09

KUALA PERLIS GATEWAY: ACCENTUATING KUALA PERLIS AS NEW WATERFONT ATTRACTION

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ABSTRACT

This project is about accentuating a new waterfront attraction at Kuala Perlis. The place is facing several issues such as 1) there are a lot of dull public spaces with a lack of facilities, 2) no proper linkages and sense of direction from one place to another to guide visitors, and 3) No reflection of local identity as fisherman village. Therefore, this project aims to revive this place by enhancing the image of the Waterfront and unifying the spaces within Kuala Perlis. There are three (3) objectives of this study which are to provide vibrant places for leisure and tourism activities promote the identity of Kuala Perlis as well as the International Transit Hub, to induce uniqueness into the design of the commercial area that will generate the local economy and to enhance the waterfront connectivity that links all the sites and promotes pedestrian-friendly environment. A few methods were adopted to achieve the objectives, 1) study on the waterfront tourism, 2) inventory checklist for Kuala Perlis, and 3) observation during the site visit. The data has been analysed to enhance waterfront public realms, waterfront trading centers, and accessibility of the area. Design improvement was developed based on the results during the site visit and the desk study. Thus, appropriate design elements are proposed that enhance the area's identity, which could promote the sustainability of Kuala Perlis.

INTRODUCTION

Kuala Perlis is located in northwest Peninsular Malaysia, near the border of Thailand and is known as the second-largest town after Kangar. Kuala Perlis is the main port for Perlis, which provides a ferry service mainly used to transit to famous Langkawi island and Satun, Thailand. Most tourists use Kuala Perlis as the disembarkation point for going back to the mainland and they do not stop overnight at Kuala Perlis. Besides, Kuala Perlis is also famous for its beautiful sunsets and seafood among the locals and tourists. Therefore, Kuala Perlis can be one of the waterfront attraction spots before embarking to Langkawi Island or Satun, Thailand.

Key Plan of Kuala Perlis

Location Plan Proposed Site

Figure 1: Key Plan and Location Plan

ISSUES

There are several dull public spaces lacking of facilities.

There are no proper linkages from one place to another and a sense of direction to guide visitors.

There is no reflection of local identity as a fisherman village.

AIM

To revive Kuala Perlis by enhancing the waterfront image and unifying the spaces.

OBJECTIVES

To propose vibrant places with interesting activities to attract visitors for leisure and tourism purposes.

To introduce a significant local visual character to the site's physical appearance to enhance the sense of identity that will generate the local economy.

To enhance the waterfront connectivity that links all the areas and promotes a pedestrian-friendly environment.

LITERATURE REVIEW

Terminology of Seafront & Waterfront

Seafront and Waterfront
Seafront: This is the part of a town on the coast next to the beach, often with a road along with it and a row of houses and shops facing the sea.
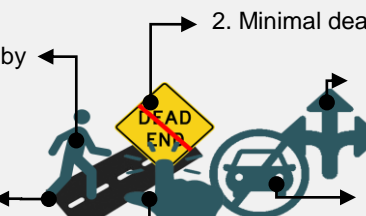Waterfront: This is the land with buildings or a section of a town fronting or abutting a body of water.
According to Yasin et al. (2010), waterfront is defined generally as the area of interaction between urban development and the water.

Waterfront Connectivity

Terminology of Connectivity, accessibility & mobility

1. Pleasant to travel by foot.

2. Minimal dead-end

3. Numerous intersection

4. Discourage car users.

5. Easy to access for pedestrian

6. Many short link

Waterfront Tourism

Tourism Attraction:
The attraction for tourist to spend their time for the uniqueness of the places, people, events, and things that make up the objects of the tourist gaze and attract tourists to destinations. Common examples include natural and cultural sites, historical places, monuments, zoos, game reserves, aquaria, museums and art galleries, gardens, architectural structures, theme parks, sports facilities, festivals and events, wildlife, and people.

What make a successful waterfront

Interesting uses for tourism and residents activity uses on water, commercial & non-commercial uses & program at the edge of the water.

The places need to be welcoming, interactive, pride, diversity and stewardship integration of the history, culture, and existing architecture are recommended for a new waterfront development.
"Theme" means a unifying idea, image, or motif developed throughout a work that is important to maintaining people's loyalty to a waterfront area.

Accessible from surrounding areas, easily and pleasantly to walk, good edge with water, connected transit by land or water & effective signage.

The places need wide range of hardscape and softscape, water elements and art. The images of the area could give an interactive views and comfort to the visitors.

Summary of precedent studies

Table 1: Summary of precedent studies

ISSUES		
There are a lot of inactive and dull public spaces with poor facilities and a lack of maintenance.	Bad road design with no proper linkages and lack of sense of direction has resulted in poor traffic flow and congestion during weekends and schools holidays	Throughout the city, it does not reflect any identities as a maritime city that can attract tourists.
AIM: To revive Kuala Perlis by enhancing the waterfront image and unifying the spaces.		
To provide vibrant places for leisure and tourism activities which promotes the identity as Maritime City and as well as International Transit Hub	To enhance the seafront connectivity that promotes a pedestrian friendly environment	To generate economy by promoting northern seafood as the main attraction for tourism
Summary: 1. Waterfront Aker Brygge, revitalize the left harbor into interactive public places with their maritime identity 2. Lush tropical landscape with the extensive ground of park and waterfront that balance natural and development. 3. The Xin Hua Waterfront aims to provide public realms which encourage well-being and a healthy environment.	Summary: 1. Then, they connected with various access from the inner city to the waterfront and with designated pavement. 2. With multi-layered approach, integrating vehicular roadways, car parks, a light rail transit system, and pedestrian public realm. 3. Various types of environment which will promotes interconnection between human and nature.	Summary: 1, The revitalization project has improved the local economy as it attract tourism to the beautiful waterfront promenade. 2. In Forest City, Singapore, they improved their attractive areas and connectivity to attract tourism.

METHODS OF DATA COLLECTION

Checklist and Observation

In conducting the methodology of data collection, the checklist for the site inventory and observation method is done by mapping the existing site condition and taking pictures of the site condition.

ANALYSIS AND SYNTHESIS
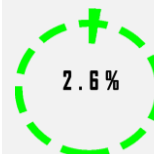
1. Kuala Perlis Site Context & Landuse

Kuala Perlis is a tourism development area that has been utilised by mixed development that focuses on tourism attraction. There are seven types of land used in the area: seafront recreational area, commercial area, transportation hub, residential, facilities and infrastructure, open spaces, and mangrove forest.

Facilities and Infrastructure

1.8% One of the attractions in Kuala Perlis is the Floating Mosque of Al-Hussain. This mosque has a lot of uniqueness, like beaches and ocean as its backdrop, and the materials for the walls use coral, quartz, granite, marble, and pebbles. Besides, the minaret has different lights as an indicator to inform the fishermen of the prayer time.

Recreational Area

Figure 2: Site Context Map

2.6% Another attraction in Kuala Perlis is the seafront recreational area that faces the ocean of Selat Melaka. Unfortunately, the site is not well maintained, and it does not serve the purpose of a recreational area or public area. Besides, these places do not link with each other due to disturbance from the seafood restaurant development in the area.

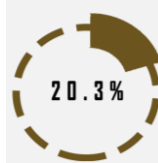### Mangroove Forest

11.3% On the south of the site, a mangrove forest contributes to coastal ecosystems.
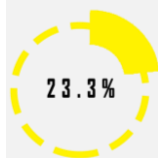
Commercial Area

18.5% There are many commercial areas on the site, which could improve the local economy, but the commercial area does not have significant and unique values that could attract tourists to stay there for a long time. There are also some seafood restaurants on the site.

Open Spaces

20.3% There is a huge undeveloped area located between Bus Station and Brasmana Hotel in the area. Currently, there is ongoing construction in the area to develop a shopping mall with multilevel parking. (According to Kuala Perlis Rancangan Tempatan)
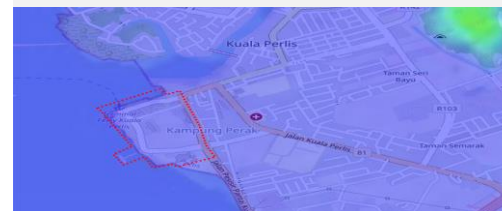
Transportation Hub

23.3% There are two main transportation types at the hub: Kuala Perlis Ferry Terminal and Bus Station. The locals and tourists actively use both, but the buildings do not reflect any identity of the places, and there is no sense of welcoming at all. Besides, both hubs do not connect to other interesting places in the area.

2. Topography, Hydrology & Microclimate Of Kuala Perlis

Kuala Perlis Topography

Kuala Perlis is located near the coastal area, where the site topography is generally flat. From the observation, most of the places on the site have been utilised by development. The landform of the site influences the water run-off and the wind speed.

