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RESUBMISSION
28.7.2016
(In response to Tender Clarification
Dated 14.6.2016)

REQUEST FOR PROPOSAL
SAFE REHABILITATION, DEVELOPMENT OF JELUTONG DUMPSITE
AND PROPOSED NEW DISPOSAL SITE FOR CONSTRUCTION & DEMOLITION
WASTE AND MARINE CLAY (PPPP/TH2/2015)
FOR
PENANG DEVELOPMENT CORPORATION



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1.0 INTRODUCTION

This Revised Proposal is submitted in response to the Tender Clarification session held with the Penang Development Corporation (PDC) on 14 June 2016. This will supplement our earlier submission for the RFP (Request for Proposal) for Safe Rehabilitation and Development of Jelutong Dumpsite and Propose New Disposal Site for Construction and Demolition (C&D) Waste and Marine Clay as advertised by the Star on 12 March 2015.

Originally established in 1990s to receive all kinds of waste, the Jelutong Dumpsite (JD) has since been receiving C&D waste, an estimated 11 million m³ so far, consist of mainly C&D and marine clay. The waste mountain stretches 35 meters high from the surrounding terrain, and covers an area of 84 acres of State Land along Lebuhraya Tun Dr Lim Chong Eu in Jelutong, Penang. It is an enduring eyesore and health threat to local residents and tourists. The JD has no basal lining barrier and no leachate collection system. The environmental repercussions are severe; recurring open burning causes air pollution including the release of toxins such as dioxin and has invited countless complaints from local fishermen and residents.

Our proposal is in support of the Penang State Government's effort for green projects to improve the environment for future generations. Safe rehabilitation or remediation works will be carried out to make JD a suitable place for development. A comprehensive solution will be provided which will ultimately see that controlled mining of buried waste is carried out while at the same time addressing the disposal of C&D waste and marine clay, current and future.

As specified in the RFP document, a well-mixed and integrated development will be developed on this site. With its related provision set aside for the Arts and Tourism, this well-mixed and integrated development will be a catalyst for future growth in this area while also upgrading and providing better facilities for the present citizens of Penang.



2.0 THE TEAM

PLB Engineering Berhad (PLB) is a leading engineering concern engaged in general construction, construction engineering services, land developments, property management and waste management and is listed in the Bursa Malaysia.

PLB Terang Sdn Bhd (PLBT) is a joint-venture company between PLB and Terang Bersih Sdn Bhd, a company founded by Tengku Dato' Naizatul Shima binti Tengku Abdul Murad Shah-Al-Haj to engage in environmental projects. PLBT has the skills and experience in landfill engineering, brownfield redevelopment and human health and ecological risk assessments; and has operated numerous landfill-related projects in Malaysia and throughout the world, including a landfill project currently ongoing in Kuantan, Pahang and a 20-year concession to operate and manage the solid waste landfill at Pulau Burung, Nibong Tebal, Penang, commencing year 2012.

For such a huge public interest project, PLBT has the necessary expertise and know-how to rehabilitate the Jelutong Dumpsite safely and within the timeframe stipulated. Based on the many years of successful operating and maintaining of landfills within and away from Malaysia, PLBT is able to address any environmental matters as and when brought up by the public. The total rehabilitation portion of the JD is estimated to take up to six (6) years.

PLB, together with **Moonwork Archi Sdn Bhd**, envisage a totally integrated development that will bring tremendous benefits to the local residents, the Local Council and the Penang State Government in the near future. This proposal is submitted by a Penang-based company who truly understands the needs and requirements of the people of Penang. We recognize that the identification of minimum remedial requirements and the evaluation of viable and sustainable redevelopment alternative is a priority for us and PDC.

Once the JD has been successfully levelled, PLB's subsidiary, **PLB-KH Bina Sdn Bhd** (PKH) who has over 40 years of experience, will come in to participate in the construction portion. PKH has built up a favourable track record in industrial, commercial and residential building construction, foundation construction and other general civil engineering works and is now reputed as one of the most active industrial, commercial and residential building contractors in Malaysia. The construction portion of the development stretches for a period of 11 years. The construction will commence during the 4th year of landfill mining and rehabilitation.

As development is now the core business of PLB, the sales, marketing and administration of the JD development will be handled by PLB's wholly-owned subsidiary, **PLB Land Sdn Bhd** (PLD). PLD is the property development arm of PLB and has been a member of the Real Estate and Housing Developers' Association of Malaysia (REHDA) since year 2000. As an integrated property development company, PLB Land Sdn Bhd receives strong operational support from in-house construction arm, PLB-KH Bina Sdn Bhd.

LIST OF MANAGERIAL, ADMINISTRATIVE & TECHNICAL OFFICERS

No	Name	Position	PLB Group of Companies
1	Dato' Seri Ong Choo Hoon	Group Executive Chairman	PLB Engineering Berhad
2	Dato' Dr Rickson Ong Seng Soon	Group Managing Director	PLB Engineering Berhad
3	Madam Ong Guat Beng	Executive Director	PLB Engineering Berhad
4	Mr Ong Seng Chye, Vincent	Executive Director	PLB Engineering Berhad
5	Encik Mardzukhi Abu Bakar	Executive Director	PLB Engineering Berhad
6	Ms Thenmathy Ramasamy	Senior Legal Manager	PLB Engineering Berhad
7	Ms Phee Poh Suan	Senior Finance Manager	PLB Engineering Berhad
8	Tengku Dato' Naizatul Shima Binti Tengku Abd. Murad Shah Al-Haj	Executive Chairman	PLB Terang Sdn Bhd
9	Encik Syamshuar Bin Husin	Chief Operating Officer	PLB Terang Sdn Bhd
10	Encik Nor Azman Bin Othman	General Manager, Operations	PLB Terang Sdn Bhd
11	Enck Mohd Ramsyah Bin Ismail	MRF / Landfill Manager	PLB Terang Sdn Bhd
12	Encik Amir Bin Ahmad Astor	Process / Landfill Engineer	PLB Terang Sdn Bhd
13	Puan Zahira Binti Mohamad Daud	Environmental Executive	PLB Terang Sdn Bhd
14	Mr Kok Lee Chow Peng	Equipment Specialist	PLB Terang Sdn Bhd
15	Mr Happy Ng Neoh Soo	Executive Director	PLB-KH Bina Sdn Bhd
16	Encik Iderus Mat Ibrahim	Senior Project Manager	PLB-KH Bina Sdn Bhd
17	Mr Choong Yew Leong	Sales Admin & Marketing Manager	PLB Land Sdn Bhd
18	Puan Azizah Binti Abdul Aziz	Assistant Sales Admin & Marketing Manager	PLB Land Sdn Bhd

3.0 CONCEPTUAL REHABILITATION AND DEVELOPMENT PLAN

Based on the terms and conditions of the RFP, our initial studies on the JD indicates that given the proposed timeline of 15 years to rehabilitate and develop the land, a minimum allocation of 6 years is needed to mine and dispose waste of approximately 11 million m³ comprising mainly of C&D waste & Marine Clay, which translates into an estimated 14 million tonnes to be mined from the JD. Over 6 years, it is estimated at least 240 lorries will be used to transport the waste out of the JD per day. This mining works itself will involve a lot of time, energy and money.

At the same time, there are some incidental impacts from the above rehabilitation works which may need to be addressed:-

- a) rehabilitation and subsequent development activities will involve massive flow of traffic in an otherwise quiet area i.e. traffic congestion in the affected areas, on the surrounding roads and the bridge for at least 15 long years, indirectly impacting the social and environmental wellbeing of the people working and residing nearby;
- b) noise & dust pollution created by the above activities will have undeniable and far reaching effect creating further health and social issues.

Further, PLB has been verbally informed by the Jabatan Perancang Bandar & Desa that the reclamation works by the IJM group nearby will end about 50 metres away from the boundary of the JD as buffer zone requirement.

PLB has always been in support of the State of Penang's "Cleaner, Greener, Safer & Healthier" campaign. However, PLB's initial survey and findings show that the information provided and conditions required under PDC's Request for Proposal may need to be restructured in order to ensure that the above aspirations of the Penang State Government is upheld while at the same time, sustainable economic growth of the State is continued for the current and future of Penangites.

Land is also very scarce on the Penang Island. In order to avoid future environmental and logistics problem in an already congested island with limited land, PLB will in this proposal present a more feasible and environmentally friendly option.

As such, after taking into consideration the limited land available for new landfill sites, the logistics issues that is envisioned to arise and the economic feasibility, in order for this proposal to work, and work well, the following is what PLB offers:-

- 1) Total land mining of the JD in preparation for future mixed development of 67 acres and tourism of 17 acres
- 2) New C&D Waste Process Facility proposed will either be on the Penang Island or Mainland with the final disposal site at Pulau Burung Solid Waste Sanitary Landfill, subject to the approval from the relevant Authorities

It is our hope that our visionary concept will shed new light on the potential of how to turn a dumpsite into a vibrant area where government infrastructure, tourism and residential development are closely integrated within an area making it a mini-metropolis!

We invite you to read on and explore further our proposal in the following pages.

4 LANDFILL MINING WORKS

4.1 WASTE VOLUME ESTIMATION

Based on the Jelutong Dump Site, Penang Preliminary Investigation & Conceptual Closure Options Appraisal report published by CH2MILL, the total volume of waste within the JD is estimated at 5.5 million to 7.0 million m³ at total area of 53 acres. However, based on the new data given by PDC dated 15 June 2016, the area is now extended to 84 acres. Thus, the estimated volume of waste is increase to 11 million m³. Given that 1 cubic meter of waste is equal to 1.3 tonne, the total tonnage of waste inside the JD, inclusive of waste from 5 meter below the sea level is estimated around 14 million tons.

4.2 LANDFILL MINING TIMELINE

It is estimated that a duration of 1 year is required for preparation of EIA submission and procurement of the landfill machinery. For the mining works, 8 set of machinery which capable of processing 1000 tons/day/machine will be set up at site. Thus, the total number of years for the mining works inclusive documentation is approximately 6 years period.

Table 1 below show the proposed implementation schedule for landfill mining of JD.

Item	Sub Item	Year 1		Year 2		Year 3		Year 4		Year 5		Year 6	
		Jan-June	July-Dec	Jan-June	July-Dec	Jan-June	July-Dec	Jan-June	July-Dec	Jan-June	July-Dec	Jan-June	July-Dec
Landfill mining	Submission of detailed plans to authorities	█	█										
	EIA submission	█	█										
	Preliminary site assessment	█											
	Road access & Utilities			█	█	█	█	█	█	█	█	█	█
	Equipment & Material Procurement	█											
	Equipment Installation		█										
	Landfill mining operation			█	█	█	█	█	█	█	█	█	█
	Temporary C&D waste operation			█	█	█	█	█	█	█	█	█	█

Table 1: Timeline for landfill mining

4.3 METHOD OF LANDFILL MINING

Landfill mining will be conducted as per method described below:

1. The landfill mining will be conducted in 3 phases. A portion of land approximately 10 acres inside the JD will be flattened out to accommodate the mining machinery (processing area). The ground level is maintained as per existing level on site.
2. The processing area will be shifted accordingly during this 3 phases. The area will also be used temporarily and shared together for processing the incoming C&D waste from Penang Island.
3. All the waste inside the JD will be excavated and processed from top to bottom up until 5m depth below the sea level.
4. The processing area and its corresponding mining area during the 3 phases are described in Figures 1 to 3 below.



