

DRAGON VEIN

The 8th Virtual Design World Cup

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INTRODUCTION

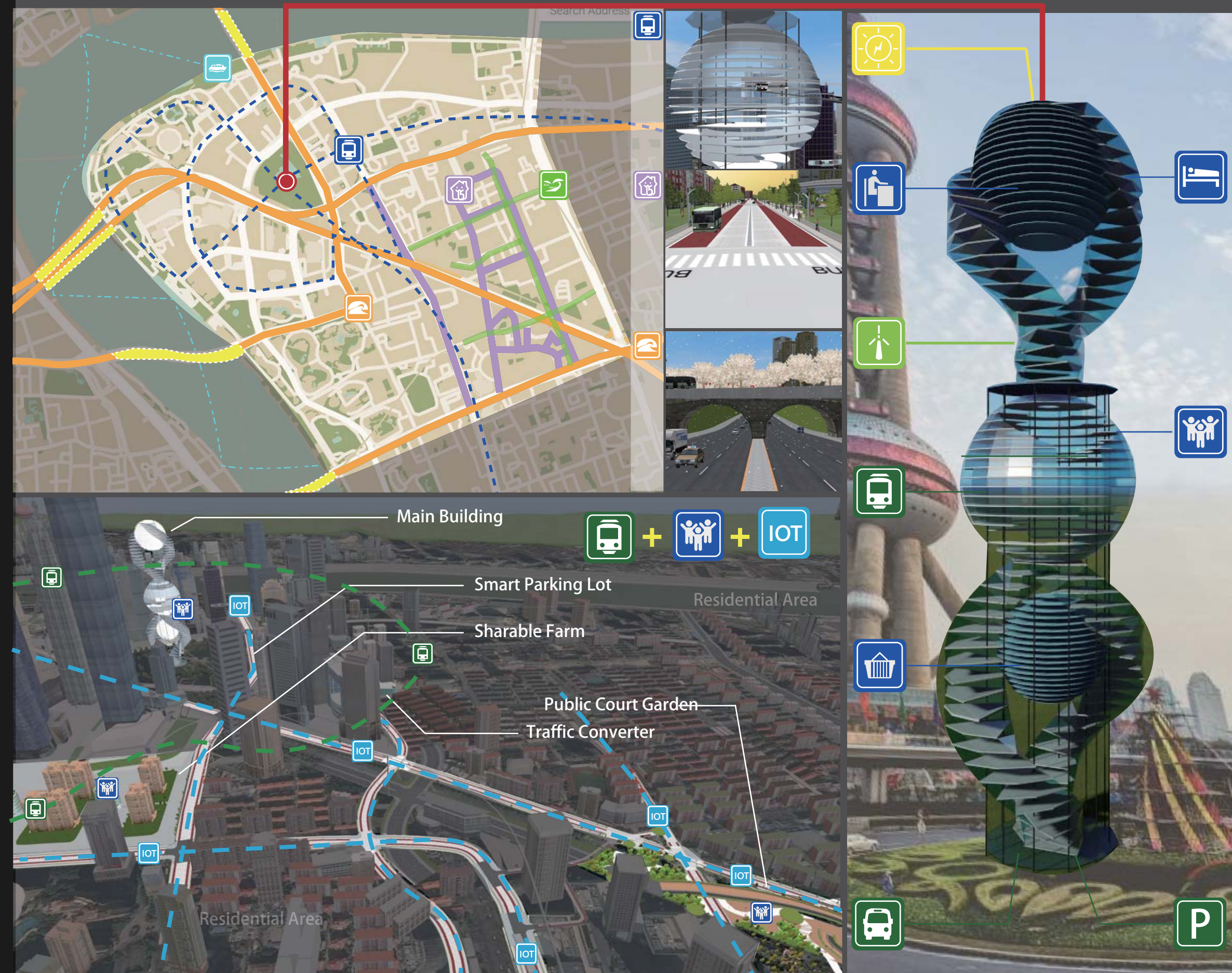
Shanghai Pudong is one of the fast-growing cities in China. Wide and dense road system is one of its main features. However, the broad roads hold up the traffic of pedestrian. The purpose of Dragon Vein plan is to re-build a new shareable network for future Shanghai. The concept of multi-layer transportation is applied to create a micro-circulation road network. In addition, IoT technology will be applied wildly to build a real-time message network in this sharing city. Let Pudong become the great future city of the East again.