This image showed that Kuala Perlis is located in a flat area that can be further developed into a tourism spot near the coastal zone.
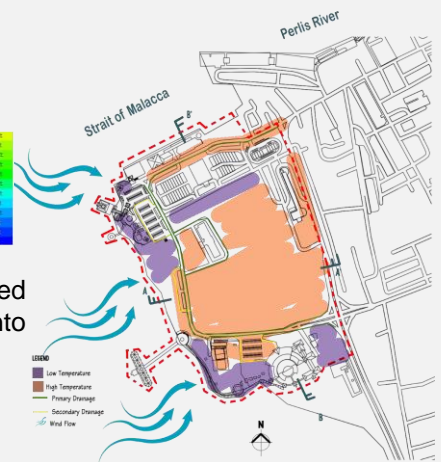
Figure 3: Physical Map

3. Natural Elements In Kuala Perlis

Vegetation in Kuala Perlis

There is some vegetation in Kuala Perlis, but as Kuala Perlis develops, it has lost it has already lost its values and function as Kuala Perlis develops. Due to the development, the coastal area has been changed and introduced to new species. As mentioned before, Kuala Perlis is a fisherman village built on mangrove stilt, but through time, there is no longer a mangrove ecosystem on the site. Only a part of the site is still covered with mangrove trees.

Wildlife in Kuala Perlis

During the observation, a few wildlife has been spotted in the site, but there are just a few species such as birds, mammals, and edible sea snail. The coastal area is rich with shellfish seedling that contributes to seafood-based commercials. Near the seafood restaurants, there are many crows and stray cats because they are finding food from the garbage.
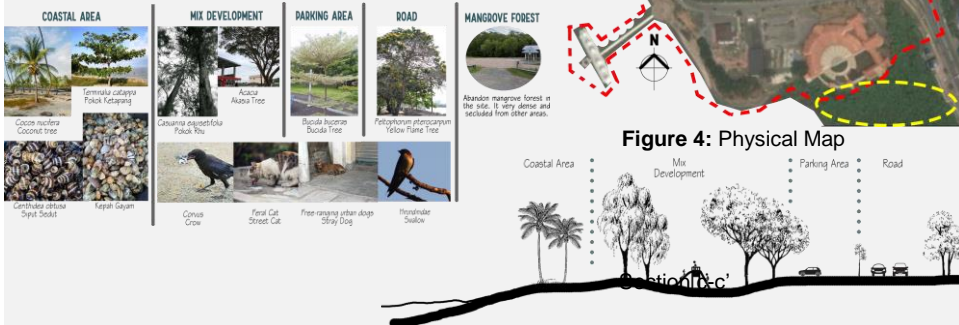
Figure 4: Physical Map

5. Visual Studies for Kuala Perlis

Kuala Perlis has one natural beauty: the view towards the ocean. Who's a nature lover and photographer will come to Kuala Perlis to see and capture the beauty of the sunset. Kuala Perlis has been a hotspot for sightseeing during the late evening around early 6 pm to 8 pm as around that time, the background of the ocean will change colour due to sunset.
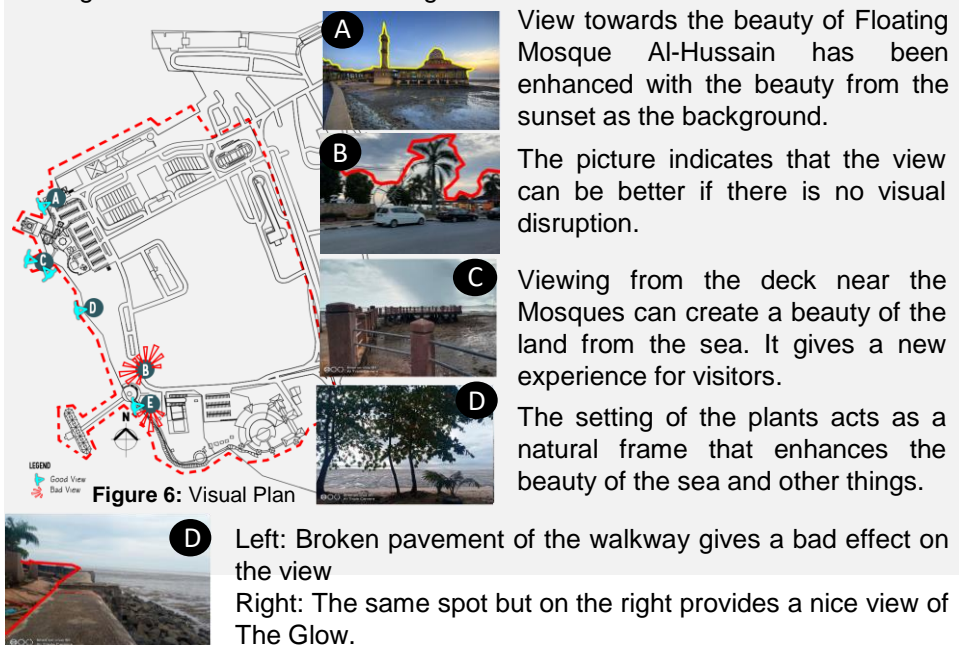
A — View towards the beauty of Floating Mosque Al-Hussain has been enhanced with the beauty from the sunset as the background.

B — The picture indicates that the view can be better if there is no visual disruption.

C — Viewing from the deck near the Mosques can create a beauty of the land from the sea. It gives a new experience for visitors.

D — The setting of the plants acts as a natural frame that enhances the beauty of the sea and other things.

Figure 6: Visual Plan

D — Left: Broken pavement of the walkway gives a bad effect on the view
Right: The same spot but on the right provides a nice view of The Glow.

4. Transportation Networking System

Kuala Perlis has three types of circulation system: the main road circulation system, minor road circulation system, and pedestrian circulation system. All the circulation systems need to be connected to the link and unite the urban waterfront fabrics.

Major Road Circulation

The site can be accessed from Changlun-Kuala Perlis Highway and Kuala Perlis road. There is only one entrance to the site located in the south area of the site.

Minor Road Circulation

There is a minor road on the site, a secondary road divided into two types: routes with 1-way direction and 2-way directions.
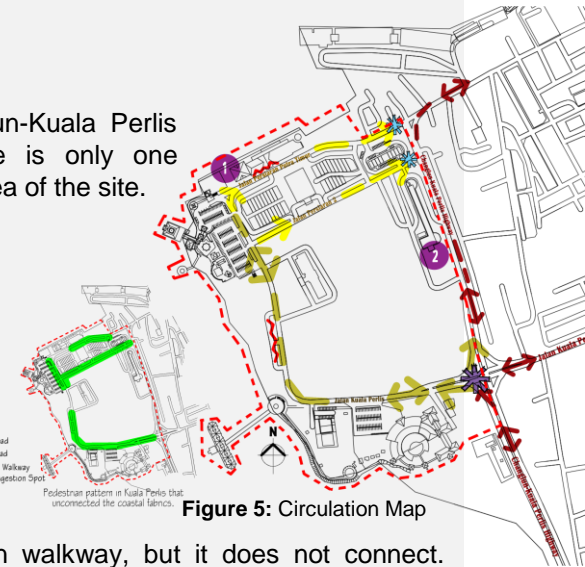
Figure 5: Circulation Map

Pedestrian Circulation

There is 1-meter width of the pedestrian walkway, but it does not connect. Besides, the walkways are not maintained, which results in broken pathways. It will affect the safety of the pedestrian walkway. Moreover, the area also does not fully equip with proper signage, resulting in a poor sense of direction towards the walkway visitors.

Traffic Congestion Spot

According to local authorities, Persiaran Putra Timur Road is the hotspot for traffic congestion due to it being a 1-way direction with a small width of the road. Besides, it is always busy with cars that drop and pick up the passengers from the jetty as it has a small area for the parking lot, which did not tally with the number of cars that visit the Terminal Ferry.

6. Users activities and Events

Users Activities: Passive Activities
Sightseeing: Usually people watch sunset and sunrise near the ocean because it has a good view and therapy.

Semi-active Activities

Gathering: People gather at the seaside recreational area because it is the only public space in Kuala Perlis. Besides, they also gather at food stalls also located beside the ocean.

Active Activities

Collecting seashells: Parents allow their children to play near the sea while collecting the seashells.

Socio-economic

Seafood Restaurants: It is the main attraction of Kuala Perlis.
Hotels: As a tourism spot, hotels are very crucial to in providing accommodation for tourists

Brasmana Food Truck And Flee Market

Located in front of Brasmana Hotel, which sells food-based items.

Figure 7: User Activities Plan

SITE SYNTHESIS

Referring to Figure 8, the synthesis map is categorised by three areas of potential for development: waterfront public realms, waterfront trading centres, and accessibility and circulation.

