

T H O M A S  
JASPERDESIGN

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conveyance farming	A02
metabolzing furniture	A03
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barcelona 22@	A05

a thomas f. jasper design, 2014 publishment

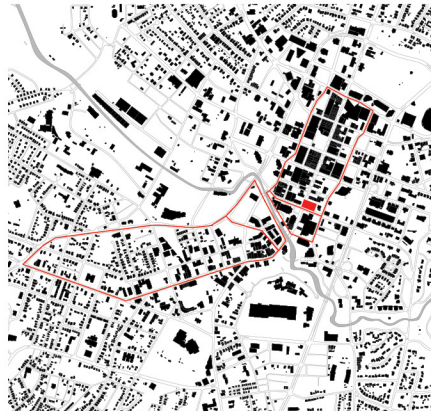
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704 996 3801

# A01

## culinary arts institute



**fields + context** Figure ground studies were used to drive the initial schematic concepts of this design.



**grid intersection** The site is located at the intersection of the two main city grids. Because of the river rolling through the center, an interesting vernacular break in the high-order planning occurs.



**collision** Our site is located within the tectonic collision of these two grids. This project will emphasize this interaction, and draw these two fields of the city together to create a more wholistic community space.

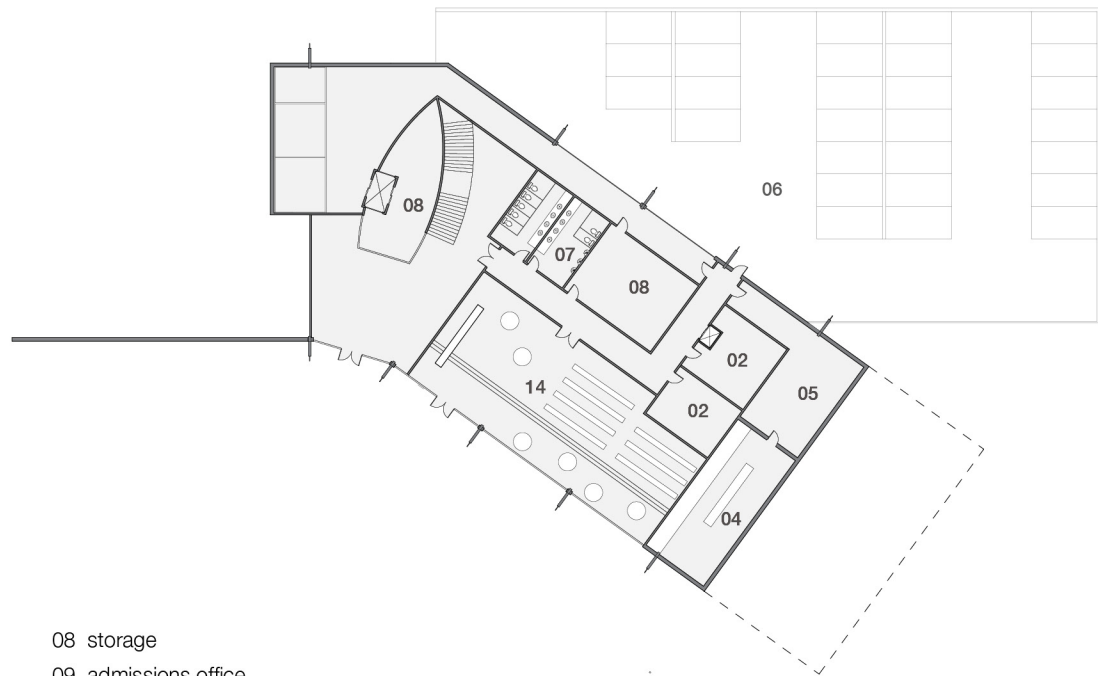
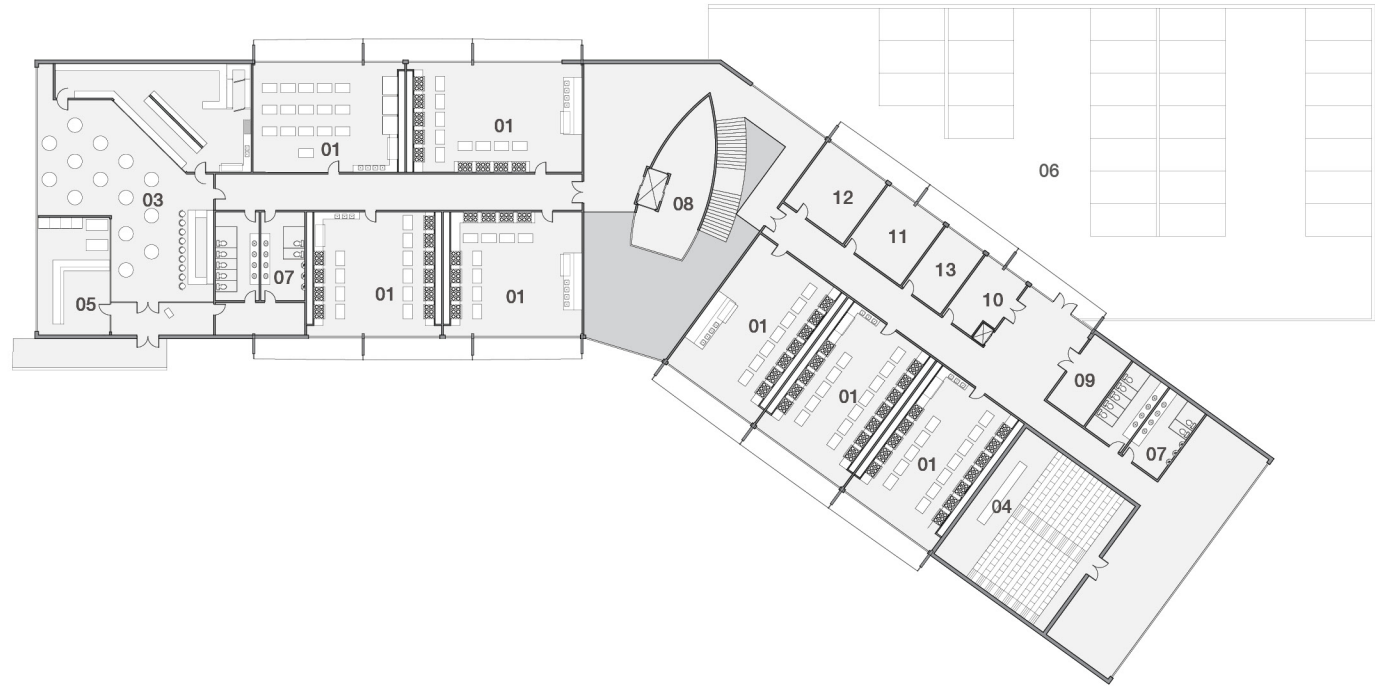


This project attempts to define the growth and destination of the booming city of Greenville, SC within the design of a centralized city icon. The proposal asks for a 40,000 sqft. culinary arts college including a commercial restaurant and public auditorium. Being a ASCA competition an innovative use of steel was necessary in the design concept of the building with a focus in long span steel systems.

Driven initially by the indepth study of figure ground and city grid relationships, the design culminates into a very engineered interior plan forcing the skeleton and organs of the building to the exterior to act as the draw and aesthetic of the building.

*project complete during my duration at Clemson University under the tutelage of Professor Julie Wilkerson [january 2012 - may 2012]*





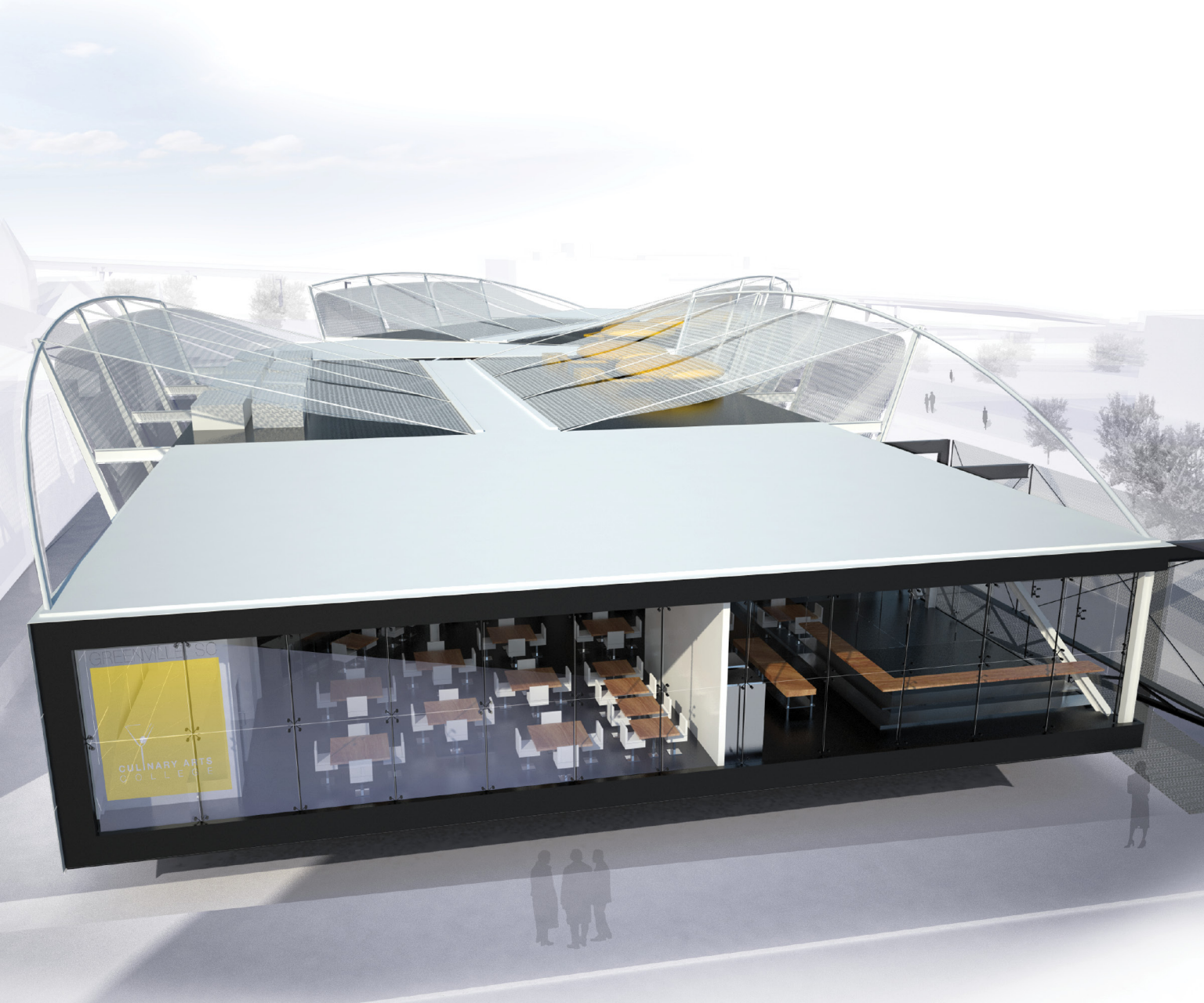
- |                     |                      |
|---------------------|----------------------|
| 01 teaching kitchen | 08 storage           |
| 02 pastry kitchen   | 09 admissions office |
| 03 restaurant       | 10 career office     |
| 04 auditorium       | 11 staff room        |
| 05 bakery           | 12 faculty area      |
| 06 parking          | 13 director's suite  |
| 07 bathrooms        | 14 library           |



