



Extension of the Central City Melbourne  
Ideas for Urban Design in Fisherman's Bend Urban Renewal Area

## INTRODUCTION

The "Green Wave" is a redevelopment plan for the Lorimer precinct in Melbourne. In order to improve the traffic and the surrounding inter-regional area relations, this plan includes transfer station planning and green open space as buffer zones between industrial, residential, and commercial areas. This plan also conforms to ecological balances and standard for environmental tolerance, providing a safety, convenient, and cozy environment for Melbourne residents. In addition, this plan applied BIM and VR tools for simulation and analysis. These results were conducted to discuss the problems of usability, disaster prevention, and sustainability.



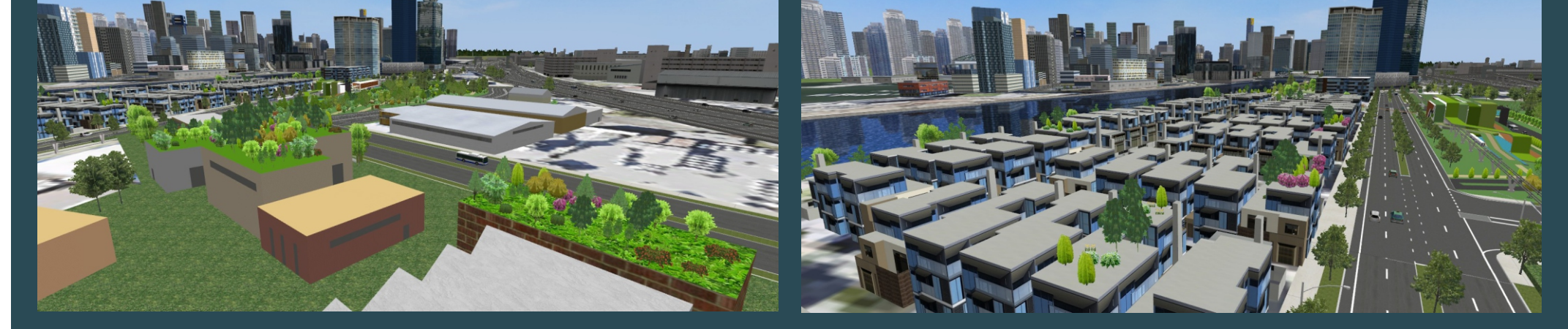
## DESIGN CONCEPT

Planning area is located at the riverside of Yarra River. The design is based on Yarra River and its tributaries, which riverbanks are the origin of Indigenous Australian villages development. The design concept is based on green wave, which symbolizes the water flow and the ripples made by falling water drops. Indigenous Australians' dependence on and coexistence with the river continue like the waves of water. The unique history, culture, ethnicity, and identity are revealed through landscapes, conveying the message of cherishing river resources and symbolizing the concept of sustainability.



