Chapter 6

Sustainable Mobility System in Temburong District

6.1 Mobility Network in Temburong District

6.1.1 Basic Concept

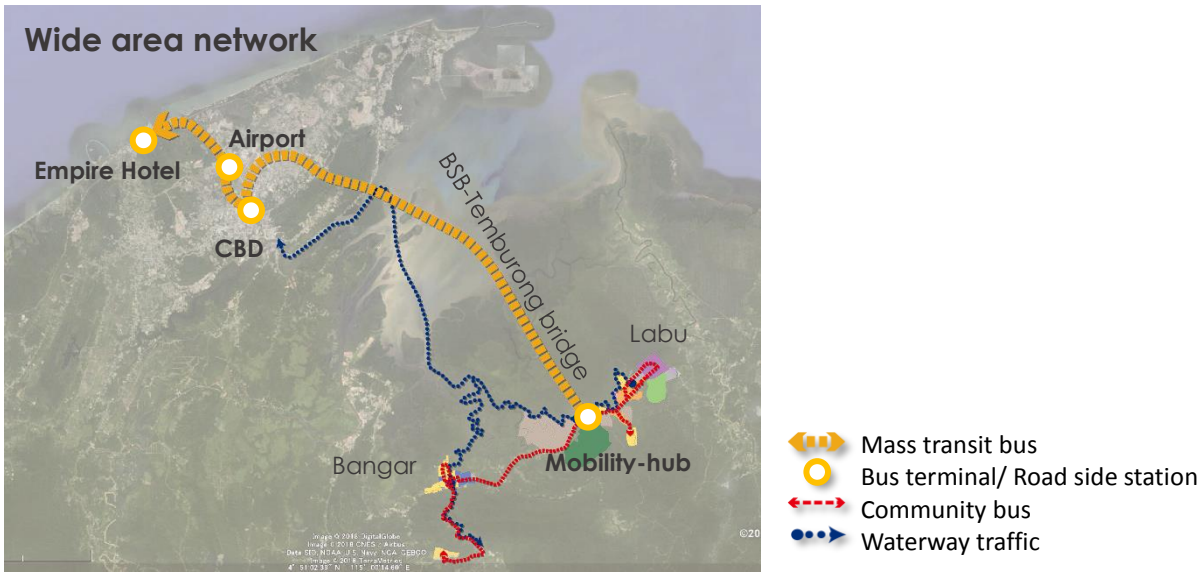
As a model of a carbon-neutral society, Temburong district aims to build an eco-friendly as follows:

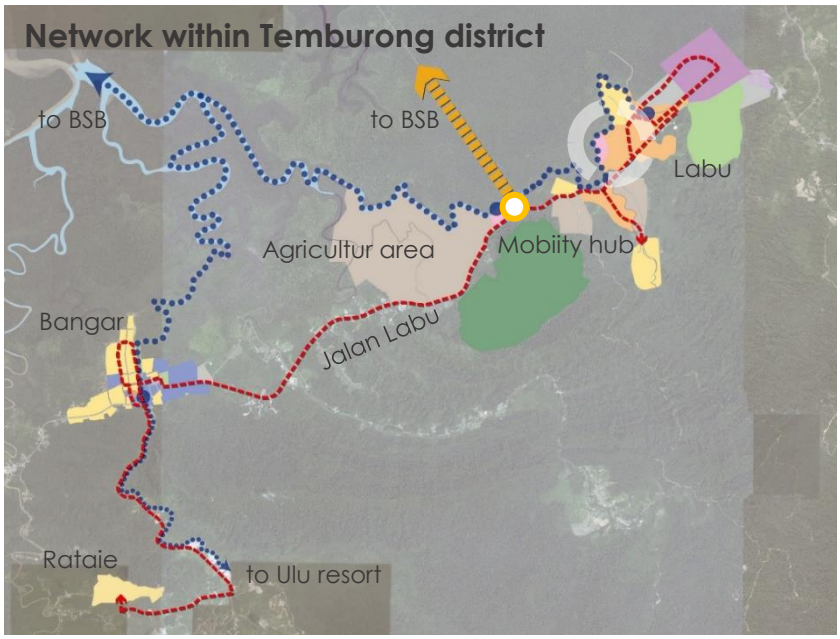
- Suppression of traffic volume:
  - Control entry of vehicles from Temburong Bridge
  - Promote carpooling system
  - Introduce public transportation
  - Encourage a new logistics system, such as drones, that does not depend on vehicles
- Prioritisation of transport devices with small environmental loads:
  - Develop traffic regulation that gives priority to Electric vehicle (EV) or Fuel cell vehicle (FCV)
  - Introduce transportation device that does not depend on automobiles, such as electric motorcycles
- Introduction of various transport devices to activate ecotourism:
  - Introduce various transportation devices such as autonomous vehicles, boats, buses, taxis, electric motorcycles, and bicycles.

