

**Environmental Mitigation Implementation Schedule – Hong Kong Boundary Crossing Facilities (Superstructures and Infrastructures)**

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location	When to implement the measures?	What requirements or standards for the measure to achieve?	Implementation Status
<b>Air Quality</b>								
S5.5.6.1 of HKBCFEIA	A1	The contractor shall follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria(Ref. 1-hr and 24 hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$ , respectively)	V
S5.5.6.2 of HKBCFEIA and S4.8.1 of TKCLKLEIA	A2	<p>Proper watering of exposed spoil should be undertaken throughout the construction phase:</p> <ul style="list-style-type: none"> <li>- Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;</li> <li>- Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</li> <li>- A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones.</li> <li>- Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;</li> <li>- When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice</li> </ul>	Good construction site practices to control the dust impact at the nearby sensitive receivers to within the relevant criteria	Contractor	All construction sites	Construction stage	To control the dust impact to within the HKAQO and TM-EIA criteria(Ref. 1-hr and 24 hr TSP levels are 500 $\mu\text{g}\text{m}^{-3}$ and 260 $\mu\text{g}\text{m}^{-3}$ , respectively)	V

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		<p>shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period;</p> <ul style="list-style-type: none"> <li>- The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials;</li> <li>- Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;</li> <li>- Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;</li> <li>- Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;</li> <li>- Any skip hoist for material transport should be totally enclosed by impervious sheeting;</li> <li>- Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;</li> <li>- Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed;</li> </ul>						

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		<ul style="list-style-type: none"> <li>- Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and</li> <li>- Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.</li> </ul>						
S5.5.6.3 of HKBCFEIA and S4.8.1 of TKCLKLEIA	A3	The Contractor should undertake proper watering on all exposed spoil and associated work areas (with at least 8 times per day) throughout the construction phase.	Control construction dust	Contractor	All construction sites	Construction stage	To control the dust impact	V
S5.5.6.4 of HKBCFEIA	A4	Engineer to incorporate the controlled measures into the Particular Specification (PS) for the civil work. The PS should also draw the contractor's attention to relevant latest Practice notes issued by EPD.	Control construction dust	Engineer	All construction sites	Design Stage	Air pollution Control (Construction Dust) Regulation	V
S5.5.6.4 of HKBCFEIA and S4.11 of TKCLKLEIA	A5	Implement regular dust monitoring under EM&A programme during the construction stage.	Monitor the 24hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.	Contractor of Contract No. HY/2010/02 and Contractor of Contract No. HY/2011/03	Selected representative dust monitoring station	Construction stage	<ul style="list-style-type: none"> <li>- Air Pollution Control (Construction Dust) Regulation</li> <li>- To control the dust impact to within the HKAQO and TM-EIA criteria(Ref. 1-hr and 24 hr TSP levels are <math>500\mu\text{gm}^{-3}</math> and <math>260\mu\text{gm}^{-3}</math>, respectively)</li> </ul>	V

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S5.5.7.1 of HKBCFEIA	A6	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions for concrete batching plant:</p> <p>Loading, unloading, handling, transfer or storage of any dusty materials should be carried out in totally enclosed system;</p> <p>All dust-laden air or waste gas generated by the process operations should be properly extracted and vented to fabric filtering system to meet the emission limits for TSP;</p> <p>Vents for all silos and cement/ pulverised fuel ash (PFA) weighing scale should be fitted with fabric filtering system;</p> <p>The materials which may generate airborne dusty emissions should be wetted by water spray system;</p> <p>All receiving hoppers should be enclosed on three sides up to 3m above unloading point;</p> <p>All conveyor transfer points should be totally enclosed;</p> <p>All access and route roads within the premises should be paved and wetted; and</p> <p>Vehicle cleaning facilities should be provided and used by all concrete trucks before leaving the premises to wash off any dust on the wheels and/or body.</p>	<p>Monitor the 24hr and 1hr TSP levels at the representative dust monitoring stations to ensure compliance with relevant criteria throughout the construction period.</p>	Contractor	Selected representative dust monitoring station	Construction stage	<p>Air Pollution Control (Construction Dust) Regulation</p> <ul style="list-style-type: none"> <li>- To control the dust impact to within the HKAQO and TM-EIA criteria(Ref. 1-hr and 24 hr TSP levels are <math>500\mu\text{gm}^{-3}</math> and <math>260\mu\text{gm}^{-3}</math>, respectively)</li> </ul>	N/A