This perspective exhibits the face of the building on main street providing access to the restaurant space for the public. The more educational program of the building is back from the main street to provide more private space for the students (image above). This view portrays the lower half of the site where a massive picture window offers guests a view of the beautiful surrounding suburbs beyond before attending shows within the auditorium (image right).

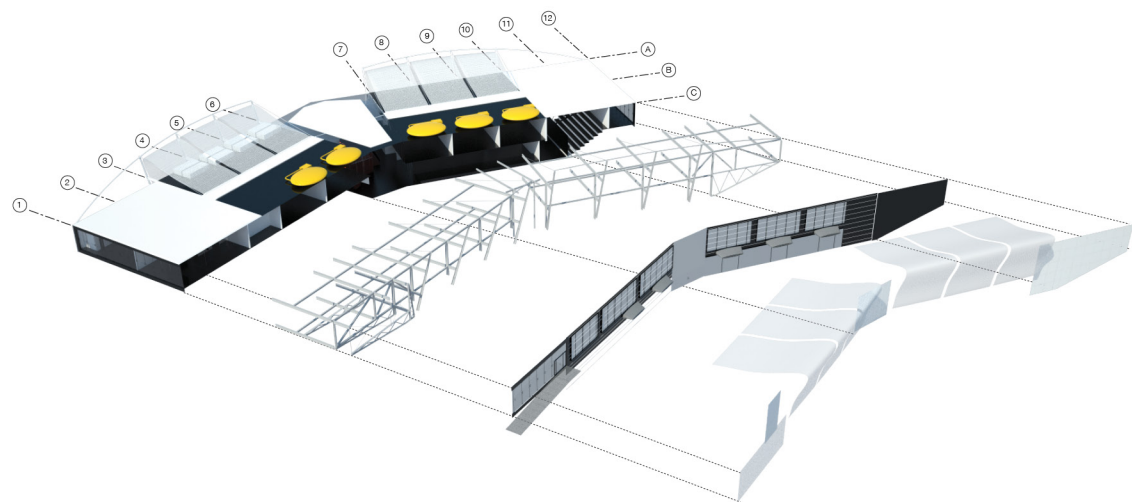
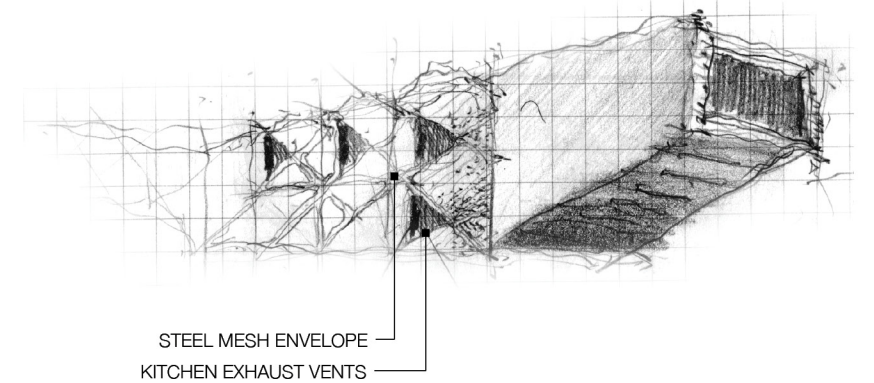






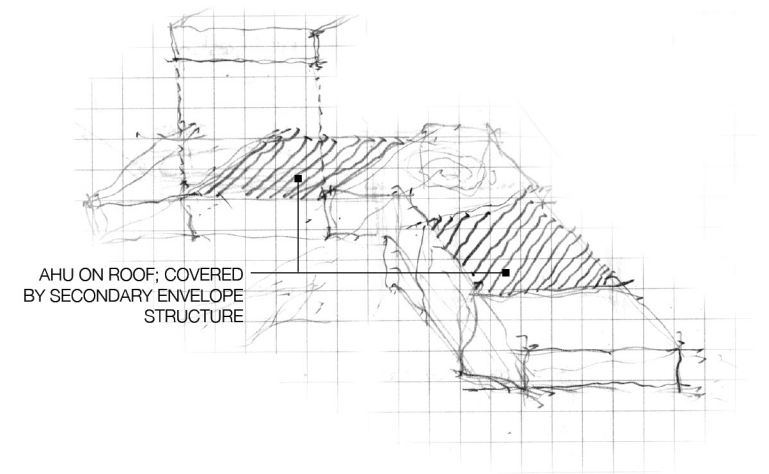
Sharing the aroma's and unique cooking creation going on within the building was a major influence to the design development. Custom mechanical systems with bright yellow inflatable duct systems are used to exhibit which teaching kitchens are in use. Exhaust vents from the kitchen dump the latest cooking aroma's into the public space in front to draw the passerby.

There is also a needed balance of public and private within this site that was difficult to achieve. Certain space aspects of the desing draw in the public and others such as the butterfly-like sun screens that wrap the center of the building provide a cover for that going on within the building.

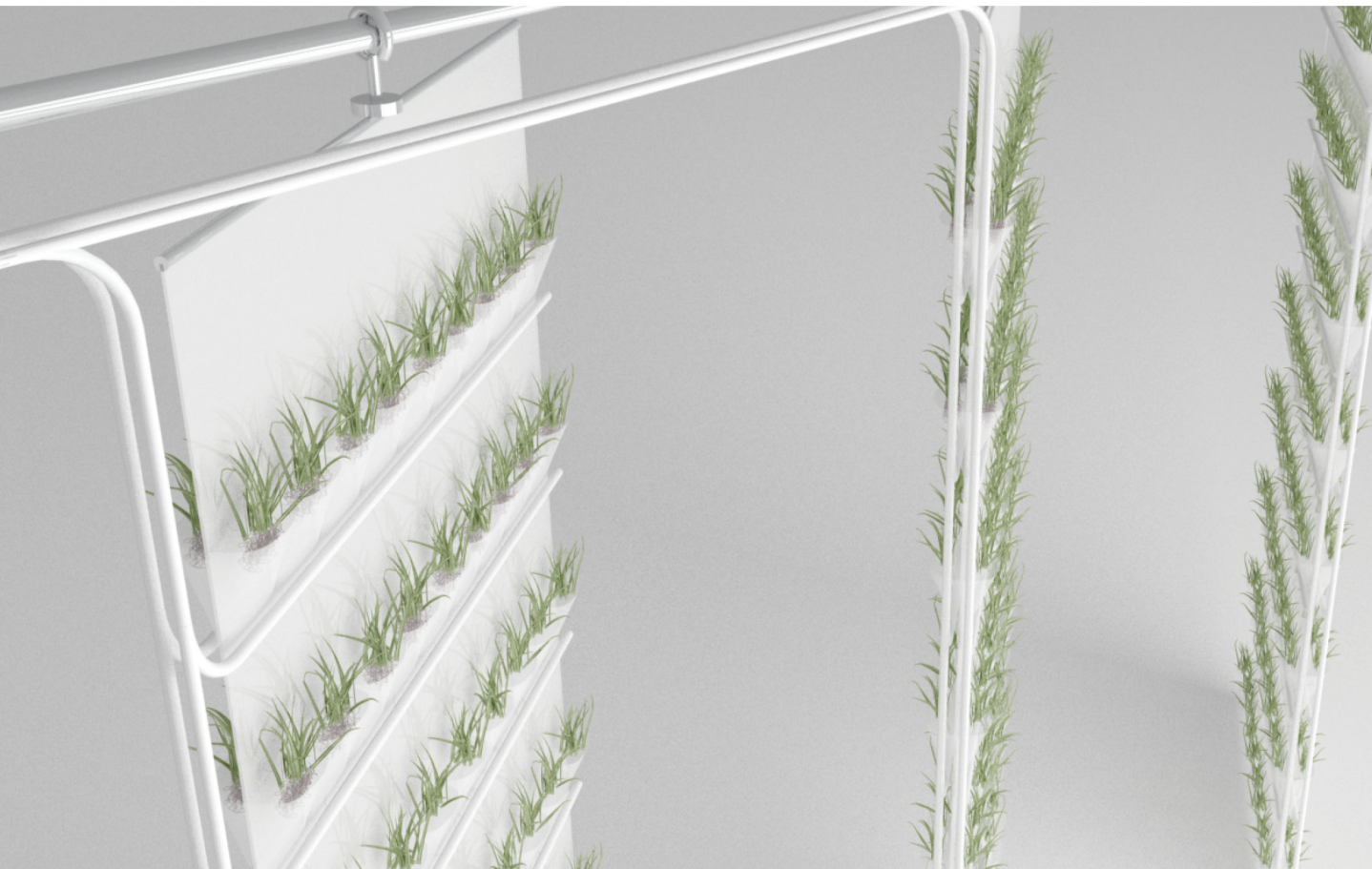


#### BUILDING ENVELOPE

The exterior layering of the building mimics that of the Pompidou in Paris. All the necessary building systems are drawing to the exterior to provide for more adapatable space within.







