MENG-FU KUO

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Selected Professional + Studio works
Architecture / Urbanism / Landscape Architecture
01 INWARD OBSERVATORY

A measure between nature and human perception.

Independent work
Instructor: Shu-Hsien Chou
Bachelor’s 5th-year, Thesis Project, 2015

This proposal is for a renewed geothermal powerplant that will expose part of the circulation to let the tremendous energy - geothermal be perceived by human beings. This project is based on the scientific research and a long-term site observation.

Under three thousand meters deep of the site, boiling underground water heated by the geothermal energy would only take sixty minutes to arrive the surface through artificial wells due to the pressure. However, if the rainwater penetrates naturally to the same depth will take more than twenty years. This is actually an invisible circulation to human beings. As far as human concerned, geothermal energy has only become the hot water that comes out from the faucet and industrial pipes. The only relationship between human and nature is manipulation; the essence in the background is ignored. Therefore, how the human beings can participate and perceive within this tremendous circulation becomes an important challenge.

This project involved into the abandoned industrial facilities on the Qingsu geothermal site in Yilan, Taiwan. Except to renew the equipment, an additional loop of cooling and re-injection process will be added to balance the volume of underground water. This loop will not only has the industrial function but also will be opened as an experience area that revealed natural energy. The action of opening the pipes let the spring and steam reacting with atmosphere, thus, following the changes of the season and temperature, visitors can see the nature elements alternating. The area would turn into a lively exhibition of nature, which can be seen and felt by visitors.
The site in North-East Taiwan has abundant reserves of geothermal energy. With the boiling water, a stable source of electricity can be produced with thermal power. However, the site has been abandoned for more than 30 years due to the technical failure. On the site, the water still comes up through the abandoned wells.
The next stage after the cooling area is mostly buried under the ground. Huge water tanks and the re-injection well are within. The experience space also extend to this area, which provides an underground bath that without the intervention of weather.

Dropping hot water and rain water

Rising steam and heated air
The hot water will be released by the pipe that buried under the pebbles from the site. Normally the visitors step on top of it, it will not touch the water directly, only when it rains, the heat will be brought up to the surface.

Hot water releasing area (100°C)
02 RURAL WATERCOURSE REGENERATION

Studio of Rural Strategies

Independent work
Instructor: Kuang-Chen Bee
Bachelor’s 4th-year project I, 2014

This project challenges the possibility of self-purification of rural townships through the connection of the eco-purify system with the local drainage system.

Located in middle-west of Taiwan, Yunlin County is known for its agriculture and husbandry. One of the main rivers in this area is suffered from water pollution by the wastewater released from the nearby townships and industries. Due to the accumulate of the pollutions, the ecosystem in downstream is seriously damaged. The proposal is to locate the eco-purify system strategically. The system will connect to the current drainage system. Thus, the townships applied to this system can purify its own pollution before it entered the river.

The classic rural town in Yunlin can be regarded as three zones, the town center, the husbandry zone, and the agriculture zone. The system will use the idled land in the three zones to collect and purify the sewage before the water entered the main river. The system is designed not only for purification but also for protecting the ecosystem in the rural area. Moreover, the three zones will provide the recreation and educational value to the rural townships.

Zone 1: Community Park
Subsurface flow system

Zone 2: Eco-Farm
Constructed wetland system

Zone 3: Wetland Park
Constructed wetland system & nature conservation site

Zone 3: Wetland Park
The area near the main river will purify the water from the fields. The place will extend the ecosystem of the main river, to raise the biodiversity.

Zone 2: Eco-Farm
The wasteland of this area will be changed into several large wetland ponds with the function of purification. The farms will be combined with the new landscape and become the spot of eco-tourism.

Zone 1: Community Park
In this area, fragmented idled site transform into small community parks, with subsurface flow system underneath it to purify the sewage from the residential and commercial area.
The subsurface flow system and constructed wetland system are both in use in this planning. The first system needs less area than the second. Thus, the town center area would only use the subsurface flow system. The constructed wetland system which will be applied to Zone 2 and 3 take the larger area to purify the sewage; however, it creates more biodiversity.
[TRAVEL TO ICELAND] The trip to Iceland in 2016 inspired us to attend this competition of Iceland trekking cabin design. Through the trip, we had learned the magnificent terrain and ever-changing weather are important factors to be considered in the design process.

[RIDGE] House with the ridge roof is what we always see in the Nordic country. The roof with slopes resolves the problem of heavy snowfall; however, in the highland of Iceland, the snowfall can be higher than a person. Thus, we try to mirror the ridge to lift up the living area of the cabin and reduce the area of the foundation which can also decrease the damage to the ground.

