

Appendix B Project Implementation Schedule (PIS)

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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Air Quality Impact								
Construction Phase								
3.10.1.1	2.2	Dust control measures stipulated in the Air Pollution Control (Construction Dust) Regulation should be implemented during the construction of the Project to control potential fugitive dust emissions. Standard construction practices for dust minimisation, including a number of practical measures such as regular water spraying, provision of vehicle wheel-washing and body washing facilities and shielding or covering with impervious sheet of stockpiled materials or exposed area when it is not use, should be implemented to reduce dust nuisance.	Construction site	Contractor		√		Air Pollution Control Ordinance (APCO), Hong Kong Air Quality Objectives (HKAQOs), Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM)
3.10.1.2	2.2	In order to avoid potential odour emissions from the decommissioning activities, the existing sewage pumping station and main should be flushed out and sludge should be pumped away before the start of decommissioning works.	Construction site	Contractor		√		EIAO-TM
3.10.1.3	2.2	Site practices such as regular maintenance and checking of the diesel-driven Powered Mechanical Equipment (PME) should be adopted to avoid any black smoke emissions and to reduce gaseous emissions. Good site practices listed below should be carried out to minimize construction dust impact: <ul style="list-style-type: none"> ▪ Use of hourly watering to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. ▪ The maximum percentage of active construction works area shall be 50% during construction. 	Construction site	Contractor		√		APCO, HKAQOs, EIAO-TM

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		<ul style="list-style-type: none"> ▪ Use of frequent watering for particularly dusty construction areas and areas close to Air Sensitive Receivers (ASRs). ▪ Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines. ▪ Open stockpiles shall be avoided or covered. Where possible, placing dusty material storage piles near ASRs should be prevented. ▪ Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. ▪ Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. ▪ Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. ▪ Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit. ▪ Imposition of speed controls for vehicles on site haul roads. ▪ Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs. ▪ Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise. 						

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Operational Phase								
3.6.2.2	2.2	Biogas generated should go through the gas treatment facility to remove hydrogen sulphide (H ₂ S) before passing to the combined heat and power (CHP) generator. Sidestream should be treated by using Anammox technology in order to remove the ammonium nitrogen content.	New development area of the Project	Project Proponent	√		√	EIAO-TM
3.10.2.2	2.2	The major process equipment of the upgraded TPSTW and Co-digestion Facilities will be confined inside the substructure/superstructure, except for the final sedimentation tanks at the existing East Plant, to minimize odour nuisance to the surrounding air sensitive receivers. Two stages de-odourization system (bio tricking filter and carbon adsorption) will be installed to treat the collected odourous gases. The overall odour removal efficiency would be not less than 99%.	New development area of the Project	Project Proponent	√		√	EIAO-TM
Water Quality Impact								
Construction Phase								
4.11.2	3.2	<u>Construction Site Run-off and General Construction Activities</u> Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.	Construction site	Contractor		√		Water Pollution Control Ordinance (WPCO), EIAO-TM, The Professional Persons Environmental Consultative Committee Practice Note on Construction Site Drainage

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								(ProPECC PN 1/94)
4.11.3	3.2	All vehicles and plant should be cleaned before they leave a construction site to minimize the deposition of earth, mud, debris on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfall to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	Construction site	Contractor		√		WPCO, ProPECC PN 1/94, EIAO-TM
4.11.4	3.2	Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.	Construction site	Contractor		√		WPCO, EIAO-TM, Waste Disposal Ordinance (WDO)
4.11.5 - 4.11.6	3.2	The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be followed as far as practicable to minimize surface run-off and the chance of erosion. Surface run-off from construction sites should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels, earth bunds or sandbag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels at site boundaries should be provided on site boundaries where necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.	Construction site	Contractor		√		WPCO, EIAO-TM, ProPECC PN 1/94

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4.11.7	3.2	Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to prevent local flooding. Before disposal at the public fill reception facilities, the deposited silt and grit should be solicited in such a way that it can be contained and delivered by dump truck instead of tanker truck. Any practical options for the diversion and re-alignment of drainage should comply with both engineering and environmental requirements in order to provide adequate hydraulic capacity of all drains. Minimum distance of 100m should be maintained between the discharge points of construction site run-off and the existing saltwater intakes.	Construction site	Contractor		√		WPCO, EIAO-TM, ProPECC PN 1/94
4.11.8	3.2	Construction works should be programmed to minimize soil excavation works in rainy seasons (April to September). If excavation in soil cannot be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place in such a way that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm.	Construction site	Contractor		√		WPCO, EIAO-TM, ProPECC PN 1/94
4.11.9	3.2	Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	Construction site	Contractor		√		WPCO, EIAO-TM, ProPECC PN 1/94

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4.11.10	3.2	Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	Construction site	Contractor		√		WPCO, EIAO-TM, ProPECC PN 1/94
4.11.11	3.2	Construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or similar fabric during rainstorms.	Construction site	Contractor		√		WPCO, EIAO-TM, ProPECC PN 1/94
4.11.12	3.2	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	Construction site	Contractor		√		WPCO, EIAO-TM, ProPECC PN 1/94
4.11.13	3.2	A discharge license should be applied from the EPD for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge license. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS). The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimize water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO	Construction site	Contractor		√		WPCO, EIAO-TM, ProPECC PN 1/94, Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS)

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		license which is under the ambit of regional office (RO) of EPD.						
4.11.14	3.2	<p><u>Accidental Chemical Spillage</u></p> <p>Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (WDO) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied with for control of chemical wastes.</p>	Construction site	Contractor		√		WPCO, EIAO-TM, WDO
4.11.15	3.2	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	Construction site	Contractor		√		WPCO, EIAO-TM, WDO
4.11.16	3.2	Disposal of chemical wastes should be carried out in compliance with the WDO. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the WDO should be followed to avoid leakage or spillage of chemicals.	Construction site	Contractor		√		WPCO, EIAO-TM, WDO, Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
4.11.17	3.2	<p><u>Sewage Effluent from Construction Workforce</u></p> <p>Sufficient chemical toilets should be provided in the works areas. A licensed waste collector should be deployed to clean the chemical toilets on a regular basis.</p>	Construction site	Contractor		√		WPCO, EIAO-TM, WDO
4.11.18	3.2	Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the surrounding environment.	Construction site	Contractor		√		WPCO, EIAO-TM

