



DESIGN IDEALS

Volume 1 | Issue 2 | 2019

PREFACE

Assalamu'alaikum wrt. wbt.

Dear all colleagues and readers.

Once again, warmest welcome to our readers for taking time to read and review our Second Issue of the Design Ideal Journal. This issue covers eleven articles from our faculty and students that specializing in the fields of architecture, planning, landscaping architecture, quantity surveying, building technology and engineering, applied arts and design. Succeeding the previous issue, since there is a general lacking of intellectual articles and research reports, either collectively or individually, that are related to Malaysia and the Islamic perspectives, it is our compulsion to continually producing a journal specially devoted to design to be a well-thought-of by KAED community. As such, the fundamental aim of the Design Ideal Journal is to provide a platform for the students, lecturers and practitioners extending their practical charge for consumption of the readers, be it general, students or professional alike.

The Design Ideal Journal offers an opportunity for researchers, research students, and practitioners to share their views, theoretical and empirical research findings; and readers, especially academics and students to advance and value from its contents. We welcome the research reports and theoretical papers, short practice notes, design reviews and abstracts from portfolios and design theses on any aspects of architecture, urban and regional planning, landscape architecture, applied arts and design, and other fields related to the built environment discipline. This year we just manage to publish only one issue though our expectation is to publish a biannually. Next year, Insyallah, apart from regular issues, we hope an additional issue in the forms of Special Issue will be presented to the readers. Last but not least, again for this issue, we hope to receive an encouraging feedback from all readers.

Editor-In-Chief

EDITORIAL

Assalamu'alaikum Wrahmatullahi Wabarakatuh

This is the Second Issue of the Design Ideal Journal of the Kulliyyah of Architecture and Environmental Design, IIUM. The Issue contains eleven research papers, all of which discuss the various subjects, challenges and solutions in the forms of design concepts pertaining to the built and natural environments. As in the First Issue, this issue is dedicated to Malaysian case studies comprising of final year studio projects and design thesis of the students guided and supervised by the lecturers. Collectively, this Issue covers subject matters pertaining to the design of park, boutique hotel, bee keeping nest, auto-city theme park, adaptive re-use of old masjid, special area plan, food waste sealer, cartoon animation studio, upcycling product, dockland and waterfront revitalization.

The first paper by Nur Ayuni Mohd Bohori, Aniza Abu Bakar and Putri Haryati Ibrahim titled *Nature and Structure: Merging Blue & Green Landscape for Holistic Well Being at Metropolitan Batu Park*, is about enhancing the well-being of the community around Metropolitan Batu Park and Sungai Batu Retention Pond that might have face the urban security issues in term of environment, social and economic aspects. The project proposed to create an integration of the blue and green landscape element, infrastructure and technology in merging these two area into one family park that can give the platform in spreading the positive well-being effect to the users.

The second paper by Fatin Nabilah Mohamad Yusof and Zeenat Begam focus on the need of themed boutique hotels that is vivacious to attract local and international tourists to Melaka city. A Neo Traditional Boutique Hotel was proposed which partake not more than 10 rooms, maximum of 2 storey height with other supporting facilities. The Boutique Hotel was proposed to be located at Jalan Klebang Besar near Bert's garden restaurant.

Julaila Abdul Rahman, Nur Kamaliah Amer and Mohd Azam Halim were looking at *Stingless Bee Nest for Housing Area* in the third paper. Their aim is to propose a suitable design for stingless bee nest, which will be applying in a housing area. By managing of bees in artificial hives, it enables beekeeper to propagate colonies and produce products such as honey, pollen and propolis that help to raise a side income for the participants.

The next paper by Syazleen Razali, Jasasikin Abd Sani and Mazlina Mansor focuses on the design for an Auto-City Theme Park, which focuses on planning and designing a unique interchange spot using the concept of "Hybrid". There are three key points that basically reflected in Auto-City Theme Park: (a) to promote the concept of corridor development with integrated and centralised development nucleus (b) Restore mangrove habitats and improve regional water quality (c) Rehabilitate Auto-City to reduce the carbon emission through ecological approaches. This design thesis is aimed to create a unique interchange spot Auto-City that is centered around the auto-mobile culture while preserving the ecological balance.

The fifth paper entitled *Reviving of Adat Bersiram Tradition and Adaptive Resuse of Masjid Lama Kampung Tanjung Beringin, Seri Menanti, Negeri Sembilan Darul Khusus* by Muhammad Amar Syahi, Shamzani Affendy Mohd Din and Harlina Md Sharif, studies on how to revive the deteriorated traditional Masjid Lama Kampung Tanjung Beringin, Seri Menanti, Negeri Sembilan Darul Khusus for an adaptive reuse. The project identifies factors causing the functional deterioration of Masjid Lama Kampung Tanjung Beringin, so as to raise its identity to its significance level of its function.

The sixth paper by M. Zainora Asmawi, Mohamad Izzudin Mat Sundari and Mazaruddin Merzayee looks at an action plan in a special royal town of Bandar Maharani, Johor. It is a historic town and the capital of Muar District, Johor. Though there are many potentials to be further enhanced, several issues need to be resolved for better environmental quality. The suggested development approach relates to its physical condition, taking advantage of Sungai Muar that lies in the middle of the town. Thus, the riverfront development is recommended with many improved elements of urban design to elevate the image of the urban heritage of Bandar Maharani. Among the key projects are water taxi, Sungai Bentayan open space, Muar bridge gateway, and sky pedestrian.

Julaila Abdul Rahman, Nuur Hafizah Ramdan and Zumahiran Kamarudin developed *Fosseal – A Sealer Mechanism for Food Waste Management*. This research aims to identify the behavior of household towards food waste management in the home kitchen and to propose a better way of food waste management method by developing a product, *FOSSEAL*. It is a new eco-friendly product that has a potential to improve the waste management at home as well as in formal institutions like hospital, school and offices.

Jigzoe: Integrated Cartoon Animation Studio Institution in Ipoh, Perak by Muhammad Ihsan Shaharil and Elias Salleh have faith in that cartoon and animation are universal, effective and entertaining tools used in conveying messages. They are being used worldwide and its industry has been growing rapidly. For many years, cartoon and animation encounter many issues regarding their approaches, methods and impacts. Four main issues have been identified to affect this industry, namely stigma (social), misuse (ethical), lost identity (cultural) and downfall industry (economic). Based on various studies and research, these problems can be overcome by 4E Approaches; Exposure, Education, Establishment and Enhancement, which leads to the components of the program: institutional academy and production studio. The objectives of the study are to rectify the perception of the public towards acceptance of cartoon and animation, to educate both cartoonists and public to treat cartoon and animation the right way, to revive local identity in promoting culture and elevate the cartoon industry for intellectual property purposes.

Ismail Jasmani and Norzalifa Zainal Abidin's paper on *The Way to Practice Sustainability: Wonders of Upcycling Products*, have confidence in that upcycling is a process of converting old or discarded materials into something more useful and creative. It is also gives an item a better purpose. The concept of upcycling ensures the product is made out of recyclable materials and better than the original product. In other terms, upcycling actually increases the value of the product. Creativity and innovation are the key factors that are needed to produce better and more beautiful products. It is also an easy and simple method which can be followed by others as a way to save our environment.

Urban Dockland by Farhana Zulkeflee, Jasasikin Ab Sani and Zainul Mukrim Baharuddin is about rejuvenating heritage value of South Port Klang by highlighting its unique identity, revitalising abandoned area by transforming it to be green space for the benefits of users and environment as well as to provide green infrastructure for a sustainable and conducive living for this area. The study articulates the strategies for a proposal via several methods which are direct observation, document analysis and direct interview of individual and public. A concept of "Antiquarian Fusion" has been implemented in this design proposal to achieve the objectives and giving a new breath by mixing urban and heritage value of the area.

The final paper is about *A Historic Waterfront Revitalisation Project in Tanjung Emas, Johor* by M.Zainora, Nahzatulla Abrar and Omaid Omari. Their project addresses the importance of public open spaces in supporting the revitalisation of historic waterfront development along Tanjung Emas, Muar, Johor. This area is very popular as it attracts many visitors, particularly during the weekends. Its location in the Royal Town of Bandar Maharani plays an essential role in creating a catalyst for a sharp image of urban design elements. The distribution of many historical buildings such as Masjid Sultan Abu Bakar, Muar High School, and Muar District Court, reflecting the influence of colonial architecture adds to its colourful and vibrant image of an old town. Hence, the proposals which mainly cover the public open spaces along Tanjung Emas are expected to revitalise the image of Bandar Maharani. The projects involve mainly the uplifting the facilities of the children playground, provision of the water fountain, open theatre, pavilion, and floating café.

Overall, it is hoped that professionals, lecturers, researchers, undergraduate and postgraduate students, in built and natural environments, will find this issue of Design Ideal interesting, useful and knowledge-expanding.

Prof. Mansor Ibrahim
Editor-in-Chief
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01

NATURE & STRUCTURE: MERGING BLUE & GREEN LANDSCAPE FOR HOLISTIC WELL BEING AT METROPOLITAN BATU PARK

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ABSTRACT

This project is about enhancing the holistic well-being of the community around Metropolitan Batu Park and Sungai Batu Retention Pond that might have face the urban issues in term of environment, social and economy aspect. Therefore this project is proposed to create an integration of the blue and green landscape element, infrastructure and technology in merging these two area into one family park that can give the platform in spreading the positive well-being effect to the users. The project is located at Metropolitan Batu Park which is 33 acres and Sungai Batu Retention Pond which is 253 acres.

INTRODUCTION

The aim of this project is to integrate the blue and green landscape element that can enhance the livability and the user well-being with minimal impacts to the environment in creating a sustainable design towards the society. This aim is focusing in creating the balanced of holistic well-being between the society, environment and also economical aspect. The issues of this project is highlighting on the urban security factors in aspect of the environment, user well-being and economical status in the community. For the environment aspect, the area is having the urban heat island issues with slight pollutions from the nearby waste system and lack of green space that can be use by the nearby community. In term of the user well-being, the community are having lack of the opportunity for recreational activities as well as the existing safety condition of the area with can be considered as poor. As for the economical aspect, this area mostly consists of low and moderate income of society and have lack of economical activities opportunity. The followings are the objectives of this project:

1. To create a design that have minimal impact to the environment as well as reducing the temperature and pollution through ecological approaches.
2. To encourage healthy lifestyles as well as livable community in securing the user well-being through recreational activities.
3. To increase the opportunity of economical activities as well as creating a job chances to the local community.



Figure 1: Key and location.

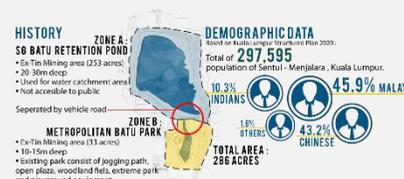


Figure 2: Demographic data.

The total area is 286 acres. Figure 1 shows the key and location plan of the selected site. Both area is classified as zone A (Sungai Batu Retention Pond) that consist of natural retention pond area that is not accessible to public engagement, and Zone B (Metropolitan Batu Park) which is a lake park consist of few recreational activities however is not being fully utilized due to maintenance problem Both water bodies of these two area is from the ex-mining open pit that have turned into beautiful lakes. Figure 2 shows the zoning area between these two parks throughout the planning process and the demographic data of the community area. This two zone is separated by Jalan 1/18D, a newly constructed road crossing the area connected to the main road.

LITERATURE REVIEW

Type of Parks: Metropolitan Park

According to the guideline of *Jabatan Perancangan Bandar dan Desa Negeri Selangor* (2010), a Metropolitan Park should be around 20 to 100 acres with the need of facilities such as various play courts and football field in term of small sport complex, swimming pool, children's playground area, camping or picnic zone, open space for adventurous game, closed hall, stalls, restroom, resting area, payphone, eating area, public transport accessibility area and parking area which consist of 35 car park for the first 5 acres of the park with 30% of motorcycle park and other needed enquiry depending to the area.

Landscape for Well-being

In creating a healthy well-being landscape design, there are five principles that is considered as essential in creating a healthy places (Evans & Bull, 2013). The first principle is creating a place that improve the air, water and soil quality, incorporating the sequences that helps the user in adapting to spaces and also help mitigating the climate change. The second principle is creating a places that help user in overcome health inequalities as well as promoting a healthy lifestyles. Third principle is about creating a place that is easily adaptable and create comfortable ambience that can encourage social interaction and reducing mental stress. The fourth principle is creating a place that have optimum chances of working, learning and development activities. The last principle is creating a healthy places that restorative, uplifting and healing for both mental and physical condition of user's health.

Blue and Green infrastructures

Urban environment is currently at the stake of facing balanced disturbance due to rapid development that need the ability of adaptation from urban system in bringing back the natural cycle from urban growth. Therefore, integrating the traditional grey approach, merging with blue and green infrastructure system

can help to mitigate most of the urban problems. The term blue and green infrastructure is reflecting the system and technologies that is mostly used of the natural approaches with a help of technology (Perini & Sabbion, 2017). Also as stated by Brears (2018), the need of blue and green city is for the holistic planning and management of water in urban area. Creating this city is a goal towards more sustainable, efficient, adaptive and resilient way in creating a healthy environment.

METHOD / PROCEDURE

Checklist and Observation

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

SITE INVENTORY AND ANALYSIS

1. Landuse

Figure 3 clearly shows the percentages of landuse map as well as the analysis of the cross relation of each aspect. The highest percentage of the landuse is; residential area which are covering almost half of the selected area. Residential area are the target user for this project and given the opportunity of having a large percentage of target user is also one of the factor why this area need to be proposed for integration of blue green landscape design.

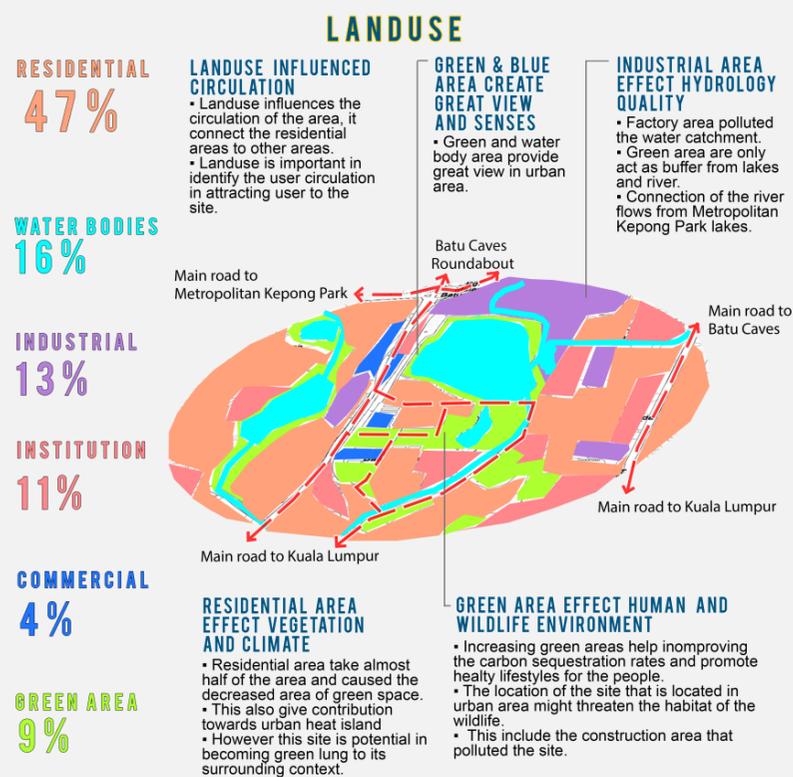


Figure 3: Analysis map for landuse

2. Site Context

Figure 4 shows the location of this site and its site context, nodes and landmarks. Sites context is important in considering the circulation and accessibility of the visitor as to the site.

The nearest park is the Metropolitan Kepong Park, located about 9.1km from this park. Thus it is clear that this park has potential to create a platform for healthy well-being for the community around the area.

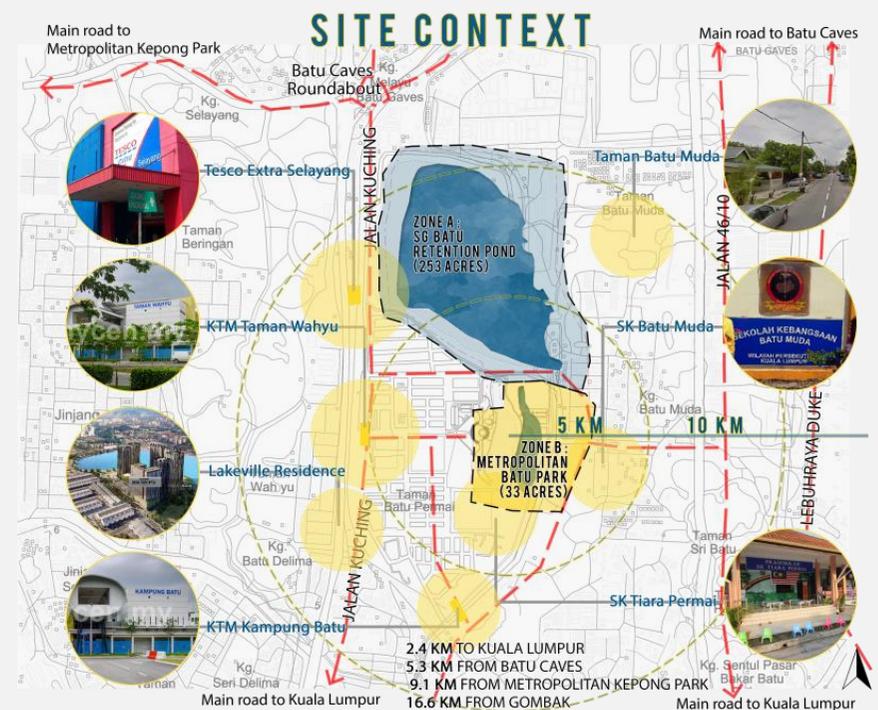


Figure 4: Analysis map for site context

3. Circulation

These two zone is actually separated by four lane of vehicle road that have cause the loss connection of green network and disturbing the green corridor. This newly constructed road is one of the factor for urban heat island as most of the street planting have low density of shady trees. However, this circulation route can use as attraction for the user to cross over the road in connecting this two area (Figure 5).

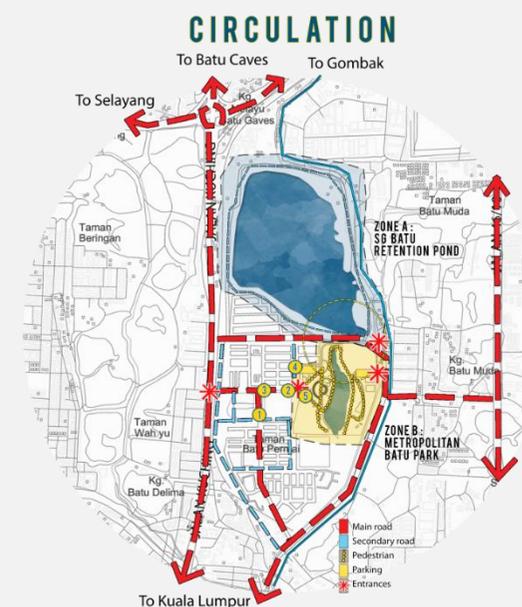


Figure 5: Analysis map for circulation

4. Topography

Figure 6 shows the level of topography layers according to Topographic Map (n.d), the deepest area is located at zone A retention that reach 25-20m deep.



Figure 6: Analysis map for topography.

Figure 7 is showing the sectional cut of the selected area on figure 6, which is highlighting the type of slope treatment in Zone A and Zone B. For Zone A, the area is not accessible to public therefore there is no initiative of design treatment to the slope area, and the slope is being naturally treated as there is high density of the vegetation on the slope that help to hold the slope stronger as well as filter and slows down the surface run off into the lake.

While for Zone B is using the terrace slope treatment in avoiding land slide however have less shrub planting that lead to slightly polluted surface water run-off into the lake.

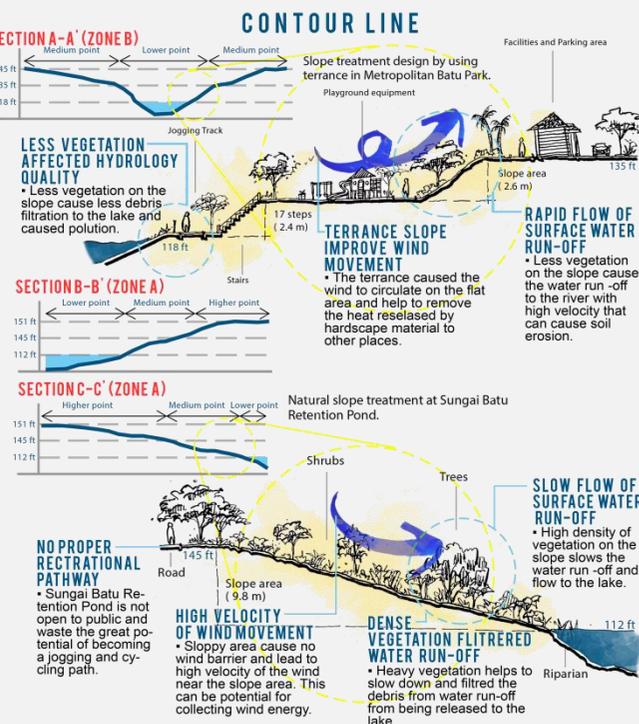


Figure 7: Topography sectional drawings.

5. Hydrology

Figure 8 shows the hydrology map consist of the water run-off flow and river flow of zone A and zone B. As the water bodies have quite large areas in this site, it have potential in becoming the sources of economy and water supply to the nearby community.

The water bodies also act as cooling factor in reducing the temperature of the urban heat stress. Zone A is consisting more of the natural ambience therefore is provide natural resources for wildlife habitat and have a great mirror sky reflecting view. Zone B is suitable in creating a water-based activity as well as introducing floating farming system to the users.

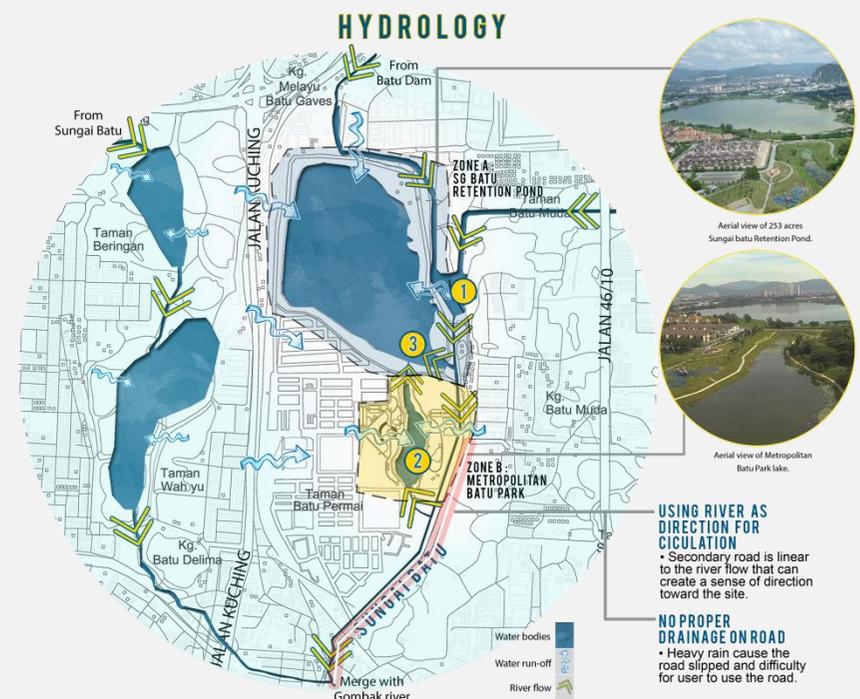


Figure 8: Analysis map of hydrology.

6. a) Vegetation

Figure 9, shows the diversity of existing vegetation that help to provide great views and senses to the surrounding areas and help in mitigating the climate changes. The study found that, zone A have a higher vegetation density compares to zone B, which have less vegetation coverage especially along the slope area.

6. b) Wildlife

Zone A is also suitable for habitat conservation area as for the high vegetation density at the area (refer Figure 9), however as these two area is separated by vehicle road cause the loss connection of the green corridor with can be a threat for the wildlife at the area.

7. Climate & View and Sense

Climatic factor are affected by the vegetation, plant materials, water bodies, and the surface reflecting material such as the colour chosen for the materials. These factor play important roles in reducing the heat of the site. As for the view and senses, most unpleasant sense are coming from the nearby construction site at the south end of the park. There are also unpleasant smell from the factory waste and filtration system that need further upgrades and enhancement.

VEGETATION AND WILDLIFE

VEGETATION EFFECT HYDROLOGY CYCLE

- High density vegetation help to filter the debris from water run-off Zone A.
- Low density vegetation cause water slightly poluted at zone B.
- Zone B, less vegetation at the river bank lead to erosion.

VEGETATION ENHANCING CIRCULATION ROUTE

- Less vegetation at parking area in Zone B and along the road cause the road have slightly high temperature and less shady area.
- Vegetation not providing senses toward direction.

VEGETATION AS WILDLIFE HABITAT

- The vegetation also act as the source of food to the wildlife as well as attracting bird migration to the site.

HABITAT CONSERVATION

- High density of wildlife whereabouts and their habitat possibility.

LOSS CONNECTION OF GREEN CORRIDOR

- As this two area is newly separated, wandering wildlife could cross the road and disturb the circulation of vehicles or pedestrian.

LIVING LANDSCAPE

- Enhancing the ambiances of the site as well as provide diversity of ecosystem to the view and sense.

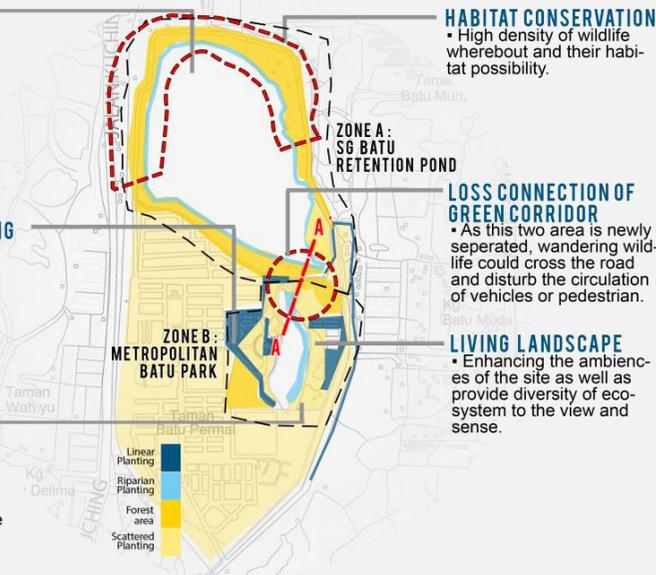


Figure 8: Analysis map of vegetation and wildlife.

SITE SYNTHESIS

Referring to Figure 10, the synthesis map is categorized by three stages, of potential are for development which consist of high (dark blue), moderate (light blue) and low (yellow) potential of development opportunities.

SYNTHESIS

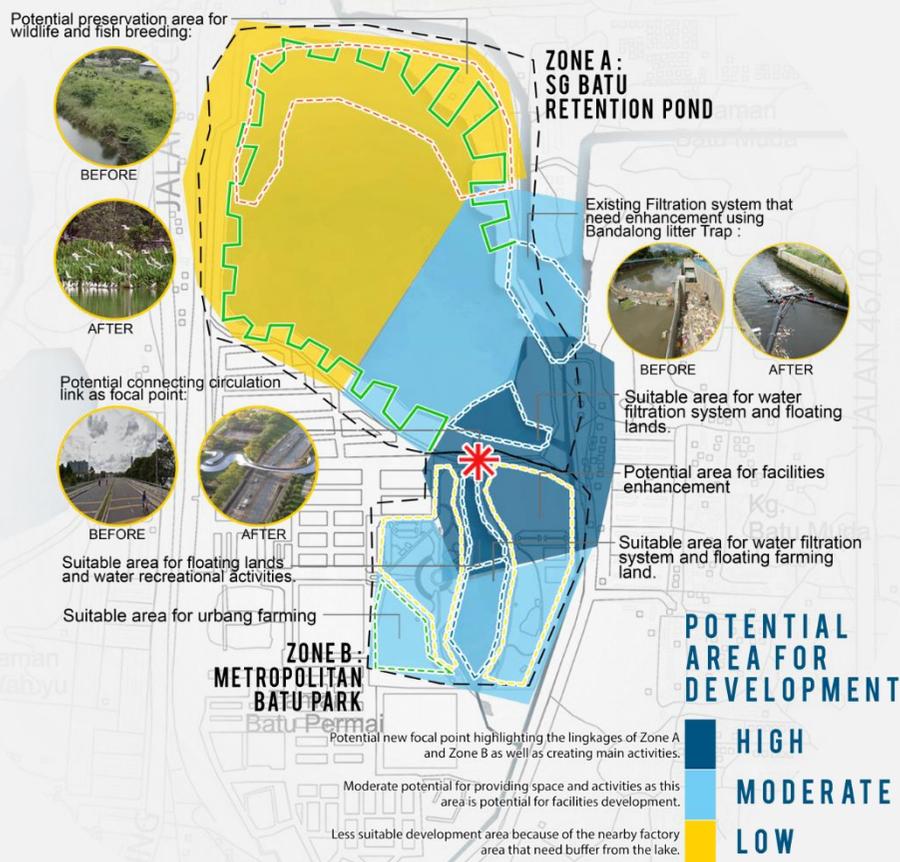


Figure 10: Synthesis map.

In term of land use and site context, there are potential of increasing a commercial area within the residential area around the park. Circulation, high priority in solving the green linkages issues. The needs to propose a new road to connect the two area. It is also important to install new connectivity that create great sense of welcoming to the site. Hydrology, to integrate the blue infrastructure, aligned to the aim and objectives in creating a holistic well-being. Implementation of green infrastructure to create the balance of the ecological cycle and diversity in vegetation and wildlife.

DESIGN DEVELOPMENT

DESIGN STRATEGIES

The strategies is developed by using Sustainable Development Goals (SDG) as the guideline, these strategies is also categorised by three aspect which is environment, social and economy. Figure 11, the highlighted SDG goals related to the proposed design.

Figure 12 shows the development of the design strategies that derived from the synthesis map. As for this stage, the area is located accordingly to the most suitable potential area for either environment, social and economy development. Most potential area for the environment is focus around the northern part followed by social focus and economy focus of the site.



Figure 11: Related Sustainable Development Goals

DEVELOPMENT STRATEGIES

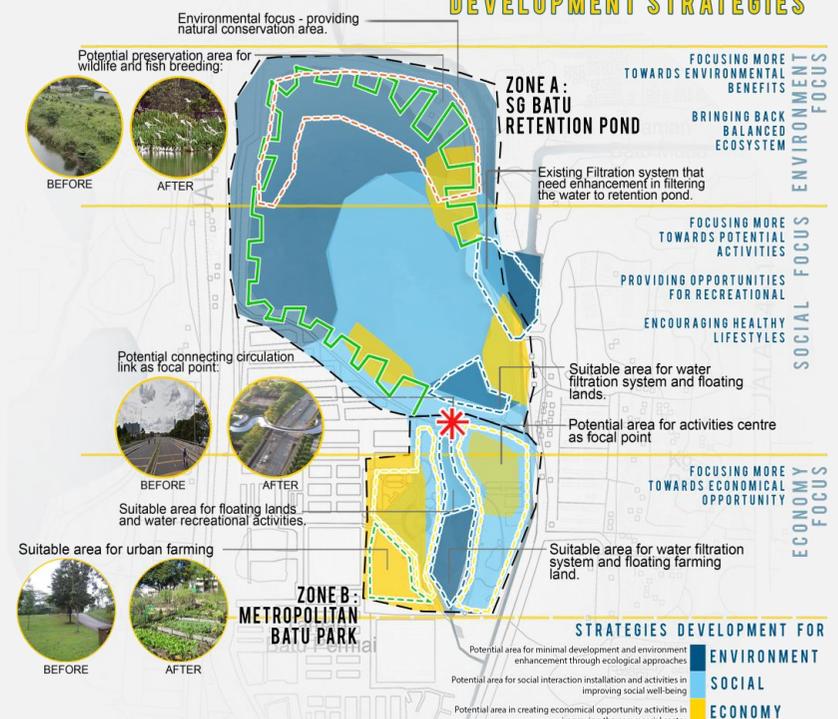


Figure 12: Development strategies map.

DESIGN CONCEPT

The design concept for this project are initially direct as the concept of this project is *Aqua Lush: the Lush Cay of Aqua Pura* or by literal meaning the combination of blue and green technology in creating a sustainable design (Figure 13).

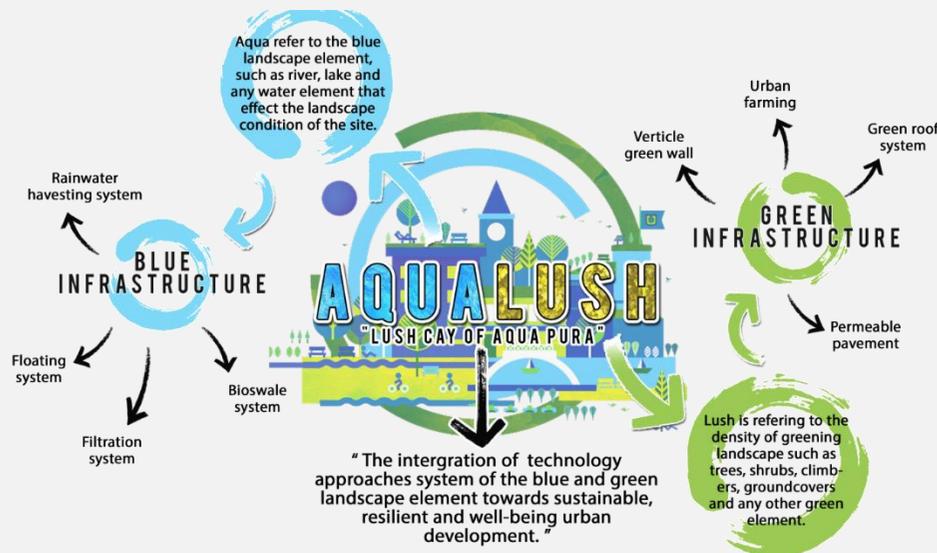


Figure 13: Concept diagram

SITE RELATED FUNCTIONAL DIAGRAM

The functional diagram is divided into four categories, the circulation, the nodes and landmarks, the blue area, and the green area.

