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Contour Pavilion

ARCH205 DGW/DESIGN VISUAL 2
ADVISOR I
DATE I FALL 2014
SOFTWARE I ILLUSTRATOR, PHOTOSHOP
ABOUT:
THIS PROJECT USES THE CONCEPT OF PSEUDO LINES
AND EXPLORES THE IDEA OF WORKING IN THREE
SPACES. A FLAT SPACE DONE IN ILLUSTRATOR. A 2D
SPACE GENERATED BY GIVING THOSE LINES MASS. THE
FINAL SPACE IS THE 3D SPACE, WHICH ANALYZES HOW
THOSE PSEUDO LINES CAN GIVE FORM TO A COMPLEX
SPACE THAT USES MAN MADE TOPOGRAPHY, USES
THOSE LINES TO CREATE A SERIES OF PATHS THAT WORK
INSIDE AND OUT.
THE TASK OF THIS PROJECT WAS DONE IN ARITHMETIC.
1. WAS TO GENERATE A SERIES OF RANDOM LINES IN
ILLUSTRATOR
2. PRINT THE LINES AT 30"X40"
3 PICK A HORIZONTAL PART THAT I FOUND INTERESTING
4 PROVIDE THICKNES TO THE LINES WITH WOOD STRIPS
5. GENERATE A TOPOGRAPHY
6. BRAKING APART THE WOOD FRAME AND ALLOWING
IT TO RESPOND TO THE TOPOGRAPHY
7. GENERATE PATHS
OVERLAYING WOOD STRIPS

SPLITTING WOOD FRAME

FLAT SURFACE

RAPTURE THROUGH THE VOLUME

JOINING THREE FRAMES

RAISING AND DECREASING SLOPE

TYING JOINERY

CREATING TOPOGRAPHY

ADDING POST
Scope of work was to proposed additions to an existing property. I had the opportunity to work with one of my advisor's clients. This gave me an opportunity to be able to listen to the client's needs, and be able to provide solutions to her living conditions through sketches and diagrams. Three proposed conditions involved the addition of a second room with a master bedroom, a more open kitchen that allowed light to enter through a skylight, and a enable a better flow through the residence by readjusting certain rooms and openings. As a final task I had to also build a frame model that showed my understanding of how a residence is framed.
SITE SURROUNDINGS

SUMMER PREVAILING WINDS

WINTER AND SUMMER SUN PATHS

206 HOUSE BLOCKS SUN LIGHT AND PROVIDES NO PRIVACY

SPACE DIAGRAMS NOTES

SPACE DIAGRAMS

DIAGRAMS 01 THROUGH 09 EXPLORE THE POSSIBLE ADDITIONS OF NEW SPACES AS WELL AS THE ENLARGEMENT OF EXISTING ROOMS.

EXISTING VS PROPOSED CIRCULATION

THE EXISTING CIRCULATION HAS NO CONNECTION FROM EXTERIOR TO INTERIOR. AS WELL AS A LACK FOR NATURAL LIGHT. THE PROPOSED CIRCULATION ENABLES BETTER MOVEMENT BETWEEN ROOMS AND ENABLES MORE LIGHT INSIDE THE KITCHEN AND LIVING ROOM.
PLAN NOTES

1. GUEST ROOM
2. CLOSET
3. 1ST FLOOR RESTROOM
4. BEDROOM #1
5. LIVING ROOM
6. KITCHEN
7. LAUNDRY ROOM
8. RENTABLE UNIT
9. GARAGE
10. PATIO
11. 2ND FLOOR MASTER ROOM
12. 2ND FLOOR MASTER RESTROOM
13. 2ND FLOOR WALK IN CLOSET

SETBACK

- FRONT SETBACK: 14' - 6 1/8" & 10' - 0"
- SIDE SETBACK:
  - 1ST FLOOR: 3' - 7 1/2" & 4' - 4 5/16"
  - 2ND FLOOR: 8' - 8"
- REAR SETBACK:
  - 2ND FLOOR: 8' - 8"
**Mussel Park**