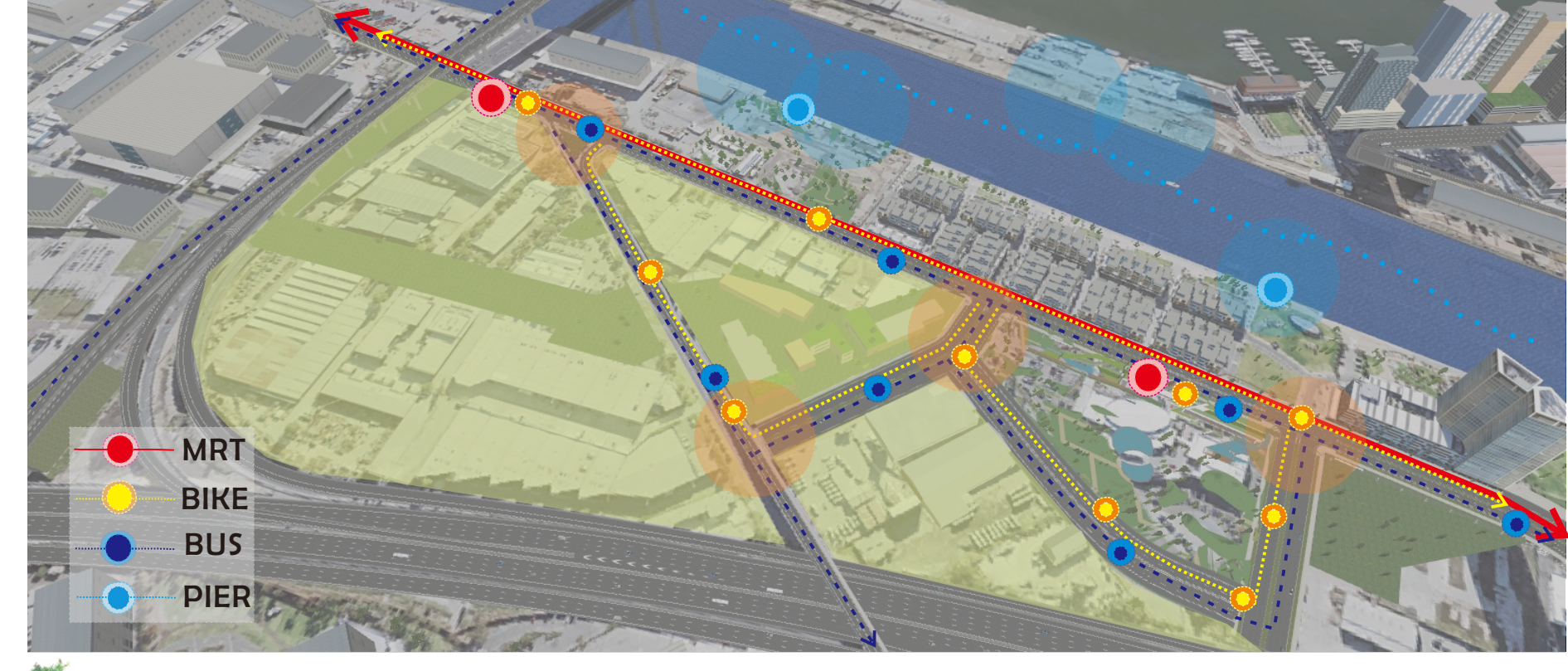
## ECOLOGY STEPPING STONE

With the plentiful ecological resources in Melbourne, the plan uses ecology stepping stone as its concept, making use of green roofs and green open spaces to connect with Yarra River and Melbourne Royal botanical garden and to develop various kinds of plants, providing habitats for birds and insects to inhabit and forage. The city becomes a livable city that human and nature coexist harmoniously.