6.1.2 Mobility Network in Temburong district

- Tourists from BSB, such as the Empire Hotel, BSB airport, or the central business district (CBD) visit Temburong via hydrogen-powered mass-transit bus through Temburong bridge.
- Tourists travel around Temburong district in non-carbon vehicles such as community buses, boats, and taxis.
- In future, only non-carbon cars will be permitted to drive in Temburong district. This also aims to control the traffic volume (internal-combustion engine cars, buses, and trucks) passing through Temburong from Sabah to Sarawak State in Malaysia.

Figure 6.1: Mobility Network of Temburong District





Source: Study team.

6.2 Proposal of Gate Zone

The bridge construction yard (50 ha) at the end of Temburong bridge in Labu district has high development potential. It is supposed to be covered with tropical rainforest or agroforestry when construction in finished.

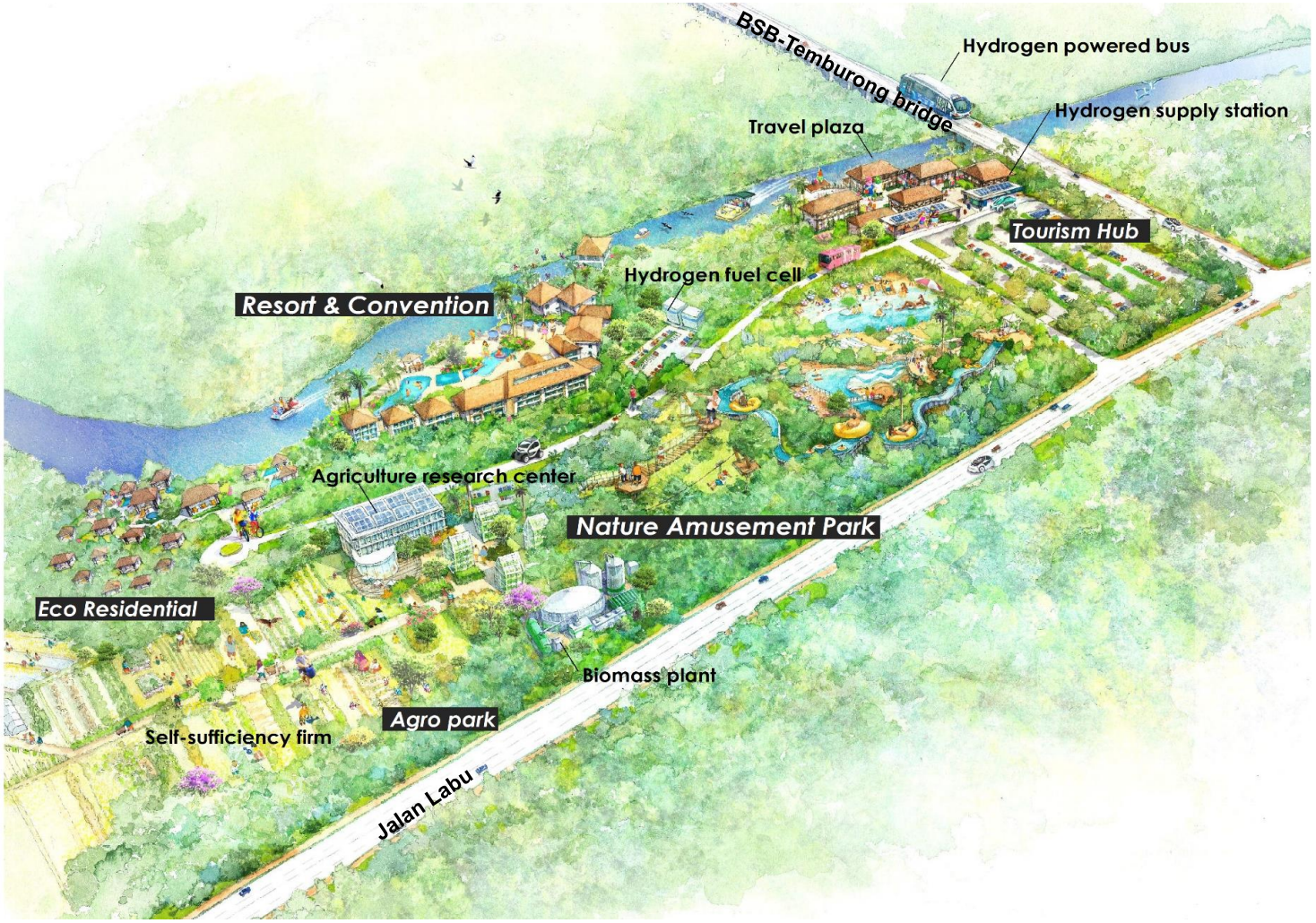
Figure 6.2: Condition of Gate Zone

Note: The construction yard covers about 50 hectares.
Source: Study team.

We propose developing this area as the gate zone of Temburong district, comprising five zones: (i) mobility hub zone, (ii) nature amusement park zone, (iii) agro park zone, (iv) resort and convention zone, and (v) eco residential zone.

This land will become a tourist hub and showcase of new energy and mobility.

Figure 6.3: Gate Zone



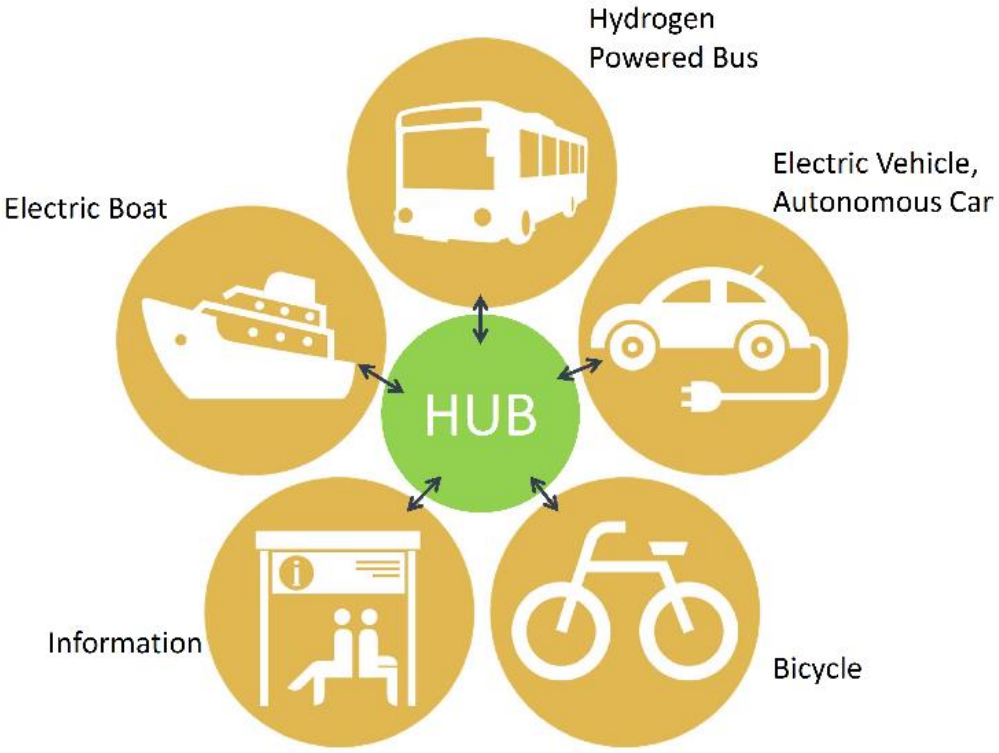
Source: Study team.

6.2.1 Mobility Hub Zone

A mobility hub is a place where hydrogen-powered buses, electric cars, autonomous cars, electric boats, and bicycles are connected. Tourists arriving in Temburong from BSB via hydrogen-powered bus can transfer here to other means of transportation such as electric cars, autonomous cars, electric boats, and bicycles to go to other tourist spots.

