# PORTFOLIO

2022 - 2023

Graduate School of Architecture, Planning and Preservation

SIXUAN (STELLA) CHEN

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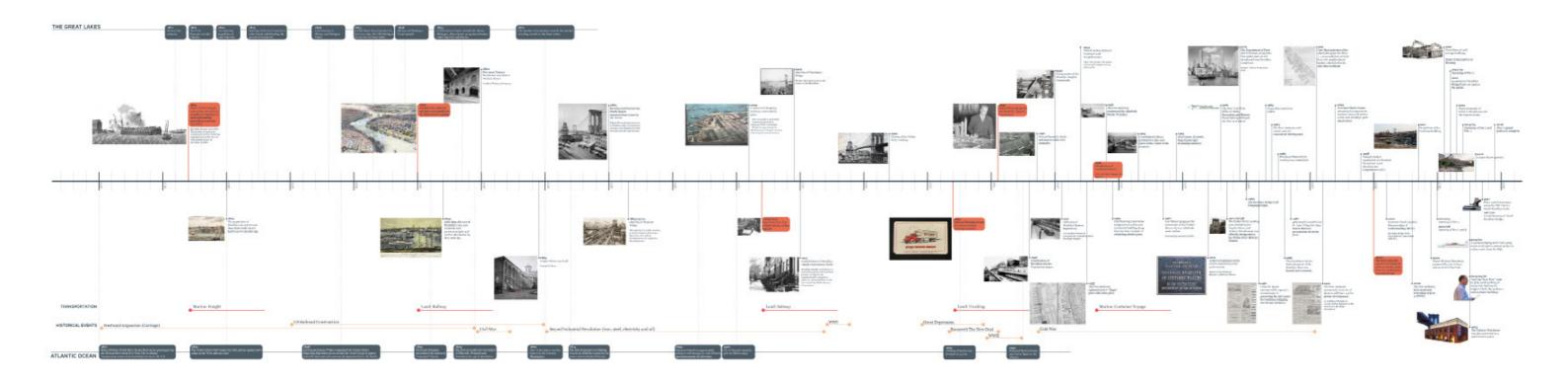
### Making Space for the More-than-Human

Partner: Zixiao Huang, Summer 2022 Instructor: Marco Ferrari, Elise Hunchuck



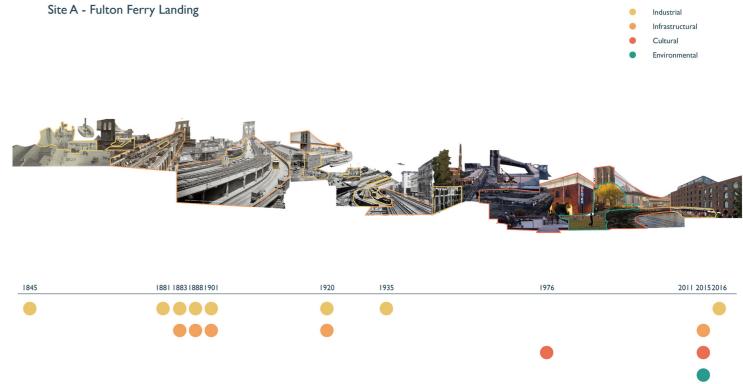


### A Chronological Review of Brooklyn Bridge Park



Transforming from a dilapidated industrial port to a prosperous public park, the land under Brooklyn Bridge Park adapted new identities to accommodate global changes. However, if we see through the spatial development that has been constructed to maximize economic and real estate value, it reveals an overlooked yet significant component, the timber piles, who have been supporting the existence of the landscape. Therefore, the undervalued piles are a proxy for the capital structure that obscures them from above.

As the proxy relationship is embodied in the negotiation between valued and undervalued objects, we want to first identify the current system of value. Value exists persistently, yet it sustains, evolves and is presented through different modalities. Human society tends to quantify the value of a piece of land using a monetary system, whose algorithm often depicts the common and ignores the particular. In contrast, if we perceive lands with ecological perspectives, where the value is embodied through the energy flow in nature driven by multi-spe-cies, the image of a land becomes more comprehensive with values superimposed and exchanged dynamically. Therefore, our projection is to challenge the predominant interest of short-term economic benefits, reimagining the human-constructed landscape of Brooklyn Bridge Park with long-term value of ecological regeneration.





#### Making Space for the More-than-Human SU2022 5

Brooklyn Bridge Park

A Screenplay by Stella & Nicholas

Cherry Revision August 2<sup>nd</sup>, 2022 Salmon Revision July 27<sup>th</sup>, 2022 Buff Revision July 18<sup>th</sup>, 2022 Idenrod Revision July 11<sup>th</sup>, 2022 Green Revision June 30<sup>th</sup>, 2022

IMAGE. BROOKLYN-QUEENS EXPRESSWAY - 1941 5 Nicholas places a photo card, highlighted with a red dot, on the model in a line marked 1940.

STELLA (CONT.D) commissioner of New York City's Nobert Moses, announced tituos plans to build a four-phway, known as the Brooklyn-Expressway, through the middle tyn Heights, which further

looks around the room, but can't remember that a same time period, the Port Authority of New York d to control the planning and maintenance of the n Piers for the preparation of larger modern car

IMAGE. CONTAINERIZATION - 1956 6 Nicholas places a photo card, highlighted with a red dot, on the model in a line marked 1960.

STELLA (CONT'D) in 1956, businessman Malcolm McLean introduced the practice of "containeri-tation" to the global maritime industry. The shift from break bulk to containeriz

Trying not to derail from the historical records of the piers, Stella skipped the disuse and disrepair of the Fulton Ferry Landing which happened during the same period. "The gradual decline of the ferry service, which ceased operation (CONTINUED)

NICHOLAS (CONT'D) th an orange dot, and that's frastructure. I see the logi d the dashed circles? this value. As you can see bugh Hall is losing its ind

Now I get it. So then you are going to put them together and --

Stella raises her voice.

STELLA Right! SHIFTS OF VALUE - 1845 TO 2020

STELLA (CONT'D) By tracking across time and calculating the total number of each value, it shows how the site shifted from an industrial-driven

It must be a very valuable land, so that the society never ceased to adapt her to changing conditivalue. As the current Brooklyn B Park presents its popularity bot for locals and tourists, it seem to be a good demonstration of a successful transformation for post-industrial landscape. 1 TEXT. TITLE PAGE - 2022 1 Stella and Nicholas step up to the podium, greeting the audience.

