



ARCHITECTURAL GASTRONOMY

Creating connections between architecture and food through sustainability, community, and culture.

ARCHITECTURAL GASTRONOMY: CONNECTING THE ART OF ARCHITECTURE AND FOOD

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THESIS PROPOSAL

Figure 2

Food and shelter are two constants that have been vital to survival throughout human history. These two facets of life must co emerge to enhance the world for future prosperity of resources and human connections. Architecture and the Food Industry need to work hand-in-hand to show and create a maximized effort to optimize impacts on climate change. To utilize correlations between food, culture, and human relationships found between the two fields by creating and defining a clear and distinct relationship between architecture and food. The design and project typology demonstrates an interactive location where collaboration can be facilitated to help counter-act climate change, food waste, and over-production of resources while emphasizing the importance of cultural community expression. Through correlative research, case studies, and combined strategies, architecture and food will work cohesively to promote cultural integration, sustainability, community connections, and personal growth through the many different collaborative programs and spaces. As the fourth Campus of the Culinary Institute of America, the Charleston Campus addresses sustainability through the built environment and food practices taught, while inviting discussion on how food, architecture, and culture must work together to convey the importance of human relationships.



Figure 3

Through sustainable space, community, and cultural programming the art of Architecture and Food can be used to create human Connections through the built environment. Architectural Gastronomy focus's these main facets to strengthen the need for a Culinary Arts School to answer the thesis goals and theoretical premise.

Climate change and sustainability have been at the forefront of technology and research in recent years. Improvements to optimize climate change through Architecture and the food industries need to maximize different sustainability practices for the betterment of our future. Architects are focusing design strategies to maximize sustainability from the very beginning of design and focusing on new construction becoming NET Zero by 2030. Within the food industry, the struggles with sustainability happen due to over production, waste, water depletion, resource depletion, and carbon dioxide emissions. With this in mind, architecture and the food industries need to show and create a maximized effort to promote a better lifestyle. To utilize sustainability in both fields through design and education. Through design, building operations, and food practices this growth promotes a better connection between the neighborhood and community surrounding the building.

Architecture and Food are connected in more than one way through Culture. Every Region around the world has its own unique Cultural practices and forms of architecture and food. They both bring people together in a place of celebration, collaboration, and interactions. In the beginning of early practices of hunting and gathering, led to the start of villages being located near food supplies and related resources. The architecture and food are both impacted by regional and local traditions and geography. With this deep cultural connection between the two fields, being able to highlight these throughout the design process is a must.

Local and Regional integration of Food and Cultural Practices within a community is important to create a mutually beneficial bond between the Campus and the city of Charleston. To provide for these community connections became the utmost importance throughout the design process. These connections are not only important for the community, but also for the students enrolled in the Campus. It showcases and promotes positive human interactions and has a more welcoming environment overall. These specific connections are grown and strengthened through an integrative building program to allow people to come interact, learn, and communicate with everyone. This becomes a place where everyone is benefiting from the Culinary School.

Through Architectural Gastronomy sustainability, community connections, and cultural integration is used to create human connections between the art of architecture and food. Sustainability through both fields being integrated through green building practices and a holistic approach to food production allows for a personal growth of knowledge and sustainable practices to emerge for the betterment of our future. Cultural Integration allows the very intertwined fields of architecture and food to create a space that allows for regional and local traditions to integrated within building programing, educational spaces, and public amenities. Through these spaces and programming, they pay respect to the community it resides in and allows for a deeper tie between the two to emerge. Specific community spaces integrated throughout not only the student educational spaces, such as the Restaurant, Bakery, and Events Center, but also through their own Vertical Garden allows for interactions and access to their own learning of food, sustainability, and culture. Through the theoretical premise, research and design solution, Architectural Gastronomy is the location that allows for all of these facets to be integrated and incorporated together to create human connections.

PROJECT TYPOLOGY

Culinary Schools have many different aspects to their success that makes them very important and intertwined within the final thesis solution. Architecture and food have many things in common and the school is the perfect way to display this through the education taught and integrated green design of the building.

Sustainability has become a forefront of most conversations in both architecture and food industries. Within the food industry the diminishment of resources, global warming, and the push for more clean eating have led to a necessity of how we must think about these issues in a more creative and sustainable way.

Classrooms, restaurants, food production, bakery, business planning, and waste production are all going to be implemented within the school that can be taught, designed, and utilized to create a maximized sustainable effort.

PRECEDENT STUDIES



The Culinary Institute of America
Location: New York, New York

Figure 4



Figure 5

Le Cordon Bleu
Location: Paris, France



Figure 6

Institute of Culinary Arts
Location: Omaha Nebraska

BUILDING PROGRAM

Skills Kitchen

Individual work-stations to learn basic cooking skills through demonstrations and hands on experience with instructors.

Instruction Kitchen

Students have the opportunity to take what they have learned in the Skills Kitchen and demonstrations to be used in a group setting to get the experience of working in a kitchen.

Demonstration Auditorium

Students sit and learn in an auditorium setting by watching instructors cook in front of them.

Bakery

By having both a bakery and a Cafe in the school students get hands on experience on how businesses are run by selling food they learned to cook.

Educational Spaces

Typical college classrooms house teaching general education, food management, business, and other food related fields. As well as individual breakout spaces, study rooms, and group gathering to promote student interactions while learning.

Library

Provide resources and study spaces for students throughout their education

Event Space

Event Space located on the premise holds a key part of the education by allowing students to serve food in large scales. This space can also be transformed into Gallery Space to highlight student work.

Administration

Houses everyday building and college tasks. Welcoming space located as the first stop for people entering the building.

Vertical Garden / Green Roof

Spaces that promote the learning of food production from the very beginning through growing of vegetables, apiaries, and animal production.

Back of House

Back of House will house mechanical needs, storage, and janitorial needs

Bookstore

Location for students to buy course required equipment, school swag, and general day to day necessities.

Restaurant

Restaurant serves as another learning opportunity to give students the opportunity to work in a more high pressure situation, to mimic work once they graduate.

THE CLIENT

Culinary Institute of America currently has three locations in the United States with one location in Singapore. The new Culinary Institute of America will be located in Charleston, South Carolina and become the 4th in America. Every Institute of America Campus is unique in their location, culture, and environment. With new advancements in technology and respect for the earth and sustainability, the new Campus in Charleston, SC will specialize in Farm-to-table approaches by utilizing sustainable aspects of waste reduction and carbon emission reduction. All while being a valuable addition to the current Culinary Institute of America Campus's.

THE USERS

The users that occupy and interact with the site and building throughout the day consists of building employees, college students, children, professors / chefs, farm staff, and adults. These users interact with the site in different ways and different times throughout the day. Adults and Children are the most unreliable statistic. They are based on how well the bakery and restaurant do. While building employees, college students, professors / chefs, and farm staff are more on a regular schedule between 8 -5, Monday - Friday.

USER DESCRIPTION

Building Employees

Building Employees consist of anyone that are essential to keep the school running. They also provide as operation staff for restaurant, support spaces, and bookstore.

Professors / Chefs

Includes professional chefs, cooking instructors, class professors. This is the second most important user group as they are the ones teaching and leading the new students.

College Students

Students make up the largest user group as they are the ones paying to learn and go to college at the school.

Farm Staff

Farm staff makes up a very important role of care of farm animals, gardens, bee hives for educational uses.

Children

Children will be able to join their families and enjoy food at the restaurant, bakery, and cafe

Adults

While enjoying the students culinary abilities adults will come to enjoy the restaurants, bakery, cafe, and event space.

Daily User Usage

| | |
|--------------------|---------------|
| Building Employees | 16 - 20 total |
| College Students | 1 - 400 total |
| Children | 1 - 250 total |
| Professors / Chefs | 1 - 30 total |
| Farm Staff | 1 - 5 total |
| Adults | 1 - 250 total |

SITE DESCRIPTION

Charleston was chosen as the fourth location within the U.S. for the Culinary Institute of America since the Southeast Region of the United States is currently unrepresented. This location splits the Texas's and New York's Campus equally. Located in the heart of Burroughs historic district, the Peninsula, and the heart of Charleston's Downtown, the site sits perfectly to promote student life, sustainability, and community growth. With the culture, history, and food scene of the city it made for the perfect location.

The site is located on the block between Mary St, Reid St, and Meeting St in Charleston, South Carolina. It is 2.85 acres and is located right across from Charleston School of Law.

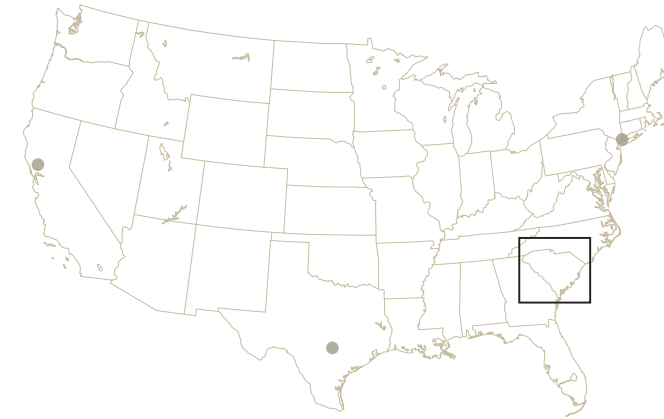


Figure 7

● Current location of the three Culinary Institutes of America



Figure 8

City: Charleston, South Carolina

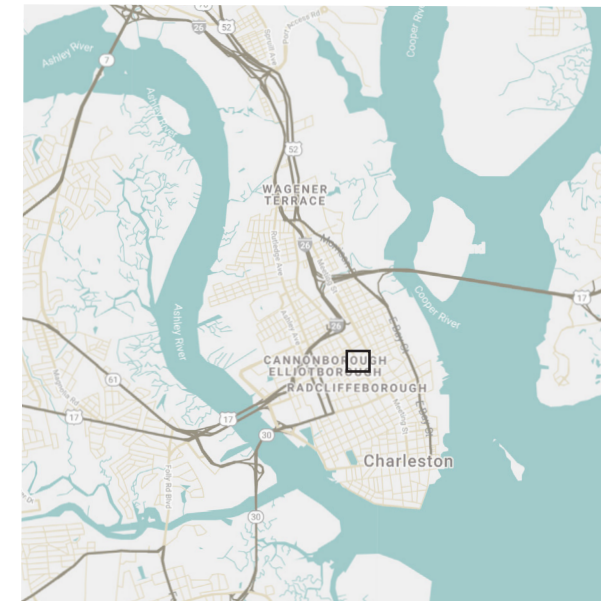


Figure 9

Located within Downtown and the Boroughs Historic District



Figure 10

Near local eateries as well as Charleston School of Law and Charleston College

PROJECT EMPHASIS



Figure 11

Sustainability

Sustainability actions needs to demonstrate the collaboration necessary to facilitate change to help counter-act climate change, food waste, and over-production of resources around the world. These issues between the two fields are currently addressing sustainability as separate entities, but these very connected fields need to work together to address them by incorporating Sustainable Building practices through LEED Design Criteria, Water Collection, and Kitchen Heat Exchange.



Figure 12

Culture Integration

Food and Architecture are brought together and expressed through cultural aspects found between the two. Every culture around the world has their own cultures and food practice that can be expressed and shared with others through the built environment and human exchanges. By Incorporating these connections into the school will increase human connections through the understanding of other cultures.



Figure 13

Personal Growth

Building Programing allows for a more holistic approach to learning Culinary Arts and related fields. Transparency between the interior atrium, classrooms, and exterior allows for information to be absorbed at all areas within the school, including collaboration stations located in varying locations to prosper individual educational learning to promote an environment where knowledge can be expanded upon.



Figure 14

Community Connections

Charleston's 10 year Future Land Use Plan states,

"Accommodate quality growth in a way that respects the unique character of different parts of the County, promotes economic opportunity where appropriate, respects private property rights is coordinated with the provision of community and public facilities, and protects cultural and natural resources."

By following and supporting this plan, the Culinary Institute of America Charleston will respect current residents by promoting community usage throughout the building.

ACADEMIC

Throughout the thesis design project, I have created a set of personal academic goals. First, I want to put my best foot forward with a completed well-rounded thesis project. This will happen by focusing my attention on gathering the best information and research that will guide my best design work. I want to design a building that can be achievable from start to finish. Second, is to use knowledge gained through education and professional work in the final thesis product. This will happen by creating the building in a scale that will allow for all areas within to be well designed.

PERSONAL

I believe my personal goals is what is going to help my academic and professional goals succeed. By focusing my attention on the research and design, will allow me to keep on track with the work load and allow me to excel on the final deliverables. By getting at least 6 hours of sleep at night will allow me to be able to focus better. Creating a personal schedule will keep me accountable for every step and action I do. This allows for plenty of time to work on the project but also gives time to relax and recharge to reduce burnt out.

PROFESSIONAL

Professionally, I want to accomplish work that will highlight my design ability for my potential employers. I will be able to use my previous experience of working in hospitality and education to create the best building program.



Figure 15

DESIGN METHODOLOGY

As the design process progresses, analysis, archival research, interviews with colleges and architecture firms, readings, and local studies will be the basis of my design methodology. Graphical and strong written comparisons between food and architecture and why they two different industries are similar will be implemented by ways of sustainable design within the building and building practices.

Qualitative research through archival readings and research as well as local studies of the town through direct observation and interviews. Quantitative research will be utilized to show the scientific proof of how these sustainable implants for the project are impactful in the community it resides in.

DESIGN PROCESS DOCUMENTATION

Through the thesis research, design documentation, and preservation of the information will be a very important part of making this project the best it can be. Preservation methods that will be used during this year consist of: Creation/Investigation; weekly meetings and feedback from advisor, documentation through hand documentation and computer led programs; and all documents backed up and documented every week.

Design Investigation:

- Hand Sketching
- Computer Modeling
- Hand Modeling
- Video Representation

Software for Documentation:

- Autodesk Autocad
- Autodesk Revit
- Rhinoceros 6.0
- Lumion
- Enscape

Software for Documentation:

- Adobe Photoshop
- Adobe Indesign
- Adobe Premiere Pro
- Adobe Illustrator

Publication of Material:

- NDSU Institutional Repository
- Hard Cover Book

Final Documentation:

- Hard Cover Book
- Presentation Board
- Project Video
- Presentation Slideshow

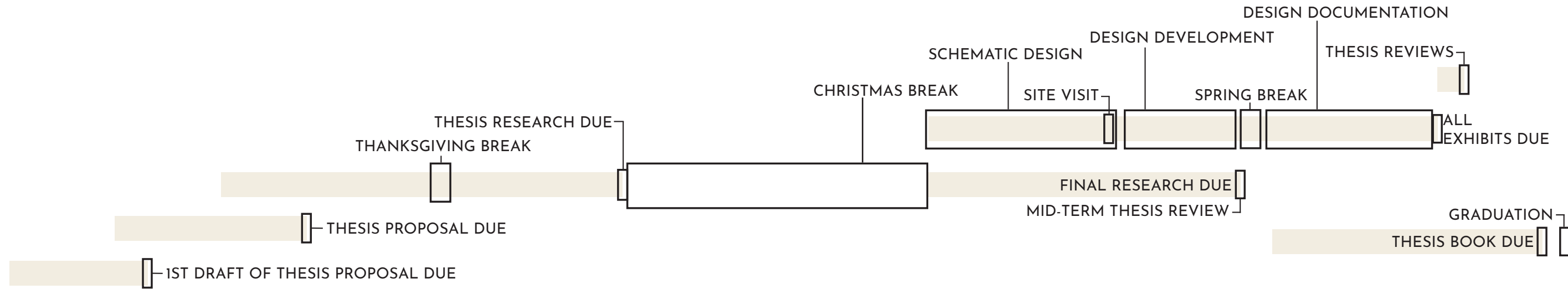


Figure 16

PROJECT SCHEDULE

FALL SEMESTER

SPRING SEMESTER



AUG

SEP

OCT

NOV

DEC

JAN

FEB

MAR

APR

MAY

A photograph of an outdoor cafe scene. In the foreground, a white coffee cup with a blue floral pattern sits on a saucer next to a plate of a layered cake with cream and fruit. A waiter in a white shirt and black vest is visible in the background, along with other patrons and a white umbrella. A yellow rectangular box is overlaid on the left side of the image, containing the text "THESIS RESEARCH" in black, uppercase letters, with a thin horizontal line below it.

THESIS RESEARCH

Figure 17

THEORETICAL PREMISE

Throughout the thesis research process. Historical research will be done to see how previously food has incorporated not only within learning but also how it has influenced cultures from where the food has originated from. Qualitative research through the process through readings related to both the food industry and the Architecture field. These correlations will be made and expanded upon throughout the design process. The look into case studies is also going to be an incredibly important part to see what the typical building programs are and how the school conducts itself through practices and teaching.



Figure 18

Architecture Of Food: A Study On The Impact Of Food Malls In Kuwait

In this literary review on article, "Architecture of Food: A Study on the Impact of Food Malls in Kuwait." I will cover how the different ways that food and architecture are related as well as how through the interviews and studies shown through the reading, the importance between the two. The professions of both food and architecture, "both produce creative pieces of art and share a technical side that relies on careful measurements and aesthetic proportions." (Al-Haroun) This statement gives the first piece of how food and architecture are related. Both are really technical fields that intertwine and tell us a story of culture and identity.

First this article goes into depth on how the two fields are related. There are connections not only between the human being and food just being a way to live or a vision into their health, but it also says food goes much deeper than that into it reflecting who they are due to cultural, regional, and personal environment. The different regions around the world have different types of cuisine that are enjoyed by locals due to location, culture practices, and access to food. Arabs have spices as a key ingredient into their meals since they are located at a crossroads for trade. Italians celebrate life through food with natural and colorful meals. Which consists of hundreds of pastas. Middle-Eastern's make food a family affair, always eating together and making a big deal over hospitality and their generosity. In China, food and architecture have always worked together to create harmony and balance through vibrant colors and the atmosphere the food is ate in. Today with the wide growing globalization of food these culture aspects and food are spreading outside of their traditional regions. This is allows for the growth and artistic expression of food to expand through a more in depth eating experience through food, architecture, touch, and smell to stimulate all the senses through their dining experience.

Food and architecture are not only related to cultural, regional, and personal environment but also through their creative processes, consumerism, and globalization of products leading to new eating habits and a healthy lifestyle. When humanity first came about food needed to be hunted and gathered leading to a connection between where they eat the food and obtained it from. As time went on hunting, gathering, and farming expanded, and civilizations were formed around where food could be collected. This connection to place and food has started and formed thousands of years ago and with globalization is now able to be expanded through architecture. This expansion in resources and architecture has allowed people to become more creative with how restaurants can look and the types of food that is sold there. Before globalization restaurants or places where food were served were limited to regional foods and resources. However, as they were able to obtain more of these resources and materials the creativity also grew along with the availability of these elements. This was the beginning of food wasn't just about survival anymore, but as an enjoyable experience where you can choose what time of cuisine you want. According to Jensen (2003) "eating behaviors express one's identity and the choice of food may in fact reflect their personality, group, family, generation, gender, school, religion, or nation." This allows for food and architecture to be created and grown upon to challenge each other through innovation and expectations.

Globalization of food throughout the world it has allowed for goods, food, and cultural practices to be experienced outside of their original cultural region. One positive outcome from globalization are that humans are more aware of their dietary patterns based on their income, capital flow, and market availability. Due to this outcome, people tend to migrate and live in urban communities, which has increased the international food and availability in these urban settings. Today 55% of the world's population lives within an urban setting. On the downside, it brings in the negative impact to countries facing Mal-nutrition and poverty. This downside was put under the world microscope during the

2008/2009 food crisis when people were more aware of food demand. Ultimately leading to more organic, local, and sustainable food practices and a shift towards a more sustainable and environmentally friendly food choices. Through the new self-awareness and further investment into the food demand, it has been proven that the food industry is responsible for one third of all greenhouse gas emissions.

With all the changed in globalization and the new types of dining experiences popping up everywhere around the world has led to a "new social experience(s), events. And architectural spaces that elicit the senses" (Al-Haroun). Kuwait is a good example of this growth. They have created this new typology of 'Food Malls' that allows for different cultural experiences, food typology, and architectural styles all under one roof. However, this 'Food Mall' impacts Kuwait in negative and unhealthy ways.

Through this new typology Kuwait has seen an increase of growth by adding over 50 of these 'Food Malls' throughout their country. Studies were compiled throughout the article to see the comparisons on how the Food Malls have influenced and impacted the residents in Kuwait. A questionnaire was held with 199 participants that answered questions about the Food Malls, architecture, how much they go out to eat, where they prefer to go, what type of restaurant, etc. Through the findings from the questionnaire and interviews with 12 people including residents and visitors of Kuwait, they have found life has changed dramatically through globalization. People are no longer just confined to the local food of the desert and surround sea but to a new diverse food scene. This shift has led residents of Kuwait to be less home oriented and more willing to go out and eat at restaurants instead of at home. It is very rare for people today to eat at home. 51% of the questionnaire stated a positive relation with Food Malls, as well as 42% said they are their first choice to go to for food. Going out to eat is one of the only activities to do in Kuwait so why wouldn't they eat out more than staying in. The data found relating to food and the architecture

related to them consist of 52% prefer a calm, quite atmosphere. Modern design with 12% and creative design as 11%.

This study led to the conclusion that 'Food Malls' in Kuwait had both positives and negatives related to them. The positive impact they had on the people of Kuwait allowed for more diverse food options. It also allowed for people to go out and interact with each other more. It has become their main source of socializing. However, the negatives of the 'Food Malls' consist of locals losing their sense of home. Before the Food Malls residents rarely ate out and families would gather around the dining table at home. Even with this negative impact of these Malls there are still more than a 50% positive reaction to how these 'Food Malls' have impacted and changed their lives. By creating these spaces for people to grow their food experience and interact with other cultures has allowed for more personable interactions and time spent with others.

In conclusion, the 'Architecture of Food: A Study on the Impact of Food Malls in Kuwait,' has increased the knowledge and understanding on how food and architecture are more intertwined than in previous knowledge. Culture, globalization, and environment all take major roles in these two very similar but very different professions. It is not only important for individual people but also for their communities, countries, and the world. The food industry and its production need to be carefully investigated and reevaluated due to producing 1/3 of the greenhouse gas emissions around the world. Through education, community engagement, and legislations to help promote a more sustainable industry and raising awareness about the issues currently within the food industry will be volatile to the future of everyone. Architecture and food create a place for social interactions to advance, new innovations, and creative design solutions between food and space. This is important to continue even with the fear and knowledge of global warming with both professions.

Food, Architecture, And Experience Design



'Food, Architecture, and Experience Design' discusses how through architectural-food based experiences and the creative nature between the two, the future of creating social bonds between human relationships and food are more interwoven than we may believe. There are many undiscovered possibilities related to the fields of architecture, food, and design. Through further analysis this important connection will be made known throughout this literature review.

Historically, food and meals were a way of survival, celebration, and ritual. You ate what you could hunt and farm yourself. Humans are preconditioned to survive and to socialize with each other through eating and drinking part of survival. As time went on during the Middle Ages, Renaissance, Period of Enlightenment, and the Industrialization, historically, food has become and turned into more of an experience and event. During the historic time, these lavish events of banquets and royal feasts were only meant for the high society. These spaces would be designed, transformed, and enjoyed, not only through the luxurious food, but also through tableware, cutlery, furniture, music, and entertainment. It was the "higher intention behind these feasts was not the experience-value alone, but presumably a means for the higher aristocracy to communicate social power, status, and prosperity within society through lavish events and sensuous meal experience." (Fisker) Today this has transformed into a more readily accessible experience for all to enjoy. While previously it was only meant for the high society. History may not have changed food and entertainment being an experience it has however transformed in a different way. Instead of just eating fancy meals and having people perform today, "meal and

food to a greater extent are experiences orchestrated by precise sequences of surprises expressed through texture, composition, form, and interaction with the diners. (Fisker)" With this new way of looking at how food can be served and experienced for diners the emergence of Molecular Gastronomy and new restaurants like NoRa, and ICE-AID have emerged.

The act of food as experience and event occurs in many different forms. From indoors to outdoors, variety of locations including restaurants, cafes, barns, markets, or in courtyards around cities. Because humans are preconditioned to sustain ourselves through food and drink the location of where this happens has changed dramatically over time. With mass production and globalization of products has more readily allowed for this change. People are no longer confined to what they can hunt and grow themselves or find within their region of the world. They now have the option and availability to get global food. This allows for people to expand from just eating at home to being able to go eat at restaurants, markets, cafes, and other locations. This achievement has made it to, "where food is not just a matter of nutrition, but where food and meals play crucial roles in our consumer choices making the food an important part of contemporary cultural offers." (Fisker)

Food and Culture have gone together since the very beginning. People have always been tied to their culture with specific recipes and meals that are enjoyed and made from their cultural traditions. These different cultures all had a variety of different foods due to what was accessible to them in their regions. However, today culture has changed due to food globalization, including access to new and exciting restaurants instead of eating at home. These places give people an alternative to a work and home life. It allows for a 'third place' of socializing among different people, a place that generates a sense of community and where discussions can be had about political issues. Through the growth over time with culture and food translates through the architecture that surrounds these important aspects.

Today location of socialization like museums, concert halls, movie theaters, shopping centers, etc. are now incorporating food into their experience. This experience of socializing coupled with food allows for all senses to be focused into one space. This experience not only allows for the social and cultural connections to people but also an emotional one where humans are now more aware of the value food can have to their bodies and guides them to a more personal connection to food.

By allowing for the socialization and experience of food to grow and evolve throughout time the performative experience within the field has grown. There has been a greater focus on meals to have an "aesthetic taste" rather than just gustatory taste. Allowing for a total experience. The atmosphere where people can visually see, smell, and then taste the food mixed with the architectural design of a space, Chefs and Architecture can make people experience in whatever way they want patrons to feel. For example, Madeleines Madteater transforms the normal restaurant theme into a theatrical show. Where they focus patrons of the environment around them and less on the food. You experience and watch the theater and think secondly on what is happening with the food. It allows for the sensation of all your senses to be utilized at once.

As stated above Madeleines Madteater has changed the way of the experience of food and architecture just as ICE-AID and NoRa have. They "illustrate how the interdisciplinary co-operation between chefs and architectural designers can contribute to performative city experiences initiating social relations among citizens." (Fisker) NoRA was exhibited at the 10th International Architecture Biennale in Venice in 2006. This pavilion was a collaboration between the network consortium Food College Denmark, a group of students from the University of Aalborg - Department of Architecture and Design, and the National Culinary Team of Denmark. Through the collaboration the result created the start of debate and dialog surrounding food manufactures, corporate business, and educations urban environment.

As well as "the understanding of an urban scene interchanging knowledge between local and global cultures, through the experience and communication of food and architectural form." (Fisker) It represents the human interaction through bodily relations and the experience of visual communication. NoRA, "creates both an intimate space within the pavilion, but further unfolds food activities, social events, and a sensuous environment into the city and surrounding landscape. (Fisker)

ICE-AID on the other hand was developed at Aalborg University with local food manufacturers, external designers, and Food College Denmark. ICE-AID examines and questions whether food is design and the relationship food and design have in common. Food is considered a new area within the design field and ICE-AID is provoking these questions through the lens of global warming. The project overall takes high-quality ice cream and serves it within an ice bowl. This allows for people who enjoy the ice cream to experience the pain of the melting ice to represent how the "direct experience associating the consequence of our contemporary energy consuming lifestyle with an added a twist of humo(u)r and positive taste experience" (Fisker) aiming to give awareness to political and environmental issues. According to Fisker 2008, both ICE-AID and NoRA come together to,

"Touch upon more than urbane, architectural, and design-related aspects of experiences and events, but further seek to process and innovate the question of regenerative factors in the city; the social relations and bodily interaction which historically have been formed around the dining table and the shared meal experience, via the performative combination of food with architectural design."

In conclusion, 'Food, Architecture, and Experience Design' talks about the historical, social, cultural, and personal aspects related to food, design, and architecture. Through the Case Studies of ICE-AID, NoRA, and Madeleines Madteater it is shown how these different fields work together to broaden the intellectual mindset of people through questioning modern issues, changing the experience of dining, and involving the fields to create a space for an open dialog of content from various sides.

LITERATURE REVIEW SUMMARY

Both 'Food, Architecture, and Experience Design' and 'Architecture of Food: A Study on the Impact of Food Malls in Kuwait' act as vessels of which will help drive this thesis project. 'Food, Architecture, and Experience Design' shows that recently food is being considered as a design field. This is huge in the argumentation proving that architecture and food have more in common than thought in the past. Grows on the knowledge on what historical trends related to food and architecture have in common as well as the experience behind it. It has evolved from survival to showing social class hierarchy to more of a social experience for all in today's society. Through the case studies of NoRA and ICE-AID it gives a more in-depth look on how the two can be utilized to start conversations about environmental and political issues. It tends to be a vessel for whatever type of conversation needs and wants to be had. Through design, food, and architecture this is easy to help guide these conversations.

'Architecture of Food: A Study on the Impact of Food Malls in Kuwait' is started to give the base of knowledge to what and how the history of food has evolved over time. While through culture and food globalization it has changed culture and how food is viewed. Through the interviews and questionnaires handled in this article it was found how the phenomenon of 'Food Malls' were changing Kuwait's culture, effecting the typical lifestyle of residents, and also providing a space for people to socialize. Typically, the culture in Kuwait was to enjoy the native food from the land and sea in their country. However, through food globalization and the food malls it has allowed for residents to spend less time at home eating and more time eating outside of their homes. This has changed their culture for the younger generation versus the older generation. Today they consider these food malls as part of their socialization with others. They aren't just about eating. They are a place for friends, family, co-workers to meet and socialize outside of home and work. How the food malls of Kuwait also work into where people go to enjoy their meals. Design and atmosphere of the restaurant are all taken into consideration when picking where to eat.

These two readings have made me reflect and learn about the growing connection between food and architecture. This allows for the evolution of this thesis topic and thesis statement to evolve past its initial start. The high similarities between these two articles prove that history and culture are a huge part into what connects architecture and food. These two aspects will now be taken more into consideration as this process continues. It is important to remember, consider, and grow from for the betterment of our future. We cannot just take into consideration what is happening now in order to be better for the future. If we cannot learn from our past we are destined to relive the struggles of our past which includes the 2008/2009 food crisis as well as malnutrition and starvation in third world countries.

Culinary Schools have many different aspects to its success that makes it very important and intertwined within my thesis solution. Architecture and food have many things in common and the school is the perfect way to display this.

Sustainability has become a forefront of conversations between both architecture and the food industry. Within the food industry the diminishment of resources, overproduction, food waste, global warming, and the push for more clean eating have led to a necessity of how we must think about these issues in a more creative and sustainable way.

Classrooms, restaurants, greenhouses, bakery, business planning, and waste production are all going to be implemented within the school that can be taught, designed, and utilized to create a maximized sustainable effort.



Figure 19

THE CULINARY INSTITUTE OF AMERICA, HYDE PARK



The Culinary Institute of America
Location: New York, New York

Figure 20

PROJECT INFORMATION

Location: Hyde Park, New York

Opened: 1972

Architect (Remodel): Noelker and Hull Associates, Inc., John Canning Studios

Area: 170 - Acres

Description:

Hyde Park Campus is the largest of the three Culinary Institute of America campuses. Located on 170-acres this campus houses 2,200 students over 14 buildings located on its campus.

Mission:

The Culinary Institute of America is a private, not-for-profit college dedicated to providing the world's best professional culinary education.

Excellence, leadership, professionalism, ethics, and respect for diversity are the core values that guide our efforts.

We teach our students the general knowledge and specific skills necessary to live successful lives and to grow into positions of influence and leadership in their chosen profession.

CAMPUS PROGRAMMING

Roth Hall

5-stories tall and holds 3 restaurants (American Bounty, The Bocuse, and the Apple Pie Bakery Cafe), teaching kitchens, bakeshops, bookstore, classrooms, administrative office spaces, and Farquaharson Hall (dining center). This building is at the heart of the Campus and is the welcoming face to everyone who comes to visit.

Marriott Pavilion

Opened in 2014 the Marriott Pavilion is 42,000 square feet and the largest gathering space for the campus. It has an 800-seat Ecolab Auditorium and a 300-seat conference center.

Shunsuke Takaki School of Baking and Pastry

Opened in 1990 and holds bakeshops, kitchens, lecture halls and dining areas. This building is the home to CIA's Baking and Pastry Arts students

Admissions Center

Opened in 2006 the Admissions Center is 25,000 square feet and houses the Admissions Department, Student Financials, and Registration Services. Students come here for open houses.

Student Commons / The Egg

Opening in 1998 the student commons holds the dining center or Egg, Recreation Center, and the Brewery. The Recreation Center has a full-size gymnasium, indoor track racquetball courts, pool, and fitness center. Brewery is used as another teaching classroom for everything to do with Brewing. As well as the Egg for the full dining experience



Figure 21

Colavita Center for Italian Food and Wine

Opened in 2001 Colavita Center is the only building like this on a Culinary Arts Campus. This 18,000 square foot building teaches and influences Italian cooking through interactive classrooms, kitchens, Science Labs, and the Italian-themed restaurant Ristorante Caterina de' Medici

Conrad N. Hilton Library

The library holds spaces for demos and presentations from guest chefs, library learning commons, support center, research and study rooms

On-Campus Housing

Hyde Park has 4 residence halls; Hudson Hall, Katharine Angell Hall, Pick-Herndon Hall, and Jacob Rosenthal Hall housing a total of about 1,235 students. As well as the Adirondack Lodges with 6 village style arrangement housing 424 students. The 3 Townhouses also are located within the campus houses a total of 24 students.

General Foods and Nutrition Center

Serves as the home to the Annual Pop-up restaurant and weekly farmers market



Figure 22

The Culinary Institute of America Hyde Park Campus is a very unique and in depth case study to look at throughout this thesis documentation and discovery. It allows me to see how a Culinary Arts School can look like on a campus wide location. Typically with most Culinary Arts Schools, they are just located within one building and they do not have student housing or other college amenities located within the same site. So CIA Hyde Park I was able to see a Culinary School on this large scale. It allows the perspective of all the different aspects that I originally did not think about when choosing a Culinary School for my thesis project. By allowing for a more well rounded education that includes extracurricular activities will add a more positive and welcoming environment for the new incoming students and the students currently enrolled.

Hyde Park as one third of the CIA Campuses in the United States also shows me how the other schools interact with this one. It allows me to see how through my design solution and final result at the end of the thesis documentation and final project just how much it will fit into the different campuses. Hyde Parks acts as the main hub for all the different campuses and is a breath taking example of how existing spaces can be utilized in more than their original meaning.

THE CULINARY INSTITUTE OF AMERICA, GREYSTONE



The Culinary Institute of America
Location: St. Helena, California

Figure 23

PROJECT INFORMATION

Location: St. Helena, California

Built: 1888

Architect: N/A

Area: 117,000 square feet

Materials: Tufa stone

Description:

Culinary Institute of America Greystone campus offers a unique learning opportunity for students to be immersed in food and wine culture. Located within Napa Valley this school is located within the old Christian Brothers winery and is listed on the National Register for Historic Places.

CAMPUS PROGRAMMING

The Bakery Cafe by Illy

The Bakery Cafe serves as a teaching location for the baking and pastry arts students to work together to run and serve by baking and cooking all the food served within the cafe.

De Baun Theatre and Ecolab Theatre

Two theatres are located within the building that are used for teaching demonstrations from professors and guest chefs.

Ghirardelli Chocolate Discovery Center

The Ghirardelli Discovery Center is the perfect location for everything chocolate to be made and produced. The famous Greystone Chocolates are made here.

Margie Schubert Library

The library houses all the needed student resources needed for their college career, including a collection of wine books.

Shunsuke Takaki Baking Center

Pastry and baking students educational learning happens in the Takaki baking center. This is where students get hands on experience.

Spice Island Marketplace

The Marketplace acts as an innovative look on a college bookstore. It has everything for students to buy for their college courses with a twist. Located within is the Flavor Bar where premium olive oils and culinary sensory experiences are served



Figure 24

The Barrel Room

Special events and organizations are held in the Barrel Room where Historic wine barrels are stored and honored through the Vinters Hall of Fame. Pioneers of the California wine industry are all honored here.

Gatehouse Restaurant

Greystones restaurant serves the public that uses the freshest and most regional ingredients, including the campus's own farm and herb garden.

Rudd Center for Professional Wine Studies

Opened in 2003 was designed with sensory classrooms for analyzing wine. As well as specializes in a Bachelor's degree with focus on wine and farm-to-table cooking. Other Greystone wine classes also utilize this building for certifications and general college programs.



Figure 25

CIA Greystone campus is a beautiful example of how one of their campuses, on a much smaller scale than Hyde Park, can be successful overall. Greystone offers different learning experiences in this specific location compared to the other CIA campuses. Greystone has the same programs as the other campuses, however, they specialize more in baking, chocolatiering, and wine.

Greystone is also a very important part for me to research during the thesis documentation as it allows me to see how the architects were able to renovate old Winery into the Culinary school while still keeping to the original style because the building is on the National Historic Register List. The current site that I have picked out in Charleston, South Carolina for my project is located within an overlay district, which means I am going to have to take into consideration the design and historic looks of the existing surrounding buildings to make sure it aligns with the values and rules of the National Historic Preservationists.

THE CULINARY INSTITUTE OF AMERICA, SAN ANTONIO



The Culinary Institute of America
Location: San Antonio, Texas

Figure 26

PROJECT INFORMATION

Location: San Antonio, Texas

Opened: 2008

Architect: N/A

Area: Over 103,160 square feet of educational space

Materials: Brick and Metal

Description:

Culinary Institute of America San Antonio is the third Campus located within the United States located within the heart of the Pearl District in San Antonio. This campus has an emphasis on Latin Cuisine as well as Culinary Arts, Baking, and Pastry Arts. As well as focusing on sustainability throughout the different buildings and building practices located throughout campus.

CAMPUS PROGRAMMING

Main Building

At 30,000 square feet, all of the campus learning and classwork happen here. Inside it includes teaching kitchens, bakeshop, demonstration theaters, computer lab, library, and learning commons. This building has incorporated green practices into it through ionized water, composting machine, and solar panels for generating energy.

Full Goods Building

This two story 67,000 square foot building houses studios, offices, shops, cafes, and eight live work residences throughout. The Full Goods Building also committed to sustainability and is a LEED Gold-certified building.

Pearl Stable

Originally home to the Pearl Brewery horses, it now is the home to unique events and graduation ceremonies.

Pearl Lab Building

This mixed-use building houses retail and office spaces with outdoor dining attached. These shopping and dining locations are on three of the four facades with a court yard located around the fourth facade.

Cured

Originally built in 1904 this historic building that originally was the administration building for the Pearl has now been transformed into a restaurant that specializes in organically products and hand-crafted cured food.



Figure 27

Pearls Farmers Market

The Farmers market is held every Saturday and Sunday with local vendors that only sell producers-only. This helps promote fresh, local produce that are harvested by involving the local community into the CIA campus.

Hotel Emma

Originally built as the Pearl's Brew house in 1894, designed by August Maritzen. Today this building is 146 room hotel with 7 top-floor suites, bar and club, restaurant and public spaces

The Can Plant Residences at Pearl

This urban lifestyle building has retail space on the main floor with shopping for residents that live within the residences as well as visitors alike. This space is a friendly addition to the Pearl community.



Figure 28

The Culinary Institute of America in San Antonio is located within the Historic Pearl District. Originally home to the new Pearl Brewing Company up until 2001 when they moved to a new location. Then in 2006 CIA started the Texas Pilot campus in the historic Pearl Brewery. In 2008 the campus officially opened with the specialization in Latin American Cuisine.

This campus is important to include not only in context with the other two campuses but also because the buildings located within this campus are historical buildings that have been renovated with green design and innovation. Full Goods Warehouse is a LEED Gold-certified building that includes solar panels, rainwater collection, storm water irrigation, adaptive reuse, native landscaping, and energy reduction.

With the emphasis of sustainability throughout this thesis project this case study allows for the perspective of having a sustainable building within the context of a historical area. The design of the new Culinary School will have to incorporate all of these aspects in all of the final design of this thesis project.

LE CORDON BLEU, PARIS



Le Cordon Bleu
Location: Paris, France

Figure 29

PROJECT INFORMATION

Location: Paris, France

Opened: 2016

Architect: Didier Primard Architect DPLG, Cachan

Landscape Architect: Regis Guignard, Caulnes

Contractor: Ecovegetal, Broue

Area: 800 square meters

Materials: Glass and Aluminum

Address: Le Cordon Bleu, 13 - 15 Quai André Citroën,
75015 Paris, France

Description:

Located in Paris, France Le Cordon Bleu opened its new headquarters in June 2016. This four story building sits near the Eiffel Tower with views of the river Seine. This new innovative building houses more than 20,000 students from over 20 countries. The roof houses a garden, beehives, insect hotel, composting machines, and water pump for irrigation.

FLOOR PLAN

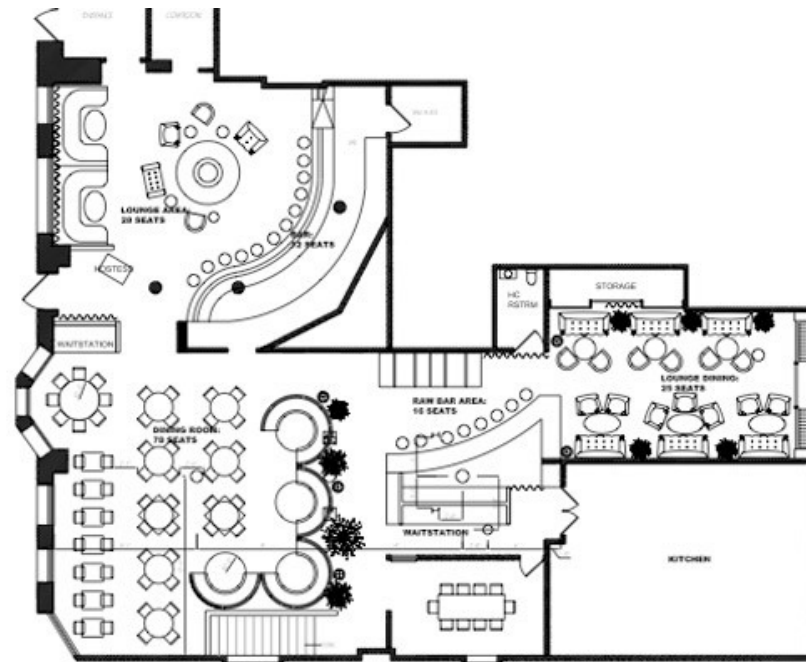


Figure 30



Figure 31

Le Cordon Bleu Paris Programing

- 7 Practical Classrooms for cuisine, pastry, boulangerie, and Asian cuisine
- 3 demonstration rooms
- 1 cellar for wine classes
- 6 modular classrooms which can be transformed into a 420 m squared function room
- Student area and library
- Boutique with products, gifts, cuisine, and pastry equipment for purchase
- Workshop dedicated for cuisine amateurs
- Le Cafe Le Cordon Bleu



Figure 32

Le Cordon Bleu was founded in Paris in 1895 by a journalist and publisher, Marthe Distel. First class was held on October 15, 1895. The school has been taught here and have also taught at the school, including Julia Child. Students at this school are taught by mostly Michelin-starred restaurants which allows students to learn from the best of the best and get a well rounded learning experience in classic French cuisine and modern international food.

