works

marco thomas juliani

may 2013

marcotjuliani@gmail.com

(520) 954-8150

It has become a part of my character to operate in a realm of discomfort. This, I like to believe, is a more interesting way to live life. It begins with baby steps when you are young and afraid, and it quickly escalates to bold, disruptive steps when you are young and determined. It involves having a tolerance for uncertainty. It involves getting on airplanes and going to places that don't feel like home, in hope of obtaining life-changing experiences. It involves sacrificing a few hours of sleep almost routinely.

Architecture is the medium through which I have begun to piece together different understandings- it has helped me interpret the complexity that characterizes life. It is a field of knowledge, of subjectivity, of speculation, of uncertainty- all at the same time. These conflicting concerns seem to be brought up by the work of architects who are willing to operate at the boundaries of architecture, places where the divides between architecture and all other are slim and in many cases blurred. It becomes a realm of discomfort- it produces argument, it is interesting. This is the architecture I admire most- whether built or not.

Marco Thomas Juliani *CV*

e: *[marcotjuliani@gmail.com]*
b: *[http://onurban.tumblr.com/]*
m: *[520.954.8150]*
a: *[630 E 2nd St*
Tucson, AZ 85705]

PROFESSIONAL

SLADE ARCHITECTURE
June 2011- Aug 2011 *New York, NY*

Architectural Intern

Responsible for a range of tasks including pre-design logistics studies, conceptual and schematic design visualization, assistance in the compilation of construction documents.

Project Involvement

-Flight Club NY store addition
-W Philadelphia Hotel
-Virgin Atlantic JFK Lounge

SEAVER FRANKS ARCHITECTS
Feb 2012- Sep 2012 *Tucson, AZ*

Architectural Intern

Responsible for a range of tasks including physical model making, designing display boards for marketing purposes, pre-design logistics studies, conceptual and schematic design visualization, assistance in the compilation of construction documents, assistance in compilation of specification documents.

Project Involvement

-Plaza Palomino Remodeling
-Salpointe STEM Student Center
3063 Hirst Residence

ACADEMIC

UNIVERSITY OF ARIZONA
Aug 2008- May 2013 *Tucson, AZ*

College of Architecture
Five Year B. Arch

Eller College of Management
General Business Minor

RECOGNITION

STUDENT SHOWCASE 2012
Nov 9th, 2012 *Tucson, AZ*

1ST PLACE

University-wide student showcase hosted by the Graduate and Professional Student Council. Placed 1st in the Architecture, Planning & Landscape Architecture category in the Undergraduate division.

DESIGN EXCELLENCE CANDIDATE
Spring 2009- Land Ethic Studio
One of four class candidates.

EXHIBITION

D3 HOUSING TOMORROW COMPETITION
March/April 2013
Submission selected by curators for exhibition at University of Houston College of Architecture Gallery.

ARIZONA CHALLENGE COMPETITION
May 2012

LYCEUM COMPETITION
May 2010
One of three studio submittals from my section.

NAEA CONFERENCE
March 2013
Toy project exhibited in lecture by Eryn Chiu.

RESIDED IN

Quito, Ecuador
Tucson
Washington DC
New York

SOFTWARE

Rhinoceros 4.0 & 5.0 (h)
Grasshopper (m)
Vray (h)
Autocad 2012 (h)
Revit 2012 (m)
3d Studio Max (m)
Adobe Creative Suite Cs4+ (h)
Microsoft Word + Excel (h)

Basic exposure to:

ZBrush
Maya 2013
Python PL
HTML

LANGUAGES

English- Native fluency
Spanish- Native fluency

REFERENCES

Hayes Slade
Principal at Slade Architecture
e: hayes@sladearch.com
t: 212 677-6380

Mike Franks
Principal at Seaver Franks Architects
e: mikefranks@seaverfranks.com
t: 520 795-4000

Susannah Dickinson
Professor at University of Arizona
e: srd@email.arizona.edu
t: 646 896-9172

Alvaro Malo
Former Director of College of Architecture
e: malo@email.arizona.edu

Ruben Caldwell
Professor at University of Arizona
e: rnc@email.arizona.edu

Content

works

1- Ungrounded
Advisor: Ruben Caldwell
5th year- Senior Thesis (Spring)

2- Habitat Continuum [CONCEPTUAL]
Professor: Susannah Dickinson
4th year- Option Design Studio (Spring)

3- Live/ Work New Orleans [CONCEPTUAL]
Professor: Martin Despang
4th year- Systems Design Studio (Fall)

4- Bird Watcher [CONCEPTUAL]
Professor: Christopher Trumble
3rd year- Building Technology (Spring)

5- Informed Plasticity [BUILT]
Professors: Mikhail Gladchenko, Keegan Quick
5th year- Option Design Studio (Fall)

6- Modulating Enclosure [IN PROGRESS]
Professor: Jean-Luc Cuisiner
5th year- Fabrication Research (Spring)

Ungrounded *Senior Thesis*

Advisor: Ruben Caldwell

Position:

In order to inflect an obsolete system of spatial ordering, the architecture of infrastructure must serve as a framework over which the public realm can exercise radical renegotiations of spatial and programmatic ordering.

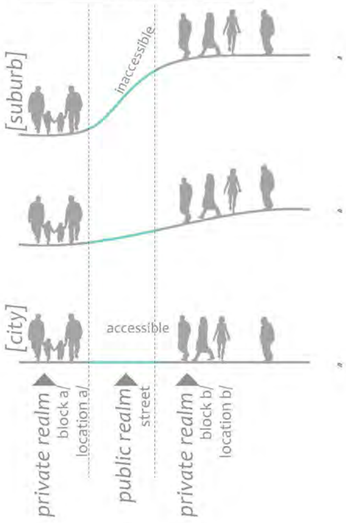
Description:

My proposal is rooted in addressing a new architectural infrastructure that can coexist and slowly transcend the obsolete infrastructure of transportation and development that has in great part led to, and characterizes, the phenomenon of suburbia. Facilitating a transportation system at the scale of the vehicle has led to this very patchwork of unused land. Facilitating a transportation system that can house the public sphere could become the new city-street in suburbia. The juxtaposition of this new infrastructure over the existing one will rearrange the suburban landscape, renouncing to the suburban paradigm. In doing so, this new spatial ordering will be closer aligned to our values as an increasingly conscientious society in regards to how we inhabit the planet.

SITE PLAN

1- Shaded temporary market space- site anchor.
2- Elevated public deck + residential condos.
3- Spectator steps viewing open park.
4- Neighborhood elementary school + elderly club + retail shops.
5- Mixed-use tower and park- site anchor.

The Ground and the Street...



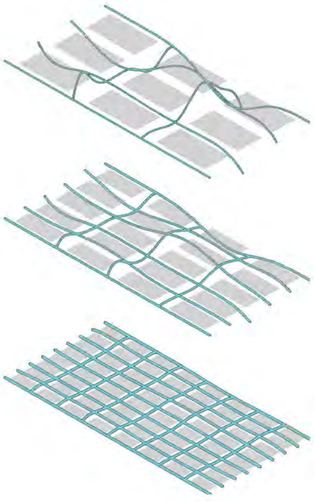
Car culture has suffocated the ground plane with pavement, rendering it unihabitable to living systems. This very material is the backbone of transportation infrastructure.

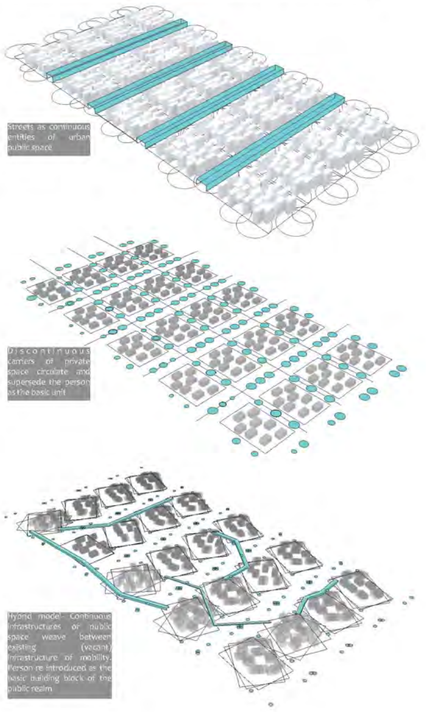
This infrastructure has also suffocated and dissolved the public realm.

Creatures that live out in the open don't suffocate the earth with asphalt nor do they live in isolation.

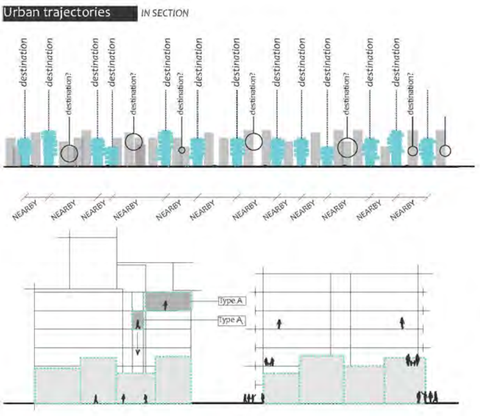
Being that we live in the closed and isolated, must we not devise another ground?

