



BRIDGING THE GAP

SUSTAINABILITY THROUGH TECHNÉ

HOLLY BURLEY

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A design Thesis Submitted to the
Department of Architecture and Landscape Architecture
of North Dakota State University

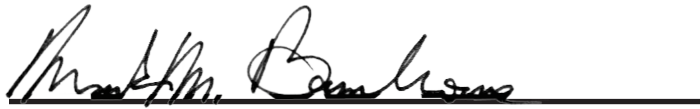
By

Holly Burley

In Partial Fulfillment of the Requirements
for the Degree of
Master of Architecture



Primary Thesis Advisor



Thesis Committee Chair

May 2014
Fargo, North Dakota

PREFACE

Sustainability is an issue that can be approached from many angles. This project was focused on the benefits of designing past the technical side. In order to do this, a few ideas came to the forefront of the research and followed the project to completion. The following are terms that will be utilized throughout the book, please take a moment to familiarize yourself with the basis of the ideas.

1. The famous German philosopher Hans-Georg Gadamer speaks to the issue of health and the over specialization of it. Our health is not something that we often recognize until it is gone and we rely mostly on someone else to tell us how to get it back. He believes that health instead should be recognized as a set of “factors that promote equilibrium”(Gadamer, 1995) – that it is a balance that gets disrupted and in turn leads to the loss of health. Instead of relying on a new pill prescribed by a specialist for every ailment we should be focused on maintaining our own balance.
2. The fourfold as introduced by Martin Heidegger speaks to a primal oneness of earth, sky, divinities, and mortals. We as mortals are a part of the fourfold because we dwell. This reference to dwelling is far more than a mere inhabiting, but rather a “keeping of things”. That is how, as Heidegger states, we keep the fourfold. This connectedness and recognition of belonging is a point of creation for these spaces that we dwell. It is important to the sustainable movement that this oneness is recognized – through this, a deeper understanding and responsibility can arise.
3. Heidegger further introduces the concept of techné, which refers to a “bringing forth”(Heidegger, 1993) a platform for the fourfold to present itself. It is the root for today’s word technology but speaks more to a revealing than a science. Techné allows the fourfold to be presented through actions and interactions and allows for a stronger relationship than science.
4. Heidegger also presents his definition of dwelling through the study of language. To build is derived from the word bauen which comes from the old high german verb baun referring to a remaining, a preserving, and a nurturing.

TABLE OF CONTENTS

List of Tables and Figures.....	7
Thesis Abstract.....	8
Problem Statement.....	9
Statement of Intent.....	10
Narrative.....	16
User/Client Description.....	17
Major Project Elements.....	18
Site Information.....	19
Project Emphasis.....	24
Plan for Proceeding.....	25
Previous Studio Experience.....	28
Program Document.....	30
Case Studies.....	44
Historical Context.....	62
Project Goals.....	70
Site Analysis.....	72
Spatial Studies.....	82
Design.....	86
Reference List.....	132
Personal Identification.....	133

Statement of Intent Cover Photo.....	figure 1
Proposal Cover Photo.....	figure 2
Northeastern Region Map.....	figure 3
State of Connecticut Map.....	figure 4
Wesleyan University Campus Map.....	figure 5
Site Panorama.....	figure 6
Program Document Cover Photo.....	figure 7
Artefact Photo.....	figure 8
Artefact Photo.....	figure 9
Wesleyan Center for The Arts Building.....	figure 10
Wesleyan Sustainable Land Plot.....	figure 11
View From Site.....	figure 12
Artefact Photo.....	figure 13
Boston University.....	figure 14
ITRI Campus.....	figure 15
Dormitory Mariatal.....	figure 16
Hub Mall.....	figure 17
Olin Library.....	figure 18
Memorial Chapel.....	figure 19
Japanese Transport Hub Proposal.....	figure 20
Climate Diagrams.....	figure 21
Spatial Diagrams.....	figure 22
Design Documentation.....	figure 23
Personal Identification Photo.....	figure 24

TABLES & FIGURES

ABSTRACT

This thesis explores the relationship between experiential and scientific approaches to sustainability and the architectural approaches to the hot-button issue. It will provide an example of how an environment can encourage participation in sustainable futures and how architecture may invite these sustainable decisions. Through the typology of student housing, this project will utilize some of the first independent years of a young adults life to lead to a better-understood relationship between students and their place in the world. The design will be catered towards Wesleyan University in Middletown, Connecticut with hopes of further influence in the field of sustainable student living. Students are the future and it is essential that they understand and work towards a more environmentally sound tomorrow.

KEY WORDS:

sustainable, experiential, bridging, participatory, students, relationship

PROBLEM STATEMENT

How can an architectural interaction awaken a participant's responsibility to a sustainable future?

STATEMENT OF INTENT



Figure 1
photo by Holly Burfi

TYPOLOGY:

Dormitory/Student Housing

CLAIM:

By sharing the benefits of sustainable design with the younger generation today in both modern technical and poetic (techné) based architectural practices, we pave the way for a more viable tomorrow.

Actors: University architecture

Action: Encouraging an environmental responsibility

Object: Students

Manner: Technical sustainable practices and participatory action

PREMISES:

1. Sustainable behavior is easier and thus more likely when people face few barriers to sustainable action. (Manning, 2009)
2. Architecture that encourages a deeper mental connection with sustainability will help to open a relationship between students and their environment.
3. Over technilization and specialization in sustainable systems alienates users and limits understanding of sustainable practices.

THEORETICAL PREMISE:

By pairing technical sustainable practices and a more techné based approach to independent and communal living situations, architecture can awaken a sense of empathetic exchange with the environment, the other, and the community. This can invite a reciprocal responsibility between users and the environment and pave the way for students to make sustainable choices in the future.

SITE:

The site is located on Wesleyan University campus in Middletown, CT. Chosen for the need for student housing, the site provides a bridge to the environment, students and the broader campus.

PROJECT JUSTIFICATION:

Students that form relationships with the environment through participatory sustainable actions are more likely to choose sustainable futures for themselves. Additionally, a deeper understanding of the issue is gained opposed to those who occupy spaces with unrecognizable, technical responses.





PROPOSAL

Being young and going out in to the world on your own for the first time can be scary and challenging. It is important to your academic career to find a place you feel comfortable; a sense of place in the world. Unfortunately, most architecture does not contribute to the empathetic connections between self, others, or the environment that fosters this sense of place. The typical big box architecture that is focused only on technical efficiency is contributing to the lack of meaningful experiences and ethical decision making that is plaguing our society. When everything becomes specialized, we no longer exercise our personal judgement or connections between ourselves, others, and things. If we are told that reducing our shower by 2 minutes each wash will help save the world's water resources by someone we consider a specialist, do we really believe it is so?

Will this action help with our current environmental problem? Yes. But does it give us the dependence and respect for nature that will help lead us back to a relationship of being part of the earth rather than on it? No.

NARRATIVE

Science is a part of the "solution" for our current environmental issues but it is not the sole answer. We cannot pile more and more technological answers on a problem that is uniquely natural and expect it to restore our natural resources. As Hans-Georg Gadamer states "It is the tragic fate of our modern civilization that the development and specialization of scientific and technical abilities has crippled our powers to treat ourselves (properly)" (Gadamer, 1996). The same can be said for our natural surroundings and our connections with others. If we keep trying to control our environment we will eventually replace it with an artificial representation of it. An interaction that demands ritual and moral judgement must go beyond making a dent in our environmental woes and begin to emphasize the interconnected relationship between us and our surroundings that can lead to a responsible and sustainable future.

OCCUPANTS:

The dormitory will be occupied by approximately 200 of the 2940 Wesleyan University undergraduate students who are required to live in campus housing for the totality of their academic career. It would also house a hall director and a resident assistant for each floor. The co-ed dormitory would also have a handicap accessible room on each floor as well as dining and library areas could be accessed by students and staff. To further bridge the building to campus and potential students, this design will incorporate a school bookstore in a retail space that could be adapted for a multitude of uses.

USER/CLIENT DESCRIPTION

OWNERS:

The green student dormitory will be owned by the Wesleyan University system.

EMPLOYEES:

There will be staffing in the bookstore, dining center, library, a general maintenance and janitorial staff for the building as well as staff for the residential portion of the property.

BRIDGE TO CAMPUS:

A campus bookstore located on the first floor acts will draw visiting potential students and families to the building. This is amplified due to the proximity of the admissions building.

BRIDGE TO FELLOW STUDENTS:

Dining center, gathering spaces that occur on dormitory floors, and the covered exterior space between the wings allow students to congregate and interact with one another.

MAJOR PROJECT ELEMENTS

BRIDGE TO ENVIRONMENTAL LEARNING:

The environmental library housed in the first floor of the west wing will provide a space to learn and connect with the environment as well as study spaces and meeting rooms.

BRIDGE TO FUTURE HOMES:

Dorm rooms located on the second floor of both wings lend students a place to call home while at school. The sustainable nature of the dorms and amplified connections make it more likely for students to incorporate sustainable living in their future homes.

NORTHEASTERN REGION



Wesleyan students are required to live in on campus housing for the entirety of their undergraduate career. A majority of this housing requirement is being met by dilapidated, inefficient single family houses within a couple mile span of campus. With the incorporation of a new dorm the university could relocate many students to a more environmentally friendly building located directly on campus. This will provide a connection to the community, to nature, and the other in an area that is lacking in function by utilizing the natural resources of the site. Currently, the university is comprised of a mix of modern and classical architecture that speaks to the historical and progressive nature of the campus.

SITE INFORMATION



Figure 4
map by: http://www.bestplaces.net/images/city/middletown_ct.gif

CONNECTICUT



Figure 5
map by <http://emergencymanagementblogs.wesleyan.edu/files/2008/12/color-campus-07-11-08.gif>

WESLEYAN



Figure 6 Panoramic

UNIVERSITY





Figure 6
Panoramic from center of site
photo by Holly Burley

This project will focus on how to invite a connection between students, their peers, their school, and the environment in ways that provide a lasting sense of responsibility to sustainable action that moves beyond a simple technological application.

PROJECT EMPHASIS

By using architecture to engage existential questions of our place of “being in the world”, I hope to form habits of a more holistic view of man, earth, and the relationship between them. This involves moral and ethical questions of judgement that is fleeting in today’s society.

RESEARCH DIRECTION:

Research will be performed heavily in the first semester with an ongoing focus on the theoretical premise, typology, historical context, site analysis, and programmatic requirements. This includes a focus on which spaces will be best utilized to draw students in and create a connection to the environment.

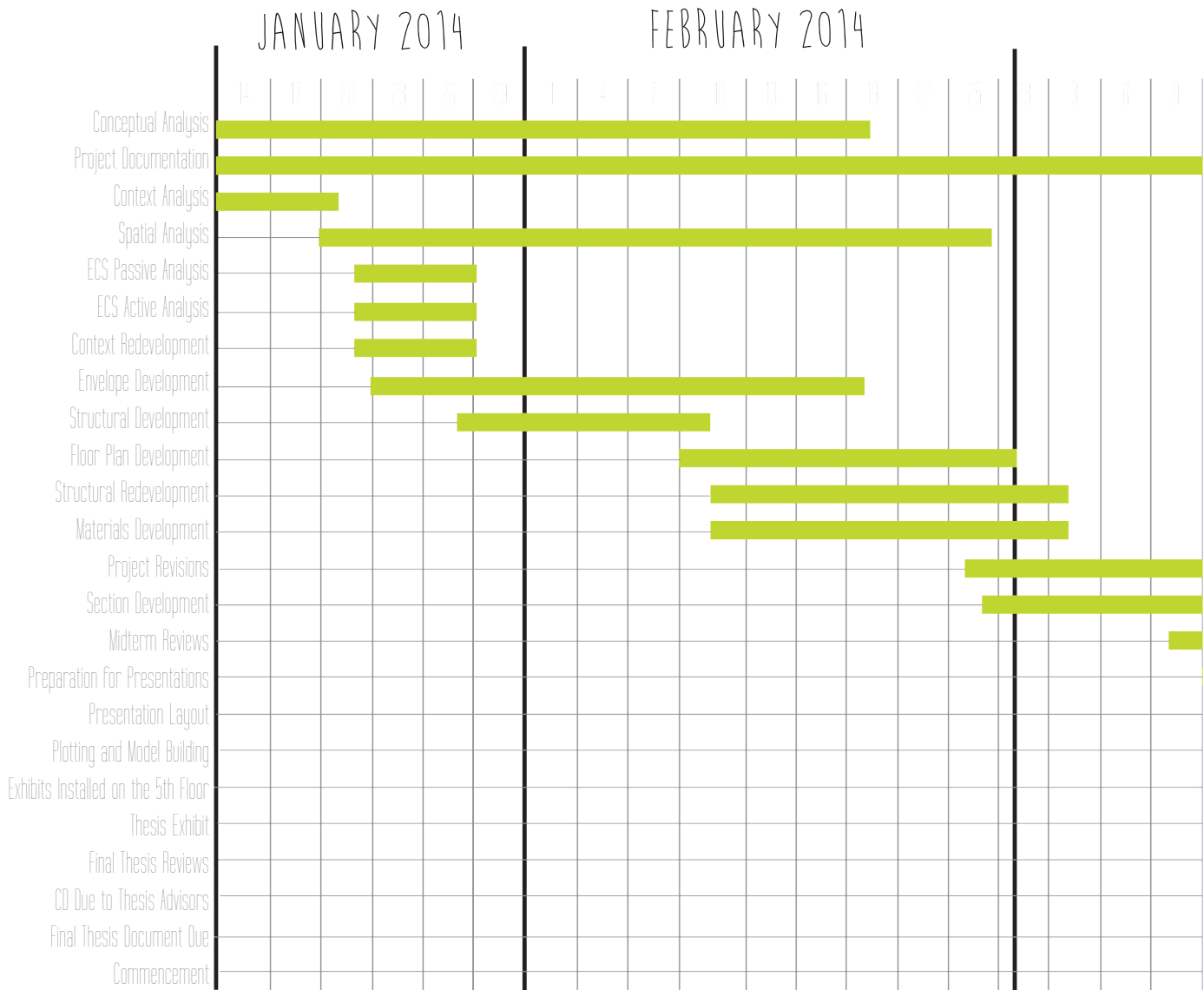
DOCUMENTATION OF DESIGN:

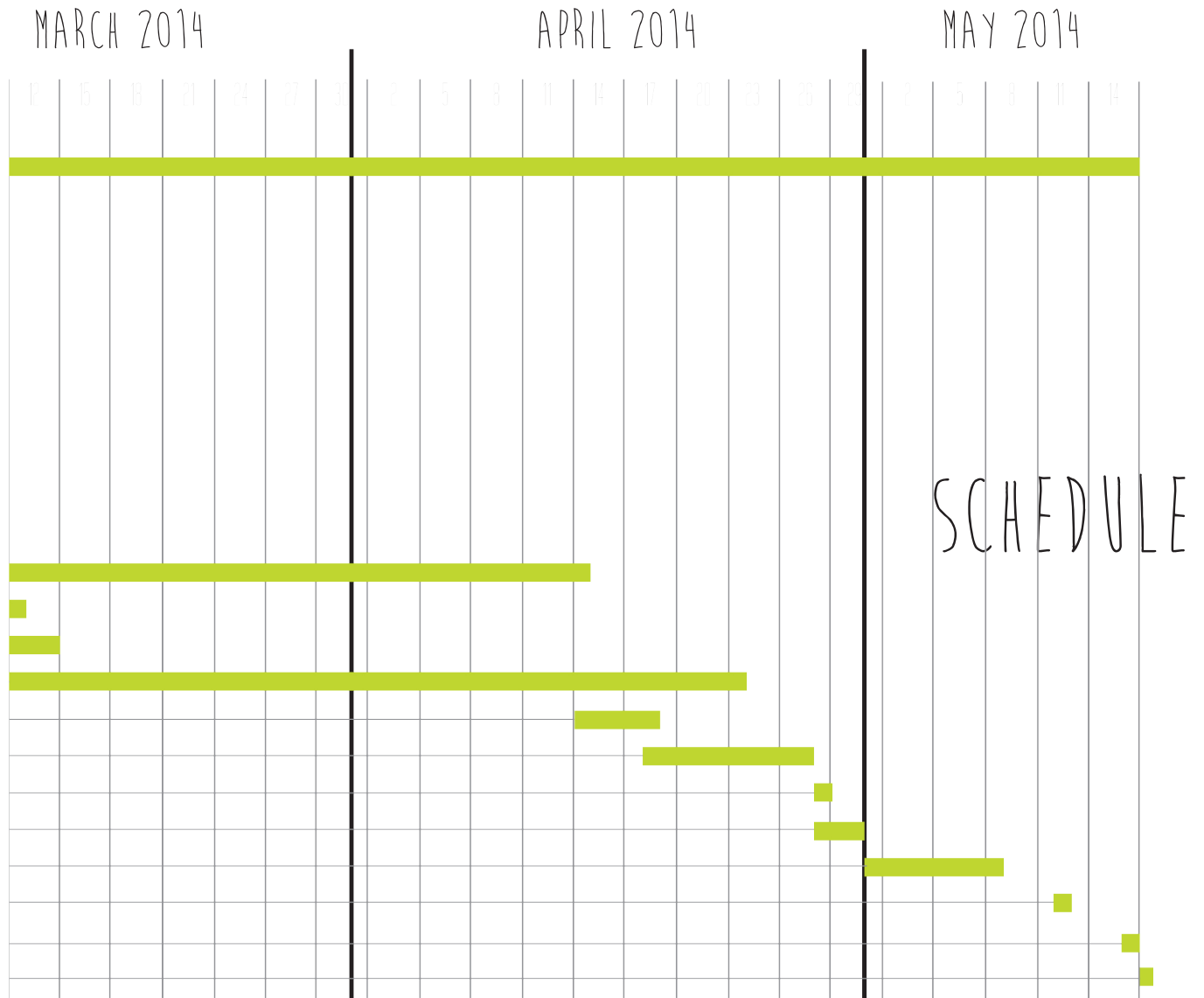
Documentation will be compiled in the form of a physical and electronic book containing any works deemed to be of importance during the course of the project. This will include site, context, and historical information, research, analysis, design, data collected, and theoretical study throughout. Upon completion of the thesis project, a physical book will be created and an electronic version will be made available to NDSU for future review.

PLAN FOR PROCEEDING

DESIGN METHODOLOGY:

Research will be conducted following a mixed method approach focusing on a combination of qualitative and quantitative research and analysis. This will be continuously guided by the theoretical premises and unifying idea and will include using a concurrent transformative strategy. Throughout, the research and design process will guide me to analyze and interpret the information gathered and created in written, graphic, models, artefacts, language studies and digital media. There will be personally observed and researched information included in the qualitative data and statistics and scientific data in the quantitative information gathered. All will be documented in the thesis book.





2nd year - fall 2010-spring 2011

Tea House - Fargo, ND parkJoan Vorderbruggen

Boat House - Minneapolis, MN riverfront.....Joan Vorderbruggen

Bird House - Research competition.....Cindy Urness

Montessori School - Fargo, ND.....Cindy Urness

Dwelling - Marfa, TX.....Cindy Urness

3rd year - fall 2011-spring 2012

Zombie Safehouse CompetitionRegin Schwaen

McCanna Artist in Residence - Grand Forks, ND.....Regin Schwaen

Agricultural Research Center.....Mit Yergens

Culinary Institute - Fargo, ND.....Mit Yergens

PREVIOUS STUDIO EXPERIENCE

Landscape Architecture 3rd year - summer 2012

Unicorn Park Redesign - Fargo, ND.....Jay Kost

4th year - fall 2012-spring 2013

Highrise - San Francisco, CA.....Don Faulkner

DLR Competition.....Don Faulkner

Hope's Journey School - Jema, Ghana.....Don Faulkner

Marvin Windows Competition.....Don Faulkner

5th year - fall 2013

Theoretical Thesis Preparation.....Stephen Wischer

PROGRAM DOCUMENT

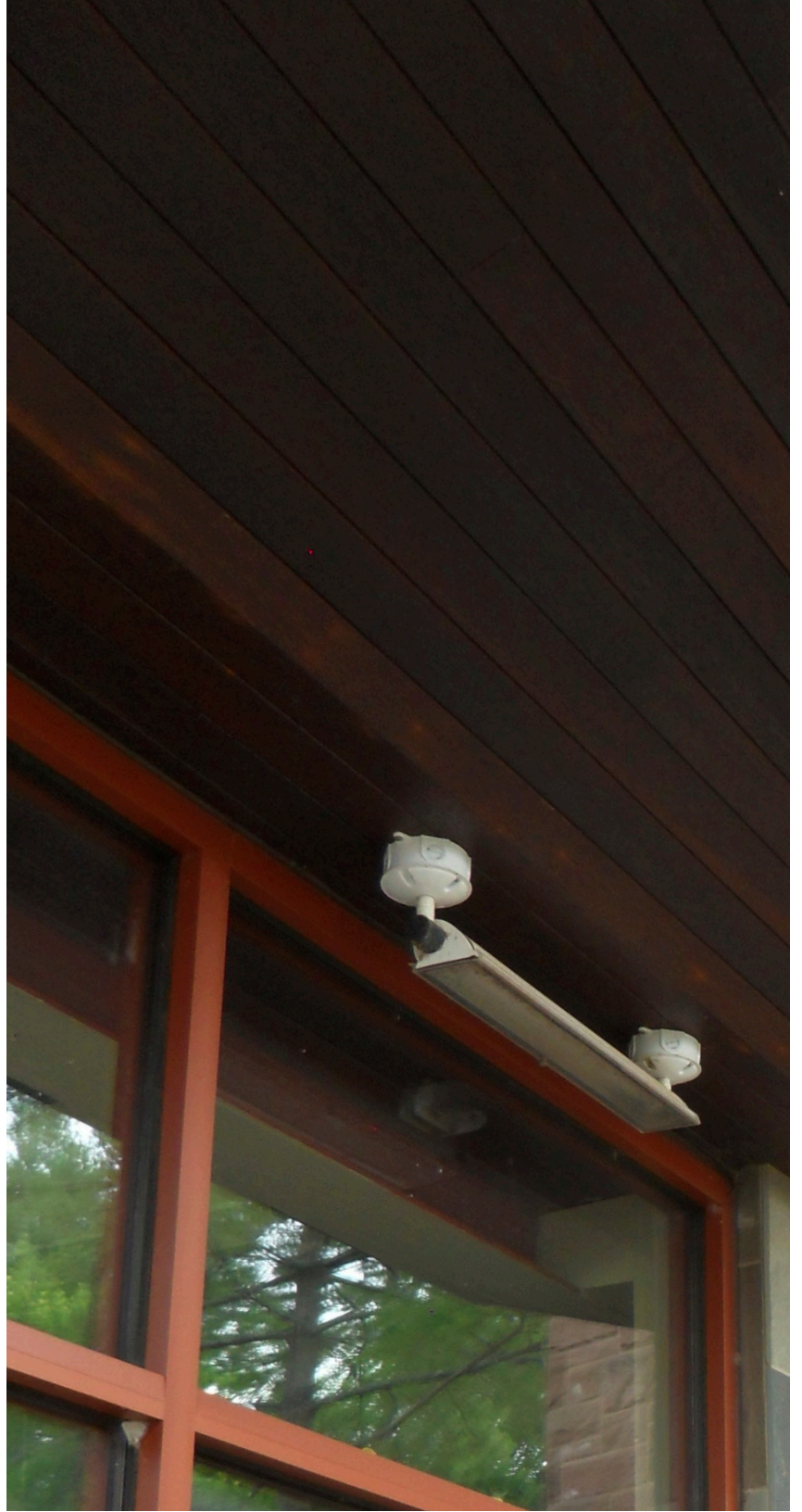




Figure 1
photo by Holly Burley

The Fourfold - A study of language through Heidegger:

The idea of dwelling has been on the forefront of my thesis research and consideration. What does it mean to dwell and what does that mean to the earth that sustains our actions of dwelling? Through the study of language in Heidegger's essay *Building, Dwelling, Thinking* I was able to tie some of these concepts together to better understand these relationships.