Figure 1: Landfill mining Phase 1

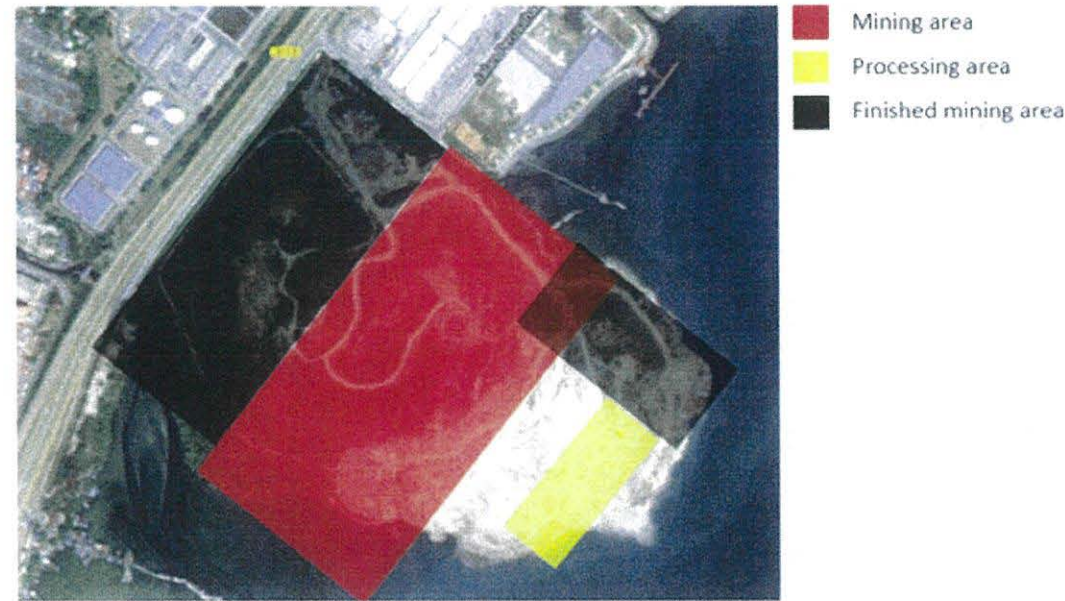


Figure 2: Landfill mining Phase 2

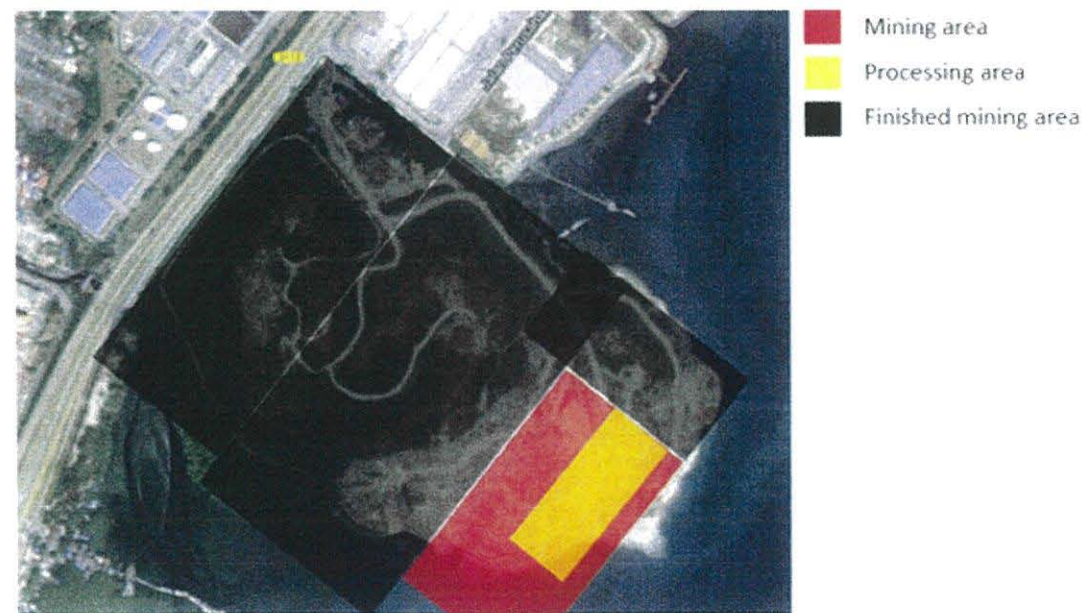


Figure 3: Landfill mining Phase 3

The landfill mining duration for each phases are tabulated below:

Phase	Estimated duration [month]
1	12
2	36
3	12

4.4 PROCESS OF LANDFILL MINING

Landfill mining typically consists of three basic operations:

- a) excavating waste,
- b) processing the excavated material and
- c) The excavated or processed materials.

Waste is first excavated using equipment commonly employed in surface mining and landfill operations such as a backhoe or excavator. The excavated waste can be processed to meet several objectives, including separating bulky materials, sorting hazardous material and other unidentified waste, screening soils from waste and sorting material for recycling. Several common mechanical process (such as magnets for ferrous metal and eddy current for aluminium) can be used to separate recyclable materials.

Other major factors that influence the choice of processing methodology are the condition and properties of the excavated materials. Factor that can impact processing methodology is the potential end market for recovered materials. In many occasion, recovered materials such as ferrous metals and aluminium must meet certain quality requirements in order to have values as a recovered material – the additional processing to meet recovered material standards represent another factor that can impact a mining project profitable and feasible.

The cost and time for processing the excavated material are also important factors when considering processing methods for materials recovery. For JD, PLB would propose using 8 lines of equipment and the mining activity is expected to be completed in 5 years' time. Automated processing of material mined has been proposed to potentially lower the operation cost.

4.5 EQUIPMENT

Equipment typically used in landfill mining projects includes machines commonly used as part of solid waste management operations as well as machinery used in the surface mining industry. For example, equipment (e.g. backhoe, dozers) used for the excavated landfilled waste is commonly used. Another frequently used piece of equipment is the off-road dump trucks. The following sections describe the equipment that will be effective in support of a landfill mining project.

4.5.1 Waste Excavation and Scraping

The waste is excavated using an excavator or backhoe and loaded into the trommel or a dump truck. A dozer scrapes the waste along the slope from the top towards the bottom and bring the waste to an excavator, which feed the waste to the trommel. This mining will used one or two excavator per trommel, depending on the desired excavation rate.



Figure 4: Landfill mining methods - Waste Excavation



Figure 5: Landfill mining methods - Waste Scraping

4.5.2 Material Handling and Pre-sorting

Depending on the waste processing methods and equipment used, the large-sized pieces also may need to be sorted out before processing the mined material using a mechanical screen. A front-end loader working with the excavator can be used.



Figure 6: Use of loader for waste sorting and handling

4.5.3 Waste Screening

Waste screening is done by using the landfill mining equipment. After the excavation process, there are 3 types of waste which will sorted out according to their type i.e. marine clay/soil, bulky waste and mixed co-mingle waste. The overview of the process is summarised below:

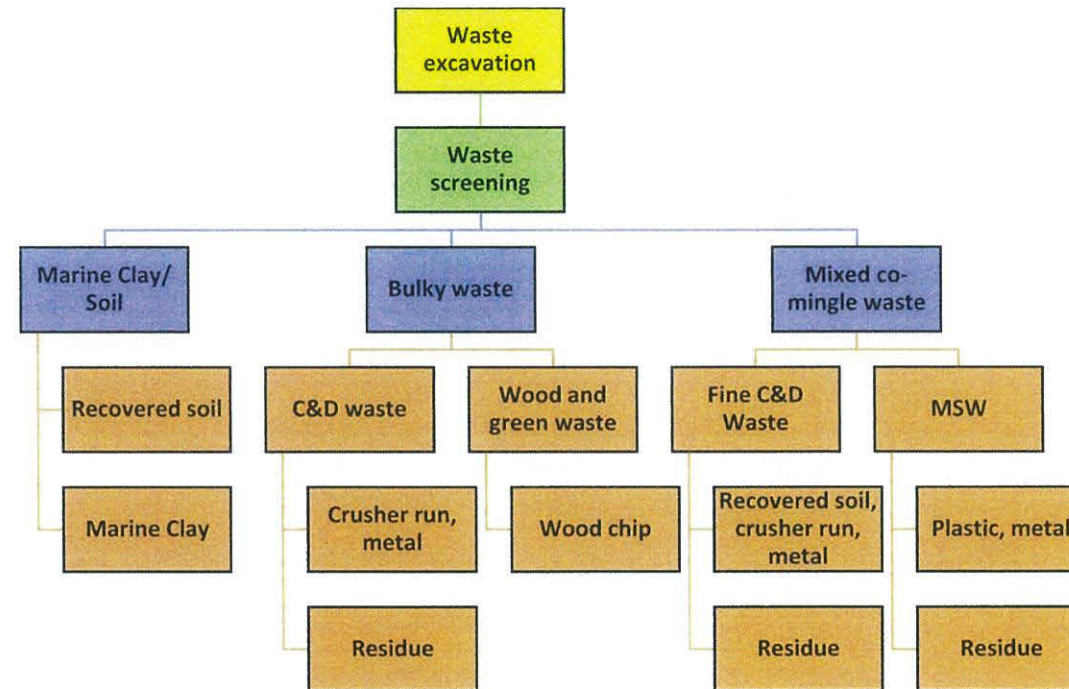


Figure 7: Overview of landfill mining process for JD

For mixed co-mingle waste, it will be processed using waste segregation system. The process flow are stated below:

- The excavator will transfer the waste to vibrating sieve. Any waste which is >200mm in size will be channel to the outgoing conveyor and send out from the landfill.
- Waste which is <200mm will go to trommel via chain conveyor. The trommel will further segregate the waste size to 60mm and below. The >60mm wastes are mostly comprising of soil, crusher run, crushed concrete and metal. A magnet separator will extract out any metal object from the waste.
- The fine grade (<60mm) wastes are mostly decomposed MSW, plastic and small fraction of metal.
- At the end of the trommel, an air blower is installed to blow all the plastic and trap it inside the metal cage.
- The trapped plastic will then fall to baler machine for baling process.
- The residue of the whole process will be transferred to landfill.

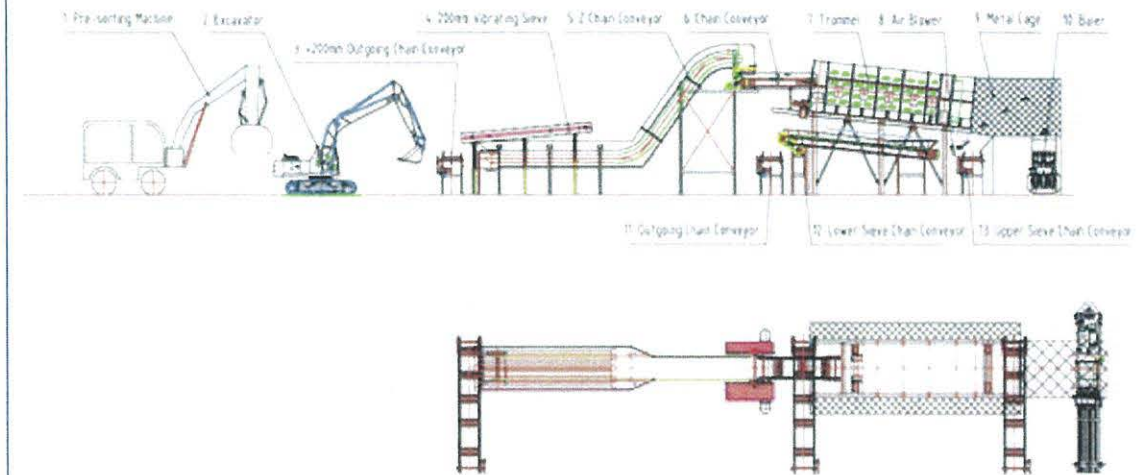


Figure 8: Waste segregation system (side and top view)

For bulky waste, 2 types of machines will be use depending on their category. If the bulk wastes are stone and concrete, it will be crush using a mobile crusher. The crushed stone and concrete will be use as our internal road access. If it is green waste or wood, it will be turn to woodchip using wood crusher.