The hybridization of the street and the block

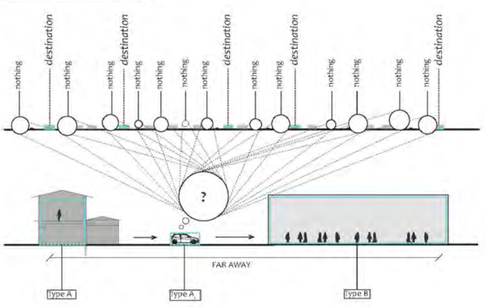




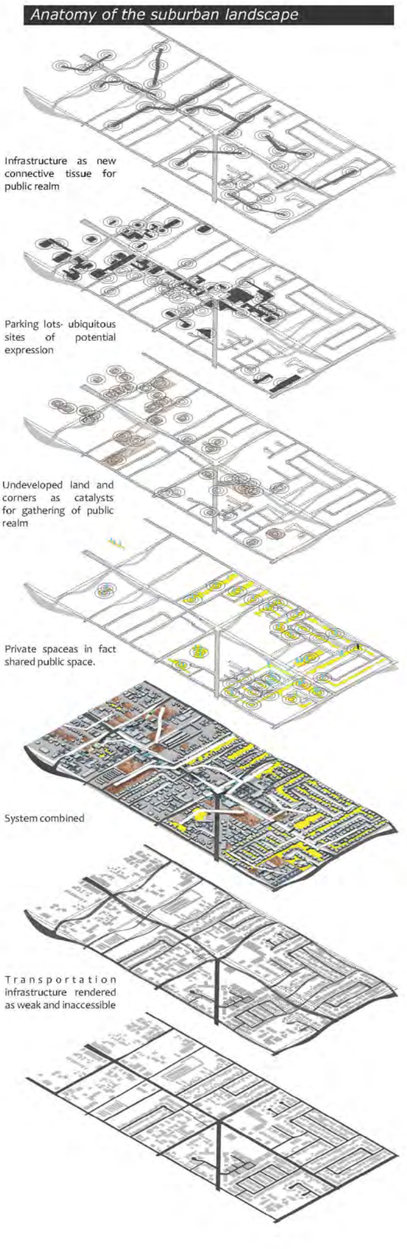
Urban trajectories *IN SECTION*



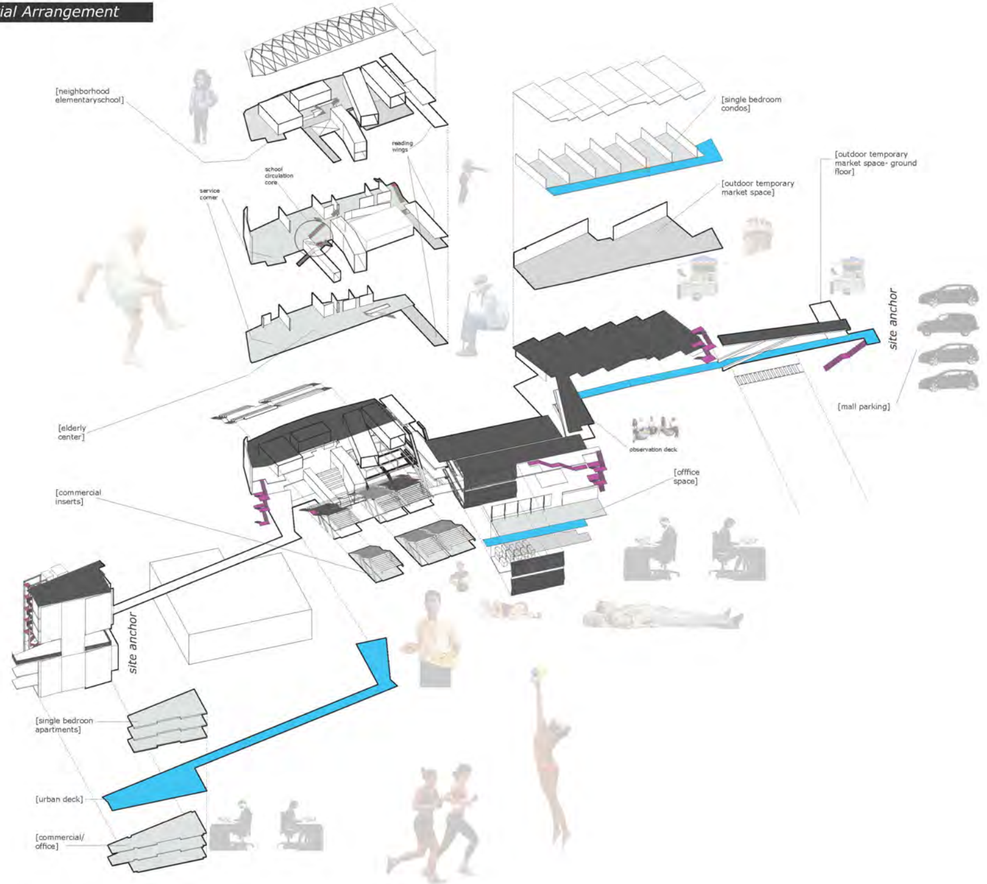
Suburban trajectories *IN SECTION*



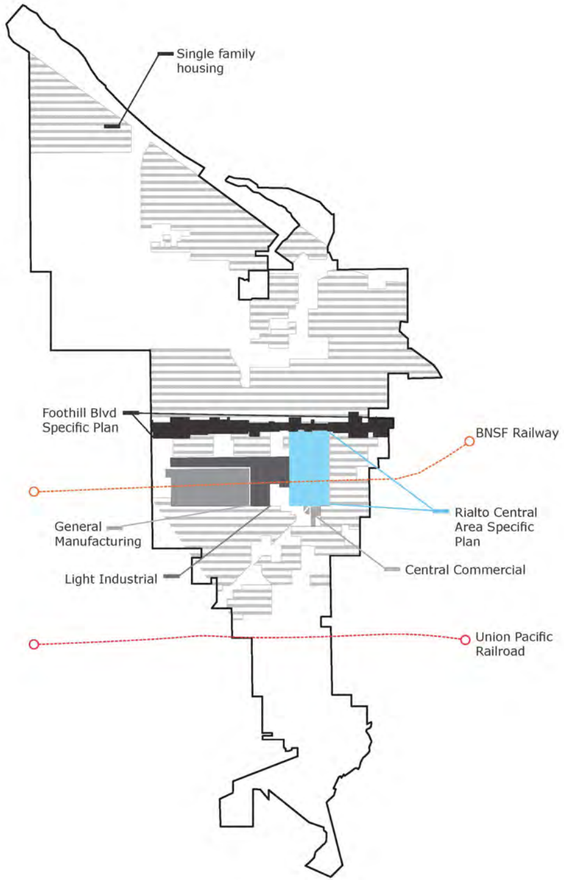
Anatomy of the suburban landscape



Users and Spatial Arrangement

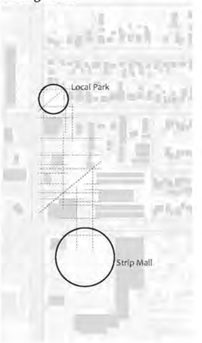


City of Rialto

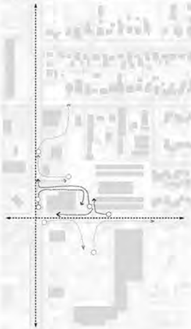


Contextual Speculations

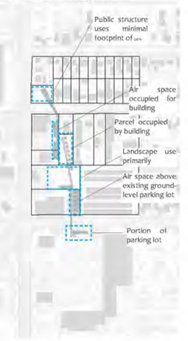
Linking nodes



Adjacent Vehicular patterns



BLDG Parcels Occupied



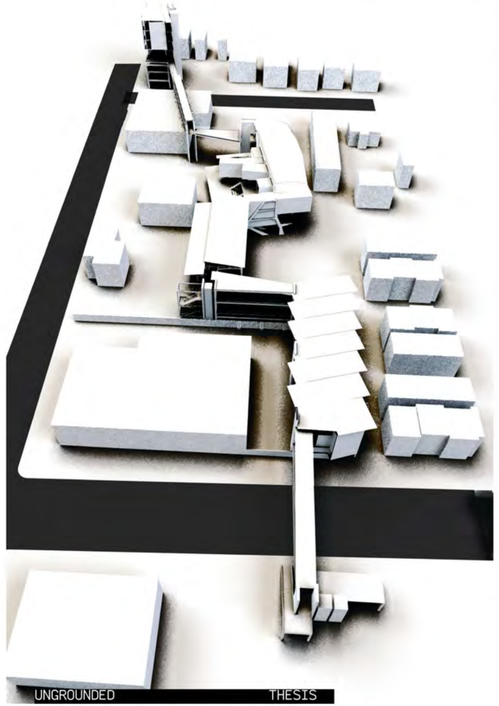
Bundling of program

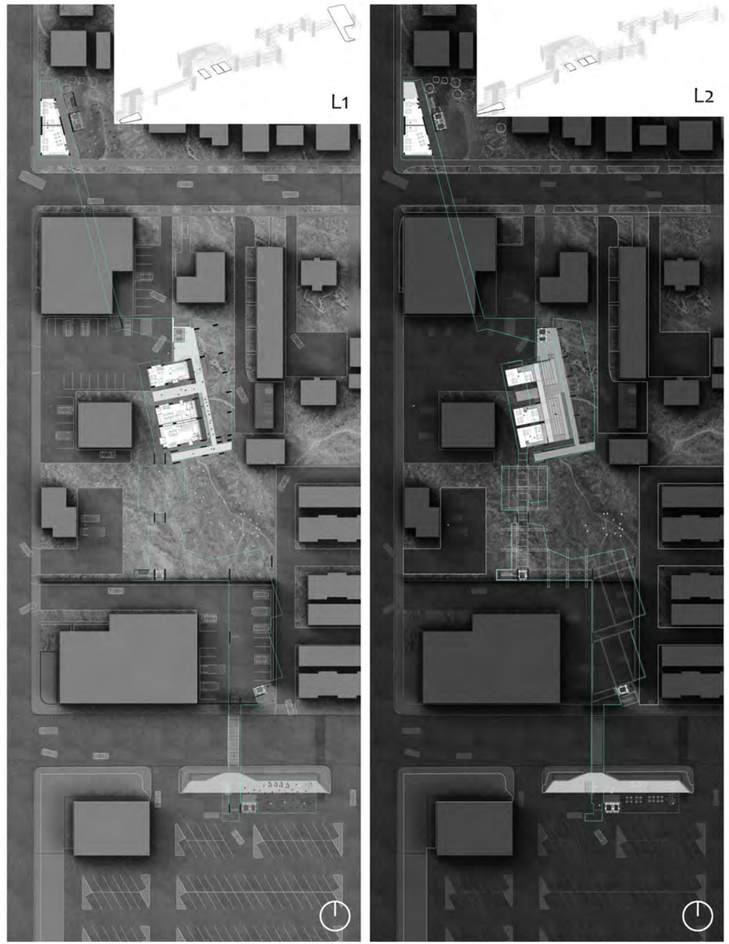
Accessways to open space

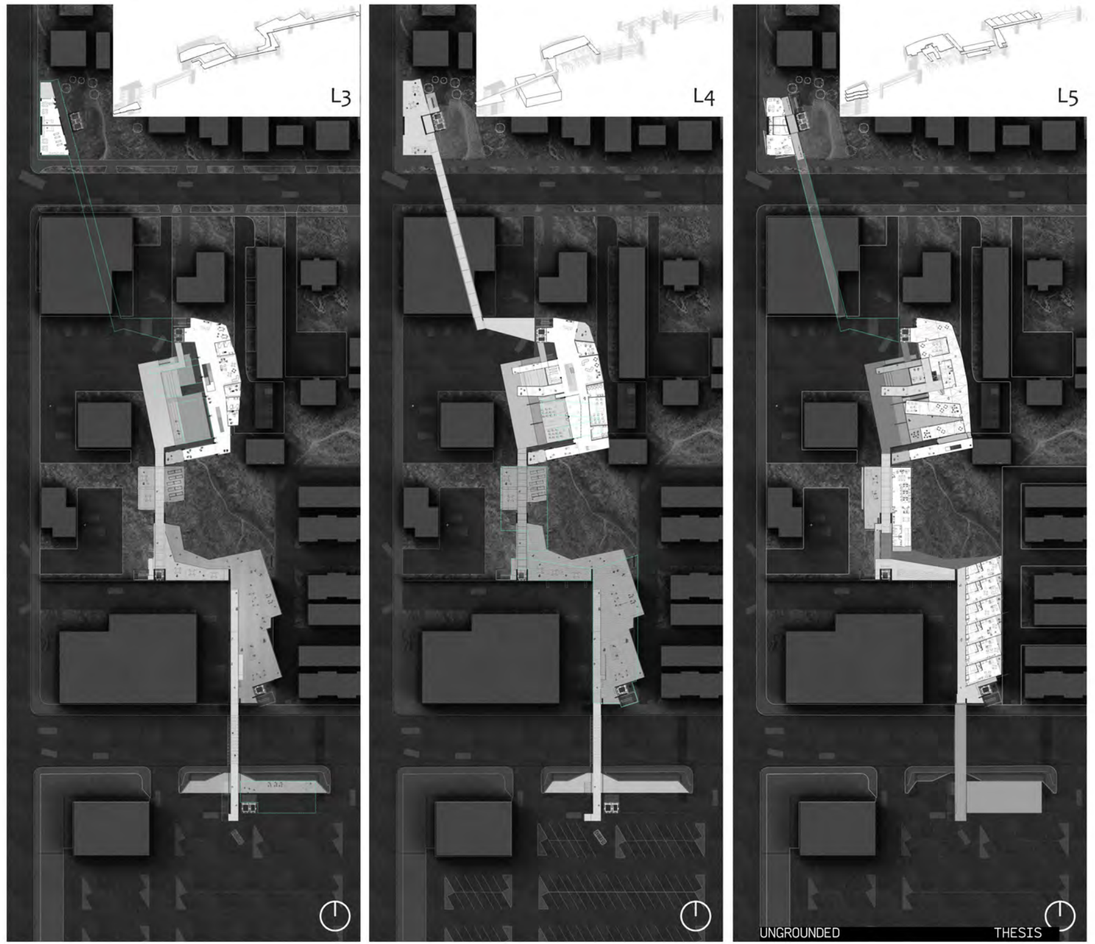
Entry points

This project presupposes that in the near future this 'fragment-based' model of development along a piece of infrastructure will be made possible through a further commoditization of property. In other words, proprietors will see a business opportunity in renting a piece of their property for public amenity (infrastructure of kinds).

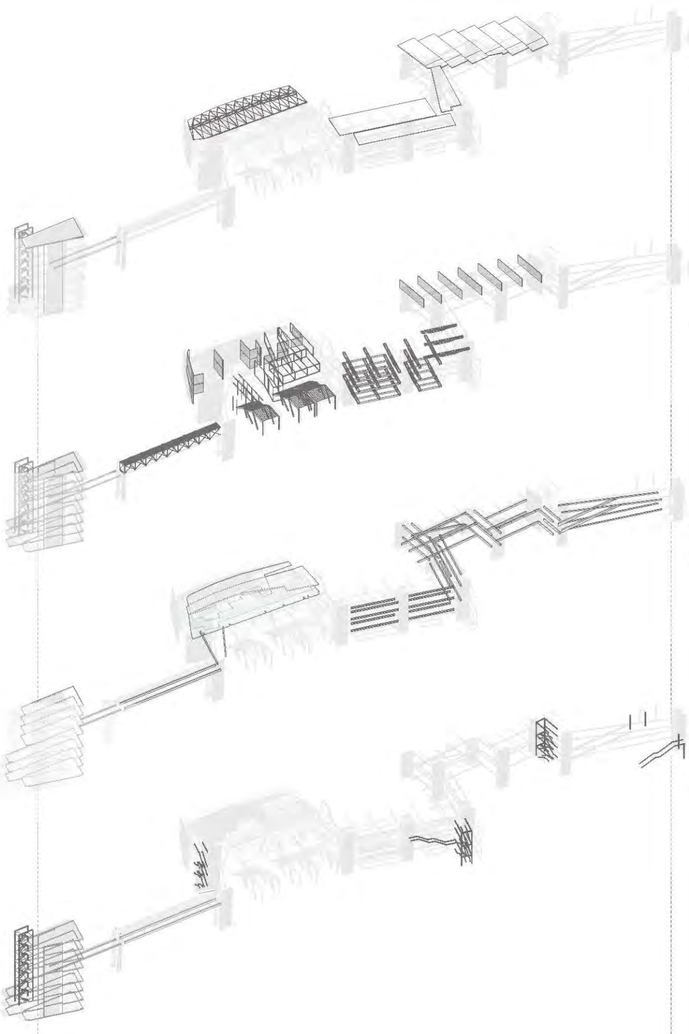
With this in mind the infrastructure in this project spans several sites and is anchored at the two extremities. Along the infrastructure, different interest groups over time choose to develop inhabitable spaces that begin at a second level above the ground plane.







Structural sequence

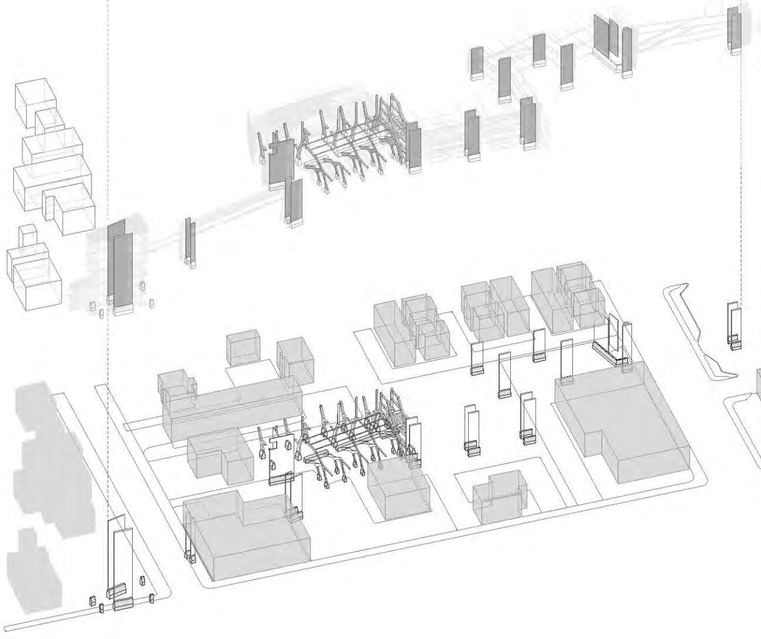


[enclosing membranes- roofs]

[vertical structural members that range from precast concrete walls to hollow steel tube]

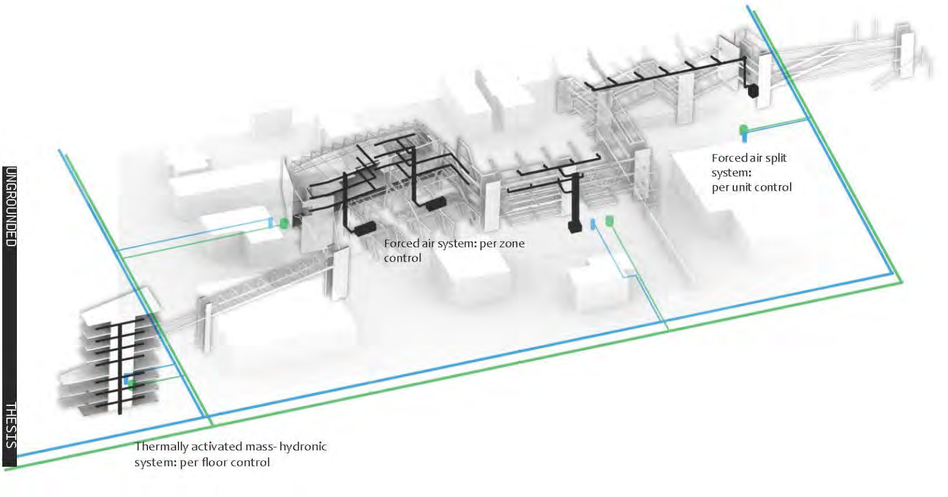
[members that span be betweeen primary structure creating horizontal surfaces]

[attached steel frame for vertical access to ground]

