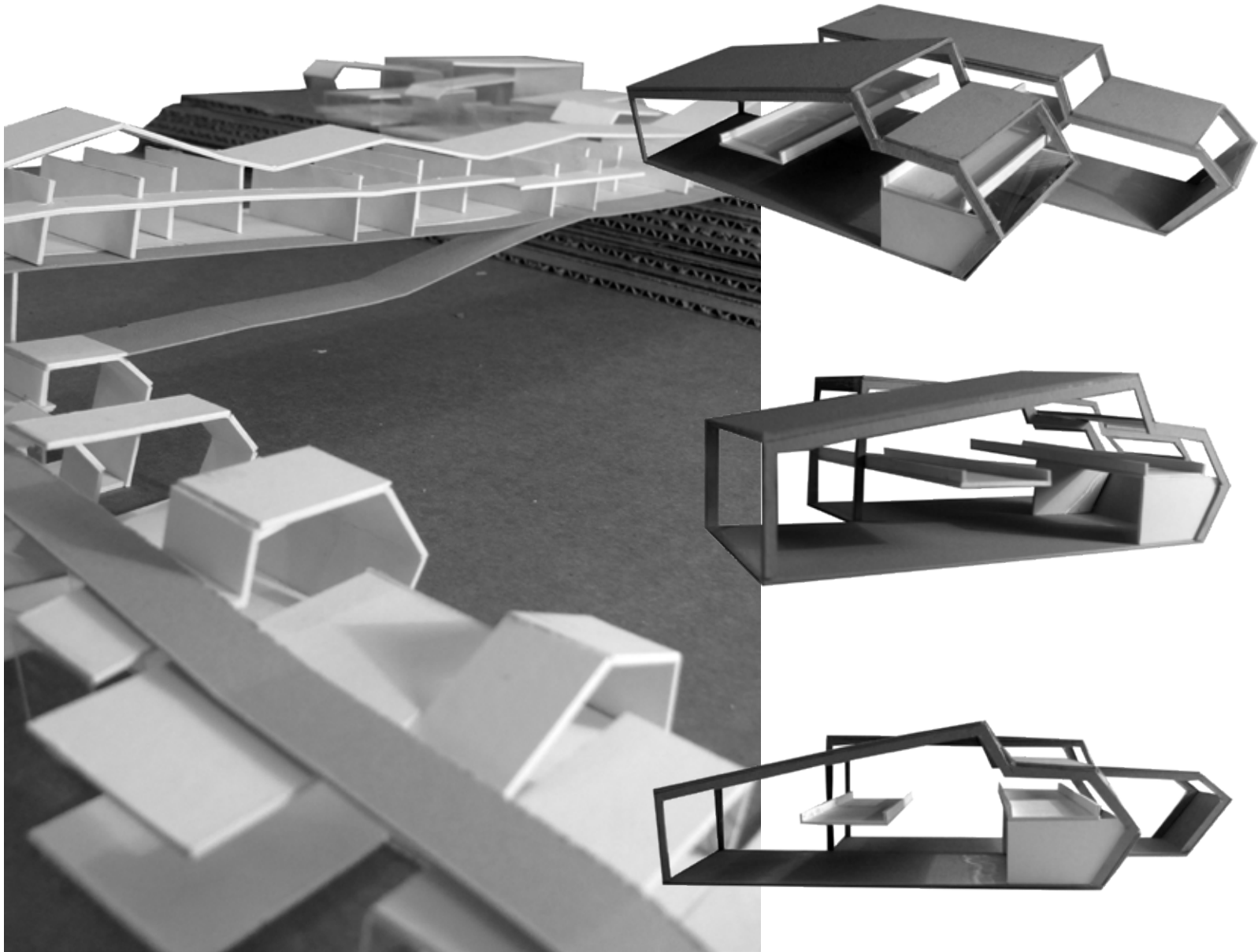








office space unit model



final drawings

The final result of the project was reduced to only a one bar scheme. The project became a linear building that is sunken in the ground becoming a part of the earth. The project became a series of pushes and pulls that create sunken courtyards and outdoor space as well as bring in light and give views while also creating a green space with in the city of Cleveland's old Warehouse District.