**ARCH215 ARCHITECTURAL DESIGN/THEORY 2**

**ADVISOR**

**DATE** | SPRING 2013

**SOFTWARE** | ILLUSTRATOR, PHOTOSHOP

**ABOUT:**

The process revolves around creating a sequence in the beach. The photos focus on a cycle of events that fluctuate from birth to death, and from destruction to beauty. How these give birth to a more beautiful space. This sequence of photos explores the idea of mimicking the organic form of a mussel shell through a collage and series of study models.
The task was to design a tree house. The process began by combining three ideas into a hybrid with the best traits from each concept. We use the metal bridge to dictate the shape of the structure accompanied by the free form of the other two ideas. Once the design was done, the real challenge surfaced by trying to understand how we could create a physical model that was made out of concrete, and still provide such interesting space and form. This project also explores a new way in which concrete can be manipulated. As a result, we made several study models to try and replicate the 3D model, and in the process, we also made different softwares and building techniques blend with each other.
UNROLLED SHELL SURFACE FROM PEPAKURA
FIRST PROTOTYPE: UNCONVENTIONAL
FREE FORM SKETCH
UNROILED SHELL SURFACE FROM PEPAKURA
SECOND PROTOTYPE: PEPAKURA MODEL
STAIR CONCEPT
THIRD PROTOTYPE: USING LAZER CUTTER TO CREATE MOLD
HYBRID
FABRICATION PROCESS
FABRICATION PROCESS
1. ALUMINUM FOIL
2. 1/2" PLYWOOD MOLD
3. POURING CONCRETE
4. WIRE MESH
5. SECOND 1/2" WOOD MOLD
6. POURING CONCRETE SECOND TIME

LEGEND
1. GLASS PANELS
2. CONCRETE PANELS
3. TREE BRACING
4. STEEL FRAME
5. STEEL SLAB
6. TREE
Zoid House

ARCH185 ENVIRONMENTAL DESIGN SYSTEMS
ADVISOR
DATE: FALL 2014
GROUP LEADER
SOFTWARE: ILLUSTRATOR, PHOTOSHOP, SKETCHUP, REVIT

ABOUT:
ZOID HOUSE FOLLOWS THE CONCEPT OF FUNCTION FOLLOWS FORM.
ZOID HOUSE FOCUSES ON LEARNING HOW TO DESIGN MORE ENVIRONMENTALLY FRIENDLY
THE PROCESS WAS TO CHOOSE A DOG BREED, AND LEARN ABOUT SPECIFIC NEEDS THAT THE BREED MIGHT REQUIRED IN ORDER TO FEEL SAFE AND COMFORTABLE.
THE TRAPEZOID SHAPE RESPONDS TO TWO CONDITIONS THE BODY PROPORTIONS AND THE WEATHER.
THIS PROJECT AIDS TO UNDERSTANDS THE INTERSECTION BETWEEN MATERIALS AND HOW MATERIALS COULD MEET LEED STANDARDS.
RECTANGULAR SHAPE

SLOPING CORNER FOR DRAINAGE

EXTRUDING VOLUME

BIGGER ENTRANCE FOR MAINTENANCE AND VIEWS

PULLING CORNERS TO CREATE 360° MOVEMENT

VENTS FOR BETTER AIR FLOW

PUSHING TO CREATE DECK AND OVERHANG

RAISING FOR PROTECTION AGAINST HUMIDITY

PROCESS PHOTOS
PLYWOOD is a material that can easily decompose and be reused, and does not harm the environment or any living organism. As well as being able to find it locally. - Two 4’ x 8’ sheets

HARDWOOD behaves the same way as plywood. The only difference is thickness. A plus is that it can be found locally and provides a longer life span. Another positive aspect was that it was reuse from a table. - One sheet of 4’ x 6’

HAIRPIN LEGS provide an anti-corrosion element between the plywood and the concrete ground plane, as well being able to be recycle the steel. - 4 hairpin legs

FOAM INSULATION provided the right thickness to protect from the heat gain, as well as maintaining the inside cooler in the day and warmer at night. - 1 sheet of 4’ x 8’

