

AR-402(af)

Studio MA2 (Tsuneyama)

Tsuneyama Mio

Cursus	Sem.	Type
Architecture	MA2, MA4	Obl.
Mob. AR	E	Opt.

Language of teaching	English
Credits	13
Withdrawal Session	Unauthorized Summer
Semester	Spring
Exam	During the semester
Workload	390h
Weeks	14
Hours	6 weekly
Courses	2 weekly
Project	4 weekly

Number of positions

It is not allowed to withdraw from this subject after the registration deadline.

Remark

Inscription faite par la section

Summary

Urban Wild Ecology / Production and Decomposition Urbanism / SOIL studio focuses on earth-conscious construction methods and materials that return to the soil. A radical vision will be sought to incorporate a comprehensive, self-sustaining system of the material into neighborhood design.

Content**URBAN PRODUCTION AND DECOMPOSITION**

The urban lifestyles of today's developed countries are extremely low in food and energy self-sufficiency, the earth's surface is covered with asphalt, and the production and disposal area that support urban life are dependent on the countryside and global supply chains. Already in the 1970s, the earth exceeded its carrying capacity, and it is expected to become even more serious as the ever-growing population continues to live as it does in today's developed countries. The recent coronavirus pandemic and the situation in Ukraine have raised concerns about global food and energy shortages. Cities are required to have an autonomous cycle of production, disposal, decomposition, and furthermore, reproduction. A hybrid vision of urban production and decomposition is needed in order to seek a sustainable way for urban living.

FOOD AND SOIL

Eating is the basis of life. We derive nourishment and energy from food, eating gives us pleasure in our daily lives, and food culture connects people.

Soil grows food and plants which generate the oxygen. It decomposes fallen leaves, carcasses, and the excrement and food scraps from our daily lives, turning them into nutrients. Soil is the hidden half of the world usually invisible to the eye, the substratum of life.

This studio will focus on FOOD during the fall semester and SOIL during the spring semester.

FALL**FOOD LIVING**

The fall semester will consider urban living with a self-sustaining cycle of food production, processing, preservation, cooking, and disposal. In our urban life in this age of food satiety, it is very important for consumers to produce and process food themselves in order to supplement the food supply and learn about food through experience. Making food close to home reduces transportation energy, knowing the effort involved in producing food reduces food loss, and most importantly, we can enjoy making food and eating it fresh and delicious. It contains many possibilities to maintain a healthy urban living in the future.

LEARNING FROM A PERIOD OF FOOD SHORTAGES

In Germany and Austria-Hungary, the defeated countries of World War I, many simple houses with *Kleingarten* were built to solve the severe food shortage and housing shortage after the war. In Korea, which was under Japanese colonial rule, the courtyard (*madang*) of traditional urban houses (*hanok*) were used as multi-purpose outdoor domestic space closely related to the kitchen, including a water supply, a soy sauce pot, kimchi pickling, laundry, and drying clothes. Examining examples of how people faced food crises and how they tried to overcome the crisis, including policies and projects, will be a useful lesson for us to consider the coming global food shortage.

FOOD-FIRST TYPOLOGY

Study the local climate, food culture, and lifestyle to determine the food theme. The theme can be specific to one food (e.g. kimchi) or a composite of several foods. It may also be meaningful to focus on philosophies such as microbiotics or cultivation methods such as natural farming. The food theme is developed into a "food typology" in which food and lifestyle are cyclical, based on the energy, location, and tools required for production, processing, storage, cooking, eating, and disposal, as well as maintaining sunlight, ventilation, and sanitation when assembled in a high-density urban setting. It is a pure food-first typology that does not consider various architectural requirements such as envelope performance, energy efficiency, structure, materials, etc. The food typology will be represented by a model and a network diagram containing people and things.

We propose a way to assemble the food typology according to various conditions, such as the shape of the site. Each student will design their housing in a different plot, and they will be assembled to create a single food neighborhood. It is expected that the typology will be significantly modified from its original form, and it is also encouraged to combine it with other programs as necessary. The final product will be represented in a 1:10 cross-sectional drawing of food, tools, and people's "work".

The studio will include a tour of a housing complex with a field, an agricultural experience, and a pickling experience.

SPRING

SOIL-FRIENDLY LIVING AND ARCHITECTURE

In the spring semester, we will consider urban neighborhoods made of soil-environment friendly construction methods and materials that return to the soil. Any construction is physically supported by the ground and to maintain its structure, it is necessary to keep a healthy subsoil environment in which fungal microorganisms are actively working by supplying water and oxygen.

However, most of the surface of today's cities is covered with buildings and asphalt, leaving the earth in a necrotic state. In the center of Tokyo, the ground is filled with countless foundation piles left over from past development, and it is said that in the future there will be no more places to put piles for the forthcoming buildings. In order to keep the ground breathing and to maintain a sustainable subsoil environment, it is necessary to reconsider how architecture and civil engineering interact with the soil.