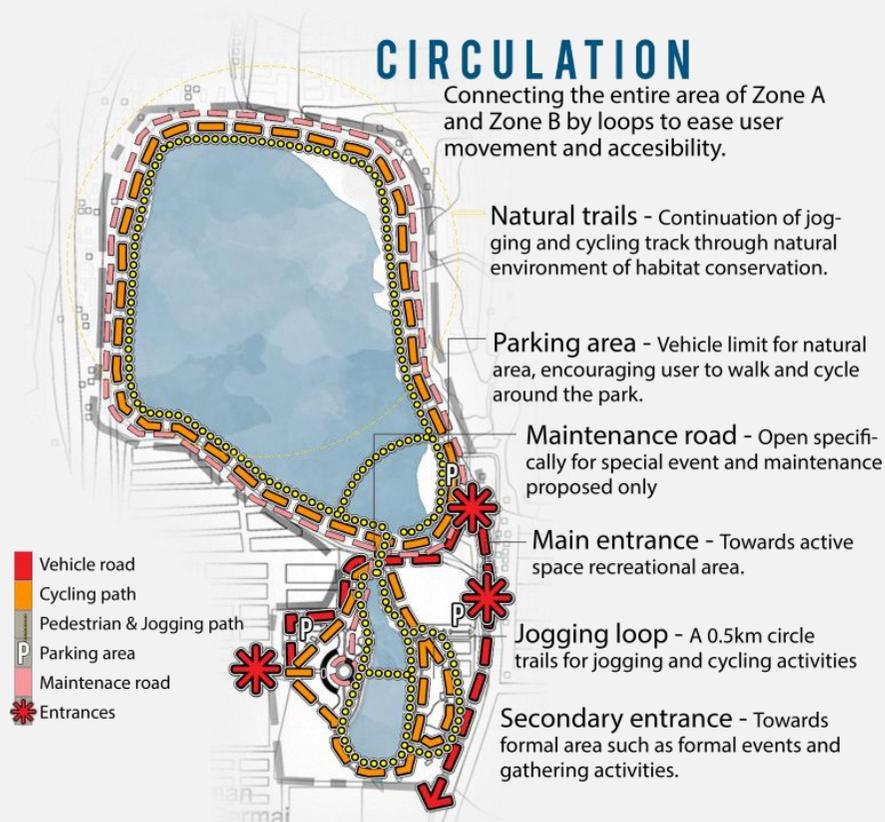


Figure 14: : Proposed new circulation, parking area and entrances.

NODES & LANDMARK

Providing the suitable distance for stop point and resting point with a great landmark as the main attraction to the site.



Figure 15: Proposed landmarks, nodes, edges and fences area of the site.

BLUE AREA

Connection of the water element with the green landscape technology in enhancing the water quality.

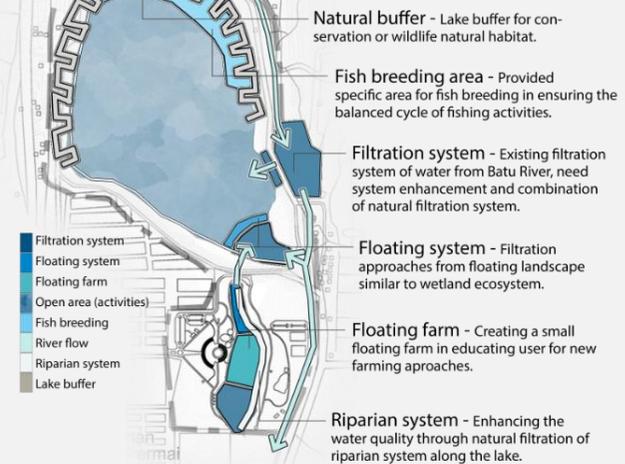


Figure 16: Propose blue infrastructures and technology design.

GREEN AREA

Installation of green infrastructure and technology in enhancing the blue element of the landscape design.



Figure 17: Proposed green infrastructures and technology design.

CONCEPTUAL PLAN

Figure 18 shows the conceptual plan, results of the merging layers of functional diagram and detail explanations on the element proposed to the site.

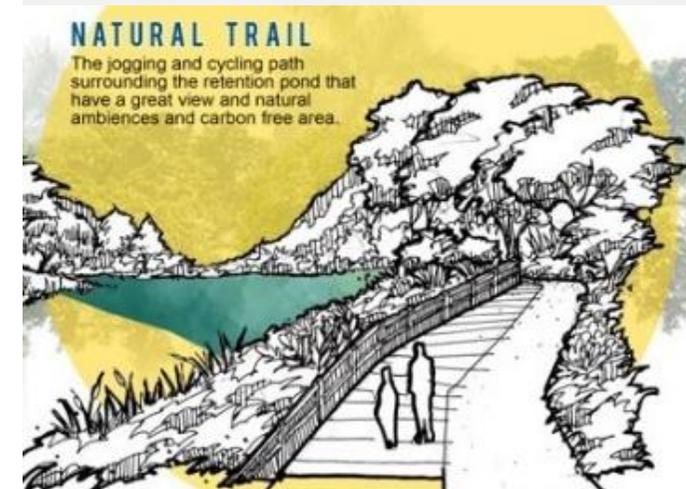
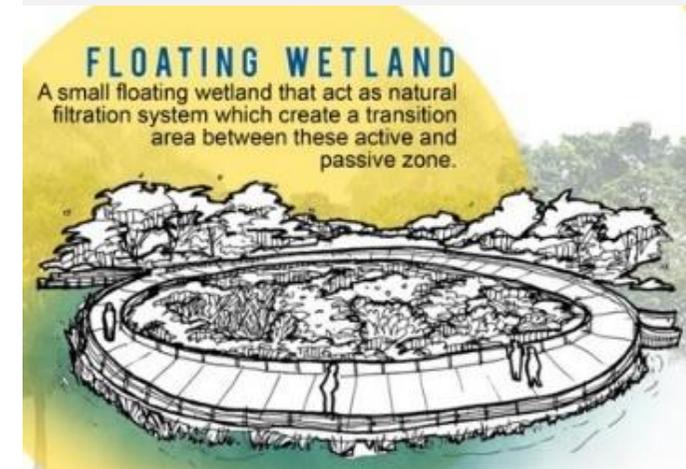
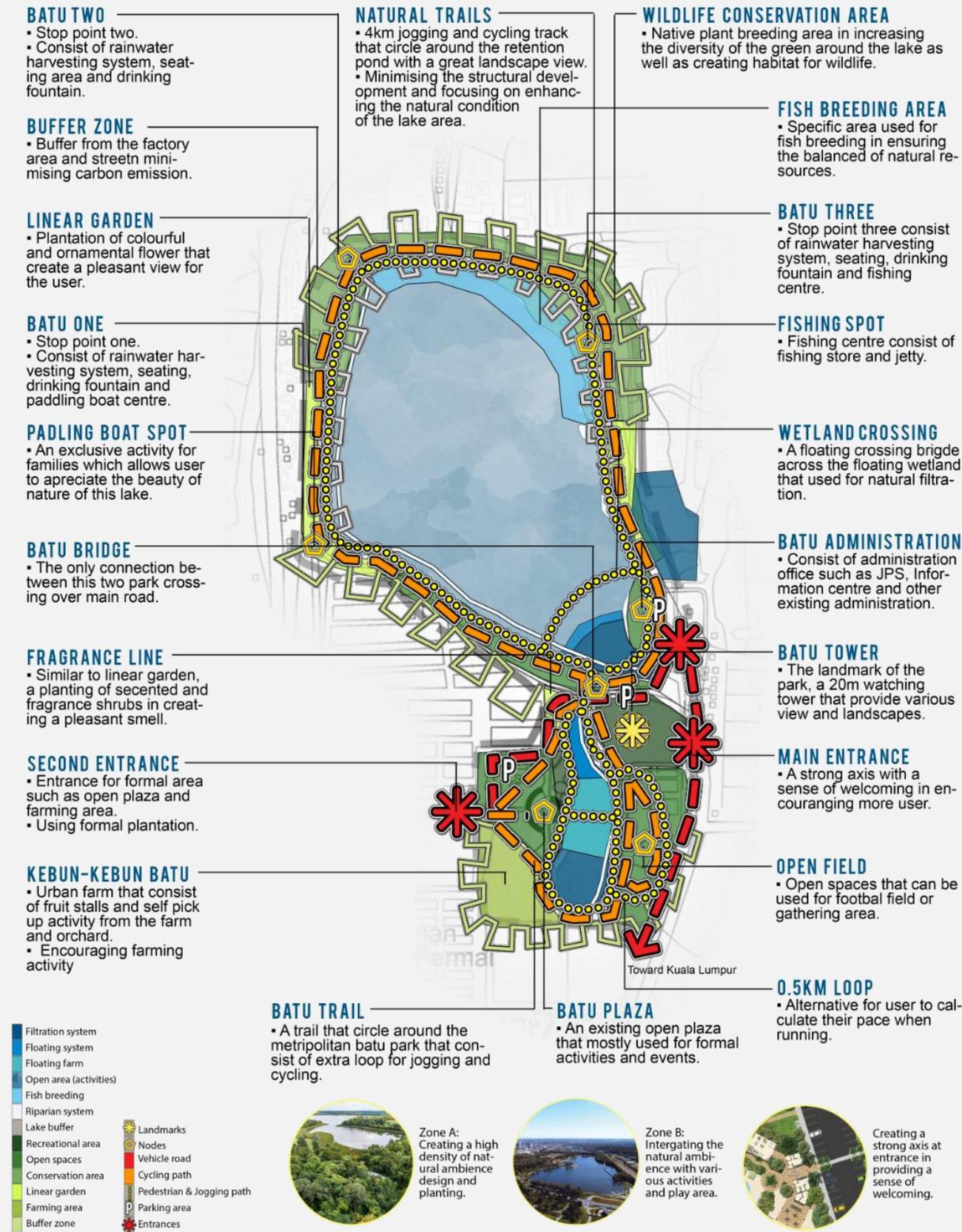


Figure 18: :Conceptual Plan

FINDINGS
PRELIMINARY MASTER PLAN

Figure 19 shows the preliminary master for proposed design of Metropolitan Batu Park.

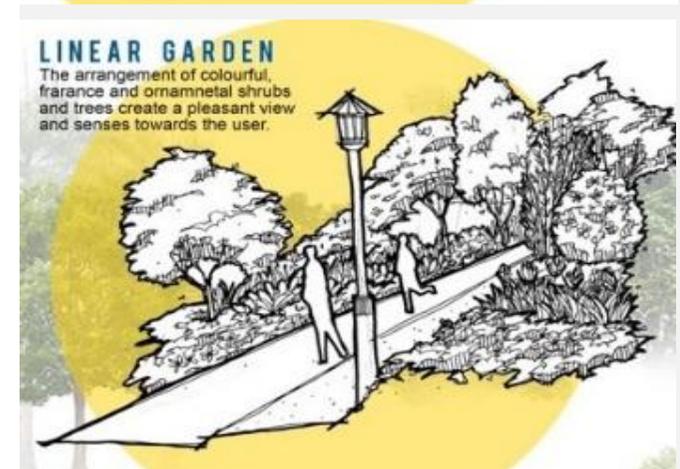
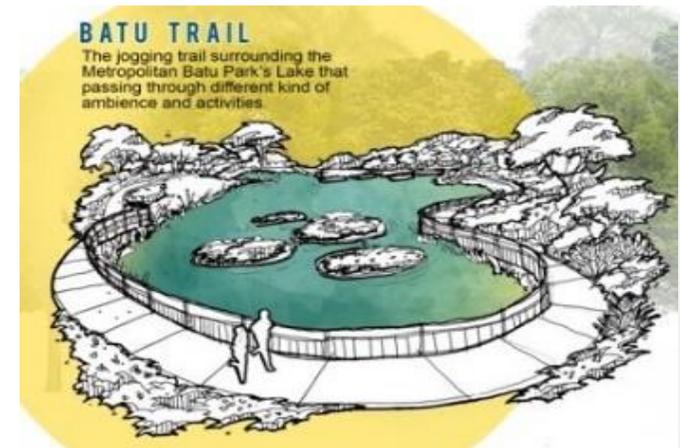


Figure 19: : Preliminary Master Plan

CONCLUSION

The initiative of designing with integration of blue and green infrastructure is giving many positive impact towards the environment, society and economy aspect. The main important approaches that have been proposed is the nodes or rainwater harvesting system that act as the main attraction as well as treating the nature ecosystem nicely. This also helps the educate the user of the importance of keeping the balance between the nature and structure in our daily life.

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02

NEO TRADITIONAL BOUTIQUE HOTEL

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ABSTRACT

Tourism cities are facing massive emergence of new tourism enterprises that continuously catering the changing needs and lifestyles of tourists and local communities. Hospitality industry plays a major role in 'branding' tourism cities. However, the current issue on overdevelopment of tourism accommodations with similar branding approach are causing many cities in the world losing their creativeness (Chang and Teo, 2008). The similar issue also occurred in Malaysia especially in Melaka city where thousands of hotels emerged around the cities without having creative branding style (Hall, 2000). Therefore, the need of themed boutique hotels is vital to attract local and international tourists to Melaka city. Consequently, a Neo Traditional Boutique Hotel was proposed which have not more than 10 rooms, maximum of 2-storey height with other supporting facilities. The Boutique hotel was proposed to be located at Jalan Klebang Besar near Bert's garden restaurant.

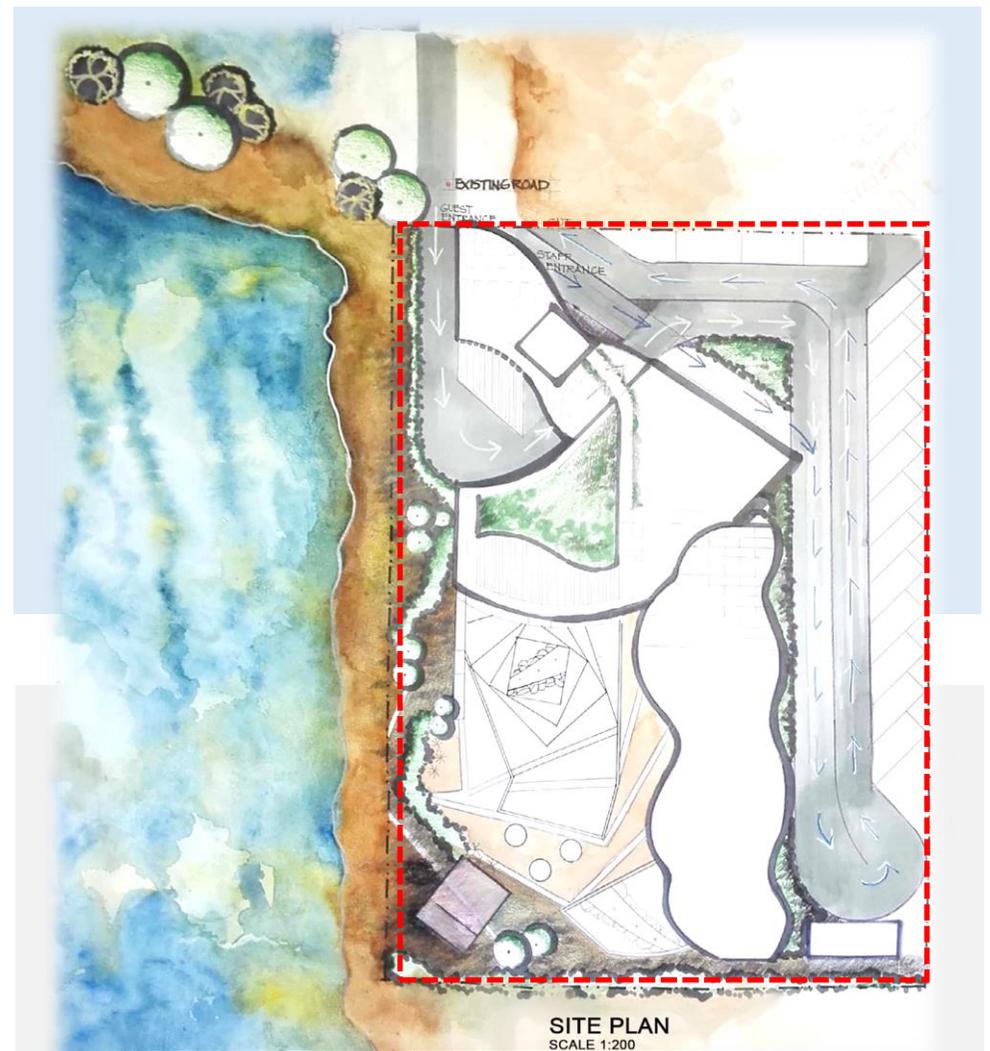


Figure 2: Site Plan and Location plan



Figure 1: Key Plan and Location Plan

PROJECT INTRODUCTION

This project was proposed under the course of AAR 2101 Architectural Design 3 which required students to explore the relationship of space, form and function, materials and construction methods. The nature and complexity of the design was:

- To design a small scale functional boutique hotel with maximum 10 rooms in urban or suburban area
- The project is to be designed to a maximum of two storey high volume with space provision ranged between 600 sqm of built up area.
- Emphasis for this course is on the design of building form, function, construction materials and the surrounding exterior space for example landscape.

CONCEPTUAL PROCESS AND IDEAS

The boutique hotel theme was inspired from Kampung Morten Architecture. Kampung Morten is a well-preserved Malay traditional village located at the center of the town and nearby the Malacca river. A theme of 'neo-traditional' was adopted to reflect the relationship between traditional architecture of the village and Neo classical architecture of the city (e.g Hosseini, 2012). Building elements of the Boutique Hotel was impersonates from Malacca Traditional Houses (characters, materials and carvings).

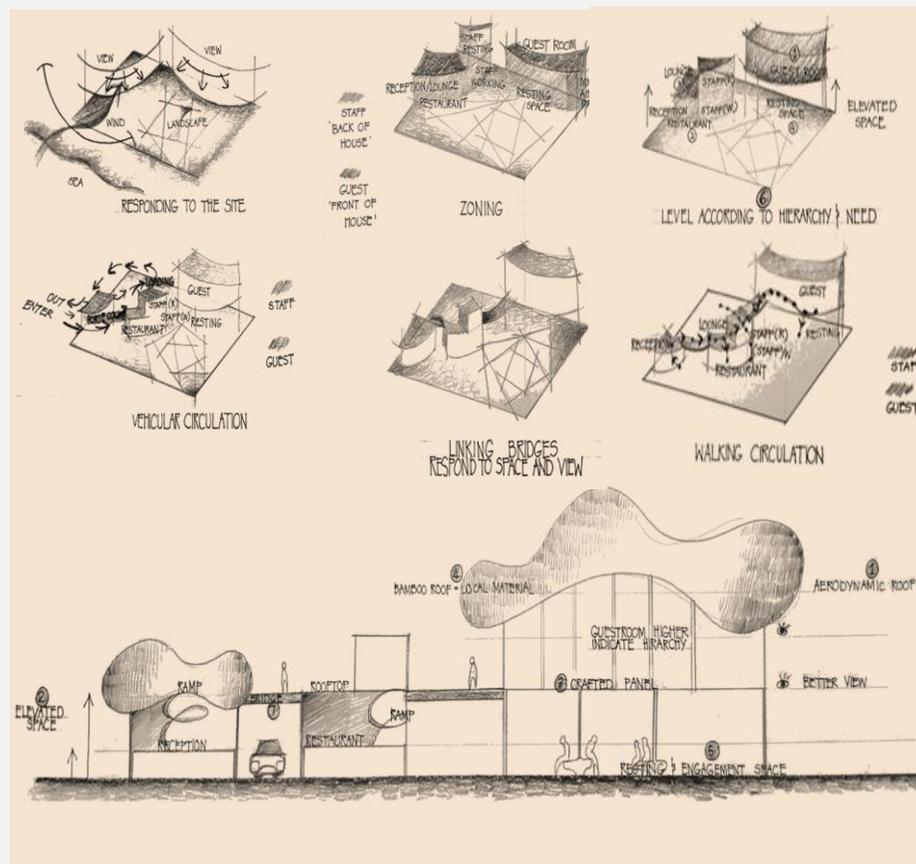
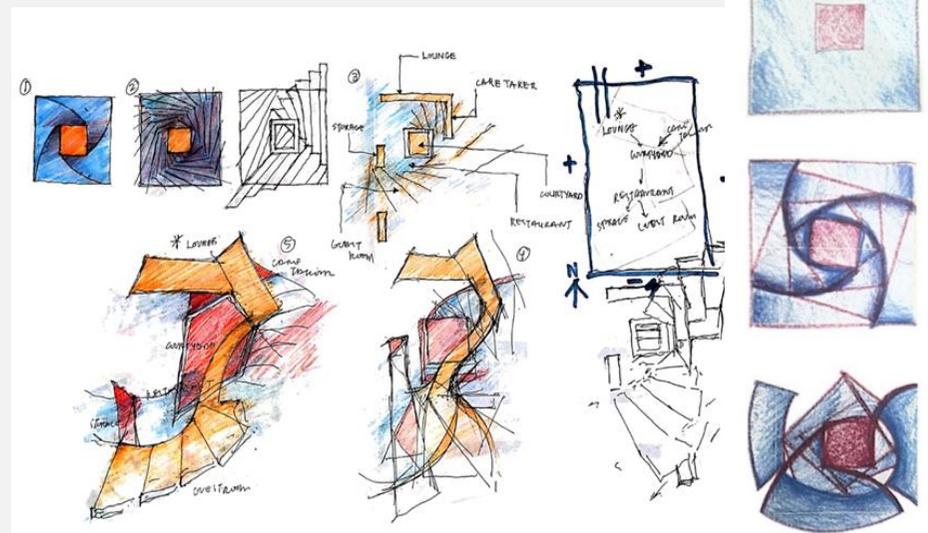


Figure 3: Site analysis and synthesis

DESIGN DEVELOPMENT



MASSING

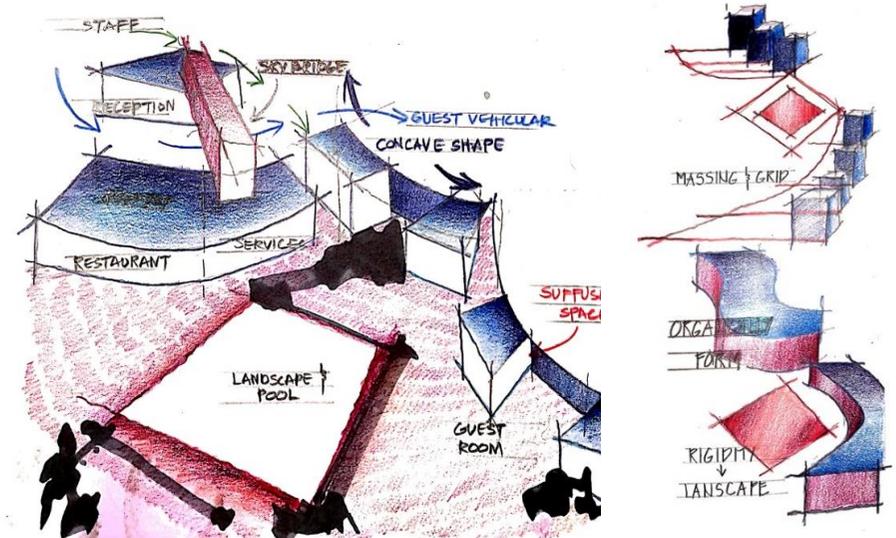


Figure 4: Conceptual diagrams and design process

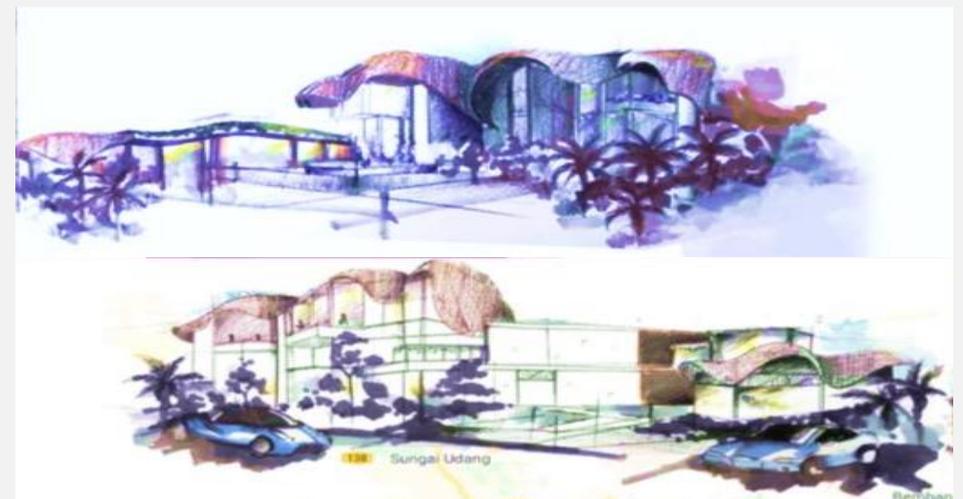


Figure 5: Sketch idea of the boutique hotel

METHOD

To achieve the aim of the study, analysis of five international precedent studies was conducted in terms of space planning, architectural style, themes and services. The precedent studies was analyzed and synthesize to achieve the first research objective. The second objective was achieved by identifying specific theme for the boutique hotel through series of sketches and photographs and presented in the form of poster. Synthesis of the poster give the conceptual idea of proposing Neo-traditional type of Boutique Hotel. Neo-traditional architecture is assimilation of Neo Classical Architecture with Malay Traditional Architecture.

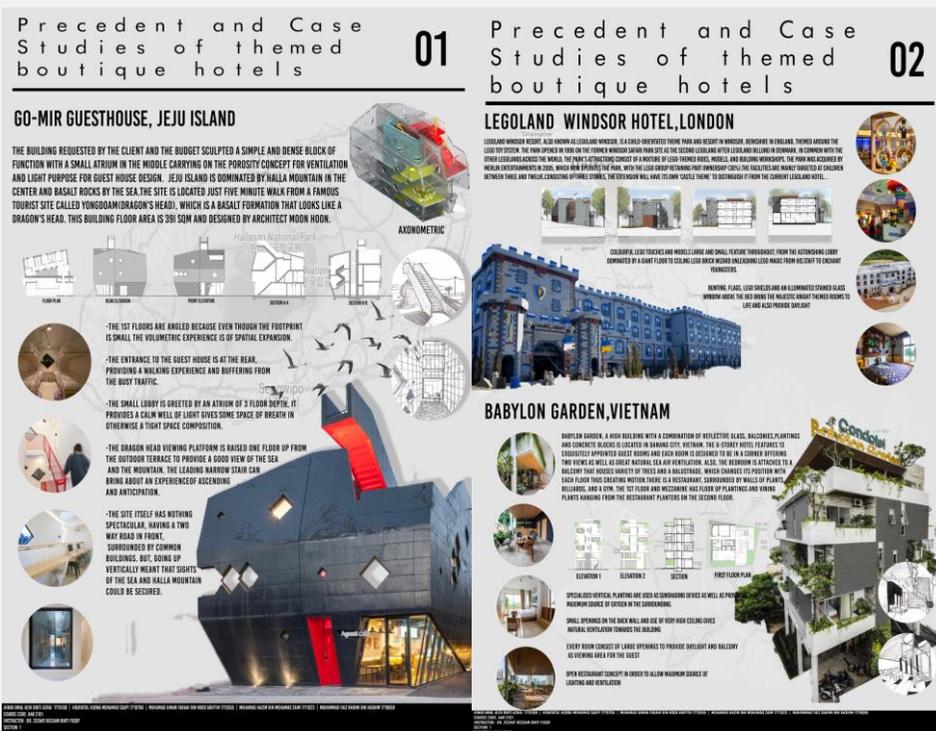


Figure 6: The examples of Precedent studies conducted



Figure 7: Analysis of Malay traditional architecture at Malacca city

Literature review

Analyse various literature regarding boutique hotels.

Site observation

Observation of unique characteristics of Melaka city by taking photographs and sketches.

Site analysis

Site analysis and synthesis of the proposed site was conducted to understand the site context and the characteristics of the site.

Semi-structured interview

Interview five boutique hotel operators at Melaka city in order to gain insight of the operation and space planning.

Critique sessions

Professional architects was invited to critique the design in three stages. Feedbacks from the critique sessions was adhere.

Presentation

The final design of the themed boutique hotel was presented in front of the invited professional architects.

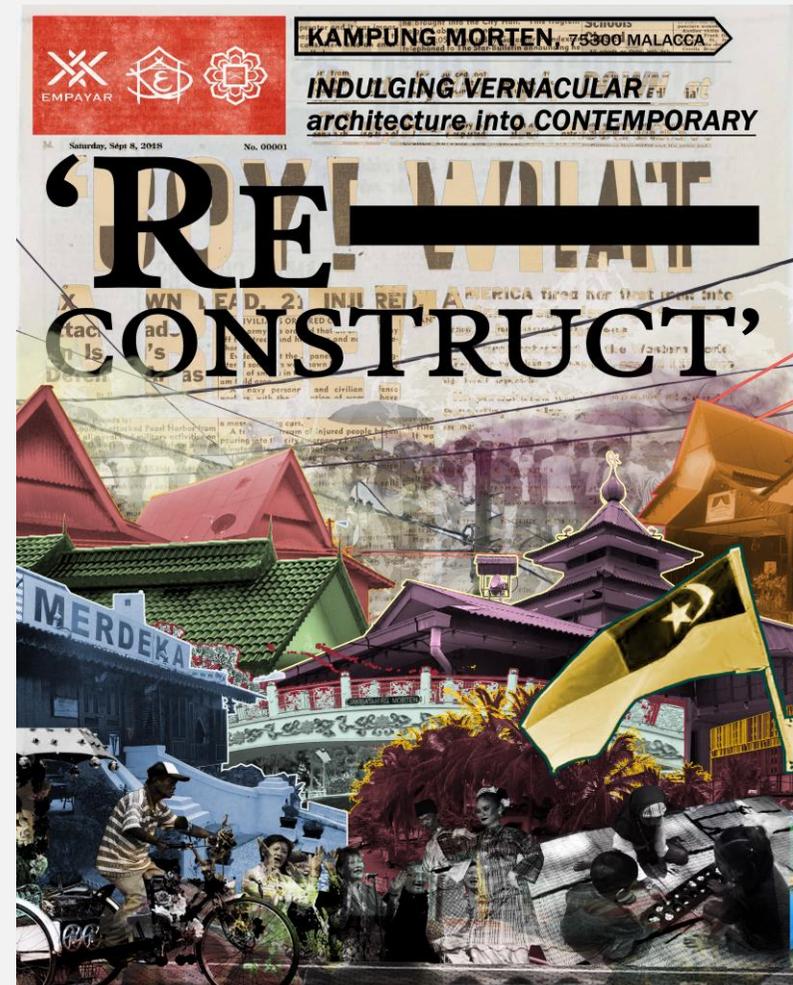


Figure 8: Identification of a theme through poster composition

PROJECT FINDINGS

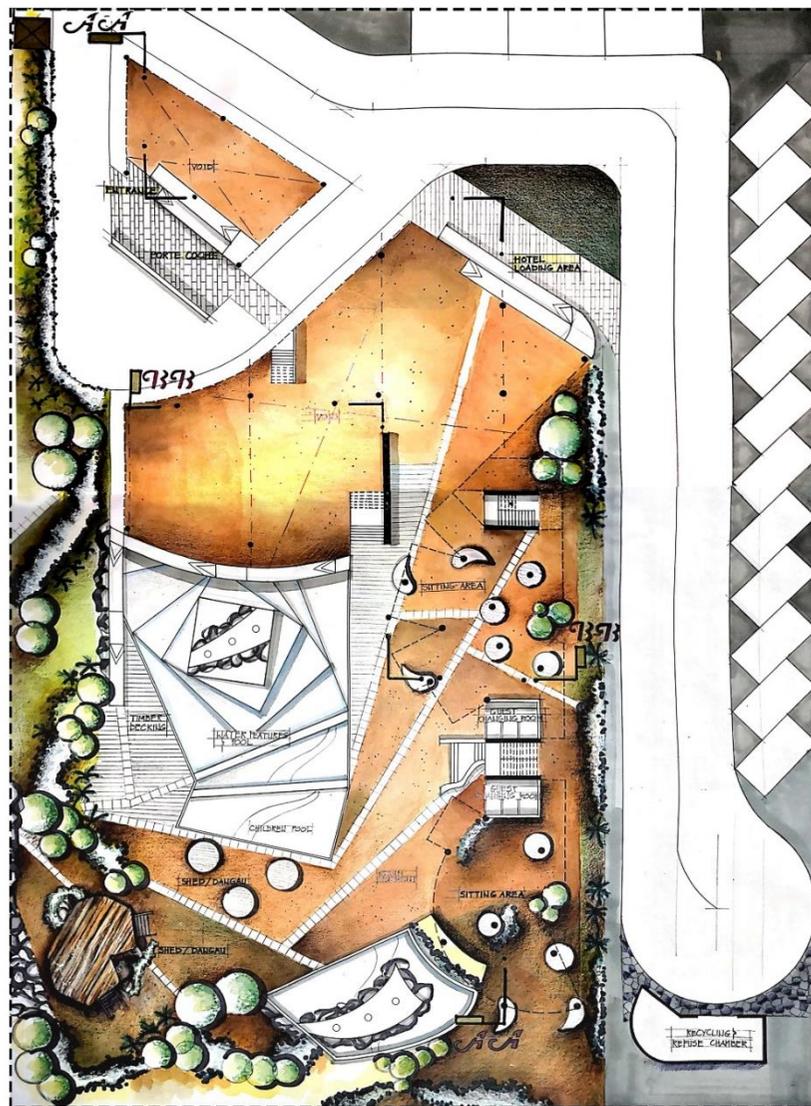


Figure 9: Ground floor of the boutique hotel (Scale 1:100)

Ground level of the hotel was left open for recreation and landscaping area for guest to enjoy the sea view. Guests enter the building through spiral staircase from the lobby to the first floor. On the first floor a restaurant was located facing the sea. The guest rooms are separated in different block by long corridor in radial shape which also facing the sea. The second floor of the hotel consist of roof top garden, *mussofa*, caretaker room and guest rooms. Roof top garden area facing sea which give opportunity for guest on the top floor to enjoy the view. Guest rooms provide feeling of new tropical and classical architecture. The roof of the hotel made of material that resembles 'tikar mengkuang' malay traditional mat.



