

APPENDIX I

EM&A Implementation Schedule

Appendix I Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
<u>Air Quality</u>						
During Construction Phase:						
3.9.1	4.9.2	<p>Good site management practices are important in reducing potential air quality impacts. As a general guidance, the contractor shall maintain high standard of housekeeping to prevent emission of fugitive dust emission. Loading, unloading, handling and storage of fuel, raw materials, products, wastes or by-products should be carried out in a manner so as to minimise the release of visible dust emission.</p> <p>It is recommended that the active works areas within the construction site to be watered regularly during construction period so as to suppress dust emission effectively.</p>	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
3.9.1	4.9.3	The speed of the trucks travelling on haul roads within the Project Site will be controlled at 10 kph in order to reduce dust impact and for safe movement around the Project Site. Any piles of materials accumulated on-site to be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas to be carried out in a manner without generating fugitive dust emissions. The material to be handled	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation

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		properly to prevent fugitive dust emission before cleaning.				
3.9.1	4.9.4	If concrete batching is required on-site, the plant should be cleaned and watered regularly as a good practice. Cement and other fine grained materials delivered in bulk should be stored in enclosed silos fitted with high level alarm indicator. Wet mix batching process is preferred over dry mix batching. In addition, concrete batching plant shall comply with the specified process (SP) licence requirements including specified emission limits and dust control measures.	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
3.9.1	4.9.5	All the relevant dust control measures stipulated in the <i>Air Pollution Control (Construction Dust) Regulation</i> would be fully implemented:	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
3.9.1	4.9.5	<ul style="list-style-type: none"> The designated haul road should be hard paved to minimize fugitive dust emission; During the site formation works, the active works areas should be water sprayed with water browser or sprayed regularly during the construction period. The Contractor(s) should ensure that the amount of water spraying is just enough to dampen the exposed surfaces without over-watering which could result in surface water runoff; Dump trucks for material transport 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation

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		<p>should be totally enclosed using impervious sheeting;</p> <ul style="list-style-type: none"> • Any excavated dusty materials or stockpile of dusty materials to be covered by impervious sheeting or sprayed with water so as to maintain the entire surface wet, and recovered or backfilled or reinstated as soon as practicable; • Dusty materials remaining after a stockpile is removed should be wetted with water; • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with e.g. concrete, bituminous materials or hardcore or similar; • The Contractor(s) shall only transport adequate amount of fill materials to the Project Site to minimise stockpiling of fill materials on-site, thus reducing fugitive dust emission due to wind erosion; • Should temporary stockpiling of dusty materials be required, it shall be either covered entirely by impervious sheeting, placed in an area sheltered on the top and the 3 sides; or sprayed with water so as to maintain the entire surface wet; 				
3.9.1	4.9.5	<ul style="list-style-type: none"> • All dusty materials shall be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet; • Vehicle speed to be limited to 10 kph except on completed access roads; 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation

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		<ul style="list-style-type: none"> • The portion of road leading only to a construction site that is within 30 m of a designated vehicle entrance or exit should be kept clear of dusty materials; • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites; • The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle; • The working area of excavation should be sprayed with water before, during and after (as necessary) the works so as to maintain the entire surface wet; 				
3.9.1	4.9.5	<ul style="list-style-type: none"> • Use of effective dust screens, sheeting or netting to be provided to enclose dry scaffolding which may be provided from the ground floor level of the building or if a canopy is provided at the first floor level, from the first floor level, up to the highest level (maximum four floors for this Project) of the scaffolding where scaffolding is erected around the perimeter of a building under construction. 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
3.9.1	4.9.6	In order to minimize potential fugitive dust impacts, the site formation works should be carried out in stages. Regular site watering will be applied within the construction site in order to effectively suppress dust emission, and that dusty materials will be properly covered to prevent wind erosion. Works area shall be properly covered at the end of working	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	EIA

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		day to minimize wind erosion.				
3.9.1	4.9.7	The concerned sediment at existing pond is intended to be left in place and not to be disturbed as far as possible. However, in case pond sediment is involved during construction at the abandoned pond area, the following precautionary measures are proposed:	Odour control during construction	Contractors	During construction at the abandoned pond (in case pond sediment is involved)	EIA
3.9.1	4.9.7	<ul style="list-style-type: none"> Exposed surface shall be filled by filling materials; Malodorous material, if any, should be placed as far as possible from any ASRs; Malodorous materials should be covered by plastic tarpaulin sheets; and Regular odour patrol to examine the effectiveness of the above control measures. 	Odour control during construction	Contractors	During construction at the abandoned pond (in case pond sediment is involved)	EIA
During Operational Phase:						
3.9.2	4.10.6	During operation, RCP will be provided for the residential development. A licensed waste collector shall be employed to collect domestic waste on daily basis.	Odour control during operation	Project Proponent	During operational stage	EIA
3.9.2	4.10.3, 4.10.2	During the operational stage, an interim sewage treatment plant is proposed within the Project Site before connection to the public sewerage system becomes available. Detailed design of the interim STP has yet been carried out, but the interim sewage treatment plant will be within a totally enclosed building with biological treatment, membrane filtration and Reverse Osmosis processes to be located underground. The concerned facility will only be temporary and will be carefully planned such that the brine	Odour control during operation	Project Proponent	During operational stage	EIA

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		disposal during maintenance (a potential odour source) will be away from the residential area as much as possible and will be close to the vehicular access connecting the nearby road.				
3.9.2	4.10.4	The STP will be equipped with odour removal system (with an odour removal efficiency of not less than 99.5%). In addition, the exhaust of the STP will be directed away from nearby ASRs.	Odour control during operation	Project Proponent	During operational stage	EIA
3.9.2	4.10.8	In terms of vehicular emission impacts, the required minimum separation distance between air quality sensitive uses of this Project and the edge of nearby roads surrounding the Project Site should be >5m as stipulated in Chapter 9 of HKPSG. The current proposed development (with separation distance of 7m to over 104m between air quality sensitive uses of this Project and the edge of nearby roads surrounding the Project Site) can satisfy the above-mentioned minimum separation distance (Figure 3-1 of EIA report refers).	Vehicular emission during operation	Project Proponent/ Project architect	During operational stage	EIA, HKPSG
Noise Quality						
During Construction Stage:						
4.8.2 & 4.8.1	5.7.6, 5.7.3, & 5.7.4	EPD's quality powered mechanical equipment (QPME) inventory is reviewed and proposed to be used wherever possible as a noise mitigation measure. The Contractor of this Project should diligently seek equivalent models of quiet/	Noise control during construction	Contractors, ER	Construction areas near the specified locations during the construction period	EIA, Contractual requirements, Annex 5 and Annex 13 of EIAO-TM.

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		<p>silenced PMEs.</p> <p>Asides from QPMEs mentioned above, additional noise mitigation measures in terms of movable noise barriers are also proposed. Movable noise barriers are proposed to shield construction plants. The movable noise barriers should have sufficient surface density of at least 10 kg/m² or material providing equivalent acoustic performance to block the line of sight from the sensitive receivers. There should not be any gaps and openings at the noise barriers to avoid noise leakage. The design of the noise barriers shall be proposed by the work contractor(s), and approved by the Engineers Representative (ER) and the Environmental Team in accordance with the Project EM&A Manual</p>				
4.8.3	5.7.11	It is also recommended that good housekeeping activities shall also be carried out to further minimise the potential construction noise impact, and these are summarised below. The following good site practices are also recommended for incorporation into the contractual requirements:	Noise control during construction	Contractors, ER	Construction areas near the specified locations during the construction period	EIA, Contractual requirements, Annex 5 and Annex 13 of EIAO-TM.
4.8.3	5.7.11	<ul style="list-style-type: none"> ■ Before the commencement of any work, the Contractor shall submit to the Engineer for approval the method of working, equipment and sound-reducing measures intended to be used at the Project Site; ■ Contractor shall comply with and 	Noise control during construction	Contractors, ER	Construction areas near the specified locations during the construction period	EIA, Contractual requirements, Annex 5 and Annex 13 of EIAO-TM.

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		<p>observe the Noise Control Ordinance (NCO) and its current subsidiary regulations;</p> <ul style="list-style-type: none"> ■ Contractor shall devise and execute working methods that will minimise the noise impact on the surrounding environment; and shall provide experienced personnel with suitable training to ensure that these methods are implemented; ■ Only well-maintained plants should be operated on-site; ■ Plants should be serviced regularly during the construction programme; ■ Machines that may be in intermittent use should be shut down or throttled down to a minimum between work periods; ■ Silencer and mufflers on construction equipment should be utilised and should be properly maintained during the construction programme; 				
4.8.3	5.7.11	<ul style="list-style-type: none"> ■ Noisy activities can be scheduled to minimise exposure of nearby NSRs to high levels of construction noise. For example, noisy activities can be scheduled for midday or at times coinciding with periods of high background noise (such as during peak traffic hours); ■ Noisy equipment such as emergency generators shall always be sited as far away as possible from noise sensitive 	Noise control during construction	Contractors, ER	Construction areas near the specified locations during the construction period	EIA, Contractual requirements, Annex 5 and Annex 13 of EIAO-TM.

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		<p>receivers;</p> <ul style="list-style-type: none"> ■ Provision of mobile noise barriers in adjacent to construction plants , piling machine, or provision of acoustic screens by the Contractor(s); ■ Mobile plants should be sited as far away from NSRs as possible; ■ Material stockpiles and other structures should be effectively utilised as noise barrier, where practicable; ■ The contractor(s) is also encouraged to arrange construction activities with care so that concurrent construction activities are avoided as much as possible. The contractor(s) should closely liaise with the school so that noisy activities are not undertaken during school's examination period. With the above noise mitigation measures in place and good site practices, residual noise impact at the school would be temporary and unacceptable noise impact is not expected; 				
4.8.3	5.7.11	<ul style="list-style-type: none"> ■ EM&A will be carried out for this Project during the Project construction phase in order to monitor the construction noise level and to verify the effectiveness of the noise mitigation measures. A Project Environmental Team will be formed as part of the Project EM&A works, which will closely monitor contractor(s)' performance and the residual noise level at the school. Should unacceptable construction noise level be identified during the construction noise monitoring, 	Noise control during construction	Contractors, ER	Construction areas near the specified locations during the construction period	EIA, Contractual requirements, Annex 5 and Annex 13 of EIAO-TM.