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S5.5.2.7 of HKBCFEIA	A7	<p>The following mitigation measures should be adopted to prevent fugitive dust emissions at barging point:</p> <p>All road surface within the barging facilities will be paved;</p> <p>Dust enclosures will be provided for the loading ramp;</p> <p>Vehicles will be required to pass through designated wheels wash facilities; and</p> <p>Continuous water spray at the loading points.</p>	Control construction dust	Contractor	All construction sites	Construction stage	Air Pollution Control (Construction Dust) Regulation	N/A (Construction in process)
<b>Construction Noise (Air borne)</b>								
S6.4.10 of HKBCFEIA	N1	<p>Use of good site practices to limit noise emissions by considering the following:</p> <ul style="list-style-type: none"> <li>- only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction programme;</li> <li>- machines and plant (such as trucks, cranes) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;</li> <li>- plant known to emit noise strongly in one direction, where possible, be orientated so that the noise is directed away from nearby NSRs;</li> <li>- silencers or mufflers on construction equipment should be properly fitted and maintained during the construction works;</li> <li>- mobile plant should be sited as far</li> </ul>	Control construction airborne noise by means of good site practices	Contractor	All construction sites	Construction stage	Noise Control Ordinance	V

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		<p>away from NSRs as possible and practicable;</p> <ul style="list-style-type: none"> <li>- material stockpiles, mobile container site office and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>						
S6.4.11 of HKBCFEIA	N2	Install temporary hoarding located on the site boundaries between noisy construction activities and NSRs. The conditions of the hoardings shall be properly maintained throughout the construction period.	Reduce the construction noise levels at low-level zone of NSRs through partial screening	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>- Noise Control Ordinance</li> <li>- Annex 5, TM_EIA</li> </ul>	V
S6.4.12 of HKBCFEIA	N3	Install movable noise barriers (typically density 14kg/m <sup>2</sup> ), acoustic mat or full enclosure close to noisy plants including air compressor, generators, saw.	Screen the noisy plant items to be used at all construction sites	Contractor	For plant items listed in Appendix 6D of the EIA report at all construction sites	Construction stage	<ul style="list-style-type: none"> <li>- Noise Control Ordinance</li> <li>- Annex 5, TM_EIA</li> <li>- 75dB(A) for residential premises</li> <li>- The movable barrier should achieve at least 5 dB(A) and the full enclosure should be designed to achieve 10dB(A)</li> </ul>	N/A
S6.4.13 of HKBCFEIA	N4	Select "Quiet plants" which comply with the BS 5228 Part 1 or TM standards.	Reduce the noise levels of plant items	Contractor	For plant items listed In Appendix 6D of the EIA report at all construction sites	Construction stage	<ul style="list-style-type: none"> <li>- Noise Control Ordinance</li> <li>- Annex 5, TM_EIA</li> </ul>	V
S6.4.14 of HKBCFEIA	N5	Sequencing operation of construction plants where practicable.	Operate sequentially within the same work site to reduce the construction airborne noise	Contractor	All construction sites where practicable	Construction stage	<ul style="list-style-type: none"> <li>- Noise Control Ordinance</li> <li>- Annex 5, TM_EIA</li> </ul>	V

