

Hong Kong Housing Authority
Agreement No. CB20120293
Planning and Engineering Study
for the Public Housing Site and
Yuen Long Industrial Estate
Extension at Wang Chau

Final Technical Report No.4B (TR-
4B) Implementation and Costing

REP-026-01

Final | May 2014

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Job number 226464

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1 INTRODUCTION

1.1 Project Background

- 1.1.1.1 As stated in the Chief Executive's 2011-12 Policy Address, the Administration is committed to expanding the land resources and increasing housing land supply. To meet this policy objective, the Planning Department (PlanD) has carried out a comprehensive review of the areas zoned "Green Belt" (GB) on the Outline Zoning Plans (OZPs) focusing on sites which are no longer green or spoiled. A number of "GB" and "Open Storage" (OS) sites in Wang Chau, Yuen Long were identified as having potential for public housing (PH) development.
- 1.1.1.2 Subsequently, the Innovation and Technology Commission (ITC) and the Hong Kong Science and Technology Parks Corporation (HKSTP) advised the need to expand the Yuen Long Industrial Estate (YLIE), in addition to the existing three Industrial Estates (IEs) at Tai Po, Tseung Kwan O and Yuen Long. It was requested to use a portion of the Wang Chau potential housing site for this purpose.
- 1.1.1.3 After due consideration, an agreement was reached between the Housing Department (HD) and ITC to share the site, tentatively with the northerly portion to be allocated for the YLIE extension (YLIEE), while the remaining south portion would be developed for public housing use. It was further agreed that no Potential Hazardous Installations (PHIs) would be located at the YLIEE so as to minimize the potential adverse impact on the neighbouring PH developments.
- 1.1.1.4 **Figure 1.1.1** shows the location of the Project site and **Figure 1.1.2** shows the aerial photo of the Project Site. The PH and YLIEE sites are zoned as GB and OS on the Ping Shan OZP No. S/YL-PS/14. It is currently occupied by OS, vehicle parks, farmland, fallow land, grassland, rural residential dwellings and temporary structures.
- 1.1.1.5 Ove Arup & Partners Hong Kong Limited (Arup) was commissioned by Hong Kong Housing Authority (HKHA) under entrustments from the Government of the Hong Kong Special Administrative Region (HKSAR) & Hong Kong Science and Technology Parks Corporation (HKSTP) to conduct the Planning and Engineering Study for Public Housing Site and YLIEE at Wang Chau (the Study), which will examine the feasibility on developing public housing and YLIEE at Wang Chau by conducting planning, engineering and environmental assessments to formulate proposal for the PH site and YLIEE, and the implementation strategies and programme for the proposed development.

1.2 Objectives of the Report

- 1.2.1.1 Following on the endorsement of the Technical Report (TR) on Option Generation, Evaluation and Preliminary Assessments (TR-2) in the Study Steering Group Meeting on 28 June 2013, a preferred development option has been formulated. The TR-3 – Preferred Option and Technical Assessments under this P&E study has been conducted to assess the feasibility of the preferred development option.
- 1.2.1.2 According to the Clause 5.3(d) of the brief, the TR4 – Preliminary Recommended Option, Implementation and Costing is required. This report forms part of the TR-4 and is to present the implementation and costing for the preliminary recommended option. It shall be noted that the preferred development option as assessed in TR-3 is the same as the preliminary recommended option presented in this TR4.
- 1.2.1.3 Specifically, the objectives of this report are as follows:-
- prepare action plan and implementation programme for the preliminary recommended option. The action plan shall include public consultation and other actions required to obtain planning / rezoning approval, land requirement / administration and clearance, land grant document, etc.
 - assess the adequacy of the existing mechanism in delivering the developments and the associated infrastructures/facilities and identify the issues involved.
 - examine the issues related to the implementation of the proposed developments and infrastructures/facilities, e.g. land clearance/resumption, rehousing needs for non-indigenous villagers, etc.
 - identify possible agents and actions needed for managing/coordinating the proposed developments, associated infrastructures/facilities.
 - prepare detailed cost estimates for the different phases/packages of the developments and infrastructure to include the cost of land resumption and clearance.

1.3 Structure of this Report

- 1.3.1.1 The structure of this Report is as follows:

<u>Chapter</u>	<u>Title</u>	<u>Aims</u>
1	Introduction	Introduces the project background and the objectives of the report.
2	Project description	Describes the site, preliminary recommended option, the associated infrastructures/facilities etc.

3	Action plan and implementation programme	Identify the action plan, describe the proposed development phasing/package, as well as present the implementation programme in delivering the development.
4	Issues related to implementation of the development	Describe the issues related to implementation of the proposed development.
5	Implementation agents	Propose the management and maintenance agents involved for the proposed development.
6	Cost estimates	Present the cost estimates for the different development phases/packages.
7	Conclusion	Provide a conclusion of this report.

1.4 Nomenclature and Abbreviations

1.4.1.1 The following **Table 1.4.1** lists out the meaning of abbreviation for expressions adopted in this report:

Table 1.4.1: Abbreviations

Abbreviations	Term
ACE	Advisory Council on the Environment
AFCD	Agriculture, Fisheries and Conservation Department
ArchSD	Architectural Services Department
Arup	Ove Arup & Partners Hong Kong Limited
BL	Building License
C&DMMP	Construction and Demolition Materials Management Plan
CAF	Clearance Application Form
CDA	Comprehensive Development Area
CEDD	Civil Engineering and Development Department
CLP	China Light and Power Hong Kong Limited
CPLD	Committee on Planning and Land Development
DP	Designated Project
DSD	Drainage Services Department
EDB	Education Bureau
EIA	Environmental Impact Assessment
EP	Environmental Permit
EPD	Environmental Protection Department
FEHD	Food and Environmental Hygiene Department
GB	Green Belt
GFA	Gross Floor Area
GI	Ground Investigation
GLL	Government Land Licence
HD	Housing Department
HKCG	The Hong Kong and China Gas Company Limited
HKHA	Hong Kong Housing Authority
HKSAR	Hong Kong Special Administrative Region
HKSTPC	Hong Kong Science and Technology Parks Corporation

Abbreviations	Term
HyD	Highways Department
IEs	Industrial Estates
ISWB	Integrated Social Welfare Building
ITC	Innovation and Technology Commission
LandsD	Lands Department
LCSD	Leisure and Cultural Services Department
LOA	Letter of Approval
MLP	Master Layout Plan
MOD	Money-of-the-day
MOT	Modification of Tenancy
MTRCL	MTR Corporation Limited
OS	Open Storage
OU(IE)	Other Specified Uses (Industrial Estate)
OZPs	Outline Zoning Plans
P&E	Planning and Engineering
PDS	Project Definition Statement
PH	Public Housing
PHIs	Potential Hazardous Installations
PlanD	Planning Department
PR	Plot Ratio
PTI	Public Transport Interchange
RC	Rural Committees
STT	Short Term Tenancies
STW	Short Term Waiver
TFS	Technical Feasibility Statement
TM-EIAO	Technical Memorandum – Environmental Impact Assessment Ordinance
TPB	Town Planning Board
TPO	Town Planning Ordinance
TR	Technical Report
TR-2	Technical Report on Option Generation, Evaluation and Preliminary Assessments
WSD	Water Supplies Department
YLDC	Yuen Long District Council
YLIE	Yuen Long Industrial Estate
YLIEE	Yuen Long Industrial Estate Extension
YLSTW	Yuen Long Sewage Treatment Works

2 PROJECT DESCRIPTION

2.1 Site Location

2.1.1.1 The Project site is bounded by the existing YLIE, Fuk Hi Street and Fuk Hing Garden and Sai Tau Wai to the east, Long Ping Road and Long Ping Estate to the south, Kai Shan to the west, as well as Shing Uk Tsuen, Tai Tseng Wai and Ng Uk Tsuen to the north as indicated in **Figure 1.1.1**.

2.2 PH site

2.2.1.1 The PH site has a site area of 18.81 ha. Types of the proposed land use within the PH site boundary include residential with local open space and parking spaces, retail, schools, integrated social welfare building (ISWB), Public Transport Interchange (PTI), roads, amenity greening and slope.

2.2.1.2 Within the PH site, about 14.49ha is residential site area. A plot ratio (PR) of 6.0 (i.e. 5.86 domestic and 0.14 non-domestic) and maximum building height of 41 storeys is proposed. A total of a domestic GFA of 848,750 m² and retail GFA of 19,760 m² will be accommodated. The proposed development option could provide a total of 16,975 flats to cater for around 52,113 populations.