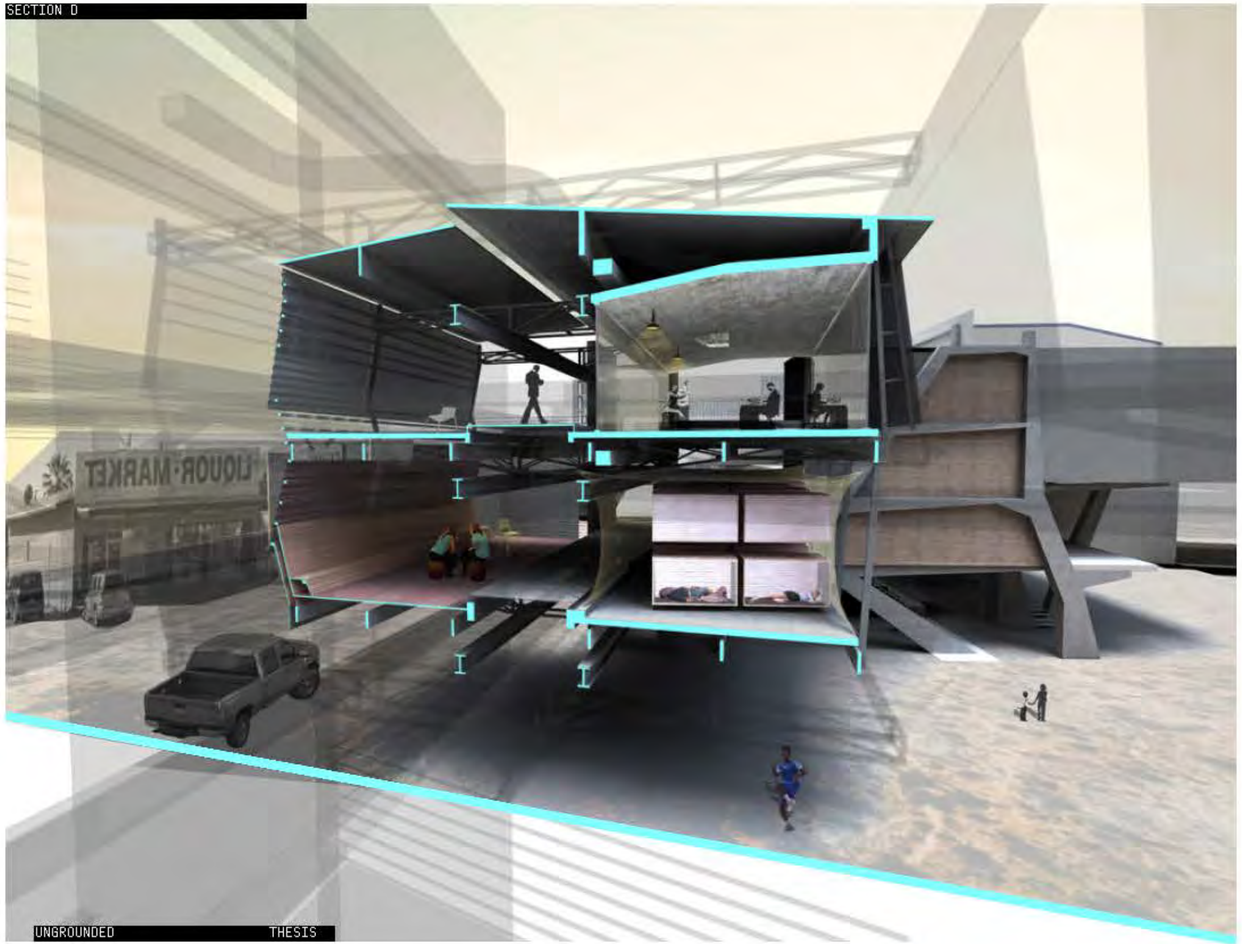


[concrete columns]

[footings & foundation walls]



SECTION D



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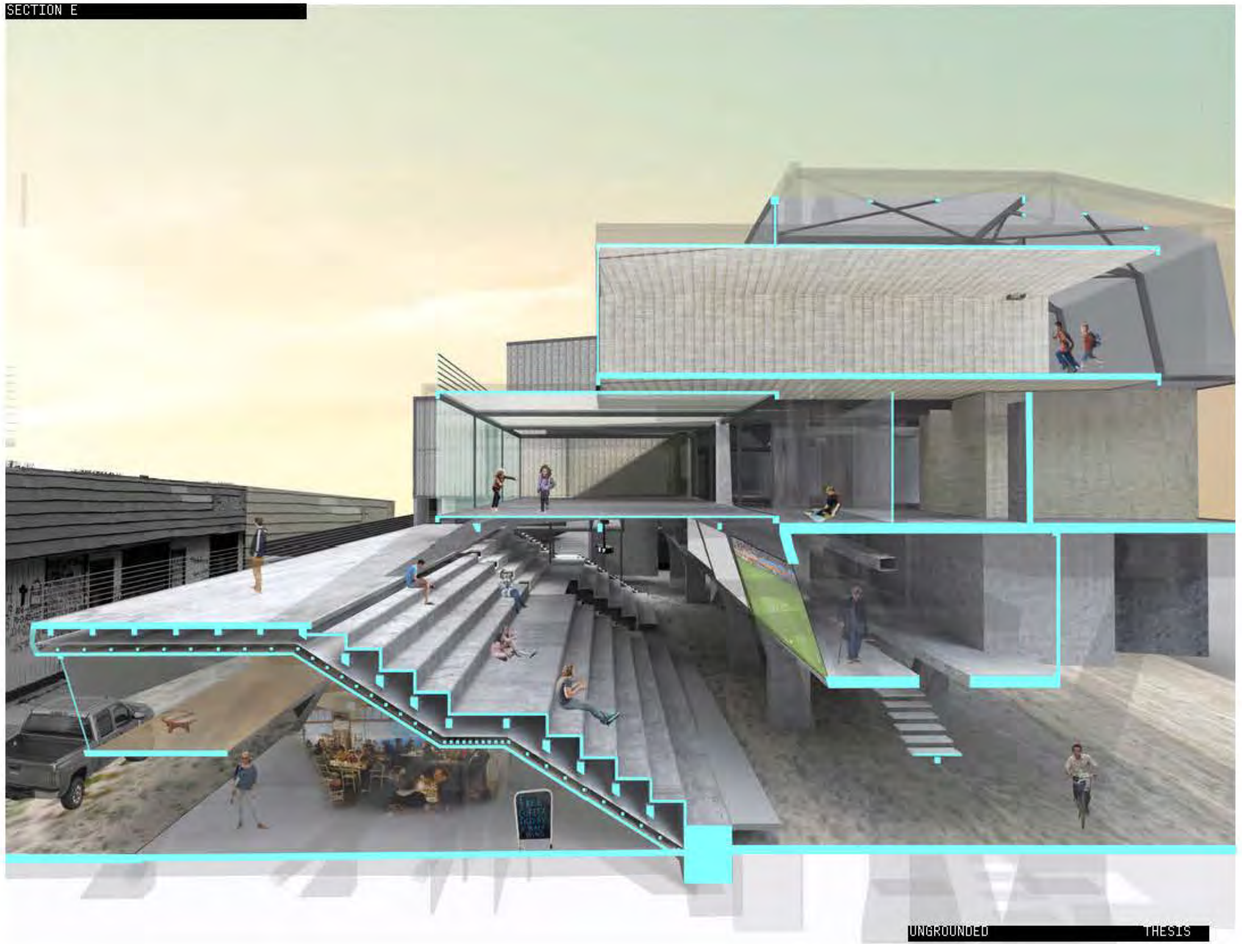
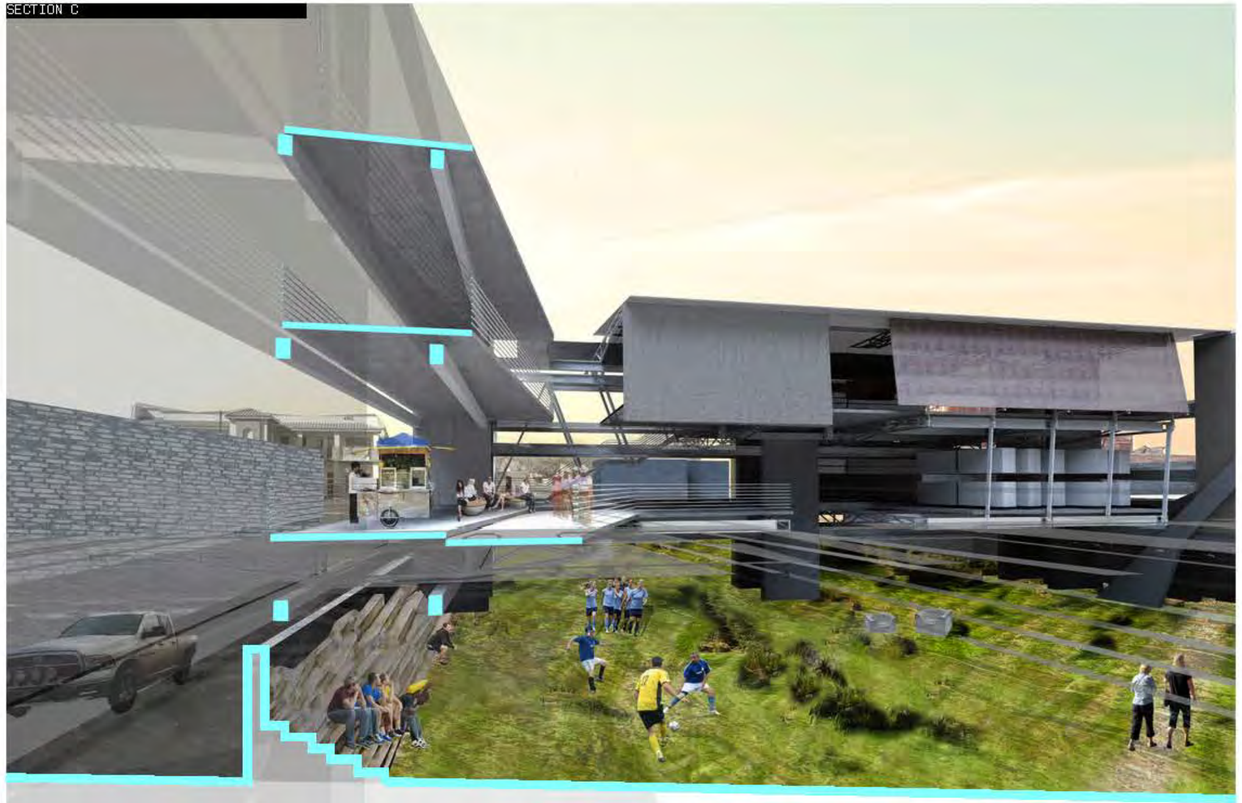
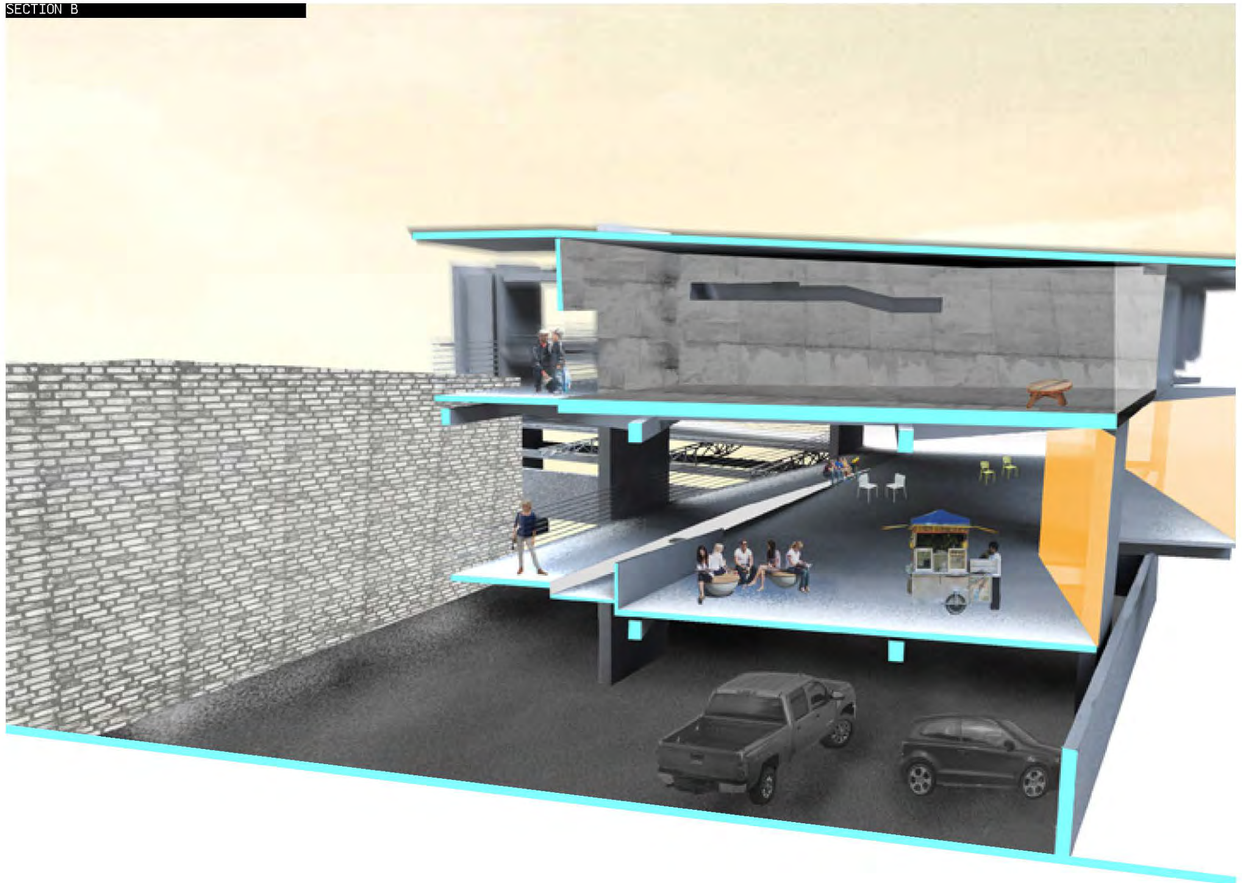


