Contents

Resume

Experiment One
A Question of Sin: The Creation of a Sin Center
New Orleans, LA, USA

Sub-Study: Form of Dance

Experiment Two
A Question of Culture: Developing the Kulturhuset
Copenhagen, Denmark

Sub-Study: Precedent Modeling

Experiment Three
A Question of the Cube: Fabricating the Digital

Sub-Study: Defying Gravity

Sub-Study: Coral-Inspired Facade

Experiment Four
A Question of Steel Construction
New Orleans, LA, USA

Abstract of a Thesis
Morphogenesis and the Emergence of Form
Masters Thesis for 2012
EDUCATION

TULANE UNIVERSITY, NEW ORLEANS, LA
Masters of Architecture 2013
Awarded: Dean’s List Scholar, Recipient of Tulane Founders Award, Dean MacAulay Grant, and Predicted Cum Laude Graduate
Affiliated with: American Institute of Architecture Students (Secretary) and Tau Sigma Delta (Architecture Honors Society)

Danish Institute of Study Abroad, Copenhagen, Denmark
Architectural Design 2011
Included a concentrated study and travel of Swedish and Finnish Architecture.

SKILLS

Digital
- AutoCAD Architecture
- Rhinoceros 4.0
- V-Ray for Rhino
- Sketch-Up
- Adobe Creative Suite: Photoshop, Illustrator
- InDesign
- Dreamweaver
- Flash
- Grasshopper
- Revit Architecture

Analogs
- Detailed Sketching
- Acrylic Painting
- Scaled hand-drawings
- Model Making
- Laser Cutting Fabrication
- Wood shop experience
- 3d Printing
- Experience in Glass Blowing

WORK EXPERIENCE

WWCOT, Shanghai, China
Intern
- Independently designed large components of governmental competition including the landmark of a new business center, a museum, a theatre, and large landscaping schemes.
- Participated in site visits around the country to meet with governmental officials and receive briefs on projects
- Research sustainable design in terms of a marsh and landscaping project

Marrano Corporation, Buffalo, NY
Drafting Assistant
- Reviewed and assembled steel, window, door order forms and permit requests while editing drawings of several residential houses using AutoCAD within a work day
- Learned visually the correct and incorrect manner to construct a wood frame building by assisting the drafter in site visits

Global Green USA, New Orleans, LA
Intern, Holy Cross Project
- Assist the Green Building Program Associate of the Holy Cross Project (5 single-family homes (built) and a community center/sustainable design and climate friendly books Fall 2011). The goal of the project is to be LEED Platinum standards
- Gained knowledge of the green building materials and the most up to date sustainable products and systems used at the Holy Cross Project site.

Tulane Regional Urban Design Center, New Orleans, LA
Teacher’s Project Assistant
- Organized post documentation, site analysis, drawings, and photographs of city projects from China and the United States
- Prepared and assembled the initial proposal of a book documenting the architectural work of T.R.U.D.C to be published in late spring of 2011

The Digital Output Lab, Tulane School of Architecture
Specialist Technician
- Organized files sent by students of the campus including architectural boards and ‘cut files’ sent to the laser printer to be made into scaled models
- Familiarized and used daily large scale printers, 3D printer, and laser cutting system

Tulane School of Architecture, New Orleans, LA
Student Mentor
- Oversaw and critiqued twelve architecture freshmen to prepare them for reviews and professor’s critics
Chapter One
A Question of Sin: The Creation of a Sin Center

Sin is tempting: and to see it and hold it can be seen as something more tempting. Much like the apple in the garden of Eden, sin is organic and a natural part of being human. The concept is each ‘sinful’ program is represented as an attractive object that is suspended in the air. The program consisted of:

Office Building
Hotel
Club
Café
Restaurant

These suites become an extension of sin through temptation. This temptation is led through a series of ramps that divide and intersect the bulbs to create a disconnect of inside the building and outside.

The organization of the bulbs is based upon a study of different organic bulbs, specifically an onion. (Sketch studies to the left). This study began to influence the nature of the building:

The bulbs also act as the structure of the building that hang off the roof of the building and seem connect to the base of the building. The facade is an undulating louver that fits the exterior of the bulbs like a glove to provide transcurrency yet opacity. a glimpse of the world inside the building.
The bulbs glow different colours to differentiate them from each other. This furthers the curiosity of each bulb and the temptation (LEDs).
Study Models

The exploration began with a series of models that investigated different circulation possibilities and concepts. The process of finding the most efficient number of bulbs that allows the most flexible circulation.
Bringing Down the Light of Sin

The bulbs bring in light and allow stacked ventilation within each bulb. As people circulate through the building they are able to witness all parts of each bulb. Above is an image of the spa lobby in which visitors can see inside the pool from above.
Sub-Study: Form of Bones
Chalk Drawings of the Shadows and Form of Different Bone Structures.
Chapter Two
A Question of Culture: Developing the Kulturhuset

Every city has a particular culture that the resident are proud to be a part of. It is something to be celebrated and something a city holds onto for many generations. The Kulturhuset was designed as the final stop of one of the metro lines in Copenhagen. The goal was to create a building that consisted of a library, café, and auditorium.