This new modern sustainable school complies with all the latest sustainable strategies. Located on the roof of the building is a 800 square meter roof garden for educational purposes. This includes fruits, vegetables, and herbs. Included within this roof top space also houses beehives, insect hotel, composting machines, and water pump for irrigation.

INSTITUTE OF CULINARY ARTS, OMAHA



Figure 33

PROJECT INFORMATION

Location: Omaha, Nebraska

Opened: 2009

Architect: HDR Architecture

Area: 39,000 square feet

Materials: Brick, Glass, Copper

Description:

Located at the Metropolitan Community College in Omaha, Nebraska. This 39,000 square-foot building houses two-stories of learning spaces including bakery and coffee shop, conference rooms, instructional spaces, service spaces, demonstration lab, The Sage Student Bistro in JoJo's Dining Room, Production Kitchen, and Theory Labs.

FLOOR PLAN

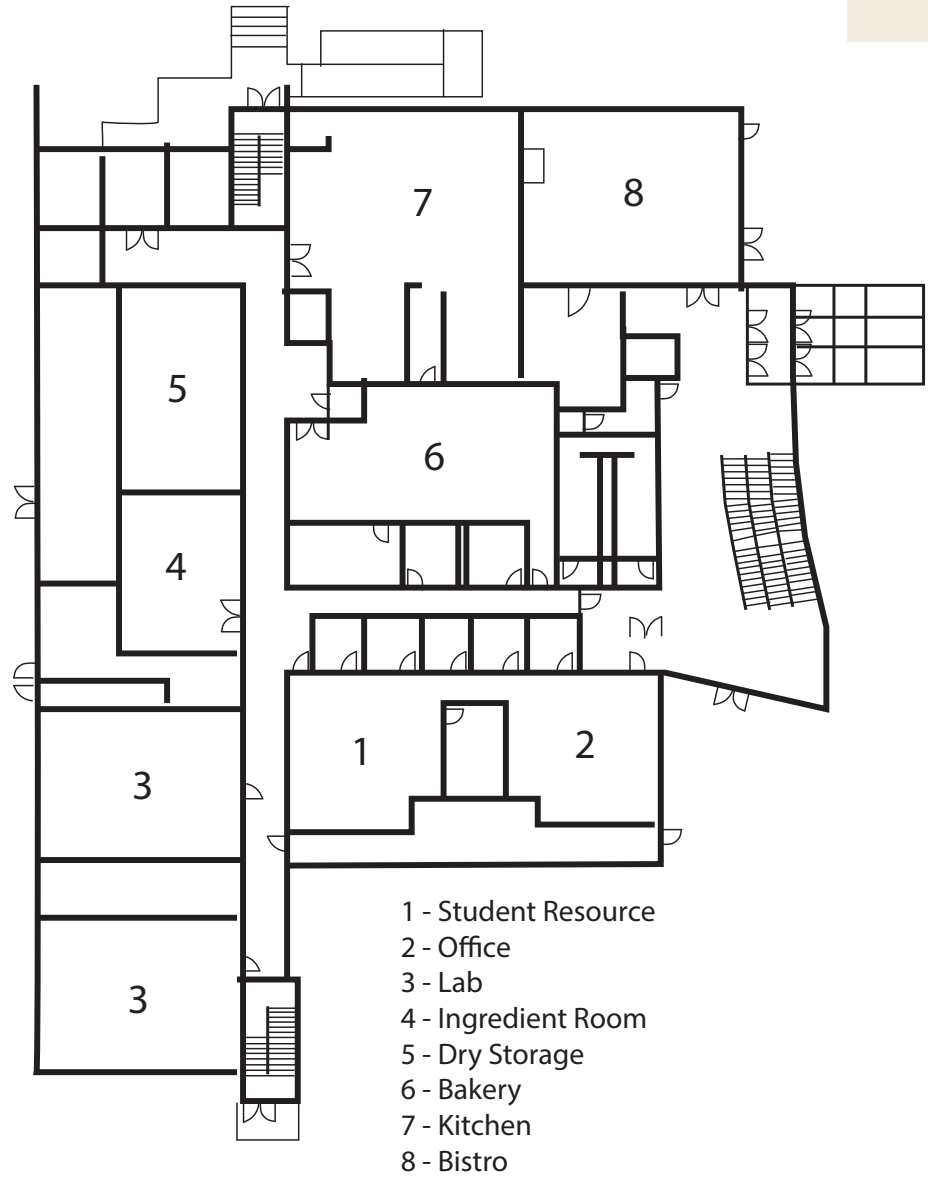


Figure 34



Figure 35

The Institute for Culinary Arts School in Omaha is a useful case study for the research of this thesis project because it observes a modern approach to the building plans and program. The use of having visual floor plan is allowing the usage of HDR's layed out of this specific culinary arts school. It is also beneficial as it is approximately the same project size as this thesis is planning on becoming. It will aid in giving perspective of how large the final building will be.

SECTION CUT

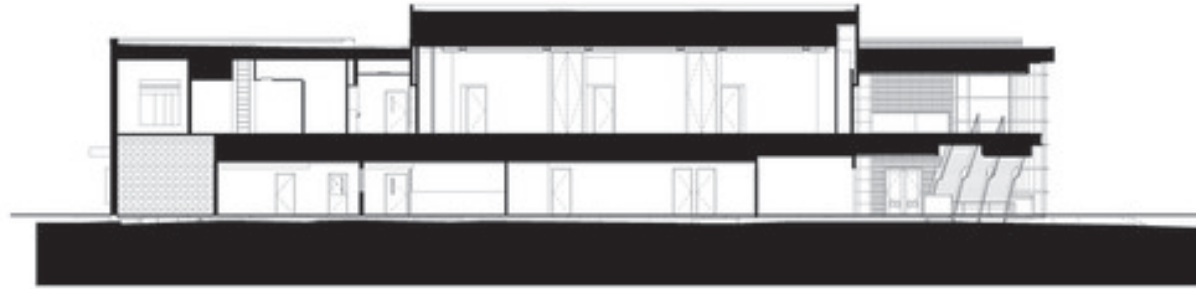


Figure 36

ELEVATION

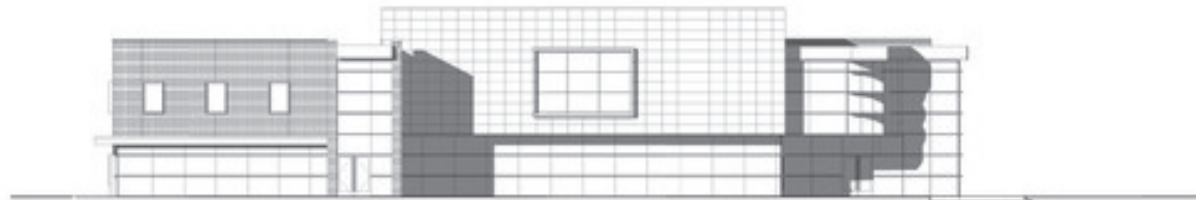


Figure 37

ELEVATION

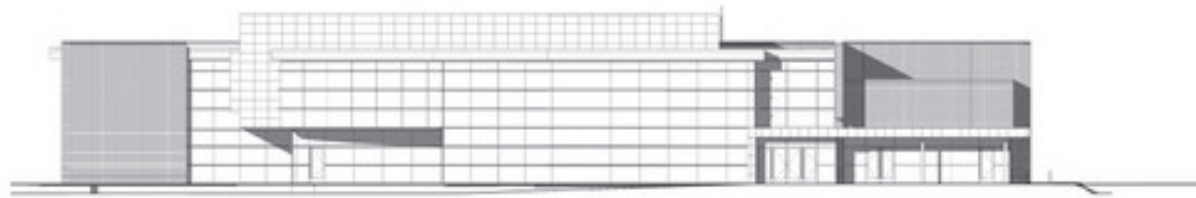


Figure 38



Figure 39

In conclusion, the Institute of Culinary Arts is going to provide in site on scale, program, and how a smaller culinary school is set up. This specific building is all located within one space which will allow for a deeper dive into how the different learning spaces connect together. Compared to the other case studies the Institute of Culinary Arts is unique because I am able to see these floor plans connect on a micro scale, instead of the others like Hyde Park where I have to look at their overall campus plan and programming more on a macro level.

INTERVIEW WITH PROVOST MARK ERICKSON

On November 19th I had the opportunity to interview the Provost of the Culinary Institute of America Mark Erickson. During our hour and a half long interview I got great insight on why the CIA is an amazing school to attend, what makes them stand out compared to other culinary art schools, as well as what could be improved and grown on for the future. Mark Erickson oversees all aspects the schools Academics as well as the Food and Beverage operations for CIA. Provost Erickson career before working for the CIA was chef garde manger for the Palace Hotel in Gstaad, Switzerland; Executive sous chef, sous chef, and executive chef in many different restaurants including Greenbrier Hotel, Everglades Club, and Cherokee Town and Country Club. Provost Erickson also was a member of the gold medal-winning United States Culinary Olympic Teams in 1980, 1984, and 1988. As well as the United States team that won the 1985 Culinary World Cup.

QUESTIONS AND ANSWERS

What makes Culinary Institute of America (CIA) so Special?

The Culinary Institute of America is a 501c3 and Accredited by Middle States (the standard for High Education). As well as it offers a, Associate, Bachelor, and Masters degrees. Hyde Park campus itself houses around 2,200 students currently. All of their campuses are infused into existing buildings. Greystone Campus in California was constructed in the 1800s and was once owned by Christan Winery. As well as the San Antonio Campus is located within the old Pearl Brewery.

What Programs does CIA have?

First we offer a two year Associates degree. Then our students can choose to continue another two years to obtain their Bachelor. They have eight majors including: food studies, business, culinary science, baking, pastry, applied food studies, and Culinary Arts, Hospitality. The years are broken down into the following semesters:

First Semester - General Courses

Second Semester - Commercial Production

Third Semester - Work Study

Fourth Semester - Specialization in Global Cuisine

Fifth Semester - Restaurant Practicum

What do you think could be improved in the current schools?

Since the current Culinary Institute of America campuses are located within existing buildings, Provost Erickson sees many ways that the school could be improved. With being able to design a new building specifically for all of the schools functions and needs it will allow for a more sustainable outcome. Currently they are just fitting in spaces where they can and not able to do as much as they would like in the sustainability aspect. As well as rooftop gardens where herbs, exotic vegetables, and honey can be harvested by bees can be cultivated from. Vertical farming is also a way to look at this in a more sustainable outlook for where farming is looking towards.

What are important aspects that should be taken into consideration when designing a culinary arts school?

First of all it is a very expensive education. (\$19,270 per semester). The student to Faculty ratio should be small, about 12-15 per professor. Optimizing space when designing the kitchens is very important. Being able to use the spaces for more than one use is a plus. Recommends kitchens to be close to the roof to help with heating and ventilation. Having one or two floor maximum to make sure the school is walkable.

Through the exploration of Case Studies and Typological interviews the end results will help this thesis project in the long run. Case Studies used were the three Culinary Institute of America campuses located in Hyde Park, New York; Napa, California; and San Antonio, Texas. As well as Le Cordon Blue in Paris, France and Institute of Culinary Arts in Omaha, Nebraska. All of these have been beneficial as they all show different aspects that go into a Culinary Arts School that the others don't. Included in this research an interview with the Provost of the Culinary Institute of America, Mark Erickson was conducted that gives an in depth look into how a Culinary School is run, the programs within, and where he sees the future of the design and incorporation of sustainability is headed within the Food Industry.

Le Cordon Blue showed and highlighted new sustainable strategies that they have incorporated within their building programming and design. This school was built and opened in 2016, which means it is a very new building that was able to focus on these aspects. This 800 square meter building is 4 stories tall and has incorporate a roof garden into the design. This roof garden covers the entirety of the roof and grows fruits, vegetables, and herbs for educational purposes. As well as includes four beehives, insect hotel, composting machines, and water pumps for irrigation. By adding these elements to the design of the building they are paving the way for new ways of sustainability through the Culinary Arts Field. This case study is going to be useful in the sustainable parts to see what has previously been done and where these practices can be improved upon.

The Institute of Culinary Arts in Omaha acts to show how a culinary school is put together. Finding Architectural plans for this typology was tedious and through the examination of this project allows to see how the different program elements fit together and share spaces within the school. Culinary schools also tend to only be one or two stories tall, and this study shows this through elevations and section cuts. This is useful in the exploration when it comes to where to layout the specific parts of the school.

The Culinary Institute of America's three campuses show the most useful during the process of looking into Case Studies as they have direct connection to this thesis project. Each of the different campuses are unique to themselves in the programs that they provide, campus size, historical significance, and location in the United States. Hyde Park is the main campus and is shown through having multiple buildings located around the site. The main building is located within a historic building as well as Greystone in California. Greystone is unique as they have one main building for all their schooling, including the emphasis of wine education, baking, and pastry degrees. Their building is an old winery and is located on the Historic Register List. While San Antonio is located within the old Pearl Brewing building and has an emphasis of Latin cuisine taught here.

The interview held with Provost Mark Erickson of the Culinary Arts School of America was the most beneficial to the deep dive into what really makes a Culinary School run and work. During the interview we discussed what makes the CIA so special, what programs are offered, and the timeline related to these programs, what could be improved for the future, and what should be taken into consideration when designing a Culinary Arts School. The interview lasted an hour really expanded the knowledge and thought process of what this thesis project could be.

Overall, all the Case Studies and the Interview are a huge part of the research for this project. It helps see where Culinary Arts started, where its at now, and what the future of this profession can be.

This project is an important part of my past that I wanted to incorporate in to my future. I want to be able to bridge these two design focused fields in a way that will not only benefit my learning throughout this year but for the future of food and architecture. I personally chose to do this project because I have always had a love for food and really wanted to incorporate it into my thesis project. There are so many different things that make both the food industry and architecture that make it unique and very similar. However, people don't typically think of these two arts as similar. So, I want to be able to show how these two passions of mine can work together in more than a place that food is served in.

Through my academic career I believe this is the perfect point for me to design and research this project because I am interested in this typology for when I graduate from NDSU. I really enjoy working in and on hospitality buildings and being able to create these spaces for people to come, enjoy, and relax. Through past internships I have worked on a lot of educational buildings from my first internship as well as casinos and hotels in my last internship. So, by creating a Culinary Arts School I will be applying all my areas of professional work into my final thesis project which will benefit me tremendously throughout this process.

This is important not only for just my academic career but also for my professional development because it incorporates everything I have learned in the professional field and is tying it back into one project. This is also going to push my boundaries on knowledge and usage of sustainable green design. I am currently a LEED Green Associate and I wanted to be able to utilize my knowledge and certification throughout the design of my thesis project. This will be best put into use as I utilize a well-rounded approach to this throughout the entire research and design processes.

The location of my site in Charleston, South Carolina was chosen to be the fourth school located across the five regions of the United States. Currently they only cover 3 of the 5 regions but with the new Culinary school I am using my thesis on will occupy the 4th. The location of the school was also chosen because it is in the heart of Charleston's downtown, food district, and college scene. This will encourage community involvement within the different college students and the restaurants and chefs located downtown.

This project not only is justifiable for educational growth and personally, but also Economically. Through this Culinary Arts School and sustainability driving the programs and building itself will lead to the education of people learning and teaching how to be more economically friendly in the long run. People that learn from this school will be able to lead a new generation of sustainable practices as the need for this increases even more than it does now. Change cannot just happen over night and with education and building design that pushes people to grow and learn will increase this change to happen sooner than later.

Overall, this project is going to be a stepping stone on how a building can not only just be sustainable through the architecture but through the learning and interactions that happen within.

HISTORICAL CONTEXT

Prehistoric Times

The first form of food and survival started with humans eating nuts and berries. Followed by the invention of fire allowed for the first form of cooking, boiling, to happen then hunting started allowing for humans to expand their pallets past fruits and nuts.

Ancient Egypt

In ancient Egypt food tended to be very dull and consisted mostly of bread and beer. Due to their region in the world, they were able to grow vegetables, fruits, and herbs and spices. These consisted of marrows, beans, onions, lentils, leeks, radishes, garlic, lettuce, melons, dates, figs, and pomegranates. Social class also had a big part in what food was eaten. Only the rich ate pomegranates and had the money to eat meat. Meat was also a part of their diet and included sheep, pigs, cows, and goats. If people couldn't afford these meats, they were able to eat fish which was plentiful in Egypt.

Ancient Greece

Typically ate plain food. Diet consisted of bread and goat's cheese. Fish and vegetables were available for all. These vegetables were pulses, onions, garlic, and olives. Fruit consists of raisins, apricots, figs, apples, pears, and pomegranates. Meat was a luxury and only the upper class were able to enjoy these staples which includes hare, peacock eggs, and meat.

Middle Ages

During the Middle Ages food changed dramatically since ancient times. It started to become more of an enjoyable activity versus just survival. Women cooked the food and meals for everyone. Diets for everyone consists of beer, mead, butter, cheese, bread, eggs form a variety of birds, and fruits and nuts. The wealthy were able to afford a more luxurious life and could enjoy wine, meat, and fish. During these times celebration were also starting to form. Special occasions allowed for huge feasts where mutton, beef, pork, and venison would be served. As well as they started using wooden bowls to eat out of and cow horns as cups.

16th Century

During the 16th century the first form of food globalization started. Turkeys were introduced to England around 1525. Potatoes were brought to England in the 1580s. Apricots and cauliflower also made its way to England. However, during this time the rich and poor ate very different meals. The rich were able to enjoy a variety of food including meat, white bread, sugar, and wine. While the poor only cooked one meal a day and ate meals that were mixed grain with water and vegetables. As well as coarse bread of barley or rye bread and ale. These two classes also were different in the cutlery that they owned. The rich had gold and silver plates while the poor had dishes made out of pewter. During this time as well people made their own foods at home.

19th Century

The diet of people improved greatly during the 19th century. With the inventions of railways and steamships Food Globalization increased even more by allowing a cheap way of transporting goods across the country and seas. Food still typically consisted of plain food like bread, butter, potatoes, and bacon. However, with the invention refrigeration and canning allowed for longer lasting food. As well as the invention of ovens and toasters allowed for more evolution in different types of food being able to made.

CULTURAL CONTEXT *Charleston, SC*

Introduction

Charleston, SC is enriched with so many Cultural aspects that make the city unique and impactful. Through its history, arts, food, preservation, and close ties to race and identity Charleston is the ideal location for this thesis project. Food, people, architecture, and culture all need to work together to make each other complete. These deep ties to Culture and Architecture will allow for a deeper connection between this thesis and the community it resides in.

The Arts

Charleston advocates for the arts throughout schools, auditoriums, art galleries, theatres, and playhouses. They want to share the skills of local artists, performers, and writers of Charleston to really represent what makes them unique and special. With Art being apart of their historical past leads to Markets and showcases of art that have been around their for many generations.

Cultural History of Charleston

For thousands of years before European colonization, Charleston was home to a large group of Indigenous people. They were the first people that farmed the land, established trade routes, created tools, pottery, jewelry, and clothing. Due to colonization though the indigenous population diminished to a small group of Catawba, Cherokee, Pee Dee, Chicora, Edisto, Santee, Yemassee, and Chicora-Waccamaw.

Food

Charleston is home to many different types of cuisine that have been brought to the area from generation to generation. From French cuisine brought over by European settlers to traditional African American cuisine, from Fresh Seafood to good ole Southern Cooking that can be found throughout the City. All of these foods that are enjoyed and loved in the area come from cultures around the world and have been integrated here. As well traditionally rice was once grown across plantations around the city to be sold which helped Charleston become one of the Wealthiest Cities in the original 13 colonies.

Historic Preservation

Charleston is home to the first historic district in the United States and was established in 1931. The Old and Historic District of Charleston is home to 17th and 18th - Century homes that are still being preserved today for people to experience the history and culture of what has been there. The culture of these buildings are a key part of Charleston's Downtown and what draws people there.

Race and Identity

African American Culture and Identity has made Charleston what it is today. However, they are not given the credit that they deserve. In recent years this has been on the focus of change to showcase how their lives and culture are so deep within Charleston. Cuisine, agriculture, iconic buildings and streets, churches, handmade goods, arts, crafts, and music come from generations of African American People in Charleston. All of these are critical in how the City was formed and is running today.

Conclusion

Due to Charleston having very deep Cultural ties to people, cuisine, and architecture it makes the ideal place for the Culinary School to be located here. Culture brings people together through food and architecture and by being able to tie in the native culture into the project will lead to more direct connections between the building and the local community around it. The connections of Architecture and Food are drawn from the culture around the world.

SOCIAL CONTEXT

Since Food Globalization has spread more within the past 2 decades social tendencies with food and architecture have changed tremendously. Throughout reading 'Architecture of Food: A Study on the Impact of Food Malls in Kuwait' this has shown just how much, especially in the country of Kuwait. Today, the younger generation leans more towards hanging out, socializing, and celebrating with friends and family at restaurants or having food at these events. This has been incorporated more within our society in the later years compared to history. Previously the older generation tended to stay home and go out less. They have other ways of celebrating and socializing with friends and family. This change in the social concept of food, people, and architecture is paving the way to show a new way of interactions between the three. Food and architecture mix in the social aspect in order to create spaces for these interactions to happen.



Figure 40

SITE SUMMARY

Located in the heart of Burroughs historic district, the Peninsula, and the heart of Charleston's Downtown this site location sits perfectly to promote student life, sustainability, and community growth. Charleston was picked as the fourth U.S. location for the Culinary Arts of America due currently the southeast region of the country isn't represented in their current locations in New York, Texas, and California. With the culture, history, and food scene of the city it made for the perfect location for the typology and exploration of this thesis project.

Located on the block between Mary St, Reid St, and Meeting St in Charleston, South Carolina. The site sits at 2.85 acres and is located right across from Charleston School of Law, College of Charleston, and King Street Commercial Corridor.

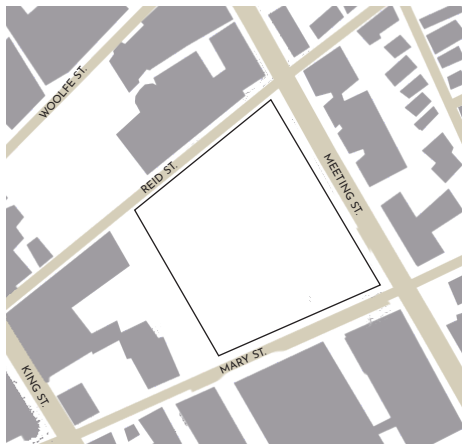
Through further anylization and exploration into the city and neighborhood it has been proven to be the best location for this project to sit. Through design and the use of existing conditions students of this new school will be immersed into the center of the social scene, food scene, college life, and everyday needs within walking distance from the school.

King Street Commercial Corridor is located a block away with access to food, retail, and entertainment. Over 10 bus routes run right past the site allowing for easy access for students and people to access all parts of Charleston.

This site will be able to help the goals for this project by allowing for community growth, historic preservation, and sustainability. Historic Preservation will be taken into effect and added throughout the design of the building to make sure it fits within the Buroughs Overlay District. By locating the project here it allows for the community to accept the new building instead of being out of context without these guidelines. Sustainability will be utilized through every process but due to this specific location having ample time throughout the year for direct sunlight, long growing seasons, and the climate will help achieve these goals. Community growth with the addition of the new school will connect the two schools located around the site more by adding a location where they can come socialize and enjoy with the schools students within the buildings programs.

Overall, this was the best site that could have been picked due to its direct connection to the growing downtown food scene, college experience, historical significance, and climate location.

EXISTING GRIDS



Address:
17 Lockwood Dr. St Charleston,
South Carolina 29401 - 1155

Acreage: 2.85

Overlay District:
Boroughs District



SITE RECONNAISSANCE



Figure 41



Figure 42

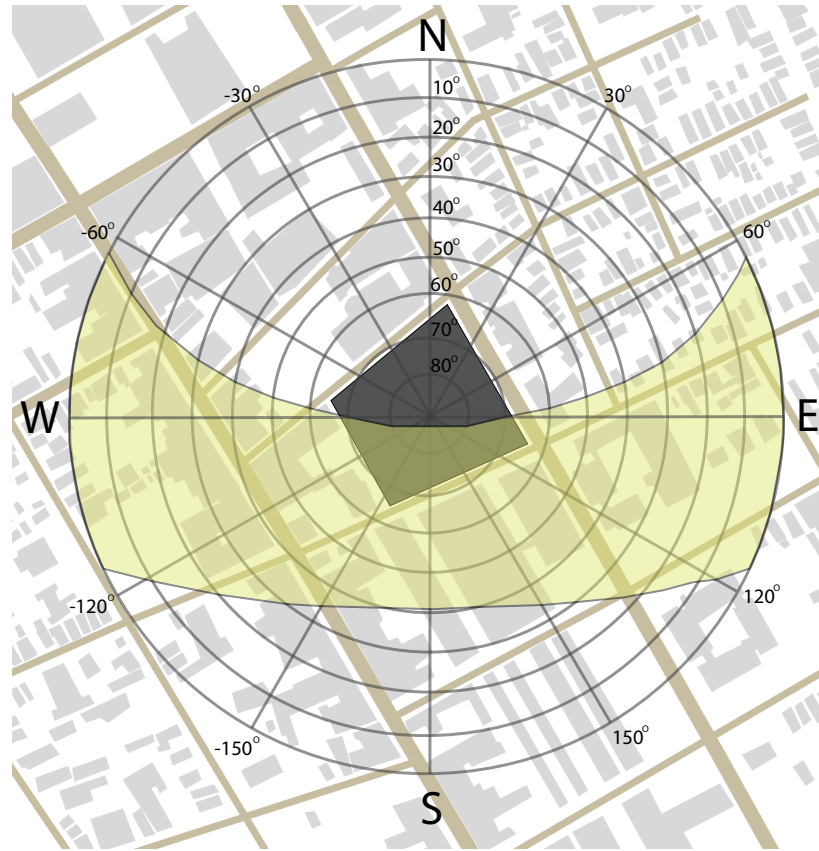


Figure 43



Figure 44

SUN PATTERNS



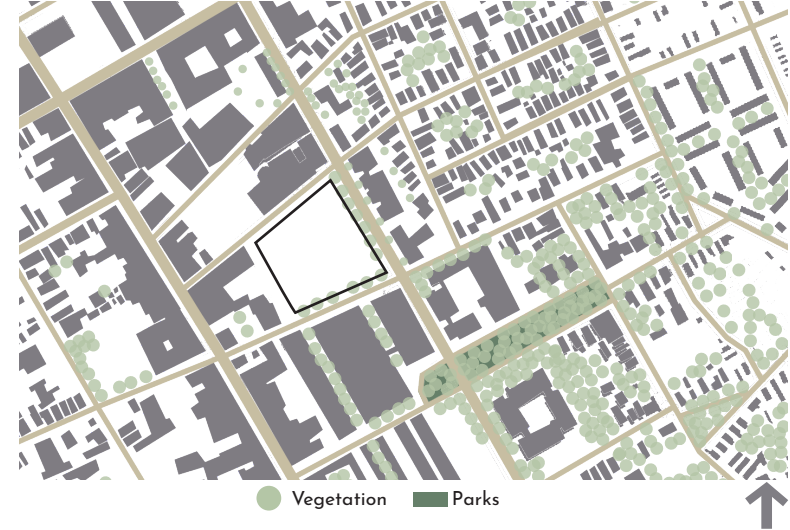
Sun Pattern

With all surrounding buildings directly surrounding the site no more than three stories tall, the site will obtain lots of sunlight on the south due to not being over taken by surrounding buildings shadows. Throughout the year the site will get plenty of sunlight.

SITE CHARACTERISTICS

Green Space and Vegetation

Green park space is limited around the site location. However, overall Downtown Charleston has a plethora of trees surrounding this historic District. The closest park, Wragg Mall Park, is located near the site is a block South-East



Surrounding Building Uses

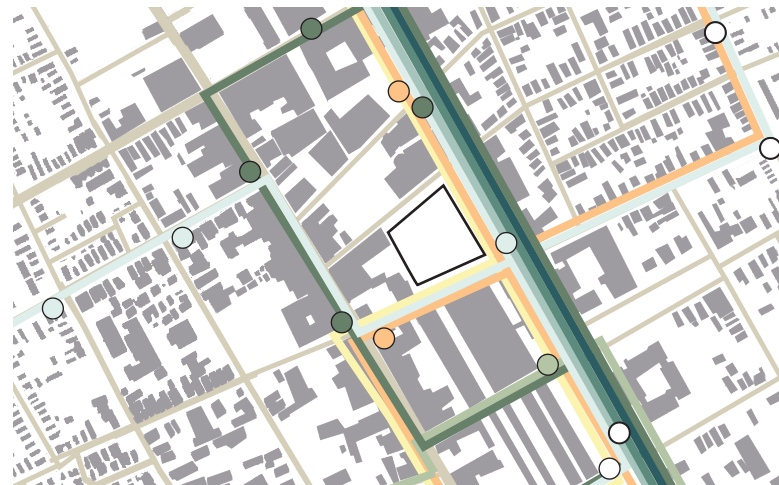
The Site is located in the heart of not only Downtown Charleston but also is neighboring Charleston School of Law, College of Charleston, and King Street Commercial Corridor. This allows for plenty of activities, restaurants, and places to shop located within walking distance from the proposed location for the Culinary School.



TRAFFIC PATTERNS



● Interstate ● Low Traffic Streets ● High Traffic Streets



○ Bus Stops  Bus Lines

Vehicular Traffic

As stated before the site is located in Downtown Charleston, which naturally brings in traffic. It is located about 7 blocks South-East of Interstate 26. As well as is centered between two major roads that are very busy during rush hour.

Public Transit

This prime location is located next to the colleges and King Street, and Downtown there are over 10 bus lines that run around the site. This allows the students to have access to ample transit if they choose not to bring cars with them to college.

PEDESTRIAN PATTERNS

Pedestrian Sidewalks

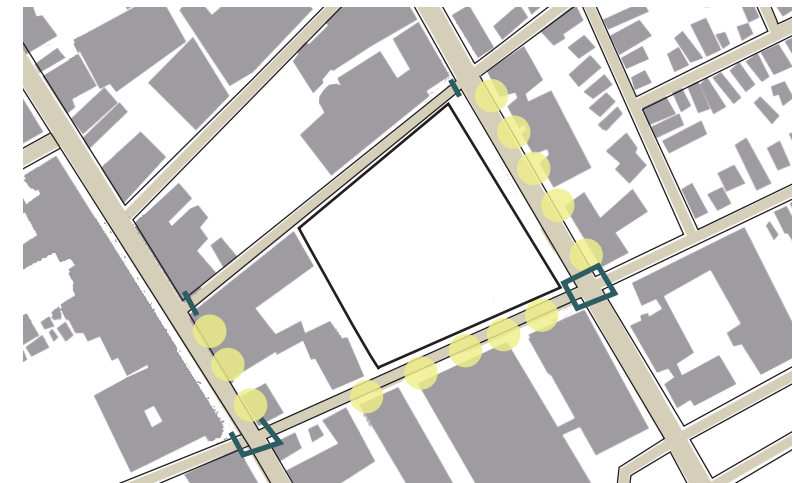
The walk ability in this region of Charleston allows for people to enjoy the Historic District while being able to walk on the sidewalks that surround the streets. Especially, that the college and King Corridor are so close they strongly encourage walking.



— Sidewalks

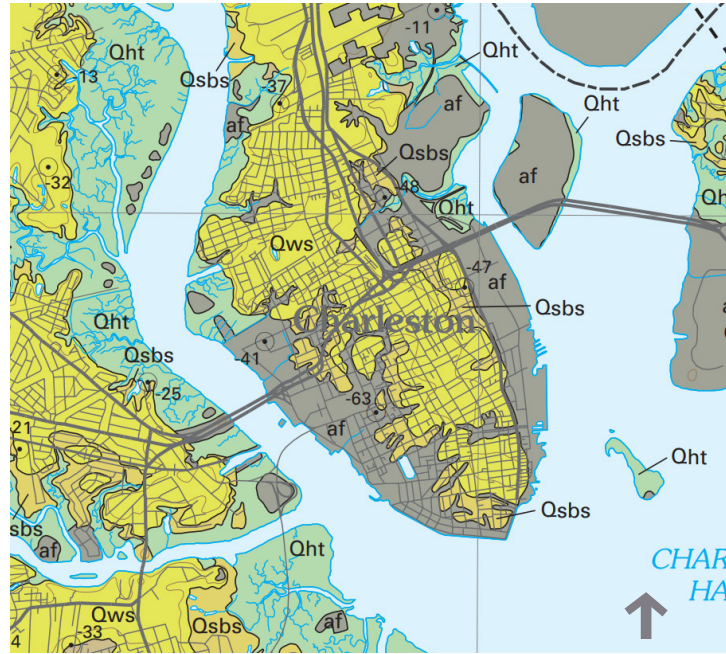
Site Safety

The safest location for pedestrians to cross the street around our site is at the South-East intersection because cross-walks surround all crossing in the roads. As well as is the most lit with lights on both sides of the road. With the addition of a bus stop located in that corner will for allow for more pedestrian movement than in the North-West corner



● Street Lights — Crosswalks

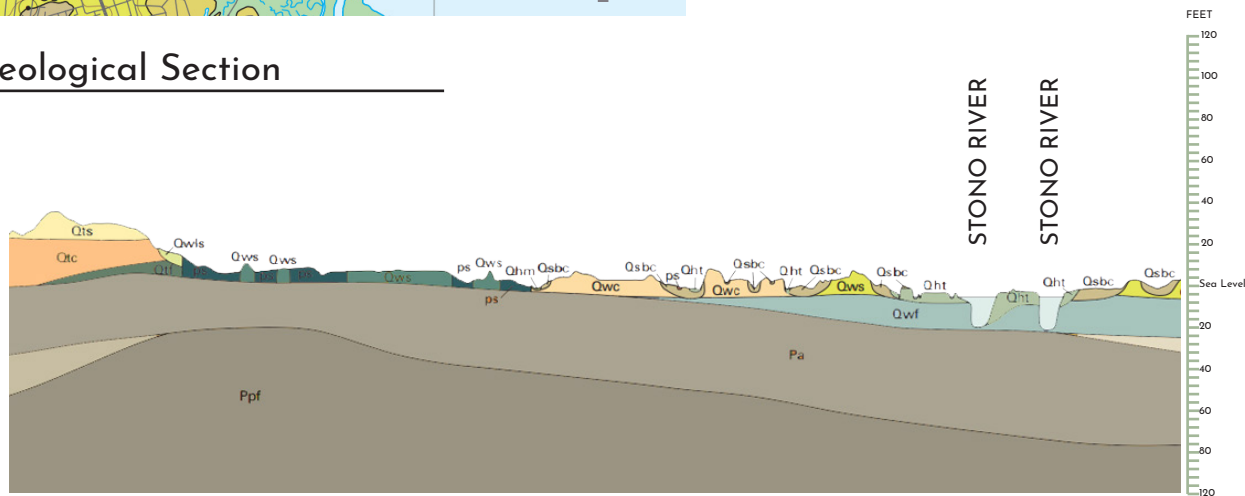
SOILS



Geological Soil Map

- Ppf - Parkers Ferry Formation
- Pa - Ashley Formation
- Qts - Barrier - Island Facies
- Qtc - Clayey Sand and Clay Facies
- Qwls - Barrier Sand Facies
- Qtf - Fossiliferous Shelf-San Facies
- ps - Phosphate Spoil
- Qws - Barrier-island sand facies
- Qhm - Freshwater swamp deposits
- Qsbc - Clayey sand and clay facies
- Qwc - Clayey sand and clay facies
- Qht - Tidal-marsh deposits
- Qwf - Fossiliferous shelf-sand facies

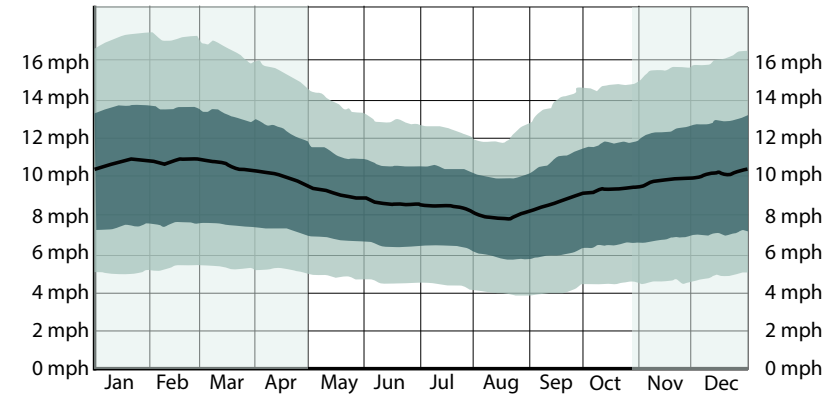
Geological Section



WEATHER PATTERNS

Average Wind Speed

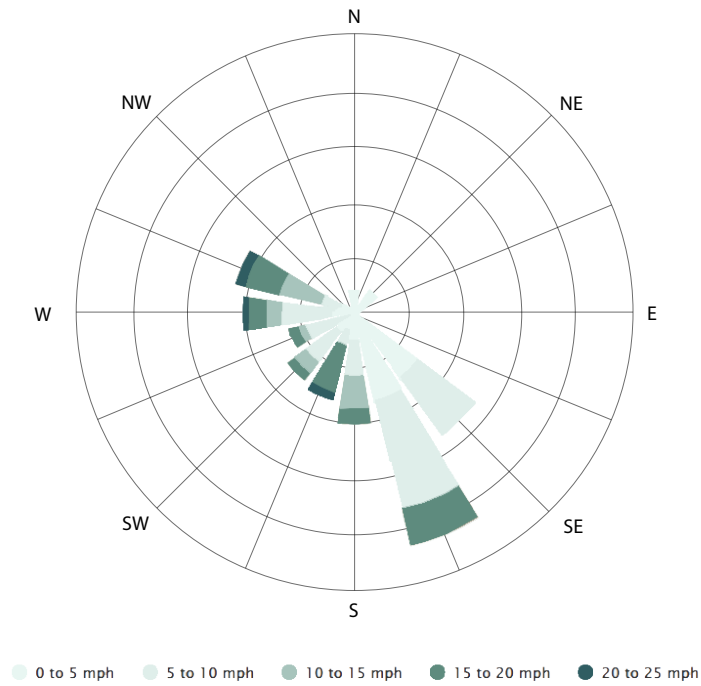
Throughout the year wind patterns change. In February the wind is the most intense at around 10.9 mph. While in August winds tend to only be 7.8 mph. November through April are the windiest months of the year for Charleston.



Summer / Winter Winds

Summer winds tend to come from the South from March to August. Winter winds come in from the North from October to January.





Wind Rose

The site experiences mostly Southern winds, blowing from Charleston harbor. This cooler wind could be beneficial in the design process through the use of passive cooling to combat the humid Southern climate. Interior and exterior spaces have the opportunity to use these breezes

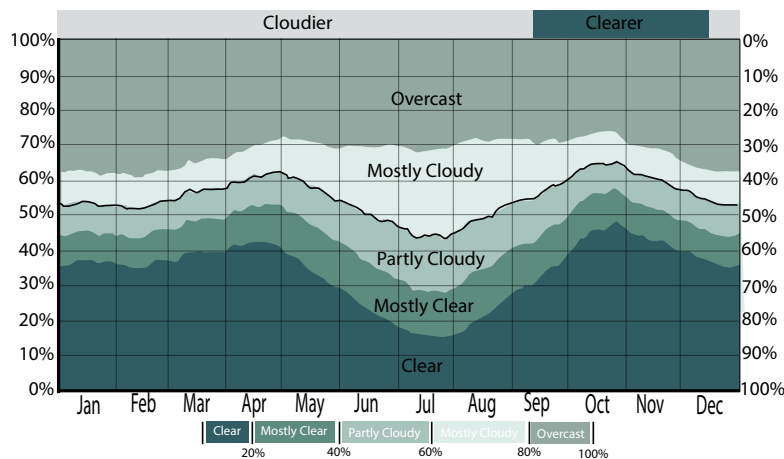
Charleston Yearly Average

Every year Charleston experiences rain year round. August experiences the most rain with an average of 7.15 inches and November with the least at 2.43 inches.

Charleston Temperature also varies tremendously from the hot season to cool season. In the hot season from May to September the average temperature is above 72 degrees. While during the cool season the average daily temperature is below 67 degrees

| | Precipitation (in.) | Min. Temperature (F) | Average Temperature (F) | Max. Temperature (F) |
|-----------|---------------------|----------------------|-------------------------|----------------------|
| January | 3.71 | 38 | 48 | 59 |
| February | 2.96 | 41 | 52 | 63 |
| March | 3.71 | 47 | 58 | 70 |
| April | 2.91 | 53 | 64 | 76 |
| May | 3.02 | 62 | 72 | 83 |
| June | 5.65 | 70 | 79 | 88 |
| July | 6.53 | 73 | 82 | 91 |
| August | 7.15 | 72 | 80 | 89 |
| September | 6.10 | 67 | 76 | 85 |
| October | 3.75 | 57 | 67 | 77 |
| November | 2.43 | 47 | 58 | 70 |
| December | 3.11 | 40 | 51 | 62 |

Figure 45

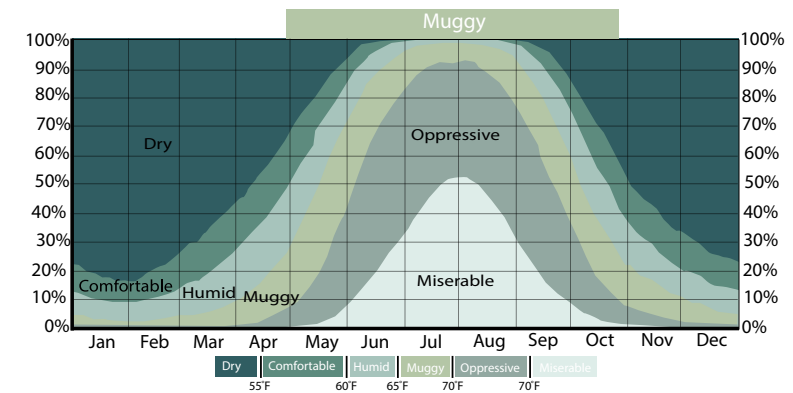


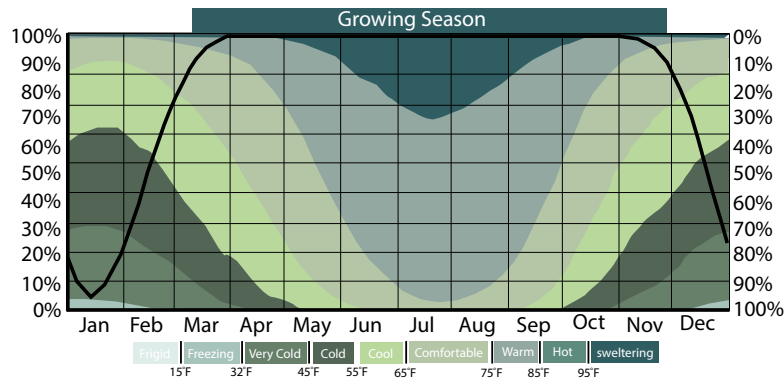
Cloud Coverage

Throughout the year Charleston tends to be cloudier from mid-December to mid-September. While during September through mid-December the cloud cover ranges from 54% to 66% clear. While during the cloudier times the cloud coverage from around 39% to 55%.

Humidity

Charleston experiences extreme seasonal variation in humidity levels. The Muggy period lasts for about 6 months of the year from April 27 - October 26. During this time the comfort level tends to be muggy, oppressive, or miserable 26% of the time. February tends to have the least muggy days throughout the whole year.