WATERFRONT PUBLIC REALMS

Waterfront Square - Potentials: The abandoned land can be developed as new public realms which could unite all the urban fabrics in Kuala Perlis. The strategic location in the middle of the sites can be a new node where people can gather and socialise

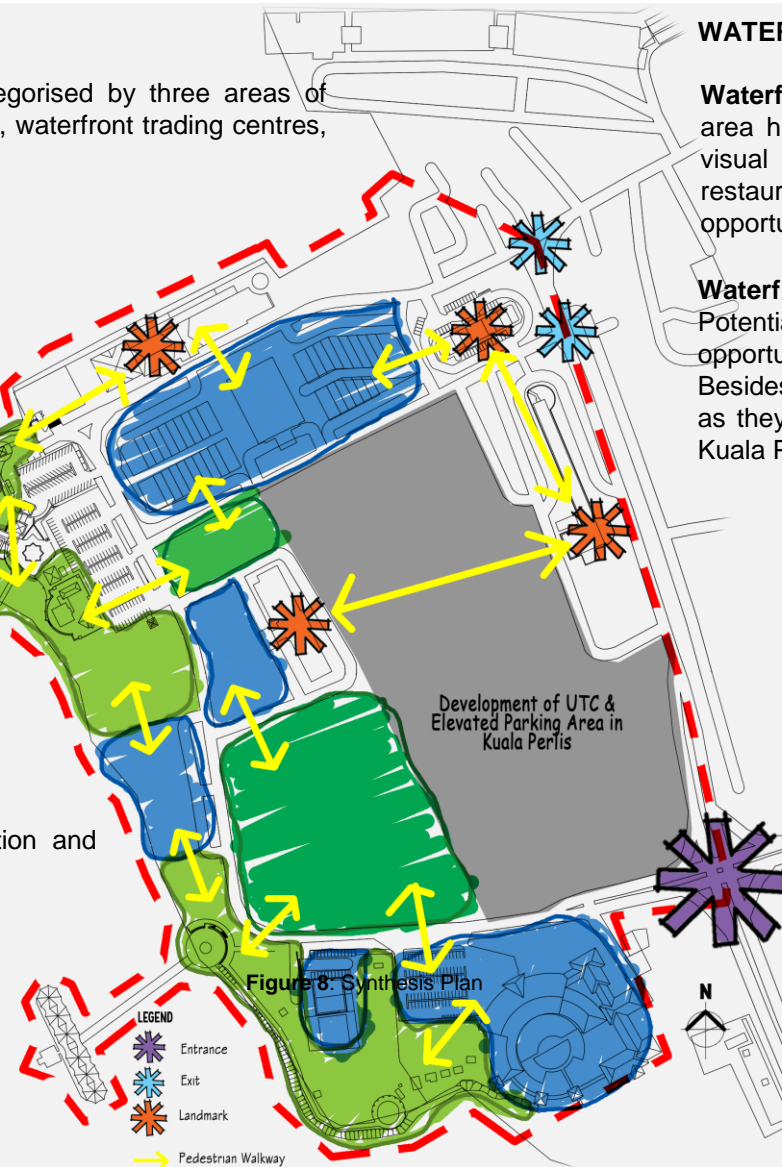Potential for development as open spaces and green spaces.

Provide a pavilion that enhances social interaction and creates new activities like resting or gathering.

Waterfront Promenade - Potentials: The area is located near the seafront, which provides a good spot to attract tourism and those who love nature due to the beauty of the sunset at Kuala Perlis. Constraints: There are patches of waterfront promenade in Kuala Perlis that do not connect. It has contributed to the division group of people

Create a unique image and connect it with a series of pedestrian walkways with faster and slower interconnected paths, as visualised in the precedent studies of Xin Hua Waterfront in China.

Figure 8: Synthesis Plan

Development of UTC & Elevated Parking Area in Kuala Perlis

LEGEND
- Entrance
- Exit
- Landmark
- → Pedestrian Walkway

ACCESSIBILITY & CIRCULATION

Entrance and Exit - Constraints: No Proper entrance and exit that indicates the identity of Kuala Perlis, which results in losing the sense of welcoming.

The visitors cannot identify the site because no landmark for sense of welcoming or attracting people to the site
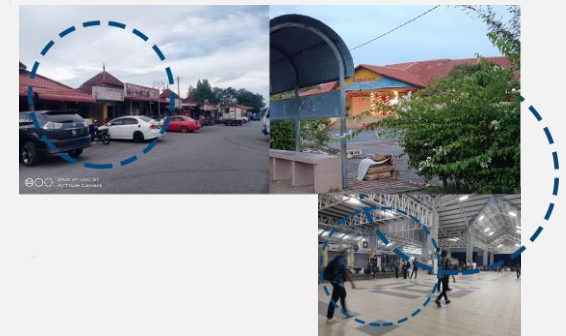
It is an obvious and vibrant entrance that catches the visitors' eye for the site—proposed continuously visual cue that leads the visitors into the area.

WATERFRONT TRADING CENTER

Waterfront Seafood Restaurants - Constraints: The area has a lot of domestic waste that gives a bad visual toward the site. Potentials: Seafood restaurants provide a lot of potential like job opportunities and attract visitors who love seafood.

Waterfront Bazaar Rakyat Kuala Perlis - Potentials: This Bazaar can create many job opportunities and generate income for local people. Besides, it also can give the identity of Kuala Perlis as they can sell goods based on the Uniqueness of Kuala Perlis.

Strategies:
1. Proper maintenance for garbage management to avoid any discomfort to visitors.
2. Bazaar Rakyat needs to be enhanced with a proper layout to utilise the area while waiting for departure to Langkawi Island or to return home.
3. The environment for the bazaar needs to reflect the identity of Kuala Perlis, which could attract tourists to explore more on Kuala Perlis.

Pedestrian Walkway - Constraints: Unmaintained and broken pedestrian walkways will affect the safety of visitors during their visit. Besides, the dull environment makes pathways look scary and insecure both day and night.

The visitors cannot utilise the area, and it becomes abandoned and unsafe to use.

Create sustainable pedestrian walkways that encourage people to walk to improve their quality of life and promote a healthy lifestyle.

FINDINGS:
Kuala Perlis Gateway: Accentuating Kuala Perlis as New Waterfront Attraction

DESIGN CONCEPT

Green
Renewal, nature, freshness, and environment
Green highlights the area's advantages and associate them with the environment, which gives the sense of place towards the regions.

Loop
Continuous connection.
Loops collectively link the different aspects of Kuala Perlis while allowing visitors and locals to travel through the city easily.

To be pause in life - A temporary stop in action or speech

The designated areas with their unique advantages that provide a different experience are actively connected with other areas that will make the visitors temporarily stop their journey to appreciate nature.

DESIGN STRATEGIES

WATERFRONT PUBLIC REALMS

- Create interesting public realms that offer many activities and where users can choose their activities.
- Increase the native planting species that express the area's identity and which could balance the coastal biodiversity.
- Improve the quality and their own identity can give a different ambience for the visitors, and the areas need to be connected with designated pathways.

WATERFRONT TRADING CENTER

- Create a new dining environment that makes people engage with the ocean or nature as a new attraction in the site.
- Improve the quality of the environment by enhancing the area with green space will increase the area's aesthetic.
- Express the identity of the Kuala Perlis by creating the unique appearance of the stalls.

ACCESSIBILITY & CIRCULATION

- Provide a vibrant environment and obvious structure that give new landmarks as the entrance to the site and create a sense of welcoming for the visitors.
- Implement the native tree species that gave shade and resilient which could create a great view
- High level and environmental-friendly walkway that promotes quality of life and creates a sense of direction.
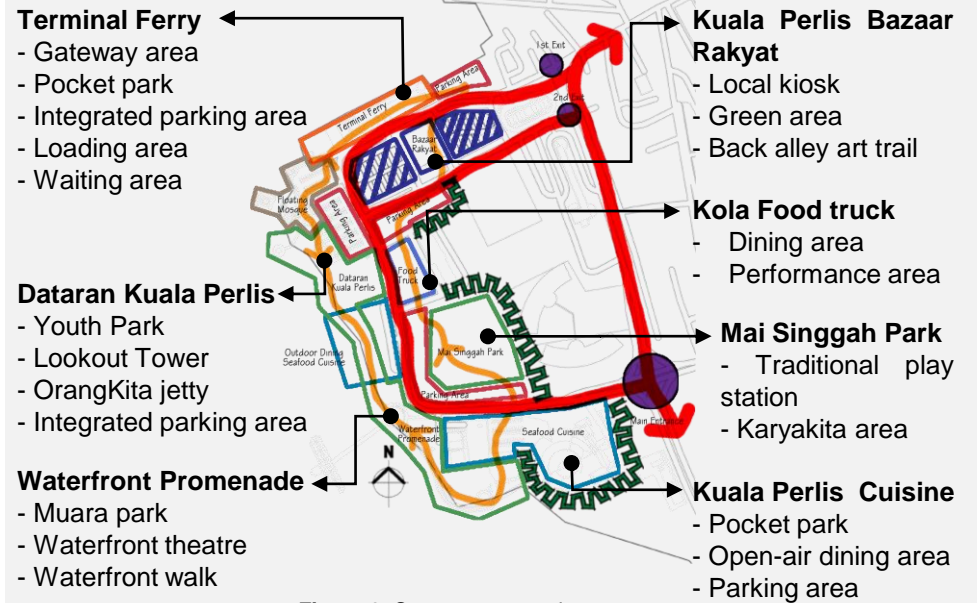
SPACE PROGRAMMING