SECTION A

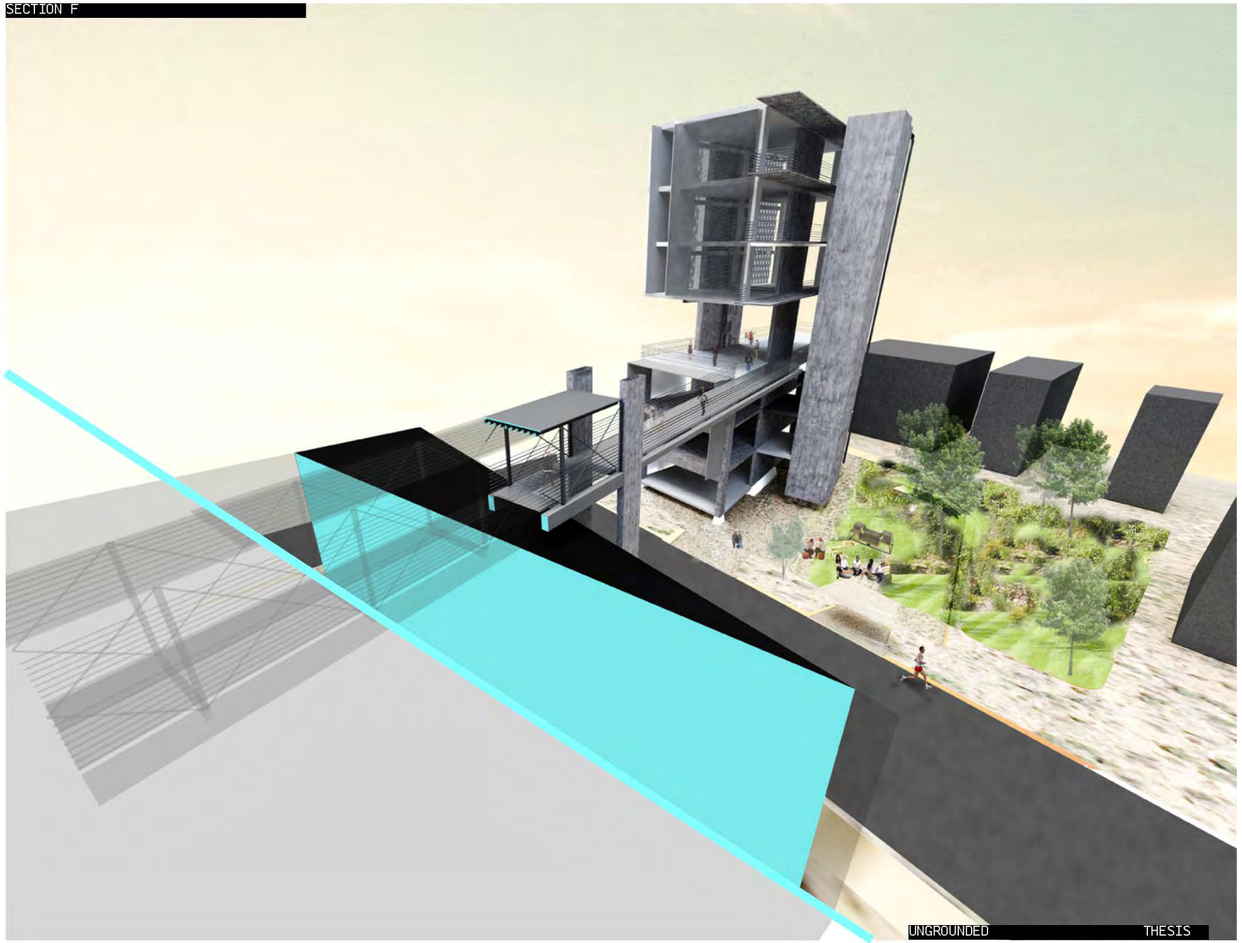
SECTION C

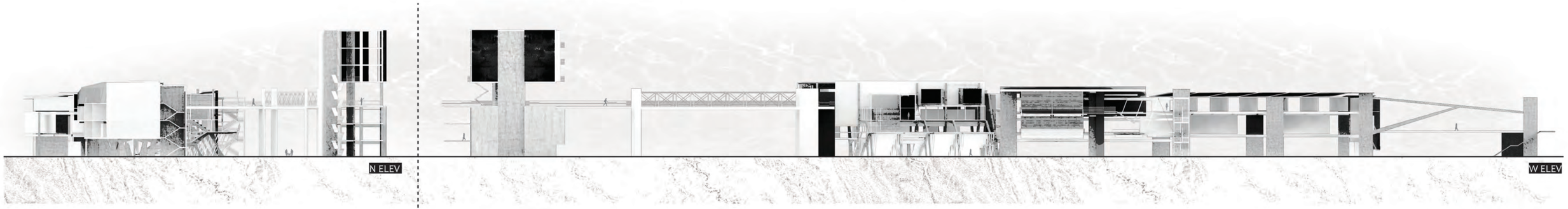


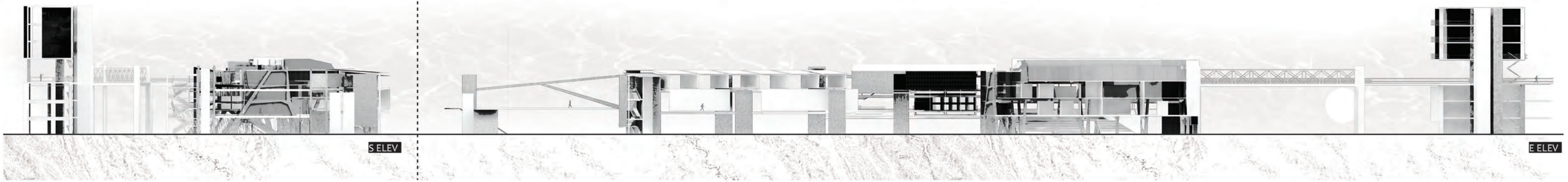
SECTION B



SECTION F

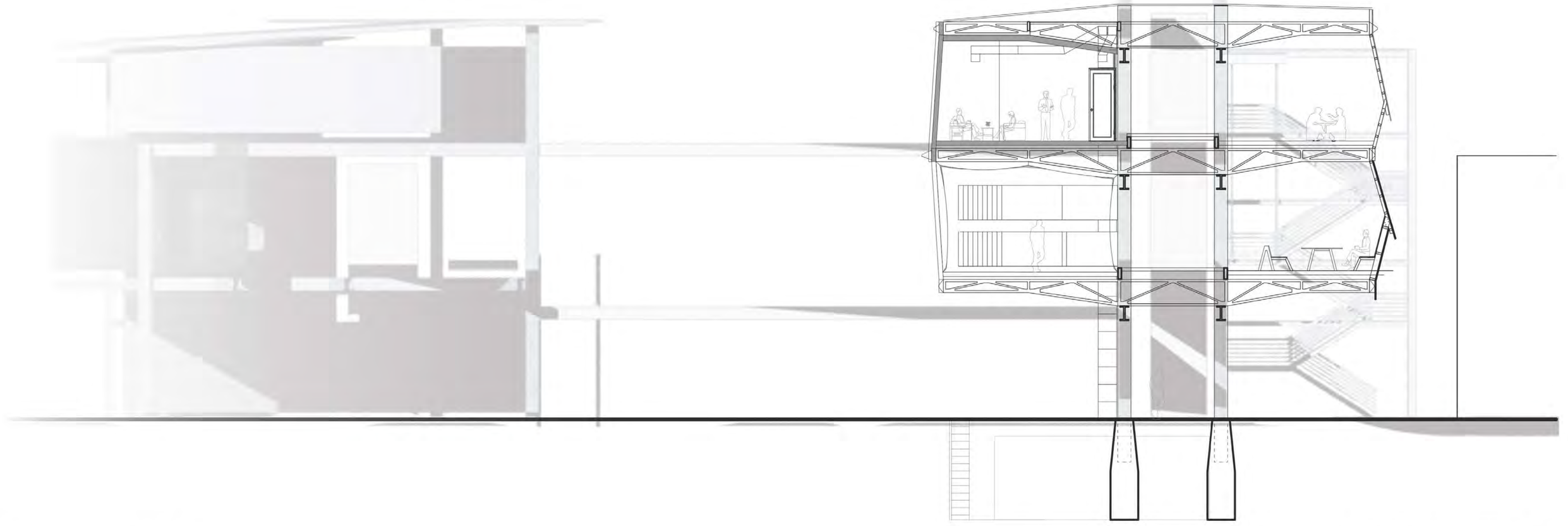






UNGROUNDED THESIS

SECTION D REVERSED



UNGROUNDED THESIS

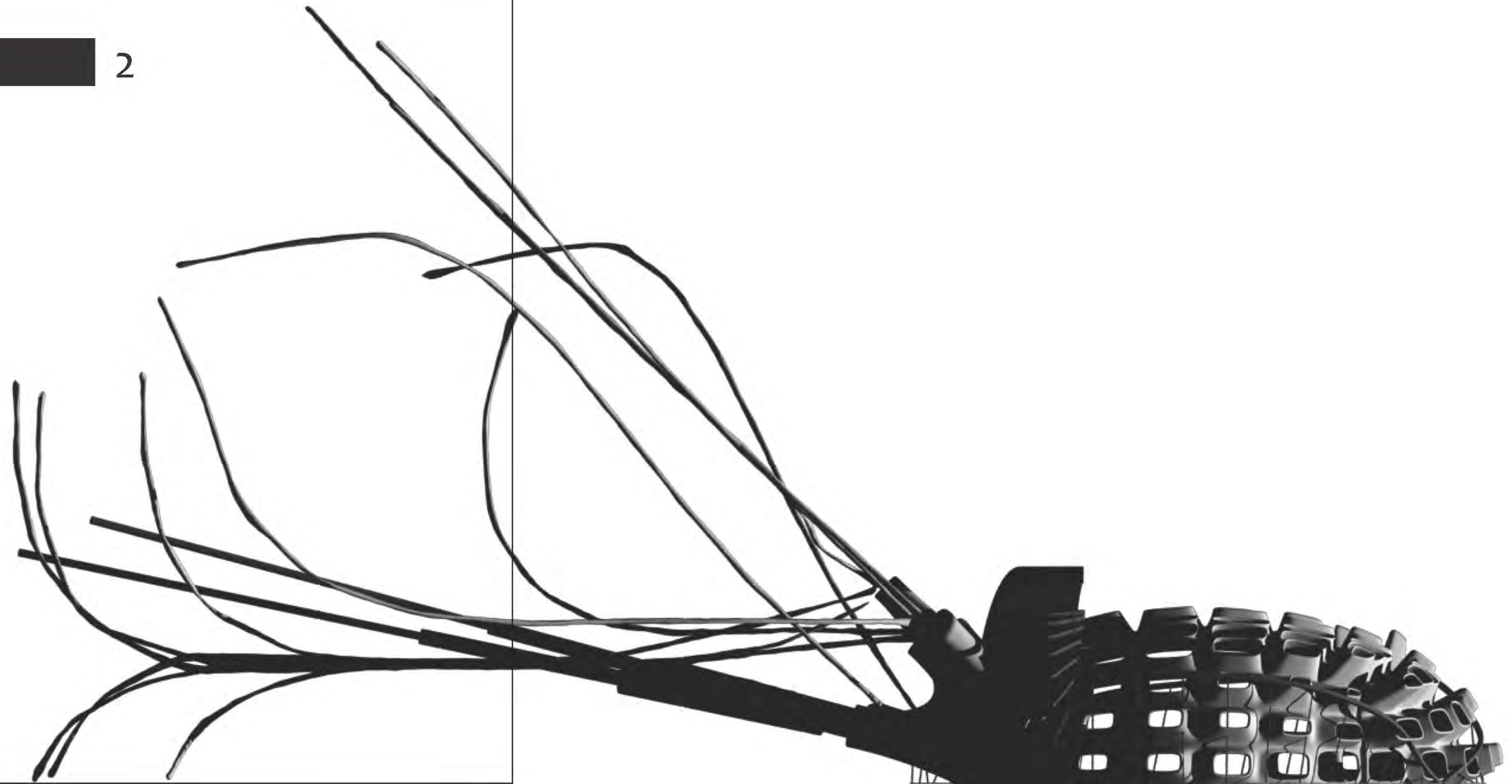
Habitat Continuum 2

4th year Option Design Studio (Spring)
Professor: Susannah Dickinson
Team: Marco Juliani, Rene Corella

"A desert basin typology"

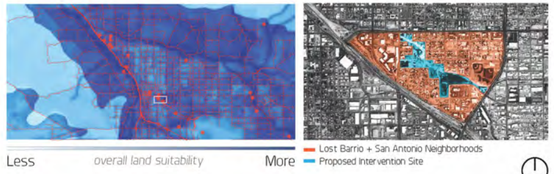
Habitat Continuum is a region-specific typology that seeks to flourish form the shade/water pulses that succulents depend on. Located in the midst of a city-scale stormwater retention basin, the proposal seeks to thrive on the very resource it is harnessing, thus becoming a prototype for retention basin architecture and social ecology. The capstule becomes the distilled essence of the continuum effort. It is a system-driven living enclosure in which a reciprocal exchange of energy (namely water) disctates its behavioral economy under varying conditions within the basin. Its lightness speaks of its transitory character, one that can be replicated and deployed in a continued ecological practice of resilience and low-impact infrastructure. Its formal and material character resembles that of succulents, optimizing resources and allowing for conditioned porosity, specific to the time of day.

The proposal is rooted in the character of a local community and in the broader context of the Tucsonan social and academic environments. It exists as a satelllite campus of the University of Arizona, extending the presence of an academic entity that characterizes the city. It bridges the University's culture with a downtown recovering from urban renewal, and a stronger network within the urban fabric is created because of it. The location of the retention basin and the architectural proposal, between two disassociated communities, is currently adjacent to a decaying riparian habitat; this in-situ implementation allows for a new social and ecologial platform to manifest itself, through which instances of rigid coexistences, such as those caused by commodity-dependent suburban culture, can start to be dissolved.

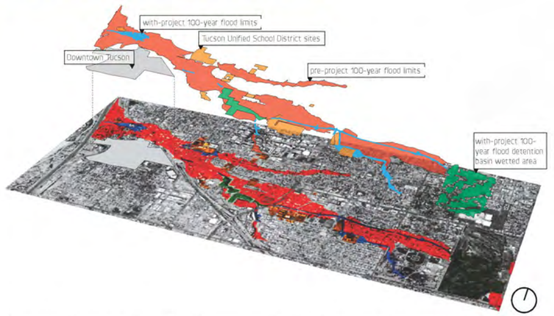


IDENTIFYING A NEED

CREATING A SUITABLE INTERVENTION



REGISTERING CITY-WIDE CONDITIONS



This project is multi-phase flood-control, native habitat restoration project that is being undertaken by the City of Tucson. The implementation of this series of artificial detention basins serves as flood damage protection to private and public properties, as well as an opportunity to restore riparian habitats that have been affected by careless urbanization.

Tucson Drainage Area/ Arroyo Chico Multi-Use Project

HABITAT CONTINUUM SPRING 12

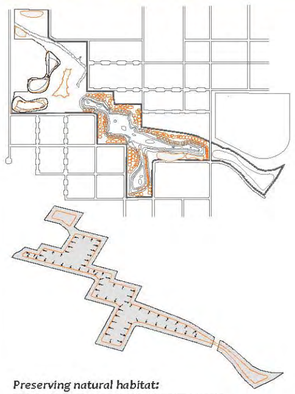
systems

AERIAL VIEW

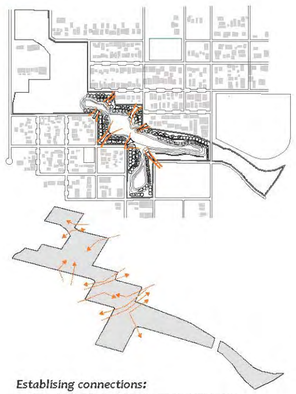
PROPOSAL

HABITAT CONTINUUM SPRING 12

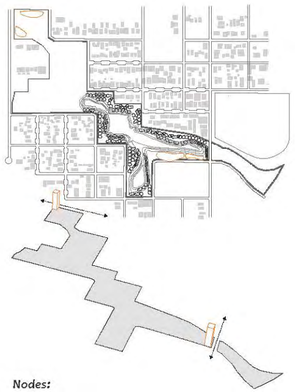
CONTEXTUAL RESPONSES



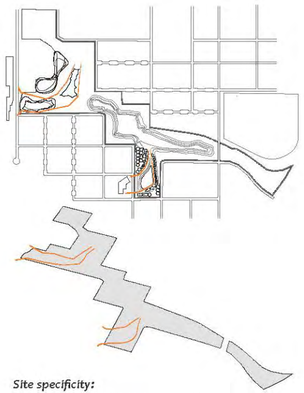
Preserving natural habitat:
Establishing architecture's presence along the perimeter for minimal impact on the basin.



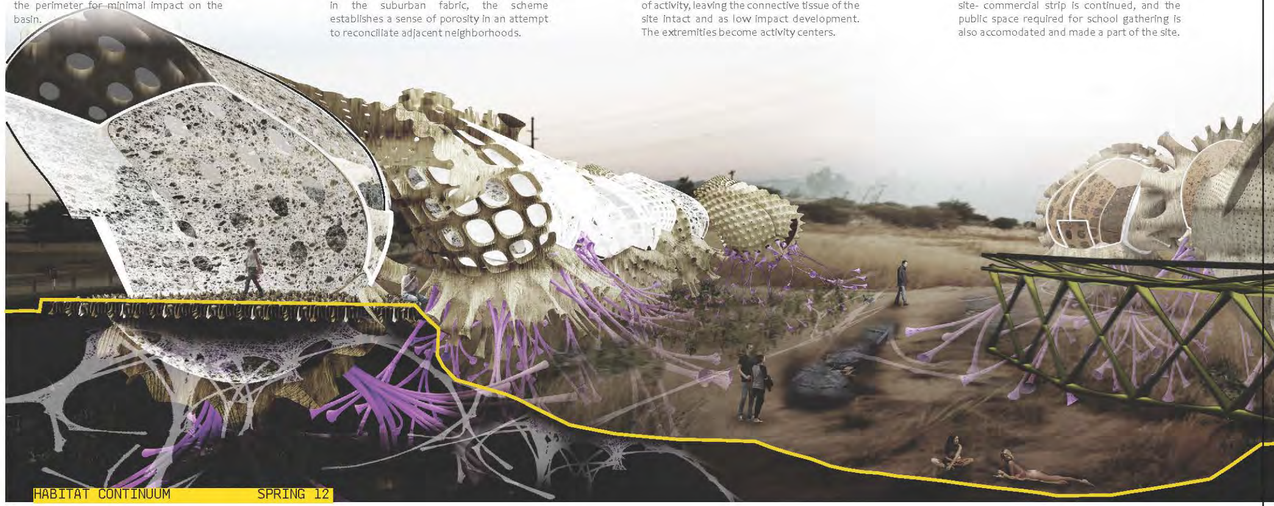
Establising connections:
Acknowledgement of the sharp discontinuity in the suburban fabric, the scheme establishes a sense of porosity in an attempt to reconciliate adjacent neighborhoods.