Growing Season

Charleston is the ideal location for optimizing the seasons to grow food for the Culinary School. The growing season typically lasts 10 months from February to December allowing for crops and produce to be grown almost year round at the school.

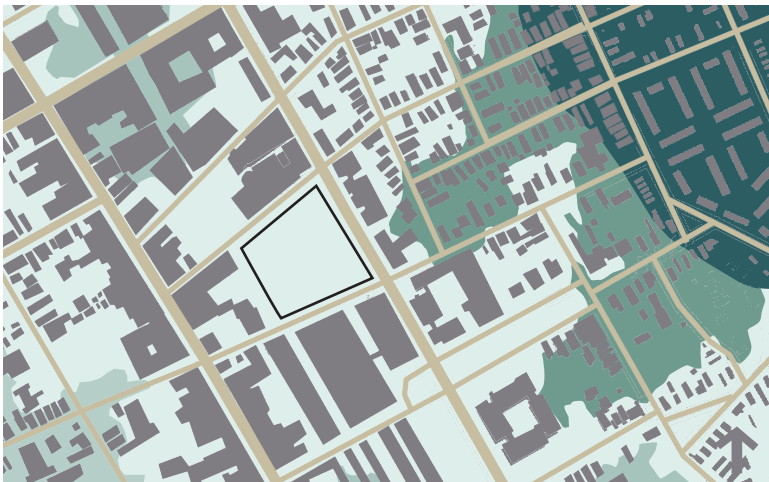
Hurricanes

Charleston is located in a low-lying zone, which is any area under 20 feet above sea level. The site chosen sits at around 10 feet above sea level.

Category 3 to 5 hurricanes are considered to be major hurricanes. According to a GIS Hurricane Risk Index Charleston County has experienced only 3 major hurricanes. Resilience against a hurricane should be considered in the design to keep occupants safe in the chance for one to hit land.

Saffir - Simpson Hurricane Wind Scale

- Category 1 → 74 - 95 mph winds
- Category 2 → 96 - 110 mph
- Category 3 → 111 - 129 mph
- Category 4 → 130 - 156 mph
- Category 5 → 157+ mph



● High-Risk ● High-Risk ● Moderate to Low-Risk ● Moderate to Low-Risk

Flood Plane

Charleston is located only a few feet above sea level and is a flat due to the lack of topography. This allows for areas to easily get flooded during heavy rains and during extreme tropical storms or hurricanes. Charleston also has a drainage problem that leads to roads to flood during almost from all rainfalls. The FEMA Flood plane states that the site is located in a Moderate to Low-Risk area of town which means during these events it will flood less than site more east of the site.

Space Allocation

Since we haven't started the design portion of our thesis proposal, yet I don't know how the different spaces allocations will work completely yet. However, the design is going to be cohesive design that allows for the spaces to work together to maximize square footage as well as optimizing sustainable practices through the placement of the different programs. These spaces will include teaching kitchens, administration offices, classrooms, bookstore, commons spaces, restaurants, greenhouses, bakery's, events space currently.

Energy Consumption

Energy consumption throughout my building is going to be on the higher side of energy production due to the nature of the activities located within. All the different kitchens located within the school will be running all day for class work and will put off a tremendous amount of heat and electricity. Through the energy consumptions of the building I am going to look into how different appliances and which ones are the most sustainable and analyze the different brands on what type of appliances throughout my building will be the best implemented to reduce this as much as possible.

Environmental Performance

Thermal control within the building is going to be a big area that will have to be addressed within the final design of the thesis process. Like I said before many kitchens will run all day long which will affect how the building is cooled as well as how it is vented out of the building. Overall, the building will achieve NET Zero to enhance the Environmental Performance.

Code Compliance

All local codes, ADA, and IBC codes will be used in the production of the design of my building when it comes to the time of designing it. As well as incorporating the Historical context into the design process as the site is located within an Overlay District.

Behavioral Performance

Since the building I am designing for my thesis is a Higher Education school it will be running from 5 am to 11 pm, Monday through Friday. As well as the restaurants will be open 7 days a week. Events space will also very depending on what events are scheduled. This means that there is a pretty set time from when students and faculty will be occupying the space in conjunction with the additional time from the restaurants and event spaces.

Psychological Impact

The psychological impact within the school is going to be a positive, encouraging, and invigorating experience for those who come and occupy it. Students will be pushed, encouraged to learn and grow in a positive learning environment. They will be able to expand their current knowledge through the invigorating work that higher education naturally brings. As well as for guest who are there to just enjoy the space. They will be able to see how the students interact with food, guests and their teachers. Within the food profession, when you go to a restaurant to eat, you want to enjoy and have a positive experience while there. So, it is critical that this be shown, taught, and learned within the space. It will also go hand in hand with the design of the space because a poor designed building will minimize how people experience the building.

Environmental Impact

With the emphasis of sustainable green design within my building I will be pushing the bounds of what can be possible throughout the site and building practices as a whole. So, through there are going to many studies of what is the best way to implement green design into the building that will work in climate and location it is currently set in. As well as researching new up and coming green design techniques. Including joining in on educational sessions that promote and talk about how to improve and better green design and practices.

Cost

This new culinary arts school is going to be a pretty penny when the final amount is added up. However, through the offsets that I am hoping to create through my sustainability plans for the design of my building I am hoping that they will offset the long term facility and maintenance costs, as well as building operations.

EXECUTIVE SUMMARY

Throughout the design and conception of the thesis project it is always good to see how your building will do overall through different aspects that make up the building as a whole. The overall spaces will be laid out to optimize usage as well as sustainable practices. The sustainable practices within the building are going to be at the forefront of the design work and be able to not only benefit the building itself but also the community surrounding it. The sustainable practices put into effect are also going to be able offset the cost of the building in the long run. However, the upfront cost to develop and build this Higher Education Culinary school is going to be on the more expensive design just due to the fact of all the equipment and energy that is going to have to be put into it. The energy consumption alone from all of the different learning spaces, classrooms, and kitchens are going to be a huge part of the cost that will hopefully be addressed, modified, and lessened through the design of the spaces and sustainable features that will offset all of the energy being consumed through them.

Throughout the design as well all codes will have to be taken into consideration while designing as well as making this a place that is a place where students and people want to come to. Its going to designed to be a positive, encouraging, and invigorating experience for everyone to enjoy.

SPACE INTERACTION MATRIX

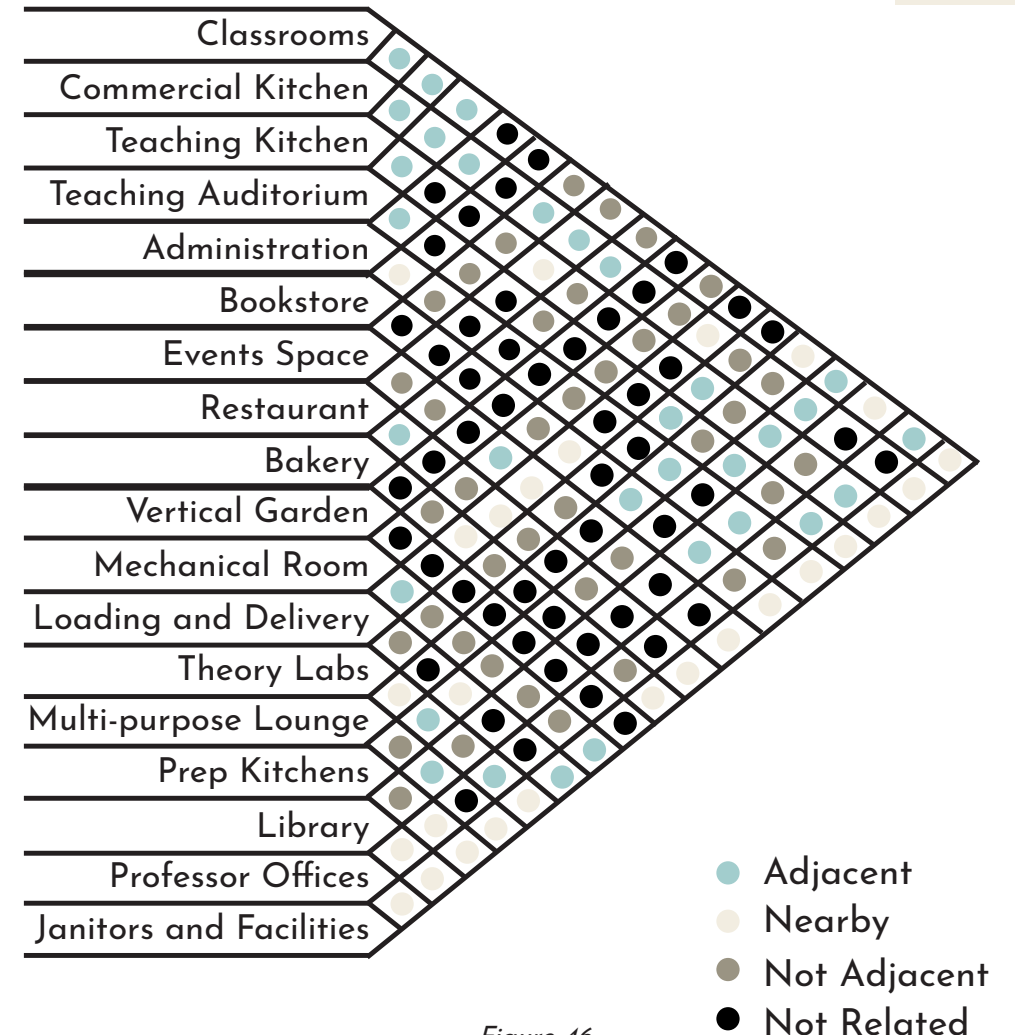


Figure 46

SPACE ALLOCATION TABLE

| | Small (sf) | Average (sf) | Large (sf) |
|---------------------------|------------|--------------|------------|
| Classrooms | 900 | 1,000 | 1,200 |
| Commercial Kitchen | 900 | 1,000 | 2,000 |
| Teaching Kitchen | 1,800 | 2,250 | 3,000 |
| Teaching Auditorium | 1,800 | 2,250 | 3,000 |
| Administration | 650 | 715 | 800 |
| Bookstore | 1,800 | 2,250 | 3,000 |
| Events Space | 3,500 | 3,700 | 4,000 |
| Restaurant | 2,500 | 3,500 | 5,000 |
| Bakery | 1,300 | 1,400 | 1,500 |
| Vertical Garden | 10,000 | 20,000 | 35,000 |
| Mechanical | 1,300 | 1,400 | 1,500 |
| Loading / Delivery | 400 | 800 | 1,000 |
| Professor Offices | 100 | 144 | 180 |
| Theory Labs | 500 | 800 | 1,000 |
| Multi-Purpose Lounge | 1,000 | 1,400 | 2,000 |
| Prep Kitchens | 500 | 900 | 1,200 |
| Library | 1,500 | 2,000 | 3,500 |
| Janitorial and Facilities | 500 | 700 | 1,000 |

Figure 47

SPACE INTERACTION NET

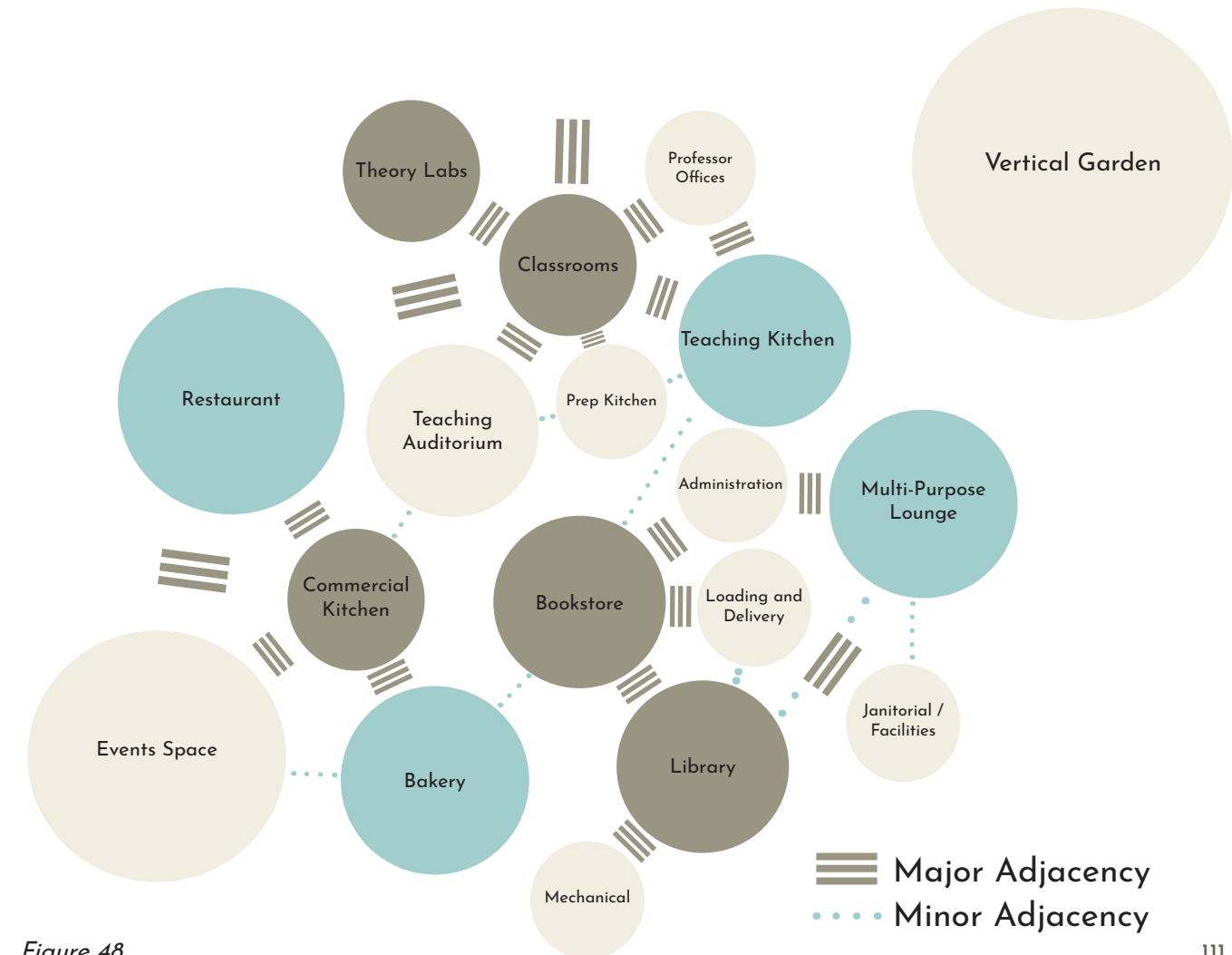


Figure 48

DESIGN SOLUTION



Figure 49

PROCESS SKETCHES

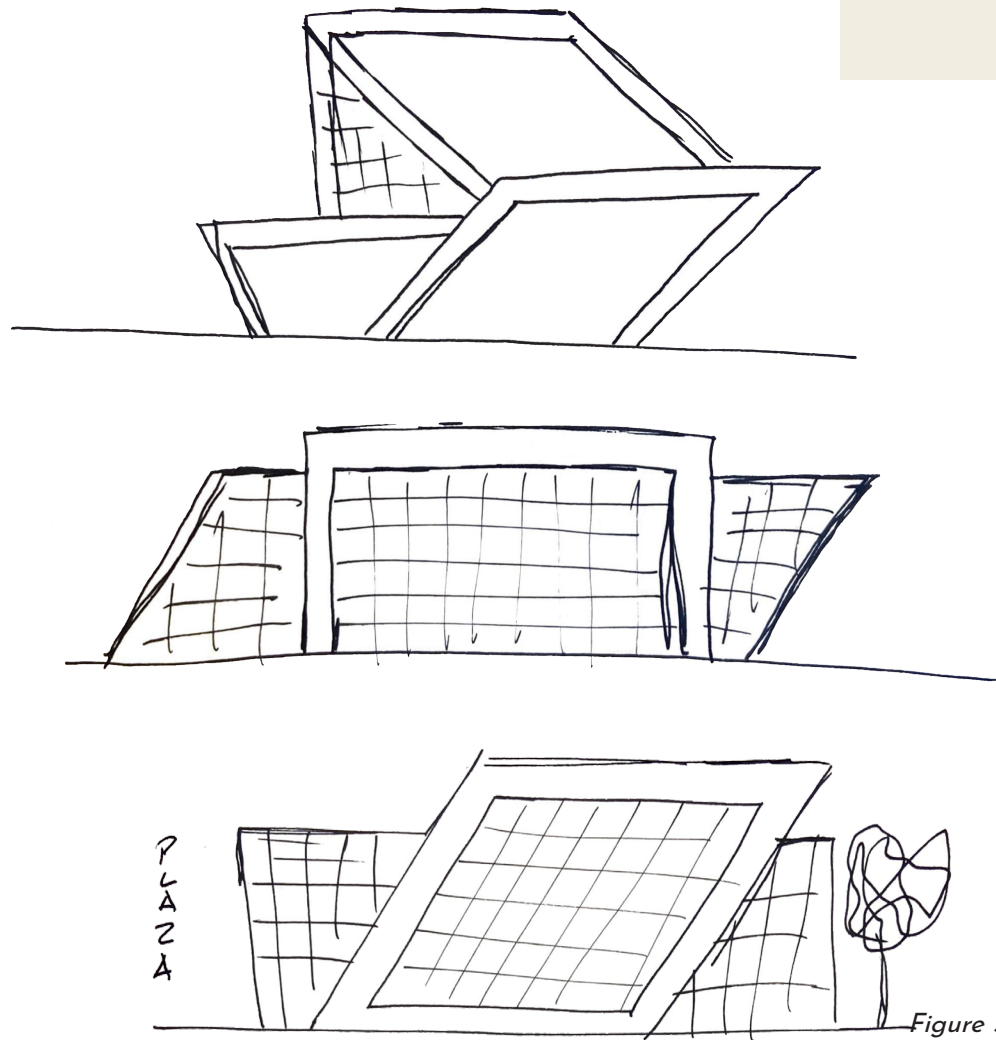


Figure 50

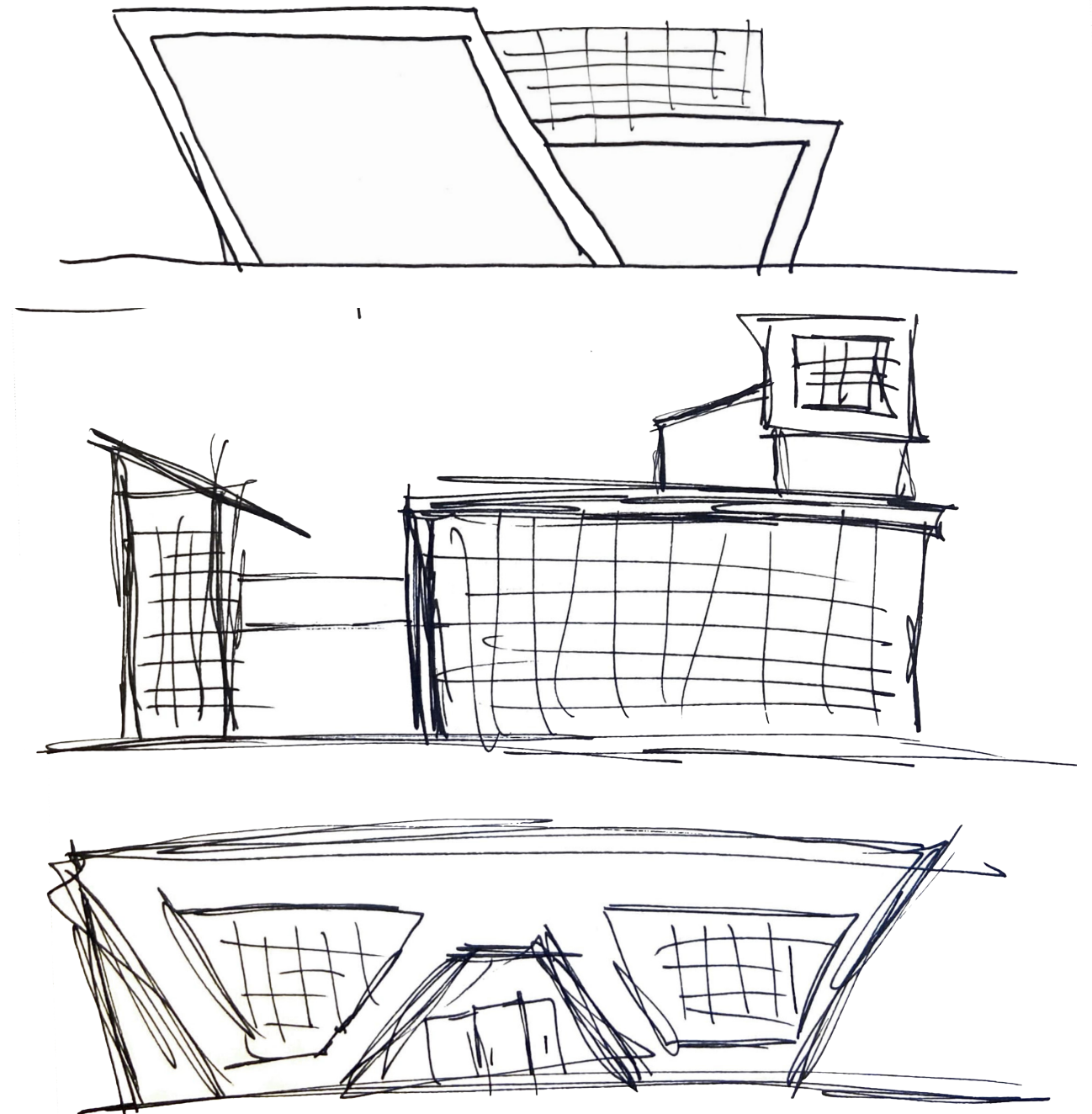


Figure 51

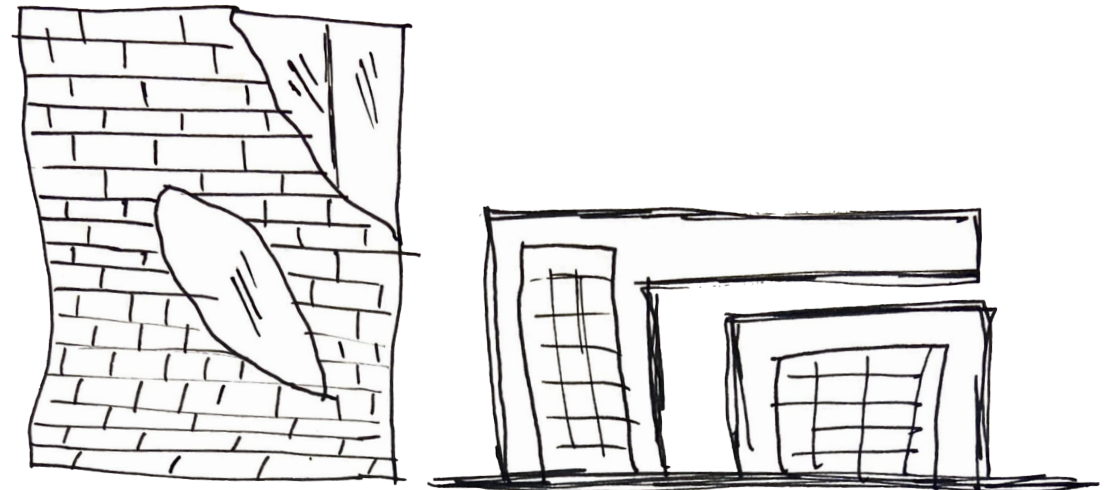
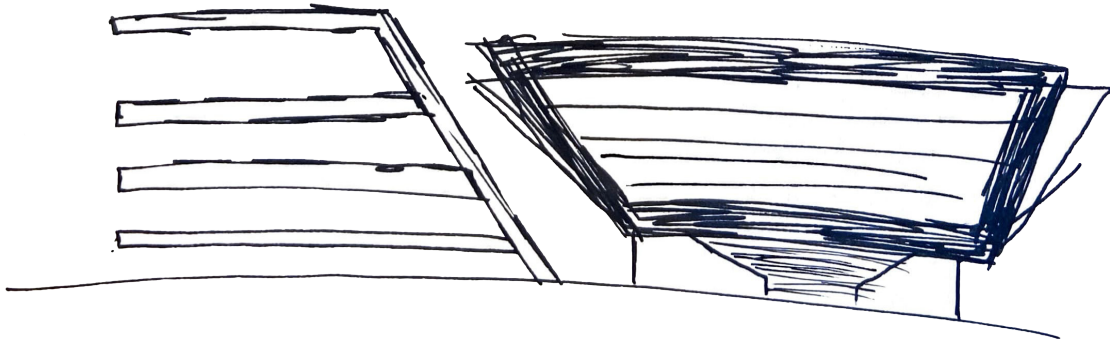
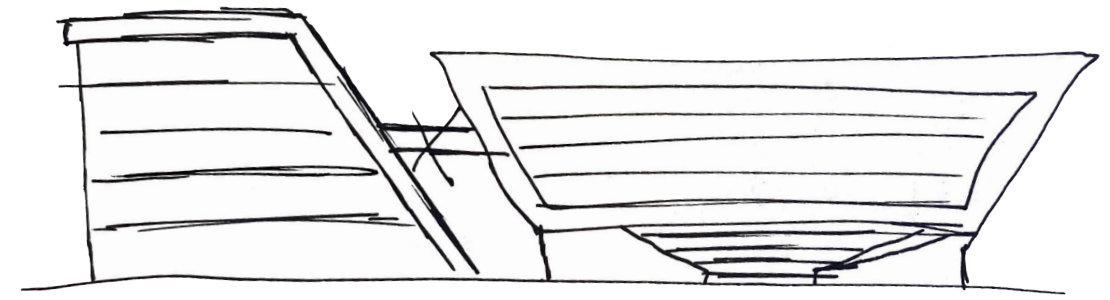


Figure 52

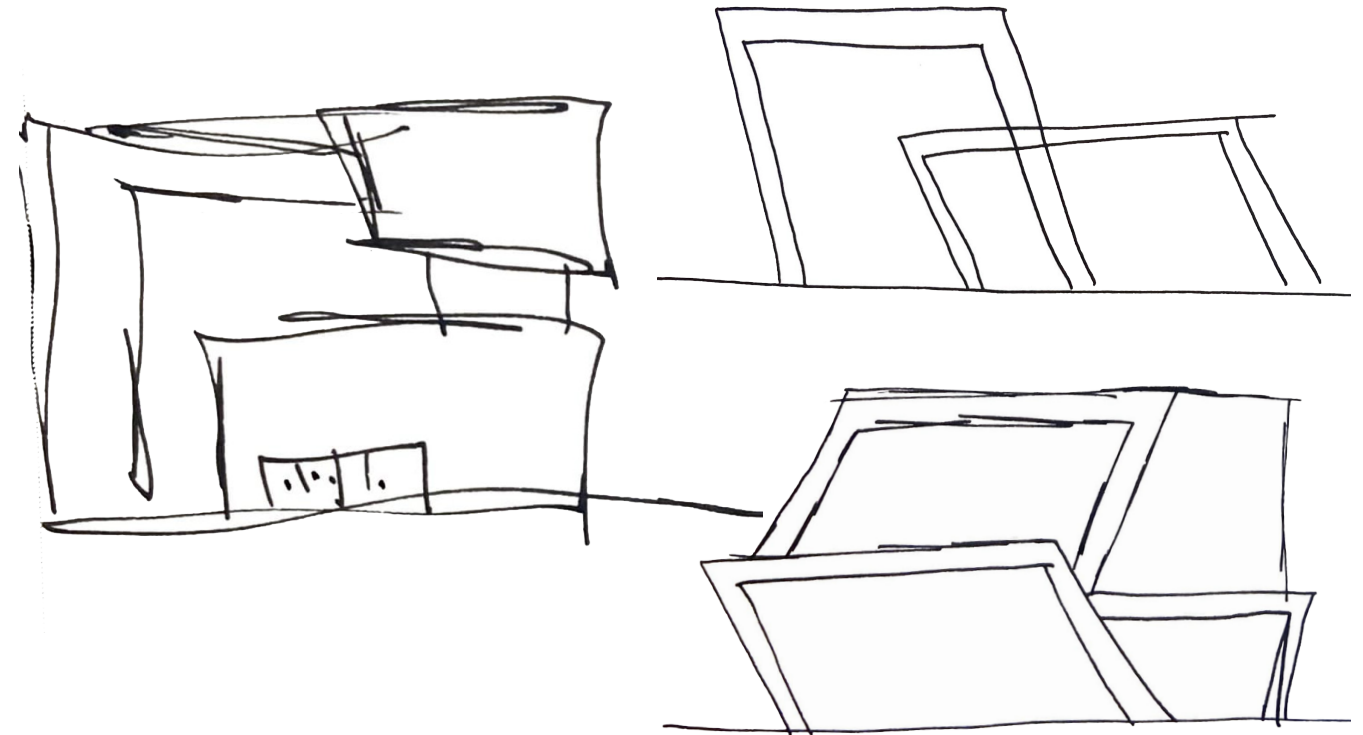
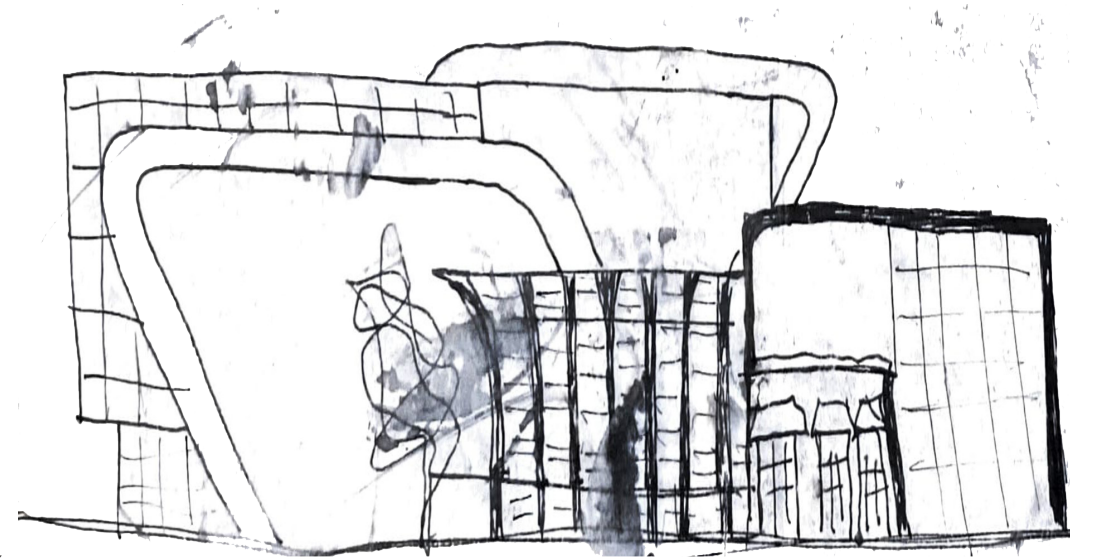


Figure 53



EXTREME SCHEME 1

Extreme Scheme 1 showcases the vertical farm in a plaza with the academic entrance located within the plaza that allows direct access into the building. With public amenities located on the exterior edge for the Public and Private event space cantilevered over the educational wing.

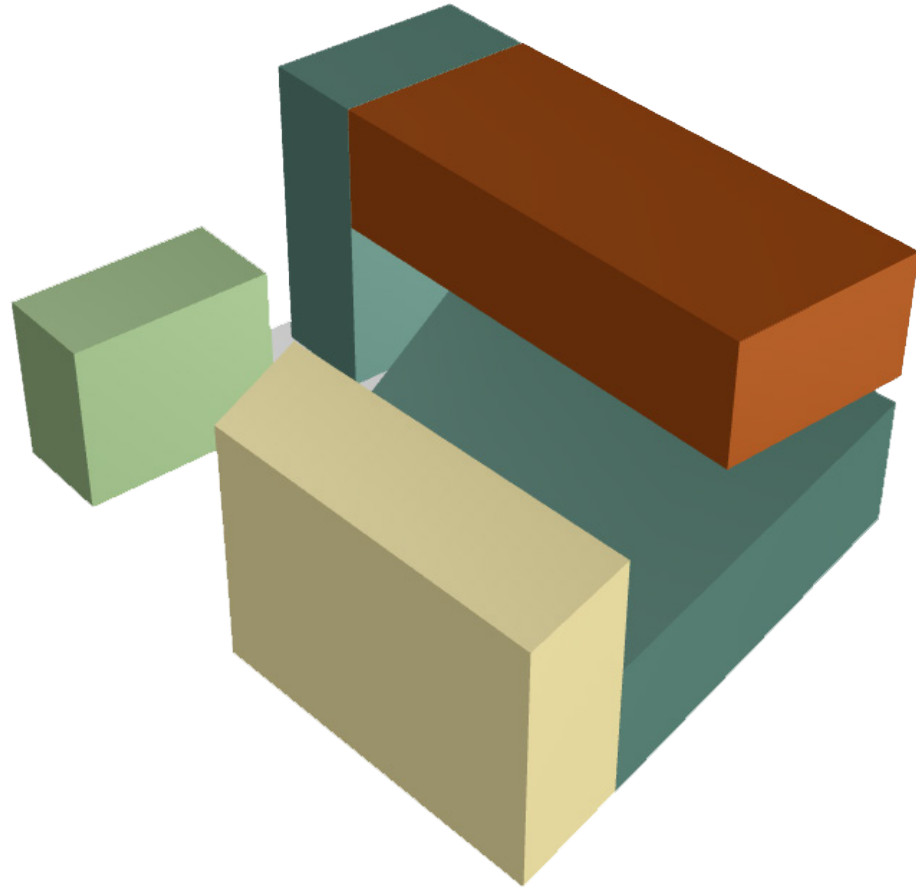


Figure 54

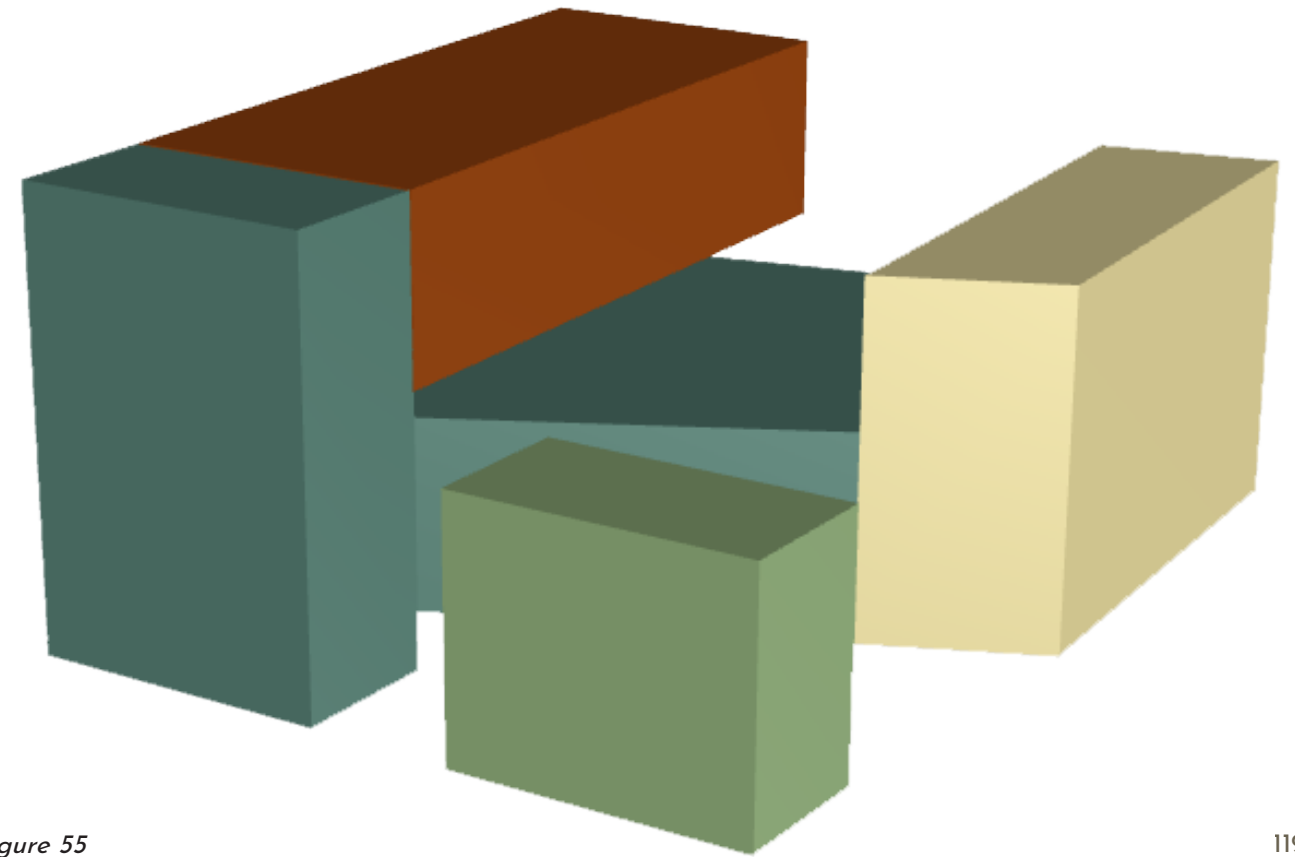


Figure 55

EXTREME SCHEME 2

Extreme Scheme 2 showcases the educational classrooms at the forefront of design through a very transparent open classroom from the exterior. Incorporating the administration and public amenities along the exterior of the building splitting the educational classrooms by a plaza and connected through an Events Space and Educational Kitchens.

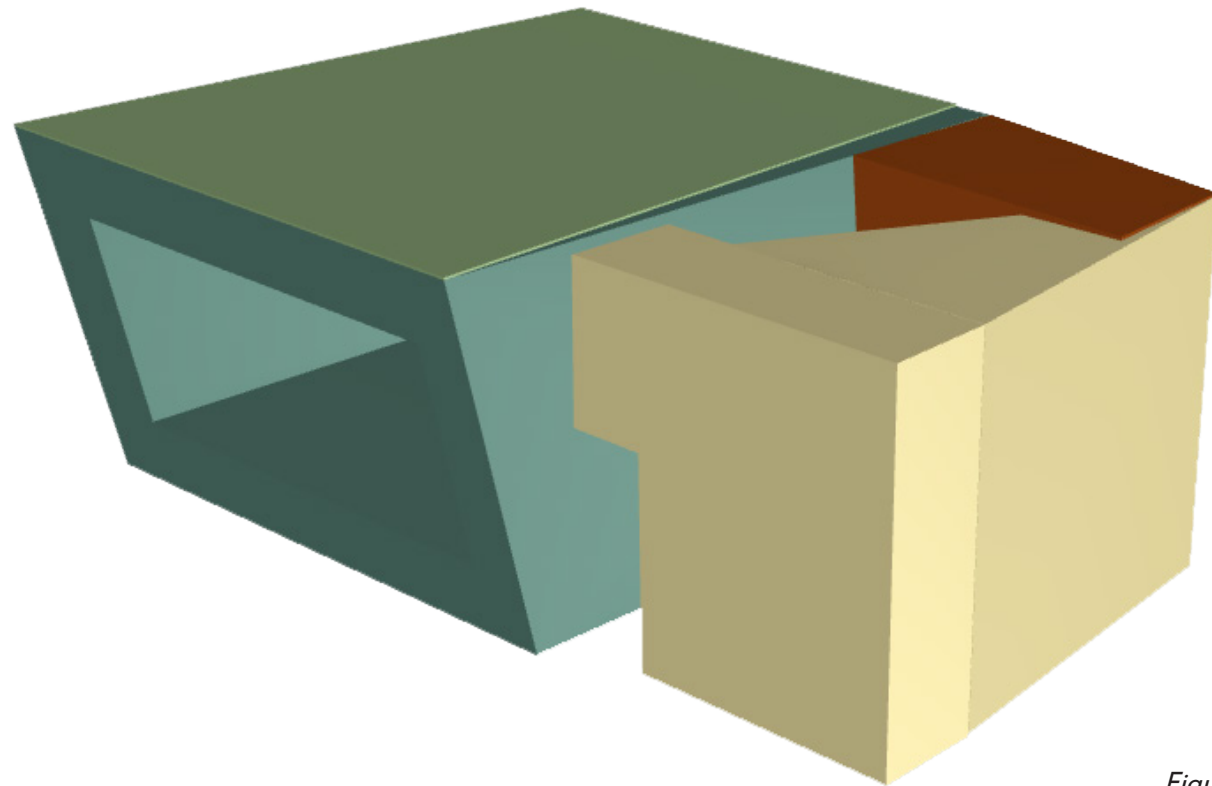


Figure 56

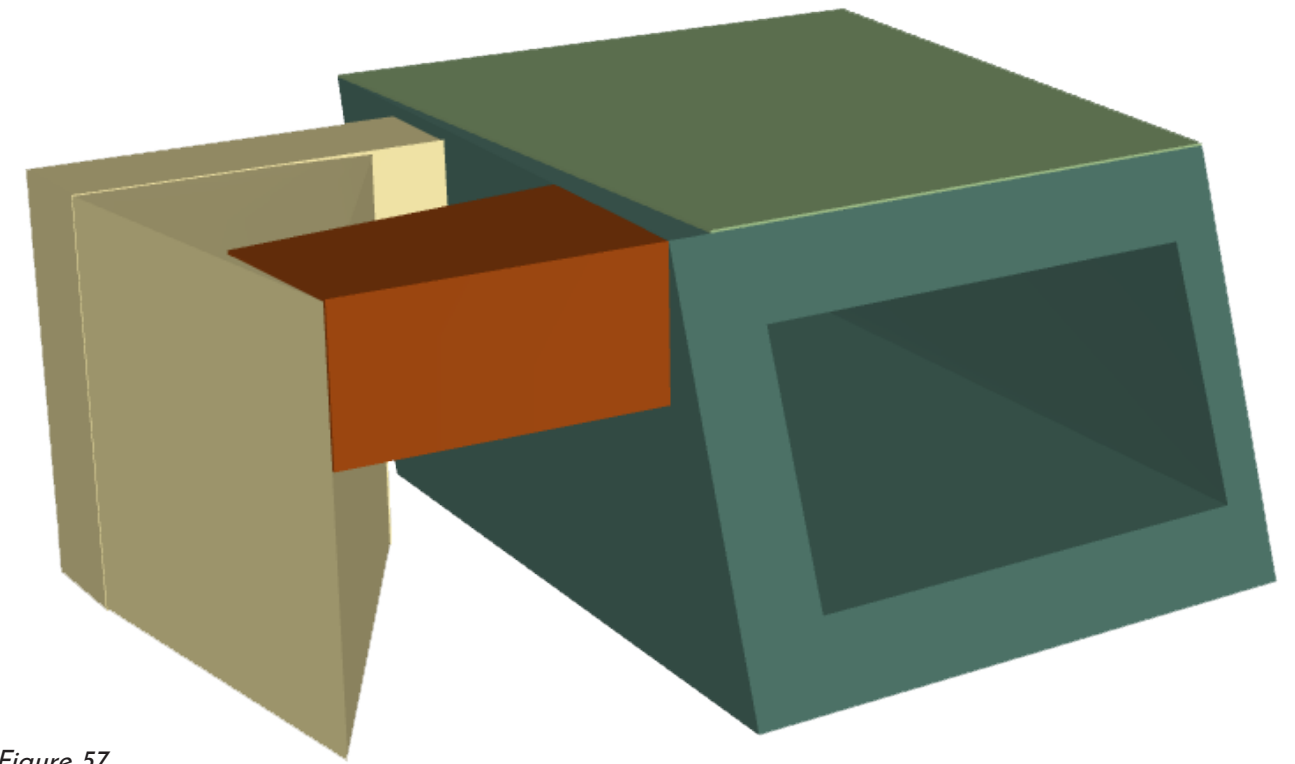


Figure 57

EXTREME SCHEME 3

Extreme Scheme 3 showcases the Educational Classrooms in a cylindrical form connected to the Teaching Kitchens and Events Center through the Administration, Public Amenities and Green Roof. All split with a central plaza between the different forms and programs.