[ADAPTABLE] The trekking cabin should be able to adapt different terrain and locations in Iceland and be flexible to accommodate more or fewer visitors. The proposal included five basic modules that can be transported by helicopter and assembled by man easily. To cope with varied situation, the modules can be assembled in different ways.
The cabin should be sustainable and function independently. Therefore, series of supply systems are included. The air condition and water supply are located in the top and bottom of the cabin. On the roof, electricity can be produced by the solar panel, and fresh water can be collected through the ridge roof.

JUNCTION
A module will be located on the site first, which is the joint that linked all the other units.

CHAMBER
A module can carry different living programs. Which will be install with the junction.

PLATFORM
A floating outdoor platform that can added outside the cabin. Hiker can rest and leave their outdoor gear here.
IN-BETWEEN COMMUNITY CENTER

The re-interpretation of street house

Independent work
Instructor: Hideki Hiraoka
Bachelor’s 4th-year project II, 2014

The proposal is a new community center for Di-Hua St’s residence, which provides a small library, rentable studio and exhibition area. The idea of the layered and sloped floor comes from the roof of the traditional houses which is wavy and has the opening on it for receiving more sunlight.
The journey between above and below:

Instructor: Shu-Hsien Chou
Bachelor’s 5th-year pre-thesis project, 2014

This assignment is a small practice before the final thesis project. Students were asked to design an "exhibition" for what they want to exhibit that related to their final project.

The project regards Architecture as a measurement, a media between human and nature elements. In this exhibition, water and air became lively and playful through the installation of the three main chambers.

In the beginning of this journey, visitors will enter the Chamber of Air, which the balloon above the head will expand due to the rising of hot air flow. Then, the visitors will step into the Chamber of Rain, which the steam will condense in the pipe and drop through the chamber and the penetrable floor all the way to the Underground Hall. The last one is the Chamber of Steam, which has several drawers embedded on the wall. Steam will come out when the visitor opens the drawer. People on the ground can also see the steam on the streets.

In this exhibition, there are three angles for the visitors, first, observation on the ground; second, entering the chamber; and the third, in the bottom of the space to see how everything works.
The California dream has long been a doubling of, first, the human ego of manipulating the nature, and second, the unlimited appetite with uncontrolled consumptions. The project is a perceptual transformation from “ego” to “eco”. With the new form of technology, we are able to re-arrange the spatial sequence to enable a higher level of sustainability, an integrated suburban amalgam overlapping numbers of layers together as an organic whole. Through the multiple open space distributions, we are able to create the internal native landscape within the community and the external liner corridors for infrastructures of agriculture and energy production.

The application of AV system will release 60% of hard pavement in the traditional American suburban community. The open spaces transformed into public and production landscapes that support the community with 1000 homes.
Tropical forests are perceived as the lungs of our planet; they regulate the Earth’s climate by storing nearly three hundred billion tons of carbon — roughly forty times the annual greenhouse gas emissions from fossil fuels. However, incessant deforestation jeopardizes such regulatory systems. The island of Borneo in Southeast Asia’s Malay Archipelago retains only eight percent of its forests and is facing multiple extractive pressures: coal mining, logging, and palm oil plantation. Deforestation is also violence against indigenous people. The forest is home to tens of thousands of indigenous peoples, who yet have no legal rights to their homeland since very few can prove legal documentation of land ownership. The installation is a triptych of extractive industries. At the center stands a 3D printed model of a contemporary indigenous hat that is held by the Harvard Peabody Museum. The replica brings into attention museological behaviors, and the collector impulse to render dead living heritage in museum storages. The hat speaks of an indigenous culture that continues its practices despite historic violation from British colonial officers, contemporary discrimination by nation states and exploitation by international corporations.

The sense that the dam will serve as the heart of future urbanism that will grow around this power-producing heart was firstly implicated by the Italian Futurist Antonio Sant’Elia. This concept of building large infrastructure to generate electricity as the core of forming new urbanism later reappeared as a solution for The Great Depression. The TVA’s 30 dams on the Tennessee River had carried a clear and unconventional message that human beings try to tame the notorious water and utilized it to reach the prosperous future of civilization. Yet, when the post-war historical background gradually fades away, it is necessary to re-examine the side effects caused by the large dams. The increasing conflict between the large dam and ecology preservation raises the environmental awareness, the necessity of many large dams is under question. The infrastructure that has currently being claimed as crumbling, insufficient, and ineffective also confront the urgent issues of climate change, sustenance inequality, and environmental degradation. This project took a closer look at Fontana Dam, which is one of the Dams built by TVA, as a case study provides the understanding and implication towards the infrastructure design in the future urbanism.
**WURI WELFARE CENTER**
Architectural + Landscape Design

