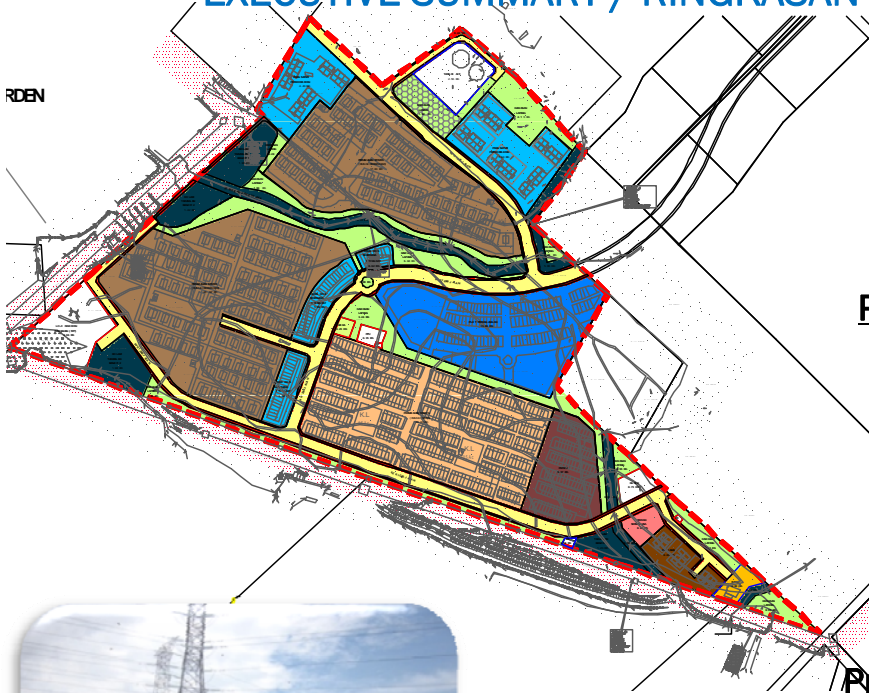




**PRELIMINARY ENVIRONMENTAL IMPACT ASSESSMENT (PEIA) FOR  
PEMBANGUNAN BERCAMPUR DI ATAS LOT 663, LOT 664, LOT 804 –  
LOT 807, LOT 1114, LOT 917 & LOT 920, MUKIM PULAI,  
DAERAH JOHOR BAHRU, JOHOR.**

**EXECUTIVE SUMMARY / RINGKASAN EKSEKUTIF**

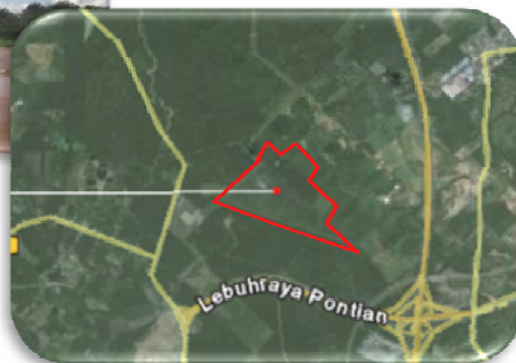


**Prepared for:**

**Firstwide Plus Sdn Bhd**  
G-03, Block 5, Danga Bay,  
Persiaran Abu Bakar Sultan  
80200, Johor Bahru, Johor  
Tel : 07 - 235 7888  
Faks : 07 - 235 7800

**Prepared by:**

**Perunding UEP Sdn. Bhd.**  
No. 36A, Jalan Impian Emas 7,  
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Johor Darul Ta'zim  
Tel: 07 - 557 3987  
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## EXECUTIVE SUMMARY

## INTRODUCTION

**Name/Title of Project:**

The Project Described In This Report Is Preliminary Environmental Impact Assessment (PEIA) for Pembangunan Bercampur Di Atas Lot 663, Lot 664, Lot 804 – Lot 807, Lot 1114, Lot 917 & Lot 920, Mukim Pulai, Daerah Johor Bahru, Johor.

**Name & Contact Details of the Project Proponent:**

Project Proponent : Firstwide Plus Sdn Bhd  
 Address : G-03, Block 5, Danga Bay, Persiaran Abu Bakar Sultan  
 80200, Johor Bahru, Malaysia  
 Telephone : 07-2357888  
 Fax : 07-2357800  
 Contact Person : 1. En Steven Chu Chee Kwang  
 2. Ir Mohd Sohimin Bin Mohd Alayedin  
 3. En. Harvey Wong Eng Wen

**Name & Contact Details of the EIA Consultant (Firm):**

EIA Consultant (Firm) : **Perunding UEP Sdn. Bhd.**  
 (Urban & Environmental Planning Consultant)  
 Address : No. 36A, Jalan Impian Emas 7,  
 Taman Impian Emas,  
 81300, Skudai, Johor  
 Telephone : 07-557 3987  
 Fax : 07-557 2987  
 Email : peruepsb@yahoo.com  
 Contact Person : Abdul Halim Bin Ali Hassan  
 Register No. EIA (DOE) – (C 0137)

**Project Location**

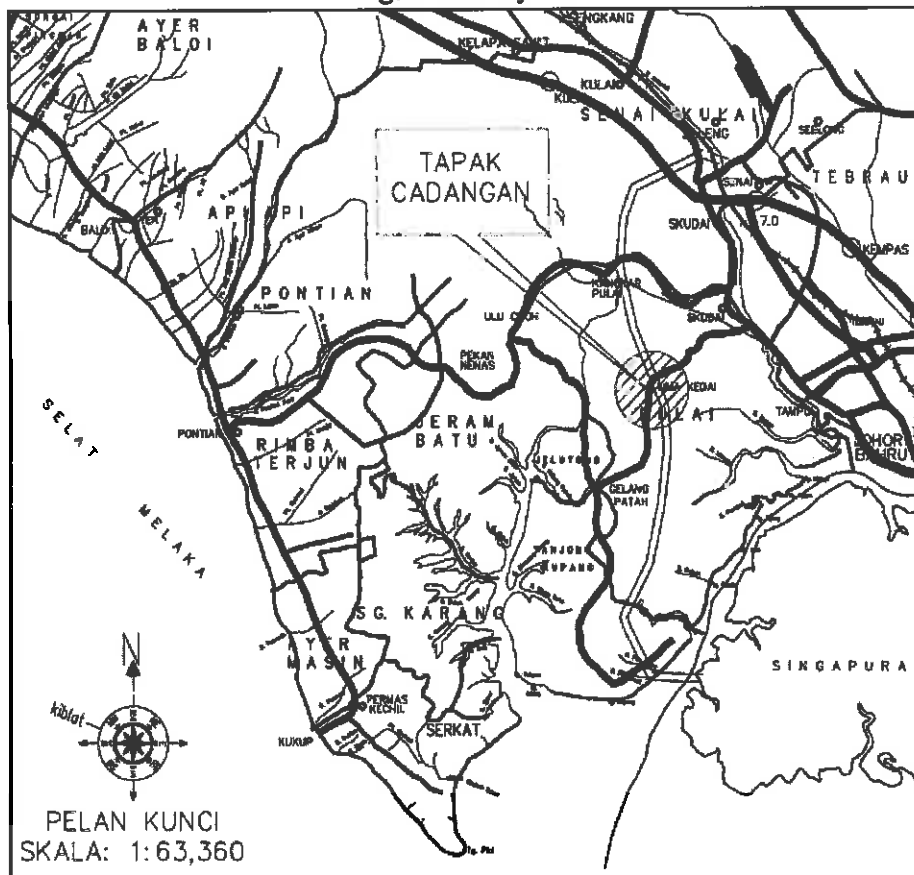
**Firstwide Plus Sdn Bhd** act as project proponent for this project and plan to develop mixed development (housing and commercial) with other facilities and infrastructure. This development will cover an area **160.18 acres or 64.82 hectares** which located on Lot 663, Lot 664, Lot 804 – Lot 807, Lot 1114, Lot 917 & Lot 920, Mukim Pulai, Johor Bahru. Existing land use of proposed site consists of oil palm plantation, shrub, bushes, secondary forest and including part of Bukit Resam. Generally, this proposed site is surrounded by Setia Eco Garden (north west) and Nusa Bayu residential (south) of the proposed site. Other than that, the existing development have been identified such as industrial, commercial, housing, school, infrastructure and utilities where located at surrounding of proposed development. The coordinates for this development lies between approximately N 1° 29' 9.09" E 103° 35' 20.84", N 1° 29' 30.55' E 103° 35' 39.32", N 1° 29' 18.30" E 103° 35' 52.33" and N 1° 28' 53.45" E 103° 36' 10.19". The proposed site within the jurisdiction of the Majlis Perbandaran Johor Bahru Tengah (MPJBT).

The following table present **Table 1.0** below explains concerning situation relating proposed site for this proposed development.