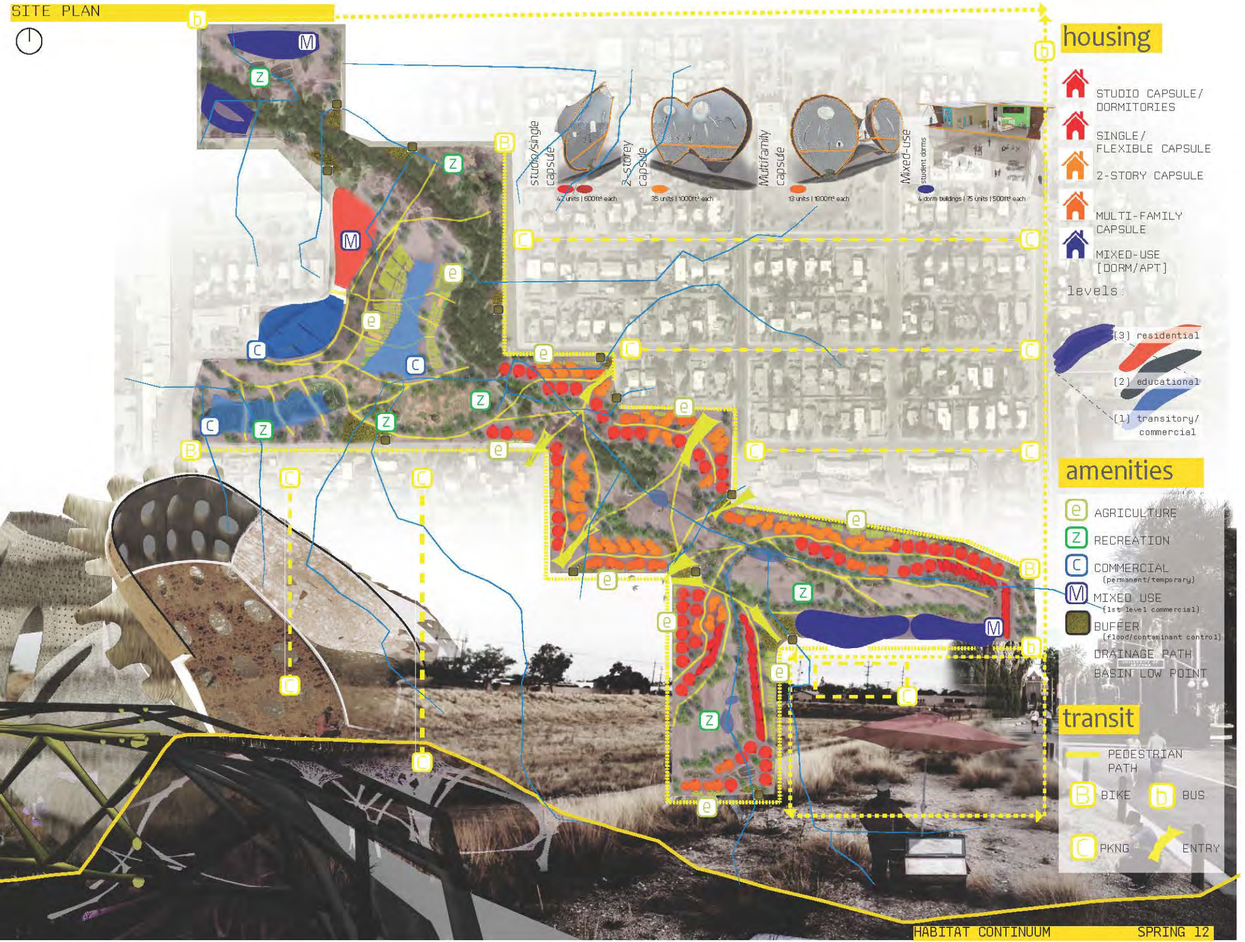
Nodes:
Site extremities draw the maximum amount of activity, leaving the connective tissue of the site intact and as low impact development. The extremities become activity centers.

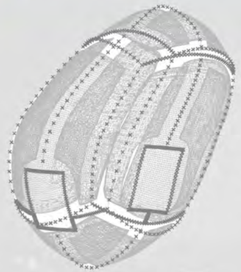


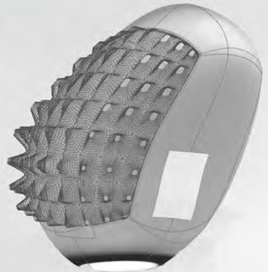
Site specificity:
Neighborhood conditions are brought into the site- commercial strip is continued, and the public space required for school gathering is also accomodated and made a part of the site.

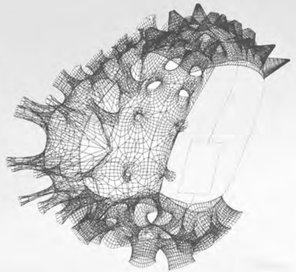


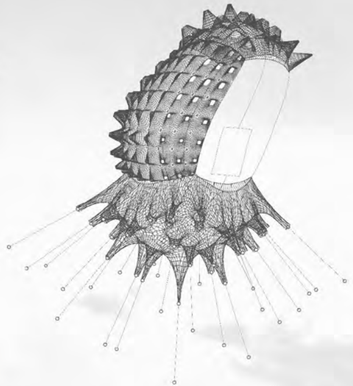
SITE PLAN









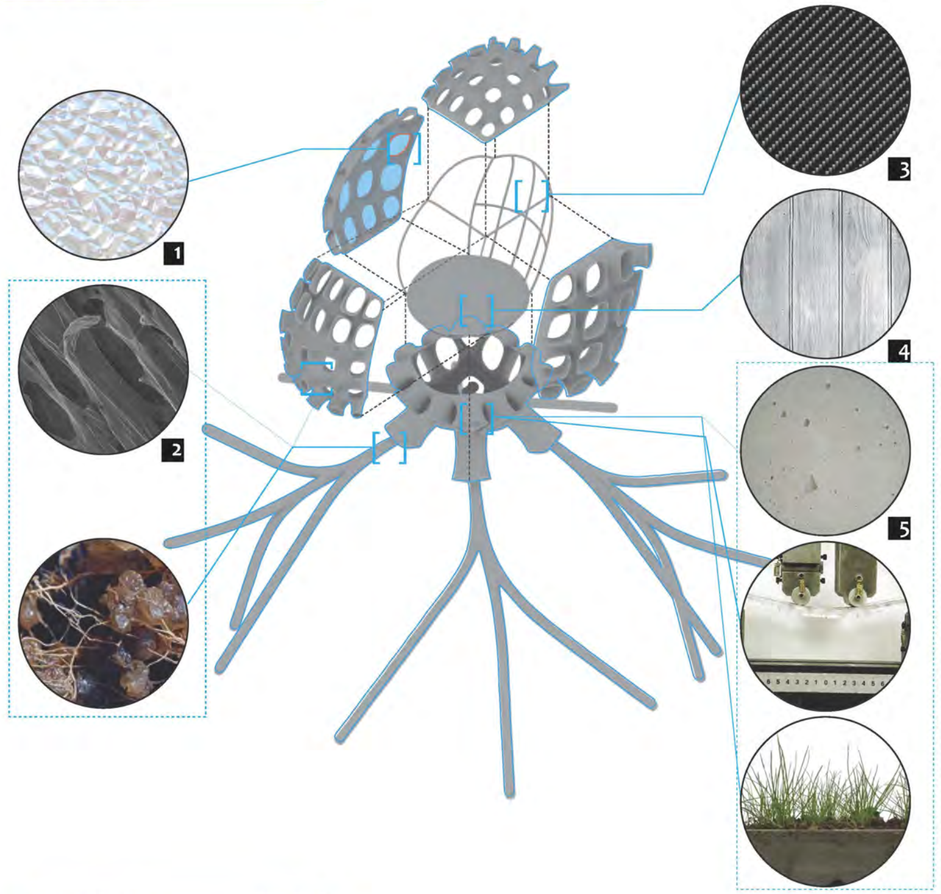


The capsule pays tribute to the arid regions and its exceptionally resilient flora; its architecture serves both a socio-cultural purpose and a bio-remediation effort, evoking a sense of ecological reconciliation. The basin typology and the limited resource it relies on describe the very essence of this suburban intervention. It begins as an implant, gradually finding its way into the ground and eventually achieving growth, stability, and re-configuration capabilities through an extremely lightweight, yet highly resilient infrastructure.

Succulent flora exhibits extraordinary survival skills such as advanced photosynthesis, adaptive tension/compression, water retention, optimized competition, and moisture regulation. The capsule typology seeks to thrive off this biological premise as the whole habitat is subject to the subtle pulse of water streaming down the undulating landscapes of the Tucson valley. The continuum emerges as an offer to the Tucson community and a concerted effort to parallel its natural arid systemics through an experimental way of living.

HABITAT CONTINUUM SPRING 12

CAPSULE ANATOMY



SELECTION AND PERFORMANCE DESCRIPTION

1
WINDOW: PHOTOVOLTAIC LIQUID CRYSTAL- smart glass technology for day-light control.

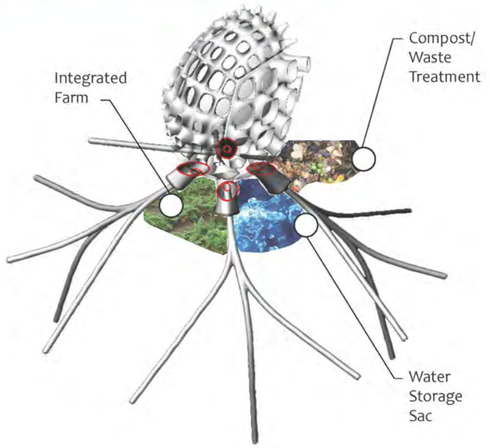
2
ROOT/ SKIN: NANOCELLULOSE AEROGEL + SPERABSORBENT POLYMER- very lightweight, capable of carrying many times its weight; can absorb toxic spills, retain and release water; absorbs and maintains moisture; favors plant growth.

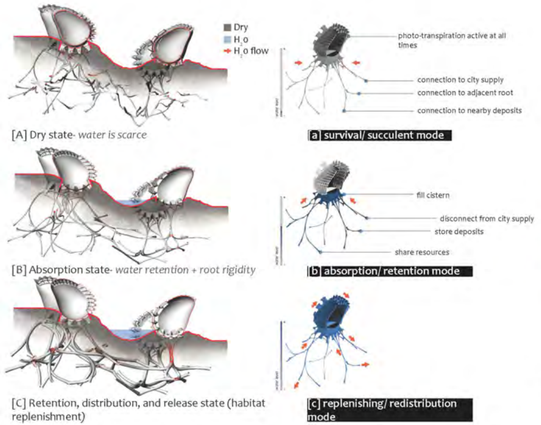
3
FRAME: CARBON FIBER- can conduct electricity, great structural strength, high resistance.

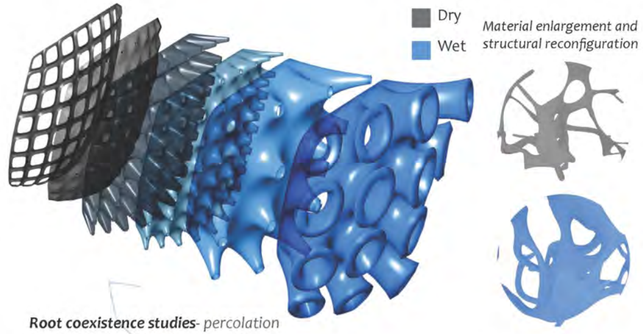
4
FLOOR: COMPOSITE WOOD DECKING- recycled material, allows for quick access to underground cistern.

5
FOUNDATION/ MULTI-FUNCTION CISTERN: ORGANIC BENDABLE CONCRETE- disaster-ready, high resistance, CO_2 absorbing.

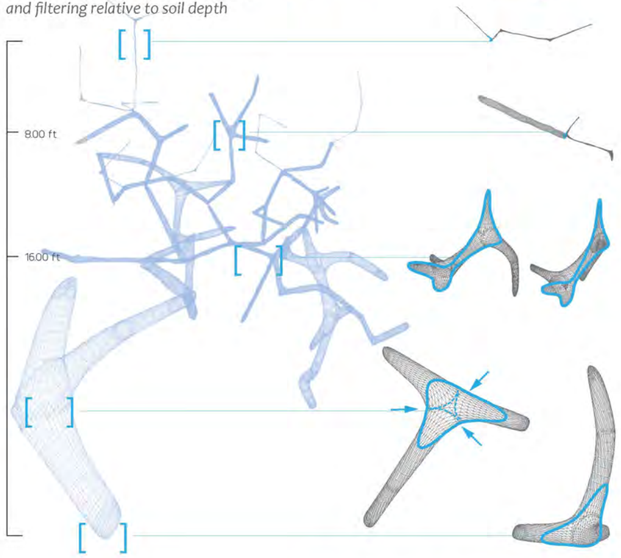
CAPSULE SECTION







Root coexistence studies- *percolation and filtering relative to soil depth*



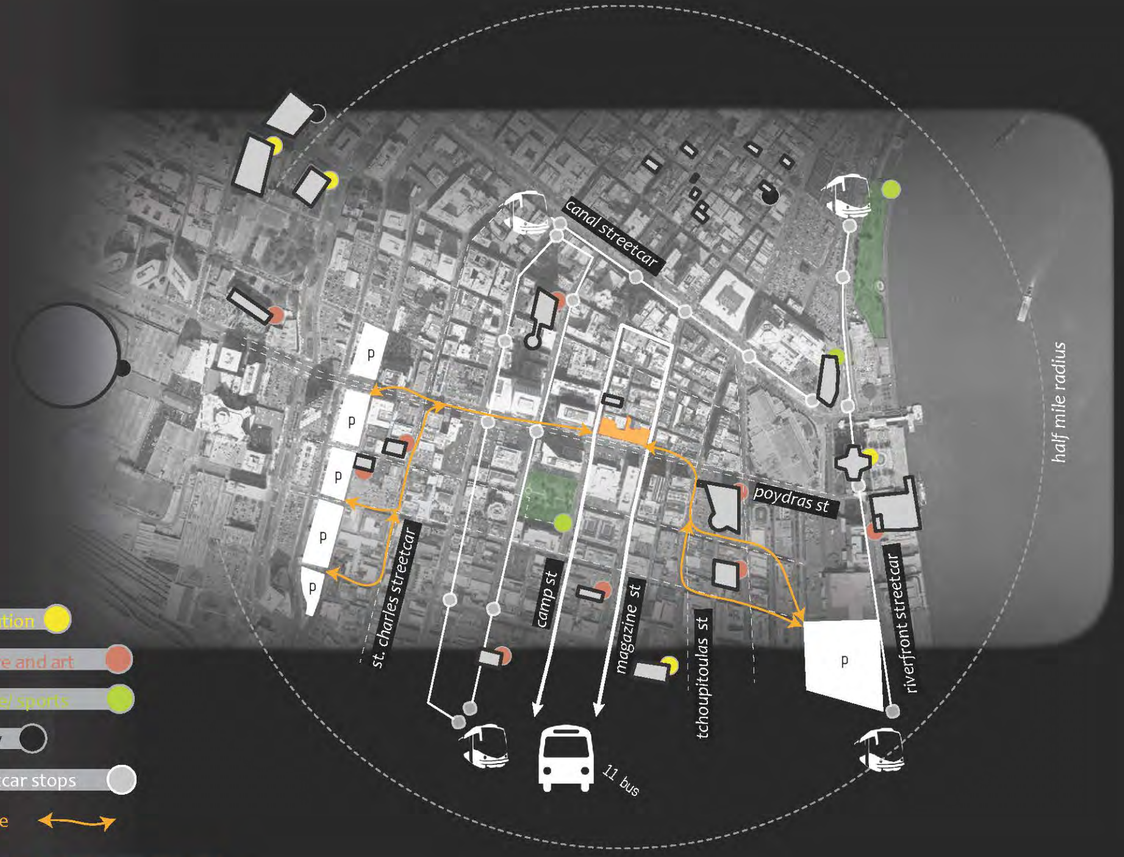
Live/ Work New Orleans 3

4th year Systems Design Studio (Fall)
Professor: Martin Despang

"An amenity that could connect all"