Exterior view of project

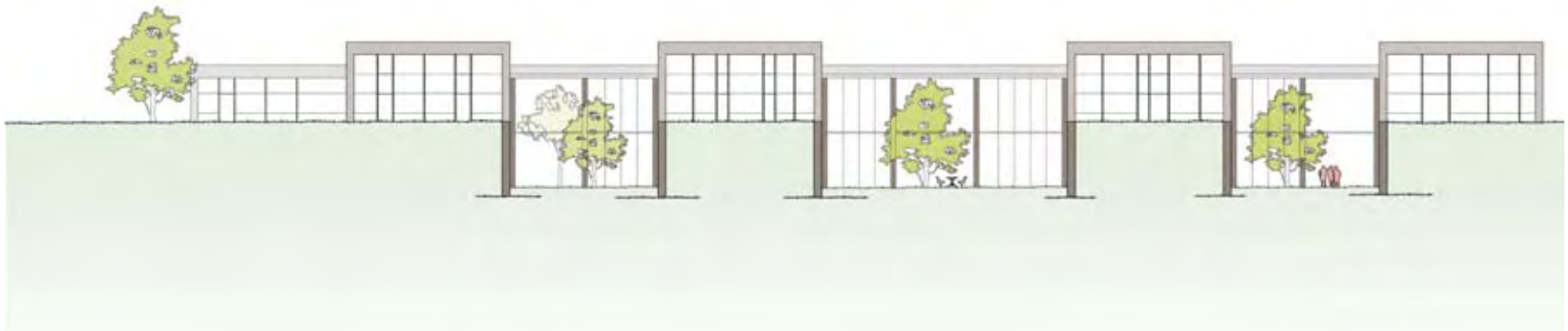




Ground Floor Plan



Elevations



Section

