

# The eco-boat which connects the land and the sea

## 【Outline】

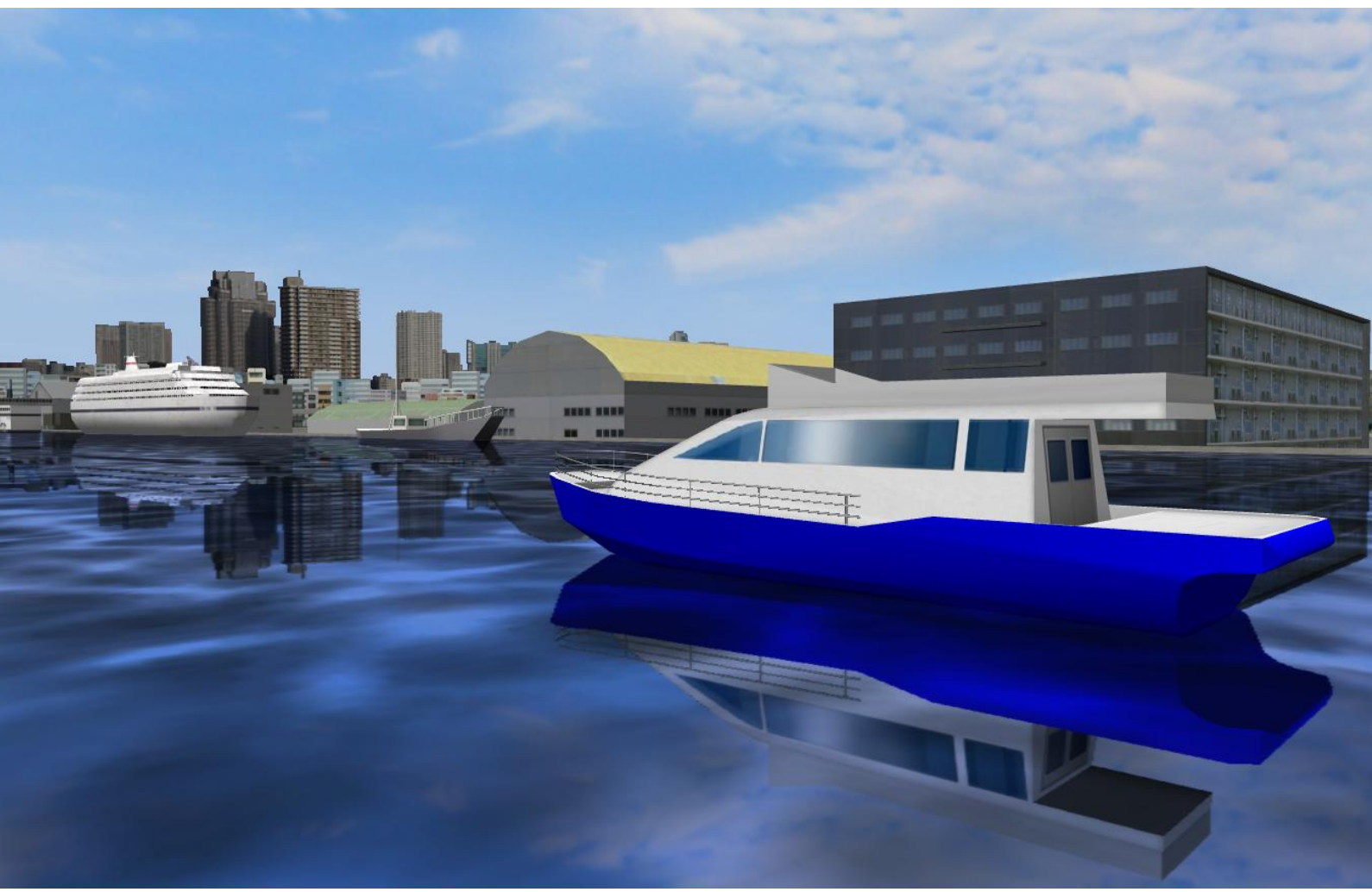
Because it is expected that traffic of the Shinkiba, Tatsumi area increases in the Tokyo Olympic Games held in 2020, with this work, we suggest the new access method that added a ship using a waterway to a railroad and a bus which are the transportation of the land route. In addition, triggered by the maintenance of the waterway transportation network for the Tokyo Olympic Games of 2020,it is hoped that a ship penetrates as one means of transportation like former Japan such as the Edo era our life.