STELLA Hi everyone, good afternoon. This is Stella, and this is Nicholas. Nicholas smiles and greets.

STELLA (CONT'D) Today we will consider the Brooklyn Bridge Park as a proxy of waterfront landscape, in which its transformation is heavily affected by changes of - -

NICHOLAS What's Brooklyn Bridge Park? Is it related to the Brooklyn Bridge?

Stella is about to talk about some general information abou Brooklym Bridge Park ad then expand on the topic of proxy in depth. But it seems a bit of historical background is needed.

2 2 IMAGE. 1854 - BROOKLYN RESIDENTS COMMUTING Nicholas places a photo card, highlighted with a red dot, on the model in a line marked 1850.

STELLA As early as the 1850s, more than 186,000 of Brooklyng 300,000 residents were commuting back and forth to Manhatian by ferry each day. Brooklyn began to show its potential se a center of transportation and communication.

Stella chooses to mention this as the beginning of Brooklyn's early prosperity, as thousands of prospective

6 CONTINUED: completely in 1524, had precipitated the collapse of the boroupd's once-builting center of storage, shipping, and trads. The landing area was further isolated by the opening of the Manhatan Bridge in 1909, which completely bypassed the area, and by the opening in 1931 of the Brooklyn-Queens Expressivey, whose encrosure supports forward an insonin barrier between the district and the rest formed an imposing barrier bet of the borough".

7 IMAGE. IDEA OF A PARK - 1980 Nicholas places a photo card, highlighted with a red dot, on the model in a line marked 1980.

STELLA (CONT'D) The idea transforming the abandoned Brooklyn waterfort into a public park first emerged after the establishment of Empire-Public Park, promoted by the Department of Ports and Terminals. Despite the debate between public use versus commercial development, the land eventually became the Encoking Bridge Park we know today. Nicholas turns toward Stella by the model and asks.

NICHOLAS It's such a complicated history! It seems that Brooklyn waterfront has been shaped by multiple factors, locally, regionally and globally. How are you capturing the relationship and causations behind those changes? Stella takes a quick glimpse at her notes.

> STELLA I think photographs are the most powerful when trying to recover the historical identity of a place. They became puzzles for me to compose the whole (CONTINUED)

Stella moves toward the mounted collage and starts to talk.

STELLA Yes, I agree. The land of the park,along with its adjacent neighborod,all became much more valuable. And the value I mean here is specific and concrete -it is the dollar, the economy.

Nicholas moves toward the collage too and points at a dollar sign.

How did you come to that

nd points at the waters.

NICHOLAS That's true. . . we can't deny that economic value is the standard in today's society. Everything has to be cost-effective, in a mometary sense. Just like what you did here; Trees are worth 27,300,000 dollars'

STELLA Yes, the numbers are surprising. When calculating for trees, I have to consider the discount of air pollution removal, carbon storage, health care value, ultraviolet

STELLA (CONT'D) And for the waters, I looked up the value of restored oysters, not only the economical value of the oysters themselves, but also the value of

10

(CONTINUED

10 COLLAGE. MONETARY VALUE - 2022

Stella points at a tree.

2 CONTINUED: 2 residents migrated from Manhattan due to great accessibility and cheap fares (ranging from 1 cent to 4 cents).

3 IMAGE. SHIP LOADING - 1880 Nicholas places a photo card, highlighted with a red dot, on the model in a line marked 1880.

STELLA "By 1880, Brooklyn had become the fourth largest manufacturing hub in the nation, serving as a bustling center of shipping, commerce, and storage for both the borough and the city at large."

Stella looks down at her notes with the stellar of the stellar of the stellar the stellar the stellar the lowlands along the East River gradually developed into a thriving commercial area with docks and ferry landings along the waterfront". 4

4 IMAGE. BROOKLYN BRIDGE - 1883 Nicholas places a photo card, highlighted with a red dot, on the model in a line marked 1880.

STELLA (COST.D) The opening of the Brooklyn Bridge in 1893 promoted ground transportation while deviating people's dependence on the maritime traffic system. The life at Brooklyn waterfront became overshadowe

Nicholas wants to point out that it was true that most residents, from bankers to merchants, were able to ride to work by horse-drawn cartinges. Yet, while the bridge slowe the ferry service's growth, it still attracted more investment and activities to Brocklyn. But the image fades

STELLA (CONT'D) picture and understand how the site's spatial quality, organization, and function react to different values held by various parties. Stella points at the model.

STELLA (CONT'D) As a result, I'm able to recognize four significant values on our site at that time period, including industrial, infrastructural, cultural and environmental values.

NICHOLAS How did you come to this conclusion? Could you please show us an example?

STELLA Sure! 8 COLLAGE. 4 SITES - 1845 TO 2016 8 Stella looks excited to show her collage, and Nicholas moves closer to the screen.

STELLA Four important locations were chosen and re-llustrated through photo collage in a timely manner. By highlighting elements that hold different values, you can tell which value outweight the other:

(CONTINUED)

Nicholas points at the screen. NICHOLAS The pier gets a yellow dot, which is Industrial value. The bridge is added

10 CONTINUED: STELLA (CONT'D)

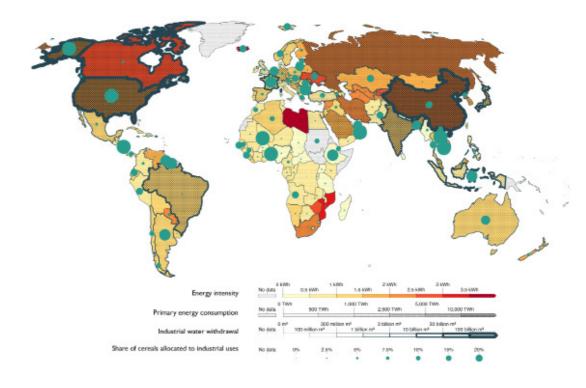
> ogen removed and the amount o rater them filtered. The water transportation is also a huge

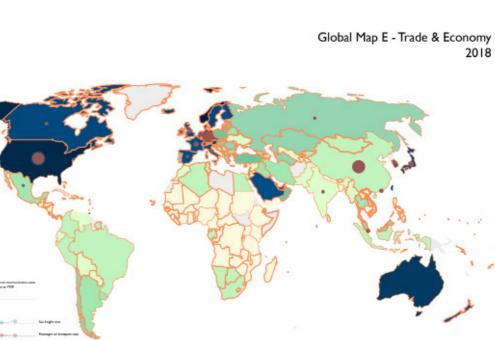
Stella steps back and looks at the collage for a whole. STELLA (CONT'D) It's just.. . everything can be described by a dollar sign!