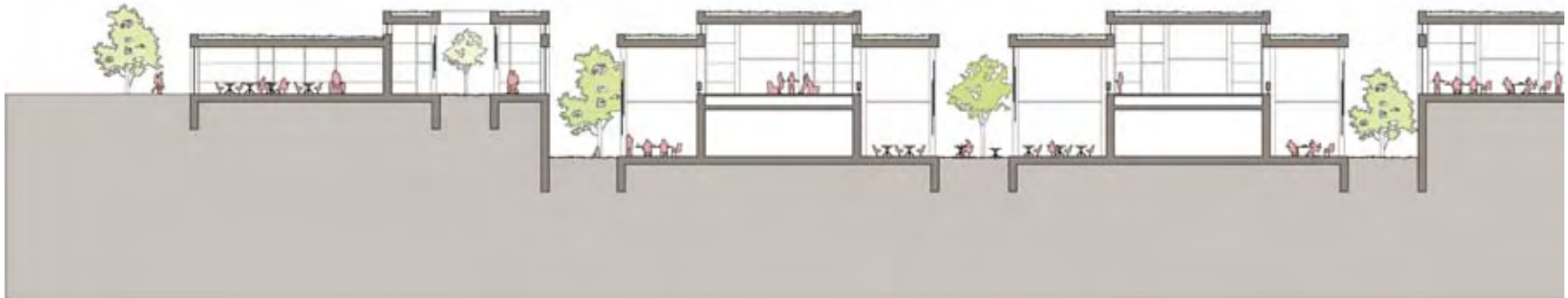
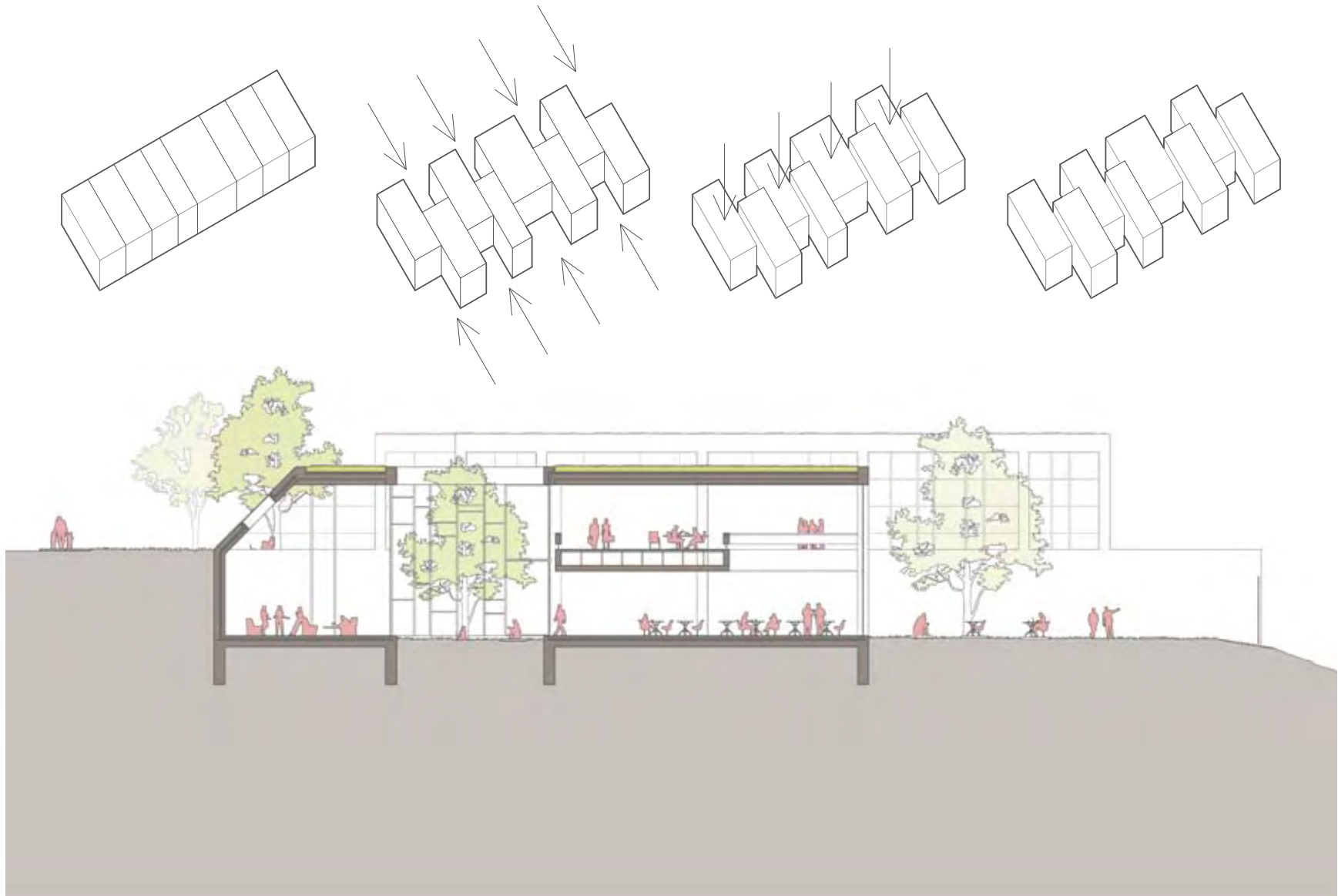
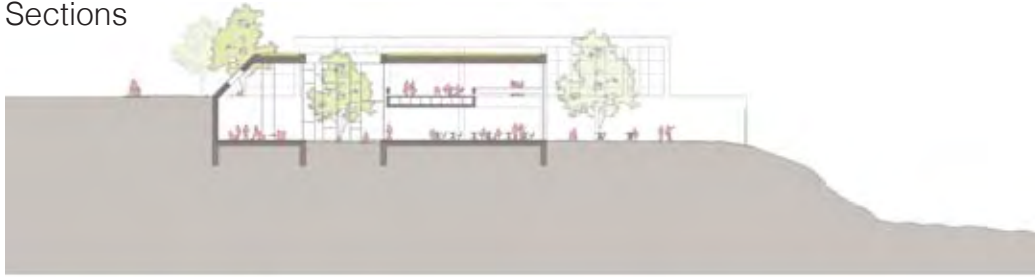