Table 1.0: Site Particulars

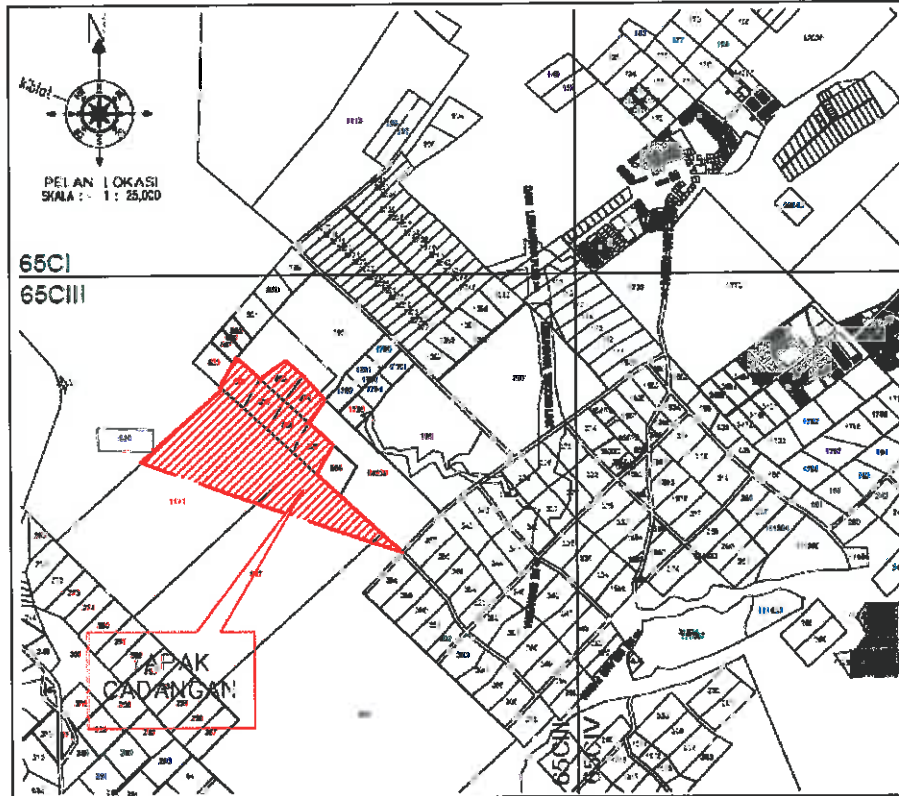
| No. | Items                  | Description   |
|-----|------------------------|---|
| 1.  | Developer & Land Owner | Firstwide Plus Sdn Bhd<br>G-03, Block 5, Danga Bay, Persiaran Abu Bakar Sultan<br>80200, Johor Bahru, Malaysia<br>Tel: 07-2357888 Fax: 07-2357800 |
| 2.  | Contact Person         | 1. En Steven Chu Chee Kwang<br>2. Ir Mohd Sohimin Bin Mohd Alayedini<br>3. En. Harvey Wong Eng Wen  |
| 3.  | Area                   | 160.18 acres or 64.82 hectares  |
| 4.  | Mukim                  | Pulai   |
| 5.  | District               | Johor Bahru   |
| 6.  | State                  | Johor   |
| 7.  | Longitude & Latitude   | N 1° 29' 9.09" E 103° 35' 20.84", N 1° 29' 30.55" E 103° 35' 39.32", N 1° 29' 18.30" E 103° 35' 52.33" and N 1° 28' 53.45" E 103° 36' 10.19       |
| 8.  | Existing Landuse       | Oil Palm Plantation, shrubs, bushes, secondary forest and part of Bukit Resam.  |
| 9.  | Zoning in RTD          | BPK 4.6: Presin Lima Kedai - proposed housing & existing and comited road network   |
| 10. | Local Authority        | Majlis Perbandaran Johor Bahru Tengah (MPJBT)   |
| 11. | Proposed Development   | Mixed Development (Housing and commercial)  |

Figure 1.0: Key Plan



Source: Extrated from Drawing No.MRC/MPJBT/FPSB/KM/2013 (01) by Mega Rancang, 2013

Figure 2.0: Location Plan



Source: Extrated from Drawing No.MRC/MPJBT/FPSB/KM/2013(01) by Mega Rancang, 2013

Figure 3.0: Location of Proposed Site



Source: Google Earth, 2013.

**PRELIMINARY SITE ASSESSMENT (PAT)**

The project proponent, **Firstwide Plus Sdn Bhd** has undertaken the project to develop mixed development that will consist of housing, low cost housing, commercial, open space and infrastructure utilities at the proposed site as per stated above. The Preliminary Site Assessment (PAT) report had submitted and approved earlier by Department of Environment Johor on 1<sup>st</sup> November 2013 to **Firstwide Plus Sdn Bhd** with (Ref. No: 1st November 2013 with reference no AS (B) J 50/011/100/608(02) (Refer Appendix B: Preliminary Site Assessment (PAT) Letter)

**ENVIRONMENTAL IMPACT ASSESSMENT (EIA)**

The proposed project is subject to the preparation of an EIA as indicated in the Schedule of Prescribed Activities quoted below:

**Item 9: Infrastructure**  
**(e) Construction of New Townships**

Source: Environmental Quality Act 1974 and Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987

**EXISTING ENVIRONMENT**

**Geology and Surface Hydrology**

The proposed project site is located at Mukim Pulai, Johor Bahru. In term of geological time scale, the proposed site is includes in **Triassic** and **quaternary class** while the sediment and metamorphic rocks were shale, mudstone, siltstone, phyllite, slate and sandstone (interbedded) and lithology are unconsolidated deposits and for soil texture, it is composed by Clay & Silt. Surface hydrology located near to proposed site is Sungai Pakgadai and will flows towards Sungai Pulai and ended in Strait of Johor.

**Climate and Meteorology**

The average total rain from the period January 2003 – May 2011 is 2,812.8 mm. The annual dominant wind speed is 6.1 ms<sup>-1</sup> according to the data supplied by Malaysian Meteorological Services (MMS). Climate and meteorological data is obtained from the Senai Meteorological Station.

**Environmental Quality**

**Table 2.0: Environmental Quality Station**

| Environmental Quality    | No Stations | Location Description |  | Co-ordinate                      |
|--------------------------|-------------|----------------------|--|----------------------------------|
| Water<br>(River / Drain) | 4           | W1                   | Bridge Sungai Pakgadai   | N 01° 28.737'<br>E 103° 34.905'  |
|                          |             | W2                   | Existing drain outside project boundary, beside Setia Eco Garden | N 01° 29.682'<br>E 103° 35.591'  |
|                          |             | W3                   | Existing drain at STP and TNB pump house                         | N 01° 29.546'<br>E 103° 35.358'  |
| Air                      | 3           | A1                   | In front of International School Tenby, Setia Eco Garden         | N 01° 29.577'<br>E 103° 35.465'  |
|                          |             | A2                   | Setia Eco Garden Shop Lot Office                                 | N 01° 29.531'<br>E 103° 35.301'  |
|                          |             | A3                   | Nusa Bayu Housing  | N 103° 29.163'<br>E 103° 35.361' |
| Noise                    | 4           | N1                   | In front of International School Tenby, Setia Eco Garden         | N 01° 29.577'<br>E 103° 35.465'  |
|                          |             | N2                   | Existing drain outside project boundary, beside Setia Eco Garden | N 01° 29.682'<br>E 103° 35.591'  |
|                          |             | N3                   | Setia Eco Garden Shop Lot Office                                 | N 01° 29.531'<br>E 103° 35.301'  |
|                          |             | N4                   | Nusa Bayu Housing  | N 103° 29.163'<br>E 103° 35.361' |

Source: Perunding UEP Sdn Bhd, 2013.

### i. Water Quality (River/Drain)

Two (2) stations (W1 and W2) showed the WQI as slightly polluted, while the other one stations (W3) showed the WQI fell into Polluted.

For W1 station, the high concentration of AN and low concentration of DO is may be caused by surrounding activities due to the location of Sungai Pakgadai was adjacent to workshop, fishing pond, residential and commercial activities. W2 Station was located at existing drain which near to oil palm plantation may causing the result of high concentration of AN (from pesticides) and low concentration of DO. The activities which come from residential and other nearest activities could effecting the result for AN and DO for W3 station.

Below are the WQI for water quality (river/drain) station:

**Table 3.0: River Water Quality Index (WQI)**

| Station | W1                | W2                | W3       |
|---------|-------------------|-------------------|----------|
| WQI     | 69.08             | 68.53             | 57.19    |
| Status  | Slightly Polluted | Slightly Polluted | Polluted |

### ii. Air Quality

The air quality obtained is compared against the Malaysian Air Quality Guidelines. Based on the results, the ambient air quality at all stations is good (low) which ranging from **23  $\mu\text{g}/\text{m}^3$**  until **57  $\mu\text{g}/\text{m}^3$**  for all stations and within stipulated limit of Malaysian Air Quality Guidelines for 24 hours average period.

