FOOD SOIL
PRODUCTION AND DECOMPOSITION URBANISM

EPFL ENAC SAR
2022-2023
Urban Wild Ecology

Mio Tsuneyama
Gloria Asami Lili
Thomas Gobet
Fuminori Nousaku
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.
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.
FOOD
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.
In Germany and Austria-Hungary, the defeated countries of World War I, many simple houses with Kleinegarten 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.
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,
or a pickling experience (maybe).
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.
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.
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.
HOLEs IN THE HOUSE
Renovation of House and Workplace
Architect: Fuminori Nouseku (Fuminori Nouseku Architects)
Mio Tsuneyama (mm)
Project and Visualization: April 2017 – on going
Location: Hachioji, Tokyo Japan
Structure: Steel Frame 4 Storeys (Existing)
Foot Print: 42.74 m²
Total Floor Area: 149.84 m² (existing 154.77 m² – holes 4.93 m²)

[RAVEN] Rain falling on the pavement is collected through the building. A rainwater tank in the city is gathered in a gutter, drained to storage and prevented the ground. We also collect rain water to prevent the newness of neighboring houses in the alley. Rainwater is recycled to be used as a source of water, plants, people, and allies

URBAN WILD ECOLOGY

[DESIGN] The ground floor was originally a warehouse space for the paper industry and was closed by a chiller. Looking at the surrounding buildings, it seems that the first floor of such structures were used for industry or storage spaces, but many of them are now closed. In those structures, large spaces and storage spaces provided potential for space to be used for other purposes. In order to make it usable, we decided to dismantle the interior and set up a new space to create a new concept to make work space. Since the lower half of the first floor is out of the range where rain is not enough opening the roof, we made some skylights and skylights, which will be high performance, non-energy consuming, and environmentally friendly.

[RAVEN] Rain falling on the pavement is collected through the building. A rainwater tank in the city is gathered in a gutter, drained to storage and prevented the ground. We also collect rain water to prevent the newness of neighboring houses in the alley. Rainwater is recycled to be used as a source of water, plants, people, and allies

[DESIGN] The ground floor was originally a warehouse space for the paper industry and was closed by a chiller. Looking at the surrounding buildings, it seems that the first floor of such structures were used for industry or storage spaces, but many of them are now closed. In those structures, large spaces and storage spaces provided potential for space to be used for other purposes. In order to make it usable, we decided to dismantle the interior and set up a new space to create a new concept to make work space. Since the lower half of the first floor is out of the range where rain is not enough opening the roof, we made some skylights and skylights, which will be high performance, non-energy consuming, and environmentally friendly.