

2019 WINTER LANDSCAPE WORKSHOP

cape

Campus

Asia

Plant

Environment innovation

—
SINGAPORE



Context

Following the recent announcements by the Ministry of Trade and Industry and Ministry of National Development, the southern coast of Singapore is set to undergo transformative changes over the next 20-30 years. The proposed creation of two new mega land development plans, named "Greater Southern Waterfront" and "Southern Gateway of Asia" will see major redevelopment of the areas affected.

These are made possible by the relocation of the container port terminals at Tanjong Pagar, Keppel, and Pulau Brani by 2027, and with the eventual relocation of the new Pasir Panjang Terminal to the Tuas Mega Port, 1,000 ha of land will be freed at the southern coast of Singapore in close proximity to the current CBD. These impending changes are reflective of similar transformation of waterfront areas in major cities in the world, such as the Canary Wharf in London, Brooklyn Naval Yard in New York City, HafenCity in Hamburg, Melbourne Docklands, East Darling Harbor in Sydney, etc., as cities seek to redevelop, adapt and reuse post-industrial sites for a wide range of urban development goals.

This workshop is centred on the future of one of the major pieces of land in the proposed redevelopment: Pulau Brani, which is currently a container terminal, and which also hosts the Singapore Police Coast Guard.

The workshop is premised on the basis that landscapes must be a big part of the redevelopment plans for P. Brani. Landscapes must be an important, if not the dominant strategy to be considered for the ecological, social and economic plans for the redevelopment.



PHOTO: GOOGLE MAPS STRAITS TIMES GRAPHICS



Objectives of Design Workshop

The workshop asks students to look at developing conceptual ideas for the future of P. Brani. The task is to develop conceptual schemes and developmental strategies for P. Brani, but students must necessarily understand the surrounding and regional landscapes and its socio-cultural, socio-environmental context, as well as the economic development potential of the site in relation to current and future land uses. The key steps that will guide student's tasks are:

- (1) Understand the context of the site and its redevelopment. For instance, what are current land uses and future land use in the surrounding areas? What are the needs of the different stakeholders? Assume that a clean slate is available for you to develop bold, innovative concepts.
- (2) Articulate the desired outcome. What do you aim to achieve with the new conceptual scheme for the site? Explain your rationale and analysis.
- (3) Represent the concept spatially. These must cover broad concepts, analysis, and spatial features.

Design Deliverables

The deliverables are contents represented logically and professionally in 2 x A1 posters, covering:

- (1) Analysis of current condition and identification of issues and weakness
- (2) Analysis of future needs and potential
- (3) A spatial representation of the planning and design concepts, covering plan, elevation and cross-sections as needed.

Teams

Students were divided into the following five teams.

Abbreviations:

CU-Chiba University;
NUS-National University of Singapore;
TU-Tsinghua University.

A

Li Jingwen -CU
Hiraku Izawa -CU
Kohei Segawa -CU
Wang Hanfeng -NUS
Gao Chenchen -NUS
Gao Ang -TU
Zeng Yuejia -TU
Liu Si -TU

D

Tepei Koikawa -CU
Hiromi Nishikawa -CU
Wakako Sakata -CU
Victor Kuan -NUS
Liu Xiaolei -NUS
Lu Yilei -TU
Zhai Yitian -TU
Jiang Kaiyue -TU

B

Xu Yueye -CU
Kodai Soma -CU
Xu Linxin -NUS
Xu Yuexin -NUS
Yao Haomu -NUS
Chen Xueting -TU
Wang Xiaoshan -TU
Zhao Jing -TU

E

Miyu Tanimoto -CU
Tomomi Kakeya -CU
Kong Lingchang -NUS
Wang Zhe -NUS
Yoshio Motoko -TU
Han Yawen -TU
Li Yunbing -TU

C

Yohei Sasahara -CU
Akimasa Yagi -CU
Daichi Kamimura -CU
Raymong Yong -NUS
Swan Lam -NUS
Hou Shujun -TU
Zhao Ruosi -TU
Zhang Lu -TU

