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METHOD STATEMENT TITLE	Rev. B
Method Statement of Disposal of C&D Materials	

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1. Introduction (Overview of the operation/works)

This Method Statement gives a guideline for the execution of the Disposal of C&D Materials procedure at Siu Ho Wan Depot under Contract 1701.

This document shall be distributed to relevant parties to introduce the work scopes, to present the sequence of works and to define the associated responsibilities to ensure the health, safety, environment and quality issues addressed. The details of the procedures contained herewith shall be reviewed periodically and updated based on the actual site conditions. The principle methods as described in the following sections are subject to review during construction and may be amended if required.

The general topics outlined in this method statement are the following:

- Type of C&D Materials
- Management of C&D Materials
- Management of Disposal of Marine Sediment
- Disposal Plan

2. Reference Documents (Identify relevant documents by name and reference number)

- General Specification for Civil Engineering Works (NEC4) (MTR Corporation Limited - 2022)
- Scope for Contract 1701.
- Materials and Workmanship Specification for Civil Engineering Works.

3. Responsibilities for Activities described within Method Statement

CSHK is responsible to inspect and carry out the construction works. The following persons, as listed in the table below, will attend the specific tool-box talk and be responsible for the activities:

Name	Position
CF Chan	Construction Manager
Anthony He	Assistant Construction Manager
Nick Wang	Site Agent
Tim Cai	Engineer
Andrew Mak	Engineer
Charles Xu	Graduate Engineer
Andrew Lo	Graduate Engineer
Leung Kwok Fung	Safety Manager
Ernest Young	Assistant Safety Officer
James Ma	Environmental Manager
Iris Ho	Environmental Officer
Priscilla Yick	Assistant Environmental Officer
Cheung Siu Kei	Superintendent / WPIC
Ng Ho Lun	Senior Foreman / WPIC

(a) Construction Manager / Assistant Construction Manager
Responsible for overall administration, monitoring, controlling progress and quality of works in a safe manner.

	(b) Site Agent / Senior Engineer / Engineer Responsible for developing works procedures, controlling progress and quality of works in a safe manner. They also have to implement safety at works area for workers via guidance from safety officers. (c) Safety Manager/ Safety Officer Responsible for assessing working conditions of work areas in safety means. To prepare risk assessment before works, enforce safety works practice and environment in the workplace and work site. (d) Environmental Manager/ Environmental Officer Ensuring the environmental mitigation measures are properly implemented at site, especially the mitigation measures required for the usage of the vertical seawall that's in the Environmental Review Report approved by EPD. CSHK Environmental team will monitor the barge routings through the RTTMV system website (as shown in section 7.2.4.11) in case the barge enters the marine park, once barges are found to pass through the marine park, CSHK Environmental Team will inform CSHK Construction Team, Engineer, and ET and IEC. (e) Worksite Person In Charge (WPIC) WPIC is in charge of the work in the works areas, which are located at various positions of site. Site Supervisor is also responsible in implementing works control checklist. (f) Workers Workers who have completed RSI training and received a valid qualification. (g) Competent Person (CP(T)/CP(NT)) CP shall provide pre-work briefing to all workers and anyone work within the Railway Operation Area (Siu Ho Wan Depot). Briefing attendance records shall be kept on site for inspection. CP shall report to depot before works could commence.
4.	**Programme and Working Hours** (Start & finish date of operation/works)
	The C&D material disposal works will be carried out tentatively from Mid-2024 to Mid-2026. The general working hours will be from 08:00 – 18:00 daily, from Monday to Saturday. However, it may be required to carry out works from 18:00 to 23:00 and Sunday and Public Holidays in case of essential speeding up of the working process. CSHK would check internally to fulfil the Construction Noise Permit Requirement. All the works within OA Area shall be led by CP(T)/CP(NT) during the approved working period. For works in CA areas that require EDOC approval include all types of non-routine maintenance works carried out by the Hong Kong Transport Services, Capital Works Business Unit or Property Business Unit, such as capital and revenue works, tests, trials, modifications, replacement and repairs with design changes, which have an effect on the operation, safety and reliability of the Operating Railway, CP(T)/ CP(NT) will be required.

