Development at San Hing Road and Hong Po Road, Tuen Mun

Project Profile

(prepared in accordance with the Environmental Impact Assessment Ordinance (Cap. 499))

June 2017

Civil Engineering and Development Department

Project Profile

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List of Drawings

1. BASIC INFORMATION

1.1 Project Title

1.1.1 Development at San Hing Road and Hong Po Road, Tuen Mun (hereinafter named as the Project)

1.2 Purpose and Nature of Project

1.2.1 As stated in the Chief's Executive's 2011-2012 Policy Address, the Government is committed to expanding the land resources and increasing housing land supply. To meet this policy objective, San Hing Road and Hong Po Road is identified as potential long term public housing sites.

1.2.2 The Project is to plan the future land use of the potential development sites at San Hing Road and Hong Po Road, which are located to the north of Siu Hong Court near Tsing Lun Road, Tuen Mun.

1.2.3 A planning and engineering study for the proposed development at San Hing Road and Hong Po Road will be conducted to assess the feasibility of the proposed development to meet long-term housing, social, economic and environmental needs, and to prepare preliminary engineering design for the development. The scope of the planning and engineering study also includes an environmental impact assessment (EIA) which is the subject EIA of this Project Profile.

1.3 Name of Project Proponent

1.3.1 The Project Proponent is Housing Projects 2 Division (HP2), Civil Engineering Office (CEO), Civil Engineering and Development Department (CEDD) of the Government of HKSAR.

1.4 Location and Scale of Project and History of Site

1.4.1 The location of the Project is shown in Drawing No. HP2/HPR/SK017.

1.4.2 The proposed development sites fall within an area mainly zoned "Green Belt" ("GB") and partly zoned "Residential (Group E)" ("R(E)") on the approved Tuen Mun Outline Zoning Plan (OZP) No. S/TM/33 and Lam Tei and Yick Yuen Outline Zoning Plan No. S/TM-LTYY/8 (LTYY OZP).

1.4.3 The existing land use is generally a mixed urban-rural nature typical of a developing rural area on the fringe of a growing urban environment. Most building land is occupied by low density residential development of not more than 3 storeys, with smaller number of higher density development. The agricultural land is generally

occupied by cultivation, orchards and other farm uses, together with areas of mixed commercial/industrial uses, the majority of which are of a low intensity, local nature, many with temporary types of structures. There are also numerous business operations, including container yard, vehicle repair workshop, vehicle parking area, ice-making factory, motor services yards, workshop for woodworking and sawmill, open parking area and warehouse, which may be subject to potential contamination by petroleum hydrocarbons, metals and organic solvents.

1.4.4 The western part of the Hong Po Road site is a natural hilly area vegetated with mature trees as well as semi-natural watercourses in the proximity at the western part of the site boundary. A 400kV overhead transmission line with its 50m wide working corridor is running along the southern boundary.

1.4.5 The proposed development within the assessment area comprises the housing development sites, school sites, public transport interchanges, the proposed Road L7 and associated infrastructure works.

1.4.6 The works for the Project include site formation works and the associated infrastructure works, which would include the necessary slope works, road works, sewerage works, sewerage pumping station, drainage works, waterworks, utility works, etc. within or outside the assessment area for serving the proposed housing developments. The scope and details of the associated infrastructure works would be identified and confirmed in the planning and engineering study.

1.4.7 This Project Profile is prepared for application to the Director of Environmental Protection for an EIA Study Brief for the Project.

1.5 Number and Types of Designated Projects to be Covered by the Project

1.5.1 The proposed development at San Hing Road and Hong Po sites has an area of about 27 ha, with a total population of about 63,000. Therefore, the planning and engineering study falls within Item 1 under Schedule 3 of the Environmental Impact Assessment Ordinance (EIAO), i.e. "Engineering feasibility study of urban development projects with a study area covering more than 20 ha or involving a total population of more than 100,000". It is a Designated Project requiring an EIA report.

