# AUTONOMOUS CITY

THE 14TH VIRTUAL DESIGN WORLD CUP 2024

DESIGN CONCEPT

In metropolitan cities, vehicle parking has become a major concern in all busy areas and a good traffic system needs a good parking system. Different types of vehicle parking are applied worldwide namely Multi-level Automated Car Parking, Automated Car Parking System, Volkswagen Car Parking, etc. The aim of this project is to design and build a prototype of an automated parking system which will automatically park and retrieve the vehicle without the driver. With the advancement of technology, Robotic Valets are a new innovation in parking that resolves the problem of parking. In order to safely move the car, the valet uses 3D mapping software and cameras, and sensors to monitor the position of the car. Automated Valet Parking is an innovative technology that can provide businesses and drivers with a safe, convenient, and cost-effective parking solution. With its improved safety features and environmental friendliness, it is no wonder why this technology has been gaining in popularity.

ROBOTIC VALETS

Robot valets operates by crawling under your parked car, lifting it and autonomously moving it. It precisely measures distances to transport your car to different locations or return it directly to you. The robot valests can even identify the license plate of your vehicle and recognize and judge the size, weight and shape of your car. It can also make your parking easier and faster by letting you use a mobile app APS to track your car, book a spot and ask for a pickup.
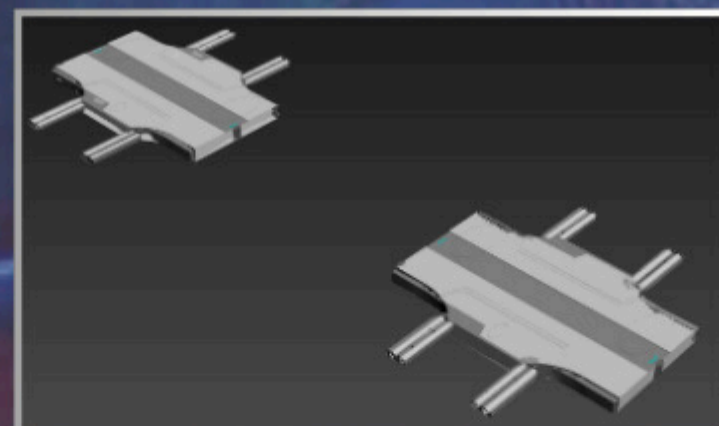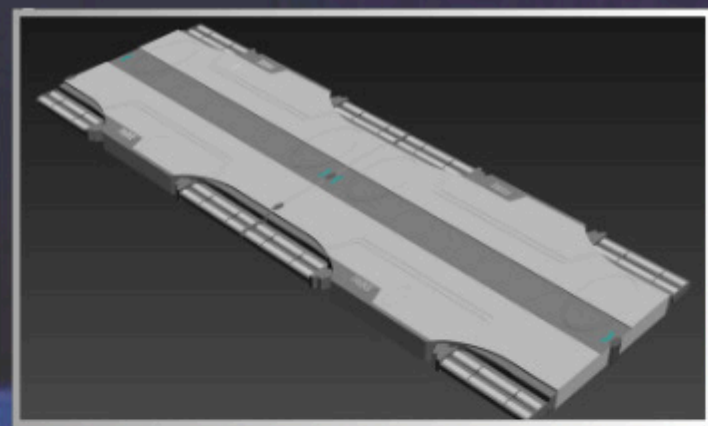
SUSTAINABLE INFRASTRUCTURE DEVELOPMENT

Coastal Road Planning focuses on designing and developing roadways along coastlines, ensuring efficient transportation while protecting and enhancing the natural environment.