### iii. Noise Quality

There are currently four (4) points scattered surrounding the proposed areas. Current noise reading is acceptable for urban area which range from **21.7 dB (A)** to **35.0 dB (A)**. Overall, most station level of noise was within The Planning Guidelines for Environmental Noise Limits and Control, 2004 by DOE which below than 60dBA (daytime) and 50dBA (night time). Generally, the acoustic environment is considered good and within tolerable limit.

### Biological – Ecological Environment

Existing land use of proposed site consists of oil palm plantation, shrub, bushes, secondary forest and including a some area of Bukit Resam. All flora and fauna findings were recorded during site visit and environmental sampling and common for habitat in oil palm and bushes such as shrub, squirrels, insects and others.

## PROJECT CONCEPT

In general, proposed project concept involves of mixed development (housing and commercial) cover an area of **160.18 acres or 64.82 hectares**. This proposed development consist 75.00 acres (46.82%) of housing development including low cost and another 25.93 acres (16.19%) is for commercial development. **Figure 4.0** and **Table 4.0**.

## PROJECT COMPONENT

a) **Housing Development (Housing & Low Cost Housing) – 75.00 acres (46.82%)**

The project proponent plan to develop housing development including low cost housing which cover total area of 75.00 acres (46.82%) from overall development. The proposed housing including strata housing (semi detached and terrace), RMMJ, Johor Community (Package A & B) and medium cost shop with overall total 900 unit. It shows that this development will be the main residential within Mukim Pulau and Johor Bahru area.

b) **Commercial Development – 25.93 acre (16.19%)**

The commercial component includes commercial plot (13.86 acres) and service apartment (12.07 acres). The total area for commercial development is 25.93 acres (16.19%) including above type of commercial from overall development.

c) **Open Space – 18.85 acres (11.77%)**

For open space cover an area of 18.85 acres (11.77%) for this proposed development. Open space is to provide the comfort and balance in term of green development by applying the softscape and hardscape.

d) **Facilities Development – 2.64 acres (1.65%)**

The facilities such as kindergarten, multipurpose hall, prayer room and clinic cover an area of 2.64 acres (1.645) from overall development.

e) **Infrastructure & Utilities Development**

Total number of facilities development involves an area of 37.76 acres (23.57%). Provision of infrastructure is comprises of:

- Water tank
- Sewage Treatment Plan
- Drainage Reserve
- Detention Pond
- Road Reserve
- PMU
- PPU



Table 4.0: Component Development

| Komponen Pembangunan                                       | Plot      | Unit       | %             | Ekar          | %             |
|--|-----------|------------|---------------|---------------|---------------|
| <b>PERUMAHAN</b>   |           |            |               |               |               |
| Perumahan Strata Rumah Berkembar (40'x80')                 | 2         | 260        | 28.89         | 42.50         | 26.53         |
| Perumahan Strata Rumah Teres (22' x 75')                   | 1         | 280        | 31.11         | 20.90         | 13.05         |
| <b>Jumlah Kecil Perumahan Kos Biasa</b>                    | <b>3</b>  | <b>540</b> | <b>60.00</b>  | <b>63.40</b>  | <b>39.58</b>  |
| <b>PERUMAHAN KOS RENDAH</b>                                |           |            |               |               |               |
| Perumahan Mampu Milik Johor (RMMJ)                         | 1         | 180        | 20.00         | 5.37          | 3.35          |
| Perumahan Komuniti Johor (Pkj A)                           | 1         | 45         | 5.00          | 1.00          | 0.62          |
| Perumahan Komuniti Johor (Pkj B)                           | 1         | 90         | 10.00         | 1.20          | 0.75          |
| Kedai Kos Sederhana  | 3         | 45         | 5.00          | 4.03          | 2.52          |
| <b>Jumlah Kecil Perumahan Kos Rendah</b>                   | <b>6</b>  | <b>360</b> | <b>40.00</b>  | <b>11.60</b>  | <b>7.24</b>   |
| <b>Jumlah Keseluruhan Perumahan Kos Biasa + Kos Rendah</b> | <b>9</b>  | <b>900</b> | <b>100.00</b> | <b>75.00</b>  | <b>46.82</b>  |
| <b>PERDAGANGAN</b>   |           |            |               |               |               |
| Plot Perdagangan (Kompleks Perniagaan/Kedai Pejabat)       | 1         | -          | -             | 13.86         | 8.65          |
| Plot Perdagangan (Pangsapuri Perkhidmatan)                 | 2         | -          | -             | 12.07         | 7.54          |
| <b>Jumlah kecil</b>  | <b>3</b>  | <b>0</b>   | <b>-</b>      | <b>25.93</b>  | <b>16.19</b>  |
| <b>Jumlah Keseluruhan Komponen A</b>                       | <b>15</b> | <b>900</b> | <b>-</b>      | <b>100.93</b> | <b>63.01</b>  |
| <b>KAWASAN LAPANG</b>                                      |           |            |               |               |               |
| Kawasan Lapang   | 11        | -          | -             | 18.85         | 11.77         |
| <b>Jumlah</b>  | <b>11</b> | <b>0</b>   | <b>-</b>      | <b>18.85</b>  | <b>11.77</b>  |
| <b>KEMUDAHAN MASYARAKAT</b>                                |           |            |               |               |               |
| Tadika   | -         | 1          | -             | 0.25          | 0.16          |
| Dewan Serbaguna  | -         | 1          | -             | 0.86          | 0.54          |
| Surau  | -         | 1          | -             | 0.80          | 0.50          |
| Klinik   | -         | 1          | -             | 0.73          | 0.46          |
| <b>Jumlah Kecil</b>  | <b>0</b>  | <b>4</b>   | <b>-</b>      | <b>2.64</b>   | <b>1.65</b>   |
| <b>INFRASTRUKTUR &amp; UTILITI</b>                         |           |            |               |               |               |
| Pencawang Pembahagi Utama (PPU)                            | -         | 1          | -             | 0.35          | 0.22          |
| Pencawang Elektrik (55' x 50')                             | -         | 2          | -             | 0.05          | 0.03          |
| Rizab Parit Utama  | -         | -          | -             | 5.98          | 3.73          |
| Rizab Utiliti  | -         | -          | -             | 4.36          | 2.72          |
| Tangki Air   | 1         | -          | -             | 2.55          | 1.59          |
| Kolam Takungan Banjir                                      | 4         | -          | -             | 6.53          | 4.08          |
| Loji Rawatan Kumbahan (STP)                                | 1         | -          | -             | 3.96          | 2.47          |
| Rizab Jalan  | -         | -          | -             | 13.98         | 8.73          |
| <b>Jumlah</b>  | <b>6</b>  | <b>3</b>   | <b>-</b>      | <b>37.76</b>  | <b>23.57</b>  |
| <b>JUMLAH KESELURUHAN KOMPONEN B</b>                       | <b>17</b> | <b>7</b>   | <b>-</b>      | <b>59.25</b>  | <b>36.99</b>  |
| <b>JUMLAH KESELURUHAN KOMPONEN A + KOMPONEN B</b>          | <b>32</b> | <b>907</b> | <b>-</b>      | <b>160.18</b> | <b>100.00</b> |

Source: Extract from Drawing No.MRC/MPJBT/FPSB/KM/2013 (01) by Mega Rancang, 2013



## POTENTIAL IMPACT AND MITIGATION

### Phase: Pre-Development

At the preliminary stages of development, there are few activities, which were involved such as topographical & hydrographical survey, hydraulic study, soil investigation, detailing design at the entrance of the site and etc. All activities involved at this phase should not significantly disturb or cause any negative impact to the local people or environment. Instead, it will provide some positive impacts in terms of economic opportunities and technical information to the surrounding of the project site.

### Phase: Development / Construction

Development phase involves actual physical construction of the site clearing, earthwork, construction of temporary access road, transportation of material, construction of site office and etc. Other activities that we expected from this development when the construction period start to peak are site clearing, earthwork, sub and main structures of the buildings, infrastructure works and other utilities as specified in the final layout plan. At this stage, some impacts will be expected to generate based on the intensity of the construction works. It includes pollution (air, noise and water (river), soil erosion, social and economics if no proper measures were implemented. All those impacts identified shall be mitigated either via engineering approach (temporary access road, silt fence, sediment basin, etc. or on site management approach (traffic control, waste minimization, watering method on the surface of gravel roads, etc).

### Phase: Post-Development

During the operational stages, some impacts shall also be generated such as the increased of utilities demand, operations and maintenances. Besides generation of sewerage waste and solid waste, there will also be significant increase in volume of surface water run-off. In general, most of the impacts that will be generated during the operational stages must require continuous environmental monitoring and supervision by the respective parties, by either the project proponent or relevant authorities.

Please refer to Chapter 3, Chapter 5 and Chapter 6 for the elaboration of these findings.