	Barge Frequency: • Maximum 6 trips per day, 7 days per week, Maximum 42 trips per week. **Estimation:** - 3 barges for pre-cast units - 2 barges for steel and rebar - 1 barge for excavation material
5.	**Plant, Equipment & Material** (Identify type, model and specification of MAJOR plant & equipment)
	The major equipment will be deployed to carry out the works are as follow: - **For Disposal of C&D Materials** ● Dump truck ● Hopper barge ● Ro-Ro Barge with Tipping Hall ● Derrick Lighter ● Tug boats ● Grab lorry ● Backhoe
6.	**Precaution and Preparation Before Commencements of Works**
	● Fully Supervision at all times shall be provided at work fronts, especially for the location with significant interfaces with SHD daily operation or other construction works within depot. ● Advanced coordination and communication shall be made with interfacing contractors to facilitate works nearby. ● For lifting works by grab lorry or crane, the operator shall ensure a clear and unrestricted view of the load carried in prior to lifting works. ● CP shall report to depot before works could commence and brief safety rules to workers before commencement of work. ● CP escort is required for all dump trucks travelling in OA areas, especially travelling to barging point via OA areas. ● Environmental mitigation measures shall be checked and ensure to be in place prior to commencement of the barging operation.
7.	**Construction Methods**
	7.1 Type of C&D Materials For the type and volume of C&D Materials, please refer to separate submission 1701/W/000/CSC/790/000029 Spoil Disposal Plan. **7.2 Management of C&D Materials** **7.2.1 Seawall and Barging Point Arrangement** Using the seawall and the barging point, we will arrange for the disposal of the C&D materials. For the arrangement of seawall and the barging point in Siu Ho Wan Depot, please refer to separate submission 1701/W/000/CSC/760/000204 Method Statement for Seawall Arrangement.

7.2.2 Classification

For the classification of C&D Materials, please refer to separate submission 1701/W/000/CSC/790/000029 Spoil Disposal Plan.

7.2.3 Sorting of C&D Materials

For sorting of C&D Materials, please refer to separate submission 1701/W/000/CSC/790/000029 Spoil Disposal Plan.

7.2.4 Forecast of C&D Materials

For forecast of C&D Materials, please refer to separate submission 1701/W/000/CSC/790/000029 Spoil Disposal Plan.

7.2.5 Construction Waste Disposal Charging Scheme

CSHK have applied to EPD for a billing account and obtain chits for the disposal of C&D non-inert waste to landfill sites in WENT and inert materials at the TM 38 Public Fill Reception Facility. The CHIT example is shown in Figure 1.

Figure.1 - Example CHIT

7.2.6 Trip Ticket System

A trip-ticket system (TTS) will be implemented to manage and record the removal of C&D material generated from the construction work on Contract 1701.

A Disposal Delivery Form and related Daily Record Summary for Disposal of C&D materials from site will be used to manage our C&D material disposal process. The trip tickets will record specific designated disposal grounds.

CSHK will inform the Project Manager's Representative in advance for removal of C&D materials.

The Project Manager's Representative will check each truckload of C&D materials/waste leaving the site and the representative will complete and stamp the Disposal Delivery Form (DDF) (as attached in Appendix).

The dump truck will proceed to the disposal ground as stipulated in the DDF. In the event that the disposal ground is the Barging Facility or other approved designated disposal ground, the truck driver will present the DDF to the facility operator. If the spoil disposal material complies with the acceptance criteria, disposal of the materials will be permitted and the facility operator will return the truck driver a transaction receipt and stamp the DDF.

CSHK will maintain a daily record of the disposal of C&D material from the site which will include details of the materials, the truck number, departure time, etc, using the summary record of trip ticket system. The copy of the daily record will be forwarded to depot for reference and retention.

CSHK will update the summary record of trip ticket system on a daily basis or whenever there is a return of transaction records from the truck drivers. The record will be readily available for checking by the Project Director's Representative and will be submitted formally to the Project Manager's Representative on a monthly basis as part of the monthly update of the Environmental Management Plan.