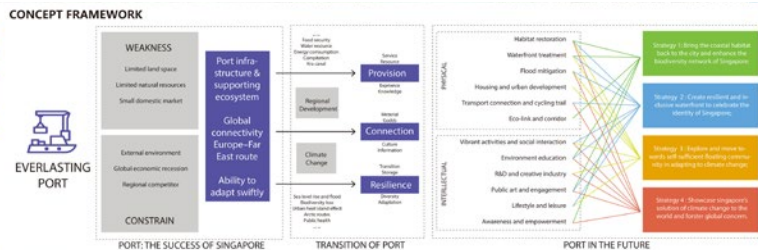


B

EVERLASTING "PORT" - Planning and Design for Pulau Brani

A new "port" for nature, where the land meets ocean; for future, where has adaptive capacity to meet challenges; for interaction, where connects the diverse idea and people all over the world; for intelligence, where has excellent human, natural and financial capital to transform ideas into urban solution.

As the project strategy: Bring the coastal habitat back to the city and enhance the bio-diversity network of Singapore; Create resilient and inclusive waterfront to celebrate the identity of Singapore; Towards self-sufficient floating community in adapting to climate change; Showcase Singapore's solution of climate change to the world and forster global concern.



NATURE RESTORATION

Step1: Select core ecological potential area



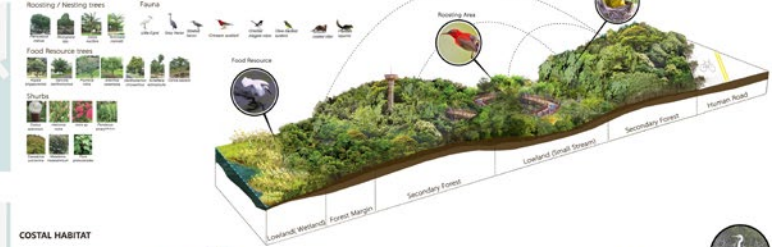
Step2: Rebuild sustainable habitat for species



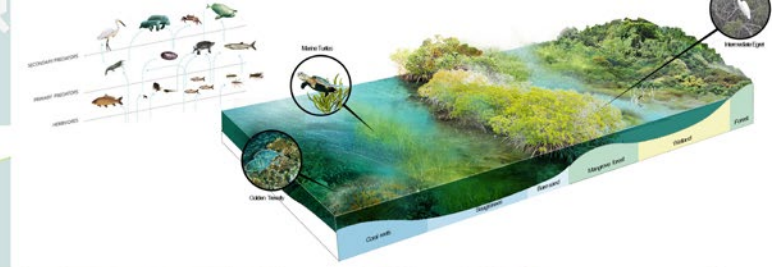
Step3: Create connective marine and forest corridor



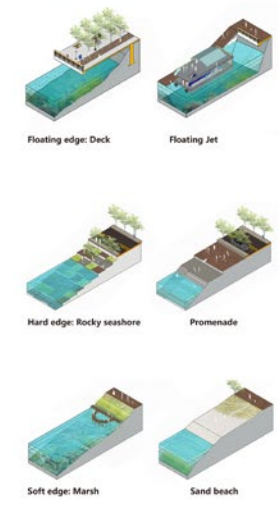
FOREST HABITAT



COSTAL HABITAT



RESILIENT WATERFRONT



MICE is infrastructure for businessmen: Networking, Innovation and Leisure place.
 MICE: Meeting for meet up with businessmen from other firms; Incentives for bonus travel with/for workers in same company - Motivation for Performance; Conventions for specific Objectives & Exchanges of Information - Organising Itineraries for people from the same field / profession; and Exhibition for public Display.

A unique business - vacation island where the principles and best practices of eco - tourism provide its visitors and locals a unique and memorable experience on how it is to have an environmentally friendly lifestyle in a tropical setting. ECIM will bridge social exchanges with nature.

WHAT IS MICE?