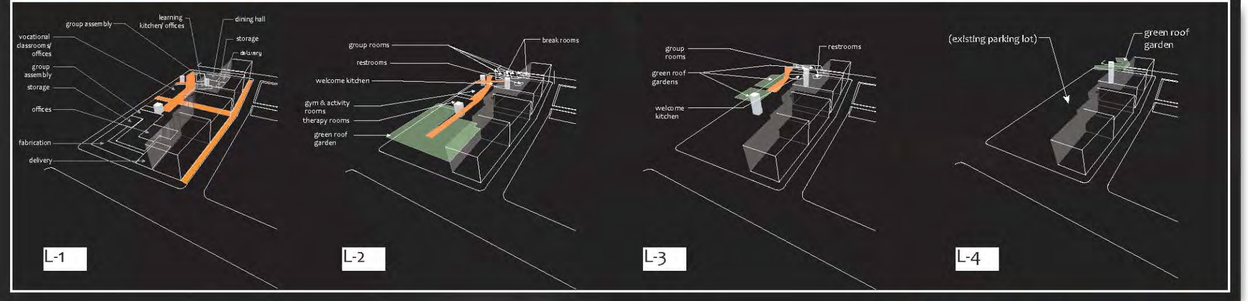
A center for working/ living for the disabled neighboring residents was the set program. The performance of this building from the scale of the city to the scale of the individual room, addresses social and environmental issues in an urban context. The choice of urban infill in Downtown New Orleans is reinforced by the need to develop on ground that is above sea level. This "green hub" becomes a breathing place for the city dweller, and more specifically a home to the disabled residents who work and reside in it. The architecture addresses the humid climate and the substantial rainfall through the maximization of exterior spaces and through the use of intensive green roofs. By creating gradated comfort levels, the building transitions the user from interior to exterior: systems are kept to a minimum.

SITE CONTEXT

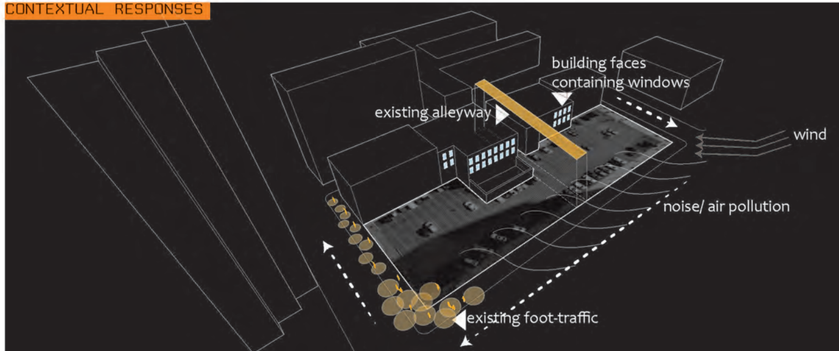


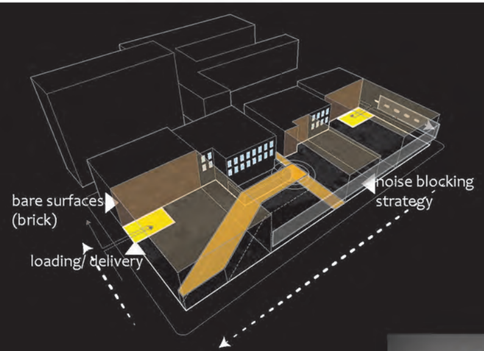
AERIAL SITE PLAN

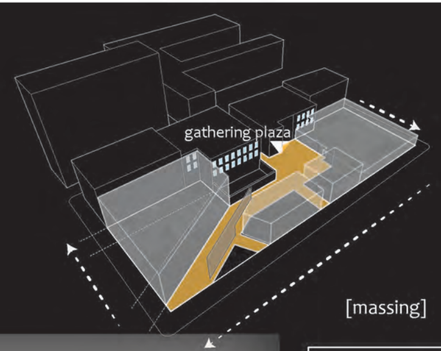
PROGRAM + CIRCULATION



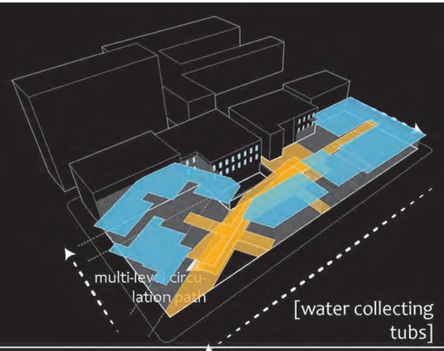
CONTEXTUAL RESPONSES





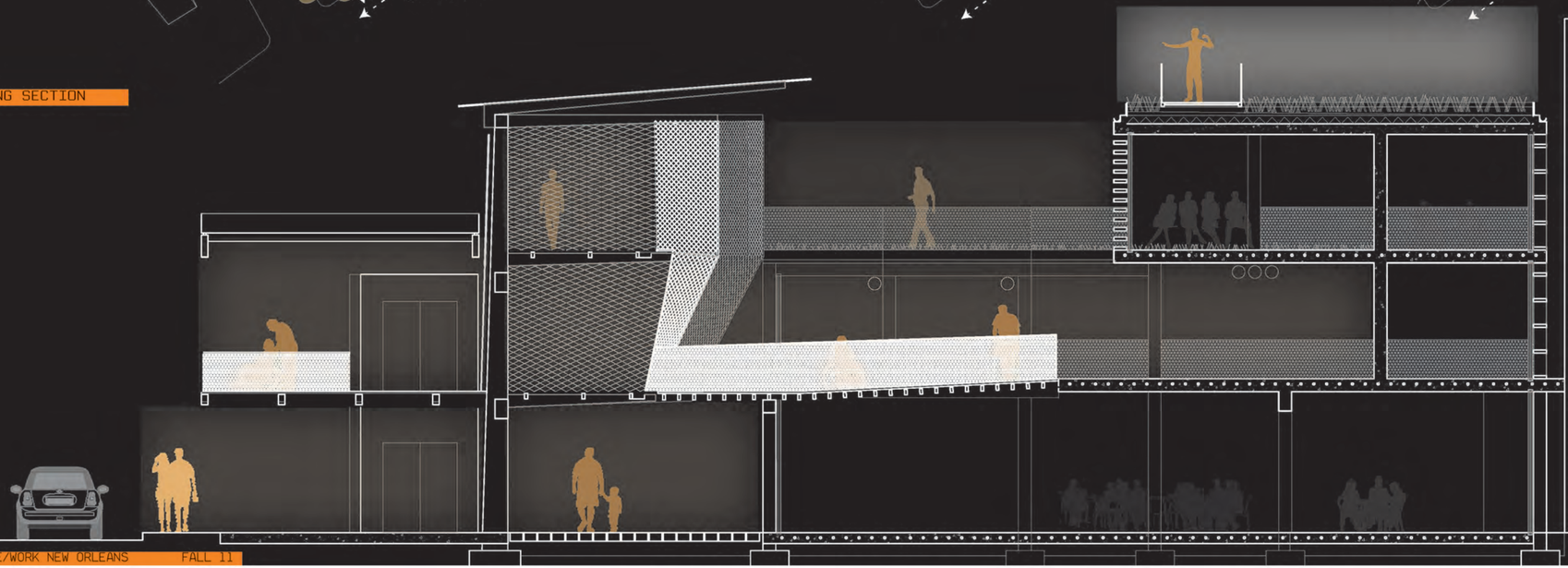


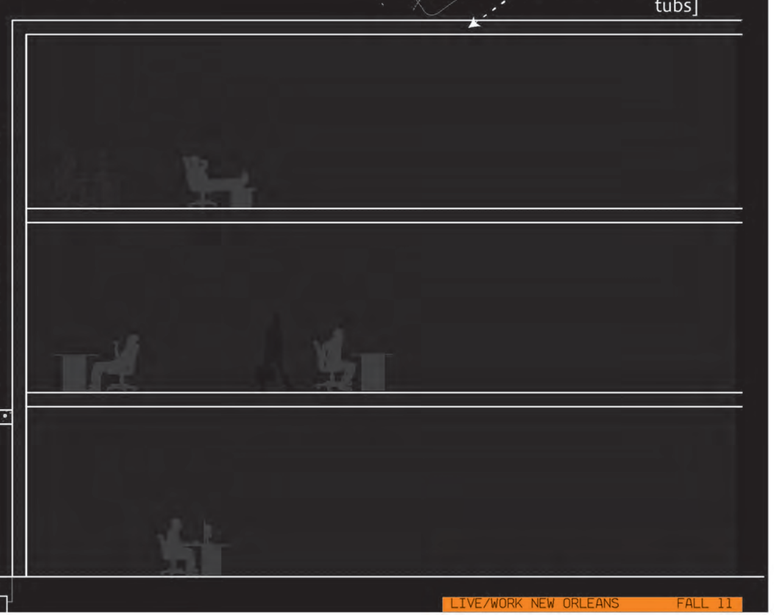
[massing]



[water collecting
tubs]

BUILDING SECTION



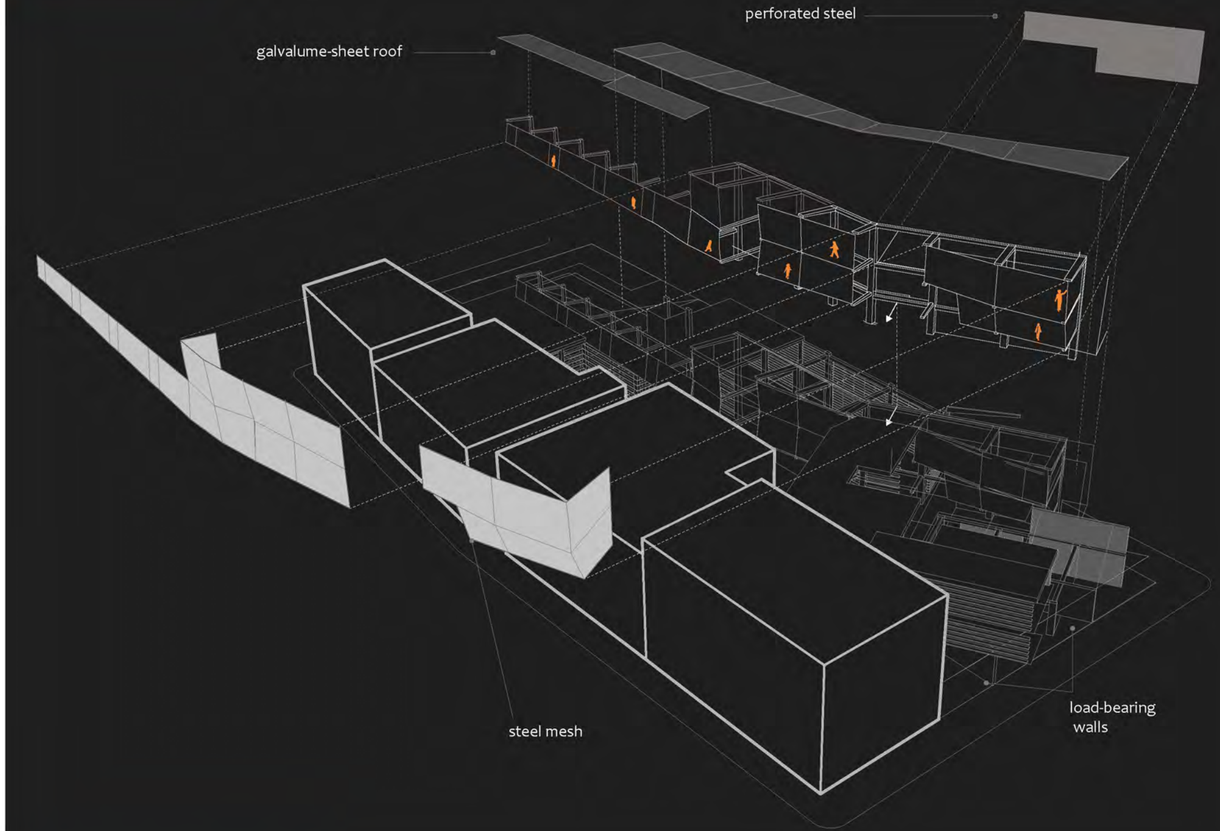


LIVE/WORK NEW ORLEANS FALL 11

AERIAL SITE PLAN

LIVE/WORK NEW ORLEANS FALL 11

CIRCULATION LUNG



Bird Watcher

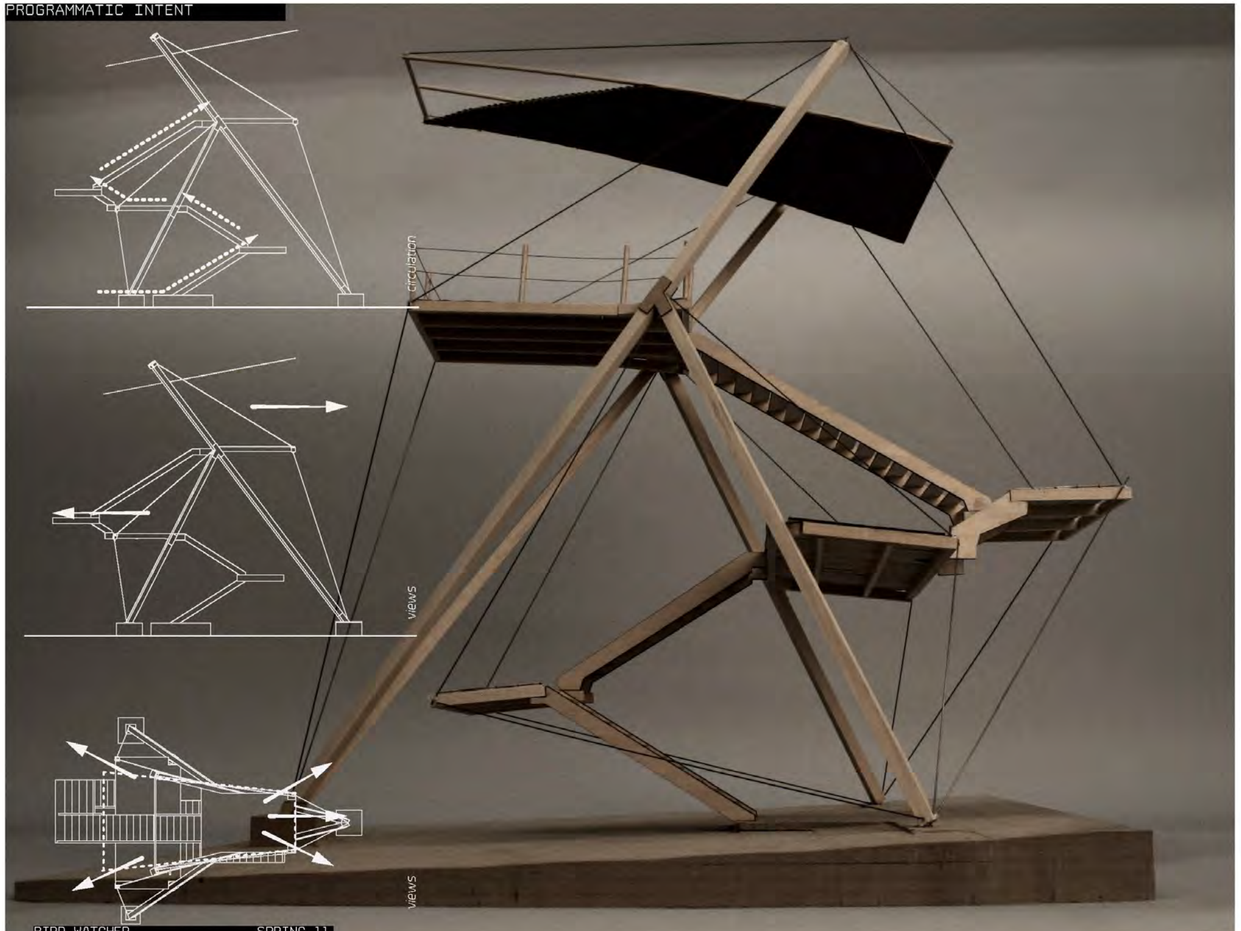
3rd year Building Technology (Spring)
Professor: Christopher Trumble
Team: Marco Juliani, Rene Corella, Marcela Gracia, Alex Zee