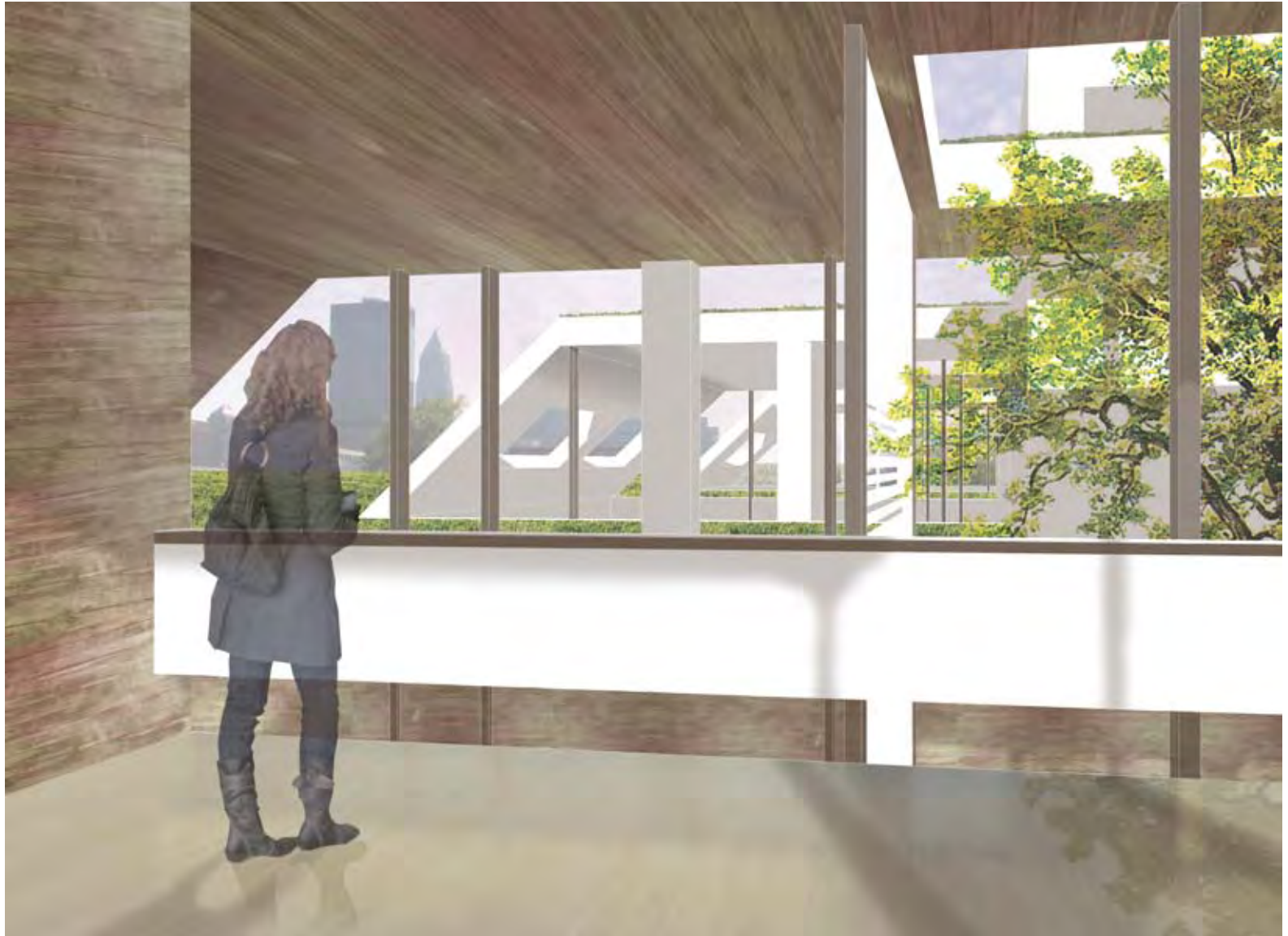
Diagram showing push and pull of the building to allow light and views, bringing the building into nature.



Sections



View upon entering project



View of open work space



View of work space



View looking towards Lake Erie from upper level



View of Lake Erie from lower level



View of work space into interior courtyard



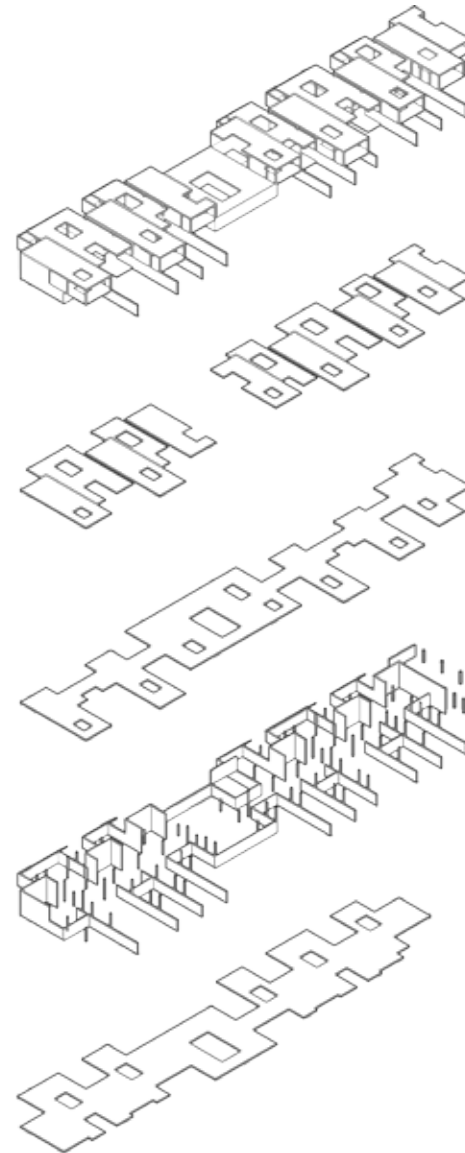
View from exterior courtyard in to cafeteria