**MATERIAL**

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
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<tbody>
<tr>
<td>Plywood</td>
<td>Plywood is a material that can easily decomposed and be reused, and does not harm the environment or any living organism. As well as being able to find it locally. - Two 4’ x 8’ sheets</td>
</tr>
<tr>
<td>Hardwood</td>
<td>Hardwood behaves the same way as plywood. The only difference is thickness. A plus is that it can be found locally and provides a longer life span. Another positive aspect was that it was reuse from a table. - One sheet of 4’ x 6’</td>
</tr>
<tr>
<td>Hairpin Legs</td>
<td>Hairpin legs provide an anti-corrosion element between the plywood and the concrete ground plane, as well being able to be recycle the steel. - 4 hairpin legs</td>
</tr>
<tr>
<td>Foam Insulation</td>
<td>Foam insulation provided the right thickness to protect from the heat gain, as well as maintaining the inside cooler in the day and warmer at night. - 1 sheet of 4’ x 8’</td>
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THE TASK WAS TO REDESIGN A BUS STOP THAT COULD PROMOTE PUBLIC TRANSPORTATION. ORANGE COUNTY IS KNOWN FOR ITS HIGH DENSITY OF CARS AND A LACK OF PUBLIC TRANSPORTATION ROUTE 541 FOCUSES ON RESPECTING THREE EXISTING CONDITIONS WHILE ENABLING THE ADDITION OF THREE MORE CONDITIONS. THE FIRST EXISTING CONDITION IS TRAFFIC, THE SECOND ONE IS BICYCLE TRAFFIC AND THE LAST ONE IS THE LACK OF PUBLIC USE. THREE CONDITIONS THAT WERE ADDED WAS A MORE ENGAGING STRUCTURE THAT PROVIDES PROTECTION FROM NATURAL ELEMENTS WHILE CREATING A PUBLIC STOP AND LASTLY ADDING AN OPEN SPACE THAT CAN ALLOW PEOPLE TO WALK THROUGH THE SPACE AND ENGAGE PEOPLE ON A PERSONAL LEVEL.
USING S SHAPE

SPLITTING THE SHAPE

WORKING WITH A RIB SYSTEM

WORKING WITH A RIB SYSTEM

S SHAPE MORPHS TO PROVIDE PROTECTION

ADJUSTING FOR SEATING

APPLYING CURVE PATH TO RIBS

STRETCHING RIBS TO PROVIDE VIEWS

ADJUSTING RIBS TO BE MORE ENGAGING

FINAL VISION

PROVIDING MORE SPACE BY CONCAVING TOWARDS GRASS
THE BUS STATION

Good morning!

No bus. (sigh)

Wow, Conductor!!!!

Finally!

The End!!
SBFF 16

ARCH201 DESIGN/BUILD

ADVISOR: I
DATE: SPRING 2016
TEAM LEADER: I
GROUP MEMBERS: I
SOFTWARE: I ILLUSTRATOR, PHOTOSHOP
RHINO 3D I

ABOUT:
This year’s Santa Barbara Film Festival focused on creating an interview set that worked within a restricted area. My team was in charge of creating the backdrop stage where celebrities get interviewed. My team worked with a more free form rather than a rigid form. This allowed for a more open space at the middle, while serving as an entrance that embraces the guest. To meet the deadline, the class was broken into four groups. Groups one to three focused on designing three skins for the set, while my team focused on building the backdrop frame. This allowed me to learn new working tools, while constantly providing input to my teammates as to how certain tasks should get done more efficiently, as well as documenting the process, and meeting the deadline.
VORONOI SKIN  MASONITE BOARD  FABRIC  LOWER RIB  BASE  L STUDS  UPPER RIB  MIDDLE RIB  WOOD JOINERY
Personal Drawings

SKY HOUSE, JAPAN

ABC BUILDING, COSTA MESA

BROAD MUSEUM, LOS ANGELES

CLAIM JUMPER, COSTA MESA
**Tween Grapher**

**ARCH163 3-D MODELING: RHINO 2**

**ADVISOR:**

**DATE:** SPRING 2016

**SOFTWARE:** RHINO3D, V-RAY, ILLUSTRATOR, PHOTOSHOP GRASSHOPPER 3D.

**ABOUT:**

*TWEEN GRAPHED* is the idea of making surface grids intertwined with each other and have certain points being pulled by gravity to mimic the idea of a surface floating. I use a previous concept of mine as a reference. The project concept would have the roof merging to the ground within certain points. This would enable a rib system that interlocked with each other to mimic Japanese joinery. On top of the rib system there would be light wells that would close in and out depending on control points that would manipulate where light would be directed towards. My goal was to create something that would seem almost corrupt due to using the aid of computer program such as Grasshopper to push the traditional architecture boundaries. At the same time I wanted a system that could be buildable and beneficial.