



UNIVERSITY OF OKLAHOMA
FIFTH YEAR ARCHITECTURE

MANDY BOCCIO 2018

CONTENTS

ARCHITECTURE

U.S EMBASSY / RIYADH, SAUDI ARABIA	8-15
THE WAVE / NORMAN, OKLAHOMA	16-23
BUS TERMINAL / NORMAN, OKLAHOMA	24-29
THE GRASS STITCH / MANHATTAN, KANSAS	30-33

INTERIOR DESIGN

THE RHO / NEW YORK, NEW YORK	36-43
CHICK-FIL-A / PAVE COMPETITION	44-49

DIGITAL MAKING

DEVELOPED	52-53
INDEXED SURFACES	54-55
SERIALIZED	56-57

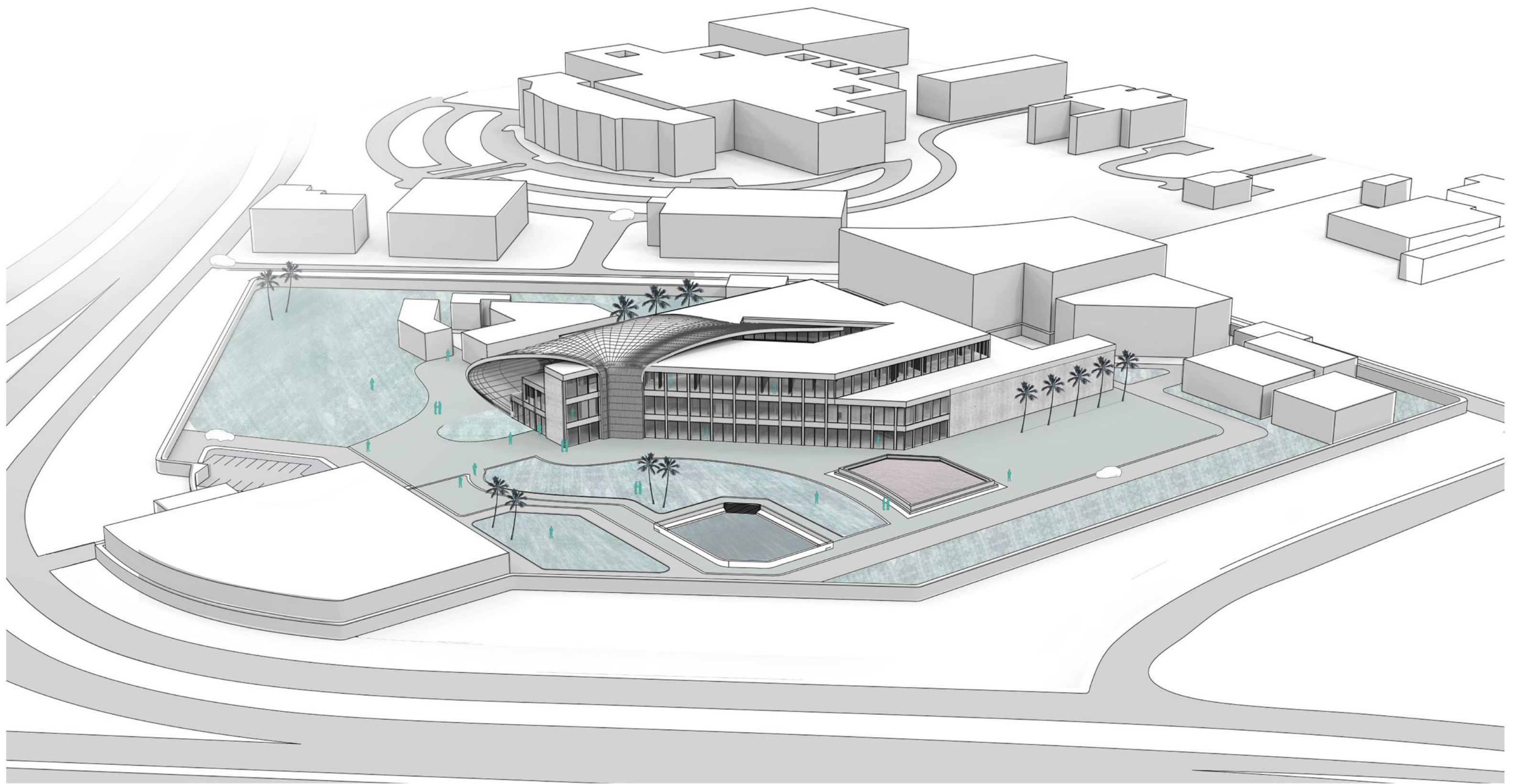
PARAMETRIC DESIGN

FLOW	60-61
LIGHTING	62-63

NEWSPAPER DESIGN

OU DAILY DESIGNS	66-69
------------------	-------

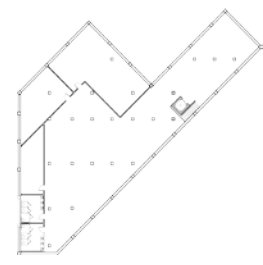
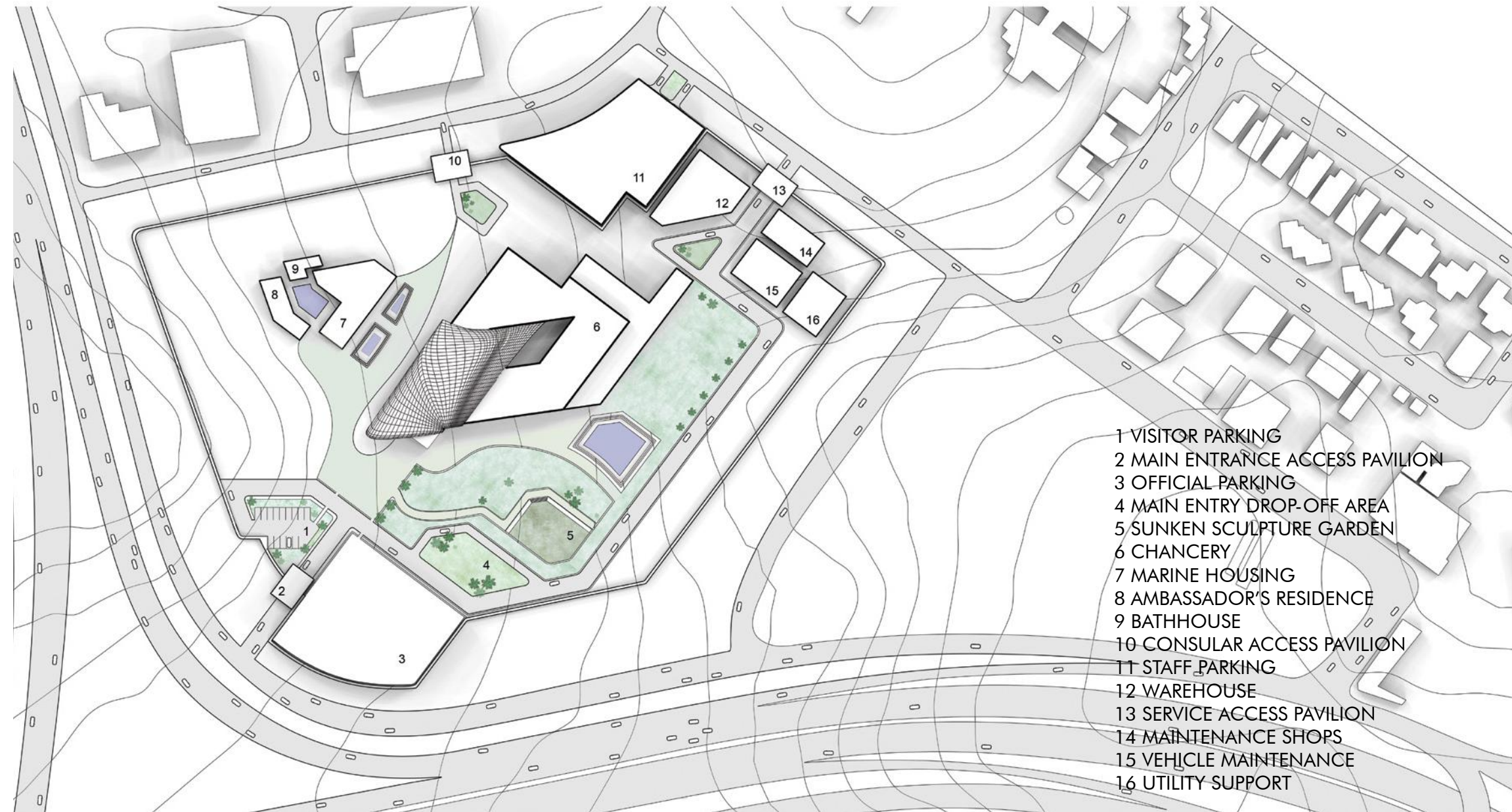
ARCH-
TECTURE



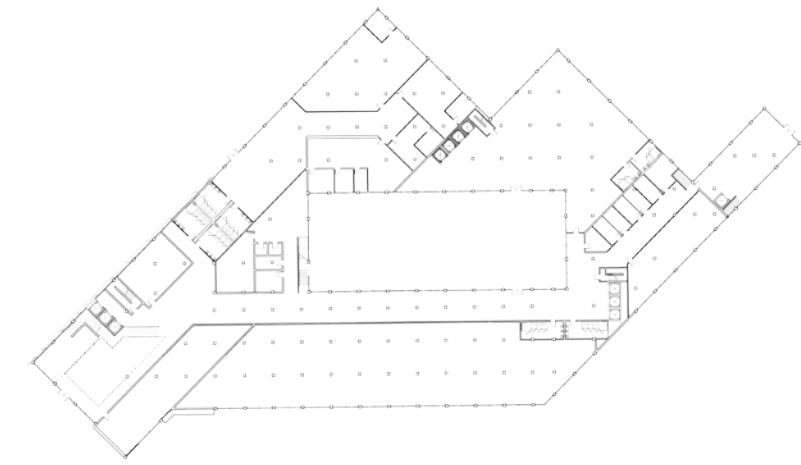
U.S. EMBASSY SAUDI ARABIA CITY OF RIYADH

Rhino 5.0 / Grasshopper / Flamingo Rendering / Adobe Photoshop / Adobe Illustrator

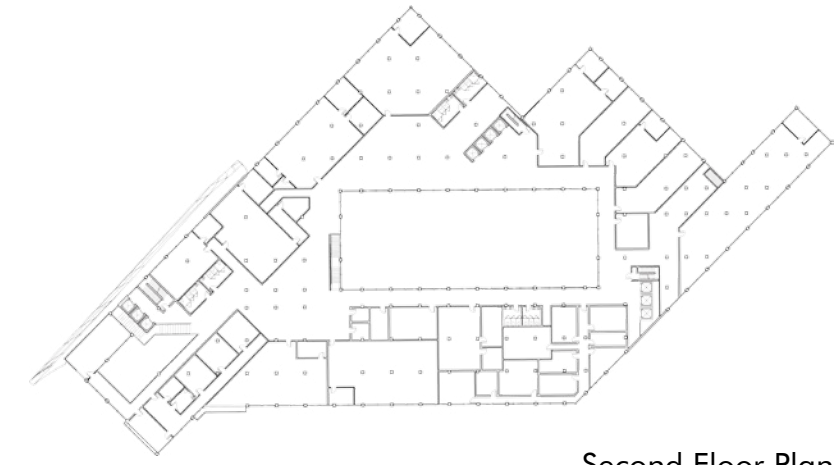
Consisting mostly of desert, Saudi Arabia's climate posed many factors to be accounted for during the design process. To combat the intense climate, an organically shaped canopy is used to control heat gain within. Along with designing solutions for the climate, security must be under consideration. In collaboration with the United States Department of State, certain embassy guidelines had to be followed. The overall compound follows regulations such as setbacks, parking restrictions, entry points, circulation, etc. The embassy itself had to be 30.5 meters away from a 10ft. high perimeter wall that encases the entire compound. The challenge of this project was to create an aesthetically pleasing building that met all the regulations provided, controlled the extreme temperatures, and be a safe and secure place for high-profile government officials and ambassadors in Saudi Arabia.



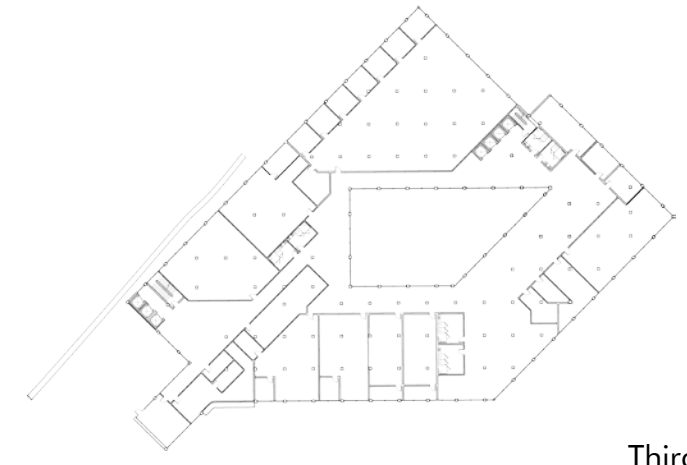
Basement Level



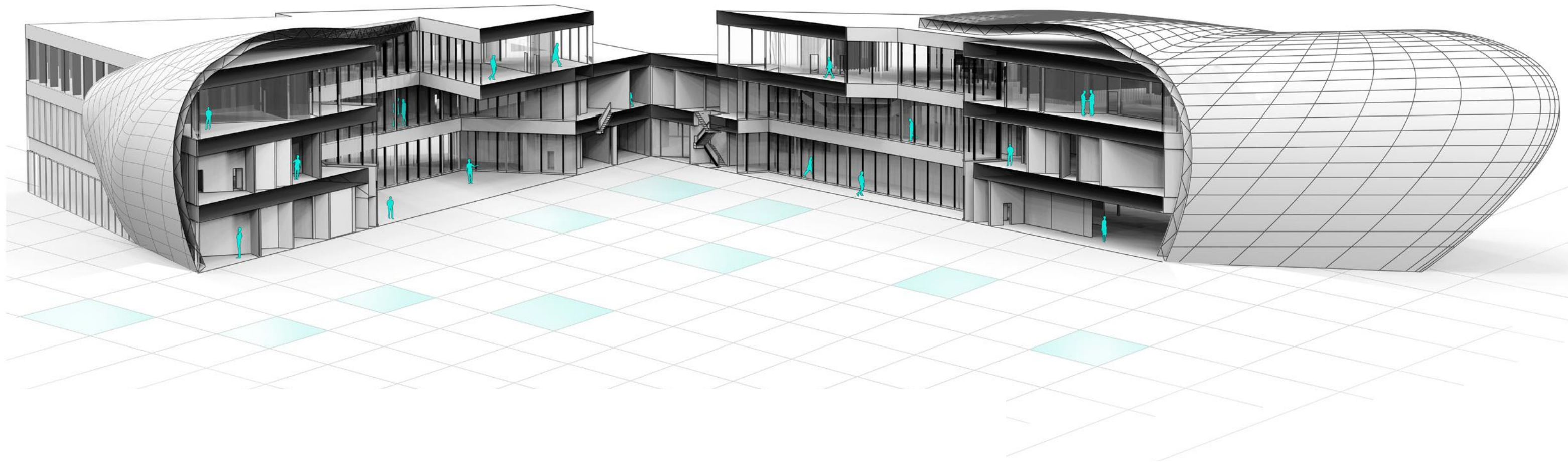
First Floor Plan



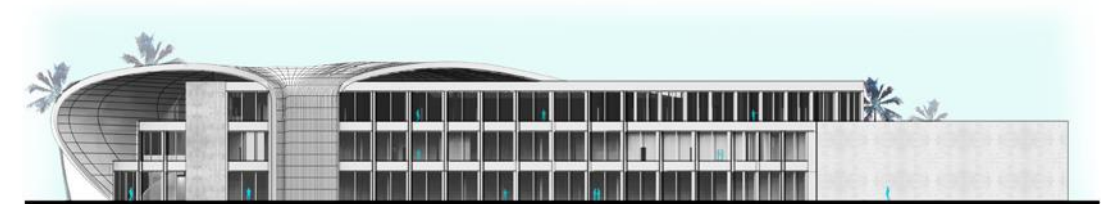
Second Floor Plan



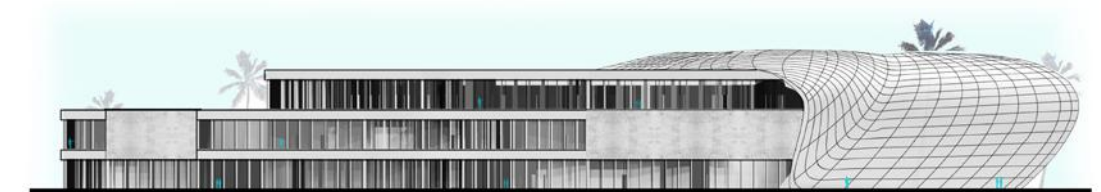
Third Floor Plan



The overall form of the building consists of two systems, an exterior organic canopy, and the occupiable interior space. The building sitting underneath the canopy has its own structural system consisting of steel-reinforced concrete columns, beams and trusses. The geometric, rectangularity of this space juxtaposes the canopy. The canopy is made up of a steel space-frame and glass fiber reinforced concrete panels. The goal of the canopy is to frame the entry points while reducing interior heat gain and providing shade within the courtyard space. The canopy is a monumental, organic form that grows out from the ground. Being the driving force of the design, the canopy solves issues of security and climate.