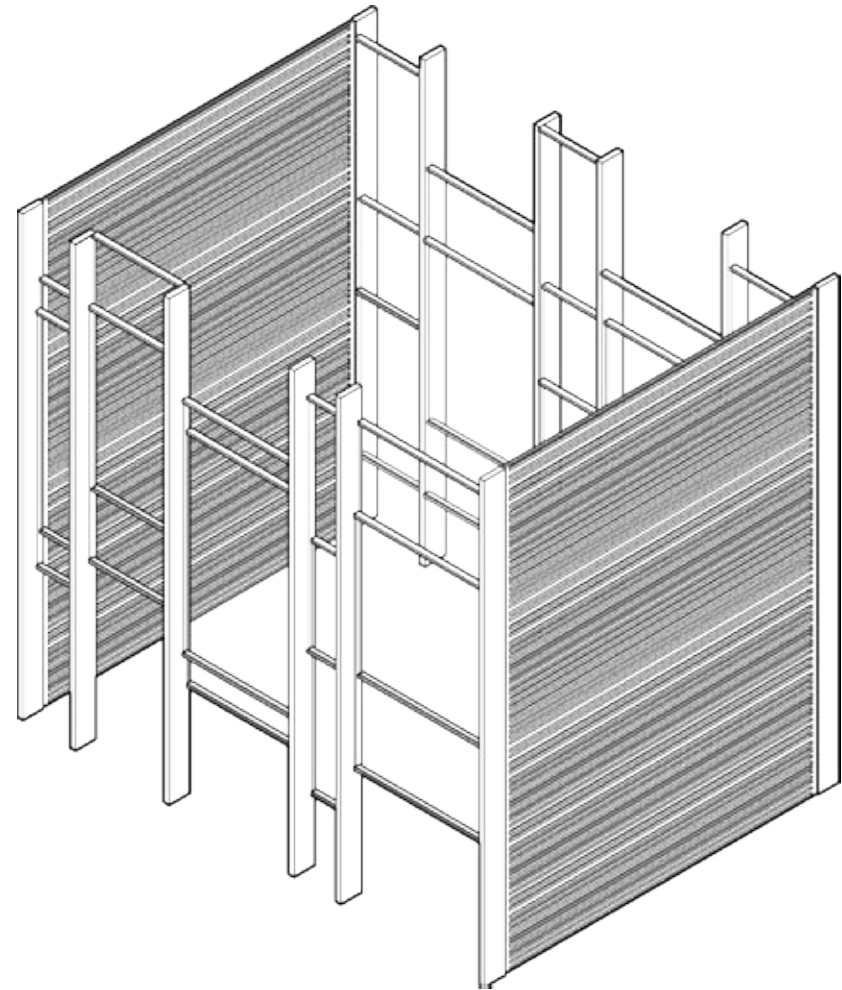


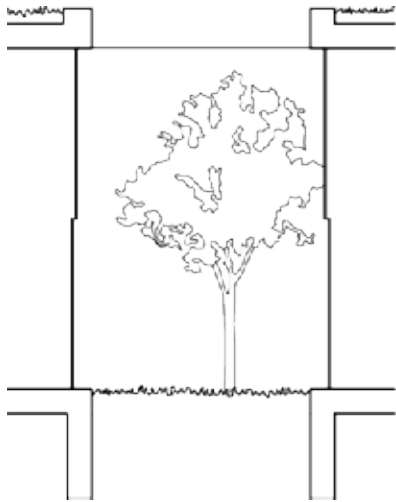
Structure

two-way concrete system with 12" slab spanning 40 ft

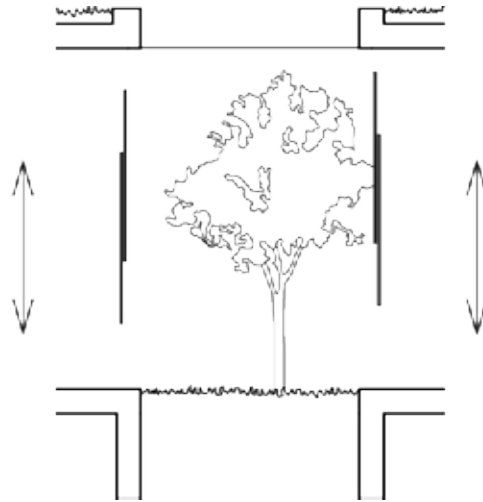


Interior courtyards are enclosed with sliding vertical windows in order to open the building up to nature during summer months. The courtyards are also enclosed with insulated glass with timber grid.

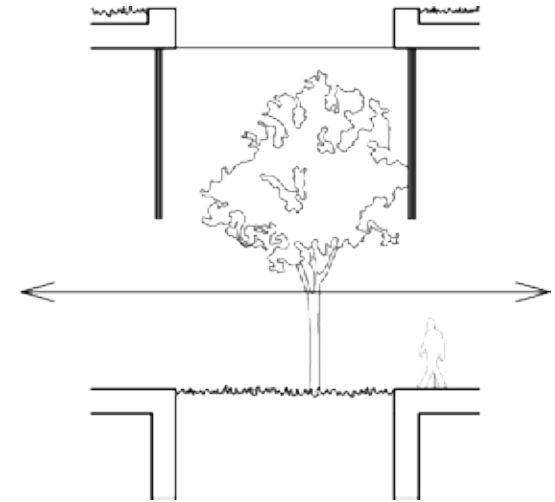




closed



moveable/natural ventilation



open

washington hawthorn tree

Courtyards are planted with Washington Hawthorn Trees which have very distinctive traits throughout the seasons.