## A02

### conveyance farming

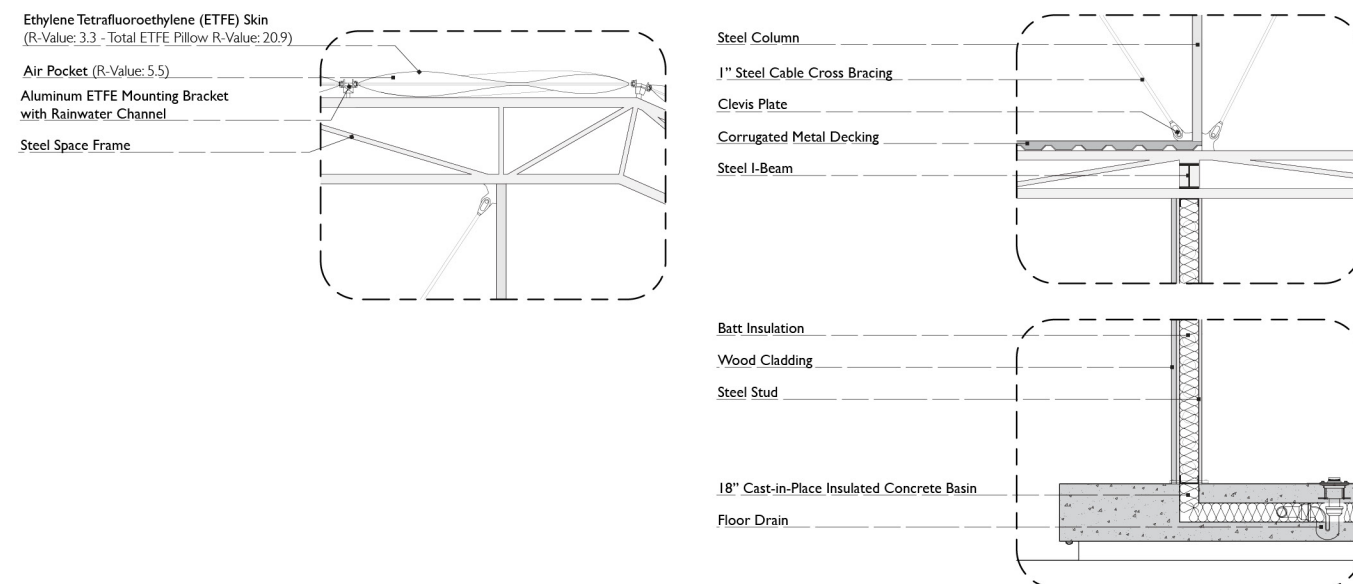
Being my thesis, this project represents the culmination of my architectural studies. Being our comprehensive design studio, all aspects of the building had to be covered and represented in the final documentation.

The proposal was initiated by the EPA and the Institute of Applied Ecologies. It called for a vertical farm design in the city of Charleston, South Carolina, retrofit into an existing structure on one of three sites proposed by the EPA. During the design process three charrettes were held in the Charleston area, to provide a forum for experts in various disciplines, from music and food science to transportation engineering and microbiology, to participate in design decisions, including the choice of site.

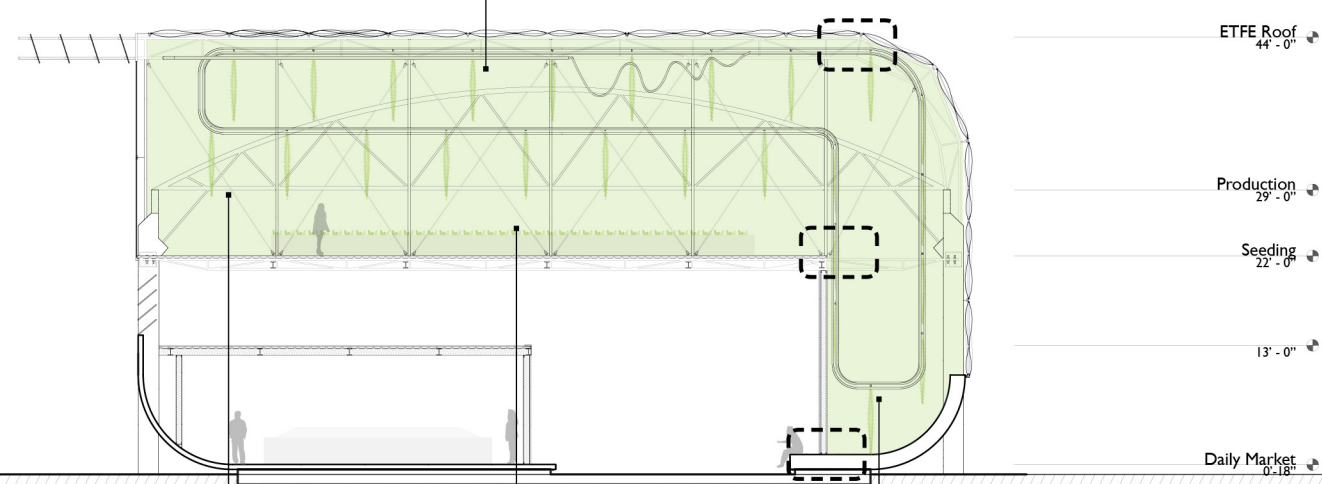
The major challenge of this project was in offering an innovative and practical design within the constraints of highly restrictive building codes, which stem from the city's historical preservation covenants. Our proposal employed various cutting-edge technologies to optimize the production of consumable vegetation within an urban setting, proving the concept both economical and environmentally friendly.

*project complete during my duration at Clemson University under the tutelage of Professor Dan Hardin [august 2011 - december 2011]*





The plants then cycle along the conveyor for equal, optimized natural light exposure. They will undertake the rest of the production process on the conveyor system



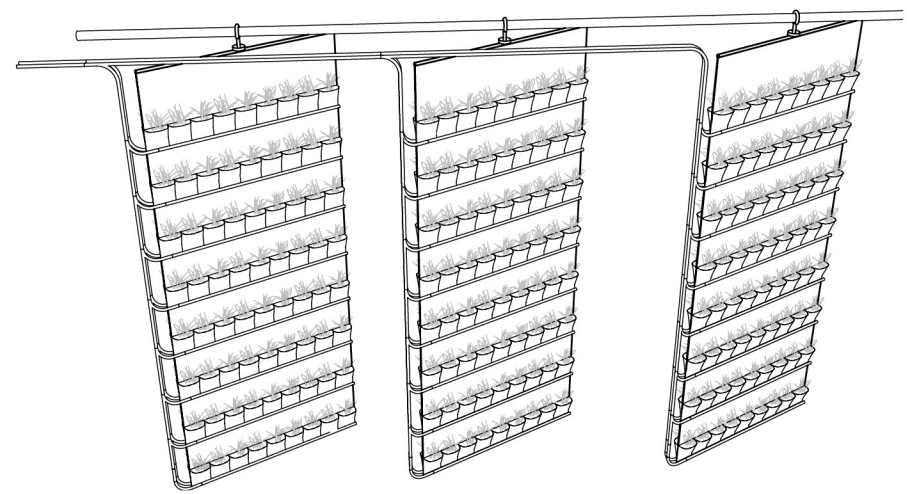
Once plants are of a certain maturity, they are placed in the hydroponic sheets and racked on the conveyor

The seeding process occurs in long troughs running north to south within the air-locked production chamber.

When plants are ripe, the racks are removed and taken for processing before being put on the shelf or shipped to a local grocer.