For disposal at PFRF or Landfill, CSHK will check on a regular and routine basis the information in the summary record of trip ticket system against the disposal records of C&D materials from EPD's website. The quality and environmental manager will arrange internal audits to track internal movements of materials and ensure no irregular disposal occurs.

In the event a trip ticket process irregularity is detected CSHK will submit to MTRCL, within five working days, the supporting stamped DDF and the transaction receipts to confirm proper completion of the delivery trips.

7.2.7 Dump Truck Tracking System

Every dump truck, delivery barge or hopper barge used for disposal of C&D materials must equip with a Global Positioning System. For Dump Truck Tracking System or Global Positioning System (GPS), please refer to the separate submission 1701/W/000/CSC/510/000013 Real Time Tracking and Monitoring System for Dump Trucks and 1701/W/000/CSC/790/000029 Spoil Disposal Plan.

7.2.8 Dumping License

All dump truck drivers should apply for a valid dumping license from the Fill Management Division, CEDD, to dump public fill within the CEDD public fill reception facilities if required.

7.2.9 Mechanical Covers

All vehicles transporting spoil from the site for disposal have their loads fully covered with a mechanical cover to prevent spillage of spoil on the roads. For mechanical cover requirements, please refer to separate submission 1701/W/000/CSC/790/000029 Spoil Disposal Plan.

7.2.10 Temporary Storage Area for C&D Materials

There will be two 20m x 20m temporary storage areas in W11. One will be storing C&D materials, the other one will be storing marine sediments. In the C&D material temporary storage area, there will be a portion of the space used to store non-inert C&D materials. Each storage area can store at least 1000 tons of materials. The layout plan will be shown in the following figure. WPIC from CSHK will check the temporary storage areas regularly to ensure that no flammable materials would be stored in the area.

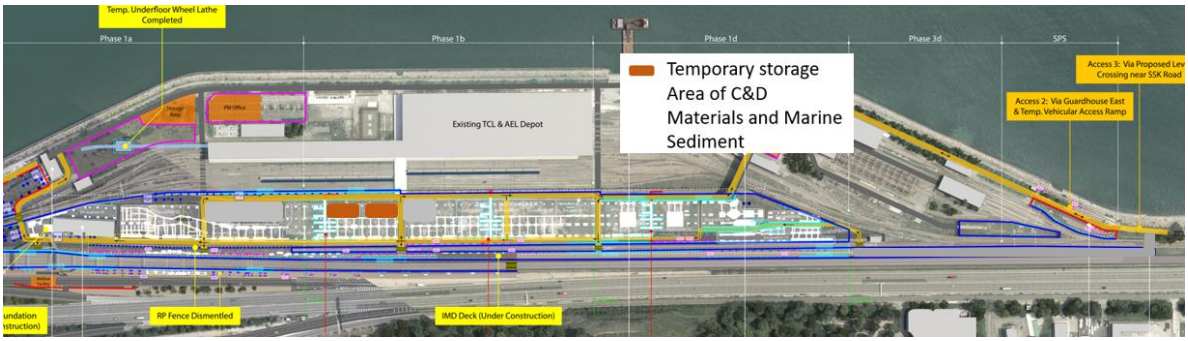

Figure.2 – Temporary storage area layout plan

7.3 Management of Disposal of Marine Sediment

The Type 1 (Open Sea Disposal) sediment generated would be reused on site (e.g. as backfilling materials) as far as possible after on-site treatment. The remaining Type 1 (Open Sea Disposal) sediment after onsite reuse as well as other types of sediment would be disposed to marine disposal sites according to Marine Fill Committee (MFC). Marine sediment will be disposed of to open sea disposal for Type1 Sediment, as directed by MFC.

7.3.1 Marine Dumping permit Application

To avoid and minimize the impacts arising from the marine sediments, CSHK will apply for the marine dumping permit under Dumping at Sea Ordinance (DASO) from EPD for the sediment disposal. The updated permits will be placed on board for readily inspection.