## ENVIRONMENTAL ISSUE

- a) **Geology and Soil**  
Earthwork activities will be prone to erosion when surface runoff drain eroded material to the nearest river.
- The total estimated earthwork volumes are balance as follow:
    - ✓ **Volume of Cut = 3,632,456.21 m<sup>3</sup>**
    - ✓ **Volume of Fill = 2,172,782.16 m<sup>3</sup>**
    - ✓ **Net Exported Earth = 1,459,674.04 m<sup>3</sup>**
- The platform level for this proposed area is from **16m – 80m** based on existing topography and survey plan.
- The survey plan shown the existing level is from **8.1m – 138.4m**.
  - Possibility of sediment which may flows to surrounding waterway is **1,859.80 kg/ha** per annum on pre-development stage. This value will increase to **145,866.52 kg/ha** per annum on development / construction stage which are increasing around **99%**. Then, it would decrease to **5,105.33 kg/ha** per annum on post-development stage.
  - Surface runoff carrying non-point source pollutants are channeled more efficiently by concrete drains into the rivers. However, the more crucial stage is during construction works where the sediment loadings are expected to increase to a very high level. As such, mitigation measures have to be implemented to reduce the level of sediment loading to a more tolerable level.
  - The total sediment generated during proposed site is cleared without mitigation measure based on MSLE is **77,256.66 ton/year** and will generate **3,755.99 mg/L** suspended solid. Meanwhile the total sediment generated during proposed site is cleared with mitigation measure (90% grassed) is **1,895.79 ton/year** soil loss and will generate a total approximately **9.85 mg/L** total suspended solid.

- The mitigation measures on implementation of Best Management Practices (BMPs) which Erosion and Sediment Control Plan (ESCP) for this proposed project are:-
  - i. Temporary Hoarding Board Line
  - ii. Stockpile Area
  - iii. Vehicle and Equipment Area
  - iv. Materials Storage Area
  - v. Sediment Basin
  - vi. Check Dam
  - vii. Temporary Waterway Crossing
  
- b) Water, Air and Noise Quality
  - This activity also contributes to water pollution when the premix (oil and grease) mixed with surface runoff water and then flow directly to nearby water bodies. Thus, harmful to the marine and aquatic life if flows into nearby river and marine.
  - Vehicles such as trucks, lorries and motors will emit pollutants into surrounding air. Its include heavy metal (lead and cadmium) that potentially contribute significantly to air pollution. Transportation activities also have impact to the noise levels surrounding the project site
  - It was estimated that noise level at various distances generated by most heavy machinery. It will disturb surrounding area especially residential area.
  - Mitigating measures should take into considerations and its efficiency to mitigate any impacts highlighted earlier.
  
- c) Biomass generation
  - Based on site visit observation, most of the surrounding land was under palm oil, orchards, plantations and secondary forest. In general, any land use that located adjacent to the proposed area is likely not to be affected because minor activity area are located adjacent the site. Since site conditions have been cleared, there is no major tree cutting activity that involves generating biomass.
  - It is estimated about **503,554 tonne** of biomass and will properly manage in the vicinity of the boundary site.
  
- d) Residue Impact
  - Residual impacts are impacts that still exist even though proper mitigation measures have been taken to minimize the impacts such as impact to water, air, noise, safety and hazard. Residual impacts need to be properly identified as to formulate environmental management plans for the impacts.
  
- e) Surface Run Off
  - The proposed project will increase the surface runoff. After development, the discharge for 100ARI (year) are increasing about **57.01% (7.65 m<sup>3</sup>/s)**.
  - The proposed project will increase the surface runoff. Thus, on site mitigating measures is essential to ensure that generate surface runoff should not excessively storm into the existing drainage system. The overflow in the drainage system potentially floods the surrounding.
  
- f) Traffic
  - Road surface that are not well maintained are not only hazardous to road users but are also harmful to the vehicles.
  - Increased in vehicular activities will directly increased the air pollution (lead emission, carbon monoxide, sulfur dioxide, nitrogen dioxide and others pollutant in particle (TSP) and traffic congestion.
  
- g) Disposal of Construction
  - Wastes during building construction, the waste is largely made up with material packaging, disused formwork, and concrete debris and used containers which may create blockage to drainage system if not properly disposed off. Improper disposal

of construction wastes such as left over cement, steel bars, cut off piles are potentially degrading to the environment.

- h) Sewage Treatment Plant/Water Reticulation System
  - Total development has estimation of PE which **26,426 PE** and the estimation for wastewater volume is **5,946 m<sup>3</sup>/day**.
  - The proposed developments will be provided with integrated sewerage reticulation systems, which shall consist of gravity pipelines, manholes and sewerage treatment plant.
  - For water reticulation system, the daily water demand was assessed from the sum of the various sanitary and drinking water demand. Generally, the estimation of water demand will be based on the criteria set out in Malaysian Water Association (MWA) Guidelines for Water Supply Systems. The water consumption for the whole new development is estimated to be approximately **1,428,023 gallon/day (6,492 m<sup>3</sup>/day)**.
  
- i) Solid Waste Management
  - Under normal operation, solid wastes include general refuse from the residential and commercial. Littering and indiscriminate dumping and discharge of solid wastes will result in the deterioration of the environment with respect to general aesthetic and health impact. The total solid waste generation upon completion of the development has been estimated to be about **51,471 kg/day**.

**Table 5.0: Estimated Utilities Demand and Waste Generated during the Operational Phase of the Proposed Project**

| Sector                       | Estimated Demand / Peak Output Daily |                     |
|------------------------------|--------------------------------------|---------------------|
| Population Equivalent (P.E.) | 26,426                               | PE                  |
| Domestic Wastewater          | 5,946                                | m <sup>3</sup> /day |
| Water Demand                 | 1,428,023                            | gallon/day          |
|                              | 6,492                                | m <sup>3</sup> /day |
| Solid Waste                  | 13,345                               | kg/day              |
| Electricity                  | 51,471                               | kVA/day             |

Source:

- i. Load demand, J Roger Preston (Malaysia) Sdn Bhd, 2013.
- ii. Laporan Kejuruteraan Sistem Pembentungan, (SSA/PDC 1), Permohonan Kebenaran Merancang Mengikut Seksyen 21, Akta Perancang Bandar Dan Desa 1976 (Akta 172) Bagi Cadangan Pembangunan Bercampur Di atas Lot 663, Lot 664, Lot 804-807, 1114, 914 & 920, Mukim Pulau, Daerah Johor Bahru, Johor Darul Takzim Untuk Tetuan Firstwide Plus Sdn Bhd. Jurutera JRK Sdn. Bhd., 2013
- iii. Perunding UEP Sdn. Bhd. , 2013 (Janaan PE & Utilities)

- j) General maintenance (Infrastructure and Utilities)
  - Treated effluent must meet the limits under Standard A of The Environmental Quality (Industrial Effluent) Regulations, 2009. Sewage and sullage will be channeled to the sewage treatment plant for treatment up to the stipulated standard before discharging into the waterways.
  - The drainage along road upgrading must be on maintenance regularly.

**CONCLUSION**

The impact assessment supported by relevant analysis conducted specifically in every subject namely water quality (river), air quality, noise quality, traffic condition and last but not least on human environment suggest that proper mitigating measures must be undertaken during every stages of project development The project proponent must submit their EMP report to the DOE for approval and EMP must be conducted to support the outcome whether they have operate efficiently and in an environmental sound manner.



Any significant adverse impacts towards the environment must be appropriately mitigated or abated. The mixed development (commercial & housing) of the area with all the proposed method of mitigating measures emphasized on any forms of pollution control will create and enhance conductivity and aesthetic environment towards the surrounding of the project site. Therefore, the element of sustainable management and continuous monitoring must be incorporated throughout the operation of the purposed project until the completion of the project.

## RINGKASAN EKSEKUTIF

## PENGENALAN

Nama/Tajuk projek:

Tajuk laporan adalah Penilaian Awalan Kesan Ke Atas Alam Sekitar (PEIA) untuk Pembangunan Bercampur Di Atas Lot 663, Lot 664, Lot 804 – Lot 807, Lot 1114, Lot 917 & Lot 920, Mukim Pulau, Daerah Johor Bahru, Johor.

