

An abstract architectural drawing on a black background. It features a complex network of thin, colorful lines (red, blue, yellow, green, purple) that form various geometric shapes and patterns. On the left, a large, light-colored triangle is formed by these lines. In the center, there is a dense, chaotic cluster of lines. On the right, there are several distinct, fan-like structures radiating from central points. The overall composition is dynamic and layered.

TO
CREATE
ONE MUST
QUESTION
EVERYTHING

NIMA FERDOSI
Architecture Portfolio
M-Arch student at University of Oklahoma

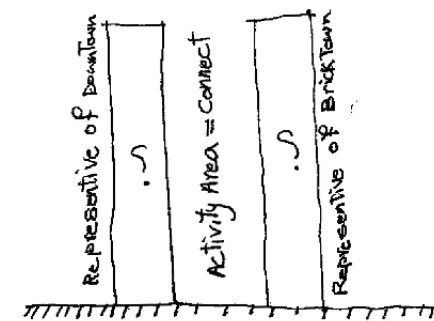
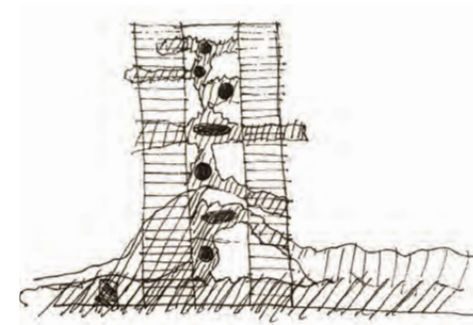
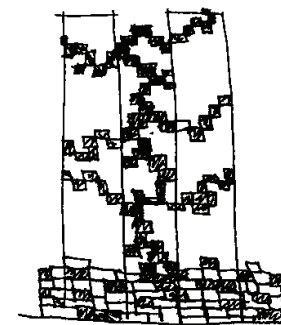
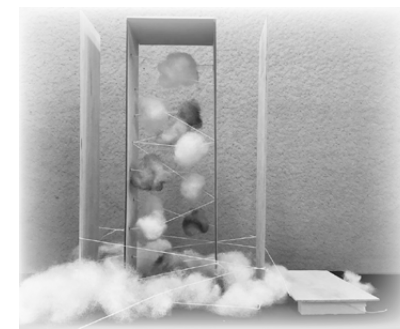
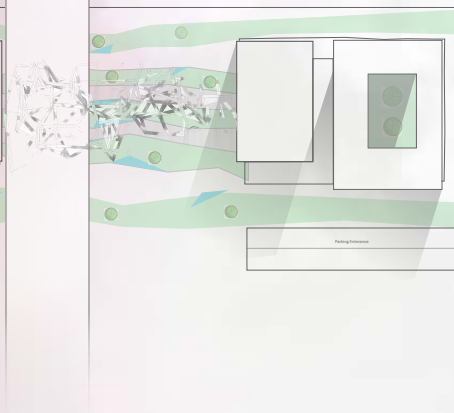


SWARM GARDENS

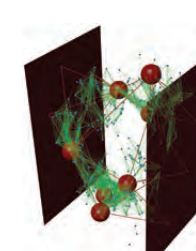
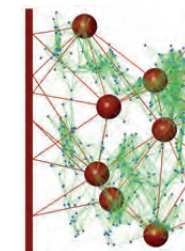
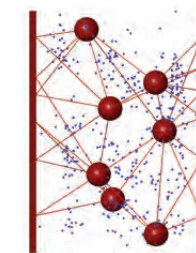
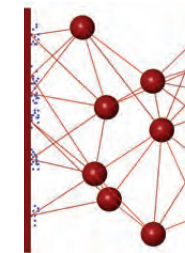
Supervisor: Deborah Richards
Second Graduate design Studio
Spring 2016



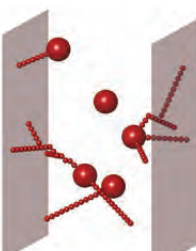
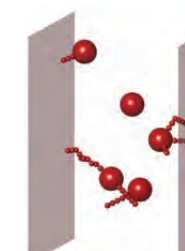
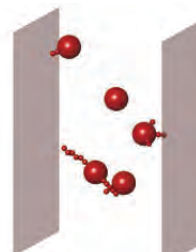
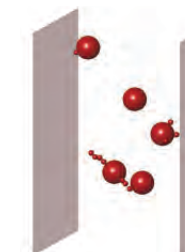
Oklahoma has one of the richest landscapes in the nation, however, when you look at Oklahoma City by itself it feels barren and flat. Also, the site was located in a really special place where the two main districts of the city (Bricktown and Downtown) meet but those districts are separated by a railroad that crosses our site. In order to solve those issues, a geographic feature was proposed to connect the two towers, be a landmark in OKC, break the rigidity of the buildings that we are used to seeing in downtown area and most importantly serve as a place for community to gather and have fun.



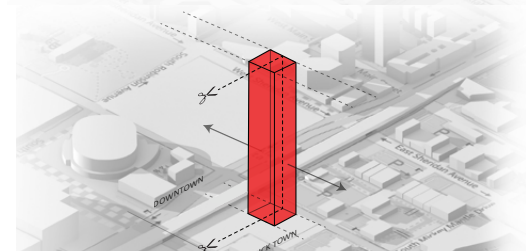
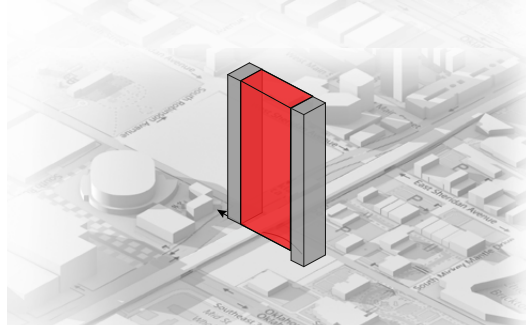
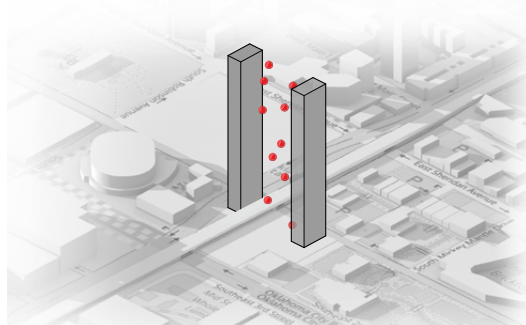
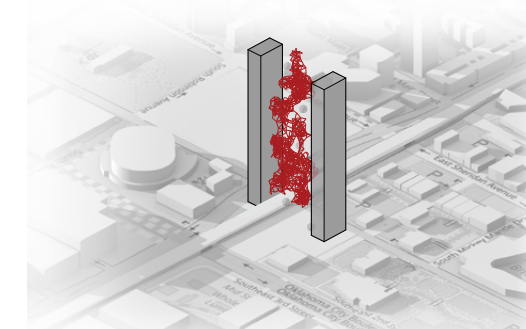
First concept sketches



Second Idea: Slime Mold Experiment

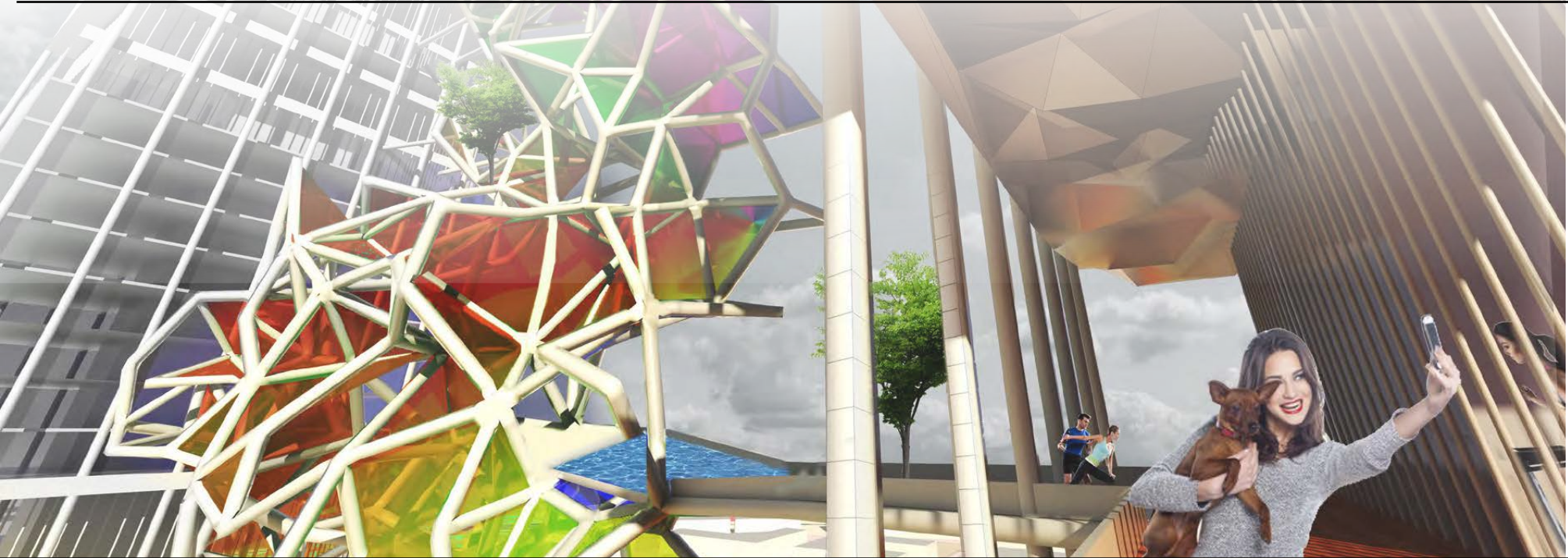
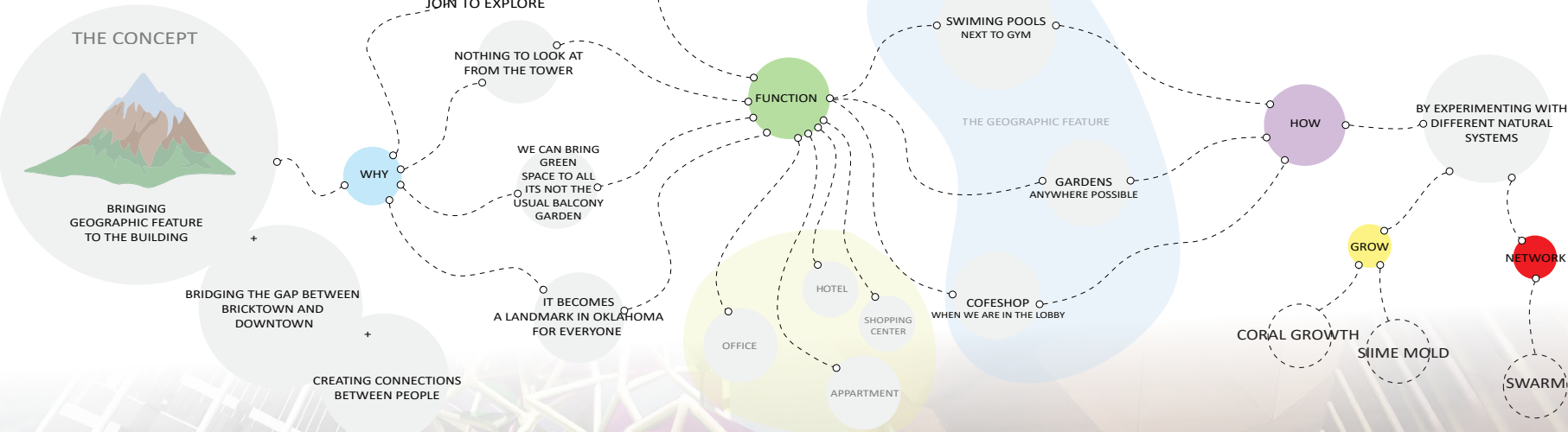