Figure 10: First and second floor plan (Scale 1:100)



Figure 11: Interior and exterior view of the hotel

PROJECT FINDINGS



Figure 12: North Elevation (Scale 1:100)



Figure 13: South Elevation (Scale 1:100)



Figure 14: Entrance view of the hotel



Figure 15: West Elevation (Scale 1:100)

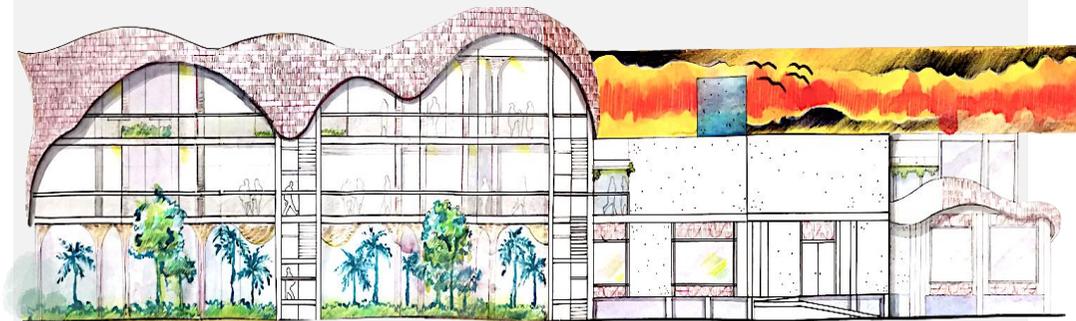


Figure 16: East Elevation of the hotel (Scale 1:100)

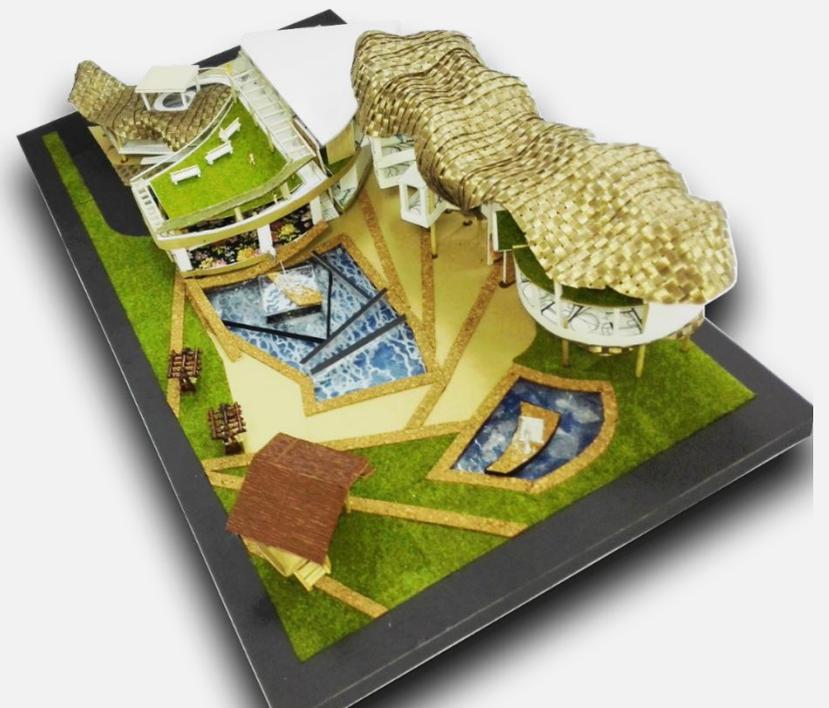


Figure 17: Top view of the hotel

PROJECT FINDINGS



Figure 18: Section A-A (Scale 1:100)



Figure 19: Section B-B (Scale 1:100)

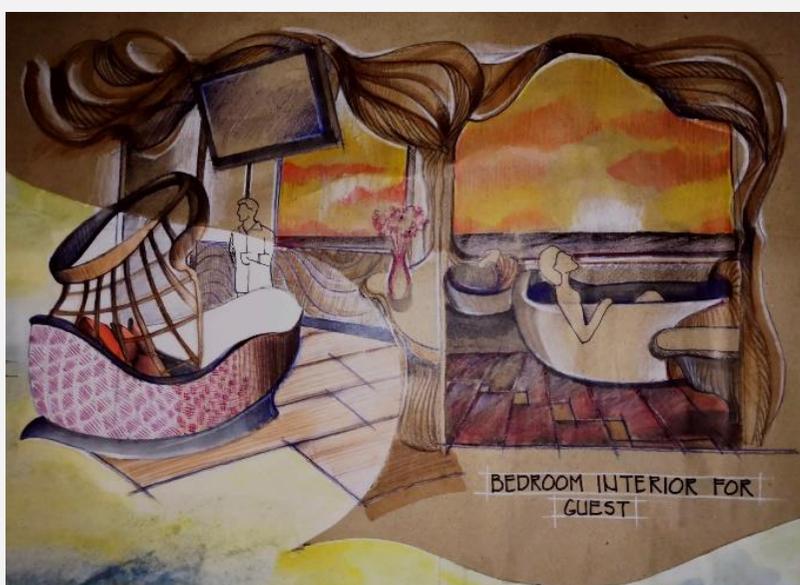


Figure 20: Guest room interior



Figure 21: Interior model of the boutique hotel

CONCLUSION

In conclusion, the project has achieved to create 'creative ecosystem' for tourism industry in Melaka city. This center become starting point to brand the city. The boutique hotel become center of attraction by introducing new type of architecture which assimilate between Malay traditional architecture and Dutch classical architecture. The design of the hotel has considered the surrounding context, view and natural ventilation. Open landscape space at the ground floor was created to give access for guests to approach the sea. The intricate design of the interior using neo classical architecture give cozy ambience.

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03

STINGLESS BEE NEST FOR HOUSING AREA IN MALAYSIA

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ABSTRACT

Meliponiculture is an activity of stingless beekeeping, where the colony of stingless bees extracted from the wild for the purpose of profit. It is the art and science of keeping stingless bees for honey, pollen, resin and ecological services. With the managing of bees in artificial hives, it enables beekeeper to propagate colonies and produce products such as honey, pollen and propolis.

This study aims to propose a suitable design for stingless bee nest, which will be using in a small housing area in Malaysia. Colonies of *G. Thoracica* were used to study the nest structure and growth, foraging activity and morphometry of worker bee. With this study, it is hoped that many more users can involve in meliponiculture for domestic purposes, which will also contribute to the Malaysian economy in general.

INTRODUCTION

Geniotrigona thoracica, is one of the largest stingless bee in Malaysia and has economy potential used in meliponiculture. They are able to produce honey similar to honey bees. The stingless bees colonies managed in artificial hives enables bee keepers to propagate colonies and also to produce products such as honey, pollen, cerumen and propolis. The meliponiculture industry is new in Malaysia, whereas this activity widely practiced in Brazil, Mexico, Africa, Australia and Thailand.

Meliponiculture allow bee farmers to generate income by selling stingless bee colonies, honey, bee bread propolis, pollination services, educational services and agro tourism. Most of the stingless bee company are from local because it gives the potential for them to increase their economy and the surrounding area are very suitable to have an active stingless bee that can produce a lot of honey and pollen.

In order to sustain the meliponiculture industry in Malaysia, research on design criteria of the nest features and behaviour of stingless bees were needed. Thus, the aim of this study is to propose design criteria of stingless bee nest for small housing area in order to solve the discover problems and as an alternative where the product can provide an opportunity to the community to get involved in meliponiculture industry in Malaysia.

CONCEPTUAL PROCESS, PROCEDURE AND SCHEMATIC

This stingless bee nest called ZEN HACHI; it is the new trend for stingless bee nest product in Malaysia (Figure1). The name of the product itself represents the safety of the structure in Japanese which means (safety bee). The design produced a modern and simple concept inspired by the basic structure of Japanese lunch box (Bento).

The hexagon shape of the storage represents the beehive itself while full structure indicate the shape of a modern flower pot which is very suitable to be placed at housing area. Instead of giving weight at the top shield for safety, it also can be replaced and flower pot itself as the farmer can put any suitable plant on top of it. The flower pot will give a source of food to the bee for honey and pollen making. Therefore, the beekeeper can have less concern about the surrounding plant. The storage will not easily open by the human or other animals to make the bee worker feels safe during the foraging process.

RESEARCH METHODOLOGY



Figure 1: Zen Hachi bee nest

A case study was conducted in the area chosen which is Madu Kelulut Pak Ya, and housing area at Kg, Soi, Kuantan, Pahang, Malaysia. This area has been chosen as the case study and survey area as it is one of the meliponiculture industry in Malaysia. To gain a better understanding of the relationship between the existing product of stingless bee nest, the behaviour of 30 kinds of stingless bee species, and also the suitable environment and pollen favour needed by stingless bee species. The study is site inventory, semi-structured interview and survey questionnaire. The semi-conducted interviews were conducted with six local farmers and company owners who have expertise in structures based on the phenomenon and behaviour of stingless bee.

FINDINGS AND DISCUSSIONS

STINGLESS BEE NEST LINE UP ANALYSIS

A total of 30 samples of stingless bee nest from 2 places in Kuantan Pahang were analyzed. The result indicates that there are two (2) kinds of nest structure; with proper length and shield and without proper long and shield. Main features of bee nest were analyzed in terms of its stand, log, shield, area, safety and honey extraction condition. Most of the nest have all the main features but it is in improper condition, which may lead to the decreasing in the honey production. It is observed that features of the nest affect the safety of the bees as well as the people near the nest. The people will feel insecure while open the top shield of the nest to get the honey because they can easily see the active bees in the nest. Although the stingless bees usually do not sting, whenever it is in the insecure condition, it may bite people and other animals. At this condition, bee keepers need to wear a safety attire to prevent from bees attack. Based on the observation that has been done, it is a need to have a proper stingless bee artificial nest with safety features.

TYPES OF PLANTS FOR HONEY MAKING

The genera of stingless bees play an important role as pollinators of plants. These bees are actively involved in the pollination of agricultural crops and known to have preferences in selecting flowers to pollinate. Although many flowering plants are capable to self-pollinate, cross-pollination is needed to increase the genetic diversity of plants. In cross-pollination, pollens are transferred by wind, water, birds, bats, or bees. Bees are after one thing and that's the food in flowers: pollen and nectar. So the more flowers in the garden, the more bees will attract. Some flowers are more attractive to the bees because they may have more pollen and nectar. Some of the flowers may bloom at a particular time which other flowers are not blooming yet. Different structures of flower may also lead to the attraction of the bees, which wider petal may give bees more areas to collect pollen and nectar from the flower. There are several top plants are such as Abelia, Callistemon, Daisies, Tea Tree, Cupanopsis, River Lily, Apple and many more.

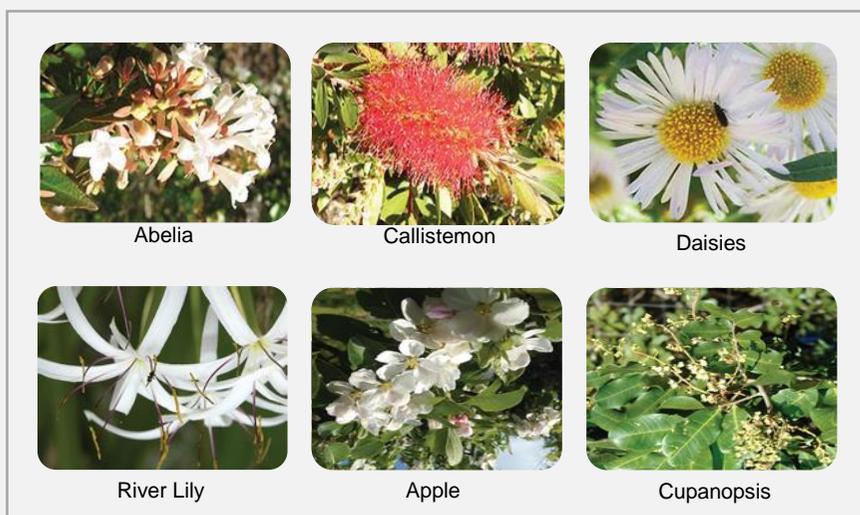


Figure 2: Several Types Of Plants For Honey Making

TYPES OF STINGLESS BEE

Stingless bee is an insect that lives in a perennial colony together with the queen, workers (sterile female) and drone (male bee) which fly and collecting the pollens and inorganic salt from various sources. There's a lot of species of stingless bees from 14 genera have been identified, and only some species such as Geniotrigona thoracica, Heterotrigona itama, Lepidotrigona terminata, Tetragonula fuscobalteata and Tetragonula leviceps that being commercialized in meliponiculture industry for honey production in Malaysia. As highlighted by Wan Nur Asiah (2015), "the flight activity particularly of two species namely, Heterotrigona itama and Geniotrigona thoracica were significant affected by temperature, relative humidity, moderate light intensity and hours of treatments ." Hence, some of these species such as Heterotrigona itama and Geniotrigona thoracica (Figures 2.a- 2.b) is the largest and suitable species that could produce honey in Malaysia.



Figure 2.a: Stingless bee species Heterotrigona itama



Figure 2.b: Stingless bee species Geniotrigona thoracica

STINGLESS BEE NEST STRUCTURE



Figure 2.3. External and internal nest structure of G. Thoracica. (a)- The front view of external nest (entrance) (b)- side view of external nest (entrance) showed (c)- the view of internal nest

TYPES OF COLORS FOR HONEY OF STINGLESS BEE

Each colony produce a different type of colour and taste of honey for each nest, which depends on the types of flowers' pollen as its food source. The honey taste, which is more towards sweet and fruity taste are depending on the source of the pollen from the flowers. The darker the colour of the honey will make the taste of honey become sour. Oppositely, the lighter the colour of honey indicates the sweeter taste. (Refer to Figure 3).



Figure 3: Types Of Plants For Honey Production
Source: <http://healthyhabitshub.com/how-to-choose-the-best-honey/>

Table 1: Different type of colour and taste from stingless bee honey

Figure	A	B	C	D	E
Colour	Dark Amber	Amber	Dark yellow	Yellow	White Colourless
Taste	Bitter	Sour	Sweet sour	Sweet	Sweetness
Flower Sample	Sourwood tree	Lily tree	Blueberry	Aster	Acacia Alfalfa

LAYOUT PLAN OF NEST ARRANGEMENT

Two types of stingless bee nest arrangement ha been analyzed in two different places as shown in figure 4.a- 4.b. Plan (a) is the landscape of stingless bee nest arrangement at En. Abdul Aziz's housing area while Plan (b) is the landscape of nest arrangement at En. Haziman's housing area. Both areas have a different type of nest arrangement. Plan A shows that the arrangement of the nest is quite far from others but some of the nest were facing each other entrance. The area also doesn't have enough plants as a food source. While Plan B shows the arrangement of the nest is close to each other, yet the position of the entrance was facing opposite from others where it much safer for colonies in each different nest.

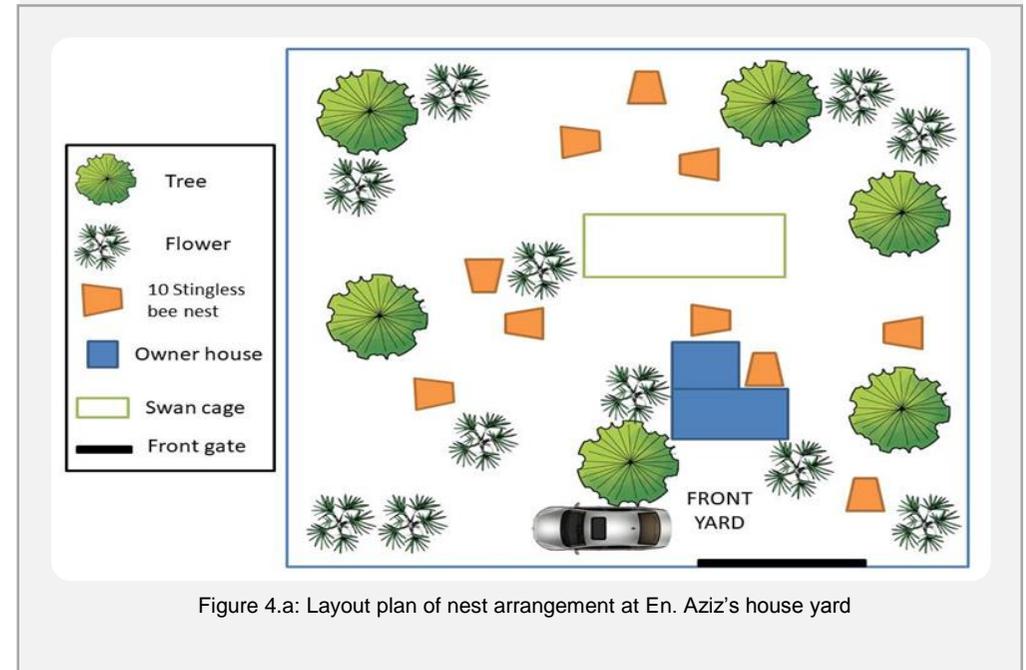


Figure 4.a: Layout plan of nest arrangement at En. Aziz's house yard

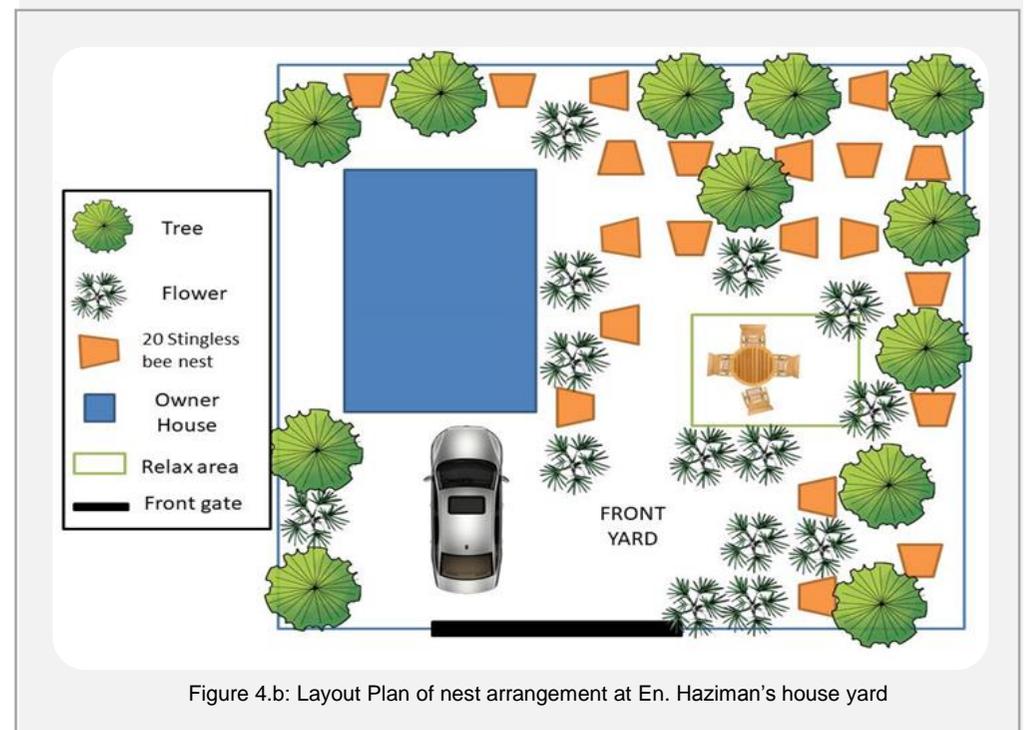


Figure 4.b: Layout Plan of nest arrangement at En. Haziman's house yard

Line up analysis

The table shows that all 30 of the nest has their basic structure: log, storage and top shield but most of the nests have improper physical features and surrounding which make the condition of honey extraction is low. Plus, the study shows the features of the nest also affect the safety among stingless bee colonies and people around the nest. People will be insecure while opened the top shield of the nest if the colony is an active species such as *G. Thoracica*. Although, stingless bees are not sting but they can bite whenever they feel insecure around their nest. By this result, it shows that there is a need for future studies on a proper nest in design, cost, and safety. So that the foraging process will be smooth, and the farmer will get high benefit on keeping the stingless bee colonies.

Table 2. Physical features of the Stingless bee nest and Honey extraction condition

Nest	Main Features					Safety		Honey Extraction Condition		
	Stand	Proper log	Storage	Proper shield	Suitable area	Colony	Human	Per week	Per month	None
1	✓	✓	✓	✓	✓	✓	✓	✓		
2	✓	✓	✓	✓		✓		✓		
3	✓		✓		✓		✓			✓
4		✓	✓	✓	✓		✓		✓	
5	✓		✓	✓			✓			✓
6	✓	✓	✓	✓	✓			✓		
7	✓	✓	✓	✓		✓	✓		✓	
8	✓	✓	✓	✓	✓		✓		✓	
9			✓							✓
10	✓		✓		✓					✓
11	✓	✓	✓			✓	✓		✓	
12	✓	✓	✓			✓	✓	✓		
13		✓	✓	✓	✓	✓	✓		✓	
14	✓	✓	✓	✓	✓	✓	✓		✓	
15	✓		✓	✓	✓		✓			✓
16	✓		✓		✓					✓
17	✓	✓	✓	✓		✓	✓		✓	
18	✓	✓	✓	✓	✓	✓	✓	✓		
19	✓	✓	✓	✓	✓			✓		
20	✓	✓	✓	✓	✓	✓	✓		✓	
21	✓		✓	✓	✓					✓
22		✓	✓	✓	✓		✓		✓	
23	✓	✓	✓		✓			✓		
24	✓	✓	✓	✓		✓	✓		✓	
25	✓	✓	✓	✓		✓	✓	✓		
26	✓		✓							✓
27			✓		✓					✓
28	✓	✓	✓	✓	✓		✓	✓		
29	✓	✓	✓	✓		✓	✓		✓	
30	✓		✓	✓			✓			✓
Score	25/30	20/30	30/30	15/30	17/30	12/30	20/30	9/30	11/30	10/30

DESIGN DEVELOPMENT & FINAL DESIGN PROPOSAL

IDEA SKETCHES

The idea exploration started with sketches of a few thumbnails to brainstorm a various idea. It was started with the basic shape of each component in the product. This process assisted the possibilities of idea it might be. Thumbnail did and a few of them are selected for further exploration in the design proposal stage. There are four idea proposals have been made to study the composition as well as the form of each component in the product. The sketches give a general view as it was drawn part by part of the form and composition. Then, the process continues with the final design development for the selected idea.

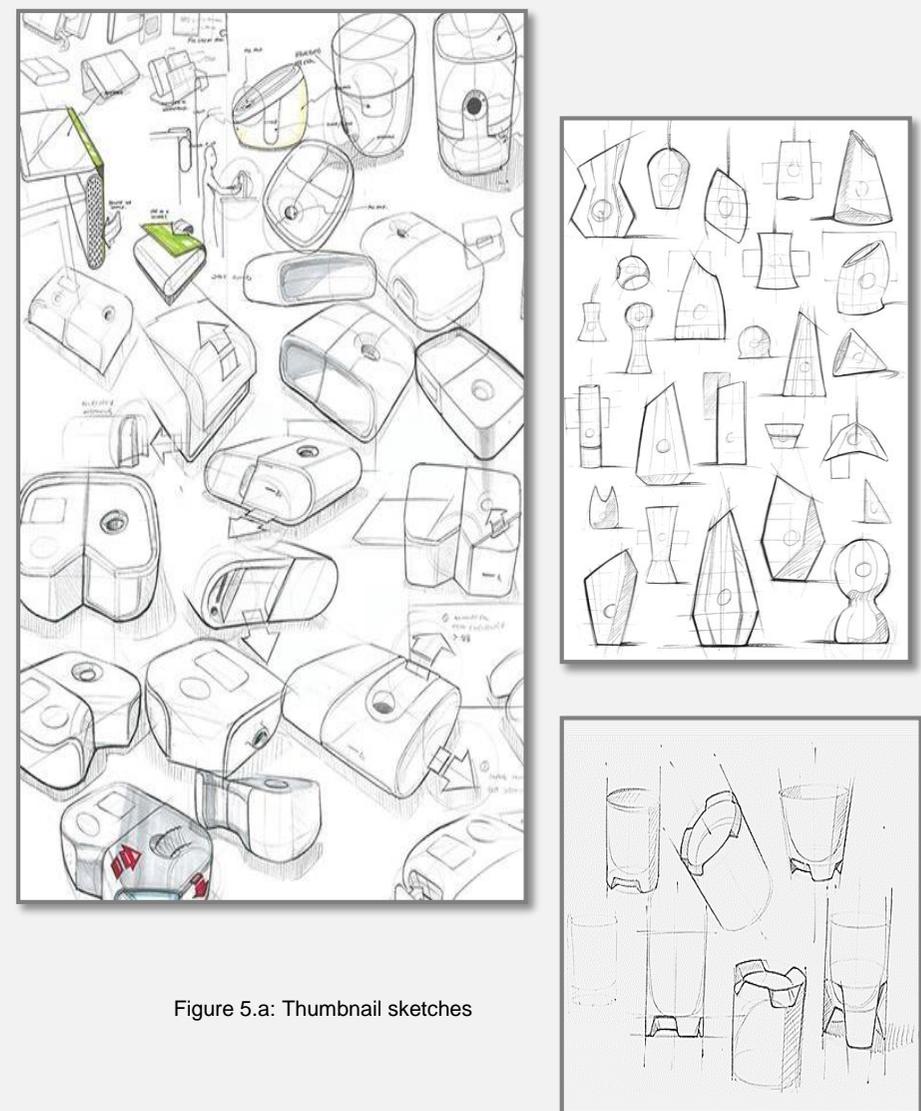


Figure 5.a: Thumbnail sketches

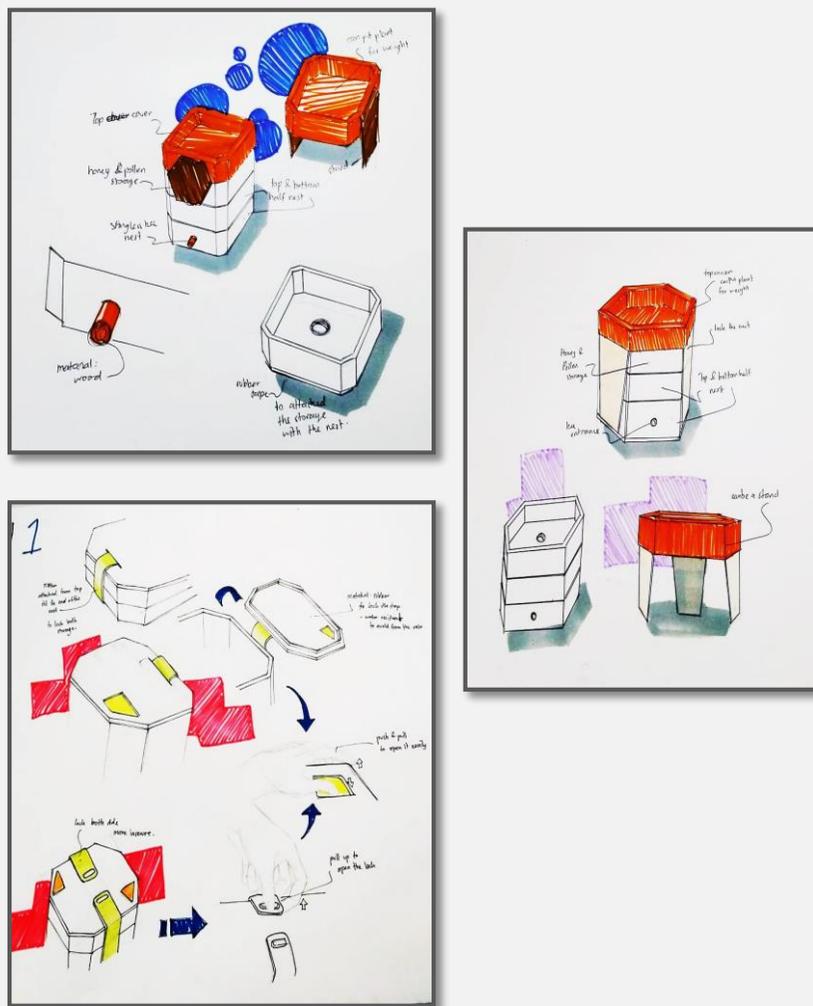


Figure 5.b: Ideation Sketch 2

Mock-Up

The next step was projecting the ideas on sketches into a structural form, to study the basic solid form of realization. It is important to transfer the sketched ideas into the mock-up form, as to make sure the ideas are proved to be realistic or not. The mock-up has been done made into actual size, which is easier to achieve the ergonomic studies of the product. This mock-up gives a clear understanding of how to make it and possible problem that probably faces in the model making process.



Figure 6.a: First Mock up development (a) perspective view (b) inside the storage



Figure 6.b: Second Mock up development (a) perspective view (b) top and the hive



Figure 6.c: Third Mock up development (a) perspective view (b) top and the hive

TECHNICAL DRAWING

The technical drawing of the product could be easily obtained through the 3D model build-up, by projecting the wireframe through related perspective views. By technical drawing, the process of model making would be easy and the realistic size could be estimated.

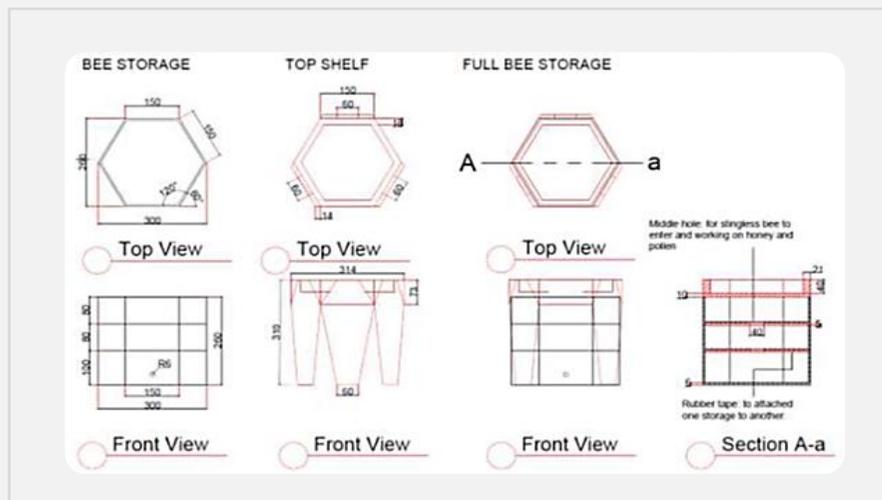


Figure 7: Technical Drawing of Zen Hachi

MODEL MAKING PROCESS

To test the practicality of stingless bee nest, a prototype model was built as the first sample to be learned. Materials used for model prototyping process that is being used and practiced in the real industry for making stingless bee nest is Maple and Nyatoh wood. This kind of wood is commonly used for in a wide array of furniture product including table, chair, cabinet and frame due to its good quality of wood.



Figure 8: Zen Hachi - Model making process

CONCLUSION

Zen Hachi gives the idea of simple modern stingless bee storage, which can provide multi-function product as planter pot as well as stingless bee nest. Instead of giving weight at the top for safety, it also can be replaced as planter pot so the farmer can put any suitable plant on top of it. The storage is not easily open by the human or animals to ensure the safety of the bee worker during the foraging process. Zen Hachi also allocates a place for the plant at the top of its body, which will help to provide a food source to the colony to get pollen and honey.

This new design not only provides a modern concept but also eco-friendly where a part of the nest can be transformed into storage for more space for bees to produce honey. For instance, Zen Hachi is one of the solutions for bee keeper because of its portability as well as functionality. With this product, it is expected to help the entrepreneur in stingless bee honey production soon. Zen Hachi also can be used in the housing area in town, a city as well as in a village.



Figure 9: Zen Hachi final design product

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04

AUTO-CITY THEME PARK, JURU, PENANG

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ABSTRACT

The project presents the design proposal for Auto-City Theme Park, which focuses on planning and designing a unique interchange spot. Auto-City is located in Juru, Penang. The design proposal is focusing on Phase 3. It is strategically located as it is next to North-South Highway. Since the site is located at commercial area and surrounded by automobile trade centre, it will offer great opportunities for a motor-centric event that can serve the car enthusiasts. However, some issues arise at the area of Auto-City that need to be addressed by the proposal, such as high in carbon emission, less green space and loss of natural heritage. Thus, this study articulates the strategies for a proposal on Auto-City Theme Park derived from several methods, which are observation and interview on special persons and the public.

As a result, the concept of “Hybrid” has been implemented in the design proposal to achieve the objectives. There are three key points that basically reflected in Auto-City Theme Park: (a) to promote the concept of corridor development with integrated and centralised development nucleus (b) Restore mangrove habitats and improve regional water quality (c) Rehabilitate Auto-City to reduce the carbon emission through ecological approaches. In short, this design thesis is aimed to create a unique interchange spot Auto-City that is centered around the auto-mobile culture while preserving the ecological balance. Therefore, there are solutions formulated through landscape design to cater all the issue arise.

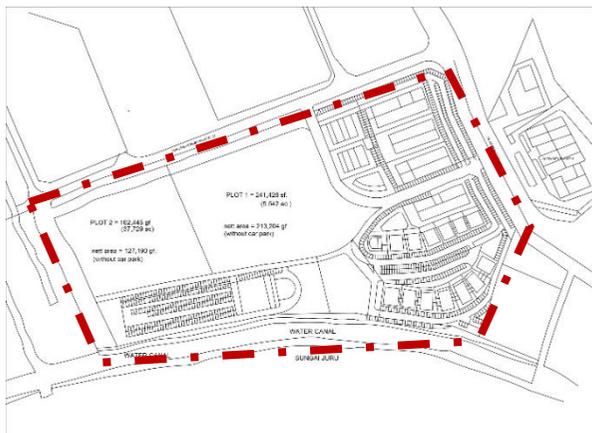


Figure 1: Site Plan of the proposed site in Juru, Penang

INTRODUCTION

The project has been proposed to be set up on a land, which is located at Auto-City Juru in Penang mainland. Penang is located in the north of Malaysia, approximately 350 km from Kuala Lumpur. Its land area of 1048km² and population of 1.746 million (Dept. of Statistic, 2018). Auto-City is designed as a tourist spot by the Penang State Government. Auto-City conceived and started to implement its Modern Nature concept, which integrates modern facilities and amenities with the natural habitat along the adjoining riverbank and green practices in striving to achieve a sustainable healthy environment (Jim & Chen, 2003). Auto-City is the first Auto-City in Malaysia and is a landmark as a 1-stop centre for auto, food entertainment, banking, shopping and outdoor events. This 25 acres site is located next to North-South highway, commercial area, residential area and industrial area. It is surrounded by the existing mangrove forest and Sungai Juru (www.autocity.com.my).