1.5.2 The Project may also consists of Schedule 2 Designated Projects under the EIAO that may be identified in the course of the planning and engineering study. In particular, the following element of the Project, which may be proposed under the planning and engineering study for the public housing development and is identified as Schedule 2 Designated Project, is also included in this Project Profile :-

(i) Construction of sewage pumping stations with capacity of more than 2000m^3/d. [under Schedule 2, Part I, F.3]

1.6 Name and Telephone Number of Contact Person

1.6.1 All queries regarding the Project can be addressed to:

Mr CHAN Cheuk Wing, Edward (Chief Engineer/Housing Projects 2)

Housing Projects 2 Division
Civil Engineering Office
Civil Engineering and Development Department
5/F Civil Engineering and Development Building,
101 Princess Margaret Road,
Homantin, Kowloon.
Tel.: 2762 5603
Fax. 2714 0113

2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

2.1 Project Implementation

2.1.1 The Project Proponent, HP2, CEO of CEDD subject to the final recommendation of the planning and engineering study, will be responsible for implementing the proposed works, together with all the environmental mitigation measures, the environmental monitoring and audit requirements as specified in the Environmental Impact Assessment (EIA) Report of this Project to be prepared under the EIA study.

2.1.2 The Consultants of the planning and engineering study are responsible for undertaking the EIA study according to the Study Brief to be issued by the Director of Environmental Protection and responding on behalf of the Project Proponent on issues related to the EIA.

2.1.3 The construction works of the proposed site formation and infrastructure works to serve the development will be carried out in phases by contractors to be appointed under various works contracts.

2.2 Project Time Table

2.2.1 The planning and engineering study including the EIA study is targeted to commence in Q1 2018 for completion in Q1 2020. Outline implementation

programme for the development will be formulated under the Study.

2.3 Interactions with Other Projects

2.3.1 Potential projects that would interface with the development at San Hing Road and Hong Po Road have been identified and are listed below. Implementation of some of these projects has yet to be approved. This list should be re-visited during the EIA study to ensure all the latest projects available from the respective stakeholders are incorporated.

(i) Tuen Mun Area 54 Development
(ii) Cycling Tracks Connecting North West New Territories with North East New Territories – Tuen Mun to Sheung Shui Section (Stage 1)
(iii) Tuen Mun Western Bypass
(iv) Drainage and Associated Improvement Works
(v) Sewerage upgrading works in Tuen Mun by DSD and EPD as recommended under the Review of Tuen Mun & Tsing Yi Sewerage Master Plan
(vi) Tuen Mun Sewerage, Stage 1 – Village Sewerage in Tsing Cheun Wai and Tuen Tsz Wai
(vii) Upgrading of Tuen Mun Sewerage, Phase 1
(viii) Replacement and Rehabilitation of Water Mains – Mains in New Territories
(ix) Implementation of Pressure Management and District Metering for the Fresh Water Distribution Systems – Design and Construction

2.3.2 The EIAs for the above projects, if required, will be conducted by their respective proponents. The Project EIA will consider the environmental effects of these projects on the assessment area of San Hing Road and Hong Po Road development.

3. POSSIBLE IMPACTS ON THE ENVIRONMENT

3.1 Air Quality

Construction Impacts

3.1.1 Construction works include site clearance, site formation, the infrastructure provision and any other infrastructure activities. The major temporary air pollution will be dust generated as a result of these construction works and vehicle movement on unpaved haul roads. Due to the extent of the proposed development, extensive site formation works and subsequent construction works may have the potential to pose adverse air quality impacts on the nearby air sensitive receivers.

Operational Impacts

3.1.2 The major permanent sources of air pollutants are the vehicular emissions from

traffic on major roads and the air pollutants emitted from the vicinity of the industrial stationary sources. There will be vehicular emissions from the roads surrounding the San Hing Road and Hong Po Road sites, including the existing Hong Po Road, the proposed Road L7, San Hing Road, Ng Lau Road, Castle Peak Road and all internal roads. The potential air quality impacts associated with the proposed public transport interchanges have also to be addressed. Chimney emissions associated with nearby industrial premises are the stationary air pollutant sources. Odour from the proposed sewage pumping station, refuse collection points as well as the drainage channels and nullahs are other potential sources of air pollution.