We use hi-charging battery promotion boat **“Raicho N”** that Tokyo University of Marine Science and Technology researches and develops as a future ship. This ship doesn’t have effluent gas and is eco-friendly and excellent quietness.

Furthermore, we suggest new terminal **“frontier”** letting you unify transfer of the transportation of the land and water to connect a land route to a waterway more effectively. In addition to a function as the connection of the transportation network, it is possible to use this **“frontier”** as multifunctional terminal. At the time of the disaster, this multifunctional terminal is available as a disaster base such as medical facilities and the relief supplies storage warehouse.

## 【 Merit of Raicho N】

- ① There is not effluent gas and is eco-friendly.
- ② Because it is battery promotion, it is excellent quietness, and there is not vibration, and the burden on passenger is reduced.
- ③ The charging station necessary for charge of Raicho N can be used at the time of disasters and as the simple commercial facilities.
- ④ Because it is a ship and is strong in high tide and the high waves, it is effective as transportation at the time of the disasters.



## 【Outline of Raicho N】

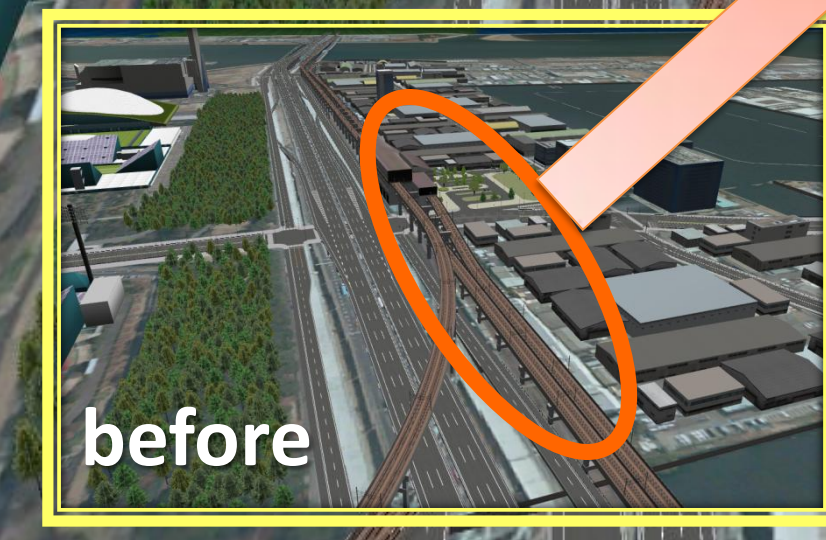
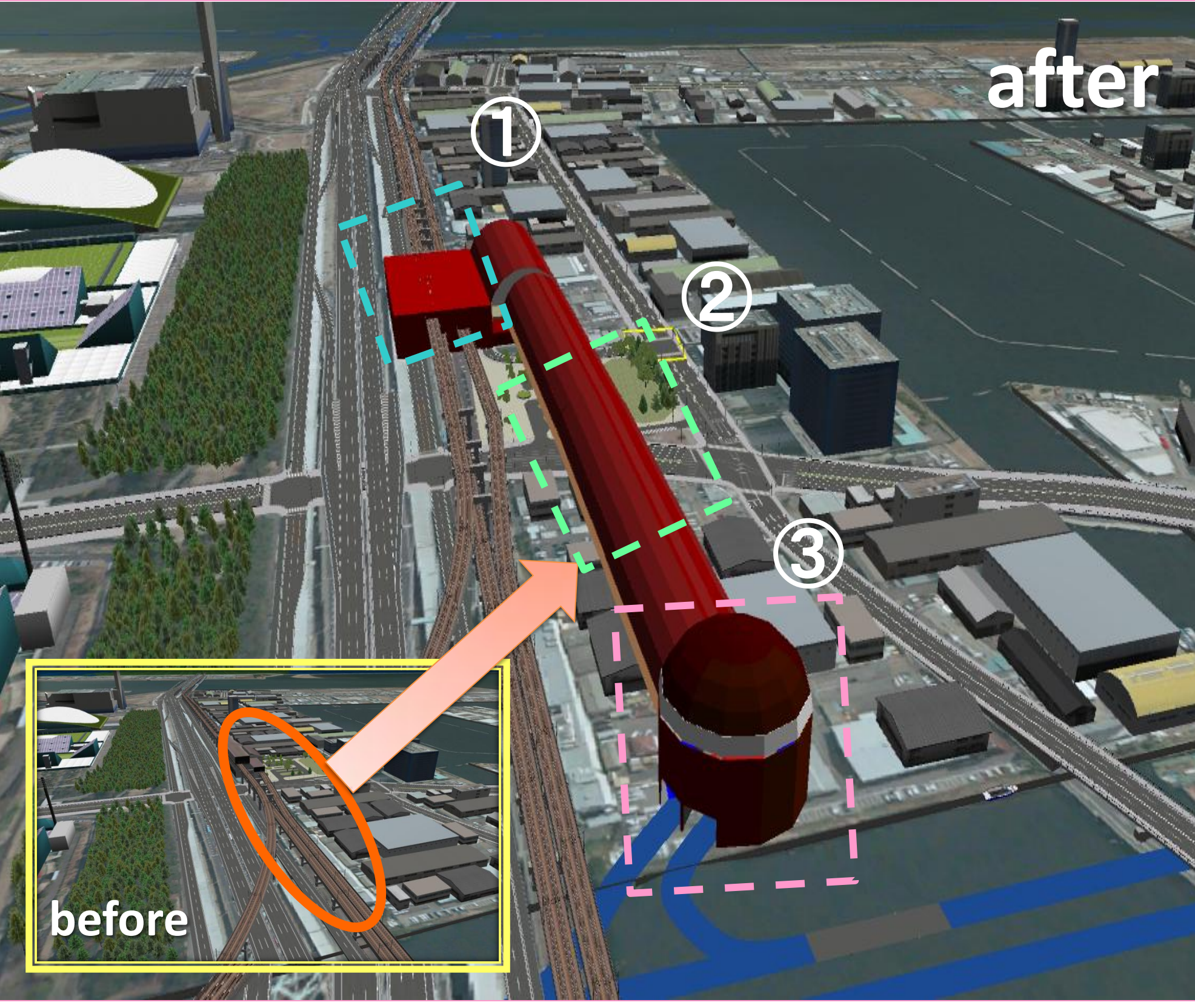


Length	14 m
Beam	3.5m
Depth	1.5 m
Motor output	45 kW × 2
Speed	
Full load	11 knots
Navigation service	8 knots
Crew	8

## 【Access design】

In the land route (car, railroad) which links the downtown area to Shinkiba in the case of the Tokyo Olympic Games of 2020, serious congestion is expected, and it may take much time required. Therefore by using the transportation called the ship, it is thought that we can reduce a traffic jam and the time required.

Route	Distance (Road)	Distance (Waterway)	Car	Ship	Railroad	Railway network
Shinkiba Sta.⇔Haneda Airport	17.1km	11.3km	20min.	36min.	34min.	Rinkai Line ▪ Tokyo Monorail
Shinkiba Sta.⇔Tokyo Skytree	14.1km	10.3km	16min.	33min.	34min.	JR ▪ Tokyo Metro ▪ Toei Asakusa Line
Shinkiba Sta.⇔Chiba Port (neighborhood of Chiba Minato Sta.)	33.0km	30.3km	40min.	56min.	31min.	JR Keiyo Line
※Calculation as Ship→10kt (18.52km/h) , Car→50km/h						