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4.11.19	3.2	<p><u>Contaminated Site Run-off</u></p> <p>Any excavated contaminated material and exposed contaminated surface should be properly housed and covered to avoid generation of contaminated run-off. Open stockpiling of contaminated materials should not be allowed. Any contaminated run-off should be properly collected and treated to reduce the pollution level to an acceptable standard and remove any prohibited substances (such as total petroleum hydrocarbon) to an undetectable range. All treated effluent shall meet the conditions of the discharge license and the requirements as stated in the TM-DSS.</p>	Construction site	Contractor		√		WPCO, EIAO-TM, TM-DSS
4.11.20	3.2	<p><u>Demolition Works</u></p> <p>The decommissioned treatment facilities shall be cleaned prior to their demolition or removal. All wastewater residues, if any, in the decommissioned facilities shall be properly collected, contained and treated within the plant and shall not be discharged directly into the drainage system or the environment. Chemical residues, if any, in the decommissioned facilities shall be properly collected, handled and disposed in accordance with the Waste Disposal (Chemical Waste) (General) Regulations and the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published by EPD, and should be collected by a licensed chemical waste collector for proper disposal at the Chemical Waste Treatment Centre at Tsing Yi.</p>	Construction site	Contractor		√		WPCO, EIAO-TM, WDO, Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
4.11.21	3.2	<p>Proper site practice and good site management (as specified in the ProPECC PN 1/94 "Construction Site Drainage") and presented in EIA Reference Sections 4.11.2 to 4.11.13 above shall be followed to prevent polluted run-off and site effluent generated from the demolition works areas from directly entering the surrounding waters.</p>	Construction site	Contractor		√		WPCO, EIAO-TM, ProPECC PN 1/94

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Operational Phase								
4.12.3	3.2	<p><u>THEES Maintenance</u></p> <p>The THEES should be regularly maintained to ensure that it is functioning properly. This will avoid any emergency repair of the THEES or unexpected discharge of treated sewage into the Tolo Harbour.</p>	THEES	THEES operator	√		√	WPCO, EIAO-TM
4.12.4	3.2	<p>The regular THEES maintenance event should be carefully planned and scheduled outside the peak algae blooming season. (i.e. December to April/May) to minimize the risk of red tides. Relevant parties including the EPD, Agriculture, Fisheries and Conservation Department (AFCD), Water Supplies Department (WSD) and the key stakeholders for mariculture and fisheries in Tolo Harbour should be informed of the THEES maintenance event prior to any discharge. The number of red tide incidents was found lowest from July to November according to the data from past record. It is recommended that shutdown of the THEES, if unavoidable, should be arranged within the period from July to November and should be shortened as far as possible. The scheduling of the maintenance discharge should also take into account any ongoing blooming event in the area, which may occur outside the blooming season. In planning of the maintenance work and before the maintenance discharge, AFCD should be consulted to seek advice on the potential for red tide occurrence in the receiving water. The maintenance discharge should be rescheduled or postponed based on AFCD's advice, as necessary.</p>	THEES	THEES operator	√		√	WPCO, EIAO-TM
4.12.5	3.2	<p><u>Emergency Discharge</u></p> <p>Dual power supply or ring main supply from CLP should be provided for the Project to prevent the occurrence of power failure. In addition, standby facilities for the main</p>	Project site	Project Proponent	√		√	WPCO, EIAO-TM

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		treatment units and standby equipment parts / accessories should also be provided in order to minimize the chance of emergency discharge.						
4.12.6	3.2	To provide a mechanism to minimize the impact of emergency discharges and facilitate subsequent management of any emergency, an emergency contingency plan has been formulated by the DSD to clearly state the response procedure in case of pumping stations or sewage treatment works failure. The plant operators of the Project should carry out necessary follow-up actions according to the procedures of this existing contingency plan to minimize any water quality impact due to emergency discharge. The plant operators of the Project should also closely communicate with WSD in order to minimize any impact on WSD seawater intake due to emergency discharge. WSD may consider shutting down the Tai Po seawater pumping station or provision of a higher disinfection level for a short period of time in order to minimize any adverse impacts, should such be necessary.	Project site	Plant operators	√		√	WPCO, EIAO-TM
4.12.7	3.2	<u>Handling and Transportation of Pre-treated Food Waste</u> The incoming pre-treated food waste should be transferred to the Project facilities through enclosed pipelines. The pre-treated food waste loading and handling areas of this Project should be enclosed within buildings to contain any accidental spills.	Project site	Project Proponent	√		√	WPCO, EIAO-TM
4.12.8	3.2	<u>Wastewater from Sludge / Pre-treated Food Waste</u> All wastewater generated from the sludge dewatering process and the pre-treated food waste related facilities should be fed back into the upgraded Tai Po Sewage Treatment Works (TPSTW) for treatment before final	Project site	Project Proponent / plant operators	√		√	WPCO, EIAO-TM

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		disposal. No direct discharge of wastewater shall be allowed under this Project.						
4.12.9	3.2	<p>Best Management Practices (BMPs) to reduce storm water and non-point source pollution are also proposed as follows:</p> <p><u>Design Measures</u></p> <ul style="list-style-type: none"> ▪ Exposed surface shall be avoided within the proposed Project site to minimize soil erosion. Development site shall be either hard paved or covered by landscaping area where appropriate to reduce soil erosion. ▪ The drainage system of the Project should be designed to avoid any case of flooding. <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. ▪ Road gullies with standard design and silt traps should be incorporated during the detailed design of any new access roads to remove particles present in storm water runoff. <p><u>Administrative Measures</u></p> <ul style="list-style-type: none"> ▪ Good management measures such as regular cleaning and sweeping of road surface / open areas is proposed. The road surface / open area cleaning should also be carried out prior to occurrence of rainstorm. ▪ Manholes, as well as storm water gullies, ditches provided among the development areas should be regularly inspected and cleaned (e.g. monthly). Additional inspection and cleansing should be carried out before forecast heavy rainfall. 	Project site	Project Proponent	√		√	WPCO, EIAO-TM, ProPECC PN 5/93