Infrastructure for Businessmen
 :Networking, Innovation & Leisure Place



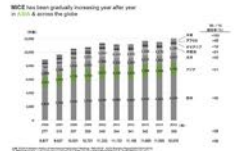
- M**EETINGS: Meet up with businessmen from other firms
- I**NCENTIVES: Bonus travel with/for workers in same company - Motivation for Performance
- C**ONVENTIONS: Specific Objectives & Exchanges of Information
 - Organising Itineraries for people from the same field / profession
- E**XHIBITIONS: Public Display



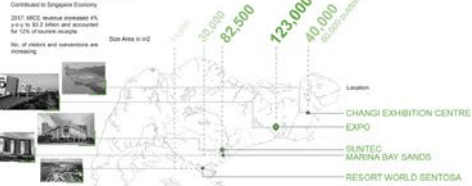
Concept

“ Bridging Social Exchanges with Nature ”

TRENDS OF MICE



MAJOR MICES IN SINGAPORE



MICES COMPARISON IN SINGAPORE

MICE	OPERATING AREA	CONVENTION HALL	THEATRE	EXHIBITION SPACE
1. CHANGI EXHIBITION CENTRE	Changi	Changi Exhibition Centre	Changi Exhibition Centre	Changi Exhibition Centre
2. SUNTEC MARINA BAY SANDS	Marina Bay Sands	Suntec Convention Centre	Suntec Theatre	Suntec Exhibition Centre
3. RESORT WORLD SENTOSA	Sentosa	Resort World Sentosa Convention Centre	Resort World Sentosa Theatre	Resort World Sentosa Exhibition Centre

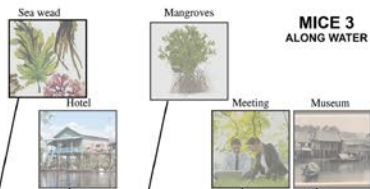
PROGRAMS & ACTIVITIES

- Each MICE has a theme with programs and activities designed around the environment of the venue. MICE participants, exhibitors and trade show attendees can enjoy a wide range of activities including team building, networking, entertainment, and relaxation.
- Activities, programs and incentives are introduced.
- Activities: Programs and incentives are introduced.
- Relax: On Water, In Water, Swimming Water.
- Fun & Play: Along Water, accommodation are situated along the coastline and waterway such as sustainable concepts being part of the coastal support facilities and water sports activities along the coastline and in the Mangroves.

MICE 3 ALONG THE WATER



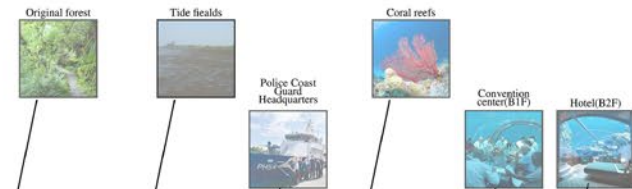
MICE 3 is an aquatic meeting place in the mangroves and coastal forest. A sustainable lifestyle is provided for visitors and exhibitors. The building is self-sufficient and provides the sustainability on its original form.



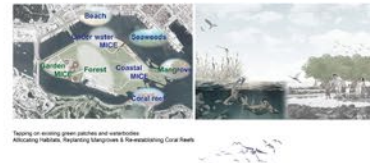
MICE 2 IN THE WATER



MICE 2 holds the medium capacity of people. The underwater MICE is an open concept of a meeting place in the sea aquarium setting and attached with an observation deck at the basement.



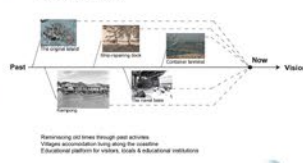
1 INVESTING IN BLUE + GREEN INFRASTRUCTURE



2 STRENGTHENING TRANSPORTATION & MOBILITY NODES



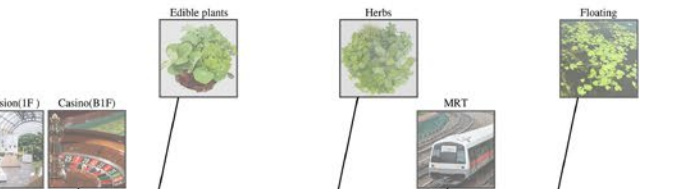
3 INTEGRATING HISTORICAL VALUES IN NEW DEVELOPMENT



4 INCORPORATING SMART TECHNOLOGY / AI SYSTEM



MICE 1 holds the highest group of people which comprises its capacity with high-quality & 5 star service. Visitors will experience activities at ground level with lush and vibrant as they enjoy the view.