North Elevation



South Elevation

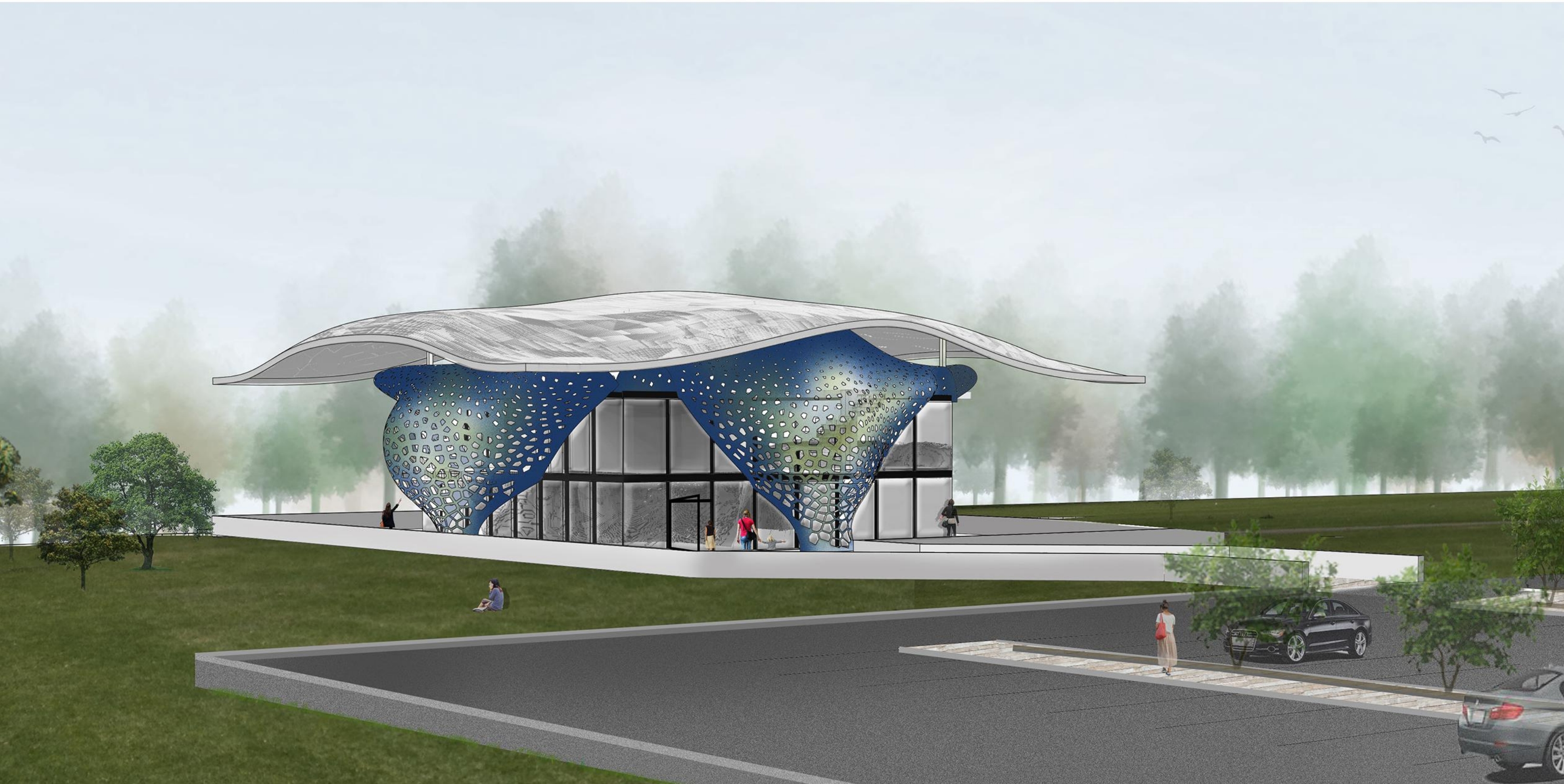


North-Facing Section



South-Facing Section





the
CURRENT
norman/moore visitor center

Rhino 5.0 / Grasshopper / Adobe Photoshop / Adobe Illustrator / Sefaira

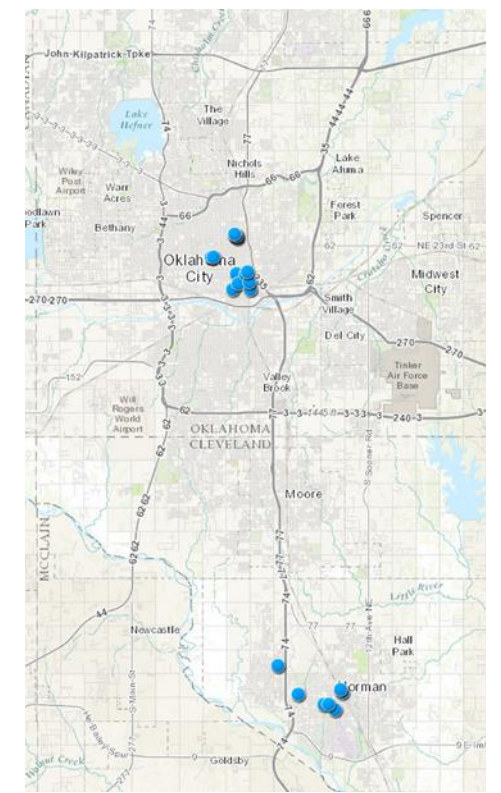
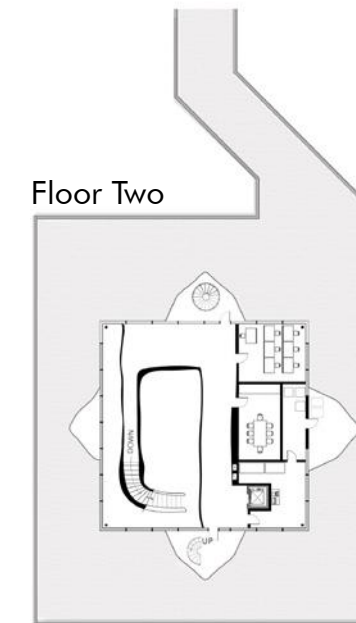
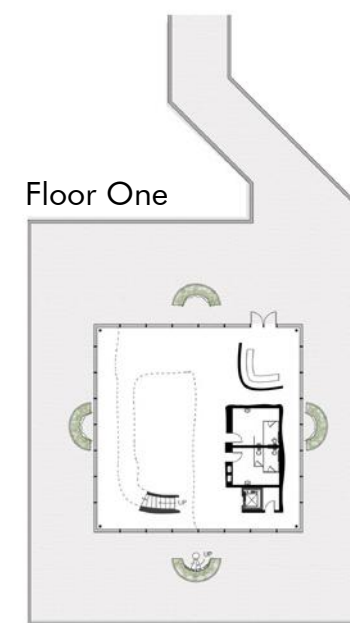
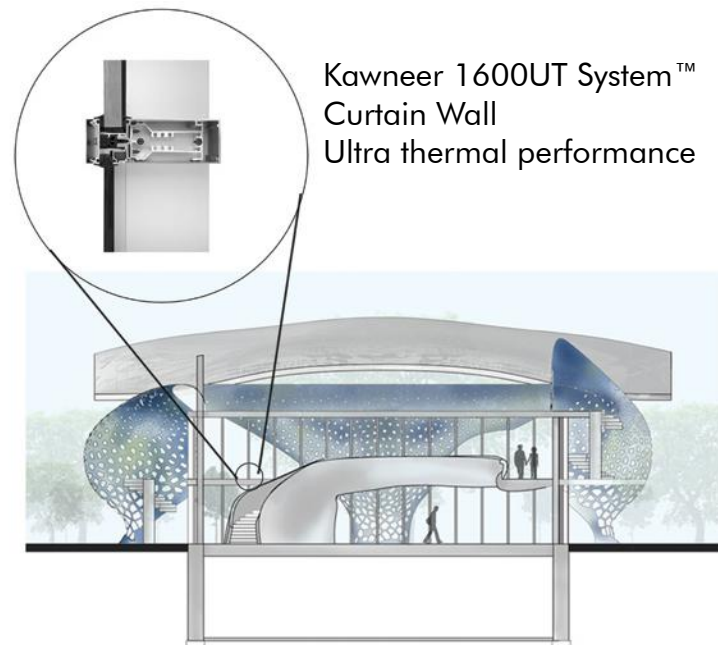
This building, situated on the border of Norman and Moore serves the community as an art gallery for local artists to display their work. Responding to the functionality, the building itself has sculptural characteristics through contrasting design elements. The exterior wall footprint is a perfect square, with organic metal sun-shading devices covering each of the four facades.

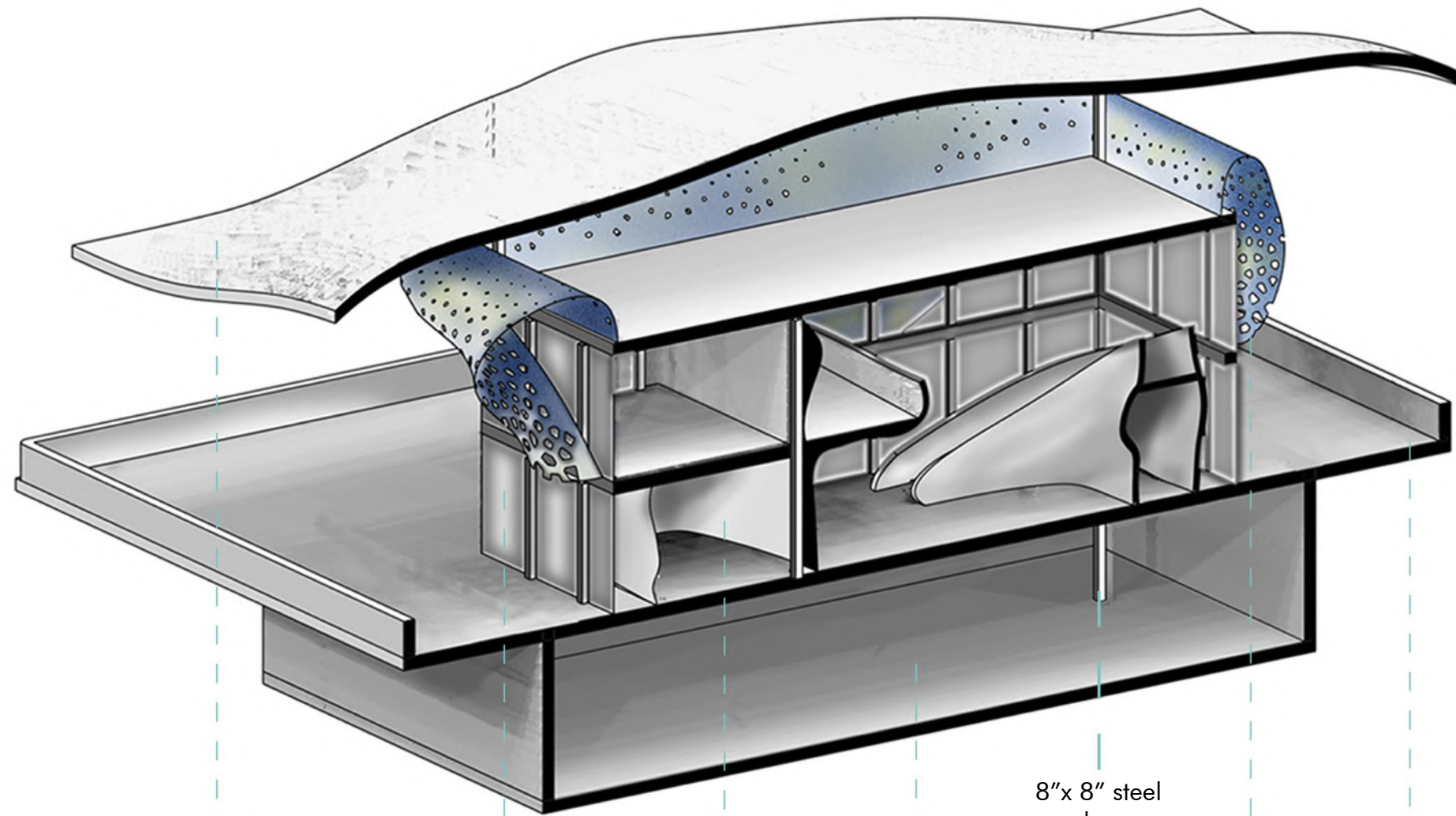


Sitting on the boundary of Norman and Moore, this site is a perfect spot to begin the expansion of artistic culture into Norman. As Norman becomes more populated with the growing size of the University of Oklahoma campus, the need for more galleries is apparent. Showcasing young, developing artists around town is an excellent way to publicize Norman on a broader scale. Giving aspiring artists the opportunity to rent gallery space and freedom to create within a space is a learning experience needed in this area.