PROJECT DESCRIPTION

Auto City is a city that facilitates, and encourages the movement of people via private transportation, through ‘physical planning’ and built environment innovations. The physical criteria of Auto-City are focus and vehicle display where the stores are concentrated and located to provide an interesting and continuous shopping experience. Next, emphasize on the Auto Center identity and exposure, which is to provide an entry statements, monuments, or signs that let visitors know that they have arrived. A good display spaces are the next criteria of a good Auto-City where indoor and outdoor displays have a good appeal and attractiveness of new centres. New techniques using attractive paving or landscaping must be often used in Auto-City. Moreover, it provides a One Stop Centre as a marketing tool where it can be useful to refer the place as a “one stop” centre selling all makes of automobiles marketed in the area.

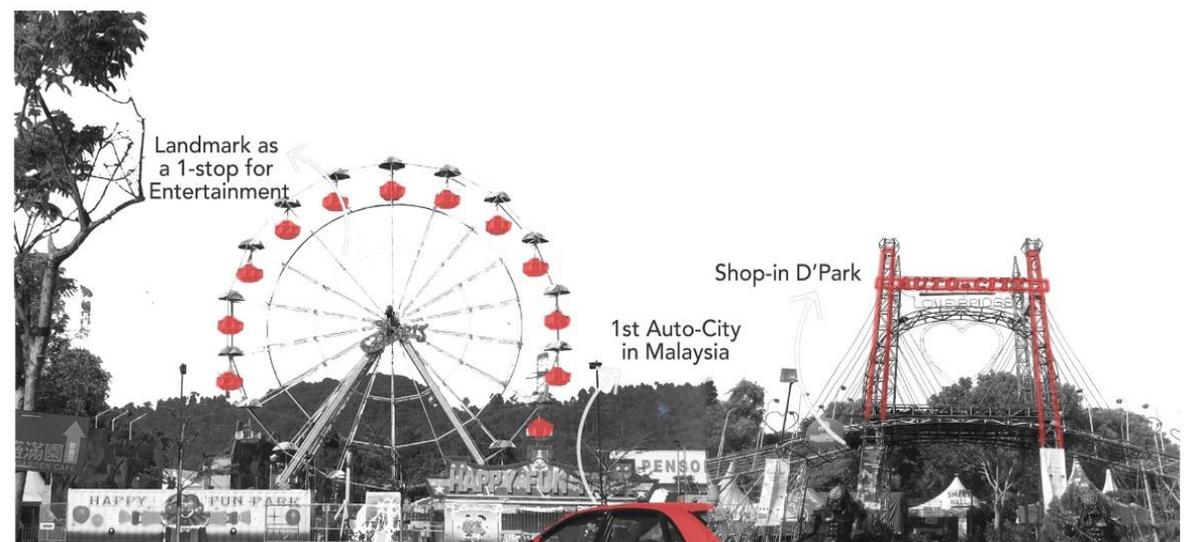


Figure 2: Vision of an Auto-City at its current surrounding

METHODS

SITE ANALYSIS STUDY

Table 1: Site Analysis and synthesis

Site factors	Analysis	Synthesis (proposed design criteria)
Site Context and Location	It is located in the heart of the Penang State, which makes it overwhelmingly friendly and culturally significant. Most of travelers rush into this way.	<ul style="list-style-type: none"> Auto-City is an interchange gateway of tourism in northern Malaysia as well as Penang
Hydrology	<p>Sungai Juru is one of the significance features as source of water for mangrove habitat.</p> <p>Great opportunity to have a scenic view and interesting activity.</p>	<ul style="list-style-type: none"> It is the main water body for mangrove habitat Minimizing the flood problems through ecological approach. Proposed space that give opportunity to people in appreciating the nature through the borrowed landscape.
Vegetation	This area portrays the cultural landscape through mangrove habitat remaining and different types of plantation on the site.	<ul style="list-style-type: none"> Restoring mangrove habitats along Sungai Juru. Create a proper design to engage users with mangrove habitats.
Existing building and features	Strategically located near North-South Highway and serve various types of land use especially auto where can attract not only local people but also tourists.	<ul style="list-style-type: none"> Enhance the image and services surround the commercial area by creating a landmark and nodes to increase permeability. Provide information center for tourism, signage and public references.
Culture	Auto-City have a unique natural heritage value to the site, which is from the mangrove habitats and auto mobile culture.	<ul style="list-style-type: none"> Design should be influence by the cultural value that belongs to the area.

CITY IMAGE & ELEMENT STUDY

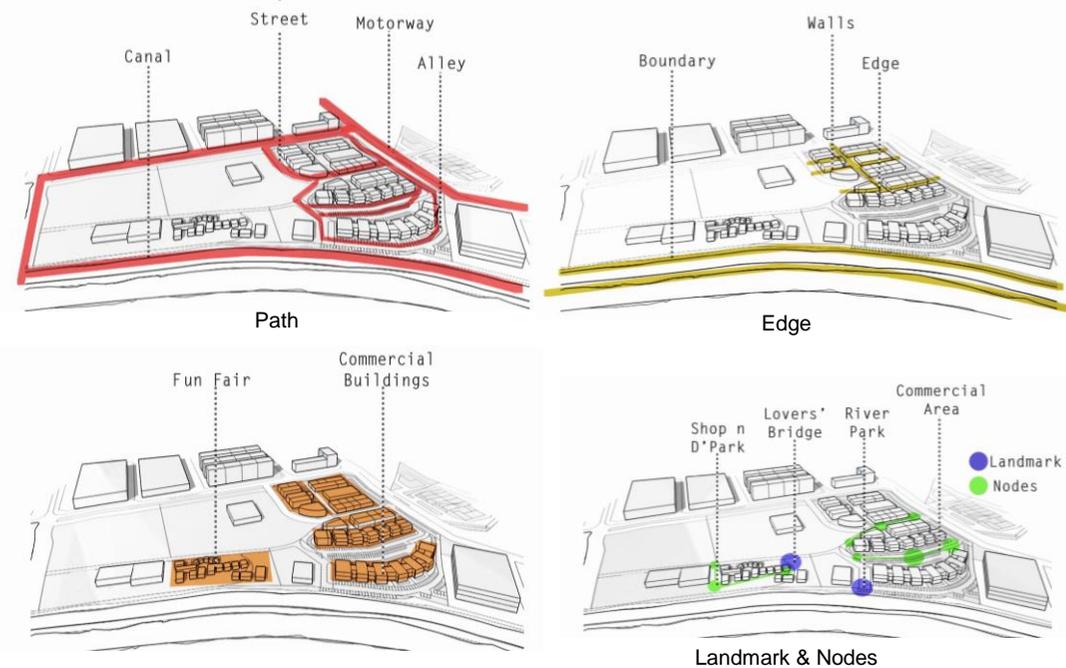


Figure 3: The City Image and Its elements' study

MODEL STUDY



Figure 4: Model mock-up study

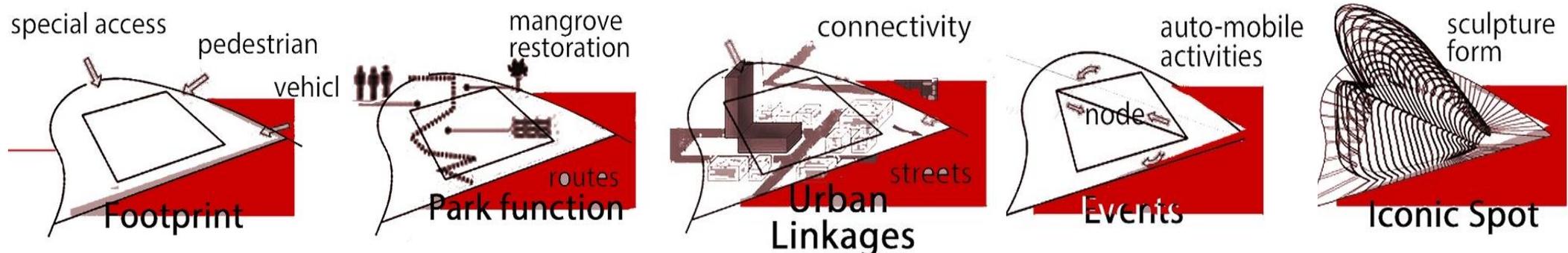


Figure 5: Design strategies for Auto-City Theme Park

CONCEPTUAL PROCESS

CONCEPT: HYBRID

The design concept chosen in this project is “Hybrid” (Jang & Kim, 2006). This concept is inspired by an expression of wider radical changes between (order and spacing) and (complexity, connectivity, permeability) (Gordeev, 2013). Hybrid in landscapes are mainly focuses in community landscapes. They are generated by combining two place-making processes that lead to the diversity and richness. Hybrid can also be divided into two, which is “conscious” and “unconscious”. Conscious is a collisions of different points of view where it “fuse the unfuseable” to create strangeness. While, “unconscious” is constraints that can be turn into ability for potential. It is by discovering new approaches into design.

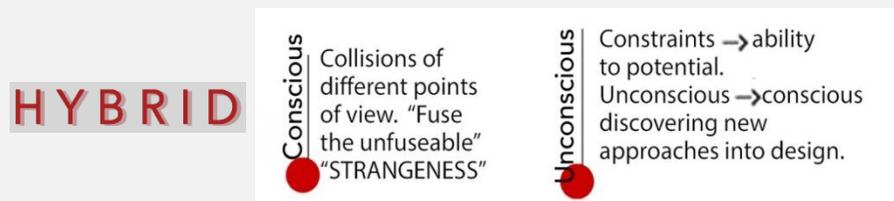


Figure 6: Concept for Auto-City Theme Park

HYBRID IN LANDSCAPE

Hybrid landscape are community landscapes (Quayle & van der Lieck, 1997). They are generated by combining two place-making processes: the ways that traditional public parks and streets are designed and maintained, and the acts of small-scale appropriation and embellishment that lead to the diversity and richness (Karvonen & Yocom, 2011; Pinto de Freitas, 2011; Vicenzotti, 2017).

I. Buffering and Remediation Replanting

The landscape design of masterplan alters the natural heritage value of the site by using native species to recover vacant land next to Sungai Juru to connect people with nature

II. Water Purification

A mature ecological is formed with aquatic plants and extending the mangrove species to filter and increase sedimentation. Aquatic plants and mangrove can help in habitat restoration around the natural heritage area.

III. Street Planting

use of dense and large canopy trees and shrubs to soften the hard edges and to provide shade for user's comfort.

MASTERPLAN DEVELOPMENT

The Auto-City Theme Park is derived from the idea of creating a unique interchange spot in Auto-City that is centered around the auto-mobile culture while preserving the Ecological balance. The Auto-City Theme Park also display the adventurous image of auto-mobile to the park which is to appreciate of auto-mobile events (Newman & Kenworthy, 2011).



Figure 8: Proposed Masterplan of Auto-city Theme Park

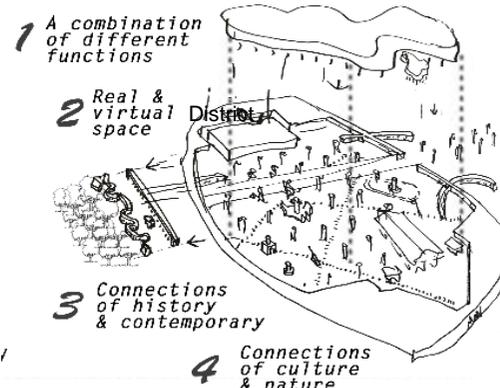
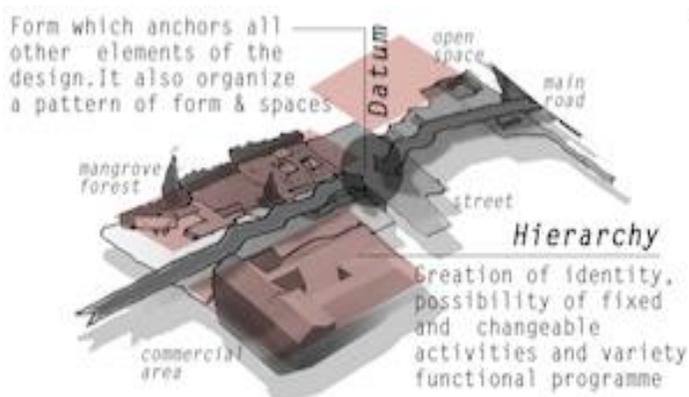


Figure 7: Initial idea development

THE DETAIL PROPOSAL

SHOW ARENA

The Development Area Plan selected from this project covers the area of Show Arena. The design for this area is intended to provide a distinctive and conducive arena for automobile. Events to promote a pleasant and Unique surrounding environment.

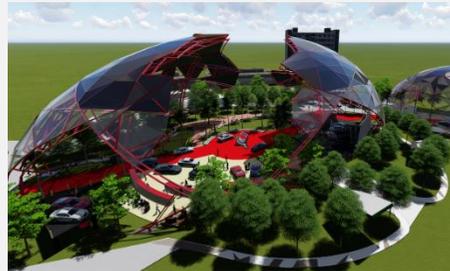


Figure 9: View towards Outdoor Showroom & Auto Stage Arena

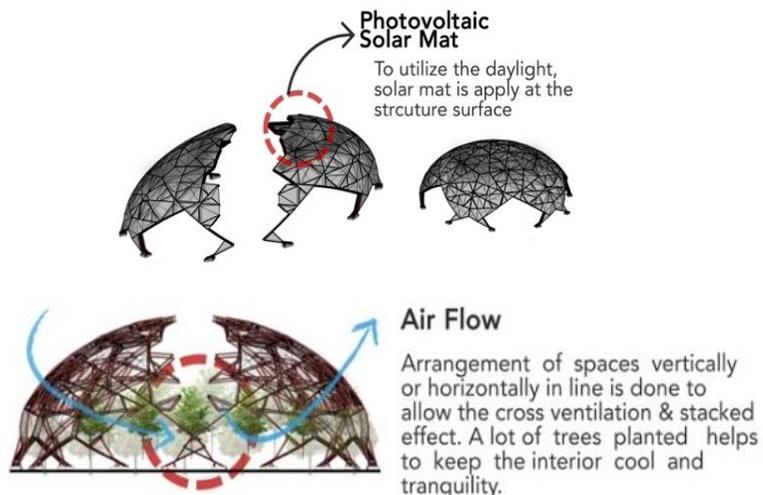


Figure 10: Green approach of the Show Arena structure

Connect people with nature

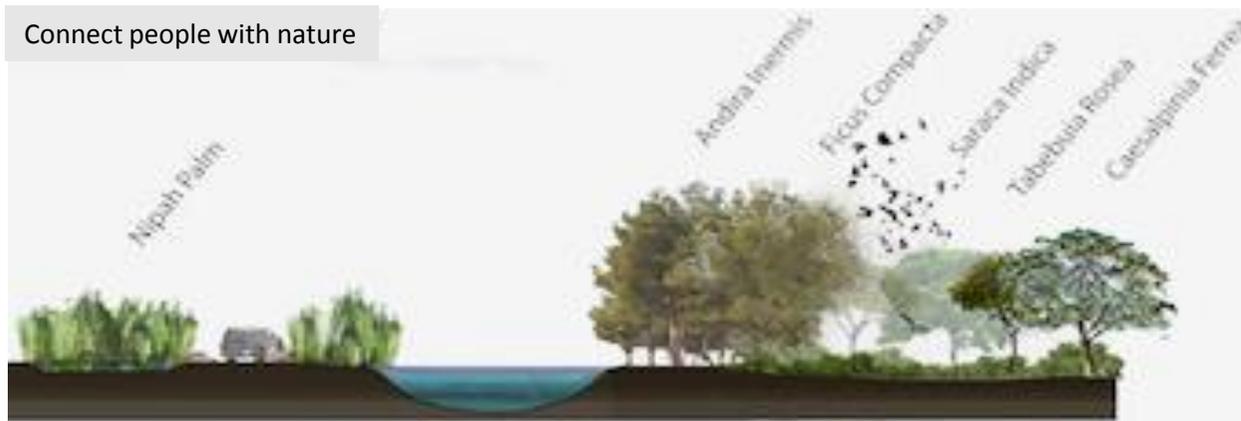


Figure 13: Buffer and Remediation Re-planting

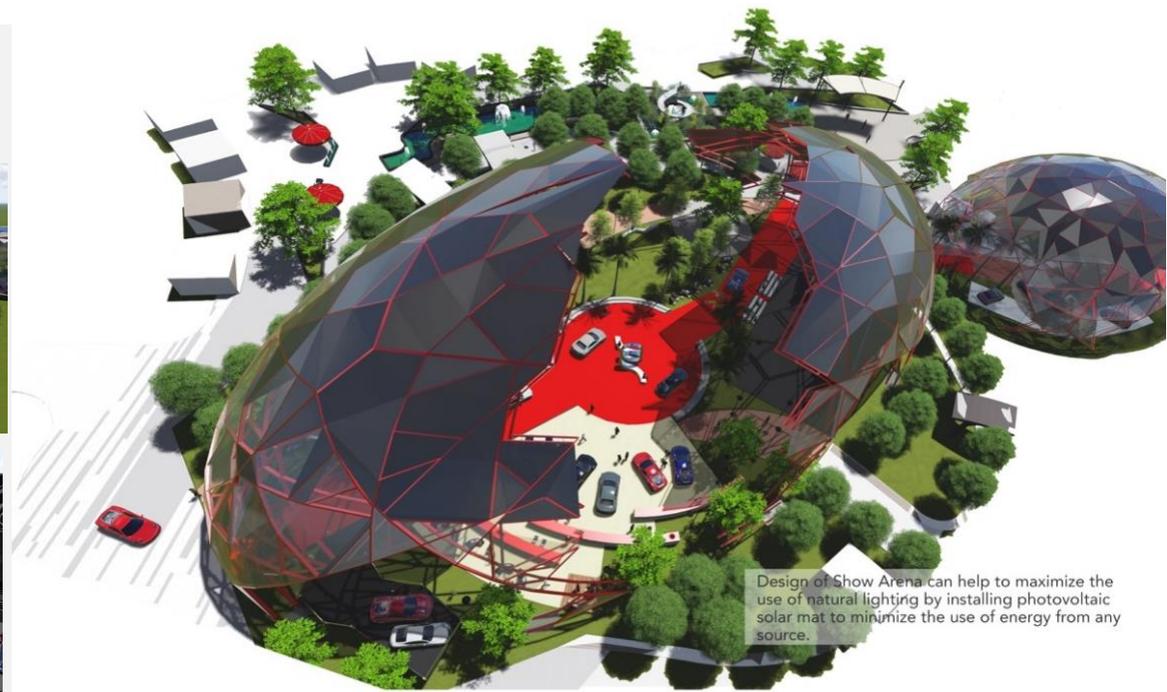


Figure 11: Aerial view towards the Show Arena

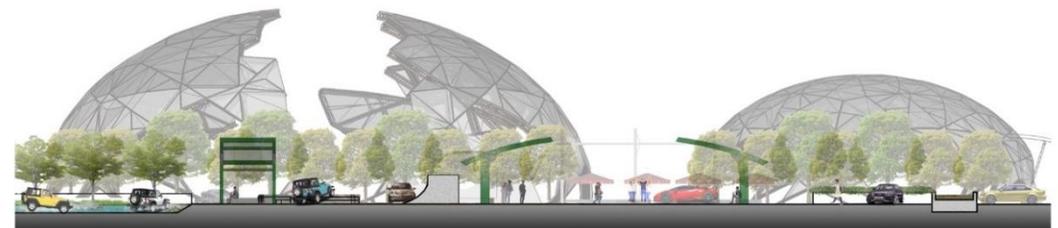


Figure 12: Section showing the articulation challenge of the proposed development

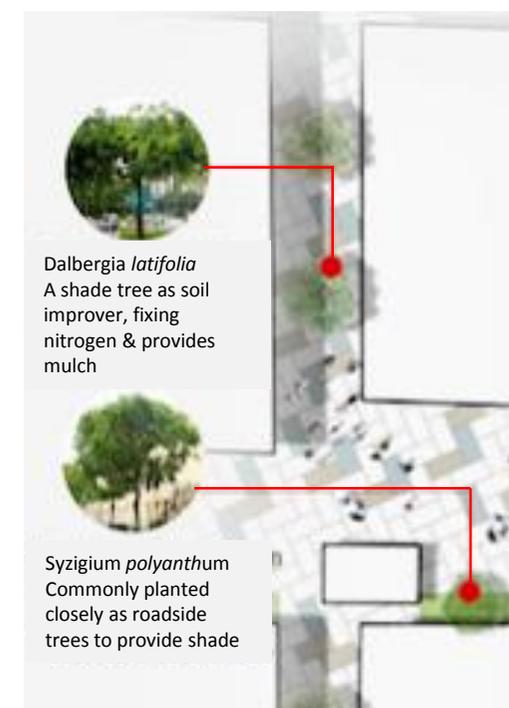


Figure 14: Street Planting

THE DETAIL PROPOSAL

THE LANDSCAPE ELEMENTS

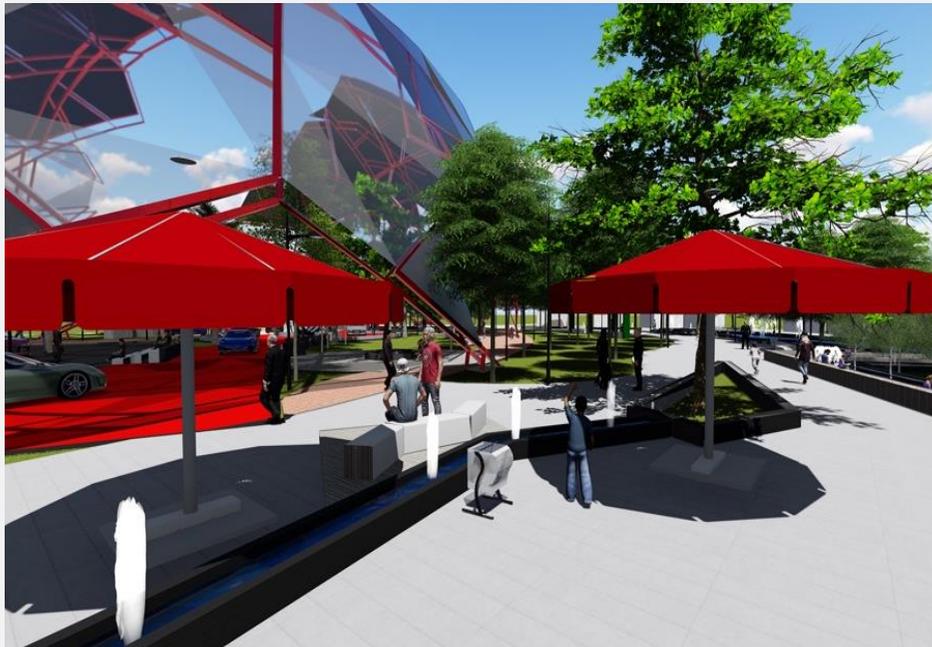


Figure 15

Figure 15-17: Images showing landscape elements and activities of the proposed site



Figure 16



Figure 17

CONCLUSION

The proposed Auto-City Theme Park has shown various characteristics of a place as an auto city, which is by designing the 20 acres of open space into a sustainable theme park. It has achieved the aim of the project, which is to create sustainable theme park through landscape design that reflect the hybridity of plants with nature, plants and place and plants and people benefit to the community and environment.

In addition, this project is also highly concern on the relationship environment and community towards preparing sustainable environment of the site and the area surrounding. Therefore, there are solutions formulated through landscape design to cater all the issue arise.

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05

REVIVING OF ADAT BERSIRAM TRADITION AND ADAPTIVE REUSE OF MASJID LAMA KAMPUNG TANJUNG BERINGIN, SERI MENANTI, NEGERI SEMBILAN DARUL KHUSUS

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ABSTRACT

Masjid Lama Kampung Tanjung Beringin was built in 1892 by Raja Melewar and the villagers. The mosque is left abandoned for many years without proper care, hence this building has present of defects and missing parts. Restoration an old building with different function has been applied a long time ago with the intention of reviving the building. There are many approaches to revive an old building, such as, adaptive reuse. The aim of this study is to revive the tradition that takes place at Masjid Lama Kampung Tanjung Beringin, Seri Menanti, Negeri Sembilan Darul Khusus through adaptive reuse. The objective of this project is to identify factors causing the functional deterioration of Masjid Lama Kampung Tanjung Beringin, to identify the significance of the mosque in order to revive its function, and to revive the function of the mosque through suitable approach.

This study will discover the right process of adaptive reuse and a documentation on the fabric of the site as well as its previous functions as one of its significant value. Perhaps, this study will be beneficial to the people. Specifically, this study analyses eight methods have been used in analysing the site on its motifs, defects, functions, and the design of the mosque in order to fulfil the objective of the study. This study finds the intricate carvings in the mosque that might have related to the reign of Raja Melewar and also related to the adat bersiram tradition that takes place in the mosque. Lastly, this study suggest that adaptive reuse is the best conservation works in hopes it will bring back from the edge of death of this mosque.

RESEARCH INTRODUCTION

Adaptive reuse means a renovation work and reuse of existing structures for new purposes. This happened often on a religious building, castles, and many more. This can be seen in Osaka Castle, Japan has turned to museum, Carcosa Seri Negara, Kuala Lumpur has become a hotel today and even Malaysia's castles like Istana Lama Seri Menanti, Negeri Sembilan and previous Istana Negara, Kuala Lumpur that has turned to museum to attract more tourist. However, old building that have undergone for adaptive reuse approach are often have conflicts with the user or perhaps with its own identity, especially religious building that have a different function. Usually the conflicts can be related with the sanctity of that building. As we know, religious building is used to perform religious practices which we often see it as a sacred building.

METHODOLOGY

The research using two different methods, which is, primary data and secondary data.

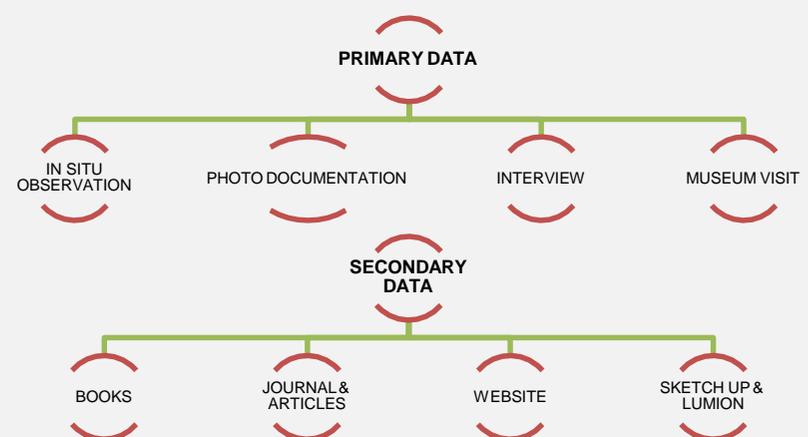


Figure 1: Research Methodology

PROBLEM STATEMENT

1

- The mosque is left abandoned for many years and lack of documentation. It is hard for a researcher to get any information regarding this mosque.

2

- Since the mosque was left without proper care, hence this building has present of defects and missing parts.

3

- There are missing parts in the mosque, which is the ceiling of the mosque are mostly detached missing due to decayed and very old.

4

- The mosque has not been used for about 55 years and perhaps the last ruler used for *adat bersiram* was Tuanku Munawir.

5

- There is no evidence or people who know the exact location of previous site of the mosque.

6

- The detail event of *adat bersiram* that takes place in the mosque also could not be found since the event happened hundred years ago. Only verbal story from the villagers is the reliable sources.

SITE LOCATION

The mosque is located at Lot 2450 in Kampung Tanjung Beringin, Seri Menanti, see Figure 2. Historically, this mosque is the first mosque established around the Pekan Diraja Seri Menanti.



Figure 2: The location of Masjid Lama Kampung Tanjung Beringin
Source: Google Earth (2019)

AIM & OBJECTIVE

OBJECTIVE

To identify factors causing the functional deterioration of Masjid Lama Kampung Tanjung Beringin

To identify the significance of Masjid Lama Kampung Tanjung Beringin in order to revive its previous function of *adat bersiram* as part of the coronation process of Negeri Sembilan royalty

To apply adaptive reuse towards improving the function of Masjid Lama Kampung Tanjung Beringin

AIM

To revive the *adat bersiram* tradition as part of coronation process and Masjid Lama Kampung Tanjung Beringin, Seri Menanti, Negeri Sembilan Darul Khusus through adaptive reuse.

FINDINGS

From the interview session conducted with Mrs. Rokiah from Jabatan Warisan Negara, Kuala Lumpur. Masjid Lama Kampung Tanjung Beringin was gazette as National Heritage in 2012. Meanwhile, the interview with Mr. Rosiswandy, the Assistant Curator at Muzium Adat Negeri Sembilan, Jelebu, found that there are many names regarding *adat bersiram*. The names are, *Adat Mandi Berlangir*, *Mandi Limau*, *Berlimau Langir*, *Adat Bersiram Tabal*, *Adat Mandi Safat*, and *Istiadat Mandi – Mandian*.



Figure 3: Current condition of the mosque

BUILDING CONSERVATION WORKS

Conservation encompasses all the processes of looking after a place so as to retain its cultural significance. It includes:



CASE STUDY

The uses of a building may change from time to time though, when the main purpose shifted into a new purpose in order to meet the current needs and at the same time preserve its authenticity. In those days, some historical buildings have been reused into a museum or concert hall, library, houses, offices, restaurants (Ariffin, et al., 2017). According to Mine (2013), there are two possible method to adaptive reuse a building, first, to preserve the originality of spatial and volumetric organization of the building which has been applied to Sephardic Synagogue, Amsterdam. Secondly, method of restoration that change the originality of spatial and volumetric organization of the building, can be seen in Carmo Monastery, Lisbon, Portugal & Demirci Mosque, Turkey.



Figure 4: Sephardic Synagogue, Amsterdam



Figure 5: Demirci Mosque, Turkey



Figure 6: Flow of the royal *adat bersiram*

ROYALTY OF NEGERI SEMBILAN

Tuanku Muhriz ibni Almarhum Tuanku Munawir is the 11th Yang di-Pertuan Besar of Negeri Sembilan, Malaysia. Tuanku Muhriz is the only son out of six children of the late Tuanku Munawir ibni Almarhum Tuanku Abdul Rahman, the Yang di-Pertuan Besar of Negeri Sembilan from 1960 to 1967.

However, he was bypassed by the Council of Undangs to become Yang di-Pertuan Besar when his father died in 1967 for his uncle, Tuanku Jaafar. Tuanku Jaafar was elected by the Undangs as the 10th Yang di-Pertuan Besar of Negeri Sembilan (Kerajaan Negeri Sembilan, 2019).



Figure 7: The chart of family pedigree of Yang Di- Pertuan Besar Negeri Sembilan
Source: Brendan (2008)

ADAT BERSIRAM

Adat bersiram in Negeri Sembilan Darul Khusus, it started with the placement of Alat Kebesaran Diraja at the lawn of Istana Besar Seri Menanti. Then, they all must wait for the arrival of four Undang. Yang Di – Pertuan Besar and the Tengku Ampuan will sit on a carriage called Maharaja Diraja to drawn by Pegawai 99 to Panca Persada. The carriage will be drawn from the palace's lawn to Panca Persada. When the Yang Di – Pertuan Besar and the Tengku Ampuan sit on Panca Persada, Orang Empat Istana will take the silver tray and bowl and round the king and queen for seven rounds.

After the Orang Empat Istana finished their ritual, the Yang Di – Pertuan Besar and the Tengku Ampuan will dipped their hands into silver tray and bowl that contain lime powder.



Figure 8: Adat bersiram of Yang Di – Pertuan Besar Negeri Sembilan
Source: Warisan Permaisuri (2014)

DESIGN PROPOSAL

The site of Masjid Lama Kampung Tanjung Beringin is in irregular shape. The site is to be use as a place to display a Maharaja Diraja (royal carriage) and Panca Persada (stage for royal *adat bersiram*) as illustrated in Figure 9. These two important replicas in royal *adat bersiram* is needed in the site to give the image of previous events during the reign of Raja Melewar.

Moving to the interior of the mosque, it will be a museum for *adat bersiram* Yang Di – Pertuan Besar Negeri Sembilan. This museum will provide an exhibition regarding the event, from the garments, equipment, and tools used during the event as illustrated in Figure 10.