The R.I.F.F. - Rooted, Intelligent, Flourishing, Futurescape

The RIFF serves as a living laboratory that used to conduct experiment on planning strategies for the future state of Singapore. Supposedly, after the clearance of port infra-structures, Pulau Brani functions as a clean slate with conflicting developing interests of different stakeholders - Entertainment Hub or Residential Integrated CBD.

The project, The RIFF (Rooted, Intelligent, Flourishing, Futurescape) utilises existing facilities and look into island's historical events to create new vision of sustainability and smart way of living that counters the upcoming nation issues for local Singaporeans.

Site Analysis
History and Culture
Historical Events on Pulau Brani

Urban Development
Master Plan 2014
Land-use extension of housing to increase living space for the island

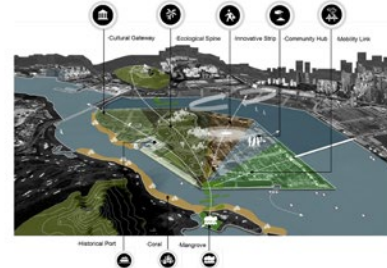
Natural Environment
Habitat Map
Geological Map

Transportation
Different Mode of Transport

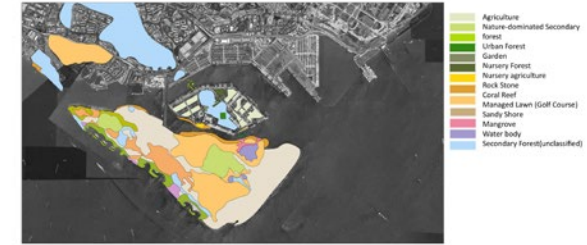
URA Planning
Planning Vision

Strategy 1
Using the natural ridge line to distinguish two main uses of the island

Strategy 2
Five paths that represents the 5 cores of the island



Proposed Habitat Map



Habitat and Species

Secondary Forest
Mid-story Layer, Understory Layer, Shrub Layer

Mangrove Fringe
Mid-story Layer, Underwater Layer, Riverbed Layer

Floating Islands
Mid-story Layer, Understory Layer, Underwater Layer

Urban Greenery
Mid-story Layer, Understory Layer, Shrub Layer

CIRCULAR ECONOMY
Relationship of All Economy

MOBILITY DIAGRAM
Transportation Loops
Internal Loop, External Loop

Strategy 3
Integrated and Dynamic system towards sustainable and livable living
Integrated Building System

Landscape Performance:

- Percentage of Landuse for Housing = 33.5%
- Total No. of Residents = Percentage of Plot Ratio (PR) 40% 1.5 PR = 40% 2.0 PR x 3.47 person/Unit = 60000 / Yr = 36,000 of people
- Agriculture: Total food produce needed = 30000ton/yr, Percentage of Crop produce = 40% 3.0 PR = 40% 3.0 PR = 400000 / Yr = Self produce crop for consumption = 23%
- 20% of Agriculture (BioP) 30% of Productive Greenery

Sub-District Level
Neighbourhood Level

Floor Level
Housing Typology

1 Distribution of Interests

2 5 Paths of Island

3 Integrated Living Lab

Sectional Perspective
Diverse Waterfront Experience

Cultural Gateway
Cultural Gateway, Line Extension, Composite Ecological Rocky Shore

Ecological Spine
Ecological Spine, Park Hotel for experts and research facilities