Bauen, to build, is derived from the Old High German verb *baun*, to dwell. This is to say that to build is to dwell, to remain in a place. It speaks to the way that we are and the way that we are on the earth. "To be a human being means to be on the earth as a mortal. It means to dwell." (Heidegger, 1993) The building that *bauen* refers to is more than just constructing. It means to care for, preserve, and nurture. It is an unfolding of the environment that brings about a built environment. Bringing this sense of dwelling and being in the world, that is lost on today's culture, back into perspective will help to share the responsibilities of the current environmental crisis in a more perceptible way.



Our being “on earth” also insinuates a being “under the sky”. These have a shared inherent meaning of “remaining before the divinities” (Heidegger, 1993) This does not only speak directly to a specific god or gods but instead to the idea of something greater than ourselves. As mortals, our life may be fleeting but our creations and ideas have the possibility to be immortal by living on, beyond our individual lives. This is where the idea of divinities derives from. “By a primal oneness the four - earth and sky, divinities and mortals - belong together in one.” (Heidegger, 1993) This is the fourfold. In a more profound understanding of life we do not consider these four as separates because they are intrinsically entwined. Human beings are in this fourfold by dwelling and because that means to preserve and nurture in its essence, this fourfold is a starting point for my study into sustainability. It is through things that human beings are preserving and keeping the fourfold. We create things that allow the fourfold to become present. A bringing about through creating that allows us to see



figure 8
photo by Holly Burley

The Artefact:

Utilizing the artefact to further study the fourfold and this approach to sustainability has been a helpful method of research. My artefact consists of four six foot long poles with interlocking three foot poles that, when assembled, form a grid that support twelve glass plates. This is at rest on the ground outside, the plates are filled with water, and the eight six foot long handles are off to the side. Through the act of assembling the handles and lifting the artefact from the ground to shoulder level, the participants act as a community to preserve the balance of the contraption. Once raised the water refracts the sun in a dancing pattern on the ground. The fragility of the glass and the frailness of the construction combine to provide the users an opportunity to see the current ecological crisis and our role in it through the artefact. The artefact calls attention to the fourfold the earth (starting point, and canvas for the refractions), the sky (provider of the refraction), divinities (lifting motion has always been indicative of an offering to something greater than ourselves), and mortals (focus on human movement and assembly).



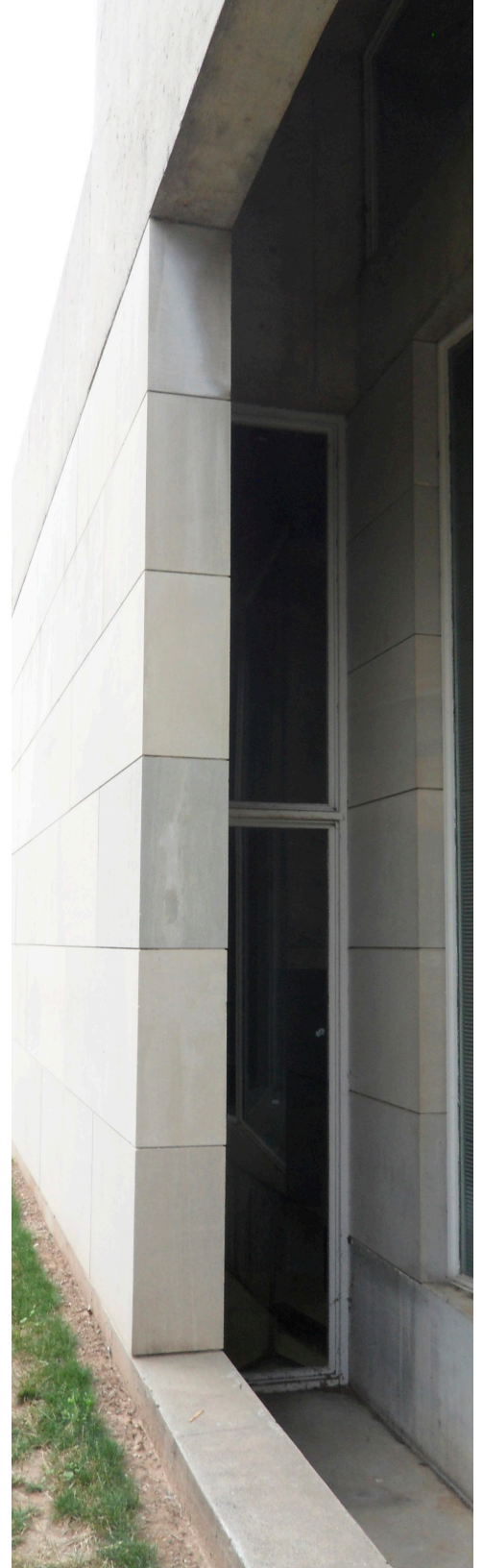
This creation provides a physical thing to relate the concept of sustainability to. A concept that is often times seen as a scientific problem requiring a further developed scientific solution. However, language and research has shown us that our place in the fourfold is buried in preservation and nurturing the earth, in other terms saving it. "Saving does not only snatch something from a danger. To save really means to set something free in its own essence. To save the earth is more than to exploit it or even wear it out. Saving the earth does not master the earth and does not subjugate it, which is merely one step from boundless spoliation." (Heidegger, 1993)



Figure 9
photo by: Holly Burley

Formative Years and Habit Development:

It is an agreed upon fact that the average 6 years of college can be some of the most formative years in a young adults life. Throughout these years, students find themselves with a freedom never before experienced. Of the 66.2 percent of 2012 high school graduates that continued on to higher education, 49 percent were living separate from their parents. During this time many make decisions they would not have under supervision from their parents. There are many reasons that can be credited for this but arguably the largest is a difference in opinion from their head of the household. Many times these college years mark the beginning of habits that will follow students through the rest of their lives. This is why many schools invest a large amount of money and effort to discourage harmful behavior like alcohol and substance abuse. Why should environmental concerns be any different? Should we not discourage the tossing of recyclable material or the wasting of water? Should we not be encouraging a deeper connection that instills a sense of responsibility to the environment?



Because it takes only twenty-one days to make or break a habit, students who live in this dormitory for even a single year will develop routines that will likely follow them into their living practices for the rest of their lives. Being regularly exposed to a certain action nearly doubles the likelihood of that action being chosen in the future. This works the same for both “positive” and “negative” habits. Therefore, living in a dormitory that promotes recycling, water collection, and a deeper connection to the environment on a regular basis means that a student is more likely to feel a responsibility to and continue in the future than a student who lives in a dormitory without any of those influences. The way these options are provided will also make a difference in future decisions. If the recycling option is inherently part of the architecture the resident interacts with on a daily basis, they will be more likely to view this action as normal versus a hassle. By starting to form positive norms regarding resource management and sustainable behavior, starting with establishing experiential connections between us, others, and things, from the moment these students leave the comfort of mom and dad’s home, we can utilize this fresh start to the environment’s benefit.

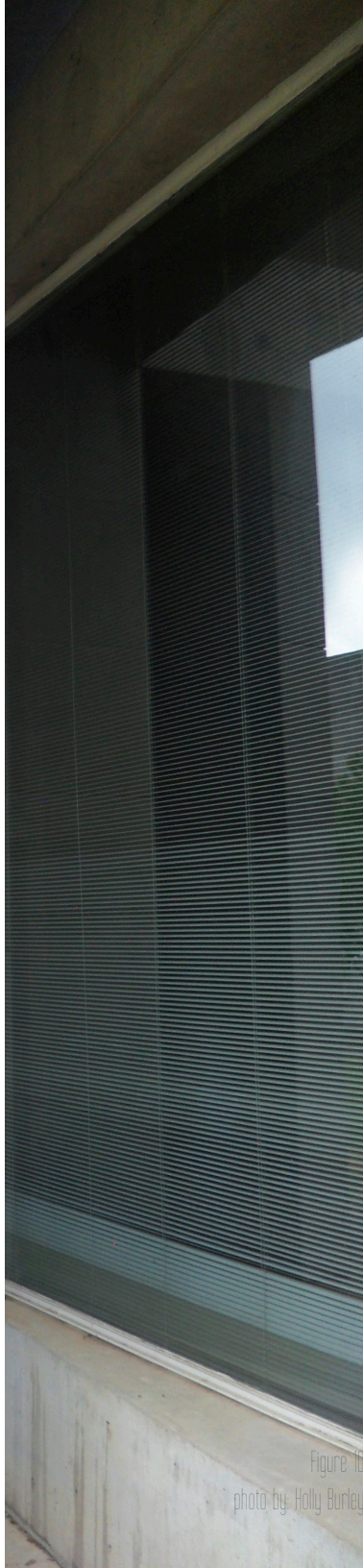


Figure 16
photo by Holly Burley

The Technical Side:

There are many technical practices that can be seen as extremely helpful in a living environment that aid in the most environmentally friendly way of life. These are advances that we have seen practiced more and more thanks to the LEED initiative. Some of these aspects that will be included in the Wesleyan Green Dorm are;

1. Reclaimed and Local Materials:

The use of materials that are harvested locally or have been salvaged from demolition projects helps to reduce the environmental wear by decreasing emissions from transport, improving air quality from less burning of waste materials, less landfill space, and less solid waste. Use of these materials also helps lower the cost of materials and helps encourage buildings that are grounded in their physical surroundings. In a green dorm, it also provides a nice example of reuse and a reminder of history for the inhabitants.

2. Rainwater Collection and Low Flow Facilities

According to the US Government, at least 36 states will have a water shortage in the next five years, which means that it is important that we utilize what we can. This will include collection, low flow, and gray water utilization.





3. Geothermal Heating and Cooling and Energy Efficiency:

Geothermal technology utilizes the relatively constant year round temperature of the earth in the Northeastern region to provide heating, air conditioning, and hot water. The system either absorbs or rejects (depending on need) heat from the ground with no impact on the environment.

4. Curtain Wall with Moveable Louvers:

Natural light is of the utmost importance for a large scale building such as this. The design will allow for every dorm to have high efficiency glazed windows with moveable exterior shading devices. These large louvers will allow occupants to move each panel individually, controlling the light and heating that occurs from the sun.

5. Vegetation:

As simple as it seems, Wesleyan has already seen the benefit of its small, sustainable turf test plot. The reduction of fertilization and care can reduce cost and pollution while maintaining a connection with natural surroundings.

Summary:

This thesis focuses on the incorporation of technology and its more holistic root techné and how they can combine to create an experiential relationship between inhabitants and the environment. This has been filtered through my problem statement - How can an architectural interaction awaken a participant's responsibility to a sustainable future? Because sustainability today has become a practice of science, it has limited our understanding of the approach. We are all urged - by professionals who have spent years developing the best response - to employ such "solutions" in our built environment. Through this action, we are required to change very few aspects of our everyday lives while still helping to offset the general environmental decline we are experiencing. These actions do result in helpful outcomes but do not register with the common user as environmentally oriented. This specialization, as Gadamer writes about, has led us to a decreased ability to care for ourselves and the environment. If we are to actively help restore nature, it needs to be seen as a "balance that helps sustain equilibrium" (Gadamer, 1995) not merely an integration of passive options in our built environment. This is achieved in sensitive solutions that make present the connections to the environment in our lived experience.

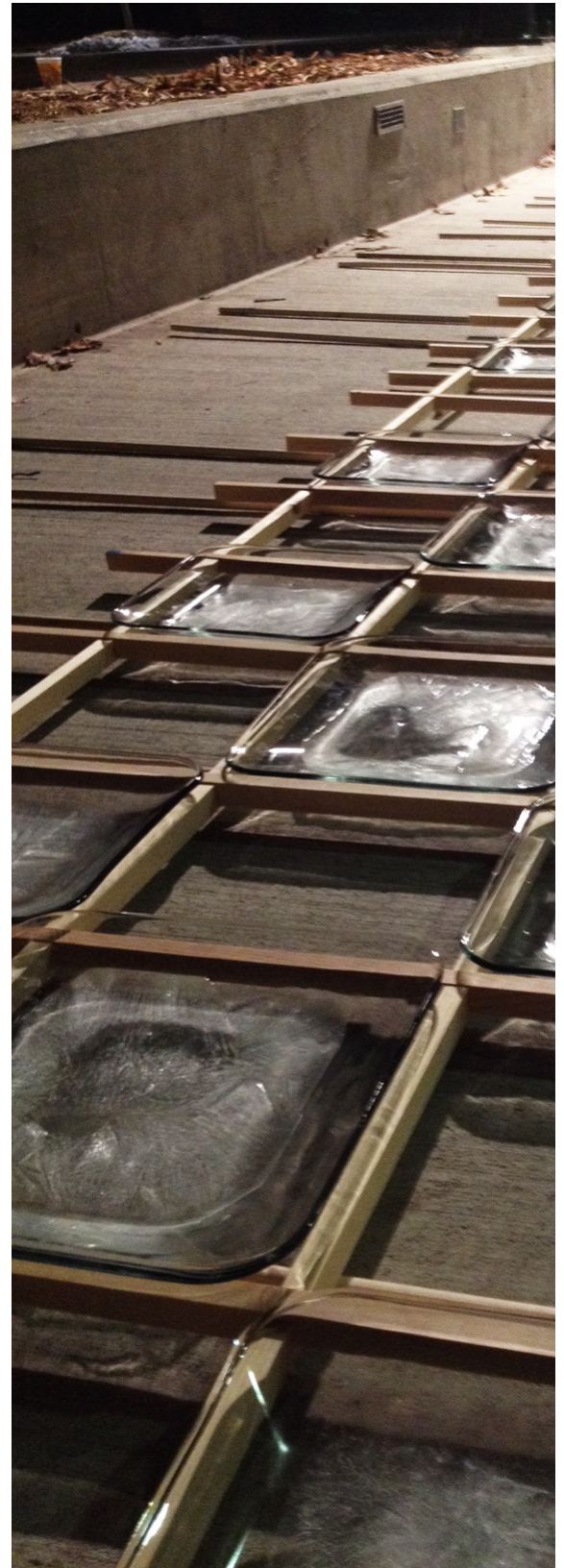




Balance needs to be acknowledged before it is lost. This requires recognition of responsibility on every individual's part to take into consideration how their actions affect their surroundings as opposed to relying on the "specialist" to give instruction. This recognition of a person's place in relation to others, to nature, and within their built environments is derived from Heidegger's study of the fourfold. The oneness that results from this recognition opens us to a more techné-based relationship with sustainability. Through this approach, dwelling can be seen as Heidegger states, to be a "bringing forth" and a "preserving of the fourfold in its essence" (Heidegger, 1993), as a more experiential relationship with the things around us as opposed to a mere inhabiting. This becomes essential to the approach of student housing. Because it is, typically, such a short-term living arrangement it is generally seen as a box to house your things while you are between homes. Using this opportunity to instill a sense of dwelling and responsibility begins a concern for such approaches in future living. The artefact speaks to the calling forth of interactions that we do not normally recognize.

The lifting of the artefact calls our attention to the fragility of the structure and the tediousness of our movements. It requires an acknowledgement of the others lifting with you and the reliance on one another for a smooth movement. Once lifted, it provides a platform to see the light and shadow that travels through it, the wind that interacts with the water, the steam that results from a reaction of warm water and cold air, as well as how this affects the people around and across from us.

Wesleyan University in Middletown, Connecticut is a school that is driven towards sustainability but due to limited space and a rule requiring all undergraduate students to live in campus housing they have placed many students in dilapidated, inefficient, single family homes. The incorporation of a sustainable on-campus dormitory will allow students to be better connected to their classmates and campus while fostering a deeper connection to nature in a similar way to the artefact. The architecture must then allow for similar realizations as the artefact to present themselves. The floating of the dwellings on the structure speaks to the layering of the artefact itself as well as the fragility and lightness of the movement.





The entirety of the structure must speak to the interaction between the self, others, the surroundings and the opportunity that this presents for nature to show itself in an unfamiliar way.

Figure 13
photo by Holly Burley

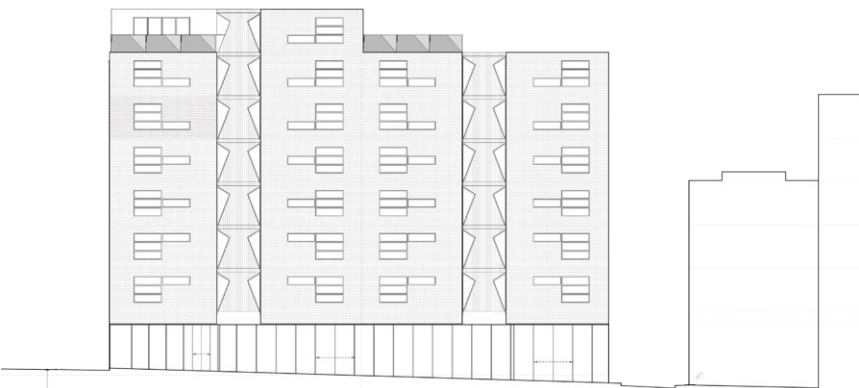
CASE STUDIES

The study of precedents allows for inspiration in design based on proven results. It also provides a platform for identifying particular elements that should or should not be included in this thesis. These studies include dormitories and a mall - many of which are focused on sustainable design.

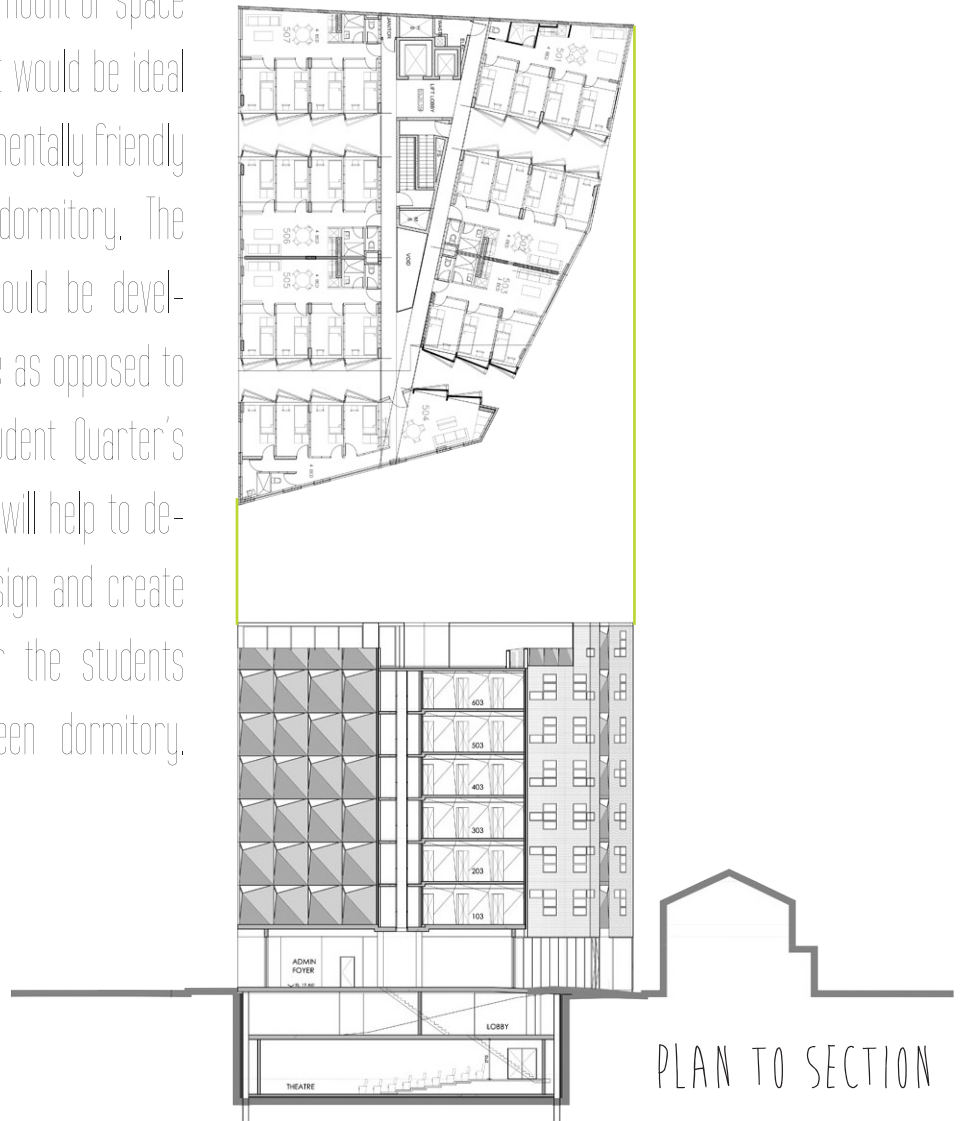
This dormitory, located in Boston, MA, was designed to maximize the natural lighting and ventilation to the bedrooms of all students. Because this is also an important part of this design, this building proved to be a good design study. The student residence houses 164 students and provides three lecture halls and a library. All student residents will benefit from the in-house library that provides research materials and study spaces. It also provides a rooftop terrace with a wooden deck and kitchen. This related

NEW STUDENT QUARTERS FOR BOSTON UNIVERSITY

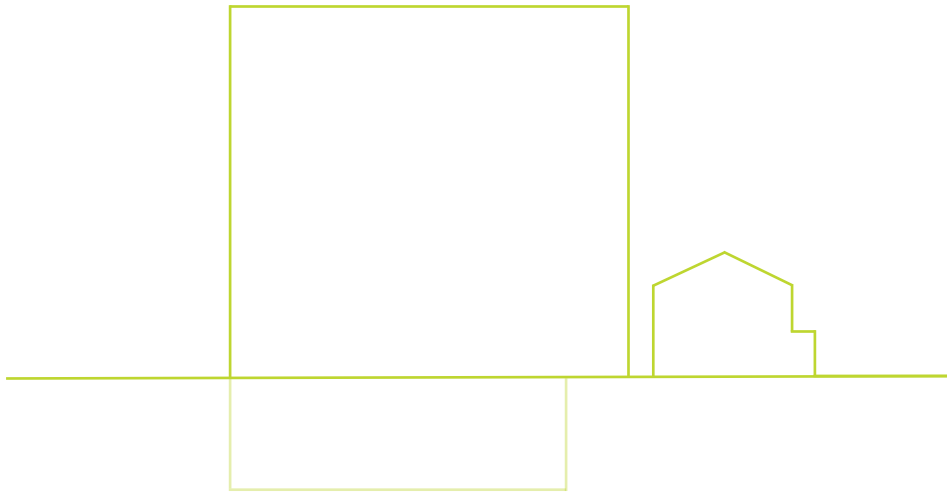
nicely to the Wesleyan green dormitory initial design because it provides a space for students to enjoy a natural surrounding while working on school work, having a communal dinner (utilizing the kitchen or cafe), or just winding down after a hard week of class.



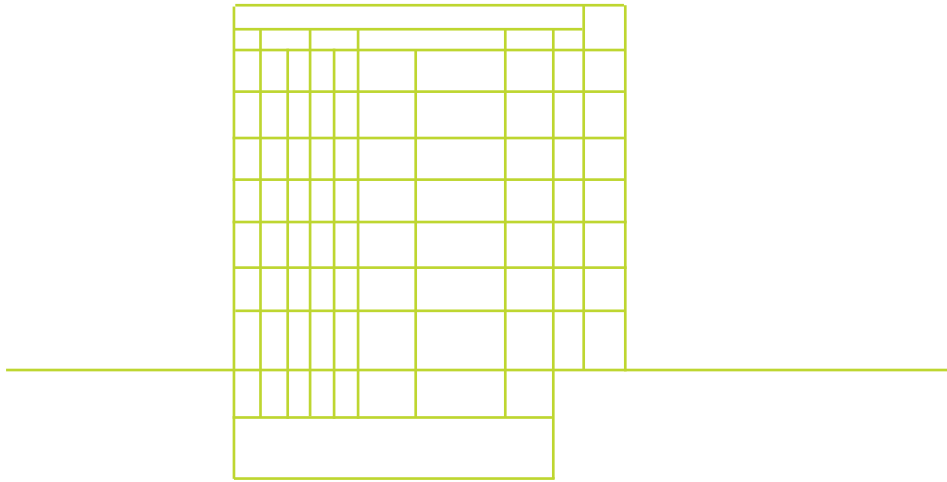
Glass louvers on the end walls and the seven story atrium help to draw a breeze in and reduce cooling costs. Tony Owen Partners and Silvester Fuller say that the layout would be “a sensible ‘blueprint’ for city planners to consider in their quest for ways to increase residential density”. Despite there being a large amount of space on my site, a small footprint would be ideal to communicate the environmentally friendly goal of the Wesleyan green dormitory. The rest of the site, ideally, would be developed using natural landscape as opposed to Boston University’s New Student Quarter’s urban in fill. The landscape will help to define the natural base of design and create an everyday encounter for the students living in the Wesleyan green dormitory.