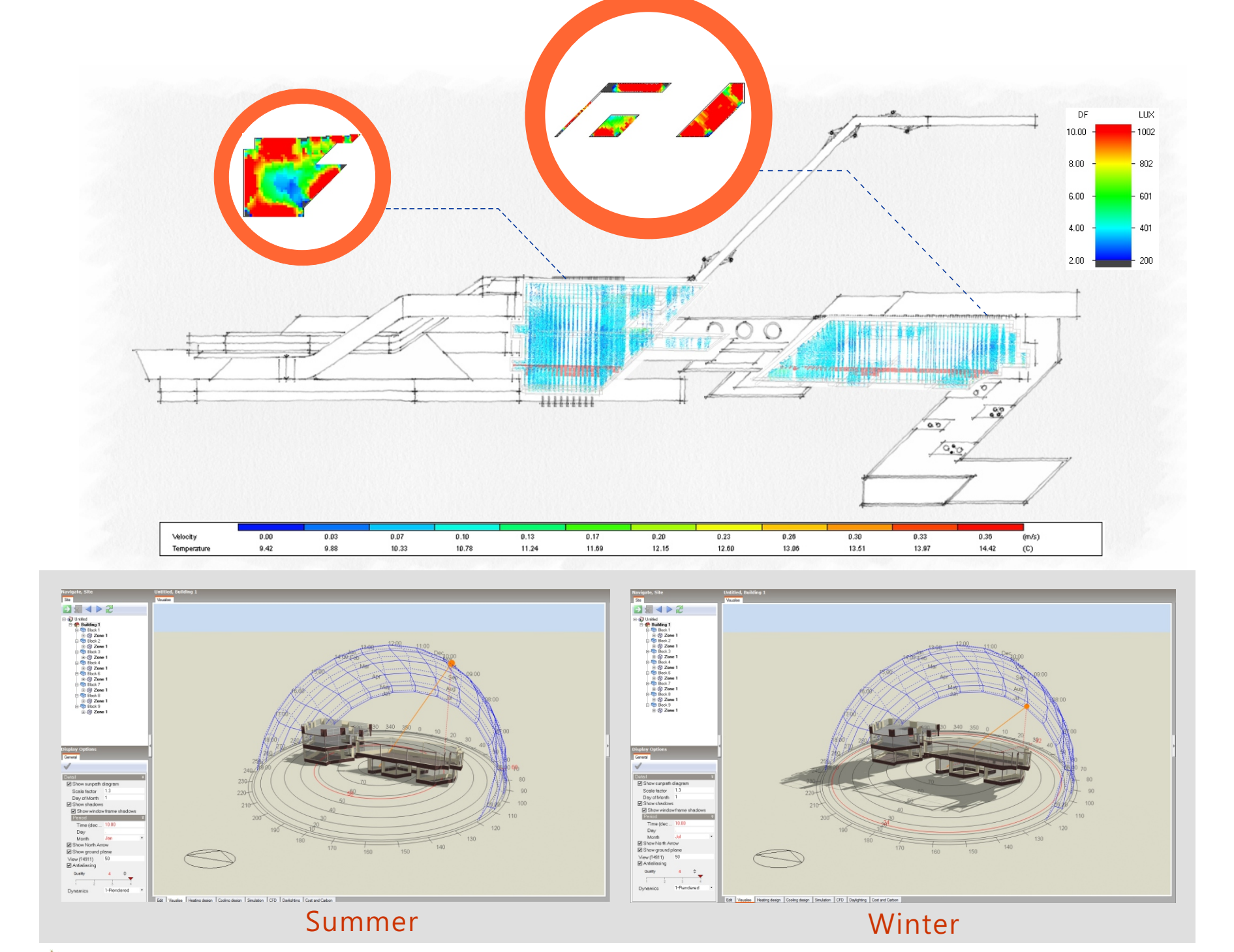
## TRAFFIC ANALYSIS

Melbourne has always been considered one of the most livable cities. The government's new plan aims to build a "20 minute city" living circle. Through transportation of development (TOD), this plan helps establish transfer stations that is mainly based on the Metro system, along with the integration of bikes and city bus system, taking into considerations energy saving, environmental protection, mobility, and health. The purposes of establishing these transfer stations are to enhance the use of transportation, improving transportations in metropolitan areas and promoting residents' quality of life.