First Idea: Coral Growth Experiment

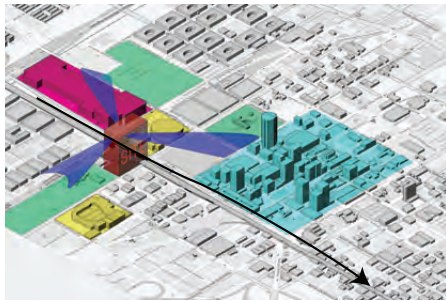


Final Idea: Swarm behaviors

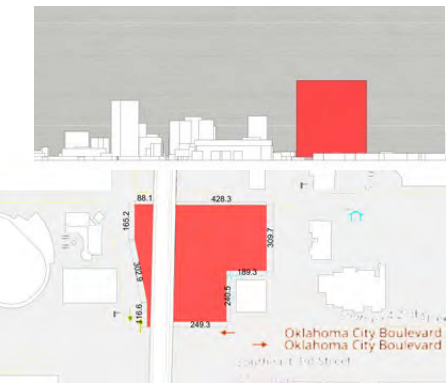
THE ARCHITECTURAL LANGUAGE



VIEW FROM OUTDOOR GYMS



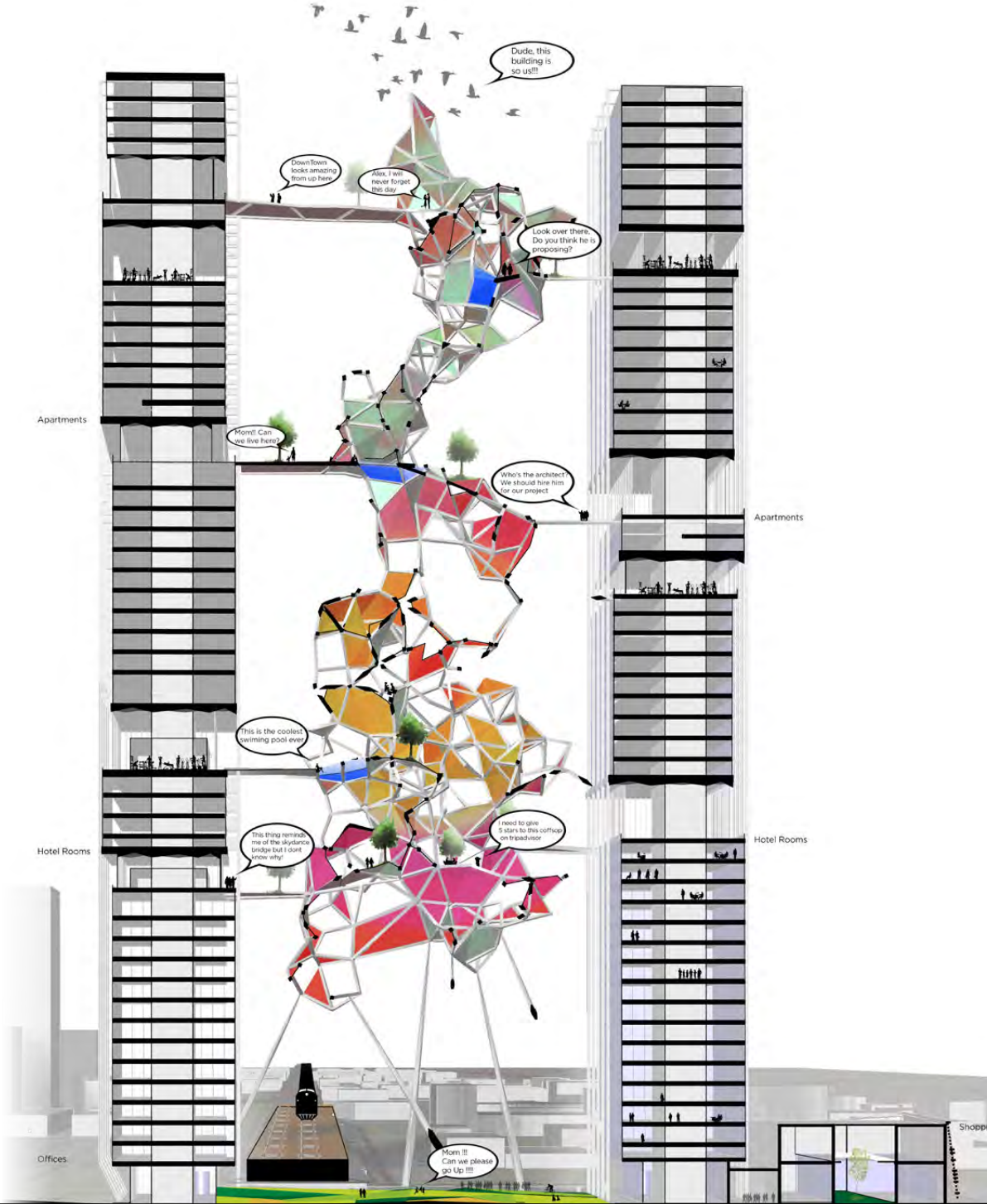
THE SITE PLAYS AN IMPORTANT ROLE IN THE FUTURE CONSTRUCTIONS OF OKLAHOMA CITY. IT CAN CHANGE THE CHAARACTER OF THE CITY AND ACT AS A MAGNET TO PUSH CONSTRUCTION TO BRICKTOWN.



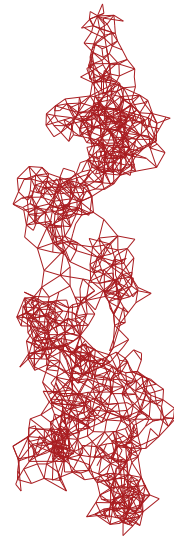
FROM THE SKYSCRAPER THERE IS NOT MUCH TO VIEW. THE GIVEN SITE HAS THE POTENTIAL TO BRIDGE THE GAP BECAUSE ONE SECTION IS IN BRICKTOWN AND THE OTHER IN DOWNTOWN.



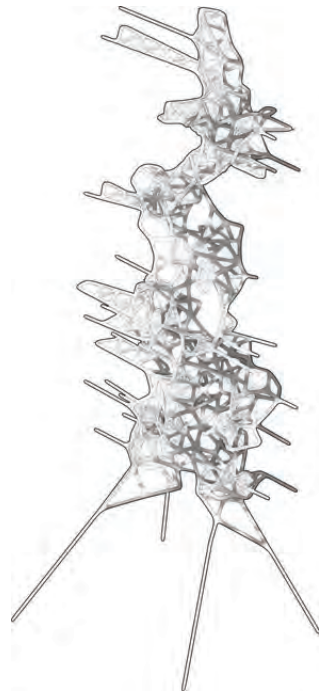
THE RAILWAY PLAYS A BIG PART FOR OBVIOUS GAP BETWEEN DOWNTOWN AND BRICKTOWN, HOWEVER THE FUNCTIONS IN EACH DISTRICT ALSO PLAYS A SEPARATE ROLE IN THE GAP BETWEEN BRICKTOWN AND DOWNTOWN



SWARM NETWORK



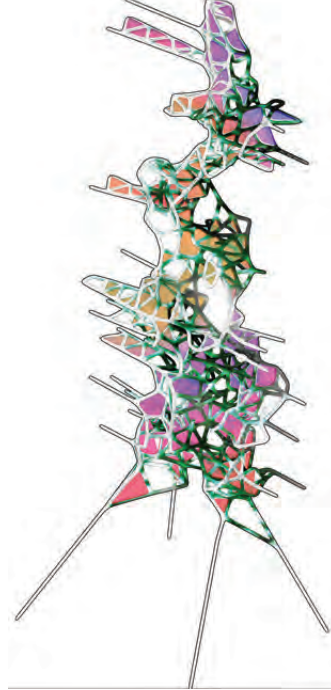
THE NETWORK THAT THE SWARM PARTICLES CREATE



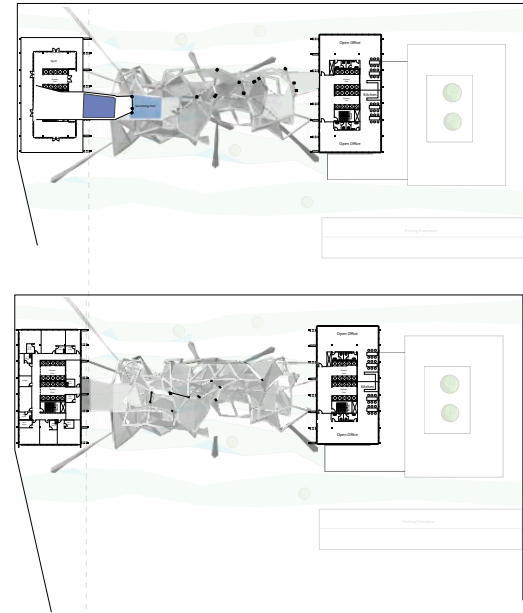
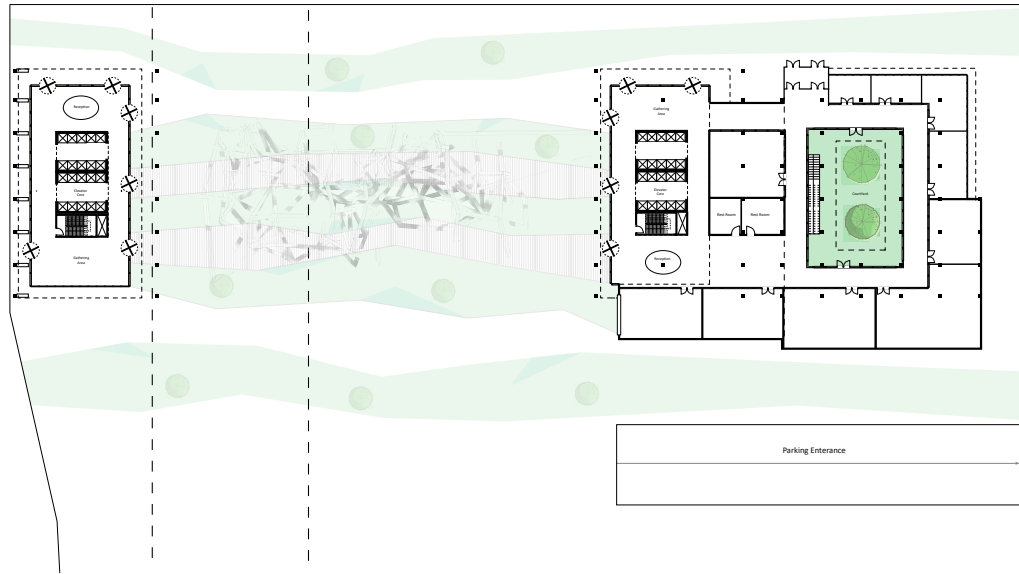
THE CONNECTED MESH TO THE GROUND AND THE TOWERS



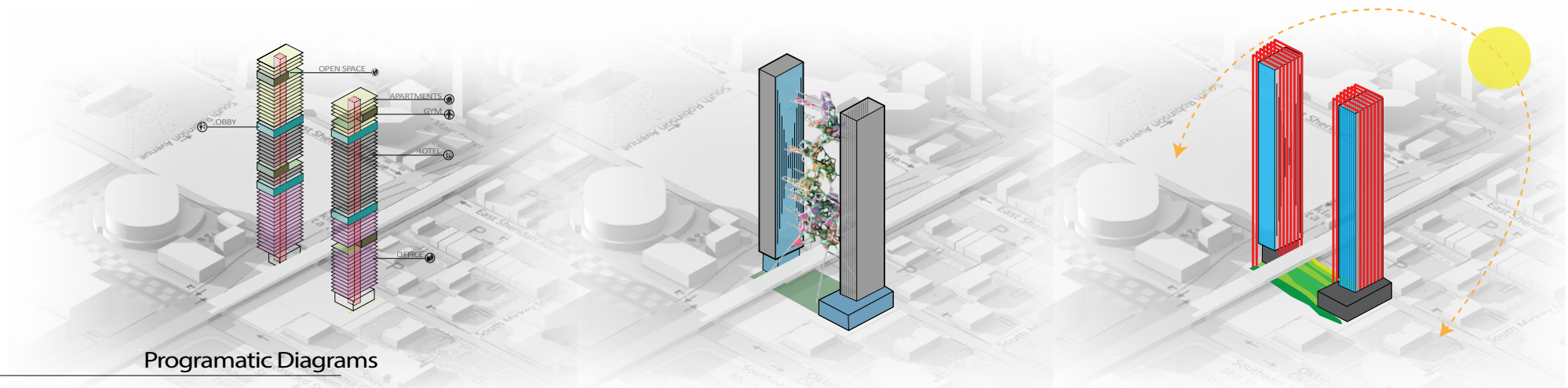
MESHING THE PLANAR SURFACES TO LOOK AT THEIR BEHAVIOR TO FIND THE ONES THAT CAN BE USED FOR CLOSED SPACES