For marine clay and soil, it will straight away transferred to landfill and use for landfill cover or internal road access depending on their suitability.

The estimated waste composition which will be excavated and processed during the landfill mining is tabulated below:

Waste Type	Percentage [%]	Tonnage
Residue/MSW	51.2	7,168,000
Soil/Marine clay	35.02	4,902,800
Plastic	6.65	931,000
Concrete/Stone	4.03	564,200
Green waste/Wood	2.4	336,000
Metal	0.7	98,000
TOTAL	100	14,000,000

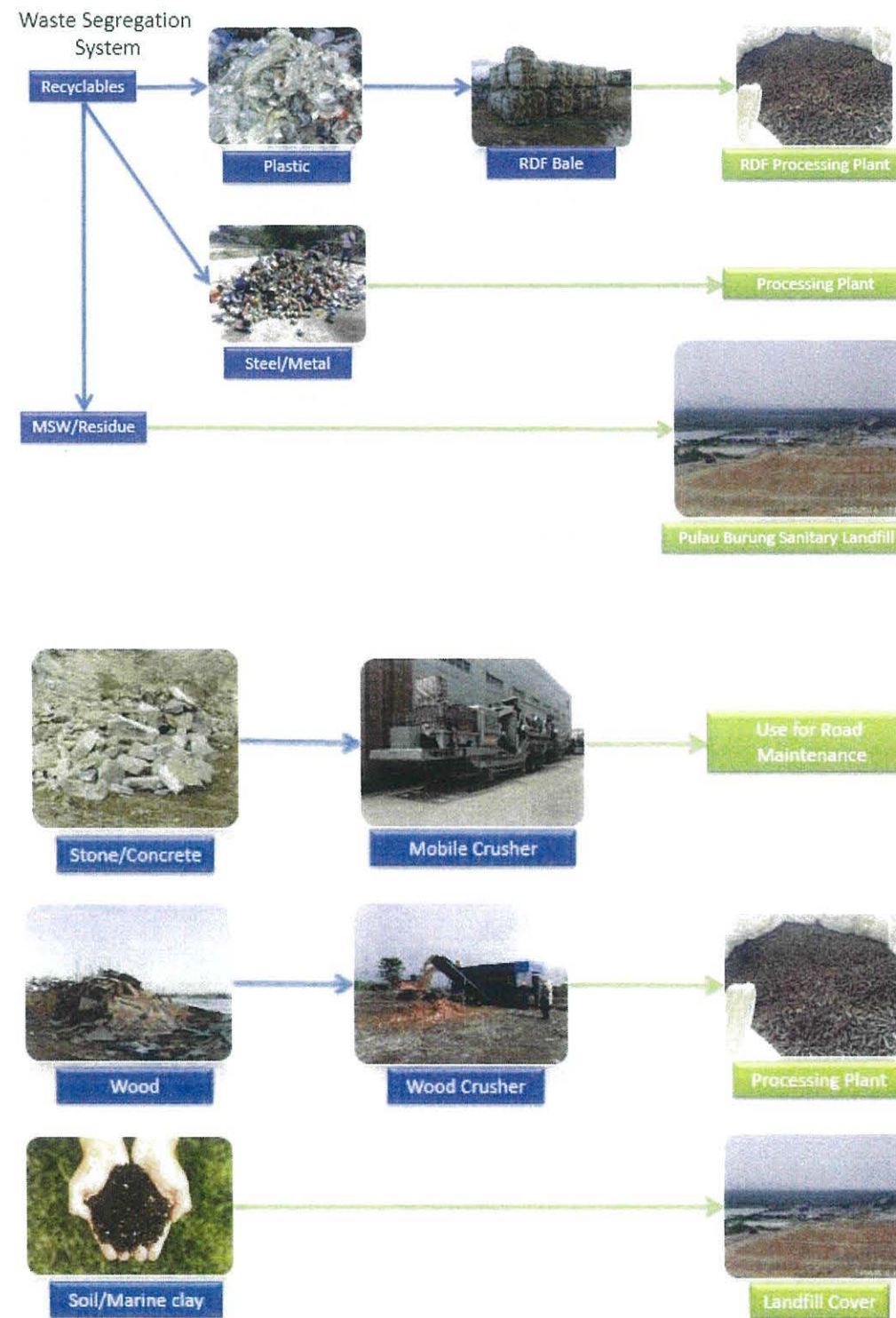


Figure 9: Process flow diagram for each waste category

4.5.4 Transportation

The residue of the mining activity which mainly consist of recovered soil and organic matters will either be used for land reclaim or is transferred to nearby landfill for final disposal.

Due to the restriction of heavy vehicle passing through the bridge during peak hours, the daily operation hours for the landfill mining and transportation of residue to Pulau Burung Sanitary Landfill is set for 12 hours maximum. A total of 80 trucks will be used to transfer the waste out from JD to the landfill.



Figure 10: Transportation of the screened waste



Figure 11: Movement and stockpiling of the reclaimed soil

Detail regarding the equipment and machinery use for the landfill mining are summarised below.

Equipment/Machinery	No. of units	Usage
Excavator	16	For excavation works and pre-sorting
Bulldozer	8	For waste scrapping
Backhoe	2	Maintaining earth drain, general works
Tipper truck	24	To transfer the soil to processing area
Mobile Crusher	8	To crush the C&D waste
Wood Crusher	8	To crush wood and green waste
Vibrating sieve	8	Segregation of waste according to size
Trommel	8	Segregation of waste according to size
Air blower	8	To channel plastic waste to metal cage
Chain conveyor	8	Transporting the processed waste from 1 machine to another
Metal cage	8	To trap the plastic waste
Horizontal baler	8	Baling the plastic waste

Table 2: Equipment and machinery for landfill mining

The table below depicts the type of waste found in JD and what they could be turned into after being processed.

No.	Type of Waste	Recovered Material	Usage
1	C&D	Crusher Run	Land Levelling, Road access
2	Organic Matter	Co-mingled Residue	Landfill Cover / Refused Derived Fuel (RDF), Landfilling
3	Plastic Waste	Mixed Plastic	RDF
4	Excavation Waste	Marine Clay	Land Levelling, Lining Material, Landfilling
5	Green & Bulk Waste	Plastics, Wood Material, Metal	RDF, Fertilizer, Recycling, Woodchip
6	Others (eg: rubber, metal)	Rubber, Ferrous, Non-ferrous Metal	RDF / Recycling

Table 3: Potential usage for the recyclable

4.6 RISK AND CONCERNS

It should be noted that many of the issues that are encountered during waste mining are similar to those met during routine waste disposal (e.g. management of storm water runoff). In the absence of regulations governing the landfill mining process, regulations dictating waste disposal and experiences from the past mining projects can be used as guidelines for addressing environmental issues during landfill mining.

4.6.1 Hazardous Waste and Special Waste Management

Management of hazardous and other special waste is a concern during mining of any landfill since the composition of the waste disposed of in old landfill is unknown. Proper management of hazardous waste is a potentially cost-intensive process and may have a significant impact on the project economics. Based on the information, minimal amount of hazardous waste materials were reported.

Technique to manage hazardous or special waste varies. First personnel involved in material excavation should be properly trained to identify hazardous or otherwise prohibited waste. This type of training should also include appropriate procedures to follow when a hazardous waste is encounter. (e.g., personnel protective equipment).

Next, when encounter the hazardous waste, it can be segregates from other waste and properly managed. Finally, the mining project will have a detail health and safety plan that includes specific provisions on how hazardous and prohibited waste will be managed and contingency procedures to follow during if such waste is encountered.

4.6.2 Gas Emission and Odour

Gas and odour emission represent potential issues both to personnel executing a mining project and potentially receptor of-site. Many landfill mining projects that were conducted during warm weather reported odour problems near the working face. The odour, however, normally confined near the working face and did not travel far.

As for gas emission, mining the landfill may result in the emission of toxic gases that may formed such as hydrogen sulphide. A mining project will include in its health and safety plan provisions to address landfill gas emission during mining. Specific elements will include monitoring components and frequency, establish of action levels and remedial procedures to follow if action levels are met or exceeded.

4.6.3 Dust and Litter

Waste excavation and screening can potentially cause the generation of dust and windblown litter. Most of the landfill mining project reported minimal dust problems as the excavated waste was in many cases moist. For Jelutong dumpsite project it is proposed to use a tanker truck to spray water around the mining area to control dust. Litter control device, portable fences or other suitable devices can be used to control dust and litter from waste mining operation.



Figure 12: Water tanker spraying water to control dust

4.6.4 Daily Cover

Application of cover can help to reduce windblown litter, odours, and disease vectors. The mining activity will be properly planned in such a way that the daily working area (active cell) is predefined. Portable cover using HDPE liner or equivalent will be applied at the end of the daily operation.



Figure 13: Use of Geomembrane/HDPE liner for daily cover

4.6.5 Health and Safety Planning

A health and safety planning is an integral part of landfill mining;

- a) Identification of key personnel, site-entry procedures and control, site characterization, personnel protective equipment and monitoring, decontamination, communication procedures, emergency medical procedures and standard operating procedures.
- b) Procedures for managing hazardous waste when encountered, including provision for work stoppage when hazardous waste was encountered and how the material was managed upon discovery.
- c) Specific listing of potential hazards, including :
 - i) Chemical compound.
 - ii) Biological hazard
 - iii) Radioactive materials
 - iv) Fire/explosive hazards
 - v) Noise
 - vi) Asbestos
 - vii) Drums
 - viii) Nuisance dust
 - ix) Confined spaces.
- d) Personal protective equipment specification for the work, which may include full-face air purifying respirators with high-efficiency particulate/organic vapour cartridges, chemical resistance boots and gloves, in addition to normal work clothes and construction gear.
- e) Relevant training from the safety agencies.

4.6.6 Storm water and Leachate Management

Mining of landfill waste will result in a change of existing grades at the site – most mining projects identified implemented a storm water management plan to minimize the contact of storm water with stockpiled or exposed waste (since storm water that contacts solid waste is considered to be leachate and must be managed as such). Leachate may also be generated by emanating from excavated waste that is wet.

Typically storm water was controlled by using diversion berms, grading the surface adjacent to the waste to have storm water flow away from the working face, or excavating waste in a given direction to minimize leachate generation. Leachate generation (e.g. from excavated waste stockpiles) was also usually controlled by using containment berms to prevent migration of leachate beyond the landfill footprint.