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		<p>necessary actions following the standard Event and Action Plan specified in the Project EM&A Manual, will be required by the Project Environmental Team.</p>				
4.9.4	5.7.7 to 5.7.10	<p>Since site hoarding will be erected along the site boundary, the proposed temporary fixed noise barriers may be combined with the site hoarding. It is proposed that 3m tall temporary fixed noise barrier would be required along the western site boundary in order to shield N8 (i.e. the Bethel High School) from construction site of this Project. Figure 4-8 of EIA report refers.</p> <p>It shall be noted that these proposed temporary fixed noise barriers are only required when this Project is constructed concurrently with the nearby approved EIA projects (namely, the approved cycle track project; the approved public sewerage project).</p> <p>The exact alignment and design of these temporary noise barriers is subject to the contractor(s) and the prior approval from the Engineer's Representative (ER). To minimize potential impact, erection of temporary fixed noise barriers will be carried out section by section and precast units will be used for the foundation of the noise barrier. These noise barriers shall be erected before the commencement of construction works of this Project. The temporary fixed noise barriers should have sufficient surface density of at least 10 kg/m² or material providing equivalent acoustic performance. There should not be any gaps and openings at the noise barriers and site hoardings to avoid noise</p>	Noise control during construction	Contractors, ER	Construction areas near the specified locations during the construction period	EIA, Contractual requirements, Annex 5 and Annex 13 of EIAO-TM.

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		leakage. The design of the noise barriers shall be proposed by the work contractor(s), and approved by the Engineers Representative (RE) and the Environmental Team in accordance with the Project EM&A Manual				
During Operational Phase:						
4.4.3, 4.8.4	5.8.3, 5.8.2	<p>The permissible SWL of STP is 74dB(A).</p> <p>According to the approved "EIA and TIA Studies for the Stage 2 of PWP Item No. 215DS-Yuen Long and Kam Tin Sewerage and Sewage Disposal", maximum permissible SWLs at louvre of sewage pumping station are reported to be in the range of 64 – 74dB(A) by the same noise mitigation measures such as acoustic silencer and enclosure.</p> <p>During detailed design, the acoustic performance of the STP should be reviewed and acoustic treatments such as provision of acoustic silencer and acoustic enclosure shall be proposed so that the SWL of STP should be 74dB(A) or below in order to meet the noise criteria.</p>	Noise control during operation at STP	Project architect and Project Proponent	During detailed design stage and operation	EIA, Noise Control Ordinance
4.8.4	5.8.1	Given to the site condition and the presence of industrial noise sources in adjacent to the Project Site and the proposed interim STP, proactive noise protection measures have already been incorporated into the design of the proposed development, which include setback from Kam Pok Road, placing noise tolerant uses such as the proposed	Noise control during operation	Project architect and Project Proponent	During detailed design stage and operation	EIA, Noise Control Ordinance

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		STP (with 10.4mPD at roof level) between the proposed house and the industrial noise source; a noise barrier along the remaining eastern site boundary with a minimum 4.5m tall solid boundary wall; and recommended noise mitigation measures for the proposed interim STP (as mentioned above). The locations of the above-mentioned noise barriers and noise tolerant uses as proactive measures are shown in Figure 5-3 of this manual.				
<u>Water Quality</u>						
During Construction Phase:						
5.5	6.3.3	<p>The Contractor shall apply for a discharge licence under the WPCO and the discharge shall comply with the terms and conditions of the licence.</p> <p>Contractor(s) of this Project is required to submit a Construction Phase Drainage Management Plan with details such as design of the temporary site drainage system; wastewater treatment facilities; and maintenance of drainage system for the approval of the Engineers Representative (ER) and the Environmental Team in order to ensure that the mitigation measures are in place.</p> <p>The concerned drainage management plan should include recommended mitigation measures as well as best practices listed out in the EM&A Manual.</p>	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance

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5.5	6.3.4	The Drainage Management Plan and recommended mitigation measures and best practices shall be implemented by the Contractor(s) and inspection shall be carried out regularly (e.g. weekly) by the Engineer's Representative (ER), and Environmental Team (ET) in order to ensure all mitigation measures are effectively implemented, in particular to ensure that no off-site spillage of runoff from the project site. Any deficiencies identified shall be timely rectified by the Contractor(s).	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.1	6.3.5	The BMPs given in the ProPECC PN 1/94 shall be implemented in controlling water pollution during the whole construction phase. The main practices provided in the above-mentioned document (i.e. ProPECC PN 1/94) are also summarized in the following paragraphs which should be implemented by the contractor during construction phase where practicable :	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.1	6.3.5	<ul style="list-style-type: none"> High loading of suspended solids (SS) in construction site runoff shall be prevented through proper site management by the contractor; 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.1	6.3.5	<ul style="list-style-type: none"> The boundary of critical work areas shall be surrounded by ditches or embankment. Accidental release of soil or refuse into the adjoining land should be prevented by the provision of site hoarding or earth bunds, etc. at the site boundary. These facilities 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance

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		should be constructed in advance of site formation works and roadworks;				
5.5.1	6.3.5	<ul style="list-style-type: none"> Consideration should be given to plan construction activities to allow the use of natural topography of the Project Site as a barrier to minimise uncontrolled non-point source discharge of construction site runoff; 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.1	6.3.5	<ul style="list-style-type: none"> Temporary ditches, earth bunds should be provided to facilitate directed and controlled discharge of runoff into storm drains via sand/ silt removal facilities such as sand traps and sedimentation basins. Oil and grease removal facilities should also be provided where appropriate, for example, in area near plant workshop/ maintenance areas; Sedimentation basins and sand traps designed in accordance with the requirements of ProPECC Note PN 1/94 should be installed at the construction site for collecting surface runoff; 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.1	6.3.5	<ul style="list-style-type: none"> Sand and silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly by the contractor, and at the onset of and after each rainstorm to ensure that these facilities are functioning properly; 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.1	6.3.5	<ul style="list-style-type: none"> Slope exposure should be minimised where practicable especially during the wet season. Exposed soil surfaces should be protected from rainfall through covering the temporary exposed slope surfaces or stockpiles with tarpaulin or the like; 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance

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5.5.1	6.3.5	<ul style="list-style-type: none"> Haul roads should be protected by crushed rock, gravel or other granular materials to minimise discharge of contaminated runoff; 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.1	6.3.5	<ul style="list-style-type: none"> Slow down water run-off flowing across exposed soil surfaces; 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.1	6.3.5	<ul style="list-style-type: none"> Plant workshop/ maintenance areas should be bunded and constructed on a hard standing. Sediment traps and oil interceptors should be provided at appropriate locations; 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.1	6.3.5	<ul style="list-style-type: none"> Manholes (including newly constructed ones) should be adequately covered or temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system; 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.1	6.3.5	<ul style="list-style-type: none"> Construction works should be programmed to minimise soil excavation works where practicable during rainy conditions; 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.1	6.3.5	<ul style="list-style-type: none"> Chemical stores should be contained (bunded) to prevent any spills from contact with water bodies. All fuel tanks and/ or storage areas should be provided with locks and be sited on hard surface; 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.1	6.3.5	<ul style="list-style-type: none"> Chemical waste arising from the Project Site should be properly stored, handled, treated and disposed of in compliance with the requirements stipulated under the Waste Disposal (Chemical Waste) (General) 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance

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		Regulation;				
5.5.1	6.3.5	<ul style="list-style-type: none"> Drainage facilities must be adequate for the controlled release of storm flows. 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.1	6.3.5	<ul style="list-style-type: none"> Vehicle wheel washing facilities should be provided at the site exit such that mud, debris, etc. attached to the vehicle wheels or body can be washed off before the vehicles leave the work site. 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, WPCO, EIA, Contractual requirements
5.5.1	6.3.5	<ul style="list-style-type: none"> Section of the road between the wheel washing bay and the public road will be paved to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, WPCO, EIA, Contractual requirements
5.5.1	6.3.5	<ul style="list-style-type: none"> Bentonite slurries, if any to be generated, shall be reconditioned and reused as far as practicable. Spent bentonite should be kept in a separate slurry collection system for disposal at a marine spoil grounds subject to obtaining a marine dumping licence from EPD. If used bentonite slurry is to be disposed of through public drainage system, it should be treated to meet the respective applicable effluent standards for discharges into sewers, storm drains or the receiving waters 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, WPCO, EIA, Contractual requirements
5.5.1	6.3.5	<ul style="list-style-type: none"> Appropriate peripheral drainage system shall be constructed along the Project Site boundary to divert away surface runoff in accordance with requirements stipulated in ProPECC PN 1/94 in order to collect surface runoff and discharge it into the 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, WPCO, EIA, Contractual requirements