DESIGN CONCEPT

Shanghai used to be called the "watery country." There were bridges above that connected with towns and towns, and canals below that transport goods. This image is adopted as the design concept of the traffic system in this plan. The main road is deployed on the lower level for logistics and external traffic. The upper level is equipped with bridges and ecological trails. In spring, the city bloomed with Shanghai Magnolia, recreating the beauty of the original Jiangnan.



The main building is connected with the upper middle and lower layers of traffic, and the shape is surrounded by dragons. dragons guard the Dragon Ball and face to the Oriental Pearl. The three spheres are divided into three different functions(shopping 、transit 、shareable spaces). Supplying the needs of the Shanghai city center for 24 hours, we will recrate the prosperity of Night Shanghai and show the endless vitality of the city.



SHAREABLE CITY

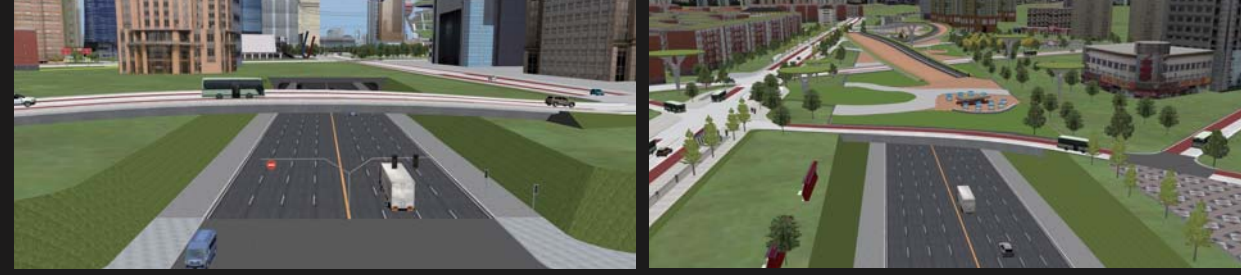
Sharable Farms

Shared farms use greenhouses for crop planting and achieve resource self-sufficiency by energy power generation and rainwater recovery systems. The main facilities on the farm are wind and solar power equipment, as well as automatic irrigation systems and production and sales space. Realize the sharing of resources and the vision of a green city.



Multi-layer Transportation

In order to achieve smooth urban traffic, transportation planning uses a multi-layer transportation system. The basement is a fast road for large vehicles, the ground floor is a general vehicle and bicycle lane, and the upper floor is planned to connect the monorail between the main building. The road paving material uses Topmix Permeable to make the road have functions such as flood control .



Public City Garden

The city gardens are set up to fill the cracks caused by the road network during urban development. In addition to creating shared public spaces and promoting residents' interaction, city gardens also achieve greening benefits. The magnolia that blooms in the spring and the red lanterns that are hung in the Lantern Festival can show the humanistic charm of Shanghai.



Smart Parking Lot

In order to solve the problem of insufficient space and parking, the smart parking lot will be set up in the basement to provide a large number of parking spaces for residents. The smart parking lot is powered by a solar power system on the ground floor and uses RFID technology for parking management.