- VERTICAL FARM / GREEN ROOF
- EVENTS / KITCHEN
- ACADEMIC
- ADMINISTRATION / PUBLIC

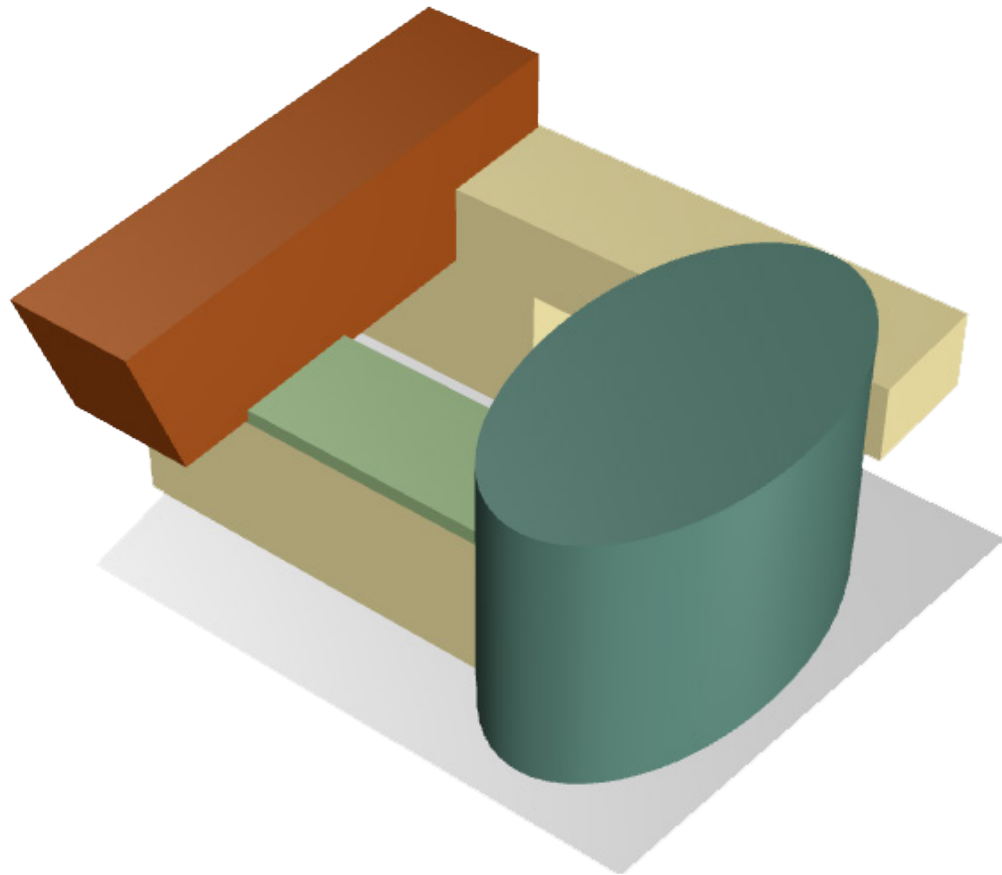


Figure 58

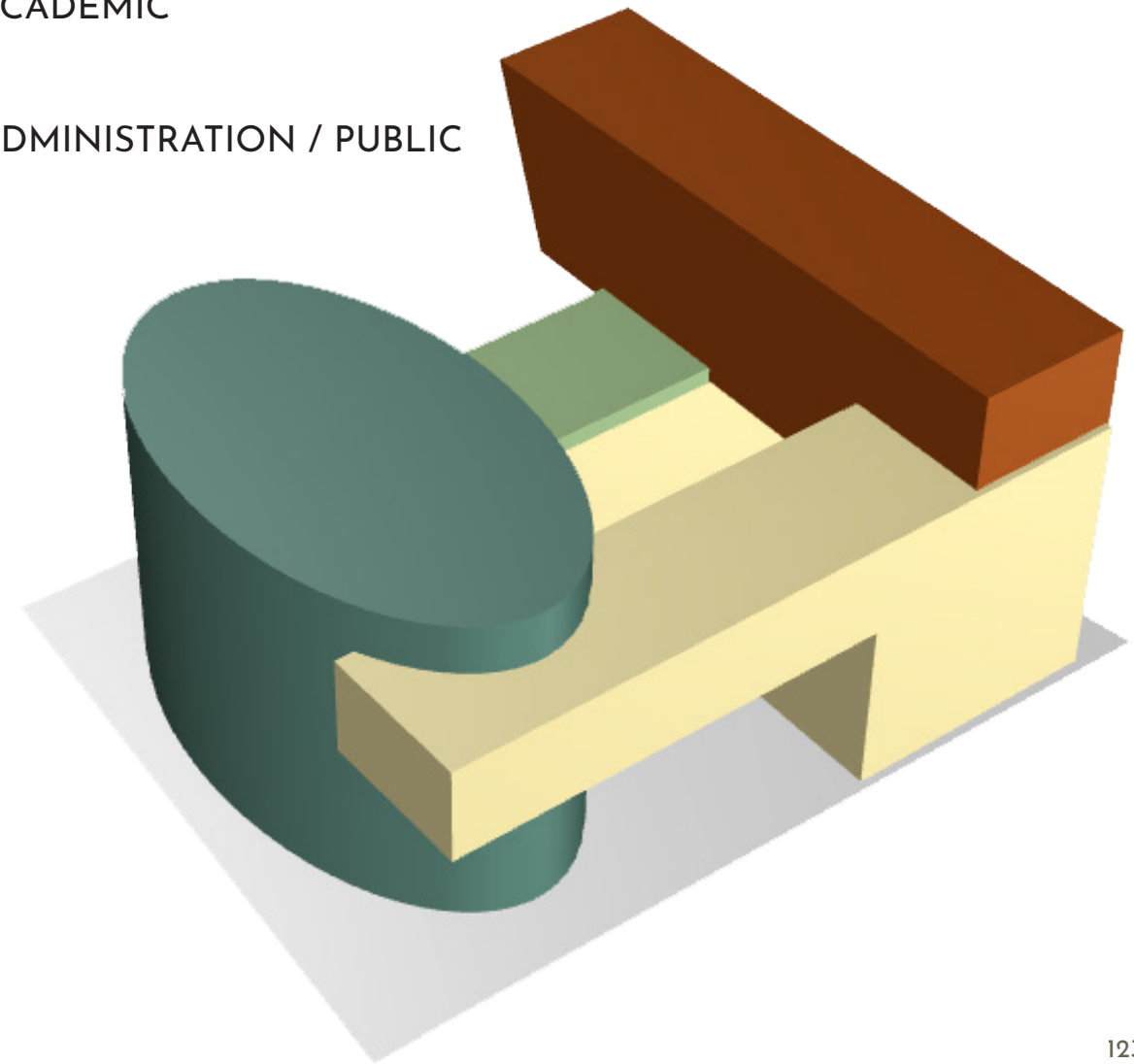


Figure 59

MID-CRIT PRESENTATION

At Mid-Crit Presentation the form and programming of the building moved from the extreme schemes of utilizing the entirety of the site with the building to moving the building to southern side allowing for more green space along the north end of the campus.

The Restaurant, Events Center, and Bakery are staggered off of King St. to allow for public access. With the Vertical Garden connected to the main educational space from the exterior, opens up and allows for a plaza in front of the school and between the Vertical Garden. A secondary entrance is located around the back near the parking lot. Education spaces located inside on the second, third, and fourth floor with kitchens and classrooms spread around a central atrium. Finally, located on the second floor attached to the Educational Wing, is a roof top garden for students use of gardening, apiaries, and small farm animals.

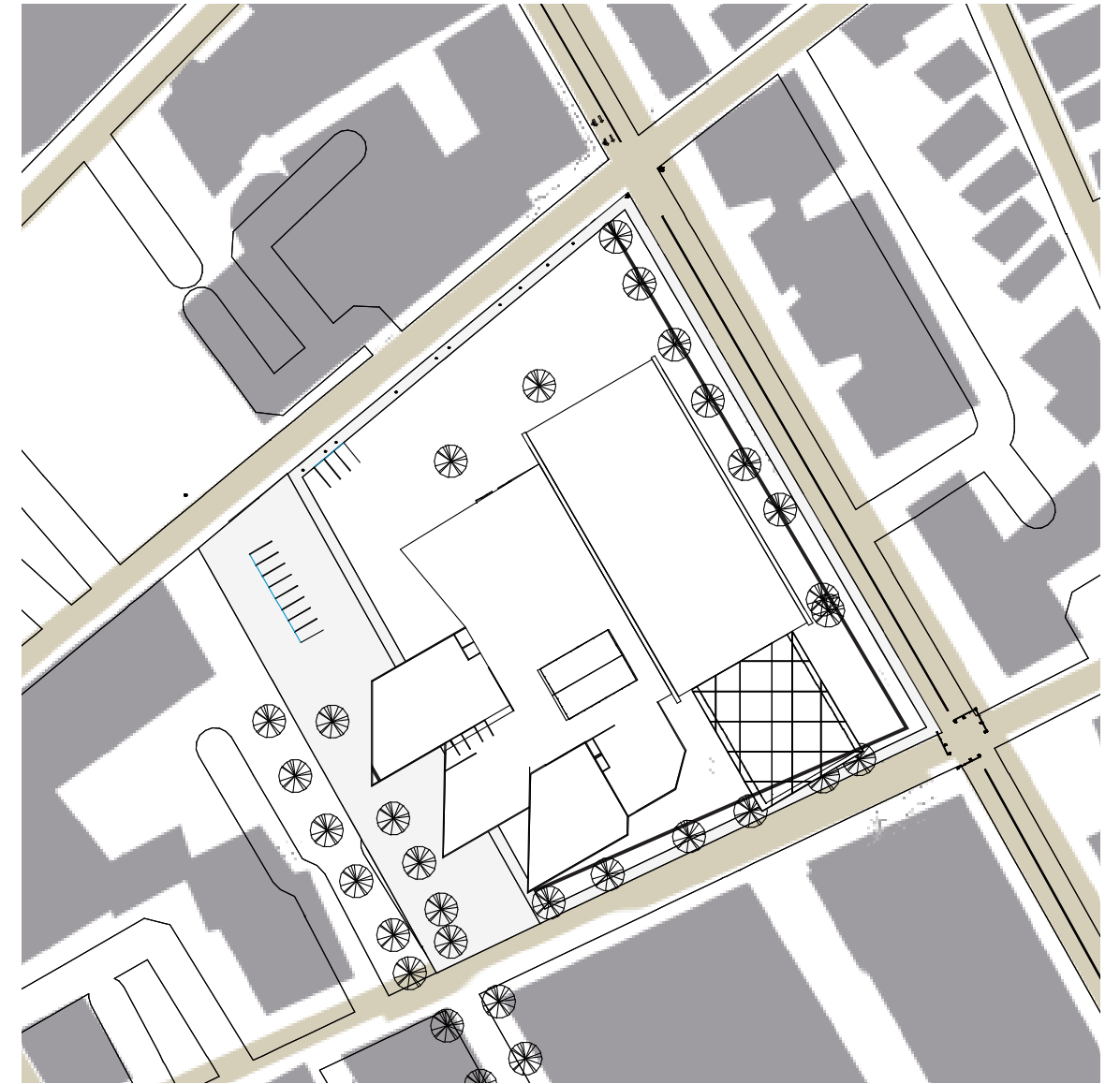


Figure 60

FIRST FLOOR PLAN

- ADMINISTRATION
- BACK OF HOUSE
- BAKERY
- EDUCATION
- EVENTS CENTER
- KITCHEN
- VERTICAL GARDEN

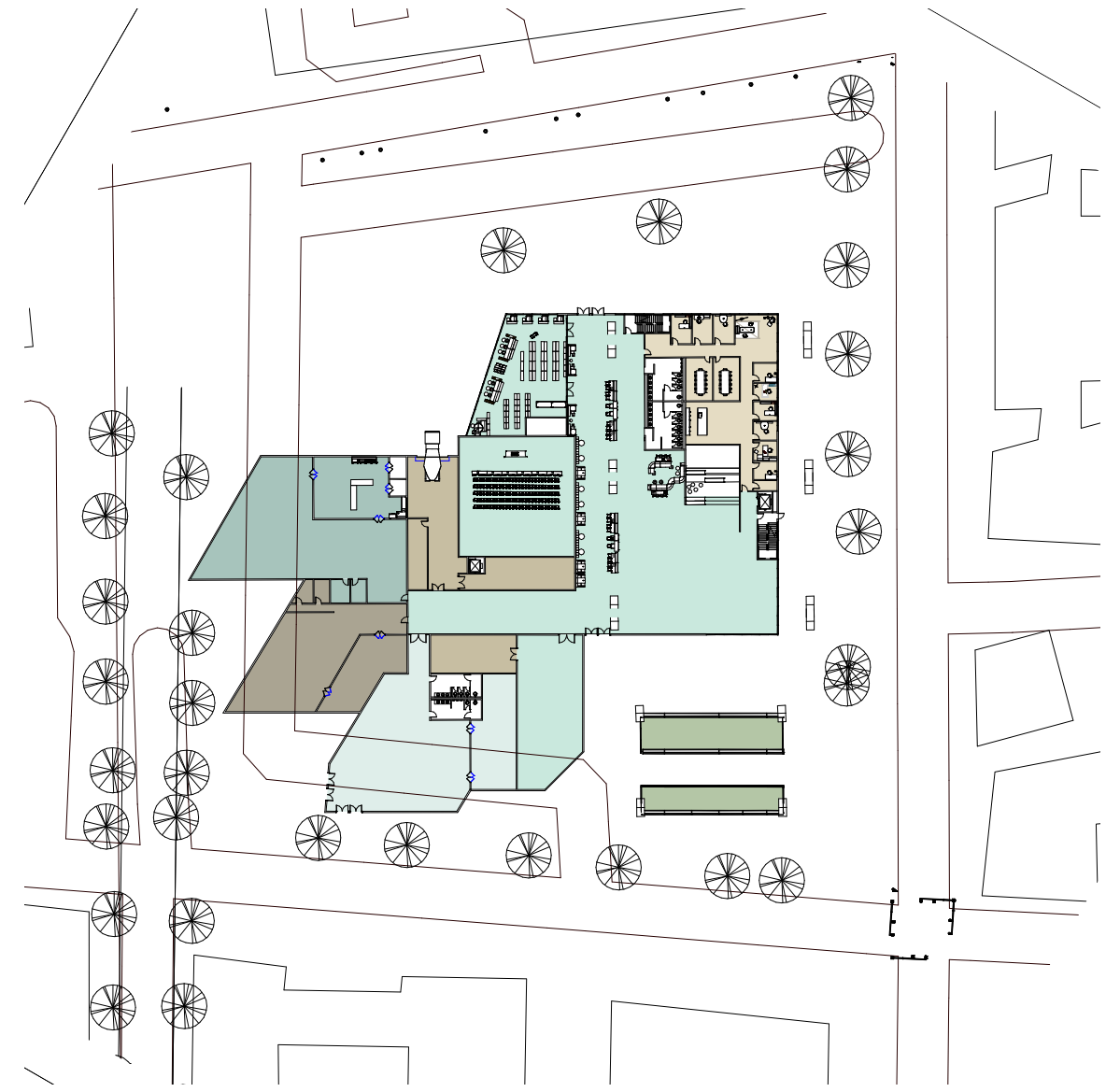


Figure 61

SECOND AND THIRD FLOOR PLAN

- BACK OF HOUSE
- CLASSROOMS
- KITCHEN
- VERTICAL GARDEN

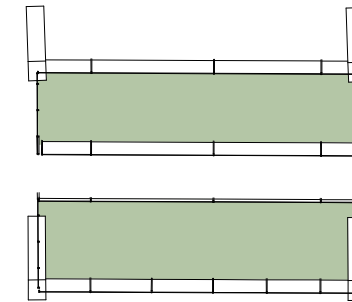
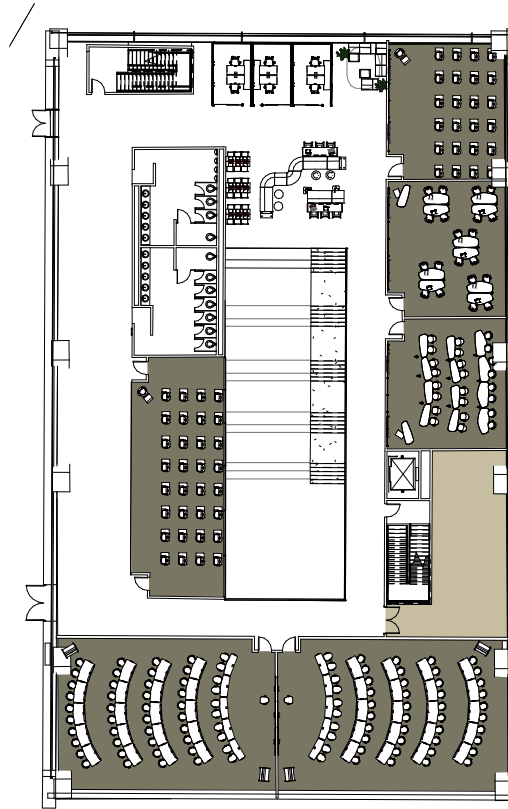


Figure 62

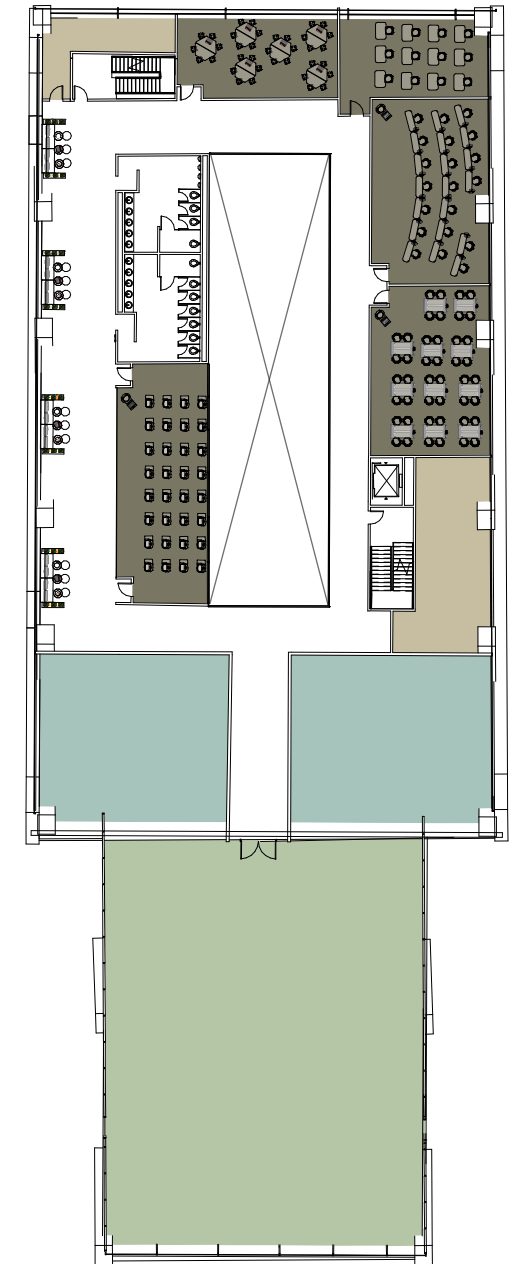


Figure 63

FOURTH FLOOR PLAN

- BACK OF HOUSE
- CLASSROOMS
- KITCHEN
- VERTICAL GARDEN

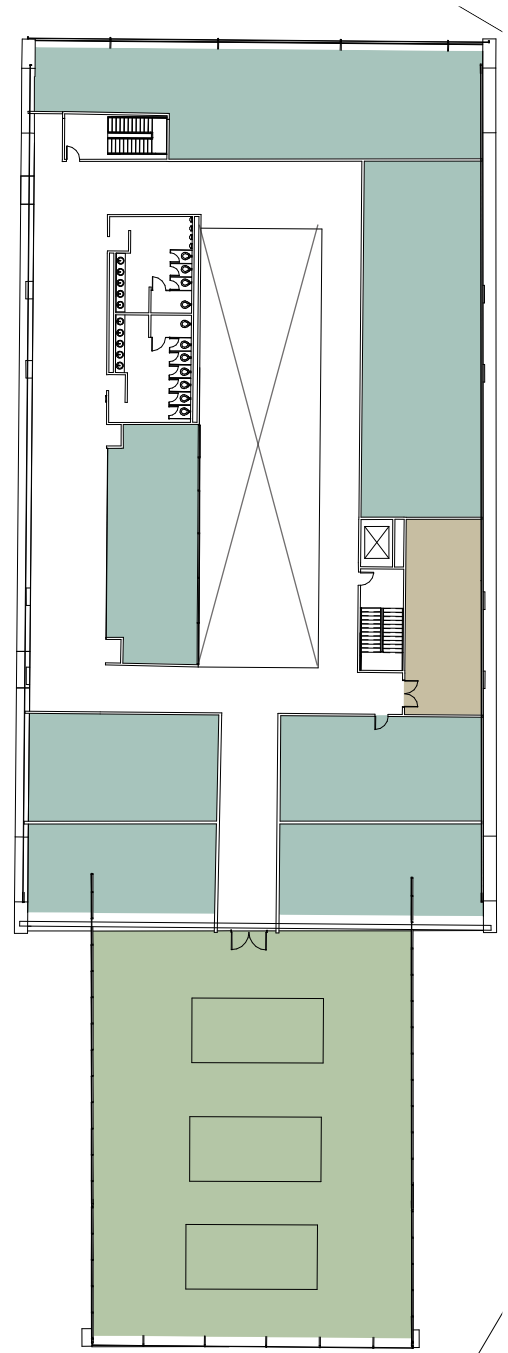


Figure 64

EXTERIOR PERSPECTIVES

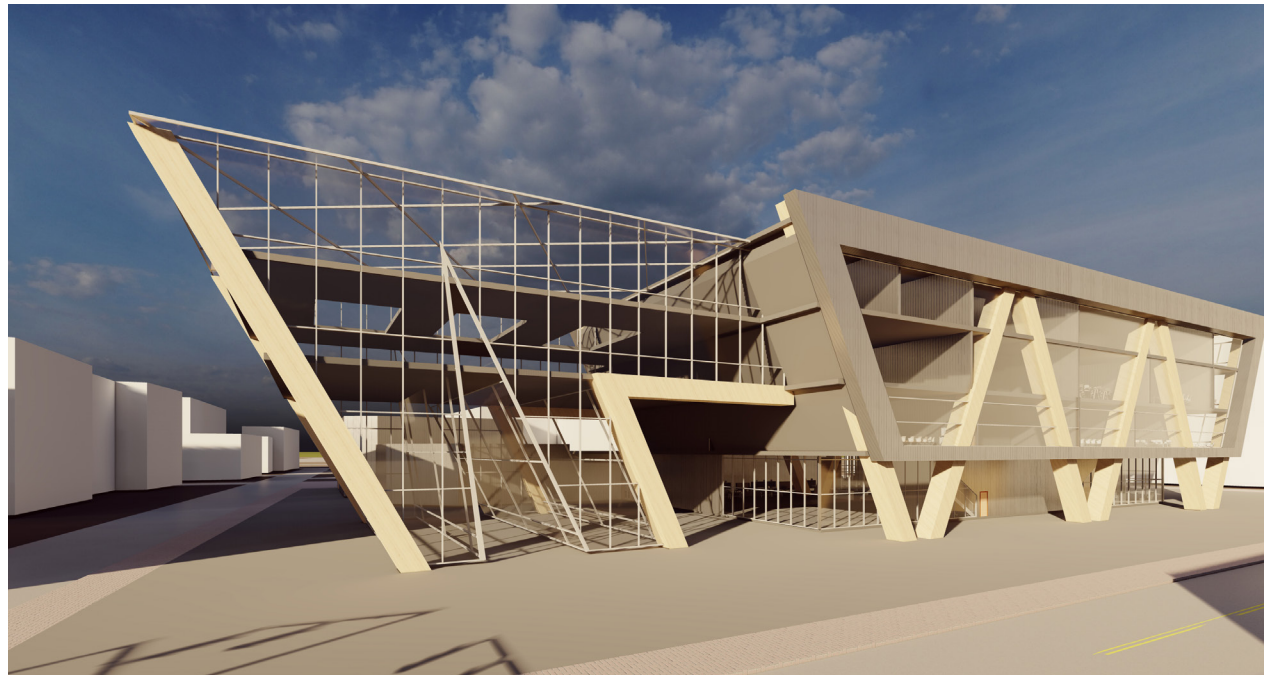
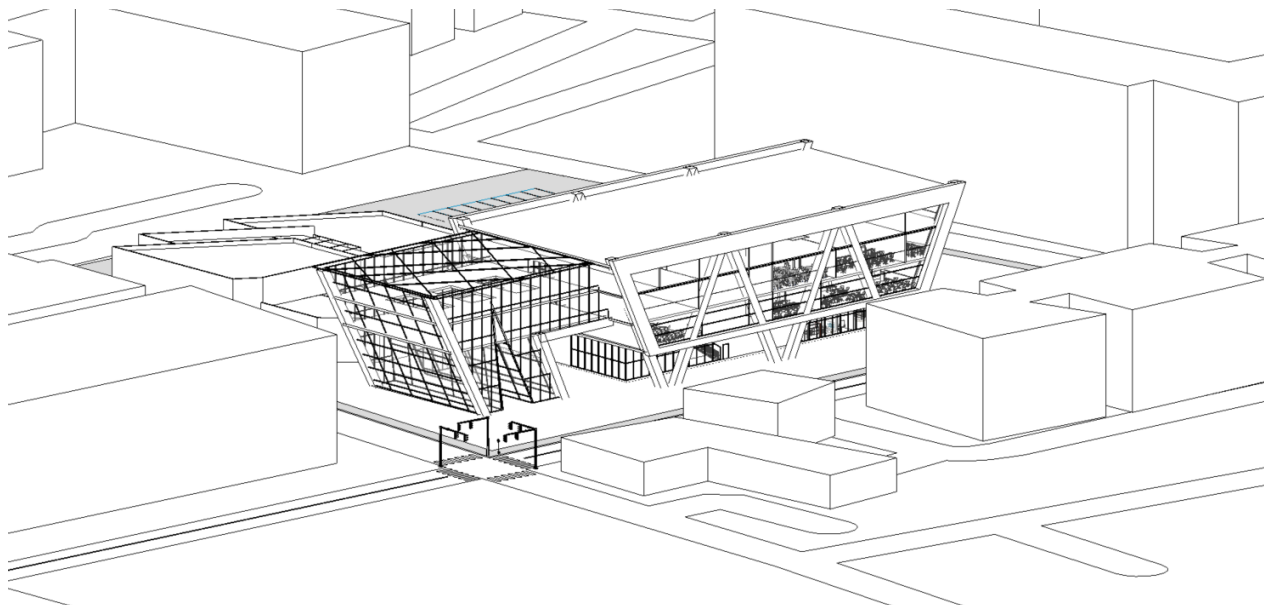


Figure 65

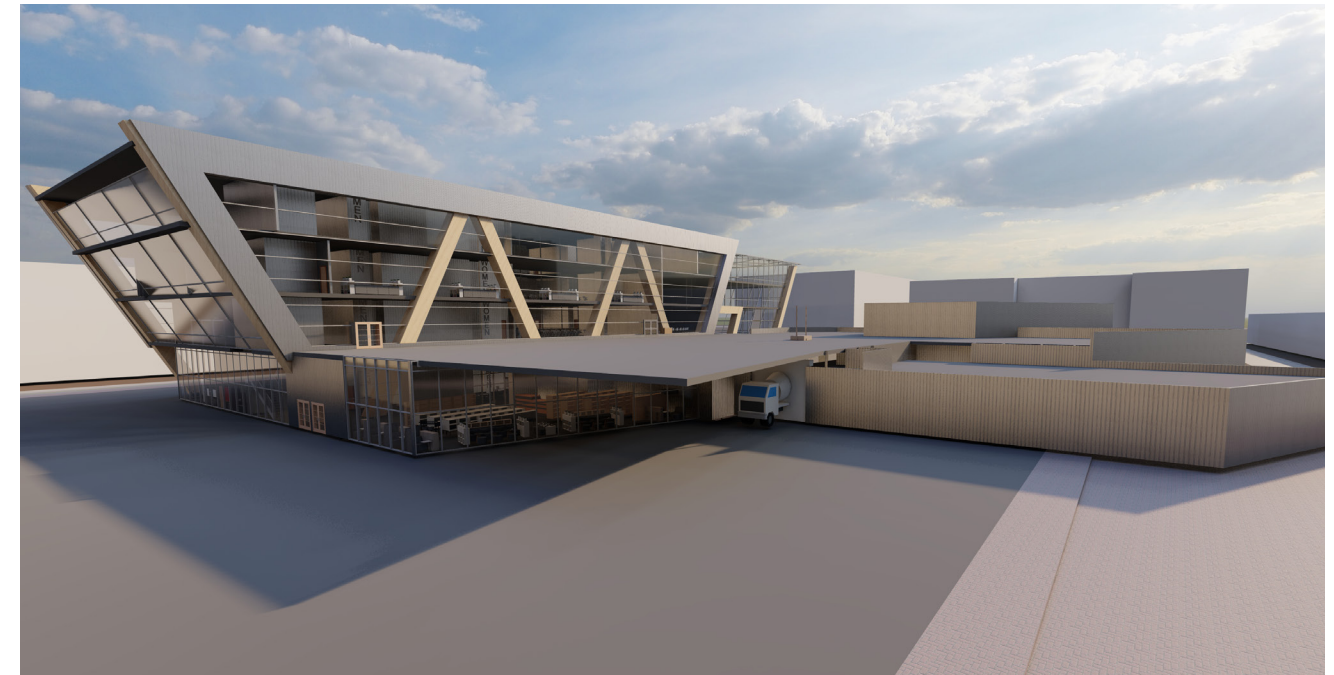
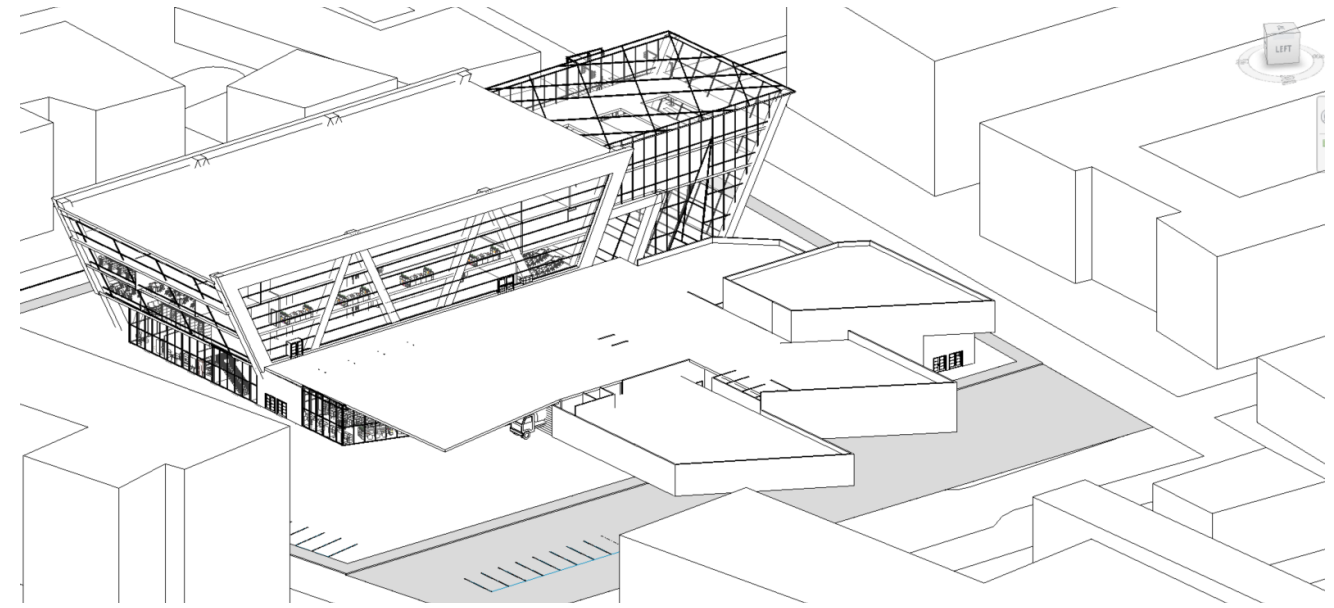


Figure 66



Figure 67

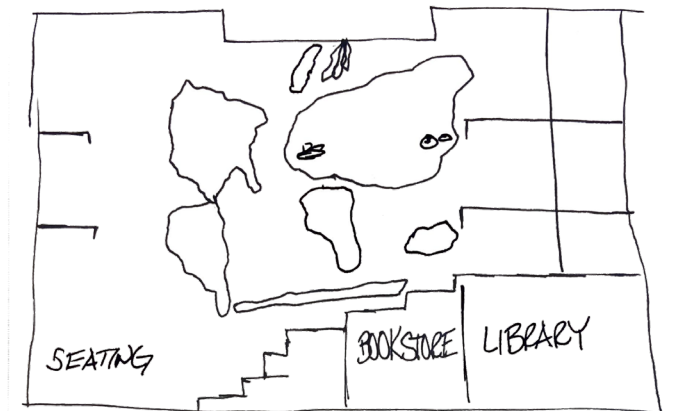
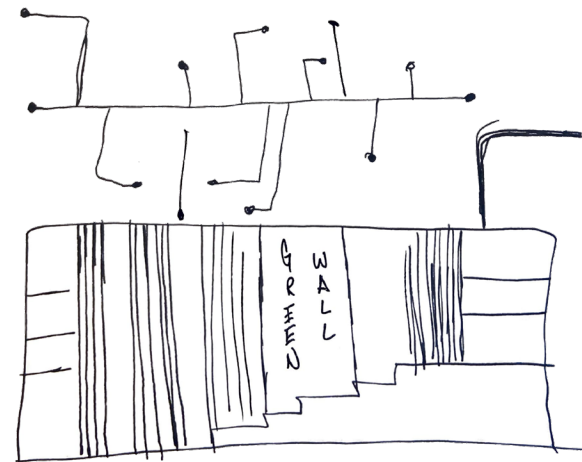


Figure 68

VERTICAL FARM SKETCHES

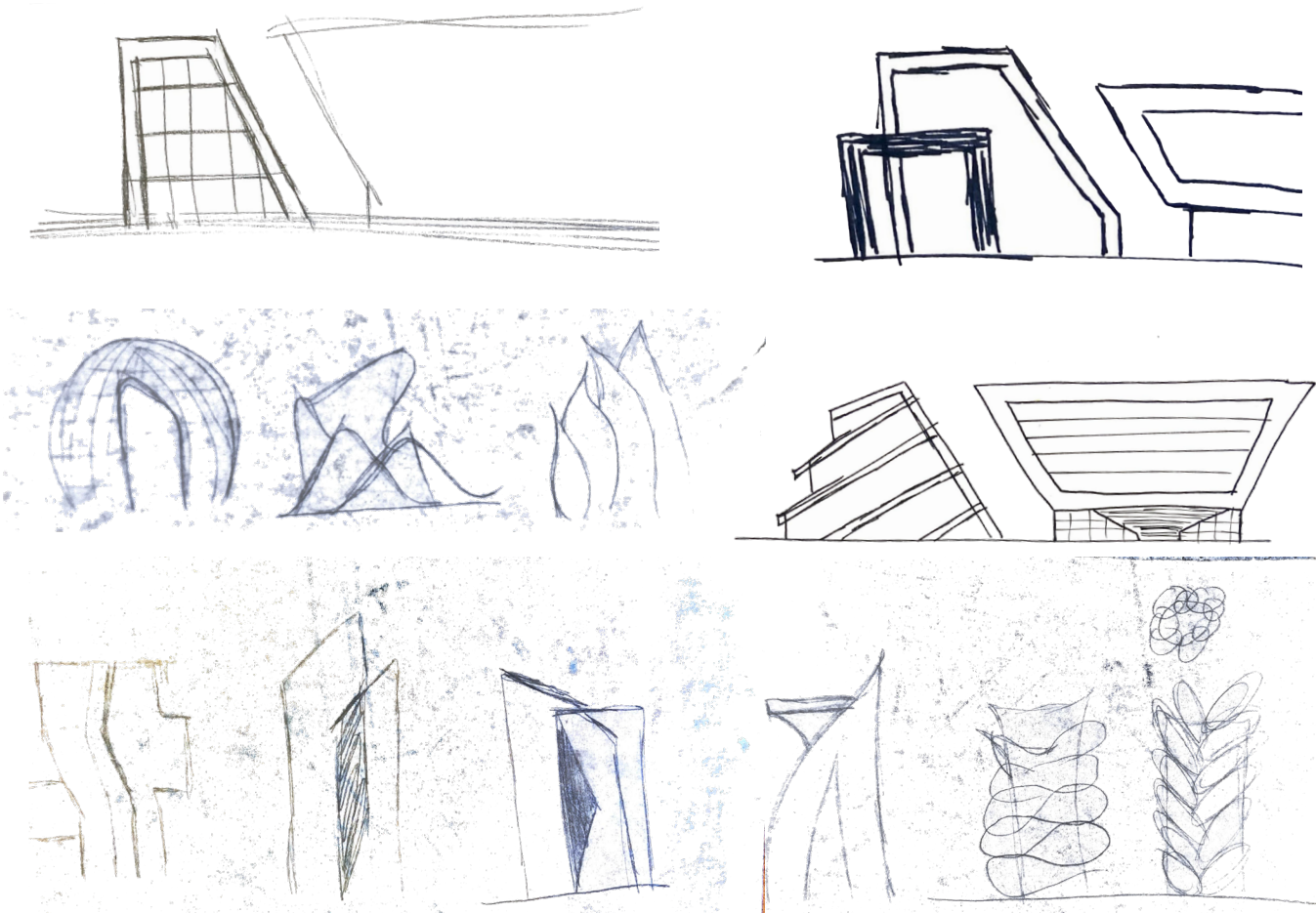
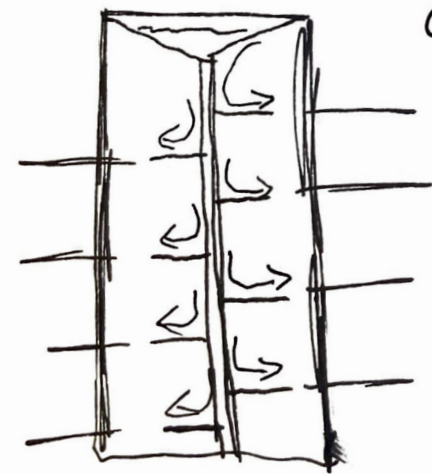
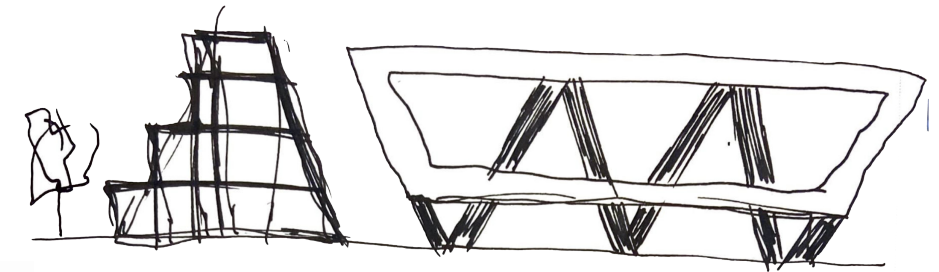


Figure 69



C

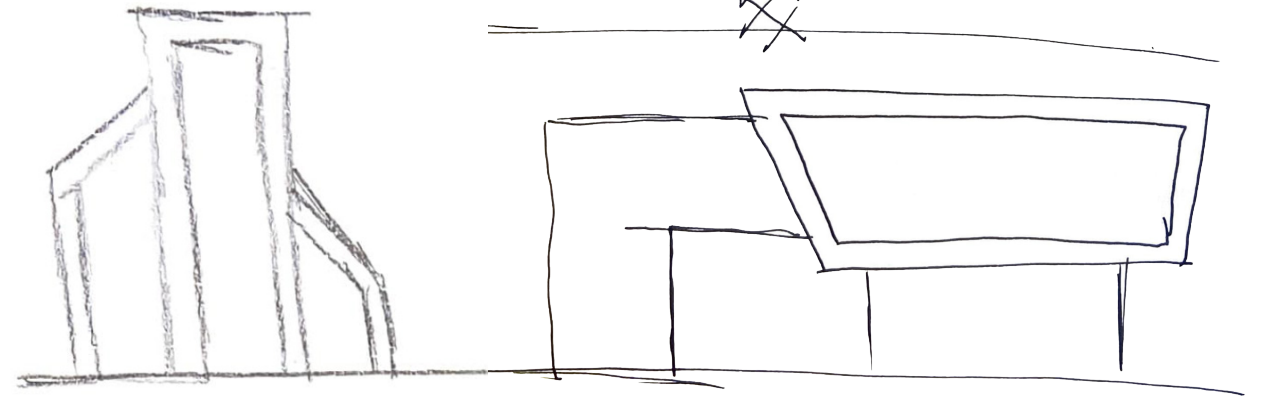
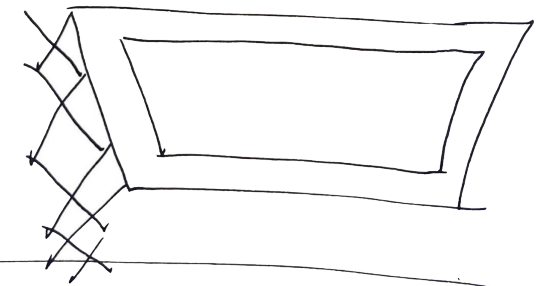
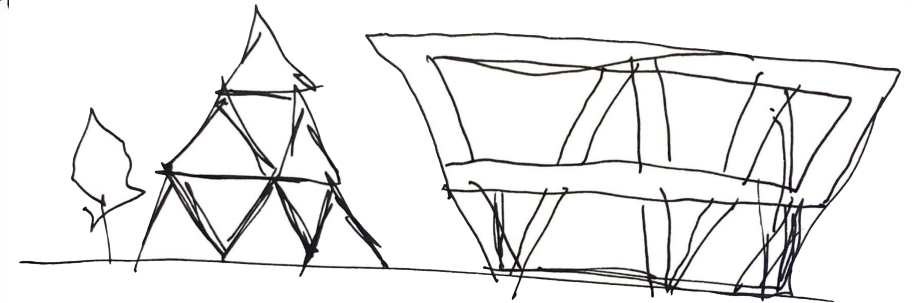


Figure 70

Food and shelter are two constants that have been vital to survival throughout human history. How design and planning communities address these two facets of life must evolve to enhance the world for future prosperity of resources and human connections. This design thesis focuses on correlations between food, culture, human relationships and place making to prove that how we feed and house ourselves matters. Using sustainable practices and rooting design in opportunity for interaction; climate change, wasting of resources, food over-production and the importance of cultural community expression are addressed to exemplify how this can be achieved.