Terminal Ferry
- Gateway area
- Pocket park
- Integrated parking area
- Loading area
- Waiting area

Kuala Perlis Bazaar Rakyat
- Local kiosk
- Green area
- Back alley art trail

Kola Food truck
- Dining area
- Performance area

Dataran Kuala Perlis
- Youth Park
- Lookout Tower
- OrangKita jetty
- Integrated parking area

Mai Singgah Park
- Traditional play station
- Karyakita area

Waterfront Promenade
- Muara park
- Waterfront theatre
- Waterfront walk

Kuala Perlis Cuisine
- Pocket park
- Open-air dining area
- Parking area

Figure 9: Space programming

SITE PROPOSED FUNCTIONAL DIAGRAMS

ACCESSIBILITY & CIRCULATION
Three main loops continuously connected the spaces. There are primary loops, inner loops, and outer loops. It will achieve one of the objectives which connect the areas and could enhance pedestrianism.

→ Primary Loop   → Inner Loop   → Outer Loop
❶ Terminal Ferry   ❷ Pocket Park   ❸ Gateway

WATERFRONT PUBLIC REALMS
The site has been divided into three main spaces, which serve different functions. The Waterfront Promenade is where people can enjoy and interact with nature while escaping from busy life. Dataran Kuala Perlis offers many activities that focus on recreational activities like cycling and fitness activities.

❶ Waterfront Promenade   ❹ Lookout Tower
❷ Dataran Kuala Perlis   ❸ Mai Singgah Park   ❺ Muara Park

WATERFRONT TRADING CENTER
The map indicates three main areas where locals can generate an economy and improve local financial status. The Seafood restaurants near the Waterfront can be enhanced as an outdoor dining area with specific features. Bazaar Rakyat is a place where visitors can purchase goods and also a place for an art trail.

Figure 10: Functional diagrams

❶ FoodTruck Area   ❷ Seafood Restaurant   ❸ Bazaar Rakyat
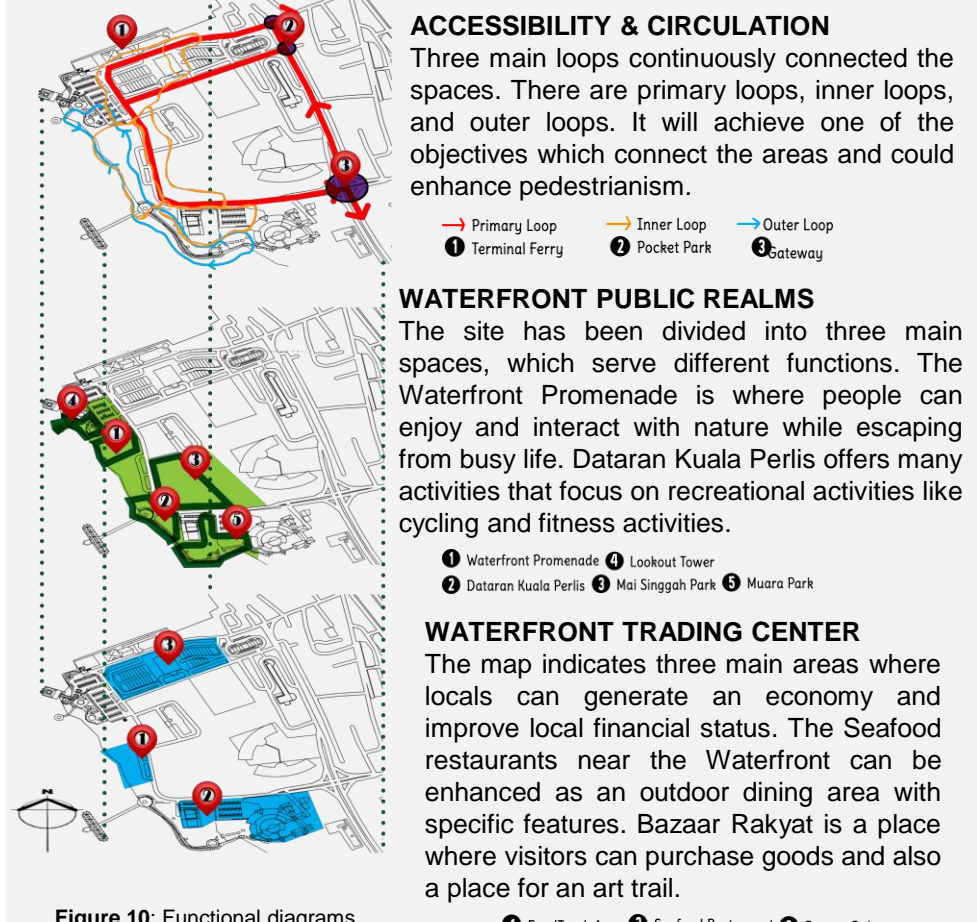
PLANTING CONCEPT

COASTAL TRANQUILITY

The planting composition will focus more on reviving the coastal ecosystem and giving a sense of relaxation. Tranquility expresses the feeling of peace of mind where the plant provides a sense of calmness.

WATERFRONT TRADING CENTRE
- Planting at the Trading Center will be planting with aesthetic values and small trees or shrubs.
Ex: Gardenia Jasminoides

WATERFRONT PUBLIC REALMS
- This area will be more on reviving the coastal ecosystems with planting resilient to salt and wind tolerance.
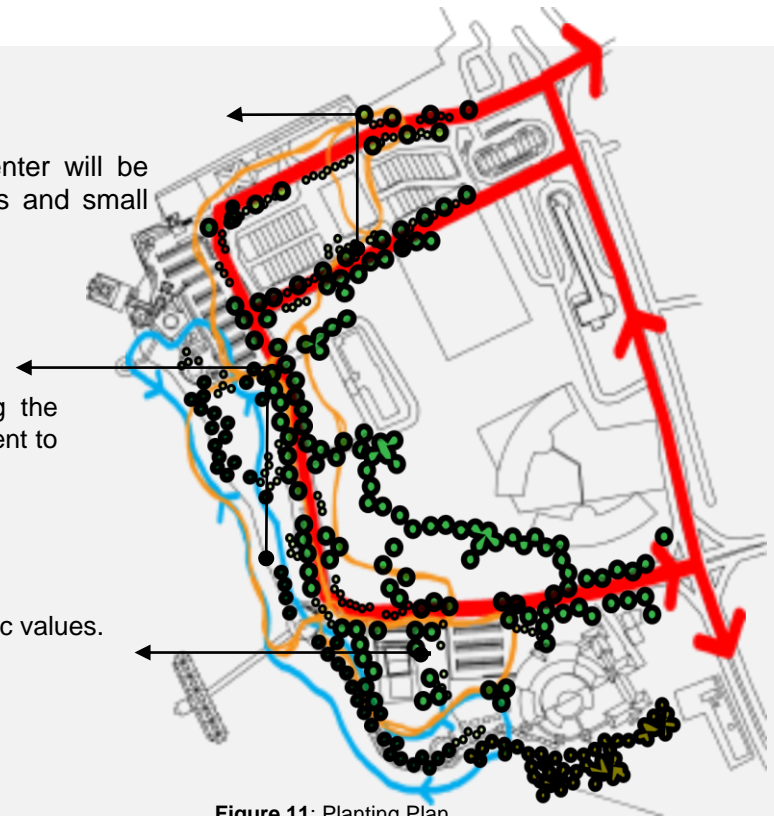
ACCESSIBILITY & CIRCULATION
- For gateway into the site, the planting with vibrant colours is used to express the aesthetic values.
Ex: *Ixora sinensis* and *jasminum*
- For the main road, planting that absorbs fine dust and provides shade will be used.
Ex: *Hopea odorata* or *Peltophorum pterocarpum*