MASSING

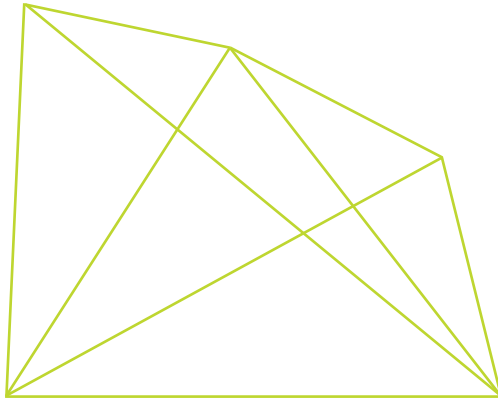


STRUCTURE

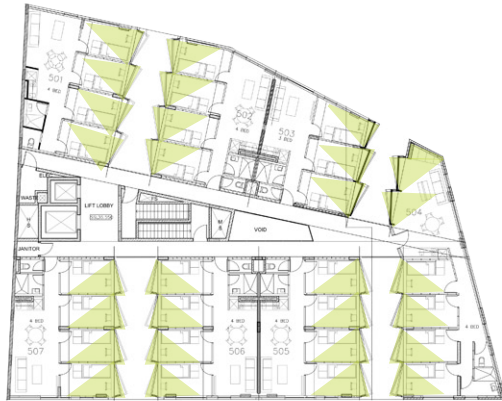


HIERARCHY





GEOMETRY



NATURAL LIGHT

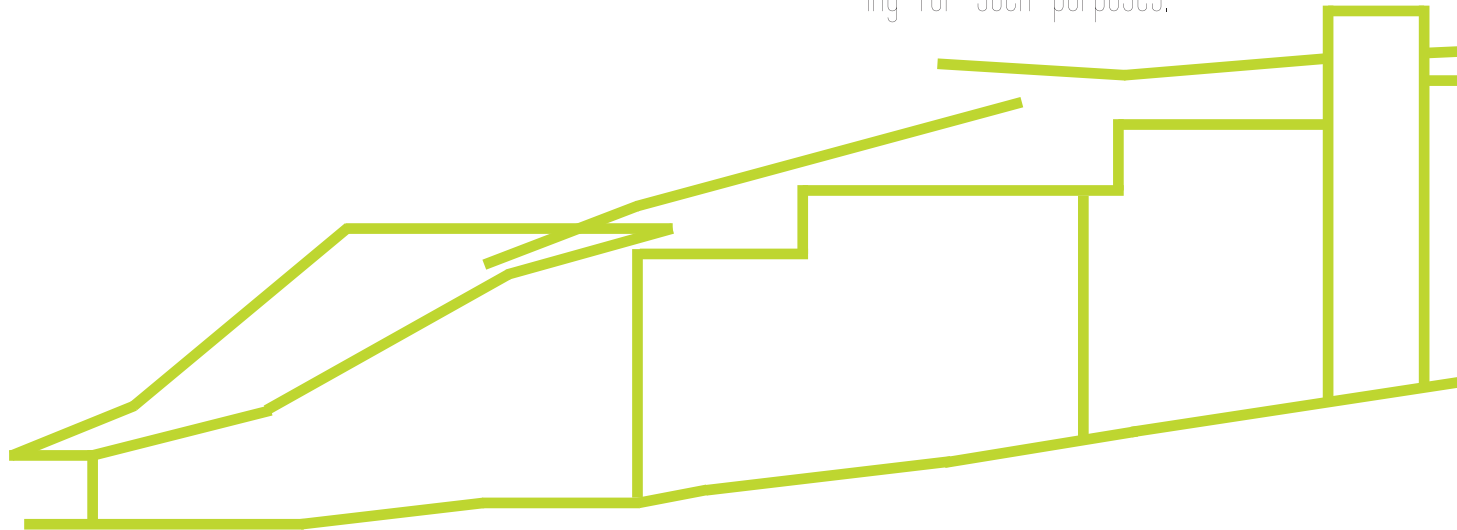


CIRCULATION

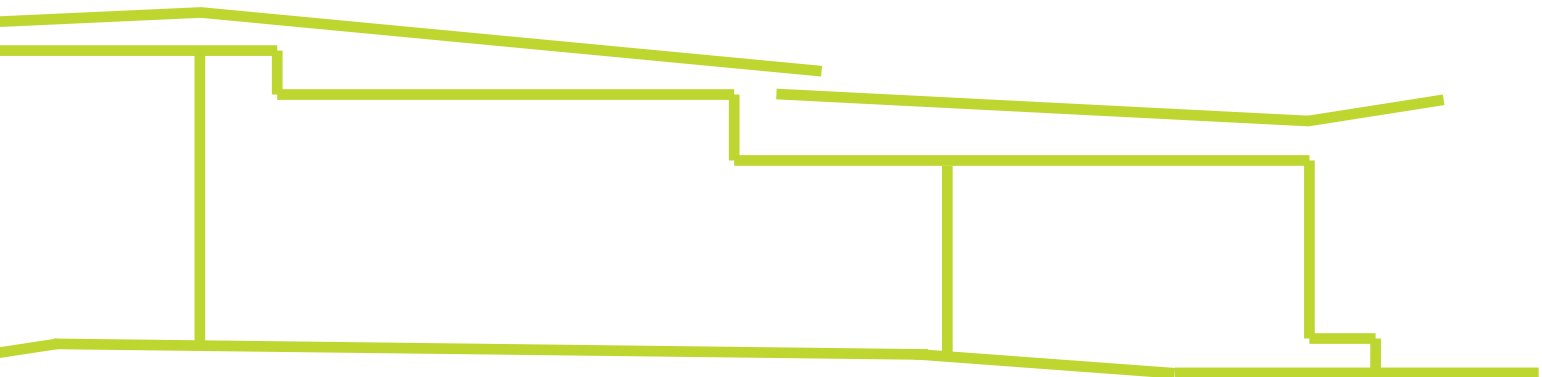
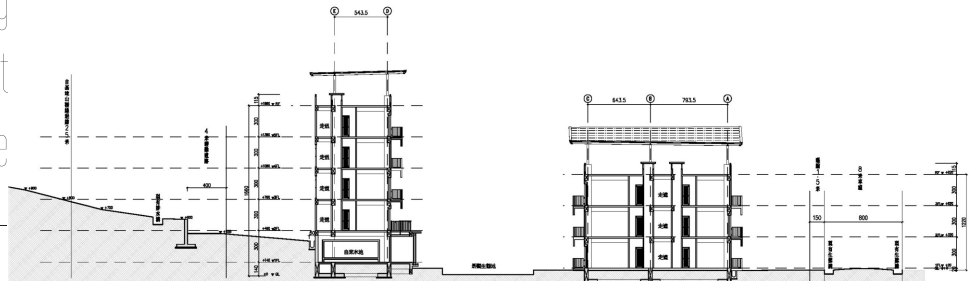
This 677 acre Industrial Technology Research Institute campus of Taiwan houses 1500 people. Here they develop landscaping software and building hardware. They provide buildings for living, eating, research, and a plethora of exterior spaces. These ecological ponds, bamboo forest, organic greenhouse, and bamboo kiln are all integral parts of the bio-architecture aspect of the campus. It is settled among natural landscape as well - with hills to three sides and lakes to the other.

DORMITORIES FOR ITRI SOUTHERN TAIWAN CAMPUS

All of these aspects provide valuable ecological research for the institute. The roof is utilized as viewing for such purposes.

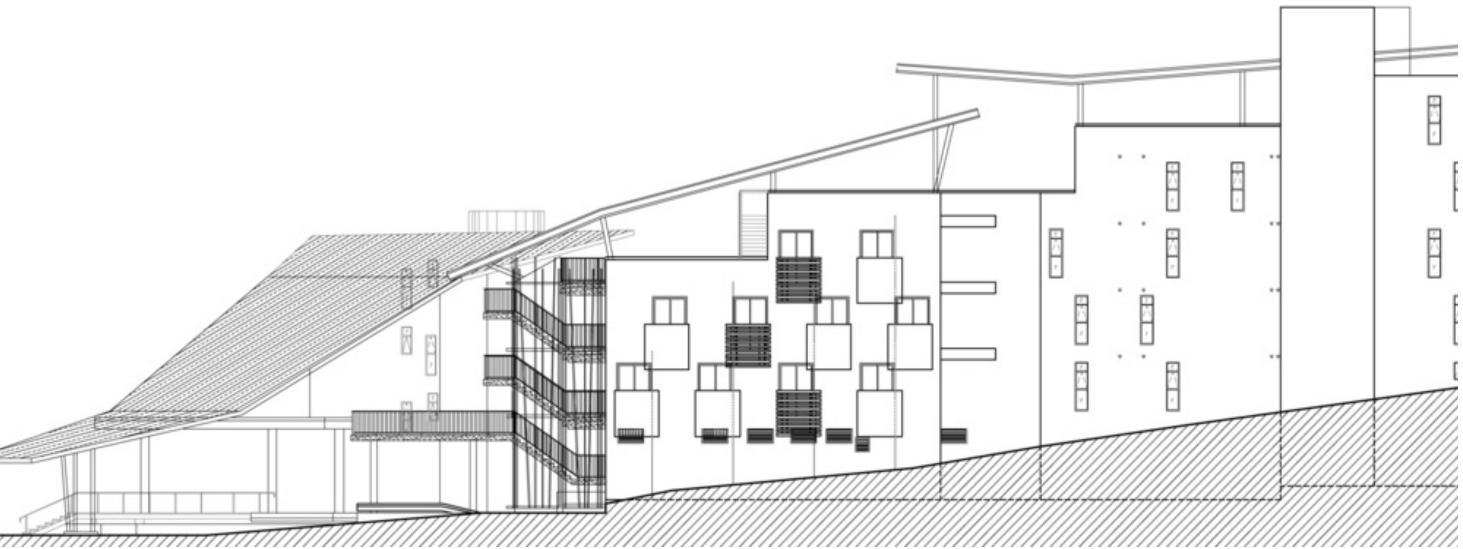
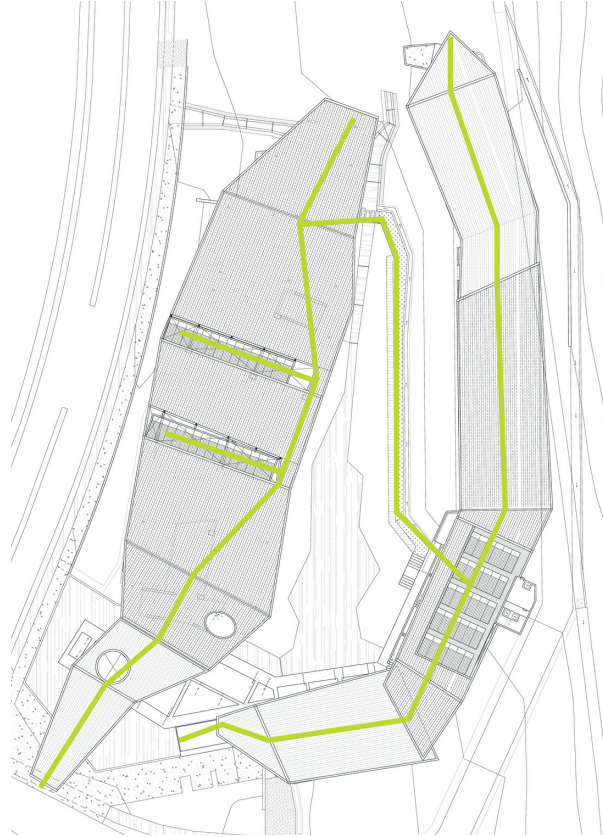


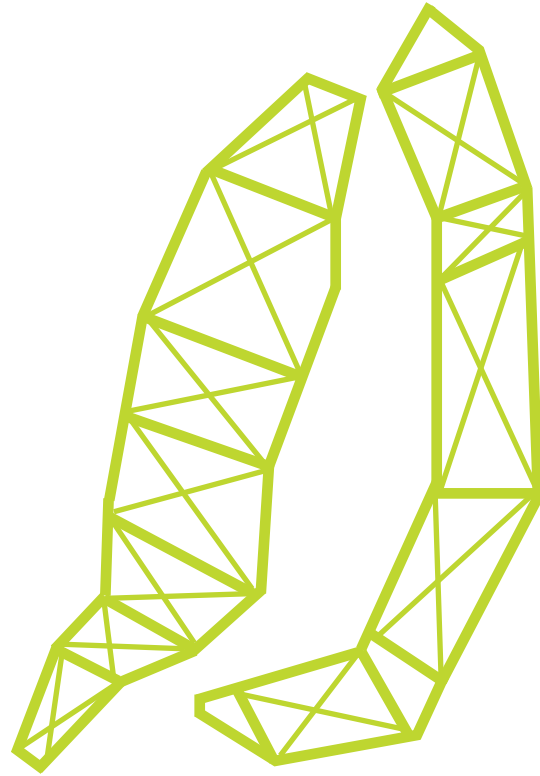
The ecological pond in the center of the courtyard can change the micro-climate while working with the retention pond nearby. The stepping of elevation from natural to man-made offers a very natural feel when travelling through the site. Bamboo grow on site is utilized to reduce the carbon footprint of building and the pavement for the semi-outdoor walkway is comprised of locally produced brick. The use of local materials (both grown and created) and the courtyard and roofs for study are all aspects that can be utilized in the Wesleyan green dormitory to create an interaction with nature.



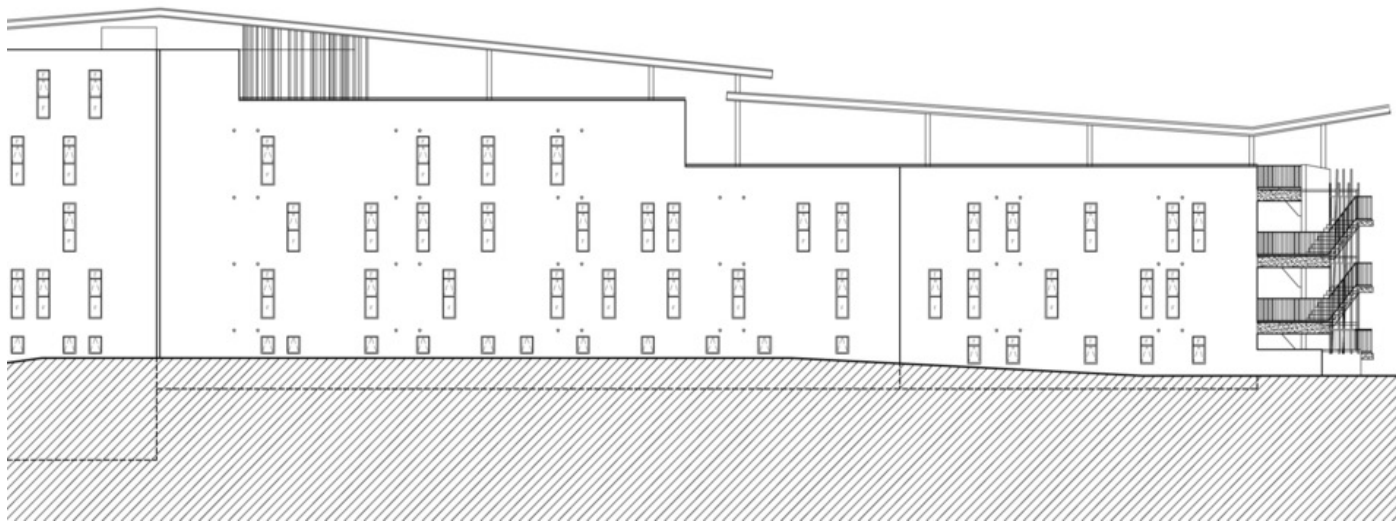
MASSING

CIRCULATION

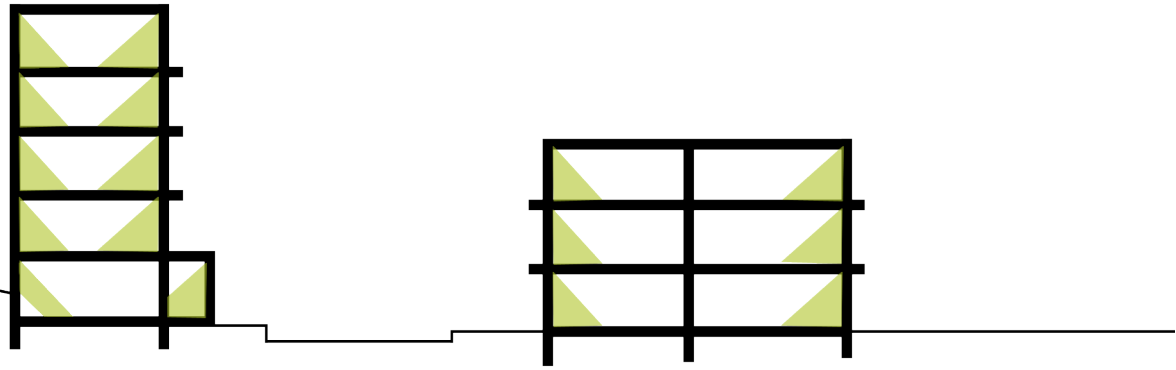




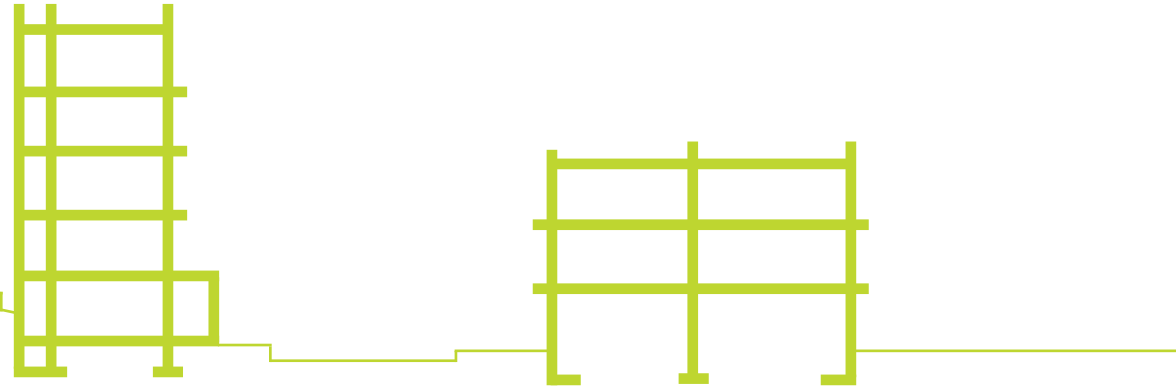
GEOMETRY



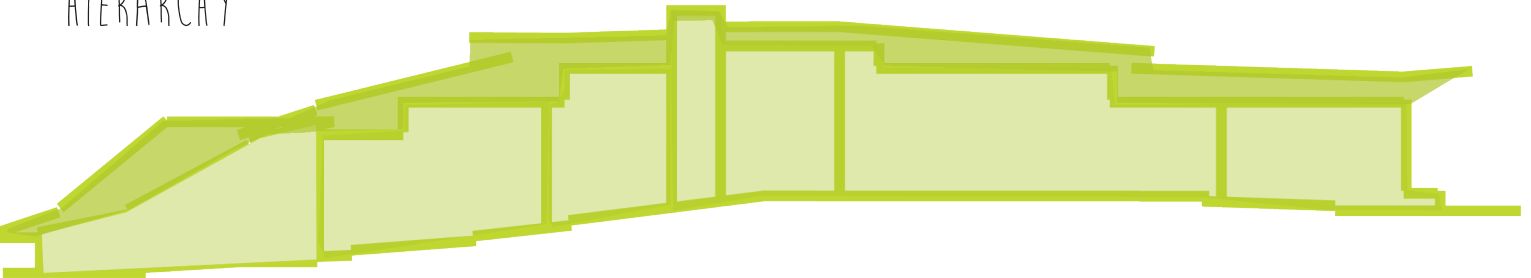
NATURAL LIGHT

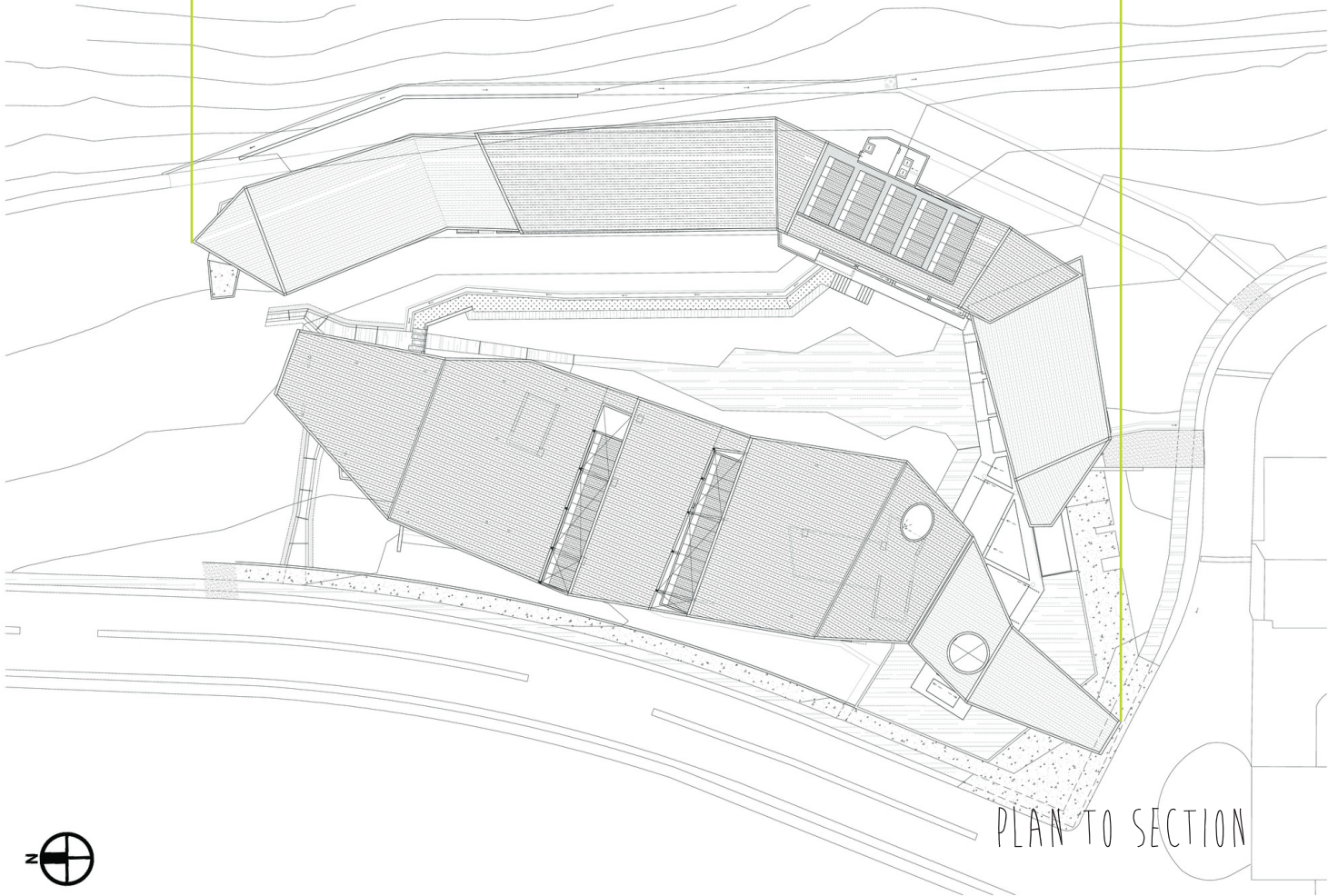
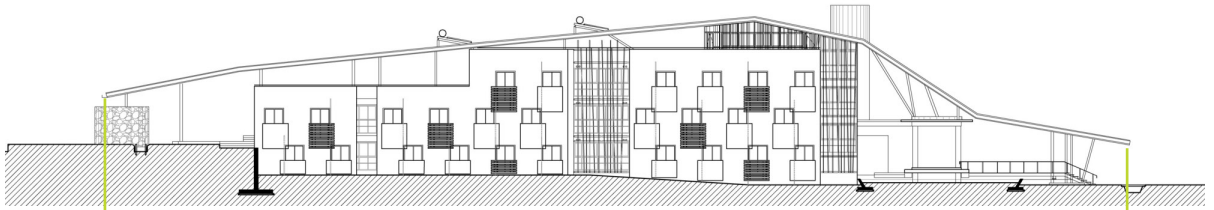


STRUCTURE



HIERARCHY





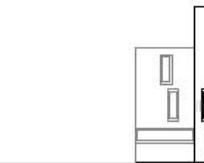
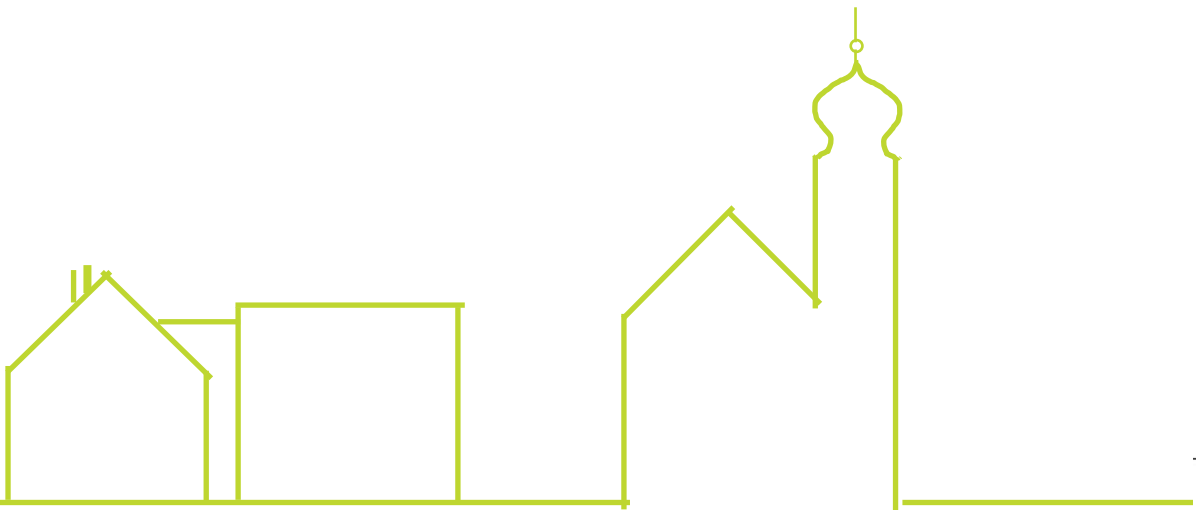
PLAN TO SECTION

This is a building that speaks to the past as much as it looks to the future. A self-contained complex resembles a monastery with its concrete walls and existing shells. These shells are to be kept when new buildings are added to preserve the look of the site. The new building has been added as a stand-alone in close proximity to the stand-alone old, creating a juxtaposition that creates an atmosphere of omnipresence. The courtyard is in the center of the old and new and is full of presence.