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4.12.10	3.2	<p><u>Chemical Spillage</u></p> <p>Chemical storage and handling areas should be bunded and enclosed within buildings. Separate drainage system should be provided as appropriate to avoid any spilled chemicals from entering into the storm drain in case of accidental spillage. Also, adequate tools for cleanup of spilled chemicals should be stored on site and appropriate training shall be provided to staff to reduce the chance of water pollution.</p>	Project site	Project Proponent / plant operators	√		√	WPCO, EIAO-TM, WDO, Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
Ecological Impact								
Terrestrial Ecology								
5.11.3	4.2	<p><u>Mitigation for Direct Impact to Roosting Non-breeding Ardeids</u></p> <p>During the demolition, site clearance works would cause a loss of an occasional night roost habitat for ardeids. Before the removal (transplantation if practicable) of the tree group, the trees should be well-separated from construction works (use of hoarding). All noisy construction works within 100m of the tree group should cease at least 1 hour before sunset.</p>	Construction site	Contractor		√		EIAO-TM
5.11.4	4.2	<p>As the trees are to be removed, mitigation could be by way of transplantation (if practicable) or compensatory planting of suitable trees within the new TPSTW layout. Transplantation Proposal shall be prepared to confirm the location, quantity and condition of the trees within the tree group, and propose methodology and receptor site(s) to transplant any of these trees that are to be affected by the construction works. Compensatory planting of suitable trees within TPSTW shall be implemented if transplanting the identified tree group is impracticable based on the tree assessment. A detailed Compensation Plan shall be prepared by a qualified botanist/ plant</p>	Construction site	Project Proponent / Contractor	√	√		EIAO-TM

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		ecologist with relevant experience. It is recommended that compensatory planting should be completed before the removal of the roosting trees and the removal of trees should be arranged in wet season when the number of roosting ardeids is generally lower. Tree species to be replanted will make reference to those utilised by ardeids and shall be in heavy standard. The new tree group can provide longer term roosting opportunities. The noisy construction works within 100 m from the relevant transplantation / compensation area should cease at least 1 hour before sunset, after the transplantation / compensatory planting.						
5.11.5	4.2	Avoidance of tree felling/removal/transplantation works at least 1 hour before the sunset is recommended to avoid any direct disturbances to the night roosting activities.	Construction site	Contractor		√		EIAO-TM
5.11.6	4.2	<u>Mitigation for Disturbance during Construction Phase</u> <i>Environmental Awareness and Construction Works Boundary</i> Construction workers should be briefed regarding the sensitivity of the areas before the commencement of the works, and requested not to disturb any areas nearby (e.g. plantation adjacent to eastern boundary of TPSTW). Furthermore, the works boundary of different phases should be clearly defined (i.e. fenced with screening materials) and any works beyond the boundary should be strictly prohibited.	Construction site	Contractor		√		EIAO-TM
5.11.7 & 5.11.8	4.2	<i>Consideration of Alternative Piling Method</i> Quieter non-percussive piling method, e.g. pre-bored steel H piles, is proposed to be adopted under this Project to minimize the noise impact where practicable. Alternatively, in case the future detailed design of the Project reveals that the quieter piling methods are not	Construction site	Contractor		√		EIAO-TM

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		practical, conventional percussive piling should be used within non-sensitive hours (e.g. close to noon or at least 1 hour before the sunset) as far as practicable.						
5.11.9	4.2	<p><i>Good Site Practices</i></p> <p>The following measures should be practised during each phase of construction.</p> <ul style="list-style-type: none"> ▪ Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme; ▪ Machines and plant (such as trucks, breakers) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; ▪ Plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from the plantation of Shuen Wan Restored Landfill (SWRL); ▪ Silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works; ▪ Noisy construction activities such as concrete breaking, should be scheduled to less sensitive hours during the day, e.g. midday as far as possible; ▪ Mobile plant should be sited as far away from the plantation of SWRL as possible and practicable; and ▪ Material stockpiles, site office and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities. 	Construction site	Contractor		√		EIAO-TM
5.11.10	4.2	<p><i>Use of Quality Powered Mechanical Equipment</i></p> <p>The Contractor should source quiet plant associated with the construction works from the Powered Mechanical Equipment (PME) listed in the Quality PME (QPME)</p>	Construction site	Contractor		√		EIAO-TM

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		system and other commonly used PME listed in EPD web pages as far as possible.						
5.11.12, 5.11.13, Figure 5.5	4.2	<p><i>Use of Movable and Non-reflective Temporary Noise Barriers</i></p> <p>Movable and non-reflective temporary noise barriers with sound absorptive materials can be placed close to noisy plant and be moved concurrently with the plant along a worksite for effective noise screening from the plantation adjacent to the eastern boundary of TPSTW where the pre-roosting sites of Collared Crow were identified (see Figure 5.5). Typical design of the noise barrier could be in the form of a vertical barrier with a small-cantilevered upper portion. A cantilevered top cover would also be adopted as required to block the direct line of sight towards the pre-roosting sites of Collared Crow.</p> <p>These movable and non-reflective temporary noise barriers with sound absorptive materials are recommended to be used for noisy PME including breakers, excavators and generators as far as practicable.</p>	Construction site	Contractor		√		EIAO-TM
5.11.14	4.2	<p><i>Control of Construction Site Run-off</i></p> <p>The relevant best practices including the requirements specified in the Professional Persons Environmental Consultative Committee Practice Note on Construction Site Drainage (ProPECC PN 1/94) should be followed to minimize the water quality impacts.</p>	Construction site	Contractor		√		EIAO-TM
5.11.15	4.2	<p><i>Construction Dust Suppression Measures</i></p> <p>The dust control measures stipulated in the Air Pollution Control (Construction Dust) Regulations should be implemented for the construction of the proposed Project, where applicable, to minimize the construction dust impacts.</p>	Construction site	Contractor		√		EIAO-TM

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5.11.16 & 5.11.17	4.2	<p><i>Mitigation of Indirect Disturbance to Roosting Non-breeding Ardeids</i></p> <p>The concerned tree group located at the southwest portion of TPSTW supports occasional ardeid night roosting. The mitigation measures and good site practices as described above would also serve to protect the roosting non-breeding ardeids from indirect disturbance during the construction phase. Before the removal (or transplantation if practicable) of the concerned tree group at the interim construction stage, the trees should be well-separated from construction works (use of hoarding). Noisy construction works within 100m of the concerned tree group should cease at least 1 hour before sunset.</p> <p>The intensity of the construction lighting, if required, should be controlled to the lowest possible level. Unnecessary lighting should be turned off outside working hours of the construction sites.</p>	Construction site	Contractor		√		EIAO-TM
Marine Ecology								
4.11 & 4.12	4.2	Mitigation measures recommended in the Water Quality Impact Assessment of this EIA for controlling water quality impact (as presented above) would also serve to protect marine ecological resources from indirect impacts.	Construction site / Project site / THEES	Contractor / Project Proponent / THEES and TPSTW operators	√	√	√	-
Fisheries Impact								
4.11 & 4.12	5.2	Mitigation measures recommended in the Water Quality Impact Assessment of this EIA for controlling water quality impact (as presented above) would also serve to protect fisheries resources and activities from indirect impacts.	Construction site / Project site / THEES	Contractor / Project Proponent / THEES and TPSTW operators	√	√	√	-