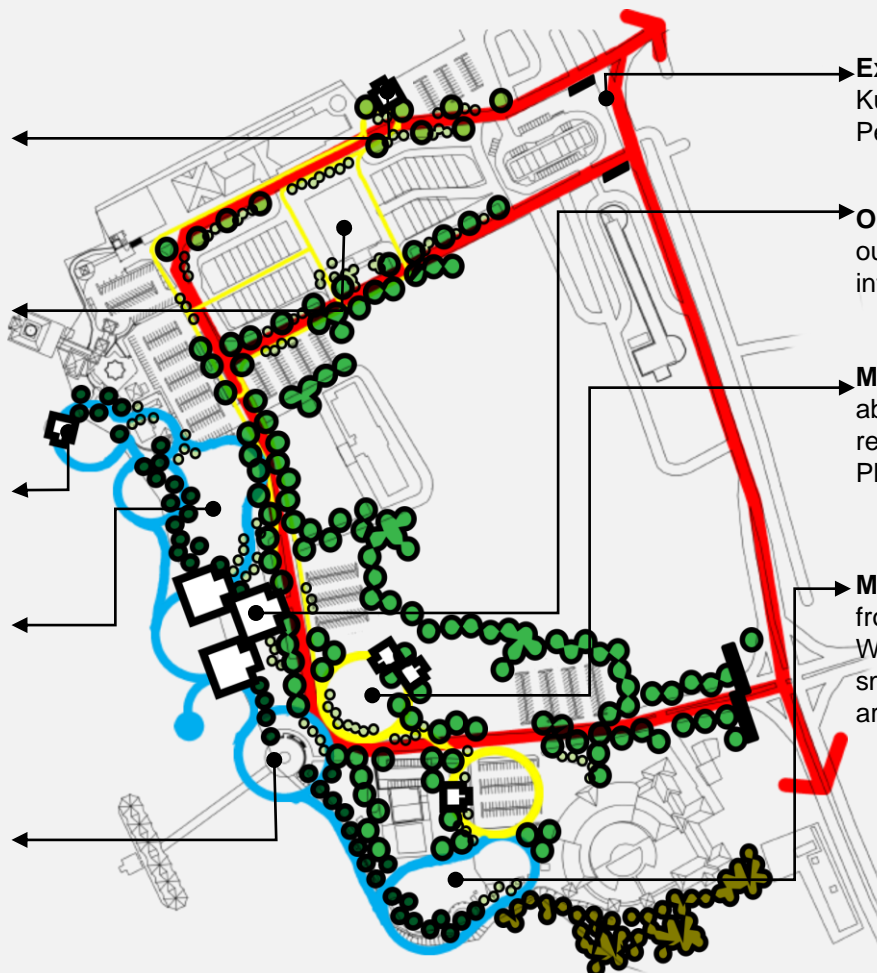**Figure 11**: Planting Plan

SCHEMATIC PLAN

Integrated Parking - Reviving the abandoned parking with the proper environment will benefit the ferry terminal users.

Bazaar Rakyat - Promoting the local goods by enhancing Bazaar Rakyat with a livable environment with a proper layout to attract visitors.

Lookout tower - The viewing tower gives visitors another experience by viewing from the top of the ground.

Dataran Kuala Perlis – is the place that promotes a healthy lifestyle either by outdoor fitness area or cycling area. This area is also provided as a waterfront food truck area.

Waterfront Theatre - the area, provided an opportunity for the locals to hold events that can attract tourism to Kuala Perlis.

Exit Gateway - The small sculpture Kuala that indicates the exit from the Perlis Waterfront area.

Outdoor Seafood Restaurants - is the outdoor dining area where people can interact with the sea.

Mai Singgah Park - Enhancing the abandoned area in front of the seafood restaurants, which turn to Traditional Play station with Karya Kita art trails.

Muara Park - As the connection area from seafood restaurant to the Waterfront of Kuala Perlis that has a small playground area and also as buffer area of mangrove ecosystems.

Figure 12: Schematic Plan

Figure 13 shows the proposed master plan for the proposed design of the whole site of Kuala Perlis.

Figure 13: Master Plan

The inner loop gives visitors the ability to interact with the sea.

The environment of Orang Kita Jetty and outdoor dining seafood restaurants mainly enhances and promotes local products and foods.

Detail Development Area: Pengkalan Kola and Citarasa Utara

The detailed development areas for this project on Accentuating Kuala Perlis as the new waterfront attractions are the Pengkalan Kola and the Citarasa Utara. Thus, the detailed development area is about enhancing the commercial space and public realm within Kuala Perlis that could express the culture and identity of Kuala Perlis. These areas are located in the middle of Kuala Perlis, between Dataran Kuala Perlis and Kuala Perlis Waterfront Theatre. The proposed area comprises of the Floating Market of Pengkalan Kola and the Seafood Restaurant of Citarasa Utara. These areas mainly promote the cultural values of Kuala Perlis and sustain the local economy. Figure 14 shows the key and location plan of the selected detail development site.

There are a few reasons and some justification for selecting these areas, which are: -

1. The area is more likely to be a potential area to express the culture of Kuala Perlis as a fisherman village.
2. These places will promote the opportunity for people to experience the northern cuisine and culture before transiting to other places by ferry.

KEY PLAN
Kuala Perlis

LOCATION PLAN
Seafood Restaurant (Citarasa Utara) &
Floating Market (Pengkalan Kola

Figure 14: Key Plan & Location Plan of Selected Detail Development Plan

ISSUES

Lack of activities offered for visitor which could retain people in Kuala Perlis

Loss of cultural identity of Kuala Perlis especially to convey the strong essence of Fisherman Village.

AIM AND OBJECTIVES

AIM: To revive Pengkalan Kola and Citarasa Utara with cultural values that will act as a catalyst to retain visitors in Kuala Perlis.

OBJECTIVE 1
Creating a significant Pengkalan Kola that would allow a wide range of activities as well as increase the local economy.

OBJECTIVE 2
To induce the cultural values through the design of Citarasa Utara that could reflect the identity of Kuala Perlis.

DESIGN STRATEGIES

1. PENGKALAN KOLA

Cluster decking for fisherman boat to ease the unloading fishes.

Selling activities that occur on Sampan can be adopted with various goods.

Sculpture of boat that indicates the culture of fisherman village.

Places for dried seafood production and also the activities of fixing netting which express the culture of fisherman village.

Enhance the environment of fisherman village by using wooden decking and identity through the design of archway.

2. CITARASA UTARA

Design of ship for the pavements and hardscape elements that follow the shape of Sampan to show the identity of Kuala Perlis.

A vibrant environment expresses the coastal environment with proper vegetation that shows the identity of the coastal area.

Case study of Turenscape paddy field where they bring the paddy farming into the middle of the city.

DESIGN PROCESS

Figure 15 below shows the design development that expands further from the design strategies. As for this stage, a few spaces have been identified and have a few proposed activities according to the need and characteristics of the areas (Figure 16).

Most of the area will be focused on reviving the culture and identities of fisherman villages. Therefore, the area will be the main area to generate local economy in Kuala Perlis and to attract more visitors
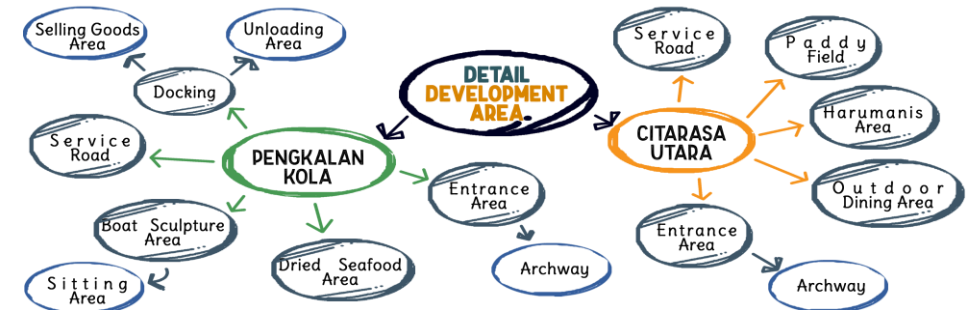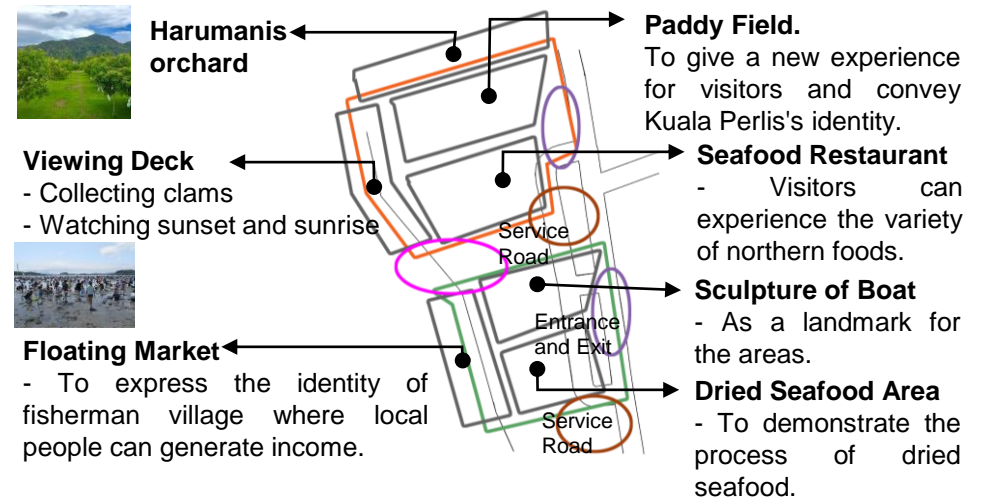

Figure 15: Site Related Space Programming

Harumanis orchard

Viewing Deck
- Collecting clams
- Watching sunset and sunrise

Floating Market
- To express the identity of fisherman village where local people can generate income.