2.2.1.3 The PH site can be roughly divided into three portions. The southwestern portion of the PH site consists of the area around residential blocks 1 to 10, the middle portion consists of the area around residential blocks 11 to 17, and the northern portion consists of the area around blocks 18 to 24. The middle and northern portions are bisected by the proposed northern access road.

2.2.1.4 The latest PH site boundary and the proposed development layout plan is given in **Figure 1.1.1**.

2.3 YLIEE site

2.3.1.1 The YLIEE site has a total area of 14.65ha with 11.66 ha reserved for industrial use. It consists of 16 individual industrial plots. A PR ratio of 2.5 and a maximum building height of 8 storeys for the industrial lots are proposed.

2.3.1.2 The major types of land use are industrial uses, local open space (LOS), car parking space, road and slope area. The LOS is currently occupied by woodland which will be preserved on-site. On-site ecological compensation area and woodland compensation area are also proposed and the existing woodland within the woodland compensation area will also be retained in situ.

2.3.1.3 The latest YLIEE site boundary and the proposed development layout plan is given in **Figure 1.1.1**.

2.4 Land Resumption Boundary

2.4.1.1 A land resumption boundary for the development site has been proposed in the Land Requirement Plan submitted separately in TR-3. The resumption boundary has marked out the land required for future land acquisition, taking into account the area for the proposed rezoning as well as the development area of PH site and YLIEE site. This boundary is given in **Figure 2.4.1** and details shall be referred to Land Requirement Plan.

2.5 Key Proposed Infrastructures

2.5.1 Access Roads and Road Improvement Works

2.5.1.1 **Figure 2.5.1** shows the arrangement for the proposed access roads to both the PH site and YLIEE site. For the PH site, there are 2 access roads, one feeding to the northern part and the other feeding to the southern part of the site. For YLIEE site, there is only one access road.

2.5.1.2 Other than the access roads within the PH site and YLIEE site, a total of 4 local improvements on existing road outside the Project site are also proposed. **Figure 2.5.2** shows the proposed scope of the improvements on existing roads and they are summarized in the table below.

Table 2.5.1: Summary of Road Improvement Works

Junction		Proposed Improvement Works
Ref	Location	
RW1	Fuk Hi Street / Long Ping Road and access road to PH site	Preliminary junction improvement has been included for this junction. A section of approximately 150m long of the north bound of Fuk Hi Street would be widened A section of approximately 120m long of the north bound of Long Ping Road would be widened for left turn Some minor refinement of the local access road to Ting Fook Villas
RW2	Fuk Hi Street / Wang Lok Street	An additional left turn lane from Wang Lok Street to Fuk Hi Street
RW3	Long Ping Road / Fung Chi Road and access road to GIC building	Minor reconfiguration of road junction layout to facilitate new access road connection
RW5	Shui Pin Wai Interchange	Local junction reconfiguration at WB lane from Long Ping Road into Shui Pin Wai Interchange

2.5.1.3 The widening work at RW1 would increase the capacity of Fuk Hi Street and Long Ping Road to cater for the increase in traffic demand induced by the Project. For RW2 to RW5, only some minor reconfiguration or an additional left turn lane is required.

2.5.2 Sewerage Infrastructure

- 2.5.2.1 **Figure 2.5.3** illustrates the proposed sewerage infrastructure within and outside the Project Site. New sewerage system would be required within the Project Site to suit the arrangement for building block layout. The sewage collected from various buildings would be conveyed to sewers running along the access roads.
- 2.5.2.2 Since the existing sewers within YLIE were not designed for the proposed development, construction of new sewers/upgrade of existing sewerage network within YLIE is required to convey the sewage flows from the Project Site to the Yuen Long Sewage Treatment Works (YLSTW).
- 2.5.2.3 According to the current design, sewage from the Project Site would be diverted to YLSTW by adopting the existing gravity system. The existing sewerage along Fuk Hi Street of varying pipe size from 375mm to 900mm diameter would need to be upgraded to 900mm from the project boundary to Fuk Shun Street and to 1050mm from Fuk Shun Street to the existing sewerage along Wang Lee Street. The reconnection of existing service laterals will be required; however the alignment of the mainline would remain the same so as to avoid conflicts with other utilities.
- 2.5.2.4 Once connected to the existing sewerage along Wang Lee Street, the sewage would be diverted to the YLSTW. The proposed Effluent Polishing Scheme (EPS) upgrading works at YLSTW to be carried out by DSD will be designed to cater for the additional sewage flow from the proposed developments. The current design does not require any new sewage pumping stations.

2.5.3 Drainage Infrastructure

- 2.5.3.1 There are a number of existing watercourses within the Project Site, generally running from the Kai Shan area in the west towards the east. In order to cater for the proposed landuses within the Project Site, it is proposed to install peripheral drains along the western boundary to collect the surface runoff from Kai Shan. The runoff collected from these peripheral drains (typically in the form of a concrete u-channel) would confluence at a number of catch pits and connect to new drainage systems aligned across the Project Site, mainly below landscaped areas and new access roads. **Figure 2.5.4** illustrates the proposed drainage infrastructure within and beyond the Project Site.
- 2.5.3.2 The existing Tai Tseng Wai channel adjoins the western edge of the YLIE and the eastern edge of the Project Site. The channel collects runoff from a small portion of YLIE and substantial flows from the Kai Shan area west of the Project Site, directing them north and then east along the northern boundary of the YLIE, and ultimately discharging to Shan Pui River. In order to optimise the developable area for the YLIE expansion, the section of channel along the western

boundary of YLIE will be removed, and flows from YLIE and the Kai Shan u-channels will be directed underground via new pipe networks, a new drainage system along the northern site boundary, and ultimately into the Tai Tseng Wai channel at the northernmost corner of the Project Site.

- 2.5.3.3 The new internal drainage system across the Project Site would need to be connected to either an existing drainage system or a new/improved drainage system. The current design recommends the following drainage improvement works. **Figure 2.5.4** shows the proposed drainage infrastructure.

2.5.4 Other Infrastructure

- 2.5.4.1 According to the current design, other than the sewerage and drainage infrastructure upgrading works as discussed in the section above, a section of existing 250mm fresh water main along Long Ping Road is proposed to be permanently upgraded to 300mm to cater for the additional water demand of the proposed development and ensure residual head meets WSD minimum requirement. **Figure 2.5.3** shows the proposed water upgrading works.
- 2.5.4.2 According to the power service provider CLP, a new 132kV power substation will be required to deliver power from the 132kV cables at Long Ping Road to the proposed development. Consultation with CLP has been made. It was agreed that CLP will be responsible to approach LandsD for a land search for a suitable location for the new substation, and new cable circuits will be installed from the new power substation by CLP to serve the development platforms via existing and proposed onsite roadways.
- 2.5.4.3 The future plan for HKCG gas supply to the project site will depend on the predicted gas demand of the proposed development during detailed design stage. HKCG may determine upgrades to its existing low- and medium-pressure mains are needed.
- 2.5.4.4 Given the variety of existing telecommunication services adjacent to the project site, it is anticipated that providers will be capable of fitting service feeds from the proposed development to existing facilities along the local road network.

3 ACTION PLAN AND IMPLEMENTATION PROGRAMME

3.1 Outline of Proposed Works

- 3.1.1.1 An outline of the proposed works for the Project based on the preliminary recommended option and the associated supporting infrastructure/ facilities is summarised below:
- a) Site clearance, decontamination and formation of about 19ha of land for PH site.
 - b) Site clearance, decontamination and formation of about 15ha of land for YLIEE.
 - c) Construction of the proposed public housing development which comprises 24 residential blocks, retails, parking spaces, 1 Public Transport Interchange (PTI), local open space and amenity area.
 - d) Associated geotechnical works, drainage works, sewerage works, waterworks, roadworks, environmental mitigation measures and landscaping works.
 - e) Creation of one on-site woodland compensation area in PH site Phase 3, one on-site ecological compensation area and one on-site woodland compensation in YLIEE and one off-site woodland compensation area in Kai Shan.