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Landscape and Visual Impact								
Construction Phase								
Table 7.13	6.2	<u>Good Site Management and Practice</u> Construction site should be kept clean and tidy and construction material should be stored in order. All stockpiling areas and idled area shall be covered by tarpaulin sheet as far as possible.	Construction site	Contractor		√		EIAO-TM
Table 7.13	6.2	<u>Erection of Decorative Screen Hoarding</u> Each site should be provided with decorative screen hoarding compatible with surrounding setting.	Construction site	Contractor		√		EIAO-TM
Table 7.13	6.2	<u>Tree Preservation</u> The existing trees shall be preserved as far as possible. The retained existing trees on site shall be protected carefully during construction. The requirement specified DEVB TCW No. 4/2020 and “Guidelines on Tree Preservation during Development” issued by Development Bureau shall be followed. Any existing vegetation in landscaped areas and natural terrain not to be affected by the Project shall be carefully preserved.	Project site	Project Proponent	√	√		EIAO-TM, DEVB TCW No. 4/2020, Guidelines on Tree Preservation during Development Transplanting issued DEVB
Table 7.13	6.2	<u>Tree Transplanting / Compensatory Tree Planting</u> Trees unavoidably affected by the Project shall be transplanted in accordance with “Guidelines on Tree Transplanting” issued by Development Bureau as far as possible. Any unavoidable tree felling shall be mitigated by compensatory tree planting in accordance with DEVB TCW No. 4/2020. In particular, compensatory planting for the same species of the mature trees (in LR1.1 and LR1.2) to be felled would be provided with sufficient planting space within the	Project site	Project Proponent / LCSD / AFCD / LandsD / Allocatee department (Dependent on location of new planting in accordance with DEVB TC(W) No. 6/2015)	√	√		EIAO-TM, DEVB TCW No. 4/2020, Guidelines on Tree Transplanting issued by DEVB

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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		Project site or nearby off-site area.						
Operational Phase								
Table 7.14	6.2	<u>Tree Planting along Site Boundary</u> Tree planting shall be provided along the site boundary as far as practicable to provide visual screening effect.	Project site	Project Proponent	√		√	EIAO-TM
Table 7.14	6.2	<u>Infill Planting</u> Infill planting of trees, shrubs and/or groundcovers shall be provided where space is available.	Project site	Project Proponent	√		√	EIAO-TM
Table 7.14	6.2	<u>Green Roof and Vertical Greening</u> Where practicable, green roof and vertical greening on the external walls without the coverage of architectural elements will be provided.	Proposed development area of the Project	Project Proponent	√		√	EIAO-TM
Table 7.14	6.2	<u>Responsive Building Design</u> Aesthetically pleasing design as regard to the form, material and finishes shall be incorporated to all buildings, engineering structures and associated infrastructure facilities so as to blend in the buildings and structures to the adjacent landscape and visual context.	Proposed development area of the Project	Project Proponent	√		√	EIAO-TM
Hazard to Life								
8.12.1	7.2	It is recommended to develop a joint emergency response plan between the building management team of development, The Hong Kong and China Gas Company Limited (Towngas), Fire Services Department and TPSTW in case of emergency in the Tai Po Gas Production Plant (TPGPP). The joint emergency response plan should detail the communication protocol between TPGPP and emergency responders as well as between	Project site	Project Proponent	√	√	√	EIAO-TM

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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		TPGPP and TPSTW (if required), and also review if drill is required periodically.						
8.12.1	7.2	Flammable Gas and H ₂ S detectors shall be provided in the biogas area to alert people to initiate the appropriate emergency actions including suspension of construction work and machine shutdown which may act as ignition sources when there is leak detection.	Project site	Project Proponent	√	√	√	EIAO-TM
8.12.1	7.2	Emergency response plan with details of on-site emergency procedures shall be developed for both construction phase and operational phase of the Project to cover the potential accident due to biogas releases. This plan should be extended to cover the concurrent construction project on site, and regular drills should also be performed.	Project site	Project Proponent	√	√	√	EIAO-TM
8.12.1	7.2	Only authorized vehicles shall be permitted to enter the Project site with restriction of speed for vehicle movements in the site. Safety markings and marked crash barriers shall be provided to the above ground piping, digesters and gas holders near the access road.	Project site	Plant operators / Contractor	√	√	√	EIAO-TM
8.12.1	7.2	Prior to the Project construction, suitable concurrent construction and operations risk and safety assessment shall be carried out to identify the potential hazards arising from the simultaneous Project construction and operation of biogas facilities onsite. Suitable risk mitigation measure shall be implemented for any significant risk activity identified. For examples, all major construction activities should be arranged with either adequate setback or physical barrier from the existing gas installations; implementation of major construction works and movement of plants and vehicles would be stringently controlled to have suitable setback clearance,	Project site	Project Proponent, plant operators and Contractor	√	√	√	EIAO-TM

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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		or physical barrier with an empty digester / gas holder from the digesters / gas holders in operation. This hazard control assessment should be extended to cover the concurrent construction project on site.						
Landfill Gas Hazard								
Construction Phase								
9.7.2	8.2	<p><u>Safety Measures</u></p> <p>The following safety measures shall be implemented during the construction phase:</p> <ul style="list-style-type: none"> ▪ All personnel who work on site and all visitors to the site should be made aware of the possibility of ignition of gas in the vicinity of excavations. Safety notices should be posted warning of the potential hazards. ▪ A Safety Officer, trained in the use of gas detection equipment and landfill gas-related hazards, should be present on site during the groundworks trenching and construction stages. ▪ All staff working in the Consultation Zone should receive appropriate training on working in areas susceptible to landfill gas, fire and explosion hazards. ▪ An excavation procedure or code of practice to minimize landfill gas related risk should be devised and carried out. ▪ No worker should be allowed to work alone at any time in or near to any excavation areas within the Consultation Zone. At least one other worker should be available to assist with a rescue if needed. ▪ Smoking, naked flames and all other sources of ignition should be prohibited within 15m of any excavation or ground-level confined space. 'No smoking' and 'No naked flame' notices should be posted prominently on the construction site, especially in excavation or trenches. 	Construction site	Contractor		√		Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/ 97)