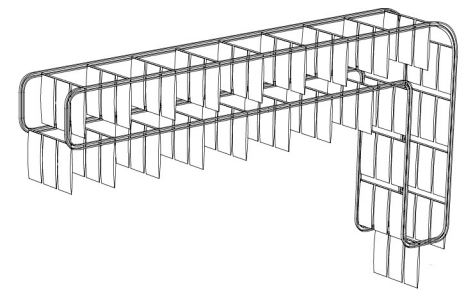
20  $\times$  8  $\times$  2 = 320

plants per row  
rows per side  
sides per bay



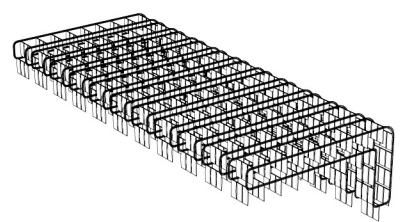
26  $\times$  3 = 78

bags per conveyor  
conveyors per bay



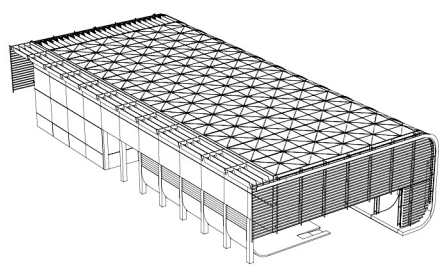
11  $\times$  1 = 11

bays total



274,560  $\div$  10,000 = 27.5

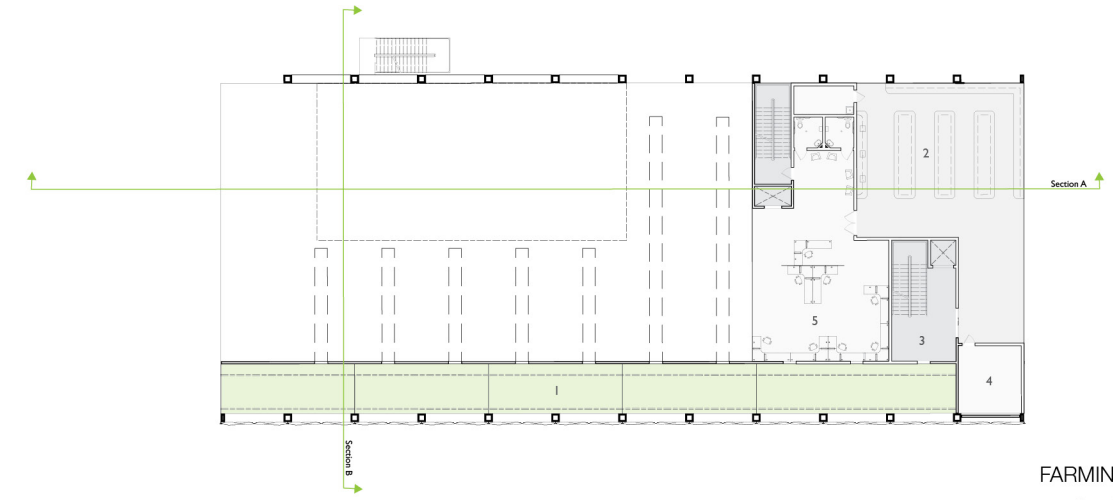
plants total  
plants per acre  
acres





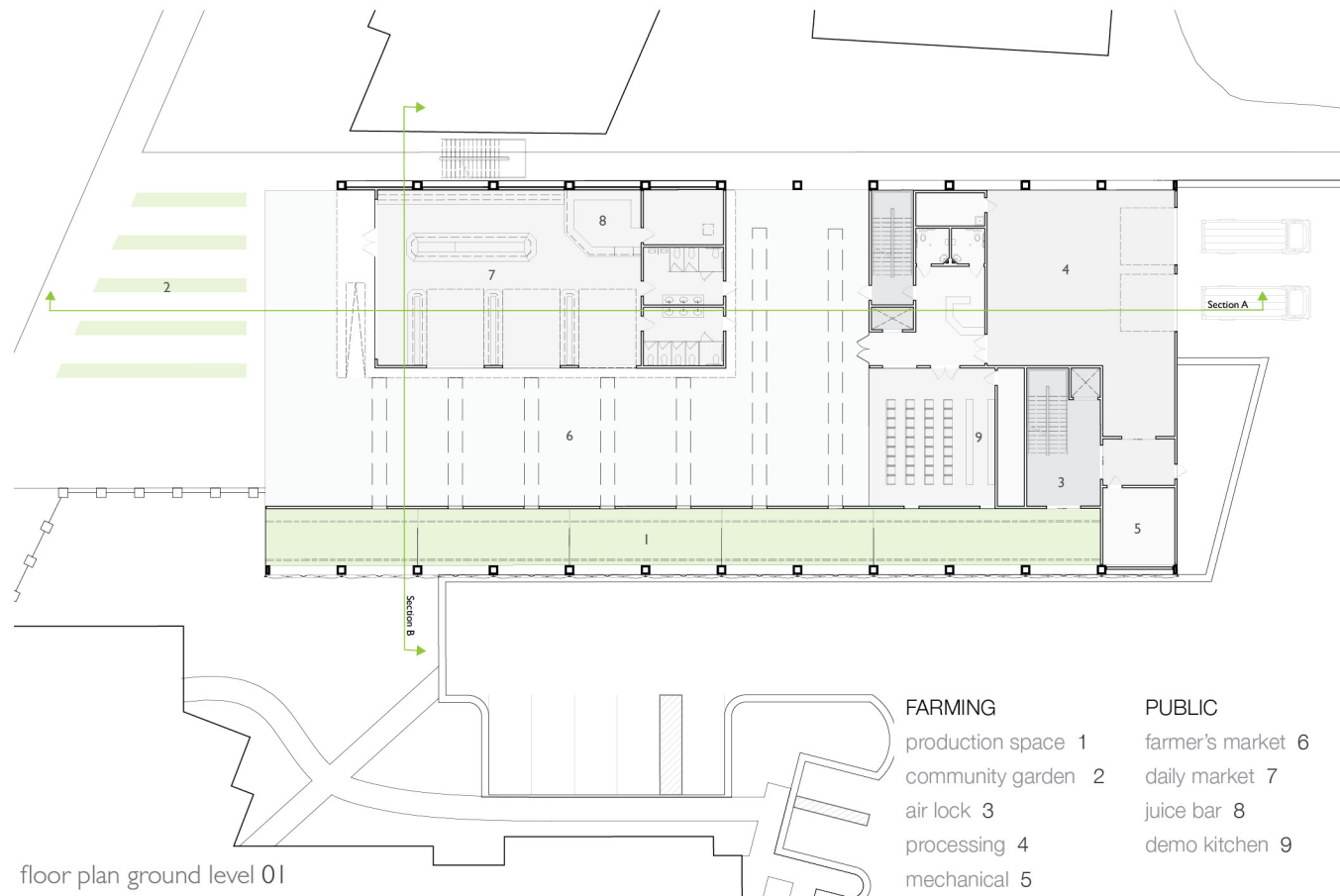


floor plan research level 02



**FARMING**  
 production space 1  
 research laboratory 2  
 air lock 3  
 mechanical 4

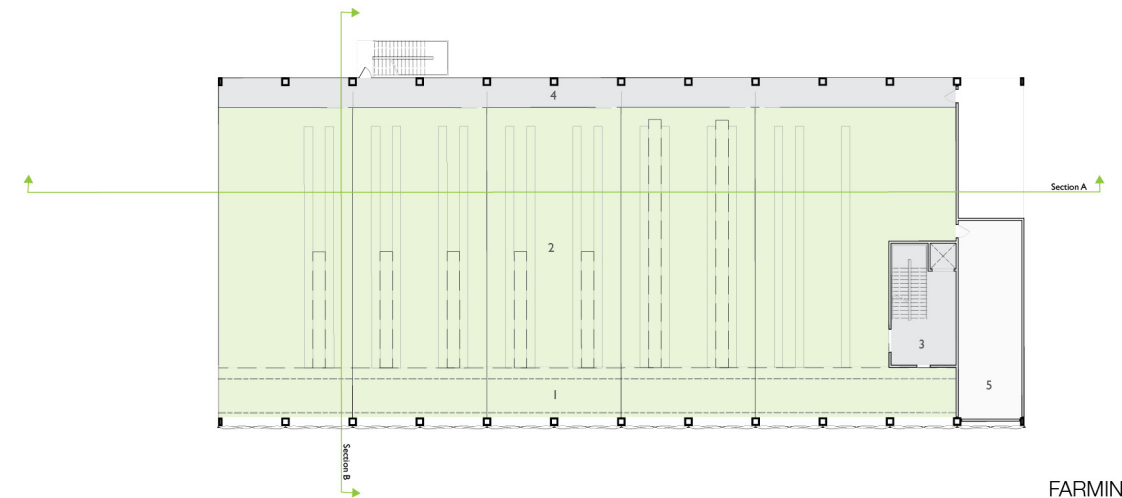
**PUBLIC**  
 administration 5



floor plan ground level 01

<b>FARMING</b>	<b>PUBLIC</b>
production space 1	farmer's market 6
community garden 2	daily market 7
air lock 3	juice bar 8
processing 4	demo kitchen 9
mechanical 5	