5.0 CONSTRUCTION AND DEMOLITION WASTE PROCESS FACILITY

5.1 INTRODUCTION

Construction and Demolition Waste Process Facility is a plant that receives, separates and prepares recyclable materials. Generally, it is also known as a Materials Recovery Facility (MRF).

The Proposed C&D Waste Process Facility will serve as a collection centre for Construction & Demolition (C&D) waste and marine clay waste in the Penang Island area. The estimated daily average capacity of the collection centre is 1,000 tonnes per day.

During the rehabilitation activity of the JD, the temporary C&D Waste Process Facility will be located within the JD itself and the facility will be shared together with the landfill mining activity. It will be in operation for a maximum of 4-year period.

The total land area required for both the landfill mining equipment and mobile C&D machinery during this 4-year period can be further defined as follows:-

Landfill mining equipment area	: 8 acres
Mobile C&D machinery area	: 2 acres
Total land area required	: 10 acres

The landfill mining area will also include loading bays for offloading of C&D waste and uploading of processed C&D waste to be disposed at either Pulau Burung Solid Waste Sanitary Landfill, an area identified on the Mainland or a designated disposal area in Penang Island.

5.2 PROPOSED SITE LOCATION

A) Temporary C&D Waste Process Facility

In order to facilitate the disposal of the mined waste at JD as well as to avoid disruption to the ongoing incoming C&D waste, we propose to construct the temporary Landfill Mining and C&D Waste Process Facility within the JD. As mentioned above, we require a total area of 10 acres. Please refer to Chapter 4.3 Method of Landfill Mining.

B) Permanent C&D Waste Process Facility & Transfer Station

As our landfill mining activities will commence from the boundary of Lebuhraya Tun Dr Lim Chong Eu seawards, we intend to relocate these temporary structures to a permanent site after the 4th year of landfill mining activities. The various stages of landfill mining is as denoted in Chapter 4.3 Method of Landfill Mining.

As the permanent C&D Waste Process Facility & Transfer Station is expected to have a lifespan of twenty (20) years, we would like to forward these two (2) options which we believe are better possibilities for consideration:-

i) Bukit Teh Site in Bukit Mertajam

We have identified a piece of private land on the Mainland at Bukit Teh, Bukit Mertajam, where it meets the 500 meter buffer zone requirement (150 meter for primary and 350 meter for secondary from the receptor). This area is a former sand mining area and as this site has been completely mined, we propose to utilise this area as the site to set-up the permanent C&D Waste Process Facility and disposal site.

The Bukit Teh Site is able to receive all of the 14 million tons of disposed C&D waste and still have room to receive more for a period of twenty (20) years. When C&D waste is disposed here, PLB will not have to take advantage of the Pulau Burung Solid Waste Sanitary Landfill Site as an alternative site for disposal. In this way, we are able to maintain the lifespan of the Phase 3 Pulau Burung Solid Waste Sanitary Landfill. Should this site be acceptable by PDC, PLB would hereby like to express our interest to be the Concessionaire Holder for the Operation and Maintenance of the New C&D Waste Disposal Site.



Figure 14: Proposed location for C&D Waste Process Facility & Disposal Site

Should this option be acceptable, we can offer the following solution to the waste generators to reduce their transport cost and carbon footprint. As we will invest in the C&D Process Equipment for landfill mining and handling of current incoming C&D Waste to JD, we can provide the mobile C&D process on-site at the various construction sites within the Penang Island to clear their C&D waste.

ii) Area for C&D Waste Disposal in Penang Island

We appreciate and understand the financial impact the Waste Generators will have should they transport the C&D Waste to the proposed new C&D waste disposal site at Bukit Teh Site.

In order to comply with the RFP Conditions, we have explored and studied the best way to source for a site within Penang Island. As land in Penang Island is scarce and as PLB would probably face a lot of public protest over on setting up of a C&D Waste Process Facility within the residential / industrial area, we propose to create a sea landfill which is accessible from Penang Island as a disposal site for C&D Waste.



Figure 15: Sea Landfill

We will bund up an area of 200 acres where we will construct a water treatment plant and a platform for 2 units of C&D Waste Process machinery. The following is the process flow:-

- i) C&D Waste is delivered to the waste processing area.
- ii) After C&D Waste is processed, it will be dumped into this bunded area.
- iii) As processed waste is dumped, the water level will increase. The excess water will be pumped into the water treatment plant to process the water.
- iv) Processed water will be pumped out to the surrounding sea.

When the sea landfill mass rises and reaches road level, this area can later be levelled and prepared for future development. This concept is similar to how Osaka Bay area was created – reclaimed land made up of landfill from waste material, sand from dredging and soil removed from construction sites.



Figure 16: Osaka Bay, Japan

5.3 C&D WASTE PROCESS FACILITY

The proposed system in the C&D waste process facility are as follows:-



Stone Crusher



Wood Crusher

6.0 INTEGRATED DEVELOPMENT CONCEPT ON REHABILITATED LAND

PLB's proposal for the development will be as follows:

The Integrated Development Concept on this Rehabilitated Land shall consist of 70% commercial content, 10% residential properties and 20% for Tourism/Public Usage.

The details of the proposed development is more clearly visualised in the following conceptual plans.

Due to the location of this site which is fronting the sea, the ideal development to be carried out here are those of commercial value as well as able to attract tourism to the beautiful state of Penang.

In order to promote tourism, we propose the following iconic features:-

- **Park in the Sky**
- **Seafront Promenade and Bicycle Track**
- **Canal Bridge and 'Pinang' Riverfront Promenade**
- **Sky Cab Station and Penang State Administration Centre**

With this large scale development, we have also considered the welfare of the future residents by proposing:-

- **Medical Centre**
- **International School**

With our **Babylonian concept** that surrounds the Park In The Sky, one is able to appreciate the skyline of Penang from anywhere within this development. The highest point of this development is located near the Lebuhraya Tun Dr Lim Chong Eu and taper gradually with the lowest point fronting the Seafront Promenade.

7.0 IMPLEMENTATION TIME SCHEDULE & PAYMENT PROPOSAL

7.1 IMPLEMENTATION TIME SCHEDULE

The Implementation Time Schedule for the overall Rehabilitation and Development Project on the Reclaimed Land is as below including the commencement, duration and completion for each stage of activity.

Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1 Financing Arrangement & Procure Of Equipments, Prelim site assessment & EIA submission															
2 Rehab. Land Mining, Earthwork etc. plus Temporary C&D waste operation															
3 Identified New Disposal and Transfer Station Site															
4 Property Development Activities:															
(a) Plan submission and approval															
(b) Phase A1 (Include RC, Bridge on Canal River, Sky Cab and Penang State Admin Centre)															
Phase A2															
Phase B1															
Phase B2 (Include Affordable Houses)															
Phase C															
Phase D (Include Park In The Sky, Promenade for Public and Bicycle Track)															

7.2 SCHEDULE OF PAYMENT PROPOSAL

Though the RFP has requested for a Sale Price, due to the nature of the needs of this rehabilitation project and taking into consideration the waiting time for development on rehabilitated landfill site, PLB's proposal is formulated on a different structure instead of the outright Sale Price as required under the RFP.

PLB's offer consists of:-

(a) Rehabilitation of JD at PLB's own cost, estimated to be RM1.05 billion. The rehabilitated land which has negative value as a dumpsite is expected to appreciate in the near future. As the rehabilitation cost is so high, PLB requests for the transfer of ownership of the Rehabilitated Land to PLB.

(b) Tourist attraction of Penang will be built and developed by PLB and surrendered to PDC/State at no cost:-

	Value (RM'million)
(i) Park In The Sky	288
(ii) Seafront Promenade & Bicycle Track	32
(iii) Canal Bridge & 'Pinang' Riverfront Promenade	32
(iv) Sky Cab Station and Penang State Administration Centre	205
Total (RM'million)	557

(c) Management Fees to be paid to PDC i.e. 2.5 % of the total GDV is estimated at RM246 million.

(d) The Reserve Price for 84 acres is RM1.85 billion which can be derived as follows:-

i) Rehabilitation cost of RM1.05 billion incurred is equivalent to RM287 per sq ft.

[This is more than the RFP Tender Price of RM240 per sq ft]

ii) Total value for In-kind items to be surrendered at RM557 million is equivalent to RM152 per sq ft.

iii) Management Fee

Schedule of Payment Proposal

Stage/Items	Value (RM' million)	Time Frame
a) Tourism / Public Utilities	557	Year 8 & 15
(i) Park in the Sky		
(ii) Seafront Promenade & Bicycle Track		
(iii) Canal Bridge & 'Pinang' Riverfront Promenade		
(iv) Sky Cab Station and Penang State Administration Centre		
b) Management Fees for PDC	246	Year 5 - 15
TOTAL	803	

(e) Performance BG Submission i.e. 5.0% of overall construction costs (estimated at RM4.83 billion) where the amount payable is according to the value of the stage of yearly activity as follows:-

	RM Million
Rehabilitation Mining (Year 2 to 6)	1,053
Development (Year 5 to 15)	3,774
Total	4,827

Performance BG based on 5% of yearly activity value which is to be determined.

7.3 PROJECT INFORMATION, COST & VALUE

Estimated Capital Investment Value

	(RM)'million
(1) Rehab / Land Mining etc	1,053
(2) CAPEX – Landfill mining	68
(3) CAPEX – MRF For C&D waste process facility	8
	<u>1,129</u>

Gross Development Value, Cost and Profit

	PHASE I (RM'million)
Gross Development Value	9,276
Gross Development Cost	7,195
Gross Profit	2,081

7.4 IMPACT / RETURNS TO PENANG STATE GOVERNMENT & PDC

Firstly, the rehabilitation exercise on the existing dumpsite will change the surrounding area into a livelier and vibrant area.

The 15 year long project also will greatly contribute in creation of jobs and indirectly allowing for greater creation of wealth through tax returns from direct and foreign investments in the development project.

The Park in the Sky, a unique architecture green park, 30 metres above ground, has a jogging & cycling track as well as viewing galleries.

7.5 COST BENEFIT ANALYSIS FOR PENANG STATE AND END PURCHASERS

Basically, there is absolutely no cost incurred by the State, rather the State (including the end-purchasers) will greatly benefit from the tourism and public utilities developed.

7.6 DETAILED DEVELOPMENT DATA COMPRISING PLOT RATIO

DEVELOPMENT DATA	
SITE ACREAGE	
84 ACRES = 339,936 S.M./3,659,040 S.F.	
PERMISSIBLE AREA FOR PLOT RATIO 1: 5 = 84ACRES X 5 = 420 ACRES = 1,699,680 S.M./18,295,200 S.F.	
PROPOSED MIXED DEVELOPMENT OF:-	
1. PERCENTAGE ALLOCATE FOR COMMERCIAL	= 237,955 S.M./2,561,328 S.F.(70.2%)
2. PERCENTAGE ALLOCATE FOR RESIDENTIAL	= 68,532 S.M./ 737,672 S.F.(9.8%)
3. PERCENTAGE ALLOCATE FOR TOURISM	= 33,451 S.M./ 360,063 S.F.(20.0%)

7.7 OUR CONSULTANTS

Concept Architect: Moonwork Archi Sdn Bhd

With our many years of experience in the construction, property development and waste management industries, PLB has a panel of experienced consultants. Should PLB be successfully awarded, we will tap their strengths for the various aspects of the JD rehabilitation and development to ensure the safe rehabilitation and development proposal becomes a reality.