THE GEOGRAPHIC FEATURE GARDENS + CLOSED SPACES+SPA



VIEW FROM INSIDE OF THE SWARM GARDEN



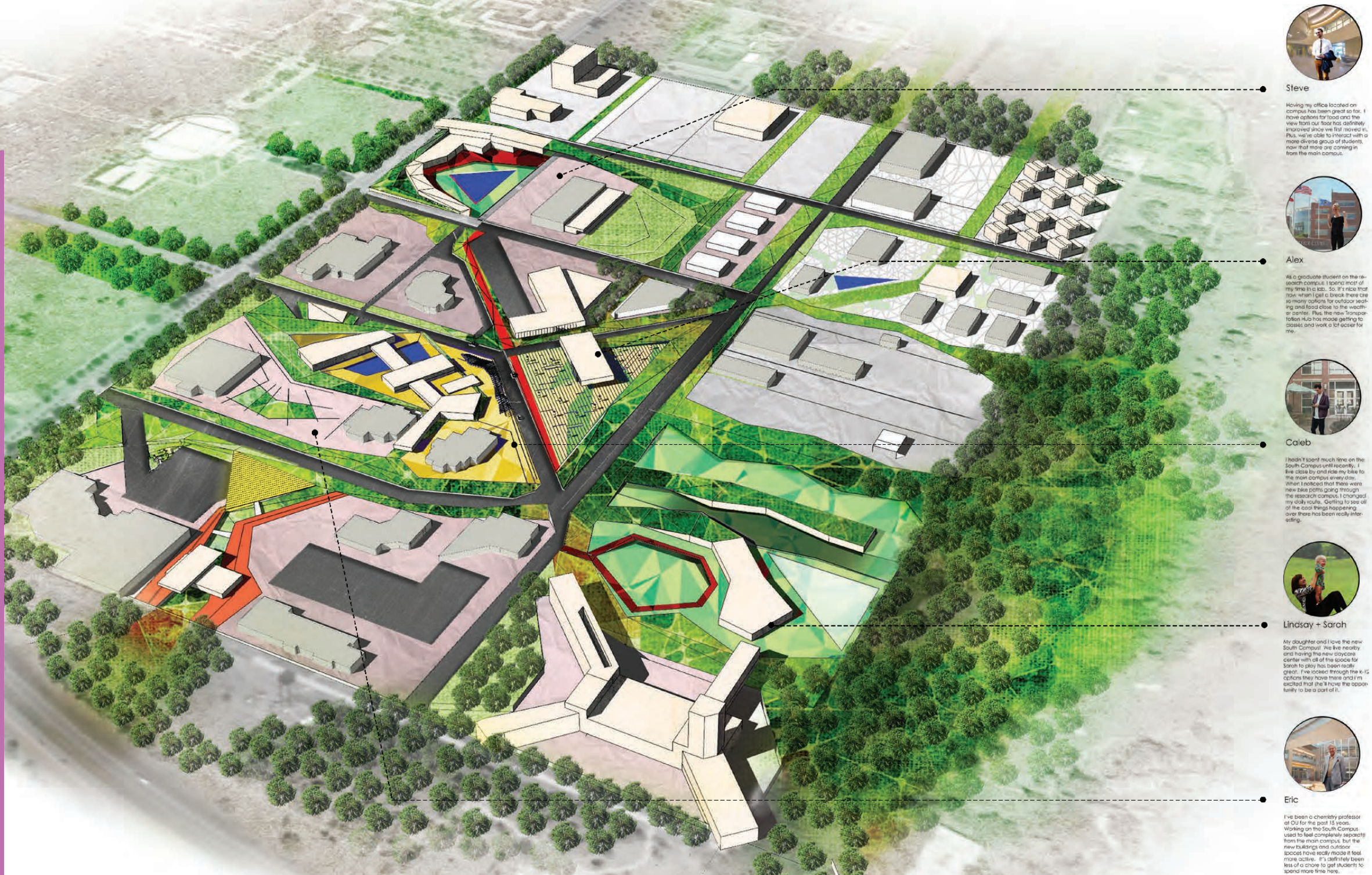
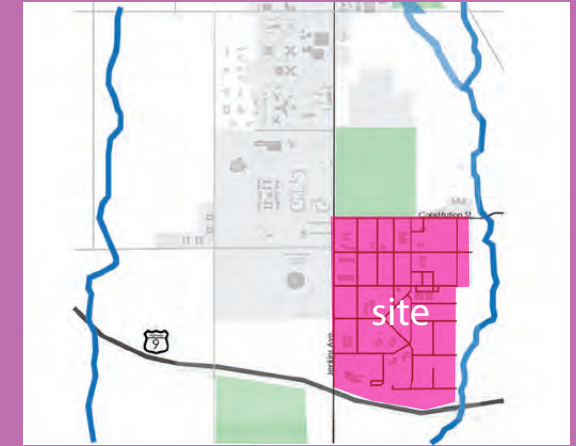
Programmatic Diagrams

THE PATCH

Supervisor: Anderes Cavieres
Third graduate design studio
Fall 2017

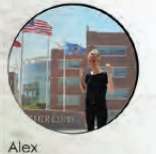
Description of Problem Statement

The Research Campus on the South end of the University of Oklahoma is a recent development that caters to the Research needs of OU. The campus is home to a handful of research centers along with other office spaces. Though the main purpose of the South Campus is research, it lacks neighborhood involvement and ultimately synergy that is so vital in making any campus successful. Also, the disengagement of the South Campus from the North Campus is quite evident. One can see a lot of human activity on the North end of the campus but the opposite is true on the South end. While the numerous parking lots may be at blame to some extent, the research center itself is program that require researchers, students and other user groups operate in a certain way that leaves little room for outdoor human activity.



Steve

Having my office located on campus has been great so far. I have options for food and the view from our floor has definitely improved since we first moved in. Plus, we're able to interact with a more diverse group of students, now that more are coming in from the main campus.



Alex

As a graduate student on the research campus, I spend most of my time in a lab. So, it's nice that now, when I get a break there are so many options for outdoor seating and food close to the weather center. Plus, the new Transportation Hub has made getting to classes and work a lot easier for me.



Caleb

I hadn't spent much time on the South Campus until recently. I live close by and ride my bike to the main campus every day. When I noticed that there were new bike paths going through the research campus, I changed my daily route. Getting to see all of the cool things happening over there has been really interesting.



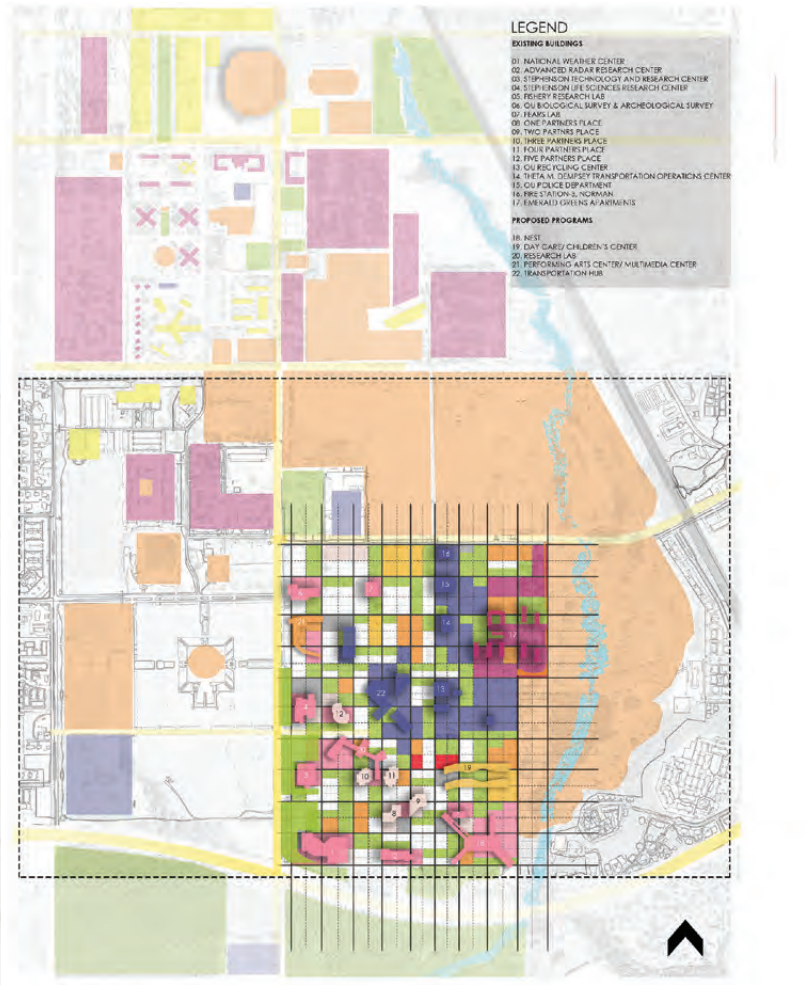
Lindsay + Sarah

My daughter and I love the new South Campus! We live nearby and having the new daycare center with all of the space for Sarah to play has been really great. I've looked through the k-12 options they have there and I'm excited that she'll have the opportunity to be a part of it.

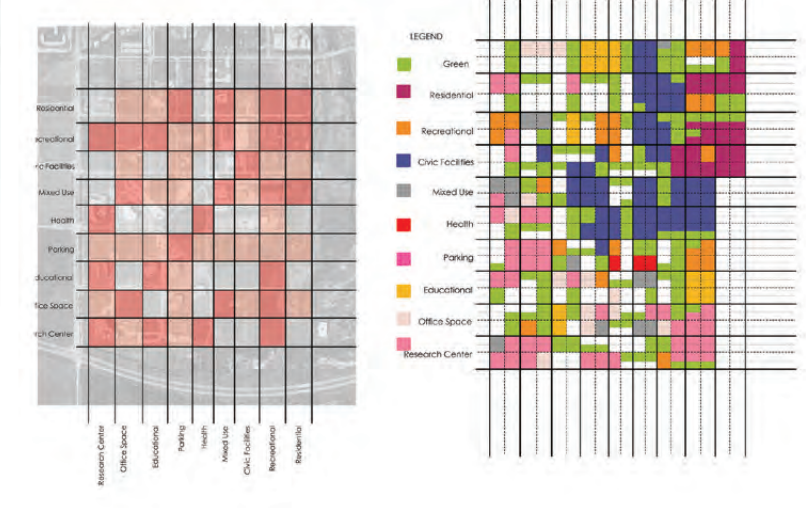


Eric

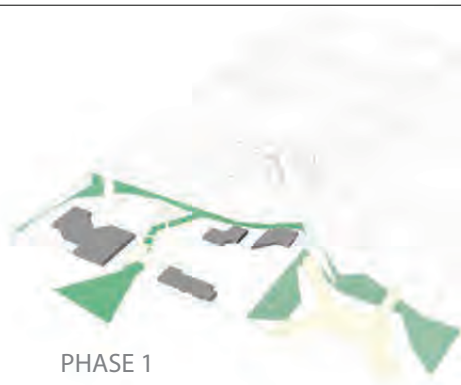
I've been a chemistry professor at OU for the past 15 years. Working on the South Campus used to feel completely separate from the main campus, but the new buildings and outdoor spaces have really made it feel more active. It's definitely been less of a chore to get students to spend more time here.



- LEGEND**
- EXISTING BUILDINGS**
- 01. NATIONAL WEATHER CENTER
 - 02. ADVANCED RADAR RESEARCH CENTER
 - 03. STIPERSON TECHNOLOGY AND RESEARCH CENTER
 - 04. STIPERSON LIFE SCIENCES RESEARCH CENTER
 - 05. REEVE RESEARCH LAB
 - 06. OU BIOLOGICAL SURVEY & ARCHEOLOGICAL SURVEY
 - 07. REEVE LAB
 - 08. ONE PARTNER PLACE
 - 09. TWO PARTNER PLACE
 - 10. THREE PARTNER PLACE
 - 11. FOUR PARTNER PLACE
 - 12. FIVE PARTNER PLACE
 - 13. OU POLICE CENTER
 - 14. THETA XI CHAPTER TRANSPORTATION OPERATIONS CENTER
 - 15. OU POLICE DEPARTMENT
 - 16. RESEARCH & NORMAN
 - 17. FARM ROAD GIVING ACADEMICS
- PROPOSED PROGRAMS**
- 18. REST
 - 19. DAY CARE/CHILDREN'S CENTER
 - 20. RESEARCH LAB
 - 21. PERFORMING ARTS CENTER/MULTIMEDIA CENTER
 - 22. TRANSPORTATION HUB



- LEGEND**
- Green
 - Residential
 - Recreational
 - Civic Facilities
 - Mixed Use
 - Health
 - Parking
 - Educational
 - Office Space
 - Research Center



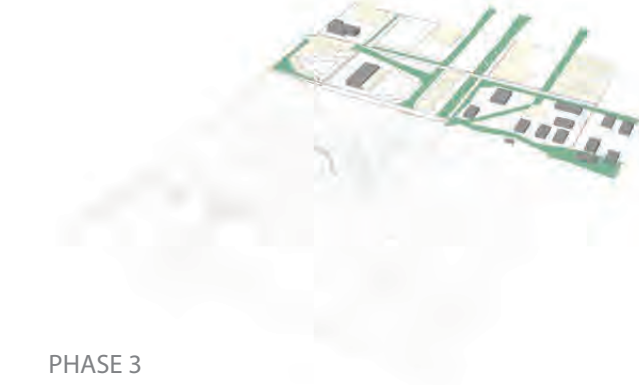
PHASE 1

Will involve development of National Environmental Simulation and Testing Facility (NEST). It will also include development of a recreational facility that will lie in the intersection of the National Weather Center, One Partner's Place, and National Radar Research Center. The existing and the proposed new buildings will be connected using a berm that would snake around the site to stitch the disconnected structures and programs together. The existing parking in front of National weather center will be camouflaged by varying the height of the berm. The parking lot will also be covered by a canopy of shading devices that have solar panels on them.