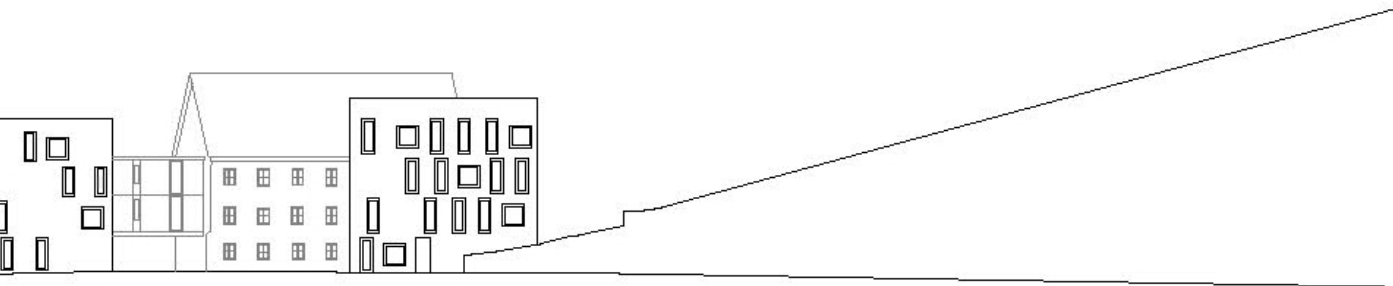
SPECIAL SCHOOL AND DORMITORY MARIATAL

The entrance of the school is on the west while the boarding entrance is located on the east of the building. The separation is joined by a glass bridge maintaining the appearance of distance, with the ultimate unity.

MASSING



The materiality, from a distance appears to be the same while up close it becomes evident that they are made of different materials that compliment each other. In the courtyard the combination of gravel and concrete stone paths also point to an inherent complimentary difference between old and new. Because Wesleyan is a school with a plethora of traditional old architecture it is important for the new green dormitory to compliment the past while still maintaining the recognition of new. Looking to the past can be one of the best tools for the future - an aspect of sustainability architecture can help communicate. The goal to make the green dormitory fit harmonically with the rest of campus is essential.



HIERARCHY

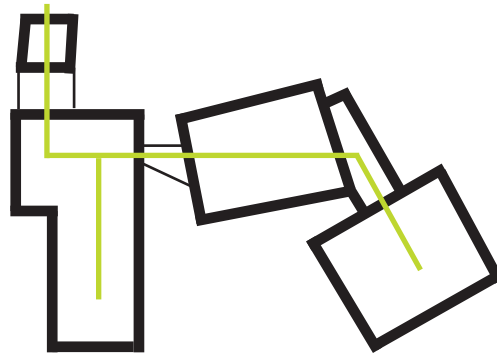


STRUCTURE

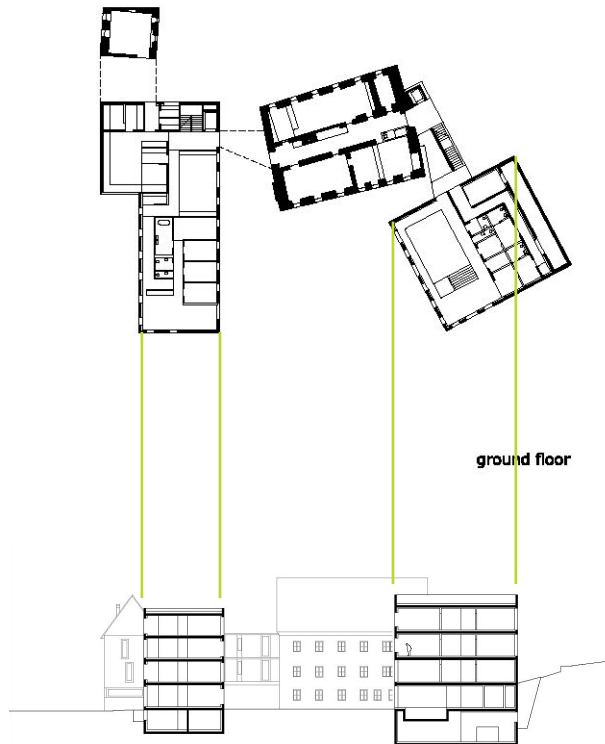


NATURAL LIGHT





CIRCULATION



PLAN TO SECTION

HUB MALL





Figure 9
photo retrieved from
http://files.ua20.webnode.com/2020/01/888_3afe240fid/HUB_residence_2013e.jpg

Hub Mall in Edmonton Alberta contains a multitude of shops and restaurants on the main floor on either side of the hallway that spans the linear building. The second floor is home to apartments. The apartment's windows open to the interior of the mall. The windows, when open, provide an opportunity for a visual connection between the apartments. This was a large inspiration for the design of the dorm rooms in this project. The bridging between people is a large emphasis of the project and the ability to adjust individual louvers for provides a similar visual connection.



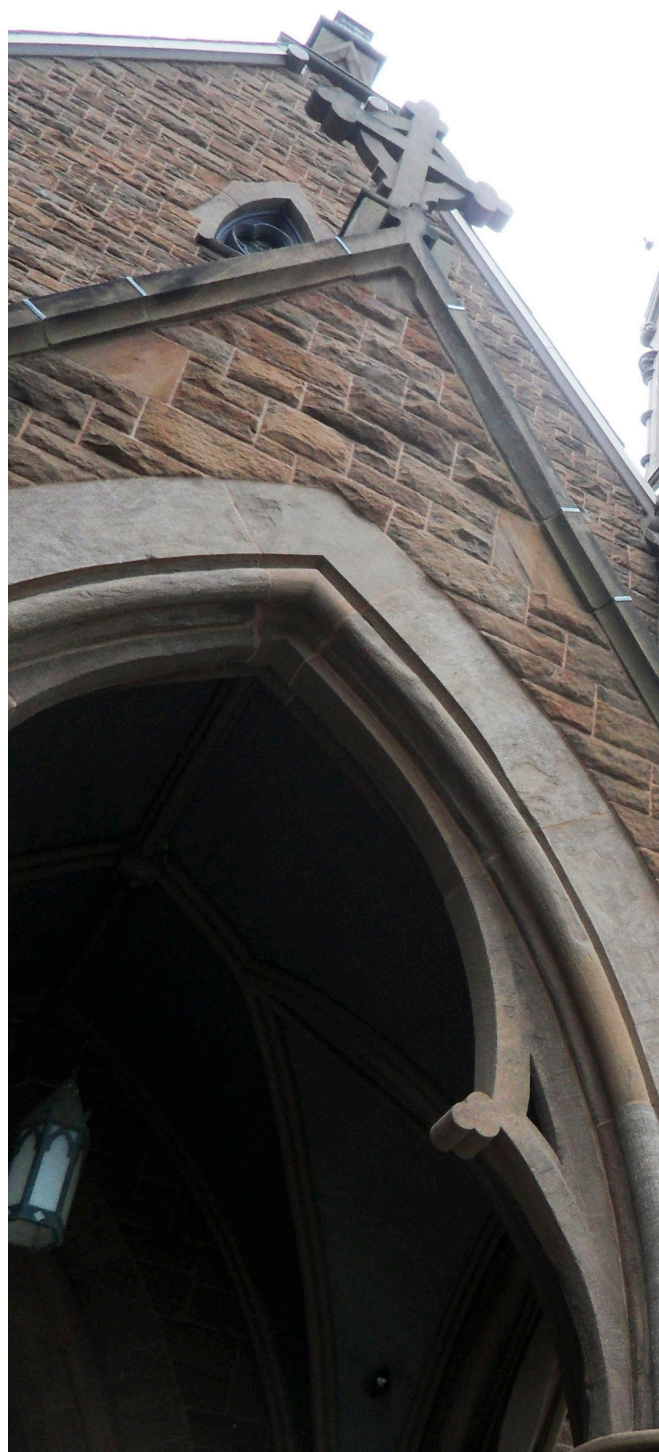


Figure 18
photo by Holly Burley

HISTORICAL CONTEXT

Wesleyan University:

The University was founded in 1831 as an entirely male, all method-ist school. From this point until 1870 historian David Potts says the college was a “local evangelical enterprise” with a yearly tuition totaling \$36, then becoming know as a methodist institution until 1910 when the school strayed from its methodist definition. It was transformed into one of New England’s prestigious liberal arts colleges from 1910 until 1962. Following a successful endowment, Wesleyan began transforming into a “little university”. Today the school has no religious ties but the architectural style of that era continues. Memorial Chapel was constructed from 1867 to 1871 and was funded through a fundraising effort and was dedicated to alumni and students that lost their lives in the civil war. Designed in gothic revival style, this brownstone was constructed using materials quarried from the Connecticut River. Unfortunately, the architect is not known. Today the building still stands, set back from High Street, providing an essential part of the Wesleyan row.



The architecture of the university is evidence of the deep roots in its history and pride for its past. It began as two buildings taken over from a previous school. Both were brownstones quarried from Portland. North College lost in a fire but South College survived and was renovated for offices the same year. These were the initial start of College Row which is now populated with a multitude of classic architecture. This is the main sight of Wesleyan University when you visit the campus.



Sustainability:

Sustainability seems to be a fairly new concept that came about with the global warming crisis but the issue dates back as far as humans do. Sustainability is based on the simple idea that we, as living beings, require the resources of the earth to survive and we must work to sustain those and nurture the earth to ensure our resources survive. The industrial revolution started the culture of overconsumption, however, and the term took on a new meaning. This is first evident with the case of the dust bowl. The government pushed wheat farmers to till and plant large areas of sod when precipitation was plentiful. Then, when the dry season came, there was nothing left to hold the dust in place rendering the farm land usable and the living conditions hazardous. Following this, soil conservation practices were implemented on a large scale but water table depletion and climate changes increase the risk of repeated severe drought. These actions show an attitude of control over nature that has prevailed since.

Today, we are more consumer driven than ever and with this more and more problems have arose with our natural resources. This has fueled the sustainable movement that we recognize in our daily lives. There have been three different styles of approaches that have been taken based on recognized problems. First, the conservation movement that started when it was realized that our taming and destroying of the wilderness was ruining what was considered a valuable part of the United States culture. Then, when it was understood that some of the chemicals and physical agents being used were harming the environment and people the Environmental Protection Agency was created and Earth day was started. Finally, population growth began to be recognized as a strain on our resources and the international endorsement for sustainable development was released at the United Nations Conference on Environment and Development. These restrictions and agencies have been working to make a more ecologically viable tomorrow yet we are seemingly getting progressively grim reports on the state of the environment.

Architecture is at the forefront of sustainable changes with 63 percent of firms having green commercial construction planned for 2015 (Weaver, 2013). This includes efforts such as LEED design and certification levels. The levels are determined by how many of the criteria you meet on their master checklist with platinum being the highest you can achieve. Reaching this level of certification indicates that the building is significantly efficient and operates at a level of acceptable environmental impact. Currently, this is the method being used to describe how sustainable a building is. While building according to LEED is a great start, it is simply not enough. The buildings being created may be wonderful for the environment in the technical sense but a user's experience with them may not indicate an environmental connection. This is where the issue arises. We have been conditioned to trust what the specialists tell us, this leads to a decreased use of our own moral judgment. (Gadamer, 1996) When this occurs we do not relate to the issue, we do not decide for ourselves, but rather, simply follow suit. The plaques on the wall of a building, such as the one shown on this page, tell us that it is so good for the environment that it has reached the platinum level.

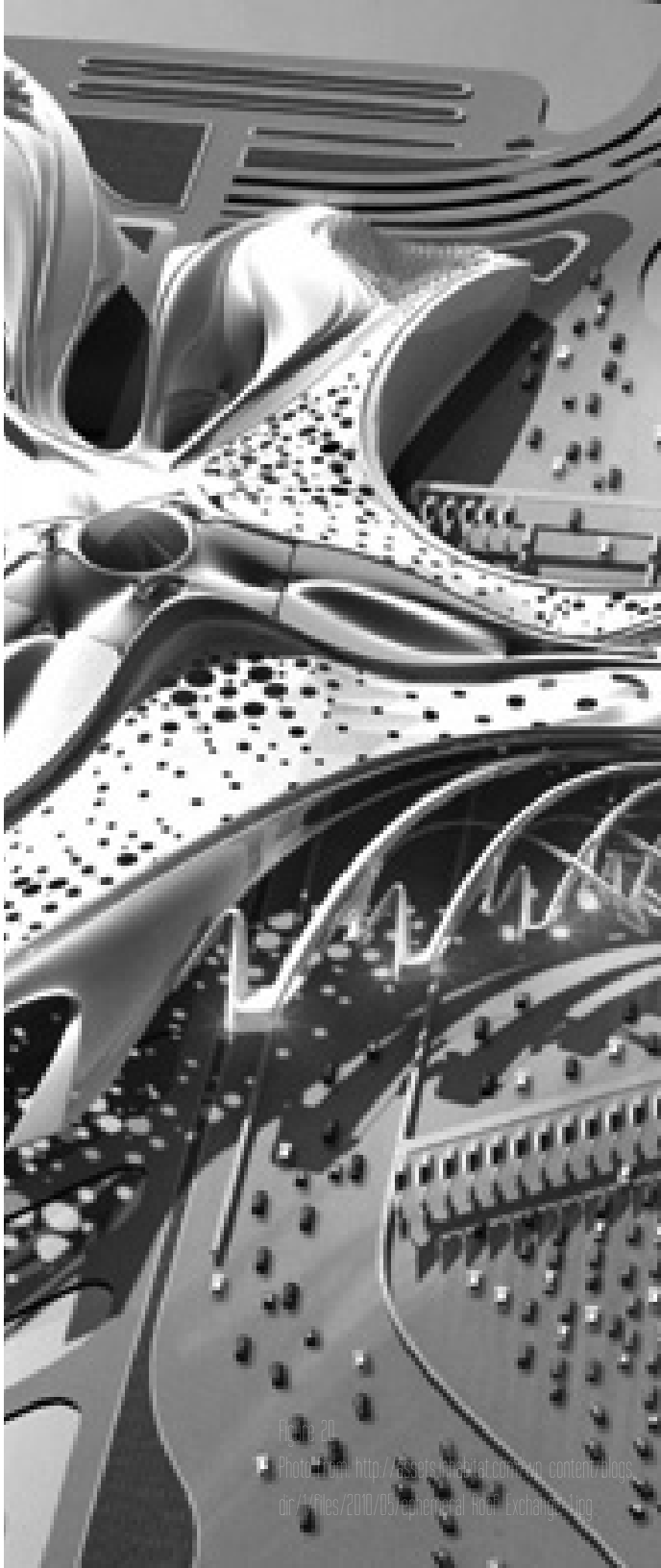


It, in no way, gives us an indication gives us the feeling of oneness with the fourfold that we require to dwell. (Heidegger, 1993)

Without this understanding of the inter-connectedness of our actions and the environment, we see no reason to make changes to our day to day lives. We do not use our own decision making processes to choose the more environmental responsible approach. We recycle because the scientist tells us if we don't, our city will be covered in trash in 10 years. We turn the water off while brushing our teeth because we are told that if we don't, we wont have drinking water in 5 years. We do not recognize the difference between being *on the earth* and being *of the earth*. If sustainable architecture continues being designed in a way that is merely aesthetically pleasing as opposed to a platform to point beyond itself our environmental concerns will continue.

FIGURE 20

Photo from <http://assets.bluelist.com/wp-content/uploads/2010/05/regenerative-Roof-Exchange.jpg>

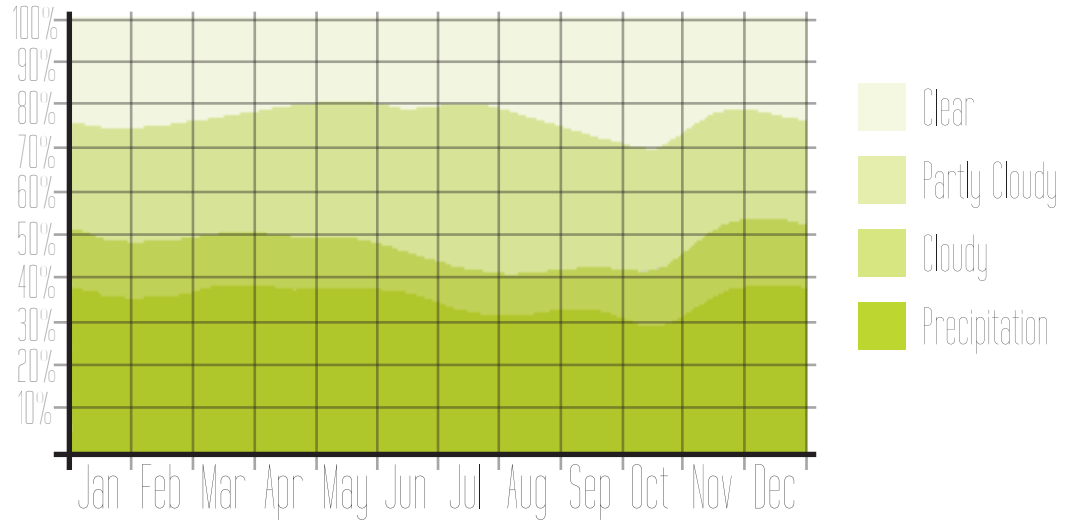


PROJECT GOALS

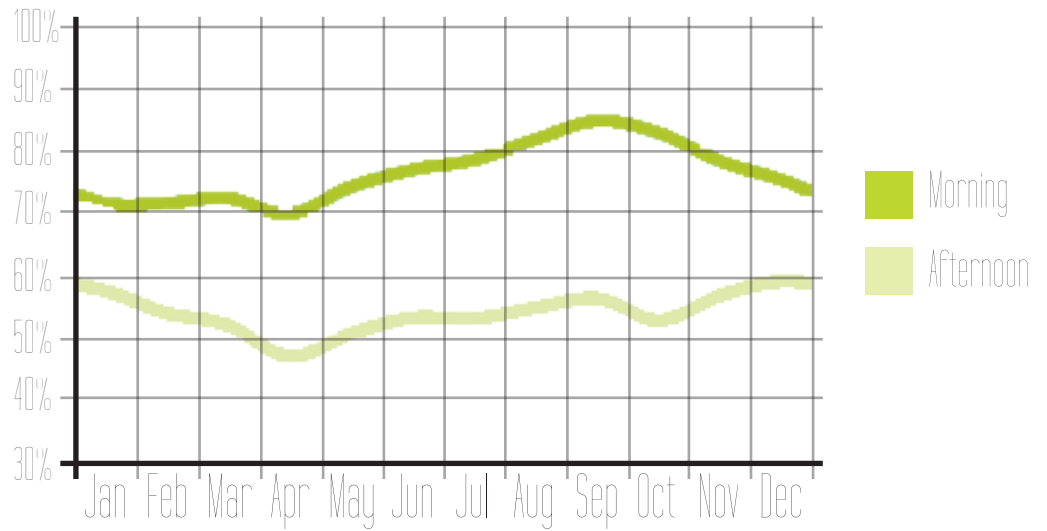
The goals of the project are – simply put, to increase the connection between people and the environment and use that connection to promote personal and communal responsibility for our treatment of the environment. Through architecture, the Wesleyan green dormitory will bring forth a connection with the elements and create a bridge between person, place, and feeling. The combination of techné and technology will mean a building that is good for the environment but also good for the dweller's sense of place. It will provide a place for newly independent students working towards their futures to develop habits that will be beneficial to themselves and the surrounding eco-system. This has the possibility to affect the future of sustainability and architectural choices.