7.8 PROPOSED ENGAGEMENT OF PDC AND/OR ITS SUBSIDIARIES

With regards to the proposed engagement of PDC and/or its subsidiaries, PLB welcomes all support and possible future cooperation with PDC upon the successful award of this RFP to PLB, based on mutually agreed terms.

7.9 PROJECTED PRO FORMA INCOME & EXPENDITURE, CASH FLOW STATEMENT AND ASSUMPTIONS

The Projected Pro Forma Income & Expenditure Statement, Cash Flow Statement and Assumptions taken are enclosed herewith.

PRO FORMA CASH FLOW STATEMENT

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Total
Cash Inflow																	
Progress billings	-	-	-	-	155,829,368	718,325,055	973,502,486	1,536,981,634	788,346,718	868,931,464	699,954,929	678,495,786	591,498,918	1,754,077,643	417,101,500	95,438,000	9,276,483,500
Cash Outflow																	
Development Cost	76,823,714	227,554,681	242,810,042	626,674,210	655,205,754	794,696,154	688,027,380	923,905,822	261,890,555	511,247,633	257,944,063	398,143,882	411,140,716	976,070,123	219,691,150	-	7,271,825,878
Taxation	-	-	-	-	9,541,177	39,063,203	54,667,615	90,752,305	31,694,131	67,924,687	42,109,554	50,727,258	28,698,373	102,728,122	-	-	517,906,425
Net Cashflow	(76,823,714)	(227,554,681)	(242,810,042)	(626,674,210)	(508,917,565)	(115,434,303)	230,807,491	(522,333,508)	494,762,032	289,759,145	399,901,311	229,624,646	151,659,830	675,279,399	197,410,350	95,438,000	1,486,751,197
Balance b/f	-	(76,823,714)	(304,378,396)	(547,188,438)	(1,173,862,648)	(1,682,780,211)	(1,798,214,513)	(1,567,407,023)	(1,045,083,515)	(550,321,483)	(260,562,338)	139,338,973	368,963,619	520,623,449	1,195,902,847	1,393,313,197	1,486,751,197
Balance e/f	(76,823,714)	(304,378,396)	(547,188,438)	(1,173,862,648)	(1,682,780,211)	(1,798,214,513)	(1,567,407,023)	(1,045,083,515)	(550,321,483)	(260,562,338)	139,338,973	368,963,619	520,623,449	1,195,902,847	1,393,313,197	1,486,751,197	1,486,751,197

PRO FORMA INCOME STATEMENT AND EXPENDITURE

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Total
Revenue	-	-	-	-	-	197,459,582	808,433,178	1,084,392,339	1,695,605,400	460,615,878	999,176,204	571,958,163	784,391,837	551,434,776	1,977,804,143	145,152,000	9,276,483,500
Cost of Good Sold	-	-	-	-	-	159,294,875	652,180,365	865,721,878	1,332,596,181	333,839,353	727,477,457	403,519,946	581,482,804	416,108,707	1,566,951,657	155,828,940	7,195,002,164
Gross Profit	-	-	-	-	-	38,164,707	156,252,814	218,670,461	363,009,219	126,776,524	271,698,747	168,438,217	202,909,033	135,326,068	410,912,486	(10,676,940)	2,081,481,336
Taxation	-	-	-	-	-	9,541,177	39,063,203	54,667,615	90,752,305	31,694,131	67,924,687	42,109,554	50,727,258	28,698,373	102,728,122	-	517,906,425
Profit Before Depreciation After Tax	-	-	-	-	-	28,623,530	117,189,610	164,002,846	272,256,914	95,082,393	203,774,060	126,328,663	152,181,775	106,627,696	308,184,365	(10,676,940)	1,563,574,912

Assumptions for Property Development

In proposing the development concept, PLB has made some assumptions for the conceptual plan to work:-

1. Affordable Housing Scheme - the Penang State Government to waive the requirement for name list
2. The plot ratio for the development is proposed at 1:5 (commercial) and 87 units per acre (residential)
3. There are no squatters on the Rehabilitated Land
4. All premium or contribution payable for any alienation or reclamation land is waived by the relevant Authorities.
5. All Infra Improvement Contribution is to be waived.

A) Feasibility Study

	Parcel A1	Parcel A2	Parcel B1	Parcel B2	Parcel C	Parcel D
Total Gross Development Value (RM)	2,379,600,000	813,298,500	1,927,170,000	931,120,000	2,922,895,000	302,400,000
Total Gross Development Costs (RM)	(1,895,229,995)	(683,229,759)	(1,408,291,627)	(640,115,853)	(2,288,264,527)	(281,867,422)
Gross Profit (RM)	484,370,005	130,068,741	518,878,373	291,004,147	634,630,473	20,532,578
Return of Revenue (%)	20.44%	15.99%	26.92%	31.25%	21.71%	6.79%
(b) Construction Period	36 months	36 months	36 months	36 months	36 months	36 months

(c) CCC on 46th month

(B) Type of Development

Type	Parcel A1 Unit	Parcel A2 Floor	Parcel B1 Unit	Parcel B2 Unit	Parcel C Unit	Parcel D Unit	Total Unit/floor
374 units 3 Storey Shops 20' x 70'	165	-	177	32	-	-	374
90 units 2 storey Heritage Look Shop	-	-	-	-	-	90	90
3000 units Office Tower	3,000	-	-	-	-	-	3,000
15 Storey office tower	-	15	-	-	-	-	15
1200 units Servo Tower	-	-	1,200	-	-	-	1,200
154 units Affordable House	-	-	-	154	-	-	154
1448 units Condo	-	-	-	458	990	-	1,448
Shopping Plaza	-	-	-	-	1	-	1
Hotel	-	-	-	-	1	-	1
Total Unit	3,165	15	1,377	644	992	90	6,283

(C) Sales & Completion Schedule

	% Sales	% Completion
Year 1	27%	32%
Year 2	54%	58%
Year 3	91%	75%
Year 4	100%	100%

8.0 SUMMARY OF OFFER

PLB's proposal is formulated on a different structure instead of the outright

Sale Price as required under this RFP.

Please refer to item 7.2 of PLB's proposal for further details.

JELUTONG LANDFILL DUMP SITE

Phase	Development Component	Acreage/Built-Up (sq ft)	Development Height / No of Storeys	Gross Development Cost, RM	Gross Development Value, RM	Implementation Month/Year	Expected Completion Month/Year
A 1	135 units Shops 20' x 70'	4,200 pu	27	1,893,229,995	2,379,600,000	Year 5	Year 8
	30 units Riverfront shops 20' x 70'	4,200 pu					
	3000 units Sovo Tower	1,000 pu					
	Sky Cab Station & Penang State Admin Centre	879,215	12				
	Canal Bridge and 'Pinang' Riverfront Promenade	-	-				
A2	700 units Office Tower	77,457 pf	19	683,229,739	813,298,500	Year 5	Year 8
B1	1200 units Sovo Tower	1,500 pu	25	1,408,294,627	1,927,170,000	Year 7	Year 10
	135 units shops 20' x 70'	4,200 pu					
	42 units Riverfront shops 20' x 70'	4,200 pu					
B2	31 units affordable houses	750 pu	25	640,115,853	931,120,000	Year 9	Year 12
	92 units affordable houses	850 pu					
	31 units affordable houses	900 pu					
	458 units condos	1,580 pu					
	32 units shops 20' x 70'	4,200 pu					
C	Shopping Plaza	1,841,270	25	2,288,264,527	2,922,895,000	Year 11	Year 14
	Hotel	367,100					
	990 units condos	1,500 pu					
D	90 units Heritage Look Shops	2,800 pu	2	281,867,422	302,400,000	Year 13	Year 15
	Park In The Sky	174,240	7				
	Bicycle Track & Seafront Promenade	119,790	-				
TOTAL				7,195,002,163	9,276,483,500		





PROPOSED ACREAGE FOR THIS PLOT= 23.195 AC/93,866.83 S.M./1,010,374 S.F.
BY USING PLOT RATIO 1 : 5, ALLOWABLE AREA = 23.195 X 5 = 115.975 AC/469,334.17S.M./5,051,871S.F.

-PROPOSED SOVO + COMMERCIAL SHOPLOT
-3 STOREY COMMERCIAL SHOPLOT WITH BUILT-UP 23,432S.M./FLOOR(TOTAL 70,296S.M.)
-BY ASSUME 30% FOR CORRIDOR+SERVICES, PROPOSED 20 STOREY 3,000 UNIT 1,000 S.F. SOVO WITH BUILT-UP 19,951.9 S.M./FLOOR(TOTAL 399,038 S.M.)
WITH 4 STOREY CARPARKS BELOW(APPROX. 8,400 CARPARKS)

PROPOSED ACREAGE FOR THIS PLOT= 5.335 AC/21,589.98 S.M./232,392.6 S.F.
BY USING PLOT RATIO 1 : 5, ALLOWABLE AREA = 5.335 X 5 = 26.675 AC/107,949.9S.M./1,161,963S.F.

-PROPOSED PREMIUM OFFICE BLOCK
-BY ASSUME 30% FOR CORRIDOR+SERVICES, PROPOSED 15 STOREY OFFICE WITH BUILT-UP 7,196.6 S.M./FLOOR(TOTAL 107,949.9 S.M.)
WITH 4 STOREY CARPARKS BELOW(APPROX. 2,000 CARPARKS)

PROPOSED ACREAGE FOR THIS PLOT= 17.535 AC/70,961.63 S.M./763,825 S.F.
BY USING PLOT RATIO 1 : 5, ALLOWABLE AREA = 17.535 X 5 = 87.675 AC/354,808.14S.M./3,819,123S.F.

-PROPOSED SOVO + COMMERCIAL SHOPLOT
-3 STOREY COMMERCIAL SHOPLOT WITH BUILT-UP 38,421S.M./FLOOR(TOTAL 115,263S.M.)
-BY ASSUME 30% FOR CORRIDOR+SERVICES,
PROPOSED 20 STOREY 1,200 UNIT 1,500 S.F. SOVO WITH BUILT-UP 11,977.26 S.M./FLOOR(TOTAL 239,545.14 S.M.)
WITH 2 STOREY CARPARKS BELOW(APPROX. 4,500 CARPARKS)

PROPOSED ACREAGE FOR THIS PLOT= 11.825 AC/47,854 S.M./515,096 S.F.
BY USING PLOT RATIO 1 : 5, ALLOWABLE AREA = 11.825 X 5 = 59.125 AC/239,270.39S.M./2,575,485S.F.

-PROPOSED SHOPPING MALL + HOTEL + LUXURY SOVO
-5 STOREY SHOPPING MALL WITH BUILT-UP 34,212S.M./FLOOR(171,060S.M.)
WITH 5 STOREY CARPARKS(APPROX. 10,000 CARPARKS)
-BY ASSUME 50% FOR CORRIDOR+SERVICES+FACILITIES, PROPOSED 10 STOREY 750 UNIT 250 S.F. HOTEL ROOMS WITH BUILT-UP 3,410.5 S.M./FLOOR(TOTAL 34,105.2 S.M.)
* EXTRA AREA FROM HOTEL = 34,105.2S.M./367,105S.F.
* EXTRA AREA FROM HERITAGE COMMERCIAL PARK = 163,751 S.M./1,762,601S.F.
* TOTAL EXTRA AREA = 34,105.2 + 163,751 = 197,856 S.M.
-BY ASSUME 30% FOR CORRIDOR+SERVICES, PROPOSED 15 STOREY 990 UNIT 1,500 S.F. CONDO WITH BUILT-UP 13,190 S.M./FLOOR(TOTAL 197,856 S.M.)