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		nearby existing stormwater drains, and via which into the existing NTMDC				
5.5.1	6.3.5	<ul style="list-style-type: none"> Temporary drains, sedimentation basins, sand traps and similar facilities shall be provided during the construction works in accordance with the ProPECC PN 1/94. 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, WPCO, EIA, Contractual requirements
5.5.1	6.3.5	<ul style="list-style-type: none"> Sewage generated from the construction workforce should be contained in chemical toilets before connection to public foul sewer becomes available. Chemical toilets should be provided at a minimum rate of about 1 per 50 workers. The facility should be serviced and cleaned by a specialist contractor at regular intervals; 	Sewage and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.1	6.3.5	<ul style="list-style-type: none"> Spillage of fuel oils or other polluting fluids should be prevented at source. It is recommended that all stocks should be stored inside proper containers and sited on sealed areas, preferably surrounded by bunds. 	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.2	6.3.7	<p>During construction, temporary drains, peripheral site drainage comprising precast concrete u-channels, sedimentation basins, sand traps and similar facilities will be provided along the Site boundary. Figure 5-3 of EIA report (Figure 6-2 in this Manual) shows the indicative site drainage during construction phase.</p> <p>The construction of water extraction facility for interim STP should be carried out in dry season so that to avoid affecting water quality at the channel. Silt curtain or sand bags should be provided to carve out the working area so as to</p>	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		<p>bypass the channel flow and to avoid any solids/materials arising from the construction activities from entering the channel during construction phase. The work sites at the NTMDC for construction of water abstraction facilities should be maintained in dry conditions. Regular visual inspections should also be carried out by the Environmental Team and Contractor to ensure there is no spillage into the channel.</p>				
5.5.2	6.3.8	<p>The existing abandoned pond will be filled up by imported fill materials. The pond sediment is intended to be left in place and not to be disturbed as far as possible. However, in case any sediment is encountered during construction, preventative measures are proposed below. Temporary access roads of Project Site should be protected by crushed stone or gravel. Offsite disposal should be avoided and pond sediment should be re-used on-site. For the purpose of prevention of soil erosion, temporary exposed surfaces should be covered by tarpaulin sheets to prevent materials from washing away. Appropriate site drainage should be provided, as part of the construction phase drainage system, to ensure surface runoff is properly collected and treated and there should be no spillage to offsite location.</p> <p>In addition, intercepting channels should be provided along the edge of pond to divert surface runoff away from this pond and to prevent storm runoff from washing across exposed surfaces (Figure 5-3 refers). Arrangements should always be in place to ensure that adequate surface protection measures can be safely carried</p>	Non-point Source Pollution Control	Contractors	During construction at existing abandoned pond	ProPECC PN1/94, Water Pollution Control Ordinance

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		out well before the arrival of a rainstorm.				
5.5.2	6.3.9	As the concerned existing abandoned pond will be filled up to the proposed site formation level during construction, remaining water in the pond will be absorbed by soakaway mechanism and no discharge to off-site location is expected. Site drainage should be provided around the existing abandoned pond to divert surface runoff away from this pond during pond filling. Draining of pond water and discharge to surrounding area should be avoided as far as possible.	Stormwater and Non-point Source Pollution Control	Contractors	During construction at the existing abandoned pond	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.2	6.3.9	In case there is still surplus pond water, the pond water will be on-site re-used for the construction activities such as dust suppression and wheel washing facilities to minimize the water consumption of project as well as the volume of pond water that needs to be handled. In case there is a need for disposal, on-site treatment should be proposed by the Contractor(s) and the discharge of treated effluent will be subject to agreement with EPD and DSD, where necessary. The contractor(s) will be required to properly treat the water on-site with the quality of the treated water complying with the requirement of the discharge license to be issued by the EPD.	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance
5.5.3	6.3.10	During construction period, in order to better control potential water pollution due to site runoff during inclement weather and emergencies, the Contractor(s) will be required to prepare and implement an Emergency Response Plan (ERP). As a general indication, the ERP should include but not limited to the design of drainage facilities/ system; maintenance	Stormwater and Non-point Source Pollution Control	Contractors	At all construction areas of the site during the entire construction period	ProPECC PN1/94, Water Pollution Control Ordinance

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		<p>of drainage system; recommended measures and best practices identified in the EIA study; an event and action plan during inclement weather and emergencies condition; emergency procedures and emergency contact details; and responsibility of relevant parties and follow up actions.</p> <p>In particular, the plan should provide details of procedure and actions required both before and after forecasted rainstorm such as checking/ inspection before onset of rainy season/ rainstorm that all drains are cleared from blockage and functioning properly; checking standby plant and equipment are ready for use; frequency of updating weather conditions; persons who will implement the measures and follow up actions; ensuring easily loose construction materials are well covered; more frequent inspection and cleansing preferably before and after every rainstorm event. In case of severe weather condition, upon the instruction from the Engineers' Representative (ER), to stop works for the sake of safety reasons.</p>				
During Operational Phase:						
5.6.1	6.3.12, 6.3.13	<p>All domestic sewage generated will be discharged to the public sewerage system via a proposed rising main from the Project Site.</p> <p>The discharge from the club house and swimming pool shall apply for a discharge licence under the WPCO, and the discharge shall comply with the terms and conditions of a licence and the standards for effluents specified in the licence, as well as conditions in Environmental Permit.</p>	Sewage Pollution Control	Project Proponent to implement, and property management company / Incorporated Owners to maintain	During operation	EIA, Contractual requirements

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
5.6.1	6.3.14, 6.3.12	An interim STP will be proposed with discharge of the treated effluent to the adjacent NTMDC in case the public sewerage is not available when the Project is in operation. Samples of treated effluent will be taken regularly and tested according to the discharge licence under the Water Pollution Control Ordinance to ensure compliance with discharge standards as well as conditions in Environmental Permit of this Project under the EIAO.	Sewage Pollution Control	Project Proponent to implement, and property management company / Incorporated Owners to maintain	During operation	EIA, Contractual requirements
5.6.1	6.3.14	The proposed interim sewerage system will be designed in such a way to facilitate the future connection to the planned Ngau Tam Mei sewerage system with the flow direction to be controlled by several flow control devices such as valves or stop-log, etc. The interim STP will be decommissioned and converted to a sewage pumping station once the trunk sewer becomes available for connection. Small amount of residual sewage left in the interim STP would be tankered away. No sewage will be discharged into the nearby water body during decommissioning of the interim STP.	Sewage Pollution Control	Project Proponent to implement	During operation	EIA, Contractual requirements
5.6.1	6.3.15	Precautionary measures have also been proposed in Section 6.12 and 6.6 of the EIA report to deal with sewage overflow, emergencies discharge, and change in flow regime. In addition, equalization tank will be provided in the STP for temporary storage of sewage in case of outage of the interim STP, and tank away will be provided for proper disposal at designated sewage	Sewage Pollution Control	Project Proponent to implement, and property management company / Incorporated Owners to maintain	During operation	EIA, Contractual requirements

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		treatment works to be assigned by DSD				
5.6.2	6.3.16	<p>Best Management Practices (BMPs) have been proposed for the development, which are summarised and grouped under the following categories:</p> <p><u>Design Measures</u></p> <ul style="list-style-type: none"> Exposed surface shall be avoided within the proposed development to minimize soil erosion. Development site shall be either hard paved or covered by landscaping area where possible. The landscaped open area should be managed and maintained by the property management company (and its contractor) during operation. Paved area of development has been minimized by a simpler and more effective internal road layout, at which proposed houses are allocated on both sides of the road. Thus hard paved area of internal access road as well as increase in surface runoff, can be minimized; The roadside channel surrounding the Project Site will be retained to maintain the original flow path. The drainage system will be designed to avoid flooding; 	Stormwater and Non-point Source Pollution Control	Project Proponent to implement, and property management company / Incorporated Owners to maintain	During operation	EIA, Contractual requirements
5.6.2	6.3.16	<ul style="list-style-type: none"> Drainage system of the development shall be designed in such a way that surface runoff from the residential area is directed towards the internal access road, where appropriate 	Stormwater and Non-point Source Pollution Control	Project Proponent to implement, and property management company / Incorporated Owners to	During operation	EIA, Contractual requirements

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		<p>drainage system with control facilities have been proposed. Additional paved U-channels with screening facilities are also provided along site boundary to avoid uncontrolled spillage of runoff.</p> <ul style="list-style-type: none"> • Street level tree planting should be introduced along roadside of internal access road, which can help to reduce soil erosion and as a buffer zone between the residential area and the drainage system along roadside. • Broadleaf and evergreen species, which in general generate relatively smaller amount of fallen leaves, should be selected where possible (e.g. at landscape berm at the periphery of the site). • Fertilizer will only be applied on landscape area when needed. If required, the fertilizer should be applied in early Spring and in later summer in order to avoid major rainy season as far as possible. Slow release fertilizer should be selected as far as possible to minimize the amount of nutrient to be washed out by rain. Application of fertilizer should not be arranged before forecasted heavy rainfall, and over dosing should be avoided. Application of fertilizer should be managed by an experienced contractor through the property management company. 		maintain		

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
5.6.2	6.3.16	<p><u>Devices/ Facilities to Control Pollution</u></p> <ul style="list-style-type: none"> Screening facilities such as standard gully grating and trash grille, with spacing which is capable of screening off large substances such as fallen leaves and rubbish should be provided at the inlet of drainage system as well as at upstream location of the u-channels. Road gullies with standard design and silt traps and oil interceptors should be incorporated during the detailed design to remove particles present in stormwater runoff. Drainage outlet of any covered car park should be connected to foul sewers via petrol interceptors or similar facilities. 	Stormwater and Non-point Source Pollution Control	Project Proponent to implement, and property management company / Incorporated Owners to maintain	During operation	EIA, Contractual requirements
5.6.2	6.3.16	In the event of emergency (e.g. car accident) where there is a major spillage of oil, chemical or fuel, dispersants or firefighting foam, etc., a system of contaminant bunding will be implemented as appropriate.	Stormwater and Non-point Source Pollution Control	Project Proponent to implement, and property management company / Incorporated Owners to maintain	During operation	EIA, Contractual requirements
5.6.2	6.3.18	Good management measures such as regular cleaning and sweeping of road surface/ open areas is suggested. The road surface/ open area cleaning should also be carried out prior to occurrence of rainstorm	Stormwater and Non-point Source Pollution Control	Project Proponent to implement, and property management company / Incorporated Owners to maintain	During operation	EIA, Contractual requirements
5.6.2	6.3.19	Stormwater gullies and ditches provided among the residential development will be regularly inspected and cleaned (e.g. monthly) by the property management company. Additional inspection and cleansing should be carried out if heavy	Stormwater and Non-point Source Pollution Control	Project Proponent to implement, and property management company / Incorporated Owners to	During operation	EIA, Contractual requirements