16
art galleries in
Oklahoma City

7
art galleries in
Norman, OK





Lightweight concrete canopy

Insulated glazing unit

Supply/Return ducts

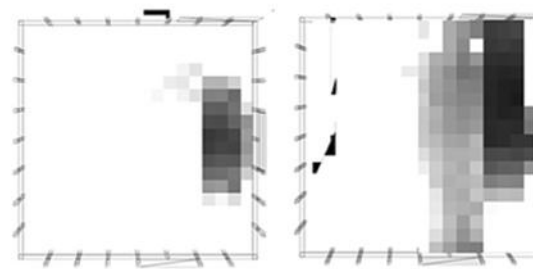
Insulated concrete tornado shelter

8"x 8" steel column

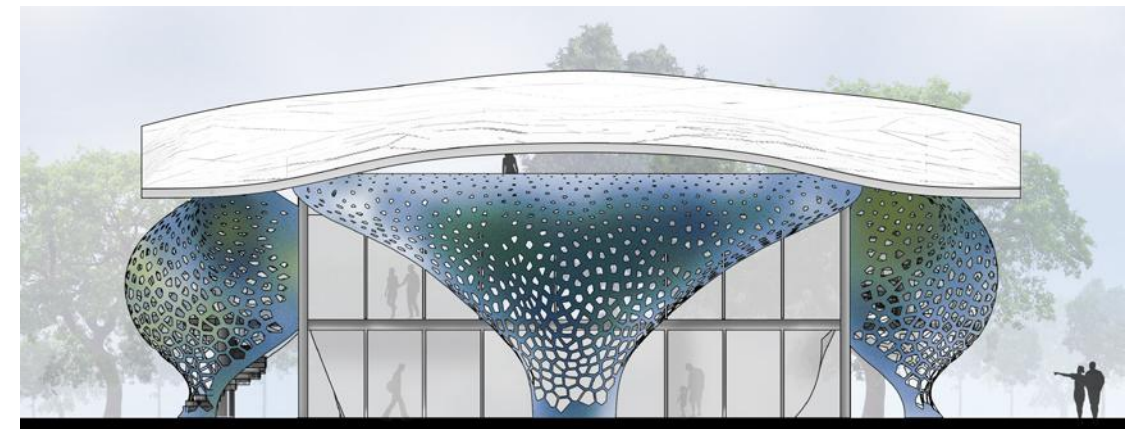
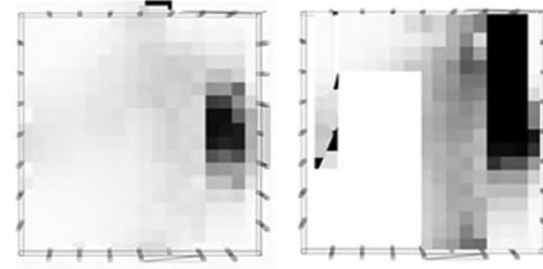
metal sunshades