Spring



Winter



Fall

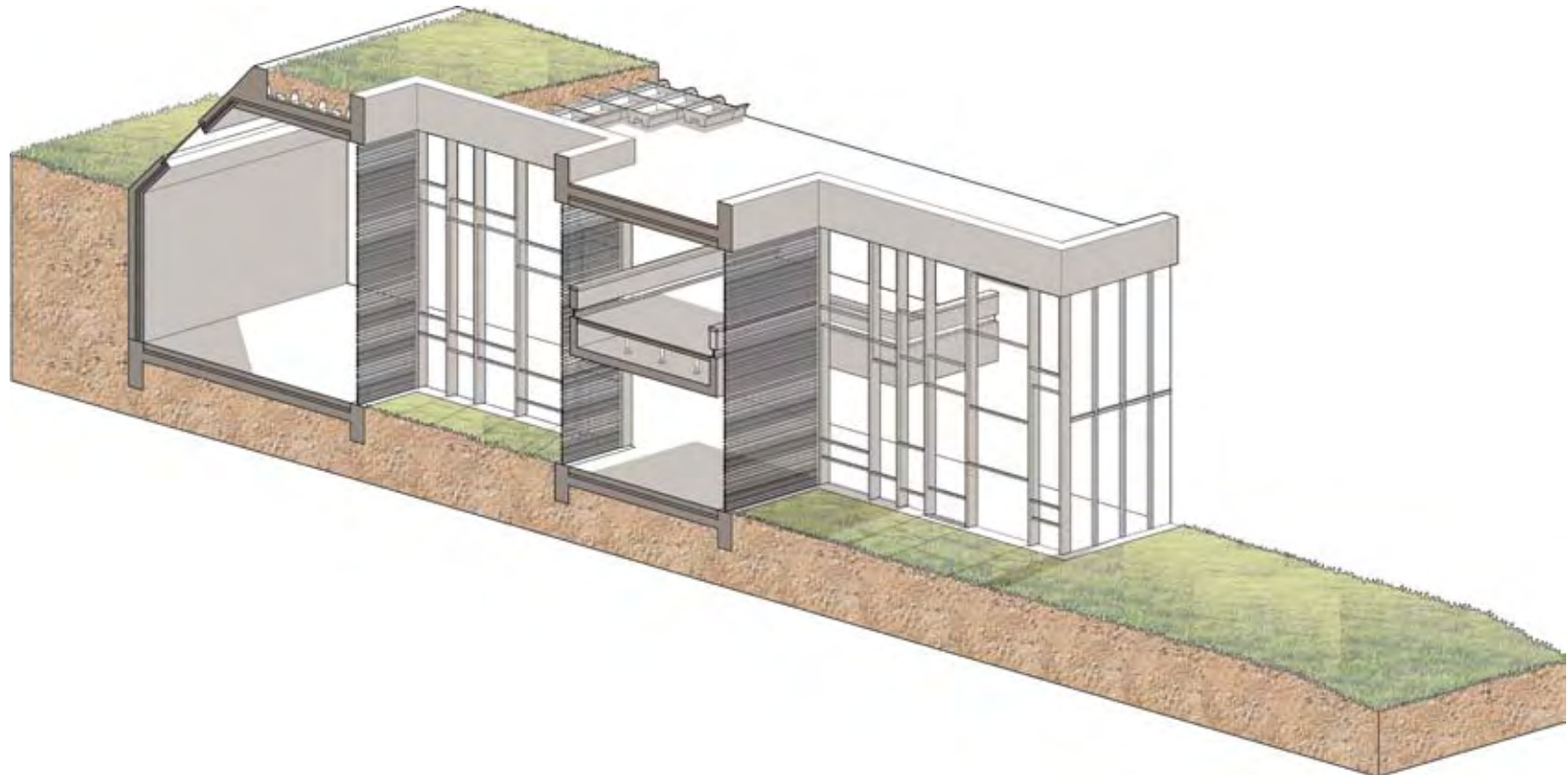


green tech green roof system

The GreenTech module is made of high-density polyethylene plastic. Athletic field applications use virgin resin and GreenRoofs are made of 100% post industrial recycled resin. They are molded and reinforced to provide adequate strength, durability, and a long life expectancy. The GreenTech System is designed with channels beneath each module to provide forklift access for transportation and rotation. These channels along with the choice of soils manage drainage rates, gas exchange, and reduce weight. Water flows directly through the module to the surface below and follows the grade to a drain. The system can be used on any roof system.



Assembly Axon



conclusion

Working with Nature project is a study on how people can bring nature into their daily routines. The project is brought to life through the themes of blurring interior with exterior spaces. The office and nature bleed together to create a dynamic space that everyone can enjoy as well as be productive. The project is based around the elements, the site, the surroundings and how they create a new day to day life style for an urban individual. The building becomes a part of the terrain and a part of the earth, it is like a boulder in the ground.

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This book explains from the beginning that the office is where most of us spend most of our lives. This is the basis of my thesis.

Jodido, Philip. 2006. *Architecture: Nature*. New York: Prestel.
This book shows just how essential nature remains to architecture. The relationship between architecture and nature is fundamental to today's creativity.

Messedat, Jons. 2005. *Corporate Architecture*. Germany: Leibfarth + Schwarz GmbH +Co. KG.
Corporate Architecture is explained with terms such as business identity or business personality and is a part of the corporate culture.