3.2 Action Plan

Local Public Consultation

- 3.2.1.1 Consultation with the Yuen Long District Council (YLDC) and Ping Shan Rural Committees (RC) will be carried out to engage the DC and RC's members on appreciation of the need of the Project and various planning and design considerations in the Project, so as to gain their support. The DC and RC consultation would also aim to facilitate the subsequent rezoning process for public housing use, industrial estate use and other associated uses.
- 3.2.1.2 The first round of briefing meetings with YLDC chairman, YLDCs' and Ping Shan RCs' key representative members have been held in Jul and Sep 2012. The two meetings were aimed to introduce the Project to the key members, to consult their initial comments on the Project as well as to appreciate their major public concern.
- 3.2.1.3 According to HKHA's tentative programme, it is scheduled to carry out the second round of briefing meetings with RC and DC committees in early 2014. The consultations with RC and DC are planned in Mar 2014 and Apr 2014 respectively. Before the meetings, lobbying with the key members will be held.

Approval of Environmental Impact Assessment (EIA) Report

- 3.2.1.4 The EIAO provides a statutory framework for the assessment of environmental impacts of designated projects and the implementation of preventive and mitigation measures to protect the environment.
- 3.2.1.5 The Project is a Designated Project (DP) under Item 1 of Schedule 3 of the TM-EIAO, i.e. “Engineering Feasibility Study of urban development projects with a study area covering more than 20ha or involving a population of more than 100,000. It needs to follow the statutory process to carry out an environmental impact assessment (EIA). There are also 3 identified DP under Schedule 2 of the TM-EIAO including Item A.1 - A road which is an expressway, trunk road, primary distributor road or district distributor road including new road, and new major extensions or improvements to existing road; Item I.1 (b) (vii) - A drainage channel or river training and diversion works which discharges or charge into an area which is less than 300m from the nearest boundary or existing conservation area; and Item K.1 - An industrial estate. They need to follow the statutory process to carry out the EIA and obtain an environmental permit (EP) prior to construction commencement.
- 3.2.1.6 According to the current programme, the Project Profile covering all the identified DPs will be formally submitted to EPD for application of study brief for the EIA after completion of the DC and RC consultation. The arrangement for public inspection of the Project Profile will be made in accordance with EIAO. The EIA study brief will be obtained in 45 days of receiving the application or further information.
- 3.2.1.7 The EIA will be conducted in accordance with the EIA study brief to be issued by EPD and under TM-EIAO. The Draft EIA report and EM&A Manual will be submitted to EPD for comments. All comments received will be addressed and incorporated into the Final EIA report for formal submission under the EIAO, tentatively in Sep 2014. A statutory time for review of the EIA report by EPD is 60 days. If the Director of EPD is satisfied that the EIA report meets the requirements of the EIA study brief and TM-EIAO, the Final EIA report together with the EM&A Manual will be arranged and made available for public inspection for a period of 30 days. The inspection of the Final EIA report by the Advisory Council on the Environment (ACE) will take 60 days in parallel with public inspection and where required, presentation meetings with ACE will be made. A statutory time for approval of the EIA is 30 days and for application of an EP is also 30 days. It is anticipated that the EIA approval and issue of EP will be obtained in early 2015.

Planning and Rezoning Procedure

- 3.2.1.8 The development proposal for Wang Chau will serve as a basis for the preparation of amendments to the Approved Ping Shan Outline Zoning Plan No. S/YL-PS/14. Amendments to the OZP will be

gazetted under the statutory plan-making process pursuant to the Town Planning Ordinance (TPO). Planning Department (PlanD) as the executive arm of the Town Planning Board (TPB) will undertake the preparation and submission of the new draft plan to the Town Planning Board (TPB) for consideration.

- 3.2.1.9 The timeframe for the gazettal process under TPO is provided in **Table 3.2.1**.

Table 3.2.1 Plan-Making Time Frame under Town Planning Ordinance

Items	Duration (months)
Publication of the Draft Plan for Representation	2
Publication and Hearing of Representations and Comments on the Draft Plan by the TPB (including amendment to the draft plan arising from the consideration of representations/comments, if needed)	9 (CE may allow a further period of up to 6 months)
Submission of Draft Plan to Chief Executive in Council for Approval	

- 3.2.1.10 In consideration of the planning intention and land use proposals for Wang Chau, it is anticipated that the PH site will be rezoned as “Comprehensive Development Area” (“CDA”) whilst the YLIEE site will be rezoned as “Other Specified Uses (Industrial Estate)” (“OU (IE)”).
- 3.2.1.11 Development in a “CDA” zone requires planning permission from the TPB. The TPB may require the application for permission in “CDA” zone to be in the form of Master Layout Plan (MLP) supported by other relevant information including explanatory statement and various assessments. The application will be considered by the TPB within two months of receipt.

Technical Feasibility Statement

- 3.2.1.12 The Project Definition Statement (PDS) and Technical Feasibility Statement (TFS) shall be prepared under the Project Administration Handbook for Civil Engineering Works, 2012 Edition for all public works such that their design and construction would be funded by government funding and undertaken by government departments. Based on the current programme, it is anticipated that the PDS and TFS will be submitted by mid 2014.

Land requirement / administration and clearance

- 3.2.1.13 Within the Project site, about 210,000 m² (~60%) of the area are private lands. There are 9 Letter of Approval (LOA), 156 Modification of Tenancy (MOT), 2 Building Licence (BL), 13 Short Term Waiver (STW) and 31 Tso and Tong lots. Gazettal of resumption of the lands for a public purpose (for public housing and industrial development except the roadwork) is required under the Land Resumption Ordinance (Cap 124).
- 3.2.1.14 The Tso and Tong lands are owned by traditional organisations. Under Section 15 of the New Territories Ordinance (Cap. 97), the consent of the District Officer, on behalf of the Secretary for Home Affairs, is

required before a registered manager may sell any registered Tso and Tong land. This consent is normally subject to a time limit, therefore a purchaser should ensure that the consent is still valid, and that any other terms of the consent have been complied with.

- 3.2.1.15 The Roads (Works, Use and Compensation) Ordinance (Cap 370) requires all roadworks, except those of minor nature, to be gazetted. This Ordinance also provides the mechanism to resume private land for roadworks. Detailed plan and scheme shall be provided for public inspection. Under Section 13A of Town Planning Ordinance (Cap 131), any works or use authorized under the Roads (Works, Use and Compensation) Ordinance (Cap 370) shall be deemed to be approved under this Ordinance. Hence, upon authorization of the proposed roads by Chief Executive in Council pursuant to the provisions of the Roads Ordinance, the roads will be incorporated as appropriate into the respective statutory town plans.
- 3.2.1.16 The Project includes the construction of new access roads in Phase 1 and Phase 2 of PH site and YLIEE site, as well as the roadworks at junctions at Fuk Hi Street / Long Ping Road and access road to PH site Phase 2/3, Fuk Hi Street / Wang Lok Street, Long Ping Road / Fung Chi Road and access road to PH site Phase 1, Fung Chi Road / Wang Tat Road / Ma Wang Road / Ping Wui Street, as well as Shui Pin Wai Interchange. Gazettal of these roadworks under the Roads Ordinance is required.
- 3.2.1.17 There are also few leased Government lands to be affected by the Project, including 9 Short Term Tenancies (STT) and 9 Government Land Licence (GLL). Termination and clearance of these licences/tenancies are required. Reprovision of licences at the nearby area may need to be considered, if required, by LandsD and liaison with these land users should be carried out.
- 3.2.1.18 There are houses/buildings, temporary structures (both living and non-living) to be affected by the Project. The occupants need to be moved and/or resettled. Local rehousing is considered to be provided to clearances that are eligible for public rental housing.
- 3.2.1.19 There are graves and kam taps that will be affected by the development. The affected graves are all located in government land and are either totally or partially outside the designated burial ground.
- 3.2.1.20 Land resumption and clearance usually needs a long lead time and an early submission of the clearance application form (CAF) is considered necessary. In accordance with the Project Administration Handbook, at least 18 months for clearance done under the Land Resumption Ordinance or 24 months for clearance done under Roads (Works, Use and Compensation) Ordinance should be allowed before work commencement. A period of 47 months is currently allowed in the implementation programme for LandsD to process all land administration, resumption and clearance procedures.