outdoor area

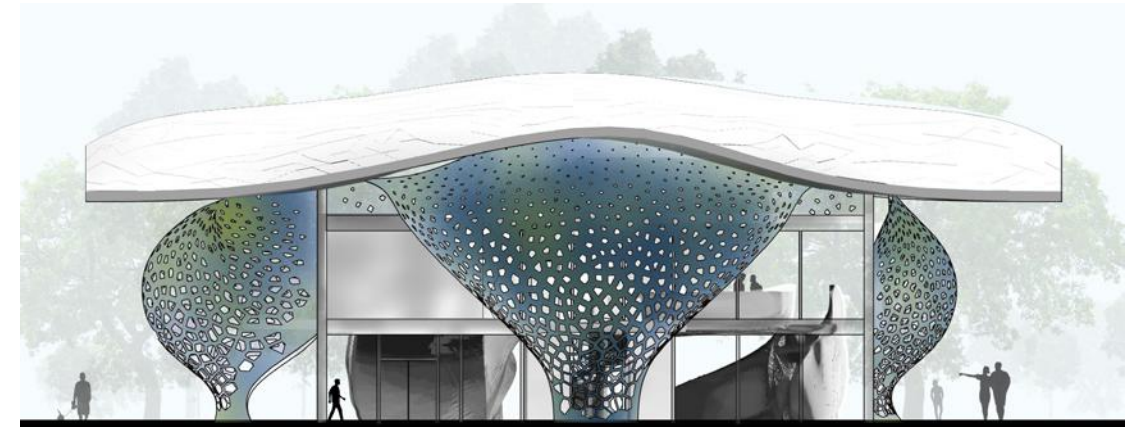
Summer Natural Daylighting



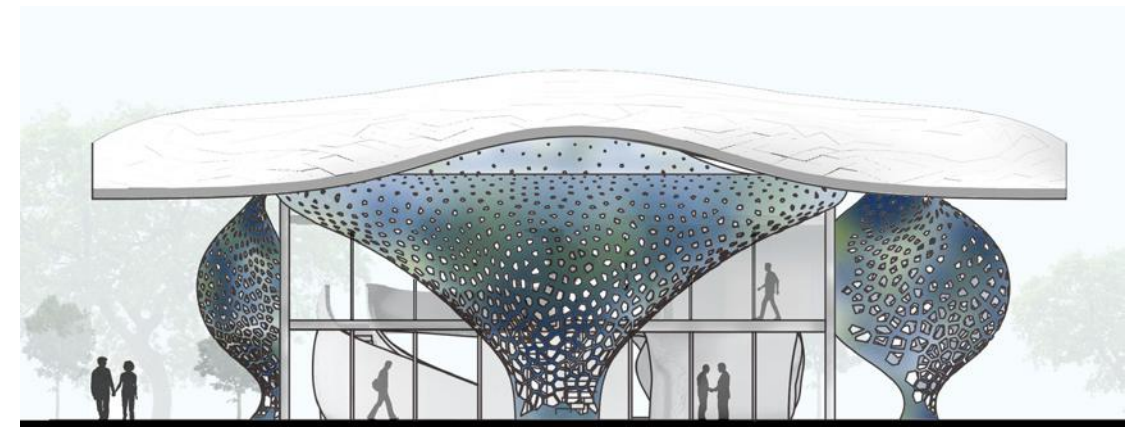
Annual Natural Daylighting



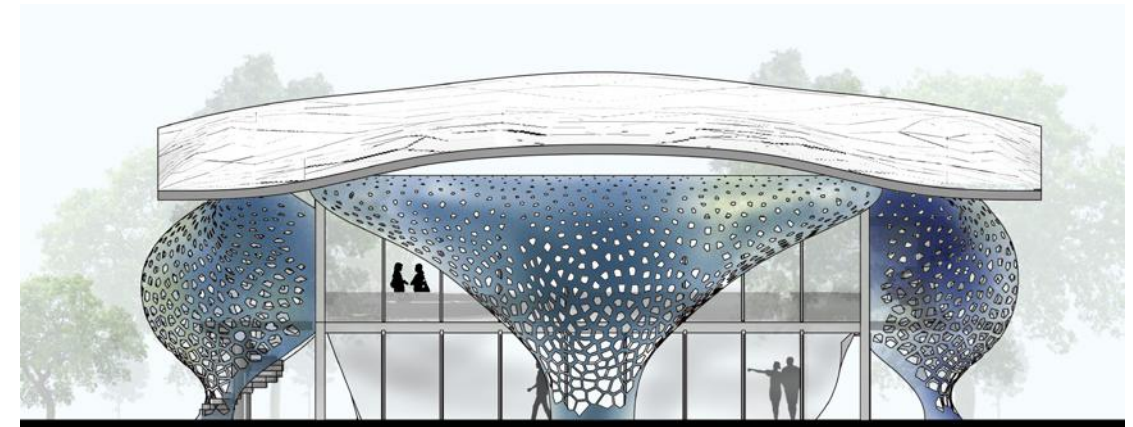
East Elevation



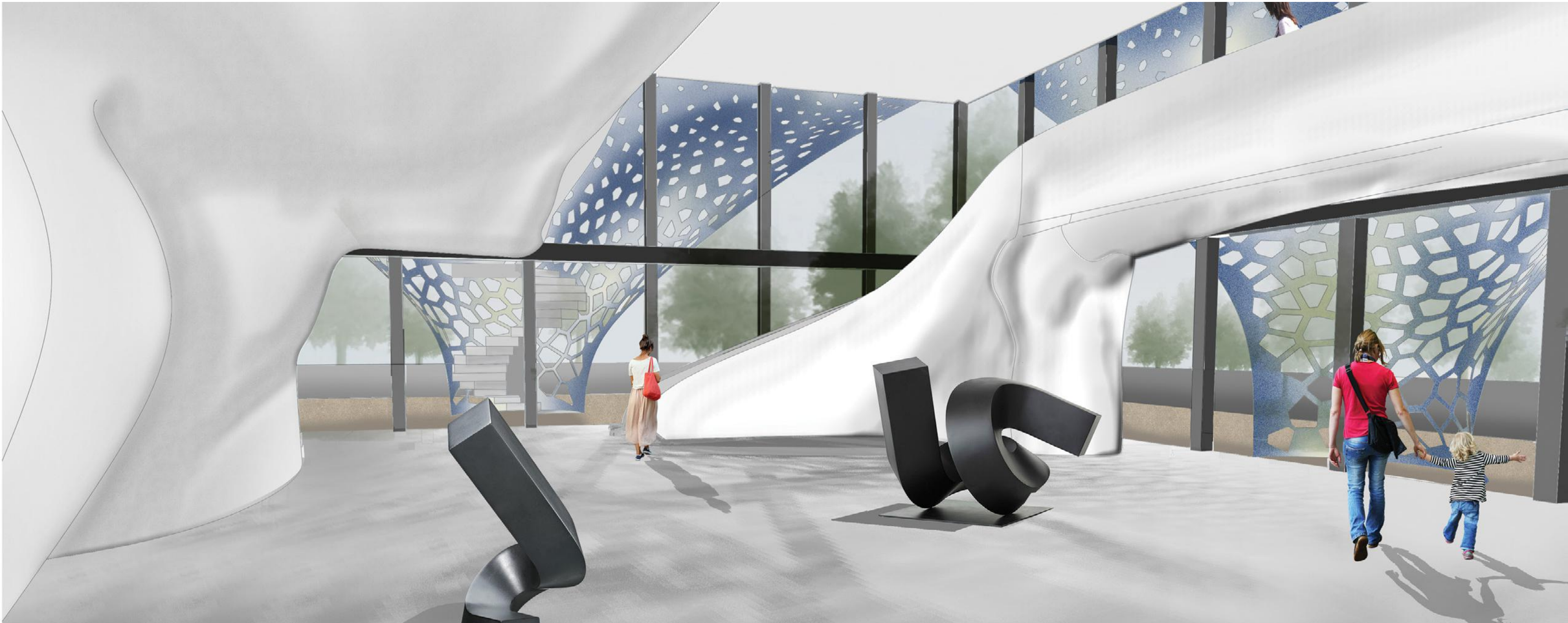
North Elevation

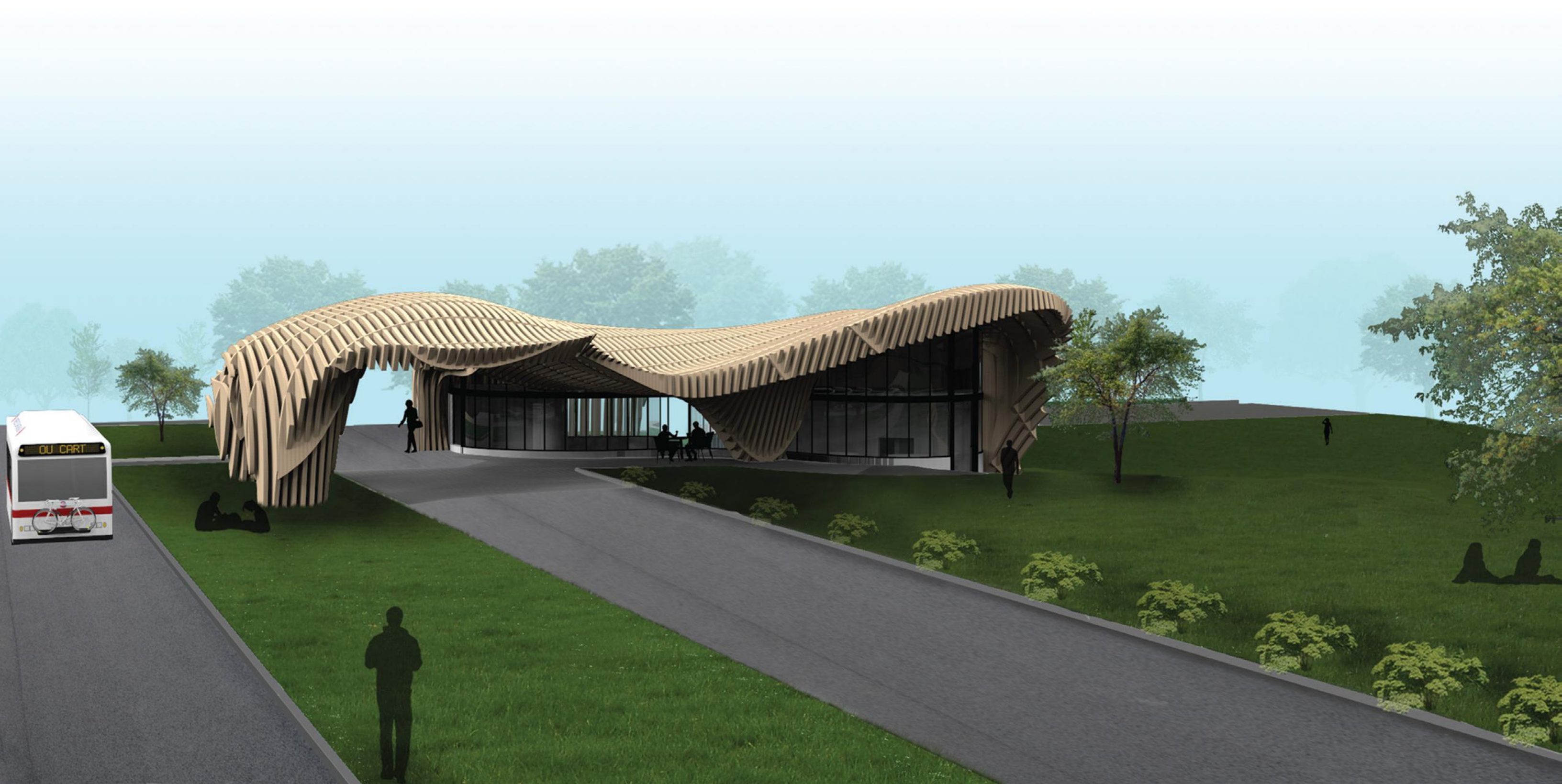


South Elevation



West Elevation

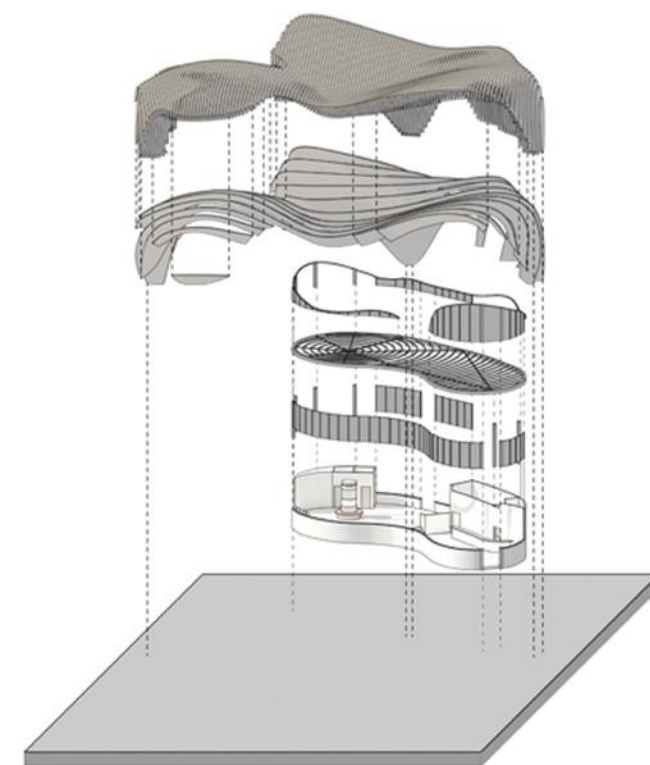
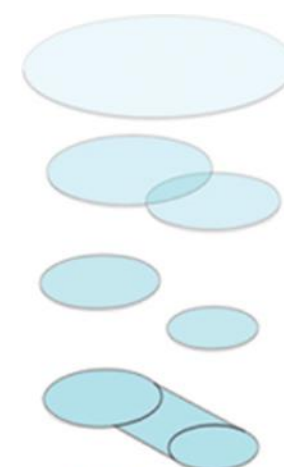
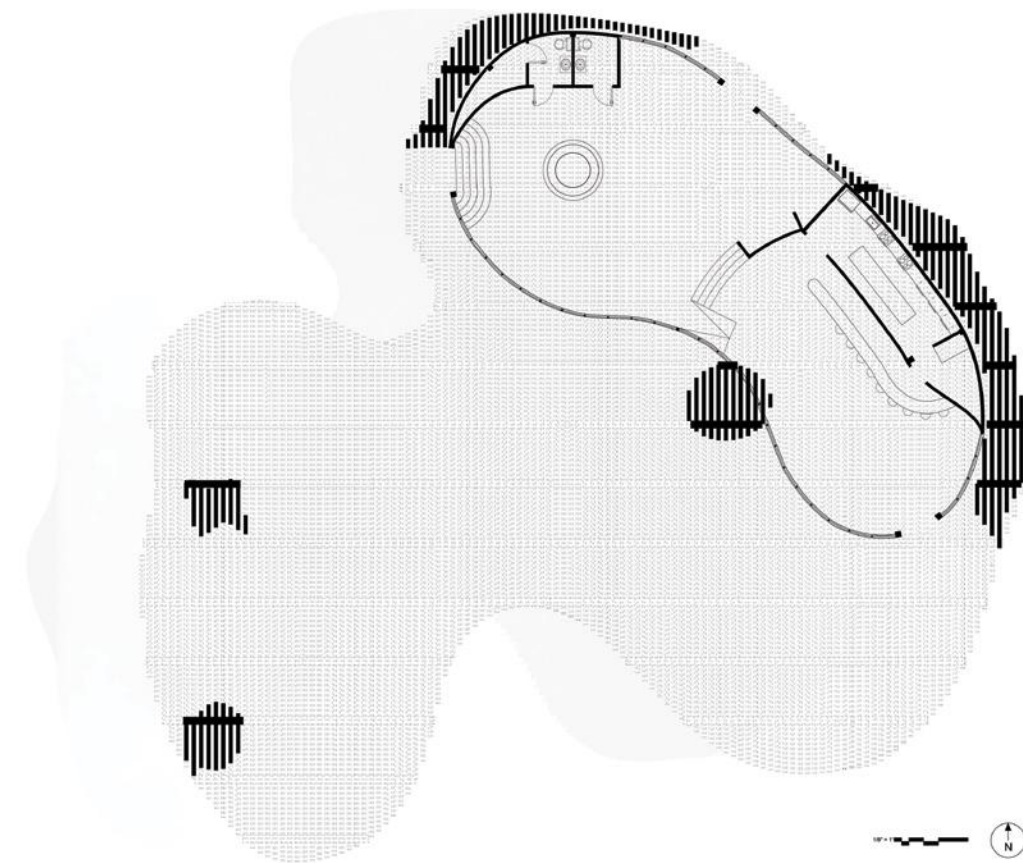
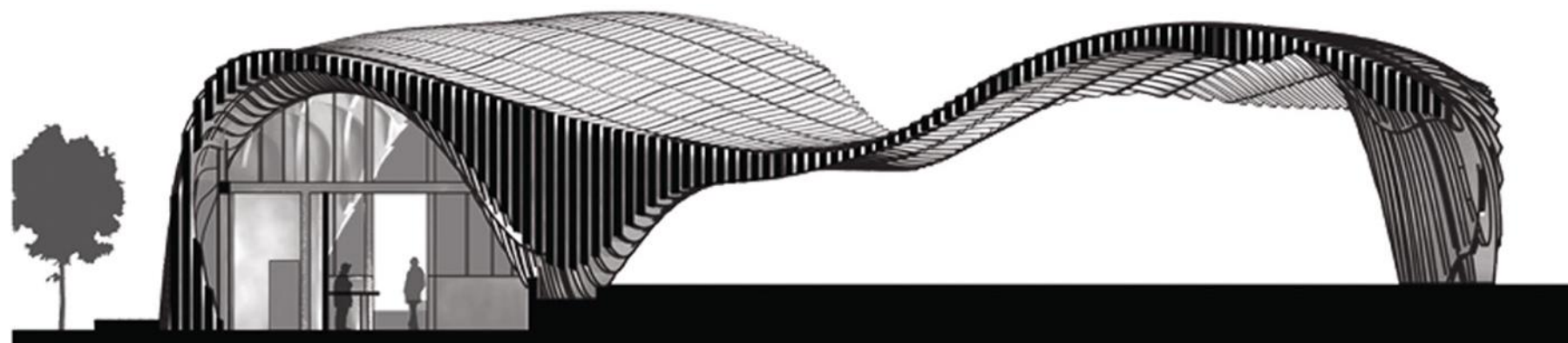
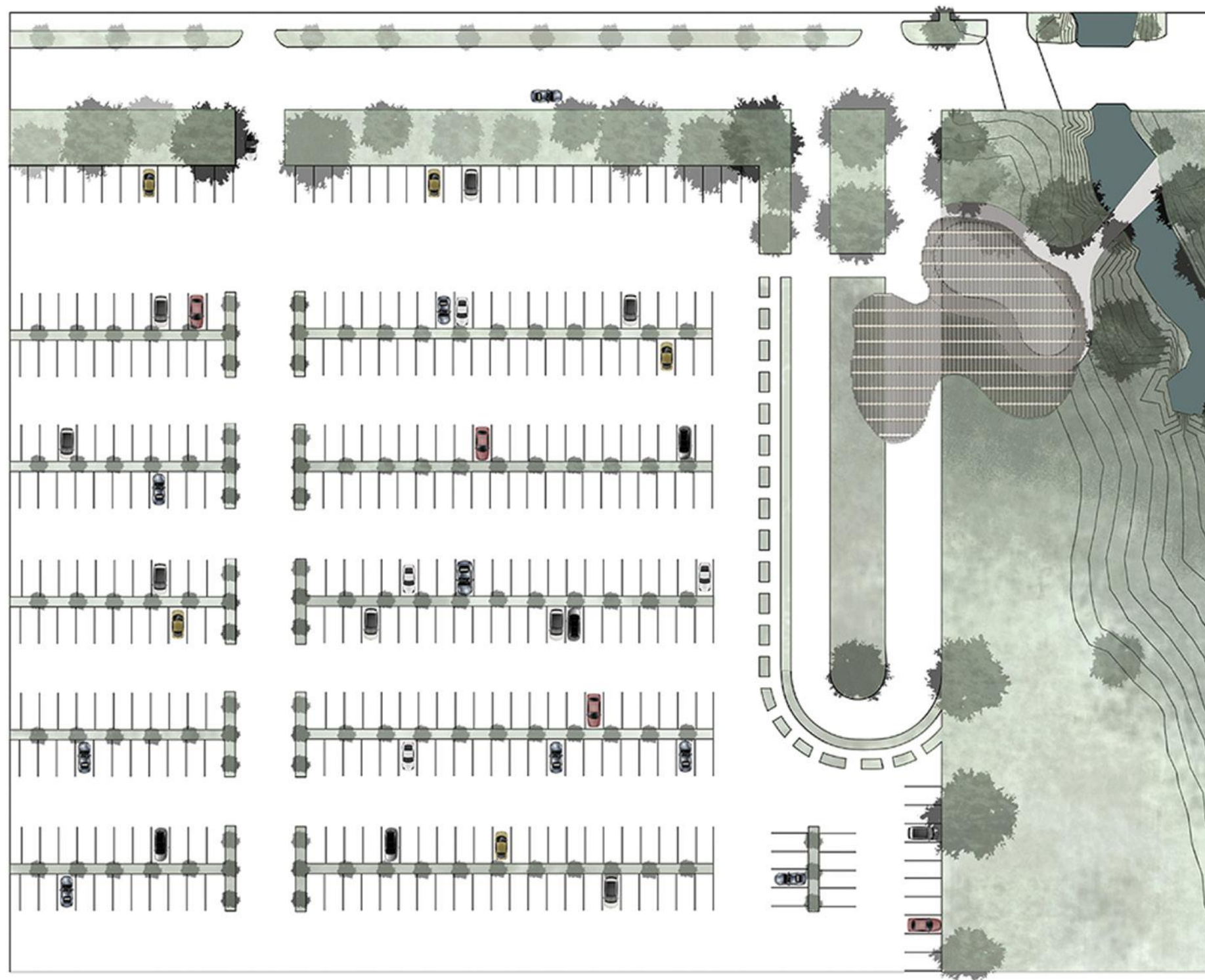




bus terminal norman

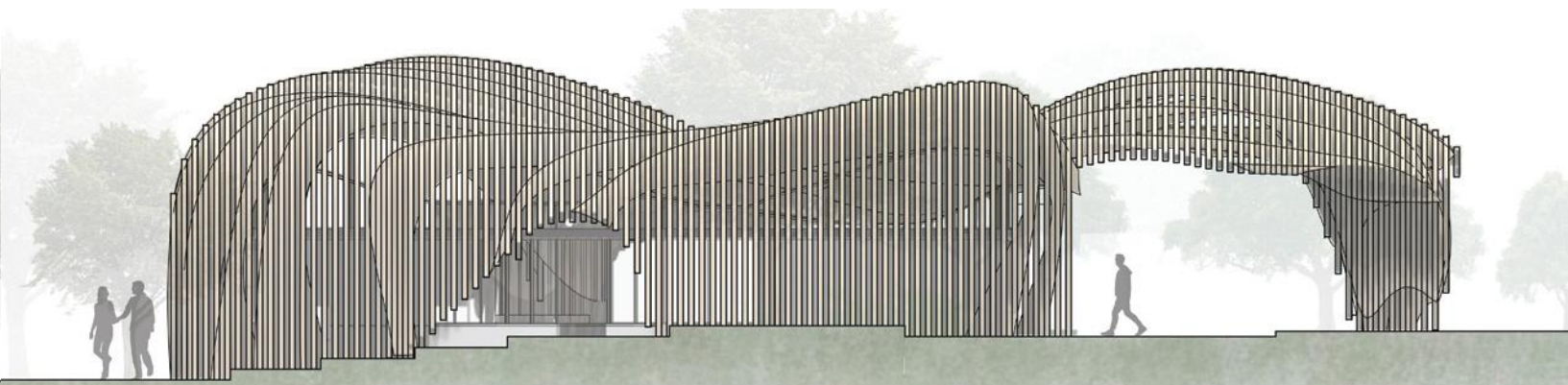
Rhino 5.0 / Adobe Photoshop / Adobe Illustrator
Partner: Noah Medley

Located on the outskirts of the University of Oklahoma campus, this bus terminal seeks to attract students and residents to take part in public transportation. Not only does this bus terminal provide routes all over Norman, but adequate access to the nearby train is simplified. Views out to the bus circle are dramatized through large glass windows facing the southwest.