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		rainfall is forecasted.		maintain		
5.6.2	6.3.20	<p>During operation, in order to control/ minimize water pollution during inclement weather and emergencies, an Emergency Response Plan should be established and implemented. As a general indication, the ERP should include but not limited to record plans of drainage facilities/ system; maintenance of drainage system; recommended measures and best practices identified in the EIA study; an event and action plan during inclement weather and emergencies condition; emergency procedures and emergency contact details; and responsibility of relevant parties and follow up actions.</p> <p>In particular, the plan should provide details of procedure and actions required both before and after forecasted rainstorm such as checking/ inspection before onset of rainy season/ rainstorm that all drains are cleared from blockage and functioning properly; checking standby plant and equipment are ready for use; frequency of updating weather conditions; persons who will implement the measures and follow up actions; more frequent inspection and cleansing preferably before and after every rainstorm event.</p>	Stormwater and Non-point Source Pollution Control	Project Proponent to implement, and property management company / Incorporated Owners to maintain	During operation	EIA, Contractual requirements
<u>Sewerage and Sewage Treatment</u>						
During Construction Phase:						
Nil	Nil	Nil	Nil	Nil	Nil	Nil
During Operational Phase:						
6.5	7.2.1	With reference to the routing of the	Sewage management	Project Proponent	During operation	EIA, WPCO,

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		<p>planned trunk sewerage in the vicinity, sewage from the Project Site is proposed to be discharged to the planned public gravity trunk sewer via a rising main to be constructed and maintained by the subject development for eventual discharge to the existing YLSTW.</p> <p>The proposed rising main for conveying sewage from the Project Site to the future public sewer will be in the form of twin rising mains, so as to provide continued operation of the pumping system when one of the mains is damaged. The rising main will run underneath the internal roads within the Project Site and then northward along Kam Pok Road to a new sewage manhole at immediate upstream of San Tin No.1 Sewage Pumping Station.</p> <p>The section of rising main within the development will be constructed before the occupation intake to minimize disruption to the residents. The construction programme of the remaining rising main along public road will be discussed with relevant departments at later stage to cope with the construction programme of the trunk sewerage project.</p> <p>Agreements will be sought from all relevant authorities for the construction of the proposed sewerage, connection to the planned public sewerage system, and the associated future maintenance responsibility.</p>	<p>during operation</p>		<p>stage (permanent scheme)</p>	<p>Contractual requirements</p>

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
6.6	7.1.2	<p>In view of the programme gap between the provision of public sewerage and the occupation of the proposed development, it is necessary to consider the provision of STP as an interim measure to handle the sewage generated from the development before the availability of public sewerage for connection.</p> <p>To minimize disturbance to the residents, all sewers within the development for connection to the public system in the future will also be constructed together with the construction of this Project.</p>	Sewage management during operation	Project Proponent	During operation stage	EIA, WPCO, Contractual requirements
6.7	7.2.4	<p>The treated effluent will be discharged into the new drainage system within the development and conveyed to the adjacent Ngau Tam Mei Channel via existing twin cell box culvert.</p> <p>The channel water will be co-treated in the interim STP with the sewage generated by the development. Considering the influent characteristic, the process of biological treatment, membrane filtration and Reverse Osmosis (such as MBR + RO), is proposed for the interim STP.</p> <p>The interim STP will adopt RO system after membrane filtration process to further polish the effluent quality in order to cover fluctuation of pollutants in Ngau Tam Mei Drainage Channel water, to ensure that the Target Effluent Quality can be met.</p> <p>After successful operation of the interim</p>	Sewage management during operation	Project Proponent	During operation stage	EIA, WPCO, Contractual requirements

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		<p>STP for a period not less than one year, and the end of year result showing no net increase in pollution loading is confirmed, the operation frequency of the RO system will then be reviewed.</p> <p>Before reviewing the performance of the RO system, sufficient performance data including influent quality and effluent quality of the RO system should be collected. The RO system can be served as a backup process to further polish the upstream effluent and eliminate the residual pollution loads of the STP, competent personnel will be responsible to constantly review the effluent water quality and decide the need of the RO system as it is readily available for operation when upstream system experienced deficiency in handling the fluctuation of the influent.</p>				
6.10	7.2.11	<p>In order to offset the additional pollution load due to the development, it is proposed to abstract water from Ngau Tam Mei Drainage Channel for co-treatment in the interim STP. The water abstraction facility which is to be located within the application site is subject to detailed design and relevant approval for construction access and government land matters. The construction of water abstraction facility should be carried out in dry season. Silt curtain or sand bags should be provided to carve out the working area so as to bypass the channel flow and to avoid any solids/materials arising from the construction activities from entering the channel during construction phase. The work sites at the</p>	Sewage management during operation	Project Proponent / Contractor	During construction of water abstraction facility	EIA, WPCO, Contractual requirements

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		<p>NTMDC for construction of water abstraction facilities should be maintained in dry conditions. Regular visual inspections should also be carried out by the Environmental Team and Contractor to ensure there is no spillage into the channel.</p>				
6.11	7.2.6	<p>Proper operation and maintenance of interim sewage treatment plant is essential to safeguard the quality of discharge effluent, subject to the following aspects:</p> <ul style="list-style-type: none"> • Competent technicians to be employed by the development management office to operate the sewage treatment plant (STP). They are to be fully conversant with the operating procedures as stipulated in the operation and maintenance manuals. • The proposed STP only serves the proposed development and thus the operation and maintenance (O&M) cost would be borne by the future management office of the development. The Applicant will ensure the design of STP is cost-effective such that the O&M cost imposed is reasonable. • The STP is to be kept in a tidy state. This includes regular hosing down, scraping of the walkways, whitewashing the walls, cleaning and painting the metalwork, and maintaining adequate lighting and ventilation. 	Sewage management during operation	Project Proponent	During operation stage	EIA, WPCO, Contractual requirements

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
6.11	7.2.6	<ul style="list-style-type: none"> • Where parts of the STP are sited beneath ground, forced ventilation will be provided. • Online sensors will be installed in the STP to monitor the parameters of Ammonia, Nitrite & Nitrate, and TSS. Easily accessible sampling point will also be provided for sampling of the treated effluent for laboratory testing. • Turbidity meter will be installed at the outlet of membrane filtration as well as the outlet of Reverse Osmosis (RO) to indicate the efficiency of pollutant removal from the corresponding process units, adjustment of RO system can then be made to suit the variation of pollutants. • Samples of treated effluent and abstracted channel water will be documented weekly, such that the lows and highs of the pollutant variations can be captured. Results will be compared against the total annual loadings, adjustment of water abstraction amount, membrane backwash frequency, RO unit operation will be fine-tuned to ensure effluent quality meet discharge license under the Water Pollution Control Ordinance and the target effluent quality. • Based on the pollutant offsetting approach, co-treating sewage with abstracted channel water will be subject to the amount of pollutants in the channel water for offsetting. The proposed target effluent quality of the 	Sewage management during operation	Project Proponent	During operation stage	EIA, WPCO, Contractual requirements

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		<p>STP has taken it into account. The annual pollution loading in abstracted channel water (kg) and annual pollution loading in effluent of the interim STP (kg) would be balanced.</p> <ul style="list-style-type: none"> • A check and balance system monitor the pollutant loading every week. Monthly or quarterly report shall be submitted. By the end of each year, the exceeding and shortcoming amount will be balanced to quantify no net increase in pollutant loading achieved based on total pollutant reduction of the year. • The production of sludge is estimated to be approx. 4 m³/d. While the reject water from the RO unit is normally around 20% of the influent depends on the quality of RO influent. The sludge and reject water will be transported by tankers from the interim private STP to government's STW for offsite treatment. A storage tank with capacity of 150 m³ will be provided for storage of the RO reject water. • The Project Proponent will be responsible for the future sewer connection upon its available in the future and STP decommissioning with connection details subject to agreement of DSD. Appropriate conditions could be imposed in the Environmental Permit (EP) to ensure the EP holder to take up the responsibility to ensure connection to public sewer when trunk sewer is ready. 				

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		<ul style="list-style-type: none"> • The Project Proponent will be responsible for the maintenance of the proposed water abstraction facilities and the associated pipelines. The proposed water abstraction facilities will be decommissioned together with the interim STP once the public sewer becomes available. • The discharge of treated effluent from the interim STP should follow the discharge licence requirements under the WPCO as well as the terms and conditions specified in the EP under the EIAO. 				
6.12	7.2.8	<p>The following measures will be adopted in order to eliminate adverse impact due to potential sewage overflow, emergencies discharge and change in flow regime beyond the expectation of this assessment:</p> <ul style="list-style-type: none"> • Adequate spare parts for the plant will have to be made readily available by storage. • Qualified personnel will be hired to inspect the plant condition and carry out maintenance on a regular basis. • Regular test, maintenance and replacement of membranes and plant equipment will be carried out in accordance to the recommendations from manufacturers or as recommended by the qualified personnel after inspection. 	Sewage management during operation	Project Proponent	During operation stage	EIA, WPCO, Contractual requirements

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		<ul style="list-style-type: none"> • Equalization tank with capacity of 168 m³ (~ 3 days of sewage storage depending on actual flow condition) will be provided in case of entire outage of the interim STP. • Tank away will be provided for prolonged outage of the interim STP, for disposal of sewage to Government operated public sewage treatment works to be assigned by DSD. <p>In case of abnormal effluent quality is detected from water sampling, discharge of treated effluent will be suspended and all sewage will be diverted to the equalization tank for temporary storage until the problem is rectified. In case of entire outage of the STP, channel water will not be abstracted from Ngau Tam Mei Drainage Channel. And if prolonged outage of the interim STP is anticipated, tankers will be arranged to transport the sewage for disposal to Government operated public sewage treatment works to be assigned by DSD.</p>				
<u>Waste Management</u>						
During Construction Phase:						
7.4.4	8.3.2	Cross contamination of inert C&D materials by other waste categories shall be minimised as far as practicable through provision of storage facilities for storage of different categories of waste. Inert materials including soil, rock, concrete, brick, cement plaster/ mortar, inert building debris, aggregates and asphalt	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Waste Disposal Ordinance, ETWB TC(W) No. 19/2005