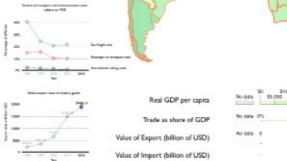
and looks like he has something to say NICHOLAS Interesting, it looks like the whole system is working like a machine vision, organized and precise. But do you think the value of this land can be depicted fully through the

STELLA This is how real estate or dealer usually describe the landscape. It does look promising, but just like all the algorithms do, they capture the common while meglectim, the particular. For instance, have you noticed the piles under the decksT They are the very

(CONTINUED)







#### Global Map A - Industrialization 2015

\$15,000 \$20	000 \$36.060 \$ \$25.000 \$20.000	25.000 \$35.000 \$30.000 \$	40,000 \$50,000	000,25
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500	1000	1900	2000	2900
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STELLA (CONT'D) foundation of the park, yet the current spatial construction has rendered then less valuable. They have even been developed and visualized to maximize economic and real estate value, through

10

NICHOLAS It seems like that the piles are undervalued by the structures and activities that conneal them

SIBLLA Right. To expand on that, the piles here become a proxy for the very capital structures that obscure them. And the monetary system, that is temporary and static, is insufficient in capturing the whole bicture of

think... What if we perceive with an ecological perspective? ne value is embodied through the flow in nature driven by multi-s. With values superimposed and ged dynamically, the image of a suld become more comprehensive.

CONTINUED: 11 Nicholas and Stella move toward Pier 3.

STELLA (CONT'D) Pier 3 survived the first phase of sea level rise, so we will leave it alone.

Nicholas and Stella move toward Pier 4. Stella points at a collages of people lying on the lawn by the shoreline made of salvaged granite.

STELLA (CONT'D) Sadly, these people will need to find another place to relax. Nicholas picks up the collage with people and put it in a box beside the model.

STELLA (CONT'D) But the lawn, combined with the granite will become a salt marsh, serving other species on earth.

Nicholas puts blue dots on the lawn and granite, and adds some more maritime species onto the model. After this, Nicholas and Stella walk toward Pier 5.

Nichelas picki up collages of human activities, picnic tables, ico cream shop, and playground and about to dump them into the box but hemisters. Nicional Mai - seems list the vooden tables and benches, metal equipment (CONTINUED)

12 12 CONTINUED: (2)

NICHOLAS What's this? Will it be affected?

STELLA These are floating wave attenuators. Though it remains, some refinement could be added. Nicholas puts a blue sticker on the attenuators.

NICHOLAS Mhat can we do about them? STELLA Towards the init

STELLA Towards the land side, captive soil can be added to connect with the existing wetland on site.

Nicholas places a collage of captive soil on the model next to the attenuator. STELLA (CONT'D) Towards the water side, oyster/mussel resf could be added to achieve additional atchmaitin depth and better protection from the surface waves.

Nicholas places a collage of oyster/mussel on the model next to the attenuator, but on the other side.

STELLA (CONT'D) Also the planted revetment. The additi of rock, roll, and plantings are beneficial to the local habitat and express a more living waterfront. For the attenuator, the weight of these items also provide permanent ballast while simultameously

ating wave reflection, a seawall problem. (CONTINUED)

(CONTINUED)

10 CONTINUED: (3) 10 STELLA (CONT'D) (clearing threat)

status (CONT'O) (clearing throat) I think it is important and meaningful for us to challenge the predominant interest of short-term versinging the human-constructed indicage of Recollyn Bridge Park with long-term value of ecological regeneration.

NICHOLAS And you made this?

TILLA Yes! Acknowledging dimate change is recordinguring the condition of earth surfaces, I want to identify Brooklyn Bridge Park as a waterfront surface that is already apposed, and provide the surface of the surface the surface and provide the surface of the surface of the surface and provide the surface of the surfac

(2) 11 strength (cont'b) can be recycled somehow, we can't just - -STELLA Yes, the worken benches and metals are actually salvaged from the Cold Storage Warehouse. We will store them somewhere eige for recollection.

Nicholas hangs wooden tables and benches onto the wall returns. Stella and Nicholas walk toward Pier 6.

11 CONTINUED: (2)

STELLA (CONT'D) Fier 6 is relatively high, So it will remain lively as Pier 3. (looking at the secreen) Now it seems like we have covered all the piers at the first phase of sea level rise. Let us go into the second phase, which is 35 warers later, with the about 7 feet.

12 MAP. SEA LEVEL RISE 7FT - 2095 12 Nicholas and Stella stay where they are right now.

STELLA (CONT'D) By the year 2055, Fire 6 is not as lucky as it was in the first phase. This time its perimeter and all the entrances are completely undersater, making it inscremible and all activities to disappear.

Nicholas puts a blue dot sticker on the collage of Pier 6 walkway, picks up the photos of activities and pier signs and about to damp them into the box. But when Nicholas is about to put them in the box, Stella stops him.

12 CONTINUED: (3) 12

Nicholas puts a collage of planted revetment on the model next to the oyster/mussel collage. Nicholas and Stella walk toward Pier 4.

STELLA (CONT'or Par 4 and its vicinity are now all underwice: We can be the advantage of time energy here. "Second time energy here."

Nicholas places a collage of a project by Roosevelt Island Tidal Energy (RITE) on the model.

STELLA (CONT'D) EastRiver is a tidal strait with strong water currents that change direction between flood and ebb tides approximately four times each day.

STELLA (CONT'D) When the water velocity exceeds around 1.0 m/s, the turbine blacks begin to rotate and the units can generate electricity for approximately 4.5 hours.

Nicholas and Stella continue to walk toward Pier 3. Nicholas takes the pier sign and hangs it on the wall.

Nicholas It seems to be a good addition to the value of water.

STELLA Yes, you can find these signs now. They wait on all pieze except Fier 1 and 4. It's pool we keep the heritage collected and preserve.