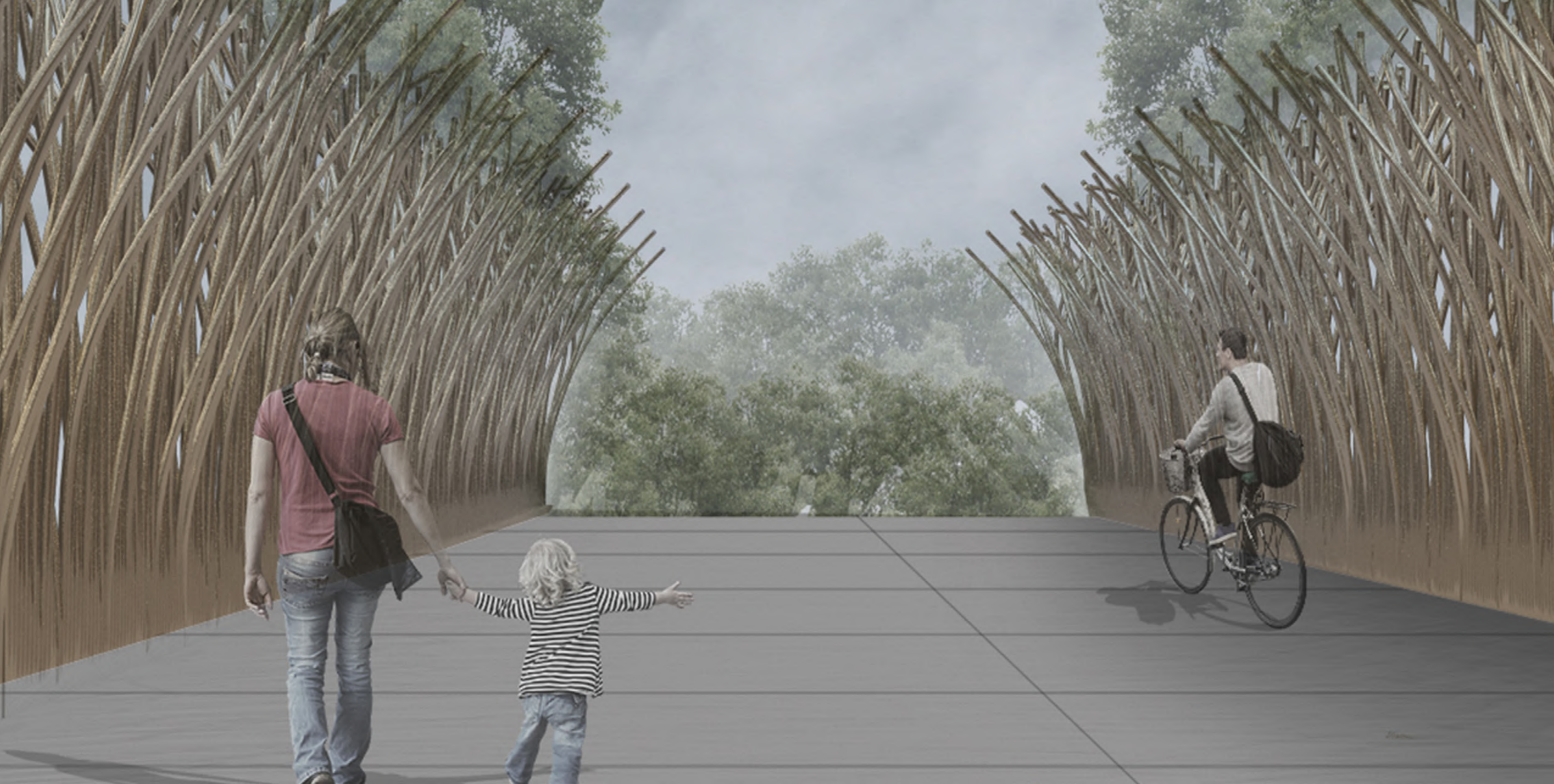




North Elevation

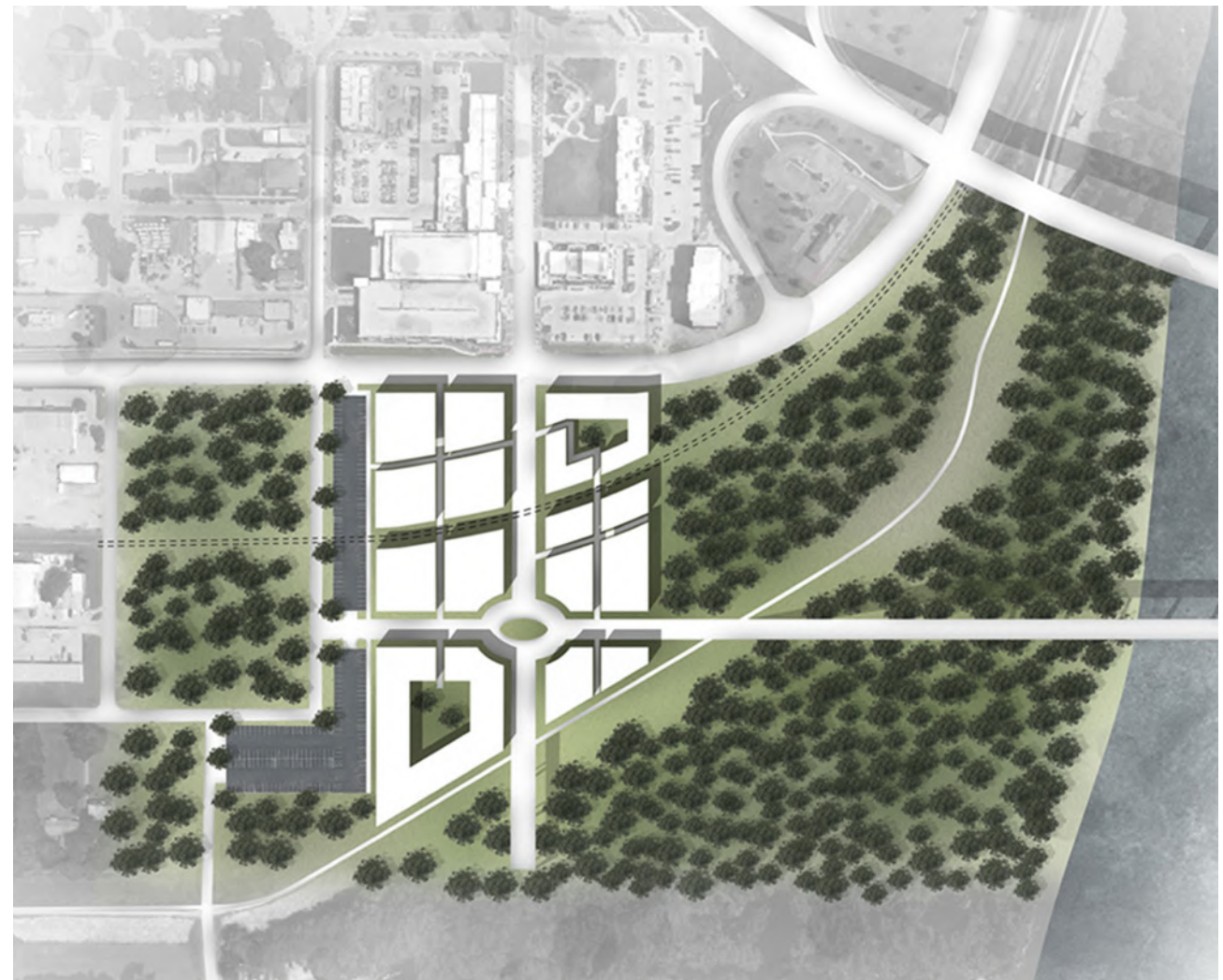


South Elevation



Rhino 5.0 / Adobe Photoshop / Adobe Illustrator / SketchUp
Partners: Erika Omae, Jacob Stinson, Firas Chamas

The 2016 Central States Region Student Design Competition was held in Manhattan, Kansas. The purpose of this 12-hour long design charrette was to propose a new regional design and pedestrian link to reconnect the public realm in Manhattan with the riverfront. The Grass Stitch provides a framework of three distinct components that reconnect the city to the riverfront.

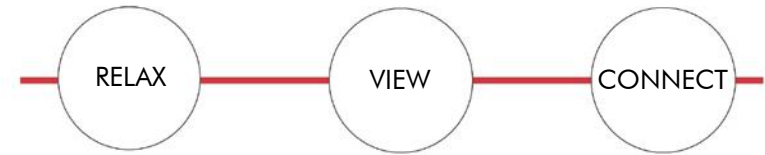
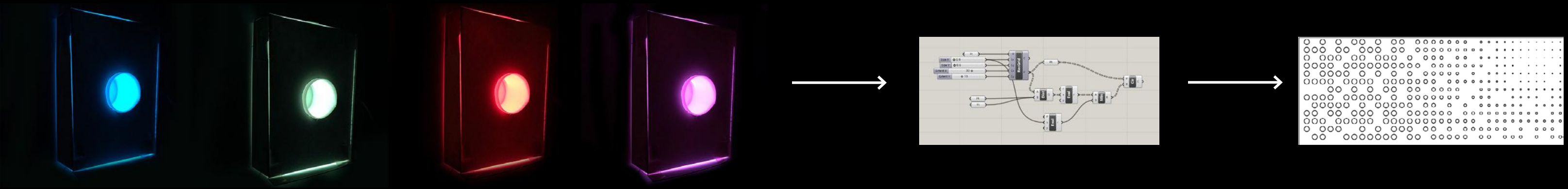


INTERIOR
DESIGN



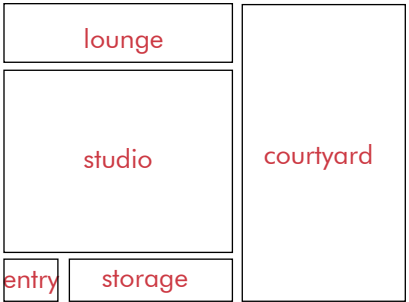
Rhino 5.0 / Grasshopper / Flamingo Rendering / Adobe Photoshop

The Financial District, one of the many heavily populated neighborhoods of New York City, has been increasingly growing over the past few years. The abundance of offices and major financial institutions make this area very business-driven. Recently, the financial district has had an increase in demand for housing. Moving into this high-stress, busy environment calls for the need for a place to relax and unwind before or after a long day of work. The Rho, a yoga studio sitting on a busy corner in New York City is a combination of convenience and a relaxing environment. A few steps away from one of the major subway stations in downtown NYC, the site is extremely accessible to people who aren't within walking distance. A circle, representing totality, wholeness, and eternity, common themes within the practice of yoga, became the motif behind the project. The yoga study is heavily influenced through the design of the courtyard partitions. These partitions consist of a series of circles varying in size, allowing light to seep through. These lights are intended to follow the pace of the yoga classes. When classes intensify, the lights will respond by displaying shades of red, which evoke more exciting emotions. Depending on the goal of the class, the lighting will vary.



floor plan

- 1 entry
- 2 storage area
- 3 yoga space
- 4 lounge area
- 5 courtyard space



PERFORATED METAL PANELS



WOOD FLOORING



TEXTURED INTERIOR WALLS



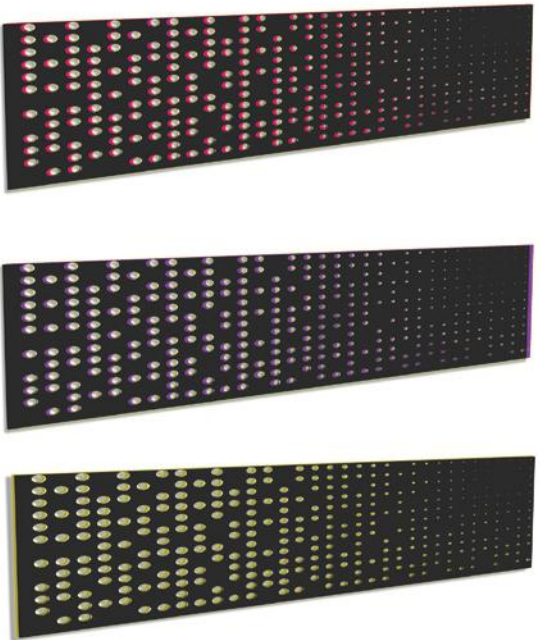
GREEN WALL

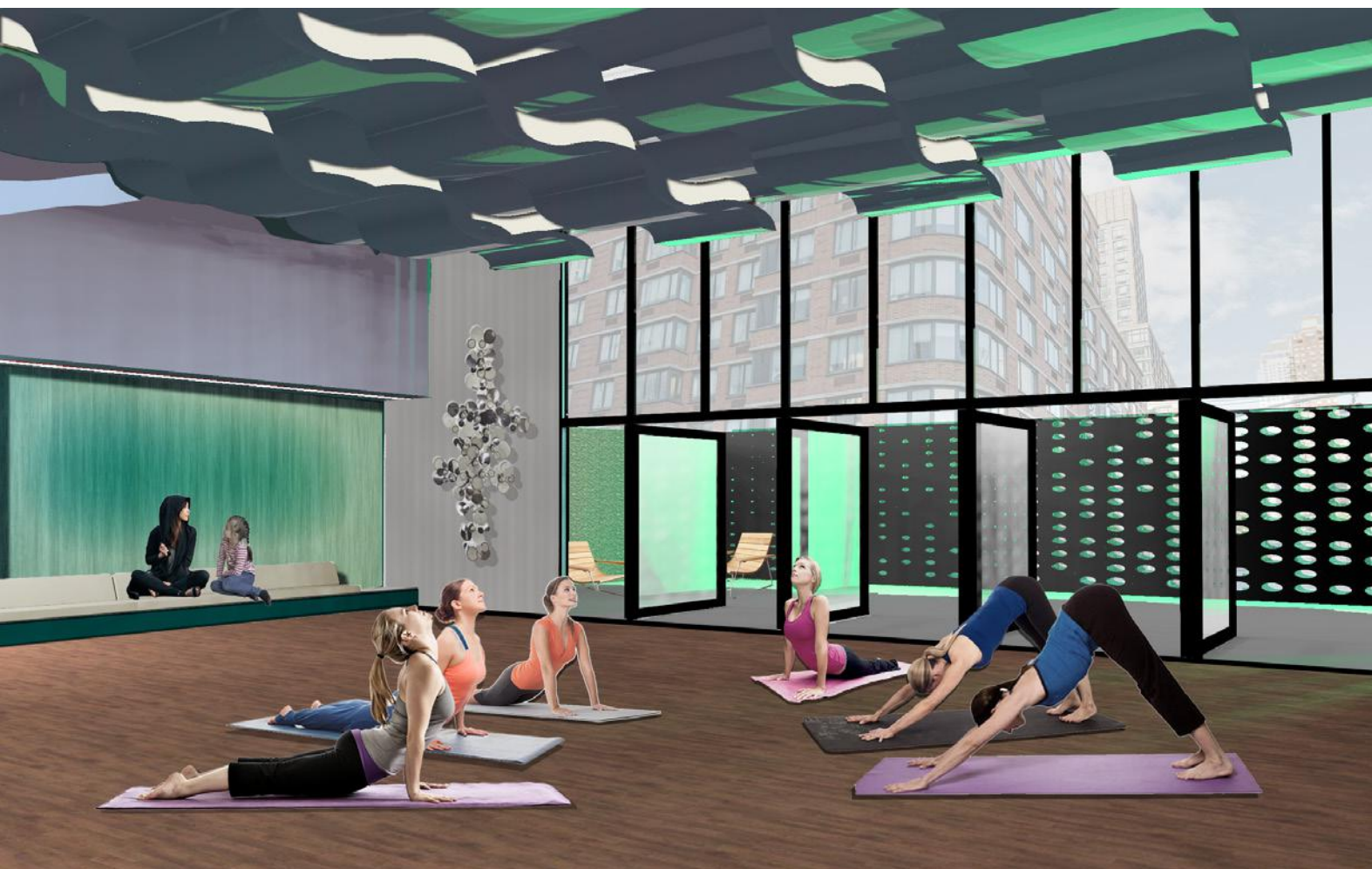
Provoke emotion through color

- GREEN: balance, harmony, refreshment, restoration
- VIOLET: spiritual, luxury, truth, quality, meditation
- ORANGE: physical comfort, warmth, passion
- RED: warmth, energy, excitement, strength
- BLUE: serenity, logic, coolness, reflection, calmness
- PINK: tranquility, nurture, warmth, love

Perforated metal panels

The metal panels are designed to allow light to filter through the proposed areas that are shaped as circles. The transparency of the circles allow the light to shine through, creating a glow that is visible from down the street. Coordinating classes with the colors of the panels is what sets this yoga studio apart from the others.