3.2 Noise

Construction Impacts

3.2.1 The noise generated from construction activities, neighbouring concurrent construction works, piling works, construction plant, traffic along site access roads, and related powered mechanical equipment have the potential to pose adverse noise impacts to the surrounding sensitive receivers.

Operational Impacts

3.2.2 The future noise environment will be affected by road traffic noise, and fixed noise sources such as the proposed sewage pumping station, light rail and railway station and the possible logistic operations and industrial establishments.

3.3 Water Quality

Construction Impacts

3.3.1 The potential development at San Hing Road and Hong Po Road will involve various construction activities undertaken at various time durations. The activities, which will have likely impact on water quality, include site formation, sediment removal, re-alignment of streams and rivers, concrete washings, construction of pilings, construction and upgrading of road network, site workshop or depot and sewage effluent from the workforce. The adverse impacts may comprise additional runoff, increase of suspended solids, pH value and turbidity levels, spillage of waste oils and generation of additional sewage and wastewater. The potential impacts on the nearby surface water associated with construction works will need to be addressed.

Operational Impacts

3.3.2 The operation of the potential development at San Hing Road and Hong Po Road will result in increases of generation of sewage, wastewater from commercial

facilities, runoff from roads, pedestrians and business.

3.4 Solid Waste

Construction Phase

3.4.1 Solid wastes will mainly be generated from a wide range of construction activities such as site formation, construction of roads and drains, and construction of the proposed San Hing Road and Hong Po Road development and infrastructure. The wastes arising from construction will largely consist of excavated and demolished C&D materials during earthworks and demolition works, chemical waste, and general refuse. The quantities of wastes to be generated during construction of the proposed development will largely depend on the programme of various works packages and also require off-site disposal.

Operational Phase

3.4.2 The operation of the proposed San Hing Road and Hong Po Road development and associated infrastructure will generate a significant amount of municipal solid waste. The storage and handling of this waste will have the potential to cause adverse environment impact.

3.5 Ecology

Construction Phase

3.5.1 During construction phase, potential ecological impacts will possible include terrestrial habitat loss only as most of the habitats occurring within the proposed development area are modified for industrial activities over a period of time.

Operational Phase

3.5.2 During the operation phase, potential ecological impacts will possible include air pollution to natural habitat at the proposed development area.

3.6 Cultural Heritage

3.6.1 Potential impacts on identified cultural heritage resources within the proposed development and associated infrastructure may arise from the construction works in damage to or loss of buried archaeological sites by:

(i) Disturbance through excavation at or near an archaeological site, topsoil stripping and the passage of heavy machinery on exposed and buried deposits;
(ii) Change in the water table due to construction and development activities;
(iii) The burial of sites resulting in limitation on accessibility for future

archaeological investigations (including surface survey and remote sensing techniques) and obscuring visible surface evidence; and

(iv) Ground compaction due to construction activities or the weight of permanent filled materials may cause damage or distortion to buried archaeological remains, especially in soft alluvial deposits.

3.6.2 Declared monuments, graded buildings and the potential archaeological sites within the proposed development area will be identified in a cultural heritage impact assessment to be conducted under the EIA study.

3.7 Land Contamination

3.7.1 While there are no extensive areas of contaminated land such as landfills, chemical stores, etc. in the proposed development San Hing Road and Hong Po Road area, there is potential for the presence of residues from small industries including container yard, vehicle repair workshop, vehicle parking area, ice-making factory, motor services yards, workshop for woodworking and sawmill, open parking area and warehouse to create an adverse impact that will need to be cleaned up during the site formation phase.

3.7.2 The contaminated land impacts are likely to be related to the following: health risks to site workers; disposal of contaminated soils, where encountered; and potential health risks to future users of the sites. The land contamination issue and its impact within the proposed development at San Hing Road and Hong Po Road area will be identified and assessed.

