Contents

Academic Work

01 INBETWEEN
Summer 2022
A water retention system combined with a sports center examines the infrastructural networks connected through the septic system.

02 ARCHiPORT
Fall 2022
A school a place to study and also a place to heal.

03 SEMINR OF SECTION
Spring 2023
A sectional drawing in testing the representational techniques.

04 SOLE TO SOUL
Spring 2023
A rehabilitation center for elephants based on the journey of tactile sensation, creating a new connection between humans and elephants.
INBETWEEN

Summer 2022 ARCH 6853 A | Professor Dan Wood

Location: Sullivan St, New York, NY
Program: Sports Center Incorporating with Water Retention System

The studio examines the urban and infrastructural networks connected through the septic system. By studying the history of sewers and sewage and how the public has interacted with them, the students will look at the potential future of the septic system and how it can function as an integral new piece of a global green movement to make cities more ecological. This project focuses on the exploration of a water retention system combined within a sports center as a public program in Manhattan, New York City.
**Water Infrastructure Research & Study**

Reservoir System in New York City

Reseasuring all of the parts of the New York City water system, from rainfall across the region’s 2,000 square mile watershed through the system of reservoirs, water treatment, supply, pressure, mains, streets, buildings to an apartment – and then back out from an apartment through the streets, combination with stormwater to outflow at the river and sewage treatment, to post-treatment options. I am specifically looking into the reservoir water supply as the first part of the water system.

**Design Process**

Spatial Organization

The building is composed of 4 parts: water tank, water park, climbing program, and floating programs. The center space is used to collect rainwater and the water park is used for collecting rainwater on ground floor. The climbing program is placed in between the water tank and outer facade with the other sports programs floating and intersecting around.

The vertical shafts lead the visitors to public floors, and each floating program is connect to two public platforms.

**Site Research**

New York City Flooding Condition

New York City Stormwater Flood Map
Design Process
Water Retention System in Manhattan, NY

Ground Floor Plan | Lobby & Outdoor Water Park

4th Floor Plan | Common Floor in Connecting the Four Parts

Sectional Model | Physical model

Exterior Perspective | Street View

Exterior Perspective | Outdoor Balcony

Interior Perspective | Bouldering

Interior Perspective | Running Track

Interior Perspective | Lobby
ARCHiPORT
Fall 2022 ARCH 4005 A | Professor Bernard Tschumi

Partner: Lin Kan & Yufei Huang*
Role in Team: Conceptual Design
                 Digital Modeling
                 Design Development
Location: IRT Powerhouse, 840 12th Ave, New York, NY
Program: Architectural School

School is a place to study and also a place to heal. Archiport as a port of architectural knowledge expands the boundary of educational location and emphasis on the comprehensiveness of study forms, envisioning that studio can be everywhere. By analogizing architecture study to the information flow, we propose that the study process can be divided into three categories: Acquisition, Processing, and Presenting (APP).

* All graphic shown in this portfolio are solely down by myself, unless otherwise credited.
Introduction
The Revolution of Architectural Study Mode

Past | The Beginning of ARCH Study

Now | Current Situation

Future | What We Think It Could Be...

Architects on the Construction Site
GSAPP, Avery Hall, Architectural Studio
Studio Everywhere

Healing
What is Healing Zone?

Experience in the Healing Zone | A Transitional Area Inbetween Studios

For School:
- Providing space, activities, facilities, and services for students to rest and take a break out of their heavy school works.
- Encouraging communication and reaction and attracting students to come to school.

For Community:
- Providing health services for communities, and school becomes a healthcare center as part of the public services.

Studio Everywhere
The Education System of The School

In the future, an architectural school is like an information station that can be constructed in every corner of the world, and students are able to physically attend the sites as part of their curriculum. With the help of technology, the sites could also be digitally projected into the studio space such that the building itself becomes a collage of studios everywhere.

Future of ARCH Education
Studying & Healing

Architecture school is an information center where we can freely grab knowledge and learn skills. And it is also a healthcare center that can heal students and visitors.

Therefore, as an indispensable part for caring and space for recreation, a new program: Healing Zone is introduced into our design.

A.P.P Diagram
The Revolution of Architectural Study Mode

By analogizing architecture study to the information flow, we propose that the study process can be divided into three categories: Acquisition, Processing, and Presenting (APP).

Inside the school, the information transition among the three behaviors happens in every program but with different ratios in each part. The programs with a large proportion of acquisition are regarded as the immutable, where students and teachers come to grab the physical or technical knowledge as desired. With the same logic, the other is considered as the mutable including the space of thinking ideas, making productions, and presenting works. And Healing Zone is an intermediated area that weaves around the two, providing a special zone of rest out of the convention.