Land Licence Area occupied by MTRCL

- 3.2.1.21 The southern end of the PH site will encroach into the area within MTRCL's Railway Protection Boundary held under Government land (see TR-3 Land Requirement Plan). It should be noted that any proposals for new building, engineering works and developments (e.g. site formation/foundation works, ground investigation works, underground drainage works, demolition works etc.) to be carried out within the Railway Protection Boundary are subject to MTRCL's comment and special scrutiny of the Building Authority prior to giving approval to the plans and/or consent for commencing the construction works. Further liaison with MTRCL needs to be made during the detailed design stage of the Project to secure their comments and approval.

3.3 Development Phasing/Package

- 3.3.1.1 It is proposed that the PH site would be implemented in 3 phases and the YLIEE site would be developed in a single phase (**Figure 3.3.1**). The site formation works and essential infrastructure works will be carried out by CEDD; while the piling and building works for PH site will be carried out by HKHA.
- 3.3.1.2 The scope of works is proposed to be grouped below.

Development Package 1 - Site formation for PH Phase 1

- 3.3.1.3 Development package 1 covers the site formation works for Phase 1 of PH site, including the following scope:
- Formation of about 5.5ha of land including the following:
 - Site clearance;
 - Tree felling and tree transplanting;
 - Site decontamination (about 0.02 ha of land having potential land contamination);
 - Slope work;
 - Excavation and deposition;
 - Export of surplus spoil materials, etc.;
 - Construction of retaining walls (retaining height of about 4-7m), bored pile wall (retaining height of about 8-10m), U-shaped retaining structure (retaining height of about 10-12m) and toe walls;
 - Construction of the southern access road and the associated junction improvement of total about 330m long;
 - Construction of 450-600Ø U-channel of total about 800m long;
 - Construction of 1050 – 1500Ø drain pipes of total about 920m long;
 - Construction of 450 – 600Ø sewer mains of total about 580m long;

- Construction of 100 – 250Ø water mains of total about 1390m long.

Development Package 2 - Site formation for PH Phase 2 and Essential supporting infrastructure works outside the site boundary

3.3.1.4 Development package 2 covers the site formation works for Phase 2 of PH site. The supporting infrastructure works/facilities outside the development boundary are grouped into this package and have to be carried out in advance to allow operation before first population intake of YLIEE development in 2022.

3.3.1.5 The scope of works for development package 2 includes the following:

Within Phase 2 development site

- Formation of about 5.9ha of land including the following:
 - Site clearance;
 - Tree felling and tree transplanting;
 - Site decontamination (about 1.3 ha of land having potential land contamination);
 - Slope work;
 - Excavation and deposition;
 - Export of surplus spoil materials, etc.;
- Construction of retaining walls (retaining height of about 2 to 6m) and toe walls;
- Construction of the northern access road and the associated junction improvement of total about 360m long;
- Construction of 300 - 750Ø U-channel of total about 550m long;
- Construction of 600 – 1800Ø drain pipes of total about 780m long;
- Construction of a 3000(W) x 2000(D) box culvert of about 220m long;
- Construction of 450 – 750Ø sewer mains of total about 580m long;
- Construction of 300 – 450Ø water mains of total about 1210m long.

Outside development site

- Site clearance, tree felling and tree transplanting for construction of the supporting infrastructure works;
- Widening of Fuk Hi Street and Long Ping Road of total about 300m long;
- Junction improvement at Wang Lok Street of total about 100m long;
- Junction improvement at Shui Bin Wai Interchange of total about 50m long;

- Construction of roadside absorptive barriers of 2-5m high and total about 460m long along Fuk Hi Street and Long Ping Road;
- Installation of friction course material on Long Ping Road;
- Construction of proposed 1650Ø drain pipes of about 230m long along Fuk Hi Street;
- Upgrading the existing storm drains to 1500Ø and construction of proposed 1500Ø storm drains of total about 220m long along Long Ping Road.
- Upgrading the existing 1800Ø storm drain along Long Ping Road to 3500(W) x 2000(D) box culver of about 170m long.
- Upgrading the existing 1200-1800Ø storm drain along Fuk Hi Street and Long Ping Road to 3500(W) x 2000(D) twin cells box culver of about 670m long.
- Construction of 600Ø sewer mains of total about 60m long along Fung Chi Road;
- Upgrading of existing 450-750Ø sewer mains to 750Ø of total about 220m long along Fung Chi Road;
- Construction 900Ø sewer mains of total about 180m long along Fuk Hi Street;
- Upgrading existing 300-900Ø sewer mains to 900-1050Ø of total about 1010m long along Fuk Hi Street;
- Upgrading existing 250Ø water mains to 300Ø of total about 130m long along Long Ping Road.

Development Package 3 - Site Formation for PH Phase 3

3.3.1.6 Development package 3 covers the site formation works for Phase 3 of PH site, including the following scope:

- Formation of about 7.5ha of land including the following:
 - Site clearance;
 - Tree felling and tree transplanting;
 - Site decontamination (about 5.7 ha of land having potential land contamination);
 - Slope work;
 - Excavation and deposition;
 - Export of surplus spoil materials, etc.;
- Construction of retaining walls (retaining height of about 2 to 6m) and toe walls;
- Construction of 300-750Ø U-channel of total about 240m long;
- Construction of 1650Ø drain pipes of total about 290m long;
- Construction of 450Ø sewer mains of total about 290m long;
- Construction of 150 – 300Ø water mains of total about 570m long.

Development Package 4 - Site Formation for YLIEE

3.3.1.7 Development package 4 covers the site formation works for YLIEE site, including the following scope:

- Formation of about 15ha of land including the following:
 - Site clearance;
 - Tree felling and tree transplanting;
 - Site decontamination (about 10ha of land having potential land contamination);
 - Slope work;
 - Excavation and deposition;
 - Export of surplus spoil materials, etc.;
- Construction of retaining walls (retaining height of about 1.7 to 7m) and toe walls;
- Demolition of the existing nullah along the eastern boundary of YLIEE
- Construction of the access road and the associated junction improvement of total about 650m long;
- Construction of 300 - 600Ø U-channel of total about 690m long;
- Construction of 600 - 1650Ø drain pipes of total about 740m long;
- Construction of a 2500(W) x 2000(D) box culvert of about 180m long and 3000(W) x 2500(D) box culvert of about 360m long;
- Construction of 600 - 750Ø sewer mains of total about 660m long;
- Construction of 100 – 450Ø water mains of total about 1370m long.
- Soft landscape and hard landscape works, tree planting including the on-site woodland compensation area, as well as the planting for on-site ecological compensation area.

Development Package 5 – Foundation works for PH Phase 1

3.3.1.8 Development package 5 covers the foundation works for Phase 1 of PH site. including the following scope:

- Piling and pile cap construction for 10 number of domestic blocks;
- Piling and pile cap construction for the proposed retails;
- Piling and pile cap construction for the proposed carparks.

Development Package 6 – Foundation works for PH Phase 2

3.3.1.9 Development package 6 covers the foundation works for Phase 2 of PH site. including the following scope:

- Piling and pile cap construction for 7 number of domestic blocks;
- Piling and pile cap construction for the proposed retails;

- Piling and pile cap construction for the proposed carparks.

Development Package 7 – Foundation works for PH Phase 3

3.3.1.10 Development package 7 covers the foundation works for Phase 3 of PH site, including the following scope:

- Piling and pile cap construction for 7 number of domestic blocks;
- Piling and pile cap construction for the proposed retails;
- Piling and pile cap construction for the proposed carparks.

Development Package 8 – Superstructure works for PH Phase 1

3.3.1.11 Development package 8 covers the superstructure works for Phase 1 of PH site, including the following scope:

- Building construction for 10 number of domestic blocks;
- Building construction for the proposed retails;
- Building construction for the proposed carparks;
- Construction of EVA;
- Construction of the footbridge at the podium level connecting to Long Ping Estate;
- Construction of the sewers, drainage and water works within housing site;
- Soft landscape and hard landscape works, and tree planting;
- MEP installation.

Development Package 9 – Superstructure works for PH Phase 2

3.3.1.12 Development package 9 covers the superstructure works for Phase 2 of PH site, including the following scope:

- Building construction for 7 number of domestic blocks;
- Building construction for the proposed retails;
- Building construction for the proposed carparks;
- Construction of EVA;
- Construction of the sewers, drainage and water works within housing site;
- Construction of the proposed noise mitigation measures within the housing site;
- Soft landscape and hard landscape works, and tree planting;
- MEP installation.