3.8 Landscape and Visual

3.8.1 The expected sources of landscape and visual impacts arising from the proposed development at San Hing Road and Hong Po Road area are as follows.

Construction Phase

(i) Loss of landscape elements, e.g. trees, fishponds and natural topography;
(ii) Loss of visual amenity through removal of landscape elements e.g. trees;
(iii) Visual appearance of any temporary use prior to full development;
(iv) Construction activities on newly formed areas and existing available land; and
(v) Obstruction of, or intrusion into views by the development.

Operation Phase

(i) Visual intrusion and obstruction created by the development; and
(ii) Visual quality of the new development.

4. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

4.1 Surrounding Environment including Existing and Planned Sensitive Receivers

4.1.1 Sensitive receivers and sensitive parts of the surrounding environment which might be affected by the Project include the following:

a) Existing villages and residents on both sides of Hong Po Road and around San Hing Tsuen, Tsz Tin Tsuen, Po Tong Ha , etc;
b) Existing residential developments in Villa Pinada;
c) Tsing Shan Firing Range Boundary to the west of the proposed development area;
d) Existing stream courses and open nullahs within/in the vicinity of the area; and
e) "Conservation Area" zone to the north of the proposed development area.

4.2 Air Quality

4.2.1 The proposed development at San Hing Road and Hong Po Road area are located on a valley running more or less in the north-south direction. On the east are the mountains of the Tai Lam Country Park; and on the west are the Castle Peak and adjacent mountains.

4.2.2 Based on the prevailing air stream at Tuen Mun Station in the south of the SHR and HPR Sites, the predominant wind direction is north-easterly during winter and south-easterly during summer, indicating the channelling effects associated with the valley landscape in Tuen Mun.

4.2.3 In the vicinity of the proposed development area, Siu Hong Court is the only existing development with high-rise building blocks. The development in Tuen Mun Area 54 located to the south of the proposed development area are under construction. These existing and committed developments may affect the wind availability of the individual sites.

4.3 Noise

4.3.1 The existing noise environment within the proposed development at San Hing Road and Hong Po Road area is dominated by the traffic on the existing Hong Po Road, San Hing Road, Ng Lau Road and Tsing Lun Road. Most of these roads carry a substantial amount of vehicles which utilize the storage yards in the vicinity of the area.

4.3.2 Isolated industrial operations scattered in the proximity of the SHR and HPR development also contribute to the overall ambient noise levels. These operations

include container yard, vehicle repair workshop, vehicle parking area, motor services yards, open parking area and warehouse.

4.3.3 The noise impact from the existing Light Rail and West Rail affect the proposed development at San Hing Road and Hong Po Road area.

4.3.4 Representative Noise Sensitive Receivers (NSRs) include the existing villages and future residential development.

4.4 Water Quality

4.4.1 The proposed development at San Hing Road and Hong Po Road area are located within the watershed of Tuen Mun River and is part of the North Western Water Control Zone (WCZ). Most of the watercourses passing through the Sites are heavily channelized or culvertized. There are other major watercourses at the southwest part of the Study Area, running along Tsing Lun Road and also minor streams running from Yuen Tau Shan. Some of these minor streams are intermittent or ephemeral streams.

4.5 Solid Waste

4.5.1 The existing solid waste arising from the area in vicinity of the proposed SHR and HPR development area include domestic waste from village houses, agricultural waste, commercial/industrial waste generated from open storage and informal industrial uses.

4.6 Ecology

4.6.1 Much of the habitat within the proposed development at San Hing Road and Hong Po Road area is currently developed/open area, comprising mainly villages. However, there are some areas of agricultural land and woodland located to the west of the development area. Ecological impact assessment will be carried out to address the possible ecological impacts on the environment due to the implementation of the Project.

4.7 Cultural Heritage

4.7.1 There were no declared monuments, proposed monuments, sites and buildings graded by the Antiquities Advisory Board (AAB) and government historic sites identified. Nevertheless, the proposed development at San Hing Road and Hong Po Road area fall within three sites of archaeological interest i.e. Siu Hang Tsuen, Kei Lun Wai and San Hing Tsuen.