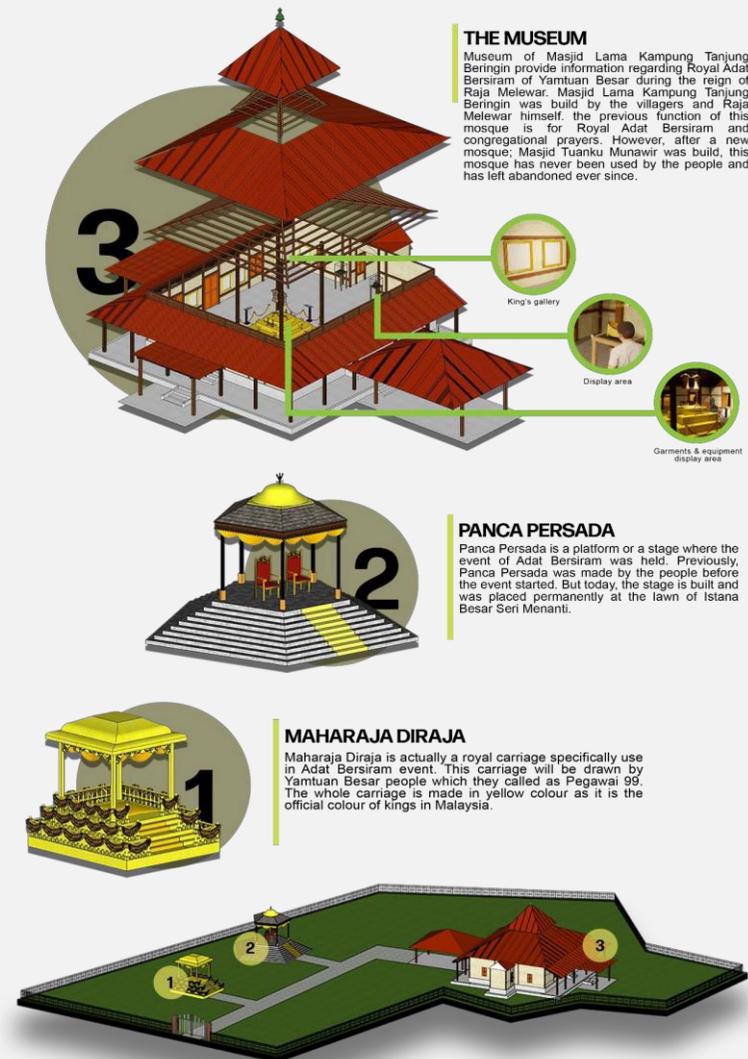


Figure 9: Proposed placement of Panca Persada and Maharaja Diraja on site

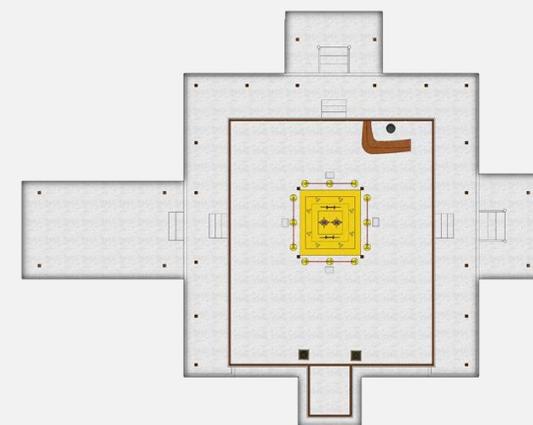


Figure 10: Spatial design of the proposed museum

3D IMAGES



Figure 11: Maharaja Diraja on site



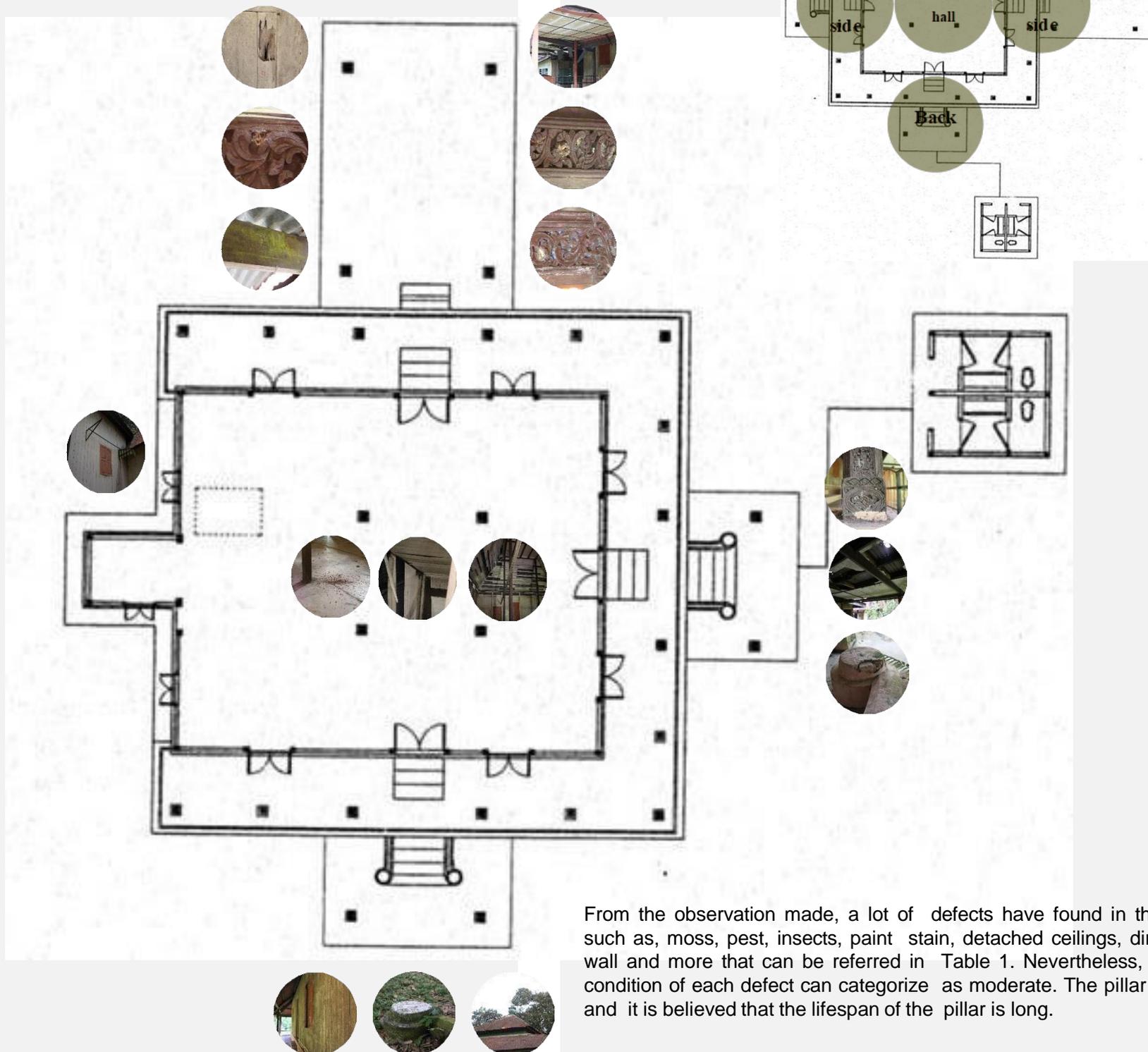
Figure 12: The display area in proposed museum of Masjid Lama Kampung Tanjung Beringin



Figure 13: The display area at mihrab area

DEFECTS

Masjid Lama Kampung Tanjung Beringin has been abandoned for over than 50 years without proper care from the residents or Seri Menanti and state authorities. Refer Table 1 for further details about the defects.



From the observation made, a lot of defects have found in the building, such as, moss, pest, insects, paint stain, detached ceilings, dirt, decayed wall and more that can be referred in Table 1. Nevertheless, the overall condition of each defect can categorize as moderate. The pillar still stable, and it is believed that the lifespan of the pillar is long.

Table 1: List of defects found in the mosque

No.	Location	Types of Defects	Defects
1.	Roof structure (right side)	Moss	
2.	Entrance pillar (right side)	Pest	
3.	Entrance pillar (right side)	Paint stain	
4.	Entrance pillar (right side)	Pest & insects	
5.	Entrance pillar (back)	Paint stain	
6.	Prayer hall	Bat's waste	
7.	Prayer hall	Bat's nest	
8.	Prayer hall	Detached ceiling	
9.	Mosque's wall (right side)	Decayed wall	

10.	Mosque's wall	Dirt	
11.	Entrance stair (back)	Flaking paint & fragmented stone	
12.	Entrance porch (back)	Detached ceiling	
13.	Entrance stair (left side)	Moss	
14.	Front window	Detached roof	
15.	Mosque's roof	Rusted roof	
16.	Entrance porch (right side)	Decayed ceiling	

CONCLUSION

The first objective of this research is to identify factors causing the functional deterioration of Masjid Lama Kampung Tanjung Beringin, Seri Menanti, Negeri Sembilan Darul Khusus. This can be seen in this mosque. The mosque has been abandoned for quite a long time and never been used ever since. Hence, during the observation it can be seen that the mosque has a lot of defects occurs on the fabric of the building.

Secondly, the objective is to identify the significance of Masjid Lama Kampung Tanjung Beringin in order to revive its function. From the observation made, it can be found that a lot of significant value can be found on the site. For example, the motifs and the fabric of the building. The motifs were carved by the villagers and the design of the mosque is basically a traditional mosque design but a bit different since it is quite big for traditional mosque.

The third objective is to revive the function of Masjid Lama Kampung Tanjung Beringin through suitable approach. The intention of this research is to find whether the method of adaptive reuse is suitable for preserving an old building, especially old mosque since it could create criticism among the region.

Preservation through adaptive reuse is seen to be more closed to the one region as it can revive the building into different use. All four case studies have proven that it is not only for house of worship but also can be used as a tourist attraction and a place beneficial for the people, like library in Demirci Mosque, Turkey. Looking at the condition of Masjid Lama Kampung Tanjung Beringin, it is suitable to use this approach as it can help to prevent the building from deteriorate and at least have a proper care.

FUTURE RESEARCH AREA

These are the potential research area that provides a natural guide to future research

1

This research can be deepened more in doing the experiment on the material found on the site to get a specific data like, the exact year of the mosque, alternative material that can replace the original material.

2

More architectural works need to be done, using advanced equipment such as, Building Information Modelling (BIM), 3D building scan, technical drawing, and more. This is to ensure that all the detail information is in one place and easy to access if there is in need to refer in the future.

3

Study on organizations related to the field area is needed to avoid wasting time when the study is conducted. The researcher should know the role of each organization in their respective fields.

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06

SPECIAL AREA PLAN (SAP) FOR BANDAR MAHARANI, JOHOR ROYAL TOWN

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ABSTRACT

This project of Development Action Plan was carried out in a special royal town of Bandar Maharani, Johor. It is a historic town and the capital of Muar District, Johor. Though there are many potentials to be further enhanced, several issues need to be resolved for better environmental quality.

The suggested development approach relates to its physical condition, taking advantage of Sungai Muar that lies in the middle of the town. Thus, the riverfront development is recommended with many improved elements of urban design to elevate the image of the urban heritage of Bandar Maharani. Among the key projects are water taxi, Sungai Bentayan open space and, Muar bridge gateway, and sky pedestrian.

INTRODUCTION

The proposed redevelopment of the riverfront of Sungai Muar is partially taken from the Special Area Plan (SAP) of Bandar Maharani, Johor. It is a historic town and the capital of Muar District, Johor. It is one of the most popular tourist attractions in Malaysia to be visited and explored for historical buildings from the pre-war period. It is declared the royal city of Johor by Sultan Ibrahim Sultan Iskandar and is the fourth largest city in Johor. The study discovered its strengths as its Sungai Muar apart from its valuable heritage covering the delicacy of foods, culture and aesthetic design of colonial buildings such as the famous Masjid Jamek Sultan Ibrahim, Muar High School, and Istana Bandar. Jalan Peteri, Jalan Maharani, Jalan Abdul Rahman, Jalan Arab, and Jalan Bakri are the main road located within the study area. The main obstacles are the street design and transportation aspects. Therefore, some riverfront projects were proposed to improve the overall ambient of Bandar Maharani like water taxi, gateway, and sky pedestrian.

METHODOLOGY

Provision of special area plan (SAP) is based on the provision of the Town and Country Planning Act, 1976 (Act 172), subsection 16B (2). The purpose of the special area plan is to accelerate detailed local character planning for an area that has an interest and specific characters. This project falls in category 2, i.e. for improvement of the heritage area. The study involved primary and secondary data collection on-site. A site investigation was conducted to gather the information, particularly on its strengths and weaknesses. Data for was collection covering the aspects of urban design, land use, transportation, and open space. Secondary data was obtained from Muar Municipal Council and other related technical departments. After the analysis of the site was done, the development concept and strategy was laid out. Following this step, detailed proposals were recommended, hoping to improve the overall image of Bandar Maharani as the royal town.

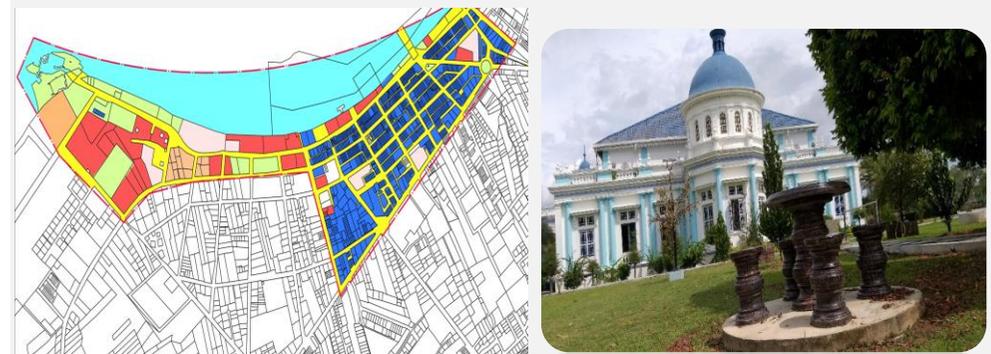


Figure 1: Location Plan of study area and image of building in Bandar Maharani

CONCEPT & STRATEGY

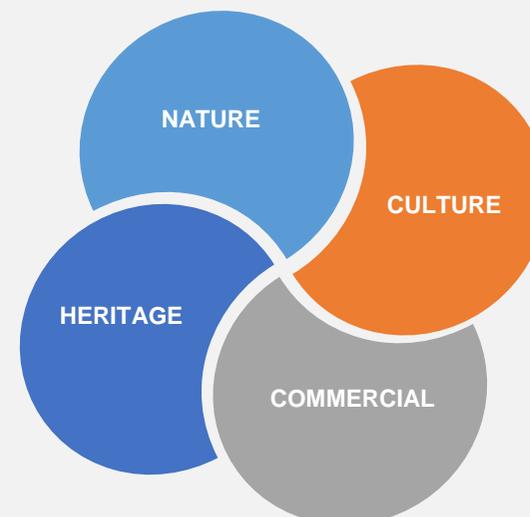


Figure 2: Moving towards the liveable, vibrant, attractive heritage township

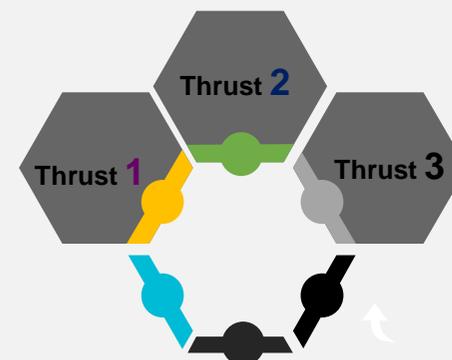
PROPOSED PROJECTS



DEVELOPMENT THRUST

Enhance accessibility, connectivity, and quality of road and pedestrian network of Bandar Maharani.

Highlight the heritage value of Muar town and improve the image of Bandar Maharani.



Improve and protect the areas that are the potential to promote the uniqueness of the historical royal town.

<p>PROJECT ONE</p> <p>ONE STOP CENTRE</p>	<p>PROJECT TWO</p> <p>MUAR GATEWAY AND SKY PEDESTRIAN</p>	<p>PROJECT THREE</p> <p>SUNGAI MUAR WATER TAXI (SMWT)</p>
<p>PROJECT FOUR</p> <p>SUNGAI BENTAYAN-WATERFRONT OPEN SPACE</p>	<p>PROJECT FIVE</p> <p>NEW TOURIST CENTRE</p>	<p>PROJECT SIX</p> <p>OBSERVATORY PARK & MULTI LEVEL PARKING</p>

PROJECT FINDINGS

PROJECT 1: MUAR GATEWAY & SKY PEDESTRIAN

This project improves the image of the welcoming gateway of Sungai Muar by connecting it to the river bank. Six towers will be built, reflecting the royal image. The larger scale of structures supports the skyline and strengthens the overall image along the river. The objectives:

- To enhance the connectivity of the town
- To create a sense of welcoming and enhance the overall image of the town



Figure 3 : Current condition (2018)



Figure 4: Proposed condition (2024)



Figure 5: Proposed condition (2024)

PROJECT 2: SUNGAI MUAR WATER TAXI (SMWT)

This project improves the water-based transportation by providing better infrastructure, for instance jetty, and boats as water taxis. The mooring and anchorage sites are provided for convenient operation of the quay. The objectives are:

- To become as a new attraction and means of transportation for Bandar Maharani .
- It can ease the movement of the local people as well as tourists.
- Connects the state of Malacca and Johor to Bandar Maharani.



Figure 6 : Current condition (2018)



Figure 7: Proposed conditions (2025)

PROJECT 3: SG. BENTAYAN WATERFRONT OPEN SPACE

The improvement works at Sungai Bentayan waterfront is essential as it rejuvenates the open spaces to welcome more users. The availability of the present physical infrastructure will become the basis for some adaptive use of spaces, in which the main new components are towers, and overhang pedestrian bridge. The objectives are:

- To offer new place for social gathering and meet up, encourage healthy lifestyle as well as relaxing environment.
- To create connectivity of spaces that encourages the vibrant of activity along the riverbank.



Figure 8 : Current condition (2018)

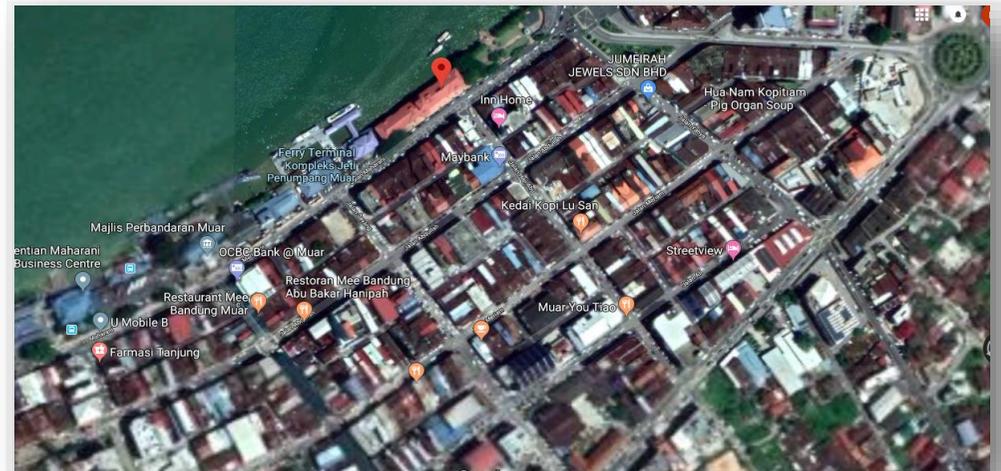


Figure 9 : Current condition (2018)



Figure 10 : Proposed condition (2025)

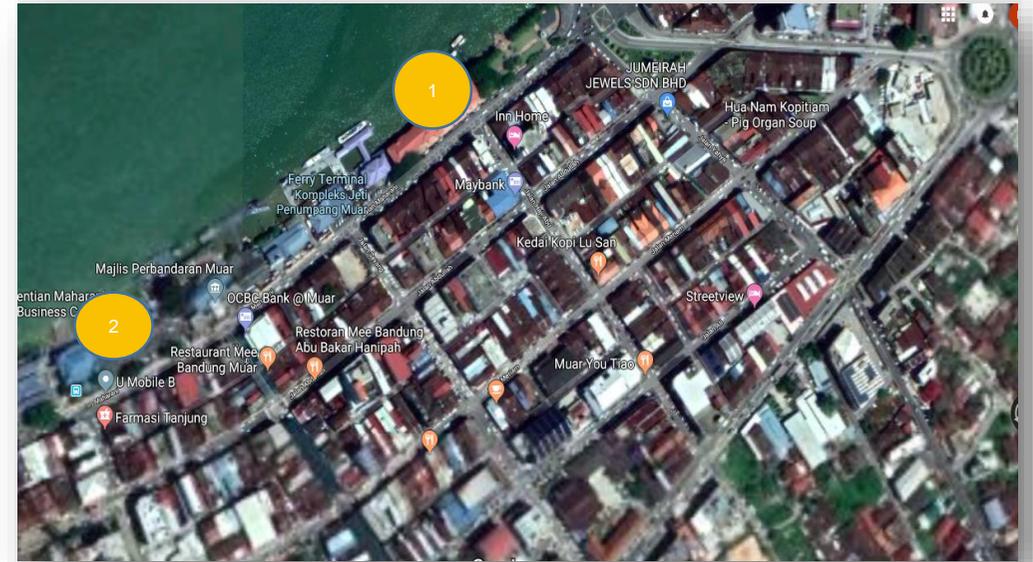


Figure 11 : Current condition (2018) (Images 1 & 2)

Figure 13 : Proposed condition of the water front (2025)



Figure 12 : Proposed condition (2025)

PROJECT 4: NEW TOURIST CENTRE

The proposed new tourist centre is vital for better operation of tourism activities. The objectives:

- To integrate it with one stop center for access
- To promote the local tourism products.



PROJECT 5: OBSERVATORY PARK AND MULTI-LEVEL PARKING

The proposed observatory park and multi-parking offers facilities of parking spaces and provides open space on its roof top to enjoy the over looking view of Sungai Muar. The objectives:

- To make good use of the existing parking building.
- To utilize the limited space for multi-purpose building.



CONCLUSION

In general, the proposals for waterfront area and Muar town itself reflect the importance of interaction between urban developments and the water. Bandar Maharani is fortunate to have the waterfront area as it is unique and irreplaceable natural resources. Therefore, the project of the Special Area Plan for Bandar Maharani is timely to improve its overall urban design image. It is rich in the abundance of natural, cultural, and historical heritage to be preserved for tourism development as a whole.



Figure 14: Proposed condition of Observatory Park and Multi-Level Parking (2025)



Figure 15: Proposed condition of Multi-Level Parking (2025)

ACKNOWLEDGEMENT

The authors would like to extend their appreciation to Miss Siti Rukiah Abd. Shukor and her team members from Muar Municipal Council for their help during our site visit in Tanjung Emas, Muar.

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07

FOSSEAL – A SEALER MECHANISM FOR FOOD WASTE MANAGEMENT

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ABSTRACT

This research aims to identify the behavior of household towards food waste management in the home kitchen and to propose a better way of food waste management method by developing a product. A total of 32 person (24 female and 8 male) were selected for a survey study. Two instruments were developed to collect data; first instrument was photography to show the real situation of waste management in one kitchen and second instrument was a survey questionnaire. The findings indicated that most of the respondents aware of Waste Separate Programme and has tried to separate their home waste.

This study also figured out behavior of household on their home food waste management. Most of respondents tie the plastic that contain rubbish before throw it into the Green Bin provided by their authority. The user prefers using small waste bin with a lid to help to prevent from bad smell comes from the waste bin and from insects and other animals. FOSSEAL is a new eco-friendly product that has a potential to improve the waste management at home as well as in formal institution i.e. hospital, school and offices.

RESEARCH INTRODUCTION

Our nation needs to have a new way to improve our waste management system. FOSSEAL is an alternative product to support waste separation campaign as promoted in Malaysia, and it is the best option for food waste management in various kitchens. The combination of sealing system and waste bin itself make it as a new innovation design that can improve hygiene and household behavior towards food waste management. FOSSEAL is a user friendly product, with a simple mechanical concept, which has an application of a sealer on the waste bin [figure 1]. The sealer can be installed easily and it is replaceable.

METHODOLOGY

The study on user awareness has been conducted recently, to enhance the validity of the product research. First, a questionnaire survey on user awareness towards waste separation programme has been done as well. The objective of the survey was to get the users perception towards the waste management and its demands. A total of 30 respondents from housing area near Gombak were selected for the survey. Also, the observation on user daily behavior towards food waste management has been conducted in 3 different house in Kuala Lumpur, Malaysia. At a later stage, an analysis on the product line-up has been done to identify the latest trend, material, dimension, colors and mechanism. FOSSEAL was inspired by the user behavior, who need to tie the plastic waste to ensure the hygiene, tidiness and convenience for the better food waste management.

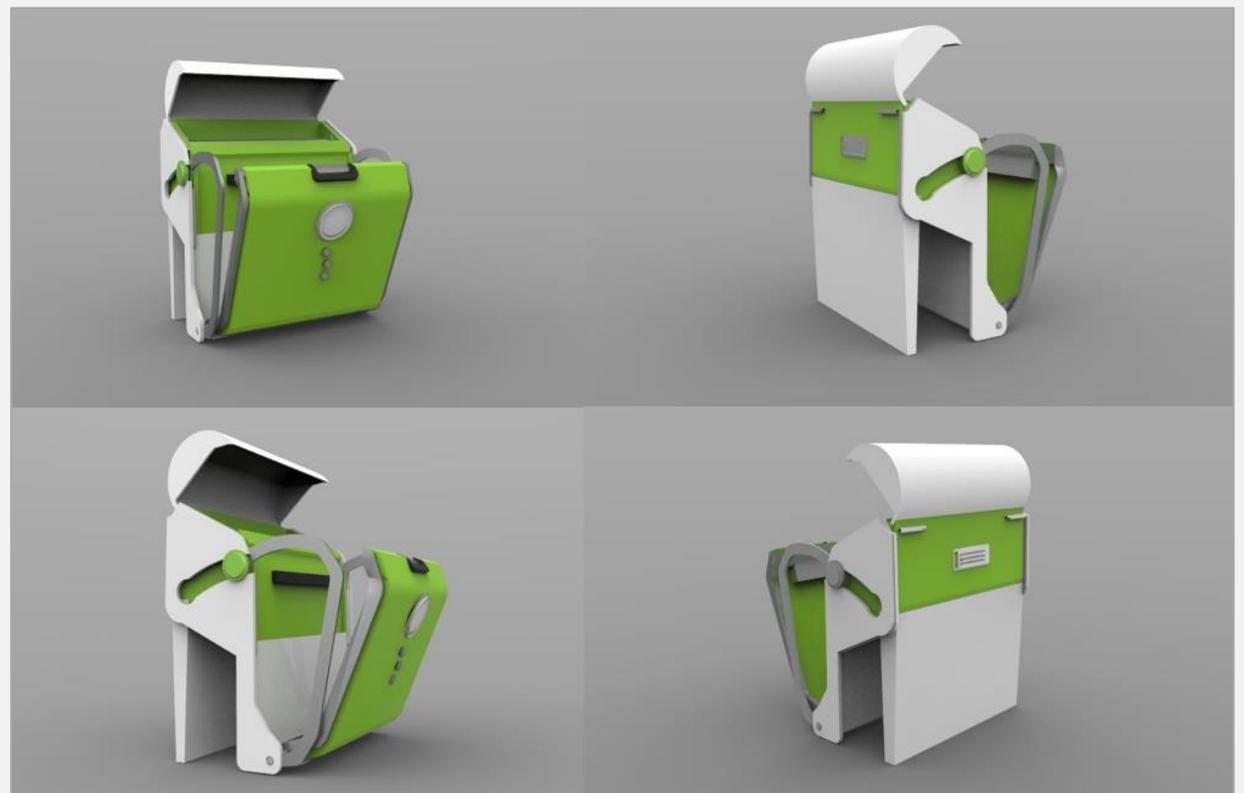


Figure 1: FOSSEAL – A sealer mechanism for food waste management

RESEARCH FINDINGS

LINE UP OF WASTE BIN FOR HOME USE

Many kinds of existing waste bins for home use were produced to provide a waste management system for municipal solid waste including food scrap, papers, bottles, clothing, appliances etc. Most of the design of waste bins are with or without lids, with or without pedal and with or without hook for hanging purposes. Most of the bins design are simple for hygienic purposes. According to Saeed et. al (2009), the municipal solid waste generated in Malaysia house hold is 0.8 – 0.9 kg per house hold in general, with food waste constitution approximately about 60% of the solid waste. Due to Malaysian weather is hot, home waste such as food scrap can be very smelly and watery. Therefore, it is good if innovation of design for waste bin can be developed to create more hygienic and user friendly.

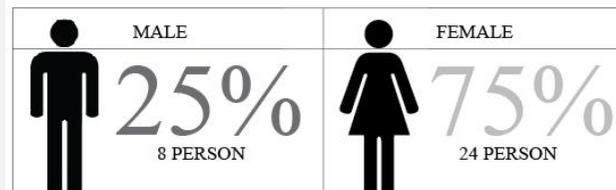
Table 1: Line up analysis for existing waste bin

Design criteria									
DESIGN	Simple without lid and open, half pierced at the above.	Simple without lid and open, using wire for all over the body.	Full covered, comes with lid.	Full covered, come with lid that can be open with pedal. And plastic bucket inside. Handy: lid remains open if opened manually, lid closes itself with pedal operation.	Full covered come with lid and pedal. And plastic bucket inside. Motion Control - light pedal operation and the lid closes silently. Handy: lid remains open if opened manually, lid closes itself with pedal operation.	Frame design, come with hook, light and simple, act as plastic holder, handy and frame	Full basket design, come with hook. Handy design, only hook when want to use it	pull-out under counter wastebin has been designed for door front fixing cabinets, and is designed with soft close runners	Door-Mounted, without lid.

FOOD WASTE SEPARATING AWARENESS

A questionnaire survey was done in Klang Valley area on 32 respondents, which 75% of them were females and 25% were male. There were three (3) sections in the survey; Section A : (Demographic), Section B (Awareness on Waste Separation Programme) and Section C (User Behavior Towards Food Waste Management). The result are as in Table 2 – 6.

Table 2: Respondents of Survey – Demographic



The result shows that 81.8% of the respondents alert on the Malaysian Waste Separation Programme. Only 57.6% respondents having the green waste bin and recycle bin in their housing areas. 84% of them have a knowledge on garbage variation or groups. More than 50% of them had tried to separate their waste.

Table 3: Result of Awareness on Waste Separation Programme

QUESTIONS		YES	NO
Q1	Malaysia Separation Program alert	81.8%	18.2%
Q2	Housing area provided by green wastebin and recycle bin	57.6%	42.4%
Q3	Garbage group knowledge	84%	15%
Q4	Tried separate garbage	61%	39%

Table 5: Frequency of Throwing Waste Weekly at Home

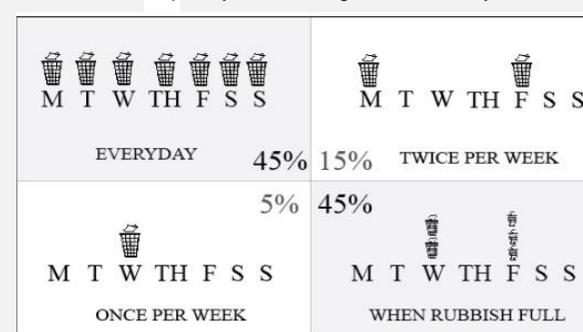
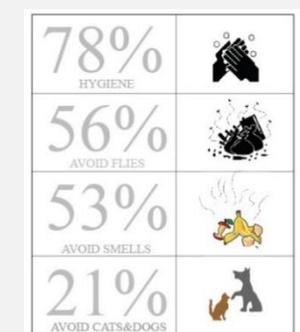


Table 6: Reasons users need to tie home waste plastic bags



There are 46% respondents who used small plastic bags before threw it to the green waste bin. 28% of them use only a dustbin to throw all rubbish without separating it. 25% of them used several bins and plastics before throwing it into the green bin. This result showed that the users are most of the users are alerts on the waste separation and tried to separate their waste for a better waste management at their home. [Table 4]

Table 4: Result of User Waste Management at Home

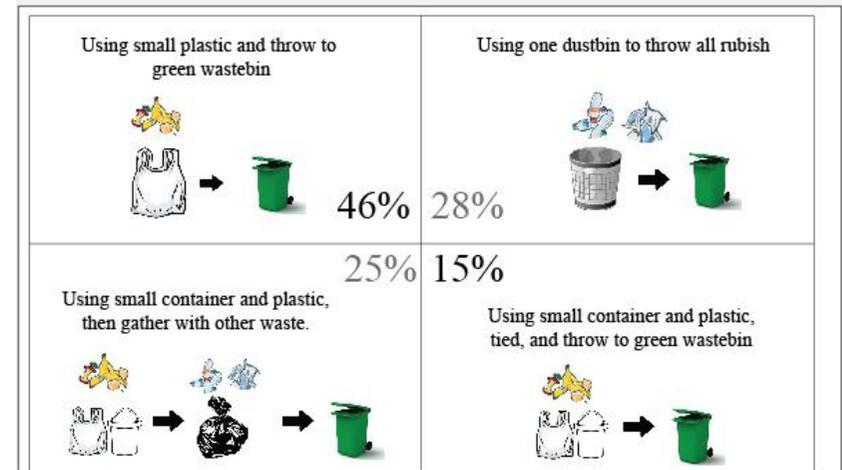


Table 5 shows frequency of throwing waste on weekly basis at home area. 45% of the respondents have a routine of throwing their home waste everyday, while another 45% of the respondents only throw it when their rubbish bin is full. Other respondents throw their rubbish twice and once a week. Table 6 shows several reasons from respondents on why they should tie their plastic bags that contains home wastes. Most of the respondents wanted to keep their home hygiene. 56% of them also wanted to avoid from flies and bad smells of the waste. 21% of them also wanted to avoid the home waste from the cats and dogs. From this result, most of the respondents alert on the clean and hygiene of their home, which they need to throw the waste everyday even though the rubbish bin is not full yet. They need a waste bin that more practical and user friendly.

Table 7 shows design preference by the respondents. Six (6) kinds of design (A – F) were the selected as the samples. Design A and F obtained the highest preference, which is 24.2% respectively. Design A have a lid to avoid the smell from the rubbish, which is consider as hygiene purposes. Design F is without lid but has a very user-friendly purposes. The least preference are Design B and C, which are less in their practicality.

Table 7: Result of User Preference on Waste Bin Design



Table 7 shows several reasons of preference on waste bin design. Seven (7) different reasons were asked to the respondents. Respondents selected their design preference mainly based on size (51.5%), lid (27.3%), material (24.2%). It can be said that users consider more on size than the material and color for waste bin design. Waste bin with lid is also one of the consideration while purchasing the waste bin. Lid can help to cover the smells and keep the waste from home flies and other insects.

Table 8: Result of User Waste Management at Home



SKETCHES AND DRAWINGS

In the FOSSEAL design development, there are many stages were conducted which are thumbnail, idea development, proposal and final design. With undergo on all stages, appropriate final design can be gained under the supervision of the designer or expert. The idea development are as in Fig. 2. Design concept of FOSSEAL as in Fig. 3.