CLIMATE STUDIES

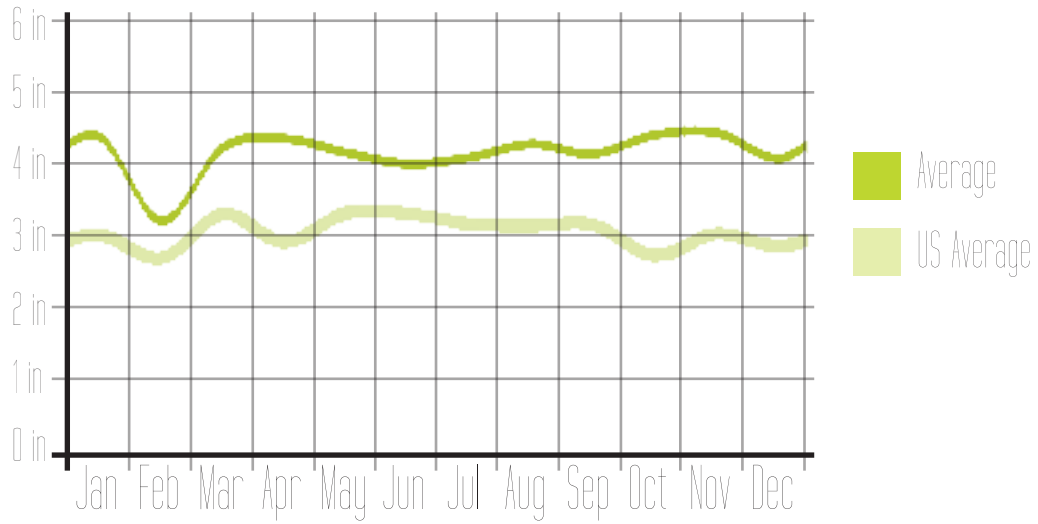
Cloudiness



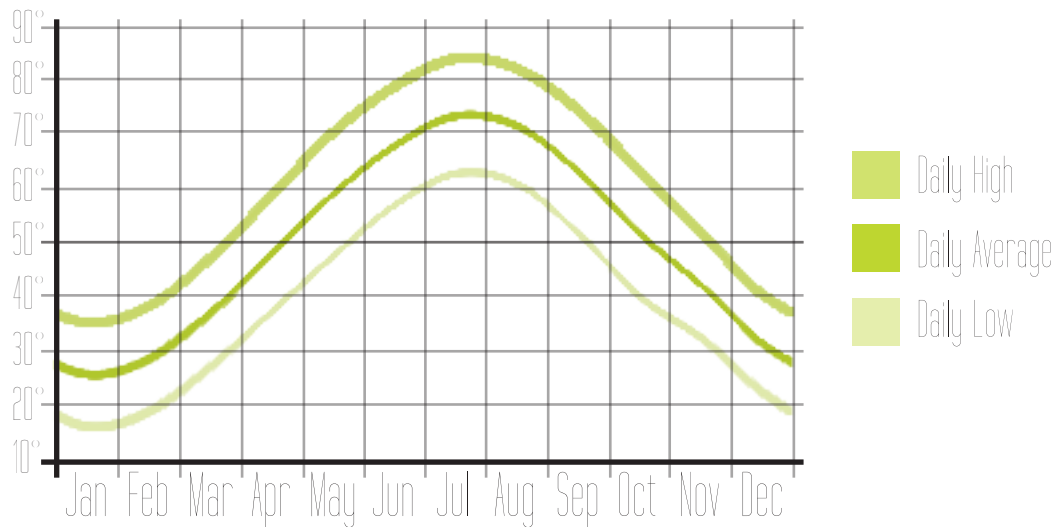
Humidity



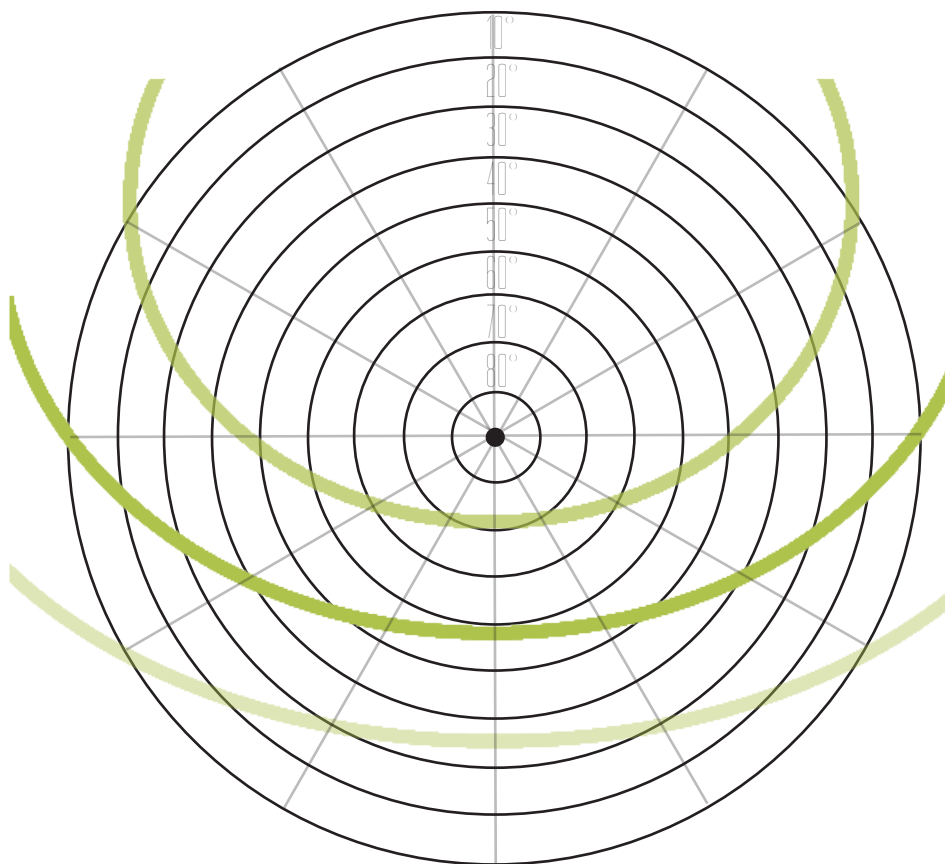
Precipitation



Temperatures



Sun Path



- Summer Solstice
- Equinox
- Winter Solstice

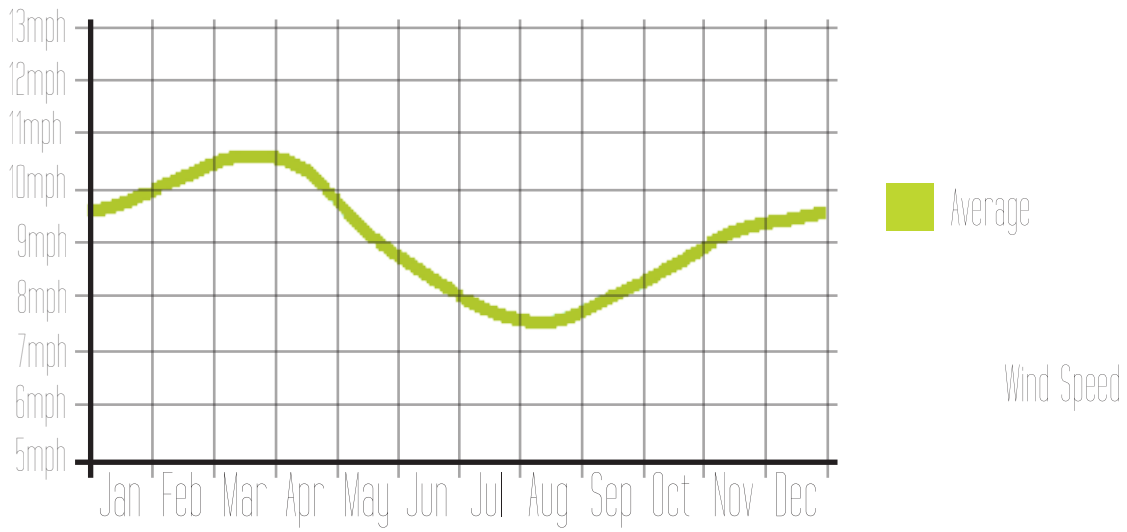
Noise



Pedestrian



Automobile



Air Flow



Topography

Slope < 2%



The large green space of Jackson field engulfs you as you walk through. The space is void of any meaningful interaction save a few high school soccer practices a year and leaves much to be desired. The performing arts center's concrete and sandstone walls can be seen blankly staring from their position. It lacks the jovial and active feel the rest of the campus has and incites a feeling of a different location in general. This place needs something. Something to join it with the rest of campus, something that invites people approaching from this side of campus. After all, it is where the administration buildings are. For an area surrounded by buildings that house such creative studies, it needs to be more. It needs a purpose, a task.

SPATIAL STUDIES

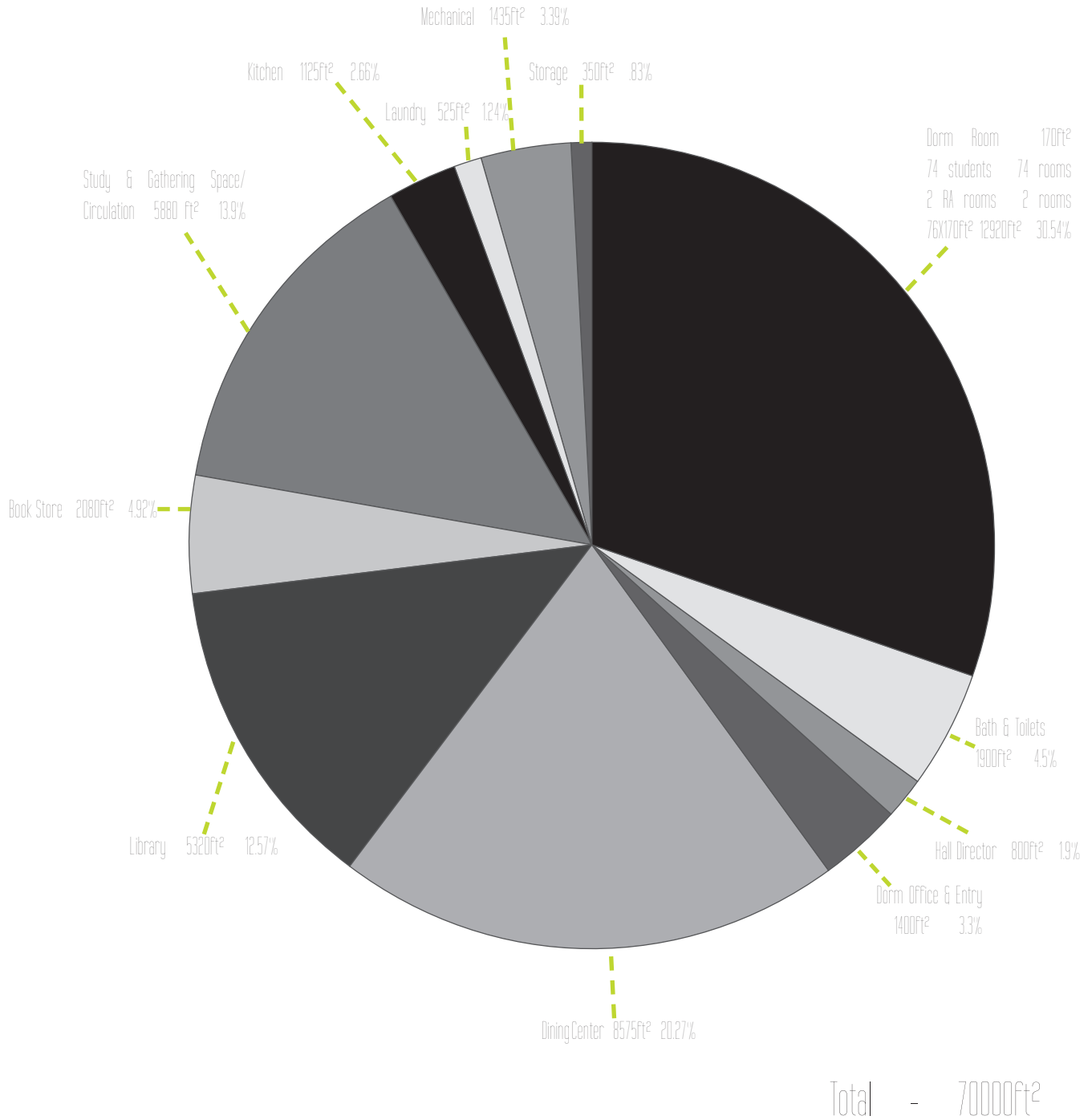


Figure 11

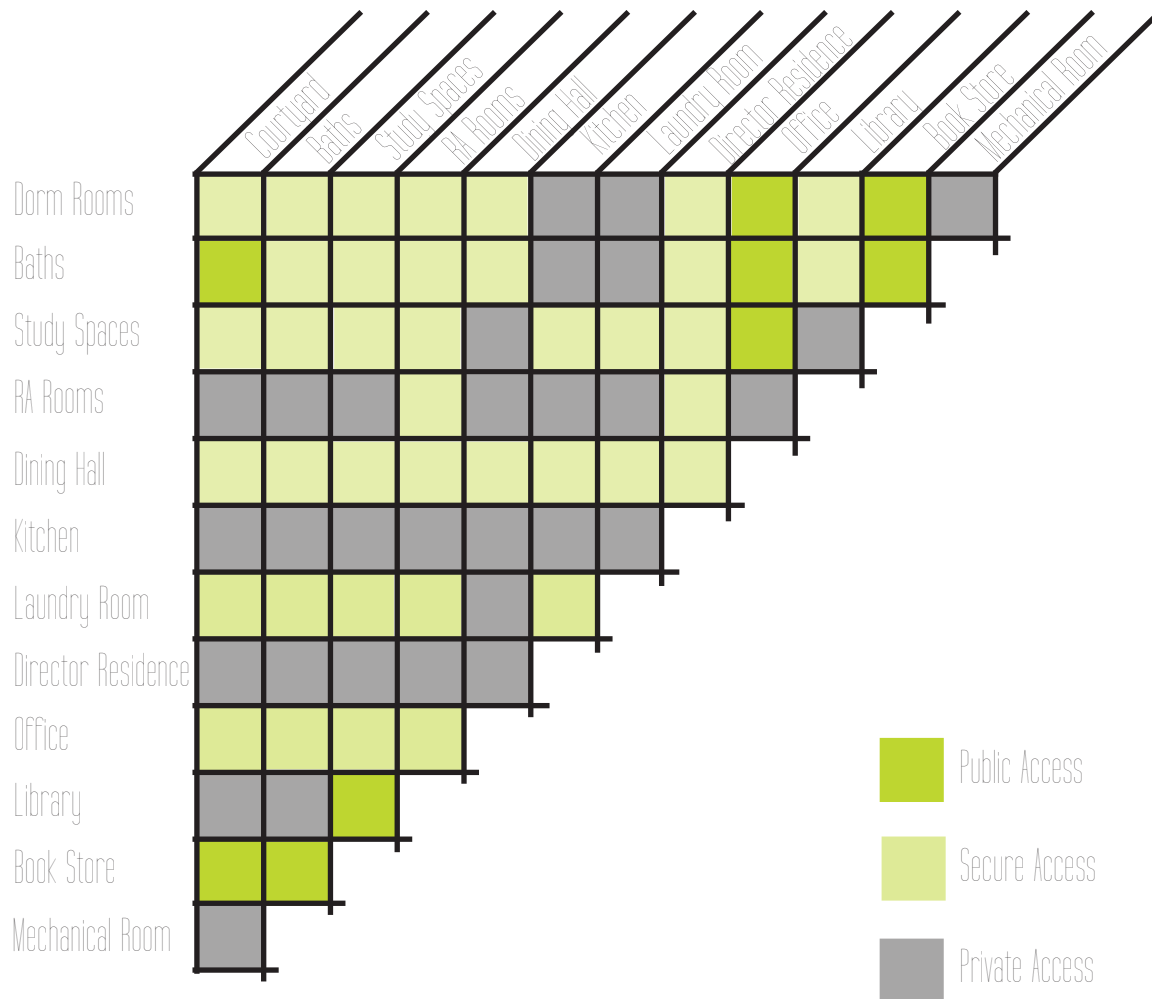


Figure 12

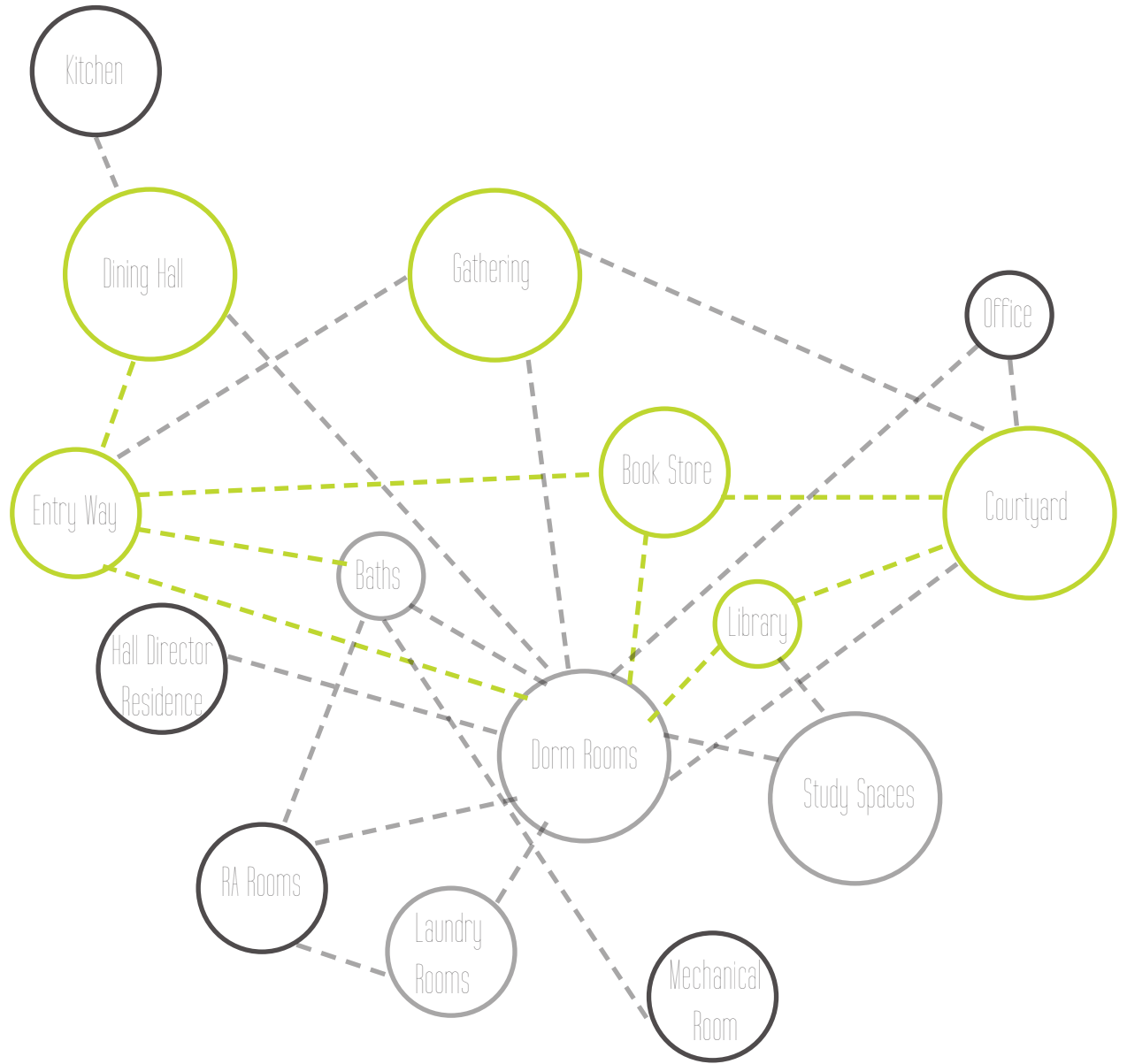


Figure 13

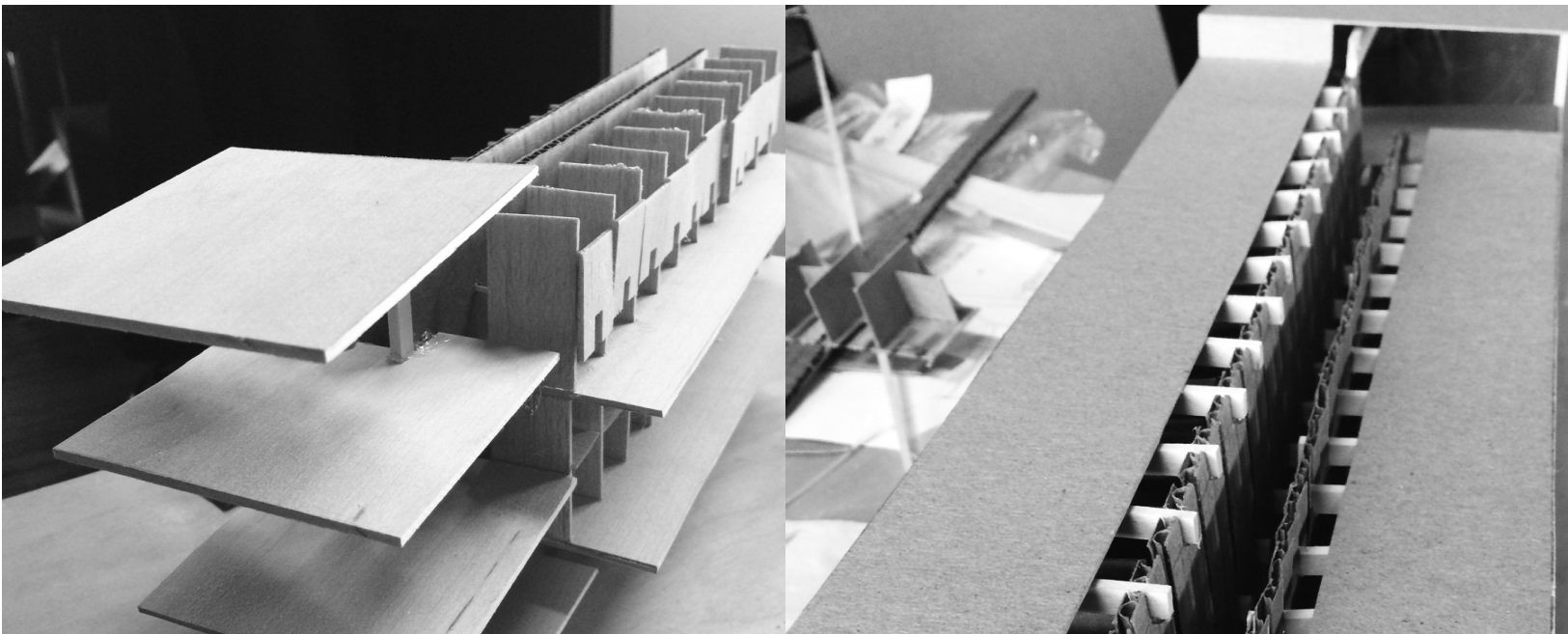


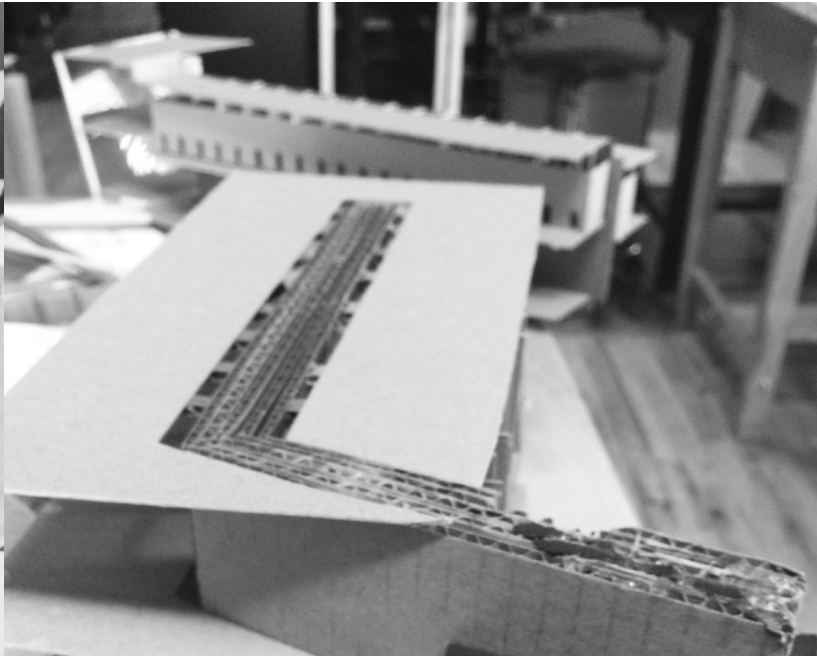
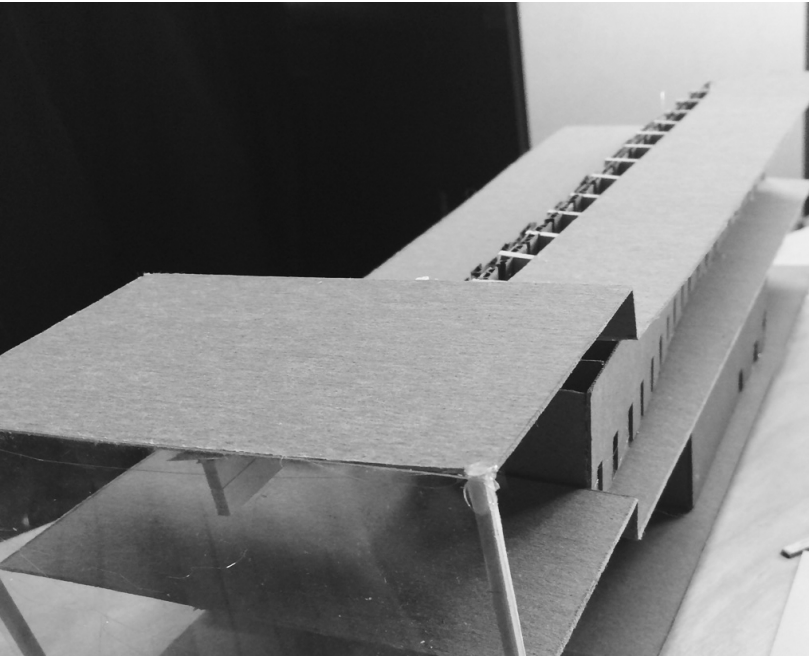


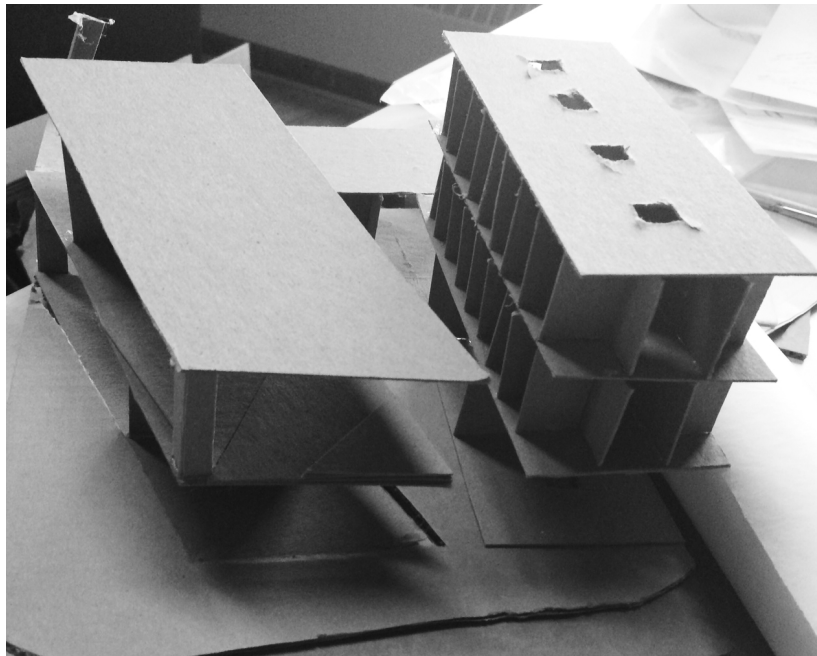
DESIGN

Located at Wesleyan University in Middletown, CT student housing provides an opportunity to create connections with fellow students, campus, and the environment.