**Nama & Butiran Penggerak Projek:**

Penggerak Projek : Firstwide Plus Sdn Bhd  
 Alamat : G-03, Block 5, Danga Bay, Persiaran Abu Bakar Sultan  
 80200, Johor Bahru, Malaysia  
 Telefon : 07-2357888  
 Faks : 07-2357800  
 Individu untuk dihubungi : 4. En Steven Chu Chee Kwang  
 5. Ir Mohd Sohimin Bin Mohd Alayedin  
 6. En. Harvey Wong Eng Wen

**Nama & Butiran Perunding EIA (Firma):**

Perunding EIA (Firma) : Perunding UEP Sdn. Bhd.  
 (Urban & Environmental Planning Consultant)  
 Alamat : No. 36A, Jalan Impian Emas 7,  
 Taman Impian Emas,  
 81300, Skudai, Johor  
 Telefon : 07-557 3987  
 Faks : 07-557 2987  
 Emel : peruepsb@yahoo.com  
 Individu untuk dihubungi : Abdul Halim Bin Ali Hassan  
 Register No. EIA (DOE) – (C 0137)

**Lokasi Projek**

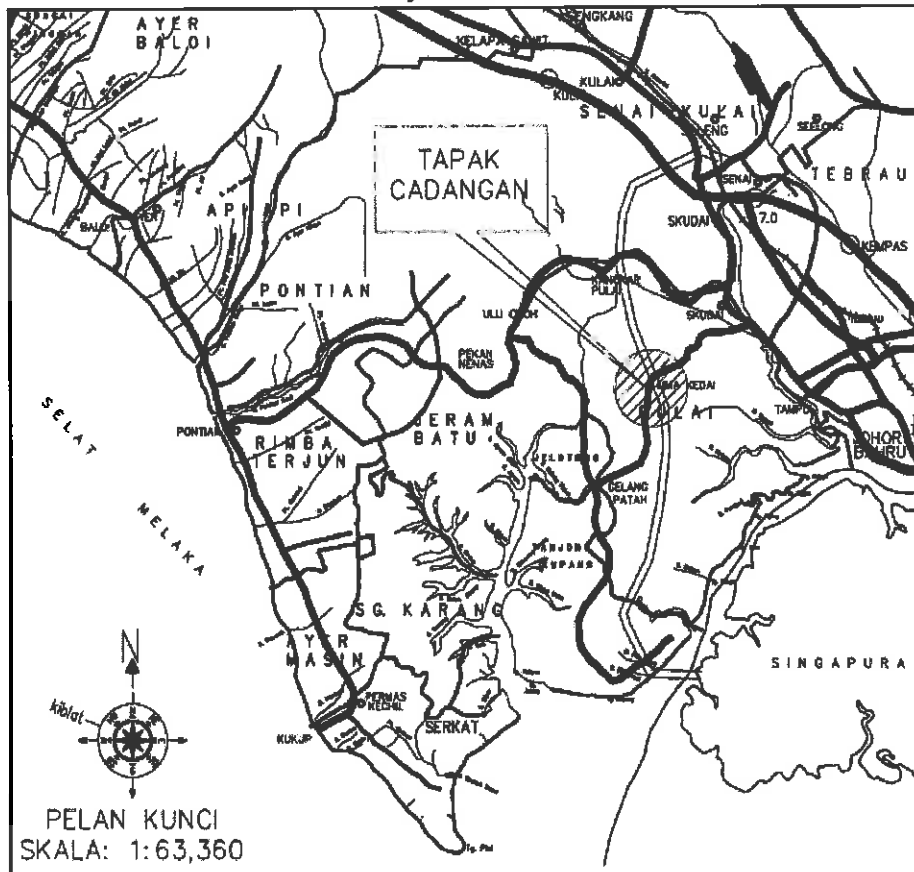
Firstwide Plus Sdn Bhd bertindak sebagai penggerak projek dan bercadang untuk membangunkan pembangunan bercampur (perumahan dan komersil) dilengkapi dengan kemudahan dan infrastruktur. Pembangunan bercampur ini merangkumi seluas 160.18 ekar atau 64.82 hektar terletak di atas Lot 663, Lot 664, Lot 804 – Lot 807, Lot 1114, Lot 917 & Lot 920, Mukim Pulau, Johor Bahru. Guna tanah sedia ada di kawasan tapak cadangan adalah terdiri daripada ladang kelapa sawit, semak samun, tumbuhan sekunder dan sebahagian Bukit Resam. Secara amnya, tapak cadangan dikelilingi oleh Setia Eco Garden yang terletak di sebelah barat laut and Nusa Bayu yang terletak di sebelah selatan. Selain itu, terdapat juga pembangunan sedia ada seperti kawasan perindustrian, komersial, perumahan, sekolah, kemudahan dan infrastruktur yang terletak di sekitar tapak cadangan. Kedudukan tapak cadangan adalah diantara koordinat N 1° 29' 9.09" E 103° 35' 20.84", N 1° 29' 30.55" E 103° 35' 39.32", N 1° 29' 18.30" E 103° 35' 52.33" and N 1° 28' 53.45" E 103° 36' 10.19 dan merupakan di bawah bidang kuasa Majlis Perbandaran Johor Bahru Tengah (MPJBT).

Berikut adalah **Jadual 1.0** yang menerangkan keadaan tapak cadangan untuk tujuan pembangunan yang akan dijalankan:

Jadual 1.0: Keterangan Tapak

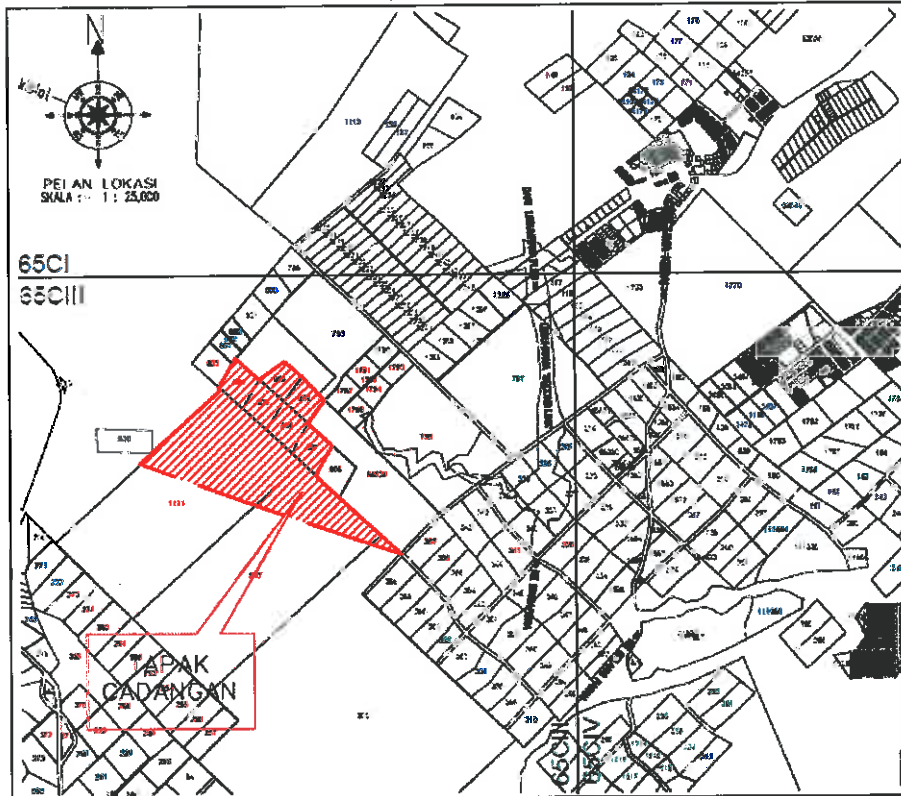
| No. | Perkara                  | Keterangan  |
|-----|--------------------------|---|
| 1.  | Pemaju & Pemilik Tanah   | Firstwide Plus Sdn Bhd<br>G-03, Block 5, Danga Bay, Persiaran Abu Bakar Sultan<br>80200, Johor Bahru, Malaysia<br>Tel: 07-2357888 Fax: 07-2357800 |
| 2.  | Individu untuk dihubungi | 1. En Steven Chu Chee Kwang<br>2. Ir Mohd Sohimin Bin Mohd Alayedin<br>3. En. Harvey Wong Eng Wen   |
| 3.  | Keluasan Tapak           | 160.18 ekar / 64.82 hektar  |
| 4.  | Mukim                    | Pulai   |
| 5.  | Daerah                   | Johor Bahru   |
| 6.  | Negeri                   | Johor   |
| 7.  | Longitud dan Latitud     | N 1° 29' 9.09" E 103° 35' 20.84", N 1° 29' 30.55" E 103° 35' 39.32", N 1° 29' 18.30" E 103° 35' 52.33" and N 1° 28' 53.45" E 103° 36' 10.19       |
| 8.  | Gunatanah Semasa         | Ladang Kelapa Sawit, semak samun, tumbuhan sekunder dan sebahagian Bukit Resam.   |
| 9.  | Zon di dalam RTD         | BPK 4.6: Presin Lima Kedai Perumahan Cadangan dan Jalan raya komited  |
| 10. | Pihak Berkuasa Tempatan  | Majlis Perbandaran Johor Bahru Tengah (MPJBT)   |
| 11. | Cadangan Pembangunan     | Pembangunan Bercampur (housing dan komersial)   |

Gambarajah 1.0: Pelan Kunci



Sumber: Diekstrak daripada lukisan No.MRC/MPJBT/FPSB/KM/2013 (01) by Mega Rancang, 2013

Gambarajah 2.0: Pelan Lokasi



Sumber: Diekstrak daripada lukisan No.MRC/MPJBT/FPSB/KM/2013(01) by Mega Rancang, 2013

Gambarajah 3.0: Lokasi Tapak Cadangan



Sumber: Google Earth, 2013.