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S5.1 of TMCLKLEIA	N6	Implement a noise monitoring under EM&A programme.	Monitor the construction noise levels at selected representative locations	Contractor of Contract No. HY/2010/02	Selected representative noise monitoring station	Construction stage	<ul style="list-style-type: none"> <li>- Noise Control Ordinance</li> <li>- Annex 5, TM_EIA</li> <li>- 75dB(A) for residential premises</li> </ul>	V
<b>Sediment</b>								
	S1	All dredged marine mud, which required Type 2 Confined Marine Disposal under Environment, Transport and Works Bureau Technical Circular (Works) No. 34/2002 Management of Dredged/Excavated Sediment, from the Project shall be disposed of inside the sheet pile cellular structures within the Project boundary.	Re-deposition of Contaminated Sediment	Contractor	Dredged Contaminated Sediment	Construction stage	<ul style="list-style-type: none"> <li>- Waste Disposal Ordinance</li> <li>- ETWB TC 34/2002</li> </ul>	V
	S2	Before re-deposition the contaminated sediment, a layer of geotextile shall be placed at the bottom of the sheet pile cellular structures to avoid direct contact of the contaminated sediment and the bottom sediment.	Re-deposition of Contaminated Sediment	Contractor	Dredged Contaminated Sediment	Construction stage	<ul style="list-style-type: none"> <li>- Waste Disposal Ordinance</li> <li>- ETWB TC 34/2002</li> </ul>	V
	S3	A minimum of 2m thick sand fill or public fill shall be placed on top of the contaminated sediment to protect and cover the sediment after redeposition.	Re-deposition of Contaminated Sediment	Contractor	Dredged Contaminated Sediment	Construction stage	<ul style="list-style-type: none"> <li>- Waste Disposal Ordinance</li> <li>- ETWB TC 34/2002</li> </ul>	V

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	S4	The contaminated sediment shall not be disturbed after re-deposition. No piling works or deep foundation which may disturb the contaminated sediment is allowed within the cellular structures.	Re-deposition of Contaminated Sediment	Contractor	Dredged Contaminated Sediment	Construction stage	<ul style="list-style-type: none"> <li>- Waste Disposal Ordinance</li> <li>- ETWB TC 34/2002</li> </ul>	V
<b>Waste management (Construction Waste)</b>								
S12.6 of TMCLKLEIA	WM1	The Contractor shall identify a coordinator for the management of waste.	Proper implementation of WMP	Contractor	Contractor All construction sites	Construction stage		V
S12.6 of TMCLKLEIA	WM2	The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges.	Proper control of wastes disposal in accordance to relevant ordinances	Contractor	All construction sites	Construction Stage	<ul style="list-style-type: none"> <li>- Land (Miscellaneous Provisions) Ordinance (Cap28);</li> <li>- Waste Disposal Ordinance (Cap 354);</li> <li>- Dumping at Sea Ordinance (Cap 466);</li> <li>- Water Pollution Control Ordinance.</li> </ul>	V
S12.6 of TMCLKLEIA	WM3	EM&A of waste handling, storage, transportation, disposal procedures and documentation through the site audit programme shall be undertaken.	Ensure proper implementation mitigation measures stated in WMP	Contractor	All construction sites		Construction stage	V



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S8.3.8 of HKBCFEIA and S12.6 of TMCLKLEIA	WM4	<p><u>Construction and Demolition Material</u></p> <p>The following mitigation measures should be implemented in handling the waste:</p> <ul style="list-style-type: none"> <li>- Maintain temporary stockpiles and reuse excavated fill material for backfilling and reinstatement;</li> <li>- Carry out on-site sorting;</li> <li>- Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;</li> <li>- Adopt 'Selective Demolition' technique to demolish the existing structures and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible;</li> <li>- Implement a trip-ticket system for each works contract to ensure that the disposal of C&amp;D materials are properly documented and verified;</li> <li>- Implement an enhanced Waste Management Plan similar to ETWBTC (Works) No. 19/2005 – "Environmental Management on Construction Sites" to encourage on-site sorting of C&amp;D materials and to minimize their generation during the course of construction;</li> <li>- In addition, disposal of the C&amp;D materials onto any sensitive locations such as agricultural lands, etc. should be avoided. The Contractor shall propose the final disposal sites to the Project Proponent and get its approval before implementation;</li> <li>- The surplus surcharge should be transferred to a fill bank.</li> </ul>	Good site practice to minimize and recycle the C&D material as far as practicable so as to reduce the amount for final disposal	Contractor	All construction site areas	Construction stage	<ul style="list-style-type: none"> <li>- Land (Miscellaneous Provisions) Ordinance</li> <li>- Waste Disposal Ordinance</li> <li>- ETWB TC 19/2005</li> </ul>	V
S8.3.9 - S8.3.11 of	WM5	<u>C&amp;D Waste</u>	Good site practice to minimize and recycle the	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>- Land (Miscellaneous Provisions)</li> </ul>	V