Development Package 10 – Superstructure works for PH Phase 3

3.3.1.13 Development package 10 covers the superstructure works for Phase 3 of PH site, including the following scope:

- Building construction for 7 number of domestic blocks;
- Building construction for the proposed retails;
- Building construction for the proposed carparks;
- Construction of PTI;
- Construction of EVA;
- Construction of the sewers, drainage and water works within housing site;
- Soft landscape and hard landscape works, tree planting including the on-site woodland compensation area;
- MEP installation.

3.3.1.14 In addition to development packages above, there are other works required to be carried out/implemented by other relevant government departments / public utility companies to facilitate the operation of the development. These works are presented below:

Utilities

- Construction of one 132kV primary substation;
- Construction of power supply network;
- Construction of gas supply network;
- Construction of telecommunication network.

GIC Building and Schools

- Construction of one school in Phase 1 of PH site;
- Construction of two schools in Phase 3 of PH site;
- Construction of one Integrated Social Welfare Facilities Block in Phase 1 of PH site.

Upgrading Yuen Long Sewage Treatment Works (YLSTW)

- Upgrading the existing YLSTW under another project “Effluent Polishing Scheme at YLSTW”.

Industrial Building at YLIEE

- Construction of the industrial buildings.

3.4 Implementation Programme

3.4.1.1 The original programme aims to achieve operation of YLIEE in 2022, Phase 1 of PH site in 2024, and Phase 2 and Phase 3 of PH site in 2026. After soft lobbying with the community leaders in July and

September 2013, objections to both the public housing development and YLIEE at Wang Chau were encountered. As a result, there is slight delay on the commissioning years of the public housing development.

3.4.1.2 The latest proposed implementation programme is presented in **Figure 3.4.1**. The key dates are summarised in **Table 3.4.1** below. It shall be noted that the programme will be further reviewed in next stage throughout the study.

Table 3.4.1: Key dates for implementation

Item	Tasks	Proposed target date
1.	Ping Shan RC and DC consultation	Mar 2014 – Apr 2014
2.	Approval of EIA	Jun 2015
3.	Issue of EP	Jul 2015
4.	Approval of rezoning application	Apr 2015
5.	Submission of final CAF	Nov 2014
6.	Completion of land resumption and site clearance for PH site Phase 1	Oct 2017
7.	Completion of land resumption and site clearance for PH site Phase 2 and 3	Oct 2018
8.	Completion of land resumption and site clearance for YLIEE site	Mar 2018
9.	Submission of PDS	Feb 2014
10.	Submission of TFS	Jun 2014
11.	Approval of road gazette	Mar 2016
12.	Include into Cat C	Aug 2014
13.	Upgrade to Cat B	Oct 2014
14.	Detailed design for site formation and infrastructure works (including WoCA and compensatory planting plan)	Apr 2015 - Aug 2019
15.	Upgrade to Cat A (PH site Phase 1)	Jul 2018
16.	Upgrade to Cat A (PH site Phase 2 and 3 and external works)	Jul 2019
17.	Upgrade to Cat A (PH site Phase 1)	Dec 2018
18.	Detailed design for housing site	Nov 2017 – Apr 2024
19.	Detailed design for YLIEE ecological compensation area	Apr 2021 – Mar 2022
20.	Site formation and infrastructure works for PH site Phase 1	Jan 2019 – Dec 2021
21.	Piling and building works for PH site Phase 1	Jan 2022 – May 2025
22.	Site formation and infrastructure works for PH site Phase 2 and 3	Jan 2020 – Dec 2023
23.	External infrastructure works	Jan 2020 – Dec 2022
24.	Piling and building works for PH site Phase 2 and 3	Jan 2024 – Jun 2027
25.	Site formation and infrastructure works for YLIEE site	Jun 2019 – Dec 2022
26.	Landscaping works for YLIEE site	Sep 2022 – Dec 2022

4 ISSUES RELATED TO IMPLEMENTATION OF THE DEVELOPMENT

Detailed Design

- 4.1.1.1 Since the detailed design of the site formation for different development phases and the associated infrastructure works/facilities are inter-related, it is proposed to be carried out by one detailed design consultant. The detailed design consultancy shall be procured by CEDD for carrying out the detailed design, tendering, contract administration, and construction supervision.
- 4.1.1.2 The detailed design for public housing development for all three phases including the residential block, retails, carparks, PTI, landscaping design, the proposed on-site woodland compensation area and EVA will be carried out by in-house HKHA.
- 4.1.1.3 The detailed design and implementation of the proposed on-site woodland compensation area and ecological compensation area in YLIEE will be separately procured by HKSTPC.

Interface issues

- 4.1.1.4 Due to separate development packages, there might be certain interface issues. However, it is considered that the interface issues could be resolved through the use of well established contractual mechanism and regular interface coordination meetings.

Power Supply

- 4.1.1.5 CLP has been consulted on the power supply strategy for operation of the proposed development. As advised, a new 132kV power substation will be required to deliver power from the 132kV cables at Long Ping Road to the proposed development. A land allowance of 32m x 62m is required to accommodate the substation transmission equipment.
- 4.1.1.6 As advised by CLP, the land application process for a primary substation typically takes 1 year to receive government approval, 2.5 years to acquire the land and another 2.5 years for design, construction and commissioning. It was agreed that CLP would approach LandsD for a site search for the new substation and deliver the necessary power demand to the site via new 132kV power substation before the first leasing of the YLIEE development i.e. 2022.
- 4.1.1.7 Under the existing policy, the power supply facility will be funded and constructed by CLP. Details shall be confirmed in the detailed design stage.

Utility

- 4.1.1.8 Construction of various utilities or any utility diversion required will be provided and undertaken by the respective utility providers. The construction of these facilities shall be in line with the development in order to meet the anticipated demand.

Effluent Polishing Scheme

- 4.1.1.9 It was agreed between EPD, DSD, HKHA and HKSTPC that sewage flows from the proposed development shall be conveyed to YLSTW, and the proposed EPS upgrading works at YLSTW to be undertaken by DSD will be designed to cater for the additional sewage flow from the proposed developments.
- 4.1.1.10 The programme of the EPS at YLSTW shall tie in with the first operation of the development i.e. YLIEE in 2022. In case there is any postponement to the EPS project, it will have potential implication on Wang Chau programme. Close liaison with DSD and other relevant government departments is required to ensure timely completion of the EPS project.

Land issue

- 4.1.1.11 There is a potential risk on the programme due to the lengthy time to resolve the objection to land resumption during the gazettal process. Early local public consultation shall be arranged to address the public opinions.

Ground condition

- 4.1.1.12 It should be noted that site is located within Scheduled Area No. 2, and complex ground conditions are likely to be present beneath the site. Due to difficulties in gaining access to the proposed site, the ground investigation (GI) was not allowed at this planning and investigation stage.
- 4.1.1.13 The GI shall be conducted as part of the detailed design stage following land resumption. Since there is insufficient ground investigation data to confirm the complexity of ground conditions below the site or to determine the variation in rockhead levels, it would impose potential constraints on the site formation and foundation design, thus potential risk on the development programme.
- 4.1.1.14 GI shall be arranged and conducted following land resumption. The GI for foundation works might be required in advance before completion of site formation contract. Thus there might be certain interface issues, which need to be resolved through close liaison between CEDD and HKHA.

Stockpiling of spoil materials

- 4.1.1.15 The PH Phase 1 would be the first work site to commence site clearance and terrain cutting as part of its site formation work. Given

the constraints in the size and shape, it is not advisable to implement a temporary stockpiling area within PH Phase 1. The proposed temporary stockpiling area would span across YLIEE and PH Phase 3, accommodating a total area of approximately 32,000m². In order to facilitate future operation, the stockpile would be split into 2 portions, with approximately 21,000m² within YLIEE while the remaining 11,000m² within PH Phase 3.