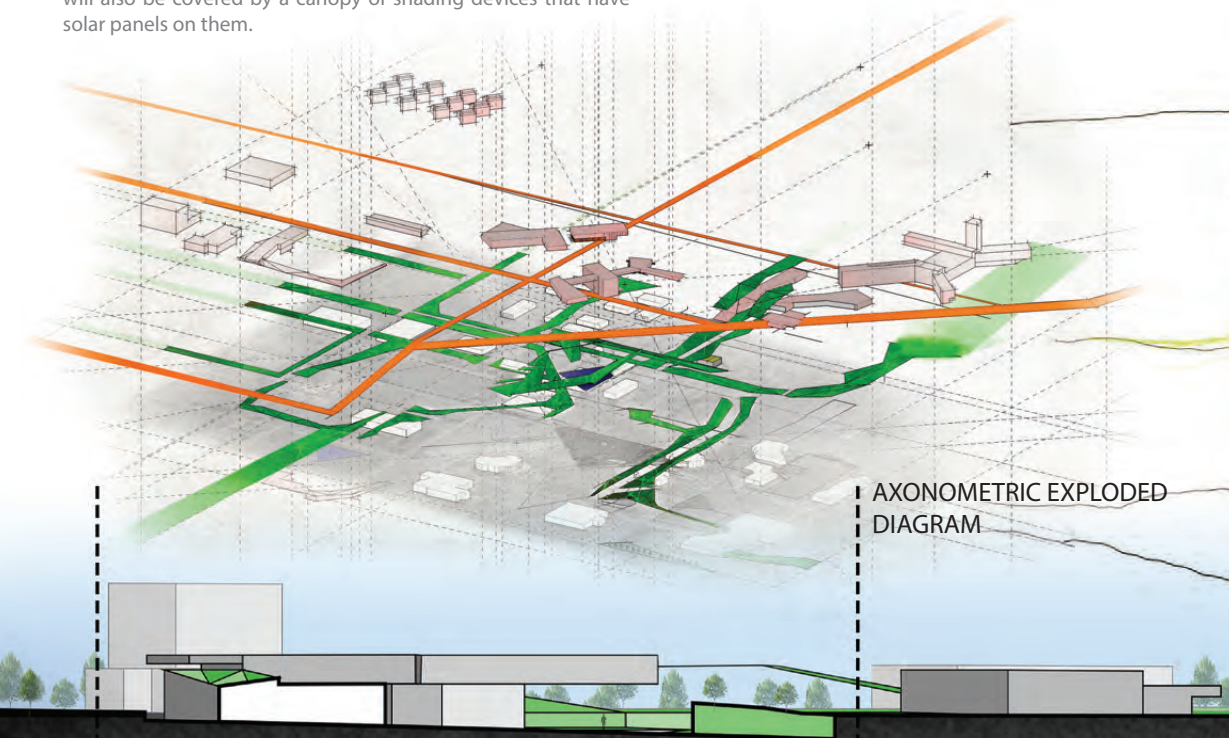
PHASE 2

will see the growth of a Research Center that stitches the Stephenson Research Center and the nearby offices together. A day care center would also be developed overlooking the creek, where people can leave their kids while at work. This day care would eventually open up avenues for new programs like urban farming and other educational programs for kids. All these programs would be established while steadily incorporating the berm at every step of the process. This would help in stitching the site better with each program development.

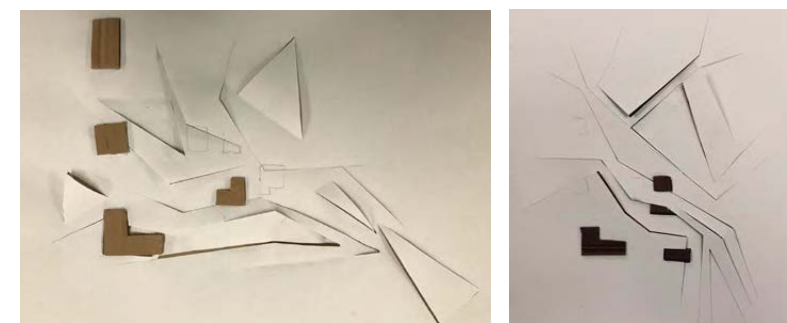
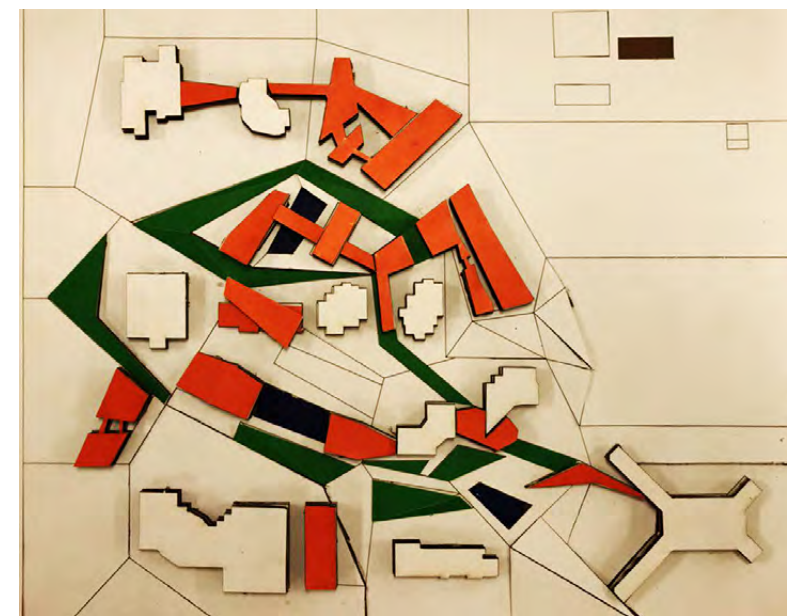
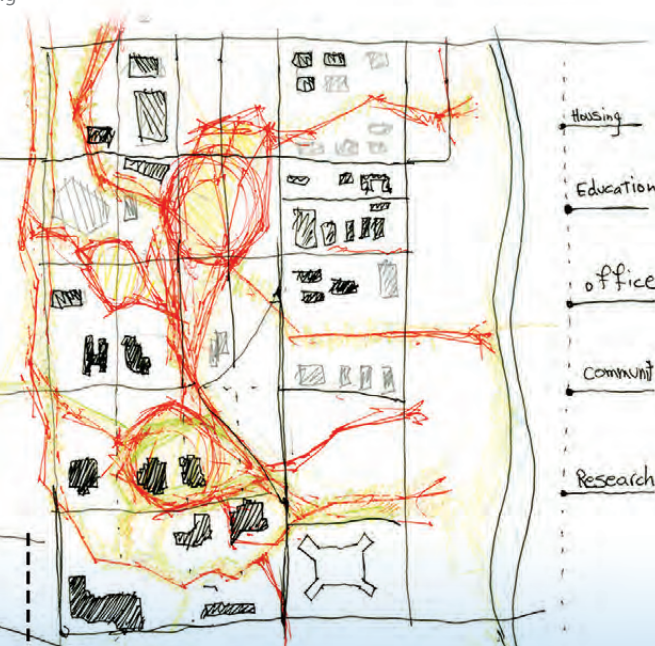


PHASE 3

Finally the last phase would be the construction of the performance art center next to Jenkins Ave. It would follow up with building the housing and recreation areas (gyms, shops, grocery stores) for the community living there, then we would extend the green ribbons outside the site and try to connect pathways and cycling ways with our north campus.



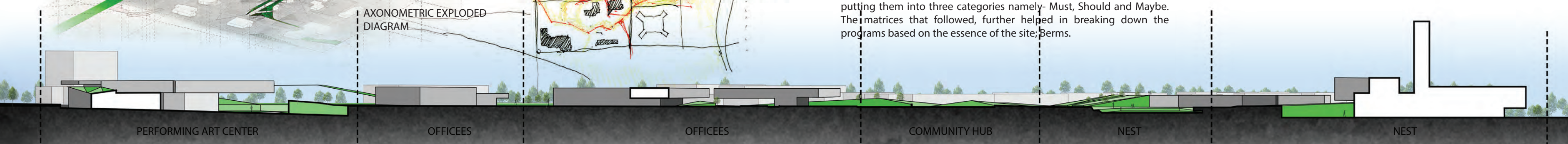
AXONOMETRIC EXPLODED DIAGRAM



To help determine the programmatic arrangement of future buildings, a matrix has been developed based on the existing environmental, social, economical and site conditions. This also takes consideration the logical adjacencies of the programs, new and old. The initial matrix focuses on the major programs and the connections that they could have by putting them into three categories namely- Must, Should and Maybe. The matrices that followed, further helped in breaking down the programs based on the essence of the site; Berms.