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HKBCFEIA and S12.6 of TMCLKLEIA		<ul style="list-style-type: none"> <li>- Standard formwork or pre-fabrication should be used as far as practicable in order to minimise the arising of C&amp;D materials. The use of more durable formwork or plastic facing for the construction works should be considered. Use of wooden hoardings should not be used, as in other projects.</li> <li>- Metal hoarding and falsework should be used to enhance the possibility of recycling. The purchasing of construction materials will be carefully planned in order to avoid over ordering and wastage.</li> <li>- The Contractor should recycle as much of the C&amp;D materials as possible on-site. Public fill and C&amp;D waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. Where practicable, concrete and masonry can be crushed and used as fill. Steel reinforcement bar can be used by scrap steel mills. Different areas of the sites should be considered for such segregation and storage.</li> </ul>	C&D material as far as practicable so as to reduce the amount for final disposal				<ul style="list-style-type: none"> <li>- Ordinance</li> <li>- Waste Disposal Ordinance</li> <li>- ETWB TC 19/2005</li> </ul>	
S8.2.12 - S8.3.15 of HKBCFEIA and S12.6 of TMCLKLEIA	WM6	<p><u>Chemical Waste</u></p> <ul style="list-style-type: none"> <li>- Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, should be handled in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes.</li> <li>- Containers used for the storage of chemical wastes should be suitable for the substance they are holding,</li> </ul>	Control the chemical waste and ensure proper storage, handling and disposal.	Contractor	All construction sites	Construction stage	<ul style="list-style-type: none"> <li>- Waste Disposal(Chemical Waste) General Regulation</li> <li>- Code of Practice on the Packaging, Labelling and Storage of Chemical Waste</li> </ul>	V

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		<p>resistant to corrosion, maintained in a good condition, and securely closed; have a capacity of less than 450 litres unless the specification has been approved by the EPD; and display a label in English and Chinese in accordance with instructions prescribed in Schedule 2 of the regulation.</p> <ul style="list-style-type: none"> <li>- The storage area for chemical wastes should be clearly labelled and used solely for the storage of chemical waste; enclosed on at least 3 sides; have an impermeable floor and bunding of sufficient capacity to accommodate 110% of the volume of the largest container or 20 % of the total volume of waste stored in that area, whichever is the greatest; have adequate ventilation; covered to prevent rainfall entering; and arranged so that incompatible materials are adequately separated.</li> <li>- Disposal of chemical waste should be via a licensed waste collector; be to a facility licensed to receive chemical waste, such as the Chemical Waste Treatment Centre which also offers a chemical waste collection service and can supply the necessary storage containers; or be to a reuser of the waste, under approval from the EPD.</li> </ul>						
S8.3.16 of HKBCFEIA and S12.6 of TMCLKLEIA	WM7	<p><u>Sewage</u></p> <p>Adequate numbers of portable toilets should be provided for the workers. The portable toilets should be maintained in a state, which will not deter the workers from utilizing these portable toilets. Night soil should be collected by licensed collectors regularly.</p>	Proper handling of sewage from worker to avoid odour, pest and litter impacts.	Contractor	All construction sites	Construction stage	Waste Disposal Ordinance	V