IMMUTABLE
- Library
- FabLab
- Auditorium

HEALING
- Exercising Zone
- Dining Zone
- Relaxing Zone

MUTABLE
- Workshop
- Studio
- Exhibition Hall
- Architecture Market

Experimental Collage of Future Architectural School | Programs Fusing Together
Typology Development

Organized Movement  Circular Movement  Random Movement

AUD  Fab Lab  Library  Healing Zone  Studio

Program Allocation

Immutable

<table>
<thead>
<tr>
<th>Library</th>
<th>Auditorium</th>
<th>Fab Lab</th>
<th>Healing Zone (Community Services)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vending Machine</td>
<td>Office</td>
<td>Vertical Shaft</td>
<td></td>
</tr>
</tbody>
</table>

Healing

<table>
<thead>
<tr>
<th>Healing Zone (School Services)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Court</td>
</tr>
<tr>
<td>Cafe</td>
</tr>
<tr>
<td>Clinic</td>
</tr>
<tr>
<td>Sports Facilities</td>
</tr>
<tr>
<td>Consulting Room</td>
</tr>
</tbody>
</table>

Mutable

| Studio |
| Exhibition Hall |
| Digital Imaging Facilities |
| Classroom |
| Study Room |

Immutable Program

- Vertical Shaft
- Library
- Auditorium
- Fab Lab

Mutable vs.小学

- Surrounding
  - Enclosed
  - Semi-Open
  - Open
- Going Through
  - Enclosed
  - Semi-Open
  - Open
- Branching
  - Enclosed
  - Semi-Open
  - Open
- Wrapping
  - Enclosed
  - Semi-Open
  - Open
- Waring
  - Enclosed
  - Semi-Open
  - Open
- Dividing
  - Enclosed
  - Semi-Open
  - Open
- Folding
  - Enclosed
  - Semi-Open
  - Open
- Sagging
  - Enclosed
  - Semi-Open
  - Open

Scenario A  Scenario B  Scenario C

- Library
- Auditorium
- Fab Lab
- Healing Zone
- Studio Space
Studio Space
Combination of Various Studio Typologies

On the open plan, space for studio could be categorized by six events: presentation, reading, desk critique, self-study, discussion, and group study. In addition, the furniture setting could be mass-produced for corresponding programs and space.

Conclusion
What is the Future of Architectural School?

Archiport is open to the public on the ground floor and base floor, where public programs in the healing zone are located with the fab lab and architecture markets. Upper floors are mainly for studio and healing zones for students. Studio is an open space, providing possibilities for various activities without rigid divisions. Archiport as a port of architectural knowledge expands the boundary of educational location and emphasis on the comprehensiveness of study forms, envisioning that studio can be everywhere.

ARCHIPORT
School is a place to study and also a place to heal
SEMINARY OF SECTION

Spring 2023 ARCH 4975 A | Professor Marc Tsurumaki

Project Name: Moshimo Restaurant
Location: Brighton, UK
Program: Sushi Bar Restaurant

The seminar will use the investigation of section to raise broader questions regarding the representational techniques that architects deploy and the complex interrelationship between delineation, ideation and materialization. Forms of representation are never neutral or transparent and profoundly effect the ways in which we are able to conceive and realize our work. An understanding of the way section operates as a representational device, what it reveals as well as what it conceals, will be considered critical to understanding how to deploy and utilize it in our own work.
**SOLE TO SOUL**

*Spring 2023 ARCH 4106 A | Professor Boonserm Premthada*

**TA:** Jules Kleitman  
**Partner:** Sixuan Wang  
**Role in Team:** Conceptual Design  
Digital Modeling & Physical Model  
Design Development  
**Location:** Ta Klang Village (Elephant Village), Surin Province, Thailand  
**Program:** Rehabilitation Center for Elephant

This project acknowledges the importance of foot care to the well-being of elephants and responds to the post-Covid tourism industry by redefining clinical spaces for animals.