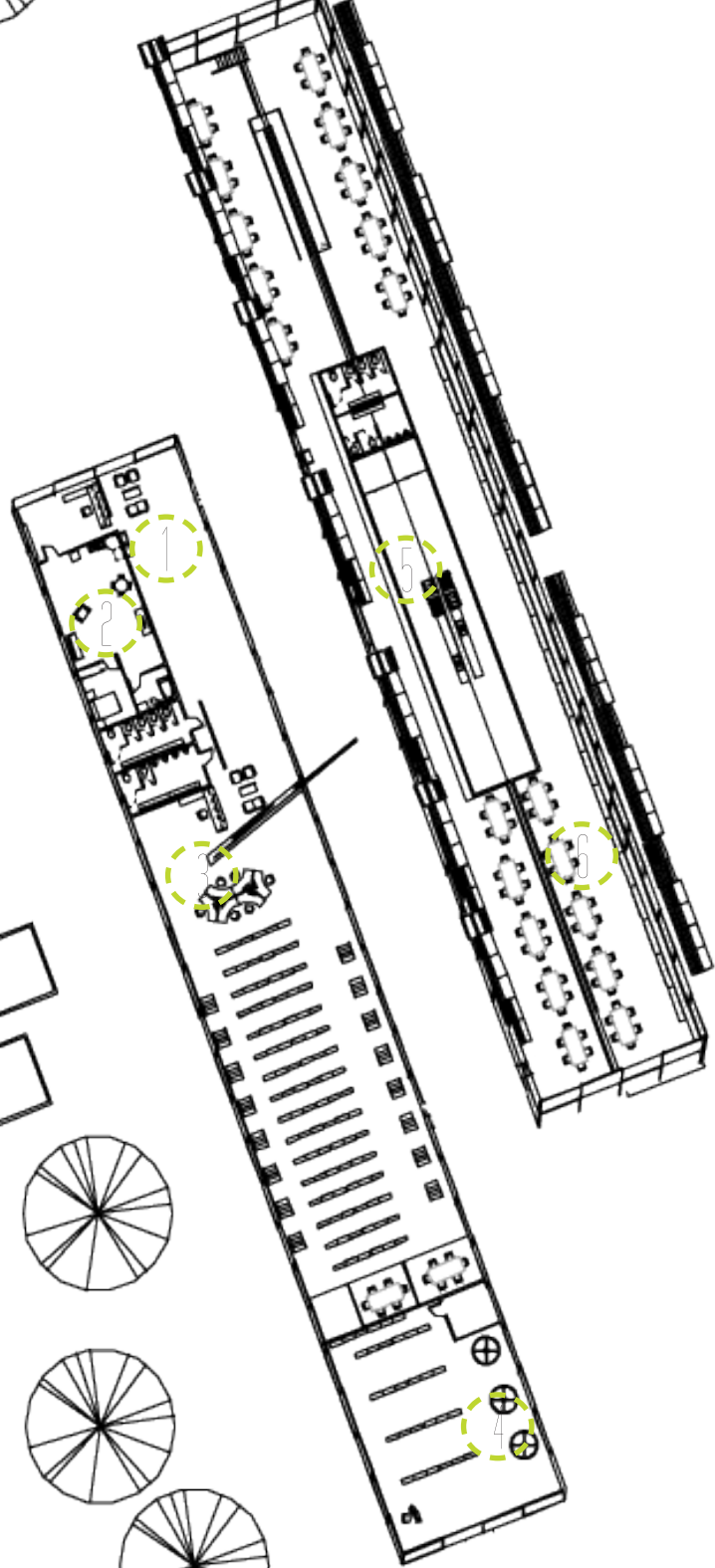




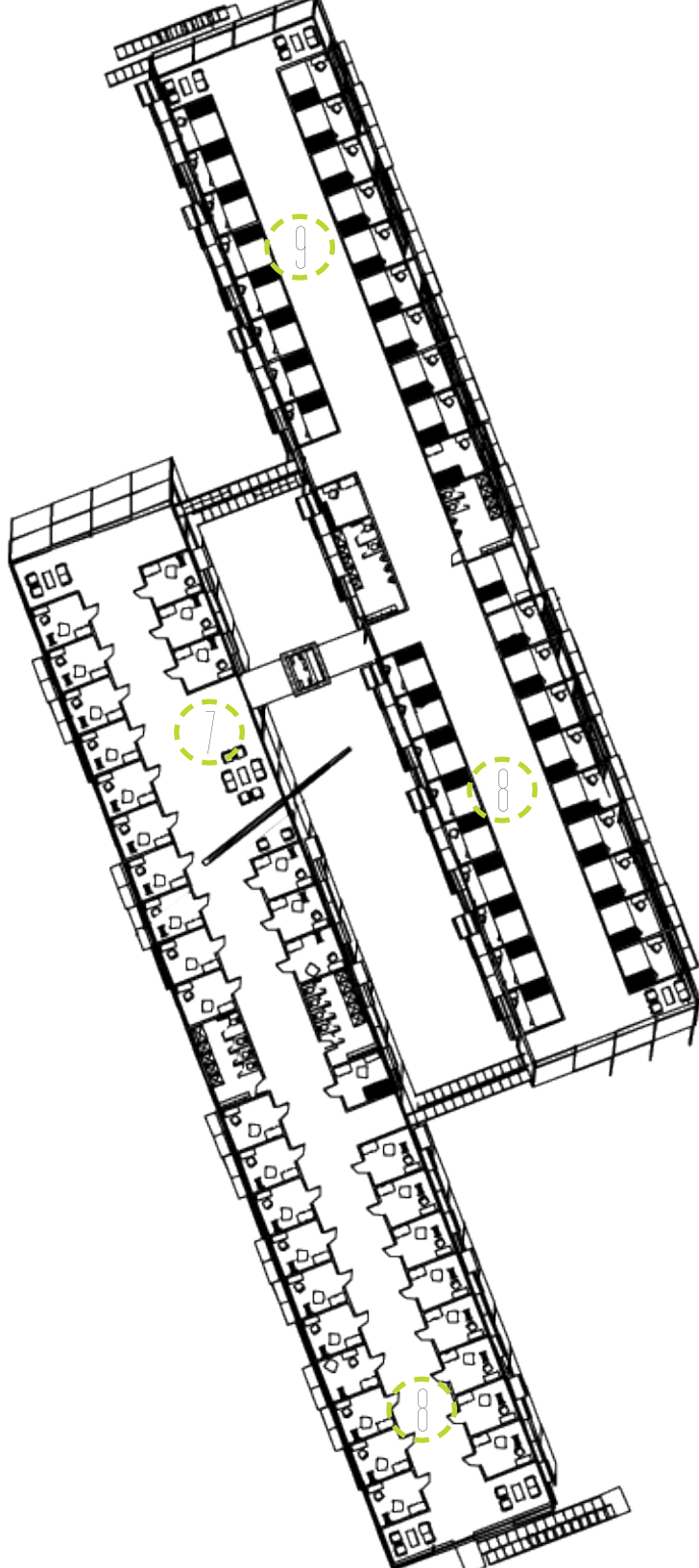


Structure consists of a heavy timber post and beam system. Columns are kept towards the interior to preserve the floating feeling and as the floor plates offset the columns allow for a recognition of difference.

1ST FLOOR



- 1. Dorm Entry and Office
- 2. Hall Director Apartment
- 3. Environmental Library
- 4. Retail Space / Campus Bookstore
- 5. Kitchen
- 6. Dining Center



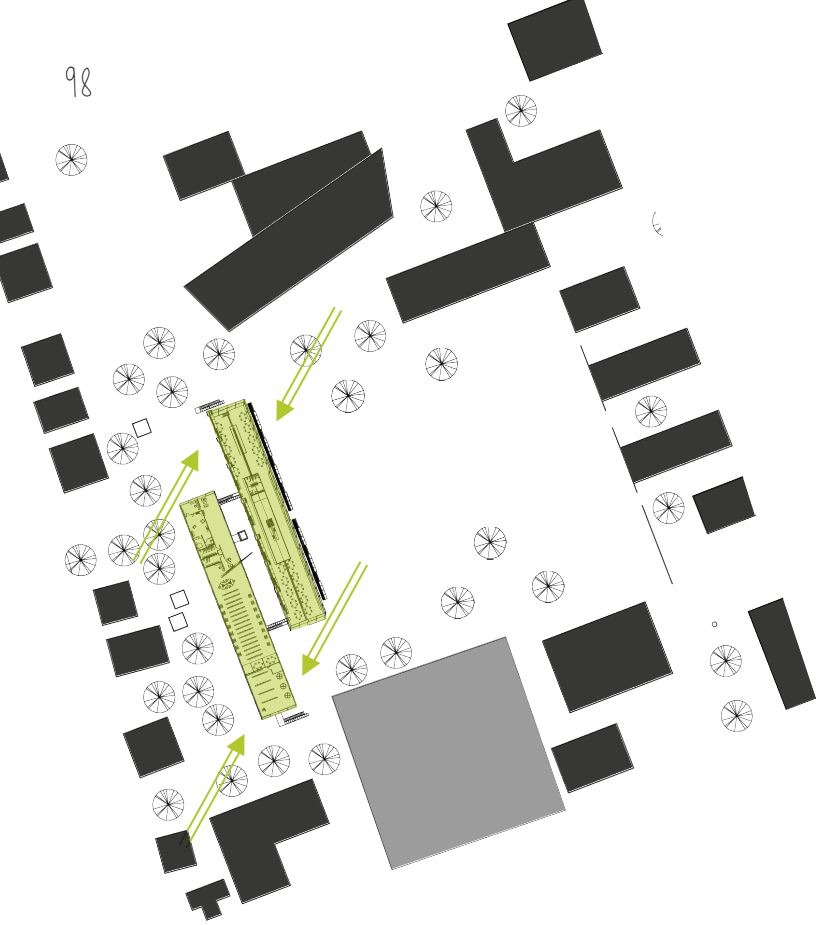
2ND FLOOR

- 7. Female Wing
- 8. Gathering Spaces
- 9. Male Wing





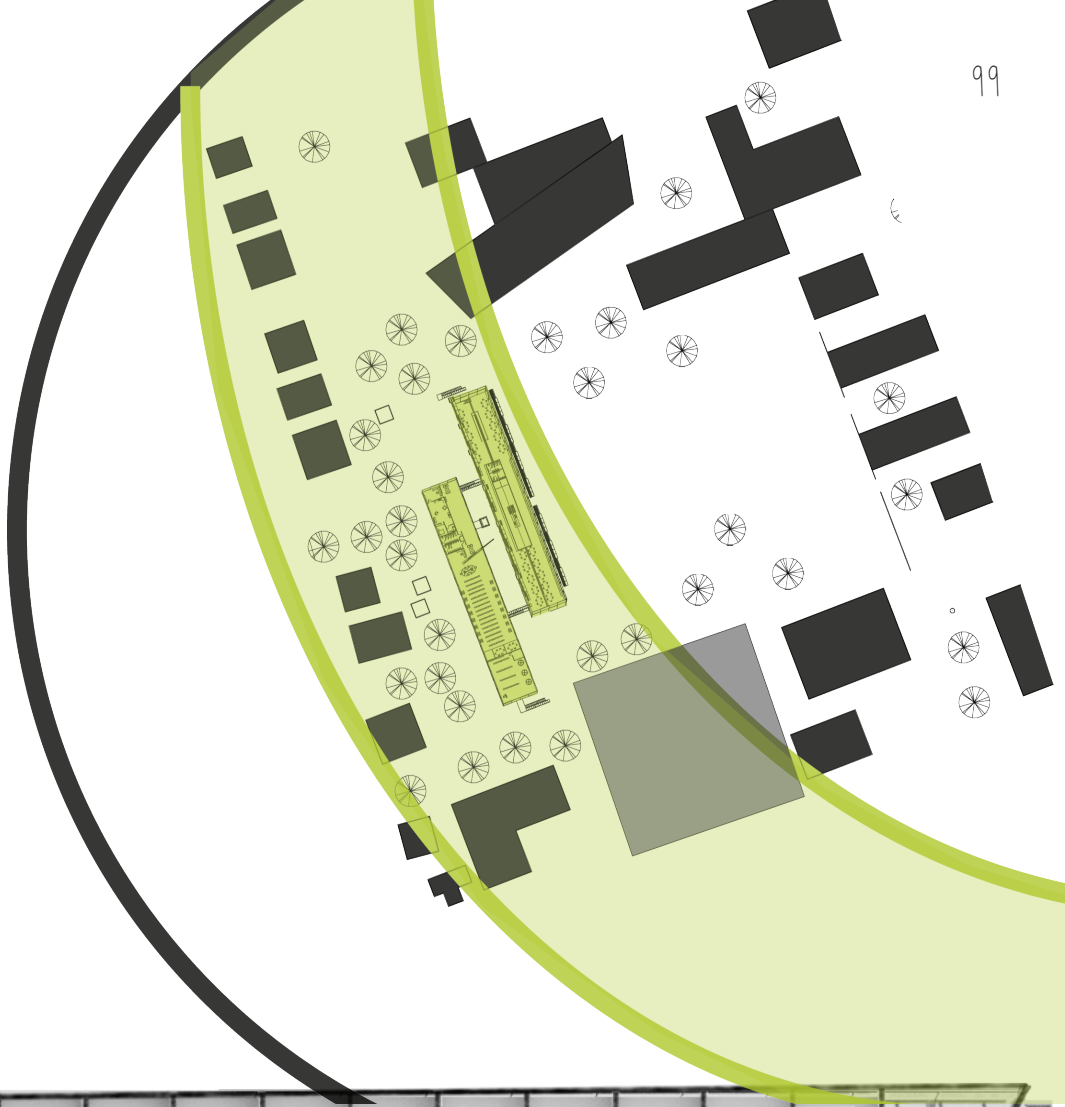
SECTION 1



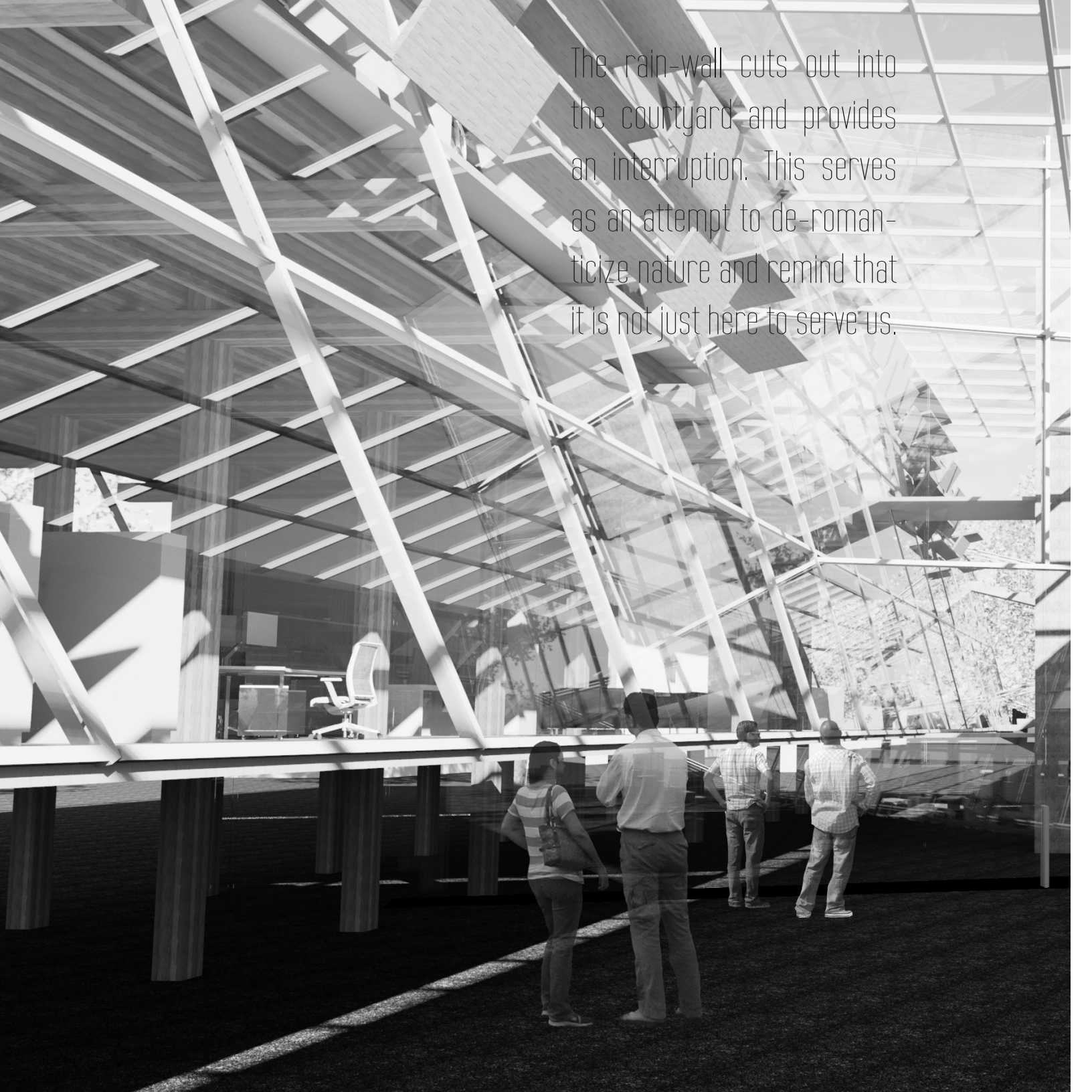
The offset of heights and positions of the wings allows for natural light and wind accessibility to each space. It also opens a dialog between the wings that promotes connections and interactions.



SECTION 2



The rain-wall cuts out into the courtyard and provides an interruption. This serves as an attempt to de-romanticize nature and remind that it is not just here to serve us.

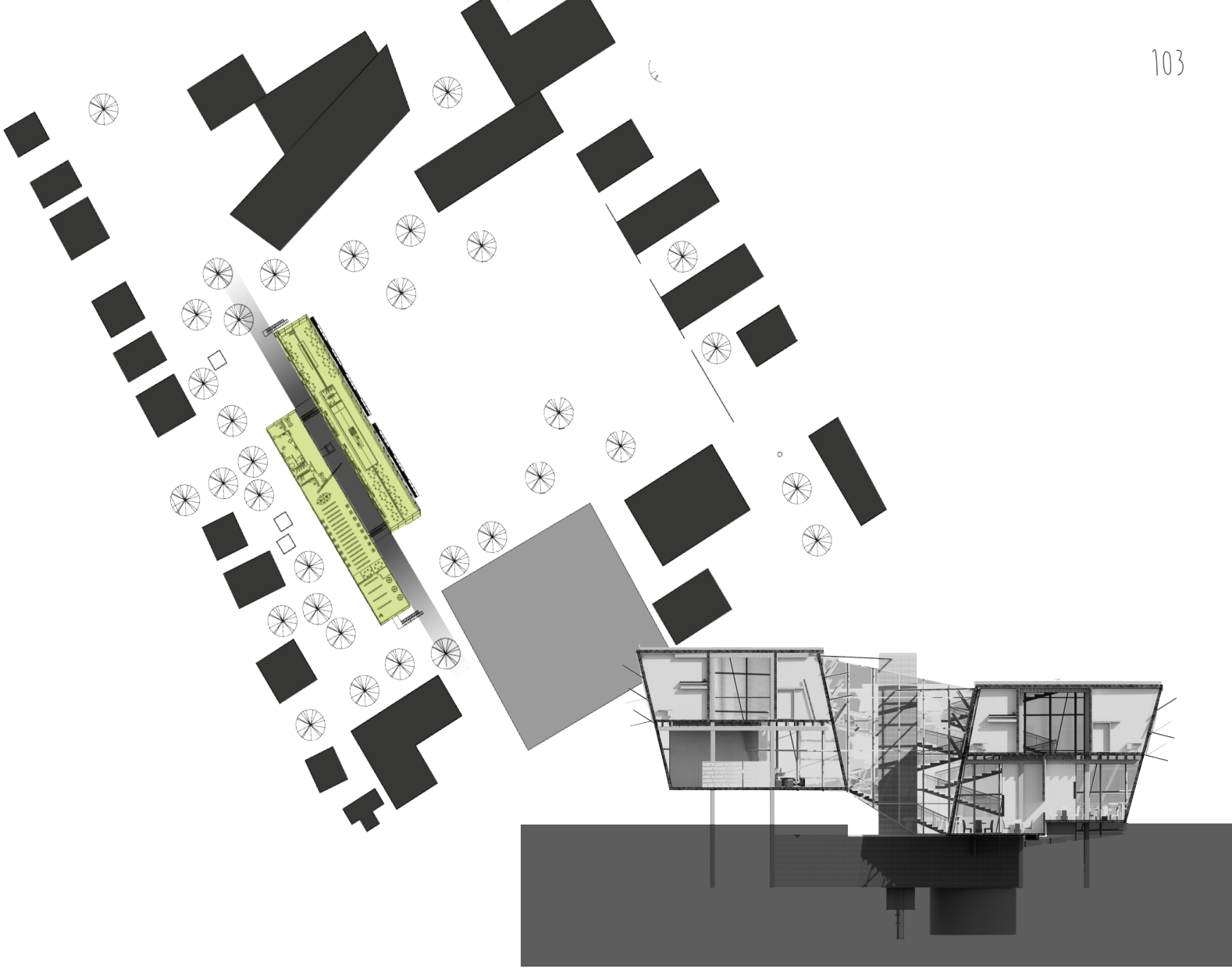




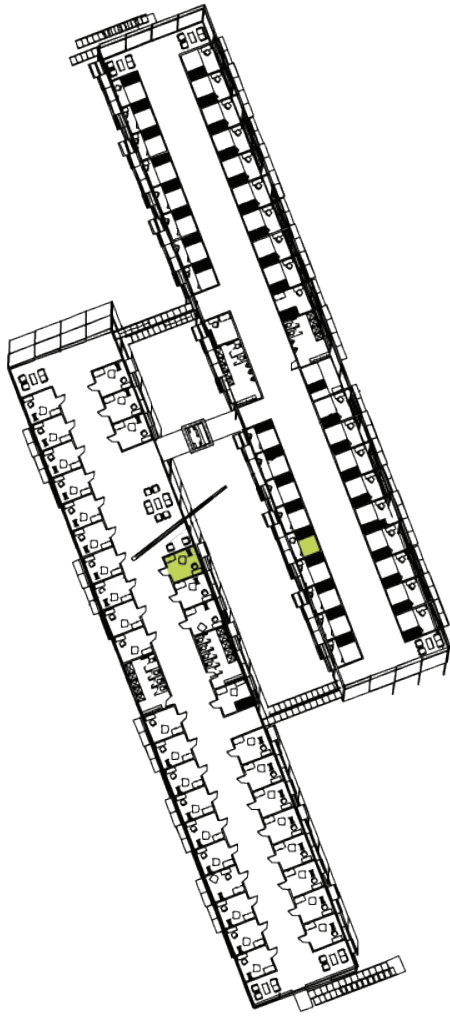
The central covered courtyard becomes the home for circulation. Due to the offsets of the wings, the stairs were able to be stretched to a tread of 2 feet. This calls for a tedious climb that is indicative of lifting the artefact.