Paddy Field.
To give a new experience for visitors and convey Kuala Perlis's identity.

Seafood Restaurant
- Visitors can experience the variety of northern foods.

Sculpture of Boat
- As a landmark for the areas.

Dried Seafood Area
- To demonstrate the process of dried seafood.

Figure 16: Site Related Space Programming

SITE RELATED FUNCTIONAL DIAGRAMS

1. FLOATING MARKET OF PENGKALAN KOLA

Figure 17 shows that this area will be used to convey the identity of Kuala Perlis as a fisherman village by implementing the activities of fishermen and also the commercial activities that occur on the decking
1. Floating Market
2. Boat's Sculpture
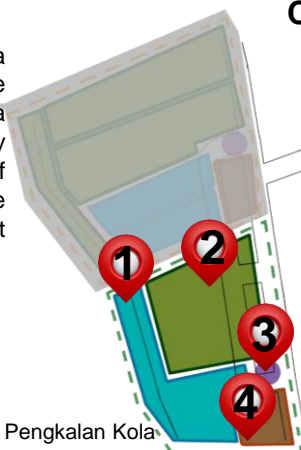3. Entrance
4. Service lane

Figure 17: Pengkalan Kola

2. SEAFOOD RESTAURANT OF CITARASA UTARA

Figure 18 shows that this area mainly generates local community while the visitors can enjoy the variety of northern cuisine.
1. Viewing Area
2. Harumanis Orchid
3. Entrance
4. Paddy Field
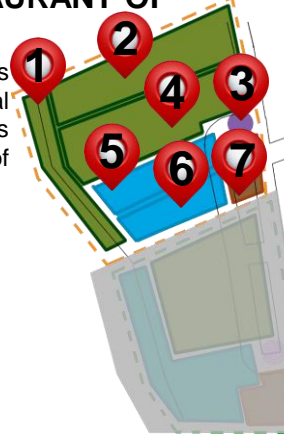5. Outdoor Dining Area
6. Seafood Restaurants
7. Service Lane

Figure 18: Citarasa Utara

3. ACCESSIBILITY AND CIRCULATION

Figure 19 shows that the site consists of 2 loops: inner loops and outer loops. As for the outer loops, will be the main Road (Primary road), pedestrian walkway and bicycle lane (Secondary Road), and last the service lane (Tertiary road). The inner loops consist of the main pedestrian walkway (Primary road for pedestrian and pedestrian walkway) connecting the sub-space within the area (Secondary Road).

Legend:
Main Road of Kuala Perlis
Bicycle Lane
Secondary road for pedestrian that connected the sub-spaces
Pedestrian Walkway
Main Pedestrian Walkway (Back bone)

Figure 19: Accessibility & Circulation

Figure 20 shows the detailed development plan for the Seafood Restaurant of Citarasa Utara and the Floating Market of Pengkalan Kola.

Figure 21: Environment of Floating Market.

Figure 21 shows that the wooden floating jetty is created to portray the area's identity. This area can be a unique public attraction because visitors not only can reach for fresh seafood, but they also can see the process of unloading the fish.

Figure 22: Environment of Seafood Restaurant.

Figure 22 shows the outdoor environment, which allowed visitors to experience the feeling of being serene and close to the vast paddy field view. Moreover, the Ripplerene can act as the focal point to navigate the visitors inside the area.
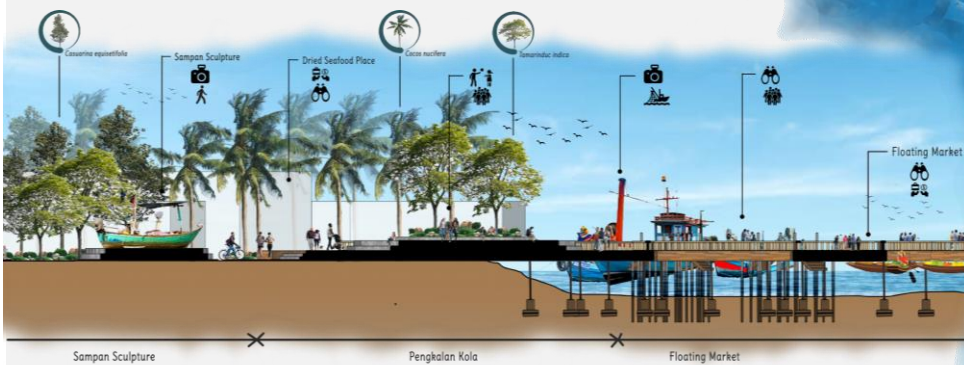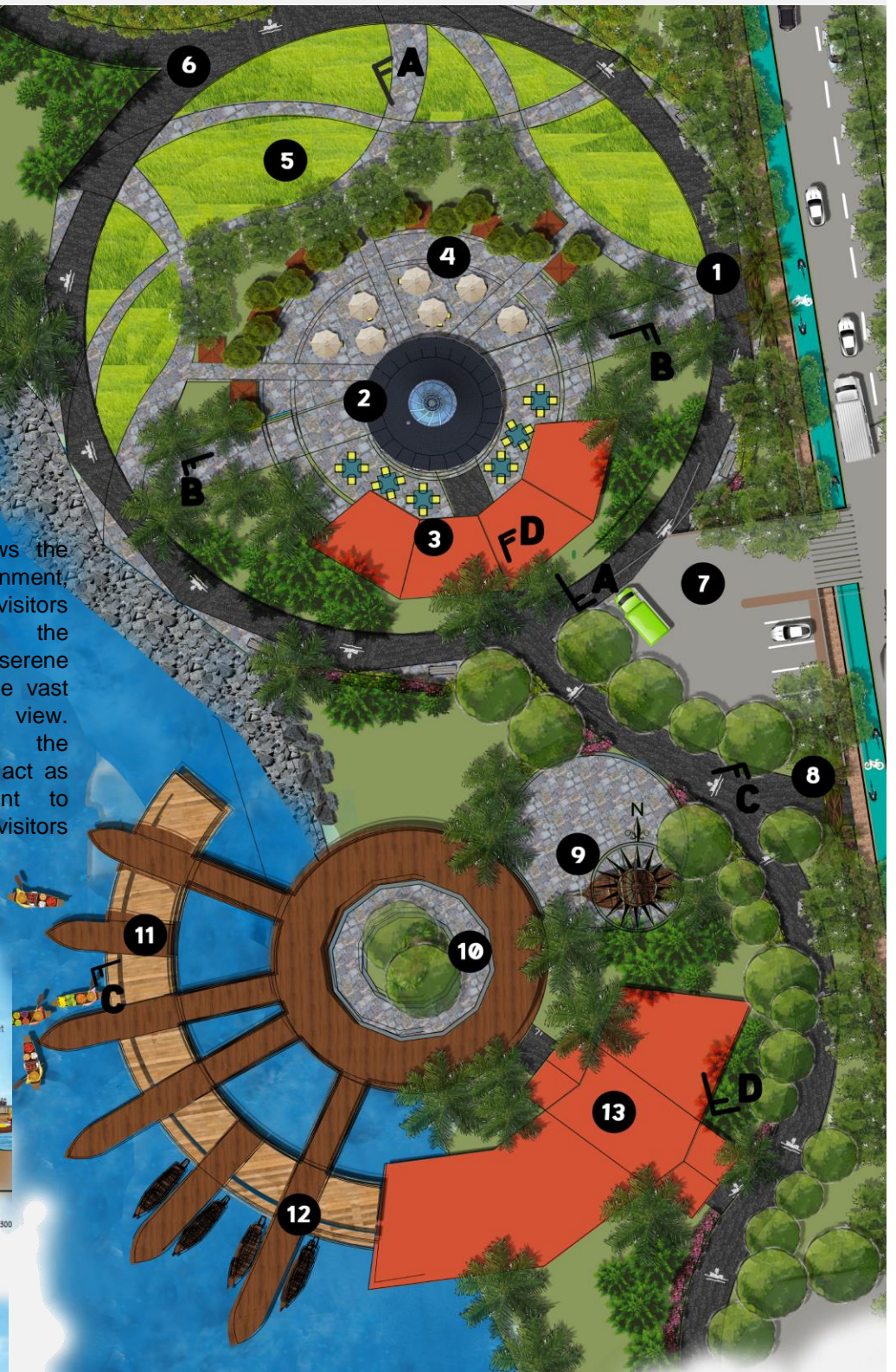

Sampan Sculpture   Pengkalan Kola   Floating Market

Figure 20: Sectional elevation of Pengkalan Kola.