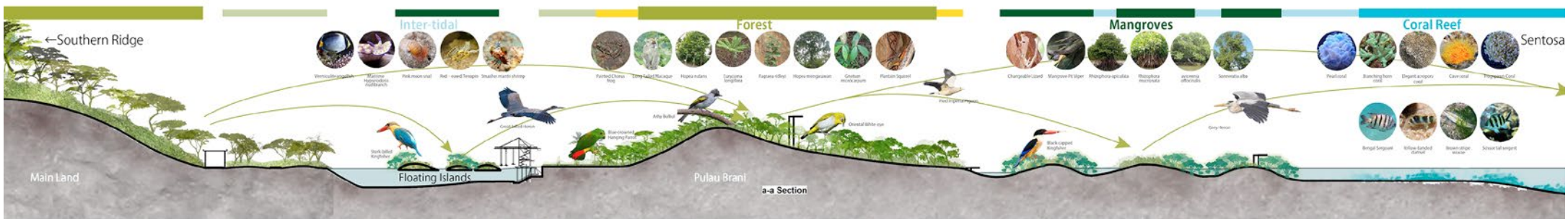
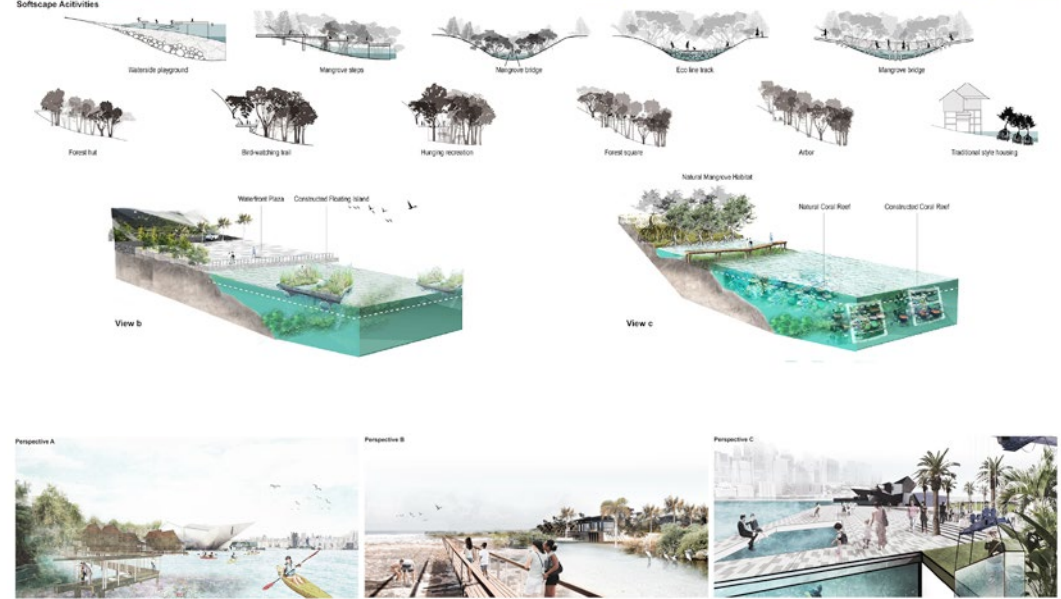
Innovative Belt
Smart Farming Methods to Increase Productivity and Efficiency of food production, Acceleration Ecological Success

Community Hub
Interactive Waterfront, Main Reservoirs for Agricultural and Recreational Use

Mobility Link
Connecting to Mainland Singapore, Readapting of Materials and Technologies, Alternative Transportation

Brani island located in the South Marina Bay and serves as shipping port, the redevelopment of the current southern waterfront try to demonstrate the ecological waterfront development could be achieved in a high dense urban area which could restore the marine biodiversity and provide unique landscape value for sustainable coastal development. The strategies might be as following:

1. Connect southern ecosystem by restoring inland and coastal habitat.
2. Enhance the land usage by meeting the different group's demand.
3. Integrate habitat restoration and new development by introducing low-impact development.



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2019

CAPE Winter Landscape Workshop

The Role of Landscapes in the Redevelopment of Pulau Brani
Singapore

FEB. 22 – MAR. 03, 2019

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