- 4.1.1.16 During the early stage of the site formation work of PH Phase 1 if the proposed temporary stockpile would not be available yet, the spoil from terrain cutting would be considered for on-site filling as much as practicable. For those that could not match with the filling activities within PH Phase 1, they would inevitably need to be arranged for off-site disposal at designated fill bank.
- 4.1.1.17 Once the proposed temporary stockpile is established, the surplus spoil from the cutting activities in PH Phase 1 would be transported to the stockpile. Similarly, the spoil from the terrain cutting activities in PH Phases 2 and 3 and YLIEE would also be temporarily stored in the stockpile for subsequent filling work so as to maximise the opportunities for on-site reuse.
- 4.1.1.18 The proposed temporary stockpiling area would be established by the site formation contractor for PH Phase 1. Since the stockpile would be split into 2 portions against the boundary between YLIEE and PH Phase 3, the site formation contractor of PH Phase 1 shall handover the management of the respective portions of the temporary stockpile to the site formation contractors of YLIEE and PH Phase 3 once the respective contractors are awarded. The site formation contractors for YLIEE and PH Phase 3 shall then manage their parts of the stockpile separately but with appropriate degree of coordination. For example, depends on further detailed design, the site formation contractor for PH Phase 3 may need to take over as much as spoil from the site formation contractor of YLIEE as early as possible so as to facilitate the early completion of the YLIEE.
- 4.1.1.19 After handing over, the site formation contractors for YLIEE and PH Phase 3 shall maintain their respective parts of the temporary stockpile until final disposal of all surplus spoils. Depends on actual site logistics and programme, the respective contractors may decide the spoil in part of their stockpile to be disposed first and hence facilitate earlier commencement of necessary decontamination works and subsequently for site formation works within the demarcation of the temporary stockpile.
- 4.1.1.20 The C&DMMP is being prepared and will be submitted to PFC for agreement on the imported and exported amounts of spoil materials arising from the development and associated infrastructures, as well as the suitable disposal sites.

5 IMPLEMENTATION AGENTS

5.1.1.1 The proposed management/coordination and maintenance agents for various items for the proposed developments and associated infrastructures/facilities are tentatively identified in **Table 5.1.1** below. Nonetheless, the proposed responsible agents and exact extent of works is still subject to further discussion and agreement by the relevant government departments during the detailed design stage.

Table 5.1.1: Management and maintenance agents

Item	Description	Management Agent	Maintenance Agent
1.	Public housing site, including residential blocks, retails, carparks, platforms, associated planting, open space, amenity areas, estate roads, EVA, as well as internal sewers, drains and water mains collecting from housing development to the public systems	HKHA	HKHA
2.	Schools, internal sewers, drains and water mains collecting from school development to the public systems	EdB	ArchSD
3.	ISWB, internal sewers, drains and water mains collected from GIC development to the public systems	SWD ^[3]	ArchSD ^[3]
4.	Industrial lots inside YLIEE	HKSTPC	Future operators
5.	Amenity planting within YLIEE site	LCSD	LCSD
6.	Public carpark area within YLIEE site	TD	HyD
7.	Internal sewers, drains and water mains from industrial buildings of YLIEE to the public systems	Future operators	Future operators
8.	Peripheral u-channel, slope and retaining structures	To be proposed and agreed ^[2]	To be proposed and agreed ^[2]
9.	Man-made features to be affected/resumed	To be proposed and agreed ^[2]	To be proposed and agreed ^[2]
10.	PTI	TD	HyD
11.	Public roads to PH and YLIEE sites	TD	HyD
12.	Widening Fuk Hi Street, Long Ping Road and junction improvements at Fuk Hi Street / Long Ping Road, Fuk Hi Street / Wang Lok Street, Long Ping Road / Fung Chi Road and access road to GIC building, Fung Chi Road / Wang Tat Road / Ma Wang Road / Ping Wui Street and Shui Pin Wai Interchange	TD	HyD
13.	Lighting within housing estate	HKHA	HKHA
14.	Street lighting	HyD	HyD
15.	Public drain pipes and box culverts within PH, YLIEE, school and ISWB sites	DSD	DSD
16.	New and upgraded public drain pipes and box culverts along the existing public roads	DSD	DSD
17.	New sewerage system along public roads	DSD	DSD
18.	Upgraded or new sewerage system on existing public roads	DSD	DSD

Item	Description	Management Agent	Maintenance Agent
19.	New watermains along public roads	WSD	WSD
20.	Upgraded or new watermains on existing public roads	WSD	WSD
21.	Cleansing including removal of general rubbish, road cleansing on public road	FEHD	FEHD
22.	Removal of general rubbish to refuse collection points and cleansing within public housing estate	HKHA	HKHA
23.	Removal of general rubbish and cleansing within school sites	Future operators	Future operators
24.	Removal of general rubbish and cleansing within ISWB site	Future operators	Future operators
25.	Removal of wastes from industrial lots within YLIEE to refuse collection point or other designated location	Future operators	Waste contractor and licensed chemical waste contractor (for chemical waste) to be appointed by the future operators
26.	Removal of wastes from other public areas within YLIEE to refuse collection point	FEHD	FEHD
27.	Refuse collection point inside public housing site	HKHA	HKHA
28.	Refuse collection point inside YLIEE	FEHD	FEHD
29.	Removal of general rubbish to refuse transfer station	FEHD	FEHD
30.	Proposed ecological compensation area	To be proposed and agreed ^[1,2]	To be proposed and agreed ^[1,2]
31.	Proposed on-site woodland compensation area within PH site	HKHA ^[1]	HKHA ^[1]
32.	Proposed on-site woodland compensation area within YLIEE site	To be proposed and agreed ^[1,2]	To be proposed and agreed ^[1,2]
33.	Proposed off-site woodland compensation area in Kai Shan	To be proposed and agreed ^[1,2]	To be proposed and agreed ^[1,2]

Note:

[1] The proposed ecological compensation area and woodland compensation area are intentionally designed to be natural in harmony with the environment of Kai Shan and not intended for public access. After the ecological planting is fully established, the ECA and WoCA are expected to be self-sustained and no routine vegetation maintenance works will be required. However, for item 31, the proposed woodland compensation area is within the public housing site; and should be managed by HKHA to restrict access by public and maintained where necessary.

[2] Management and/or maintenance agents need to be proposed and agreed.

[3] Subject to further agreement between SWD, ArchSD and HD.

6 COST ESTIMATES

6.1 Land Resumption Cost

- 6.1.1.1 The land resumption cost is based on the proposed land resumption boundary presented in TR3 Land Requirement Plan. It should be noted that the land resumption boundary is still being reviewed by LandsD, CEDD, HD and HKSTPC and hence the cost will be subject to change upon finalization of the land resumption boundary.
- 6.1.1.2 According to the Zonal Plan for Calculation of Compensation Rates – Yuen Long District (valid from 1st April 2013), all private lots affected by the PH and YLIEE development sites fall within “Zone C”. However, [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
- 6.1.1.3 No projection for the ex-gratia compensation rate has been made in this assessment and the current ex-gratia compensation rate has been adopted. The current basic rate for [REDACTED] (valid from 1st April 2013) is \$ [REDACTED] per sq ft. The compensation for agricultural land in [REDACTED] is [REDACTED]% of the basic rate. Therefore, the ex-gratia zonal land compensation rate adopted for the agricultural land is \$ [REDACTED] per sq ft and for building land is valuation price plus \$ [REDACTED] per sq ft.
- 6.1.1.4 **Table 6.1.1** presents the land resumption cost for different development phases for PH and YLIEE site. The proposed temporary works areas for supporting infrastructure works outside the Project development boundary are within the existing roads and no private land will be affected.

Table 6.1.1 Land Resumption Cost for the Project

Land resumption cost	PH site			YLIEE site
	Phase 1	Phase 2	Phase 3	
Price at 2013 (HK\$)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
MOD price (HK\$)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

6.2 Development and Infrastructure Cost

- 6.2.1.1 The development and infrastructure costs include the cost for site clearance, site decontamination, site formation, geotechnical works, road works, stormwater drainage works, sewerage works, water works, foundation works, superstructure works, landscaping works, as well as ecological and environmental mitigation works. The development and infrastructure cost estimation is based on the current development layout and proposal, extent of the proposed improvement / mitigation works, and schematic design for the proposed developments and supporting infrastructure works etc.

6.2.1.2 It should be noted that there is no EnvSI data for the site, the extent of land contamination and the extent of remediation works to be required are still uncertain at this stage. The area with potential of land contamination is identified based on aerial photos and preliminary site inspection. For cost estimation, it has assumed that 70% of this area and 1m deep would require decontamination and the typical remediation methods “Stabilization / Solidification and Biopiling” are assumed. However, it should be noted that the extent of land contamination and remediation works, as well as the remediation method are still subject to detailed land contamination assessments to be carried out during detailed design stage and hence the cost presented in this report at this stage is also preliminary only.

6.2.1.3 **Table 6.2.1 to 6.2.11** present the development and infrastructure cost for different developments for PH and YLIEE site.