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		should be segregated from and stored separately from other waste categories to ensure proper handling and reuse. The on-site temporary facilities should be equipped with dust control measures where necessary.				
7.4.4	8.3.32	Spent bentonite slurries, if any, will be handled and disposed of properly in accordance with the requirements set out in the Practice Note for Professional Persons (PN1/94) Construction Site Drainage.	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Waste Disposal Ordinance, ETWB TC(W) No. 19/2005, PN1/94.
7.4.4	8.3.2	Wooden boards can be reused on-site or off-site, though the reusability and quantity of final waste to be generated will be subject to the quality, size and shape of the boards proposed by the contractor(s). Timbers which cannot be reused shall be sorted and stored separately from all other inert waste before disposal	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Waste Disposal Ordinance, ETWB TC(W) No. 19/2005
7.4.4	8.3.3	Should construction site hoarding be erected, metal fencing or building panels, which are more durable than wooden panels, are recommended to be used as far as practicable. Opportunity shall also be sought to re-use any wooden boards used in site fencing on-site or off-site. Concrete and masonry can be crushed and used as fill material if practicable. On-site burning of wooden waste is prohibited	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Waste Disposal Ordinance, ETWB TC(W) No. 19/2005
7.4.4	8.3.4	In order to avoid dust, odour and erosion impacts, any stockpile areas within the	Waste management during construction	Contractors	At all construction areas of the site	EIA, Waste Disposal

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		Project Site should be covered with tarpaulin or impermeable sheeting. Any vehicle carrying C&D waste should have their load covered when leaving the works area. Vehicles should be routed as far as possible to avoid sensitive receivers in the area			during the entire construction period	Ordinance,ETWB TC(W) No. 19/2005
7.4.5	8.3.5	Chemical waste that could be generated from construction works would primarily arise from chemicals used in operation and maintenance of on-site equipment. These may include fuel, oil, lubricants, cleaning fluids, and solvents arising from leakage or maintenance of on-site equipment and vehicles. Chemical generated from daily operation of the construction works shall be recycled/ reused on-site as far as practicable	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal (Chemical Waste) (General) Regulation
7.4.5	8.3.6	If off-site disposal of chemical waste is required, they should be collected and delivered by a licensed contractor, and disposed of strictly following the Waste Disposal (Chemical Waste) (General) Regulation	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal (Chemical Waste) (General) Regulation
7.4.5, 7.5.3	8.3.7	The contractors shall register with EPD as chemical waste producers when chemical waste is produced. All chemical waste shall be properly stored, labelled, packaged and collected in accordance with the Regulation	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal (Chemical Waste) (General) Regulation
7.4.5	8.3.7	Fossil fuel and used lubricants from trucks and machinery are classified as chemical	Waste management during construction	Contractors	At all construction areas of the site	Waste Disposal (Chemical Waste)

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		waste.			during the entire construction period	(General) Regulation
7.4.5	8.3.8	Chemical waste generated has to be stored in suitable containers and away from water bodies so that leakage or spillage is prevented during the handling, storage, and subsequent transportation	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal (Chemical Waste) (General) Regulation
7.4.5	8.3.9	The Contractor shall prevent fuel and lubricating oil leakage from plant and storage sites from contaminating the construction site. All compounds in work areas shall be positioned on areas with hard paving and served by drainage facility. Sand/ silt traps and oil interceptors shall be provided at appropriate locations prior to the discharge points	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal (Chemical Waste) (General) Regulation
7.4.6	8.3.10	General refuse generated at the construction site should be stored separately from construction and chemical wastes to avoid cross contamination. A reliable waste collector shall be employed by the Contractor to remove general refuse from the construction site on a daily basis where appropriate to minimise the potential odour, pest and litter impacts	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal Ordinance, ETWB TC(W) No. 19/2005
7.4.6	8.3.11	Open burning for the disposal of construction waste or the clearance of the Project Site in preparation for construction work is prohibited under the Air Pollution Control (Open Burning) Regulation	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal Ordinance, Air Pollution Control (Open Burning) Regulation

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
7.5	8.3.12	To ensure the appropriate handling of the C&D materials, it is recommended that a Waste Management Plan (WMP) shall be developed by the contractor and incorporated in the Environmental Management Plan (EMP) in accordance with ETWB TCW No. 19/2005 – Environmental Management on Construction Sites at the commencement of the construction works.	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.14	In formulating the EMP in respect to waste management, the following hierarchy should be considered: <ul style="list-style-type: none"> • Avoidance and minimization to reduce the potential quantity of C&D materials generated; • Reuse of materials as practical as possible; • Recovery and Recycling as practical as possible; and • Proper treatment and disposal in respect to relevant laws, guidelines and good practice. 	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.12	The EMP shall be submitted to the Engineers' Representative (ER) and the Project Environmental Team Leader (ETL) for approval, and shall be implemented throughout the Project.	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.15	The EMP should be developed taking into account the recommended control measures given in the EIA report where appropriate, including:	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
7.5	8.3.15	<ul style="list-style-type: none"> A waste management policy, organization chart, and responsibility 	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.15	<ul style="list-style-type: none"> An estimation on the location, type, nature, quality and quantity of different waste streams to be generated from the Project works, and the corresponding waste management methodology 	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.15	<ul style="list-style-type: none"> A method statement for demolition and transportation of the excavated materials and other construction wastes 	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.15	<ul style="list-style-type: none"> The potential for recycling or reuse should be explored and opportunities taken if waste generation is unavoidable 	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.15	<ul style="list-style-type: none"> Recommendations for appropriate disposal routes if waste cannot be recycled. 	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.15	<ul style="list-style-type: none"> A system to control the disposal of C&D materials and C&D waste to public fill reception facilities, sorting facilities and landfills respectively through a trip-ticket system in accordance with the PNAP ADV-19 	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.15	<ul style="list-style-type: none"> A system to record the disposal, reuse and recycling of C&D materials/ wastes for monitoring purposes 	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.15	<ul style="list-style-type: none"> The EMP should be approved before 	Waste management	ER, Project Proponent	Throughout the	Waste Disposal

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		the commencement of construction. All mitigation measures in the approved EMP should be fully implemented.	during construction		entire construction period	Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.16	<ul style="list-style-type: none"> The Project Proponent/ ER will ensure that the day-to-day operations comply with the approved EMP. 	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.16	<ul style="list-style-type: none"> The Project Proponent/ ER shall require the contractor to separate public fill from C&D waste for disposal at appropriate facilities. In addition, the Project Proponent/ ER shall regularly audit Contractor(s)' records for the disposal, reuse and recycling of C&D materials for monitoring purposes. 	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.17	Based on the above waste management recommendations, a detailed management and control plan shall be formulated during the detailed design stage. A good management and control can prevent the generation of significant amount of waste. On-site sorting of construction wastes will be recommended. Secondary on-site sorting can be achieved by avoiding the generation of "mixed waste" through good site control. Construction wastes shall be sorted to remove contaminants, with the inert materials broken up into small pieces before being transported to the public fill reception facilities.	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.18	Chemical and oily wastes generated from the construction activities, vehicle and plant maintenance and oil interceptors should be disposed of as chemical waste in strict compliance with the Waste Disposal (Chemical Waste) (General)	Waste management during construction	Contractor	Throughout the entire construction period	EIA, Waste Disposal (Chemical Waste) (General) Regulation

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		Regulations				
7.5	8.3.19	The demolition and construction work shall be considered in the planning and design stages to reduce the generation of C&D waste where possible. Landfill disposal shall only be considered as the last resort	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.20	Construction methods with minimum waste generation quantity and other environmental impacts shall be considered in the detailed design	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.21	In addition, the Project Proponent shall require the contractor to reuse inert C&D materials (e.g. excavated soil) on-site or in other suitable construction sites as far as possible, in order to minimize the disposal of C&D materials to public fill reception facilities	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.21	The Project Proponent shall encourage the contractor to maximize the use of recycled or recyclable C&D materials, as well as the use of non-timber formwork to further minimize the generation of construction waste.	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.22	The following additional control/ mitigation measures are recommended to be followed by the Contractor	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.22	<ul style="list-style-type: none"> Storage of different waste types – different types of waste should be segregated and stored in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. An on-site temporary storage area equipped with required control measures (e.g. dust control) should be 	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		provided;				
7.5	8.3.22	<ul style="list-style-type: none"> Trip-ticket system – in order to monitor the proper disposal of non-inert C&D waste to landfills and to control fly-tipping, a trip-ticket system should be included as one of the contractual requirements and audited by the Environmental Team; 	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.22	<ul style="list-style-type: none"> Records of Wastes – a recording system should be proposed to record the amount of wastes generated, recycled and disposed of (including the location of disposal sites); 	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.22	<ul style="list-style-type: none"> Training – The contractor should provide his workers with proper training of appropriate waste management procedure to achieve waste reduction as far as practicable and cost-effective through recovery, reuse and recycling and avoid contamination of reusable C&D materials; 	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.22	<ul style="list-style-type: none"> Incorporate good practice in “Recommended Pollution Control Clauses for Construction Contracts” published by EPD in respect to removal of waste material from the construction site into the contract of the contractor. 	Waste management during construction	ER, Project Proponent	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5	8.3.24	In addition to the above, the following construction waste pollution clauses shall be included in construction contracts:	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
7.5.1	8.3.24	<ul style="list-style-type: none"> The Contractor shall submit to the Engineer for approval a waste management plan with appropriate mitigation measures including the allocation of an area for waste segregation and shall ensure that the day-to-day site operations comply with the approved waste management plan. 	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5.1	8.3.25	<ul style="list-style-type: none"> The Contractor shall minimise the generation of waste from his work. Avoidance and minimisation of waste generation can be achieved through changing or improving design and practices, careful planning and good site management. 	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5.1	8.3.26	<ul style="list-style-type: none"> The Contractor shall ensure that different types of wastes are segregated on-site and stored in different containers, skips or stockpiles to facilitate reuse/recycling of waste and, as the last resort, disposal at different outlets as appropriate 	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5.1	8.3.27	<ul style="list-style-type: none"> The reuse and recycling of waste shall be practised as far as possible. The recycled materials shall include paper/cardboard, timber and metal etc. 	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5.1	8.3.28	<ul style="list-style-type: none"> The Contractor shall ensure that Construction and Demolition (C&D) materials are sorted into public fill (inert portion) and C&D waste (non-inert portion). The public fill which comprises soil, rock, concrete, brick, cement plaster/mortar, inert building debris, aggregates and asphalt shall be reused in earth filling, reclamation or site formation works. The C&D 	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		waste which comprises metal, timber, paper, glass, junk and general garbage shall be reused or recycled and, as the last resort, disposal of at landfills.				
7.5.1	8.3.29	<ul style="list-style-type: none"> The Contractor shall record the amount of wastes generated, recycled and disposed of (including the disposal sites) 	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5.1	8.3.30	<ul style="list-style-type: none"> The Contractor shall implement a trip ticket system in accordance with the Construction and Demolition Waste in PNAP ADV-19 for public fill, C&D materials and C&D waste to public fill reception facilities, sorting facilities and landfills respectively 	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5.1	8.3.31	<ul style="list-style-type: none"> Training shall be provided for workers about the concepts of site cleanliness and appropriate waste management procedure, including waste reduction, reuse and recycling 	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.
7.5.2	8.3.33	<ul style="list-style-type: none"> The Contractor shall not permit any sewage, wastewater or effluent containing sand, cement, silt or any other suspended or dissolved material to flow from the Project Site onto any adjoining land or allow any waste matter [or refuse] which is not part of the final product from waste processing plants to be deposited anywhere within the Project Site [or onto any adjoining land]. He shall arrange removal of such matter from the Project Site [or any building erected or to be erected thereon] in a proper manner to the satisfaction of the Engineer in consultation with the Director of Environmental Protection 	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal Ordinance, PNAP ADV-19, and ETWB TC(W) No. 19/2005.

