



## Design Concept Daybreak

Dawn is a vague zone between day and night, and also symbolizes the beginning of the transformation. This project will blur the interface between the city, rain forest, traffic, and culture. Radiation-type urban planning is centered on the transit energy tower, and clusters of diverse industries are implemented in each district. Bring biodiversity into the city and blur the forest with the city through overhead buildings and introducing the plant ecosystem. Additionally, people can travel through the rain forest to enjoy nature with a high attitude of transportation. Through developing renewable energy, IOT system, AI capsule car, and MR technology we can create an avant-garde smart rainforest city.



## Energy and power

The new capital will have energy towers that use solar power to provide the huge demand for electricity at the peak times. The surplus energy transports the lake water to the top of the tower. At night, the water on the top of the tower is used for hydroelectric power generation. This becomes a circulatory system. Regional stations are equipped with Hydrogen-oxygen fuel cells to store energy and use intelligent systems to improve power efficiency.



## Introduction

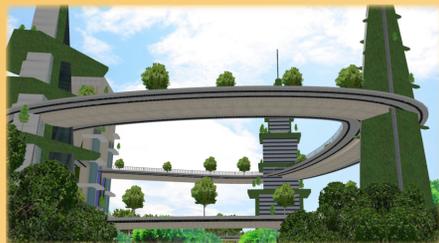
The "Daybreak Project" integrates the transportation, communication, and circulation systems of the new capital and introduces the characteristics of the rainforest to create a brand-new rainforest city. This project uses elevated roads and construction techniques to create a horizontal ecological circle, letting people use the ground level, so that rainforest plants can exist everywhere in the new capital. The transportation system narrows the difference between personal mobility and public transportation by means of unit AI cars. Introduce a water circulation system to improve the efficiency of water use in the whole city, and combine it with energy to generate clean and environmentally friendly energy through solar and hydropower. In view of the impact of COVID-19, this plan uses circular construction to create a new epidemic prevention method, combining traffic to establish a complete epidemic prevention system. Therefore, the "Light of Dawn Project" will not only create an epoch-making rainforest smart city, but also become a model for epidemic prevention.

# Light of Dawn

The 10th Virtual Design World Cup

## Rainforest City

This project brings the biodiversity of the rainforest into the new capital and uses architectural techniques to integrate the ecosystem with the city, blurring the line between the two. The elevated traffic road allows people to travel through the rainforest and enjoy nature, and create a horizontal ecological circle so that the rainforest can develop vertically without being restricted by the ground. Besides, utilize the characteristics of unit houses to reduce land-use area, and people can interact with nature by introducing ecosystem. We also build an ecological bridge so that the rain forest is no longer limited to land, but can extend to the water and expand the rainforest area.



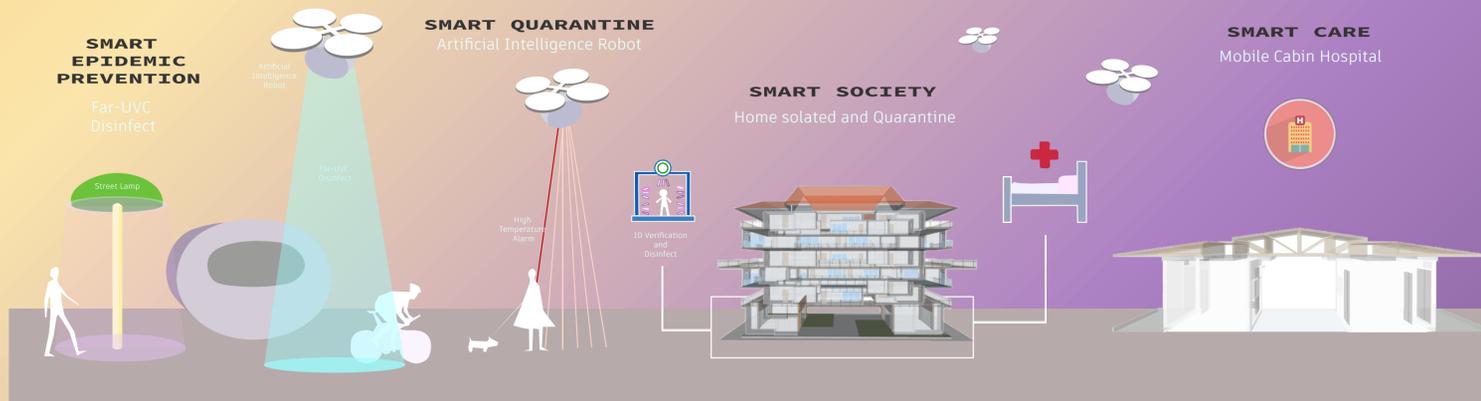
## Water Circulation

This recycling technology not only achieves the utility of water purification but also creates a circular economy system of urban farms and vertical parks. Besides, in response to flooding or overheating caused by climate change, instead of concentrating rainwater and sewage in one drainage system, this project will transfer the water to a different system. The sewage will be discharged through underground pipes. The relatively clean rainwater will be reused in the waterscape of public spaces, so the city can form an efficient irrigation system.

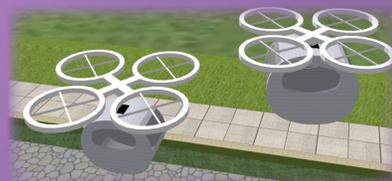


## Epidemic Prevention

In response to the virus, we have set up lighting disinfection under the street lights on the sidewalk and set up far-ultraviolet lighting in the air duct on the public transportation system, which can effectively disinfect and sterilize. The city is equipped with free-flying robots to disinfect facilities, and pedestrians are also subjected to basic quarantine. If there is a suspected disease, it can be found immediately for in-depth observation. A quarantine system is also set up at the entrance of the building to ensure the physical condition of people. The public space on the first floor of building can be divided into a Negative Pressure Rooms at any time. There are robots for unified management and tracking, food delivery, and service.



To allow the new capital to grow rapidly, we will integrate the traffic, disaster, prevention, information, and security network with IOT. Introduce artificial intelligence and build an extensive city network to create a resource sharing platform. Hope the new capital become a smart city that promotes the development of people's livelihood, shares resources and protects the environment



## EXODUS

| Stairway | Stair Width | Evacuative Time(300m) |
|----------|-------------|-----------------------|
| 2        | 1.3m        | 5 min                 |
| 2        | 2m          | 4 min                 |
| 4        | 2m          | 2 min                 |



The platform and corridor become the refuge platform while water disaster coming. There are four escape ladders on each platform. This test explores the evacuation capacity of each platform.