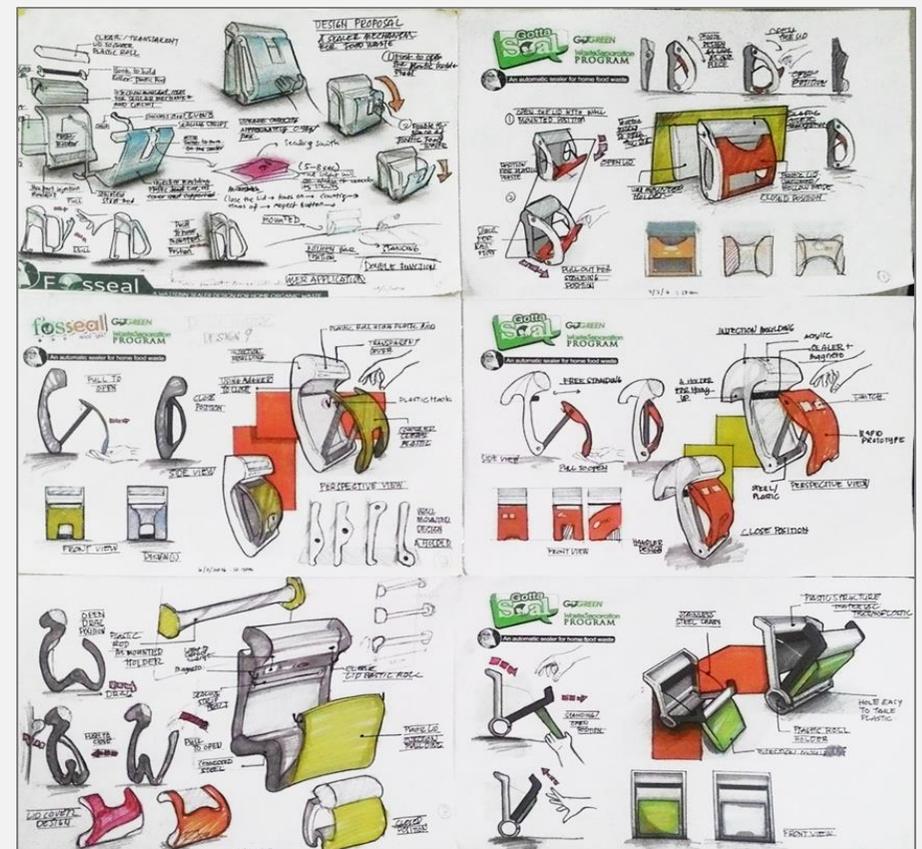


Figure 2: Sketches for FOSSEAL



Figure 3: Design Concept for FOSSEAL

MODEL DEVELOPMENT

Table 9: FOSSEAL Model Development

1. Using Laser cut on acrylic 3mm to get the body of product	2. After laser cut body part, then using model board to cover the whole body. Then using poly putty to cover the fault and to make plastic effect.	3. Blow the LID using blower and together with the mold, using ABS board.
		
4. After finished the surface of body, spray with primer coating.	5. Also spray primer on the structure part and white spray for the last resort.	6. Spray white for basic color for coating and layer.
		
7. In the meantime waiting for spray to dry, blow this acrylic sheet using blower and use the pipe pvc 4' diameter as mold.	8. After the white spray dry, spray LIME GREEN,	9. Put all the detailing like button, holder, rubber sheet, sealer and iron rod, as detailing.
		
10. Put the laser cut mechanism at the side.	11. Testing the mechanism after glue everything together.	11. Put the plastic cover. And attach it with hinge.
		

Mock-up model was developed as initial model development to assess product practicality and its design composition, material application and mechanism. Table 8 shows the mock-up development in stages, while Figure 4 shows the outcome of model development (no 1- 6). Rendering Illustration also has been created by 3DS MAX 3D Software and KEYSHOT 5 to make a realistic look for the product, to show a clear mechanism and material usage, as well as the color of the product.

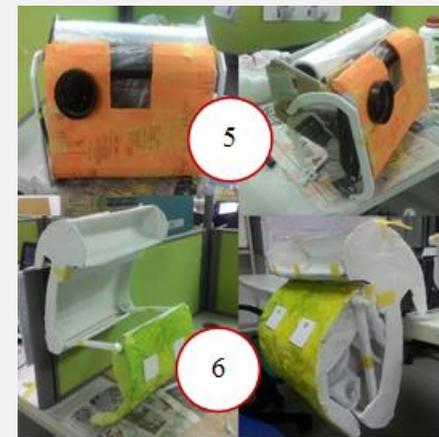
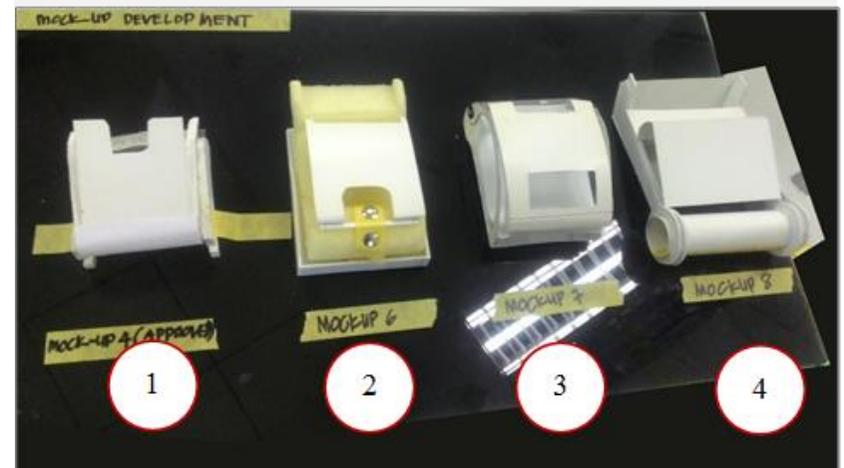


Figure 4: Mock – up Development for FOSSEAL



Figure 5: Rendering Illustration for FOSSEAL

APPLICABILITY

FOSSEAL give the idea of easy-to-seal plastic, which are biodegradable, after they throw the food waste. After sealing the plastic, the food waste can be thrown after 2-3 days without the bad smells from the rotten waste being exposed. It also can help to prevent the rubbish from insects and other animals. In addition, it will help Alam Flora in their rubbish collection services in terms of managing the separation of waste especially when dealing with the food waste. FOSSEAL also is ideal to be used in the medical institution for example in clinic and hospitals, as well as in general offices. FOSSEAL can be applied in multi-location i.e. at the kitchen cabinet or table top. Several parts of this product can be dismantle for cleaning purposes. [Figure 6]

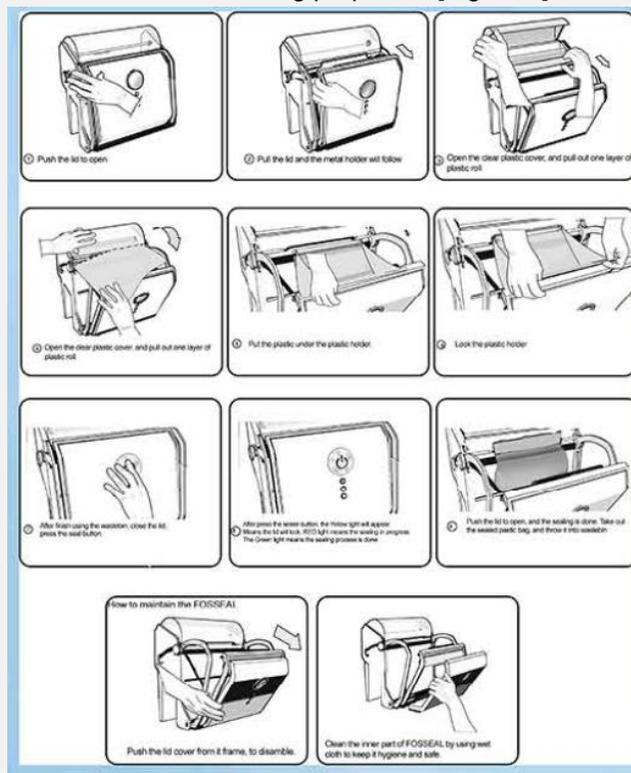


Figure 6: Manual for Product Usage

COMMERCIAL POTENTIALS

FOSSEAL is a handy and stylish product that is needed in the hectic lifestyle for personal or office solid waste management. The cost of this product is reasonable and it comes with several colors line-up such as the lime green, maroon and red. The sealer is maintenance-free, which can be replaced easily. The usage of biodegradable plastic will enhance the commercialization for bio-economic product. The sealer and the biodegradable plastic are proposed to be sold separately at affordable price. The manufacturing processes will use the common techniques including laser cut and injection molding with appropriate material selection. In future, FOSSEAL can be developed more in many potential design variation [Fig.7].

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Figure 7: Design Variations

CONCLUSION

FOSSEAL is a potential solution that can encourage people to participate in the waste separation campaign and practice a healthy and green lifestyle. The study found that typical users separates the food waste in the plastic and tie it. Then, the user will dump the plastic with other rubbish together. The study also found that users prefer small size of rubbish bin with lid, which is more practical in their daily life. FOSSEAL is a new eco-friendly product that is potential to solve the household waste management.

ACKNOWLEDGEMENT

The acknowledgement goes to the respondents who participated in this research study, to lecturers in charge of Studio 4th Year, Kulliyyah of Architecture and Environmental Design (KAED, IIUM) and all related parties and institution that given various information for the success of this study.

R. Kerry Turner Jane Powell, (1991), "Towards an Integrated Waste Management Strategy", Environmental Management and Health, Vol. 2 Iss 1 pp. 6 – 12.

Saeed, M. O., Hassan, M.N., and Mujeebu, M. A. (2009). Assessment of Municipal Solid Waste Generation and Recycle materials potential in Kuala Lumpur, Malaysia. Waste Management, 29, 2209-221310

08

JIGZOE: INTEGRATED CARTOON AND ANIMATION STUDIO INSTITUTION, IPOH PERAK

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ABSTRACT

Cartoon and animation are universal, effective and entertaining tools used in conveying messages. They are being used worldwide and its industry has been growing rapidly. For many years, cartoon and animation encounter many issues regarding their approaches, methods and impacts. Four main issues have been identified to affect this industry, namely stigma (social), misuse (ethical), lost identity (cultural) and downfall industry (economic).

Based on various studies and research, these problems can be overcome by 4E Approaches; Exposure, Education, Establishment and Enhancement, which leads to the components of the program: institutional academy and production studio. The objectives of the study are to rectify the perception of the public towards acceptance of cartoon and animation, to educate both cartoonists and public to treat cartoon and animation the right way, to revive local identity in promoting culture and elevate the cartoon industry for intellectual property purposes.

RESEARCH BACKGROUND

KEY EVENTS OF CARTOON AND ANIMATION

Background studies on cartoon and animation were conducted from archive, newspaper cuttings, visits to Rumah Komik and Kartun Malaysia, blogs and official websites. The focus was on the period of establishment and the key events. These were then analyzed into a timeline chart to narrow down on the issues according to years of events.



Figure 1: Aerial View of Integrated Cartoon and Animation Studio Institution



Figure 2: Issues From Key Events



Figure 3: 4E Approaches

METHODS

PRELIMINARY INTERVIEWS

A number of interviews were conducted to get a better understanding of the specific issues affecting the cartoon and animation industry from the cartoonist's point of view including its problems, experience and challenges, involving Kartunis Mie, Kartunis Nik, Kartunis Kerengge, Prof Mulyadi, Kartunis Tazidi and Kartunis Sireh.

FEASIBILITY STUDY ON TRANSMEDIA STORY TELLING

With today's advanced technology, cartoon and animation are categorized under transmedia storytelling where it can be displayed into many forms to reach the audience. The function of each media is different, so as the space to experience them.

ISLAMIC PERSPECTIVE OF VIEW

There are multiple views on portraying images in Islamic scholars' discussions. Even though several scholars forbid cartoon to be practiced, somehow contemporary Islamic scholars like Dr Yusuf al Qaradawi and Syeikh Muhammad ibn Salih al Utsaimin allow it, as cartoon is seen to have a close affinity with children and can be used to promote morality and tells good stories.

RELEVANCE AND SIGNIFICANCE

Based on findings, written materials with cartoon is highly preferred compared to the ones without any assisting images. Animation-based movies also have topped American box office for some years now. Another study found out that Malaysians spend most of their time with their gadgets, mostly for games and social media, where cartoon and animation are involved.

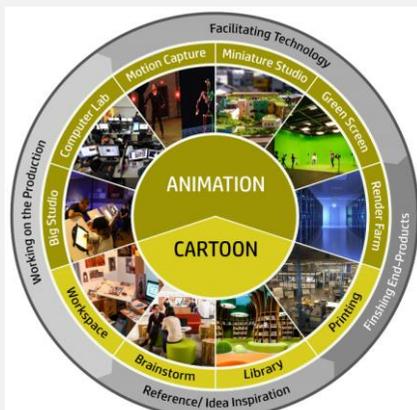


Figure 4: Activity-space Relationship (Generated From Relevant Researches)

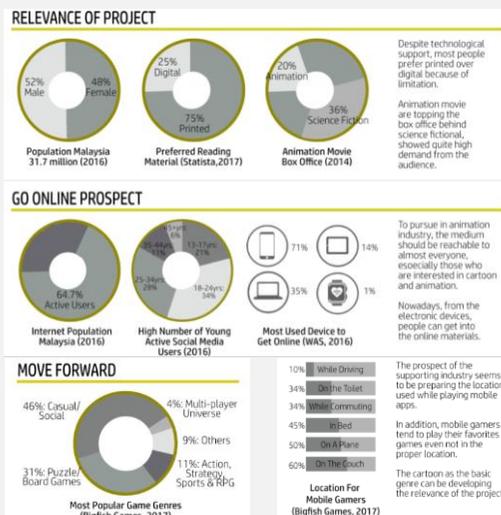


Figure 5: Relevance and Significance of Study

DESIGN DEVELOPMENT AND CONCEPTUAL DIAGRAMS

BUILDING COMPONENT: INSTITUTION

Under Institution (academy), it consists of two approaches: **Exposure** and **Education**. The theory of **Exposure** is an interactive story-telling gallery since from the macro planning towards the inner space of any layouts. Stigma was caused by unclear future of uncertainty and unstable cartoonist, thus parents discourage their children to involve in this industry.

It is not only about designing a cartoon gallery, but also to expose public to the real life of the cartoonist and how the process of cartoon and animation is done through three main activities; exhibition, reference and performance. These activities are performed in public spaces.

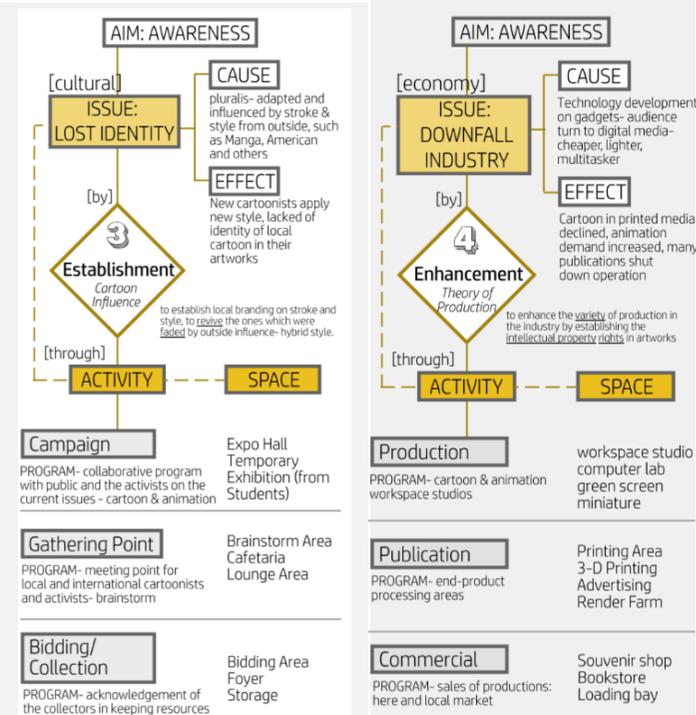


Figure 6: Component Study (Establishment and Enhancement)

Furthermore, to enhance the sustainability of the industry, the program cannot stop there. It has to continue by producing the materials in the centre so that the quality can be controlled from A to Z.

Digital technology has affected the cartoon industry through the emergence of animation which supports the changing habit of reading printed materials to using digital gadgets. However, there are points where cartoon and animation can be used together, integrated and functioned as one. Technology has made all works faster, easier and cheaper. Nevertheless, the manual skills, crafted from brain to hand is still valuable. In order to achieve this, activities are introduced such as production, publication and commercial activities.

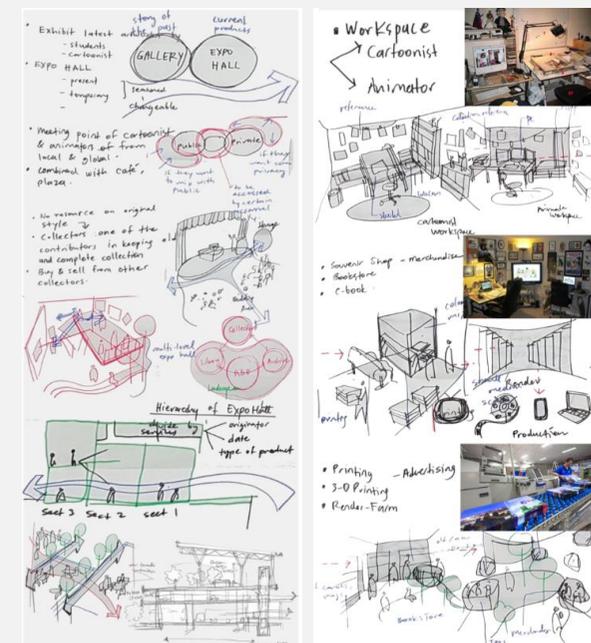


Figure 7: Conceptual Study (Establishment and Enhancement)

METHODOLOGY

The methods used to achieve the aim and objectives of the research involves seven key activities, which are literature studies, precedent study, case study, site study, design analysis, expert interviews and focused group discussion.

TABLE 1.: Research Details

Research Question	Research Objectives	Research Methodologies	Expected Outcome
What are the spaces and components of integrated cartoon and animation studio institution?	To identify the spaces and components of integrated cartoon and animation studio institution	Literature Review Precedent Study Case Study	Spaces and components of integrated cartoon and animation studio institution
What are the activities related to the cartoon and animation for a studio institution?	To evaluate the spaces and components of integrated cartoon and animation studio institution	Literature Review Expert Interviews	Activities and Programs that are related to spaces and components
What are the criteria in determining the design for the cartoon and animation for a studio institution?	To determine/ design the spaces and components of integrated cartoon and animation studio institution	Literature Review Design Analysis Site Study Focused Group Discussion	Criteria of spatial layout and planning in designing the studio institution Contextual Responsive

LITERATURE REVIEW

Secondary data collected from readily available data both online and offline. The keywords used are specifics, obtained from published and reliable data before analyzing and establishing timelines, framework, building programs, project brief and schedule of accommodation.

PRECEDENT STUDY

Study on buildings related to cartoon and animation activities and spaces around the world. The buildings selected were based on defined criteria from literature.

CASE STUDY

Study on specific areas such as materials, construction, space, users and so on, in relation to cartoon and animation space and components.

SITE STUDY

The site selection was justified with needs and significance. Includes data collection from site inventory, analysis and synthesis.

EXPERT INTERVIEWS

Preliminary and progressive interviews of experts from the industry on background research and design matters.

DESIGN ANALYSIS

Progressive supervised planning and designing, testing and simulating the components based on findings.

FOCUSED GROUP DISCUSSION

Progressive Critique Sessions on progressive design works to ensure the practicality and workability of design intention with real-life standing project.

FINDINGS AND DISCUSSIONS

An aim-oriented program was established to emphasize the concept and intention of the centre. Stands for Integrated XP Animation & Cartoon Studio, iXPACs was structured in an expedition of hierarchy from primary to tertiary. Every hierarchy was designed for specific users and activities, and every single hierarchy has its own sub-program to accommodate its own activities and spaces.

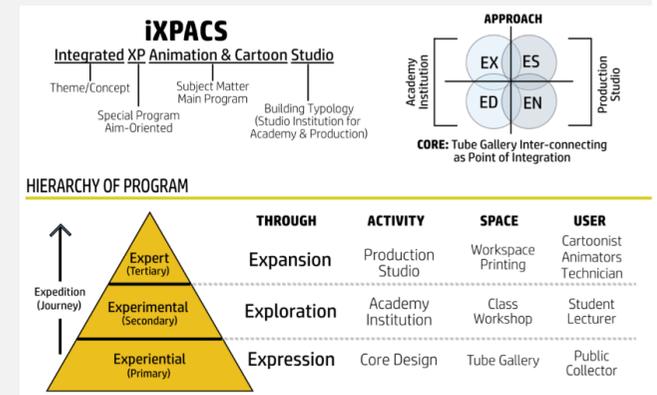


Figure 8: Hierarchy of Programmatic Framework

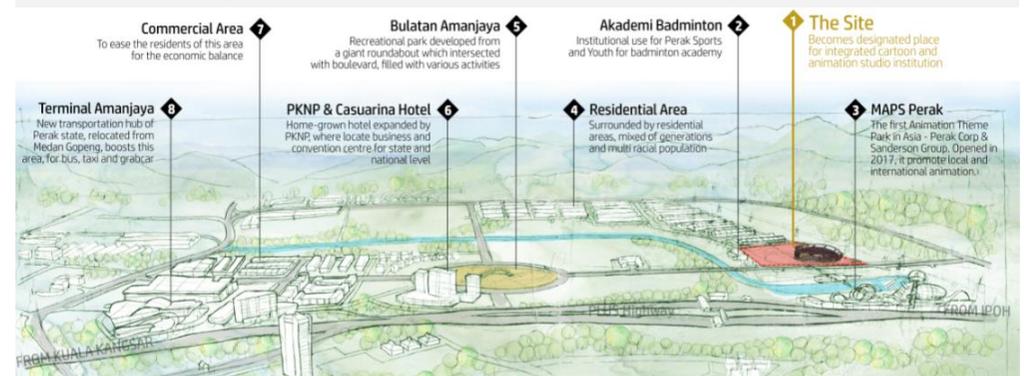


Figure 9: Site Context



Figure 10 Conceptual Site Planning and Zoning

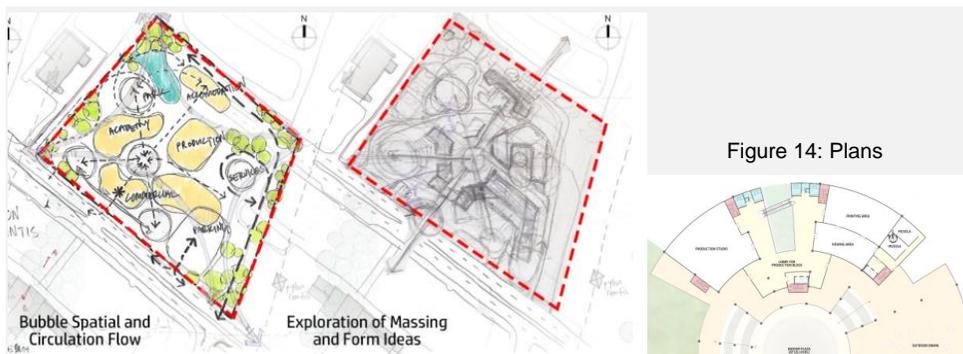


Figure 11: Conceptual Site Planning and Zoning

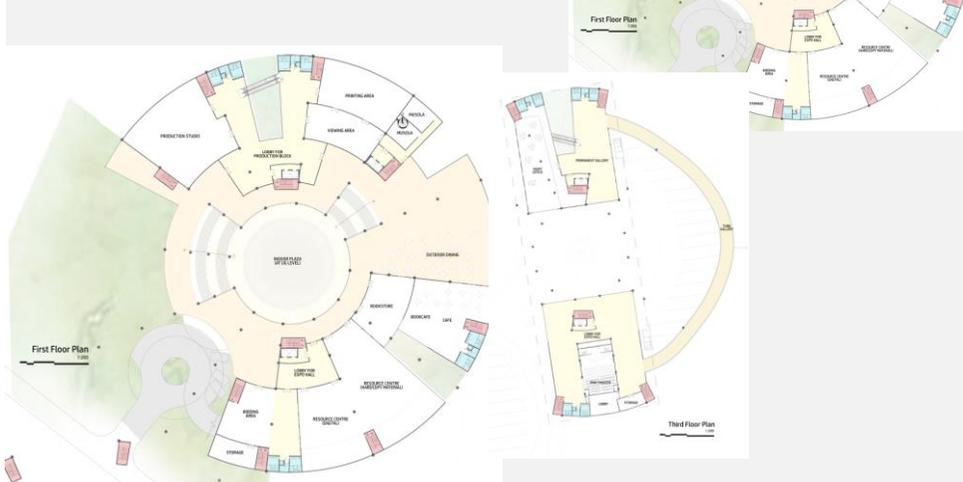


Figure 14: Plans

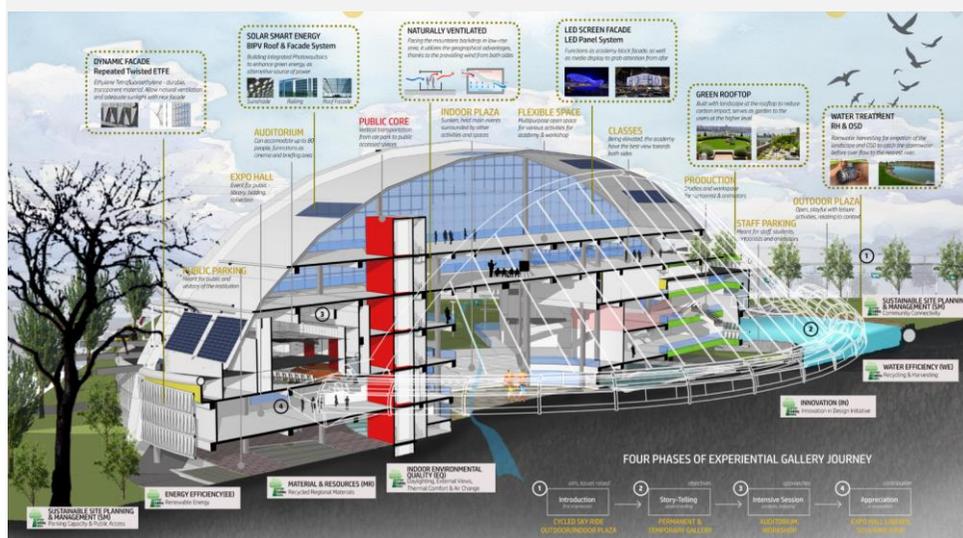


Figure 12: Sectional Perspectives

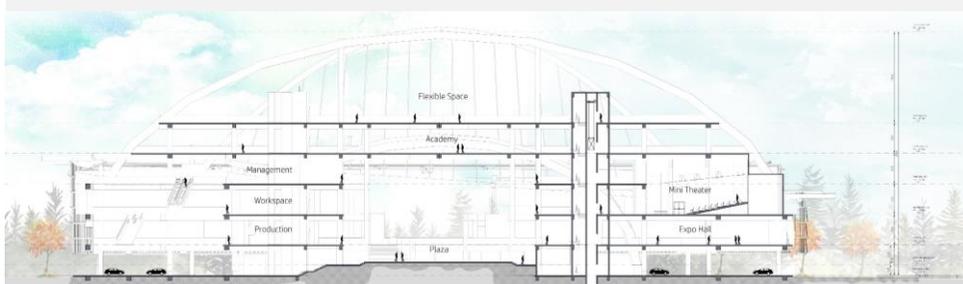


Figure 13: Sectional Elevation

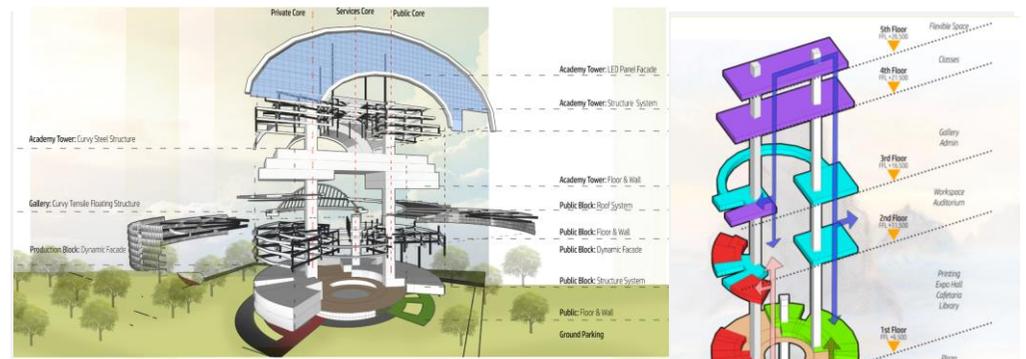


Figure 14 : Exploded Axonometric

Combining Jigsaw and Zoetrope to be its ultimate concept, JIGZOE zoning was planned in such a way public (commercial, gallery - Exposure) and private (production, workspace - Establishment & Enhancement) are connected by the semi public spaces (academy, workshop - Education). The purpose of spread awareness and in the same time earn acceptance from the public can be done with proper programs, planning and good site context.

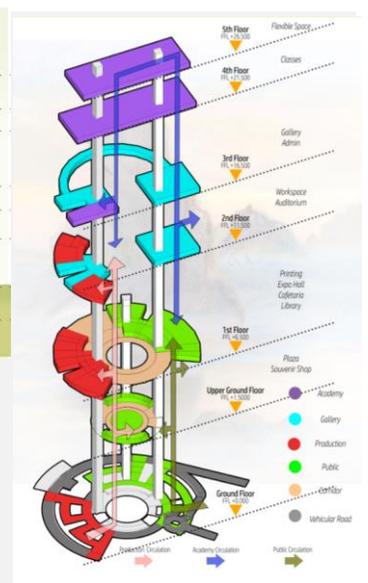


Figure 15 : Circulation Flow

CONCLUSION

The opportunity to offer a comprehensive centre in cartoon and animation is materialized through the final design of the proposed project. The proposed design appears to be distinctive and away from the typicality of local institution design. The design expresses its own architectural language through the building forms and facades, circulation and gallery approach that emphasizes more interesting user experience, the introduction of educational program, and complemented with more public facilities and activities to accomplish the design objectives.

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09

THE WAY TO PRACTICE SUSTAINABILITY: WONDERS OF UPCYCLING PRODUCTS

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ABSTRACT

Up cycling is a process of converting old or discarded materials into something more useful and creative. It is also gives an item a better purpose. The concept of Up cycling ensures the product is made out of recyclable materials and better than the original product. In another term, up cycling actually increases the value of the product (Thanam Industry, June 2014). Creativity and innovation are the key factors that are needed to produce better and more beautiful products. It is also an easy and simple method which can be followed by others as a way to save our environment. In recent years , though the world of interiors has look into up cycling approach.

PROJECT INTRODUCTION

Instead of being tossed aside and replaced by new furnishings, objects or products are getting reimagined, upgraded and up cycled, giving them a chance to be useful again.(Joanne Lim, 2015). In this chapter, there are selected of seven (7) case study products from Fifty (50) students which were designed and made by the Applied Arts and Design Year 1 students, from the batch 15 session 2018/2019, Kulliyyah of Architecture and Environmental Design, International Islamic University Malaysia. The selected works are focussing on different themes : Culture, Nature, Animals, Flowers, Planet and Tree. These themes helped them to express their creativity in choosing the various reusable materials such as plastic bottles, rubber tyres, metal motorcycle spare parts, fans, car spring, plastic banners and buntings, tin cans, metal wires etc. the exploration of ideas gave them a sense of maturity in challenging the design creativity by putting the various materials together with colourful tones.

The term upcycling originated in the 1990s and means 'reuse (discarded objects or material) in such a way as to create a product of higher quality or value than the original' (Oxford English Dictionary, 2016; Wegener, 2016).

Upcycling activities are influenced by the particular social, economic and political context in which they take place. Two extremes are upcycling driven by necessity to meet basic human needs, for example using waste materials to construct shelters in informal settlements, and upcycling as an art or craft to make objects of beauty.

CONCEPTUAL PROCESS, PROCEDURE AND SCHEMATIC

The selected works are showcasing various conceptual ideas in which the designers refer to the various sets of themes. Upon deliberating the concepts, the transformation of ideas were developed to relate to the physical subject matters with the selected reusable / recycled materials.

The challenges is to design a lighting following suitable interior and outdoor environment. The abstract concepts are developed to meet the functional and aesthetic requirements.

The transformation are to explore the various limitation of the various selected materials such as plastics, tins, metals, rubber, wood etc.

METHOD / PROCEDURE

By experimenting the various selected materials to suit the formation of the lighting designs, the student designers were encouraged to explore on the concept of SUSTAINABILITY and NON WASTAGE.

As related to the Sustainable Development Goals SDGs by United Nation (2015), this project gave the student designers an overview of the importance in taking care of the environment and awareness on recycling and up cycling the various materials into better and more beautiful products. This will create better sustainable products which thus help to create better awareness in caring for the environment. The student designers faced the challenges of constructing their products following the themes.

TRENDS IN UPCYCLING IN STUDENT PROJECT

Even though the term, upcycling, is a neologism, Szaky (2014), suggests that it has existed for thousands of years as an individual practice of converting waste or used objects into higher value/quality objects. Szaky explains that reuse and upcycling were common practices around the world before the Industrial Revolution and are now more common in developing countries due to limited resources.

Recently, however, developed countries have paid more attention to object/product upcycling in commercial perspectives L. R. Hartman, (2014), due to the current marketability and the lowered cost of reused materials T. Vadicherla and D. Saravanan, (2014). In the United States, for example, the number of commercial products by product upcycling increased by more than 400% in 2011 R. J. Slotegraaf, (2012).

The selected seven (7) case study are based on the final results and the outcome of product produced by the students. The scope of assessment were included cost of materials, aesthetic, function and the academic documentation as shown in the tabulation 2.0.

The scope of products produced by upcycling varies: rugs from fabric scraps, refashioned clothes, remade furniture, soaps and fertilisers (and energy) from organic waste, artistic objects from scrap metal, and even a whole building from reused components from deconstruction among many others M. Martin and M. Eklund, (2011). The creation of jewellery, bags, clothes, and other fashion items by upcycling, in particular, is also called 'trashion' Anderson, (2009).

The benefits of upcycling were discussed on the basis of the three pillars of sustainability – economic, environmental and social sustainability. Most publications referred to environmental and/or economic benefits but far fewer discussed social benefits.

Environmental benefits included solid waste reduction (and prevention), landfill space saving, raw materials use reduction, energy use reduction, and greenhouse gas emission reduction.