floor plan planting level 03

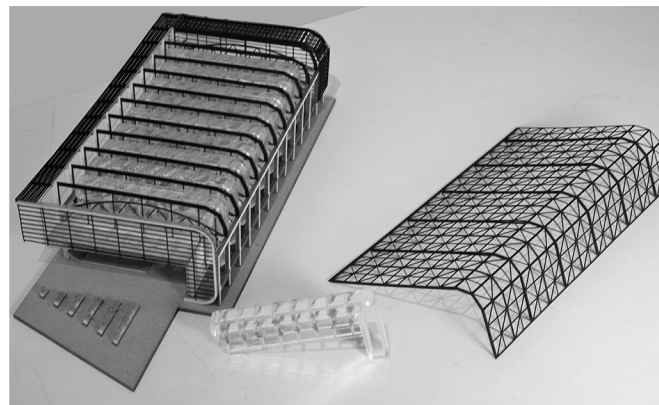


**FARMING**  
 production space 1  
 seed germination 2  
 air lock 3  
 air lock corridor 4  
 mechanical 5

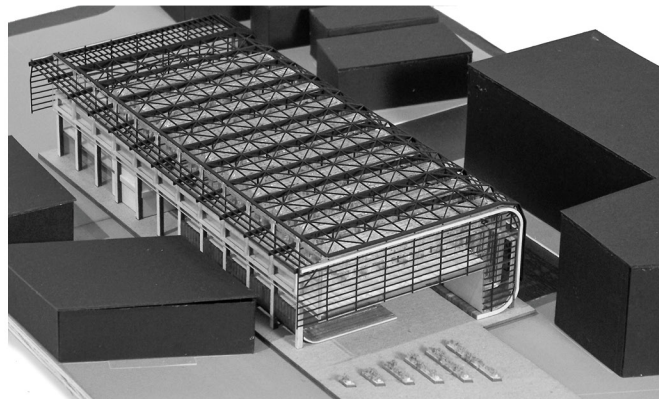




1

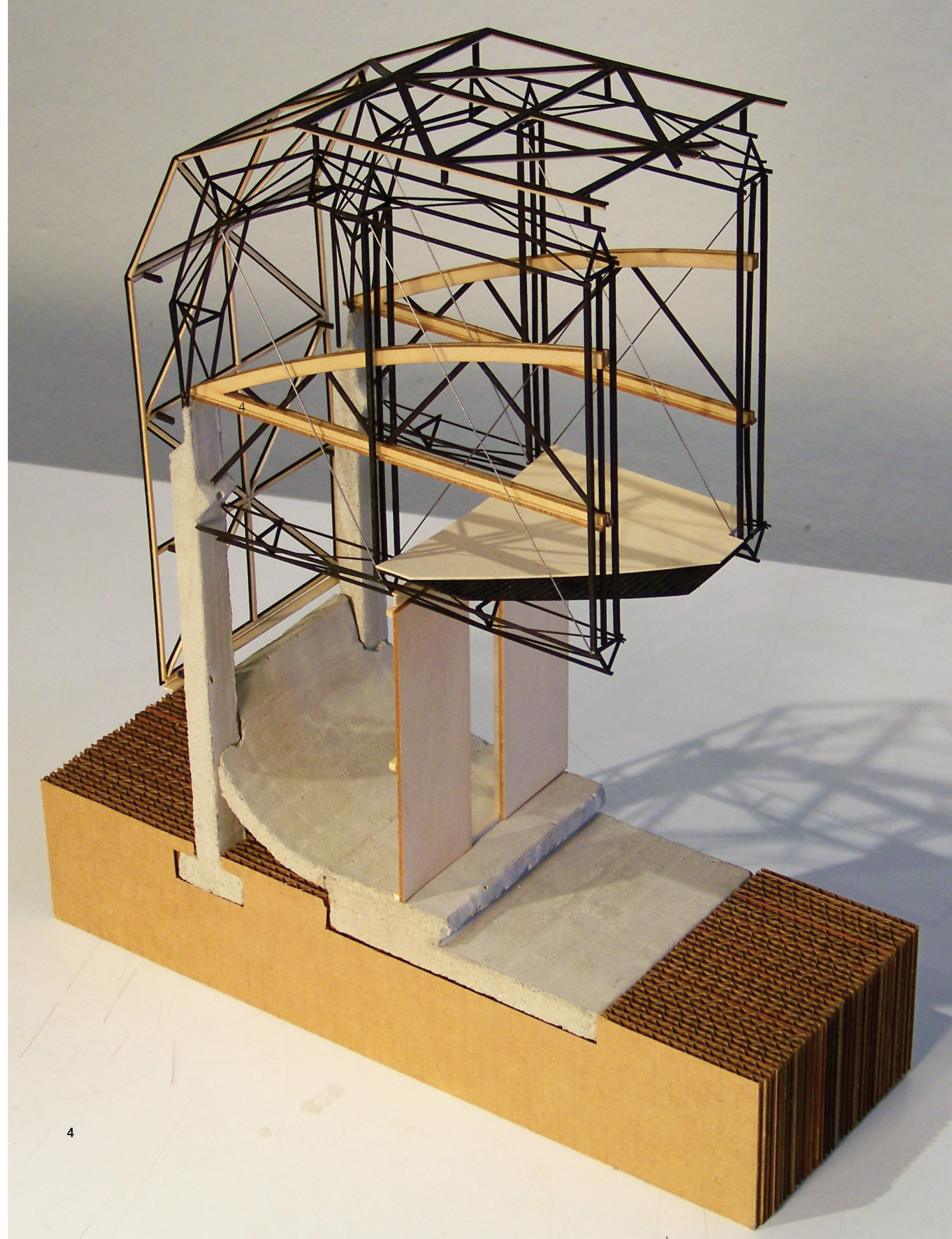


2



3

1 front perspective exhibits west facade and main entrance from King St. 2 perspective of model broken down 3 aerial perspective of north and west facade, 4 structural section model

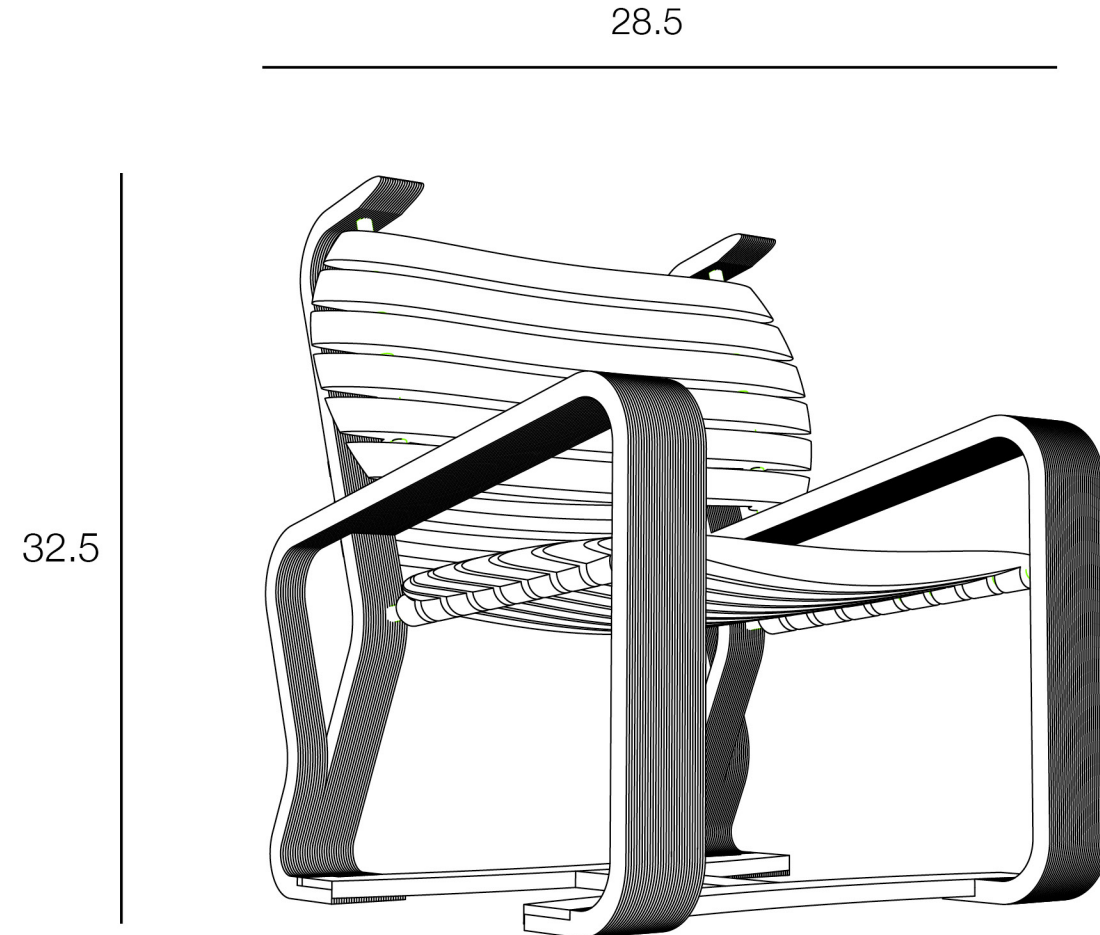


4



# A03

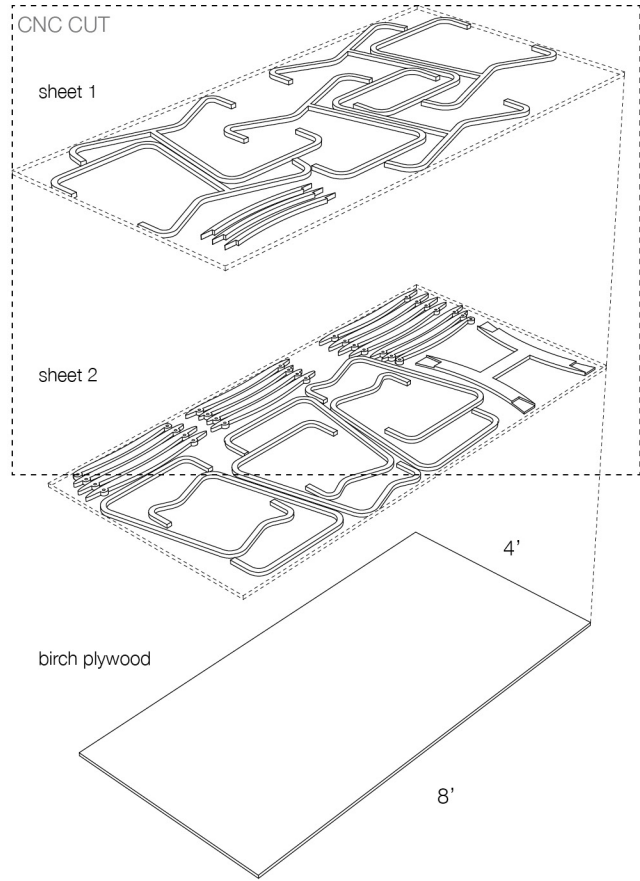
metabolizing comfort



Defining Metabolic architecture through furniture design, this projects was a reaction to the study of the metabolism movement within the modernism age of architecture. Studying works of Frank Lloyd Wright, Tadoo Ando also greatly influenced the more organic forms of this design and attracted a new aesthetic and function for the chair. The design focuses around two many ideals: adaptability and flexibility.

*project complete during my duration at Clemson University under the tutilage of Professor Yuji Kishimoto [january 2011 - may 2011]*

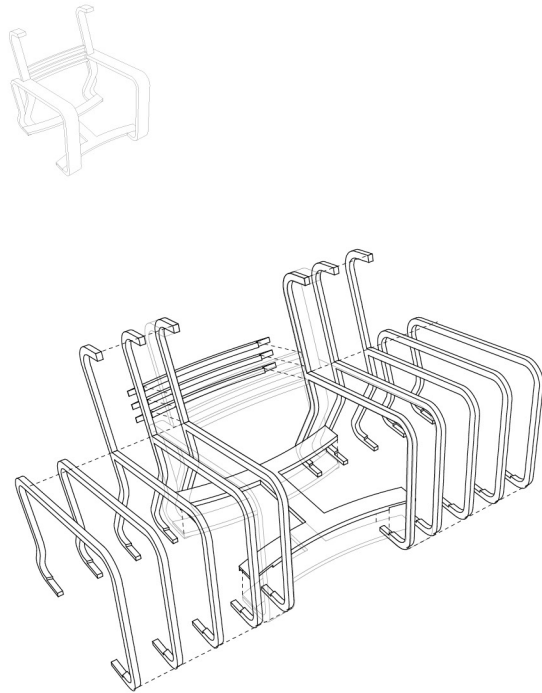




1.

All pieces of assembly are CNC cut from 4' x 8' sheets of plywood. I chose birch for my test designs.

Once the CNC process was finished, all piece were still attached by small numbed connections (this is done to keep the peices from moving and being launched off the table during the routing process). Next, the small connections are cut with a jigsaw and each piece is separated carefully.

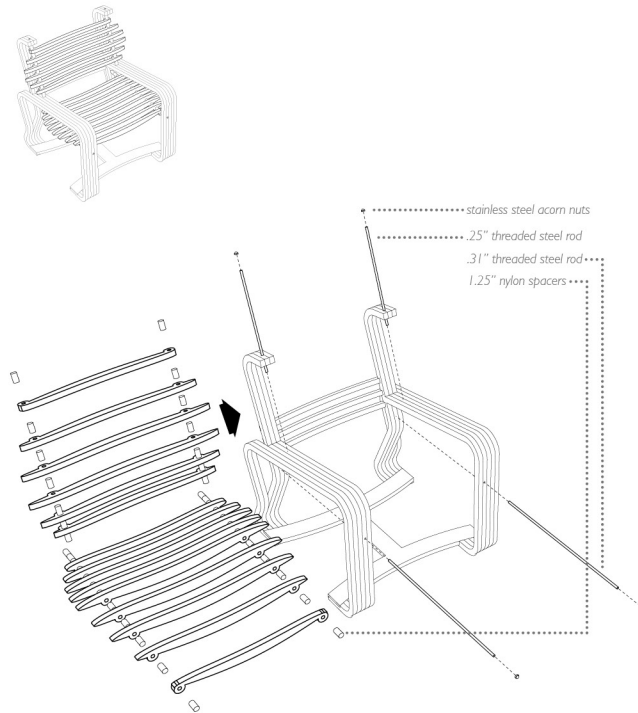


2.