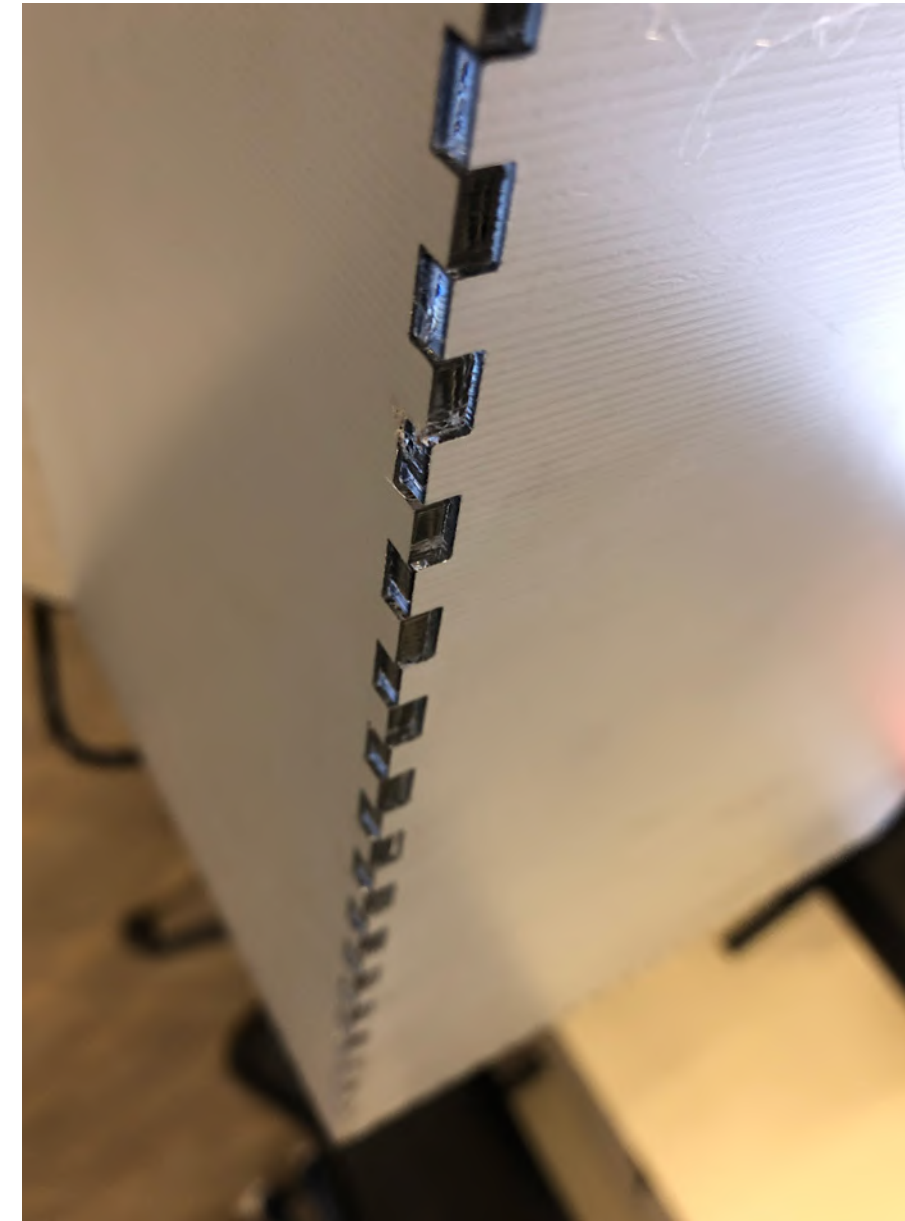
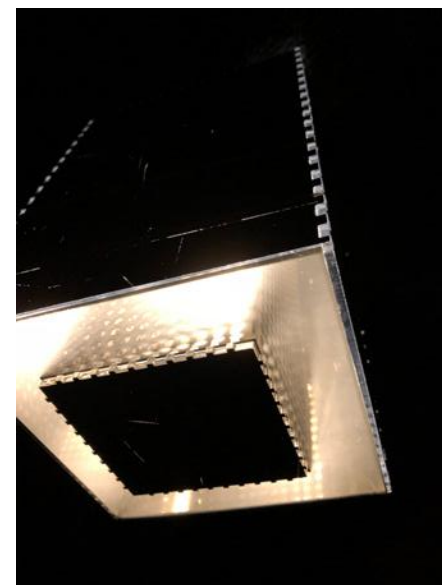
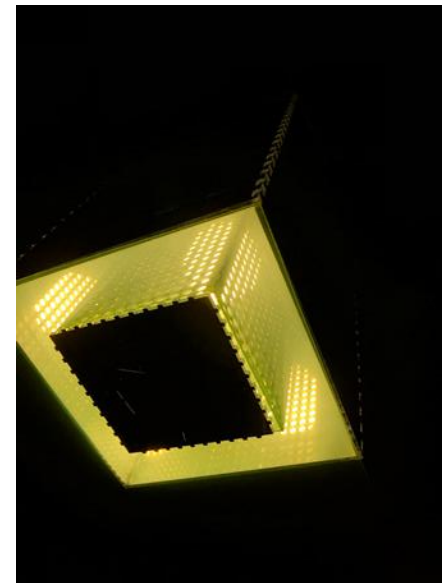
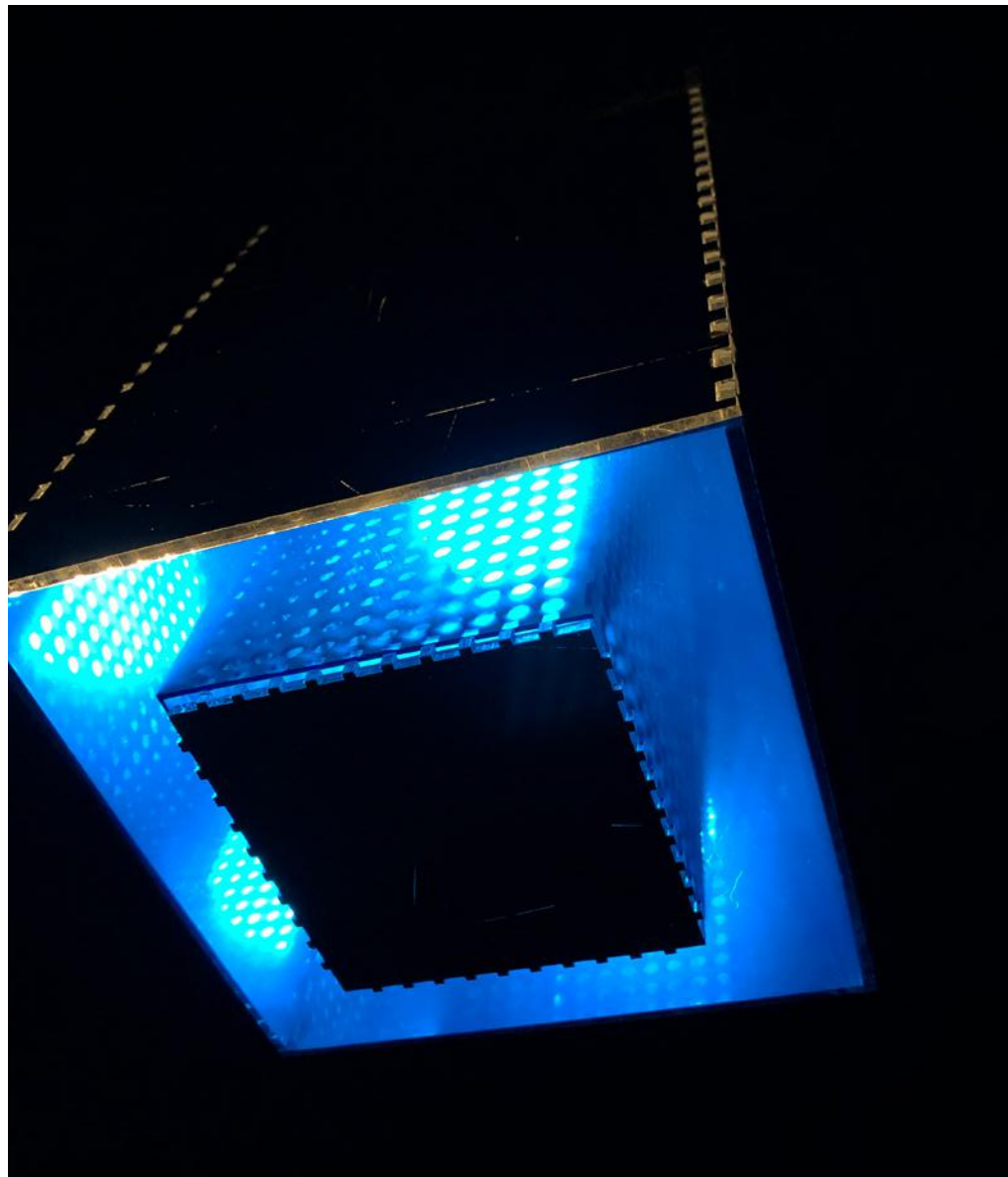
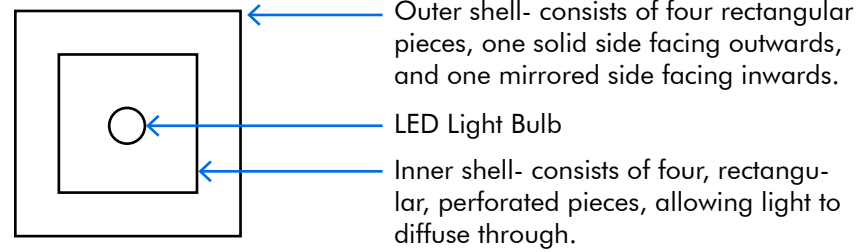




the RHO

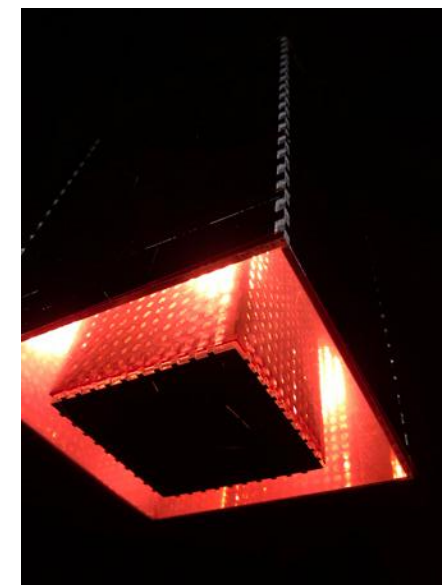
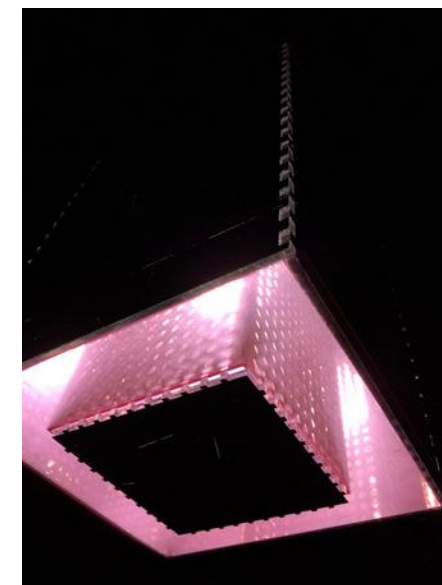
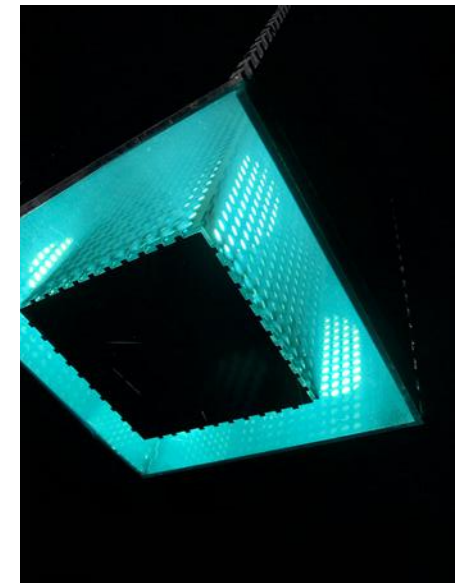
LIGHTING DESIGN

Rhino 5.0 / Grasshopper / Laser Cutter / Physical Modeling
As a continuation of the Rho yoga studio, the same conceptual ideas were applied to a light fixture. Using the same techniques developed in Grasshopper, the interior pieces follow the form of the perforated panels. The addition of mirrors on the interior allow for light to bounce around and create a more dynamic, decorative light fixture.



The Joint

To combat the weight of the exterior shell being made up of mirrors, an interlocking joint was used as a method of construction. The points of intersection created transparency, allowing light from within to glow outwards. With the colored light filters attaching to the bottom, the warm glow from the joints remained a consistent color, as the light filters can change depending on the type of exercise class.

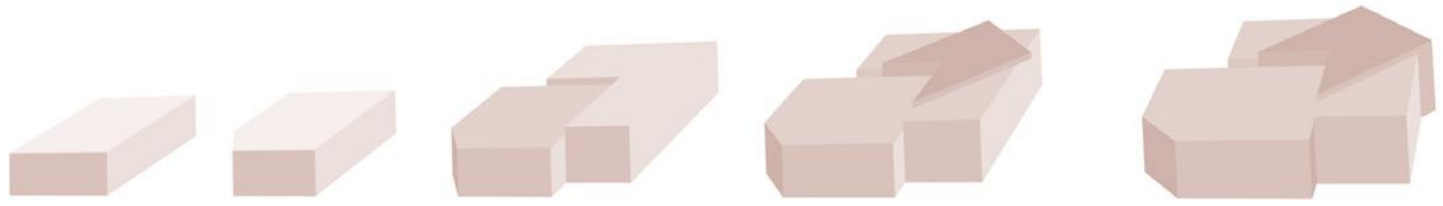
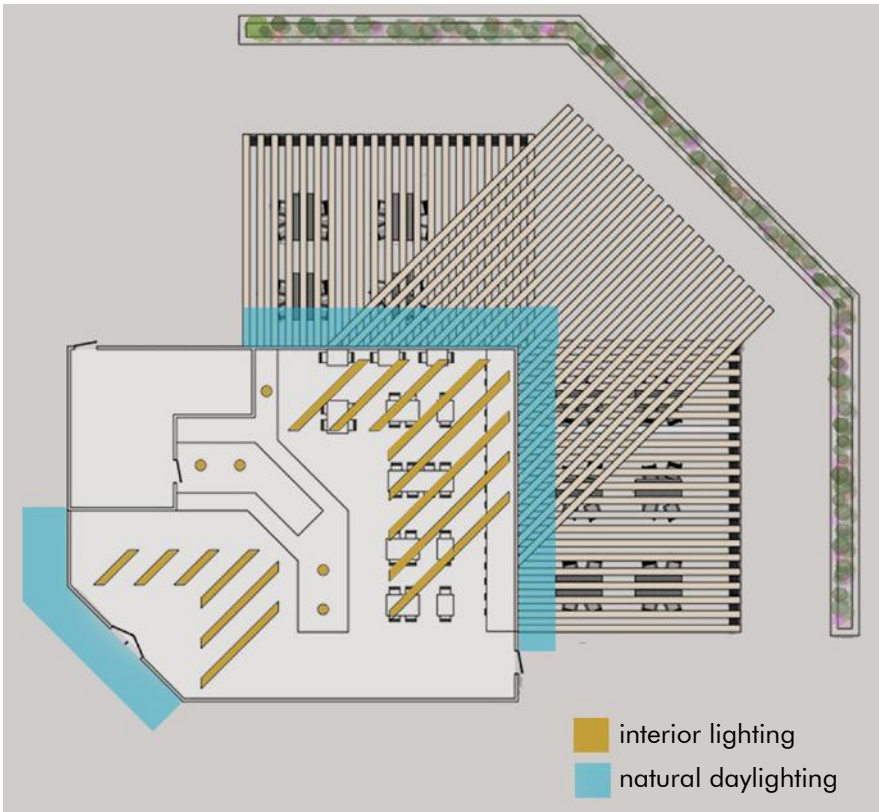
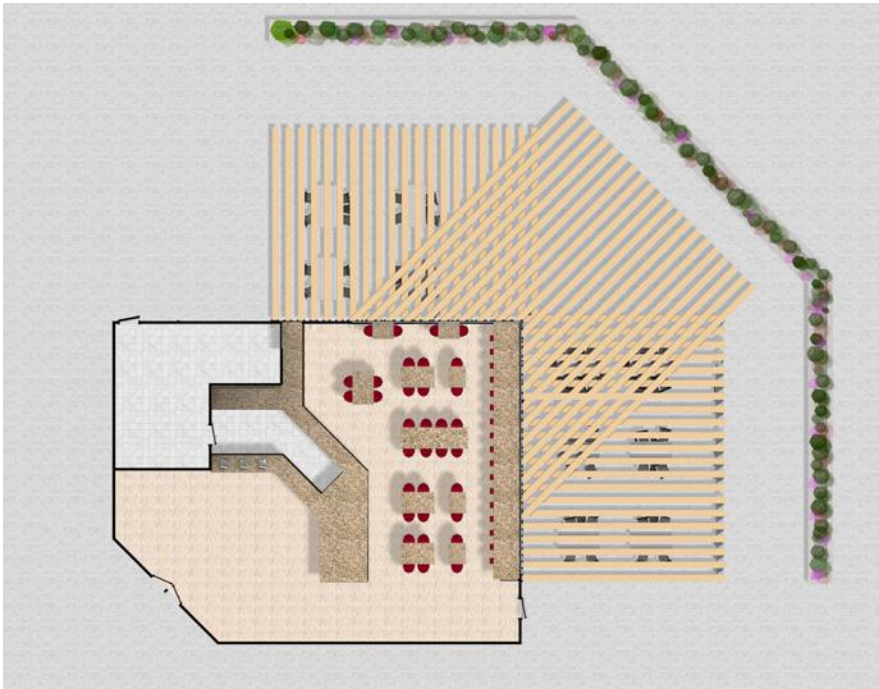




PAVE 2017 Student Design Competition

Rhino 5.0 / Flamingo Rendering / Adobe Photoshop

The PAVE 2017 student design competition is a competition to reinvent a chick-fil-a restaurant on a college campus. Through transparency, circulation, and adaptability, this design showcases a new and improved Chick-fil-a experience. To continue promoting freshness and quality of Chick-Fil-a foods, views into the kitchen space are provided to the public eye. Being on a college campus, the need for adaptability is apparent. For future additions and changes, the open floor plan allows for efficient re-arrangement and construction if needed. On most college campuses, there is specific times that on campus dining gets extremely busy. One of the major concerns of this design is for students to know where to go, to feel comfortable, and to circulate through the space in a smooth fashion. Circulation through the space is developed around the main counters in the center. The pick-up area is accessible from both the entry side and the indoor seating side, allowing for more paths of circulation. The main entry is directly on axis with both ordering stations, along with the linear lighting guiding circulation towards the center.