Key Aspects:
- Environmental Assessment: Evaluating terrain and climate to minimize impact.
- Design & Infrastructure: Planning road structures and facilities.
- Coastal Protection: Preventing erosion, tsunami and damage with barriers.
- Traffic Management: Ensuring smooth traffic flow and safety.
- Financial Planning: Estimating costs and securing funding.
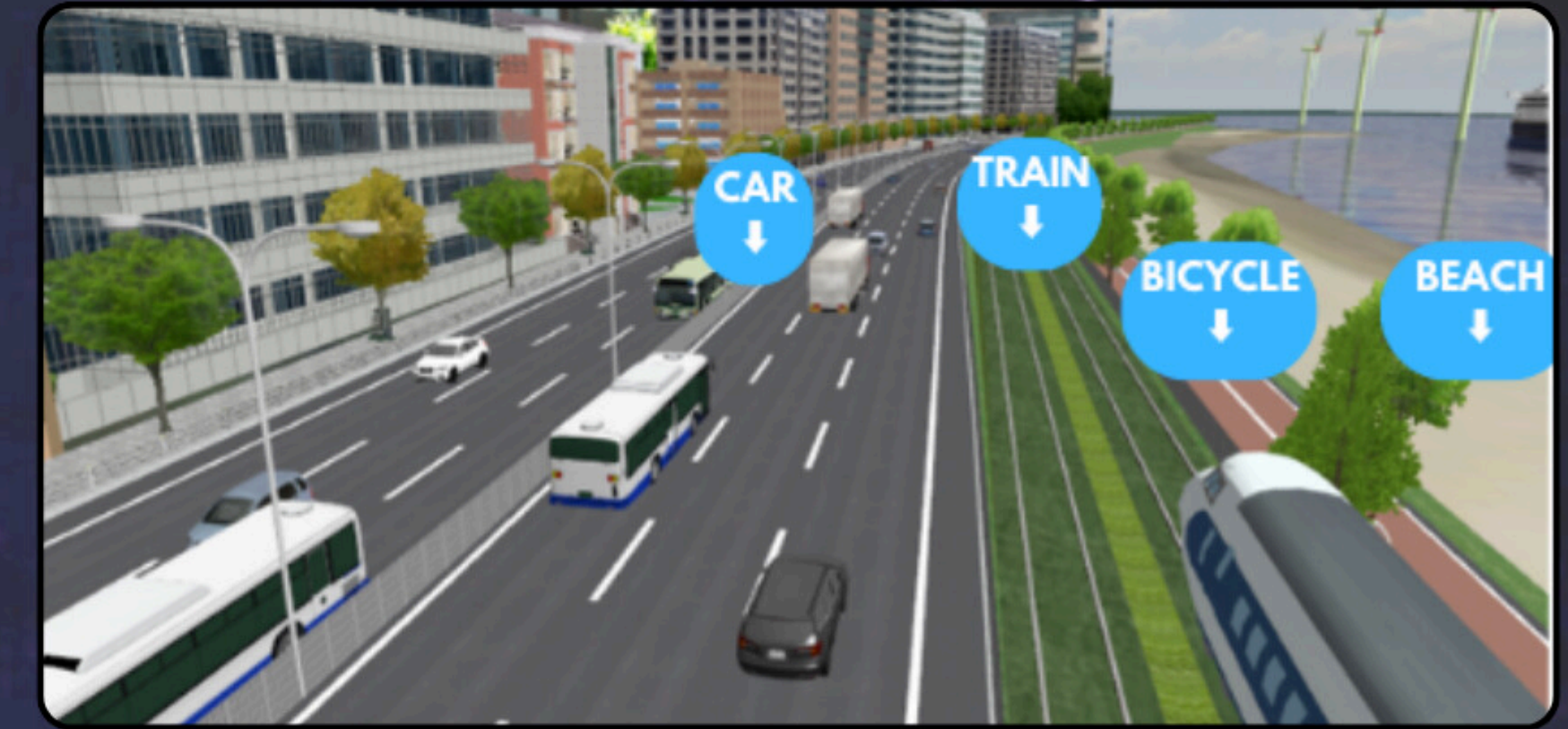
DIGITAL TWIN APPLICATION FOR WEATHER WARNING SYSTEM

Temperature-based Turbines that respond to temperature changes to perform dual functions: changing color and aiding in disaster response.

Key Aspects:
Functionality: Adjusts based on temperature to change color and provide structural support.
Applications: Used for visual indicators and building barriers to prevent flooding.
Disaster Response: Assists in managing and mitigating the effects of natural disasters.
Efficiency: Designed to effectively respond to varying weather conditions.
Technology: Innovative design for dynamic environmental adaptation.