As the fourth Campus of the Culinary Institute of America, the Charleston Campus provides a place for engagement and discussion about how food, architecture, and culture can come together to enhance human relationships and the environment. The location has been selected specifically for proximity to an area rich in the history of African American Cuisine which would be showcased through both educational and gastronomic offerings in the classroom and the Institute's restaurants. Additional programming and space is provided for community gardens and education, lectures, and gathering to grow, prepare, enjoy and learn about food at a holistic level with each other.



Figure 71

VICINITY MAP



Figure 72

SITE PLAN



Figure 73

CAMPUS PROGRAMMING

The Lunch Box

Main Educational building promoting Cultural Integration and Personal Growth through the classroom

Community Vertical Garden

Garden plots, cooking classes, and farmers market promoting community connections with the campus on a day to day basis.

Plaza

Designed Plaza space for community and student interaction across the site.

Bakery

Student run and opened to the public promoting community connections and personal growth.

Restaurant

Student run and opened to the public promoting community connections, cultural integration, and personal growth.

Events Center

Student run and opened to the public promoting community connections and personal growth.



Figure 74

FIRST FLOOR PLAN

The First Floor Plan is planned around the program and needs to the users. When entering from the front entrance and the back entrance you greeted by open collaboration spaces for formal in and informal interactions between students and professors. The Learning Staircase is centrally located in the atrium to allow for classes to circulate around this area. The Bookstore, Library, and Auditorium are located within easy access on the First Floor to allow for more classrooms on the upper floors. All of these more private school uses are located under the educational classes connected to the public side where the Restaurant, Bakery, and Events Center are located through a hallway. As well Loading and Delivery is located with easy access to the Public Kitchens and through a freight elevator to the Educational Kitchens.

On the First Floor of the Community Vertical Garden is open space for Farmers Markets as well as restrooms and a teaching kitchen for community cooking classes.

KEY

Collaboration Spaces

Administration

Bookstore

Library

Demonstration Auditorium

Back of House

The Eatery

The Beanry

Event Center

Community Vertical Garden

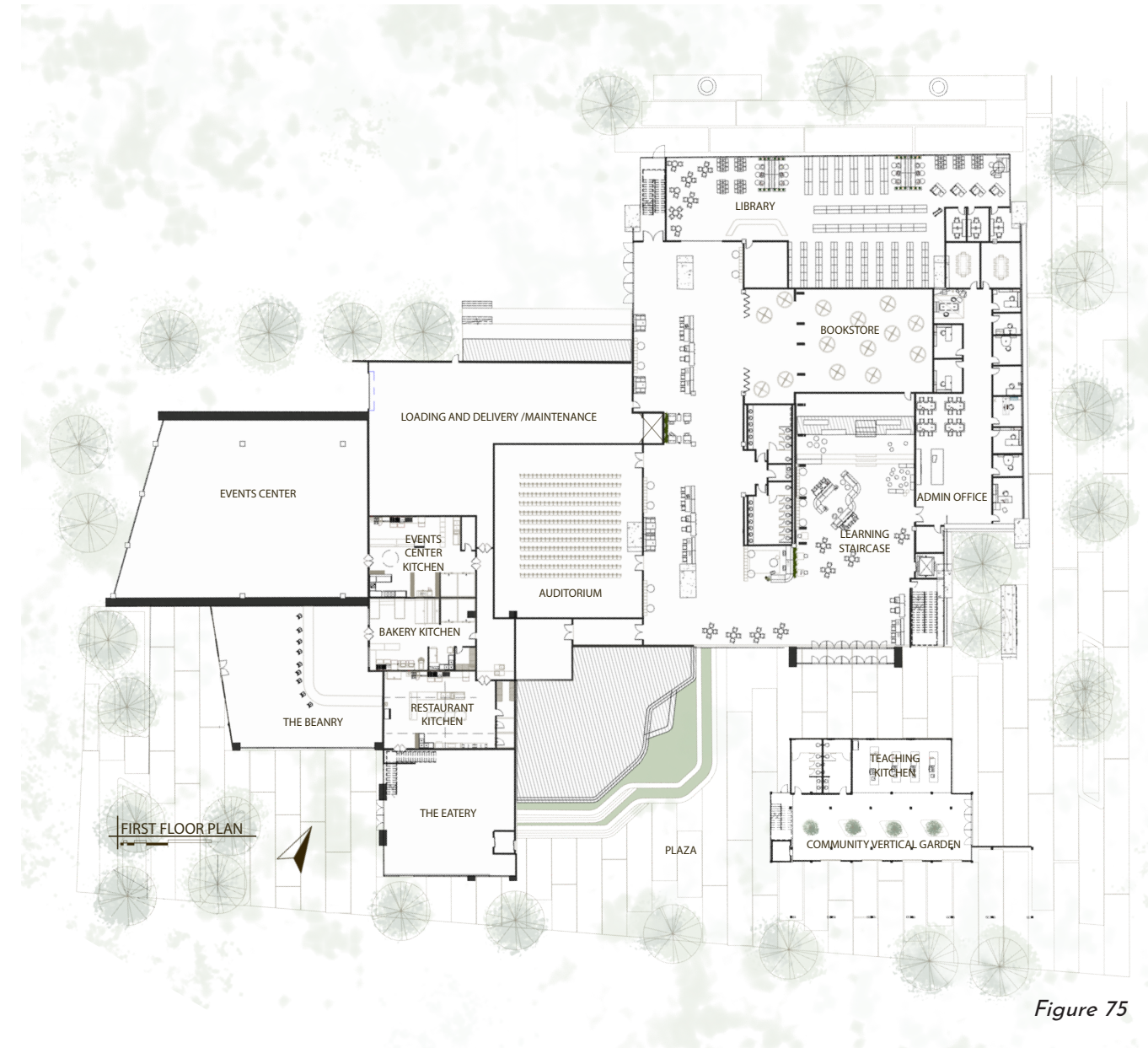


Figure 75

SECOND FLOOR PLAN

Starting on the Second Floor the main Educational Classrooms start with 7 classrooms, 3 Teaching Kitchens, and open and private collaboration spaces that connect to the teaching staircase and atrium. All of the Classrooms occupy the perimeter of the floor allowing for transparency from the exterior and interior of the building into these spaces. Locker Rooms and Restrooms are located in the core that stacks through the entirety of the building. On the Exterior of the building is the Second Floor Plaza that connects the First Floor Plaza from both ends of the campus to the second floor Restaurant and Restaurant Patio.

Located in the Second Floor of the Community Garden starts the Garden Plots for the community to utilize.

KEY

| | |
|--|---|
|  Teaching Kitchen |  Restaurant |
|  Educational Spaces |  Plaza |
|  Collaboration Spaces |  The Eatery |
|  Locker Rooms / Restrooms |  Community Vertical Garden |

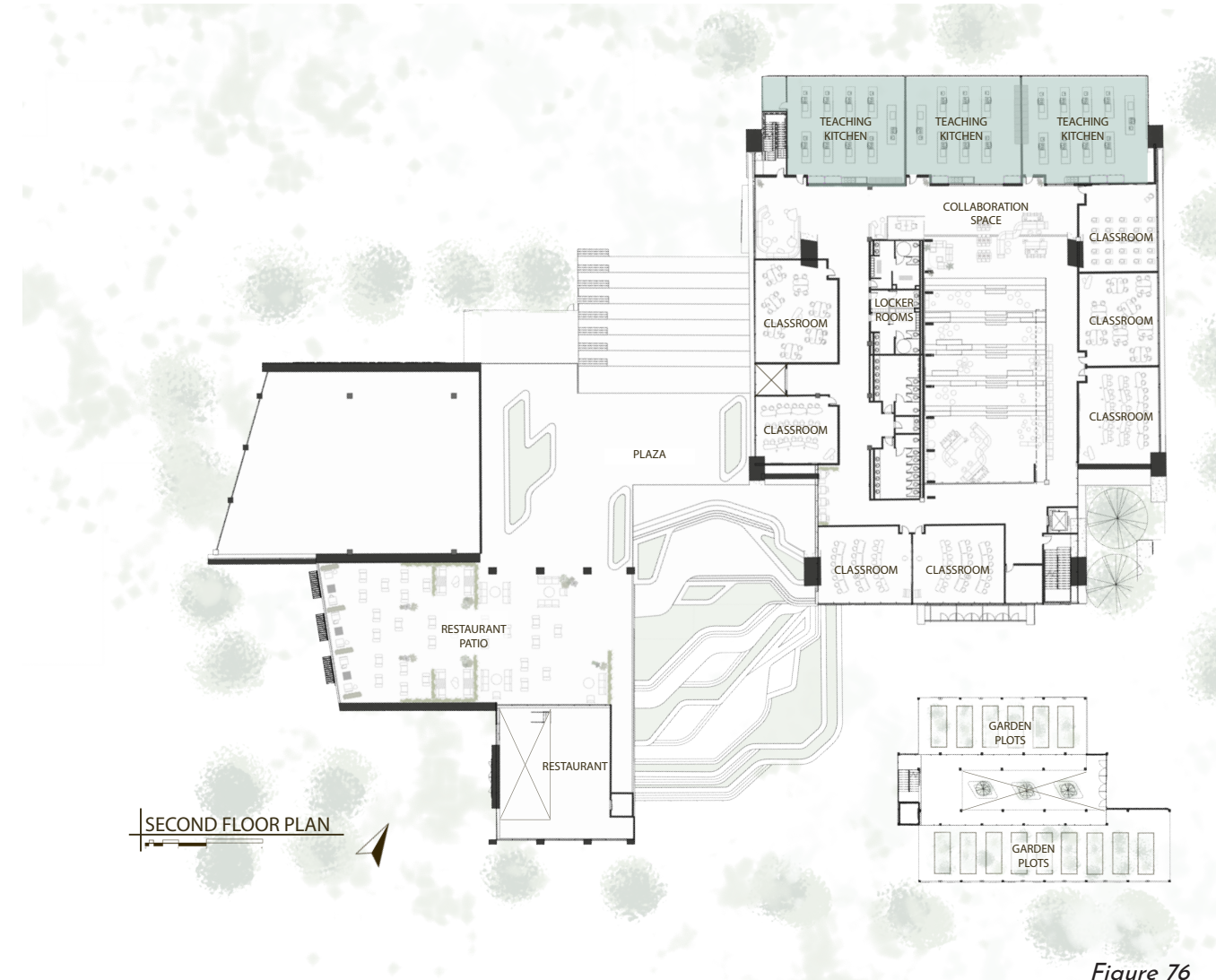


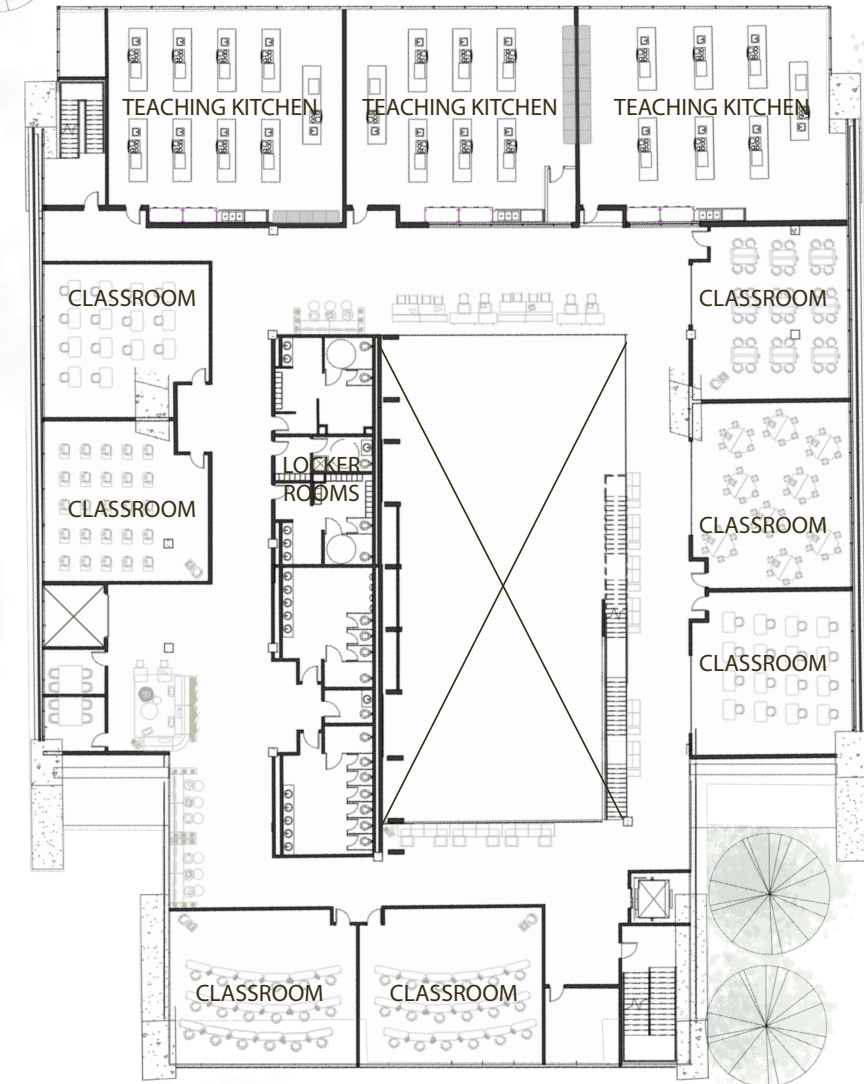
Figure 76

THIRD FLOOR PLAN

Located on the Third Floor is the main Educational Classrooms with 7 classrooms, 3 Teaching Kitchens, and open and private collaboration spaces that connect to the atrium that looks on to the Learning Staircase. All of the Classrooms occupy the perimeter of the floor allowing for transparency from the exterior and interior of the building into these spaces. Locker Rooms and Restrooms are located in the core that stacks through the entirety of the building.

KEY

- Teaching Kitchen
- Educational Spaces
- Collaboration Spaces
- Locker Rooms / Restrooms
- Atrium



THIRD FLOOR PLAN



Figure 77

FOURTH FLOOR PLAN

Starting of the Fourth Floor is the 3 Teaching Kitchens are converted to 2 Larger Lab Kitchens allowing for a more individualized learning experience. As well has the main 6 Educational Classrooms and open and private collaboration spaces that connect to the atrium that looks on to the Learning Staircase. All of the Classrooms occupy the perimeter of the floor allowing for transparency from the exterior and interior of the building into these spaces. Locker Rooms and Restrooms are located in the core that stacks through the entirety of the building.

KEY

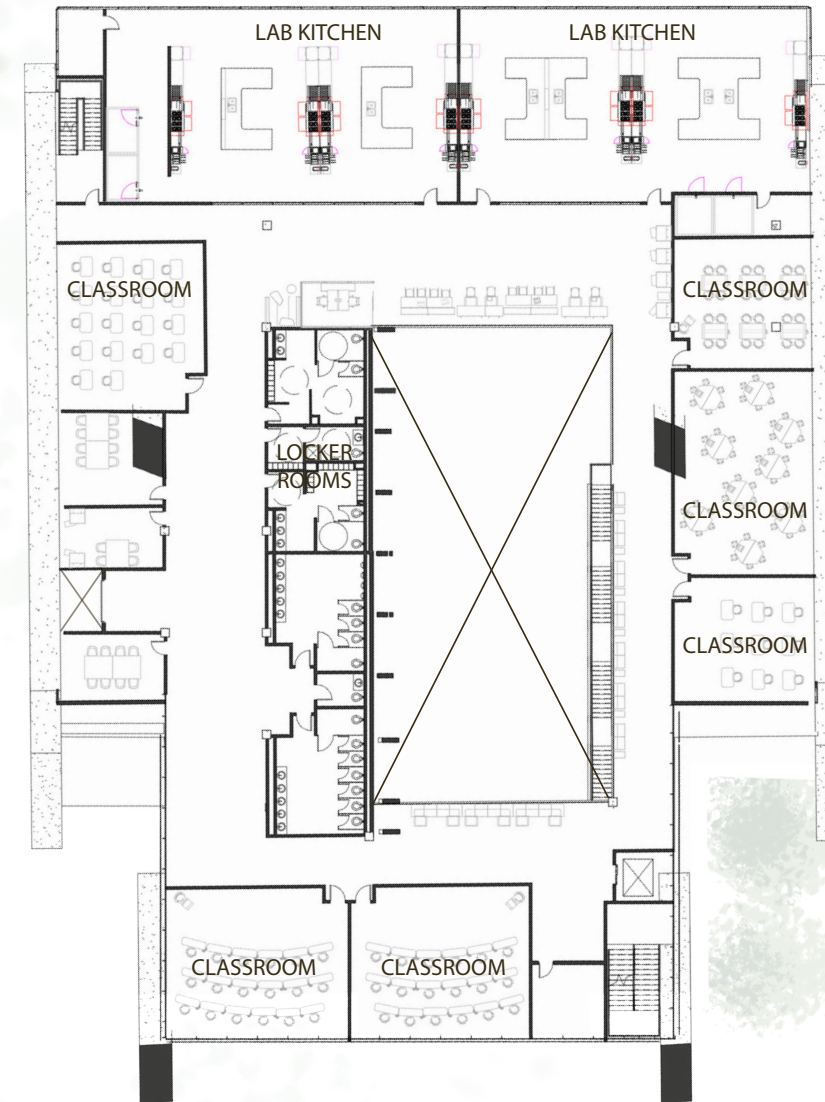
Lab Kitchen

Educational Spaces

Collaboration Spaces

Locker Rooms / Restrooms

Atrium



FOURTH FLOOR PLAN

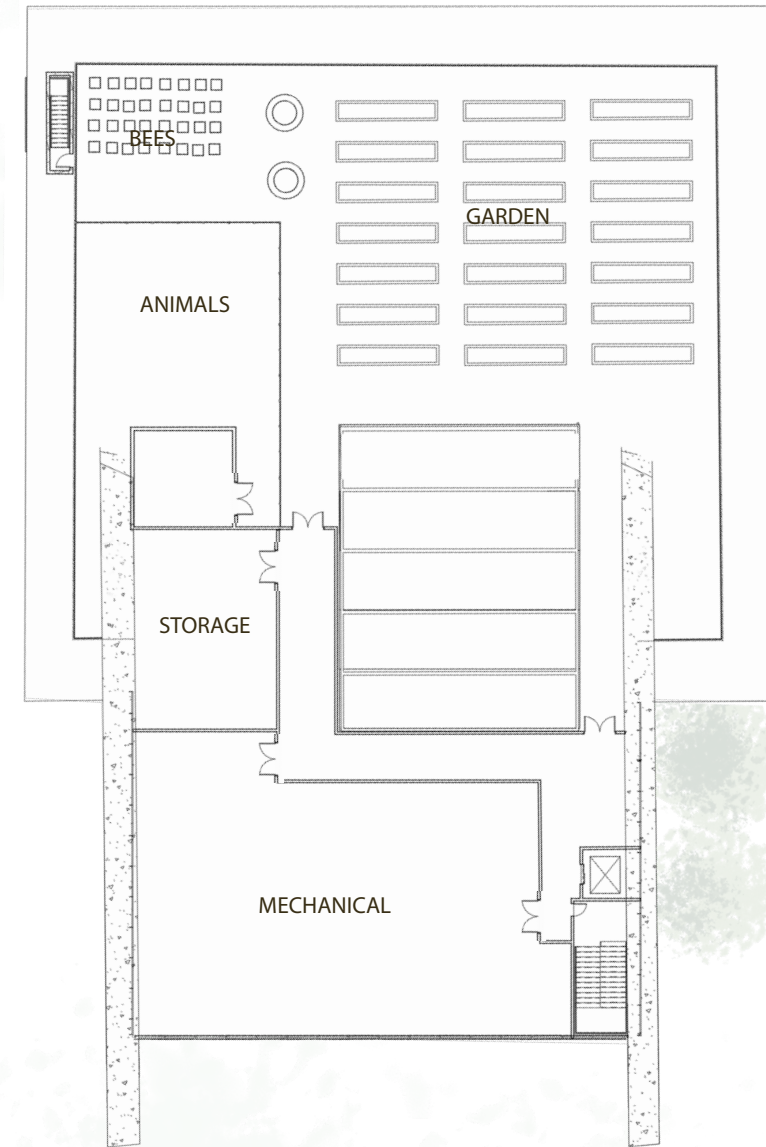
Figure 78

ROOF FLOOR PLAN

Located on the Roof Floor Plan is a Rooftop Garden, Apiary, Small Farm Animals, Storage, and Mechanical Space. These spaces located on the roof allow for students to get a more holistic approach to how food is produced. They get hands on experience taking care of animals, harvesting honey, and growing produce all that will be taken down to be used in the learning kitchens below. As well as a Mechanical Room that houses the buildings primary sustainability systems, such as water collection, solar energy, and heat exchange units.

KEY

- Apiary
- Rooftop Garden
- Mechanical
- Small Farm Animals
- Storage



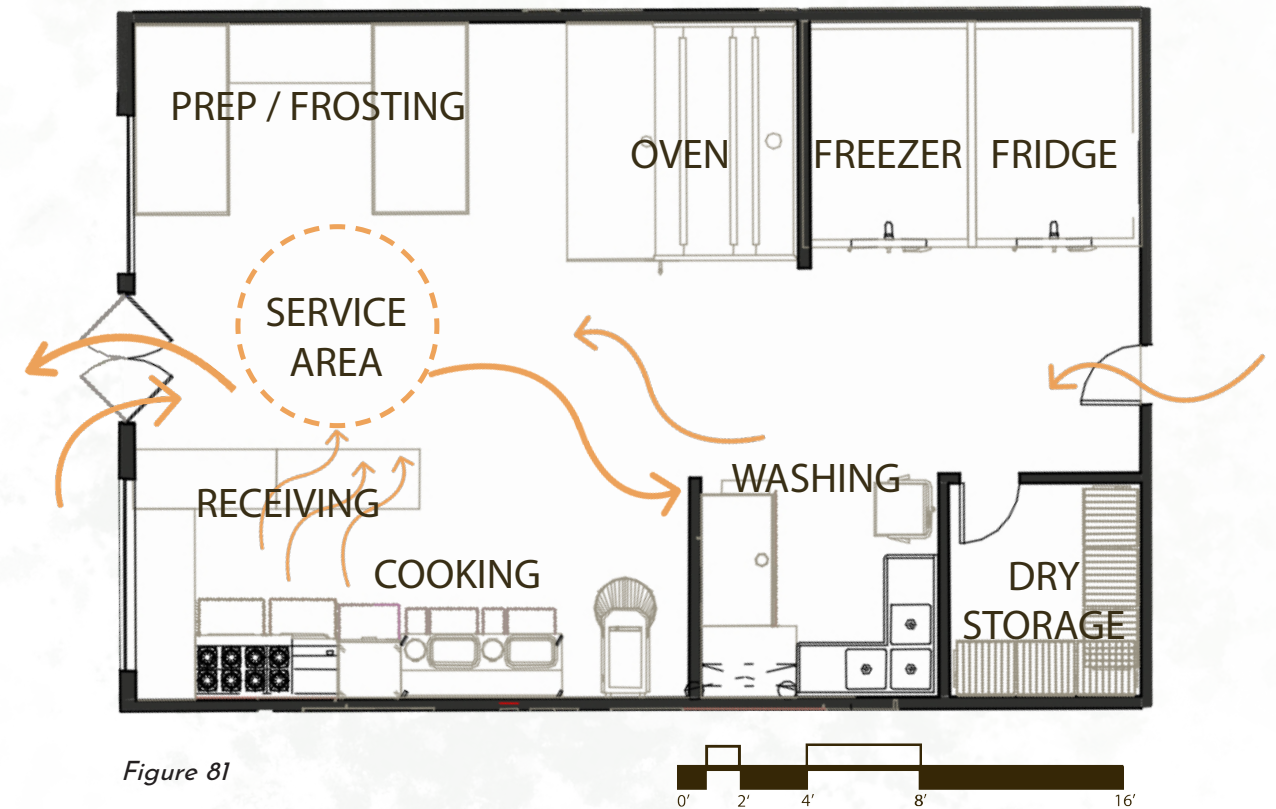
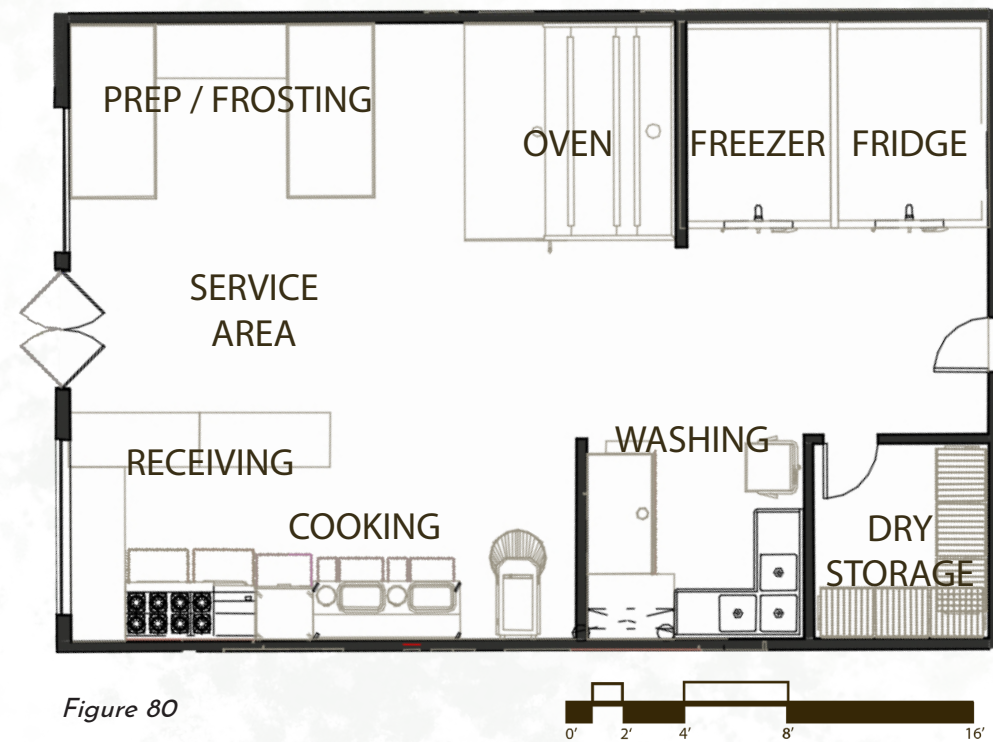
ROOF FLOOR PLAN



Figure 79

BAKING KITCHEN

The Bakery Kitchen is designed in a Zoned Layout with Food Preparation and Service Area located near the front of house to allow ease of access to wait staff. While storage and washing are located in back of house. This layout was chosen to allow for patrons to see through and experience the baking process.



RESTAURANT KITCHEN

The Restaurant Kitchen is laid out through Island zoning. This layout allows for more flow from front of house to back of house while allowing staff to have room to cook.

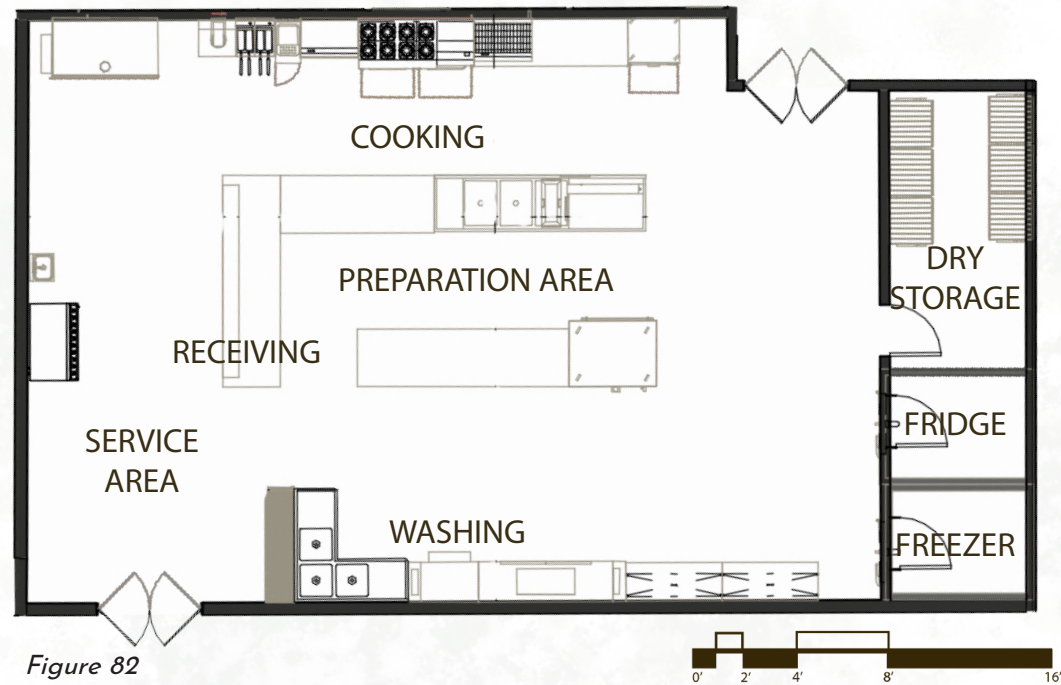


Figure 82

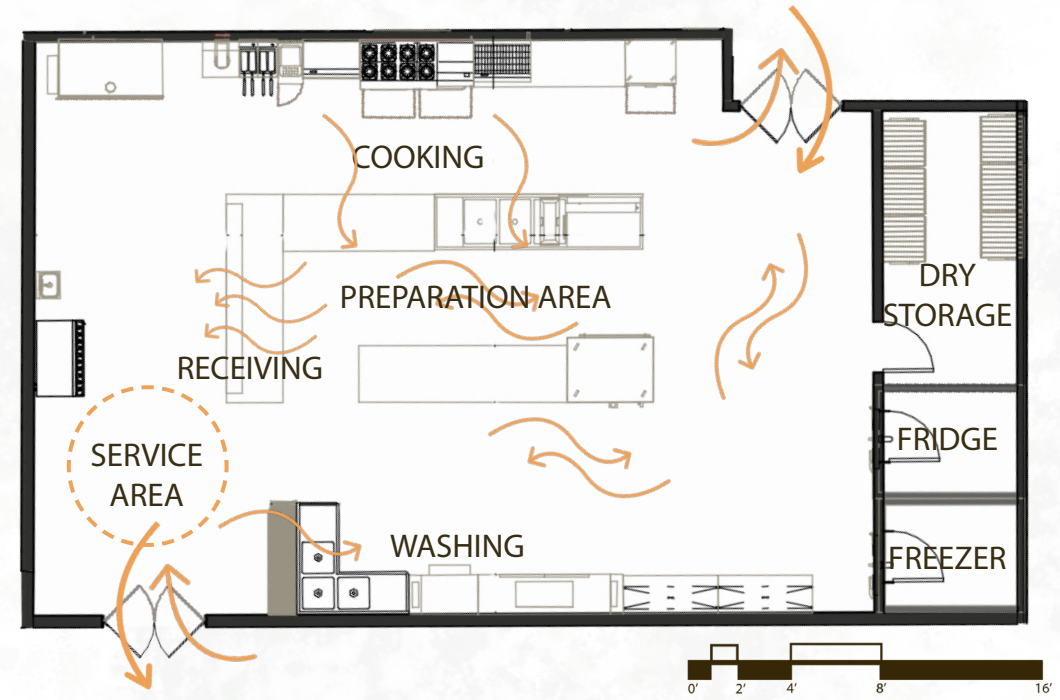


Figure 83

TEACHING KITCHEN

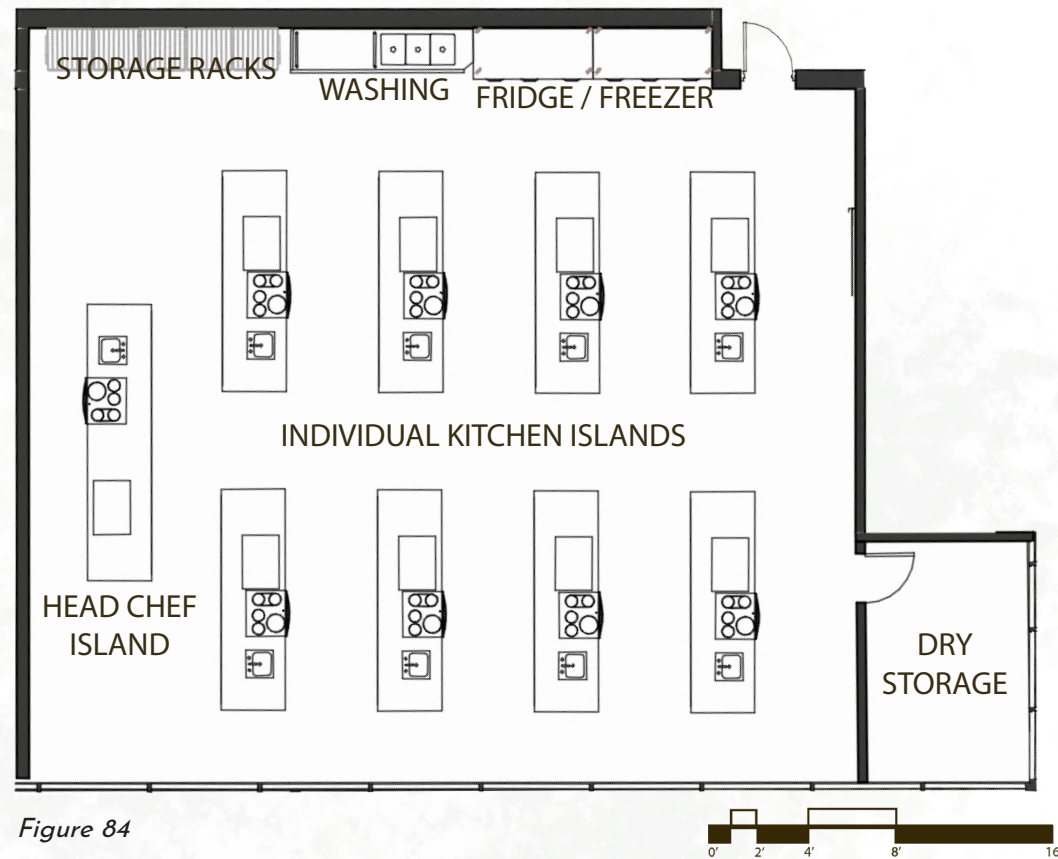


Figure 84

These Teaching Kitchens are focused on small class size interactions between Students and Chefs. These kitchens are specifically layed out for the students to cook with the Chefs through direct sight and reflective mirrors on the ceiling for closer demonstration of the food.

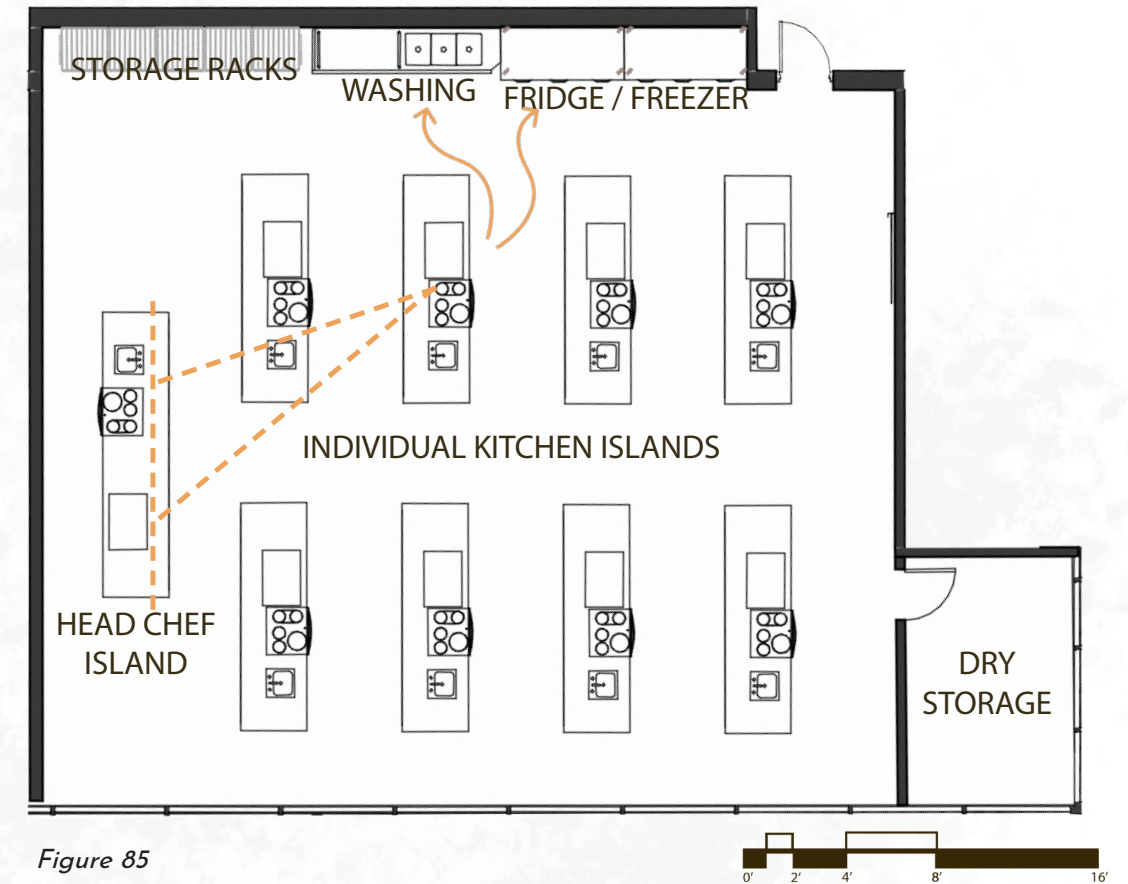


Figure 85

LAB KITCHEN

The Student Lab Kitchens uses a zoned kitchen layout. This provides students with individual kitchen space to take what they learned during lecture into a higher production level than the classic Teaching Kitchen.

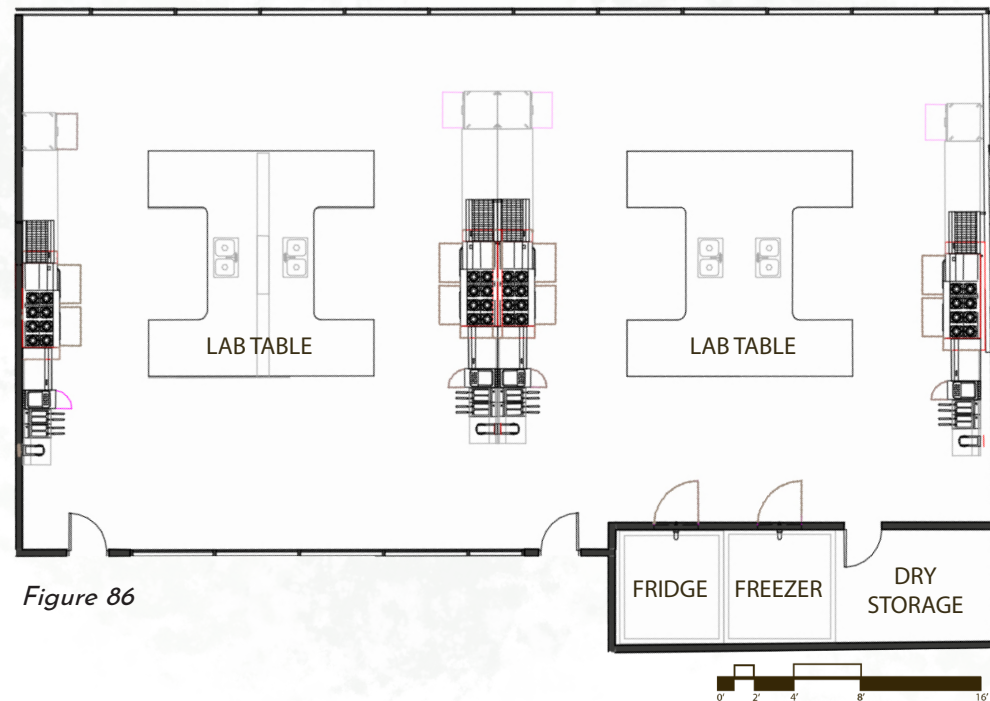


Figure 86

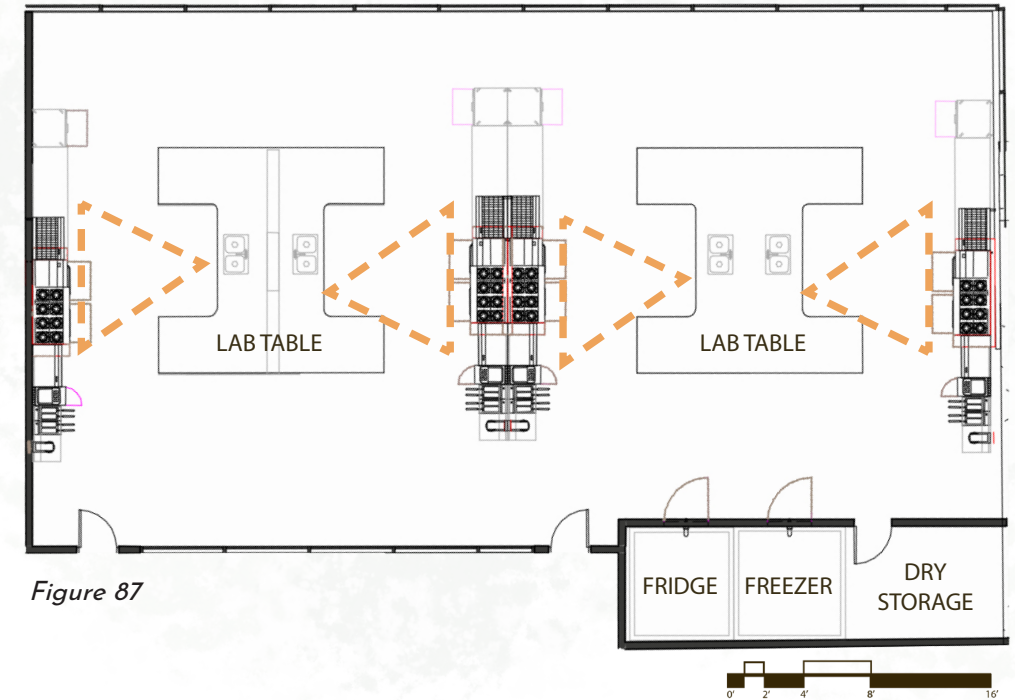


Figure 87

SUSTAINABILITY

ENERGY AND POWER



Both vertical and horizontal **SHADING DEVICES** are incorporated to control solar heat gain and maximize natural cooling.



PHOTOVOLTAIC PANELS located on the roof capture energy use within the school.



Commercial **HEAT EXCHANGE UNITS**, specifically for kitchen use, transfer heat used in kitchens to be returned throughout the building as heat.

LOCATION AND TRANSPORTATION



PARKING FOOTPRINT is lowered to maximize green space across the site. To obtain maximized parking needs, the parking garage nearby can be utilized.



Site is located within walking distance of **DIVERSE USE** area, King Street. As well as located on a major **PUBLIC TRANSIT** stop.



PROGRAMMED COMMUNITY SPACE to promote interaction with the building and students through an outdoor environment to promote human connections through nature.

ENERGY AND POWER



RAINWATER COLLECTION located on the roof lowers the needs of non-potable water for site irrigation.