Form Generation Diagram





DIGITAL
MAKING

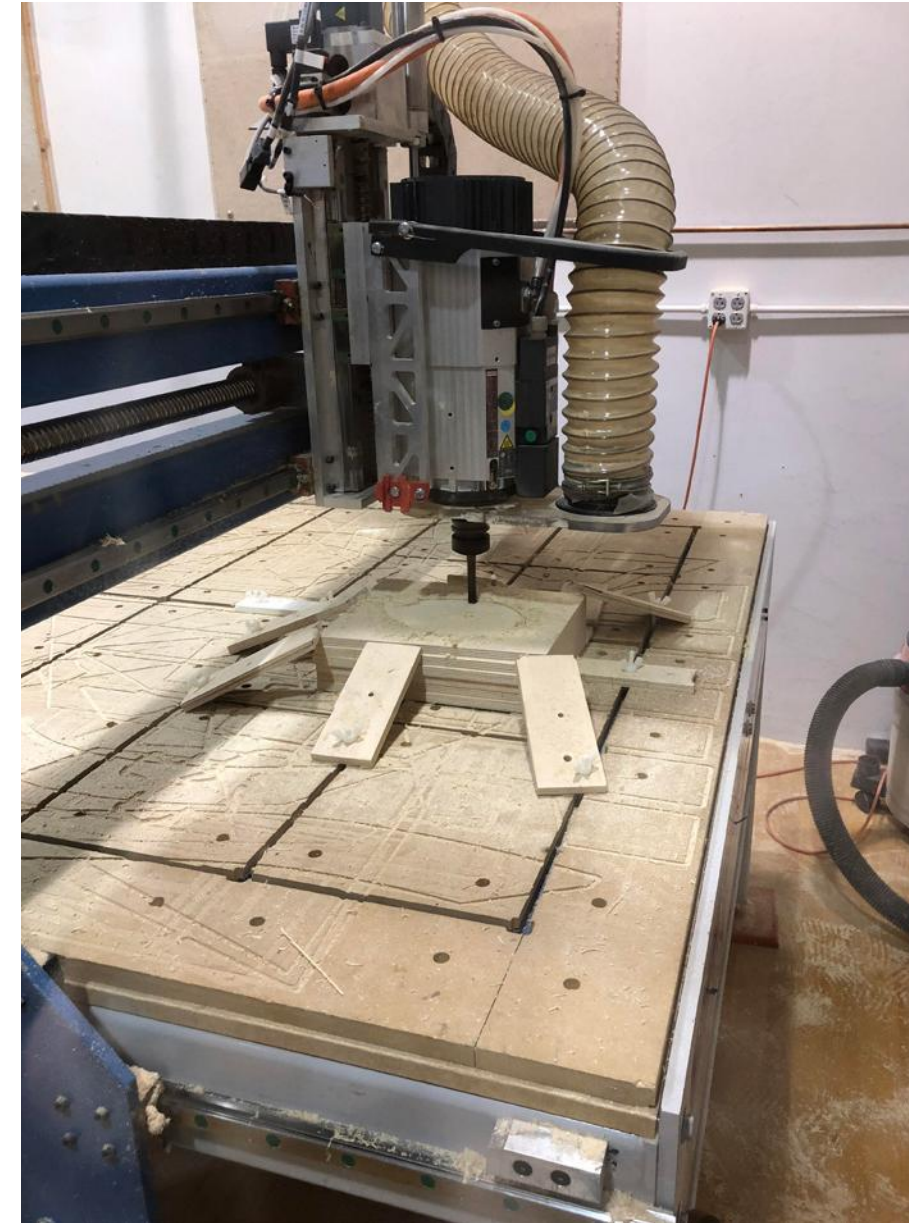


Developed

Rhino 5.0 / Grasshopper / RhinoCam /
CNC Mill / Physical Modeling
Partners: Emily Homan / Westin Dinnes

This project explores how simple, stacking polyhedrons can be fabricated. The three interlocking pieces were developed originally as planes in Rhino 5.0; as mass was added, miter joints were designed. The objects, with their miters, were laid flat and cut out of plywood with the CNC router and assembled simply with glue. The holes cut within the faces of the polyhedron directly correlate to each of the corners of that face. We then used these forms as the formwork for an additional object. The intention of this piece was to use an inextensible material to create an object with compound curvature. The form is created using triangular shapes laser cut from sheets of acrylic and zip tied together on the inside face.





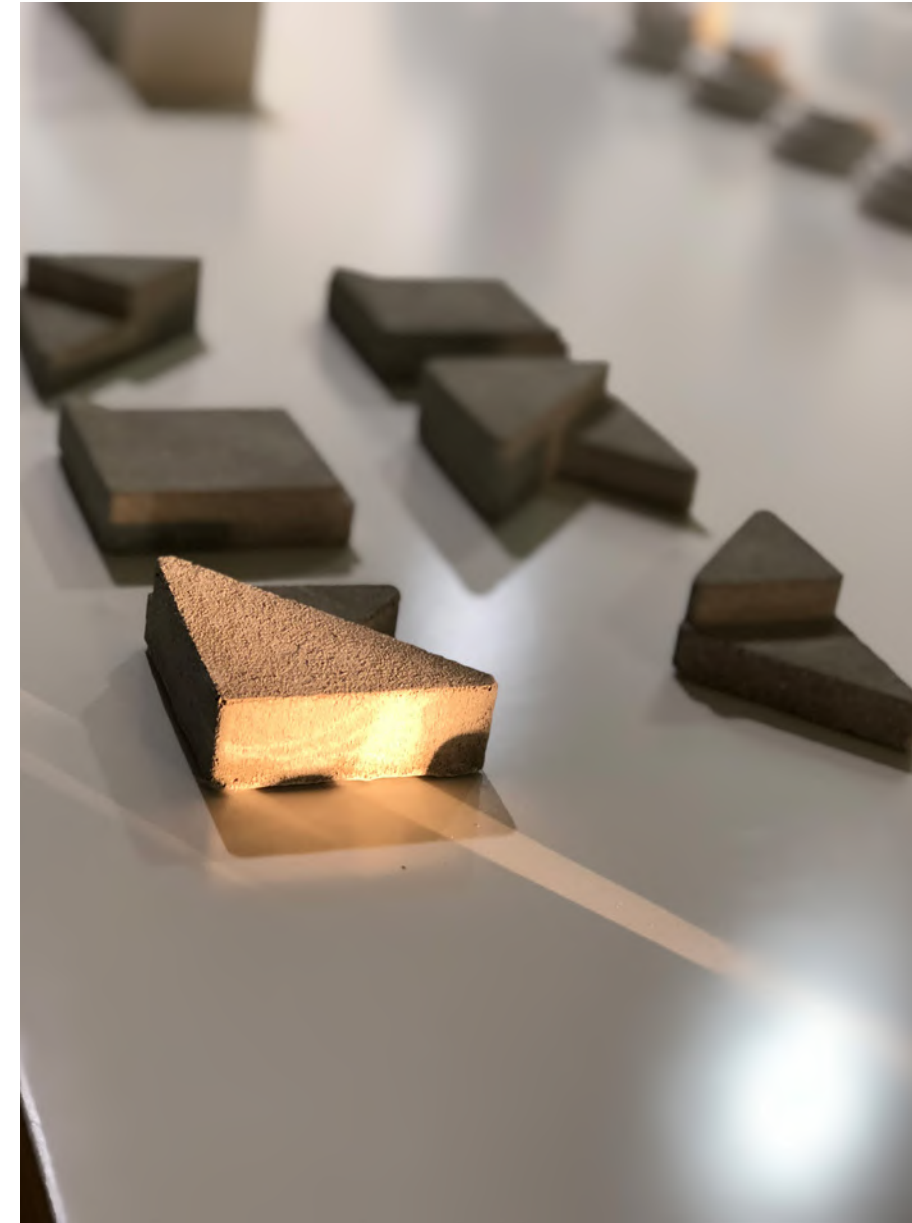
Indexed Surfaces

Rhino 5.0 / RhinoCam / CNC Mill

This goal of this project was to create a 3D object with the CNC router by milling on both sides of stock.

This twisting ellipse object explores the restrictions of the CNC router through the form's thinness. The object evolved through trial and error as it took many iterations to figure out the force of CNC router's drill-bit in comparison to the form. The textures are created depending on the speed of the machine as it goes through its finishing toolpaths.





Serialized

Rhino 5.0 / RhinoCam / CNC Mill

This project is a combination of creating a mold and casting material within. The choice of material is a foam mold with a concrete casting. The foam mold was developed in Rhino 5.0, exported into RhinoCam to explore mill techniques and textures and then brought to the CNC router.

This project was an experimentation with concrete additives, mold releasing techniques, and form. The final series is an outcome of multiple iterations.



PARA-
METRIC
DESIGN

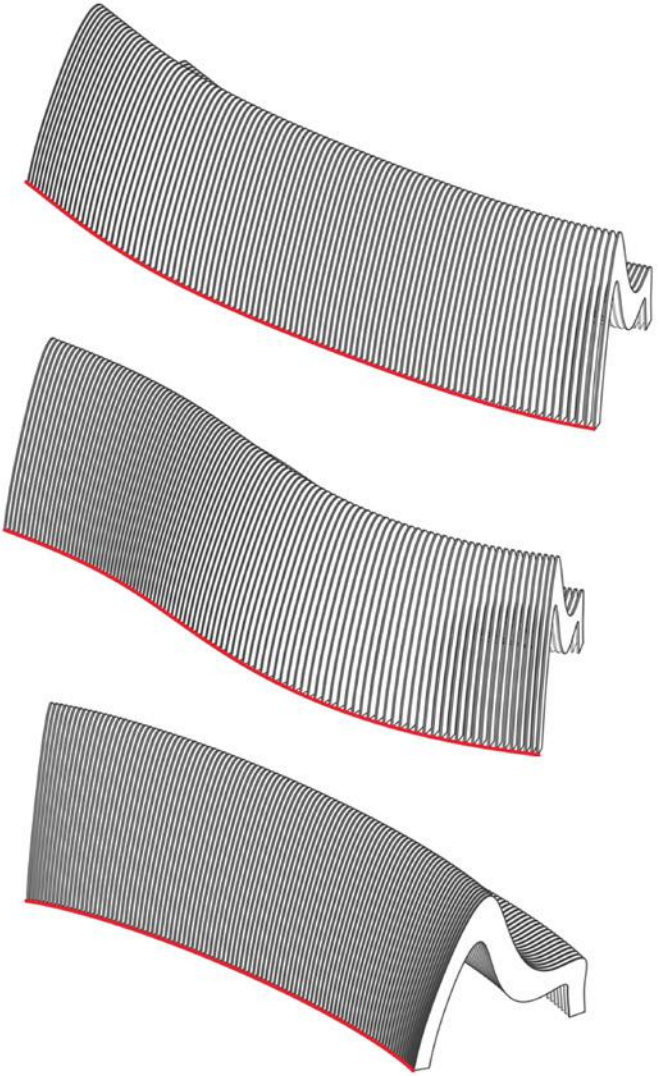


Flow

Rhino 5.0 / Grasshopper / RhinoCam / CNC Mill / Physical Modeling

Partners: Noah Medley, Jessica Black

This bench is an exploration of different grasshopper techniques. The development of the bench relied on experimentation with how many pieces of plywood need to be stacked together to create a comfortable sitting area. The parametric bench can follow along any curved line input into grasshopper. The goal of the bench was to adapt to any type of surrounding context. The full-scale mockup was produced through a joinery technique where the pieces would just slide into one another, creating stability.