Operating Principle
The turbines will display colors according to the weather
- Orange when it's sunny and hot   (30'C ≤ Tx)
- Green when it's nice day   (20'C ≤ Tx < 29'C)
- Dark Blue when it's cold and snowy (Tx ≤ 20'C)
- RED will warning of tsunami

APS (AUTOMATED PARKING SYSTEM) APPLICATION

Automated Parking System (APS) is an innovative technology that can provide businesses and drivers with a safe, convenient, and cost-effective parking solution.

The APS app displays nearby parking lots and provides directions to them. Upon arrival, it shows available parking spots for selection. APS uses advanced algorithms, sensors, and artificial intelligence AI to allow cars to park themselves. Customers will operate the control panel to register for parking. APS will automatically navigate parking areas, find available spaces, and park vehicles precisely. This technology improves parking efficiency, makes better use of space, and reduces the risk of accidents and errors.
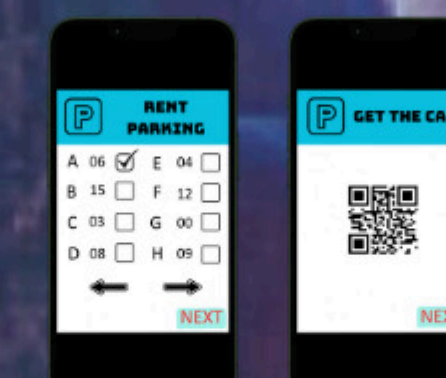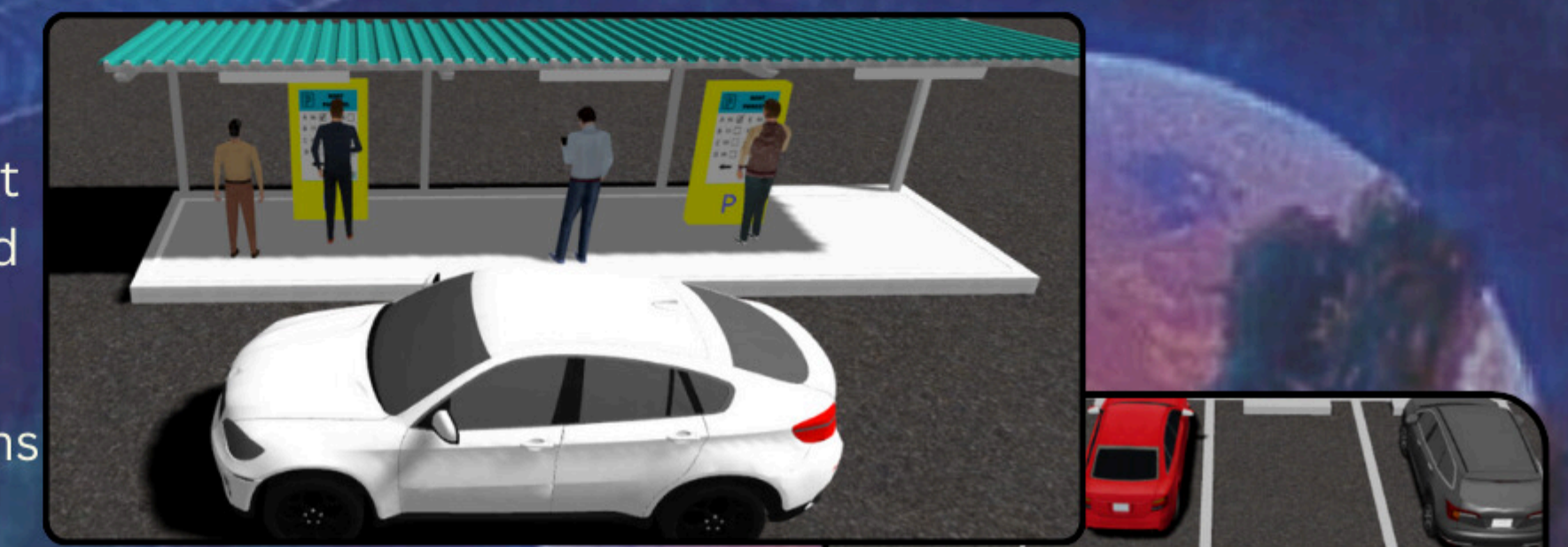
THE APS APP IS COMPATIBLE WITH IOS AND ANDROID.