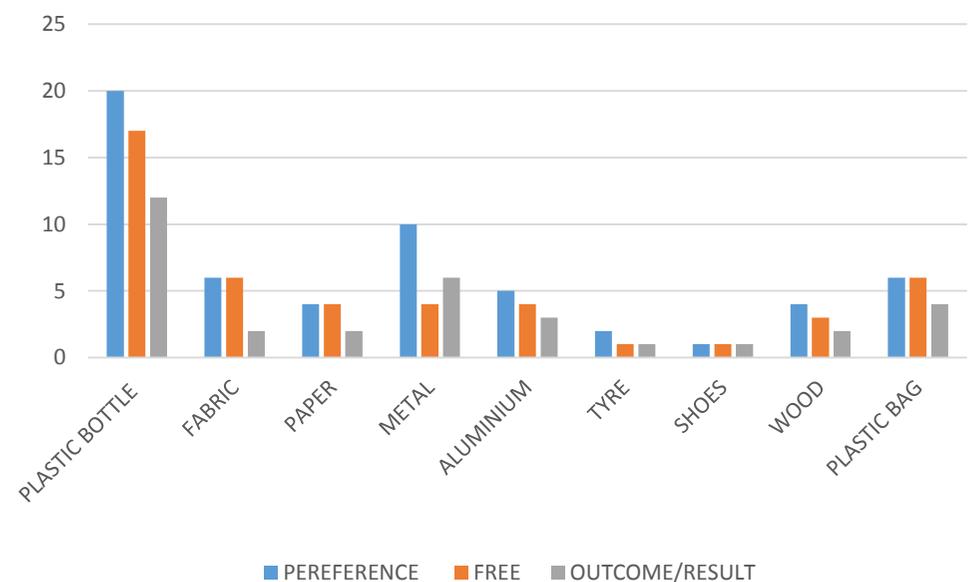
Economic benefits included cost savings and new profit opportunities for manufacturers, entrepreneurs and consumers. Social benefits in developing countries are mostly poverty alleviation and, in developed countries are more relevant to psychological well-being and socio-cultural benefits based on individual upcycling.

Table 1 : Finding sample 7 selected trend case study AAD Student batch 15 on material selection in the final product and concept

CASE STUDY	CONCEPT	MATERIAL SELECTION
CS 1	nature	fabric and paper
CS 5		plastic bottle
CS 2	african tribe design	wood, metal and colour plastic
CS 3	shoe	used shoes
CS 4	fruit	plastic from bottle and bicle weel
CS 6	betta fish	aluminium cane drink
CS 7	shell	tyre

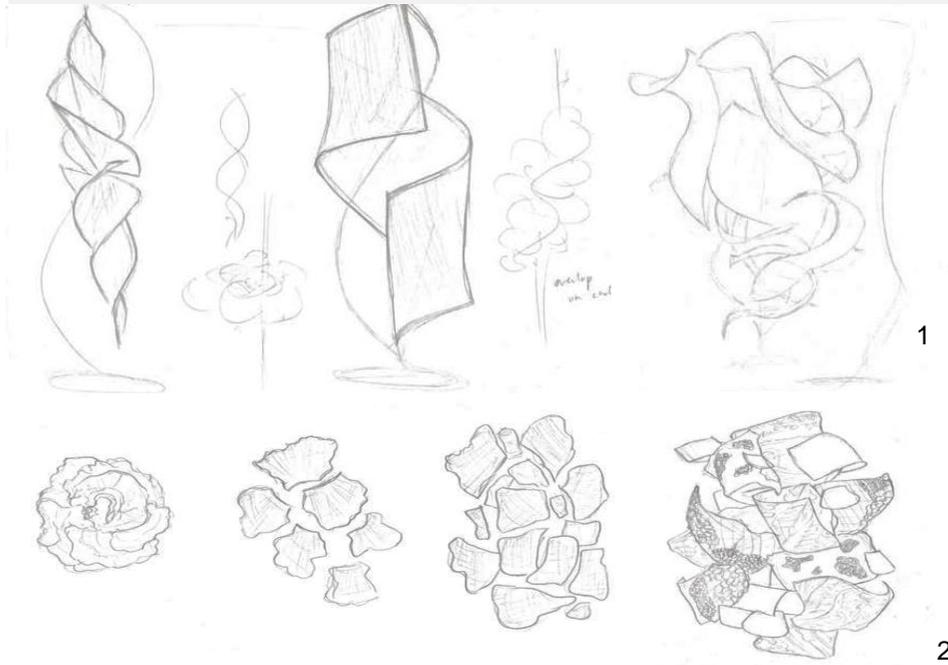
Table 2 : trends of selection materials, finding and outcome

TRENDS SELECTION MATERIALS AND RESULT OF FINAL PRODUCT



CASE STUDY 1 - RESEARCH / PROJECT FINDINGS

PROPOSED DESIGN



CONCEPT

The concept chosen is “The kingdom of underworld” where the design statement is the fungi which look a bit like the mushroom.

IDEA

Use the beautiful curves and features of the fungi. Implement the unique color segment into the design and parallel it with the idea of the placement lighting features inside the Balinese traditional spa.



Sculptural wall light is the light that have sculptural sconces that can be grouped together to create feature walls which have the visual impact of wall art installations. In contemporary homes where a minimal look is required and want the lighting to be unusual and special, these wall lights will work wonderfully. Consider using one of these sculptural wall lights on a wall with no other features, the light will add interesting detail to an otherwise plain area. Many of these sculptural wall lights provide ambient interesting lighting and lighting effects. This type of light provides a focal point on an otherwise plain wall. This range of decorative wall lights can easily be classed as art.

DESIGN STATEMENT

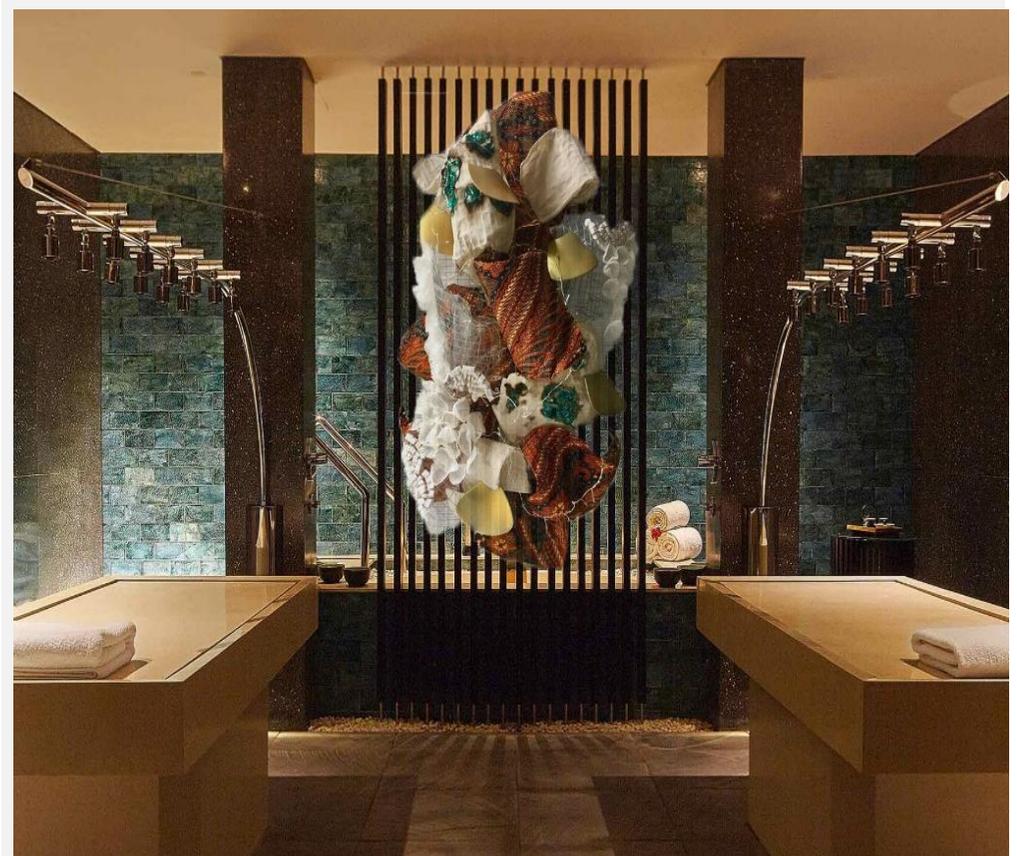
The concept is “The Kingdom of Underworld”. It is mainly focus on the uniqueness, the beautiful curves, the colour gradient and the wonderful creation of this underworld species.

The chosen subject matter for this lighting features is fungi or the specific name is *Schizophyllum commune*. From this concept, the designer intends to show the real beauty of this species and at the same time to emphasize on this unique creature in the world of nature.

The mood that the designer is trying to show is the mood of calmness and closer to nature.

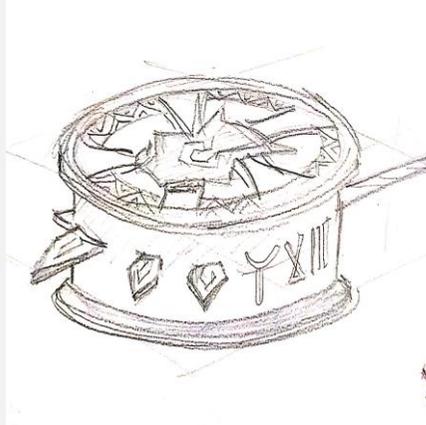


DESIGNERS' ILLUSTRATION



CASE STUDY 2 - RESEARCH / PROJECT FINDINGS

PROPOSED DESIGN



Whereby Allah guideth him who seeketh His good pleasure unto paths of peace. He bringeth them out of darkness unto light by His decree, and guideth them unto a straight path. (Quran 5:16)

Light is the source of life, giving us needed energy and uplifting our spirits. Without light, life stops. Lighting is the most essential element in the decoration of a space. We all need to bring more lighting into the spaces. Lighting creates, paradoxically, both reality and illusion.

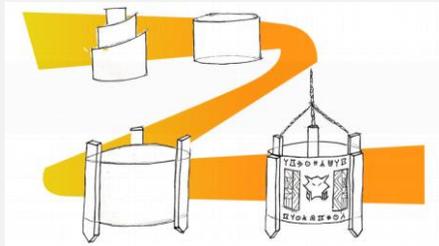
Its fixtures illuminate our treasured objects and highlights our favourite colours, as well as affects our mood, performance, and mental health on a daily basis.

CONCEPT

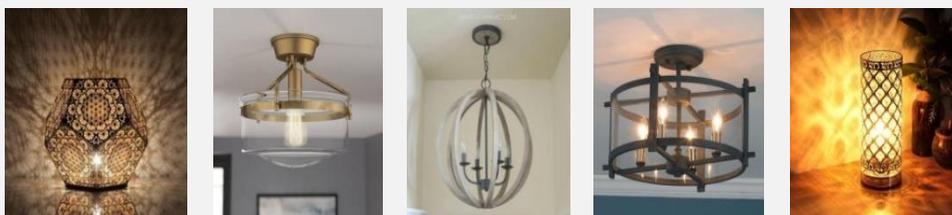
'African Tribal Design'



PROCESS



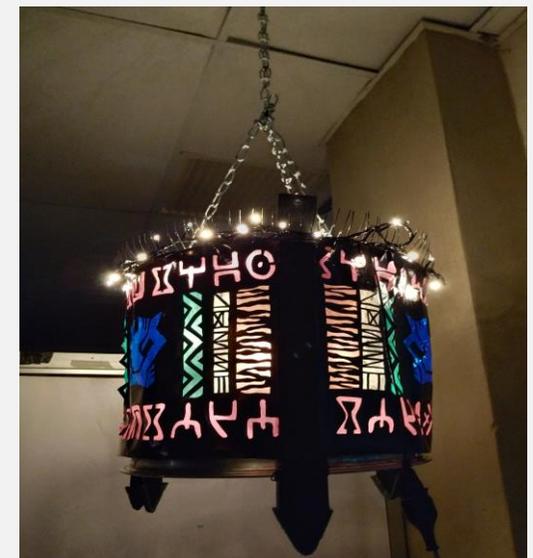
PRODUCT LINE UP



DESIGN STATEMENT

O mankind, indeed We have created you from male and female and made you peoples and tribes that you may know one another. Indeed, the most noble of you in the sight of Allah is the most righteous of you. Indeed, Allah is Knowing and Acquainted. (Quran 49 : 13)

Africa also plays an important role in the spread of Islam once. Inspired by the African's diverse tribal cultures, this project took the concept of 'African Tribal Design' which includes beautiful African tribal pattern and colourful design for the light.

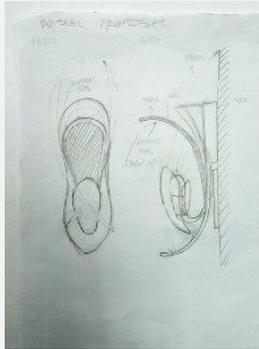


PROJECT FINDING



CASE STUDY 3 - RESEARCH / PROJECT FINDINGS

PROPOSED DESIGN



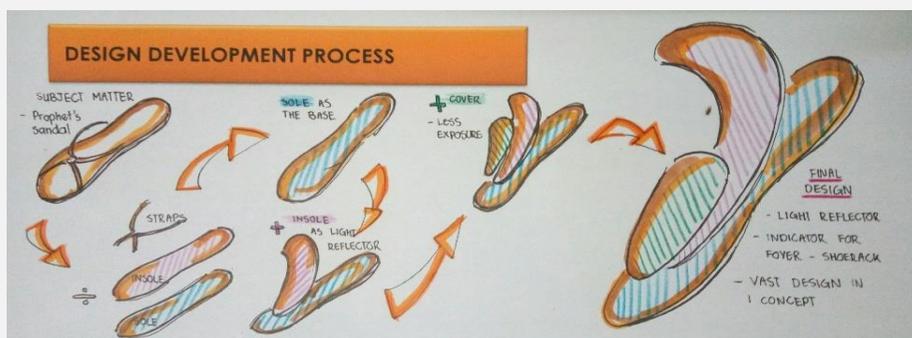
CONCEPT



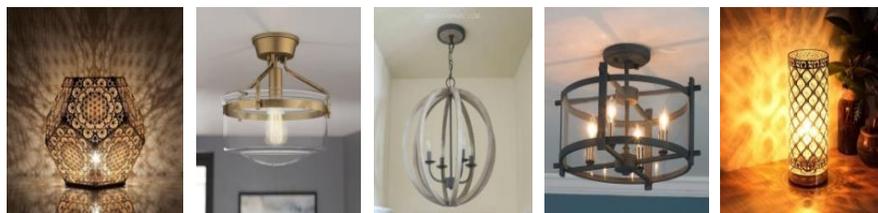
Jibril was sitting with the Prophet sallallahu 'alayhi wa sallam looking towards the sky, when he saw an angel. So Jibril - 'alayhis-salam - said to him: Indeed, this angel has never descended before today. So when the angel had descended, he said: O Muhammad! I have been sent by your Lord (to inquire) whether He should make you a Prophet-King or a Slave-Messenger. [It has been narrated by Ahmad, Al-Bazzar and Abu Ya'la, and its initial narrators are all the narrators of As-Sahih."]

Sunnah, lifestyle of the Prophet Muhammad S.A.W has been the main idea in this product, HUMBLE LAMP. His modest life is used as the concept. He is a leader for all of the Prophets, he was the King of Mecca and Madinah yet, he still humble and stay true in his way of Da'awah.

PROCESS



PRODUCT LINE UP

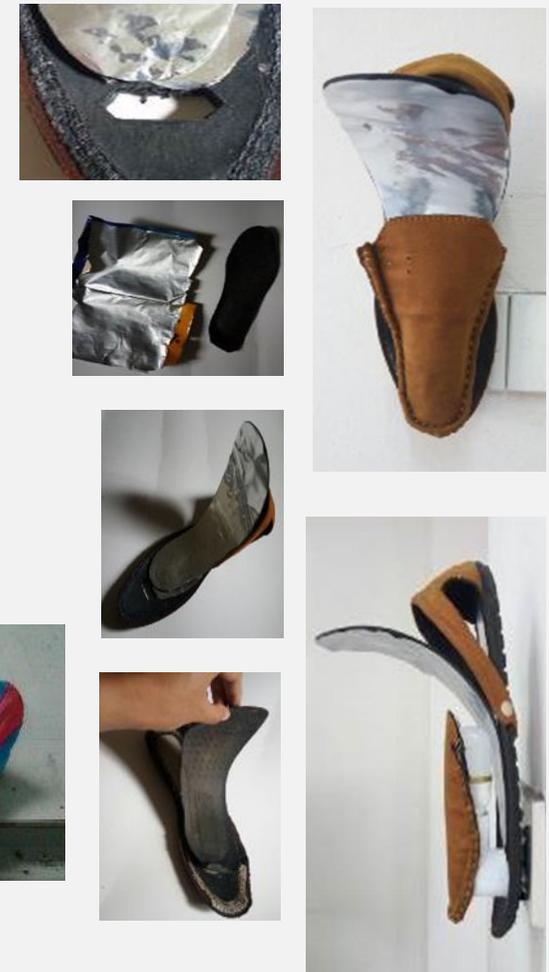


DESIGN STATEMENT

Designed in minimalist to have a great match between the humble concept and style. Subtraction was used widely by separating each parts of the shoe. Later, they were combined into a new form, high exposure same with the Prophet's sandals as in **Pic 2** form. The insole used as the light reflector in a way of someone is lowering his body, interpret the humbleness. Front cover of shoe was attached with the wall lamp, to avoid high exposure and creates reflection. Emphasizing the foyer as the place to put this HUMBLE LAMP, indicates the entrance, warm welcome and shows the place for the shoes to be placed on.



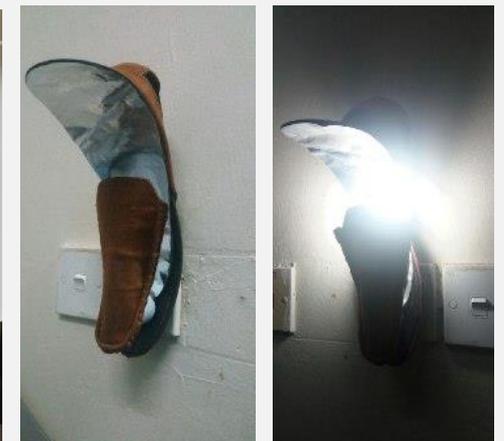
MODEL MAKING



DESIGNER ILLUSTRATION



PROJECT FINDING



CASE STUDY 4 - RESEARCH / PROJECT FINDINGS

PROPOSED DESIGN



6 sketches of different design of the light fixture . Mixture of three selected design with the color

CONCEPT

The concept Sweet Fire the subject matter is dragon fruit. Dragon fruit is a fruit that has many benefits: it contains high fiber and it also helps to lower blood pressure and helps control the level of blood glucose. Its origin from Mexico, Central and South America. And then spread in the Asian regions because of their need for heat. The name of the concept Inspired from the taste of fruit and the shape of the fruit that look like ball of fire .

RESEARCH BACKGROUND



The fruit of the dragon (Dragon Fruit) or Pitaya (**Figure 1**) which grows in the tropics and subtropical regions, which include Asia and Latin America, and the fruit in shape, and yellow and red, is a small fruit weighing about one hundred and ninety-nine grams, the fruit of the dragon contains important vitamins and minerals and The dragon fruit is low in calories, contains carbohydrates, proteins, fats and contains fiber. There are two types of fruit that differ in color from the inside, some white and the other pink color (**figures 2,3**) but have the same taste .

DESIGN STATEMENT

The color of the lighting is pink and little bit of green at the end of each leave These two colors were chosen to reflect the colors of the dragon fruit. The hidden meaning of using this kind of colors in design that these colors give meaning and feeling for the space, the green color give renewal, nature, and energy for the space, for pink color it gives romantic, charming and feminine touch in the space .The light fixture design is suitable for a girly and pink living

PROCESS



PROJECT FINDING

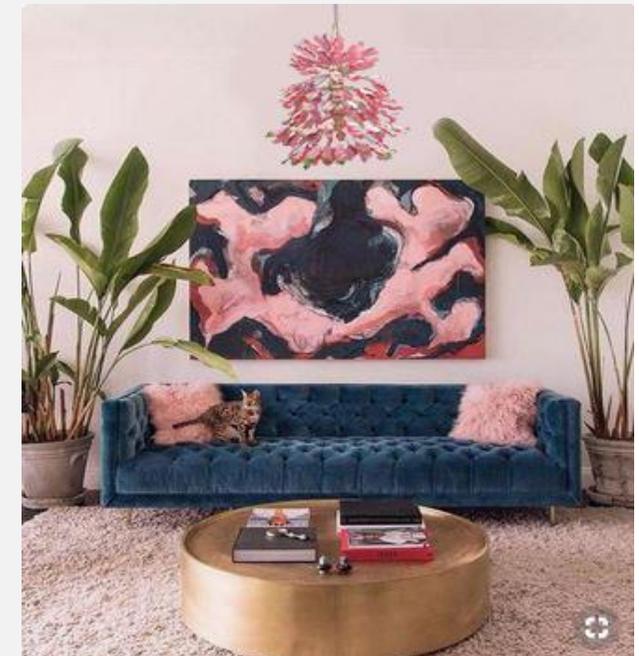
The light fixture is suitable For a girly living room its give some energy for the space and some feminine touch.



MODEL MAKING



DESIGNER ILLUSTRATION



CASE STUDY 5 - RESEARCH / PROJECT FINDINGS

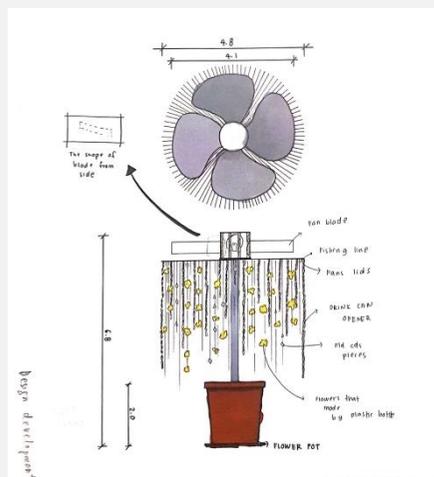
PROPOSED DESIGN

The idea is to give the effect of sparkling inside the room other than using stars.



CONCEPT

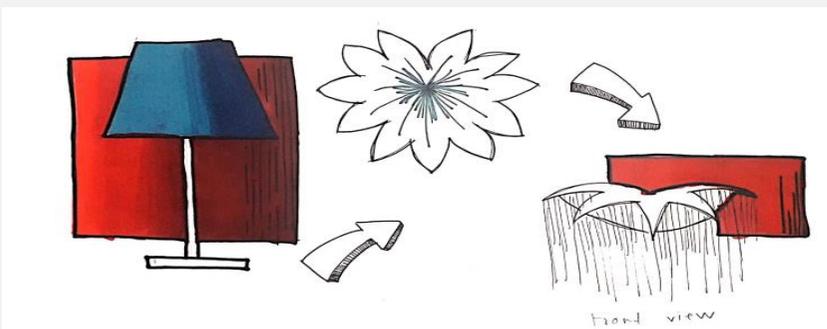
The concept for the design product is 'sparkling tears'. The subject matter chosen for the design is 'skeleton flowers' or called Diphelleia grayi



RESEARCH BACKGROUND

The subject matter that chosen was 'skeleton flowers' to get the concept of sparkling tears as the flower will turns almost transparent when it wet or rain fall down. Warm light was chosen as it helps to make someone feel more relax and help to wind down for the day. It is suitable used before sleep as sometimes people love reading books before fall into sleep

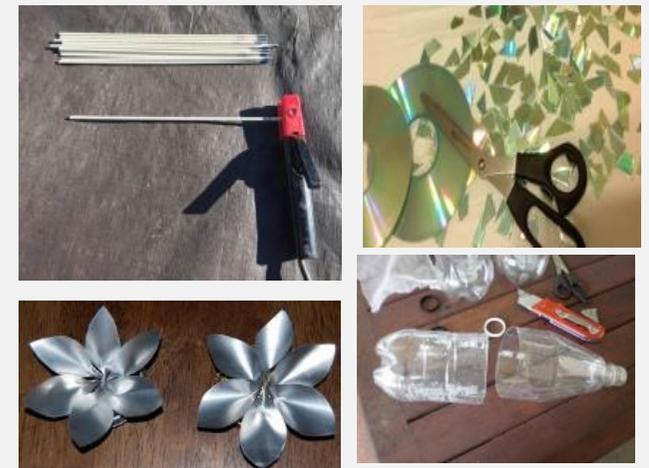
PROCESS



DESIGN STATEMENT

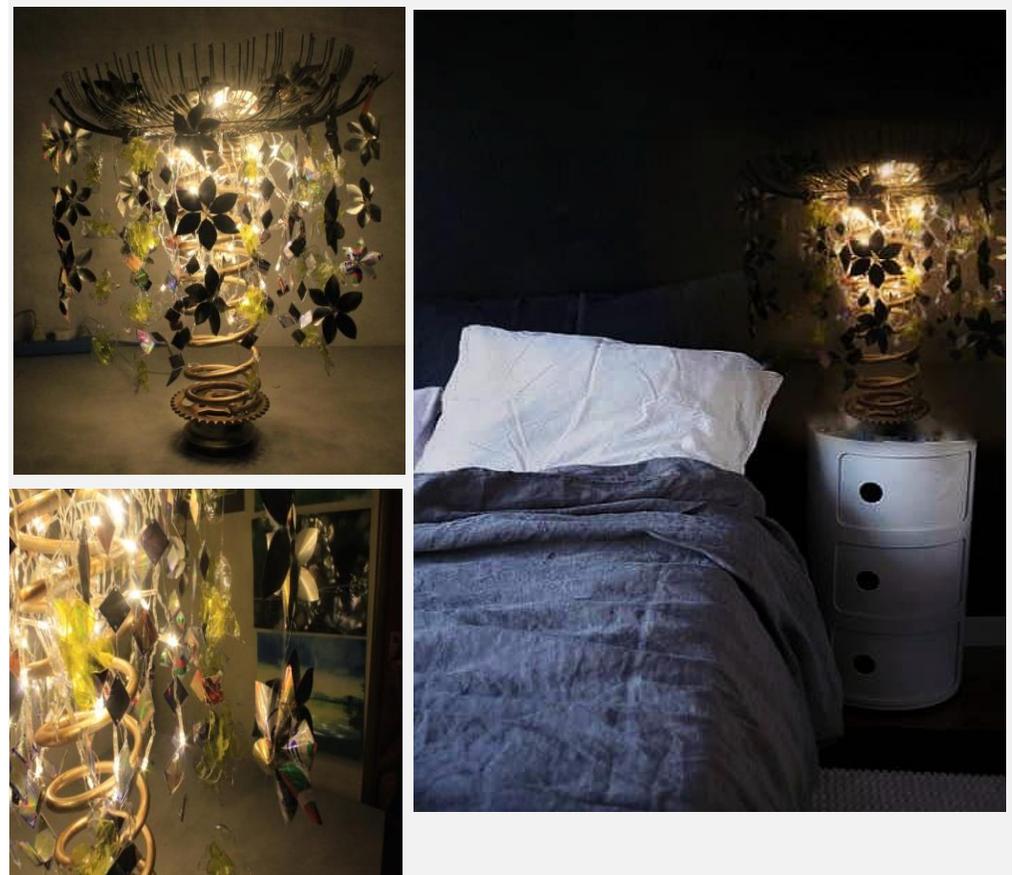
Skeleton flowers is one of rare flowers that can be found, the concept chosen for the design is sparkling tears. There are different stories behind all falling tears and the best one are those who can smile while they hurt inside. That is the idea that wanted to be interpreted in this design. The targeted users are teenagers especially for girls and the much more love sparkle than boys. It used for bedroom light.

MODEL MAKING



Cut all the recycle items into pieces before glued it to fishing line

PROJECT FINDING

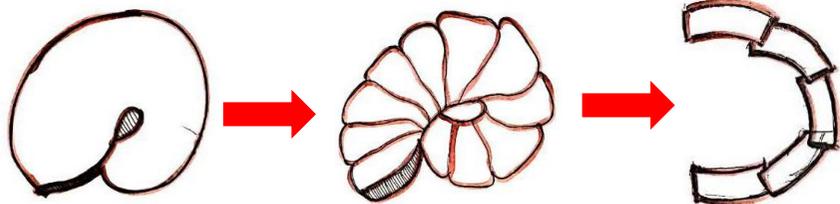


The Prophet (pbuh) said, "Allah said, "I have prepared for My righteous slaves (such excellent things) as no eye has ever seen, nor an ear has ever heard nor a human heart can ever think of." - Reported by Bukhari, Hadeeth

CASE STUDY 7 - RESEARCH / PROJECT FINDINGS

CONCEPT

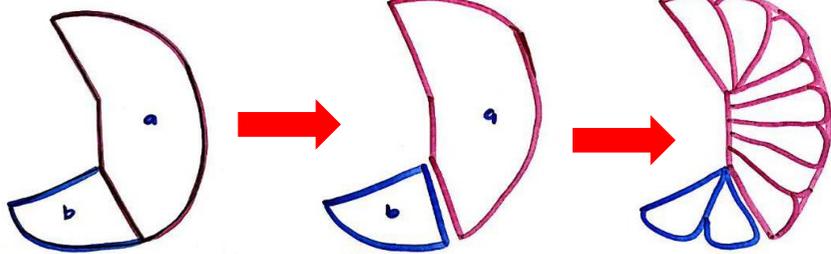
PROPOSED DESIGN



Derived from the seashell as subject matter.

Detail the seashell's texture.

Design the fixture lamp based on seashell.

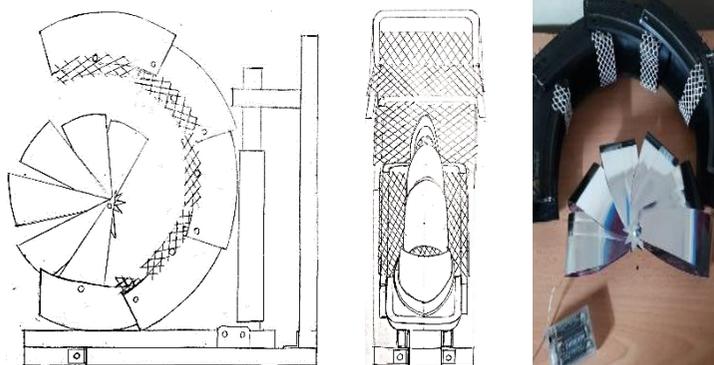


Derived from the seashell as subject matter.

Divided into 2 parts with different sizes.

Detail up the shape.

DESIGN DEVELOPMENT



RESEARCH BACKGROUND

Seashell is the chosen subject matter because it has a unique shape, colours and intricate texture. The irregular curvy shape has been applied in final design. The student designer choose to design a table lamp which is suitable to be put in the bedroom setting. When the light turns on, the mystique shadow effect is reflected on the wall behind it.



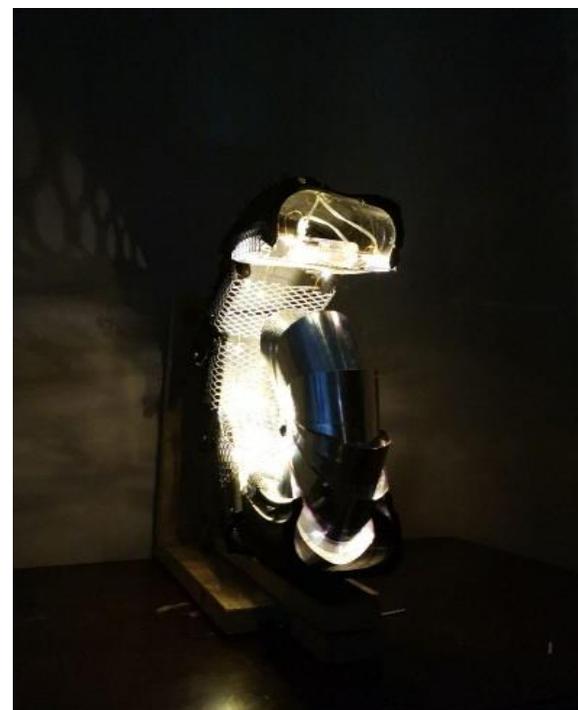
The Shiny Seashell is derived from a seashell which has a unique spiral shape. The designer develops his product based on the texture of the seashell body.



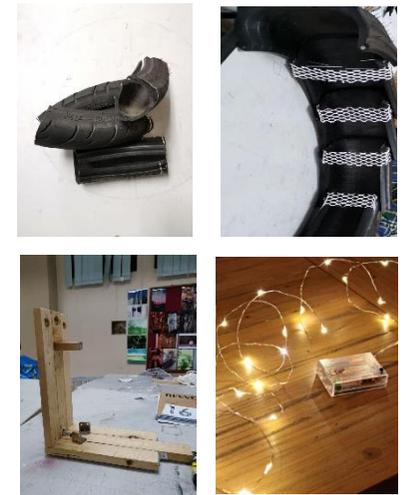
PRODUCT LINE UP



PROJECT FINDING



MODEL MAKING +



CONCLUSION

Upcycling is a process in which used materials are converted into something of higher value and/or quality in their second life. It has been increasingly recognised as one promising means to reduce material and energy use, and to engender sustainable production and consumption.

All the selected products show the various level of creativity in using recycled and up cycled the materials into better and beautiful products. We can see how the selected seven (7) design process helped the student designers to explore the materials and shaping towards the concepts that they have selected.

The idea of Sustainability in Design is reflected in all their works with various means of forms, color, material. The making and construction of these lightings are the basic challenges to produce the beautiful UP CYCLED PRODUCTS. The implication of this project was to creatively evolve different techniques to consume the scraps. New products were developed from the differences scarps which were appreciated for their innovative design and styles.

The traditional recycling is vital, it is key to reducing the amount of waste going to landfill. Recycling basically takes the waste items and takes them backwards in the chain to their raw state so they can be used again, however, through the addition of design, takes waste items forwards in the chain to become more beautiful, more valuable and hopefully more desirable for years to come.

Upcycled items are not just tatted up junk! Good upcycling is an art, you are buying a unique item designed and made by an artisan. Gone are the days when people just threw some paint all over a piece of furniture – upcycles are designers and should be following trends.

ACKNOWLEDGEMENT

This project was conducted by Batch 15 Studio AAD year 1 semester 2 session 2018/2019 under the supervisions of Studio Master Ts.Ismail Jasmani and his Assistant, Asst Prof Dr Norzalifa Zainal Abidin. There were 73 students works which were constructed. How in this chapter, 7 top products were selected to showcase the various forms, themes and concepts. Thank you to the Head of Department of Applied Arts and Design, and the top management of the Kulliyyah of Architecture and Environmental Design, International Islamic University Malaysia.