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S8.3.17 of HKBCFEIA and S12.6 of TMCLKLEIA	WM8	<p><u>General Refuse</u></p> <ul style="list-style-type: none"> <li>- The site and surroundings shall be kept tidy and litter free. General refuse generated on-site should be stored in enclosed bins or compaction units separately from construction and chemical wastes.</li> <li>- A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from construction and chemical wastes, on a daily basis to minimize odour, pest and litter impacts. Burning of refuse on construction sites is prohibited by law.</li> <li>- Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible. Separate labelled bins for their deposit should be provided if feasible.</li> <li>- Office wastes can be reduced through the recycling of paper if volumes are large enough to warrant collection. Participation in a local collection scheme should be considered by the Contractor. In addition, waste separation facilities for paper, aluminium cans, plastic bottles etc., should be provided.</li> <li>- Training should be provided to workers about the concepts of site cleanliness and appropriate waste management procedure, including reduction, reuse and recycling of wastes.</li> <li>- Sufficient dustbins shall be provided for storage of waste as required under the Public Cleansing and Prevention of Nuisances By-laws. In</li> </ul>	Minimize production of the general refuse and avoid odour, pest and litter impacts.	Contractor	All construction sites	Construction stage	Waste Disposal Ordinance	V

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		<p>addition, general refuse shall be cleared daily and shall be disposed of to the nearest licensed landfill or refuse transfer station.</p> <ul style="list-style-type: none"> <li>- All waste containers shall be in a secure area on hardstanding.</li> </ul>						
<b>Water Quality (Construction Phase)</b>								
	W1	<p>Mitigation during the marine works to reduce impacts to within acceptable levels have been recommended and will comprise a series of measures that restrict the method and sequencing of dredging/backfilling, as well as protection measures. Details of the measures are provided below:</p> <ul style="list-style-type: none"> <li>- No dredging works of marine sediment shall be carried out the Project except for the construction of box culverts and seawalls at Portion D.</li> <li>- Reclamation filling for the Project shall not proceed until at least 200m of leading seawall at the reclamation area formed above +2.2mPD, unless otherwise agreement was obtained from EPD, except for the 300m gaps for marine access. All underwater filling works shall be carried out behind seawalls to avoid dispersion of suspended solids outside the Project limit;</li> <li>- Except for the filling of the cellular structures, not more than 15% public fill shall be used for reclamation filling below +2.5mPD during construction of the seawall;</li> <li>- After the seawall is completed except for the 300m marine access as indicated in the EPs, not more than 30% public fill shall be used for</li> </ul>	To control construction water quality	Contractor of Contract No. HY/2010/02	During dredging and filling	Construction stage	TM-EIAO	V

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		<p>reclamation filling below +2.5mPD, unless otherwise agreement from EPD was obtained;</p> <ul style="list-style-type: none"> <li>- No more than 2 grab dredgers with a maximum daily dredging rate of 12,000m<sup>3</sup> shall be employed for dredging operation at Portion D of the Project;</li> <li>- Upon completion of 200m leading seawall, no more than a total of 60 filling barge trips per day shall be made with a cumulative maximum daily filling rate of 60,000 m<sup>3</sup> for HKBCF and TMCLKL southern landfall reclamation during the filling operation; and</li> <li>- Upon completion of the whole section of seawall except for the 300m marine access as indicated in the EPs, no more than a total of 190 filling barge trips per day shall be made with a cumulative maximum daily filling rate of 190,000 m<sup>3</sup> for the remaining filling operations for HKBCF and TMCLKL southern landfall reclamation.</li> <li>- Closed grabs should be used for sediment dredging to reduce sediment loss when lifting the grabs to the barges. Only grab dredgers shall be used for dredging works of the Project;</li> <li>- All mechanical grabs shall be designed and maintained to avoid spillage;</li> <li>- The moving speed of construction vessels in the dredging area should be reduced to prevent disturbance to the seabed generating sediment plumes;</li> <li>- Floating type silt curtains shall be installed enclosing the entire reclamation site at all time. Staggered</li> </ul>						