VIEW FROM NEST TO OPEN TEATHER



PERFORMING ART CENTER

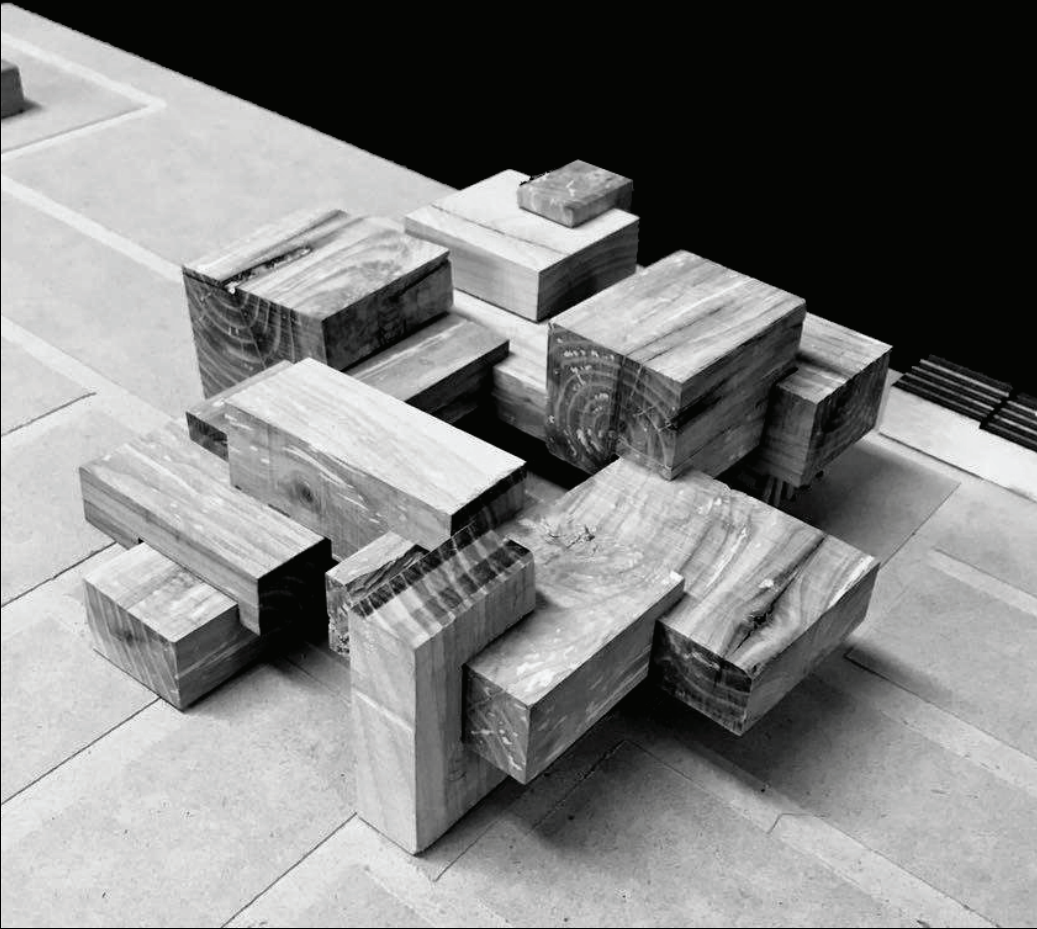
OFFICEES

OFFICEES

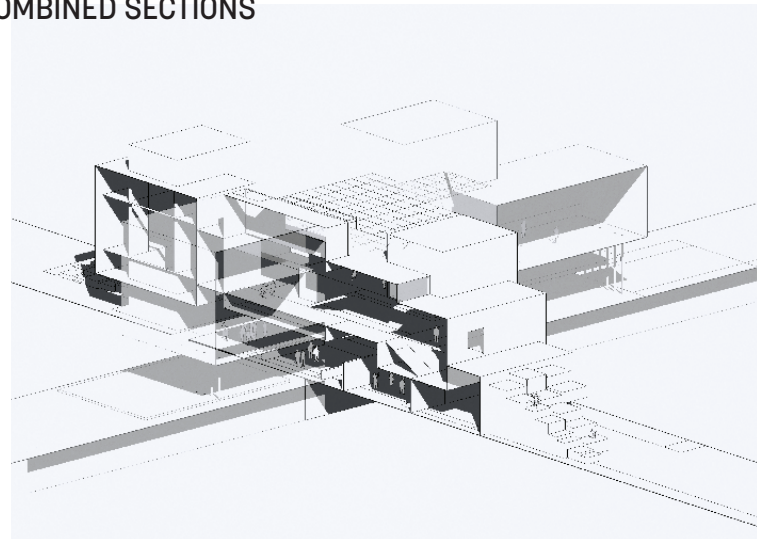
COMMUNITY HUB

NEST

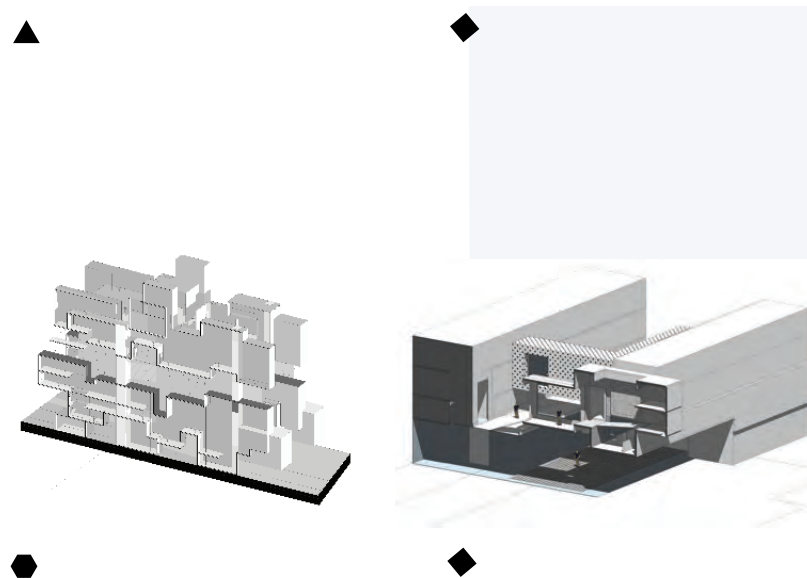
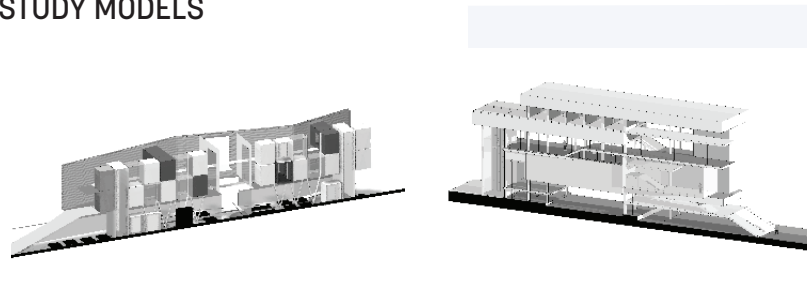
NEST



COMBINED SECTIONS



STUDY MODELS



SECTION STUDIES- WORK IN PROGRESS (EAST-WEST)

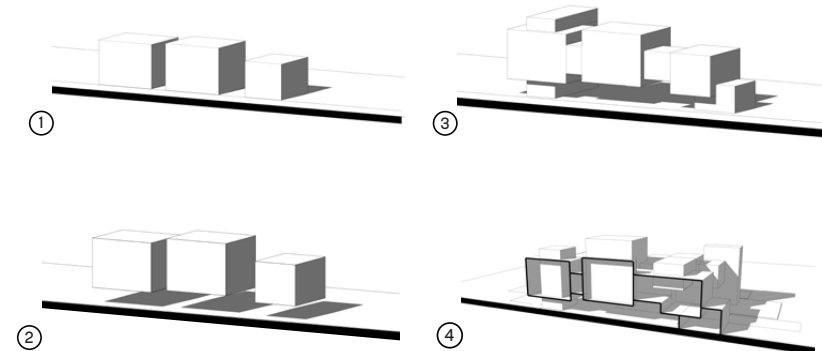
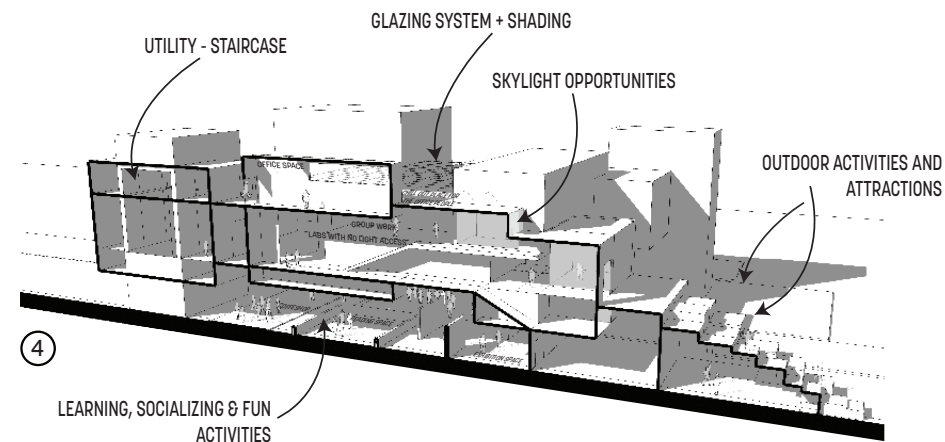
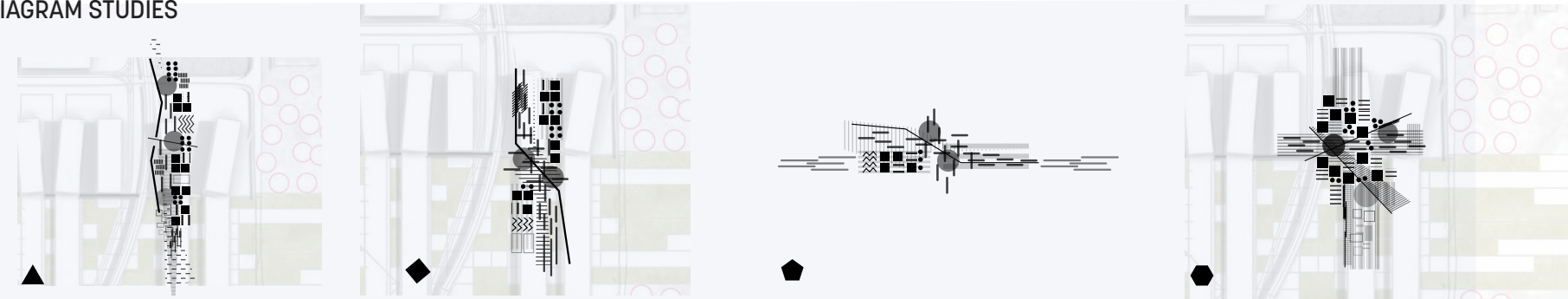