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10

URBAN DOCKLAND

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ABSTRACT

South Port Klang is previously known as Port Swettenham. It is a National Load Centre and being managed by the Port Klang Authorities (PKA) which handle all sort of developments in this area. It also has linkages with 600 ports across 10 countries. The location is very strategic as it is only 40km from Kuala Lumpur and become one of the main gateways into Malaysia. This area is very active with the load and unloading cargo and passengers every day. However, South Port Klang is still struggling with some issues such as lack of heritage value, lots of abandoned areas and flooding. As for that reasons, this design thesis have the goal to rejuvenate Port Klang as an useful Urban Dockland which does not only help in promoting trade and commerce activities but also creating a green corridor for the users as well as for surrounding environment. In order to achieve the goal of this design thesis, several objectives have been listed to guide the design thesis process such as to rejuvenate heritage value in this area as to highlight its unique identity, to revitalise abandoned area by transforming it to be green space for the benefits of users & environment and to provide green infrastructure in creating a sustainable and conducive living for this area. Thus, this study articulates the strategies for a proposal on South Port Klang derived from several methods which are direct observation, document analysis and direct interview on special person and public. As a result, a concept of "Antiquarian Fusion" has been implemented in this design proposal to achieve the objectives and giving a new breath by mixing urban and heritage value to this area. Therefore, there are some solutions formulated through landscape design to cater all the needs of this site as well as the needs for target users and also the environment.

Keywords: *Port Klang, Urban Dockland, Urban Heritage, Waterfront, Antiquarian Fusion.*

For now, South Port Klang has focusing more to transit area whereby there are a few jetty terminal, train terminal and also bus terminal. Besides, this area also more too be used as a formal urban city as there is a lot of Government officers around here. The size of the proposed area is approximately 35 acres. This area is actually an important area as it is the starting point to the development of Port Swettenham previously. The location also is very suitable as South Port Klang is located in deep water area, near the sea shore and protected from the strong wind of the Malacca Straits.



PROJECT INTRODUCTION

Port Klang has been chosen as a proposed site for this Urban Dockland project. It located at the district of Klang, Selangor. The distance from Port Klang to Kuala Lumpur is just 40 km which is about 40 minutes driving only. The Port Klang itself has already being divided into three parts which is the North Port Klang, West Port Klang and South Port Klang. This area located near to the Lumut Straits. Furthermore, Port Klang is managed by the Port Klang Authorities which responsible to any development and transaction happened in this area. It is an industrial area whereby ships containers, lorry, trailer and others pass by the area for loading and unloading items every day. As for that reasons, this area are always busy with industrial activities.



Figure 1& 2- Perspective views of Urban Dockland

LITERATURE REVIEW

Urban area is an area where the residents have a variety of activities such as residential land use, trade, communication systems, industrial and so on. It is an important area for the development of the country. In order to have a good urban area, there are lots of guidelines in planning the good design for urban area. A good urban design reflects its urban imageability (Lynch, 1960). The urban imageability depends on its nodes, landmarks, paths, edges and districts. All of these elements combined to form a good urban design. All these elements need to be included in this study as the proposed site is located to an urban area. The urban imageability will guide the process of inventory and analysis of the site.

Dockland means an area or land that surrounding a commercial port meanwhile the dock by its own means an area of water in a port that can be closed off and used for putting goods on and taking them off from ships or repairing ships. Dock has been categorized into two which are the dry dock and the wet dock. The dry dock means the dock that being used for repairs of ships and the wet docks means the dock that required for berthing of ships or vessels to facilitate the loading and unloading of passengers cargo. There are several examples of urban dockland in the world such as London Dockland and also Melbourne Dockland. This area is good in completing the function of a port and also gives a potential space for recreational area as it surround the commercial area.

IDEA AND DESIGN DEVELOPMENT

This thesis going through some design process which first is site inventory. All the data have been gathered as to be analysed in three categories which is Historical Studies, Urban Imageability and Urban Landscape Analysis. Based on Historical Studies, there are many study have been done especially on the early development of South Port Klang till it become the largest Port in Malaysia. The Urban Imageability categories study more on its elements which are district, path, edges, nodes and landmark. Furthermore, the urban landscape analysis study more on solid and void, port, visual quality and hydrology parts in this area.

After that, all these data will be going through process of synthesis. The strength, weakness, opportunities and threat are being highlighted for this area. Then synthesis map have been produced to emphasize the linkage, urban patches and green infrastructure opportunities for this site. The next phase is to develop this map to become conceptual plan and schematic plan. All these plans have provide more reasonable and systematic spaces to be proposed on the site. Based on these map, more steps are being gathered to get the suitable form for the development of Masterplan.

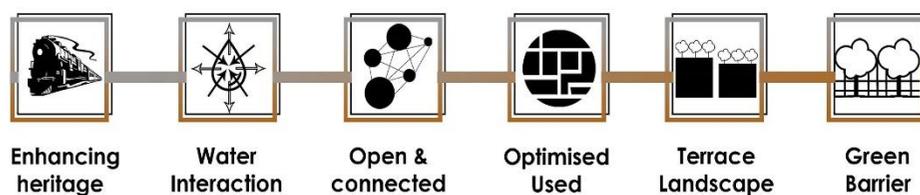


Figure 3- Design Principle for Urban Dockland

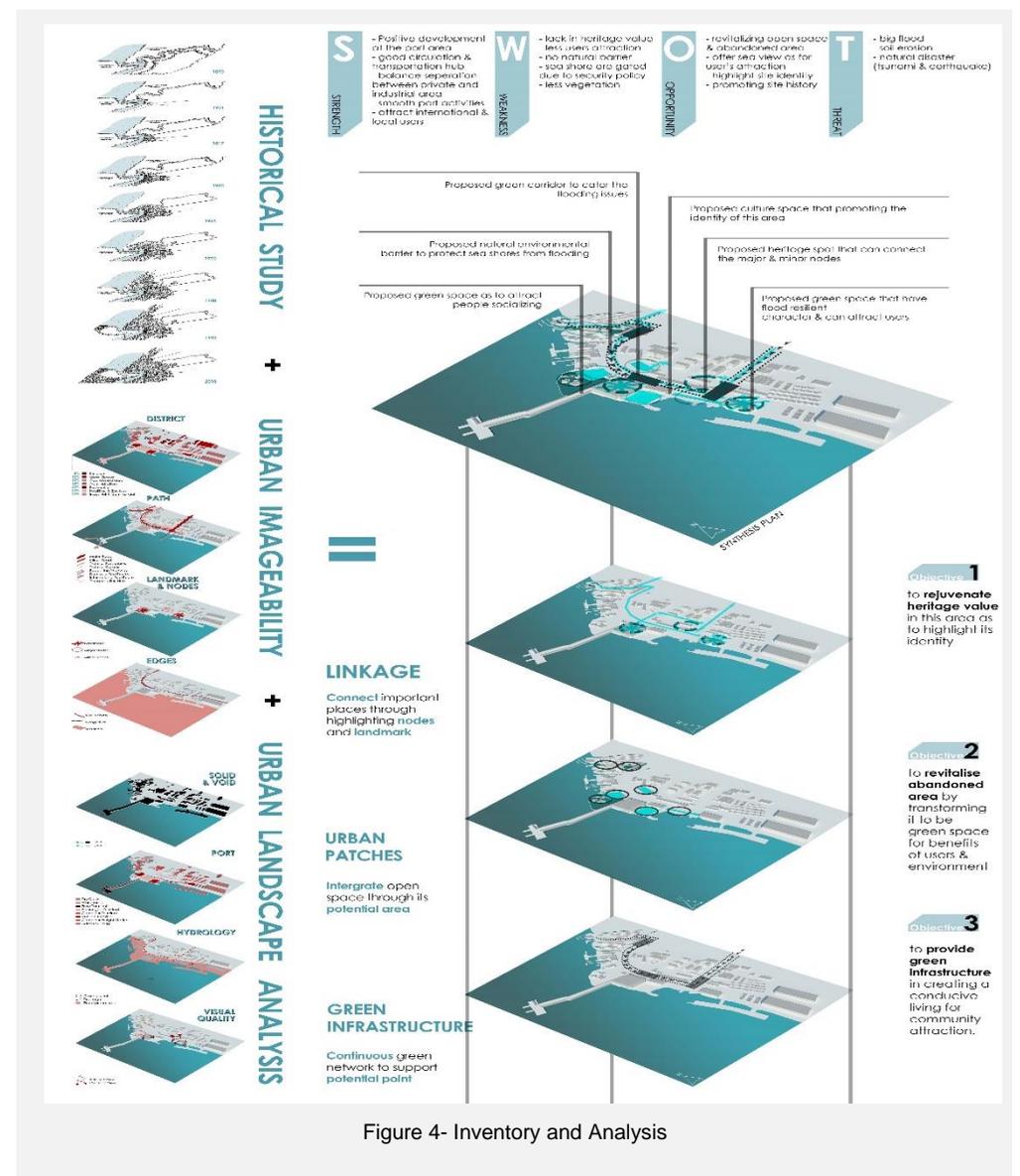


Figure 4- Inventory and Analysis

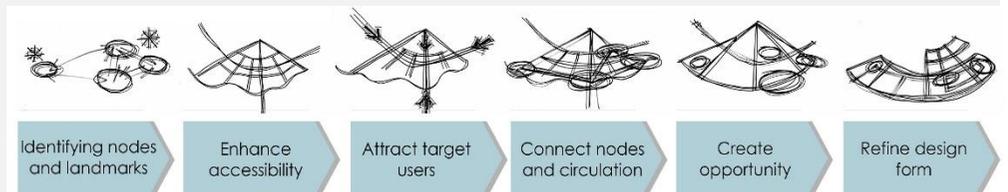


Figure 5- Sketches of idea for development of design form in Masterplan.

CONCEPT

Concept for this urban dockland project is "ANTIQUARIAN FUSION". It actually derived from the word antique which related to ancient times that have high value and outdated. Meanwhile fusion comes from the word fuse means an occasion when two or more things join together. These combining words give the meaning of antique & future development that can work together for all benefits. It also shows that the concept will mix between the heritage and urban elements of the site which can highlight the site identity.

DESIGN STRATEGIES

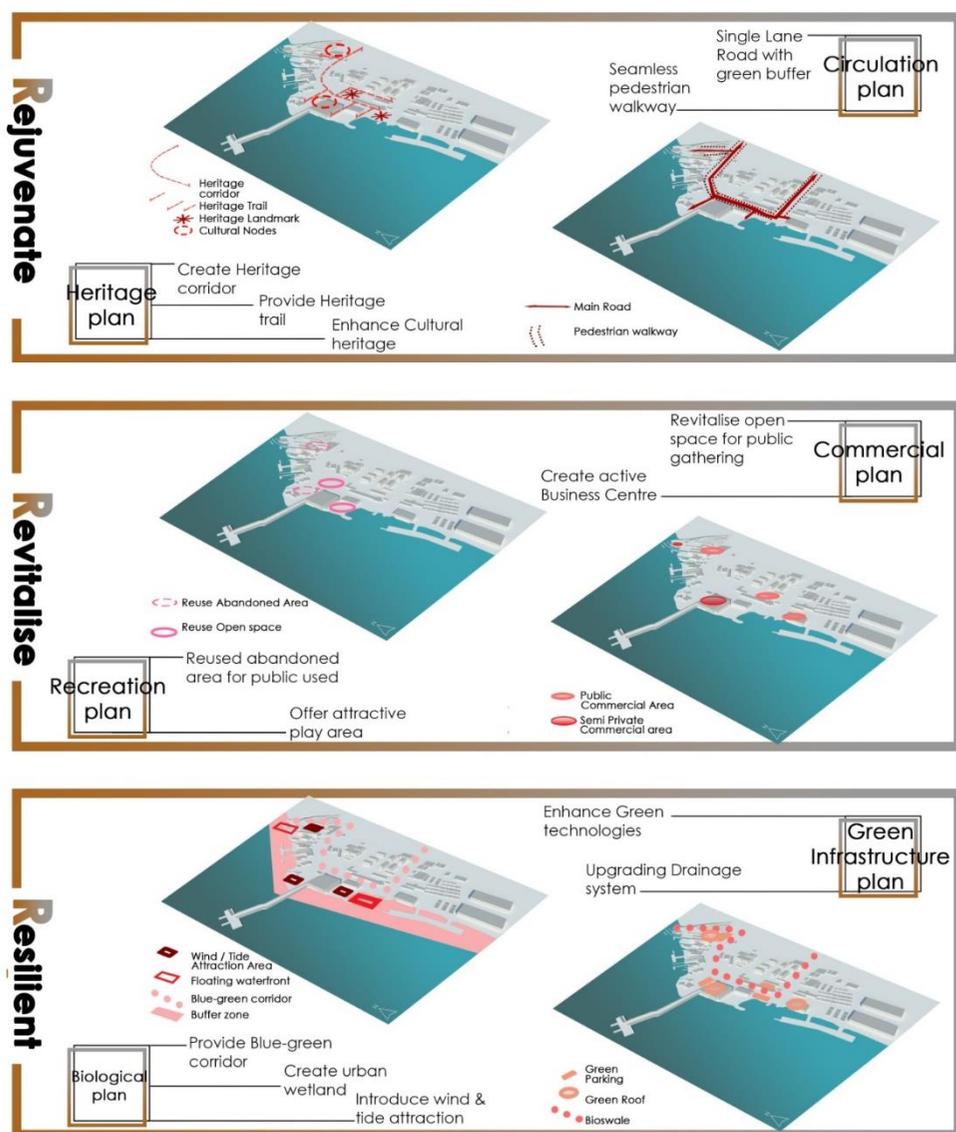


Figure 6- Design Strategies for Urban Dockland

BACKGROUND STUDIES

As to have more understanding in this project, several examples of urban dockland have been studied at the London Dockland and Melbourne Dockland. London dockland is located along the Thames River in East London (Urban Strategies, 2018). It formerly was a place for heavy industrial district area. In 1988, it undergoes redevelopment and reshaping of this dockland area as it involve in some issues of decreasing employment, decreasing population and increasing of social depression. The changes era for London Dockland has been categorized into three which is environmental regeneration, social changes and also economic regeneration. The planning of the redevelopment of this London Dockland happened in many years. The strategies of this redevelopment are to have maximum economic potential, inter-urban competition and making urban landscape to the London Dockland. Besides, London Dockland has been categorized into four divisions which are

Wapping & Lime house, Surrey Quays Rotherhithe, Isle of Dogs and Royal Docks.

Meanwhile, Melbourne Dockland is actually a derelict wasteland that transformed into thriving waterfront destination for business, residents and visitors. The aim of the development of Melbourne Dockland is to be well connected extension of Melbourne's city centre, incorporating wonderful public spaces, waterfront vibrant streetscapes. This is the reasons why Dockland becomes one of the greatest examples dockland in the world. The design strategies for Melbourne Dockland had guided the development of this area to be well managed and smoothly construct as to be a high quality of Public Realm. There are lots of spaces provided in that area such as The Dock, Harbour Town, Waterfront City, Etihad Stadium, The monument and Batman Hill. All the spaces serves function close to the users need and provide balance environment. All these elements can help in guiding the design development of Urban Dockland in the proposed site. It can give a clear path in designing a good space in the Urban Dockland area. Moreover, this reference study also can provide excellence strategies which can be considerate to be proposed onto the proposed site.



Figure 7- Design Concept of Urban Dockland

DESIGN CRITERIA

Urban Dockland in South Port Klang have provide more public spaces that incorporate with design principles such as enhancing the heritage. Having water interaction, open and connected, optimised used, terrace landscape and having green barrier for the well balance development of the users as well as the environment. The major area for this Urban Dockland has connect the major nodes of the site which is the International and Domestic Terminal and also the Train Terminal. Most of the proposed site are being rejuvenate from the existing parking area, abandoned area and leftover area. The minor area is actually located close to the minor nodes which is the Royal Selangor Yatch Club. This area gives the opportunity to the public to have interaction with sail and also the Public Park.

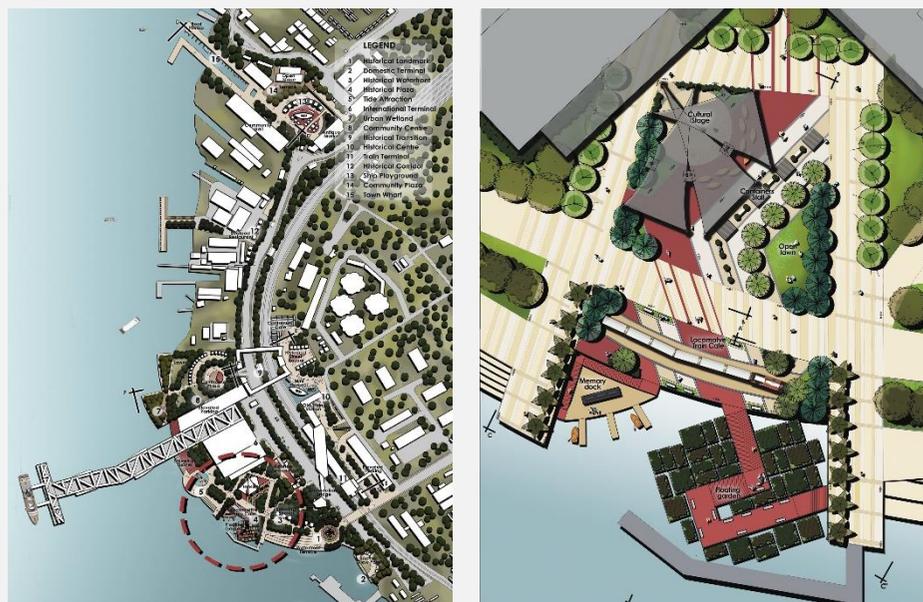


Figure 8 & 9- Masterplan and Detail Development Plan for Urban Dockland

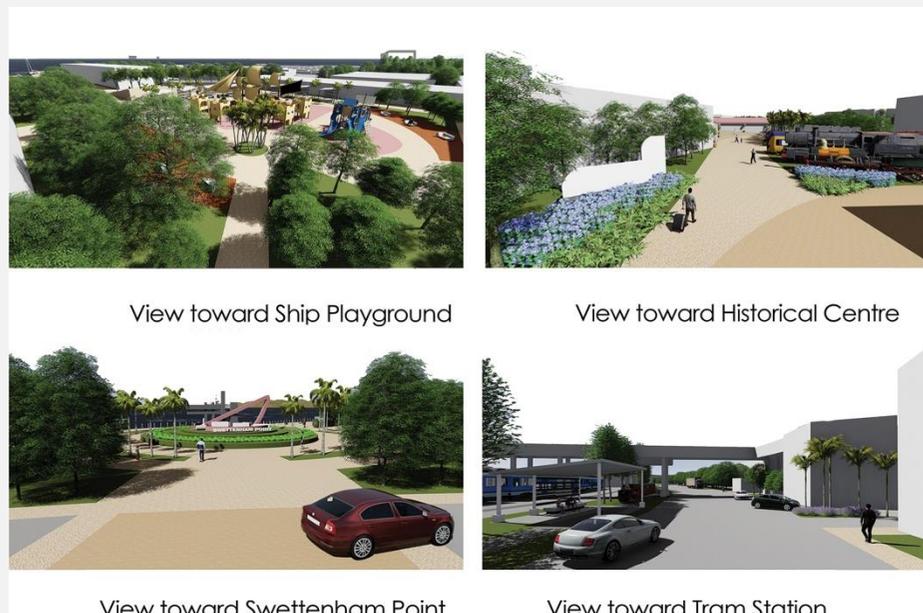


Figure 10 - 13 –Perspective views for Urban Dockland

DESIGN DEVELOPMENT

The historical plaza has been chosen to be the detail development area as it is close to the major nodes area which is the international terminal. Basically, this area was formerly a parking area for the passenger of the terminal. But it has been transform to be a plaza that can gather all the visitor for this site to have their recreational time close to the sea shore. This area provides several small spaces which are the cultural stages, open lawn, containers stall, locomotive train cafe, memory dock and also floating garden. All the spaces are design to rejuvenate the heritage value of the site as well as to inject urban elements at the same time to the site.

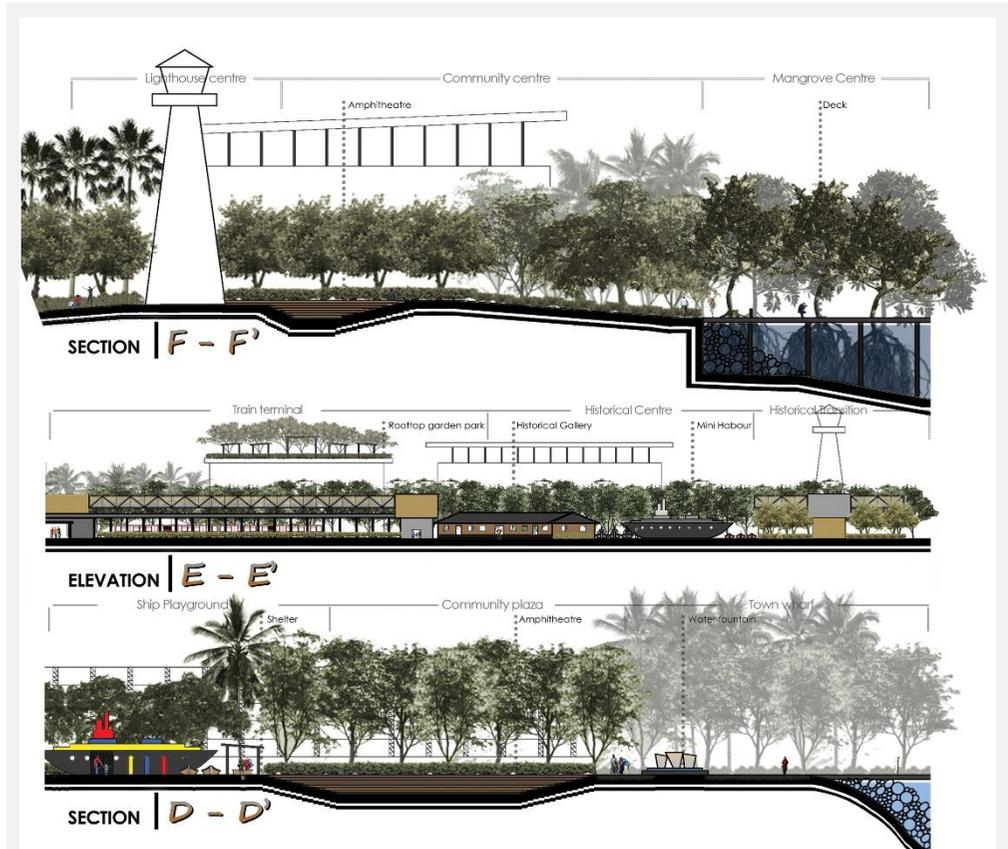


Figure 14- Section elevations of Urban Dockland



Figure 15 - 18- Perspective views of Historical Centre.



CONCLUSION

The study of urban dockland is not being exposed so much in this country. An effort to highlight urban dockland as a recreational area at the port can be considerate by the developer or any local authorities. Urban dockland not only focusing on the elements that should be provided in the port area, it also highlights the elements that are crucial for social gathering and recreational proposed. The example of reference studies located at London Dockland and Melbourne Dockland shows that this proposed idea can be done and can highlight the site character to the public of the whole world. Besides, urban dockland is actually an element that can create green effect to the dull spaces at the port area.

South Port Klang is the most suitable place to build this urban dockland. It deals with some issues on the lack of heritage value, more abandoned area and flooding issues. However, these issues still can have its solution in order to provide a good urban dockland. Based on the site inventory and analysis, it can be clearly shows that the site have its potential to be develop as it can attract many people all over places. Antiquarian Fusion is a good design concept that closes to the project situation. It reflects the heritage and urban element for the proposed site. This surely can achieve the aim for the project which is to rejuvenate South Port Klang as a useful Urban Dockland which does not only help in promoting trade and commerce activities but also creating a green corridor for the users as well as for surrounding environment. This urban dockland can actually give a new spirit in gaining back the glory time of South Port Klang.

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11

A HISTORIC WATERFRONT REVITALISATION PROJECT IN TANJUNG EMAS, JOHOR

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ABSTRACT

This project addresses the importance of public open spaces in supporting the revitalisation of historic waterfront development along Tanjung Emas, Muar, Johor. At the domestic level, this place is popular as it attracts many visitors, particularly on weekends. Its location in the Royal Town of Bandar Maharani; thus, it plays an essential role in creating a catalyst for a sharp image of urban design elements.

The distribution of many historical buildings such as Masjid Sultan Abu Bakar, Muar High School, and Muar District Court, reflecting the influence of colonial architecture adds to its colourful and vibrant image of an old town. Hence, the proposals which mainly cover the public open spaces along Tanjung Emas are expected to revitalise the image of Bandar Maharani. The projects involve mainly the uplifting the facilities of the children playground, provision of the water fountain, open theatre, pavilion, and floating café.

PROJECT INTRODUCTION

According to Anola (2009), a waterfront area is part of a town located next to water elements such as a river or sea. Presently, it can be seen that many urban waterfronts throughout the world are facing deteriorated condition due to several environmental, social, and economic pressures. In many developments of human settlements, the waterfronts are considered as the most attractive water features in enhancing the image of urban design.

Many scholars and organisations suggest that the combination of physical, social, economic and environmental problems were occurred in waterfronts development (IBI Group (2013), Rukiah and Zainora (2012), and Hoyle (2001e). On the social aspect, the rapid urban development has destroyed many cultural and old buildings or places in waterfronts (El Deeb, AbelGalil, and Sarhan (2011). Therefore, this project at Tanjung Emas relates to the enhancement of the overall public open spaces located along the waterfront of Sungai Muar. The present conditions face several problems that require improvement works to sustain the development of the waterfront.

METHOD / PROCEDURE

This project focuses on the topic of improvement of public open spaces located along the waterfront of Tanjung Emas. The study involved primary and secondary data collection on-site. Site fieldwork was conducted to gather the information, particularly on its site strengths and weaknesses. Data for was collection covering the aspects of urban design, land use, and open space. Besides, secondary data was obtained, especially from the Planning Unit of Muar Municipal Council. After the analysis stage, the formulation of the development concept and strategy was followed to complete the work. Lastly, some detailed proposals were suggested, giving some workable illustrations that could assist the authority to plan and design the development of the waterfront at Tanjung Emas.



Figure 1 Site Plan of study area

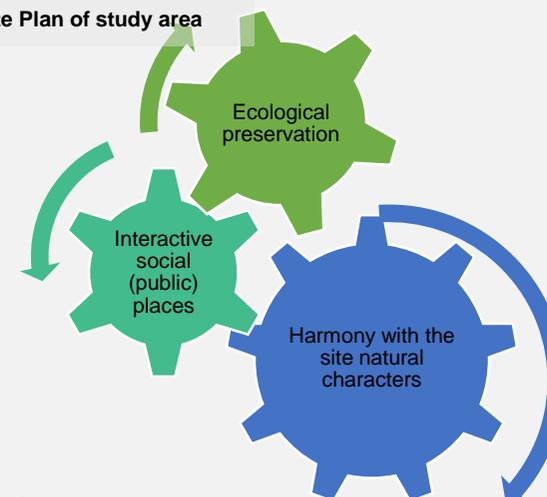


Figure 2 Development concept

CONCEPTUAL PROCESS, PROCEDURE AND SCHEMATIC

CONCEPT OF OVERALL PROPOSED DESIGN

The proposed projects take advantages of the strategic location of the waterfront concerning other environmental consideration such as the existence of the river water, and the vegetation of the site. The facelift of Tanjung Emas waterfront is anticipated can boost the local tourism sector in Muar.

This project improves the present condition of children playground by elevating its image.

The hard landscape elements will reflect the modern design yet maintain the its original concept as Bandar DiRaja. Meanwhile, more soft landscape will be planted for greenery areas.

- ❑ To create new walkways and livable environment.
- ❑ To act as a vibrant and interesting park
- ❑ To enhance the quality of facilities
- ❑ To children friendly playground.
- ❑ To make it a desirable place to spend time with family and friends.
- ❑ Encourage social interaction among community



Figure 3 Conceptual idea of proposed Tanjung Emas waterfront facelift project

PROPOSED DESIGN #1 PARK AND PLAYGROUND



Figure 4 Project #1: Illustration of Proposed park and children playground

PROPOSED DESIGN #2 OPEN THEATRE

The refurbishment work of open theatre is proposed to complement the overall new image of Tanjung Emas waterfront development project. The new setting of the theatre compliments the image of Bandar DiRaja. This place is suitable to hold cultural performance. It has terrace seating areas and large open space to occupy audience. The theatre leaves some natural grassy areas to be more environmental friendly.



Figure 5 Project #2: Proposed open theatre



Figure 6 Proposed open theatre and Aerial view

- The visitors can watch various traditional and modern performances while relaxing with the open air surrounding.
- To design an architectural feature that are visually pleasant.

PROPOSED DESIGN #4 WATER FOUNTAIN & PROJECT #6 WALKWAY

The projects of water fountain and walkway integrate the elements of urban design in a waterfront development. The creation of some artificial water bodies within the whole waterfront areas creates cooler environment. In addition, the improved softscape and hardscape features will enhance the new image of this waterfront. It is anticipated that more visitors will come to this place, once the new physical and infrastructure works taken place.

- To decorate the urban park with soft features.
- To give a sense of welcoming to the visitors and tourists.
- The fountain creates a relaxing atmosphere to the people and the environment.
- The fountain generally has the ability to increase the surrounding environmental quality.



Figure 7 Project #4: Proposed water fountain



Figure 8 Project #6: Proposed walkway enhancement



Figure 9 Aerial view of the proposed water fountain

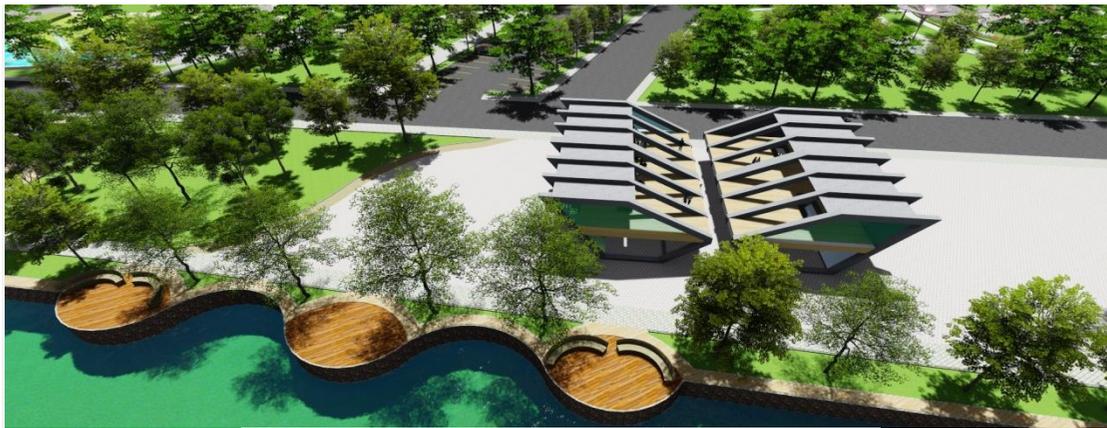


Figure 10 Project #7 Proposed Pavilion

PROPOSED DESIGN #9 FISHING WALKWAY



Fishing walkway is a over-hanged bridge, allowing the visitors to be 'standing' on Sungai Muar. It also has some artificial beach extending to the riverside. This proposed fishing walkway is expected to attract visitors and also strengthened the urban design image of this area.



Figure 11 Project #9: Proposed view of fishing walkway

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PROPOSED DESIGN #7 PAVILION

Meanwhile, the proposed Project #7 on development of pavilion is expected to connect the walkway along the waterfront development. The combination of wooden and brick structures compliment to the overall environment of this place.

PROPOSED DESIGN #8 FLOATING CAFE

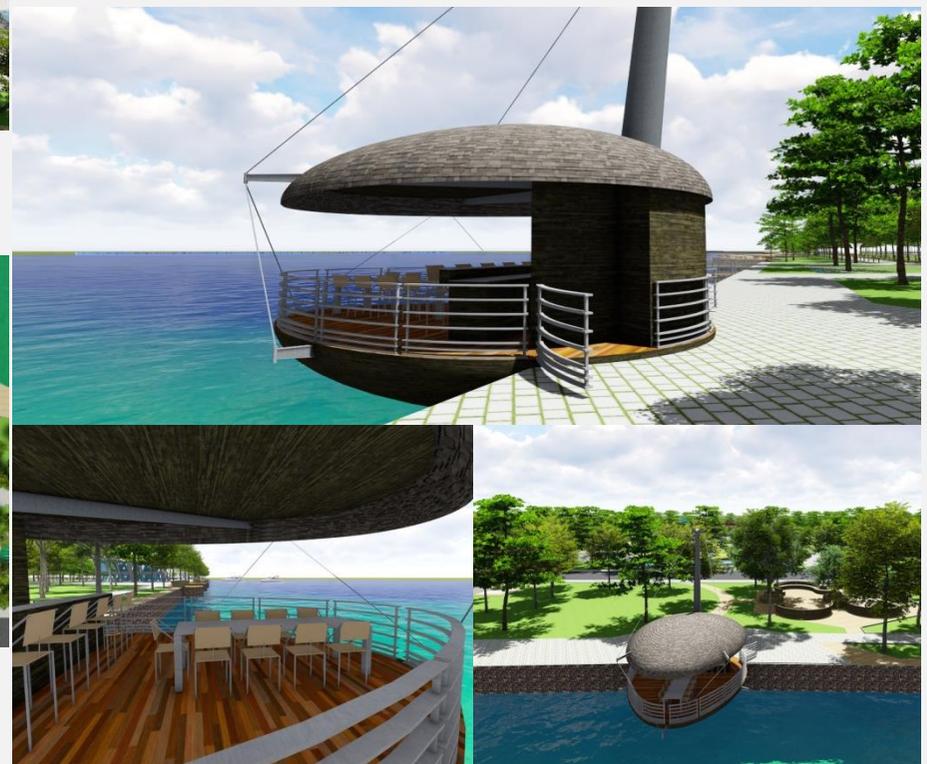


Figure 12 Project #8: Proposed floating cafe

On the other hand, Project #8 the floating café is proposed to be attached to the proposed pavilion. This concept of floating café allows visitors to have a cup of coffee while enjoying the view of the estuary of Sungai Muar. The following objectives are intend to be achieved from the project:

- To design an architectural feature that are visually interesting.
- To boost the business activities.

CONCLUSION

Overall, the city of Muar town can be improved through sustainable waterfront development. This should get participation from many aspects such as green areas and public spaces, heritage buildings, and efficient transportation system, community involvement, and environmental conservation. This paper addresses the reliable proposals for enhancing the image of urban design of Tanjung Emas taking advantage of the availability of Sungai Muar along its waterfront.

ACKNOWLEDGEMENT

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