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		<p>layers of silt curtain shall be provided to prevent sediment loss at navigation accesses. The length of each staggered layers shall be at least 200m;</p> <ul style="list-style-type: none"> <li>- The cage-type silt-curtain with steel enclosure is proposed to be installed to enclose local pollution caused by the grab dredging. The grab dredging work should be carried out within the cage-type silt curtain;</li> <li>- Single layer silt curtain to be applied around the North-east airport water intake;</li> <li>- The silt-curtains should be maintained in good condition to ensure the sediment plume generated from dredging and filling be confined effectively within the site boundary;</li> <li>- The dredging and filling works shall be scheduled to spread the works evenly over a working day;</li> <li>- Cellular structure shall be used for seawall construction;</li> <li>- A layer of geotextile shall be placed on top of the seabed before any filling activities take place inside the cellular structures to form the seawall;</li> <li>- The conveyor belts shall be fitted with windboards and conveyor release points shall be covered with curtain to prevent any spillage of filling materials onto the surrounding waters;</li> <li>- An additional layer of slit curtain shall be installed near the active stone column installation points. A layer of geotextile with stone blanket on top shall be placed on the seabed prior to stone column installation works. Stone blanket -&gt; with silt curtain.</li> </ul>						

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S9.11.1 - S9.11.1.2 of HKBCFEIA and S6.10 of TMCLKLEIA	W1	<p>- In addition, dredging operations should be undertaken in such a manner as to minimize resuspension of sediments. Standard good dredging practice measures should, therefore, be implemented including the following requirements which should be written into the dredging and filling contract.</p> <ol style="list-style-type: none"> <li>1. Trailer suction hopper dredgers shall not allow mud to overflow;</li> <li>2. Use of Lean Material Overboard (LMOB) systems shall be prohibited;</li> <li>3. Mechanical grabs shall be designed and maintained to avoid spillage and should seal tightly while being lifted;</li> <li>4. Barges and hopper dredgers shall have tight fitting seals to their bottom openings to prevent leakage of material;</li> <li>5. Any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes;</li> <li>6. Loading of barges and hoppers shall be controlled to prevent splashing of dredged material to the surrounding water. Barges or hoppers shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation;</li> <li>7. Excess material shall be cleaned from the decks and exposed fittings of barges and hopper dredgers before the vessel is moved;</li> <li>8. Adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action;</li> <li>9. All vessels shall be sized such that adequate clearance is maintained between vessels and the sea bed at all states of the tide to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller</li> </ol>	To control construction water quality	Contractor of Contract No. HY/2010/02	During dredging and filling	Construction Stage	<ul style="list-style-type: none"> <li>- TM-EIAO</li> <li>- Marine Fill Committee Guidelines</li> <li>- DASO Permits Conditions</li> </ul>	V



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		wash; 10. The works shall not cause foam, oil, grease, litter or other objectionable matter to be present in the water within and adjacent to the works site.						
S9.11.1.3 of HKBCFEIA and S6.10 of TMCLKLEIA	W2	<p><u>Land Works</u></p> <p>General construction activities on land should also be governed by standard good working practice. Specific measures to be written into the works contracts should include:</p> <ul style="list-style-type: none"> <li>- wastewater from temporary site facilities should be controlled to prevent direct discharge to surface or marine waters;</li> <li>- sewage effluent and discharges from on-site kitchen facilities shall be directed to Government sewer in accordance with the requirements of the WPCO or collected for disposal offsite. The use of soakaways shall be avoided;</li> <li>- storm drainage shall be directed to storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sediment basins. Channels, earth bunds or sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks;</li> <li>- silt removal facilities, channels and manholes shall be maintained and any deposited silt and grit shall be removed regularly, including specifically at the onset of and after each rainstorm;</li> <li>- temporary access roads should be surfaced with crushed stone or gravel;</li> </ul>	To control construction water quality	Contractor	All land-based construction sites	Construction stage	TM-EIAO	V

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		<ul style="list-style-type: none"> <li>- rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities;</li> <li>- measures should be taken to prevent the washout of construction materials, soil, silt or debris into any drainage system;</li> <li>- open stockpiles of construction materials (e.g. aggregates and sand) on site should be covered with tarpaulin or similar fabric during rainstorms;</li> <li>- manholes (including any 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;</li> <li>- discharges of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system;</li> <li>- all vehicles and plant should be cleaned before they leave the construction site to ensure that no earth, mud or debris is deposited by them on roads. A wheel washing bay should be provided at every site exit;</li> <li>- wheel wash overflow shall be directed to silt removal facilities before being discharged to the storm drain;</li> <li>- the section of construction road between the wheel washing bay and the public road should be surfaced with crushed stone or coarse gravel;</li> <li>- wastewater generated from concreting, plastering, internal decoration, cleaning work and other similar activities, shall be screened to</li> </ul>						