4.7.2 Cultural and heritage resources in the vicinity of the proposed development at San Hing Road and Hong Po Road area will be identified in a cultural heritage impact assessment to be carried out under the EIA study.

4.8 Land Contamination

4.8.1 The existing environment in the proposed development at San Hing Road and Hong Po Road area is mainly rural in character and comprises village and industrial land uses intermixed with active and inactive agricultural activities. The main expected contaminants from the land uses in the proposed development area are from by-products from small industries, container storage yards, vehicle and equipment storage and vehicle repair workshops.

4.8.2 Land-based excavation and grading works will be required for the implementation of the proposed development at San Hing Road and Hong Po Road area. These construction activities are cause for concern as they may interfere with potentially contaminated soil underlying the existing industrial uses, and hence creating the potential impact to sensitive receivers.

4.9 Landscape and Visual

4.9.1 The composition of landscape elements within the project area consists of green belts, urban/rural land uses, which include existing villages, rural industrial areas, new residential areas, road and drainage infrastructure, open storage areas, scrubland, grassland, woodland, farmland, stream courses, mountains, valleys etc.

4.9.2 The impact due to the proposed development will be expected on the existing agricultural and natural landscape elements, including hillside woodland and natural streams.

4.9.3 The proposed development area is on the periphery of an urban area that is bordered by hill ranges and ridgelines, visual sensitive receivers will be identified for environmental impact assessment during the EIA study.

5. ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN AND ANY FURTHER ENVIRONMENTAL IMPLICATIONS

5.1 General

5.1.1 The EIA study will investigate those environmental impacts and propose the appropriate mitigation measures with the intention that all proposals would be environmentally acceptable and cost effective. The residual impacts, if any, would

be confined within the allowable limits. Environmental monitoring and auditing of potential impacts that may arise from the works of the Project would be provided for the construction and operational phases. Subject to the findings of the EIA study, the following mitigation measures will be incorporated in the design and construction of the Project, where appropriate. The mitigation measures to be considered in the design and construction of the Project would not be limited to the followings.

5.2 Air Quality

Construction Phase

5.2.1 In order to prevent adverse impacts on air quality, the control measures stipulated in the Air Pollution Control (Construction Dust) Regulations should be implemented wherever applicable, to limit the dust emissions from the site. Mitigation measures, including but not limited to the following, will be put in place.

- Stockpiles of dusty material will not extend beyond site boundaries;
- In the process of material handling, any material which has the potential to create dust will be treated with water or sprayed with a wetting agent where practicable;
- Any vehicle with an open load compartment used for transferring dusty materials offsite will be properly fitted with side and tail boards and cover;
- Stockpiles of sand and aggregate will be enclosed on three sides and water sprays will be used to dampen stored materials and when receiving raw material;
- The site will be frequently cleaned and watered to minimise fugitive dust emissions; and
- Motorised vehicles on site will be restricted to a maximum speed of 15 km/hr and shall be confined to designated haul routes which will be paved or surfaced with hardcore.

Operational Phase

5.2.2 The proposed mitigation measures to improve the air quality within the proposed development at San Hing Road and Hong Po Road area are to be considered as follows :-

(i) Emissions from Chimneys

- Adequate buffer distances will be provided between the chimneys and the development sites to protect the development from emission of existing and proposed chimneys; and

(ii) Odour Impact from the proposed Sewage Pumping Stations (SPS)

- design would be in accordance with DSD's Standard Design on Sewage Pumping Station, with all pumps located underground and enclosed

within a structure/building; and

- deodorization system would be installed and good housekeeping practice would be adopted.

(iii) Impact from Public Transport Interchanges (PTI)

- the design of the PTI would follow the design consideration recommended in the Control of Air Pollution in Semi-Confined Public Transport Interchanges (ProPECC PN 1/98);
- adequate ventilation and dilution of vehicle exhaust should be provided; and
- ventilation exhaust, if any, would be directed away from the nearest ASRs.