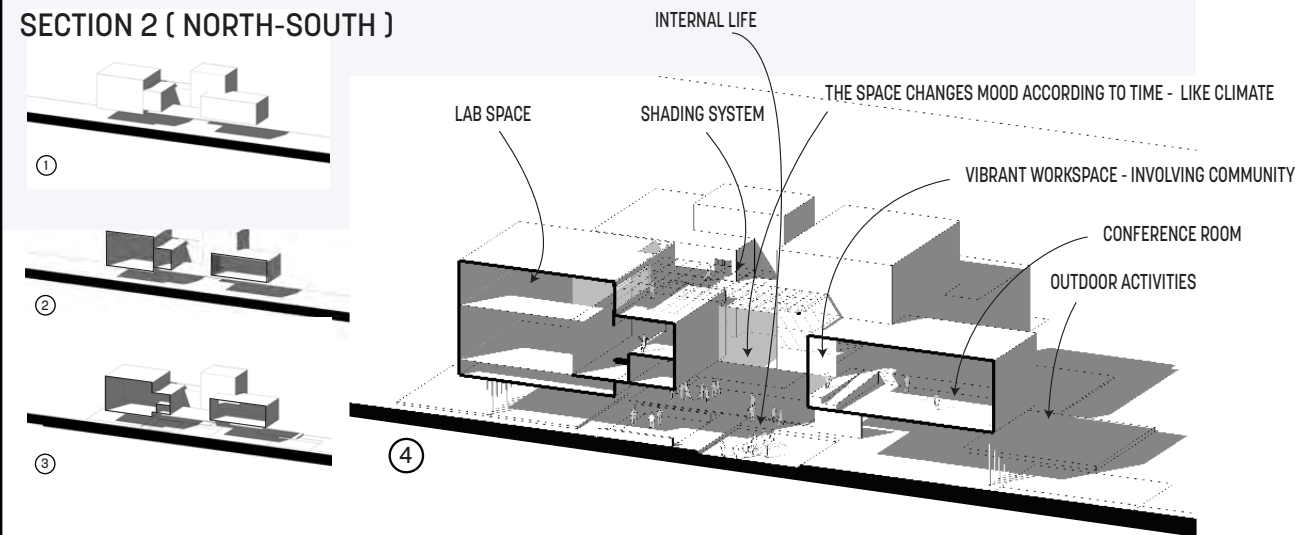
DIAGRAM STUDIES

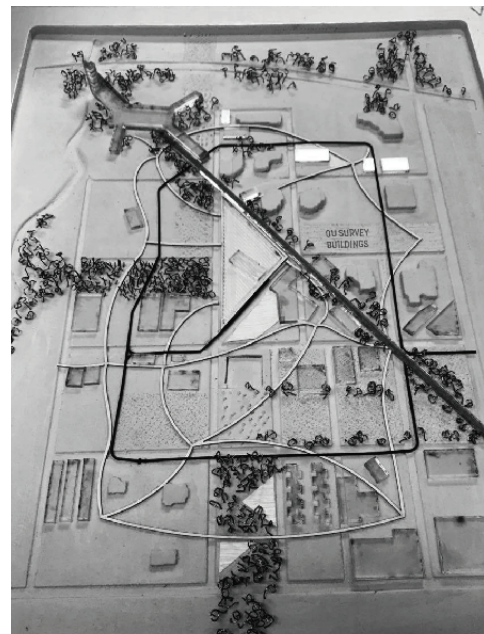
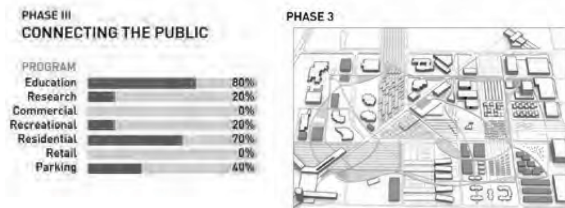
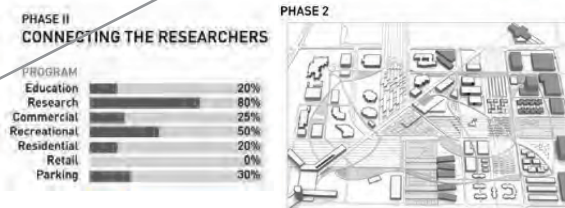
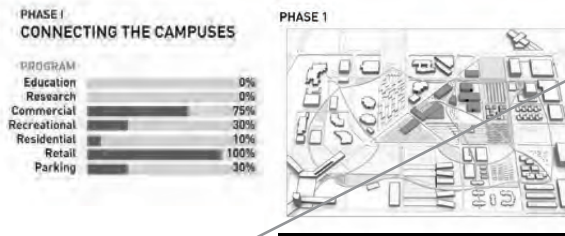
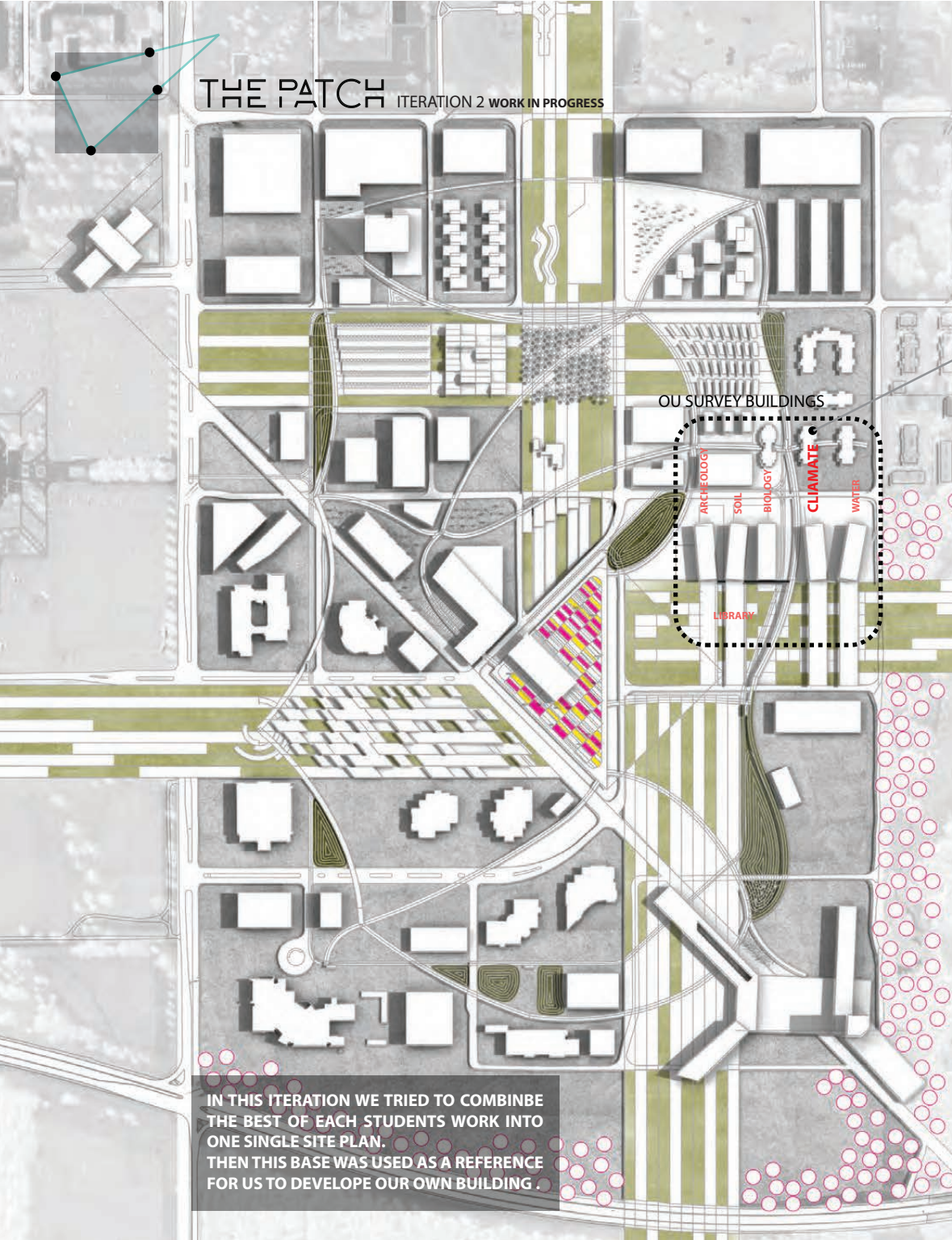


DESIGN CRITERIA

In this exercise we were asked to come up with an adjacency diagram which was presented by patterns rather than the traditional bubble diagram. The next step was to convert those diagrams into sections with respect to the site and similar precedents that we looked into. After coming up with two different sections and an overall plan, we were asked to put them together and come up with a massing model. This exercise was done more than 5 times so we could produce different models and look at the different conditions that they would create.

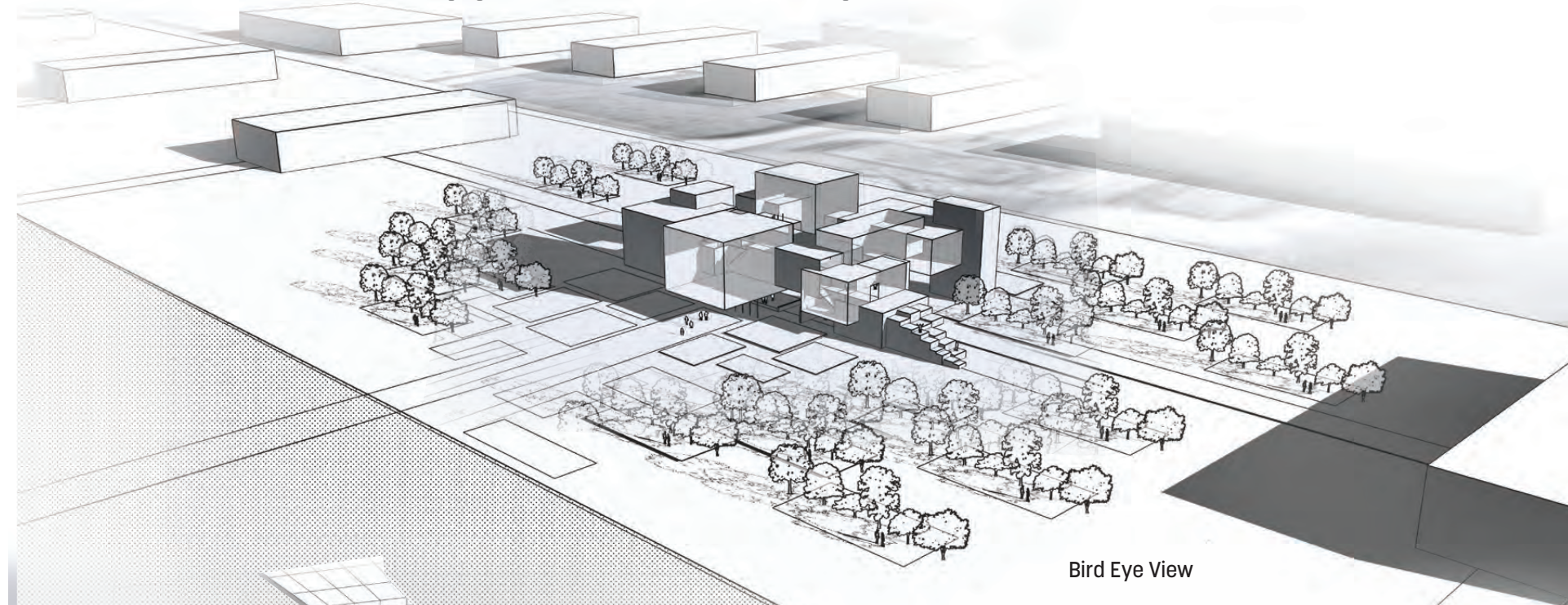
SECTION 2 (NORTH-SOUTH)



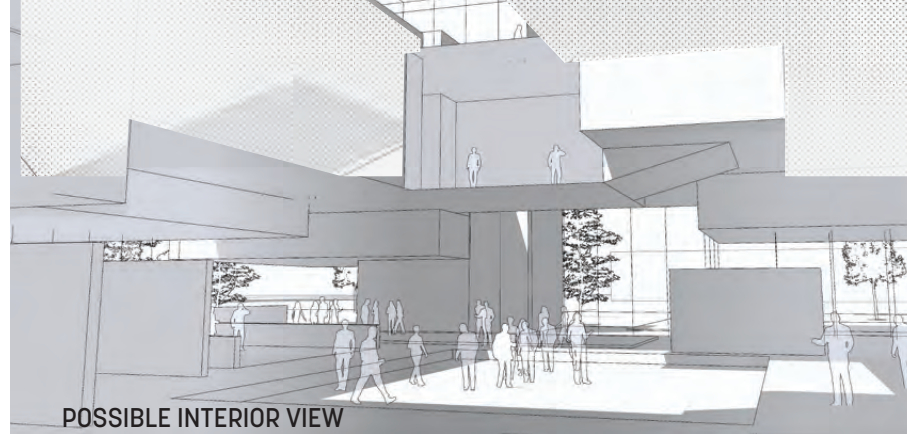


THE CLOUD OU CLIMATE SURVEY

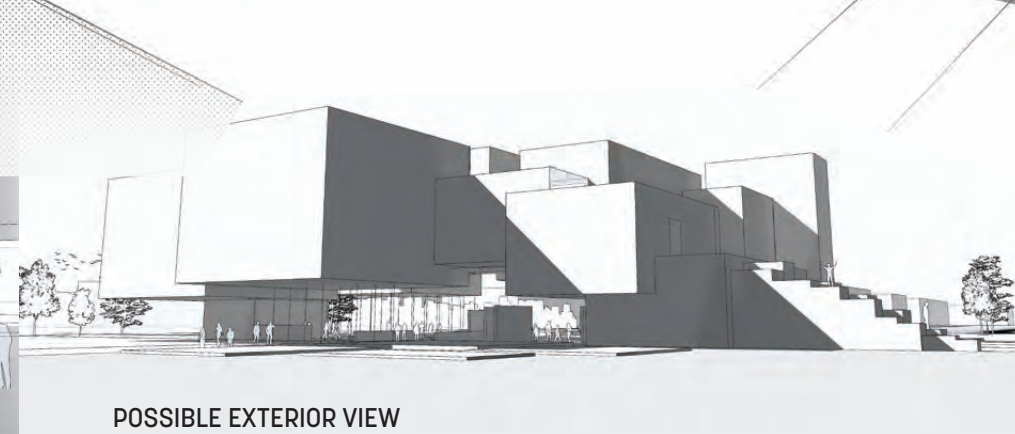
Although the main purpose of the south campus is research, it lacks community involvement and ultimately synergy that is vital in making any campus successful. One of the factors that creates this lack of involvement is the way that the research buildings are programed. They are self-contained with less transparency and attraction to the public eye. The climate survey building is trying to address this issue with mixing contradictory programs together. Not only is the building responding to the researchers needs, but also it attracts the surrounding community due to its exhibition space, community hangout spots (indoor and outdoor), reading rooms, and coffeeshop. In the climate survey building the public and private research areas are distinct yet merged together so that people can interact, socialize, learn and enjoy being there. The main force driving the core idea of the architecture was the tectonic behavior of the clouds which creates translucency and the always change factor. The idea of the building comes from the tectonic behaviors of the clouds, the translucency and the always changing factor were the two main forces driving the core ideas of the architecture.