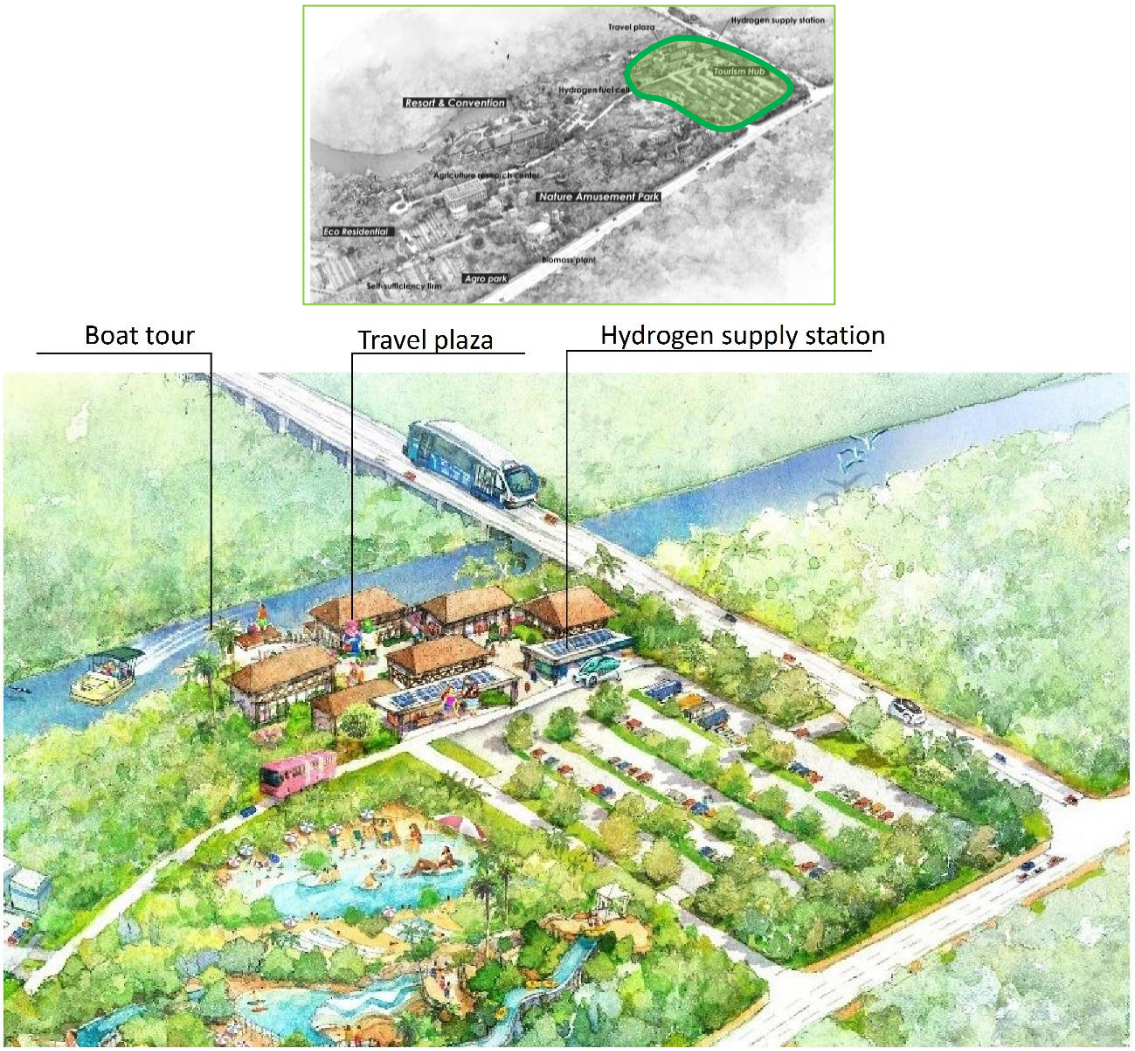
With the travel plaza here, tourists can enjoy many services such as accessing tourism information, booking tours and accommodation, and using the hydrogen supply station (Figures 6.4 and 6.5).

Figure 6.4: Mobility Hub Zone Design



Source: Study team.

Figure 6.5: Mobility Hub Zone

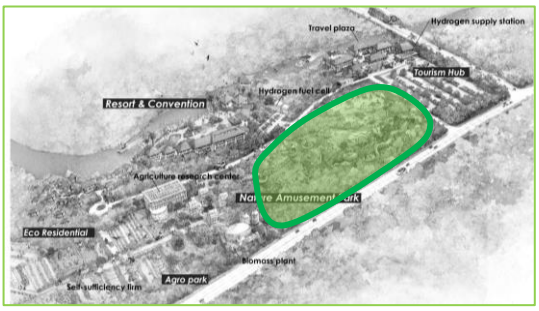


Source: Study team.