SECTION B-B' Scale 1:300

Citarasa Utara   Outdoor Dining Area   Paddy Field

Figure 23: Sectional elevation of Citarasa Utara.

SECTION D-D' Scale 1:300

Figure 20: Detail Development Plan

LEGEND

1 Entrance
2 Solar Rain
3 Citarasa Utara
4 Teratak Santapan
5 Paddy Field
6 Exit through Harumanis Orchard
7 Service Road
8 Entrance to Pengkalan Kola
9 Sampan Sculpture
10 Resting Area
11 Floating Market
12 Unloading Fish
13 Dried Seafood Area

SOFTSCAPE DETAILING

PLANTING CONCEPT

Coastal Tranquility - The planting composition will be more on reviving the coastal ecosystem and cultural environment. Tranquillity expresses the feeling of peace of mind where the planting design can give a sense of calmness.

Planting Strategies:
1. To enhance the coastal environment, the planting can survive the high concentration of salt like rhizosphere and halophytes and windbreaker plants to break the strong wind and act as a shelterbelt.
2. To enhance the cultural environment of Perlis by providing two main native plants.
3. To express the calm and relaxing environment, vibrant and attractive planting is crucial where visitors can maximize the five senses when experiencing the environment.

PLANTING SCHEDULE

A) Shrubs & Groundcovers

Table 2: Planting schedule for shrubs & groundcovers.

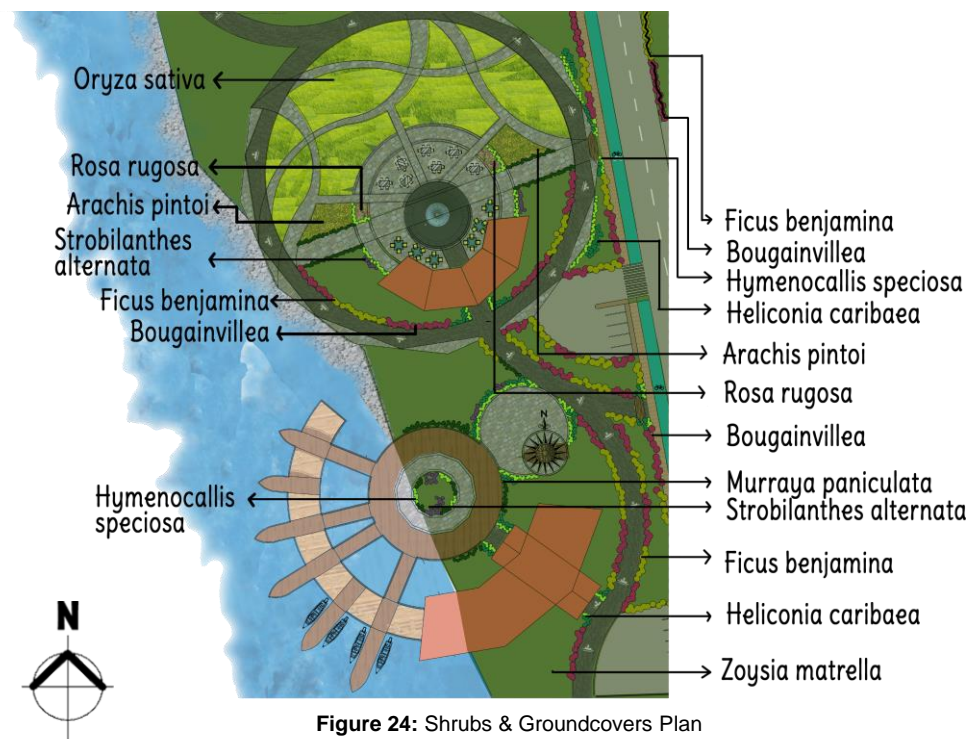| NO.	SYMBOL	COMMON NAME	SCIENTIFIC NAME	HEIGHT (m)	DIAMETER (m)	QUANTITY
		Shrubs				
1		Weeping fig	*Ficus benjamina*	1	0.5	700
2		Orange jasmines / Kemuning	*Murraya paniculata*	1.5	0.7	250
3		Green-tinge spiderlily	*Hymenocallis speciosa*	0.5	0.4	300
4		Paperflower tree	*Bougainvillea*	1.5	0.8	700
5		Lobster claws plant	*Heliconia caribaea*	2	2	150
6		Red flames ivy	*Strobilanthes alternata*	0.3	1	80
7		Paddy	*Oryza sativa*	0.7		1400 m²
		Ground Covers				
8		Japanese rose plant	*Rosa rugosa*	0.1		3.4km²
9		Yellow Peanut Plant	*Arachis pintoi*	0.1		160 m²
10		Manilla grass	*Zoysia matrella*			4800 m²

Figure 24: Shrubs & Groundcovers Plan

PLANTING SCHEDULE

B) Trees & Palms

Table 3: Planting schedule for trees and palms.

NO.	SYMBOL	COMMON NAME	SCIENTIFIC NAME	TREE HEIGHT (m)	TREE DIAMETER (m)	QUANTITY
		Trees				
1		Harumanis tree	*Mangifera indica*	10	7	14
2		Tamarind tree	*Tectona grandis*	25	5	12
3		Australian pine tree	*Casuarina equisetifolia*	30	15	44
		Palms				
4		Caribbean royal palm	*Roystonea oleracea*	40	5	12
5		Coconut tree	*Cocos nucifera*	8	5	24

SOFTSCAPE DETAILING

PLANTING PALETTE

Ficus benjamina *Hymenocallis speciosa* *Zoysia matrella* *Heliconia caribaea*

Tamarindus indica *Tectona grandis* *Mangifera indica*
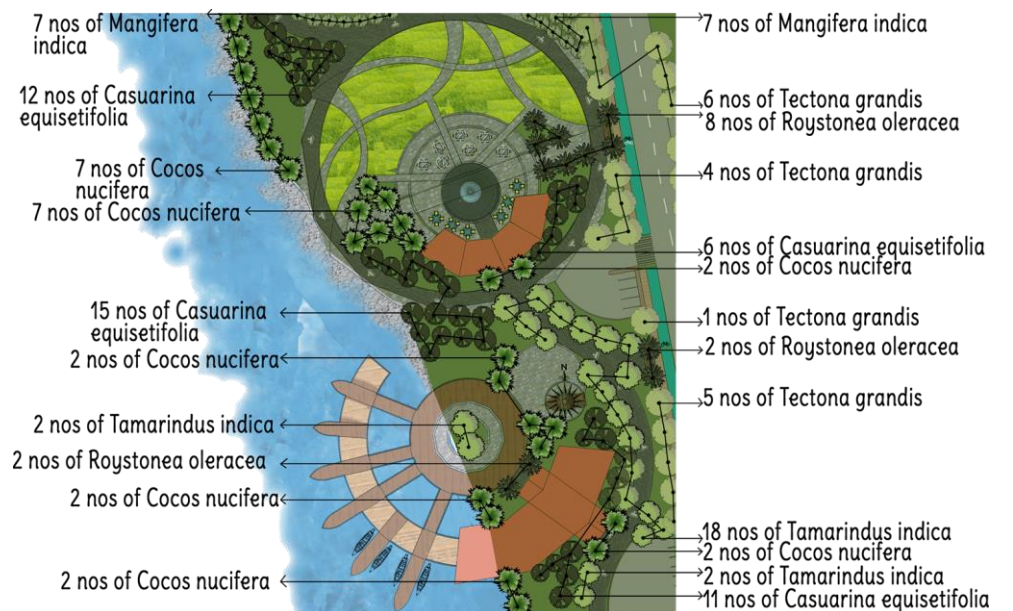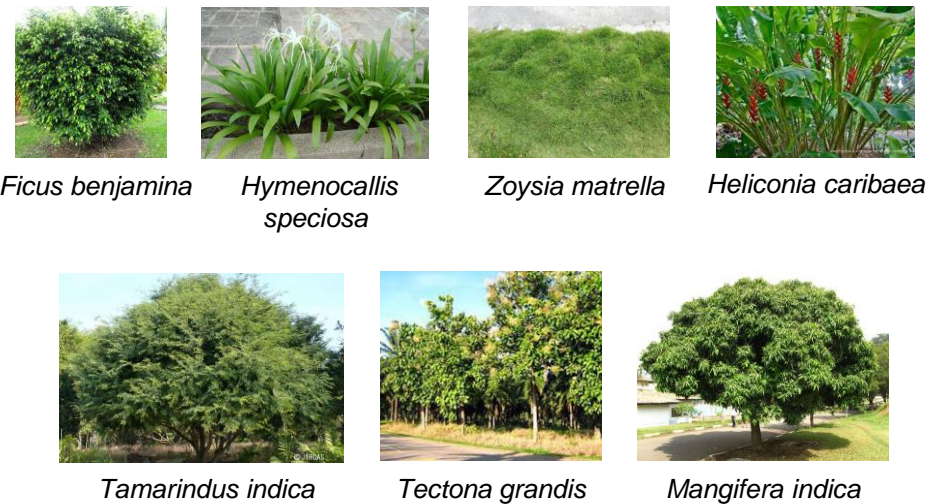