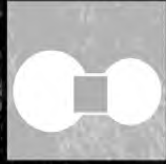
Bird Eye View



POSSIBLE INTERIOR VIEW



POSSIBLE EXTERIOR VIEW



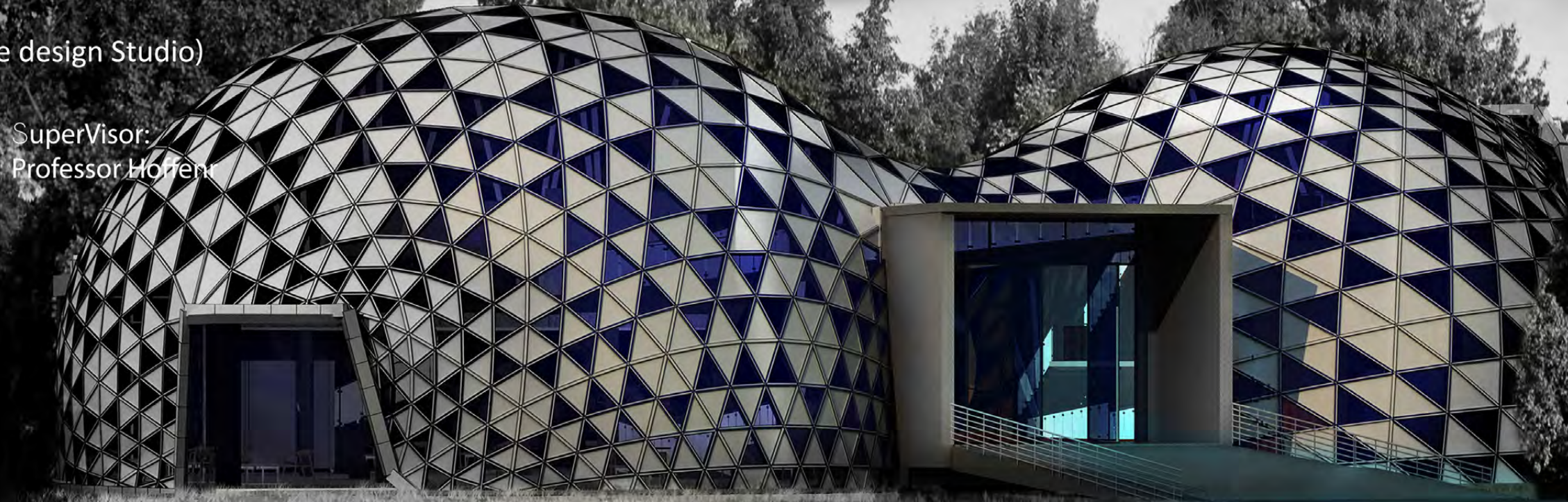
THE CANOPY (COTE Competetion + First Graduate design Studio)

Norman visitor center is a place for big ideas. People would gather in this building to share ideas, work with each other and learn about the values of collabration.

The design analysys started with bubble diagraming and how each space was conncted to the other according the appropriate sun light. Then an organic canopy like shell which would blend with the trees and gather all the spaces together in one solid unit was made. The shell brings all the spaces together, including a 1500ft FEMA shelter. This approach maximizes the visual communication among the people inside and create a unique experience for the users.

Alongside that, the dynamic shell helps the building to take a better advantage of the wind , collecting rain water. The triangular glass panels create great views to outside trees and also make sure that sun light reaches all the section's of the workshop.

SuperVisor:
Professor Hoffert



Sun path



Radiation X,Y Direction



Radiation Z Direction



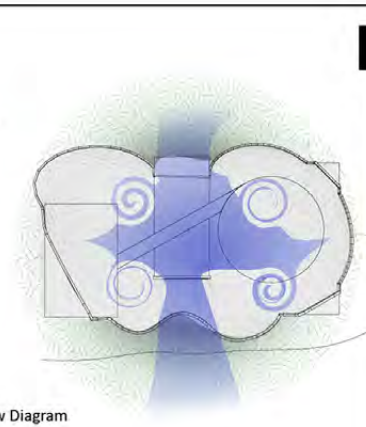
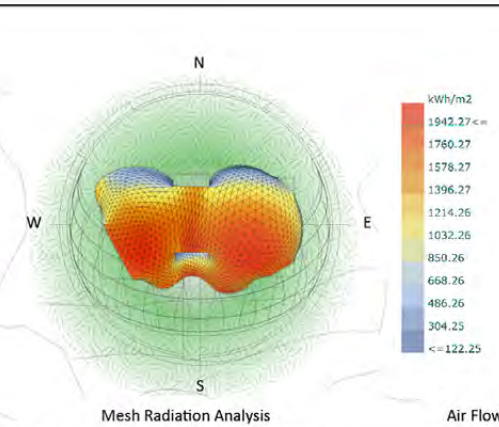
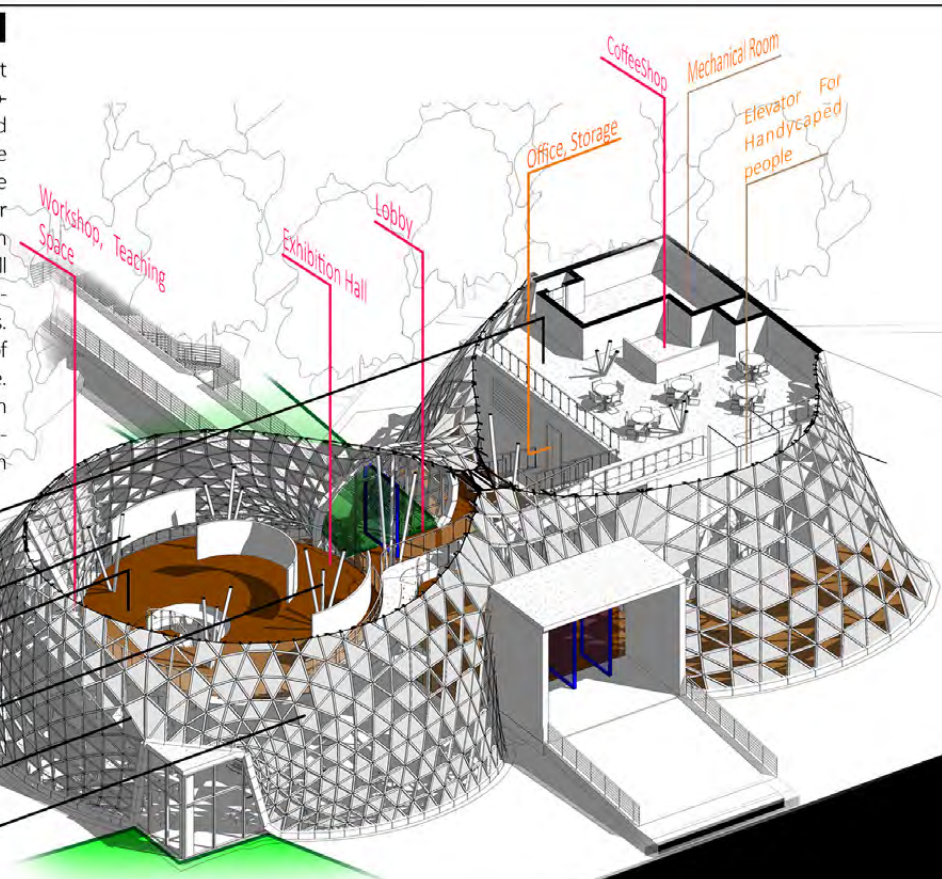
Wind Rose Diagram



Air & Light

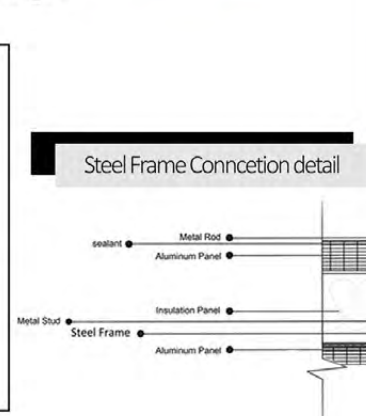
As long as the massing is concerned, different spaces were placed according to their appropriate sun light. glass windows were placed in south and north, in conjunction to the shell for maximizing the views to outside and create a sense of nature in the indoor spaces. Alongside that the triangular mesh of the shell has many skylight windows all over it that make the spaces take advantage of the sun and create attractive views. About 80% of the total square footage of the building has direct views to outside. Also, The underFloor air distribution system makes sure that the workshop-study space receives fresh air when needed.

- Carpet Panels
- Steel Beam
- Boards for Work
- Wood Panels
- Steel Tree Columns
- Steel Frames
- Double Aluminum Panels



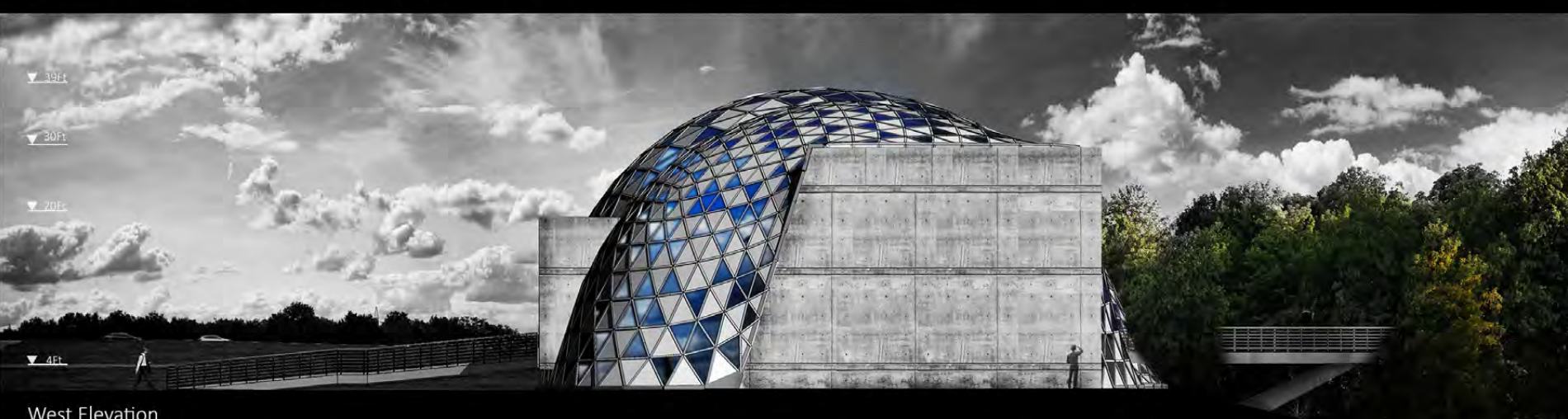
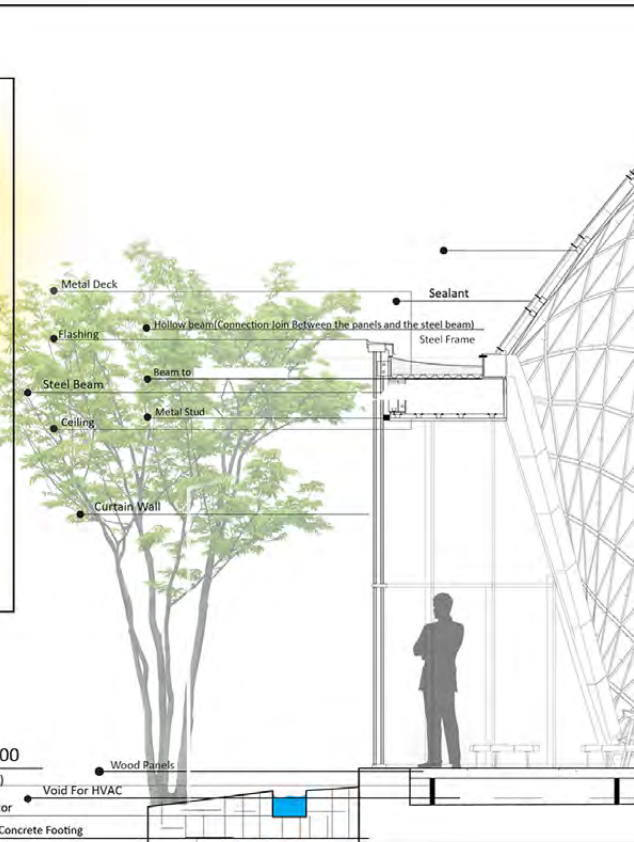
Bioclimatic design

The building is optimized to take advantage of the prevailing wind with the dynamic wind catcher at south. Alongside that, the shell sun radiation analysys shows that there would be a flow of air from North to south due to convection. Thus, when wind enters the opening at south it would be distributed all along the shell.