6.2.2 Nature Amusement Park Zone

The restored forest will become the Nature Amusement Park. An adventure land and water park will be planned here. The construction of the Nature Amusement Park aims to create a new tourist destination in Temburong to encourage longer visit such as staying more than two nights (Figure 6.6).

Figure 6.6: Nature Amusement Park Zone

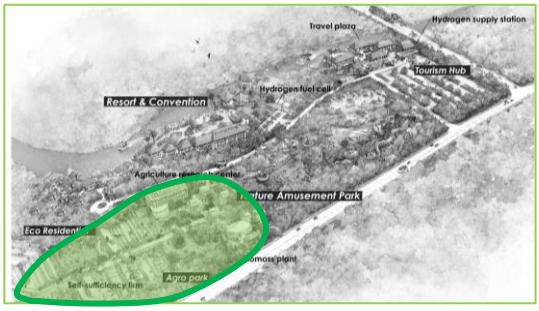


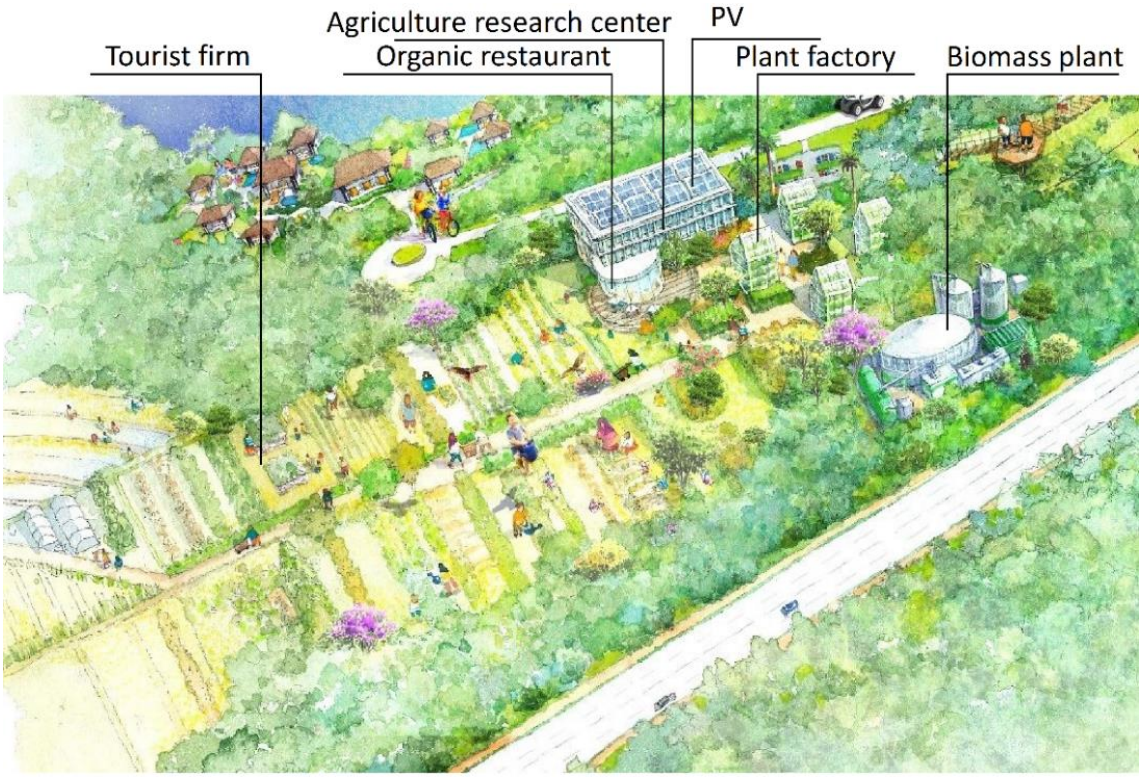
Source: Study team.

6.2.3 Agro Park Zone

The Agro Park will be constructed to promote food self-sufficiency. We plan to construct an agricultural research institute, plant factory, and agricultural test site as well as introduce photovoltaic and biomass plants as energy facilities. We aim to improve production in agriculture by linking surrounding agricultural lands like the existing one in the west (Fig.6.1). We also plan to attract tourists by building a tourist firm and organic restaurant as part of the learning tourism ecosystem (Figure 6.7).