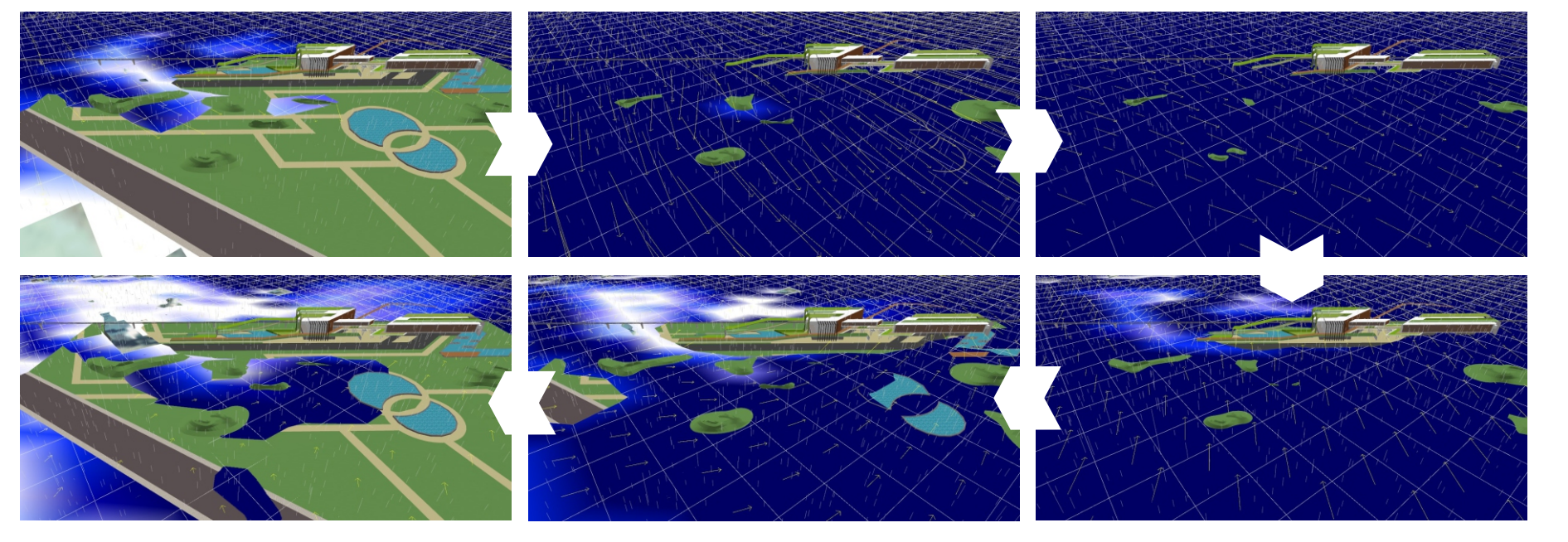
## ECO ANALYSIS

Local materials are used for the building materials. "DesignBuilder" is used to analyze and simulate, including sunlight factors and illumination simulation in order to save energy. Also, making the most of natural light and greening is beneficial for achieving the goal of low carbon.



## DISASTER PREVENTION

In the surroundings of the site, green space system and flood detention basin will be used to carry out rainwater treatment and planning. "UC-win / Road" and "XPSWMM" softwares are applied to predict possible flood zones and possible depths of sea level rise in the future. This simulation will help prevent disasters.



## FACILITIES PLANNING



### Transfer Station

Transfer stations include city bus, metro system, and bicycle rest centers. The purposes are to reduce the barrier between transportation transfers, to provide users with a seamless-transfer-transit quality, and to use ancillary facilities to relieve complex traffic problems.

### Metro System

The metro system route connects Lorimer and along the Yarra River to the Melbourne Convention and Exhibition Center.

### Bus Service

Providing public services such as real-time vehicle positioning, and connecting traffic nodes increases accessibility and convenience.

### Bike Center

At the transfer terminal, the bikeways are established all the way to the bus stops. The complete bike network connects different corners of the city, providing safe bike parking spaces, and spaces for resting, bike repair, and bike renting.

### Pier

The pier provide new bank of Yarra River open space, not only becomes a coastal attraction, but also provides marine services.

### Bike Stops

A continuous bike network is established, and safe bicycle parking spaces and maintenance stations are provided.

### Flood Detention Basin

The flood detention basin is located in the Lorimer Ecological Park and the West-Coast Ecological Park. It not only is capable of controlling the flood, but also reuses rainwater. At the same time, it also becomes part of the green landscapes and controls flood and collects water according to the amount of water.

### Lorimer Ecological Park

Lorimer Ecological park is located in the base of the transfer station. The detention basin and green space provide visitors, residents, animals and plants with a comfortable and safe space, and therefore implementing the coexistence between human beings and nature in the park.

### West-Coast Ecological Park

Riverfront landscaping, flood detention basin and greenbelt provide factory workers and residents with resting spaces, and work as buffer zones to separate the West-coast industrial zones and the surrounding residential areas.