Direct Sun Light

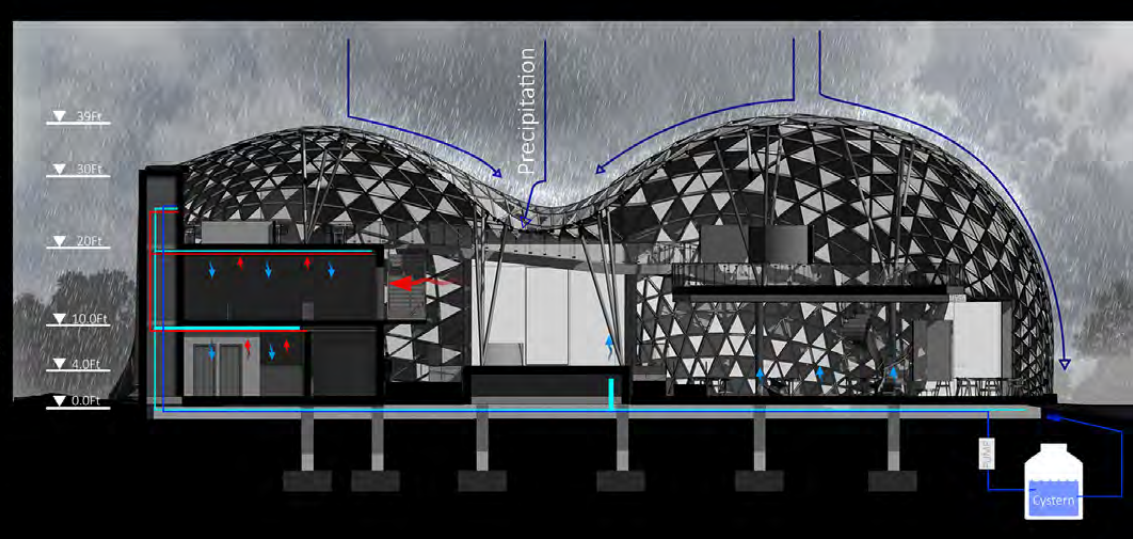
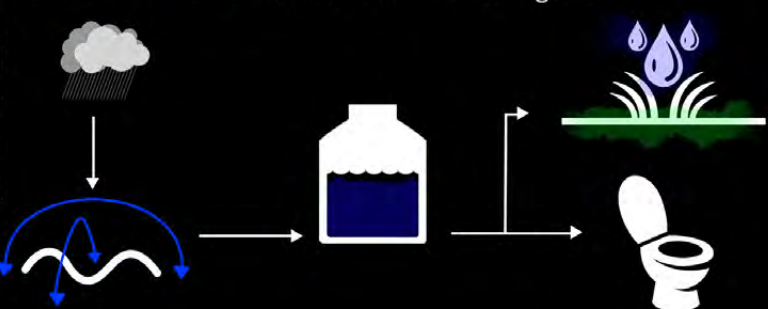
All the spaces Excluding Fema Shelter will receive direct sun light and views to outside. The glass panels on the shell help to get the sun from above and let the light escape the high dense tree area and into the building.

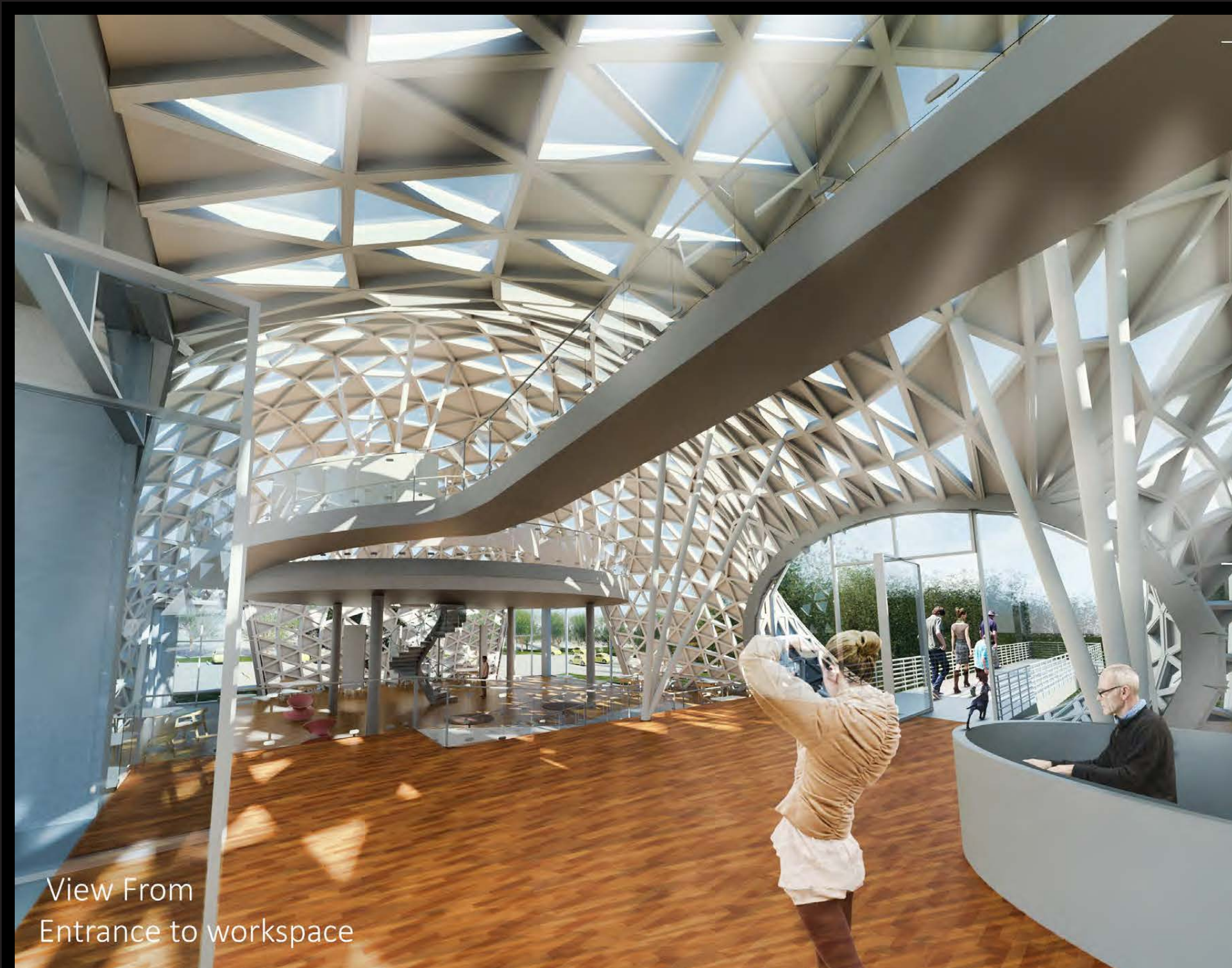


Water Usage

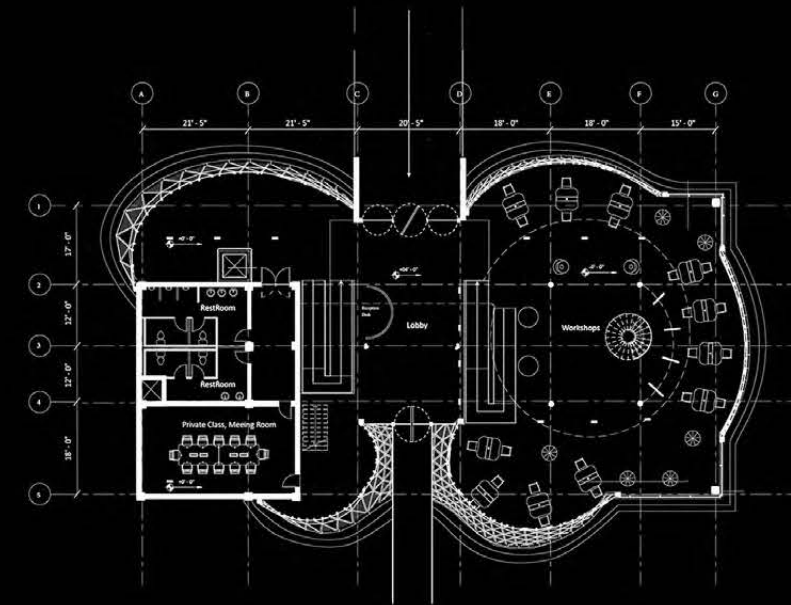


All water that falls on the shell structure would be collected and reused. This happens due to the umberella like shape of the shell. The shell can direct rain water to an underground system which the water can be collcted and reused as gray water for restrooms and irrigation.

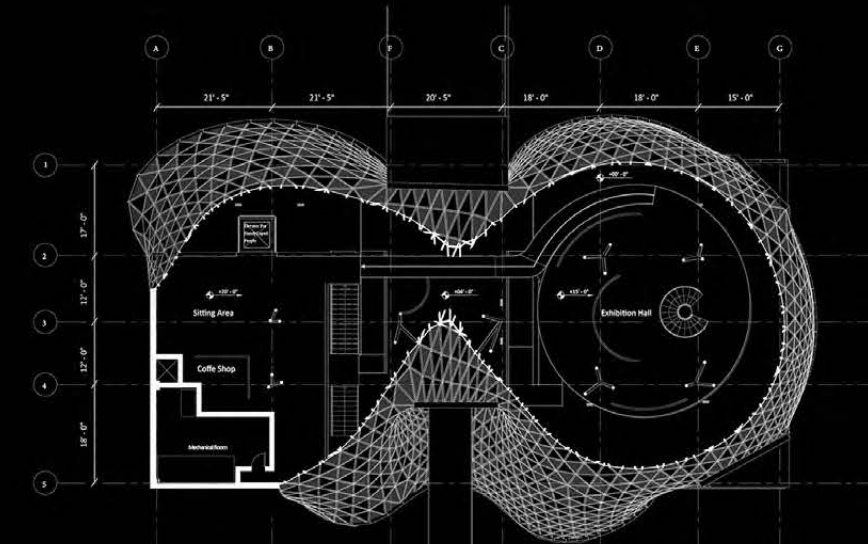




View From
Entrance to workspace

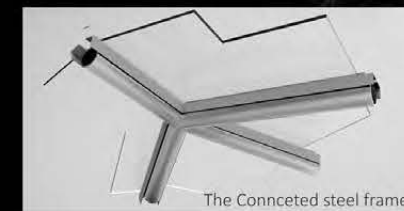


□ Ground Floor



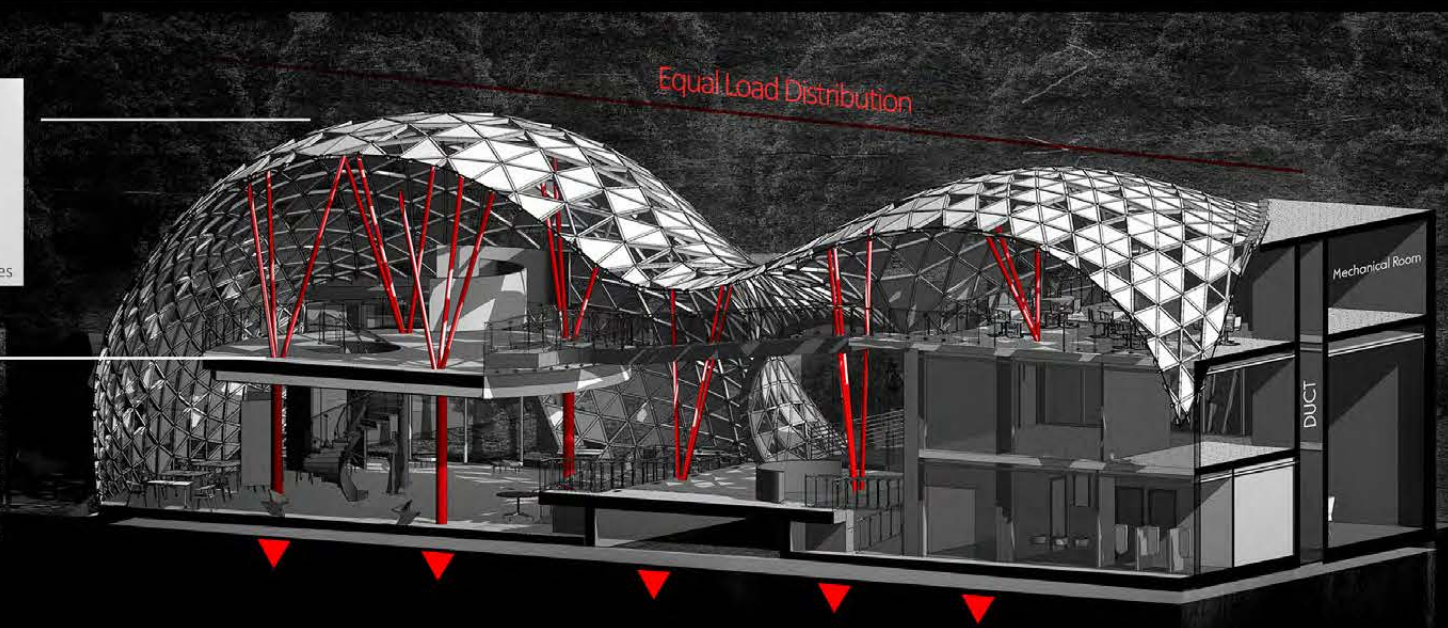
□ Second Floor

Structure



Tree Column Detail

The shell is made with the connections of triangular steel frames. The frames are structural and make sure that the load is evenly distributed on the shell, however displacement can happen on the most curvature points. To avoid any displacement and carry the load from the shell, 5 rows of tree columns were used. Also there is the connection joints between the slabs and the shell which carry the weight.



What might heaven
look like ⁱⁿ _{from} your
architectural discipline
eyes?