PROPOSED ACREAGE FOR THIS PLOT= 5.415 AC/21,913.7 S.M./235,877 S.F.
BY USING PLOT RATIO 1 : 5, ALLOWABLE AREA = 5.415 X 5 = 27.075 AC/109,568.64S.M./1,179,387S.F.

-PROPOSED SKY CAB STATION
-10 STOREY SKY CAB STATION + COMMERCIAL WITH BUILT-UP 10,957S.M./FLOOR(TOTAL 109,568.64S.M.)
WITH 5 STOREY CARPARKS(APPROX. 3,500 CARPARKS)

PROPOSED ACREAGE FOR THIS PLOT= 9.25 AC/37,433.42 S.M./402,930 S.F.
BY USING PLOT RATIO 1 : 5, ALLOWABLE AREA = 9.25 X 5 = 46.25 AC/187,167S.M./2,014,649S.F.

-PROPOSED HERITAGE COMMERCIAL PARK
-2 STOREY COMMERCIAL SHOPLOT WITH TOTAL BUILT-UP 11,708S.M./FLOOR(TOTAL 23,416S.M.)
* EXTRA AREA TO BE ALLOCATE FOR OTHER PLOT = 187,167 - 23,416 = 163,751 S.M./1,762,601S.F.

PARK IN THE SKY - TOTAL BUILT-UP = 16,205 S.M.(4 ACRES)

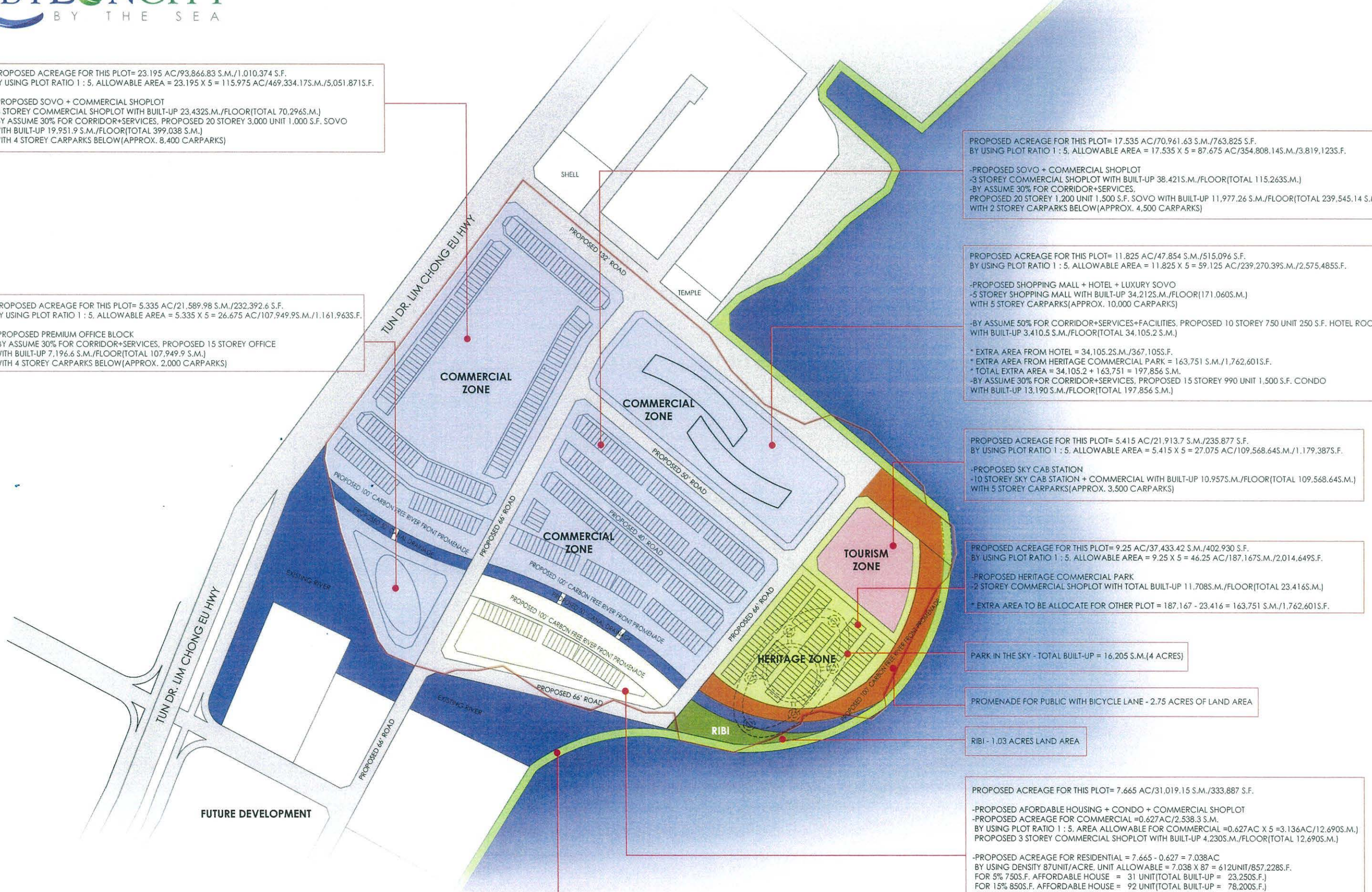
PROMENADE FOR PUBLIC WITH BICYCLE LANE - 2.75 ACRES OF LAND AREA

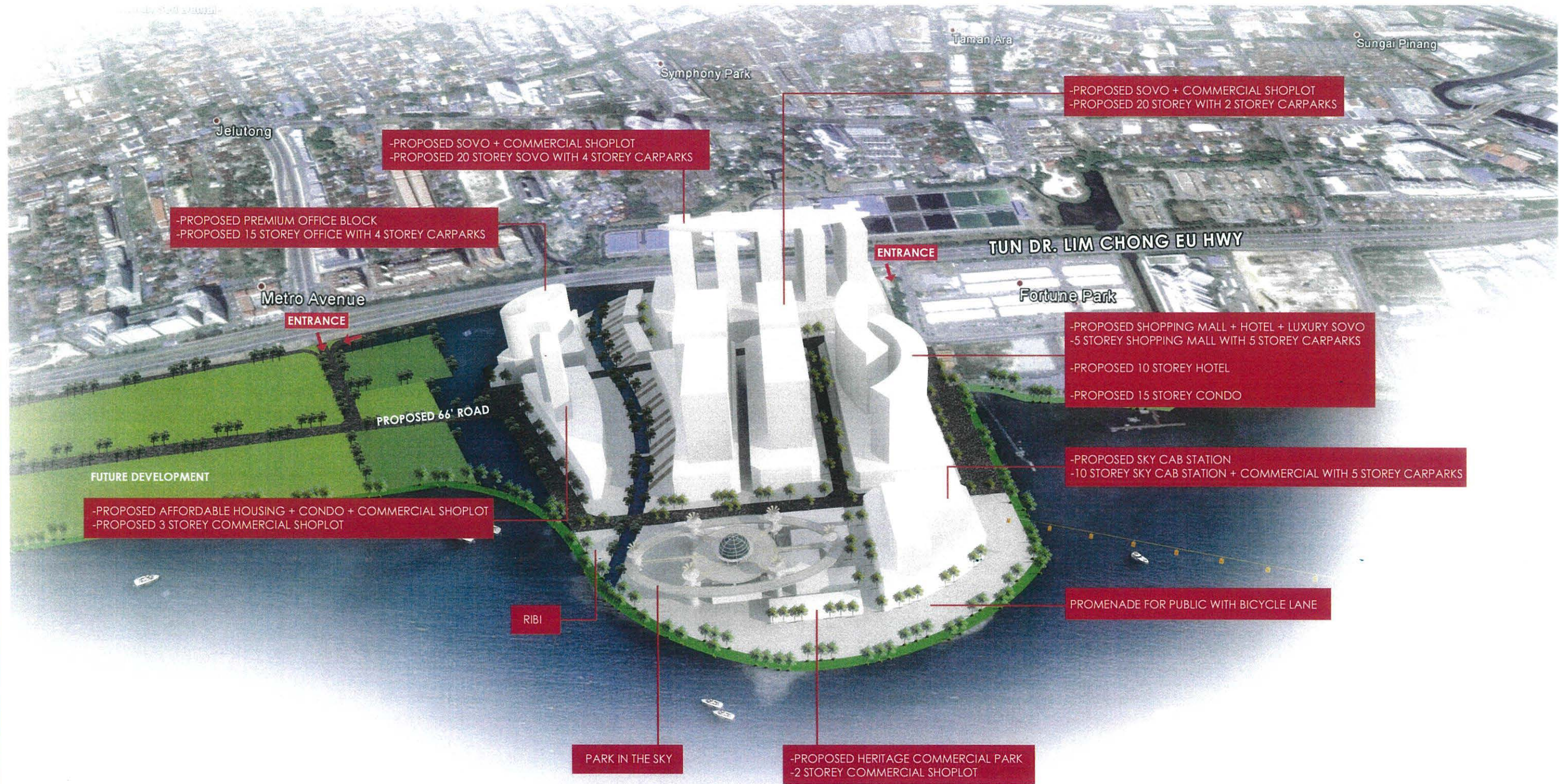
RIBI - 1.03 ACRES LAND AREA

PROPOSED ACREAGE FOR THIS PLOT= 7.665 AC/31,019.15 S.M./333,887 S.F.

-PROPOSED AFORDABLE HOUSING + CONDO + COMMERCIAL SHOPLOT
-PROPOSED ACREAGE FOR COMMERCIAL = 0.627AC/2,538.3 S.M.
BY USING PLOT RATIO 1 : 5, AREA ALLOWABLE FOR COMMERCIAL = 0.627AC X 5 = 3.136AC/12,690S.M.)
PROPOSED 3 STOREY COMMERCIAL SHOPLOT WITH BUILT-UP 4,230S.M./FLOOR(TOTAL 12,690S.M.)

-PROPOSED ACREAGE FOR RESIDENTIAL = 7.665 - 0.627 = 7.038AC
BY USING DENSITY 87UNIT/ACRE, UNIT ALLOWABLE = 7.038 X 87 = 612UNIT/857,228S.F.
FOR 5% 750S.F. AFFORDABLE HOUSE = 31 UNIT(TOTAL BUILT-UP = 23,250S.F.)
FOR 15% 850S.F. AFFORDABLE HOUSE = 92 UNIT(TOTAL BUILT-UP = 78,200S.F.)
FOR 5% 950S.F. AFFORDABLE HOUSE = 31 UNIT(TOTAL BUILT-UP = 27,900S.F.)
FOR 75% 1589 S.F. CONDOMINIUM = 458 UNIT(TOTA BUILT-UP = 727,762 S.F.)