## ①There are a ship and a railroad in the same platform

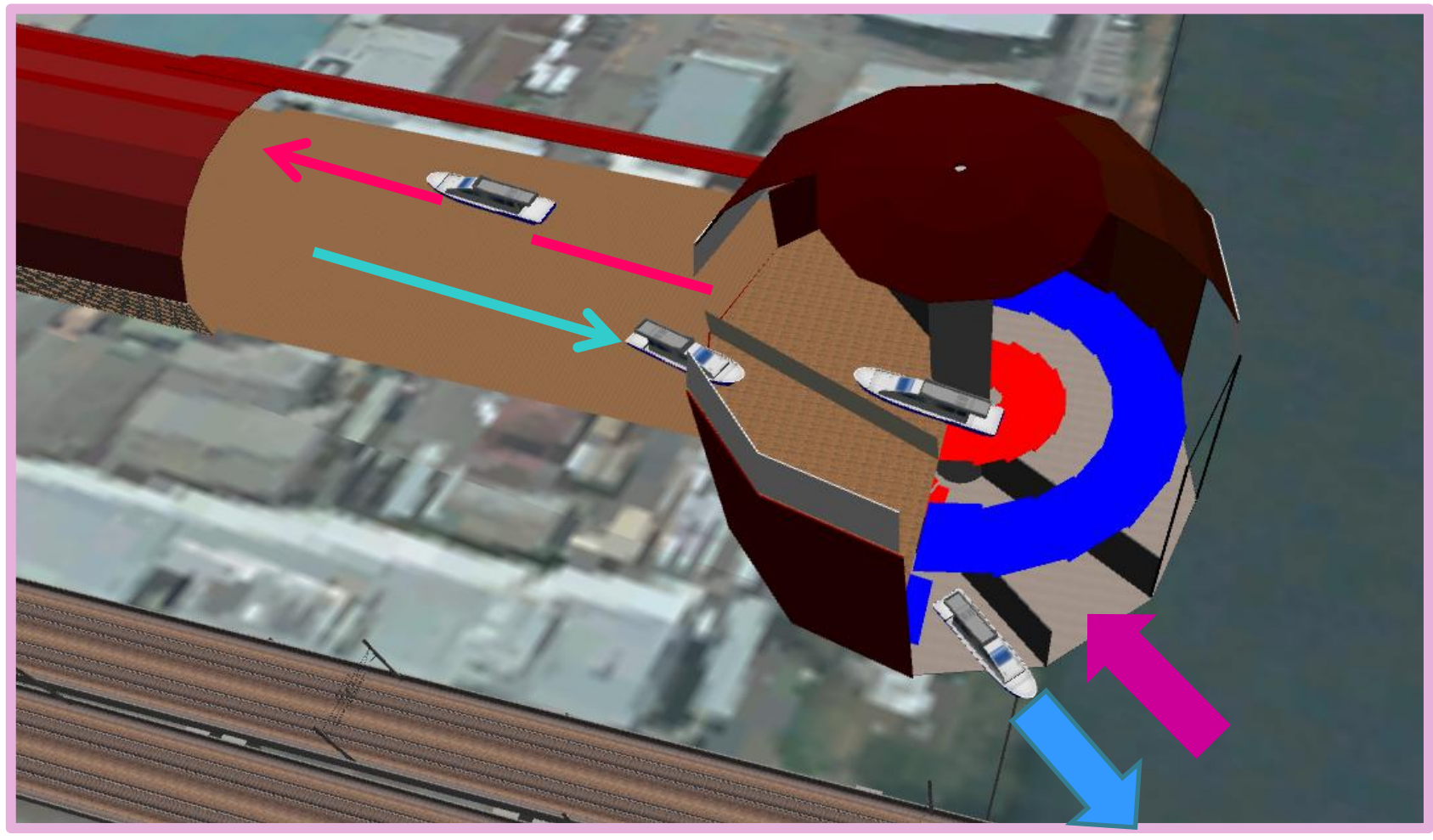
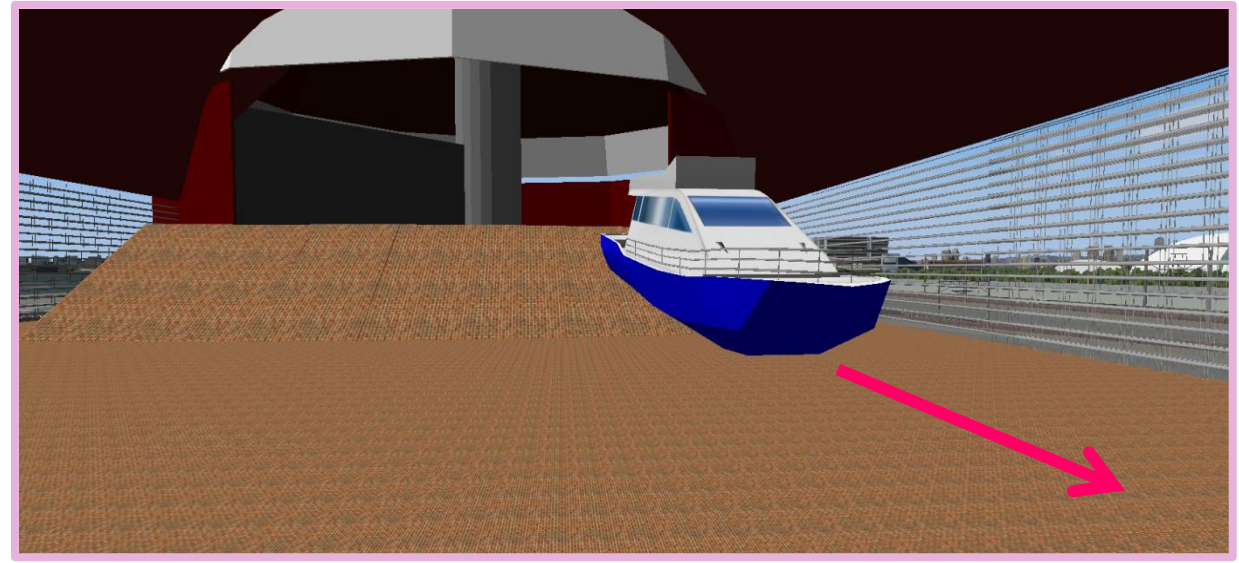
We can shorten distance of the transfer by making the same platform. A railroad and the transfer of the **“Raicho N”** smoothen. We can transfer smoothly between a railroad and **Raicho N**. We can have you realize a ship as familiar transportation. In addition, there is not unrest at the time of the embarkation, and the passenger can go on board safely and smoothly to lift up **Raicho N** from the surface of the water ashore.