WATER EFFICIENCY through low flow plumbing fixtures lowers need of non-potable water.



Figure 88

SUSTAINABILITY - SECTION CUT

WATER COLLECTION

- IRRIGATION
- WATER COLLECTION
- WATER PUMP
- FILTRATION SYSTEM

HEAT EXCHANGE

- IRRIGATION
- WATER COLLECTION
- WATER PUMP
- FILTRATION SYSTEM

SOLAR COLLECTION

- PHOTOVOLTAIC PANELS
- ENERGY STORAGE
- ENERGY INVERTER

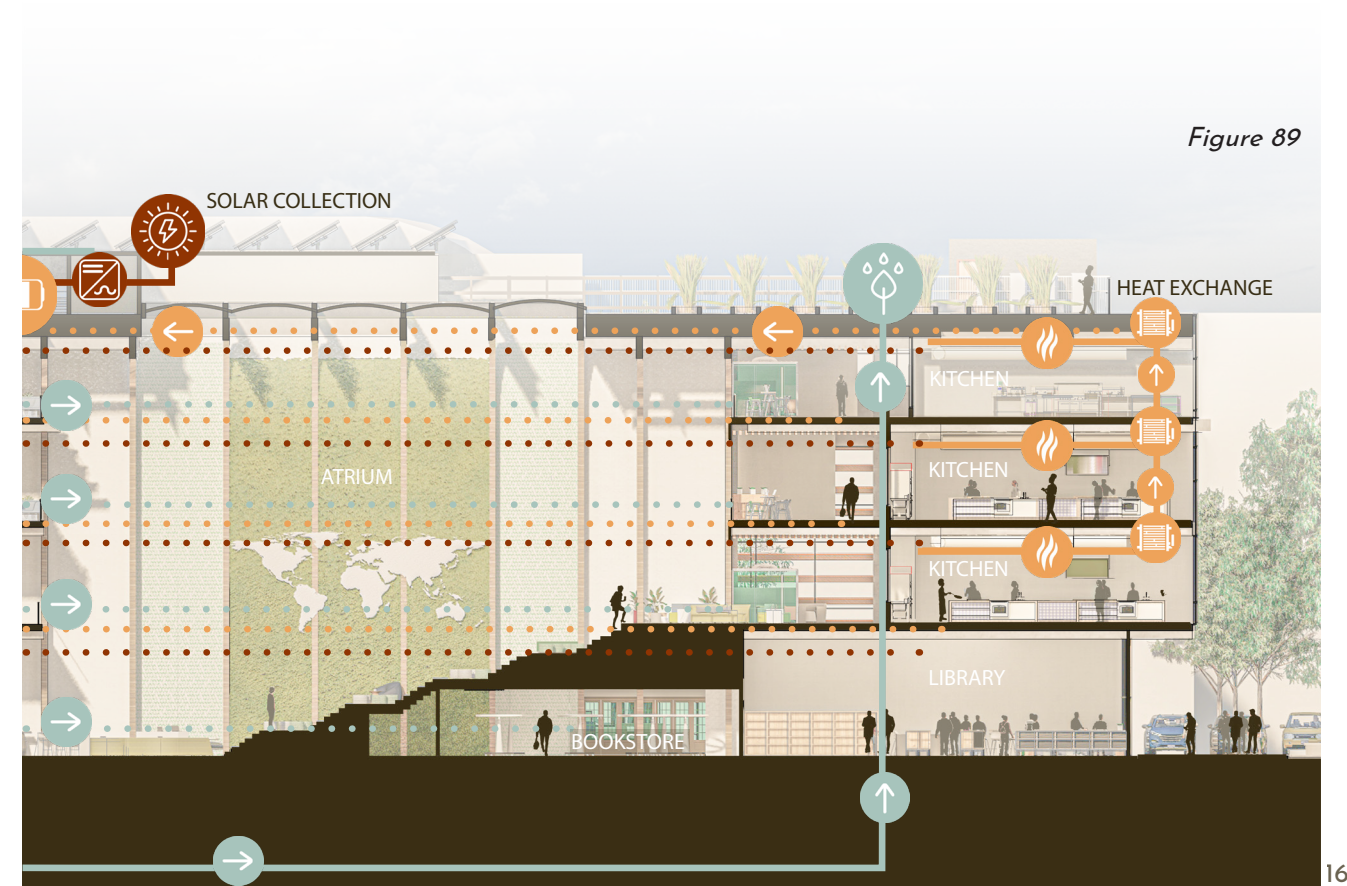
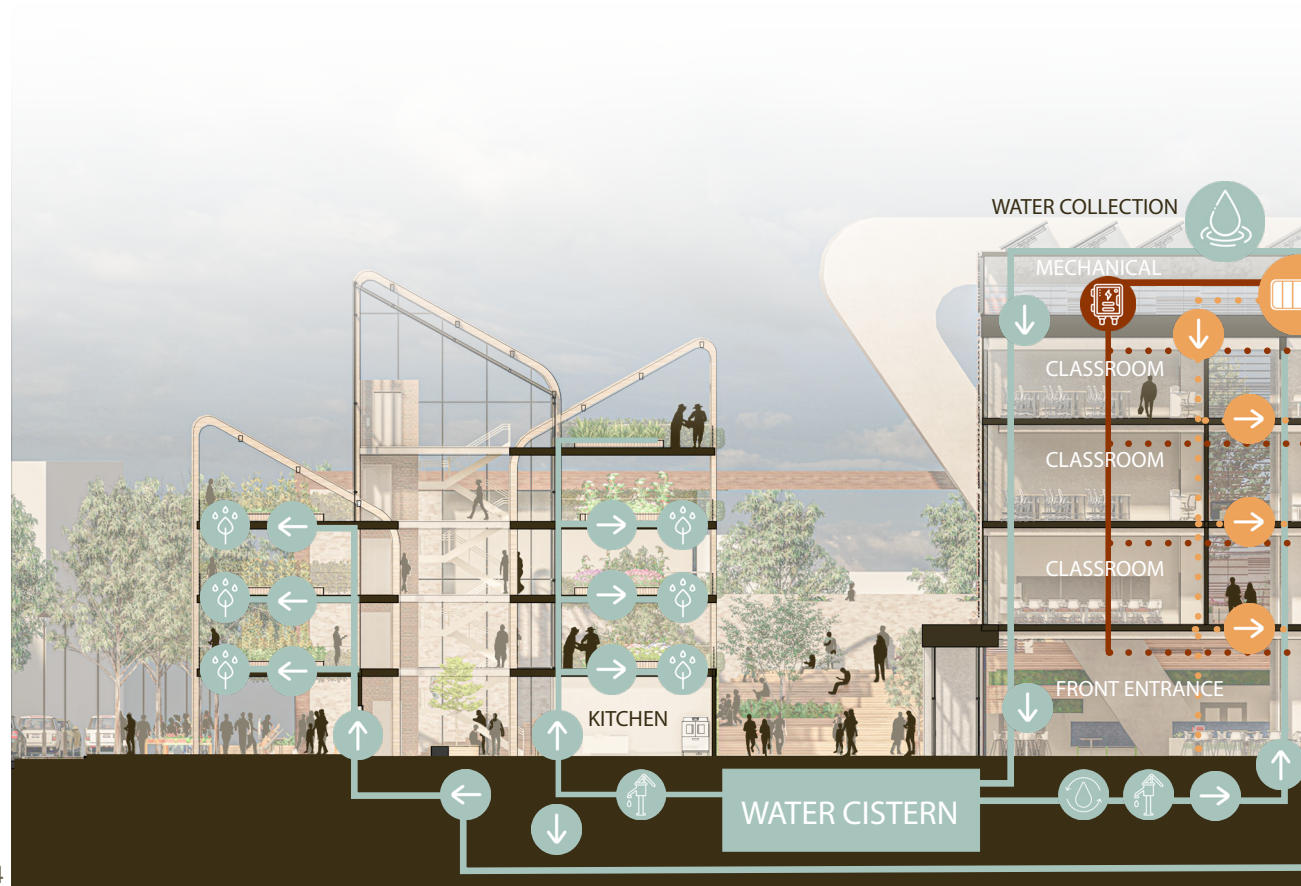


Figure 89



Exterior Kitchen Facade

Figure 90



Main Entrance

Figure 91



Exterior Stair Plaza

Figure 92



The Eatery and Beanery Exterior Plaza

Figure 93



Interior Learning Staircase

Figure 94



Restaurant Interior

Figure 95



Interior Teaching Kitchen

Figure 96

FINAL SPACE PROGRAM

Figure 97

| Main Building | | | |
|------------------------------------|----------|---------------------|-------------|
| Space | Quantity | Square Footage (SF) | Percentage |
| Classrooms | 20 | 19,495 SF | 13.7% |
| Lab Kitchen | 2 | 5,200 SF | 3.7% |
| Teaching Kitchen | 6 | 11,132 SF | 7.8% |
| Demonstration Auditorium | 1 | 4,012 SF | 2.8% |
| Administration Office | 1 | 4,047 SF | 2.8% |
| Bookstore | 1 | 3,514 SF | 2.4% |
| Events Center | 1 | 7,649 SF | 5.4% |
| Restaurant | 1 | 5,597 SF | 4% |
| Bakery | 1 | 4,494 SF | 3.2% |
| Mechanical / Facilities | 1 | 5,002 SF | 3.5% |
| Loading / Delivery | 1 | 2,673 SF | 1.9% |
| Collaboration Spaces / Circulation | 4 | 34,793 SF | 24.4% |
| Library | 1 | 5,736 SF | 4% |
| Rooftop Garden | 1 | 23,433 SF | 16.5% |
| Restrooms | 12 | 3,328 SF | 2.3% |
| Locker Rooms | 3 | 2,253 SF | 1.6% |
| Total | | 142,358 SF | 100% |

Community Vertical Garden

| Space | Quantity | Square Footage (SF) | Percentage |
|----------------------|----------|---------------------|-------------|
| Teaching Kitchen | 1 | 829 SF | 4.3% |
| Restrooms | 2 | 482 SF | 2.5% |
| Garden Plots | 60 | 12,212 SF | 62.8% |
| Circulation / Atrium | 1 | 5,915 SF | 30.4% |
| Total | | 19,438 SF | 100% |

RESPONSE TO THE SITE

This Campus is located on the site to promote and maximize community interaction and public access. Through different plazas and community amenities allows for better pedestrian flow from primary Charleston amenities and roadways.

Drawing people in from King St. towards the public amenities such as the Restaurant, Bakery, and Events Center allows for better public interactions. Access points off the corner of Mary and Meeting Street to the Community Vertical Garden, public bus stops, and plaza located around to the front entrance of the school drawing people in towards the entrance and plaza space. With Open Green Space and plaza connecting along Reid St. connecting the parking lot and student grounds with the secondary entrance. Finally connecting both ends of the campus, a second floor plaza was designed to allow easy flow, access, and connection across the site.

Overall, the site design and building layout maximizes the sites potential by placement of the different programs based off of the existing community around it.

SITE FLOW



Figure 98

RESPONSE TO GOALS

COMMUNITY CONNECTIONS

Creating Connections between the community and the Culinary School has been at the forefront of design. Food and Architecture naturally bring people together and have been since the beginning of time. So being able to cultivate this connection more with spaces designed for the community was a must. The Vertical Garden, Plaza, Restaurant, Bakery, and Events Center are placed specifically for these reasons. Within the Vertical Garden the community can have their own plots of garden, interact with farmers markets, or take a cooking class. Restaurant, Bakery, and Events Center are placed to create direct connections to the Charleston School of Law, located across the street, through an existing walking path over old train rails. It opens up to the nearest connecting point with King Street. With open Plaza space that connects across the site and allows for further interaction of people and this thesis project. All these design elements meet the goal of Community Connections through these different integrations.



Figure 99

CULTURAL INTEGRATION

Food and Architecture are brought together and expressed through cultural aspects found between the two. Every culture around the world has their own cultures and food practice that can be expressed and shared with others through the built environment and human exchanges. Incorporating these connections into the school will increase human connections through the understanding of other cultures. Charleston's deep Cultural ties to African American Heritage and history allows for the school to act as the catalyst to teach and learn about African American Culture through the teaching of food and emphasis of African Cuisine within the Restaurant on Campus. Ultimately through this integration, the Culture of Charleston is showcased and taught to everyone that interacts with the campus.



Figure 100

SUSTAINABILITY

The correlations between Food and Architecture needs to demonstrate the collaboration necessary to facilitate change to help counter-act climate change, food waste, and over-production of resources around the world. These issues between the two fields are currently addressing sustainability as separate entities, but these very connected fields need to work together to address them. By incorporating Sustainable Building practices through LEED Design Criteria, Water Collection, and Kitchen Heat Exchange allows for the building to be the basis of a more sustainable education through rooftop gardens, apiary, and small bird care. This allows for the education taught within the school to be well-rounded and incorporate food production at a holistic level. All the sustainable practices utilized throughout the school allows architecture and food to create a space that promotes a better future for all.



Figure 101

PERSONAL GROWTH

The Culinary Schools Building Program allows for a more holistic approach to learning Culinary Arts and related fields. Transparency between the interior atrium, classrooms, and exterior allows for information to be absorbed at all areas within the school, including collaboration stations located around the building in varying forms to prosper individual educational learning. The design of interior classrooms and peer interactions all promote an environment where students current knowledge is stretched and expanded upon to help not only their future but the people they interact with as well.



Figure 102

RESPONSE TO TYPOLOGICAL RESEARCH

Throughout the design process, design elements were changed and worked to respond to the research made. This thesis aims to show and strengthen the art of Architecture and Food by allowing for a deeper dive into how they can maximize their similarities for the betterment of human connections and through these design elements allow for this to happen.

Commercial Kitchen heat that is produced in Culinary Schools produces an tremendously high amount of heat and CO2 emissions. Through research it was found that maximizing each teaching kitchen and location of them was important. By stacking the kitchens along the exterior of the building and the implementation of heat exchange units allows for this energy to be re-purposed back into the building.

Food Globalization has led to more sustainable food practice, ultimately needing for a more holistic approach to how food is grown, prepared, and distributed. Through the utilization of vertical gardening, apiary's, roof top gardens, and small game farming approaches this need.

Overall, the building programing and specific design elements allows for this new school to address the research made and expand on areas that need improvement. The design acts as a catalyst of how all of the main building facets can come together to create a space that utilizes and improves on what is currently happening.

CRITIQUE OF RESEARCH METHODS

Through further investigation and thought into the research of this thesis project there a few specific areas that I wish further expansion happened. Even though the research was plentiful and very useful to the typology, I wish I expanded on more on the connections between food and architecture, sustainability practices, and further site context.

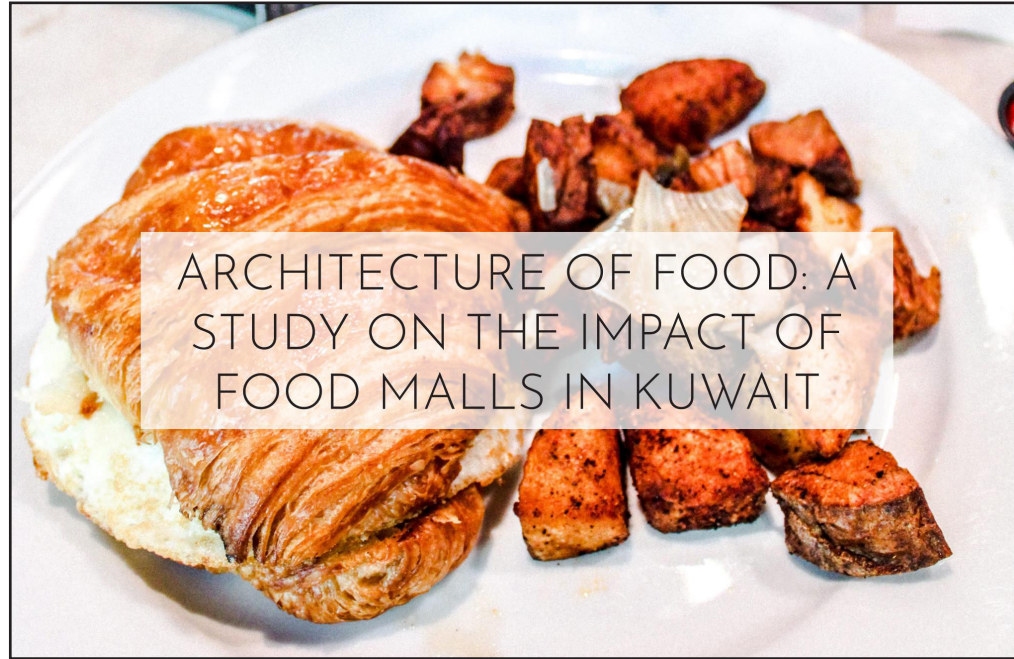
Increased research into more passive/active sustainable practices would have allowed for a more in depth look on how exactly the building would have been impacted the environment. As well as increase the site context around the building to show the deep impact and need for this typology within the city of Charleston.

Overall, I believe that the research done for this project was important and very useful for the completion of this thesis. It allowed for those connections between architecture and food to be proved and backed up through the design. However, for future expansion on this project can utilize more readings, building impact studies, and site context to further its completion.



Figure 103





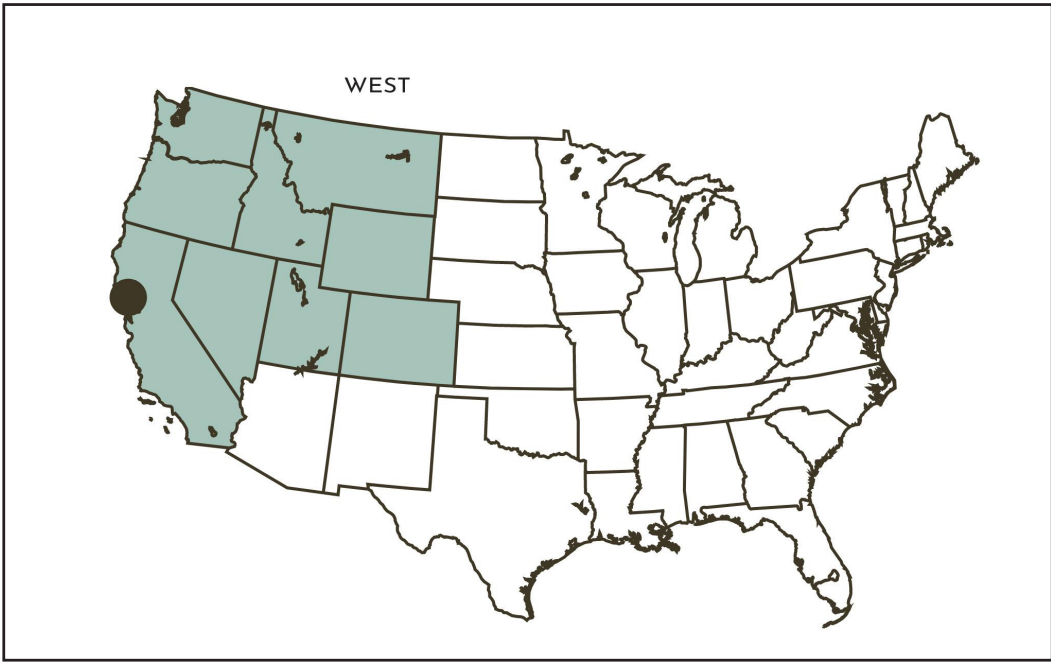
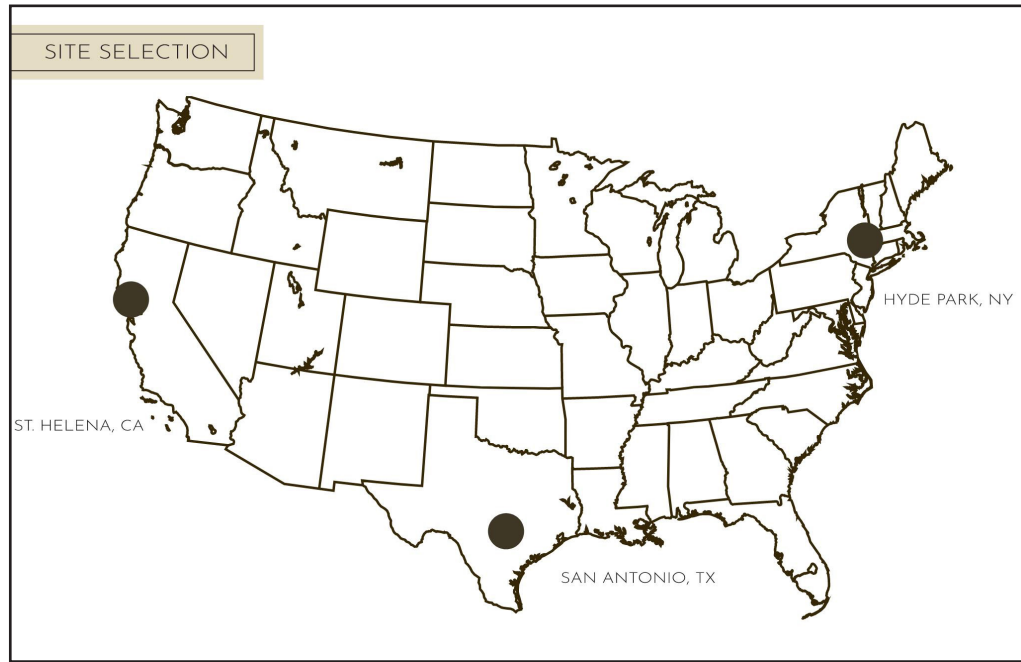


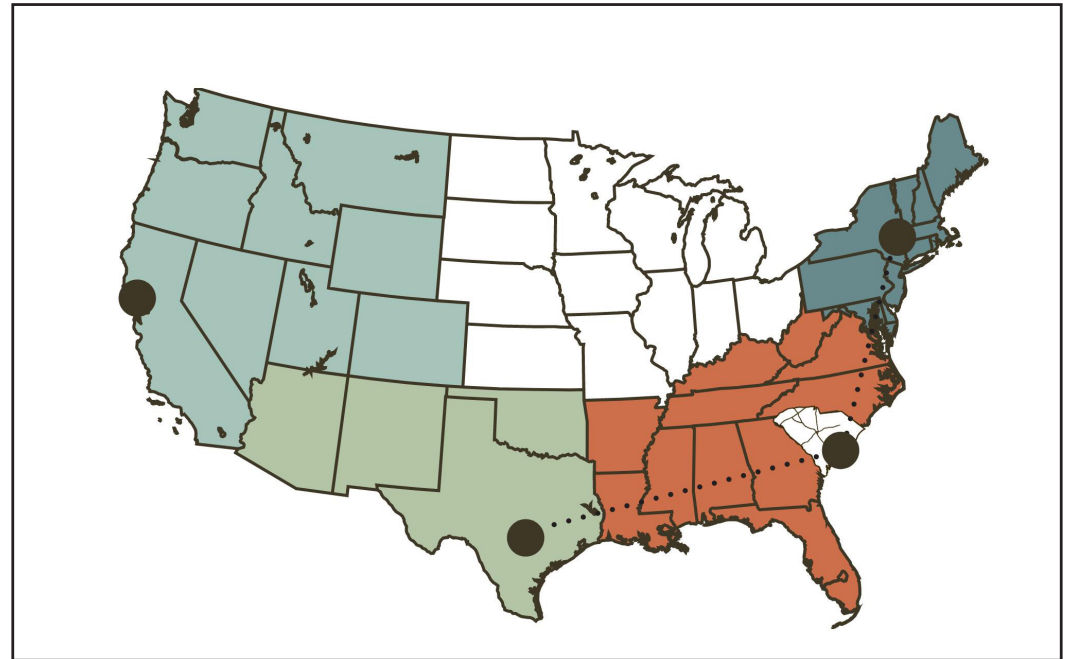
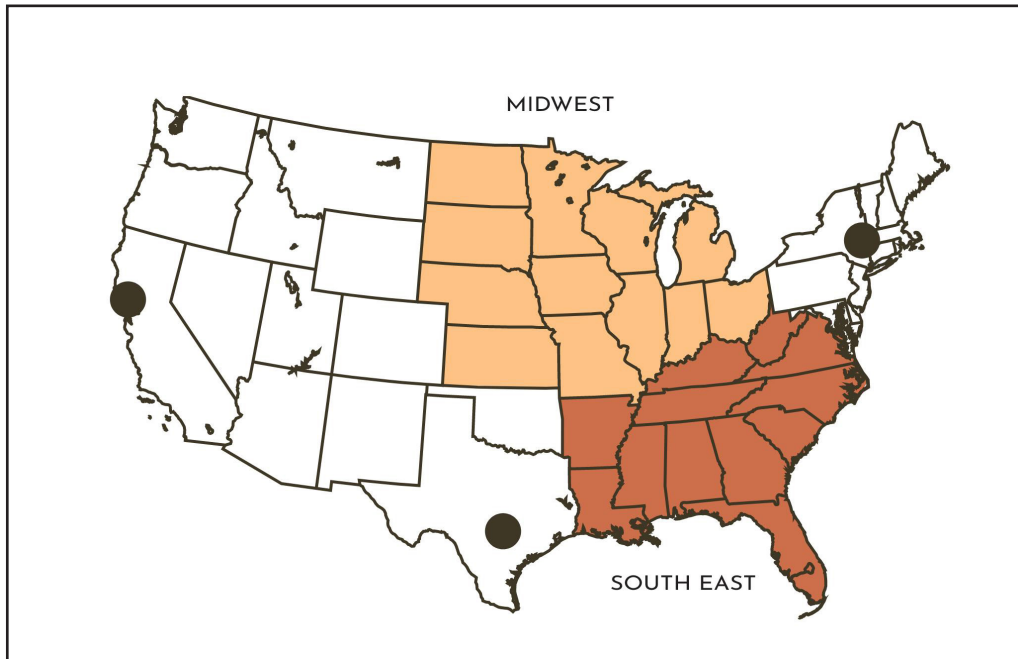
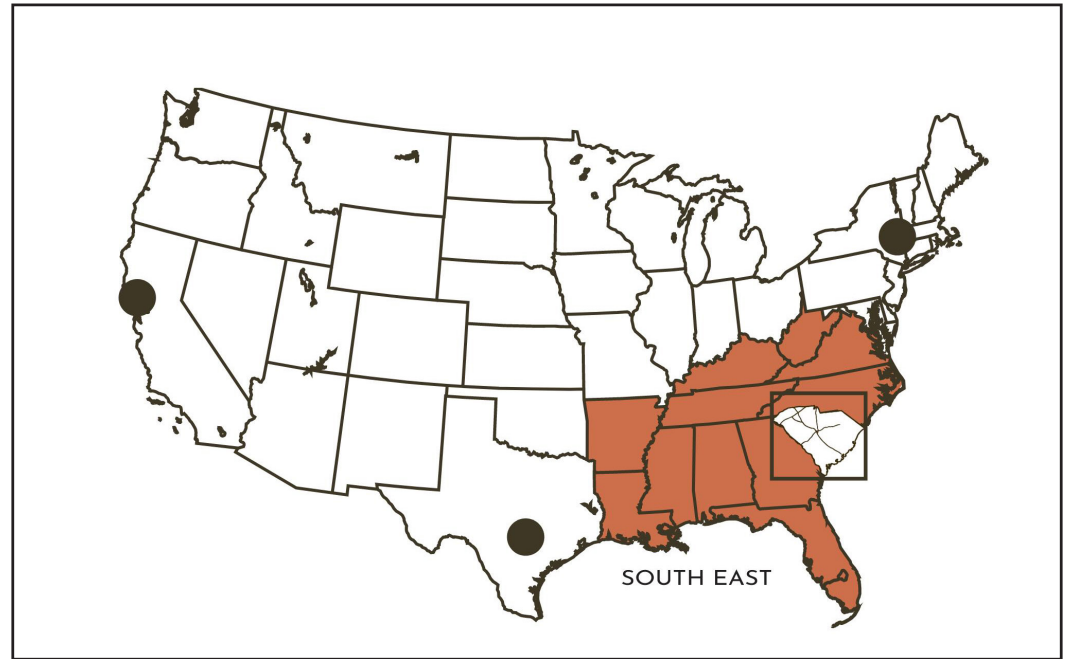
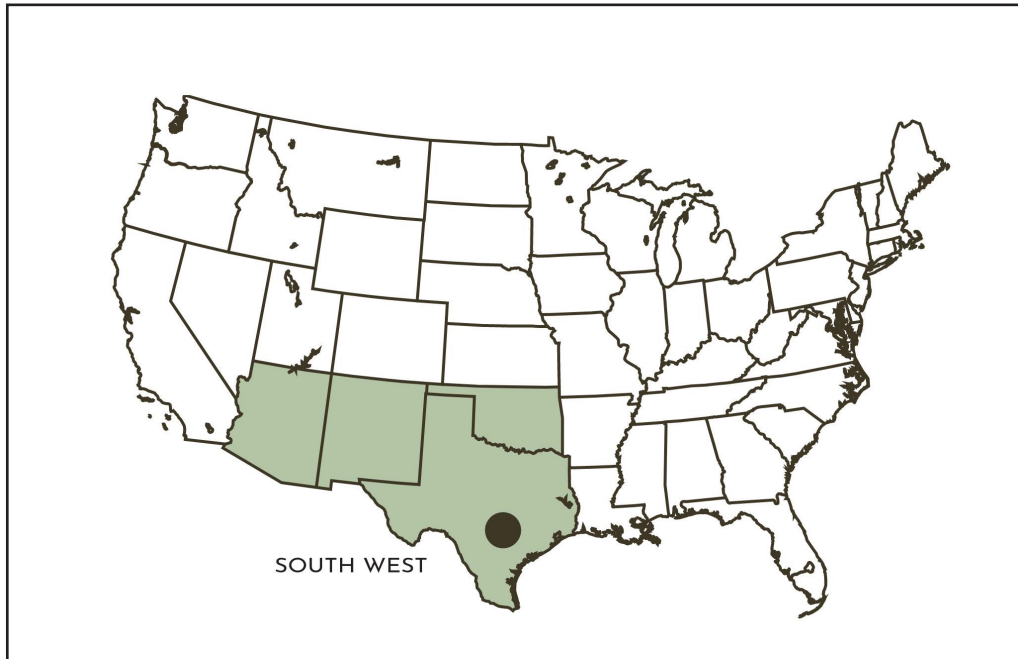
THROUGH SUSTAINABILITY, COMMUNITY CONNECTIONS, AND CULTURAL INTEGRATION THE ART OF ARCHITECTURE AND FOOD CAN BE USED TO CREATE HUMAN CONNECTIONS.



GOALS









The Lunch Box
Main Educational building promoting Cultural Integration and Personal Growth through the classroom

Community Vertical Farm
Garden plots, cooking classes, and farmers market promoting community connections with the campus on a day to day basis.

CAMPUS PROGRAM

The Lunch Box
Main Educational building promoting Cultural Integration and Personal Growth through the classroom

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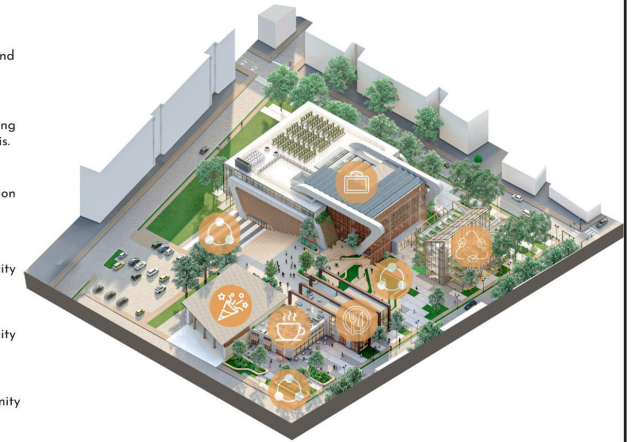
Student run and opened to the public promoting community connections and personal growth.

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Student run and opened to the public promoting community connection, cultural integration, and personal growth.

Events Center

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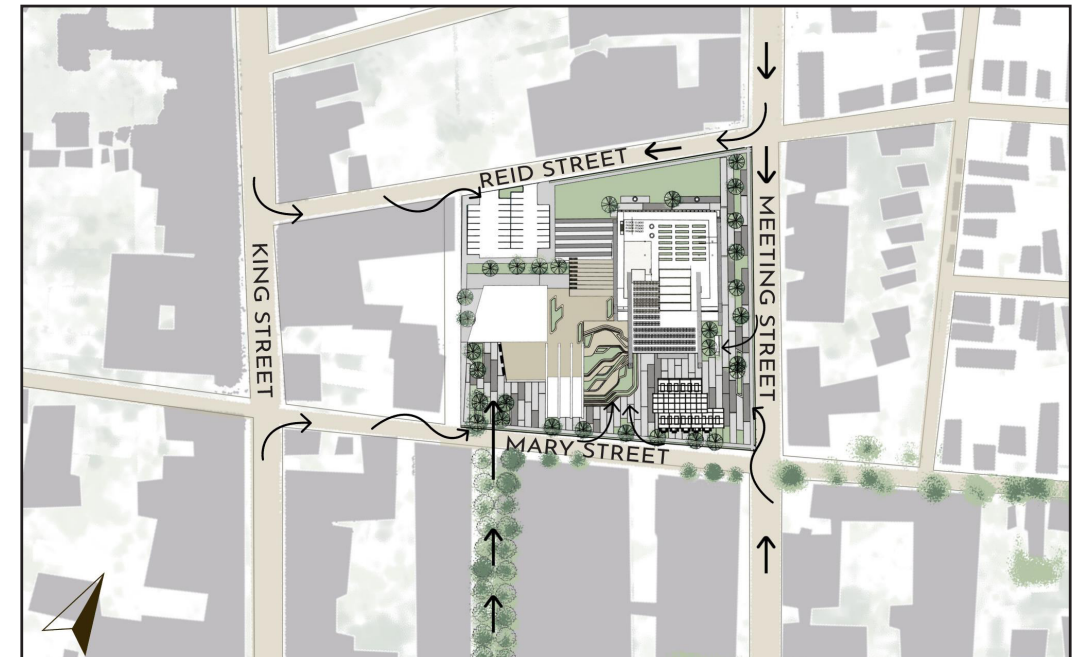
Designed Plaza space for community and student interaction across the site.

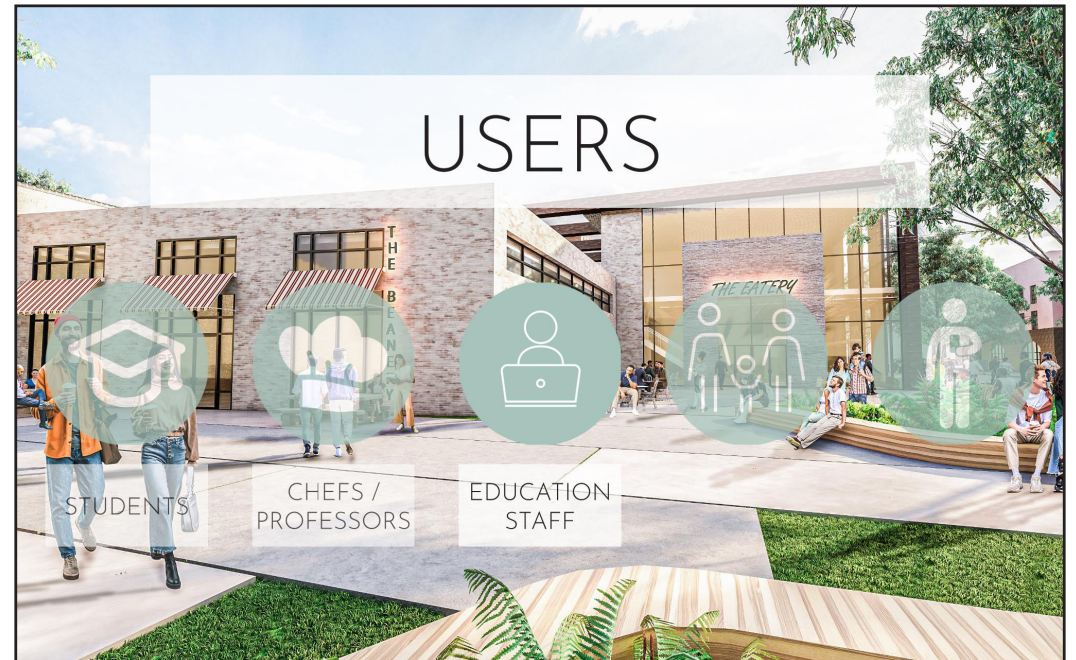
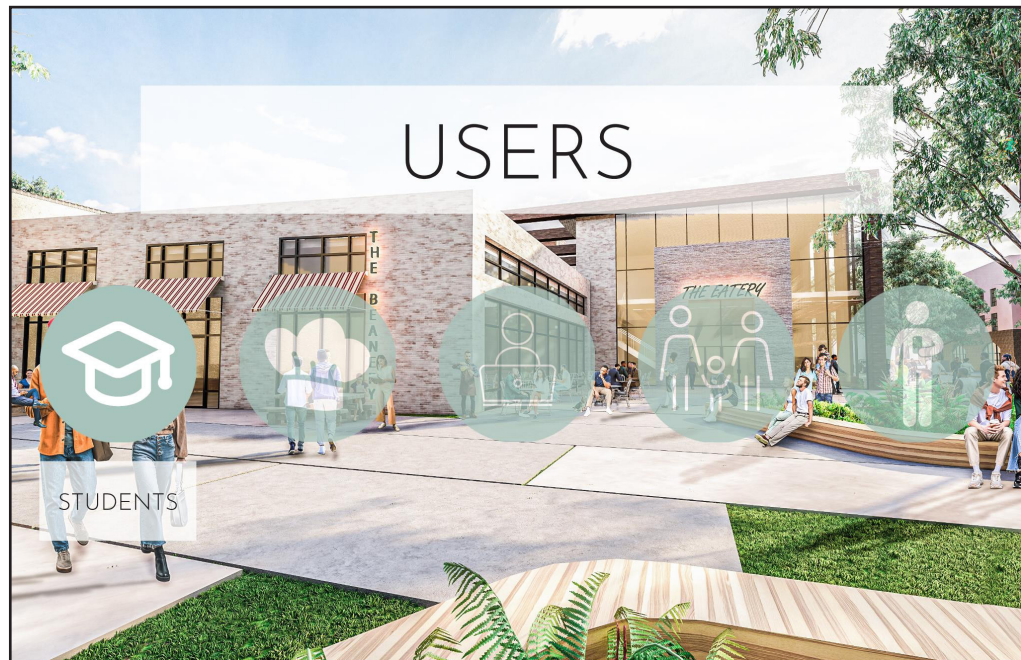
Bakery

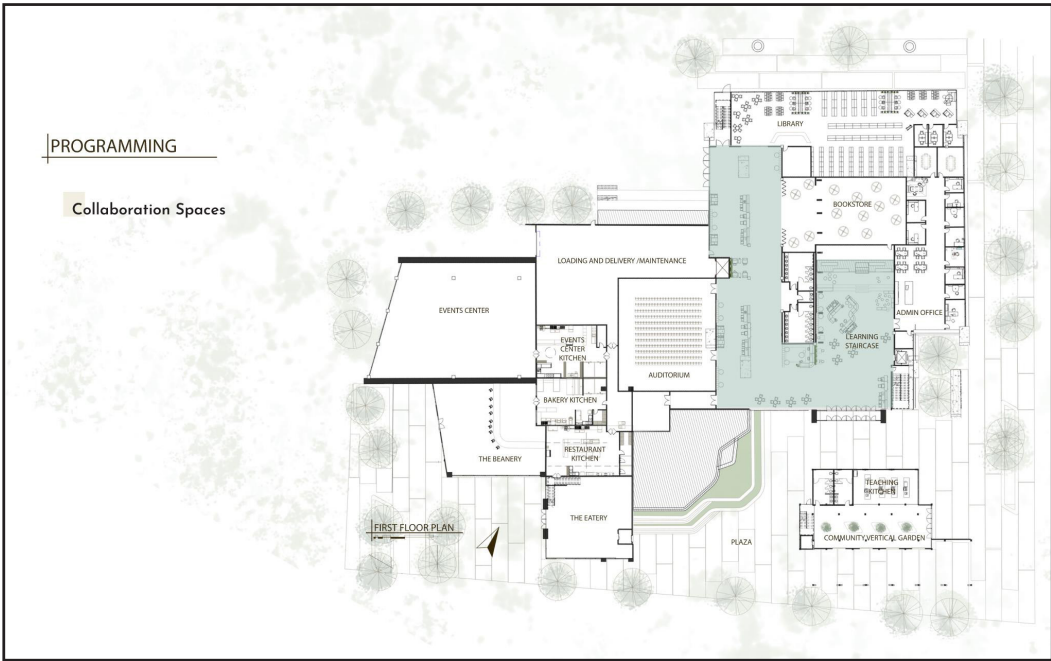
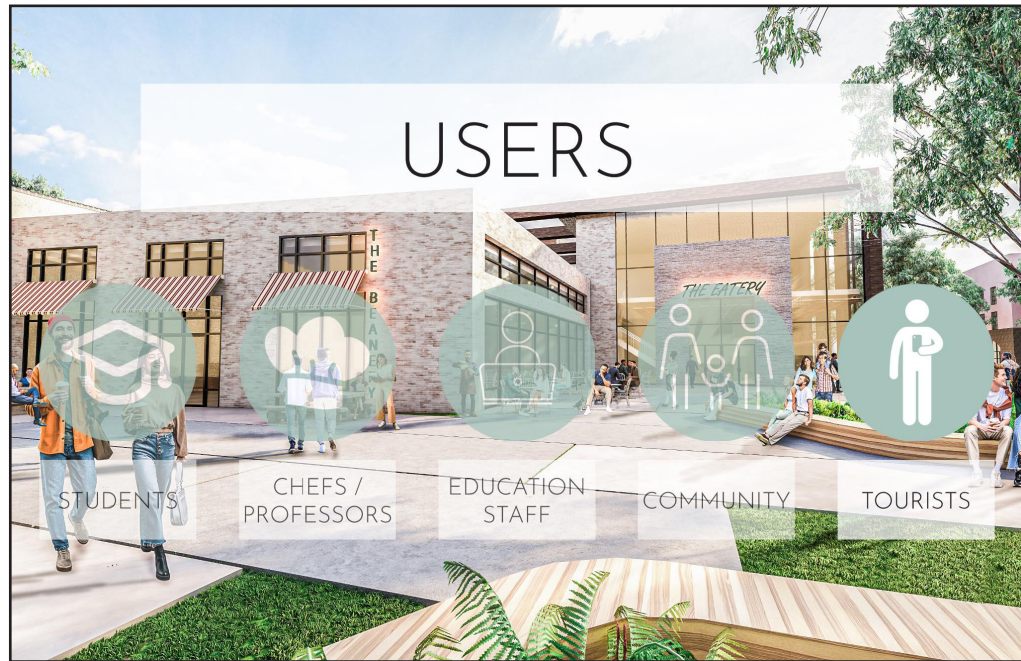
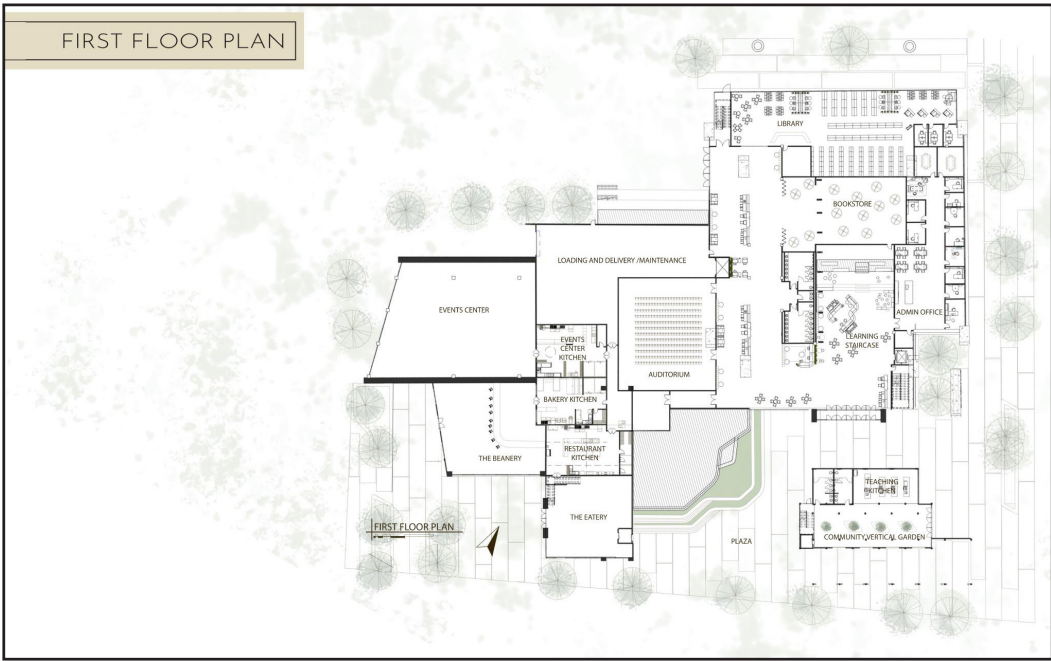
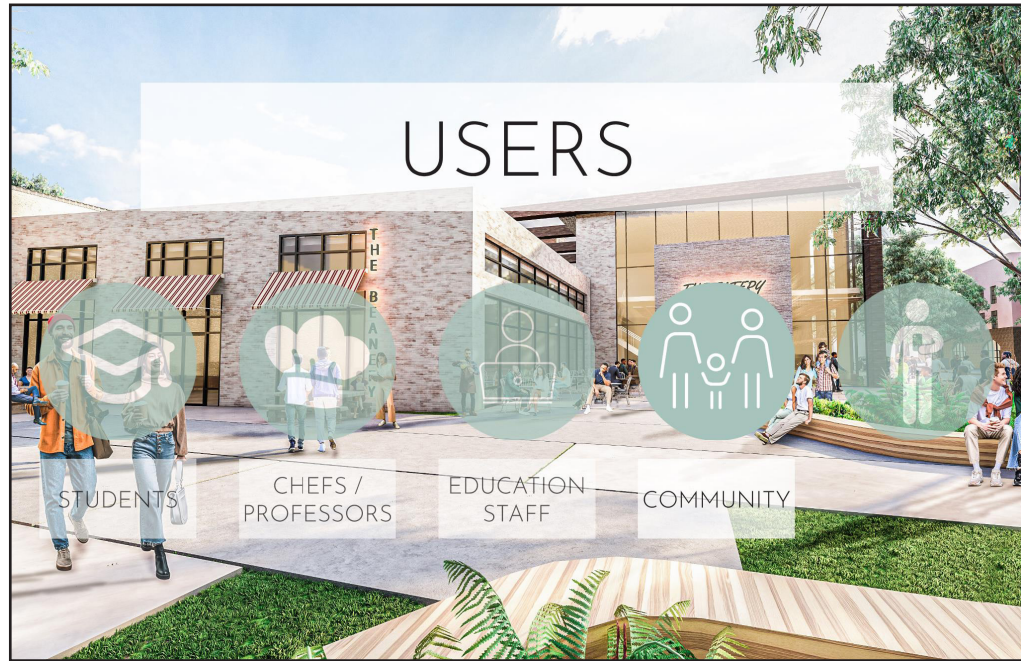
Student run and opened to the public promoting community connections and personal growth.