*Fieldscape+Partners*

**Position:** Architecture Designer
**Contribution:** Initial Concept,
concept development, site analysis, drawing processing, detail drawings processing

**Project Leader:** Kerby Chou, Ivan Chiashun Liao
**Teammate:** Karissa Wu

**Size of site:** 20000 sqm
**Location:** Taichung, Wuri, Taiwan
**Status:** Winning Project for competition
Detail design ongoing

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**KEELUNG STATION PLAZA**
Architectural + Landscape Design

*Fieldscape+Partners*

**Position:** Architecture Designer
**Contribution:** Initial Concept,
concept development, site analysis, drawing processing

**Project Leader:** Kerby Chou
**Teammate:** Yichen Shi

**Location:** Keelung, Taiwan
**Status:** Competition

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**CHIAIYI FOREST PARK**
Landscape and Urban Strategy

*Fieldscape+Partners*

**Position:** Architecture Designer
**Contribution:** Initial Concept,
concept development, site analysis, drawing processing

**Project Leader:** Kerby Chou
**Teammate:** Karissa Wu, Bonnie Ke

**Location:** Chiayi, Taiwan
**Status:** Competition

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**GREEN GRASS LAKE PARK**
Landscape Design

*Fieldscape+Partners*

**Position:** Architecture Designer
**Contribution:** Scheme Design
concept development, site analysis, drawing processing

**Project Leader:** Kerby Chou
**Teammate:** Karissa Wu, Dullard Lai, Bonnie Ke

**Location:** Shinchu, Taiwan
**Status:** Winning project
Detail design ongoing
TAIPEI PERFORMING ARTS CENTER

OMA

Position: Junior Architect
Contribution: site inspection, design supervision, design modification, communication with client, local Architect, contractor and government
Project Director: Chi-Ju Lin
Location: Taipei, Taiwan

PENG HU INTERNATIONAL PLAZA

Fieldscape+Partners

Position: Architecture Designer
Contribution: Initial Concept, concept development, site analysis, drawing processing; detail drawings processing
Project Leader: Kerby Chou
Team mate: Bonnie Ke, Jessica Lee, Karissa Wu
Size: 47000 sqm
Location: Penghu, Taiwan
Status: Winning Project, will open in 2018

Penghu island is located on the West sea of Taiwan. The island is famous for its water activities and special landscape. This project is a winning project for a plaza beside the biggest fishing port in Penghu. The proposal divided the site into several zones to accommodate varied activities. The arrangement of the zones are similar to the structure of coral stone can be found in Penghu. The stone has many holes in it to accommodate corals. On the site, the wind is severe during the winter; thus, our design creates the walls and terrain on the flat site to protect the plants and visitors. The plaza will contain a large interior greenhouse and an outdoor theater that can hold the performance for 3000 audiences. The related planning of this project continues to the culture and educational corridor on the North side.

OMA architects work on the site to ensure the design will be practiced precisely. In the process, we inspect the materials and communicate with the consultants to solve the unexpected problems that encountered in real practice.
UAE Pavilion of 2020 World Expo

OMA

Position: Intern of Architecture Design
Contribution: Initial Concept, concept development, site analysis, model study, and drawing processing
Project Leader: Roberto Requejo
Team mate: Wanyu He, Daniel Hui, Charles Lai, Katja Lam, Anthony Lam
Size: 18771 sqm
Location: UAE (United Arab Emirates)
Status: Competition

This project was inspired by the pattern of triangular fractals which has the meaning of infinity connections. This symbol also reflects the themes of the 2020 World Expo: Connecting minds, creating the future. The main body of the pavilion is suspended 24 meters above the ground. This increase the visibility of the pavilion of the host country. The facade of the pavilion creates the huge area of shadow that can shield the space underneath it from sunlight and provides a plaza for passengers or visitors in queue.

UCCA REGENERATION

OMA

Position: Intern of Architecture Design
Contribution: Concept development, site analysis, model study, and drawing processing
Project Leader: Inge Goudsmitt
Team mate: Daniel Hui, John Thurtle, Eunjin Kang, Kevin Mak
Size: 5000 sqm
Location: Beijing, China
Status: Ongoing

This project reforms the front area of the art museum which used to be the warehouse during the mid-20th Century. To create a continuous and flexible open space, the renovation removes most of the walls in the front area. The area includes an art shop, library and ticketing space. Following the schedule of the museum, the program of this front area can be transformed easily to correspond the activities. Moreover, to extend the visibility to visitors from outside, a transparent facade enhance the connection between the street and the museum.