(CONTINUED)

Stella tries to recall what she learned from her re

Nicholas looks closer at the turbine.

10 CONTINUED: (4) 10 HICHOLAS Of course! I can't wait. 11 MAP. SEA LEVEL RISE SPT - 2040 11 Nicholas and Stella both walk toward the model and stand by the end of the model marked "Brooklyn Bridge".

...., using ... STILS, the sea level From now until 2050, the sea level will rise about 5 feet. There is only minor inomdation along the shoreline. We will start from her 1. As the sector lines, more sait much will be created.

Nicholas reaches into his pocket, takes out another collage of salt marsh, and places it beside another salt marsh collage that is already in the model marked "Pier 1".

STELLA (CONT'D) And some of the salvaged granite will be submerged. Nicholas puts a blue dot sticker on the granite collage on the model marked "Pier 1".

NICHOLAS Let's mark it with a blue dot since they remain valuable on the site, as new habitats for marine animals. Nicholas and Stella both walk toward the other end of the model; Stella is on the side and Nicholas is in front of it.

Nicholas puts a blue dot sticker on the intertidal zone collage in the model and places collages of crabs and oysters beside it.

STELLA (COMP'D) Mait, I think the pier sign should go somewhere else. It occupied this site for 30 years before it was salwaged from the Port Authority and refurtished for the park. It's a heritage that should be collected, just like the salwaged wood.

NICHOLAS Okay. I will hang it on the wall. Nicholas hangs the pier sign on the wall.

STILA Also, because the sea water is entering the planted area on Pier 6, all the terrestrial plants are threatened. They will be gradually replaced by aquatic plants and the entire place will be in a transition to a salt marsh. Could you plasse take some of them out for now?

NICHOLAS For sure. Nicholas picks up some of the collages of trees and garden plants and dumps them into the box. Nicholas and Stella move back toward Pier 5.

STELLA Pier 5 is facing the same situation as what is on Pier 6. It loses its intended use.

Nicholas removes collages of boats, fishing, soccer, and the pier rign. Nicholas hangs the sign on the wall and puts the rest into the box. When Nicholas comes back from the wall, he notices something on the model.

(CONTINUED)

12 12 CONTINUED: (4)

STELLA (CONT'D) (looking back at the model) Pier 3 is very much like Pier 6, tree8 and other vegetation which will gradually be replaced. Nicholas takes some of the trees off the model and places them in the box.

Set STILLA (CONT'D) Right Behind Fier 3 upland, there is a sound bern that as used there is a sound bern that as used a prefect infrastructure bases to be transformed into breakwater finalistic, (hinking) We can reference then stilland for the sound of the sound for the so

Nicholas places collages of the Living Breakwate model. Nicholas and Stella move toward Pier 2. STELLA (CONT'D)

Because the water cut off the entrance to the pier deck, all the activities on pier 2 will stop. It's time to recycle the pieces of equipment.

Nicholas removes collages of activities and infrastructure fro the model. Nicholas moves the pier sign from the model to the wall. Stella walks toward Pier 1 and starts talking.

STELLA (CONT'D) As the water further inundates the shoreline, the existing salt marsh will extend naturally. Nicholas adds more salt marsh collages to the model.

(CONTINUED)





Nicholas picks up a photo card. 

> possibilities, such as bei displaced, or reconfigured STELLA That's correct. May I show you how it works?

12 CONTINUED:

STELLA Yes, and the same situation for the intertidal zone at Pier 2.



12 CONTINUED: (5) 12 STELLA (CONT'D) Also, like other plars, inaccessibility removes all activities

Nicholas removes all the activities and facilities photos. 13 MAP. SEA LEVEL RISE 10FT - 2100 Nicholas and Stella stand still.

STELLA (CONT'D) Now after 2100, marked as the third phase, the park is completely assemble. Without he shall be assemble assemble to the second state of the led go not only its individual background, but also the recreational present yet, on the other hand, the landscape returns to its original ecological form, where inhabitants and for the second inhibitants nothing is constructed for values, everything becomes valuable, because each of them contributes to the energy flow within the ecological system

Nicholas and Stella begin to put various sea animals and sea plants onto the model. TEXT. END - 2022 1

14 IBAL END - 2022

NICHOLAS Now if I think back to the beginning, the story starts as a historical documes then by analyzing the shifts in values

(CONTINU

NICHOLAS (CONT'D) value system, the ending projects to the future with ecological receneration as a guideline.

Yes. The installation explores the role of architesture and landscape in preserving existing values, facilitating value transformation, and unveiling obscured values throug global shipping industry fluctuation local political competition, urban evolvement, and climate change that define a post-industrial urbat define a post-industrial

Nicholas and Stella walk toward the center of the stage in front of the model. STELLA (CONT'D) And that brings us to the end. Hope you enjoy the show and thank you for your time and attention.

The end



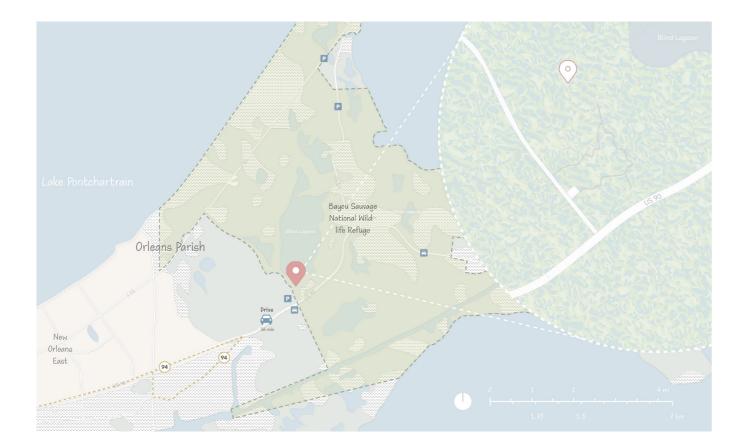


Acknowledging climate change is reconfiguring the condition of earth surfaces, we want to identify Brooklyn Bridge Park as a waterfront surface that is already exposed, preparing for conceivable submergence and projecting its future reformation to a new seabed. Start with the historical research and end with strategic method reacting to climate crisis, the installation explores the role of architecture and landscape in preserving existing values, facilitating value transformation, and unveiling obscured values through local political competition, urbanism evolvement, global shipping industry fluctuation, and climate change that define a post-industrial waterfront.