Pearson, David. 2005. *In Search of Natural Architecture*.
This book is a collection of environmentally clean and healthy buildings from around the world and across the centuries. Pearson examines how all these architectural ideas, have led to influence the organic designs of contemporary structures.

Rooca, Alessandro. 2007. *Natural Architecture*. New York: Princeton Architectural Press.

Ross, Philip. 2003. *The 21st Century Office*. New York: Rizzoli.
This book captures emerging themes and ideas of office design of the new century.

Ross, Philips. 2006. *Radical Office Design*. New York: Abbeville press Publishers.
This book is about new office design, also known as "knowledge work." Architects are leaving aside the old cubicle grid and turning to offices that foster knowledge work.

appendix

working with NATURE
cleveland, ohio
workspace/greenspace





ELEVATION FACING LAKE ERIE: 1-16" = 1'-0"



ELEVATION FACING BUILDINGS: 1-16" = 1'-0"



SECTION D: 1-16" = 1'-0"



SECTION A: 1-32" = 1'-0"

appendix b: final presentation

working with nature
PROJECT: Flexible Workspace

PROJECT: Flexible Workspace
SITE: Cleveland, Ohio

MANIFESTO

What is nature? Is it simple yet, nature is the totality of all things that are not human artifacts. However, what nature is has changed dramatically over the course of earth's history with man. With the progression of man, nature has been regenerated, viewed, and experienced in several different ways. Today nature can be manufactured, artificial, decorative, functional, and will ever since man has been destroying and slowly taking nature he has tried to recreate a manufactured nature. What is supposed to be apart of nature but we are growing out of touch. In today's technological world the idea of nature is transforming. The future of nature and its relationship with man is more than a beautiful and decorative display piece. It is several pieces that can create a more integrated and interactive social environment for man.