Project Description:

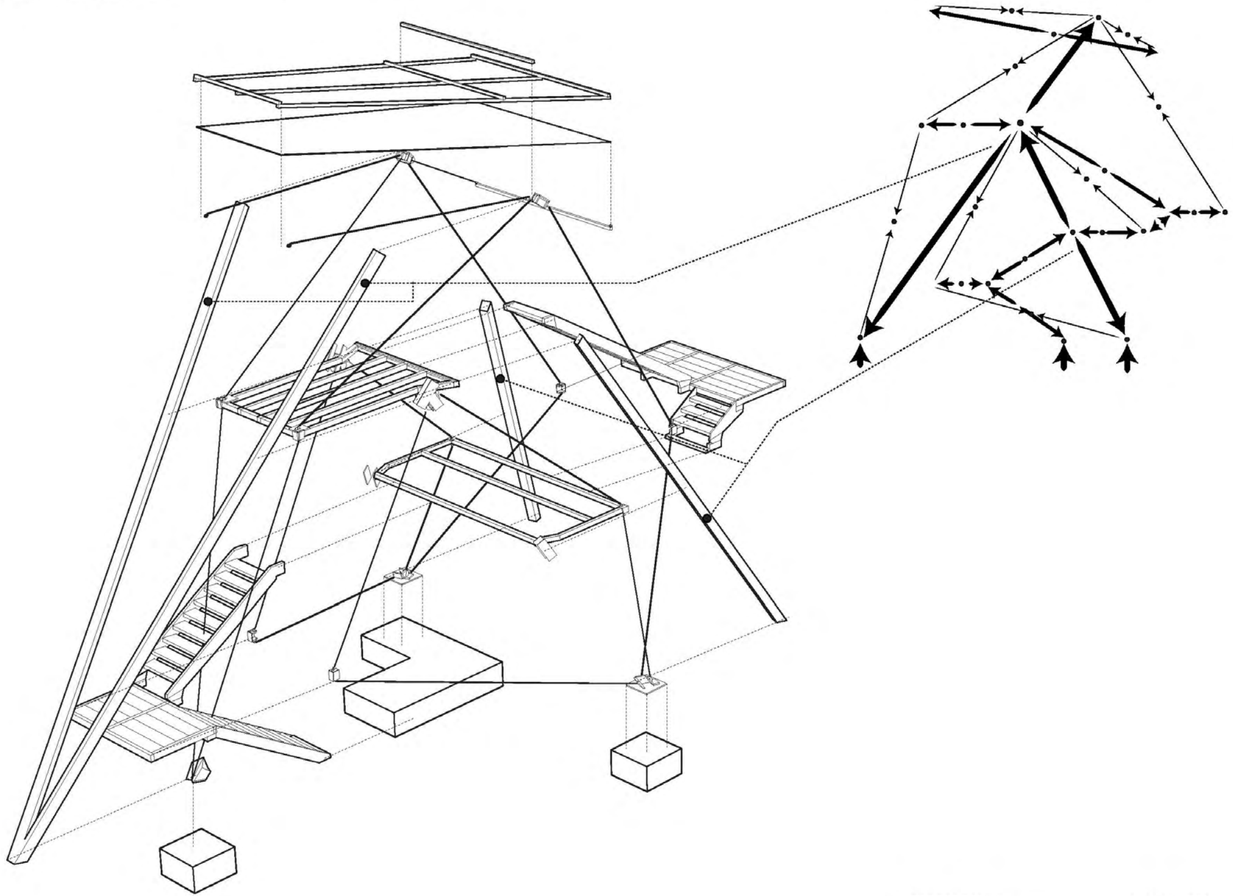
This structural exercise was a study in how minimal members of tension and compression can be combined to obtain suspended volumes. This project exposed us to: architectural detailing; it served as an introduction into the compilation of construction drawings; it provided a strong conceptual understanding of the interdependency of structural forces in a stable system, as well as providing judgement in the sizing of members with respect to the spans they cover.

The one-and-a-half week exploration consisted of a series of study models and iterative construction drawings. A 1/2" : 1' model and a package of construction drawings was submitted at the end. The project presented here was the second iteration of two iterations.

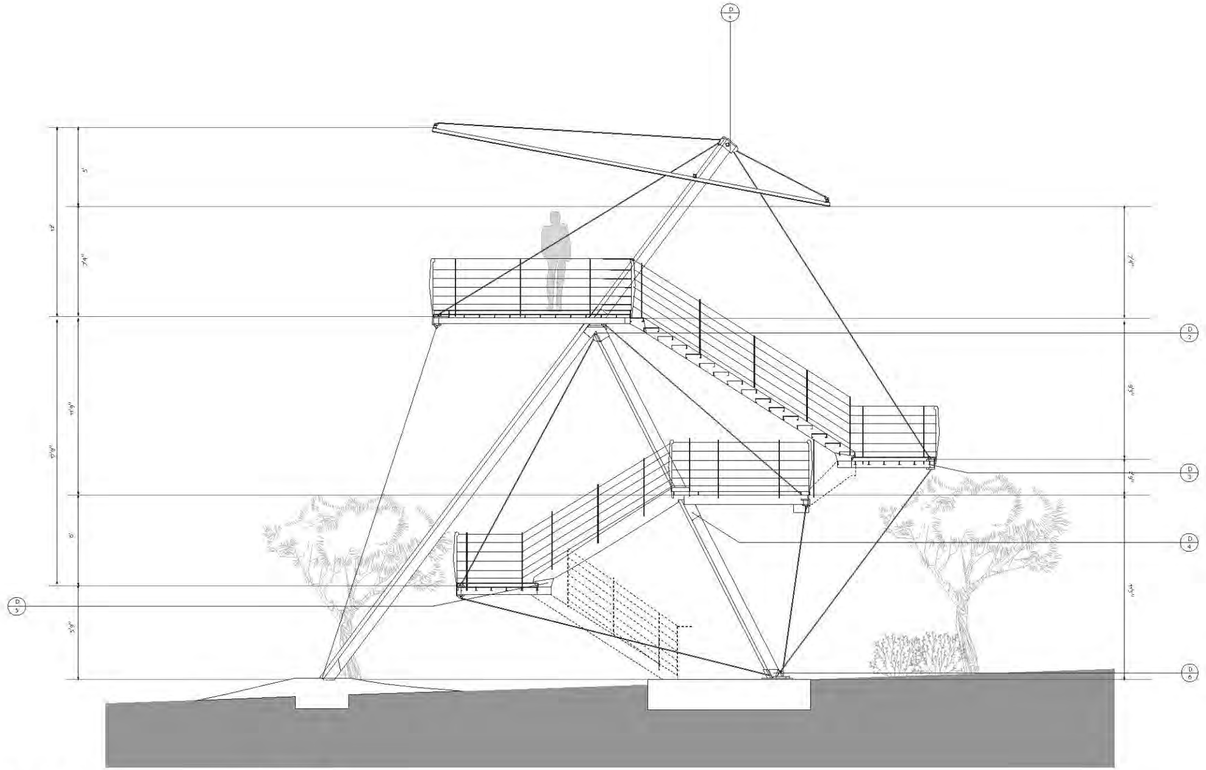
PROGRAMMATIC INTENT



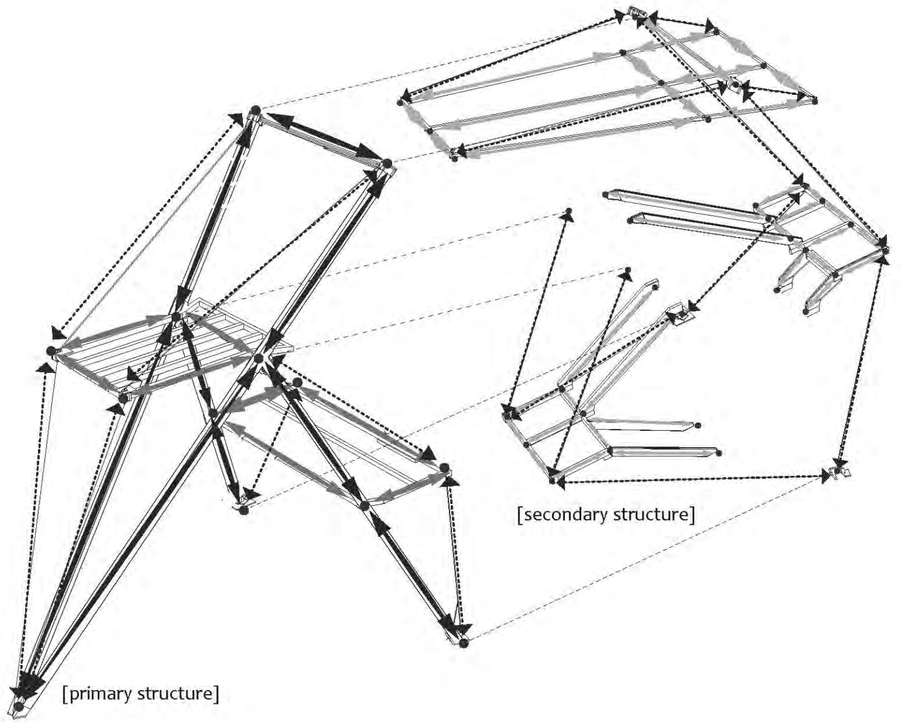
TECTONIC ASSEMBLY



LONGITUDINAL SECTION

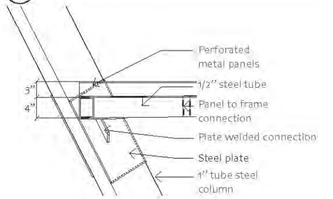


STRUCTURAL SYSTEMS

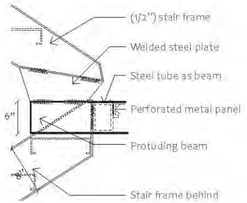


[DETAILS]

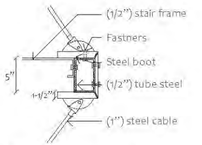
D 4



D 5



D 5



** Boots are necessary to wrap around the extremity of the platfrom, to spread the tension forces and concentrate them on these plates of steel.*

Informed Plasticity

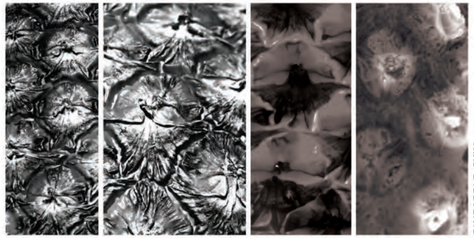
5

5th year Option Design Studio
Professors: Mikhail Gladchenko/ Keegan Quick
Team: Marco Juliani, Sergio Barajas, Evan Novak
Blog: http://f12arc451.wordpress.com/

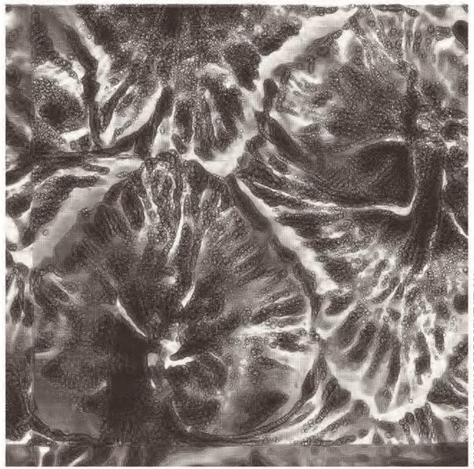
Project Description:

This project was the culmination of a semester long study into architectural abstracions of material and performance in living things. Beginning as an individual inquiry into a subject of interest, groups were formed mid-semester and ideas blended. I collaborated with Sergio Barajas and Evan Novak in the study of material surfaces how the panelization of these could approximate a double curved surface. The resulting design emerged from the development of an ordering system that followed several parameters and rule sets.

My personal contribution to the project was that of active designer in the iterative and final fabrication stages and manager of this process.

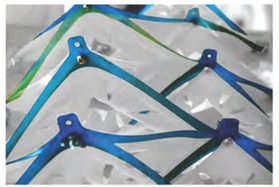


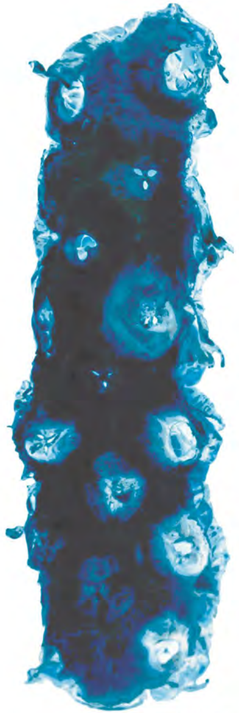
PINEAPPLE SKIN



PINEAPPLE SKIN REPRESENTATION

MODULE





PINEAPPLE INTERIOR CUT

Launching Point

The disparate texture seen in pineapple skins triggered an interest in composite systems (skins). The field condition created by the aggregation of modules comprises a broader system of moisture retention and impermeability in the pineapple.

The bulbous character seen in its seed-respective cells/ modules, and the other component parts that make up the network of its skin, became analogous to an system of pouring (additive material) and the variability that can be introduced by scaffolding. The coexistence of a scaffolding framework with its cast result became a subject of inquiry.

Re-interpreting Scaffolding (INTENT)

(1) Design of a flexible process-based system, rather than a premeditated result, allowing for individual variability and collective coherence.

(2) Questioning the inherent linearity in the casting process by allowing for ambiguity in relationship between scaffolding and cast result.