During our site visit, we observed how elephants freely roamed among the trees, and as we removed our shoes, we too experienced a sense of calm. Therefore, this design aims to foster a connection between humans and elephants by emphasizing the tactile experience of their feet. Drawing from the expertise of local doctors, various ground materials are applied for different program areas to train elephants’ fragile footpads. Two circulation paths with alternating heights are designed to increase proximity between visitors and elephants, breaking down the barrier between the two and even allowing for interactions. This approach not only ensures the safety of tourists but also frees elephants from being chained up. Other programs such as clinics, elephant foot training areas, and a central garden are spreading around the elephant main trail. A key insight we gained from our design process is the importance of considering scale in both time and space. Elephants and humans can seek their unique journeys by following the tactile feeling along the pathway and in the zones.
Introduction
Research in Buriram, Thailand

As the Covid-19 pandemic unfolded, Thailand's tourism industry was severely impacted. More than 100 elephants and their trainers lost their jobs, and as a result, many of these retired elephants returned to their hometown of Surin. The rigorous training and performances on artificial hard surfaces have taken a toll on many elephants, leading to foot injuries such as nail loss and cracking in foot pads.

Mahout Boonyarat stated that it cost her over two thousand dollars to bring her elephants back to Surin from Phuket. She mentions that she won’t be able to return there until she is confident that the shows will attract large crowds again, as she cannot afford the expenses otherwise. During our site visit to Elephant Village, we interviewed a local doctor who told us that, in response to economic challenges after the pandemic, they are conducting regular health check-ups for local elephants through tourist activities. This approach inspired us to consider establishing a clinical space that focuses on providing foot care for elephants as part of our design.

Our proposal is to construct an open-air clinic within the forest, which will have three main sections dedicated to inspection, cleansing, and bathing, as well as pedicure service. The clinic features a six-meter-tall roof that is supported by trusses spanning from 9 to 12 meters in length. To minimize labor and cost, we plan to use tree trunks and branches found on-site for the columns, trusses, and beams, creating a contrast with the perfect prefabricated wood panels and shingle coverings on the top.

Tactile Sensation of Feet
Research of Elephant Feet

As there is limited knowledge regarding elephant healthcare, the local doctor suggested using a horse clinic as a reference for the floor design.

To ensure hygiene, the clinical settings will feature concrete floors, with a slight slope and drainage system in place to facilitate cleaning. The concrete floor will also be coated with polyurethane to resist water and prevent other forms of deterioration. In outdoor settings, local doctors highlighted the fact that elephant feet are soft and fragile. To strengthen and increase resilience of their feet, caretakers typically set up a training area with a mixture of ground materials. Here is the material palette we plan to use for this purpose.

To better feel what elephants feel, we took off our shoes, walked barefoot in the forest and felt a sense of peace. And so do the elephants. They are comfortable and free when wandering around nature. Therefore, we want to reinforce such a sense of comfort when bringing the two species together, to establish connections between human and elephant by focusing on the tactile experience conducted through their feet. Therefore, our design philosophy is to foster a learning process between human and elephant, facilitating the development of new collaborative relationships based on interdependence while rehabilitating the fractured ones.
Site Analysis
Site Research in Elephant Village

We choose the forest with the great proximity to the village where elephants live, temple area where tourists gather, and natural resources such as ponds and napier farms. We utilize the fact that elephants' walking pattern is driven by their movement to avoid trees. So we marked the most distinguishable trees through satellite images. And generate this undulating trail with a total length of 2.5 km. It is a one-way path with programs inserted along the way, providing opportunities for elephants to walk as more as needed.

In the design, the project consists of 5 parts. The main path for the elephant trail, tourist path, elephant foot training area, clinic, and central garden with a pond connecting through. As mahouts guide the elephants roaming inside the area through the main trail, the material leads the way and generate various walking experiences as they enter into different programs. We wanna utilize and preserve the local materials such as local sand, gravel, fallen leaves, grass, and water as ground materials spreading into the area. The central area is an elephant garden where the pond and mud are situated. The tourists are able to see, touch, and interact with the elephants in the outer area. As the elephants gradually walk into the central garden, a more quiet and relaxed ambiance is revealed.
Time & Space
A Key Insight of The Project: Sole to Soul

A key insight we gained from our design process is the importance of considering scale in both time and space. As each elephant may find a distinctive route which will result in a unique tactile experience and spatial sensation. When it comes to travel, there are various options for getting from one point to another. Choosing a longer route can take more time, but it offers more opportunities for encounters and experiences, while opting for a shortcut may save time but limit our experiences. Our design utilizes a juxtaposition of these two systems to meet diverse needs. This approach could also be applied to other scenarios that require coping strategies for different needs, acknowledging the trade-offs between efficiency and experience.

The project aims to create a system for elephant foot treatment that is based on a journey of tactile sensation. Elephants could have proper treatment in the clinic and also explore a sense of comfort as they walk inside the area. Here, we wanna design a space where people and elephants seek a tactile experience through walking. And at the same time, it formulates a special way of advertising and opening up the local culture and life of elephants to the public.