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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		<ul style="list-style-type: none"> ▪ Welding, flame-cutting or other hot works should be confined to open areas at least 15m from any trench or excavation. ▪ Welding, flame-cutting or other hot works may only be carried out in trenches or confined spaces when controlled by a 'permit to work' procedure, properly authorized by the Safety Officer. ▪ The permit to work procedure should set down clearly the requirements for continuous monitoring for methane, carbon dioxide and oxygen throughout the period during which the hot works are in progress. The procedure should also require the presence of an appropriately qualified person, in attendance outside the 'confined area', who shall be responsible for reviewing the gas measurements as they are made, and who shall have executive responsibility for suspending the work in the event of unacceptable or hazardous conditions. Only those workers who are appropriately trained and fully aware of the potentially hazardous conditions which may arise should be permitted to carry out hot works in confined areas. ▪ Ground level construction plant used within in Consultation Zone should be fitted with vertical exhausts at least 0.6m above ground level and with spark arrestors. ▪ Any electrical equipment, such as motors and extension cords, should be intrinsically safe. ▪ During piping assembly or conduiting construction within Consultation Zone, all valves/seals should be closed immediately after installation. As construction progresses, all valves/seals should be closed as installed to prevent the migration of gases through the pipeline/conduit. All piping/conduiting should be capped at the end of each working day. 						

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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		<ul style="list-style-type: none"> ▪ Mobile offices, equipment stores, mess rooms etc. should be located on an area which has been proven to be gas free (by survey with portable gas detectors) and ongoing monitoring / measurement should be carried out, preferably at least at the beginning of every working day, to ensure that these areas remain gas free. Alternatively, such buildings should be raised clear of the ground. If buildings are raised clear of the ground, a minimum, clear separation distance (as measured from the highest point on the ground surface to the underside of the lowest floor joist) should be 500mm. ▪ Adequate fire extinguishing equipment, fire-resistant clothing and breathing apparatus sets should be made available on site. Fire drills should be organized at not less than six monthly intervals. 						
9.7.3 & Table 9.8	8.3	<p>Landfill Gas (LFG) Monitoring</p> <p>LFG Monitoring shall be undertaken during construction phase as described below:</p> <ul style="list-style-type: none"> ▪ Periodically during ground-works construction, the works area should be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. ▪ The monitoring frequency and areas to be monitored should be set down prior to commencement of ground-works either by the Safety Officer or by an appropriately qualified person. ▪ Routine monitoring should be carried out in all excavations, manholes and chambers and any other confined spaces that may have been created by, for example, the temporary storage of building materials on the site surface. ▪ All measurements in excavations should be made with the monitoring tube located not more than 10mm from the exposed ground surface. 	Construction site	Contractor		√		Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/ 97)

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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		<ul style="list-style-type: none"> ▪ For excavations deeper than 1m, measurements should be made: <ul style="list-style-type: none"> - at the ground surface before excavation commences; - immediately before any worker enters the excavation; - at the beginning of each working day for the entire period the excavation remains open; and - periodically through the working day whilst workers are in the excavation. ▪ For excavations between 300mm and 1m deep, measurements should be made: <ul style="list-style-type: none"> - directly after the excavation has been completed; and - periodically whilst the excavation remains open. ▪ For excavations less than 300mm deep, monitoring may be omitted, at the discretion of the Safety Officer or other appropriately qualified person. ▪ Depending on the results of the measurements, actions required will vary and should be set down by the Safety Officer or other appropriately qualified person. As a minimum these shall encompass those actions specified in Table 9.8 of this EIA Report. ▪ The hazards from landfill gas during the construction phase shall be minimized by precautionary measures recommended in the Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/97). ▪ In any emergency situation, the Safety Officer or other appropriately qualified person, shall have the necessary authority and shall ensure that the confined space is evacuated and the necessary works implemented for reducing the concentrations of gas. The following organizations should also be contacted as appropriate: <ul style="list-style-type: none"> - Hong Kong Police Force (HKPF); - Fire Services Department (FSD); and 						

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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		- Landfill Operator						
Operational Phase								
9.7.4	8.2	<u>Building Protection Design</u> Where below ground service entries are necessary to the buildings/facilities, the entry point should be sealed to prevent gas entry.	Proposed development area of the Project	Project Proponent	√		√	Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/ 97)
9.7.5	8.2	Where practicable, natural ventilation through windows and openings, coupled with wind driven cowls and other devices as required, should be provided at or below the ground floor of new permanent building structures of the Project.	Proposed development area of the Project	Project Proponent	√		√	Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/ 97)
9.7.6	8.2	Where natural ventilation is not feasible, the floors and walls at the ground level and the below ground rooms / voids of any proposed permanent structures should consist of gas resistant material with low gas permeability. Gas detection systems with audio alarm and forced ventilation should also be provided in such area of the Project. In addition, a clear void or a gas vent (e.g. in the form of no-fines gravel in trenches) should be created under these structures to vent and dilute any gas emitted from the ground.	Proposed development area of the Project	Project Proponent	√		√	Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/ 97)
9.7.7	8.2	The aforementioned gas detection systems should be calibrated and maintained at regular basis in according to the recommendation of manufacturer's instruction. The operators of the Project should also make sure that the gas detection systems are in functions during the operational phase of the Project.	Proposed development area of the Project	Plant operators	√		√	Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/ 97)
9.7.8	8.2	Forced ventilation should be used if methane of more than 0.5 % (by volume) in the internal atmosphere (e.g. in voids or rooms as mentioned above) is detected.	Proposed development area of the Project	Plant operators	√		√	Landfill Gas Hazard Assessment

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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								Guidance Note (EPD/TR8/ 97)
9.7.9	8.2	No person should enter or remain in any confined spaces (e.g. in voids or rooms as mentioned above) where the carbon dioxide concentration exceeds 1.5 % (by volume).	Proposed development area of the Project	Plant operators	√		√	Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/ 97)
9.7.10	8.2	Oxygen concentration should be monitored and no person shall enter or remain in any confined spaces (e.g. in voids or rooms as mentioned above) where the oxygen content of air has fallen below 18 % by volume.	Proposed development area of the Project	Plant operators	√		√	Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/ 97)
9.7.11	8.2	All the access to these confined spaces (e.g. in rooms or voids as mentioned above) should be restricted only to authorised personnel who should be aware of the LFG hazard. No member of general public should be permitted or allowed to access these confined spaces, manholes or inspection chambers.	Proposed development area of the Project	Plant operators			√	Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/ 97)
9.7.12	8.2	<u>Guidance for Entry into Manholes and Chambers</u> When service voids, manholes or inspection chambers within the proposed site are entered for maintenance, monitoring and a checklist system of safety requirements should be performed before entry in accordance with Code of Practice on Safety and Health at Work in Confined Spaces published by Labour Department.	Proposed development area of the Project	Plant operators			√	Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/ 97)
9.7.13	8.2	All the access to the confined spaces would be restricted only to authorized personnel who should be aware of the LFG hazard. No member of general public should be permitted or allowed to access these confined spaces, manholes or inspection chambers.	Proposed development area of the Project	Plant operators			√	Landfill Gas Hazard Assessment Guidance Note (EPD/TR8/ 97)

