TO CREATE ONE MUST QUESTION EVERYTHING

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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.
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.

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

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THE NETWORK THAT THE SWARM PARTICLES CREATE

THE CONNECTED MESH TO THE GROUND AND THE TOWERS

MEASURING THE PLASMAS TO LOOK AT THE 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

SWARM NETWORK

VIEW FROM INSIDE OF THE SWARM GARDEN

Programatic Diagrams
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 a program that require researchers, students and other user groups operate in a certain way that leaves little room for outdoor human activity.
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 1

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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.

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.
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.
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 programmed. 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 coffee shop.

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 changing 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.
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 collaboration.

The design analyses started with bubble diagraming and how each space was connected to the other according to the appropriate sunlight. 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 1500sf FEMA shelter. This approach maximizes the visual communication among the people inside and creates a unique experience for the users.

Alongside that, the dynamic shell helps the building to take a better advantage of the wind, collecting rainwater. The triangular glass panels create great views to outside trees and also make sure that sunlight reaches all the section's of the workshop.
As long as the opening is screened, different spaces were placed according to the appropriate sunlight. Windows were placed in south and north, in opposite 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 slant windows at each side that create a space that can catch the sunlight and create attractive views. About 80% of the total square footage of the building has direct views to outside. Also, the underfloor air circulation system makes sure that the workshop area remains fresh no matter what is needed.

The building is optimized to take advantage of the prevailing wind with the dynamic wind catcher at south. Alongside that, the shell sun radiation analysis 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 along all the shell.

Water Usage

All water that falls on the shell structure would be collected and reused. This happens due to the umbrellas-like shape of the shell. The shell can direct roof water to an underground system which the water can be collected and reused as gray water for restrooms and irrigation.
What might heaven look like from your architectural discipline eyes?