5.3 Noise

Construction Phase

5.3.1 In order to mitigate adverse noise impacts, the following general mitigation measures will be put in place.

- Quiet plant will be used to reduce noise generated;
- Movable and temporary barriers will be provided to screen noise sensitive receivers (NSRs) from particular items of plant or noisy operations;
- Noise screening structures or purpose-built noise barriers will be provided along the site boundary to provide additional protection to NSRs nearby; and
- Good site practices will be implemented as effective noise mitigation measures. These will include, but not limited to, locating noisy equipment and activities as far from NSRs as practical, scheduling noisy activities to minimise exposure of nearby NSRs to high levels of construction noise, proper maintenance of construction plant and devising methods of working to minimise noise impacts on the surrounding environment.

Operational Phase

5.3.2 For road traffic noise, a number of noise mitigation designs, including traffic management measures, environmentally friendly layout design, the consideration of the application of low noise material and where necessary, noise barriers, should be incorporated in the layout plan of the proposed development.

5.3.3 Environmentally friendly layout designs may include locating buildings to avoid exposure to traffic noise, providing comprehensive pedestrian and cycle track network throughout the development to minimize the generation of road traffic. Other designs may include the use of non-noise sensitive structures such as podium to shield traffic noise and adequate setback distance away from noisy roads.

5.3.4 Should residual impacts be identified at the existing NSRs where the use of direct mitigation measures on the roads has been exhausted, these NSRs would then be eligible for indirect technical remedies.

5.3.5 The potential noise impacts from the existing Light Rail and West Rail will need to be investigated and mitigation measures will be provided, as necessary.

5.3.6 For the fixed noise sources, mitigation measures such as provision of buffer distance, environmentally friendly layout design should be incorporated in the layout plan for mitigating noise impacts from existing/planned fixed noise sources to nearby existing/planned NSRs. The details and extent of noise mitigation measures will be subject to the assessment results in the EIA Study.

5.4 Water Quality

Construction Phase

5.4.1 In order to prevent adverse impacts on water quality, the following general mitigation measures will be put in place.

- Site run-off should be reduced and will be directed into temporary sand traps or other silt removal facilities before discharging into the outlets;
- Silt removal facilities will be maintained regularly;
- Open stockpiles of materials on site will be avoided or where unavoidable covered with tarpaulin or similar fabric during rainstorms;
- Silt curtains or sand bag barriers will be used to confine the disturbed area during sediment removal activities;
- Where possible, works entailing soil excavation will be minimized during the rainy season (April to September);
- To minimize the impacts of concrete washings, infiltration/sedimentation pits will be used to settle out the washings before treatment/re-use/discharge. If necessary, treatment units with pH adjustment will be adopted;
- Oil interceptors will be provided and properly maintained for collecting spillage or leakages from site workshops. The waste oil removed will be collected by licensed collectors;
- Mobile toilets or other appropriate means will be provided to store sewage before disposal through licensed collection agent or discharging to main sewerage system; and
- For bore piling operations, the resulting suspension will be settled in sedimentation/infiltration pit until supernatant is clear and the bentonite solids will be disposed appropriately.

Operational Phase

5.4.2 The following general mitigation measures are to be considered:

- provision of sand/silt and oil/grease traps, porous pavements and detention ponds at suitable locations to prevent ingress of pollutants to the stormwater system, which would serve to reduce the loading from the storm drains to the inland waters of the North Western Water Control Zone compared to the existing situation;
- construction of drainage works to prevent increased risk of flooding;
- upgrading the sewerage system for discharge into Pillar Point Sewage Treatment Works or providing other sewage treatment/disposal facilities to ensure that there is sufficient capacity to cater for increased sewage effluent flows from the developments; and
- provision of suitable measures to minimize the risk of emergency discharges of untreated sewage effluent and to ensure timely repair.

5.5 Solid Waste

Construction Phase

5.5.1 Solid waste arising from construction will largely consist of spoil generated during earthworks, and general construction waste/surplus materials (such as C&D material from demolition works, chemical waste and general refuse).