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
7.5.3	8.3.34	<ul style="list-style-type: none"> The Contractor shall observe and comply with the Waste Disposal (Chemical Waste) (General) Regulation 	Waste management during construction	Contractor	Throughout the entire construction period	Waste Disposal (Chemical Waste) (General) Regulation
7.4.3 & 7.5.4	8.2.5 to 8.2.6, & 8.3.23	<p><u>Minimization/ Avoidance of Excavation of Pond Sediment</u></p> <p>During construction, the concerned abandoned pond within Project Site will be filled up. The concerned pond sediment is intended to be left in place and not to be disturbed as far as possible. However, should pond sediment be encountered during construction, it should be temporarily stored and re-used on-site, and no offsite disposal is expected (for example, re-use as fill material during site formation stage. Subject to detailed design stage, mixing pond sediment with cement material may be required so that its quality can meet the engineering requirements). If solidified materials will not be reused on-site and to be used as public filling materials, prior approval from Public Fill Committee of Civil Engineering and Development Department should be sought beforehand in accepting the solidified materials at public fill.</p> <p>As this Project will require imported fill materials in order to raise the site level to the proposed site formation level, this also provides an incentive for contractor(s) to reduce the amount of materials to be excavated provided that the materials can</p>	Waste management during construction	Contractor	Throughout the entire construction period	EIA, Waste Disposal Ordinance PNAP ADV-19

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		be re-used and its quality can meet the engineering requirements. The Contractor(s) will be required to minimize the amount of materials to be excavated and to re-use excavated materials on-site.				
During Operational Phase:						
7.6	8.4.1	Refuse collection points (RCP) will be provided for the residential development. A licensed waste collector shall be employed to collect domestic waste on daily basis.	Waste management during operation	Project Proponent	During operation	EIA, Waste Disposal Ordinance
7.6	8.4.2	Separate collection bins for used aluminium cans, waste paper and plastic bottles should be provided at strategic locations within the residential development area and adjacent to the passive recreational facilities in order to promote and encourage recycling during the operational phase	Waste management during operation	Project Proponent	During operation	EIA, Waste Disposal Ordinance
Ecology						
During Construction Phase:						
8.9.2	10.4.1	Site hoarding made of opaque, non-reflective materials and painted with colour blending with the environment should be erected to properly delineate the works site boundary and screen disturbance to the nearby habitats before the wintering season of waterbirds from October to March during construction phase.	Reduce the potential disturbance to wildlife utilizing habitats near the Project Area	Construction contractor	Works area before construction phase	EIA
8.9.2	10.4.2	Construction noise will be minimised by the use of quiet construction piling method (non-percussive) and quiet/silenced equipment (QPMEs), provision of mobile noise barriers in adjacent to construction	Reduction of potential impact from construction noise	Construction contractor	Works area during construction phase	EIA, NCO

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		plants or provision of acoustic screens by the Contractor(s).				
8.9.2	10.4.2	Measures proposed in compliance with the Noise Control Ordinance will also be enforced and monitored as a mitigation measure under the Noise Impact Assessment (details see Chapter 4 of the EIA report) (also in Section 5 of the EM&A Manual).	Reduction of potential impact from construction noise	Construction contractor	Works area during construction phase	EIA, NCO
8.9.2	10.4.3	Dust control measures listed in Section 3.9.1 of the EIA report (also in Section 4 of the EM&A Manual)	Avoid construction impacts due to dust	Construction contractor	Works area during construction phase	EIA, APCO
8.9.2	10.4.4	Submission of a Construction Phase Drainage Management Plan with details such as design of the temporary site drainage system; wastewater treatment facilities; and maintenance of drainage system for the approval of the Engineers Representative (ER) and the Environmental Team in order to ensure that the mitigation measures are in place.	Avoid impact to aquatic habitat due to water quality deterioration	Construction contractor	Works area during construction phase	EIA, WPCO
8.9.2	10.4.5	Good site practice and precautionary measures (e.g. those in Section 5.5 of the EIA report)(also in Section 6 of this Manual) will be implemented to avoid the potential impact due to runoff.	Avoid construction impacts due to runoff	Construction contractor	Works area during construction phase	EIA, WPCO
8.9.2	10.4.6	Good site practice listed as follows would be implemented to minimise potential impacts due to noise, dust and runoff on the surrounding environment. <ul style="list-style-type: none"> Regular checking should be undertaken to ensure that the work site boundaries are not exceeded and 	Avoid construction impacts	Construction contractor	Whole construction site	EIA

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		<p>that no damage occurs to surrounding areas;</p> <ul style="list-style-type: none"> • Implementation of mitigation measures specified in ProPECC PN 1/94 to control site runoff and drainage at all work sites during construction; • Implementation of noise control measures at all construction sites to reduce impacts of construction noise to wildlife habitats adjacent works areas; • Implementation of dust control measures at all construction sites to minimise dust nuisance to adjacent wildlife habitats during construction activities; 				

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
8.9.2	10.4.6	<ul style="list-style-type: none"> Construction debris and spoil should be covered up and/or properly disposed of as soon as possible to avoid being washed into nearby waterbodies by rain; Construction effluent, site run-off and sewage should be properly collected and/or treated. Wastewater from a construction site should be managed with the following approach in descending order; Dusty materials remaining after a stockpile is removed should be wetted with water; All dusty materials shall be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty material wet; Proper locations for discharge outlets of wastewater treatment facilities well away from the natural streams/rivers should be identified; and Supervisory staff should be assigned to station on site to closely supervise and monitor the works. 	Avoid construction impacts	Construction contractor	Whole construction site	EIA
8.10	10.2.2 – 10.2.4	<ul style="list-style-type: none"> Conduct baseline survey of bird uses of the section of Ngau Tam Mei drainage channel within the Assessment Area 	Provide baseline information for evaluation of effectiveness of the recommended mitigation measure to minimise impact to birds in Ngau Tam Mei drainage channel from disturbance during construction phase	Construction contractor	Prior to commencement of site construction works; Section of Ngau Tam Mei drainage channel within the Assessment Area	EIA
8.10	10.2.5 – 10.2.6	<ul style="list-style-type: none"> Monitoring of bird uses of the section of Ngau Tam Mei drainage channel within the Assessment Area between October and March annually 	Evaluate the effectiveness of the recommended mitigation measure to	Construction contractor	During construction phase; Section of Ngau Tam	EIA

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
			minimise impact to birds in Ngau Tam Mei drainage channel from construction disturbance		Mei drainage channel within the Assessment Area	
8.10	10.2.7	<ul style="list-style-type: none"> Regular site audit on weekly basis 	Checking the implementation of good site practice during construction phase	Construction contractor	Works area during construction phase	EIA
During Operational Phase:						

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
8.9.2	10.5.1	Minimization of bird collision will be taken into account in the design of noise barrier. Materials which are opaque, non-reflective panels with colour will be used for construction of noise barriers to reduce the risk of bird collision, particularly under dim condition (e.g., dusk and dawn) to reduce bird collision.	Avoidance/ minimization of bird collision	Property management company; incorporated owners	Noise barrier along eastern site boundary	EIA
8.9.2	10.5.2	Extent of glass panels of the noise barrier will be reduced by incorporation of the interim sewage treatment plant as part of the noise mitigation measures.	Avoidance/ minimization of bird collision	Property management company; incorporated owners	Noise barrier along eastern site boundary	EIA
8.9.2	10.5.3	Setback area (with houses at least 30m from the Ngau Tam Mei Drainage Channel) on the western side of the Project Area will increase the distance between houses and Ngau Tam Mei Drainage Channel.	Minimise the potential disturbance to waterbirds in the channel due to human activities and noise.	Property management company; incorporated owners	During operation	EIA
8.9.2	10.5.4	A continuous 5-8m wide landscape buffer will be included in the northern, eastern and western boundary of the Project Area.	Minimize the potential impact to wildlife in the surrounding areas, particularly waterbirds in the Ngau Tam Mei Drainage Channel, due to human activities and noise in the Project Area during operation phase.	Property management company; incorporated owners	During operation	EIA
8.9.2	10.5.5	The layout proposed will only involve the construction of low-rise buildings with a maximum height of 6.6m.	Minimize the potential barrier effect to bird flights	Property management company; incorporated owners	During operation	EIA
Fisheries						
During Construction Phase:						
9.7	10.6.3	Standard site practice detailed in Chapter 5 of the EIA would be implemented to avoid or minimise the	Avoid causing water quality impacts on the	Construction contractor	Works area during construction	EIA, WPCO