Table 6.2.1: Development and Infrastructure Cost for Development Package 1 - Site formation for PH Phase 1

Description	Amount (HK\$)
Site clearance including tree felling and transplanting	██████████
Site formation including site decontamination	██████████
Geotechnical works	██████████
Drainage works	██████████
Sewerage works	██████████
Waterworks	██████████
Roadwork and Pavement	██████████
Ecological and environmental mitigation works	██
Utilities (provided by UU companies)	██
Base estimate (A)	██████████
Add █████% for preliminaries (A x █████%)	██████████
Add █████% for safety and environmental measures (A x █████%)	██████████
Sub-total (B)	██████████
Add █████% for contract contingency (B x █████%)	██████████
Sub-total (C)	██████████
Provisional Sum for Reimbursement of MPF █████% of sub-total (C)	██████████
Sub-total (D)	██████████
Add █████% for project contingency (D x █████%)	██████████
Sub-total (E)	██████████
Add █████% for detailed design consultancy (E x █████%)	██████████
Add █████% for residential site staff (E x █████%)	██████████
Add █████% ground investigation (E x █████%)	██████████
Total (price level at Sep 2013)	██████████
Add price fluctuation	██████████
MOD Price	██████████

Table 6.2.2: Development and Infrastructure Cost for Development Package 2 - Site formation for PH Phase 2

Description	Amount (HK\$)
Site clearance including tree felling and transplanting	██████████
Site formation including site decontamination	██████████
Geotechnical works	██████████
Drainage works	██████████
Sewerage works	██████████
Waterworks	██████████
Roadwork and Pavement	██████████
Ecological and environmental mitigation works	██████████
Utilities (provided by UU companies)	██████████
Base estimate (A)	██████████
Add █████% for preliminaries (A x █████%)	██████████
Add █████% for safety and environmental measures (A x █████%)	██████████
Sub-total (B)	██████████
Add █████% for contract contingency (B x █████%)	██████████
Sub-total (C)	██████████
Provisional Sum for Reimbursement of MPF █████% of sub-total (C)	██████████
Sub-total (D)	██████████
Add █████% for project contingency (D x █████%)	██████████
Sub-total (E)	██████████
Add █████% for detailed design consultancy (E x █████%)	██████████
Add █████% for resident site staff (E x █████%)	██████████
Add █████% ground investigation (E x █████%)	██████████
Total (price level at Sep 2013)	██████████
Add price fluctuation	██████████
MOD Price	██████████

Table 6.2.3: Development and Infrastructure Cost for Development Package 2 - Essential supporting infrastructure works outside the site boundary

Description	Amount (HK\$)
Site clearance including tree felling and transplanting	██████████
Site formation including site decontamination	██████████
Geotechnical works	██████████
Drainage works	██████████
Sewerage works	██████████
Waterworks	██████████
Roadwork and Pavement	██████████
Environmental mitigation works	██████████
Utilities (provided by UU companies)	██████████
Base estimate (A)	██████████
Add █████% for preliminaries (A x █████%)	██████████
Add █████% for safety and environmental measures (A x █████%)	██████████
Sub-total (B)	██████████
Add █████% for contract contingency (B x █████%)	██████████
Sub-total (C)	██████████
Provisional Sum for Reimbursement of MPF █████% of sub-total (C)	██████████
Sub-total (D)	██████████

Description	Amount (HK\$)
Add [redacted] % for project contingency (D x [redacted] %)	[redacted]
Sub-total (E)	[redacted]
Add [redacted] % for detailed design consultancy (E x [redacted] %)	[redacted]
Add [redacted] % for resident site staff (E x [redacted] %)	[redacted]
Add [redacted] % ground investigation (E x [redacted] %)	[redacted]
Total (price level at Sep 2013)	[redacted]
Add price fluctuation	[redacted]
MOD Price	[redacted]

Table 6.2.4: Development and Infrastructure Cost for Development Package 3 - Site formation for PH Phase 3

Description	Amount (HK\$)
Site clearance including tree felling and transplanting	[redacted]
Site formation including site decontamination	[redacted]
Geotechnical works	[redacted]
Drainage works	[redacted]
Sewerage works	[redacted]
Waterworks	[redacted]
Roadwork and Pavement	[redacted]
Ecological and environmental mitigation works	[redacted]
Utilities (provided by UU companies)	[redacted]
Base estimate (A)	[redacted]
Add [redacted] % for preliminaries (A x [redacted] %)	[redacted]
Add [redacted] % for safety and environmental measures (A x [redacted] %)	[redacted]
Sub-total (B)	[redacted]
Add [redacted] % for contract contingency (B x [redacted] %)	[redacted]
Sub-total (C)	[redacted]
Provisional Sum for Reimbursement of MPF [redacted] % of sub-total (C)	[redacted]
Sub-total (D)	[redacted]
Add [redacted] % for project contingency (D x [redacted] %)	[redacted]
Sub-total (E)	[redacted]
Add [redacted] % for detailed design consultancy (E x [redacted] %)	[redacted]
Add [redacted] % for resident site staff (E x [redacted] %)	[redacted]
Add [redacted] % ground investigation (E x [redacted] %)	[redacted]
Total (price level at Sep 2013)	[redacted]
Add price fluctuation	[redacted]
MOD Price	[redacted]

Table 6.2.5: Development and Infrastructure Cost for Development Package 4 - Site formation for YLIEE

Description	Amount (HK\$)
Site clearance including tree felling and transplanting	[redacted]
Site formation including site decontamination	[redacted]
Geotechnical works	[redacted]
Drainage works	[redacted]
Sewerage works	[redacted]
Waterworks	[redacted]
Roadwork and Pavement	[redacted]
Ecological and environmental mitigation works	[redacted]

Description	Amount (HK\$)
Utilities (provided by UU companies)	-
Base estimate (A)	██████████
Add █████% for preliminaries (A x █████%)	██████████
Add █████% for safety and environmental measures (A x █████%)	██████████
Sub-total (B)	██████████
Add █████% for contract contingency (B x █████%)	██████████
Sub-total (C)	██████████
Provisional Sum for Reimbursement of MPF █████% of sub-total (C)	██████████
Sub-total (D)	██████████
Add █████% for project contingency (D x █████%)	██████████
Sub-total (E)	██████████
Add █████% for detailed design consultancy (E x █████%)	██████████
Add █████% for resident site staff (E x █████%)	██████████
Add █████% ground investigation (E x █████%)	██████████
Total (price level at Sep 2013)	██████████
Add price fluctuation	██████████
MOD Price	██████████

Table 6.2.6: Development and Infrastructure Cost for Development Package 5 - Foundation works for PH Phase 1

Description	Amount (HK\$)
Building foundation for residential towers	██████████
Building foundation for retails	██████████
Building foundation for carparks	██████████
Base estimate (A)	██████████
Add █████% for preliminaries (A x █████%)	██████████
Add █████% for safety and environmental measures (A x █████%)	██████████
Sub-total (B)	██████████
Add █████% for contract contingency (B x █████%)	██████████
Sub-total (C)	██████████
Provisional Sum for Reimbursement of MPF █████% of sub-total (C)	██████████
Sub-total (D)	██████████
Add █████% for project contingency (D x █████%)	██████████
Sub-total (E)	██████████
Add █████% for detailed design consultancy (E x █████%)	██████████
Add █████% for resident site staff (E x █████%)	██████████
Add █████% ground investigation (E x █████%)	██████████
Total (price level at Sep 2013)	██████████
Add price fluctuation	██████████
MOD Price	██████████

Table 6.2.7: Development and Infrastructure Cost for Development Package 6 - Foundation works for PH Phase 2

Description	Amount (HK\$)
Building foundation for residential towers	██████████
Building foundation for retails	██████████
Building foundation for carparks	██████████
Base estimate (A)	██████████
Add █████% for preliminaries (A x █████%)	██████████
Add █████% for safety and environmental measures (A x █████%)	██████████
Sub-total (B)	██████████
Add █████% for contract contingency (B x █████%)	██████████
Sub-total (C)	██████████
Provisional Sum for Reimbursement of MPF █████% of sub-total (C)	██████████
Sub-total (D)	██████████
Add █████% for project contingency (D x █████%)	██████████
Sub-total (E)	██████████
Add █████% for detailed design consultancy (E x █████%)	██████████
Add █████% for resident site staff (E x █████%)	██████████
Add █████% ground investigation (E x █████%)	██████████
Total (price level at Sep 2013)	██████████
Add price fluctuation	██████████
MOD Price	██████████