-PROPOSED PREMIUM OFFICE BLOCK
 -PROPOSED 15 STOREY OFFICE WITH 4 STOREY CARPARKS

-PROPOSED SOVO + COMMERCIAL SHOPLOT
 -PROPOSED 20 STOREY SOVO WITH 4 STOREY CARPARKS

-PROPOSED SOVO + COMMERCIAL SHOPLOT
 -PROPOSED 20 STOREY WITH 2 STOREY CARPARKS

-PROPOSED SHOPPING MALL + HOTEL + LUXURY SOVO
 -5 STOREY SHOPPING MALL WITH 5 STOREY CARPARKS
 -PROPOSED 10 STOREY HOTEL
 -PROPOSED 15 STOREY CONDO

-PROPOSED SKY CAB STATION
 -10 STOREY SKY CAB STATION + COMMERCIAL WITH 5 STOREY CARPARKS

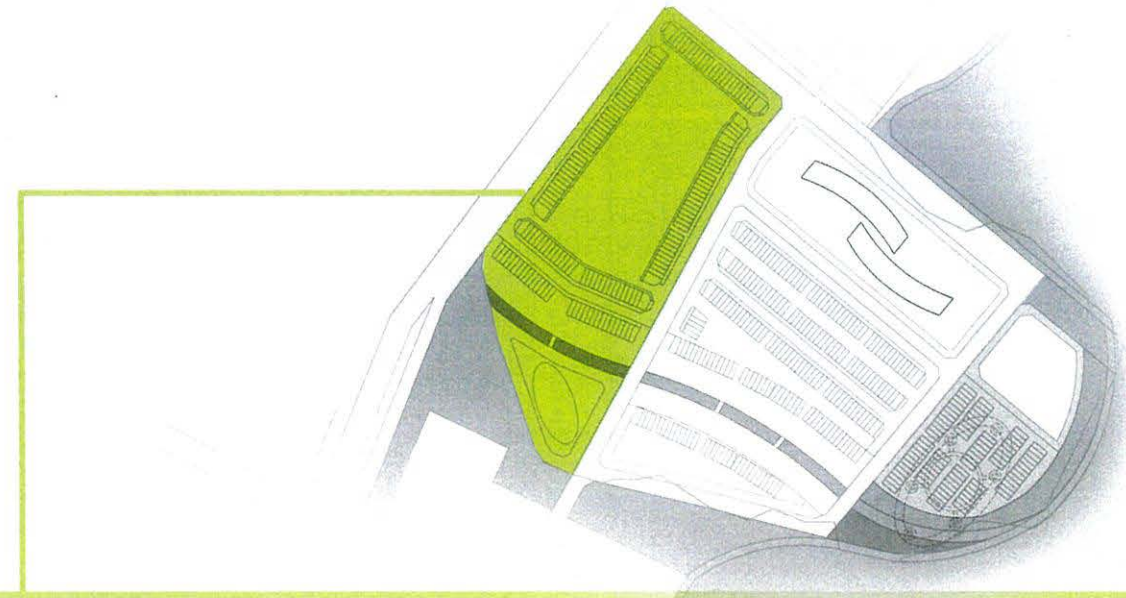
-PROPOSED AFFORDABLE HOUSING + CONDO + COMMERCIAL SHOPLOT
 -PROPOSED 3 STOREY COMMERCIAL SHOPLOT