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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Waste Management Implications								
Construction Phase								
10.6.2 & 10.6.6	9.2	<u>General</u> An Environmental Management Plan (EMP) incorporating waste management shall be prepared and submitted to the Engineer for approval before construction works in accordance with ETWB TC(W) No. 19/2005.	Construction site	Contractor		√		EIAO-TM, WDO, ETWB TC(W) No. 19/2005
10.6.2	9.2	Training of construction staff should be undertaken about the concept of site cleanliness and appropriate waste management procedures. Toolbox talk for on-site sorting of Construction and Demolition (C&D) materials should be developed and provided to enhance workers' awareness in handling, sorting, reuse and recycling of C&D materials. Requirements for staff training should be included in the EMP.	Construction site	Contractor		√		EIAO-TM, WDO, ETWB TC(W) No. 19/2005
10.6.3	9.2	Good planning and site management practice should be employed to eliminate over ordering or mixing of construction materials to reduce wastage. Proper storage and site practices should be implemented to minimize the damage or contamination of construction materials.	Construction site	Contractor		√		EIAO-TM, WDO, ETWB TC(W) No. 19/2005
10.6.4	9.2	Where waste generation is unavoidable, the potential for recycling or reuse should be rigorously explored. If waste cannot be recycled, disposal routes described in the EMP shall be followed. A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be implemented. In order to monitor the disposal of C&D material and solid wastes at public filling facilities and landfills and to control fly-tipping, a trip-ticket system should be	Construction site / transportation routes of wastes	Contractor		√		EIAO-TM, WDO, ETWB TC(W) No. 19/2005, DEVB TC(W) No. 6/2010

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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		included. DEVB TC(W) No. 6/2010 shall be referenced for details.						
10.6.5	9.2	Regular cleaning and maintenance of the waste storage area should be provided.	Construction site	Contractor		√		EIAO-TM, WDO, ETWB TC(W) No. 19/2005
10.6.4 & 10.6.6	9.2	An on-site environmental coordinator should be identified at the outset of the works. A waste recording system including the monthly and yearly Waste Flow Tables (WFT) should be included in the EMP to indicate the amounts of waste generated, recycled and disposed of (including final disposal site), and which shall be regularly updated. The reuse/recycling of all materials on site shall be investigated prior to treatment/ disposal off-site. Good site practices shall be adopted from the commencement of works to avoid the generation of waste, reduce cross contamination of waste and to promote waste minimization.	Construction site	Contractor		√		EIAO-TM, WDO, ETWB TC(W) No. 19/2005
10.6.7	9.2	<p><u>On-site Sorting, Reuse and Recycling</u></p> <p>All waste materials should be segregated into categories covering:</p> <ul style="list-style-type: none"> ▪ Inert C&D materials suitable for reuse on-site. ▪ Inert C&D materials suitable for Public Fill Reception Facilities (PFRFs). ▪ Recyclable non-inert C&D materials for recycling. ▪ Remaining non-inert C&D materials for landfill. ▪ Chemical waste. ▪ General refuse for landfill. 	Construction site	Contractor		√		EIAO-TM, WDO, ETWB TC(W) No. 19/2005
10.6.8	9.2	Proper segregation and disposal of construction waste should be implemented. Separate containers should be provided for inert and non-inert C&D materials.	Construction site	Contractor		√		EIAO-TM, WDO, ETWB TCW No.19/2005
10.6.9	9.2	Specific area should be allocated for on-site sorting of C&D materials and to provide a temporary storage area	Construction site	Contractor		√		EIAO-TM, WDO, ETWB TC(W) No.

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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		for those sorted materials. If area is limited, all C&D materials should at least be sorted on-site into inert and non-inert components. Non-inert C&D materials should be reused and recycled to local recycler wherever possible and disposed to the designated landfill only as a last resort. Inert C&D materials should be separated and reused in this or other projects (subject to approval by the relevant parties in accordance with the DEVB TC(W) No. 6/2010) before disposed of at a PFRF operated by Civil Engineering and Development Department (CEDD). Steel and other metals should be recovered from demolition waste stream and recycled.						19/2005, DEVB TC(W) No. 6/2010
10.6.10	9.2	<p><u>Construction and Demolition Material</u></p> <p>Inert C&D materials should be temporarily stored on-site for use as backfill as far as possible. It should be properly covered with tarpaulin or similar impervious sheeting to prevent dust nuisance and site runoff. Surplus inert C&D materials should be disposed of at PFRFs.</p>	Construction site	Contractor		√		EIAO-TM, WDO, ETWB TCW No.19/2005, APCO, WPCO
10.6.11	9.2	<p>Control measures for temporary stockpiles on-site should be taken in order to minimize the noise, generation of dust, pollution of water and visual impact. These measures include:</p> <ul style="list-style-type: none"> ▪ Surface of stockpiled soil should be regularly wetted with water especially during dry season; ▪ Disturbance of stockpiled soil should be minimized; ▪ Stockpiled soil should be properly covered with tarpaulin especially when heavy rain storms are predicted; ▪ Stockpiling areas should be enclosed where space is available; ▪ Stockpiling location should be away from the water bodies; and 	Construction site	Contractor		√		WDO, ETWB TCW No.19/2005, APCO, WPCO, NCO, EIAO-TM