The courtyard has a grade a foot lower than the rest of the site. This extends beyond the building and forms a very gradual ramp to the administration building and out to the film studies building.



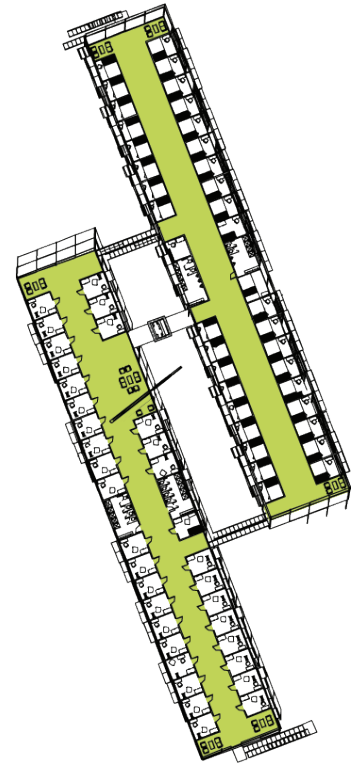






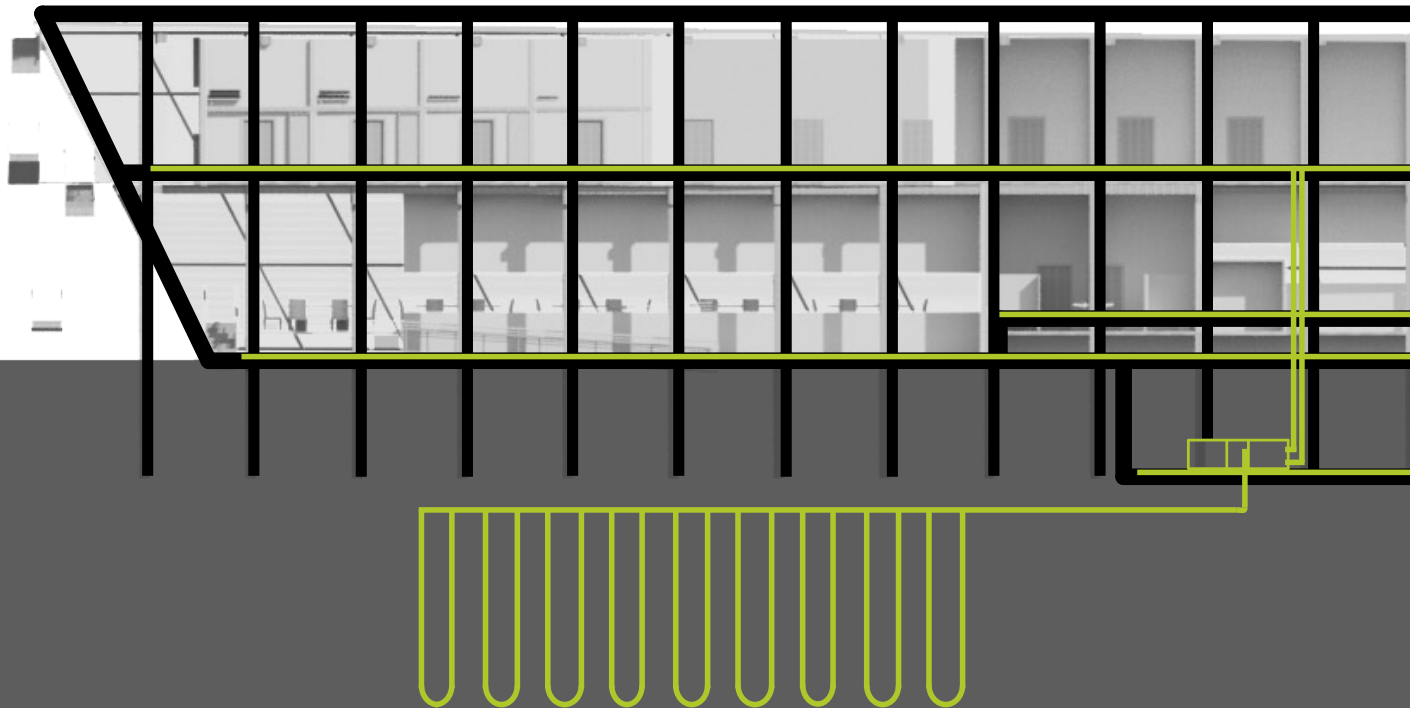
Views from dorm rooms create an opportunity to bridge from wing to wing. The single rooms feature a lofted area for sleeping – inviting the lifting and lowering motion every morning and night, a wardrobe for clothing, a desk for studying, and room for personal affects. The curtain walls are equipped with a wooden louver system that is offset from the glass. This allows natural light in even while all the louvers are closed for privacy. Each room has 12 louvers controlled in pairs by levers inside the room. When opened these allow a controlled connection between the offset wings.

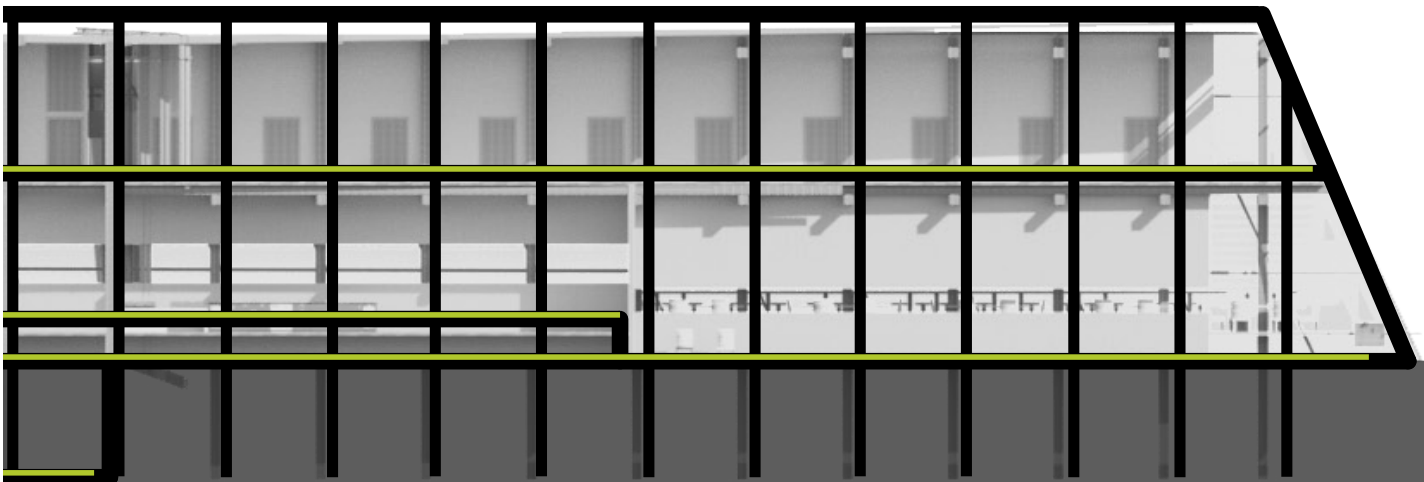
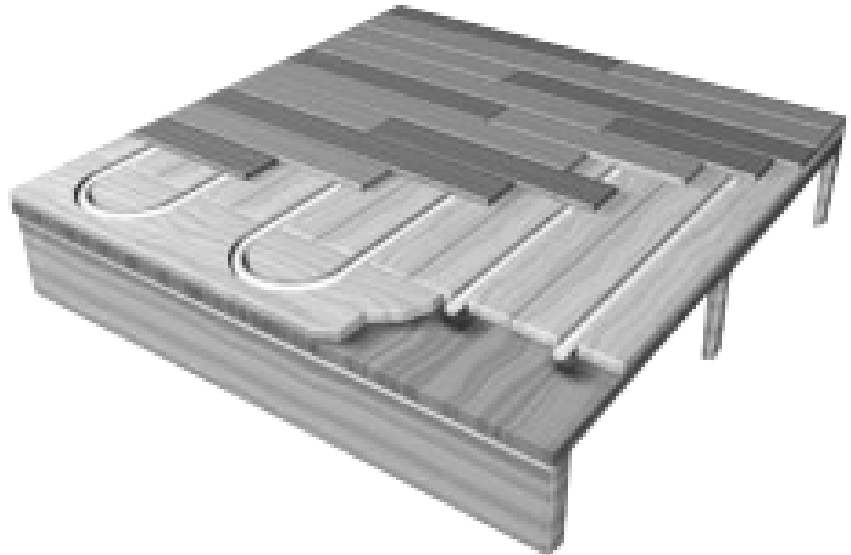




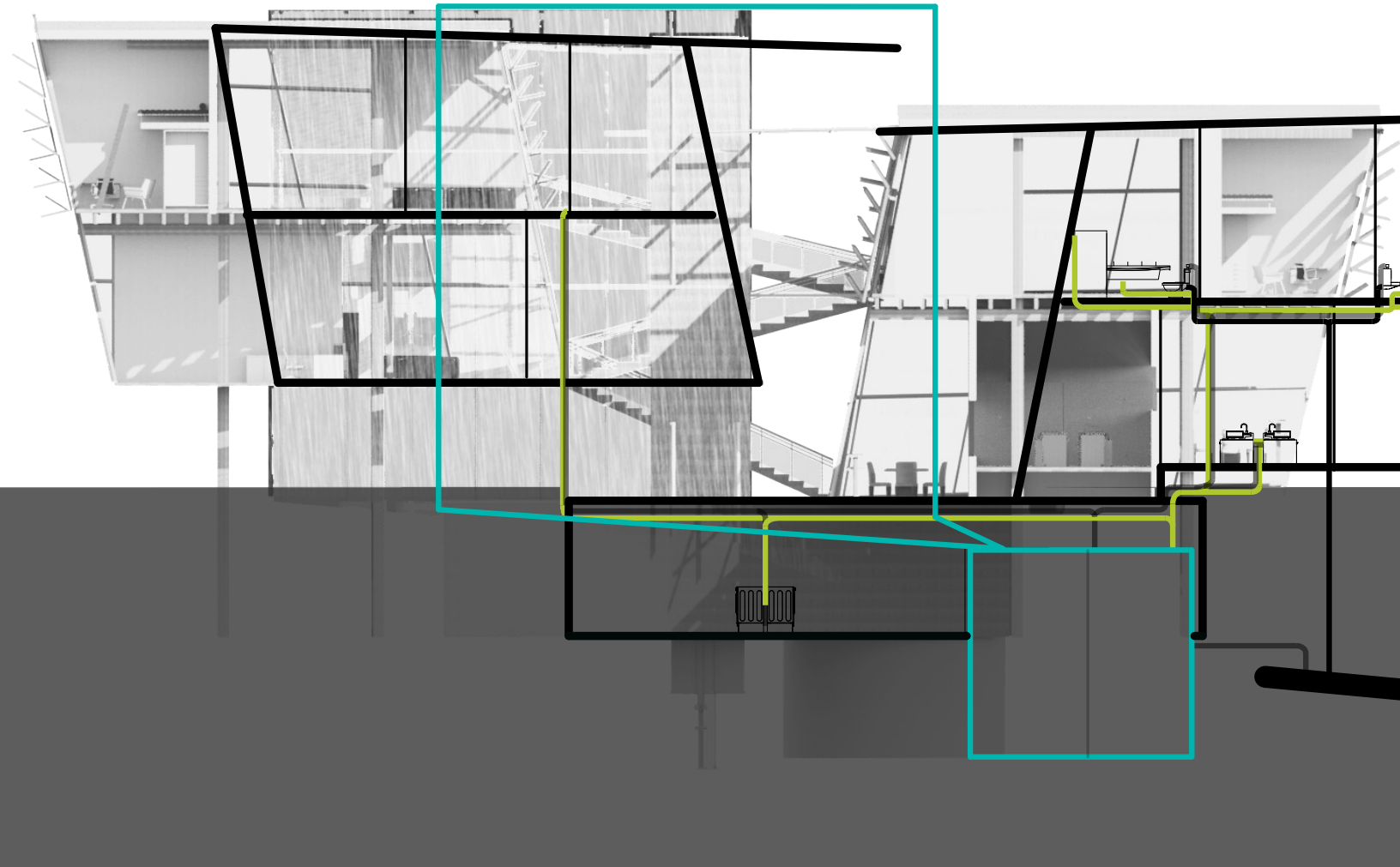
Each dorm floor also has a third of the space open for gathering spaces to further promote the interaction between students.

EC Series 120 242 Horizontal units - Dual supply





 Geothermal and radiant heating and cooling system



Water collection and filtration



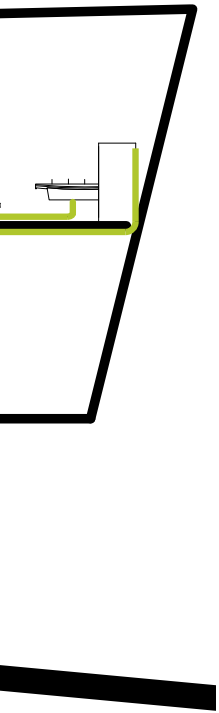
Water to be filtered for reuse



Filtered gray water



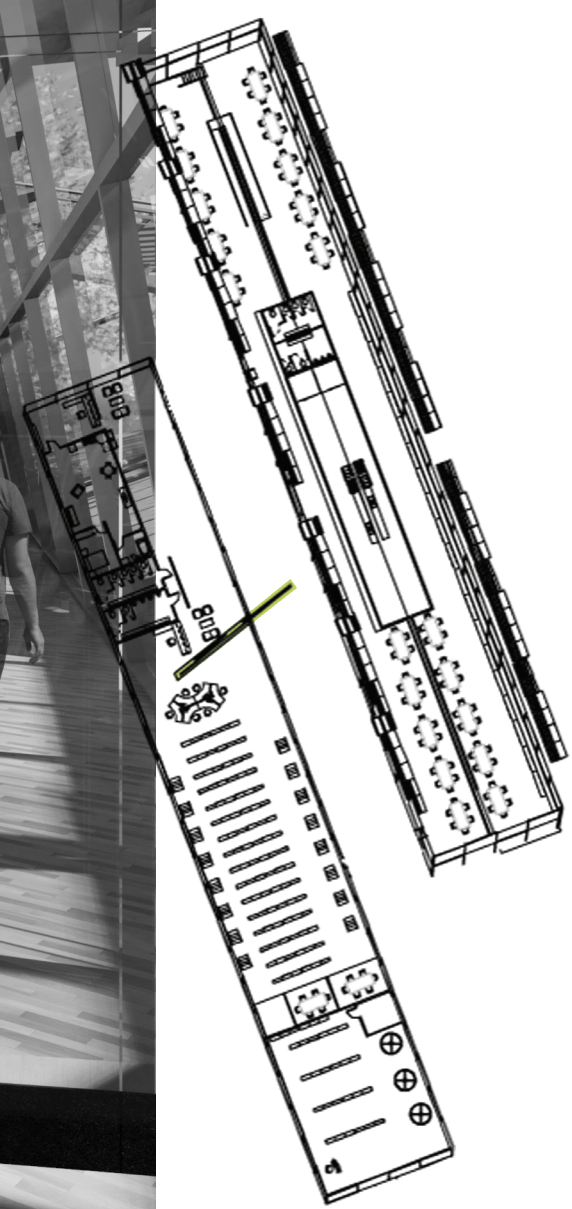
Water to sewer

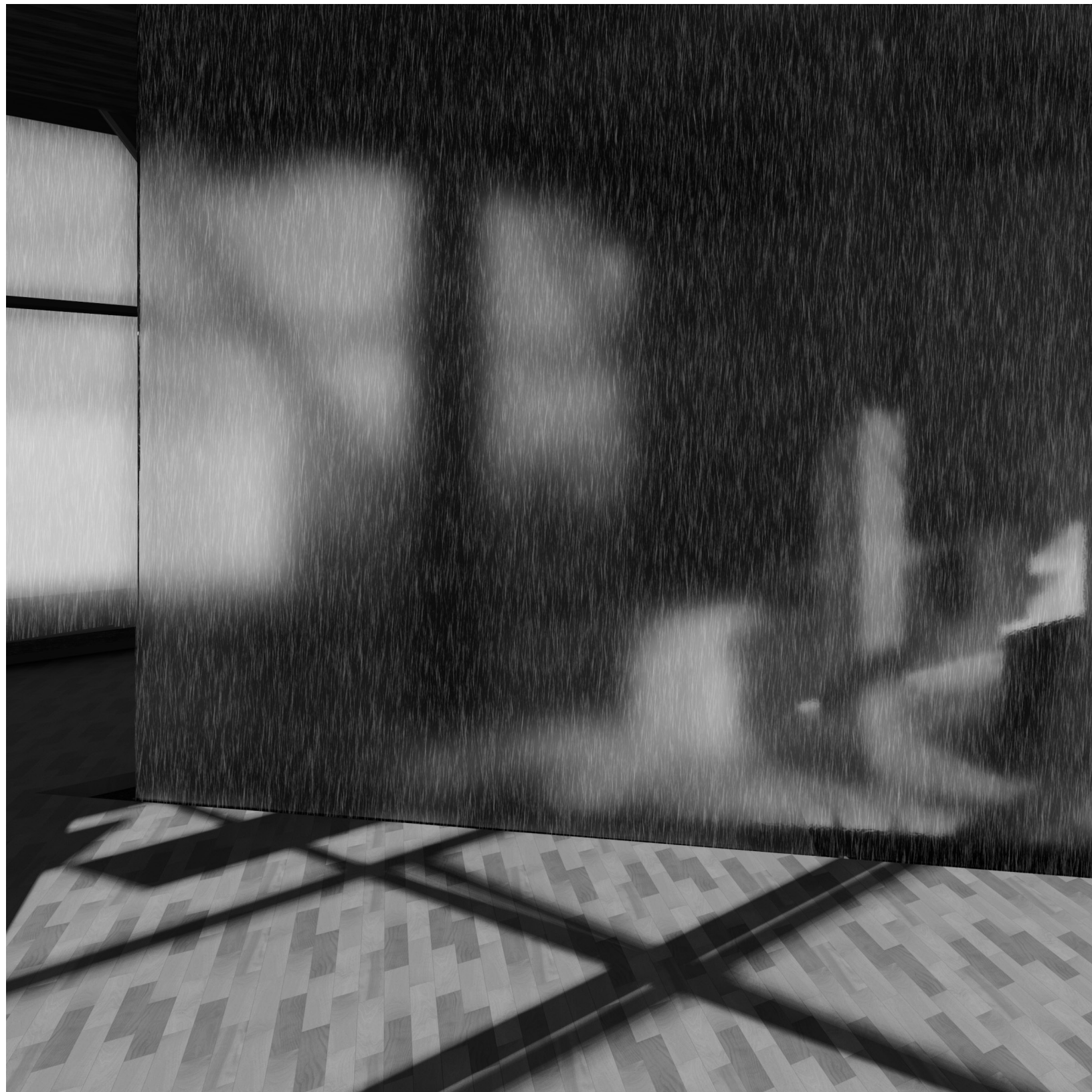


The rainwall previously mentioned cuts into the library space and provides a point of entry past the librarians desk. This cuts through the entire building extending up to the sky and down into the ground inspired by Heidegger's fourfold. The wall brings light down into the building, and the outside inside. The floor plates do not touch the wall indicating its fragile and respected nature.

This wall also functions as water collection when it rains. The gradual butterfly roof guides the water to the top of the wall which carries it to the basement where the catchment and storage occurs. This unique experience of water collection creates a more experiential interaction with a sustainable system. The water collected is used throughout the building but it also provides a moment of transformation for those experiencing it. The sound can be heard throughout the library and the visual interruption through the building draws your attention to nature.



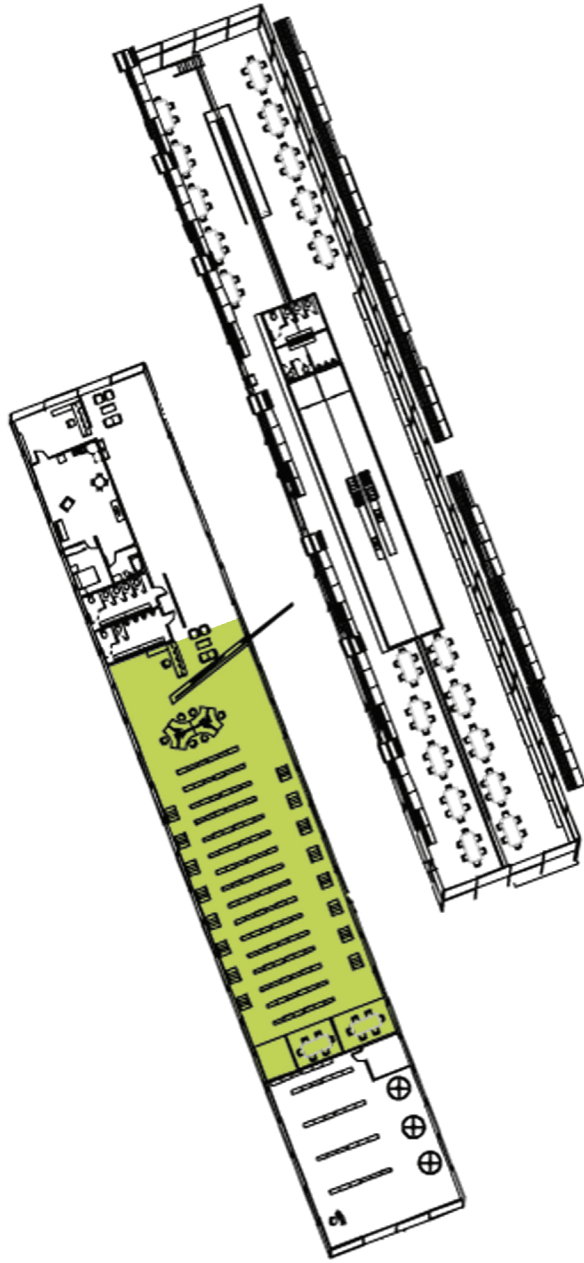




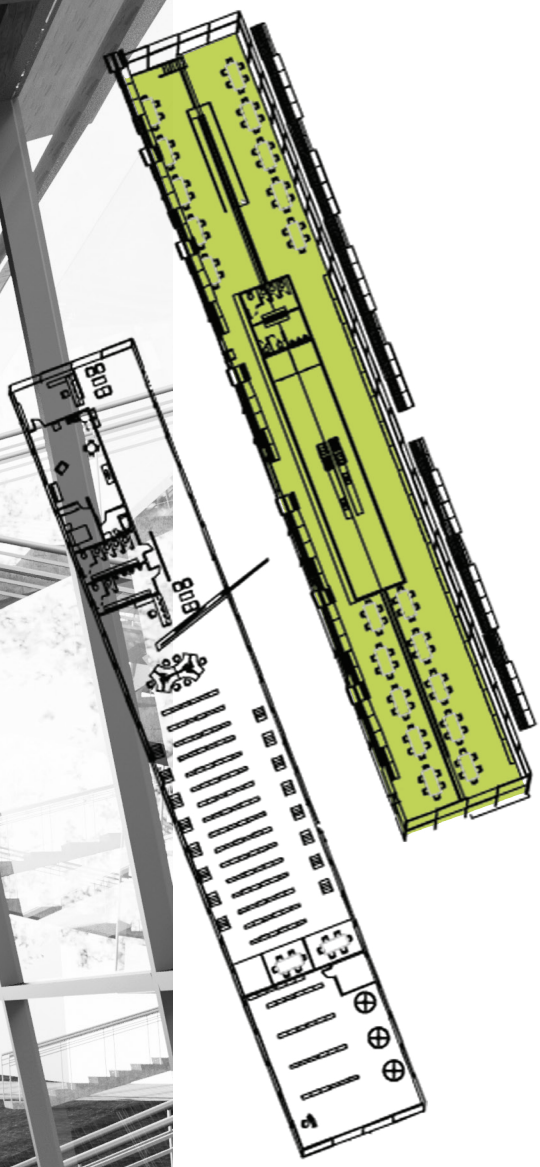


Rain-wall creates a deeper interaction with the collection process that goes beyond a technological approach.