## ②The terminal hall assumes it a multipurpose hall.

In a time of peace, we can use it as a storage warehouse for disasters. In addition, the commercial use in the event is possible, too. Furthermore we can use it at the time of the disaster as medical facilities. In addition to the traffic base, by considering that we use it as a disaster base, we assume it a landmark of the Shinkiba and Tatsumi area.

## ③ When we unload it from the surface of the water, we fry it in a spiral type.

We can enjoy outside scenery and can enter the platform smoothly. Because possibility to drop under the influence of earthquakes is thought about in the case of an elevator type, we can reduce the damage to **Raicho N** when a system stops.



## 【 Summary】

In the Tokyo Olympic Games to hold in 2020, we suggest the usage of the ship to relax increase in traffic. The ship to use is battery promotion boat **“Raicho N”** and is eco-friendly. As a multifunctional terminal to connect a waterway and a land route, we made the **“frontier”**. By using the frontier, it is thought that a ship becomes one of the familiar means of transportation.

## 【Concept of the terminal】

A ship is a non-daily vehicle in our life of the present age. However, the ship has a high transportation capability. In planning the expansion of the transportation network and the increase in traffic style, the use of the waterway is very effective. Such a waterway hides possibility, and a terminal to connect a waterway and a conventional land route without greatly changing environment is necessary. With thought to want it to become the key that a ship supported the rich life of people, we elaborated a plan in **“frontier”** of the shape of the key.