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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		<ul style="list-style-type: none"> An independent surface water drainage system equipped with silt traps should be installed at the stockpiling area. 						
10.6.12	9.2	The Public Fill Committee of CEDD should be consulted for disposal of inert C&D materials to PFRFs while EPD should be consulted for disposal of non-inert C&D materials to landfill. Disposal of C&D materials to landfill must not have more than 50% (by weight) inert material. The C&D materials delivered for landfill disposal should contain no free water and the liquid content should not exceed 70% by weight.	Construction site / designated disposal sites of C&D materials	Contractor		√		EIAO-TM, WDO
10.6.13	9.2	In order to avoid dust impacts, any vehicle leaving a works area carrying inert or non-inert C&D materials should have their load covered up before leaving the construction site.	Construction site / transportation route of waste	Contractor		√		EIAO-TM, WDO, APCO
10.6.14	9.2	C&D materials should be disposed of at designated PFRFs or landfills. Disposal of these materials for the use at other construction projects is subject to the approval of the Engineer and/or other relevant reception authorities. Furthermore, unauthorized disposal of C&D materials in particular on private agricultural land is prohibited and may be subject to relevant enforcement and regulating actions. The disposal of C&D materials will be controlled through trip-ticket system in accordance with DEVB TC(W) No. 6/2010.	Construction site / designated disposal sites of C&D materials	Contractor		√		EIAO-TM, WDO
10.6.15	9.2	<u>Excavated Sediments</u> The sediment should be excavated, handled, transported and disposed of in a manner that would minimize adverse environmental impacts.	Construction site / transportation route of excavated sediment	Contractor		√		WDO, APCO, WPCO, EIAO-TM
10.6.16	9.2	Requirements of the Air Pollution Control (Construction Dust) Regulation, where relevant, shall be adhered to	Construction site	Contractor		√		EIAO-TM, APCO

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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		during excavation, transportation and disposal of the sediment.						
10.6.17	9.2	In order to minimize the exposure to contaminated materials, workers shall, if necessary, wear appropriate personal protective equipment (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities shall also be provided on site.	Construction site	Contractor		√		-
10.6.18	9.2	For off-site disposal, the requirements and procedures specified under ETWB TC(W) No. 34/2002 shall be followed. Marine Fill Committee (MFC) of CEDD is managing the disposal facilities in Hong Kong for the excavated sediment, while EPD is the authority of issuing marine dumping permit under the DASO.	Construction site / designated sediment disposal site	Contractor		√		Dumping at Sea Ordinance (DASO), ETWB TC(W) No. 34/2002
10.6.19	9.2	To ensure disposal space is allocated for the Project, the Project Proponent should be responsible for obtaining agreement from MFC on the rationale for sediment removal and the allocation of the disposal site. The contractor(s), on the other hand, should be responsible for the application of the marine dumping permit under DASO from EPD for the sediment disposal.	Construction site / designated sediment disposal site	Contractor		√		DASO, ETWB TC(W) No. 34/2002
10.6.20	9.2	The excavated sediments are expected to be loaded onto the barge at public barging point of which the exact location should be determined by the contractor(s) and agreed by EPD/CEDD and transported to the designated disposal sites allocated by MFC. The excavated sediment would be disposed of according to its determined disposal options and ETWB TC(W) No. 34/2002.	Loading point, transportation route and designated disposal site of sediments	Contractor		√		DASO, ETWB TC(W) No. 34/2002
10.6.21	9.2	Stockpiling of contaminated sediments should be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the excavated sediment should be covered by tarpaulin and the area should be placed within earth bunds or sand bags to	Construction site	Contractor		√		EIAO-TM, WPCO

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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		prevent leachate from entering the ground, nearby drains and surrounding water bodies. The stockpiling areas for contaminated sediments should be paved with impermeable linings to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged according to the WPCO.						
10.6.22	9.2	In order to minimize the potential odour / dust emissions during excavation and transportation of the sediment, the excavated sediments shall be wetted during excavation / material handling and shall be properly covered when placed on trucks or barges. Loading of the excavated sediment to the barge shall be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.	Construction site / transportation route of sediments	Contractor		√		EIAO-TM, APCO, WPCO
10.6.23	9.2	The barge transporting the sediments to the designated disposal sites shall be equipped with tight fitting seals to prevent leakage and shall not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the EPD.	Construction site / transportation route of sediments	Contractor		√		EIAO-TM, WPCO
10.6.24	9.2	<u>Chemical Waste</u> Should any chemical waste be generated, the contractor/operator must register with EPD as a chemical waste producer. Wastes classified as chemical wastes are listed in the Waste Disposal (Chemical Waste) (General) Regulation. These wastes are subject to stringent disposal routes. EPD requires information on	Construction site	Contractor		√		EIAO-TM, WDO

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
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		the particulars of the waste generation processes including the types of waste produced, their location, quantities and generation rates.						
10.6.25	9.2	Storage, handling, transport and disposal of chemical waste should be arranged in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published by EPD, and should be collected by a licensed chemical waste collector.	Construction site	Contractor		√		EIAO-TM, WDO, Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
10.6.26	9.2	Suitable containers should be used for specific types of chemical wastes. The containers should be properly labelled (in English and Chinese in accordance with instructions prescribed in Schedule 2 of the Regulations), resistance to corrosion, stored safely and closely secured. Stored volume should not be kept more than 450 liters unless the specification has been approved by the EPD. Storage area should be enclosed by three sides by a wall, partition of fence that is at least 2 m height or height of tallest container with adequate ventilation and space.	Construction site	Contractor		√		EIAO-TM, WDO, Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
10.6.27	9.2	Hard standing, impermeable surfaces draining via oil interceptors should be provided in works area compounds. Interceptors should be regularly emptied to prevent release of oils and grease into the surface water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain. Oil and fuel bunkers should be bunded and/or enclosed on three sides to prevent discharge due to accidental spillages or breaches of tanks. Bunding should be of sufficient capacity to accommodate 110% of the volume of the largest container or 20% of the total volume of waste, whichever is largest. Waste collected from any oil interceptors should be collected and disposed of by a licensed collector.	Construction site			√		EIAO-TM, WDO, Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes, WPCO

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
					Des	C	O	
10.6.28	9.2	Lubricants, waste oils and other chemical wastes are likely to be generated during the maintenance of vehicles and mechanical equipment. Used lubricants should be collected and stored in individual containers which are fully labelled in English and Chinese and stored in a designated secure place. The chemical waste shall be collected by licensed chemical waste collectors.	Construction site	Contractor		√		EIAO-TM, WDO, Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes, WPCO
10.6.29	9.2	The registered chemical waste producer (i.e. the contractor) shall arrange for the chemical waste to be collected by licensed collectors. The licensed collector should regularly take chemical waste to a licensed chemical waste treatment facility (i.e. the CWTC in Tsing Yi). A trip ticket system operates to control the movement of chemical wastes.	Construction site	Contractor		√		EIAO-TM, WDO
10.6.30	9.2	No lubricants, oils, solvents or paint products should be allowed to discharge into water courses, either by direct discharge, or as contaminants carried in surface water runoff from the construction site.	Construction site	Contractor		√		EIAO-TM, WDO, WPCO
10.6.31	9.2	<u>General Refuse</u> General refuse should be disposed of to landfill as designated by EPD only after recyclable materials (e.g. paper, metals, aluminum cans, etc.) have been sorted out.	Construction site	Contractor		√		EIAO-TM, WDO
10.6.32	9.2	The contractor should nominate approved site personnel to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site. Training of site personnel about site cleanliness, proper waste management and chemical handling procedures should be provided. Recyclable materials such as papers and aluminum cans should be separated and delivered to the local recyclers. An adequate number of waste containers should be provided to avoid spillage of waste.	Construction site	Contractor		√		EIAO-TM, WDO