### **Ethno-Botanic Lab**

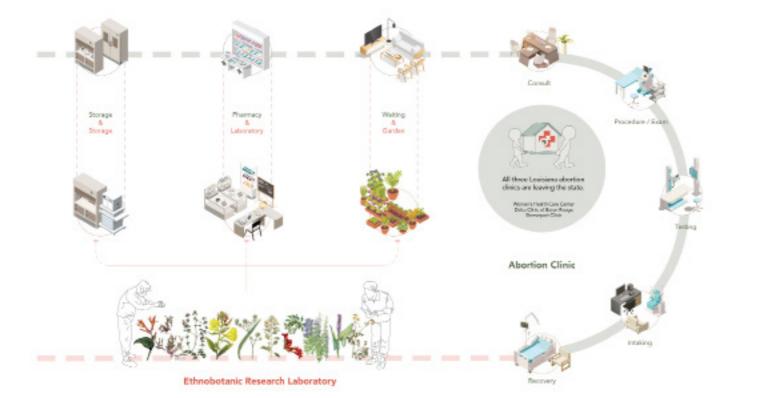
Partner: Junjie Fu, Fall 2022 Instructor: Bryony Roberts



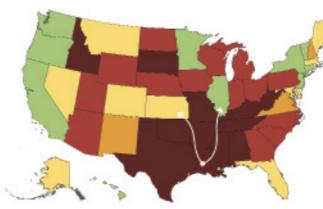


As the abortion landscape is fragmented and increasingly polarized after the overturn of Roe V. Wade, a Louisiana resident would have to drive nearly 700 miles to the nearest abortion clinic, making it one of the toughest states to receive reproductive care. Three existing reproductive care clinics, the only medical supports for reproductive health in the state, are all being relocated, and therefore, the project aims to compensate for the missing medical supports, providing consultation, medical, and recovery space.

Acknowledging women have been empowered by plants throughout the history, this project uses the natural habitat within federal lands as both a resistance and an opportunity. With the reference to ethnobotany, the goal is to foster the interspecy care between plants and humans, specifically in responding to the current situation of reproductive injustice in hostile contexts.



Abortion Laws by State



On average, a Louisiana resident would have to drive nearly 700 miles to the nearest abortion clinic.



#### Federal Lands in Louisiana





yde Amendment daral funds aro prohibited from being elite pay-for abortions, it since net sclude the federal government from aing quare or federal land to private rotion menides.

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18 -

Assimilative Crimes Act Federal government can prosecute stele trimes committed on federal property within that stats if there is no

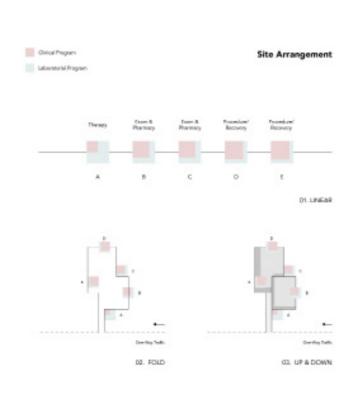
- 1. Abortion is completely banned in Louisiana.
- 2. It is legal to travel out of state to get an abortion.
- 3. Exceptions that may allow you to get an abortion in Louisiana
  - . To save the pregnant person's life
  - . To prevent serious risk to the pregnant person's physical health
  - . IF the fetus is not expected to survive the pregnancy

Lousiana imposes more restrictions on abortion providers then any other state, including:

- Trap Scheme
- · Method Ban
- Telemedicine ban
- Biased Courseling
- Mandatory Delays
- · Restriction on Low-Income Women's Access

Approximately 10,000 women obtain abortion in Louisiana each year.





Women in Botany

#### Medicine Women

Native American tribes believed that the women had more healing power and were able to soothe ill souls with their charts and connection to the spirit world. Medicine women gathered herbs to create healing medicines for those who fell sick within the tribe.

#### "Wise Women"

Lacking formal medical training, wise women in the Western world learned from their mothers, sisters, and female neighbors the medicinal properties of herbs. Relying upon trial-and-error experimentation, they learned how to apply feely growing plants to treat diseases, ease the pain of labor, and control women's fertility.

#### "Witches"

Between the 14th and 17th centuries, male authorities such as clerics in the Catholic Church and university-trained physicians wished to elevate their expertise and marginalize loser-class women in the healing arts, discrediting of "wise women" as "witches".



While women who utilized their knowledge of the natural world to influence and control the body and the mind have existed in every human society throughout history, it was only after men sought to claim expertise in the medical field that these "wise women" lay healers were branded as a malevolent and destructive "witches."



#### **Cluster Arrangement**



03. INTERLOCK





01. LINEAR



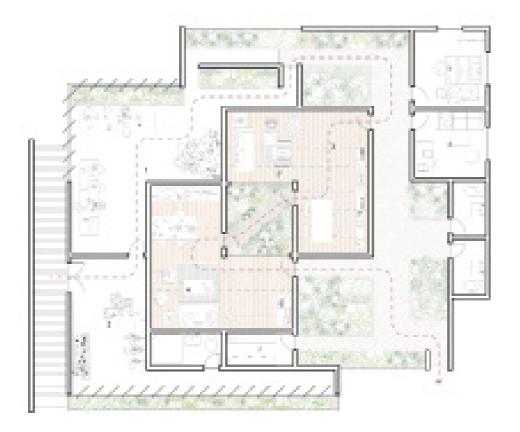
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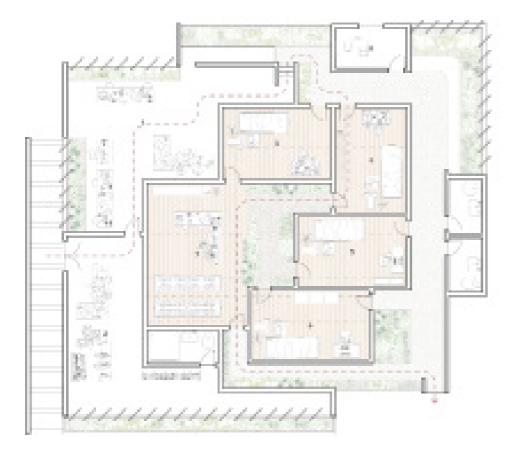