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		impacts on water quality on site, which are summarized as follows:	surround watercourses			
9.7	10.6.3	<ul style="list-style-type: none"> - Implementation of mitigation measures specified in ProPECC PN 1/94 to control site runoff and drainage at all work sites during construction; - Construction debris and spoil should be covered up and/or properly disposed of as soon as possible to avoid being washed into nearby waterbodies by rain; 	Avoid causing water quality impacts on the surround watercourses	Construction contractor	Works area during construction	EIA, WPCO
9.7	10.6.3	<ul style="list-style-type: none"> • Construction effluent, site run-off and sewage should be properly collected and/or treated; • Proper locations for discharge outlets of wastewater treatment facilities well away from the natural streams/rivers should be identified; and • Supervisory staff should be assigned to station on site to closely supervise and monitor the works 	Avoid causing water quality impacts on the surround watercourses	Construction contractor	Works area during construction	EIA, WPCO
9.6.2	10.6.4	Provide adequate site drainage to ensure that site runoff and wastewater will be properly contained and treated prior to discharge into the surrounding water courses.	Avoid causing water quality impacts on the surround watercourses	Construction contractor	Works area during construction	EIA, WPCO
During Operational Phase:						
Nil	Nil	Nil	Nil	Nil	Nil	Nil
<u>Cultural Heritage</u>						

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
During Construction Phase:						
Nil	Nil	Nil	Nil	Nil	Nil	Nil
During Operational Phase:						
Nil	Nil	Nil	Nil	Nil	Nil	Nil
<u>Landscape and Visual</u>						
Landscape Mitigation Measures						
During Construction Phase:						
11.9, Table 11-13	Table 9.1 CP1	Preservation of Existing Vegetation:				
11.9.5	CP1.1	Avoid disturbance to the existing trees and vegetation as far as practicable within the works areas.	Coordinate with the layout and design of the engineering and architectural works to minimise the disturbance on existing trees.	Project Architects/Landscape Architects (Detailed Design Consultants)/ Engineers/ Contractor	Site / Throughout the design and construction phase.	EIAO TM- Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007
11.9.5	CP1.2	Creation of Tree Protection Zone around trees/tree groups to be retained and to be fenced off from construction works.	To ensure the success of the tree preservation proposals.	Contractor	Set up at the areas with preserved trees before construction works commence and maintained throughout construction phase	EIAO TM- Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007
11.9.5	CP1.3	Prohibition of the runoff from construction activities, the storage of materials including fuel, the movement of construction vehicles, and the refuelling and washing of equipment including concrete mixers within the Tree Protection Zone.	To ensure the success of the tree preservation proposals.	Contractor	Site / Throughout construction phase	EIAO TM- Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007
11.9.5	CP1.4	All works affecting the trees identified for retention and transplantation will be carefully monitored. This includes the key	To ensure the success of the tree preservation	Contractor	Site / Throughout construction phase	EIAO TM- Annex 18, DEVB TCW No. 7/2015, LAO PN

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		stages in the preparation of the trees, the implementation of protection measures and health monitoring throughout the construction period	proposals.			7/2007
11.9.5	CP1.5	Detailed landscape and tree preservation proposals will be submitted to the relevant government departments for approval.	To ensure the tree preservation and planting proposals are integrated with the existing landscape context and that the landscape resources are preserved where appropriate.	Project Landscape Architect (Detailed Design Consultants)	Site / Throughout design phase	EIAO TM- Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007, , HKPSG
11.9.5	CP1.6	The tree preservation works should be implemented by qualified softworks contractor. Works will be inspected by a competent person of the ET. A tree protection specification would be included within the contract documents.	To ensure the tree preservation and planting proposals are integrated with the existing landscape context and that the landscape resources are preserved where appropriate.	Project Proponent/Project Management Team	Site / Throughout design and construction phases	EIAO TM- Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007
11.9.5	CP3	Implementation of Mitigation Planting and Planting Species Selection				
11.9.5	CP3.1	Replanting of existing/disturbed vegetation will be undertaken at the earliest possible stage of the construction phase.	To minimise the disturbance to existing landscape resources and minimise the impacts on the visual amenity of the area.	Contractor	Site / After the site formation or on completion of planting areas.	EIAO TM- Annex 18
11.9.5	CP3.2	Use of predominantly native and/or ornamental species and broadleaf plant species in the planting design.	To enhance the local landscape and ecological value.	Project Landscape Architect (Detailed Design Consultants)	Site / Throughout the design phase.	EIAO TM- Annex 18
11.9.5	CP3.3	Proposed mitigation planting will not only limit to conventional amenity planting, but also consider alternative greening measures such as vertical greening for screening and softening of the built	To maximise the greening opportunities and screening effects.	Project Landscape Architect (Detailed Design Consultants)	Site / Throughout the design phase.	EIAO TM- Annex 18

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		structures and green roof on built structures for enhancing the visual amenity. Small shrubs, climbing plants, lawn and groundcovers shall be used in specific locations where technically feasible.				
11.9.5	CP3.4	The tree planting works should be implemented by qualified softworks contractors. Inspected by the ET/Landscape Architects. A tree planting specification would be included within the contract documents.	To ensure the tree preservation and planting proposals are integrated with the existing landscape context and that valuable landscape	Project Proponent/Project Management Team/Project Landscape Architect (Detailed Design Consultants)	Site / Throughout design and construction phases	TM-EIA Annex 18
11.9.5	CP4	Transplantation of Existing Trees				
11.9.5	CP4.1	The tree transplanting works should be implemented by qualified softworks contractors. Inspected by the ET/Landscape Architects. A tree protection / transplanting specification would be included within the contract documents.	To ensure the success of tree transplanting	Project Landscape Architect (Detailed Design Consultants)	Site / Throughout design and construction phases	TM-EIA Annex 18
11.9.5	CP4.2	Approximately 78 existing trees to be transplanted, majority of them shall be relocated to future planting areas within the development.	To retain their contribution to the local landscape context.	Project Landscape Architects (Detailed Design Consultants)/ Contractor	Site / Throughout design and construction phases	TM-EIA Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007
11.9.5	CP4.3	Tree to be replanted will be kept in the temporary holding nurseries which closely monitoring by softwork contractors before replanting to the final recipient site.	To enhance the survival rate of the transplanted trees	Project Landscape Architects (Detailed Design Consultants)/ Contractor	Site / Throughout construction phase until the completion of new planting areas in the site	TM-EIA Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007
11.9.5	CP4.4	Phased segmental root pruning for preparation of tree transplanting over a suitable period (determined by species and size).	To ensure the success of tree transplanting	Contractor	Site / Throughout construction phase	TM-EIA Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007
11.9.5	CP4.5	Pruning of the branches of transplanted trees to be based on the principle of crown thinning that would maintain their original	To ensure the success of tree transplanting	Contractor	Site / Throughout construction phase	TM-EIA Annex 18, DEVB TCW No. 7/2015, LAO PN

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		tree form and amenity value.				7/2007
11.9.5	CP4.6	The implementation programme for the proposed works will reserve enough time for the advance tree transplanting preparation works.	To enhance the survival rate of the transplanted trees	Project Landscape Architects (Detailed Design Consultants)/ Contractor	Site / Throughout design and construction phases	TM-EIA Annex 18
11.9.5	CP4.7	Detailed tree transplanting proposals will be submitted to the relevant government departments for approval.	To enhance the survival rate of the transplanted trees	Project Landscape Architects (Detailed Design Consultants)	Site / Throughout design phase	TM-EIA Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007
During Operational Phase:						
11.9.6, Table 11-14	Table 9.2 OP1	Roadside and Amenity Planting				
11.9.6	OP1.1	Utilise native and ornamental species and broadleaf trees in combination of shade tolerant shrub planting and climbing plants in proposed landscape buffer to soften the horizontal emphasis of proposed noise barrier and fence wall.	Provide a linkage with the existing roadside landscape context and create a more coherent landscape framework	Project Landscape Architects(Detailed Design Consultants)	Site / Throughout design and operation phases	TM-EIA Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007
11.9.6	OP1.2	Enough soil depth of 1200mm will be reserved for tree planting area to ensure healthy planting establishment. High clearance tree planting will be utilised alongside of internal road and not to interfere the EVA requirement.	Healthy Tree Establishment	Project Landscape Architects(Detailed Design Consultants)/ Project Proponent	Site / Throughout design and operation phases	TM-EIA Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007
11.9.6	OP1.3	The implementation of new planting shall be undertaken as soon as technically feasible after completion of building works to ensure the effectiveness of this mitigation during operational stage.	To enhance the greening effect and shortening the duration of impact.	Contractor	Site / Throughout the construction and operation phases	V Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007.
11.9.5	OP2	Compensatory Planting Proposals				
11.9.6	OP2.1	Utilise all available spaces for new tree and shrub planting to create a comprehensive landscape framework which is connected to areas of retained and preserved vegetation and designed to	To restore and enhance the local landscape context and ecological value.	Project Landscape Architects (Detailed Design Consultants)	Site / Throughout design phase	EIAO TM- Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		integrate the proposals within their future landscape setting.				
11.9.6	OP2.2	The new planting will be maintained in accordance with good horticultural practice in order to realise the objectives of the mitigation measures. This includes the replacement of defective plant species in the new planting areas to enhance the aesthetic, landscape and ecological quality of the proposals.	To restore and enhance the local landscape context and ecological value.	Contractor	Site / Throughout operation phase	TM-EIA Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007
11.9.6	OP2.3	The planting proposals for the proposed development will achieve a compensatory planting ratio of minimum 1:1 (new planting: trees recommended for felling). Plant 126 compensatory trees and 65 amenity trees to compensate the loss of existing trees.	To compensate the loss of existing trees and restore the landscape context.	Project Landscape Architects (Detailed Design Consultants)	Site / Throughout design and operation phases	EIAO TM- Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007
11.9.6	OP2.4	The proposed compensatory and new tree planting will utilise heavy standard size tree at selected area as accent, standard to light standard size tree in general landscape and roadside planting areas. Smaller planting stock will be used on slope and landscape buffer.	To ensure the planting proposals will create a naturalistic effect that responds to the existing and planned landscape context.	Project Landscape Architects (Detailed Design Consultants)	Site / Throughout design and operation phases	TM-EIA Annex 18, ETWB TCW No. 2/2004, LAO PN 7/2007
11.9.6	OP2.5	Detailed compensatory planting proposals will be submitted to the relevant government departments for approval.	To enhance the landscape context.	Project Landscape Architects (Detailed Design Consultants)	Site / Throughout design phase	EIAO TM- Annex 18, DEVB TCW No. 7/2015, LAO PN 7/2007
11.9.6	OP2.6	Selection of native and ornamental planting species in proposed gardens and landscape buffer and bird-attracting and butterfly-attracting plant species in and surrounding the proposed landscape pond.	To enhance the landscape and ecological value of the Site.	Project Landscape Architects (Detailed Design Consultants)	Site / Throughout design phase	EIAO TM- Annex 18
11.9.6	OP5	Design of Engineering Structures				
11.9.6	OP5.1	Alternative greening measures including greening on the roof and/or vertical greening adjacent to the structures and	To ensure the proposals are integrated with the	Project Engineers and Architects and Landscape Architects	Site / Throughout design and operation	EIAO TM- Annex 18