All frame pieces were premachined to remove burs and any abnormalities. Each set of arm extensions were laminated. Each piece was added to the lamination one at a time to minimize movement when clammed during the drying period. Once dry, each arm set was sanded heavily to get a smooth finish between the laminated pieces.

The feet of the arms were routed out to fit the bottom frame and then all was attached together with glue.

Lastly the back cross supports were attached with glue at the specified locations. This created a solid frame work for the structure of the chair. Once this was complete, I did extensive sanding with the belt sander. I then applied different grades of sand paper down to the fine grits.



3.

Using a drill press the seat at back support ribs are precision drilled to ensure proper hole alignment for the threaded rods. These are then sanded carefully with different grades of paper.

I went overall of the wood parts again with a fine grit sandpaper for detailing. All wood parts are then rubbed with tung oil to provide a protective coat and clean finish (2 to 3 coats).

With a hand drill, the holes within the frame are drilled at specified locations (must be careful to drill the holes at the right angle for the rods to sit at the proper seating angle. Each set of rods are then placed in frame and cut to precision lengths, machines and prepared for final assembly.

The rods are run through the first set of holes within the frame and each set of spacers with the designated rib is attached. The end spacers are bias cut to match the angle of the frame. Stainless steel acorn nuts are used to secure each end of the threaded rods.



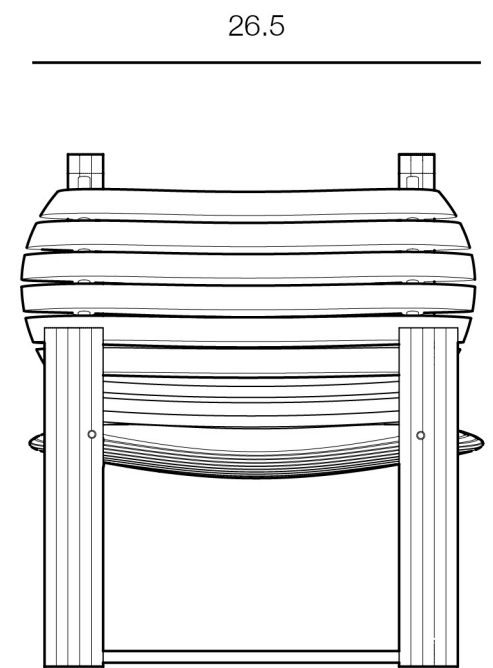
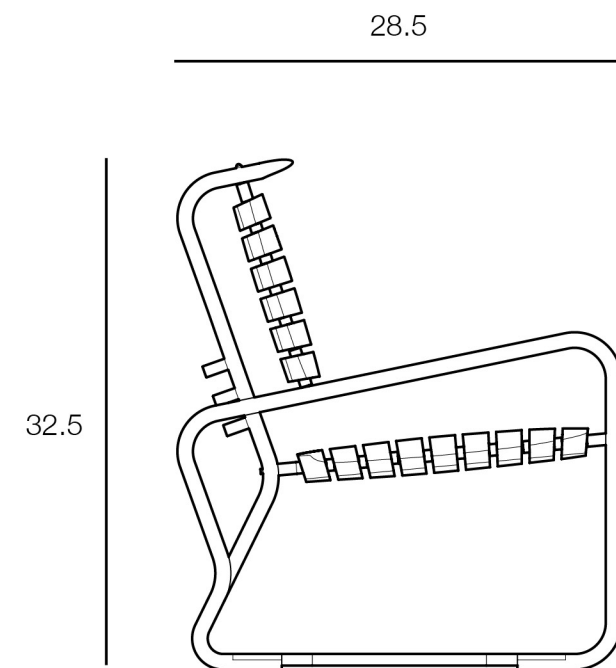
4.

After final assembly, I placed felt pads at the base of each corner of the base frame. In the assembly of this product one can see how the design provided for a flexibility and/or adaptability of the final product.

Multiple sets of the seat and back rest were made to allow for flexibility. I can have many different set of ribs of different colors, stains or materials to use on the same frame.

The other aim of this design is the flexibility of the chair seat in itself. The system of rods and spacers allow give in the seat to flex to the weight of the user. Though it is made of solid wood, it flexs to provide comfort for it user.







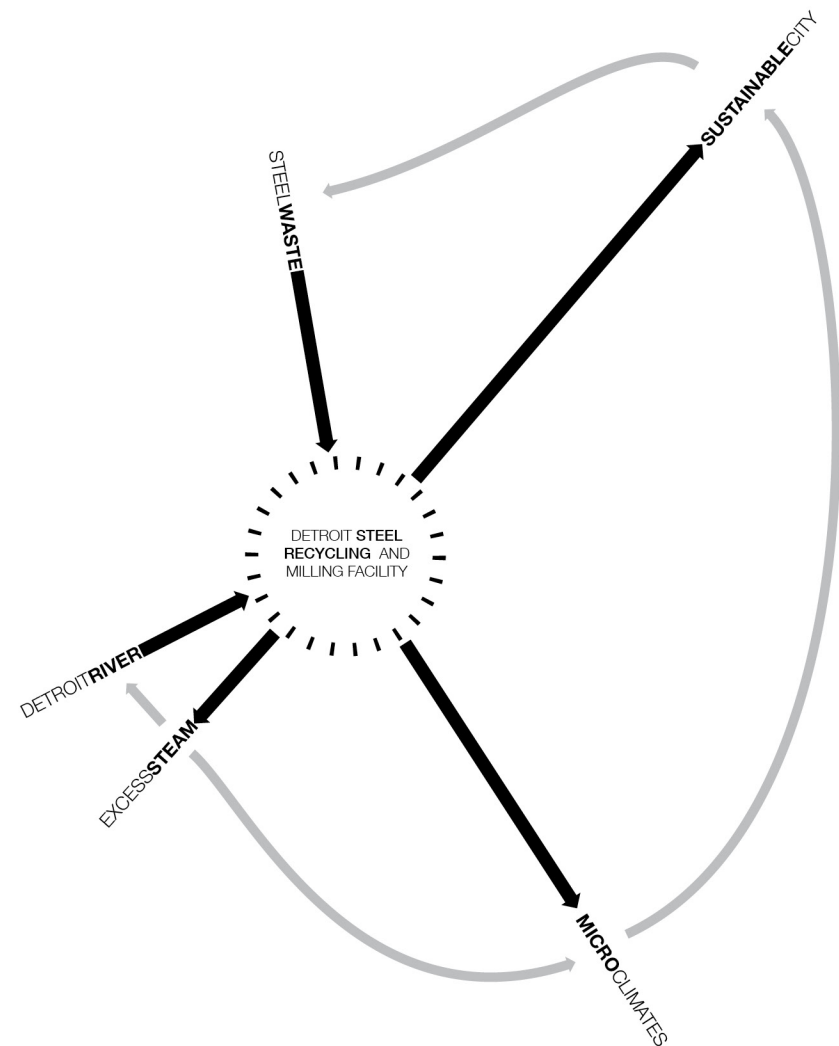
# A04

[steeling] detroit

This project is an entry for the 2011 AISI Steel Competiton. As one of the most commonly used and readily recycled materials, steel represents a high-value asset in the rehabilitation and upgrading of America's aging cities to sustainability. This steel recycling and milling facility was designed to provide new building materials for the city of Detroit both physically and mentally.

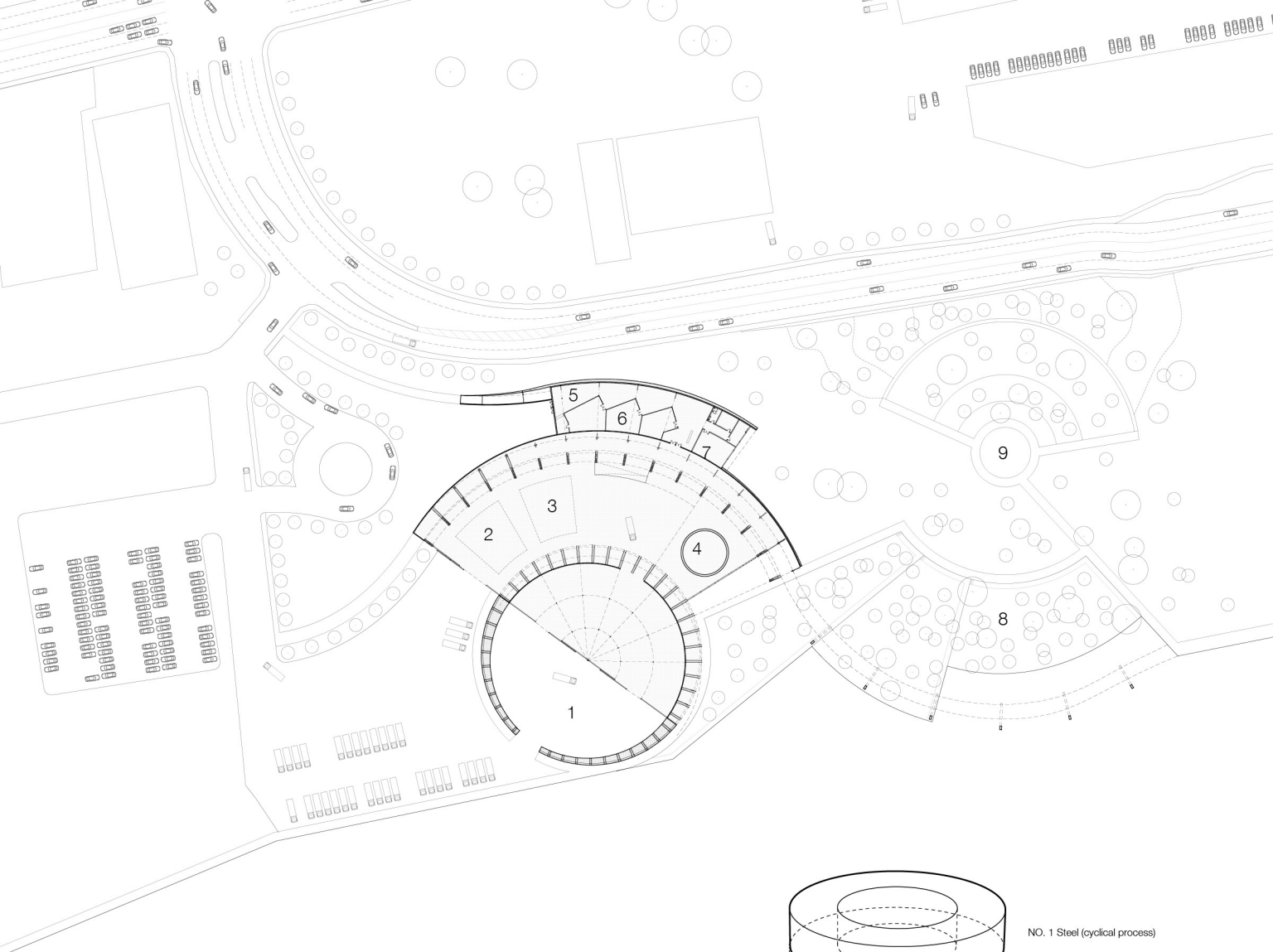
One of the unique aspects of this design is its use of excess steam from the milling process. The conventional steel milling process uses water to quench the molten steel, producing large quantities of steam which is usually vented into the air. In this design the steam is funneled into a piping system (similar to that in radiant heating) and used to regulate the environment in an adjacent park and wildlife preserve, both saving energy, and providing a public attraction that demonstrates a practical application of green technology.