PROMENADE FOR PUBLIC WITH BICYCLE LANE

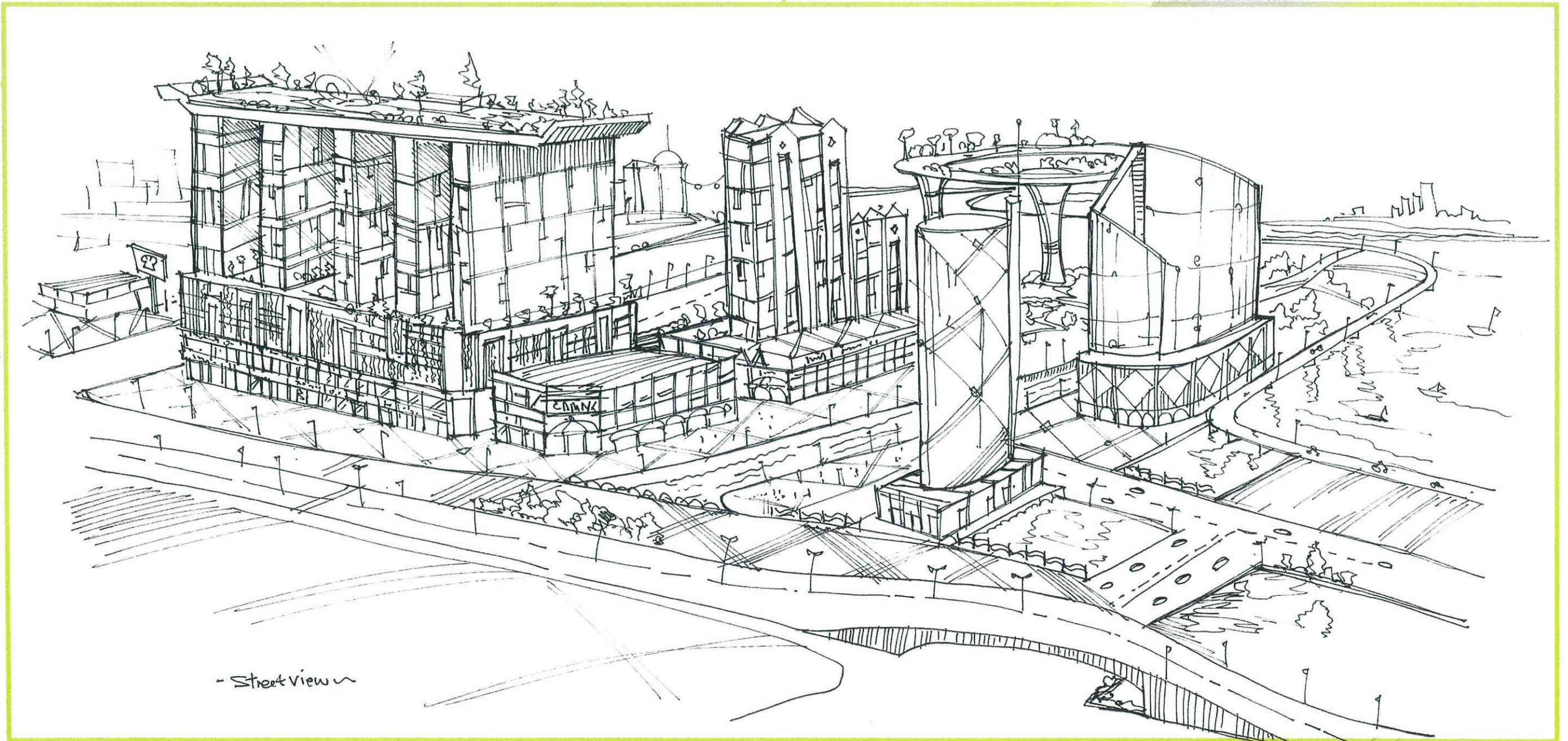
RIBI

PARK IN THE SKY

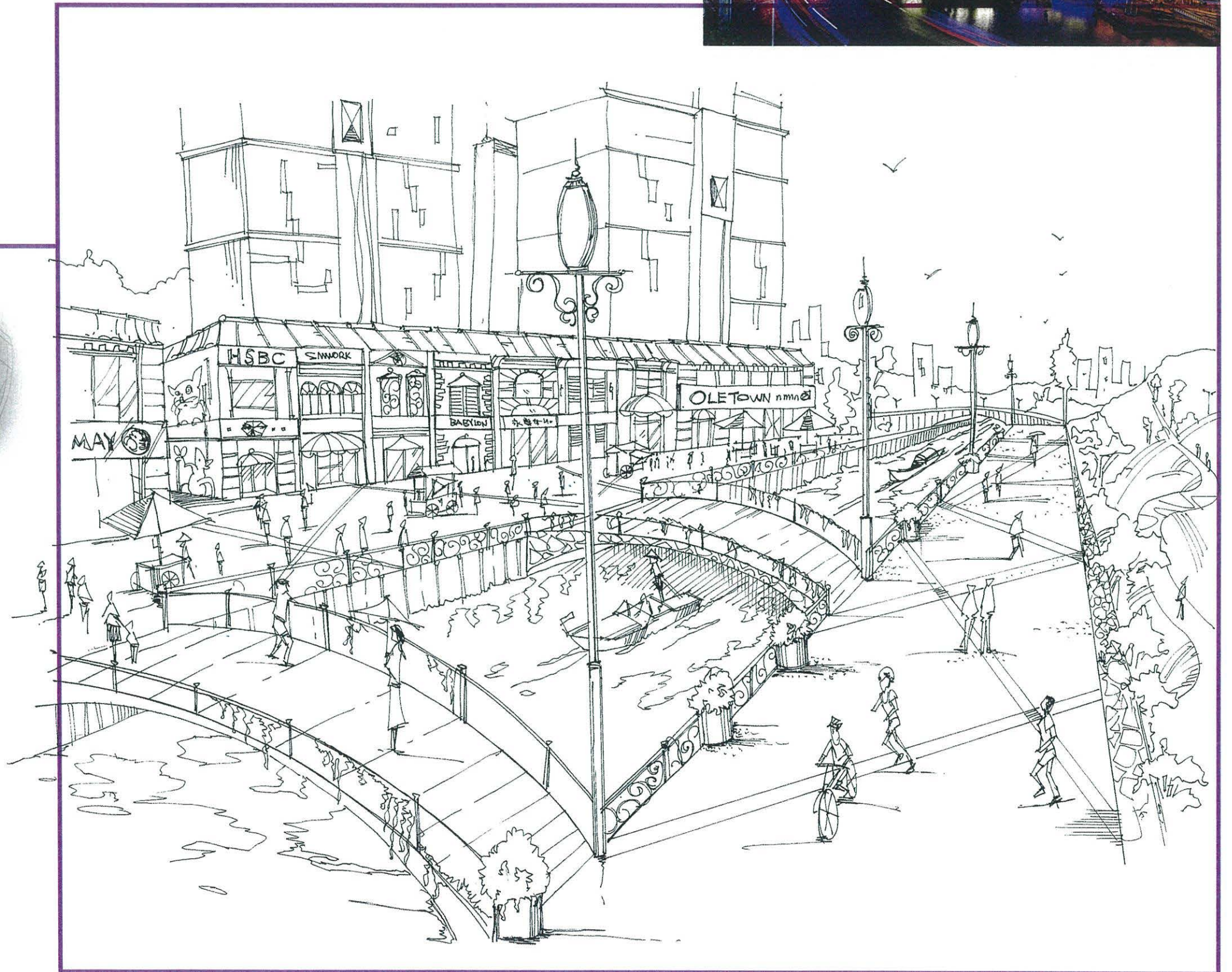
-PROPOSED HERITAGE COMMERCIAL PARK
 -2 STOREY COMMERCIAL SHOPLOT



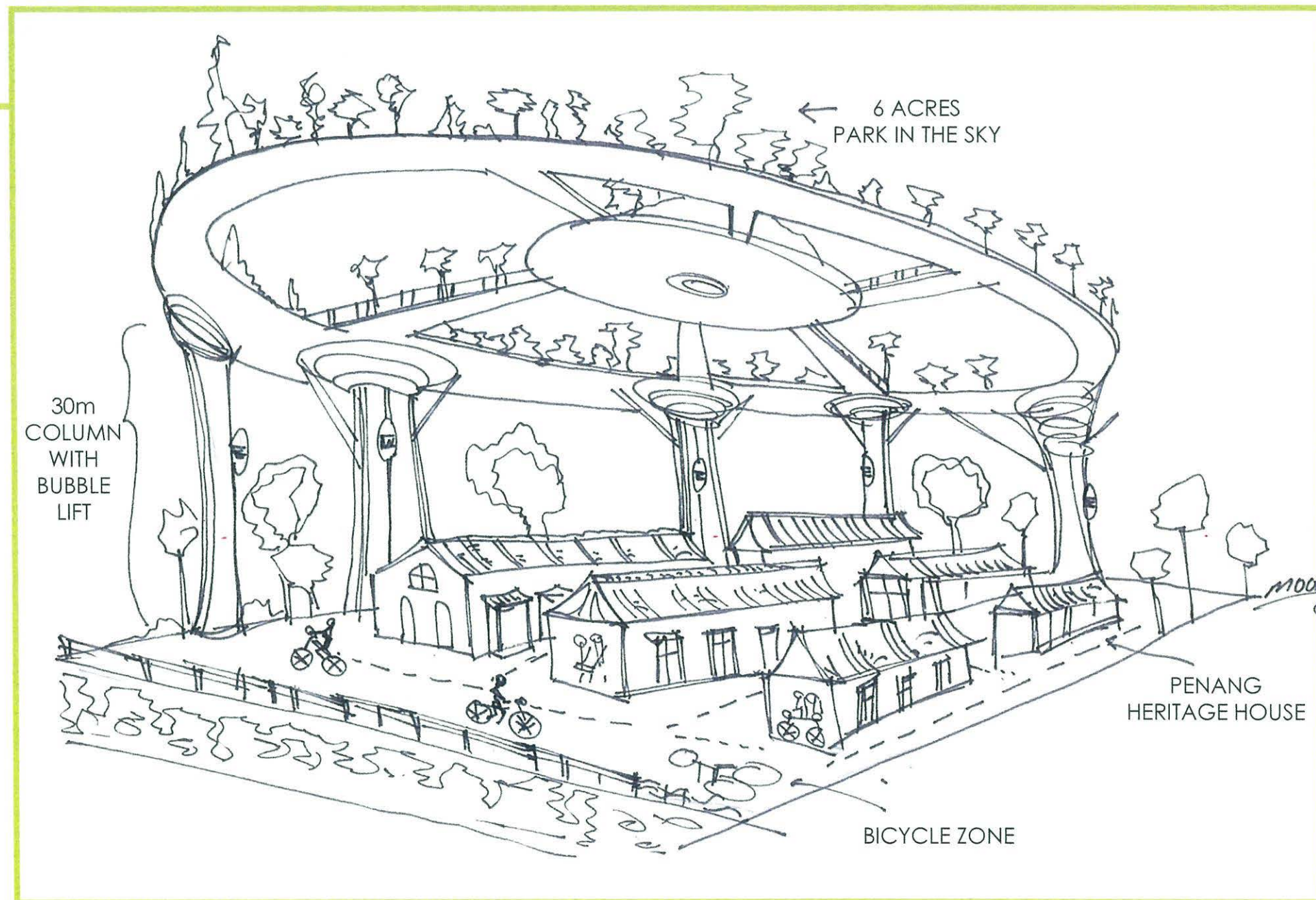
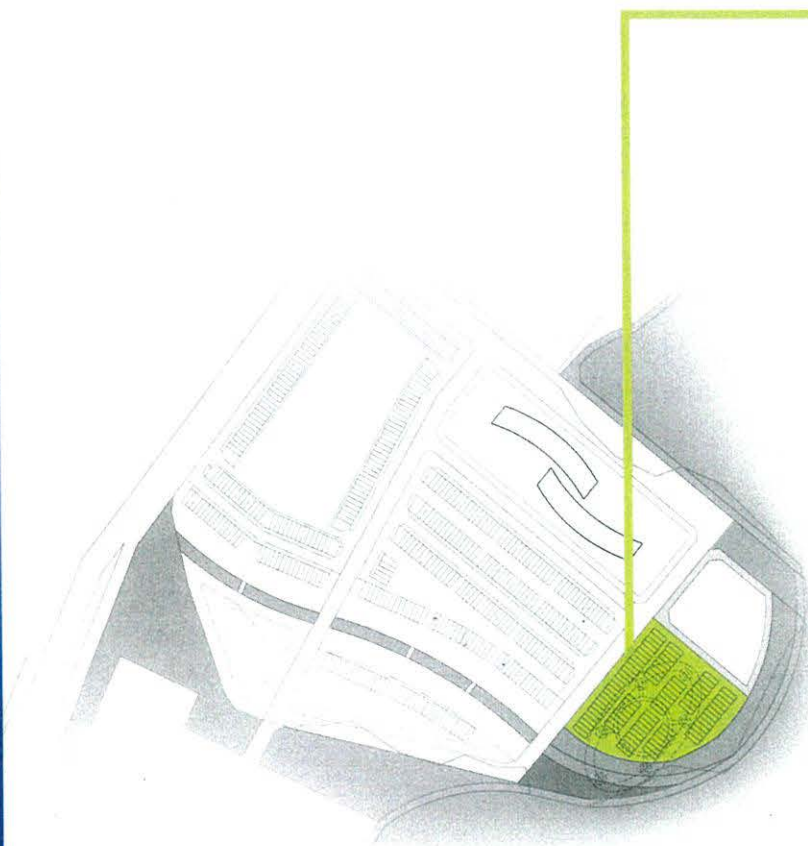
AERIAL VIEW FROM LEBUHRAYA TUN DR. LIM CHONG EU

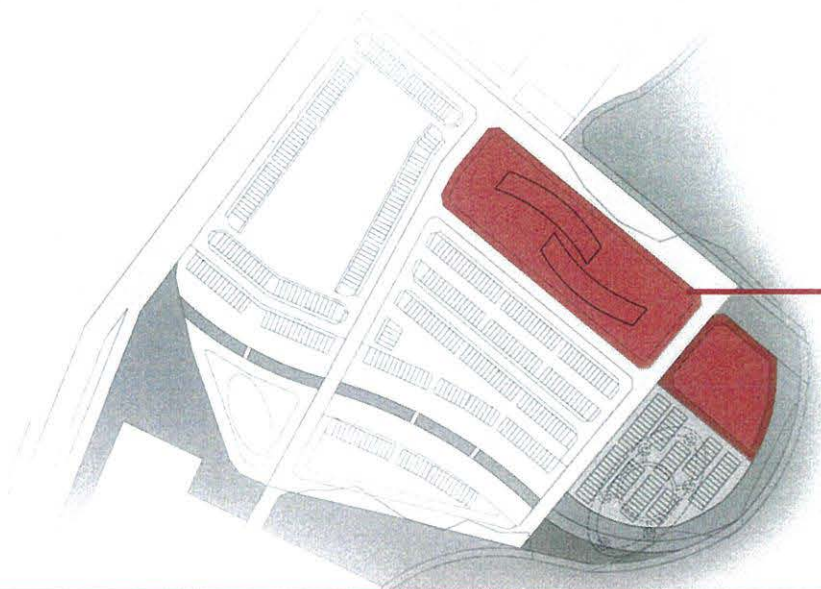


**CANAL BRIDGE &
'PINANG' RIVERFRONT PROMENADE**

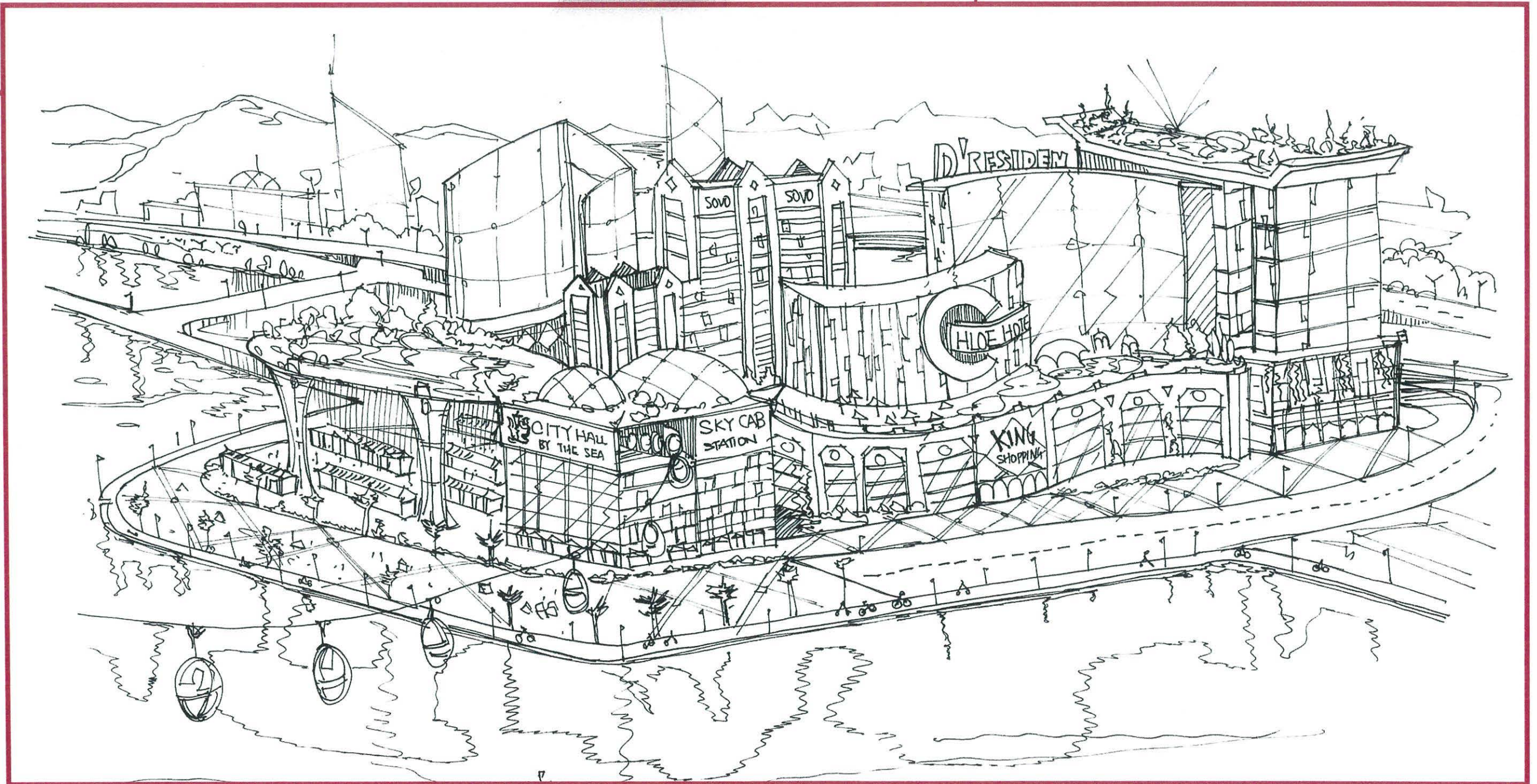


PARK IN THE SKY & PENANG 'MINIATURE' HERITAGE SHOPPING ZONE





AERIAL VIEW FROM KARPAL SINGH DRIVE



BABYLON CITY

BY THE SEA