5.5.2 The following measures will be implemented to reduce the quantities of C&D material for disposal off site.

- All C&D material will be sorted and re-used wherever possible;
- Waste haulier should obtain the necessary registration and licences under the Waste Disposal Ordinance and the Waste Disposal (Chemical Waste) (General) Regulation from the Environmental Protection Department;
- Nomination of an approved person to be responsible for good site practice, arrangements for collection and effective disposal to an appropriate facility, of all waste generated at the site;
- Separation of chemical wastes for special handling and appropriate treatment at a licensed facility;
- A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites);
- In order to monitor the disposal of C&D material and solid wastes at public filling facilities and landfills, and control fly-tipping, a trip-ticket system shall be implemented by the Contractor, in accordance with the contract and the requirements of DEVB TCW No. 6/2010 "Trip Ticket System for Disposal of Construction and Demolition Materials";

- A Waste Management Plan (WMP) shall be prepared and this WMP shall be submitted to the Engineer for approval. The WMP will be in accordance with ETWB TC(W) No. 19/2005 "Environmental Management on Construction Sites";
- Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse of recycling of materials and their proper disposal;
- Any unused chemicals or those with remaining functional capacity shall be recycled;
- Use of reusable non-timber formwork to reduce the amount of C&D material; and
- Proper storage and site practices to minimize the potential for damage or contamination of construction materials.

Operational Phase

5.5.3 The following mitigation measures are to be considered:

- Modern waste management facilities would be investigated for the proposed development at San Hing Road and Hong Po Road area. The facilities have potential enhancement of sanitary and environmental conditions over the conventional refuse collection points (RCPs);
- The RCP should be enclosed to minimize noise, odour and visual nuisance, and it should be fitted with a deodourizing unit and ventilation system to remove odour. Each RCP should be fitted with a water point and high pressure hose for cleansing operations, with connection to the foul sewerage system; and
- Domestic waste recycling should be encouraged, with provision of collection bins at appropriate locations in all housing estates and promotion campaigns for waste paper recovery, plastic bag collection and “sort and recovery” of waste materials.

5.6 Ecology

5.6.1 The mitigation measures that are to be implemented to minimize the impacts on air quality, noise and water quality will also help to minimize any impacts on ecological resources.

5.6.2 As regards habitat loss, the best mitigation is avoidance and will be used wherever possible. For loss which is considered unavoidable, compensation will be provided, with the following features:-.

- a variety of habitat types;
- linkage with other wetland areas and other ecological resources; and

- an acceptable size for creation of habitats and to minimize disturbance to fauna utilizing the habitat.;

5.7 Cultural Heritage

5.7.1 A cultural heritage impact assessment will be carried out under the EIA study. Impacts on cultural heritage sites will be avoided as far as practicable, by amending layout plan to allow preservation of the heritage resources in-situ. If unavoidable, mitigation measures to the direct impact on built heritage resources will be implemented.

5.7.2 Mitigation measures to avoid impact on archaeological deposits include rescue excavation prior to the commencement of construction works and archaeological monitoring during construction to preserve the deposits by record.

5.8 Land Contamination

5.8.1 The following mitigation measures will be implemented during the construction phase to minimise any potential exposure to contaminated soils or groundwater:-.

- Site workers should wear gloves, masks and other protective clothing where exposure to vapour or contaminated soil may be encountered;
- Contaminated materials should be removed with bulk earth movers to prevent human contact;
- Adequate washing facilities should be provided and smoking/eating should be prohibited in the area;
- Contaminated sediments which have been stockpiled or are being transported should be covered with tarpaulin;
- Leakage of pollutants or leaching from excavated soil should be prevented by storing on an impermeable surface;
- Only licensed waste haulers should be used to collect and transport any contaminated material to an appropriate disposal site and procedures should be developed to ensure that illegal disposal of wastes does not occur; and
- The necessary waste disposal permits should be obtained, as required, from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 354), as required.