*project complete during my duration at Clemson University under the tutilage of Professor Peter Laurence [january 2011 - may 2011]*



A cyclical system designed to rebuild the city of Detroit, this design uses a green philosophy to refuel a crumbled urban infrastructure with steel fabrication, microclimates, and the recycling.





#### FACILITY

- storage yard 1
- loading/unloading 2
- steel + scrap separation 3
- milling furnace 4

#### PUBLIC/ADMINISTRATION

- lobby 5
- conference rooms 6
- offices 7

#### GARDENS

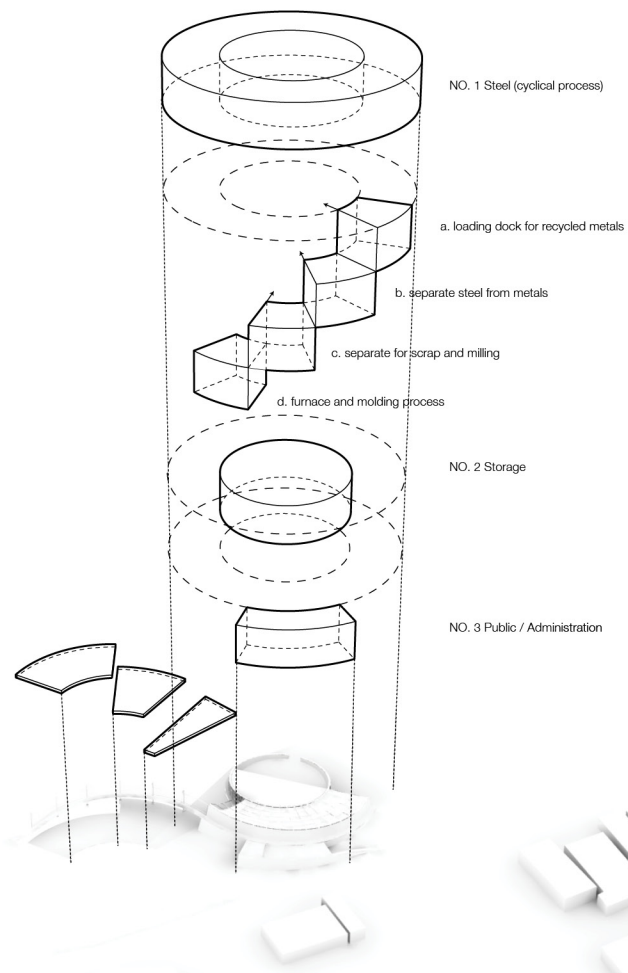
- microclimates 8
- park 9

NO. 4 Microclimates

Climate Zone A  
150-300 ft from steam source  
Temperature Range: 35-50 F

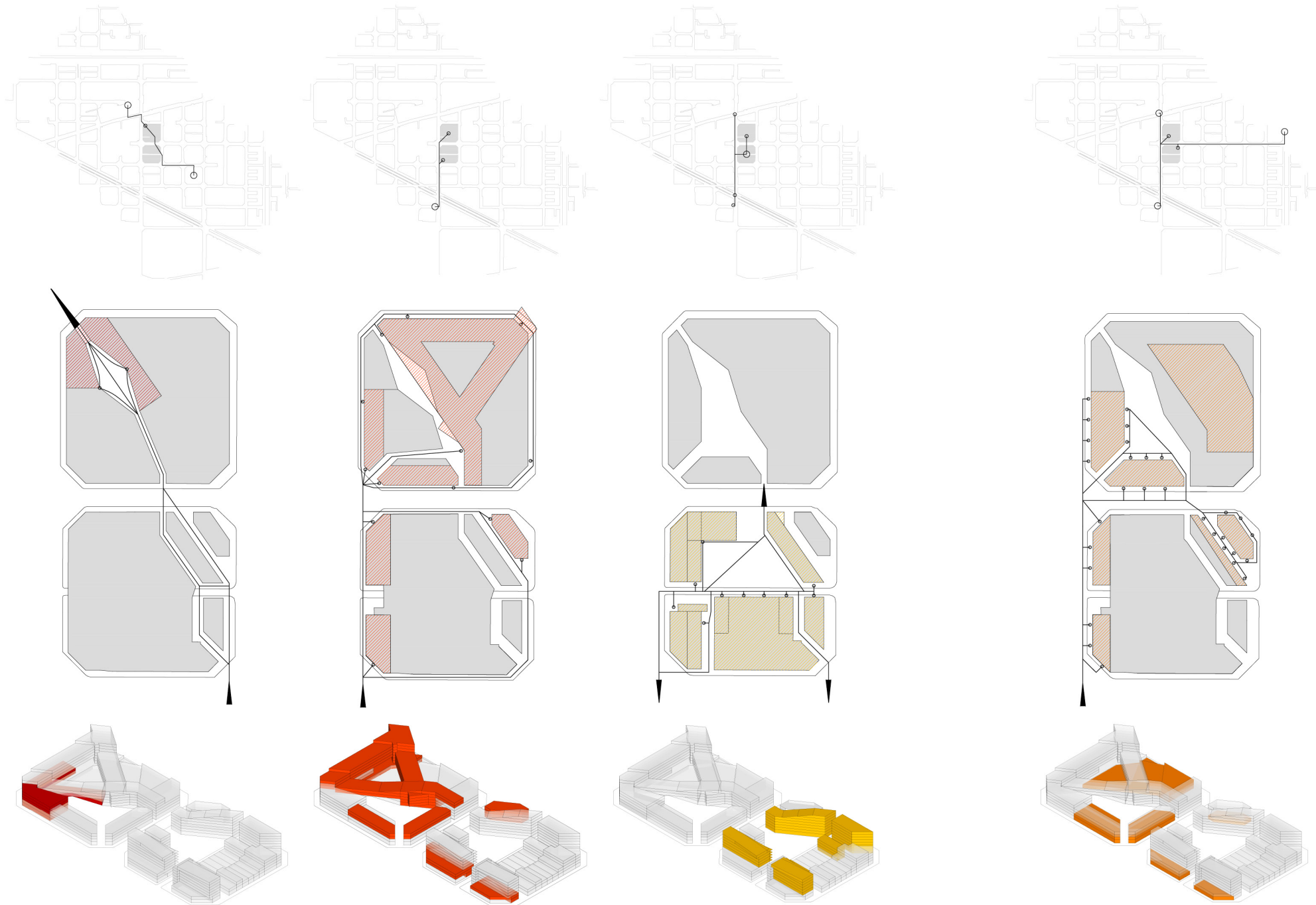
Climate Zone B  
50-150 ft from steam source  
Temperature Range: 50-65 F

Climate Zone C  
10-50 ft from steam source  
Temperature Range: 60-75 F



The Detroit River is lined with a large path that stretches the extent of the cities length. This view portrays the facility from the perspective of the public walk as it ends in the green park of micro climates (top). This is an aerial view of the facility from the south (bottom).