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		<ul style="list-style-type: none"> <li>- remove large objects; vehicle and plant servicing areas, vehicle wash bays and lubrication facilities shall be located under roofed areas. The drainage in these covered areas shall be connected to foul sewers via a petrol interceptor in accordance with the requirements of the WPCO or collected for off site disposal;</li> <li>- the contractors shall prepare an oil / chemical cleanup plan and ensure that leakages or spillages are contained and cleaned up immediately;</li> <li>- waste oil should be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance;</li> <li>- all fuel tanks and chemical storage areas should be provided with locks and be sited on sealed areas. The storage areas should be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank; and</li> <li>- surface run-off from bunded areas should pass through oil/grease traps prior to discharge to the stormwater system.</li> </ul>						
S9.14 of HKBCFEIA and S6.10 of TMCLKLEIA	W3	Implement a water quality monitoring programme	Control water quality	Contractor of Contract No. HY/2010/02	At identified monitoring location	During Construction stage	<ul style="list-style-type: none"> <li>- TM-water</li> <li>- Water Pollution Control Ordinance</li> </ul>	V
<b>Ecology (construction Phase)</b>								
S10.7 of HKBCFEIA and S8.14 of TMCLKLE IA	E1	<ul style="list-style-type: none"> <li>- Use closed grab in dredging works.</li> <li>- Install silt curtain during the construction.</li> <li>- Limit dredging and works fronts.</li> <li>- Construct seawall prior to reclamation</li> </ul>	Minimize marine water quality impacts	Contractor	Seawall, reclamation area	During construction	TM-Water	V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location	When to implement the measures?	What requirements or standards for the measure to achieve?	Implementation Status
		filling where practicable. - Good site practices - Strict enforcement of no marine dumping. - Site runoff control - Spill response plan						
S10.7 of HKBCFEIA	E2	Watering to reduce dust generation; prevention of siltation of freshwater habitats; Site runoff should be desilted, to reduce the potential for suspended sediments, organics and other contaminants to enter streams and standing freshwater.	Prevent Sedimentation from Land-based works areas	Contractor	Land-based works areas	During construction	TM-Water	V
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E3	Good site practices, including strictly following the permitted works hours, using quieter machines where practicable, and avoiding excessive lightings during night time.	Prevent disturbance to terrestrial fauna and habitats	Contractor	Land-based works areas	During construction		V
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E4	- Dolphin Exclusion Zone - Dolphin watching plan	Minimize temporary marine habitat loss impact to dolphins	Contractor	Marine works	During marine works	TM-EIAO	V
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E5	- Decouple compressors and other equipment on working vessels - Proposal on design and implementation of acoustic decoupling - measures applied during dredging and reclamation works - Avoidance of percussive piling	Minimize marine noise impacts on dolphins	Contractor	Marine works	During marine works	- TM-EIAO - Marine Park Regulations	
S10.7 of HKBCFEIA and S8.14 of TMCLKLEIA	E6	- Control vessel speed - Skipper training - Predefined and regular routes for working vessels; avoid Brothers Islands	Minimize marine traffic disturbance on dolphins	Contractor	Marine traffic	During marine works		V
S10.10 of HKBCFEIA and	E7	Vessel based dolphin monitoring	Minimize marine traffic disturbance on dolphins	Contractor of Contract No. HY/2010/02	Northeast and Northwest Lantau	During marine works		V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location	When to implement the measures?	What requirements or standards for the measure to achieve?	Implementation Status
S8.14 of TMCLKLEIA								
<b>Fisheries</b>								
S11.7 of HKBCFEIA	F1	<ul style="list-style-type: none"> <li>- Reduce re-suspension of sediments</li> <li>- Limit dredging and works fronts.</li> <li>- Good site practices</li> </ul>	Minimize marine water quality Impacts	Contractor	Seawall, reclamation area	During construction	TM-Water	V
S11.7 of HKBCFEIA	F2	Install silt-grease trap in the drainage system collecting surface runoff	Minimize impacts on marine water quality impacts	Designer	Reclamation area	During construction	TM-Water	V
<b>Landscape &amp; Visual (Detailed Design Phase)</b>								
S14.3.3.1 of HKBCFEIA	LV1	<p>General design measures include:</p> <ul style="list-style-type: none"> <li>- Roadside planting and planting along the edge of the reclamation is proposed;</li> <li>- Transplanting of mature trees in good health and amenity value where appropriate and reinstatement of areas disturbed during construction by compensatory hydro-seeding and planting;</li> <li>- Protection measures for the trees to be retained during construction activities;</li> <li>- Maximizing new tree, shrub and other vegetation planting to compensate tree felled and vegetation removed;</li> <li>- Providing planting area around peripheral of HKBCF for tree planting screening effect; and</li> </ul>	Minimize visual & landscape impacts	Contractor	HKBCF	Design Stage		V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location	When to implement the measures?	What requirements or standards for the measure to achieve?	Implementation Status
		- Providing salt-tolerant native trees along the planter strip at affected seawall and newly reclaimed coastline.						
<b>Landscape &amp; Visual (Construction Phase)</b>								
S14.3.3.3 of HKBCFEIA and S10.9 of TMCLKLEIA	LV2	<u>Mitigate Landscape Impacts</u> G1. Grass-hydroseed or sheeting bare soil surface and stock pile areas.	Minimize visual & landscape impacts	Contractor	All construction site areas	Construction stage		V
S10.9 of TMCLKLEIA	LV3	<u>Mitigate Landscape Impacts</u> CM1. Existing trees on boundary of the Project Area shall be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage).  CM2. Trees unavoidably affected by the works shall be transplanted where practical. Trees will be transplanted straight to their final receptor site and not held in a temporary nursery. A detailed Tree Transplanting Specification shall be provided in the Contract Specification. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme.	Minimize landscape impact	Contractor	All construction site areas	Construction stage		V