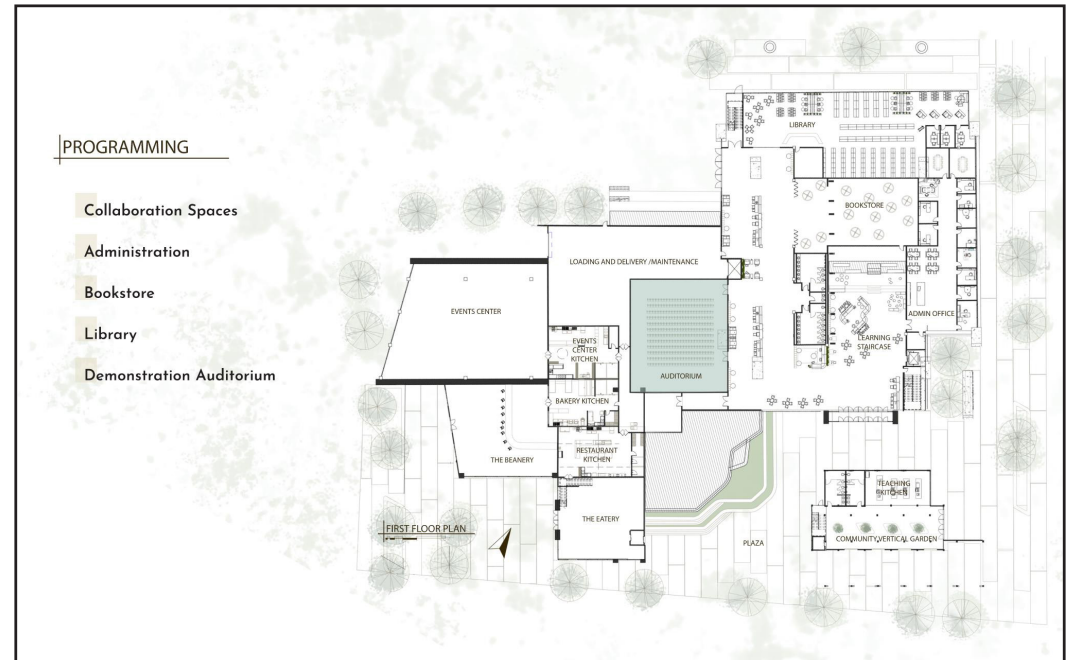
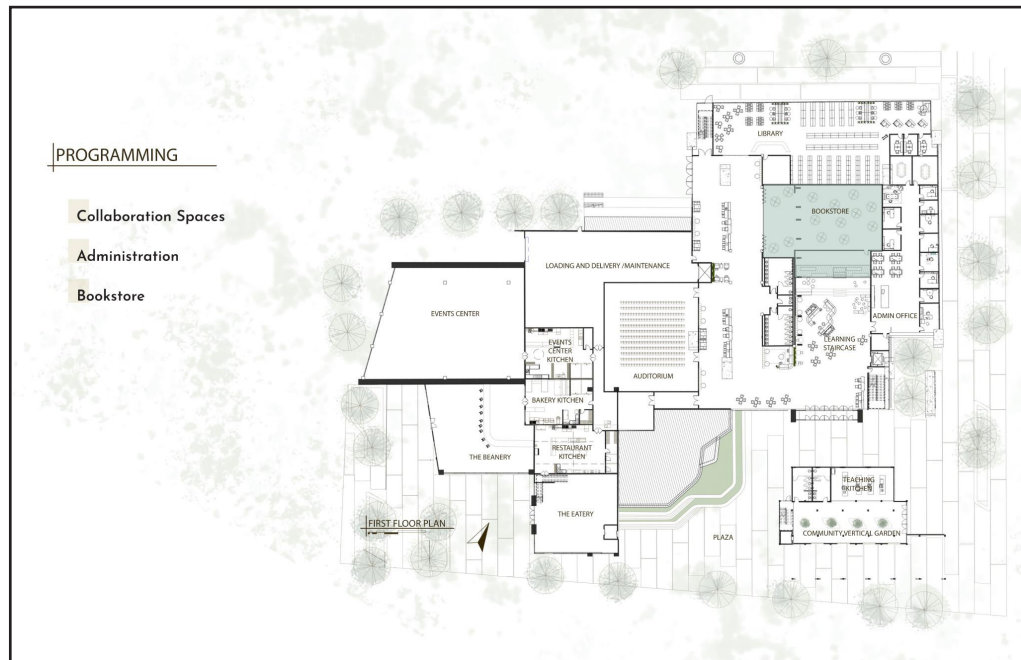
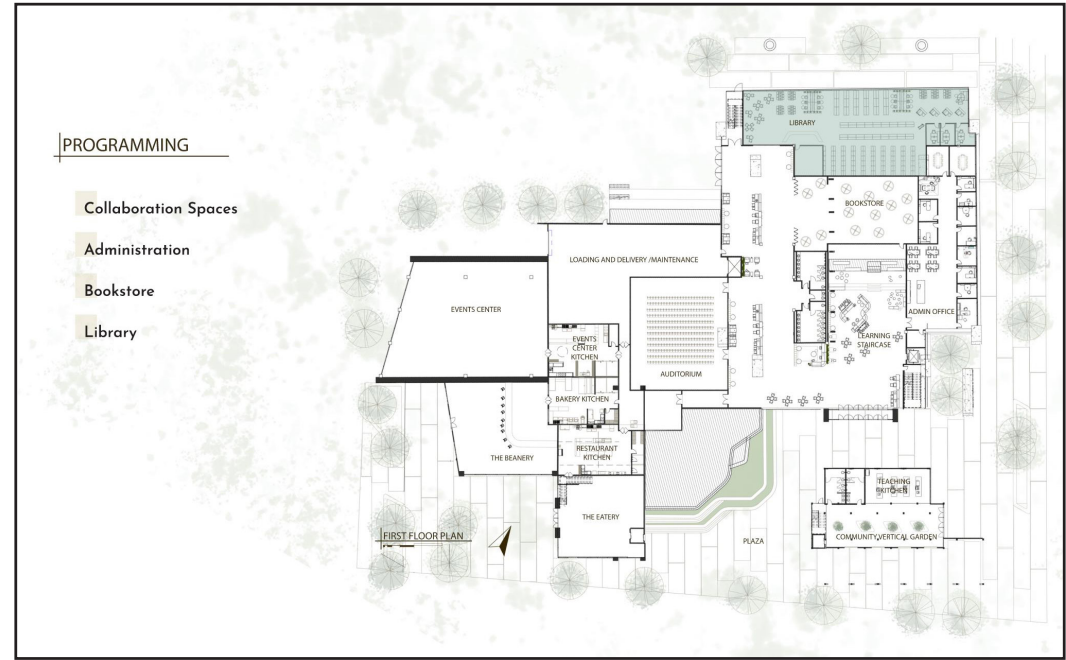
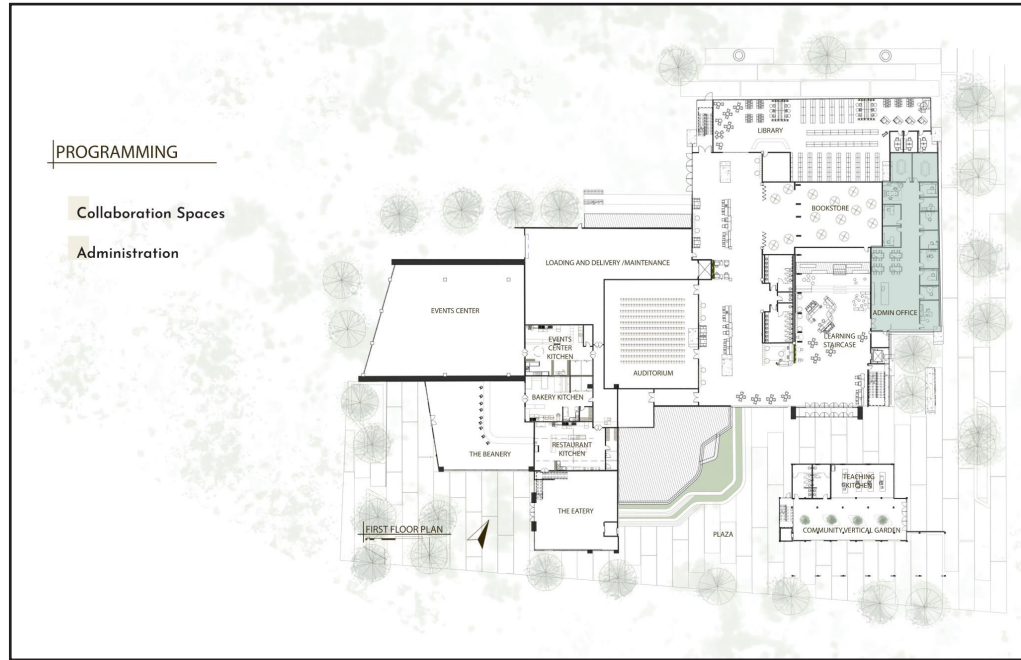
Restaurant

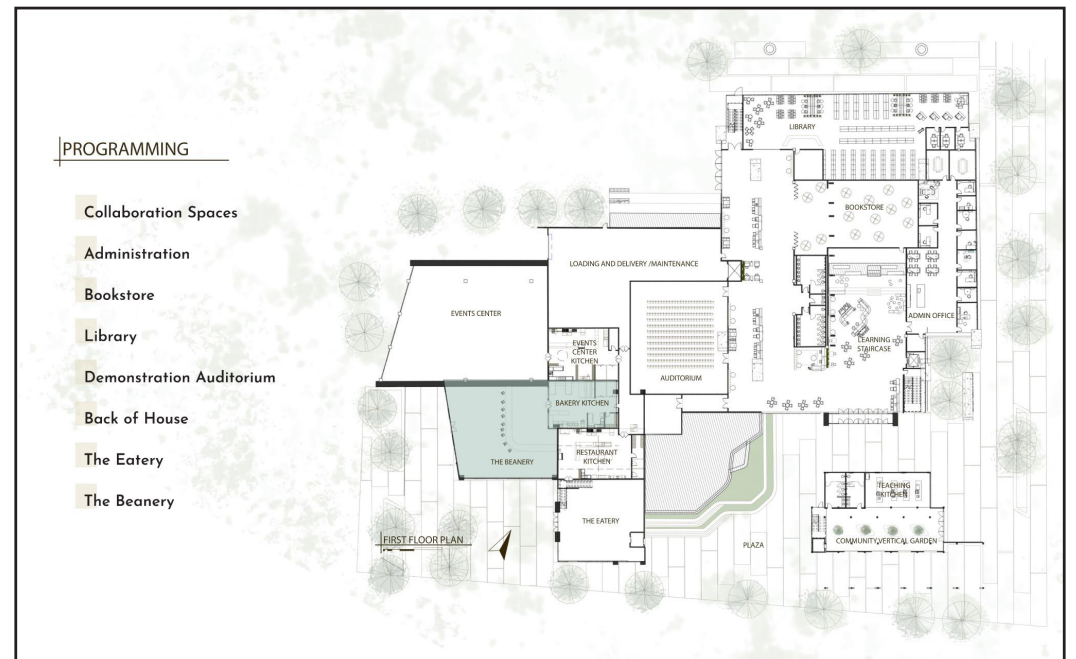
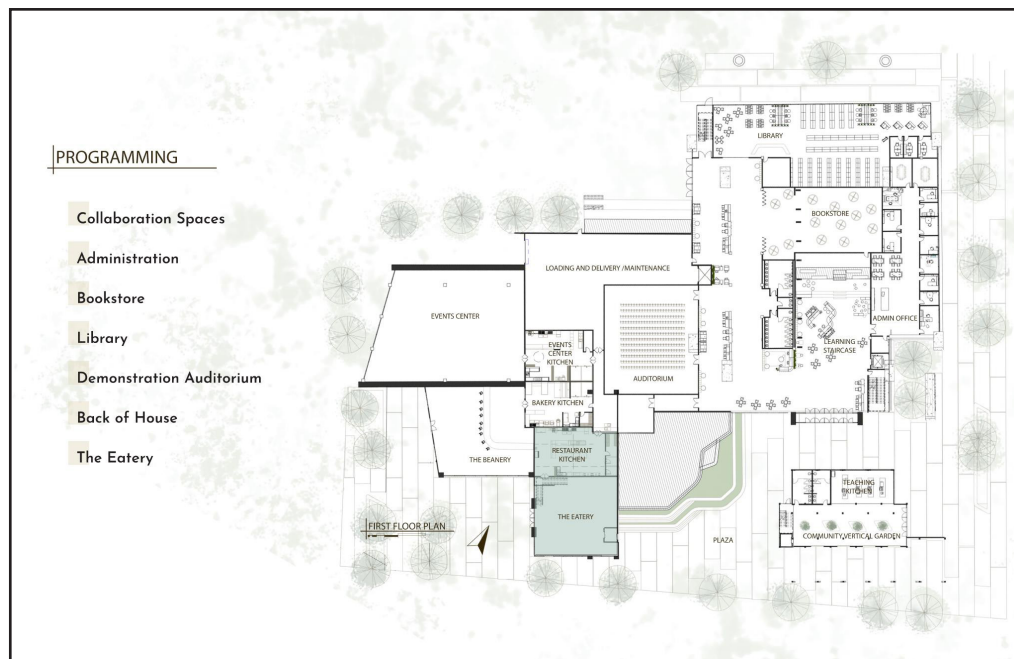
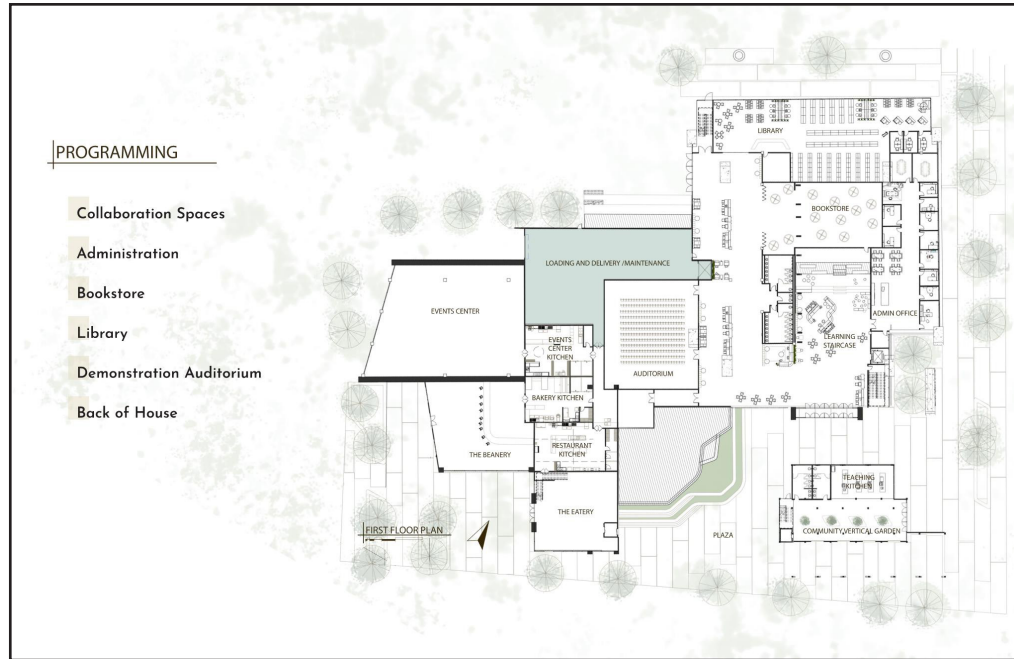
Student run and opened to the public promoting community connection, cultural integration, and personal growth.

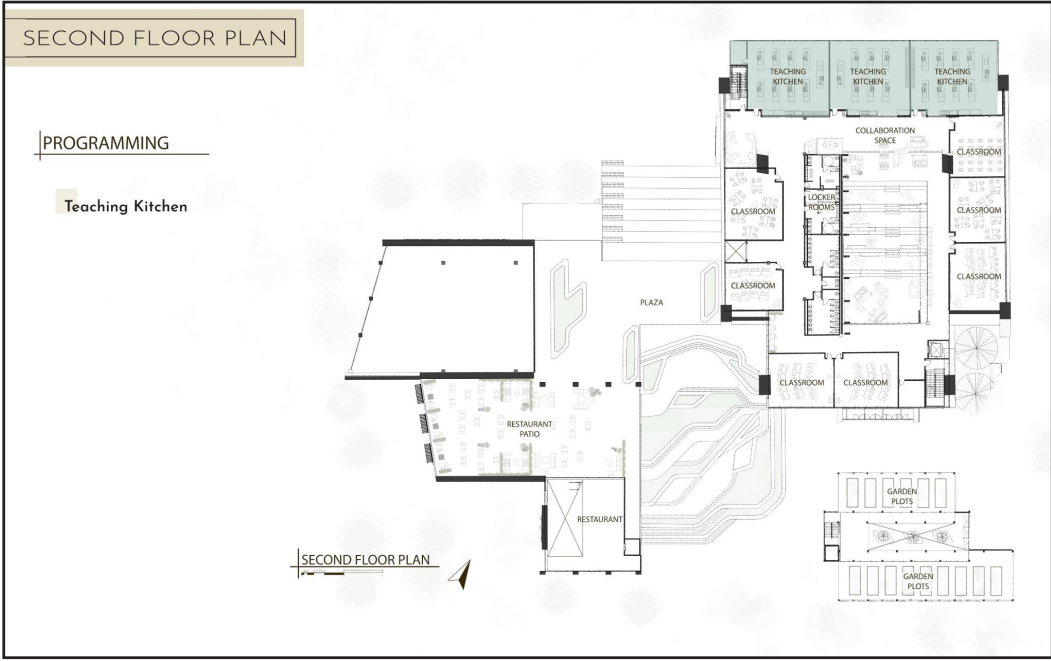
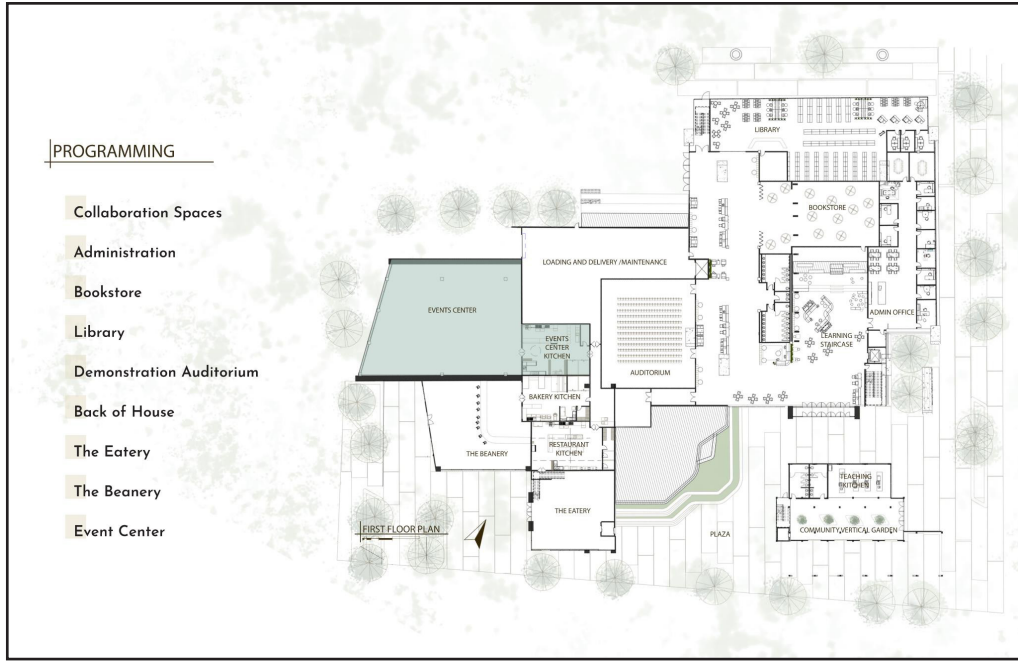
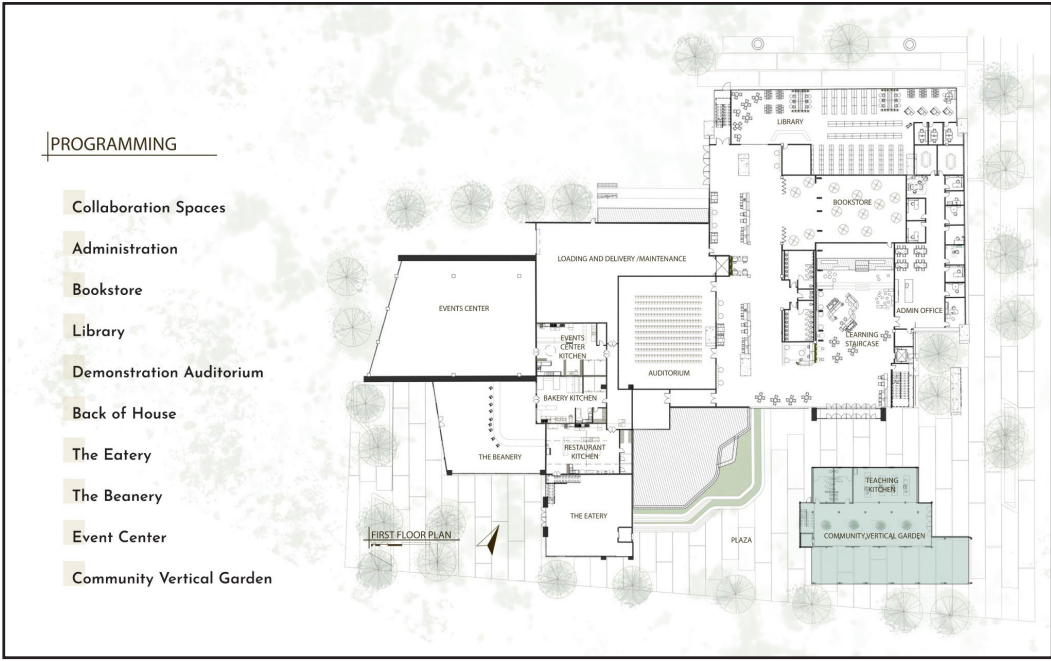


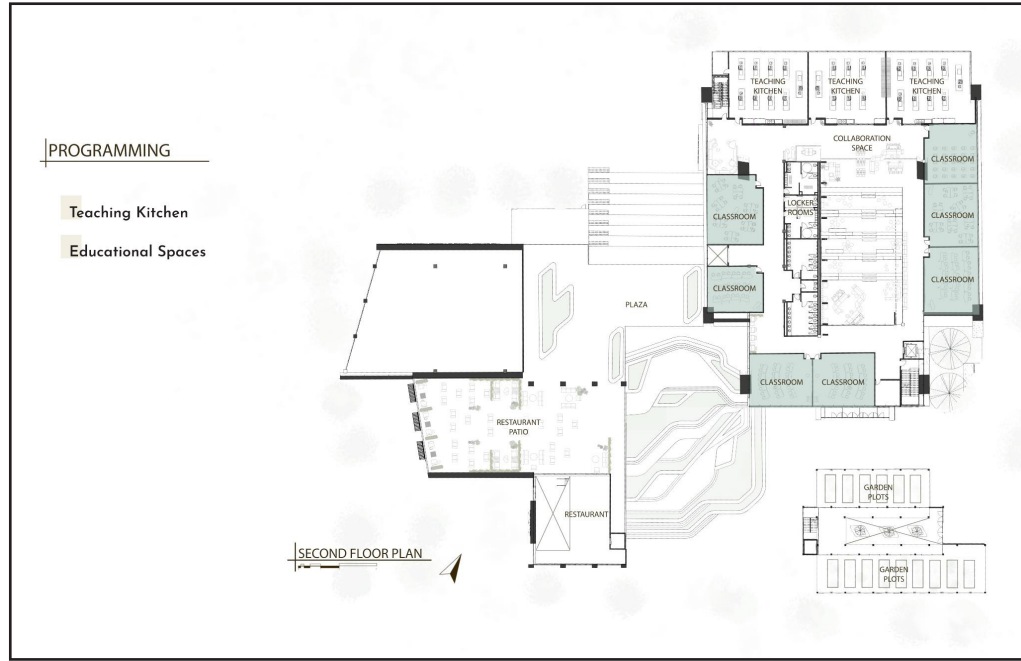
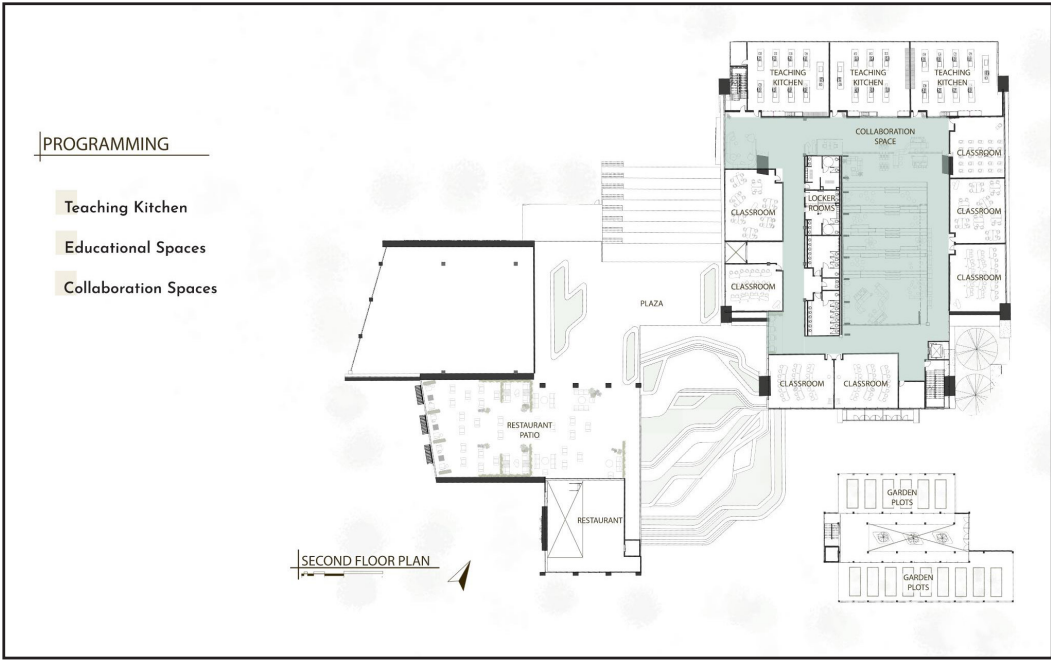


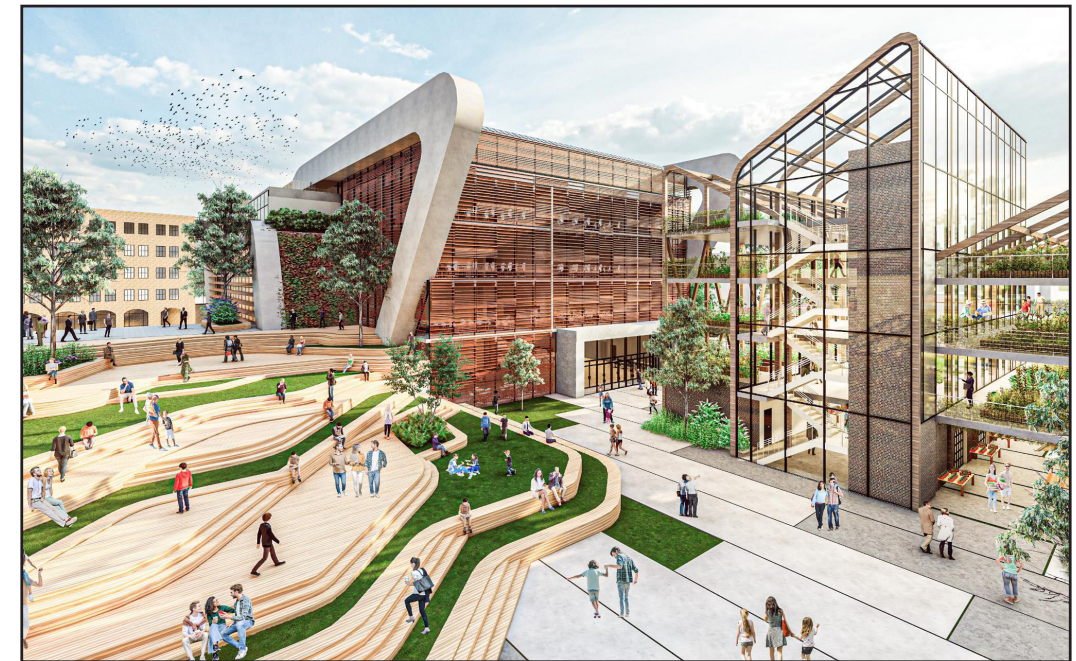
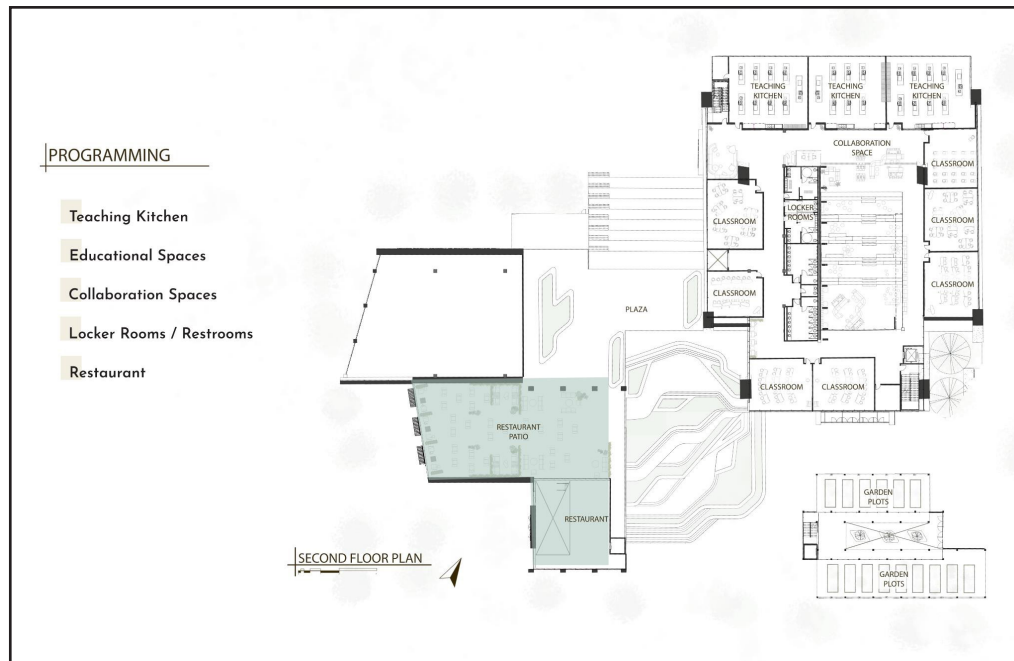
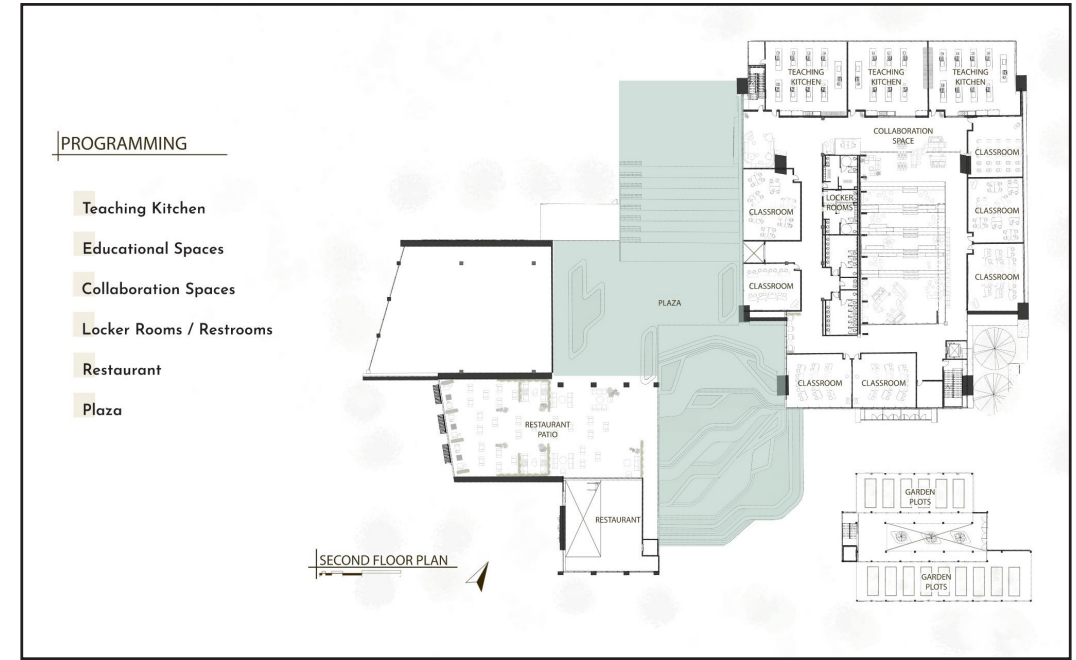
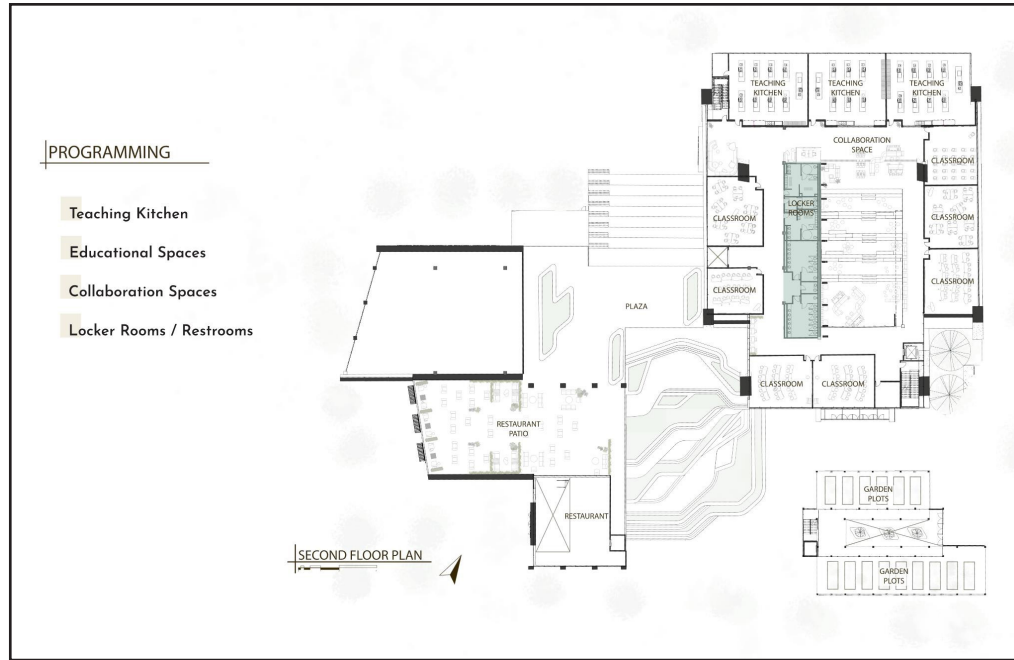


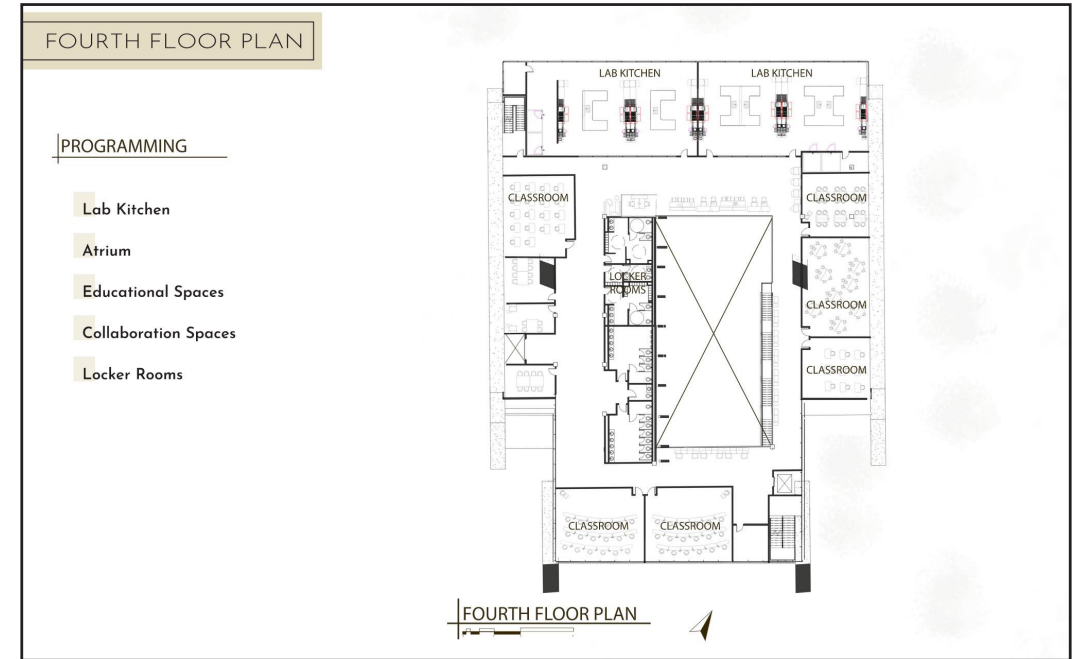
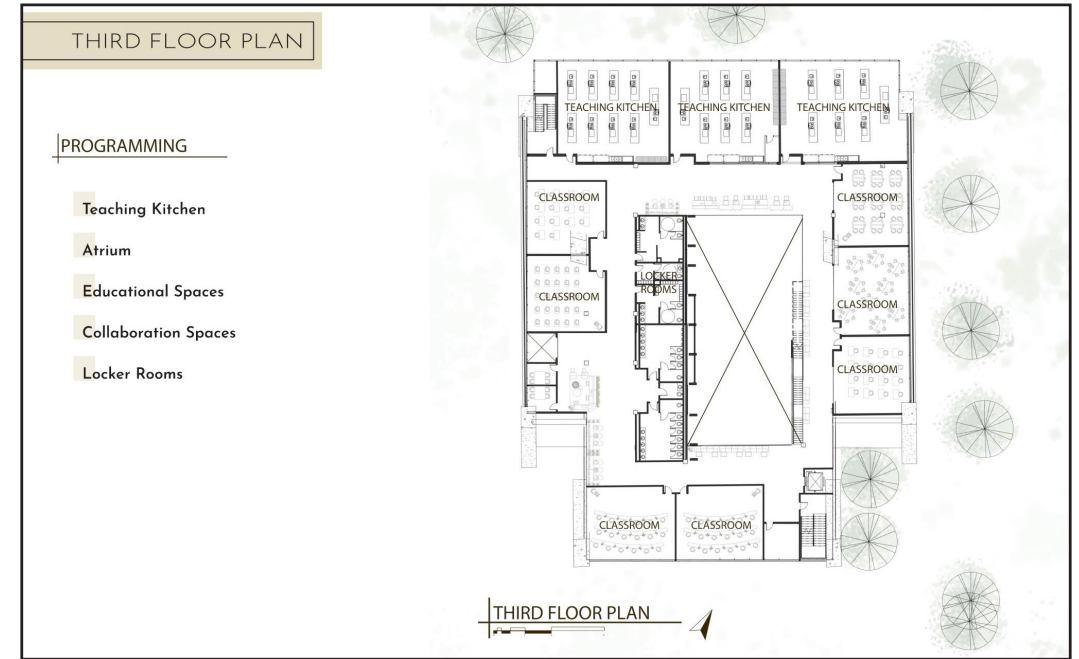
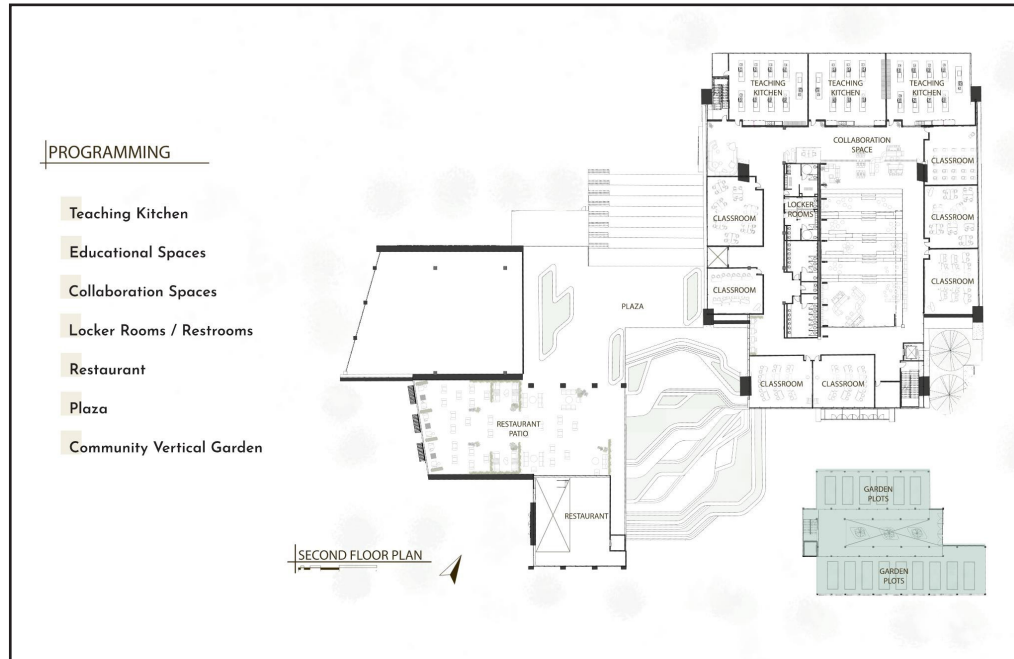