The solution was two pieces that interacted with each other while still remaining separate to allow for flexibility. The pieces worked to provide a public square surrounding the metro stop, similar to that of many other metro stops within the city. The circulation achieved can be extremely flexible with a space for bicycle parking. One could walk through the lot without entering the building if needed and a space was provided to allow for maximum circulation during rush hours.

To the left is a series of study drawings in exploration to how circulation, connections, and programming may work.
Intertwined Spaces

The two spaces physically intertwine with each other and hug the metro stop. They connect to one another through views and form, however, differentiate from each other through texture and lines on the facade. Top: Diagram of the Program. Above: View of a casual theatre space with view into the library. Right: large section taken to see the spaces behind the facade.
Life – Space – Build
The important thing when creating is interpreting the life that exists at the site and designing to promote or make that life grow. By promoting movement and connection to the public, the Kulturhuset creates more life for the city and the community.
Experiment Three
A Question of the Cube: Fabricating the Digital

This was a question of redefining a 2 ft x 2 ft cube. The concept is the bigger cube, a cube that continues infinitely in a consistent twist. As the cube twists, the pieces that remain are the pieces that do not intersect with the proceeding cube. Despite its infinity number of twists, it results in an infinite number of series that end with a cube that is similar to very first cube. The 2 ft x 2 ft cube is an example of one of those series.

To the left is a diagrammatic series showing the resulting piece from each twisting of the cube. Below is a small study model of the experiment with material and the resultant form.
Realization

Below is a further study model of material and form in preparation for the final tense form model. In the photo of the model to the right one can see the cube that is similar to the first cube of the series in 3 dimensional space.
Sub-Study: Defying Gravity
1st Year Resort Design

This was one of my first design projects that was located in Acadia, NY. The site was along a cliff, however, I tried to approach the site in a different direction. I treated the cliff like a sea and the buildings as mushroom to allow for maximum views of the area. The placement game "pods" are according to a sunlight study (directly to the left) to allow each pod for maximum sun. The result was almost a spine-like form that followed the curvature of the cliff, coming into...
Sub-Study: Coral-Inspired Facade

2nd Year section of a facade design based upon the growth of Coral.

Influenced by the growth of coral and its reaction to sunlights, I attempted to apply its patternization to a facade that grows and begins to envelope and, in some places, invade into the building, resulting in an emerging facade according to pedestrian movement, internal circulation and sunlight.

Below is the study of coral patternization and growth along with a section of the invasive facade.
Chapter Four
A Question of Steel Construction

Steel is traditionally seen as something stiff, strong, and orthogonal. The program is to see it as something else. The program is a Culinary School and a restaurant. Inside the orthogonal layout of the building is a tumor-like form that grows from within and invades throughout the building and punctures the exterior facade.

Within the tumor is the public restaurant that has direct access to the front. Classrooms and lecture rooms surround it and connect to it to allow for easy access and a constant reminder and goal of the culinary business.
Steel and a Tumor
Above is a tension and surface study to further understand the amount of steel support needed and where. The steel tumor becomes the structure for the building to create one solid form: an inversion, inside-out, space.
Morphogenesis and the Emergence of Formative Design

There exists a broken relationship between form, skin, environment and the systems in architecture that has been strongly imbedded in the ideals of Post-World War modernist beliefs that function precedes form. It is the idea that the most important aspect of the building is the programmatic function rather than an equality in all parts. Architectural structures, however, have a need to be complex systems in order to perform highly complex capabilities and aspire to be dynamic in the creation of space and systems. It is this need, to have the ability to respond to multiple factors including the environment, program, form and function, that gives way to a new kind of life in architecture in which form follows function and in essence, function follows form.

By taking inspiration from biological structuralism, there is a new light that through the growth of organic design, architecture can begin to emerge in a way that has the ability to grow and develop through a single form of dynamic interacting parts. Nature does not only inspire form, but also holds key to the process of form. Nature is influential due to its ability to evolve, adapt, and change quickly with minimal materials and extreme organization, resulting in maximum potential. The form of biological structuralism is due to the process of morphogenetic growth of forms. It is the idea that organisms act as a whole and that change in one part must take into account the interconnected nature of the entire organism resulting in a process of self-organization and unique emergent forms such as the fibers of fingerprints or a zebra's stripes. Nature is dynamic, complex, and in some ways chaotic, however, this is what creates form.

Today, through a strong advancement in computer-aided design and environmental awareness, there has been a movement of biological-inspired design. There is potential that exists in applying the ideas of morphogenesis to nature to architecture to create a maximally efficient and new formative design in which all the parts of the system work together to create a single biological structure.

"... the totality is not, as it were, a mere heap, but the whole is something besides the parts ..."

- Aristotle, Metaphysics, Book H 1045a B-10