### Penilaian Awal Tapak (PAT)

Pihak Pemaju, Firstwide Plus Sdn Bhd ingin membina pembangunan bercampur (perumahan dan komersial) di tapak cadangan seperti yang dicadangkan di atas. Laporan Penilaian Awal Tapak (PAT) telah dihantar dan diluluskan oleh Jabatan Alam Sekitar Johor pada 1<sup>st</sup> November 2013 kepada pihak pemaju dengan rujukan no AS (B) J 50/011/100/608(02)

Projek cadangan adalah subjek untuk persediaan laporan EIA iaitu seperti ditunjukkan di dalam Jadual Aktiviti yang telah ditetapkan seperti di bawah:

Aktiviti 9: Infrastruktur  
(e) Pembinaan Bandar Baharu

Sumber: *Environmental Quality Act 1974 and Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987*

### KEADAAN ALAM SEKITAR SEDIA ADA

#### Geologi dan Hidrologi

Tapak cadangan terletak di Mukim Pulai, Johor Bahru. Dari segi skala masa geologi, tapak cadangan termasuk dalam kelas *Triassic* dan *Quaternary* manakala dari segi sedimen dan batuan metamorfik ianya terdiri daripada *shale*, *mudstone*, *siltstone*, *phylite*, *slate* and *sandstone (interbedded)*. Dari sudut litologi pula adalah terdiri daripada deposit yang tidak bercampur dan untuk tekstur tanah pula ia terdiri dari tanah liat dan lumpur. Bagi hidrologi, sungai yang terdekat yang dijumpai adalah Sungai Pakgadai yang akan mengalir ke Sungai Pulai dan berakhir di Selat Johor.

#### Iklim dan Meteorologi

Purata hujan keseluruhan direkodkan untuk tempoh bulan Januari, 2003 – May 2011 adalah 2,812.8 mm. Purata aliran angin dominan adalah berkelajuan 6.1 ms<sup>-1</sup>. Data iklim dan kajicuaca diperolehi daripada Stesen Meteorologi Senai Johor.

#### Kualiti Alam Sekitar

Jadual 2.0: Stesen Kualiti Alam Sekitar

| Kualiti                  | No Stesen | Penerangan |   | Tarikh Persampelan        |
|--------------------------|-----------|------------|---|---------------------------|
| Air<br>(Sungai/longkang) | 4         | W1         | Jambatan Sungai Pakgadai                                | 22.10.2013                |
|                          |           | W2         | Longkang bersebelahan tapak projek, Setia Eco Garden    |                           |
|                          |           | W3         | Longkang bersebelahan STP dan TNB, Setia Eco Garden     |                           |
| Udara                    | 3         | A1         | Di hadapan Sekolah Antarabangsa Tenby, Setia Eco Garden | 31.10.2013 -<br>1.11.2013 |
|                          |           | A2         | Lot kedai Setia Eco Garden                              |                           |
|                          |           | A3         | Perumahan Nusa Bayu                                     |                           |
| Bunyi                    | 4         | N1         | Di hadapan Sekolah Antarabangsa Tenby, Setia Eco Garden | 22.10.2013                |
|                          |           | N2         | Bersebelahan tapak projek, Setia Eco Garden             |                           |
|                          |           | N3         | Lot kedai Setia Eco Garden                              |                           |
|                          |           | N4         | Perumahan Nusa Bayu                                     |                           |

Sumber: Perunding UEP Sdn Bhd, 2013

### i. Kualiti Air (Sungai/Longkang)

Terdapat dua (2) stesen (W1 & W2) menunjukkan WQI sederhana tercemar, manakala Stesen W3 menunjukkan WQI adalah tercemar.

Stesen W1, peningkatan kepekatan AN dan penurunan DO adalah mungkin disebabkan oleh aktiviti sekeliling ekoran daripada lokasi Sungai Pakgadai terletak berhampiran dengan bengkel, kolam memancing, kawasan perumahan dan kawasan komersial. Stesen W2 terletak di longkang bersebelahan ladang kelapa sawit yang mempengaruhi keputusan peningkatan kepekatan AN (daripada racun serangga) dan penurunan DO. Selain itu, aktiviti daripada kawasan perumahan dan aktiviti terdekat mungkin mempengaruhi keputusan AN dan DO bagi stesen W3.

Di bawah adalah WQI untuk kualiti air mengikut stesen:

Jadual 3.0: Indeks Kualiti Air Sungai (IKA)

| Stesen | W1                    | W2                    | W3       |
|--------|-----------------------|-----------------------|----------|
| WQI    | 69.08                 | 68.53                 | 57.19    |
| Status | Sederhana<br>Tercemar | Sederhana<br>Tercemar | Tercemar |

### ii. Kualiti Udara

Berdasarkan kepada keputusan kualiti ambien udara (TSP) untuk kesemua 3 stesen adalah berada dalam keadaan baik (rendah) iaitu berjalut dari 23  $\mu\text{g}/\text{m}^3$  hingga 57  $\mu\text{g}/\text{m}^3$  masing-masing dan mematuhi Garis Panduan Kualiti Udara Malaysia yang telah ditetapkan.

### iii. Kualiti Bunyi

Terdapat 4 lokasi pensampelan bunyi dijalankan di sekitar dan di dalam tapak cadangan. Bacaan bunyi semasa adalah diterima untuk kawasan persampelan di antara julat 21.7 dB (A) hingga 35.0 dB(A). Secara keseluruhan, keseluruhan stesen bunyi adalah berada dalam *the Planning Guidelines for Environmental Noise Limits and Control, 2004* oleh Jabatan Alam Sekitar iaitu kurang dari 60dBA (siang) dan 50dBA (malam).

#### Biologi – Ekologi Alam Sekitar

Guna tanah sedia ada merangkumi ladang kelapa sawit, semak samun, tumbuhan sekunder dan sebahagian Bukit Resam. Kesemua flora dan fauna yang terjumpai di tapak cadangan seperti tupai, serangga dan lain-lain.

#### KONSEP PROJEK

Secara umumnya, tapak cadangan merangkumi pembangunan bercampur (perumahan dan komersial) dengan kemudahan seluas 160.18 ekar atau 64.82 hektar. Pembangunan ini merangkumi 75.00 (46.82%) untuk perumahan termasuk perumahan kos rendah dan 25.93 ekar (16.19%) untuk tujuan pembangunan komersial. **Rajah 4.0 dan Jadual 4.0.**

#### KOMPONEN PROJEK

##### a) **Pembangunan Perumahan (Perumahan Kos Biasa dan Kos Rendah) – 75.00 ekar (46.82%)**

Pihak pemaju berhasrat untuk membangunkan kawasan perumahan biasa dan kos rendah seluas 75.00 ekar (46.82%) dari keseluruhan pembangunan projek. Pembangunan perumahan ini meliputi perumahan strata (berkembar dan teres), RMMJ, Perumahan Komuniti (pakej A & B) dan juga kedai kos rendah dengan jumlah 900 unit. Ia menunjukkan pembangunan ini akan menjadi kawasan perumahan utama dalam Mukim Pulau dan Johor Bahru.

**b) Pembangunan Komersial – 25.93 ekar (16.19%)**

Pembangunan komersial termasuk plot komersial (13.86 ekar) dan pangsapuri perkhidmatan (12.07 ekar). Jumlah keseluruhan pembangunan komersial adalah 25.93 ekar (16.19%) termasuk jenis-jenis di atas.

**c) Kawasan Lapang – 18.85 ekar (11.77%)**

Kawasan lapang dengan keluasan 18.85 ekar (11.77%) untuk keseluruhan pembangunan. Kawasan lapang disediakan untuk keselesaan dan menyeimbangkan pembangunan hijau dengan mengaplikasikan *softscape* dan *hardscape*.

**d) Kemudahan – 2.64 ekar (1.65%)**

Kemudahan yang dimaksudkan adalah meliputi tadika, dewan serbaguna, surau dan klinik seluas 2.64 ekar dari keseluruhan pembangunan.