Cluster A - Therapy

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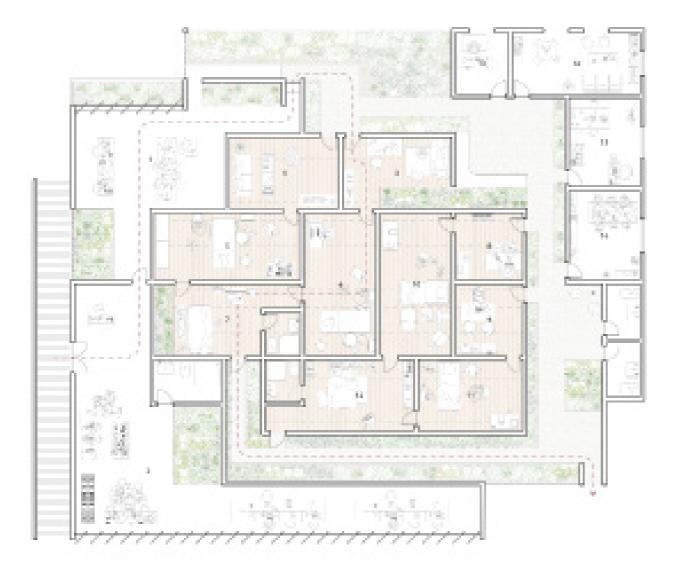
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Cluster B - Exam & Pharmacy

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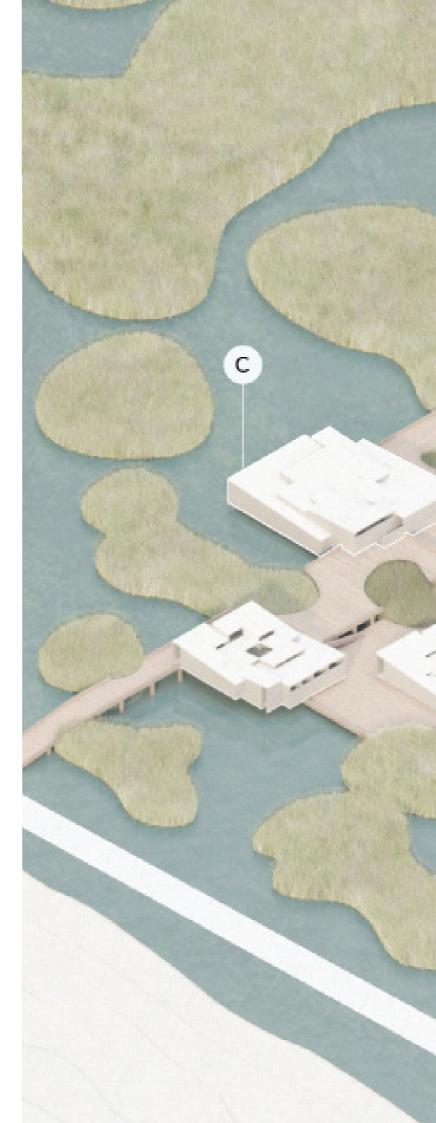




Cluster C - Procedure / Recovery

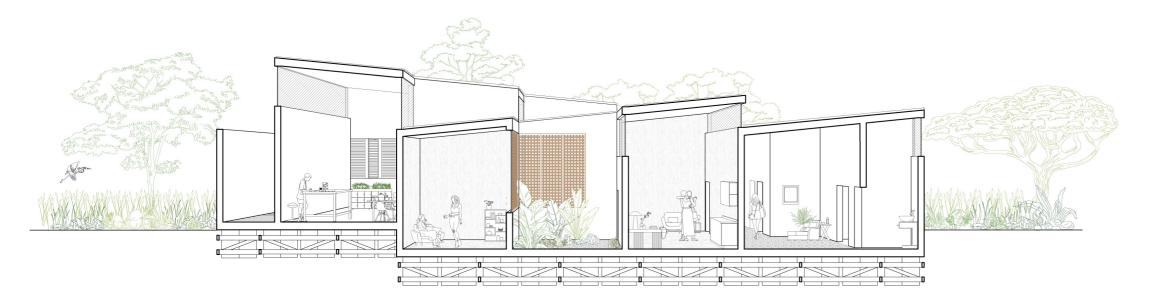
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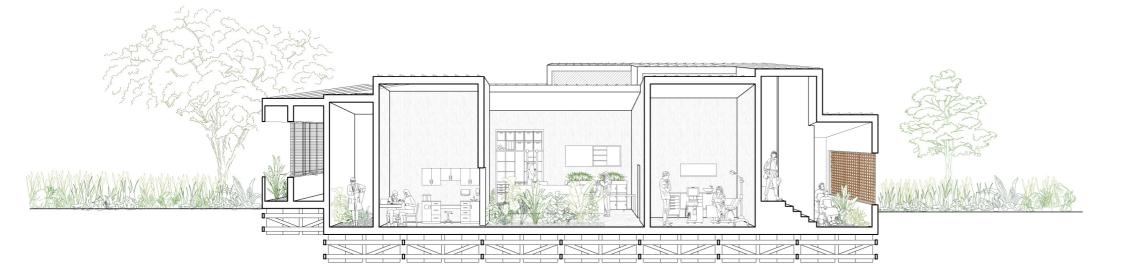