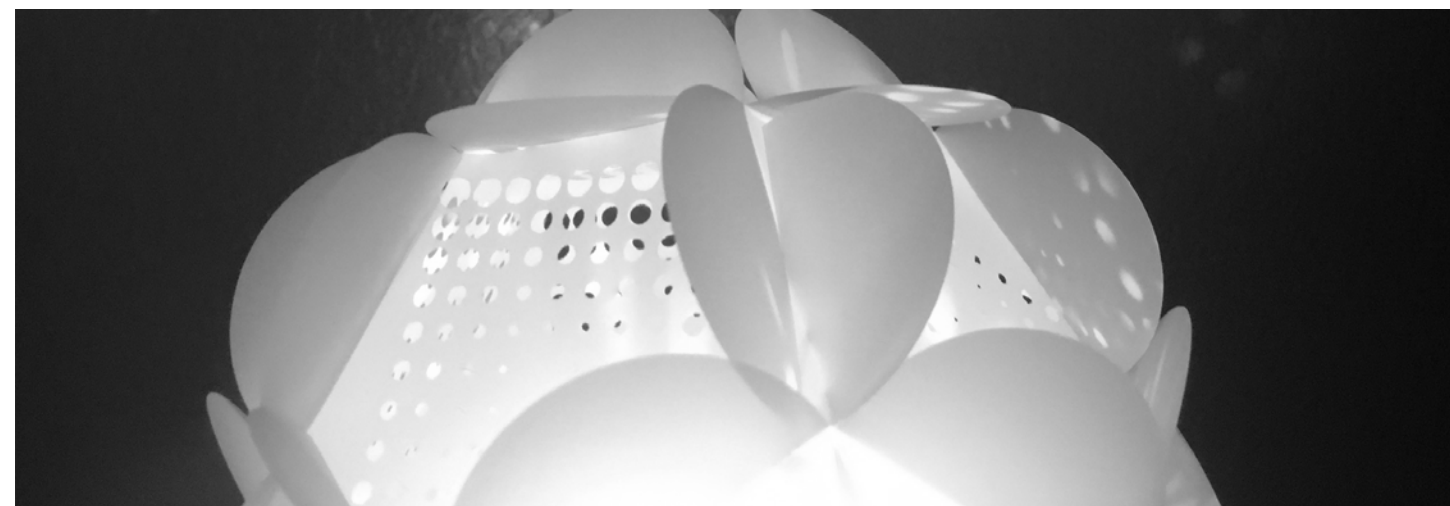
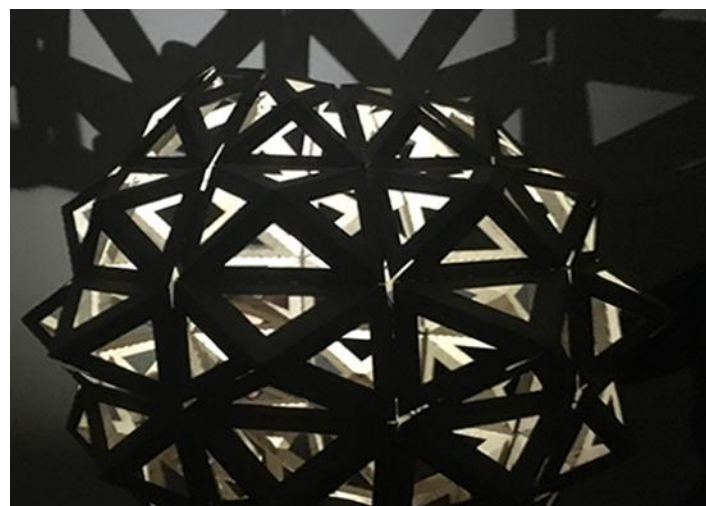
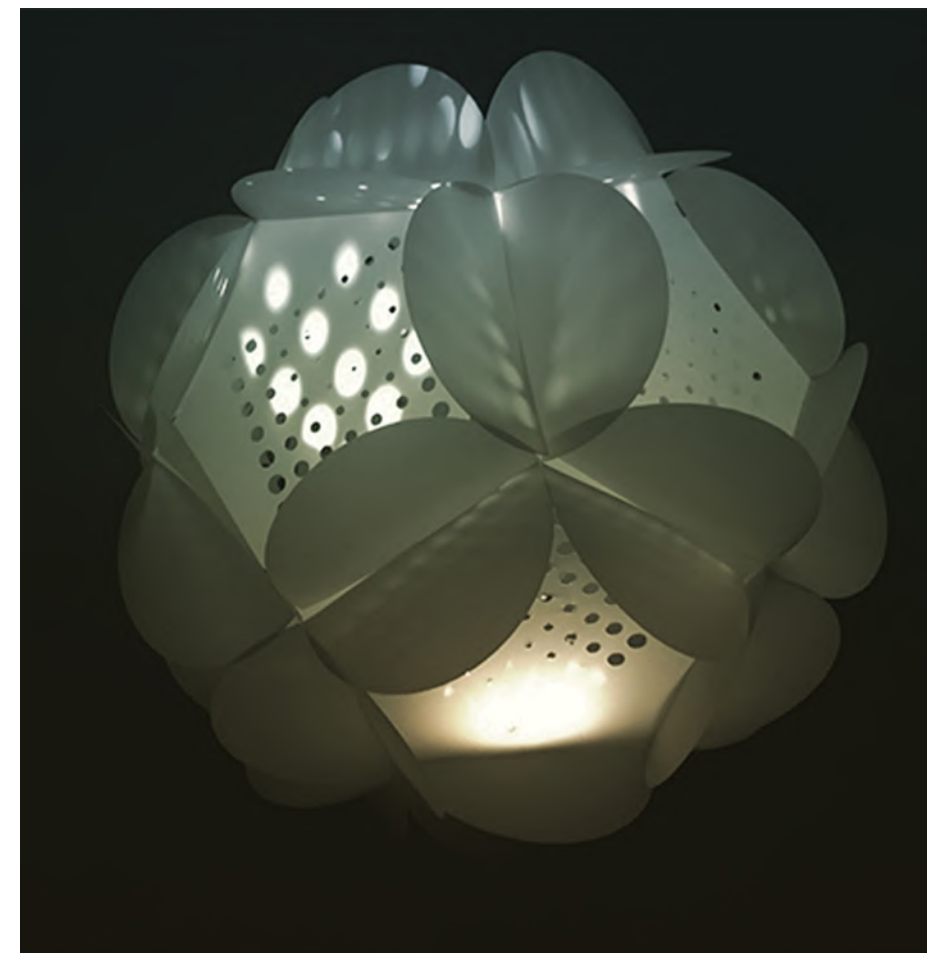




Lighting

Rhino 5.0 / Grasshopper / Laser Cutter / Physical Modeling

These models were created using algorithms using the program Grasshopper. Each model was derived through a code with various inputs that can be adapted and transformed creating different outputs to fit a variety of conditions. The models experiment with filtering light, materiality, structure, and joints.



NEWSPAPER
DESIGN



JOE BUETTNER/FOR THE DAILY

The Heisman Trophy on display in New York City prior to the award ceremony Dec. 9. Senior quarterback Baker Mayfield became the sixth Oklahoma player to win the prestigious award.

As the Heisman has become a national event, Oklahoma football has grown with it. Here's our look at OU's winners

INTRODUCTION MANUFACTURING A WINNER

JOE BUETTNER • @JOE_BUETTNER

The Heisman Trophy has evolved from a humble accolade to a year-long production, orchestrated by media outlets and wishful athletic departments.

Kenny Mossman suspected Sam Bradford would win the 2009 Heisman Trophy, an award now forever attached to his name, before the former Oklahoma quarterback was announced the winner in New York City.

The Heisman Trophy Trust, which works to uphold the award's integrity, didn't inform Mossman, the director of athletics media relations at Oklahoma at the time. Rather, he noticed camera crews starting to make their way to Bradford and his family during the commercial break immediately preceding the announcement on ESPN, positioning themselves to capture the recipient's reaction.

"There was no campaign," said Al Eschbach, a sports talk host on WWLS-FM in Oklahoma City. "Nobody talked about it, nobody was writing about it in the paper or anything. There was no talk radio then."

In the modern day, television rights, award sponsorships, social media and digital savvy public relations teams have transformed the landscape of the Heisman Trophy and how a candidate is promoted. Still, there isn't a perfect formula to promoting a Heisman hopeful. Flashy numbers are a key factor in what defines the best player in the country, but at some point in the season, every one has statistics, Mossman said.

What it comes down to is who has the most intriguing back story and the most attractive highlight reel and

a creative public relations team to accent everything special and talented about that player.

Halfway through this season, Oklahoma quarterback Baker Mayfield checked many of those boxes. He'd thrown for 2,347 yards passing, 19 touchdowns and only two interceptions. He planned the 21st interception. He planned the 21st interception. He planned the 21st interception.

The significance and tradition that follows a Heisman Trophy winner is unlike any other in college football. And in Norman, Mayfield's likeness will soon be cast as the sixth statue standing east of Gaylord Family-Oklahoma Memorial Stadium — the same place where he attended Sooners home games, hoping to one day stand among the heroes he watched as a kid — if he were to win.

"I don't even think I could use words to describe it correctly," Mayfield said earlier this season. "Coming up to tailgate and playing backyard football right there by Heisman Park, before Bradford's (statue) was there and right around the time Jason (White) was earning his, to realize I was there cheering on the team at that point in time before their statues were even there, so that obviously was writing about it in the paper or anything. There was no talk radio then."

It was just 40 years ago the Heisman Trophy presentation truly took off as a national spectacle, televised for the first time in 1977.

Eschbach remembers the era in college football before the award wasn't exhaustively discussed and debated nonstop from the conclusion of one season to the end of the next.

The commercialization of the

Heisman Trophy was initially met with some skepticism. The late Rev. Edmund P. Joyce, former vice president of the University of Notre Dame, once told The New York Times the Heisman "was not designed as a vehicle for selling soap or beer."

The prestige of the trophy seemed to be in danger as television rights were shopped for the presentation of college football's most-coveted individual prize. It had done just fine without sponsorships and television since its inception in 1935, honoring college football immortals like Davey O'Brien, Doak Walker and Ernie Davis.

In 1952, Oklahoma running back Billy Vessels was the first of five Sooners to capture the award. One of his teammates, Merrill Green, fondly recalls the days playing alongside Vessels with memories of the tough and rugged tailback that highlighted the early stages of the Bud Wilkinson era.

"Once you're a Heisman winner, that's really what you are the rest of your life. You're going to be identified as that."

Kenny Mossman, SENIOR ASSOCIATE ATHLETIC DIRECTOR

"(The Heisman Trophy) was not that prominent, especially back in our part of the country," Green said. "It was not like, 'Gee, looks like Billy's probably going to win to the Heisman,' like today. You start about (October), people start thinking about who the possible candidates are for the Heisman. That didn't happen at all."

It wasn't to say the Heisman Trophy wasn't a big deal. It just wasn't the presentation fan favorite to tune into each December with myriad cameras and lights shining on a handful of college football's finest players with their coaches and families behind them and the past winners in attendance, waiting to initiate the next member into one of sports'

most-exclusive fraternities. The humble roots of the Heisman Trophy, however, lend to its significance today.

"There's so much tradition tied up in that award, that all of a sudden you get this sense that this is something that's going to happen when you're up there. Once you're a Heisman winner, that's really what you are the rest of your life. You're going to be identified as that."

• • •

Not every Heisman candidate is made equal in the age of television and social media. Increasingly, the Heisman moment can propel a campaign in the era of viral video.

Desmond Howard's stiff arm. Johnny Manziel running for his life against Alabama. Bradford's helicopter flip at Oklahoma State.

Nearly two decades have elapsed since Superman arrived for a brief moment at Dallas' Cotton Bowl.

Two minutes remained in regulation, and the No. 5 Longhorns trailed the No. 3 Sooners 7-3 on Oct. 6, 2001. Oklahoma safety Roy Williams soared over a Texas running back and flew headfirst toward quarterback Chris Simms.

As the Texas quarterback dropped inside his end zone, he cocked his arm with the football in his left hand vulnerable to the airborne Sooner, who draped himself like a cape over Simms. Oklahoma linebacker Teddy Lehman was perfectly planted a few yards away to snatch the ball his teammate Williams' play is now regarded as one of the most iconic moments in the Red River rivalry's fabled history, and for Mossman, it was just as important in the weeks to follow.

"Superman" was a gift on a platter for us," Mossman said.

The junior safety's signature play was as clear as the Texas skies the day he etched his name in Sooners lore. The play was perfect to promote a Heisman Trophy candidate, and Williams became a strong contender for the award with the aid of his highlights and the campaigning from the Oklahoma athletics department.

"Defensive players are so much harder to promote for that award," Mossman said. "So we had to get you're a Heisman winner, that's really what you are the rest of your life. You're going to be identified as that."

Williams ultimately finished seventh in the voting. It's a feat Mossman is still proud of to this day, considering Williams' primary position was playing defense.

Two years later, Mossman made it to his first Heisman presentation with Jason White. The trip was as grand as the city that hosts the ceremony. It made it even better coming during the holiday season, he said. Once the day arrives, however, tension gradually builds inside the intimate confines of the 2,100-seat venue where the ceremony is held.

It's an overwhelming process only 80 men who've been presented the trophy have experienced, but the relief following the show is well worth the wait to go down forever in history as a Heisman Trophy winner.

"The buildup is very significant," Mossman said. "And then, of course, right before they present the trophy, they're going to commercial, so they take it out even longer. It's really overwhelming. The other thing I think that's overwhelming about it — you do get some sense of this on television — is so many of the past winners are there, and you're talking about a who's who of college football."

The greatest names to ever play the game."

Joe Buettner
joebuett@oudaily.com



THE SOONERS DEFENSE CELEBRATES A PLAY IN THE GAME AGAINST OMAHA STATE Sept. 9. THE SOONERS WON THE BACKSLAP, 31-16, IN OMAHA STATE.

OHIO STATEMENT

Sooners throttle Buckeyes in upset win, putting Oklahoma in the middle of the playoff conversation

KELLI STACY • @BASTACRYELLI

COLUMBIUS, Ohio — It's not every day that the Sooners are in the middle of the playoff conversation. But after a 31-16 victory over the Buckeyes on Saturday, the Sooners are in the middle of the playoff conversation.

The Sooners' defense was the key to the victory. The defense held the Buckeyes to 16 points and 213 yards of offense. The defense was the key to the victory.

The Sooners' offense was also strong. The offense scored 31 points and 413 yards of offense. The offense was the key to the victory.

The Sooners' defense was the key to the victory. The defense held the Buckeyes to 16 points and 213 yards of offense. The defense was the key to the victory.

The Sooners' offense was also strong. The offense scored 31 points and 413 yards of offense. The offense was the key to the victory.

The Sooners' defense was the key to the victory. The defense held the Buckeyes to 16 points and 213 yards of offense. The defense was the key to the victory.

The Sooners' offense was also strong. The offense scored 31 points and 413 yards of offense. The offense was the key to the victory.

The Sooners' defense was the key to the victory. The defense held the Buckeyes to 16 points and 213 yards of offense. The defense was the key to the victory.

The Sooners' offense was also strong. The offense scored 31 points and 413 yards of offense. The offense was the key to the victory.



Normanites clash over street named for KKK leader, OU professor

DANA BRANNHAM • @DANABRANNHAM

NORMAN, Okla. — A street named for a KKK leader and an OU professor is the subject of a heated debate in Norman. The street is named for a KKK leader and an OU professor.

The street is named for a KKK leader and an OU professor. The street is named for a KKK leader and an OU professor.

The street is named for a KKK leader and an OU professor. The street is named for a KKK leader and an OU professor.

The street is named for a KKK leader and an OU professor. The street is named for a KKK leader and an OU professor.

The street is named for a KKK leader and an OU professor. The street is named for a KKK leader and an OU professor.

The street is named for a KKK leader and an OU professor. The street is named for a KKK leader and an OU professor.

The street is named for a KKK leader and an OU professor. The street is named for a KKK leader and an OU professor.

The street is named for a KKK leader and an OU professor. The street is named for a KKK leader and an OU professor.



Normanites clash over street named for KKK leader, OU professor

DANA BRANNHAM • @DANABRANNHAM

NORMAN, Okla. — A street named for a KKK leader and an OU professor is the subject of a heated debate in Norman. The street is named for a KKK leader and an OU professor.

The street is named for a KKK leader and an OU professor. The street is named for a KKK leader and an OU professor.

The street is named for a KKK leader and an OU professor. The street is named for a KKK leader and an OU professor.

The street is named for a KKK leader and an OU professor. The street is named for a KKK leader and an OU professor.

The street is named for a KKK leader and an OU professor. The street is named for a KKK leader and an OU professor.

The street is named for a KKK leader and an OU professor. The street is named for a KKK leader and an OU professor.

The street is named for a KKK leader and an OU professor. The street is named for a KKK leader and an OU professor.

The street is named for a KKK leader and an OU professor. The street is named for a KKK leader and an OU professor.

THREE THINGS YOU SHOULD KNOW ABOUT DACA

1. Nationwide, there are 800,000 DACA recipients — 80,000 in Oklahoma.
2. DACA provides work permits, travel permits and temporary reprieve from deportation for those who came to America as undocumented children.
3. Applicants must have no felonies and no more than three misdemeanors, must pay a fee and must have at least a high school diploma or GED.

For more information and coverage on DACA, visit oudaily.com

— @DACApage2