Furthermore, industrial waste such as concrete, waste products from daily life, and construction surplus soil are piled up in mountains and oceans, contaminating the land, changing the ecosystem, and making it impossible to produce or decompose there. To stop this negative accumulation, in addition to reusing materials instead of discarding them, we should actively adopt materials and construction methods that return to the soil. It is necessary to position living and architecture in the cycle of disposal, decomposition, and reproduction, and to have a mechanism for soil circulation on a neighborhood level.

BACK TO SOIL NEIGHBORHOOD

During the semester, we will design a neighborhood unit made of materials that return to the soil in consideration of the subsoil environment. Consideration will be given not only to buildings but also to roads and other civil construction.

Neighborhoods will be designed on the premise of the idea of a material flow system, focusing on the circulation of materials. Provocative ideas are required for this master plan rather than scientific rationale.

Each student will be responsible for designing the required facilities, dwellings, and streets on top of the neighborhood created. Propose a construction method for assembly, disassembly, down/upcycling, and disposal. The plan will be presented in large scale cross sections, half above ground and half below ground, notated with a variety of ideas from resources to processing.

HYBRID OF PRODUCTION AND URBAN LIVING

This studio will participate in the Global Studio on "Production Urbanism" for Daegu, South Korea, where participating universities from five continents will work together to revitalize Daegu's declining factory zone. Daegu is an industrial city that was once responsible for mass production throughout the country, but its major industries declined in the 1980s and 1990s, the city is still being developed in a decentralized manner without a main urban industry. Modernization has led to the concentration of factories and workers, the decline of the industrial city with its segregated uses, and the city has become a consumer city that only provides services and consumption. Although this has reduced pollution, noise, and other problems, and reduced the need to separate work and living areas, the old urban planning still remains.

In this age when the entire planet is facing the serious problems of resource depletion and global warming, the purpose of our studio is to present a vision of a post-industrial city in which production and living are hybridized. A joint critique and exhibition is planned for the summer of 2023 in Daegu, Korea.

Keywords

food, soil, material flow, ecology, ecological footprint, biocapacity, decomposition, circular economy, ecological design, food production, kitchen, housing, urban living, subsoil environment, Daegu, South Korea, urban strategy, actor network theory, ANT, fungus, microorganisms, underground stream of water

Learning Prerequisites

Important concepts to start the course

Love eating and fungus

Learning Outcomes

By the end of the course, the student must be able to:

- Contextualise the local built environment from the global scale.
- Critique architecture in the context of a network of people, objects, and activities.
- Hypothesize across social issues and architectural philosophy.
- Judge architecture not only in its completed form but also throughout its life cycle.

Transversal skills

- Communicate effectively with professionals from other disciplines.
- Communicate effectively, being understood, including across different languages and cultures.
- Continue to work through difficulties or initial failure to find optimal solutions.
- Demonstrate a capacity for creativity.
- Demonstrate the capacity for critical thinking
- Take feedback (critique) and respond in an appropriate manner.
- Access and evaluate appropriate sources of information.

Teaching methods

This studio is part of a global joint program organized by the Hongik university in Seoul, South Korea. Discussions and workshops will be held with the host architects, the other participating universities, as well as the Metropolitan city of Daegu. It will be an opportunity to work on a real site, crossing both global and local perspectives. Each university will set an individual theme for the common topic of "Production Urbanism".

In the first half of the studio, students will be divided into small mixed (master and undergraduate) groups, each working on a specific research theme. In this phase, in addition to lectures by experts, it is intended to provide a more tangible input through visits to relevant sites and hands-on activities. The overall master plan will be designed in a workshop format by the whole studio.

Design assignments for the second phase of the program will basically be individual. Lectures by several architects will be scheduled throughout the design period to broaden the students' perspectives. Students will learn to compare and critique their work with that of others through shared final products and will be led to master the studio's unique representation method.

The following programs are foreseen during the semester.

- Joint online sessions with other universities
- Collaboration with the Swiss Museum of Architecture exhibition

There will also be activities outside of the semester.

- Site visit and research in Daegu, South Korea in the first half of February (participation is optional)
- Joint critique session and exhibition with participating universities in August 2023 (site visit is optional, data sharing for the exhibition is required by all the students)

Expected student activities

- Research that involves concrete experience of one's interests, such as physically visiting places and listening to people implied.
- Efforts to build logic and to collect evidence to justify one's ideas.
- Visualization at a level that allows communication without verbal explanation.

Assessment methods

- 10% of motivation (communication, leadership, involvement, participation)
- 30% of result of research (originality, relevancy and quality of presentation)
- 60% of final result (creativity, coherence and quality of representation such as models and drawings)

Resources

Moodle Link

- https://go.epfl.ch/AR-402_af