**e) Infrastruktur dan Utiliti**

Jumlah kemudahan yang akan dibangunkan merangkumi 37.76 ekar (23.5%) dan ianya terbahagi kepada:-

- Tangki Air
- Loji Rawatan Kumbahan
- Rizab Parit
- Kolam Takungan Banjir
- Rizab Jalan
- Pencawang Pembahagi Utama
- Pencawang Masuk Utama

Jadual 4.0: Komponen Pembangunan

| Komponen Pembangunan                                       | Plot      | Unit       | %             | Ekar          | %            |
|--|-----------|------------|---------------|---------------|--------------|
| <b>PERUMAHAN</b>   |           |            |               |               |              |
| Perumahan Strata Rumah Berkembar (40'x80')                 | 2         | 260        | 28.89         | 42.50         | 26.53        |
| Perumahan Strata Rumah Teres (22' x 75')                   | 1         | 280        | 31.11         | 20.90         | 13.05        |
| <b>Jumlah Kecil Perumahan Kos Biasa</b>                    | <b>3</b>  | <b>540</b> | <b>60.00</b>  | <b>63.40</b>  | <b>39.58</b> |
| <b>PERUMAHAN KOS RENDAH</b>                                |           |            |               |               |              |
| Perumahan Mampu Milik Johor (RMMJ)                         | 1         | 180        | 20.00         | 5.37          | 3.35         |
| Perumahan Komuniti Johor (Pkj A)                           | 1         | 45         | 5.00          | 1.00          | 0.62         |
| Perumahan Komuniti Johor (Pkj B)                           | 1         | 90         | 10.00         | 1.20          | 0.75         |
| Kedai Kos Sederhana  | 3         | 45         | 5.00          | 4.03          | 2.52         |
| <b>Jumlah Kecil Perumahan Kos Rendah</b>                   | <b>6</b>  | <b>360</b> | <b>40.00</b>  | <b>11.60</b>  | <b>7.24</b>  |
| <b>Jumlah Keseluruhan Perumahan Kos Biasa + Kos Rendah</b> | <b>9</b>  | <b>900</b> | <b>100.00</b> | <b>75.00</b>  | <b>46.82</b> |
| <b>PERDAGANGAN</b>   |           |            |               |               |              |
| Plot Perdagangan (Kompleks Perniagaan/Kedai Pejabat)       | 1         | -          | -             | 13.86         | 8.65         |
| Plot Perdagangan (Pangsapuri Perkhidmatan)                 | 2         | -          | -             | 12.07         | 7.54         |
| <b>Jumlah kecil</b>  | <b>3</b>  | <b>0</b>   | <b>-</b>      | <b>25.93</b>  | <b>16.19</b> |
| <b>Jumlah Keseluruhan Komponen A</b>                       | <b>15</b> | <b>900</b> | <b>-</b>      | <b>100.93</b> | <b>63.01</b> |
| <b>KAWASAN LAPANG</b>                                      |           |            |               |               |              |
| Kawasan Lapang   | 11        | -          | -             | 18.85         | 11.77        |
| <b>Jumlah</b>  | <b>11</b> | <b>0</b>   | <b>-</b>      | <b>18.85</b>  | <b>11.77</b> |
| <b>KEMUDAHAN MASYARAKAT</b>                                |           |            |               |               |              |
| Tadika   | -         | 1          | -             | 0.25          | 0.16         |
| Dewan Serbaguna  | -         | 1          | -             | 0.86          | 0.54         |

- ✓ Isipadu pemotongan = 3,632,456.21 m<sup>3</sup>
- ✓ Isipadu isian = 2,172,782.16 m<sup>3</sup>
- ✓ Tanah import = 1,459,674.04 m<sup>3</sup>

Paras platform bagi tapak cadangan adalah dari **16m - 80m** berdasarkan topografi sedia ada dan pelan ukur.

- Pelan topografi menunjukkan julat ketinggian adalah antara **8.1m - 138.4m**
  - Aktiviti pembersihan tanah dijangka memberi kesan terhadap aspek geologi dan tanah kerana akan mengakibatkan kehilangan tanah dan penjana sedimen di dalam air larian, dan seterusnya meningkat kan beban sedimen di dalam sungai berhampiran. Kesan ini secara langsung akan meningkatkan beban sedimen ke sistem saluran yang dianggarkan meningkat **1,859.80 kg/ha** setiap tahun pada peringkat sebelum-pembangunan. Nilai ini akan bertambah **145,866.52 kg/ha** setiap tahun ketika peringkat pembinaan sehingga **99%**. Kemudian, ia akan berkurang sehingga **5,105.33 kg/ha** setiap tahun semasa peringkat operasi. Oleh itu, langkah-langkah mitigasi yang sesuai dan pengurusan persekitaran seperti pemantauan yang berterusan dapat meminimumkan kesan yang terhasil.
  - Jumlah enapan yang dihasilkan semasa tapak cadangan dibersihkan tanpa langkah mitigasi berdasarkan MSLE adalah **77,256.66 tan/tahun** dan bakal menjana anggaran **3,755.99 mg/L** pepejal terampai. Sementara itu, jumlah enapan yang dihasilkan semasa tapak cadangan dibersihkan dengan langkah kawalan (90% rumput) adalah **1,895.79 tan/tahun** dan akan menjana kira-kira **9.85 mg/L** jumlah pepejal terampai.
  - Langkah-langkah kawalan dalam pelaksanaan *Best Management Practices* (BMPs) iaitu Pelan Kawalan Hakisan & Mendapan Sedimen (ESCP) untuk projek ini adalah:
    - i. Pagar Penghadang - *Temporary Hoarding Board Line*
    - ii. Tempat pengumpulan - *Stockpile Area*
    - iii. Tempat kenderaan & barang - *Vehicle and Equipment Area*
    - iv. Tempat penyimpanan bahan-bahan - *Materials Storage Area*
    - v. Perangkap mendap sementara - *Sediment Basin*
    - vi. Check Dam
    - vii. Laluan Air Sementara - *Temporary Waterway Crossing*
- b) Kualiti Air, Udara dan Bunyi.
- Kesan ini adalah kesan sementara dan akan mempengaruhi tahap kekeruhan air dan pepejal terampai terutama di sekitar kawasan tapak.
  - Kesan lain yang perlu diambilkira ialah potensi penjana minyak dan gris terutama di peringkat kerja-kerja penurapan jalan dan operasi jentera pembinaan. Tumpahan minyak dan gris berupaya mencemari air larian permukaan dan seterusnya mempengaruhi kualiti air sungai dan hidupan akuatik.
  - Penurunan kualiti udara dan gangguan bunyi dipengaruhi oleh intensiti aktiviti dan pembangunan di sekitar tapak terutama di peringkat kerjetanah dan pembinaan serta operasi jalanraya. Antaranya ialah kesan debu, habuk dan bunyi bising jentera dan kenderaan pembinaan.
  - Penurunan udara melalui pelepasan gas-gas daripada kenderaan juga akan dijangka terutama di peringkat operasi. Kesan ini harus ditangani agar ia tidak memberikan kesan ke kawasan perbandaran dan kediaman berhampiran.
  - Gangguan bunyi berlaku berkadat songsang dengan peningkatan jarak. Bagi kawasan yang terletak berhampiran dengan jalan yang dinaiktaraf terutama kawasan perumahan dan hospital dijangka mengalami gangguan bunyi terutama di peringkat operasi, kesan daripada peningkatan jumlah kenderaan.
  - Memandangkan kesan gangguan ini merupakan kesan yang bersifat kesan sisa, langkah tebatan yang efisien akan dipertimbangkan.
- c) Penjana Biomass
- Berdasarkan kepada pemerhatian lawatan tapak, adalah dianggarkan **503,554 tan** biojisim terjana dan akan diuruskan di sekitar tapak sempadan.

- Berdasarkan pemerhatian lawatan tapak, kebanyakan kawasan sekitarnya adalah kelapa sawit, kebun, ladang dan hutan sekunder. Kawasan sekitar tapak projek telah pon dibersihkan, tidak ada aktiviti utama pemotongan pokok yang akan melibatkan biomass terjana.
- d) Kesan Sisa
- Impak sisa adalah kesan-kesan yang masih wujud walaupun langkah-langkah mengatasi telah dilaksanakan bagi meminimumkan impak seperti impak ke atas air, udara, bunyi bising, keselamatan dan bahaya. Keperluan impak sisa ini perlu dikenalpasti bagi membentuk rancangan pengurusan alam sekitar untuk mengawal impak tersebut.
- e) Aliran air permukaan
- Cadangan pembangunan akan meningkatkan air larian permukaan. Kira-kira **57.01 %** daripada air larian akan meningkat **7.65 m<sup>3</sup>/s** selepas pembangunan (100 TAHUN ARI).
  - Oleh itu, langkah-langkah mitigasi hendaklah dilaksanakan bagi memastikan air larian permukaan yang terjana tidak akan menyebabkan kejadian banjir.
- f) Trafik
- Permukaan jalan yang tidak diselenggara secara sempurna akan berbahaya kepada pengguna jalan raya dan juga terhadap kenderaan.
  - Pertambahan bilangan kenderaan secara langsung akan menambahkan pencemaran udara dan kesesakan lalu lintas.
- g) Pelupusan sisa binaan
- Bahan-bahan buangan semasa peringkat pembinaan seperti bungkusan bahan binaan, acuan terbiar, sisa konkrit dan bekas terpakai boleh menyebabkan sistem perparitan tersumbat. Pelupusan yang tidak sempurna seperti baki simen, batang-batang keluli, timbunan-timbunan adalah berpotensi memusnahkan keadaan persekitaran.
- h) Loji Rawatan Kumbahan/Sistem Retikulasi Air
- Cadangan pembangunan mempunyai anggaran *Population Equivalent* (PE) sebanyak **26,426 PE** dan anggaran bagi jumlah air sisa adalah **5,946 m<sup>3</sup>/hari**.
  - Cadangan pembangunan ini akan menyediakan integrasi sistem rawatan kumbahan, iaitu terdiri daripada jajaran paip grafiti, *manholes* dan loji rawatan kumbahan.
  - Untuk sistem retikulasi air, keperluan air harian dianggarkan daripada jumlah keperluan sanitasi dan keperluan air minuman. Secara asasnya, anggaran keperluan air berdasarkan kriteria yang telah digariskan oleh *Malaysian Water Association (MWA) Guidelines for Water Supply Systems* dan Jumlah Keperluan Air = **1,428,023 gelen/hari (6,492m<sup>3</sup>/hari)**.
- i) Pengurusan Sisa Pepejal
- Semasa operasi normal, sisa pepejal adalah termasuk buangan daripada kawasan cadangan pembinaan. Pelupusan sisa pepejal yang tidak sempurna akan mengakibatkan kemerosotan persekitaran, estetik dan kesihatan. Jumlah penjanaan sisa pepejal apabila selesai pembangunan adalah dianggarkan kira-kira **51,471 kg/hari**.