# A05

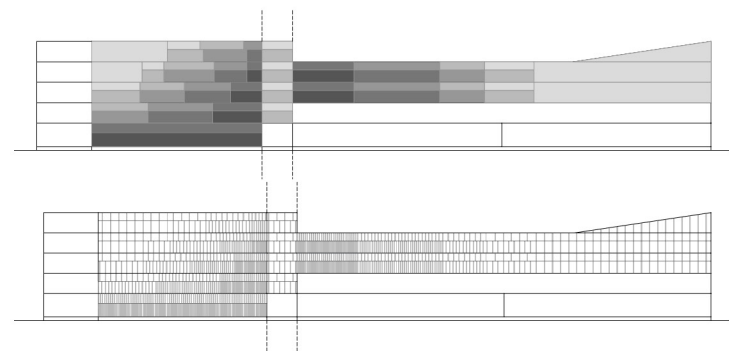
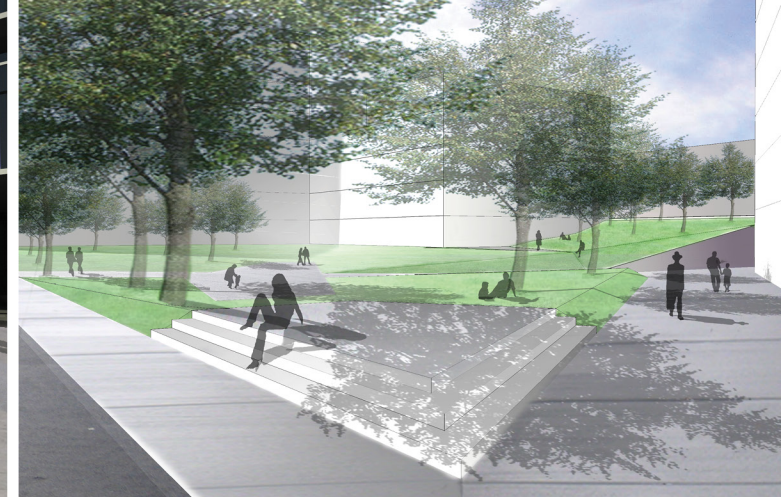
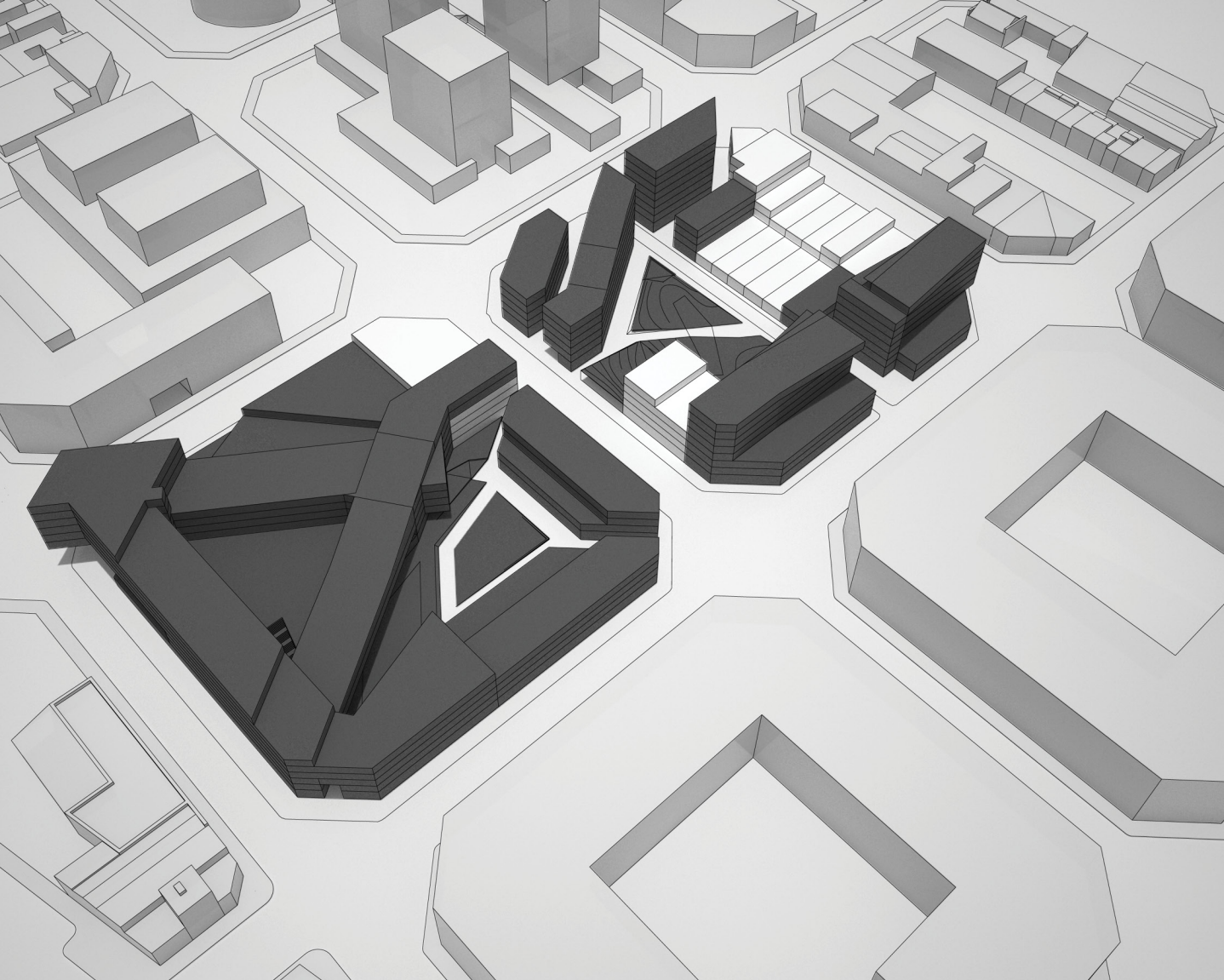
barcelona 22@

The project objective was the redevelopment of two full city blocks within Barcelona's Eixample district known as the 22@ site. Our design team was assigned the task of developing the plan for a multi-use complex of academic, residential, office, and retail space.

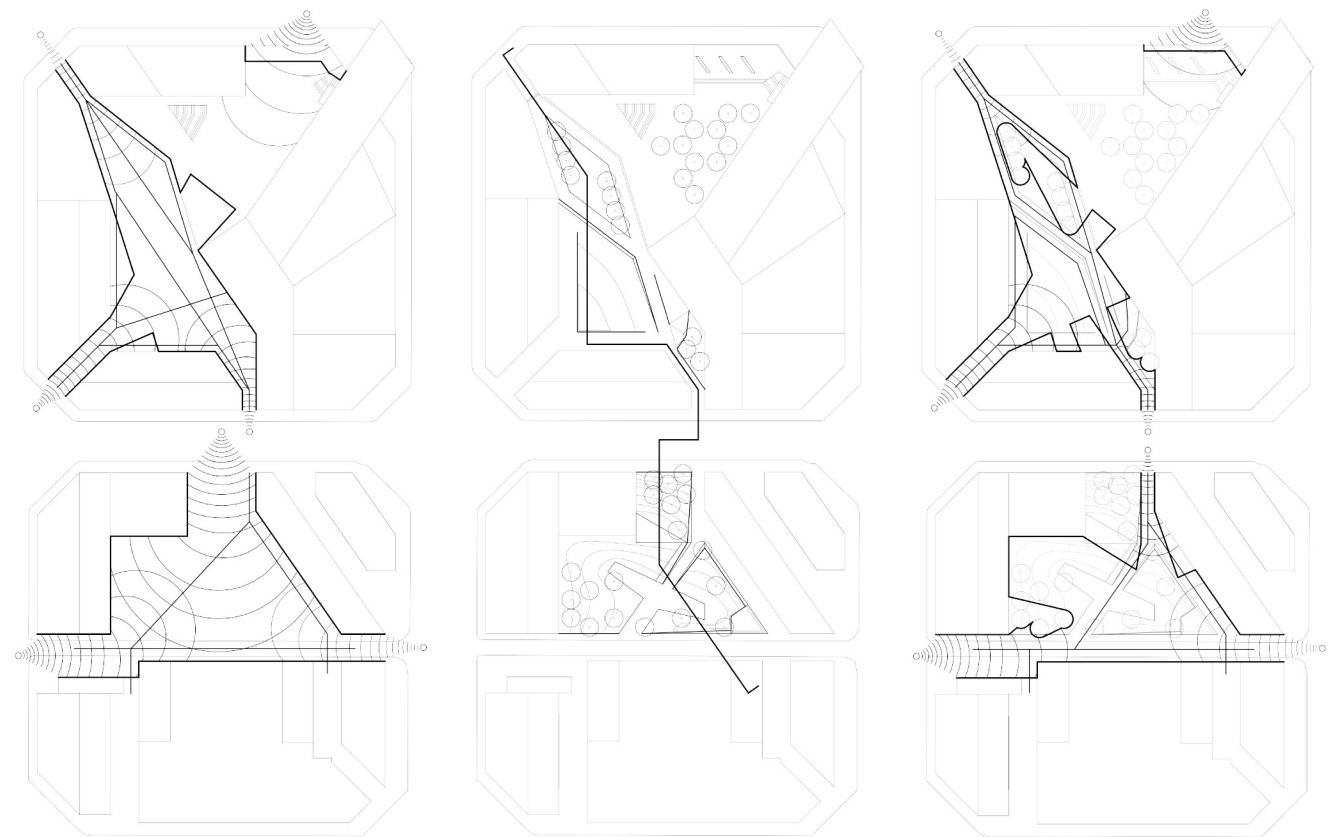
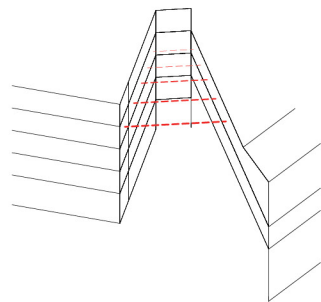
Our proposal focused on continuous outdoor living space within the construction limits generating public space. Evaluating the intimacy levels of the space with controlled variables such as pedestrian circulation, street view, and ambient noise level, I used the testing to design the structure and site, monitoring and adjusting those variables for the best result.

*project complete during my duration at El Universitat de Politecnica de Catalunya under the tutillage of Professor Santi Ibarra and Toni Montes [august 2009 - december 2009]*

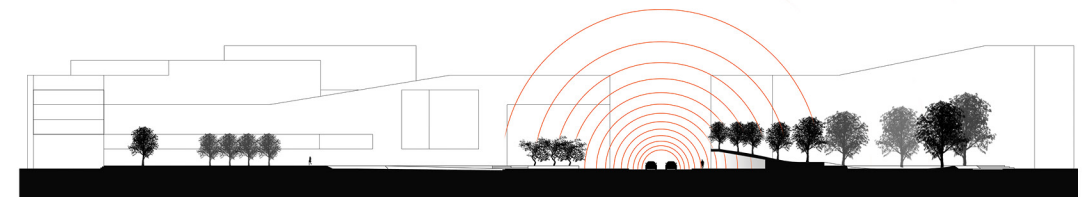




Generating levels of intimacy within open space, extensive research was done on mapping autonomous open space on certain piazzas around the city of Barcelona, which ultimately drove the design of this multi-purpose open space. Three factors- pedestrian circulation, street view, and ambient noise level were measured and used to guide the design toward optimal use of the space.



Space + influence map (left above), Reaction of variable relationships (center), verification of design (right)





a thomas f. jasper design, 2014 publishment

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