Even today in a world full of technology and computer generated images the natural environment never ceases to amaze humankind. Nature still holds great beauty, mystery, and knowledge that we are still trying to discover. Consider the hypothesis of biophilia, man has an instinctive bond with other living systems.

However, nature still holds this wonder in our world today. Not only values, appreciate, and respects nature. Progress has stepped man from what use to be so important. The view nature as a backdrop to our lives. Nature is used today in the form of artificial landscapes that is only an accent to the subject that is a building. Nature will always be present, but in what form will that be?

Nature remains is beautiful for sale. The natural landscape is transformed into a commercial landscape. Nature is not only an

How can man better relate to nature when we are constantly ignoring it? In order to close this gap there needs to be a *new way* view nature and incorporate it into society, into the art of architecture, into the places where man inhabits most. Nature needs to become integrated, a functional part of society, that is not superficial.

PROJECT STATEMENT

Today, in the architectural field the integration of nature is moral, artificial, or temporary. Nature should not only be in the places we visit, it should be the places we occupy, inhabit, and work taking an active role in regenerating what man has destroyed.

Humans spend most of their time inside, with so or little connection to nature, especially in the urban setting of the city. People may go months without truly experiencing nature. The spaces that we spend the most time occupying are places of work, education, and study. Why do we separate nature from the places that we inhabit the most?

Nature needs to be used functionally in architecture today. It can no longer be on display within and around buildings. Nature will always hold beauty, but it can also be more than that. When visiting nature it is mainly about the beauty, but when introducing it into our everyday lives, and inhabiting nature it needs to become much more. It needs to become interactive and useful while still beautiful.

The solution is to bring nature into the work place. To create a new type of working environment that works with nature. That surrounds itself in nature through function. The idea is not to create a typical office building, but a work environment, a work environment that is defined using nature to create a place where one wants to work and work better, more efficiently because it is



Green Space



Layers



View

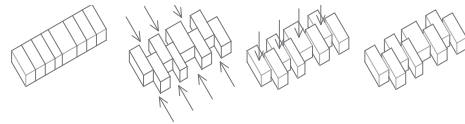


Exterior Southeast elevation view

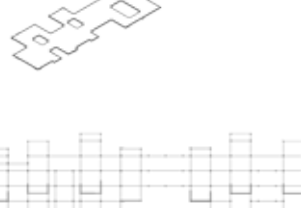
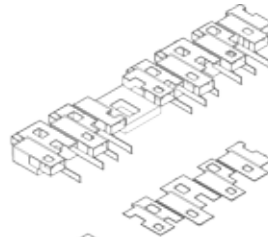




Form
Pushes apart for views and light/ Pushes underground to
black from wind



Structure
Ten-way concrete system with 12" slab spanning 40 feet



Inside vs. Outside



PROGRAM	
11 Interior Courtyards: 4,500 sqft 5 Sunken Exterior Courtyards: 17,000 sqft Library: 10,000 sqft Cafe: 3,500 sqft 2 Cafeterias: 7,000 sqft 2 Kitchens: 16,000 sqft 8 Bathrooms: 4,400 sqft Services: 7,200 sqft Flexible Workspaces: 36,500 sqft	WORK STATION/ WORK AREA
FLEXIBLE WORKSPACE: 36,500 sqft	
Reception Workstations/Lock Areas Meeting Spaces Social Spaces Circulation	MEETING SPACES
Occupancy: 300 people	RECEPTION



View from exterior courtyard facing project's cafeteria dining



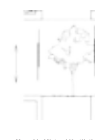
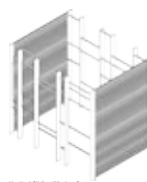
View from ground level facing Lake Erie



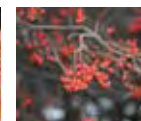
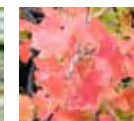
View from sunken floor viewing into exterior courtyards towards Lake Erie



Assembly Axon: 1/8" = 1' - 0"



Washington Hawthorn Trees



working with nature

Carolyn Brown
Tatiana Berger
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School of Art Architecture and Historic Preservation
ARCH 641 Thesis Design studio
Fall 2011