Media

-2 Way Stretch Fabric
-20 mm acetate
-Plaster

Test 1 Initial system of (1) malleable frame, (2) tensile supporting structure, and (3)fabric membrane. Gravity informed bulbous extrusions. Fabric provided cast piece with stress lines as evidence of the restraint on the form provided by a finite piece of fabric.

Test 2 Increasing number of frame members introduces a level of control in homogenizing bulbosity of the cast piece. Patterned fabric is introduced as an additional membrane constraining the cast product further.

Test 3 This step takes away the number of frames an allows the patterned, less stretchy fabric to perform as a constraining device. Cast result portrays secondary extrusion textures as a result of this controlled system of incremental-bulbosity.

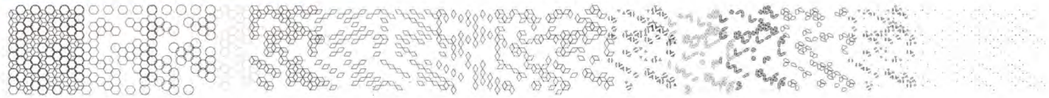
Test 4 This step scrapped the modular framework for experimenting with how the formwork (merely fabric, rubber bands, and masking tape) could be manipulated during the casting process to obtain a desired cast form.

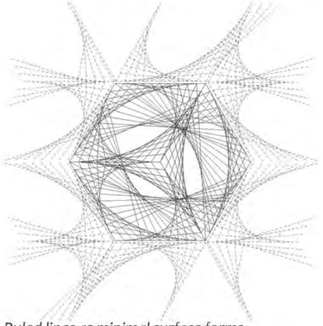
Test 5 This step alters the module to have a higher number of connection points where the tensile structure (rubber bands) can interesect each frame. Tensile members of different thicknesses/ force-exerting capacity are introdoced uniformly and the cast form 'accidentally' expresses an aesthetic of incremental controls.

Test 6 Initial modules are rearranged to form a larger system. In this particular iteration the fabric utilized as a secondary control device stretches too much and thus doesn't articulate the surface texture in previous iterations.

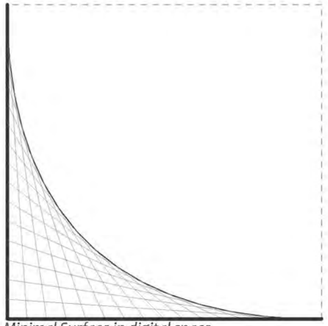
INFORMED PLASTICITY FALL 12

COMBINING CONCEPTS OF SURFACE

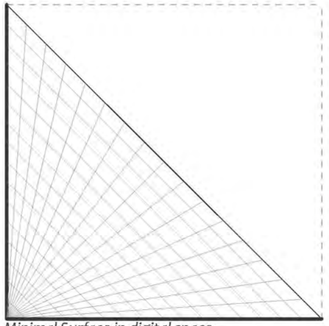




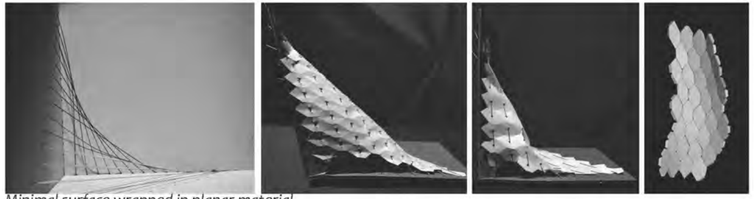
Ruled lines as minimal surface forms



Minimal Surface in digital space

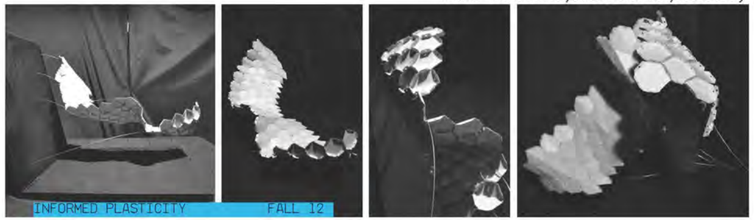


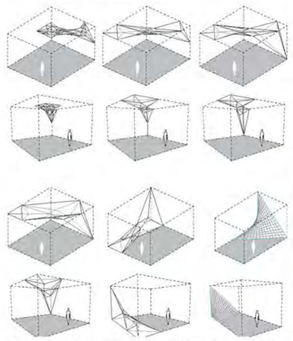
Minimal Surface in digital space



Minimal surface wrapped in planar material

Planar material to follow ruled surface loosely





Studies of surface as minimal intrusion into space

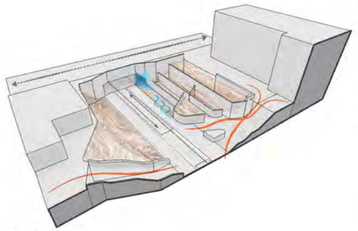
Our independent studies contained had overlapping concepts.

One of the ideas that was explored was that of a minimal ruled-surface as a reduced footprint in a space. Although this was a concept that we pursued as a macro organizational strategy, the idea of material surfaces (those that lack an identifiable geometry and form) was explored as a panelizing strategy.

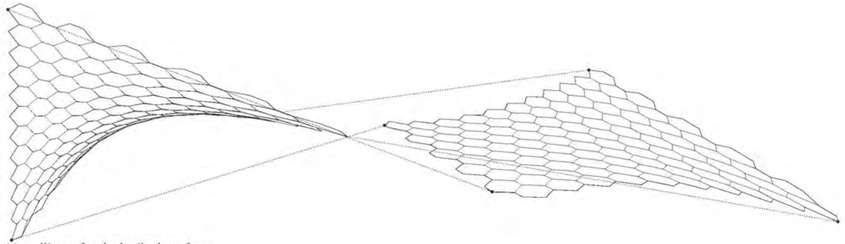
Something that caught our attention was that of trying to approximate a minimal surface with the restraints of planar materials. The discrepancy that arose with digital form and material form was something we wanted to study further. In this way we decided that imposing a material with a given set of constraints (planar paper modules coming together to form a 'minimal surface'- where no panels are actually planar) would lead to an emergent surface that could perhaps reveal something new architecturally.

At the macro scale, the number of edges is minimal, thus the minimal surface. At the micro, the increase in the number of edges within a module allowed for a more bulbous material surface that was the opposite of the minmal surface expressed at the macro scale.

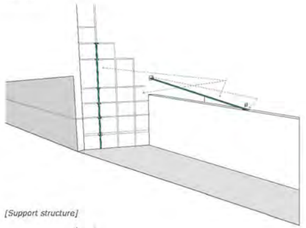
This juxtaposition of what seem to be contrary elements and concepts, and the complex skin condition created by the panelization of a numerous material surfaces, became the main object of inquiry.



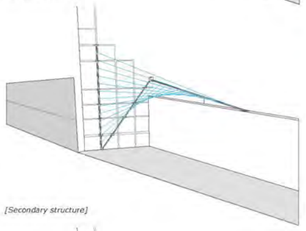
[Site]



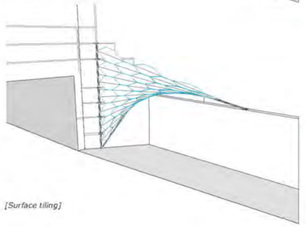
Unrolling of ruled, tiled surface



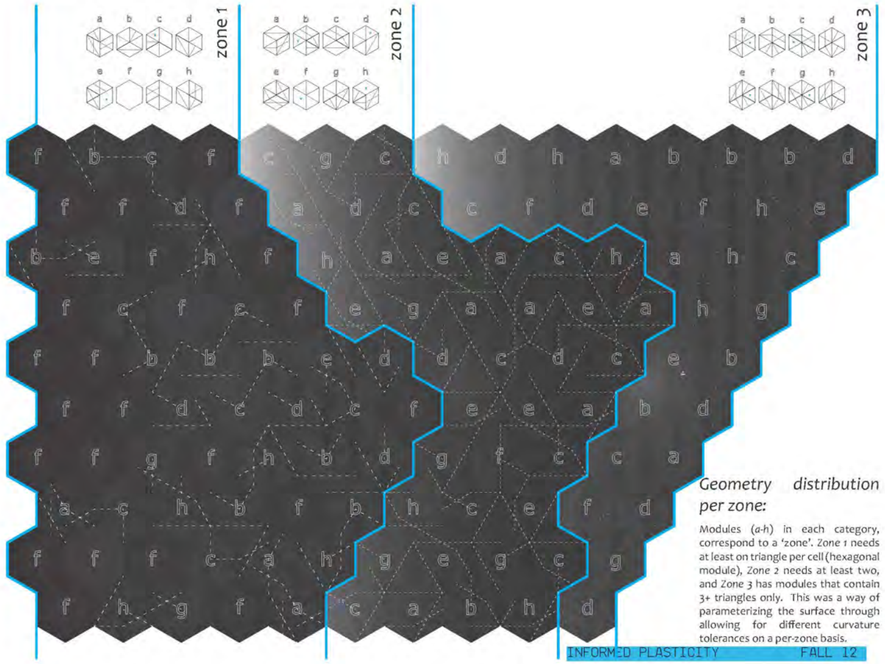
[Support structure]



[Secondary structure]



[Surface tiling]



Geometry distribution per zone:

Modules (*a-h*) in each category, correspond to a 'zone'. *Zone 1* needs at least on triangle per cell (hexagonal module), *Zone 2* needs at least two, and *Zone 3* has modules that contain 3+ triangles only. This was a way of parameterizing the surface through allowing for different curvature tolerances on a per-zone basis.

[PROCESS]

1) Laser-cutting 1mm PETG (96 sheets of 32" x 18").

2) Glass kiln slumping of plastic (1.5-3 min) of heating at ~325 degrees Fahrenheit).

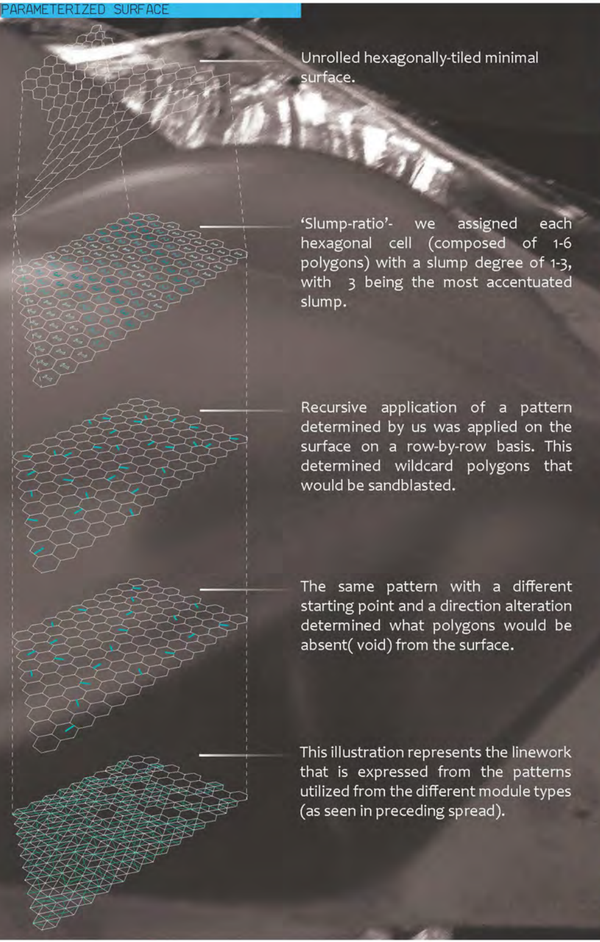
3) Bending of plastic tabs for assembly.

4) Painting pieces according to patterning system (spray paint).

5) Prewelding 1/4" steel rods to steel tubes.

6) Screwing steel tubes to concrete spacings of wall.

7) Assembling modules in strips with rivets and running these strips through steel rods.



Unrolled hexagonally-tiled minimal surface.

'Slump-ratio'- we assigned each hexagonal cell (composed of 1-6 polygons) with a slump degree of 1-3, with 3 being the most accentuated slump.

Recursive application of a pattern determined by us was applied on the surface on a row-by-row basis. This determined wildcard polygons that would be sandblasted.

The same pattern with a different starting point and a direction alteration determined what polygons would be absent(void) from the surface.

This illustration represents the linework that is expressed from the patterns utilized from the different module types (as seen in preceding spread).

Modulating Enclosure 6

[IN PROGRESS]

5th year Fabrication Research
Professor: Jean-Luc Cuisiner
Project Description:

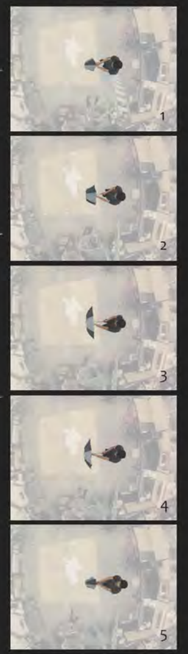
This project seeks to mitigate ubiquitous discomfort in workplace environments through the basic notion of being able to modulate one's own personal space.

Far from encouraging hermetism, this is a piece of furniture that will act as a membrane that is easily modified for the mood a space calls for.

This modular membrane will be a self-supporting system (structurally) through the interlocking of folded planar surfaces.

Like the light that passes *between* the leaves of a tree, the modular assembly of this system will allow for provocative visual permeability. Like the light that actually passes *through* leaves, the materiality of this system will reveal the broader environment in which it is situated through different degrees of translucency.

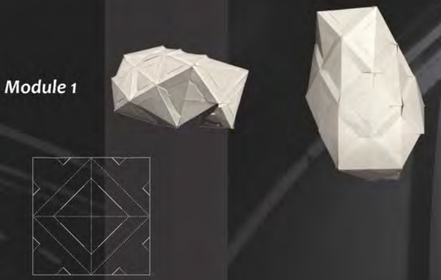
UMBRELLA ERGONOMICS



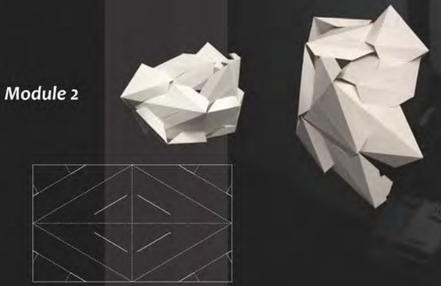
LEAF FORM ABSTRACTIONS *flexible structure adaptaple to different site conditions*

FOLDING STUDIES

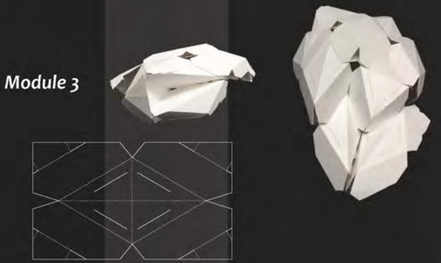
Module 1



Module 2



Module 3



SITE

SITE CONTEXT

[users]
-3 frequent workers
-1 or 2 random guests

[bearing conditions]
-steelframe of vertical desk-backs

[access]
-1 entryway

[visual access]
-small pocket of window axial to entry

"All previous revolutions had, as their goal, the attainment of some new state of equilibrium. What we are seeing in our time is a new order of revolution, whose goal is not a new equilibrium, but social disorder itself. It is the first social recognition that continuous change itself is a form of equilibrium- and that it is only in disorder that we find order. These kids are 'surfing' and it is the essence of surfing that one should ride the turbulence without succumbing to it. You cannot have fun surfing on a slow wave- and you cannot surf at all on a frozen one."

- Don Fabun

marco thomas juliani

may 2013

marcotjuliani@gmail.com

(520) 954-8150