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		regarded sloping areas will be used.	existing landscape and visual context, and avoid cluster effect.	(Detailed Design Consultants)	phases	
11.9.6	OP5.3	Treatment of Slopes should be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape.	To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect.	Project Engineer and Architects and Landscape Architects (Detailed Design Consultants)	Site / Throughout design and operation phases	EIAO TM- Annex 18
11.9.5	OP6	Creation of Landscape Buffer				
11.9.6	OP6.1	Native and ornamental tree and shrub mix, climbing plants will be utilised for the creation of landscape buffer (5-8m wide) along noise barrier and sewage treatment plant at Ha Chuk Yuen Road as well as Kam Pok Road and Fung Chuk Road.	To enhance the aesthetic and landscape diversity of the local context. These measures provide screening effect to the noise mitigation measures.	Project Architects and Landscape Architects (Detailed Design Consultants)	Site / Throughout design and operation phases	EIAO TM- Annex 18
11.9.6	OP6.2	Treatment of Slopes should be aesthetically enhanced through the use of soft landscape works including tree and shrub planting	To create a more natural appearance blending into the local rural landscape	Project Landscape Architects (Detailed Design Consultants)	Site / Throughout design and operation phases	EIAO TM- Annex 18
11.9.5	OP7	Provision of Landscape Pond				
11.9.6	OP7	A Landscape Pond (110m ²) proposed in the landscape core of proposed development and will be composed of water plants and/or plant species attracting birds and butterfly.	To compensate the loss of abandoned ponds	Project Landscape Architects (Detailed Design Consultants)	Site / Throughout design and operation phases	EIAO TM- Annex 18
Visual Mitigation Measures						

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
During Construction Phase						
11.9, Table 11-15	Table 9.3 CP1	Preservation of Existing Vegetation				
11.9.7	CP1.1	The tree preservation proposals will coordinate with the layout and design of the engineering and architectural works at detailed design stage.	To maintain visual quality of the context	Project Engineers and Architects and Landscape Architects (Detailed Design Consultants)	Site / Throughout the design phase	EIAO TM- Annex 18
11.9.7	CP1.2	The preservation of existing tree shall provide instant greening and screening effect for proposed works.	To maintain visual quality of the context	Project Engineers and Architects and Landscape Architects (Detailed Design Consultants)	Site / Throughout the design phase	EIAO TM- Annex 18
11.9.4	CP2	Works Area and Temporary Works Areas				
11.9.7	CP2.1	The landscape of the works areas will be restored to their original condition or enhanced through the introduction of new amenity planting areas or open spaces following the completion of the construction phase.	To minimise the duration of impact.	Contractor	Site / Throughout the construction phase	EIAO TM- Annex 18
11.9.7	CP2.2	Optimize the construction sequence and construction programme.	To minimise the duration of impact.	Project Engineers and Architects and Landscape Architects (Detailed Design Consultants)/ Project Management Team	Site / Throughout the construction phase	EIAO TM- Annex 18
11.9.7	CP2.3	Construction site controls will be enforced including the storage of materials, the location and appearance of site accommodation and site storage; and the careful design of site lighting to prevent light spillage.	To minimise the source of visual impact.	Contractor/ Project Management Team	Site / Throughout the construction phase	EIAO TM- Annex 18

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
11.9.7	CP2.4	Hoarding designed with recessive colour shall be set up around the construction site providing screening effect for the construction works.	To minimise disturbance to the visual context.	Contractor/ Project Management Team	Site / Throughout the construction phase	EIAO TM- Annex 18
11.9.7	CP2.5	The site office or temporary above-ground structures shall be sited at less visual prominent locations.	To minimise the source of visual impact.	Contractor/ Project Management Team	Site / Throughout the construction phase	EIAO TM- Annex 18
11.9.4	CP5	Coordination with Concurrent Projects				
11.9.7	CP5.1	Coordinated implementation programme with concurrent projects.	To minimise cumulative impacts to the visual context.	Project Engineers and Architects and Landscape Architects (Detailed Design Consultants)/ Contractor	Site / Throughout design and construction phases	EIAO TM-Annex 18.
During Operational Phase						
11.9, Table 11-16	Table 9.4 OP3	Responsive Design of Building and Structure				
11.9.8	OP3.1	<u>Integrated Design Approach</u> Responsive design of built structures considered the location of houses and utilities structures. The disposition and height profile of the houses and above ground utilities structures respond to the existing context. Design measures include the creation of setbacks, articulating the development frontage and incorporation of view corridors/breezeway, avoid abrupt transitions between the existing and proposed built environment, reduce the apparent visual mass to enhance the	To soften the development mass and enhance their visual integration within the future landscape context.	Project Architects (Detailed Design Consultants)	Site / Throughout design phase	EIAO TM- Annex 18

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		sense of visual integration with the existing low-rise development context.				
11.9.8	OP3.2	<u>Building Treatment</u> The architectural design seeks to reduce the apparent visual mass of the structures further through the use of recessive colour palette. Incorporation of alternative greening measures such as green roof /vertical greening on built structures where condition allows and particularly at where fronting to the public realm. Non-reflective finishes also recommended reducing the potential glare effect.	To restore and enhance existing landscape context and visual amenity.	Project Architects (Detailed Design Consultants)	Site / Throughout design phase	EIAO TM- Annex 18
11.9.5	OP4	Noise Mitigation Structures				
11.9.8	OP4.1	The design of noise barrier should reduce the visual effect of the structure through the use of form, materials and textures colours. Setting back with articulated alignment from the site boundary to create a continuous landscape buffer (5-8m wide) with both preserved and new planted trees forming an instant screening effect to the engineering structures. Introduction of landscape berms, by virtue of its height and natural form, would reduce the perceived scale and height of the noise barriers. Integrated the proposed sewage treatment plant with noise barrier to reduce the engineering mass making the appearance blending into the rural setting	To ensure the proposals are integrated with the existing landscape and visual context.	Project Engineers and Architects (Detailed Design Consultants)	Site / Throughout design phase	EIAO TM- Annex 18
11.9.8	OP4.2	The design of engineering structures should avoid unnecessary visual cluster, this would be achieved through the co-ordination of the various engineering disciplines involved to arrive at innovative	To ensure the proposals are integrated with the existing landscape and visual context.	Project Engineers and Architects (Detailed Design Consultants)	Site / Throughout design phase	EIAO TM- Annex 18

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		design solutions.				
11.9.5	OP5	Design of Engineering Structures				
11.9.8	OP5.1	The detailed design landscape consultants will work in liaison with the engineers on the aesthetic aspects of the structures and their relationship with the landscape.	To ensure the proposals are integrated with the existing landscape and visual context.	Project Engineers and Architects and Landscape Architects (Detailed Design Consultants)	Site / Throughout design phase	EIAO TM- Annex 18
11.9.8	OP5.2	Alternative greening measures including greening on the roof and/or vertical greening on the structures and on regarded sloping areas will be used wherever possible to disguise their function appearance in both medium and long distance views and maximise the greening opportunities.	To enhance visual amenity	Project Engineers and Architects and Landscape Architects (Detailed Design Consultants)	Site / Throughout design phase	EIAO TM- Annex 18
11.9.8	OP5.3	Tree preservation, new tree planting and alternative greening measures on and adjacent to the engineering structures will create an instant greening effect soften the visual mass.	To ensure the proposals are integrated with the existing landscape and visual context.	Project Engineers and Architects and Landscape Architects (Detailed Design Consultants)	Site / Throughout design phase	EIAO TM- Annex 18
11.9.5	OP6	Creation of Landscape Buffer				
11.9.8	OP6.1	Native and ornamental tree and shrub planting and climbing plants will be utilised for the creation of landscape buffer along noise barrier and sewage treatment plant at Ha Chuk Yuen Road to enhance the aesthetic and landscape diversity of the local context.	To ensure the proposals are integrated with the existing landscape and visual context, and avoid cluster effect.	Project Engineers and Architects and Landscape Architects (Detailed Design Consultants)	Site / Throughout design phase	EIAO TM- Annex 18
11.9.8	OP6.2	Appropriate height and form of the landscape buffer/ berm to integrate with	To ensure the proposals are	Project Engineers and Architects and	Site / Throughout	EIAO TM- Annex 18

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		the noise mitigation measures and provide screening effect to the built structures.	integrated with the existing landscape and visual context.	Landscape Architects (Detailed Design Consultants)	design phase	
11.9.8	OP6.3	Treatment of Slopes should be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to create a more natural appearance blending into the local rural landscape.	To ensure the proposals are integrated with the existing landscape and visual context.	Project Engineers and Architects and Landscape Architects (Detailed Design Consultants)	Site / Throughout design phase	EIAO TM- Annex 18
11.9.8	OP6.4	The creation of landscape buffer at the periphery of the site, the height and form of the landscape berms and planting proposals have key role in mitigating the visual mass of the external fence walls of 2.5m high, the sewage treatment plant of roof at 10.4mPD and the noise barriers of height at 10.1mPD high.	To ensure the proposals are integrated with the existing landscape and visual context.	Project Engineers and Architects and Landscape Architects (Detailed Design Consultants)	Site / Throughout design phase	EIAO TM- Annex 18