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
					Des	C	O	
10.6.33	9.2	General refuse generated on-site should be stored in enclosed bins or skips and collected separately from other construction and chemical wastes and disposed of at designated landfill by reputable waste collector. The removal of waste from the site should be arranged on a daily basis or at least on every second day by the contractor to minimize any potential odour impacts, minimize the presence of pests, vermin and other scavengers and prevent unsightly accumulation of waste.	Construction site	Contractor		√		EIAO-TM, WDO, DEVB TC(W) No. 8/2010
Operational Phase								
10.6.34	9.2	<u>Screenings, Grits and Dewatered Sludge</u> The screenings and grits should be collected and disposed of at landfill by a reputable waste collector while the dewatered sludge would be disposed of at T-Park in Tuen Mun regularly. The screenings, grits and dewatered sludge shall be transported in sealed containers to minimize associated odour impact. The trucks and containers should be washed thoroughly before leaving the Project site to avoid odour nuisance during transportation.	Project site / transportation route of screenings, grits and dewatered sludge	Plant operators			√	EIAO-TM, WDO
10.6.35	9.2	<u>Chemical Waste and General Refuse</u> The chemical waste and general refuse generated during the operational phase would follow the same handling procedures and disposal method presented in Sections 10.6.24 to 10.6.33. Chemical waste and general refuse to be generated from the operation of the Project should be properly handled by licensed chemical waste collectors and reputable waste collector.	Project site	Plant operators			√	EIAO-TM, WDO, Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
					Des	C	O	
Land Contamination								
11.10.1 to 11.10.3	10.2	<p>Prior to the commencement of the SI works, site re-appraisal and a review of the Contamination Assessment Plan (CAP) prepared under the EIA should be conducted to confirm whether the proposed SI works (e.g. sampling locations, testing parameters etc.) are still valid. Supplementary CAP(s), presenting findings of the review, the latest site conditions and updated sampling strategy and testing protocol, should be submitted to EPD for endorsement. The SI works should be carried out according to EPD's agreed supplementary CAP(s).</p> <p>SI works should be carried out according to the supplementary CAP endorsed by EPD. Following completion of SI works and receipt of laboratory test results, Contamination Assessment Report(s) ((CAR)(s)) should be prepared to present the findings of the SI works and to discuss the presence, nature and extent of contamination.</p> <p>If contamination is identified, Remedial Action Plan(s) ((RAP)(s)) which provides details of the remedial actions for the identified contaminated soil and / or groundwater should be endorsed by EPD.</p> <p>Remediation action, if necessary, should be carried out according to EPD endorsed RAP(s) and Remediation Report(s) (RR(s)) should be submitted after completion of the remediation action. The RR(s) should be endorsed by EPD prior to the commencement of construction works at the respective identified contaminated areas (if any).</p>	Construction site	Project Proponent		√		Guidance Note for Contaminated Land Assessment and Remediation, Practice Guide for Investigation and Remediation of Contaminated Land, Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management
11.10.5	10.2	The mitigation measures will be recommended in the RAP and would typically include the following:	Construction site	Contractor		√		Guidance Note for Contaminated Land Assessment

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
					Des	C	O	
		<ul style="list-style-type: none"> ▪ Excavation profiles must be properly designed and executed with attention to the relevant requirements for environment, health and safety. ▪ Excavation shall be carried out during dry season as far as possible to minimise contaminated runoff from contaminated soils. ▪ Supply of suitable clean backfill material (or treated soil) after excavation. ▪ Stockpiling site(s) shall be lined with impermeable sheeting and bunded. Stockpiles shall be fully covered by impermeable sheeting to reduce dust emission. If this is not practicable due to frequent usage, regular watering shall be applied. However, watering shall be avoided on stockpiles of contaminated soil to minimise contaminated runoff. ▪ Vehicles containing any excavated materials shall be suitably covered to limit potential dust emissions or contaminated wastewater run-off, and truck bodies and tailgates shall be sealed to prevent any discharge during transport or during wet conditions. ▪ Speed control for the trucks carrying contaminated materials shall be enforced. ▪ Vehicle wheel and body washing facilities at the site's exist points shall be established and used. ▪ Pollution control measures for air emissions (e.g. from biopile blower and handling of cement), noise emissions (e.g. from blower or earthmoving equipment), and water discharges (e.g. runoff control from treatment facility) shall be implemented and complied with relevant regulations and guidelines. 						and Remediation, APCO, WPCO, EIAO-TM

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
					Des	C	O	
Noise Impact								
Construction Phase								
12.7.1	11.2	<p>The following good site practices should be adopted during construction of the Project to minimise noise impact to the surroundings:</p> <ul style="list-style-type: none"> ▪ Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction phase. ▪ Silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction phase. ▪ Mobile plant should be sited as far away from sensitive uses as possible. ▪ Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum. ▪ Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from sensitive uses. ▪ Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities. ▪ Noisy construction activities such as road surface breaking, should be scheduled to less sensitive hours during the day, e.g. midday, as far as practicable. 	Construction site	Contractor		√		Noise Control Ordinance (NCO), EIAO-TM
12.7.2		The feasibility of adopting quieter construction methods and use of quieter and more environmentally friendly construction equipment listed in the website of Environmental Protection Department should be considered and explored to minimize the construction noise impact to the surroundings.	Construction site	Contractor		√		NCO, EIAO-TM

EIA Ref.	EM&A Ref.	Environmental Protection Measures	Locations of Measures	Implementation Agent(s)	Implementation Stage *			Relevant Legislation & Guidelines
					Des	C	O	
Operational Phase								
12.7.3	11.2	The noise emitting plants of the Project (pumps, air blowers, etc.) should be enclosed within building structures.	New development area of the Project	Project Proponent	√		√	NCO, EIAO-TM

*Des = Design; C = Construction; O = Operation