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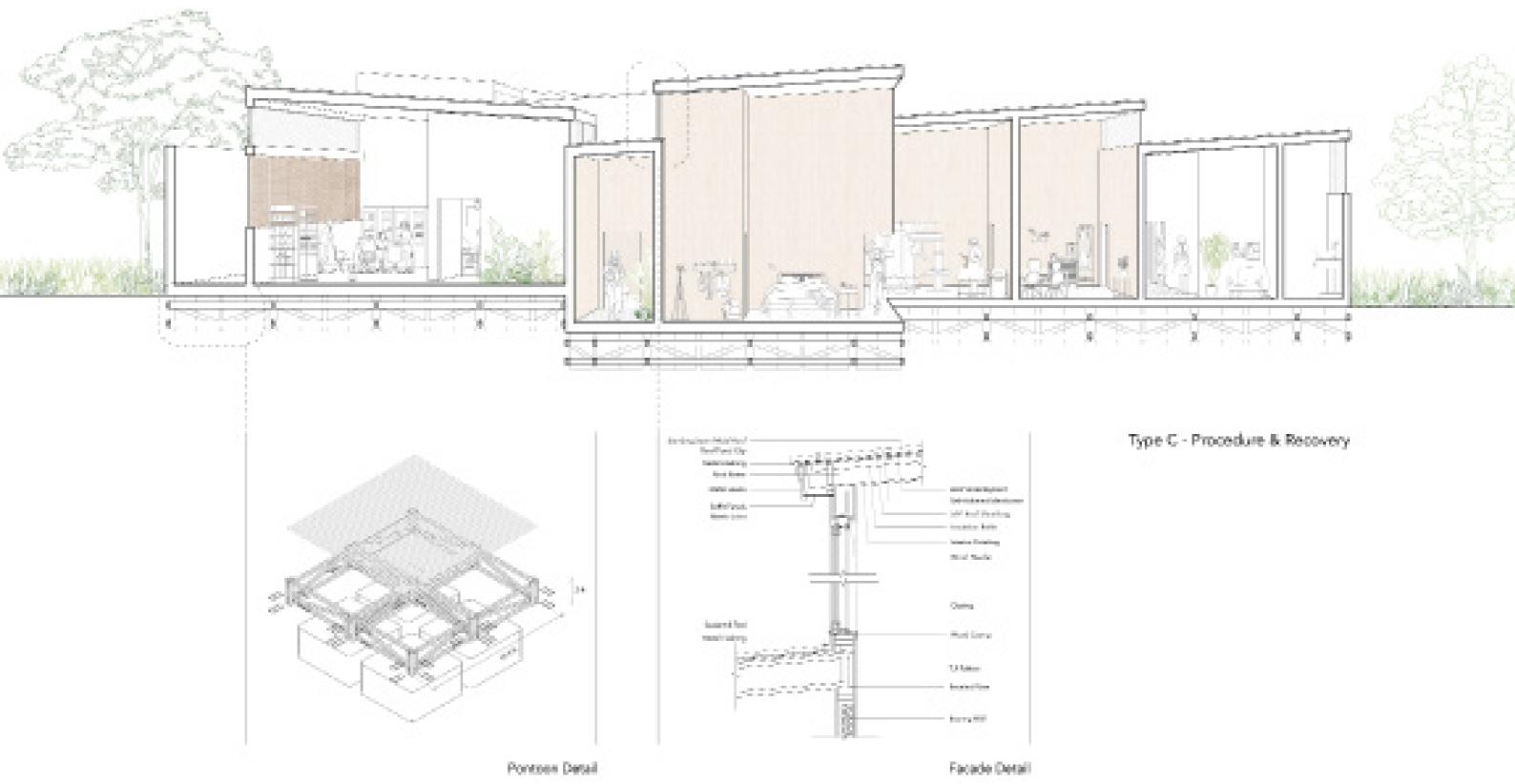
Type A - Therapy