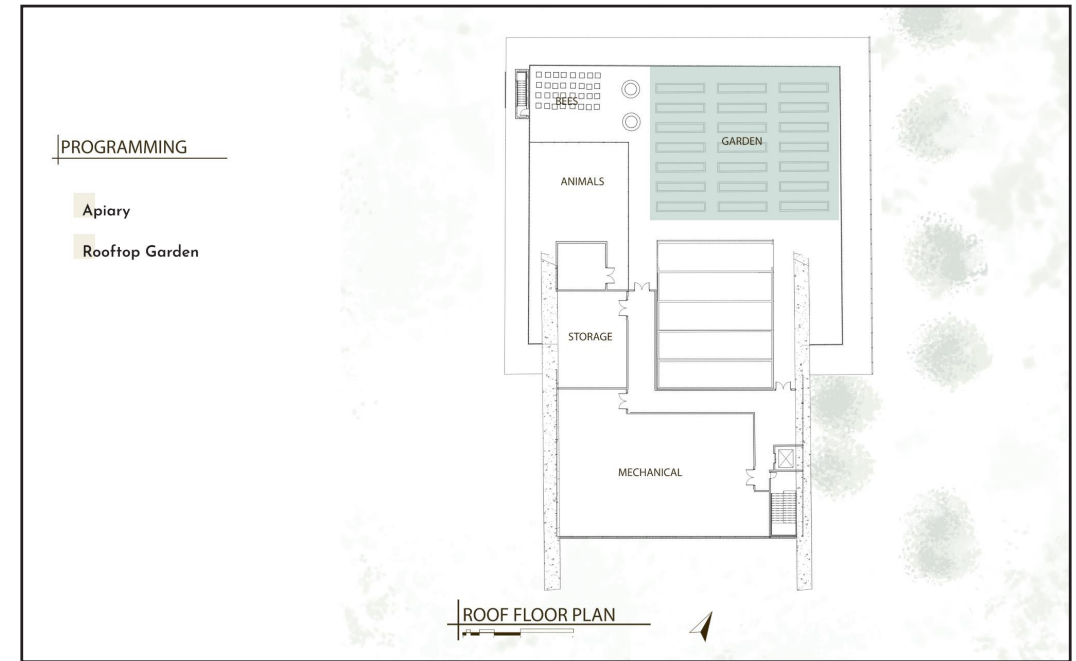
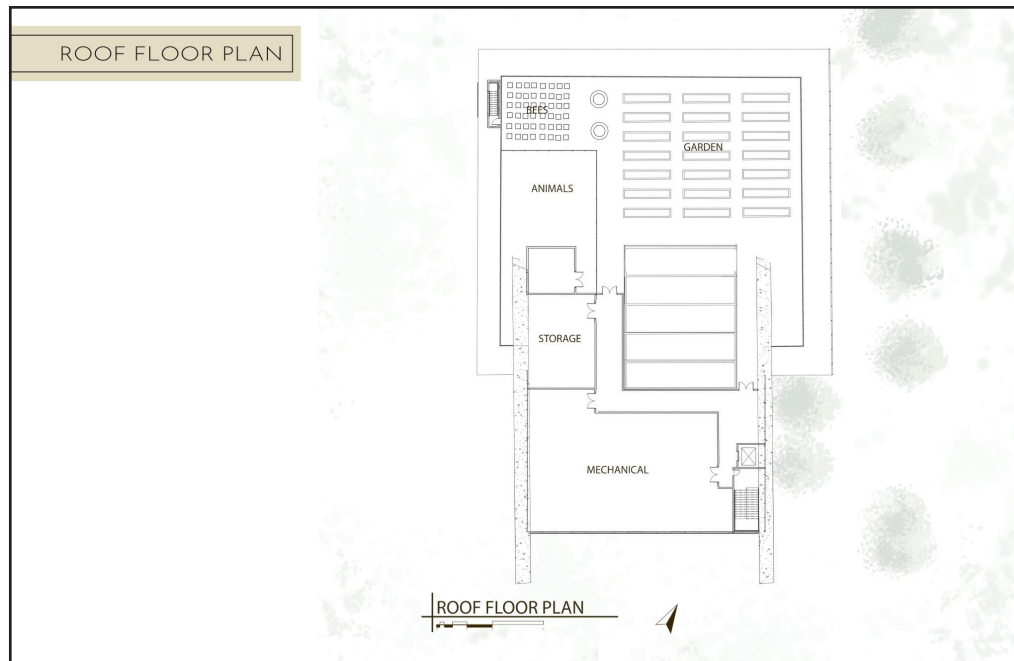
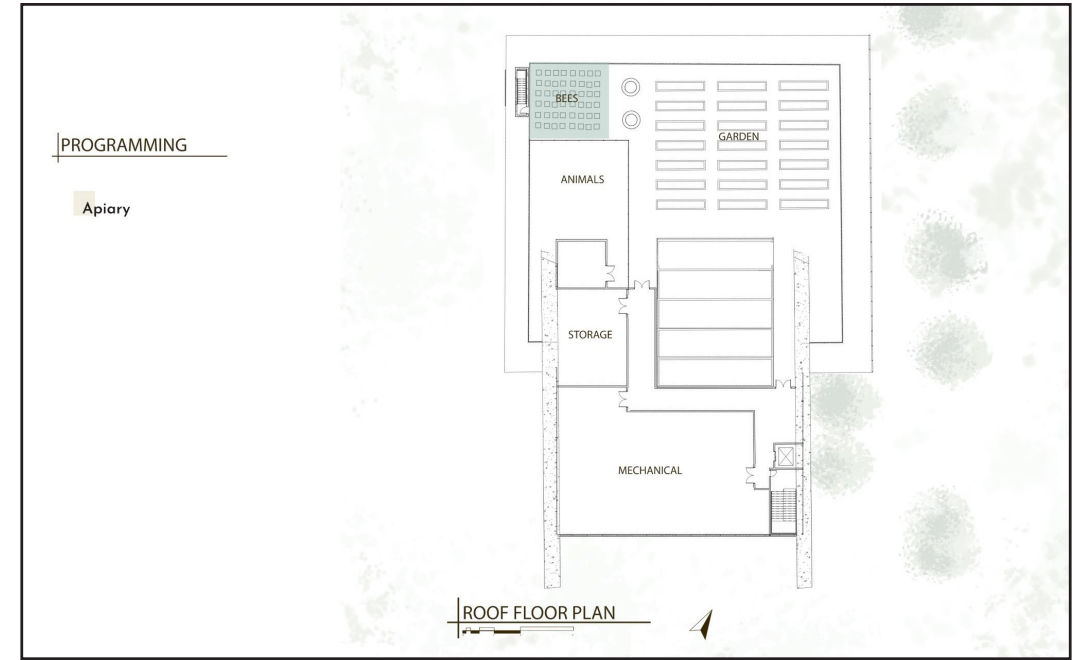
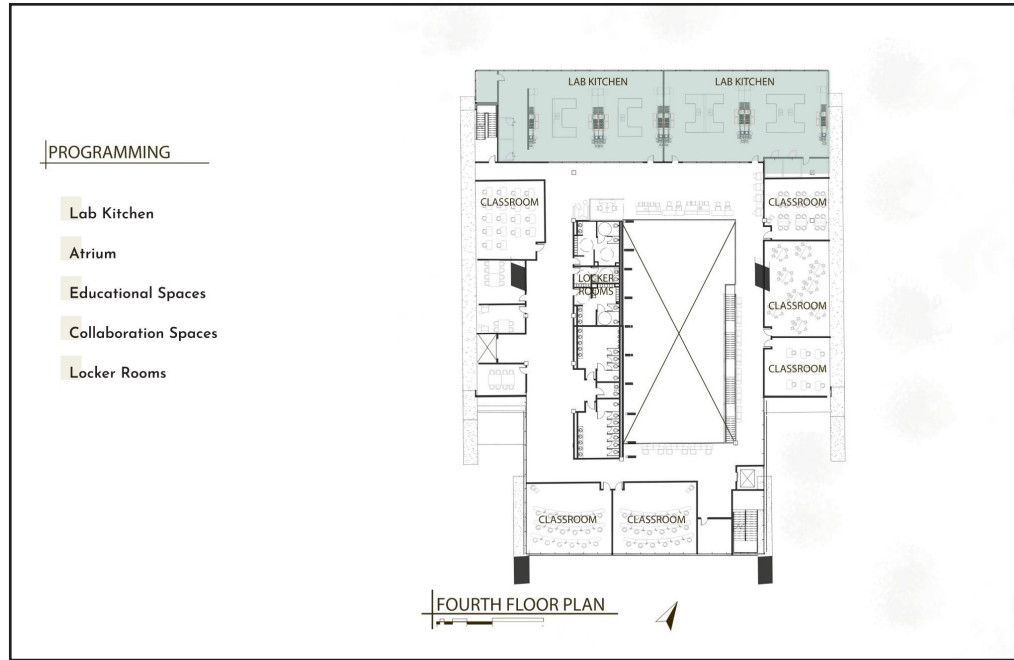


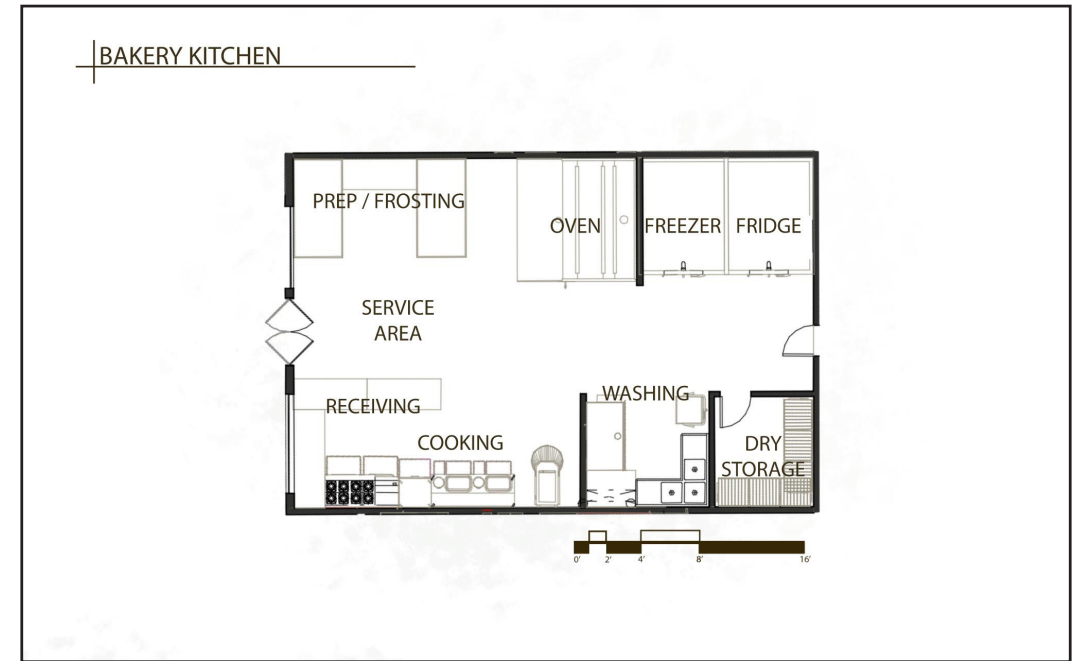
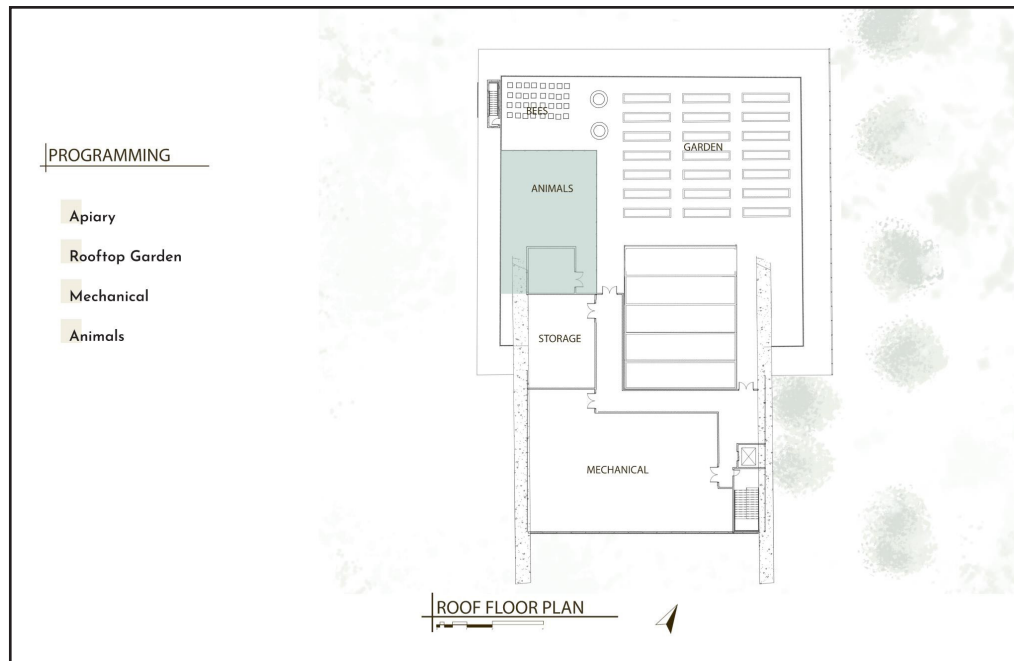
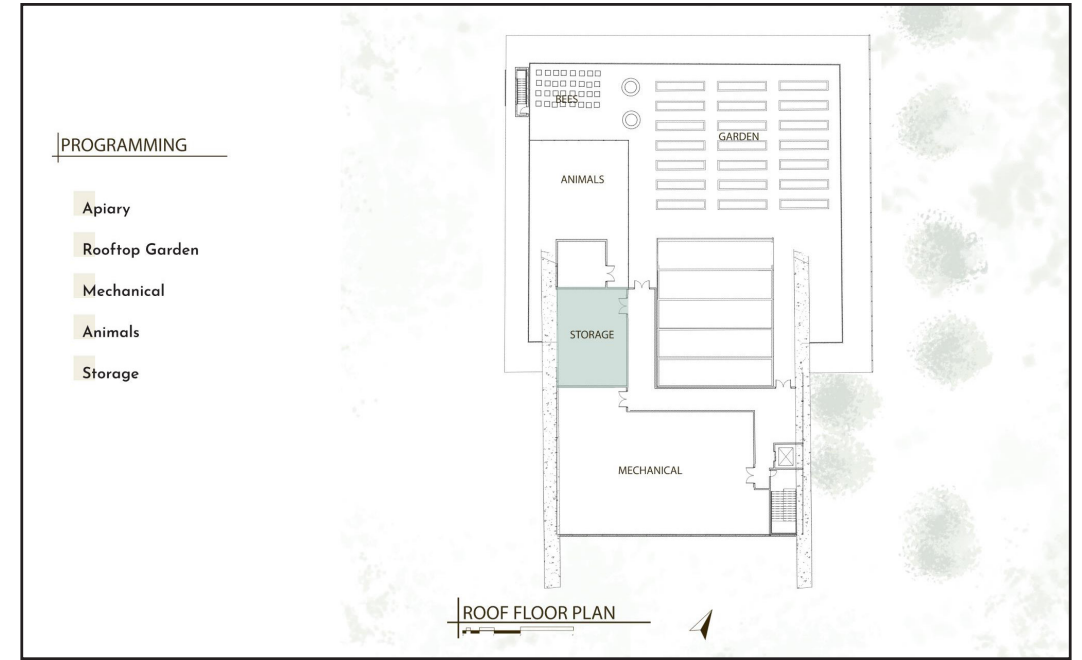
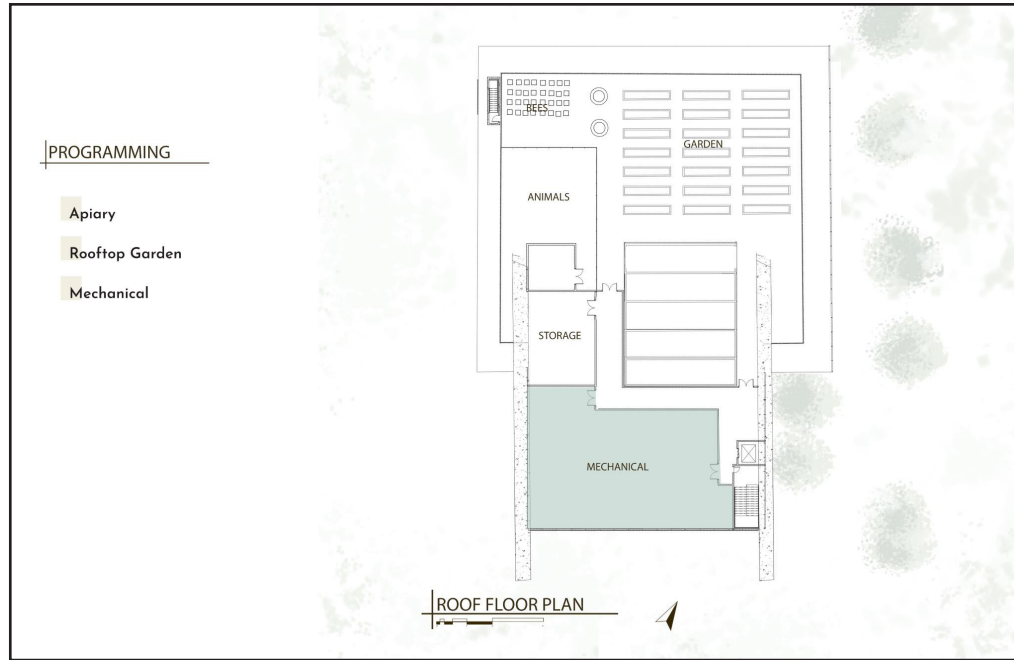


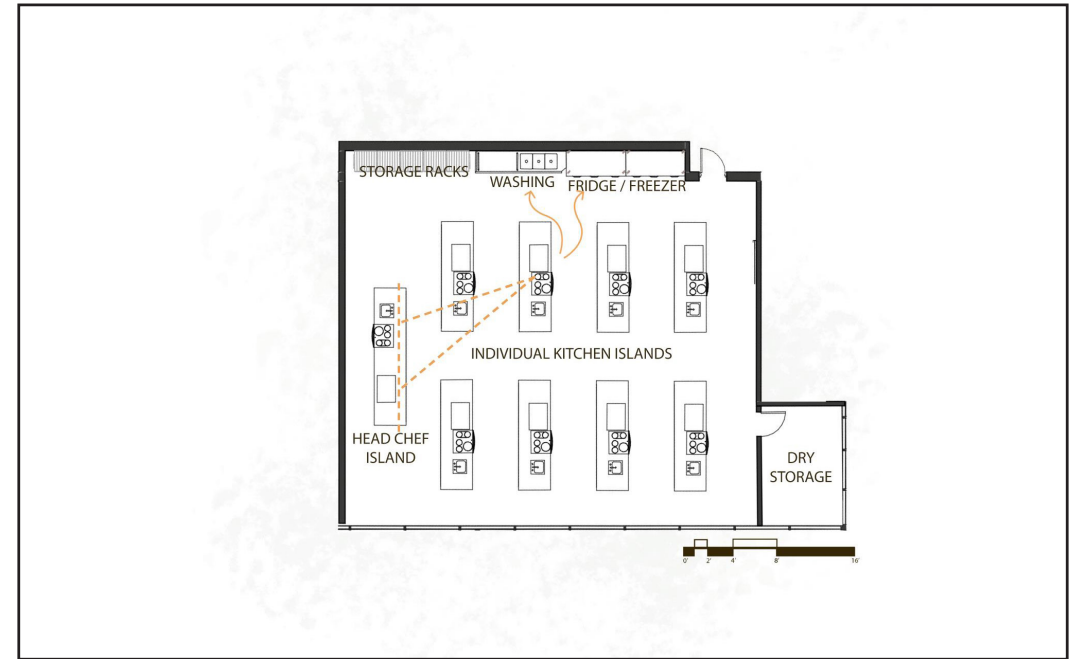
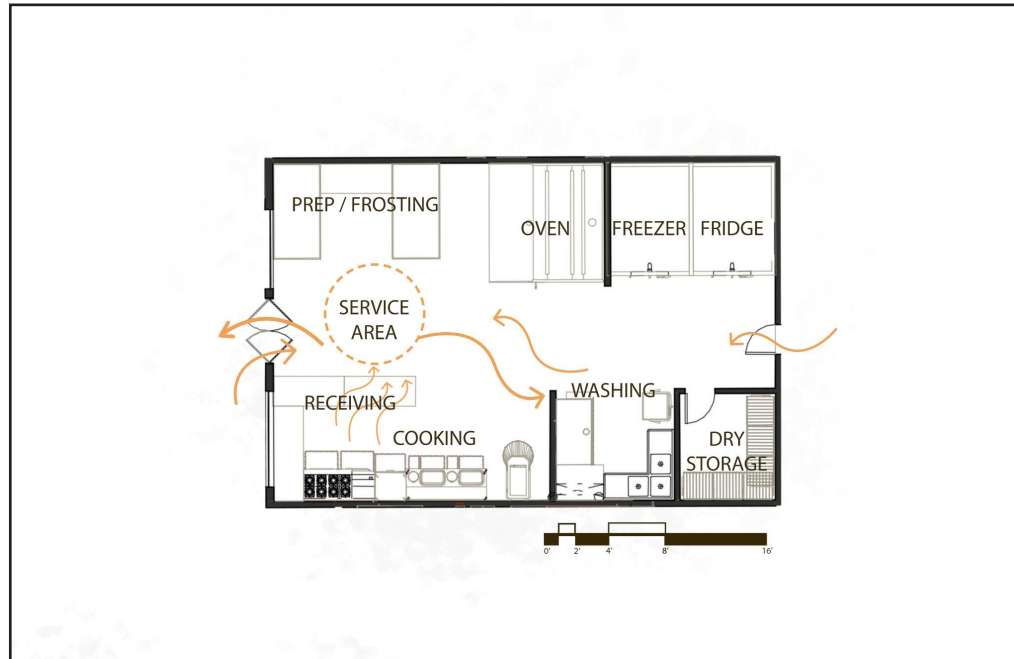




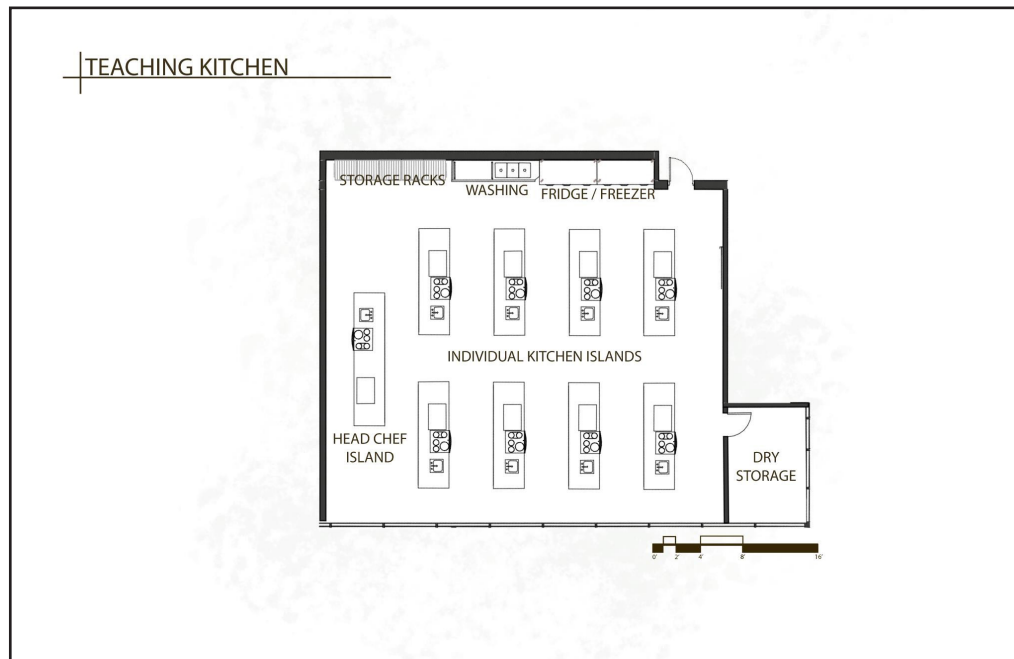




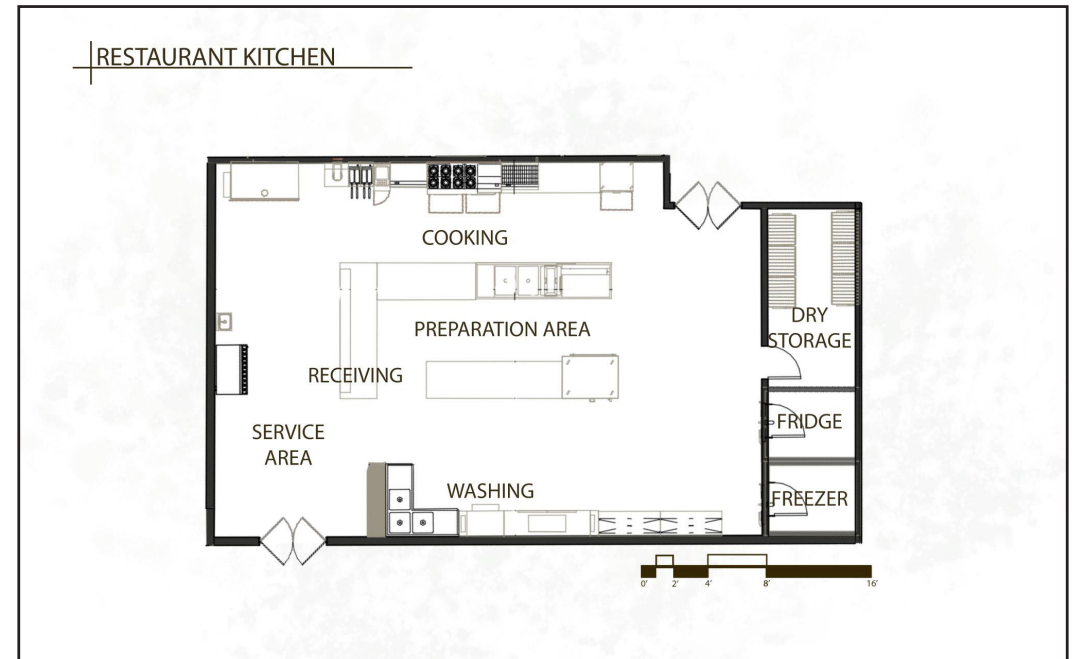


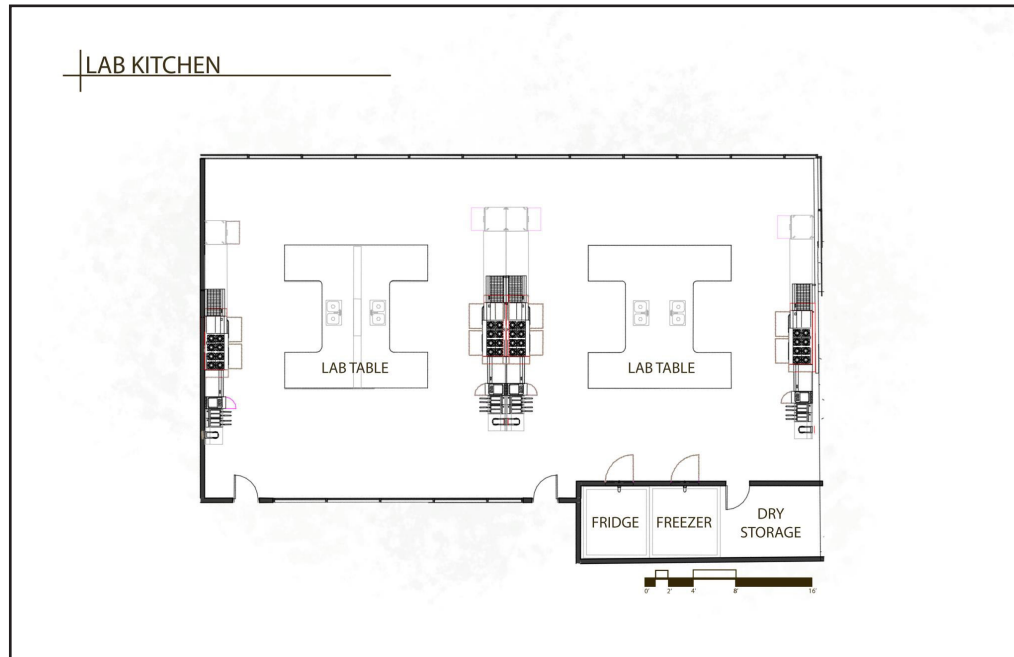
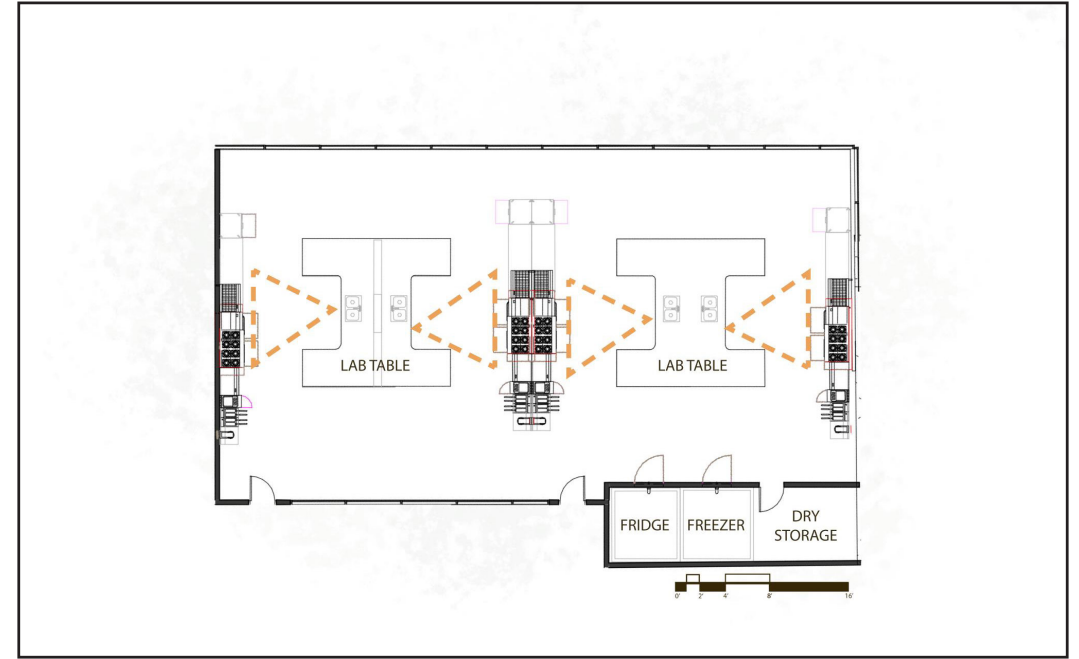
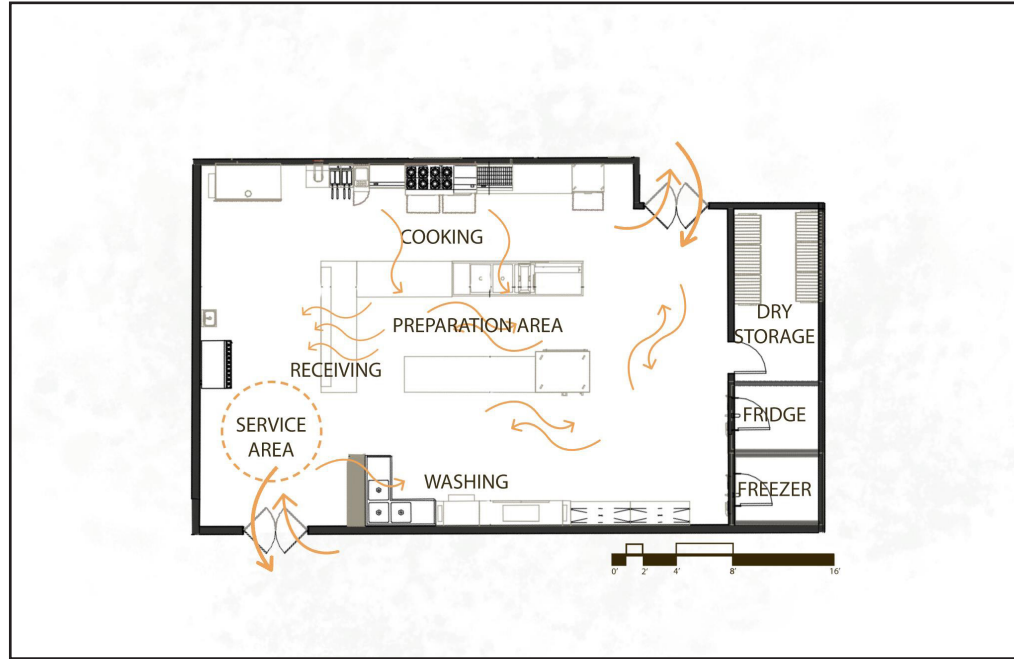


TEACHING KITCHEN



RESTAURANT KITCHEN





SUSTAINABILITY

ENERGY AND POWER

- Both vertical and horizontal **SHADING DEVICES** are incorporated to control solar heat gain and maximize natural cooling.
- PHOTOVOLTAIC PANELS** located on the roof capture energy use within the school.
- Commercial **HEAT EXCHANGE UNITS**, specifically for kitchen use, transfer heat used in kitchens to be returned throughout the building as heat.



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WATER EFFICIENCY

- RAINWATER COLLECTION** located on the roof lowers the needs of non-potable water for site irrigation.
- WATER EFFICIENCY** through low flow plumbing fixtures lowers need of non-potable water.

LOCATION AND TRANSPORTATION

- PARKING FOOTPRINT** is lowered to maximize green space across the site. To obtain maximized parking needs, the parking garage nearby can be utilized.
- Site is located within walking distance of **DIVERSE USE** area, King Street. As well as located on a major **PUBLIC TRANSIT** stop.
- PROGRAMMED COMMUNITY SPACE** to promote interaction with the building and students through an outdoor environment to promote human connections through nature.



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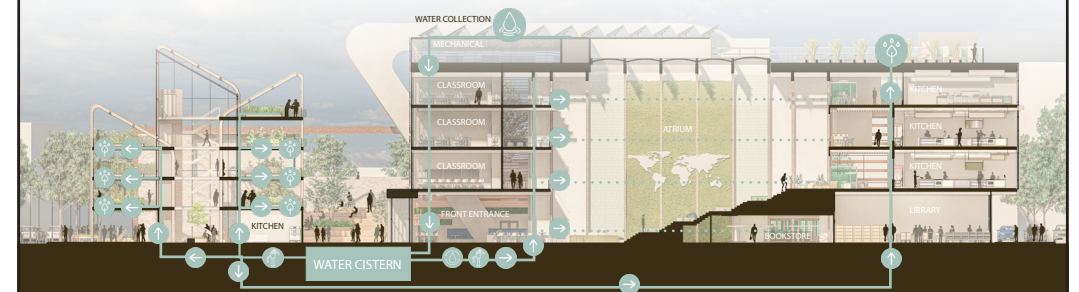
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- WATER EFFICIENCY** through low flow plumbing fixtures lowers need of non-potable water.



WATER COLLECTION

- IRRIGATION**
- WATER COLLECTION**
- WATER PUMP**
- FILTRATION SYSTEM**



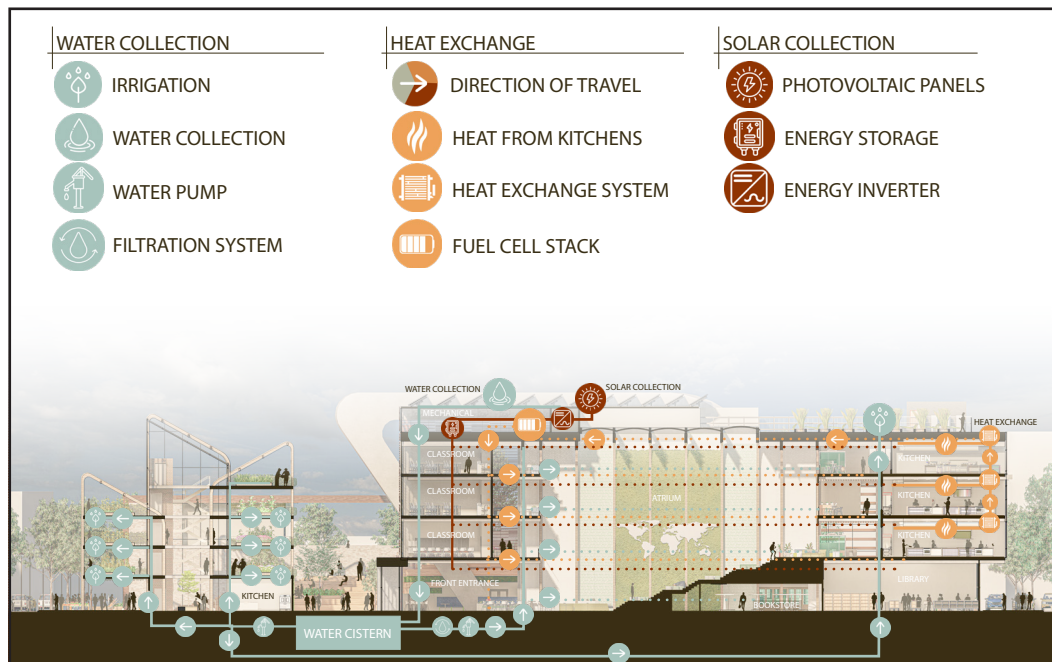
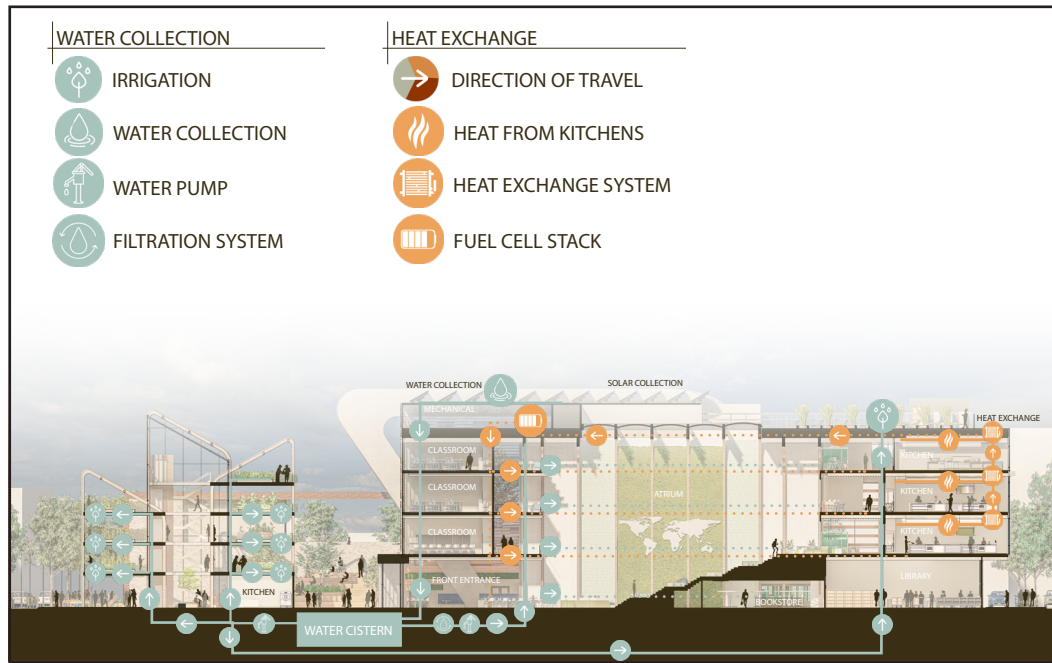




Figure 104



Figure 105

APPENDIX

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PREVIOUS STUDIO EXPERIENCE

2ND YEAR

FALL SEMESTER: CHARLOTT GREUB
- MEDITATION ROOM AND SENSORY GARDEN
- BOATHOUSE

SPRING SEMESTER: MILTON YERGENS
- BIRDHOUSE
- DWELLING
- MIXED-USE HOUSING

3RD YEAR

FALL SEMESTER: PAUL GLEYE
- VISITOR CENTER - WOOD
- MIXED-USE - BRICK
SPRING SEMESTER: BAKR ALY AHMED
- 21ST CENTURY HOME - CONCRETE
OFFICE GROUND SCRAPER - STEEL

4TH YEAR

FALL SEMESTER: CINDY URNESS
- HIGHRISE CAPSTONE PROJECT
SPRING SEMESTER: KRISTI HANSON
- MARVIN WINDOWS COMPETITION
- MEDORA, NORTH DAKOTA MASTER PLAN

5TH YEAR

FALL SEMESTER: BAKR ALY AHMED
- DRAWING STUDIO
SPRING SEMESTER: JENNIFER BRANDEL
- FINAL THESIS PROJECT

PERSONAL IDENTIFICATION



Name: Alysse Ogaard
Hometown: Williston, ND

Thank you to my professors, peers, friends, and family that have guided and went through this crazy adventure with me!