5.8.2 Mitigation measures will also be determined with reference to EPD's documents such as "Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management (December 2007)", "Guidance Notes for Contaminated Land Assessment and Remediation (August 2007)", and "Practice Guide for Investigation and Remediation of Contaminated Land (August 2011)".

5.9 Landscape and Visual

Mitigation Measures to be Incorporated in the Design Layouts of the proposed development at San Hing Road and Hong Po Road area

5.9.1 The following measures will be adopted to minimize the landscape and visual impacts during the design stage.

- The urban design principles such as controlling the density of the development;
- Controlling building height profiles and providing stepped building heights;
- Responsive building massing;
- Controlling the walling effect;
- Preserving and establishing visual and open space links, including provision of view and breeze corridors; and
- Sustainable and quality landscape design principles and best practices.

Construction Phase

5.9.2 The following general mitigation measures will be implemented to alleviate the impacts for the construction phase:

- Erosion control measures should be implemented for protection of construction works and the landscape if heavy rains occur;
- Measures should be taken to store and use construction equipment and building materials where they are not visually intrusive, or easily washed away or where they produce less dust;
- Damaged vegetation and trees, not earmarked for removal, should be rectified, repaired or replaced, using the same or complementary species, size and form, to the original condition as far as possible;
- Minimization of light pollution techniques to be implemented. This includes having more lights with focused beams rather than energy wasting, floodlighting which might impact on the nighttime character of the area;
- Exposed slopes should be appropriately vegetated as soon as grading works are completed to prevent erosion and subsequent loss of landscape resources and character; and
- Haul roads should be revegetated at the earliest opportunity to be compatible with their existing surrounding landscape or planned surrounding landscape.

Operational Phase

5.9.3 The following general mitigation measures are to be considered for the operational phase.

- Trees should be planted as visual barriers where appropriate;
- Tree transplanting and compensatory planting will partially mitigate the impact on the existing tree/woodland;

- Roadside planting is proposed alongside all roads within the development. It will enhance local identity, if theme planting is used, and reduce visual impact through screening;
- Amenity strips will be provided to roads, wherever practicable, to mitigate their visual appearance;
- Road structures, such as pedestrian bridges, will be designed to improve the visual appearance of the road corridor;
- The visual impact of noise barriers will be mitigated by appropriate detailed design, including use of transparent panels, provision of planting on and adjacent to the barriers, appropriate colour selection of panels and supporting structure as well as design of supporting structures to incorporate a high level of quality and aesthetics;
- The landscape treatment of road embankments and soil slopes will be provided to enhance their visual appearance; and
- Landscape treatment will be provided to open drainage channels, where practicable, to enhance their visual appearance.

6. USE OF PREVIOUSLY APPROVED EIA REPORT

No previously approved EIA report covers the full extent of the study area of the proposed Project. However, reference would be made to the approved EIA report in Area 54, Tuen Mun (1999).

- END -

註解 notes:

圖例 LEGEND:

- 評估範圍界線 ASSESSMENT AREA BOUNDARY
- 擬議房屋發展用地 PROPOSED INDICATIVE HOUSING DEVELOPMENT SITES
- 擬議學校用地 PROPOSED INDICATIVE SCHOOL SITES
- 擬議污水泵水站 PROPOSED INDICATIVE SEWAGE PUMPING STATION
- 擬議L7路 PROPOSED INDICATIVE ROAD L7

0 50 100 150 200 250 m

1 : 2 000 SCALE BAR

圖則名稱 drawing title

屯門新慶路和康寶路擬議發展項目的評估範圍

THE ASSESSMENT AREA FOR THE PROPOSED DEVELOPMENT AT SAN HING ROAD AND HONG PO ROAD , TUEN MUN

圖號 drawing no.	比例 scale
HP2/HPR/SK017	1:2 000

辦事處 office

土木工程處 房屋工程2部
HOUSING PROJECTS 2 DIVISION
CIVIL ENGINEERING OFFICE

CEDD 土木工程拓展署
CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT

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