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CONTENTS

URBAN NOMADS
ADVANCED DESIGN STUDIO

FAMR IN MID AIR
ADVANCED STUDIO IV

effi-CITY
ADVANCED STUDIO V
URBAN NOMADS
A new lifestyle for the migrant workers

Site: Shanghai, China
Date: 2003 Summer
Instructor: Elias Anastas, Yousef Anastas
Collaborator: Joo

In the past 48 years, China has developed rapidly. Many big cities have risen overnight, and behind the prosperity are countless neglected builders, most of them come from remote areas, most of them struggle to break through poverty, they are called migrant workers. Some of the migrant workers have a special status. They are ethnic minorities. While struggling for a living, they have to endure the torment of being away from their own culture. In Notes On Architectural Practice Studio, we start from studying the lifestyle and architectural culture of ethnic minorities and summarize some interesting architectural methods and techniques as well as special shared seemingly traditional lifestyles, and try to propose the concept of urban nomads as a solution to the lack of housing and quality of migrant workers through transcription.
Although Shenzhen is a prosperous city, the working conditions of the migrant workers at construction sites seem to be in contrast with the progressing economy. Due to the lack of adequate living spaces, migrant workers are usually crowded together in tiny rooms or even below ground. The government is trying to improve the housing situation of migrant workers by allocating them the funds to build dormitories in the city. However, the government's efforts are faced with obstacles by providing free and clean rooms, which only cover 10% of the living spaces.
Shared Public Space-Kitchen

Many residential clusters are designed as shared public spaces such as kitchens, bathrooms, etc., along hallways between units. This arrangement often overlooks the ability to create cohesive spaces through shared experiences, making it a truly unique environment. At the same time, ensuring privacy and security can be challenging, especially in urban settings. To build and maintain such spaces, most of the necessary components can be standardized for long-term use, making them more accessible.
Living Unit
Each living unit is made of the cheapest recycled wood and glass. The connection points of each part are insurable. Due to high mobility, with most connections secured through nature, export. The double-layered roof can be opened to facilitate greater ventilation by opening the sliding doors. The planks can be lifted for easy removal. The possibility of community facilities such as community centers and meeting rooms are studied in this project.
II
FARM IN MID AIR
A way to cap the CBE while solve issues

Site: New York City, UNITED STATES
Date: 2022 FALL
Instructor: Michael Bell
Individual work

As a representative of the authority, the Cross Bronx Expressway has had many negative impacts on the local community, such as dividing the north and south sides, air pollution, noise pollution, etc. There are also many other public facilities near the CBE that have negative effects on the Bronx. In this project, I want to design a Bronx-friendly public facility that partially alleviates the negative impacts of the CBE. It will create employment opportunities, reduce noise pollution, and reconnect the north and south. It is a miles-long urban farms above the Cross Bronx Expressway.
Farm Logic

Poverty Rate

Most relates closely to poverty is unemployment. This shows the unemployment rate in the United States in 2022, by occupation. From the top to bottom, it is not hard to see that the most under the jobs sensor-professional and less-ter technical-required ones.

This chart indicates that the unemployment rate is relatively high among those who work in agriculture. Therefore, a self-sufficient farm model is proposed, where people can receive vocational training on the farm, give their own olive cultivation frame, and then plant, harvest, and sell in the market.
Munich Stadium

Structure Design

The Munich Olympic Stadium, as a case study for our studies, has shown the need for an effective material application in the structural elements. The design incorporates a combination of steel, concrete, and glass to achieve a visually striking and functional building. The stadium’s steel framework is designed to ensure maximum strength and durability, while the use of glass panels not only enhances the aesthetic appeal but also allows natural light to penetrate the interior spaces. The architectural design is complemented by careful consideration of environmental impacts, with the stadium's layout designed to minimize its footprint on the immediate surroundings. The stadium's innovative design has set a benchmark for future architectural projects, demonstrating the integration of sustainability with advanced construction techniques.
This semester, our studio is focused on reducing carbon emissions through design methods in the future so that the global temperature rise is less than 1.5 degrees Celsius. As urban areas are the largest source of global carbon emissions, there is an urgent need for change. The current global urbanization rate is 56% and is expected to reach 68% by 2050. Especially in developing countries, the rate of urbanization is more rapid. All our measures will be in vain if cities still develop according to the current crude development model for the most part. In order to achieve carbon neutrality, it is necessary for cities to shift to intensive development, especially for emerging cities. Effi-City proposes a new urban developing model that combines the efficiency of Tokyo’s approach with the use of AI.
Particle Swarm Optimization

The task of location is to find the best arrangement of certain members of a population. A system of this type is composed of a population of members. Each individual in the population is a candidate solution to the problem. To find the best arrangement, we are seeking the Pbest. The best arrangement is defined as the location of the member of the population that is closest to the target. This location is achieved through learning about the behavior of local factors, while convergence towards the target is achieved by finding the optimal combination with local information.

Prototype of PSO

Each particle is a possible solution to the location problem, and each particle has a position and velocity. The position is the location of the particle in the search space, and the velocity is the speed at which the particle moves. The particle moves towards the best position found so far by its own and its neighbors. The particle can determine the location where the food is most abundant.

Application to city

In a city planning optimization process, each building can be seen as a particle, and the goal is to establish an efficient layout and type of buildings with the lowest possible path.
Future Possible Forms

The reason for selecting a lower density form of urban building avoids negative urban impacts of urbanization, favoring a closer impact of urban buildings and the terrain.