EIA Ref.	EM&A Log Ref	Environmental Mitigation Measures	Objectives of the Recommended Measures & Main Concerns to address	Who to implement the measures?	Location	When to implement the measures?	What requirements or standards for the measure to achieve?	Implementation Status
		CM7. Ensure no run-off into water body adjacent to the Project Area. CM9. Recycle/Reuse all felled trees and vegetation, e.g. mulching.						
S14.3.3.3 of HKBCFEIA	LV4	Mitigate Visual Impacts V1. Minimize time for construction activities during construction period. V2. Provide screen hoarding at the portion of the project site/ works areas storage areas near VSRs who have close low-level views to the Project during HKBCF construction.	Minimize visual & landscape impacts	Contractor	All construction site areas	Construction stage		V
S10.9 of TMCLKLEIA	LV5	Mitigate Visual Impacts CM5. Screening of construction works by hoardings around works area in visually unobtrusive colors, to screen works. CM6. Control night-time lighting and glare by hooding all lights. CM8. Avoidance of excessive height and bulk of buildings and structures.	Minimize visual impact	Contractor	All construction site areas	Construction stage		V
<b>EM&amp;A</b>								
S15.2.2 of HKBCFEIA	EM1	An Independent Environmental Checker needs to be employed as per the EM&A Manual.	Control EM&A Performance	Project Proponent	All construction site areas	Construction stage	- EIAO Guidance Note No. 4/2002 - TM_EIAO	V
S15.5 - S15.6 of HKBCFEIA	EM2	An Environmental Team needs to be employed as per the EM&A Manual. Prepare a systematic Environmental Management Plan to ensure effective implementation of the mitigation measures. An environmental impact monitoring needs to be implementing by the Environmental Team to ensure all the requirements given in the EM&A Manual are fully complied with.	Perform environmental monitoring & auditing	Contractor	All construction site areas	Construction stage	- EIAO Guidance Note No. 4/2002 - TM_EIAO	V

Legend: V = implemented; x = not implemented; N/A = not applicable