Jadual 5.0: Anggaran Permintaan Utiliti dan Janaan Sisa semasa Fasa Operasi Projek Cadangan

| Sektor                       | Anggaran Keperluan |                     |
|------------------------------|--------------------|---------------------|
| Population Equivalent (P.E.) | 26,426             | PE                  |
| Olahan Kumbahan              | 5,946              | m <sup>3</sup> /day |
| Keperluan Air                | 1,428,023          | gelen/day           |
|                              | 6,492              | m <sup>3</sup> /day |
| Sisa Pepejal                 | 13,345             | kg/day              |
| Bekalan Elektrik             | 51,471             | kVA/day             |

Sumber:

- iv. Load demand, J Roger Preston (Malaysia) Sdn Bhd, 2013.
- v. Laporan Kejuruteraan Sistem Pembentungan, (SSA/PDC 1), Permohonan Kebenaran Merancang Mengikut Seksyen 21, Akta Perancang Bandar Dan Desa 1976 (Akta 172) Bagi Cadangan Pembangunan Bercampur Di atas Lot 663, Lot 664, Lot 804-807, 1114, 914 & 920, Mukim Pulau, Daerah Johor Bahru, Johor Darul Takzim Untuk Tetuan Firstwide Plus Sdn Bhd. Jurutera JRK Sdn. Bhd., 2013
- vi. Perunding UEP Sdn. Bhd. , 2013 (Janaan PE & Utilities)

- j) Penyelenggaraan Umum (Infrastruktur dan Utiliti)
- Efluen terawat mesti memenuhi had bawah Standard A Peraturan-Peraturan Kualiti Alam Sekeliling (Efluen Perindustrian), 2009. Kumbahan dan air basuhan akan disalurkan ke loji rawatan kumbahan untuk rawatan sehingga standard yang ditetapkan sebelum dilepaskan ke dalam saluran air.
  - Saliran/parit di sepanjang jalan raya mesti di selenggara secara berkala.

## KESIMPULAN

Sebarang impak alam sekitar yang signifikan perlu disokong dengan analisis yang relevan secara khusus seperti analisis kualiti air (sungai), kualiti udara, bunyi bising, kesan trafik dan kesan sosio-ekonomi. Langkah-langkah kawalan yang efisien perlu dilaksanakan di setiap peringkat projek pembangunan dan pihak pemaju perlu mengemukakan laporan EMP kepada Jabatan Alam Sekitar dan laporan EMPr perlu dilaksanakan untuk menyokong keputusan sama ada pembangunan beroperasi dengan cekap dan efisien.

Sebarang impak negatif kepada alam sekitar perlu dikawal dan dikurangkan. Jika semua langkah-langkah kawalan diberi penekanan di dalam projek ini iaitu pembangunan bercampur (komersil dan perumahan) yang bakal mewujudkan dan meningkatkan kelestarian pelaksanaan projek ini. Oleh itu, pengurusan secara lestari dan pemantauan yang berterusan perlu dilaksanakan sepanjang operasi projek pembangunan.

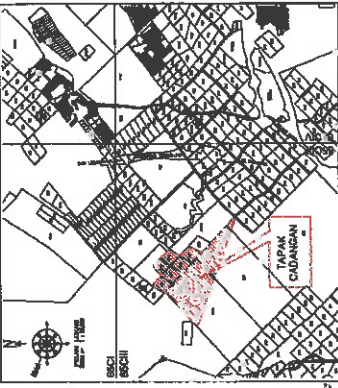
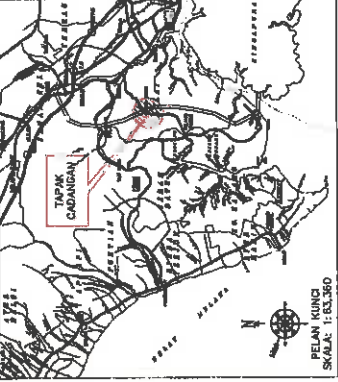
**PERMOHONAN KEBENARAN MERANCANG MENGIKUT SEKSYEN 21 AKTA PERANCANGAN BANDAR DAN DESA 1976 ( AKTA 172 ) BAGI TUJUAN SUSUNATUR PEMBANGUNAN BERCAMPUR DI ATAS LOT 863, LOT 864, LOT 804 - LOT 807, SEBAHAGIAN LOT 817 DAN SEBAHAGIAN LOT 1114 MUKIM PULAI, DAERAH JOHOR BAHRU, JOHOR DARUL TAKZIM.**

Keluasan Kejuruteraan : 189.18 EKAR  
 Saiz Jajant : 66CM  
 Skala : 1 : 3000

SETIA ECO GARDEN

NUSABAYU

- |   |                                  |                      |
|---|----------------------------------|----------------------|
| 1 | LAWA KESSELURAHAN TAPAN          | = 60.19 EKAR (8.9%)  |
| 2 | PERSEKUTUAN KAWASAN LAPANG (10%) | = 82.51 EKAR (12.4%) |
| 3 | KAWASAN LAPANG MUTLAK            | = 18.06 EKAR (2.7%)  |
| 4 | KEMUDAHAN AWAM DAN UTILITY       | = 42.38 EKAR (6.3%)  |
| 5 | KAWASAN TERBUKA                  | = 1.17 EKAR (0.2%)   |
| 6 | DAS KAWASAN LAPANG               | = 13.89 EKAR (2.1%)  |
| 7 | DAS KAWASAN AWAM DAN UTILITY     | = 2.18 EKAR (0.3%)   |
| 8 | Jumlah Kawasan Lapang            | = 22.45 EKAR (3.4%)  |



| NO | NAMA NESEK | NO. BLOK | JUMLAH UNIT | LUAS PERSEKUTUAN (M <sup>2</sup> ) | LUAS TOTAL (M <sup>2</sup> ) |
|----|------------|----------|-------------|------------------------------------|------------------------------|
| 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 | ...        | ...      | ...         | ...                                | ...                          |
| 31 | ...        | ...      | ...         | ...                                | ...                          |
| 32 | ...        | ...      | ...         | ...                                | ...                          |
| 33 | ...        | ...      | ...         | ...                                | ...                          |
| 34 | ...        | ...      | ...         | ...                                | ...                          |
| 35 | ...        | ...      | ...         | ...                                | ...                          |
| 36 | ...        | ...      | ...         | ...                                | ...                          |
| 37 | ...        | ...      | ...         | ...                                | ...                          |
| 38 | ...        | ...      | ...         | ...                                | ...                          |
| 39 | ...        | ...      | ...         | ...                                | ...                          |
| 40 | ...        | ...      | ...         | ...                                | ...                          |

PERMOHONAN AKTA (AKTA) 1976 (1976) (1976)

DAFTAR UNIT PERSEKUTUAN

LOKASI PROJEK

JUMLAH UNIT PERSEKUTUAN

AMALIA BINTI ARCHITECTS

|    |            |          |             |                                    |                              |
|----|------------|----------|-------------|------------------------------------|------------------------------|
| NO | NAMA NESEK | NO. BLOK | JUMLAH UNIT | LUAS PERSEKUTUAN (M <sup>2</sup> ) | LUAS TOTAL (M <sup>2</sup> ) |
| 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 | ...        | ...      | ...         | ...                                | ...                          |
| 31 | ...        | ...      | ...         | ...                                | ...                          |
| 32 | ...        | ...      | ...         | ...                                | ...                          |
| 33 | ...        | ...      | ...         | ...                                | ...                          |
| 34 | ...        | ...      | ...         | ...                                | ...                          |
| 35 | ...        | ...      | ...         | ...                                | ...                          |
| 36 | ...        | ...      | ...         | ...                                | ...                          |
| 37 | ...        | ...      | ...         | ...                                | ...                          |
| 38 | ...        | ...      | ...         | ...                                | ...                          |
| 39 | ...        | ...      | ...         | ...                                | ...                          |
| 40 | ...        | ...      | ...         | ...                                | ...                          |