Table 6.2.8: Development and Infrastructure Cost for Development Package 7 - Foundation works for PH Phase 3

Description	Amount (HK\$)
Building foundation for residential towers	██████████
Building foundation for retails	██████████
Building foundation for carparks	██████████
Base estimate (A)	██████████
Add █████% for preliminaries (A x █████%)	██████████
Add █████% for safety and environmental measures (A x █████%)	██████████
Sub-total (B)	██████████
Add █████% for contract contingency (B x █████%)	██████████
Sub-total (C)	██████████
Provisional Sum for Reimbursement of MPF █████% of sub-total (C)	██████████
Sub-total (D)	██████████
Add █████% for project contingency (D x █████%)	██████████
Sub-total (E)	██████████
Add █████% for detailed design consultancy (E x █████%)	██████████
Add █████% for resident site staff (E x █████%)	██████████
Add █████% ground investigation (E x █████%)	██████████
Total (price level at Sep 2013)	██████████
Add price fluctuation	██████████
MOD Price	██████████

Table 6.2.9: Development and Infrastructure Cost for Development Package 8 - Superstructure works for PH Phase 1

Description	Amount (HK\$)
Building works	██████████
Landscape works	██████████
Environmental mitigation measures	██████████
PTI	██████████
Base estimate (A)	██████████
Add █████% for preliminaries (A x █████%)	██████████
Add █████% for safety and environmental measures (A x █████%)	██████████
Sub-total (B)	██████████
Add █████% for contract contingency (B x █████%)	██████████
Sub-total (C)	██████████
Provisional Sum for Reimbursement of MPF █████% of sub-total (C)	██████████
Sub-total (D)	██████████
Add █████% for project contingency (D x █████%)	██████████
Sub-total (E)	██████████
Add █████% for detailed design consultancy (E x █████%)	██████████
Add █████% for resident site staff (E x █████%)	██████████
Total (price level at Sep 2013)	██████████
Add price fluctuation	██████████
MOD Price	██████████

Table 6.2.10: Development and Infrastructure Cost for Development Package 9 - Superstructure works for PH Phase 2

Description	Amount (HK\$)
Building works	██████████
Landscape works	██████████
Environmental mitigation measures	██████████
PTI	██████████
Base estimate (A)	██████████
Add █████% for preliminaries (A x █████%)	██████████
Add █████% for safety and environmental measures (A x █████%)	██████████
Sub-total (B)	██████████
Add █████% for contract contingency (B x █████%)	██████████
Sub-total (C)	██████████
Provisional Sum for Reimbursement of MPF █████% of sub-total (C)	██████████
Sub-total (D)	██████████
Add █████% for project contingency (D x █████%)	██████████
Sub-total (E)	██████████
Add █████% for detailed design consultancy (E x █████%)	██████████
Add █████% for resident site staff (E x █████%)	██████████
Total (price level at Sep 2013)	██████████
Add price fluctuation	██████████
MOD Price	██████████

Table 6.2.11: Development and Infrastructure Cost for Development Package 10 - Superstructure works for PH Phase 3

Description	Amount (HK\$)
Building works	██████████
Landscape works	██████████
Environmental mitigation measures	██████████
PTI	██████████
Base estimate (A)	██████████
Add █████% for preliminaries (A x █████%)	██████████
Add █████% for safety and environmental measures (A x █████%)	██████████
Sub-total (B)	██████████
Add █████% for contract contingency (B x █████%)	██████████
Sub-total (C)	██████████
Provisional Sum for Reimbursement of MPF █████% of sub-total (C)	██████████
Sub-total (D)	██████████
Add █████% for project contingency (D x █████%)	██████████
Sub-total (E)	██████████
Add █████% for detailed design consultancy (E x █████%)	██████████
Add █████% for resident site staff (E x █████%)	██████████
Total (price level at Sep 2013)	██████████
Add price fluctuation	██████████
MOD Price	██████████

- 6.2.1.4 Since there is no GI data for the site, the ground condition is still uncertain at this stage. The cost estimation presented in **Table 6.2.6 – 6.2.8** above has assumed the site under normal ground condition.
- 6.2.1.5 However, the site is within Schedule Area No. 2 and complex ground condition is likely to be present. In view of this, a preliminary review has been carried out to identify the potential areas with adverse ground condition (i.e. potentially resting on marble) based on results of the geophysical survey data interpretation (details refer to TR3 – Geotechnical Assessment and Site Formation Site Report); and the alternative foundation scheme and its implication on the associated cost have been worked out.
- 6.2.1.6 Based on preliminary estimation, it is anticipated that the foundation cost for PH site would be increased by about █████% under the adverse ground condition, i.e. MOD price would become HK\$ ██████████, HK\$ ██████████ and HK\$ ██████████ for Phase 1, Phase 2 and Phase 3, respectively. It shall be noted that the foundation design is still subject to site-specific GI data to be available at detailed design stage and hence the cost presented in this report at this stage is preliminary only.

6.3 Total Capital Cost

- 6.3.1.1 The total capital cost including the broad land resumption cost and development and infrastructure cost for PH and YLIEE site assuming a normal ground condition are summarized in **Tables 6.3.1** below.

Table 6.3.1: Total Capital Cost (under normal ground condition)

Description	MOD Price (HK\$)		
	Land Resumption	Development/ Infrastructure	Total
PH site			
Phase 1	██████████	██████████	██████████
Phase 2	██████████	██████████	██████████
Phase 3	██████████	██████████	██████████
Subtotal	██████████	██████████	██████████
YLIEE	██████████	██████████	██████████
Outside Development Boundary	●	██████████	██████████
Total	██████████	██████████	██████████

6.3.1.2

As mentioned in **Section 6.2** above, it is anticipated that the foundation cost for PH site would be increased by about ███% under the adverse ground condition. The total capital price is presented in **Table 6.3.2** below.

Table 6.3.2: Total Capital Cost (under adverse ground condition)

Description	MOD Price (HK\$)		
	Land Resumption	Development/ Infrastructure	Total
PH site			
Phase 1	██████████	██████████	██████████
Phase 2	██████████	██████████	██████████
Phase 3	██████████	██████████	██████████
Subtotal	██████████	██████████	██████████
YLIEE	██████████	██████████	██████████
Outside Development Boundary	●	██████████	██████████
Total	██████████	██████████	██████████

7 CONCLUSION

- 7.1.1.1 This report has identified and presented the action plan, the proposed development phasing/package, as well as the implementation programme in delivering the development. The key dates for public consultation, statutory procedures, land resumption and site clearance, detailed design, site formation and infrastructure works, piling and building works, etc. have been highlighted.
- 7.1.1.2 Besides, the issues related to implementation of the development have also been discussed in this report. The management and maintenance agents involved for the proposed development and associated infrastructures have been proposed. Further discussion and agreement with the concerned government departments would be required.
- 7.1.1.3 The cost estimates for the different development phases/packages have been presented. The total capital cost including the broad land resumption cost and development and infrastructure cost assuming a normal ground condition are summarized in **Tables 7.1.1** below.

Table 7.1.1: Total Capital Cost (under normal ground condition)

Description	MOD Price (HK\$)		
	Land Resumption	Development/ Infrastructure	Total
PH site			
Phase 1	██████████	██████████	██████████
Phase 2	██████████	██████████	██████████
Phase 3	██████████	██████████	██████████
Subtotal	██████████	██████████	██████████
YLIEE	██████████	██████████	██████████
Outside Development Boundary	●	██████████	██████████
Total	██████████	██████████	██████████

- 7.1.1.4 It is anticipated that the foundation cost for PH site would be increased by about ██████████ under the adverse ground condition.

Table 7.1.2: Total Capital Cost (under adverse ground condition)

Description	MOD Price (HK\$)		
	Land Resumption	Development/ Infrastructure	Total
PH site			
Phase 1	██████████	██████████	██████████
Phase 2	██████████	██████████	██████████
Phase 3	██████████	██████████	██████████
Subtotal	██████████	██████████	██████████
YLIEE	██████████	██████████	██████████
Outside Development Boundary	●	██████████	██████████
Total	██████████	██████████	██████████

7.1.1.5 It shall also be noted that the cost presented in this report at this stage is preliminary only.