Figure 6.7: Agro Park Zone



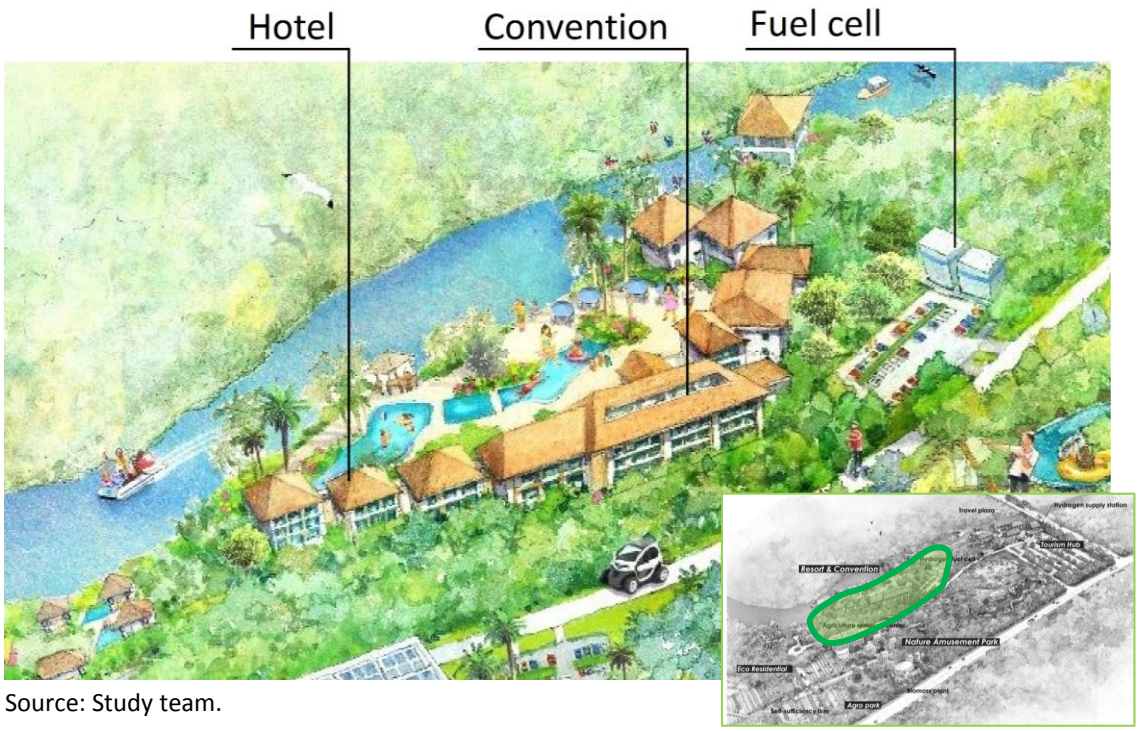


Source: Study team.

6.2.4 Resort and Convention Zone

The zone facing the river is the Resort and Convention Zone. We expect this to become a tourist hub for Labu district sightseeing and Perdayan Forest Recreation Park. This resort consists of hotel and convention facilities. The convention centre should be one of APEC's venues at the meeting to be held in Brunei in 2024. As the venue of APEC, the power source of this hotel will be hydrogen fuel cells to help promote the potential of hydrogen to each APEC country (Figure 6.8).

Figure 6.8: Resort and Convention Zone



Source: Study team.

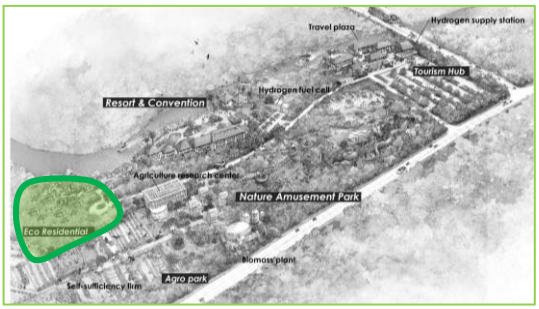
Figure 6.9: APEC Economic Leaders' Meeting, Da Nang, 2017

Source: Asia-Pacific Economic Cooperation.

6.2.5 Eco Residential Zone

The Eco Residential zone is planned next to the Resort and Convention zone. Eco Residential is a diverse community that is home to people working at the gate zone, energy and transportation workers, agricultural researchers, and employees in the service industry. With the introduction of smart technology, such as renewable energy and sustainable architecture, Eco Residential will become a living lab (Figure 6.10).

Figure 6.10: Eco Residential Zone



Source: Study team.