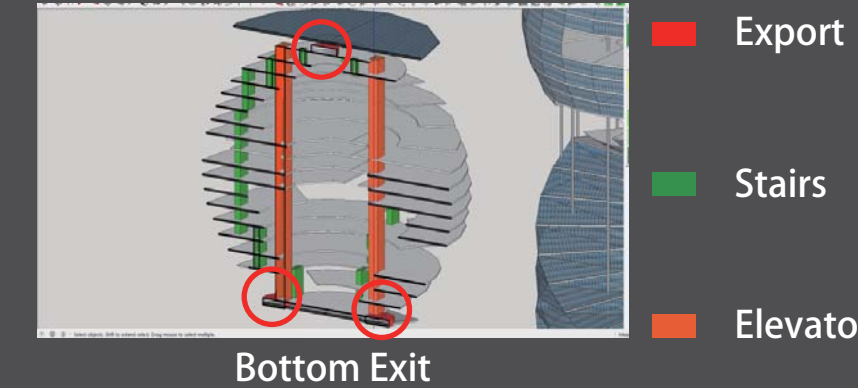


ENVIRONMENT ANALYSIS

EXODUS - Disaster Prevention



Upper Escape Platform

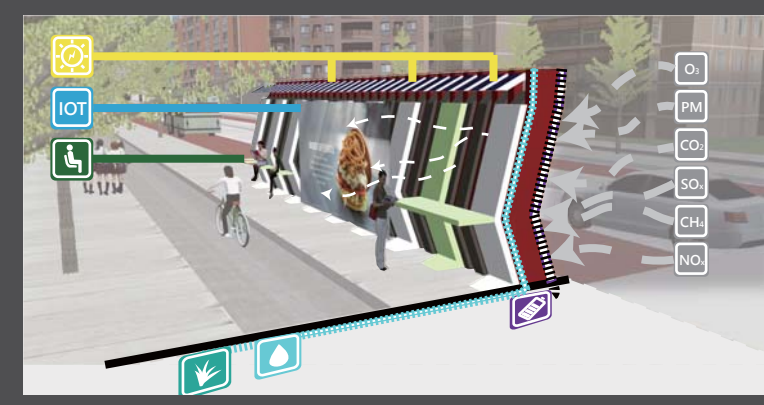


Case	Escape Mode	Escape Direction	Time
C1	Elevator Stairs	Upper Escape Platform Bottom Exit	6.4 Min
C2	Elevator Stairs	Bottom Exit	7.1 Min

IoT APPLICATION

Air Purification System

The air purification system will filter the air in the city. The air purification station has multiple functions such as smart advertising, pedestrian rest, solar power generation, and rainwater storage.



Smart Street Lamp

In addition to providing lighting, smart street lamps will combine big data and IoT technology to provide instant messages to citizens.



Emergency Assistance

Smart street lamps have environmental monitoring capabilities, and IoT technology is provided in emergency situations to provide information on refuge for citizens.



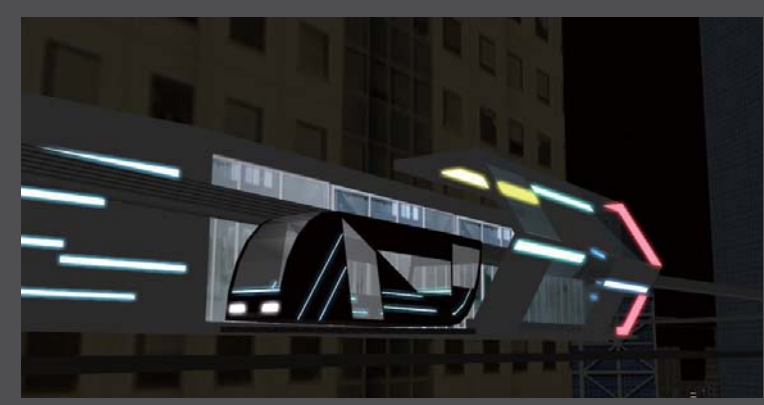
Eco-Bus Stop

Eco-Bus stops provide instant information to passengers via IoT. The station not only sets smart charging and cooling facilities but also provides green energy bus energy conversion function.



Monorail

The monorail system installed between the office buildings is to provide personnel transportation during peak hours and avoid traffic congestion affecting economic development.



Traffic Interchange Station

The use of IoT-assisted traffic interchange station is used for 3D space traffic conversion. The lower layer is used to manage and store materials, and then transported to the ground floor for distribution.



City Security System

Apply UAVs to assist in inspection and detection, and establish a complete urban security system. When a disaster occurs, the security system can also search for injuries to speed up the rescue.



DESIGN BUILDER - Energy Analysis