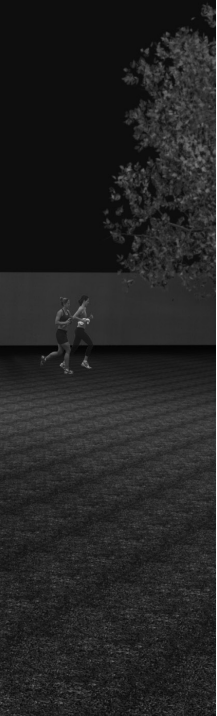


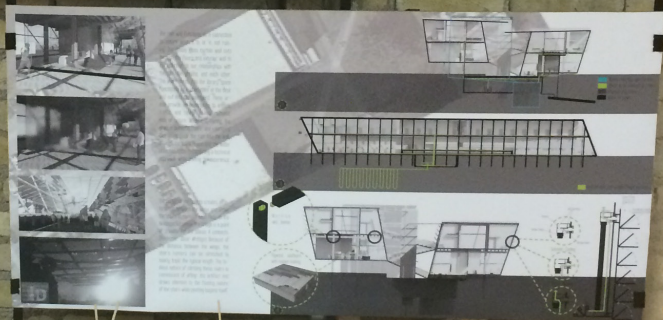
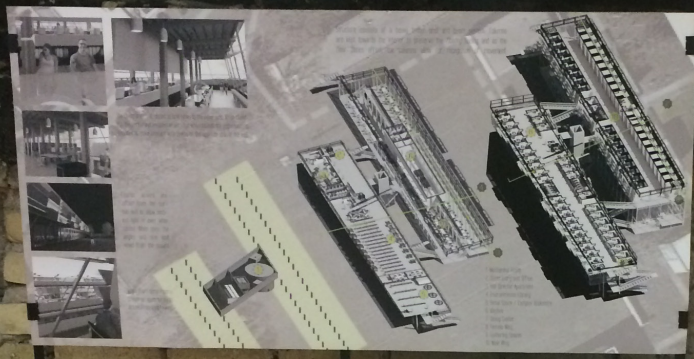
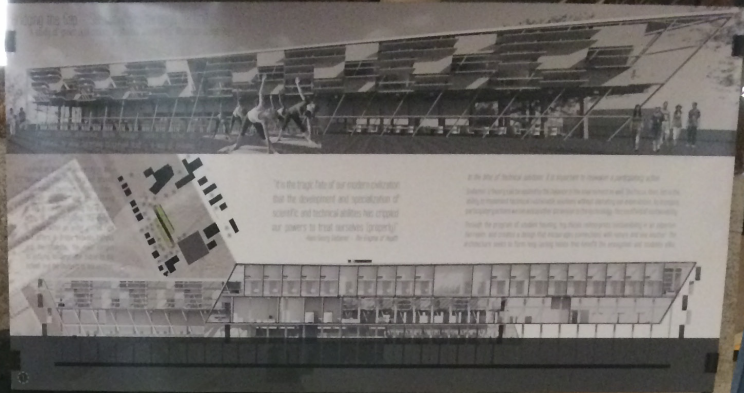


The dining area is located on the first floor of the east wing and features a central kitchen, serving area, and rest rooms. The actual dining space features an offset of floor heights and a dividing wall that allows for limited viewing of the other side. When walking the other side is not visible but from seated position, other seated diners enter the line of sight. This specific viewpoint creates a connection with others that is uniquely recognized..



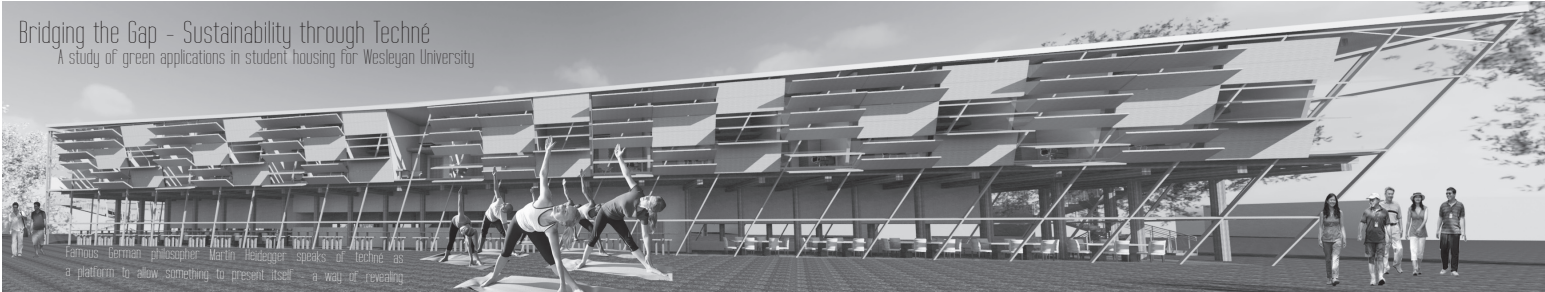
FINAL PRESENTATION





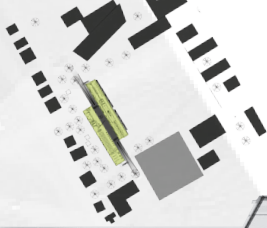
Bridging the Gap - Sustainability through Techné

A study of green applications in student housing for Wesleyan University



Famous German philosopher Martin Heidegger speaks of techné as a platform to allow something to present itself - a way of revealing

Located at Wesleyan University in Middletown, CT the dormitory will provide much needed dwellings for their undergraduate students, who are required to live in campus housing for the entirety of their schooling. The building is placed within an under utilized field and offers a *bridge* between campus and the students, the main campus to outlying buildings, the public to the school, and the students to one another.



"It is the tragic fate of our modern civilization that the development and specialization of scientific and technical abilities has crippled our powers to treat ourselves (properly)"

-Hans Georg Gadamer - *The Enigma of Health*

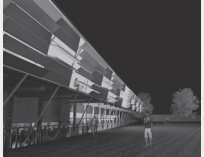
In the time of technical solutions, it is important to reawaken a participatory action.

Gadamer's theory can be applied to the *balance* in the environment as well. The focus, then, lies in the ability to implement technical sustainable solutions without alienating our experiences. By engaging participatory actions we can add another dimension to the technology-focused field of sustainability. Through the program of student housing, my thesis reinterprets sustainability in an *experiential* realm, and creates a design that encourages connections with nature and one another. The architecture seeks to form long-lasting habits that benefit the ecosystem and students alike.

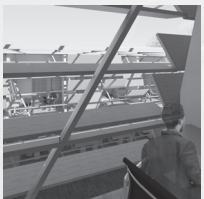




The dining area is designed to limit views to the other side. When standing, the partial wall impedes views - but when seated, the opportunity is provided to make *contact* with diners on the opposite side of the wall.

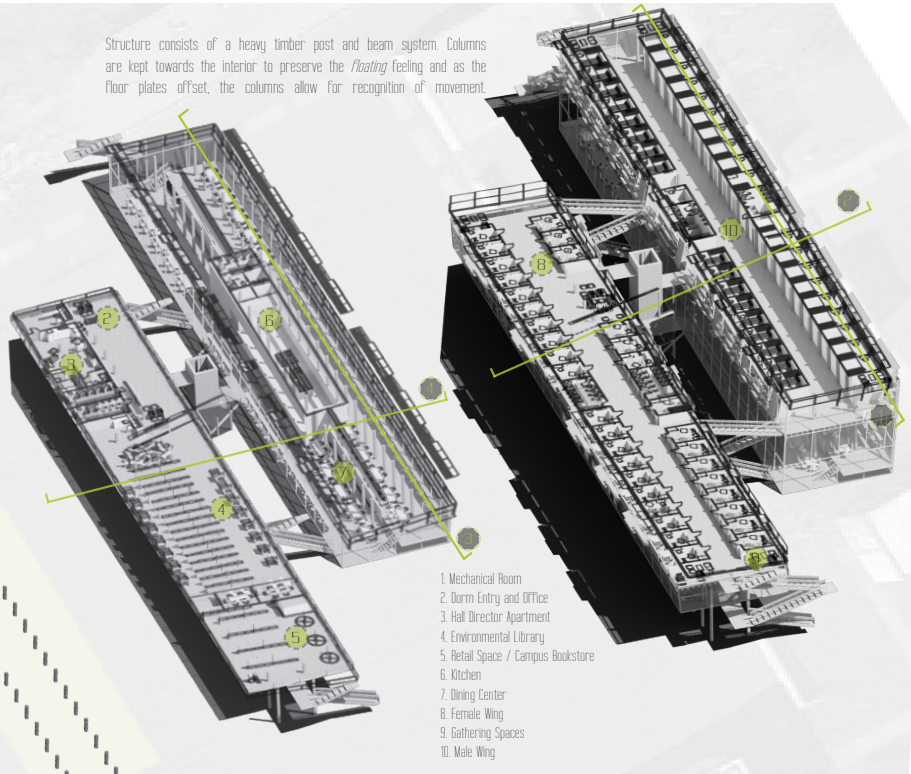


Exterior louvers are *offset* from the curtain wall to allow ambient light in even when closed. When open, the angles and size limit views from the ground.

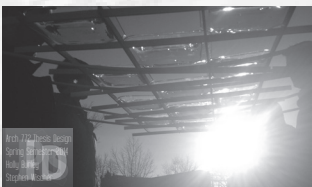
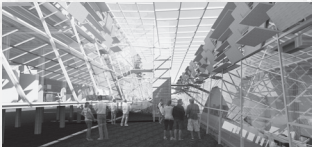
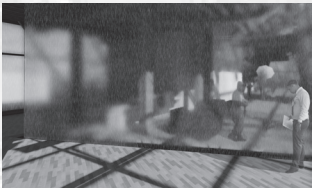
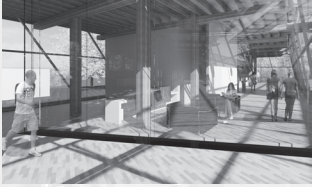


Views from dorm rooms create an opportunity to *bridge* from wing to wing.

Structure consists of a heavy timber post and beam system. Columns are kept towards the interior to preserve the *floating* feeling and as the floor plates offset, the columns allow for recognition of movement.



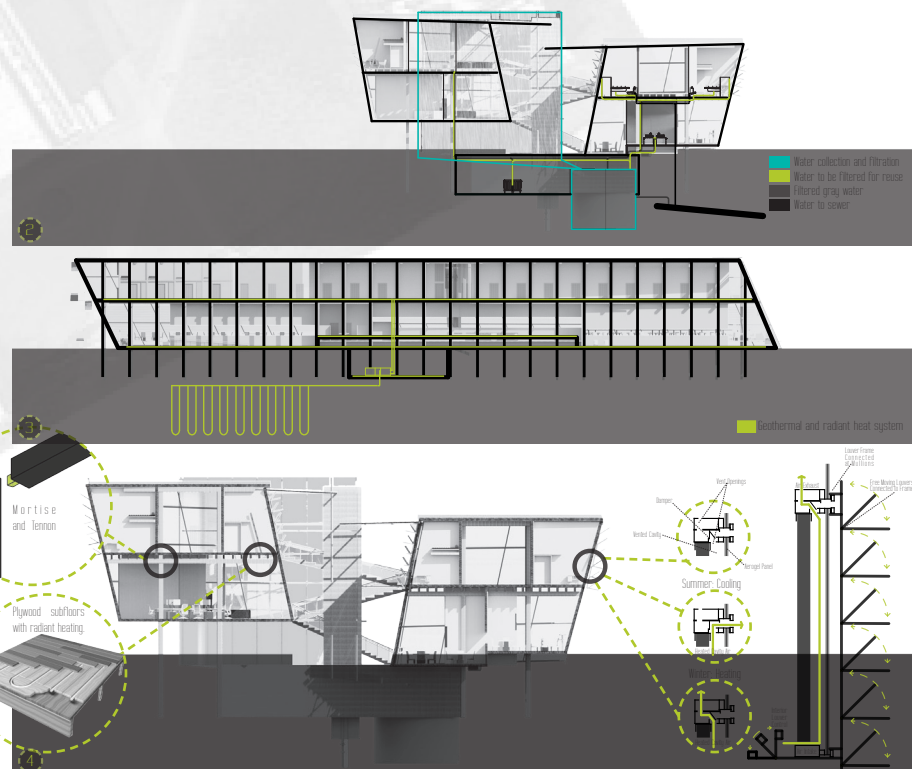
1. Mechanical Room
2. Dorm Entry and Office
3. Hall Director Apartment
4. Environmental Library
5. Retail Space / Campus Bookstore
6. Kitchen
7. Dining Center
8. Female Wing
9. Gathering Spaces
10. Male Wing

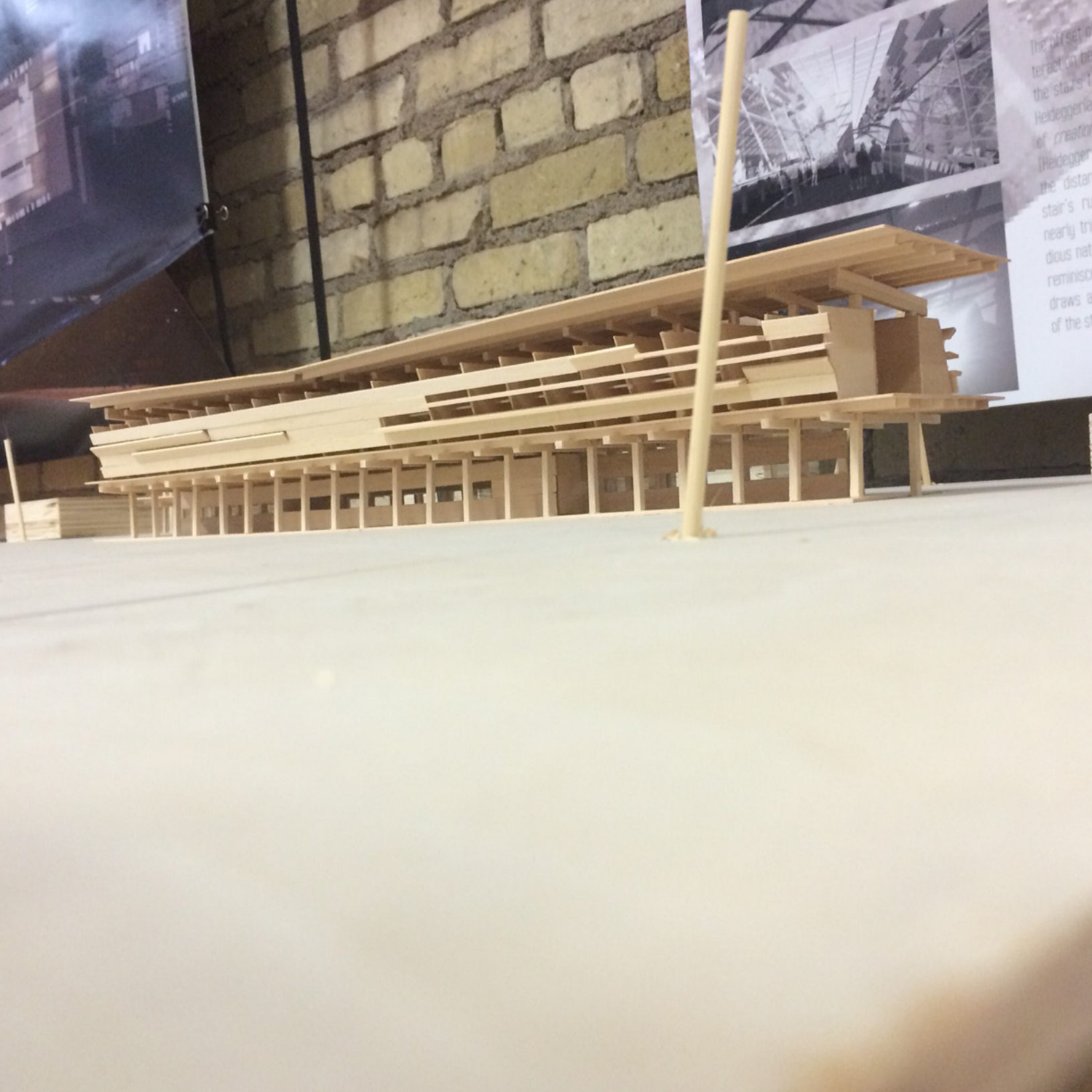


Arch: TTTA Design
 Studio: TTTA Design
 Stockholm, Sweden

The rain wall functions as a connection to nature when it is or is not raining. The double glass curtain wall cuts through the floors and exterior wall to call attention to our relationships with the sky, the ground, and each other. The wall extends into the library space functioning as a checkpoint at the desk and out into the courtyard. These areas provide an opportunity to impede traffic, and reveal a less romantic side of nature. When it is raining, the gradual butterfly roofs, and courtyard overhangs guide the rain into the wall, through the building, and into the water collection system, combining a technical approach while inviting an experience.

The offset of the heights creates an interaction between the wings and allows the stairs to connect each floor. In the Heideggerian sense, the bridge is a point of creation for the places it connects. (Heidegger, *Basic Writings*) Because of the distance between the wings, the stair's runners can be stretched to nearly triple the typical length. The tedious nature of climbing these stairs is reminiscent of *Wing*, the artifact and draws attention to the floating nature of the stairs while pointing beyond itself.





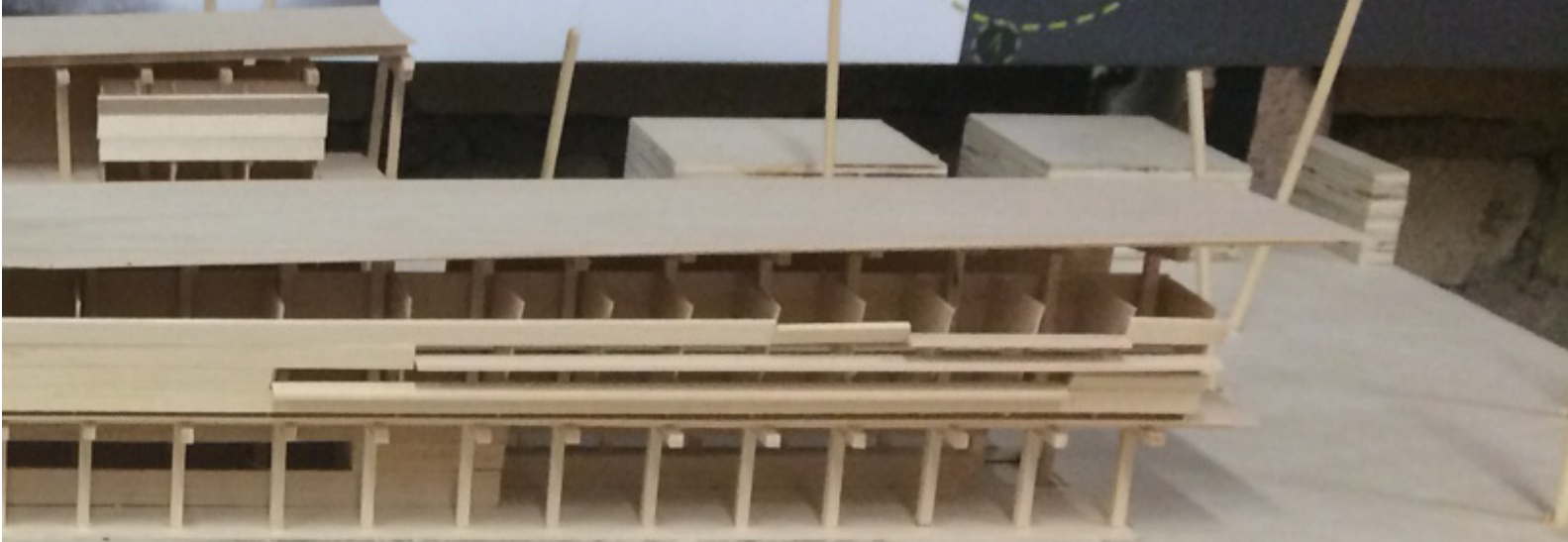
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... creator for the places it connects
(Heidegger: *Just: Wings*) Because of
the distance between the wings, the
stair's runners can be stretched to
nearly triple the typical length. The
tedious nature of climbing these stairs
is reminiscent of *if/ing*, the artifact
and draws attention to the floating
nature of the stairs while pointing
beyond itself.

Plywood subfloors
with radiant heating







The offset of the facades creates an interaction between the wings and allows the stairs to connect each floor. In the Heideggerian sense, the bridge is a point of creation for the places it connects (Heidegger, *Basic Writings*) Because of the distance between the wings, the stair's runners can be stretched to nearly triple the typical length. The tedious nature of climbing these stairs is reminiscent of *lifting* the artifact and draws attention to the floating nature of the stairs while pointing beyond itself.



Mortise and Tenon



Plywood subfloor with radiant heating



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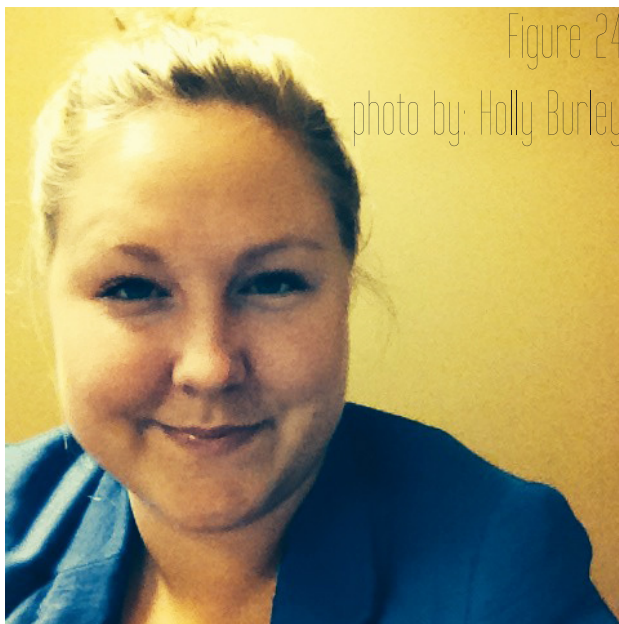
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HOLLY BURLEY

Not knowing is the greatest life motivator.
So enjoy, endure, survive each moment as it comes
to you in its proper sequence -- a surprise."

-Vera Nazarian