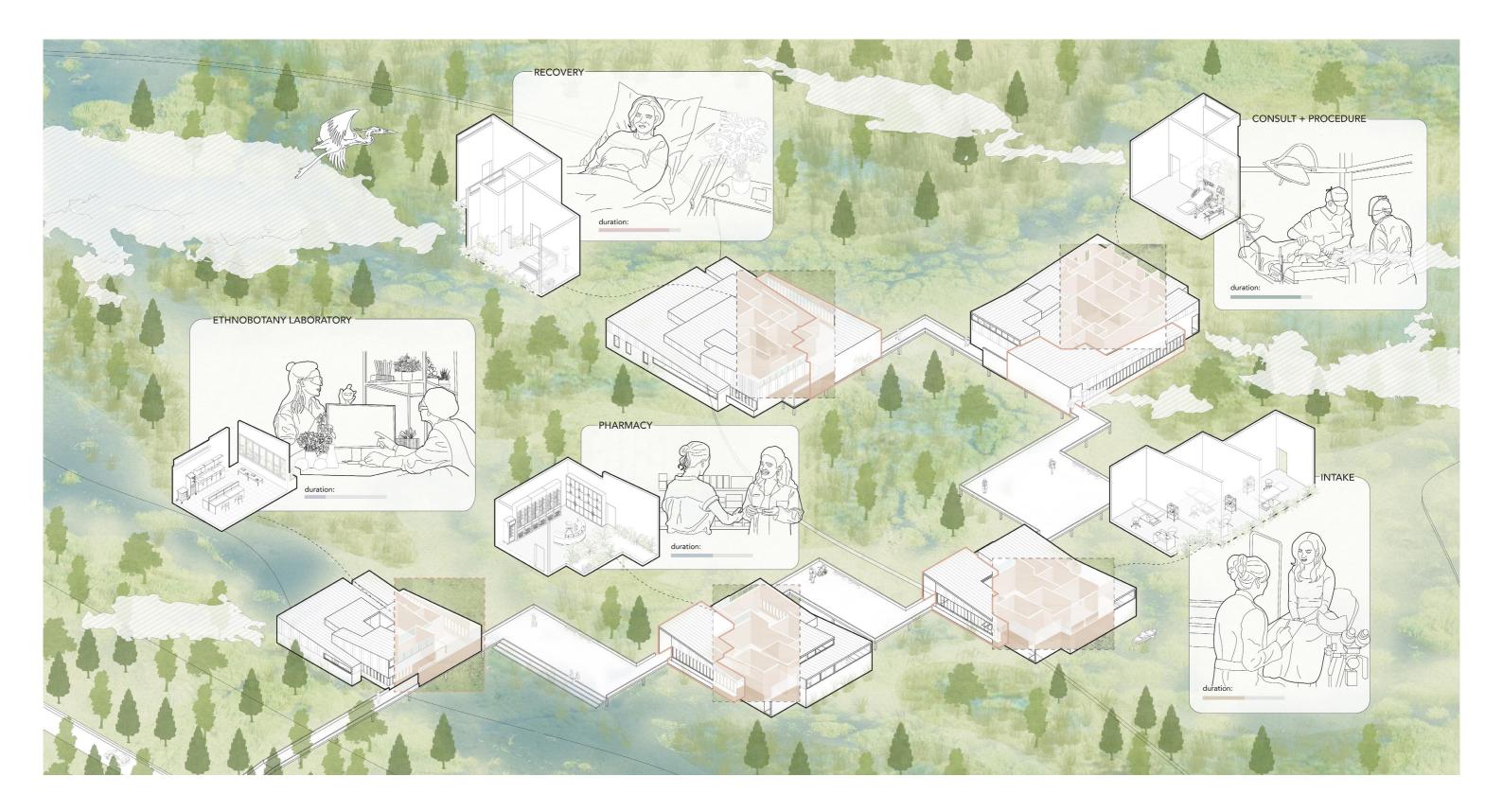


Type B - Exam & Pharmacy



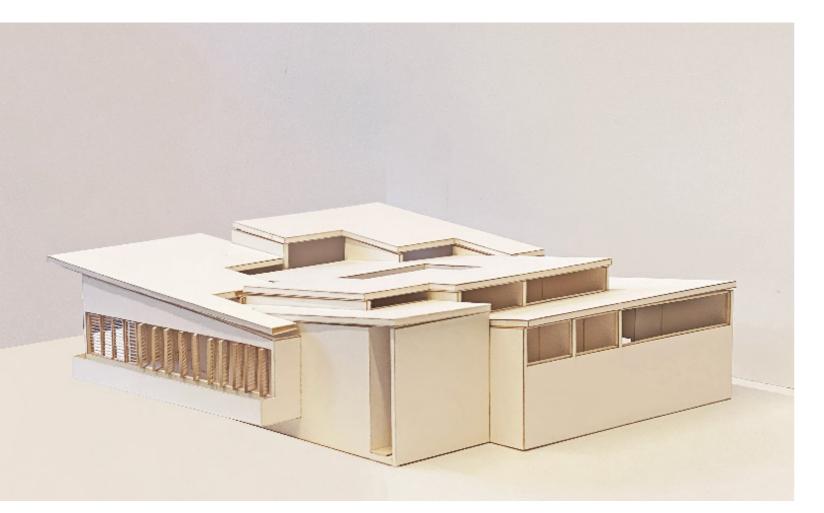






















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## Sole to Soul

Partner: Huize Wu, Spring 2023 Instructor: Boonserm Premthada









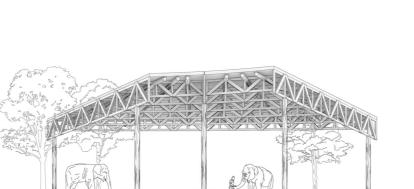
Local Sand



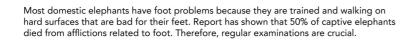
Sand with Gravel



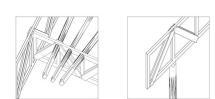
Gravel



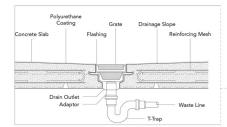






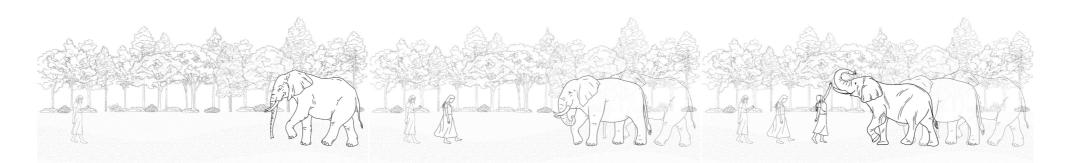


1. Timber Trusses, Beams and Columns with local-sourced materials.



2. Concrete Floor with Drainage

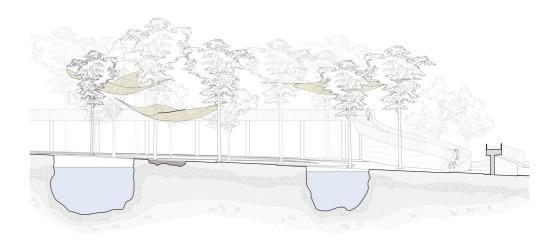








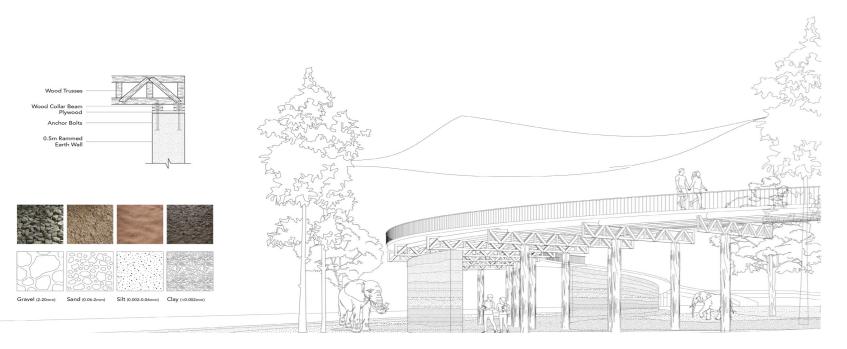












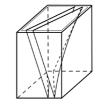




Twist

Partner: Xiangyi Deng & Runxin Fu, Spring 2023 Instructor: Lola Ben Alon



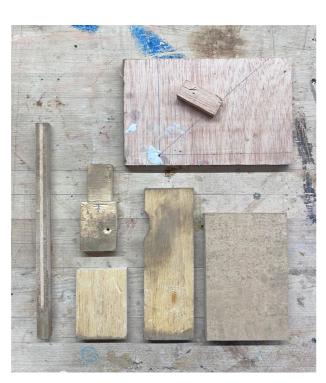


3D Printing

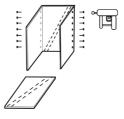
Measure Bounding Box

Twist explores how geometric complexity, formwork efficiency, and material strength interact with one another, through double-curved rammed earth elements. Hemp fibers and wood shavings are added to improve tensile strength while reducing density.

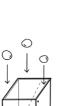








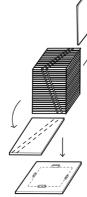
Assemble Formwork (with One Side Open)





Ram Earth on the First Level

Insert Second 3D Printed Surface



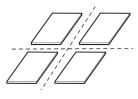


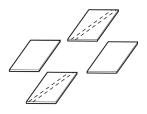
Remove Screws

T

Disassemble the Last Face, Foundation and the Rest Formwork







Generate Four Surfaces

Score on the Side

T



Insert Printed Surface & the Last Face





Ram Earth on the Second Level

Fix Foundation & the Last Face

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Disassemble Earth and 3D Printed Surfaces

Twist SP2023 45