Figure 24: Trees & Palms Plan

HARDSCAPE DETAILING

Figure 26: Hardscape Plan

HARDSCAPE PALETTE

Ripplerene

Boat Sculpture

Benches

Pengkalan Kola Archway

Pengkalan Kola Floating Market

HARDSCAPE SCHEDULE

A) Materials & Finishes

Table 4: Materials and finishes schedule

NO.	SYMBOL	NAME	TOTAL AREA	NO.	SYMBOL	NAME	TOTAL AREA
AC-01		Porous Asphalt	0.0025 km²	ST-01		Gabion Stone	0.0027 km²
AC-02		Green Soft Asphalt	0.00042 km²	ST-02		Porous Brick Pavers	0.00033 km
TB-01		Poly Coated Wood	0.00035 km²	ST-03		Brick Tumbled Pavers	0.0018 km²
TB-02		Poly Coated Wood	0.00025 km²	ST-04		Porous Grey Stone Pavers	0.0021 km²

B) Hardscapes

Table 5: Hardscape schedule

NO.	SYMBOL	NAME	DISCRIPTION	QUANTITY
1		Citarasa Utara Signage	Height of the signage is 12 metre with large graphics that can be experienced from a distance, while the signage also expresses the seafood figure for clear purpose of the area. The whole design are using wood materials.	1
2		Teratak Santapan	5 metre height with 2.5 metre width that built from wooden materials and concrete for the foundation. This pangkin function as outdoor eating area beside the paddy field.	7
3		Dining Table	The wooden dining table with parasol for outdoor dining table	6
4		Ripplerene	20 metre height with 17 metre width. The materials use are stainless steel and glasses. The structure function as shade and also for rain water harvesting with solar panel.	1
5		Pengkalan Kola Floating Market	Floating jetty that built from wooden with concrete slab for the foundation of the floating market. The area use for commercial area that sell fresh seafood and local foods.	1
6		Boat Sculpture	Height of 6 metre with 8 meter width that fully built from wooden that show the design of fisherman boat.	1
7		Pengkalan Kola Archway	The archway made from wooden materials with the height of 12 metre and 7-metre width. The function is to indicate the entrance of Pengkalan Kola	1
8		Benches	Wooden benches with 2.5 metre width that offer seating area for visitors.	5
9		Bollard	With dimension of 500 mm X 200 mm by using stainless steel materials.	8
10		Pole Lighting	Height of 2.5 metre with stainless steel materials that function to provide lighting during night.	73

CONCLUSION

In conclusion, the proposed design for Kuala Perlis has met the aim and objectives by injecting the future design development that can attract and make visitors stay in Kuala Perlis for a few days before embarking to Langkawi Island. Besides, the design also enhances the identity of the places with various ideas such as highlighting the activities of fisherman and redesigning the areas that express the environment of fisherman village.
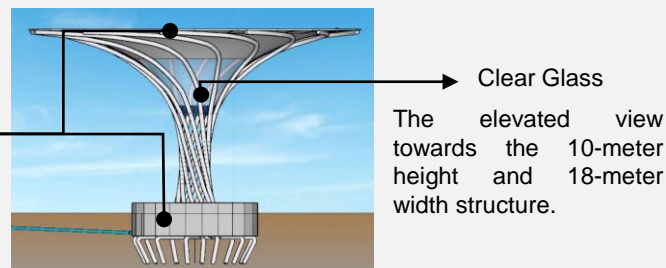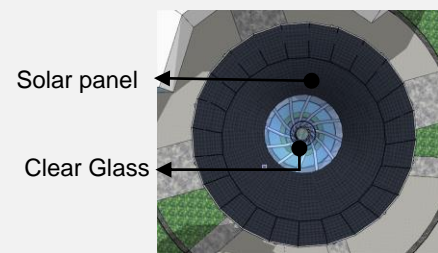
INNOVATIVE DESIGN ELEMENT

In site inventory, analysis and synthesis, it has been found that the climate in Kuala Perlis is very hot, oppressive, and overcast. Kuala Perlis is hot and faced dry seasons at the same time. Thus, it is an opportunity to use the hot and rainy seasons to the fullest.

Ripplerene is a rainwater harvesting structure that functions as a rainwater collector. This structure is also equipped with a solar panel on top of the frame to fully catch or absorb the sunlight and turn it into renewable energy during the hot season. Besides, the structure also provides a seating area and acts as a canopy.

DETAIL CONSTRUCTION

Solar panel

Clear Glass

It is equipped with a solar panel that can generate electricity between 350 kilowatts to 442 kilowatts per hour. Kuala Perlis received an average of 12 hours of sunlight per day. Thus, this solar panel can generate almost 3000 kilowatts to 3800 kilowatts per day. The energy is enough to support both areas of Pengkalan Kola and Citarasa Utara.

Stainless Steels

Clear Glass

The elevated view towards the 10-meter height and 18-meter width structure.
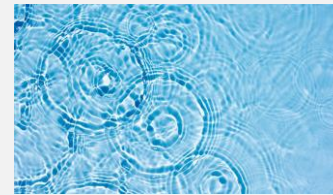

Wide area of Solar Panel on the top of the structure to collect sunlight during the hot day. Besides collecting rainwater and sunlight, it also acts as a seating area and canopies to provide shades.

DESIGN CONCEPT

Ripplerene - The combination of the Ripple of water and Serene

Ripple- The concept of the water drop that makes circle water wave. The idea of a water drop adopts the design form of Ripplerene.

Serene- Means calmness when seeing the ocean or river. Thus, Ripplerene is built near the sea where people can benefit from it.

The design form is also adapted from the concave shape of the *Sampan* (boat). It is to ensure that the rainwater can be fully captured during the rainy season.

DETAIL SYSTEMS

Detail Flows of systems:

1. When raining, the water will flow into the centre of the structure and automatically fall into the pond.
2. The valve will be open immediately when it rains and close during a hot day. The water will be pumped into the filter,
3. The water will be directed to the water filter to separate debris and dirt. The dirt will flow out into drainage.
4. Then, the clean water will flow into the slump or storage tank. The storage tank can store 60,000 litres to 70,000 litres of water.
5. The excessive water will flow out into drainage using an overflow pipe.
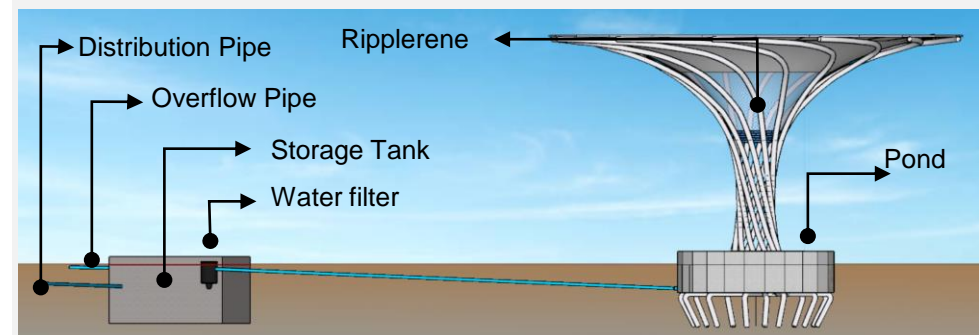

Distribution Pipe

Overflow Pipe

Storage Tank

Water filter

Ripplerene

Pond

Figure 27: Detail section of water system.

The clean water will be very useful. For example: -

Toilet

Ganeral washing (Washing Dishes)

Irrigate Paddy Field

Washing Car

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