7.3.2 Arrangement of the Transportation and Disposal of Marine Sediment

All Marine Sediment will be transported and dumped at the designed dumping grounds as specified in the dumping permit. The uncontaminated marine sediments containing Category L will be deposited of at Type 1 — Open Sea disposal area allocated by the Marine Fill Committee. The removed contaminated marine sediments containing Category M sediments both passing and failing biological tests and Category H sediment passing biological tests as designed in ETWBTC(W) 34.2002 will be disposed of at Type 2- Confined Marine Disposal Area allocated by the Marine Fill Committee.

The hopper barge for transporting the excavated sediment to the specified marine dumping site will be fitted with tight fitting seal to their bottom openings to prevent leakage of sediment and equipped with a front-end module unit for Real time Tracking & Monitoring of Vessel (RTTMV) to prevent any illegal dumping. No double handling of the excavated sediment would be performed after the hopper barge leaving the barging point and therefore the excavated sediment shall not be loaded into other vessels for whatever purpose.

The hopper barge collected the excavated sediment from the barging point, with a copy of the valid dumping permit on board, will be towed by tug boats to the specified marine dumping site. Before the loaded hopper barge leaves the barging point to the specified marine dumping site, a notification of dumping will be provided to the Management Team of specified marine dumping site, as required by the CEDD.

On arrival of the specified marine dumping site, the hopper barge operator will report to the control office of the Management Team of the specified marine dumping site. The hopper barge operator will then follow the instruction given by the Management Team staff and manoeuvre the hopper barge into the specified marine dumping site. Dumping will be commenced by an area as directed by the Management Team and proceeded slowly and steadily.

The bottom opening of hopper barge will be closed immediately after dumping, and will be kept closed during its return journey. After the completion of the sediment discharging, the hopper barge operator will inform the control office of Management Team before leaving the specified marine dumping site.

Table 4 – Disposal Spaces for Types of Sediments

Disposal Type	Category of Sediments	In-situ Volume of Sediment	Sediment Disposal Spaces
Type 1-Open Sea Disposal	Category L Sediments	10,741 m3	The subarea "SHW Depot Phase 1 & Adv" within the South Cheung Chau Open Sea Sediment Disposal Area as shown on Drawing No. MFC/002-SHW Depot Phase 1 & Adv.
Type 1-Open Sea Disposal (Dedicated Site)	Category Mp Sediments (i.e. Category M Sediments passing biological test)	1,132 m3	Subareas to be directed on site within the Mud Pit of the Confined Marine Sediment Disposal Facility to the East of Sha Chau.
Type 2 – Confined Marine Disposal	Category H Sediments (i.e. Category H Sediments not requiring test)	230 m3	Subareas to be directed on site within the Mud Pit of the Confined Marine Sediment Disposal Facility at the East of Sha Chau.

7.3.3 Supervision and Record Keeping

A full-time site supervisor will be assigned at the barging point to supervise the loading operation. All dumping operations will be supervised and recorded, at the loading points during the loading and at the specified dumping site during the discharging of sediment, so as to ensure the consistency and accuracy of the sediment dumping operation,

A monthly return of sediment dumping records will be submitted, within the first week of each month, to the Engineer and the MFC, showing the number of the barge loads and estimated

quantity of dumped material at the dumping site. A "Nil" return shall be provided even if no sediment dumping operation will carry out within any particular month.

7.4 Disposal Plan for C&D Materials

The C&D materials will mainly be delivered from the Works Area W11 to the seawall through the Vehicular Access Bridge (VAB). For traffic routing from depot works area W11 to seawall, please refer to separate submission 1701/W/000/CSC/760/000204 Method Statement for Seawall Arrangement.

Then, the materials will be transferred from the seawall to the barge. The barge leaves the Siu Ho Wan depot seawall and travels to the designated disposal area seawall. Lastly, the materials will be transferred from the designated disposal area seawall to the land access.

7.4.1 From Depot to Seawall

The C&D materials will mainly be produced in W11. For traffic arrangements and traffic routing from depot works area W11 to seawall, please refer to separate submission 1701/W/000/CSC/760/000204 Method Statement for Seawall Arrangement.

All dump trucks or any construction vehicles will be clean and free from mud before accessing the Vehicular Access Bridge (VAB) in depot. A wheel washing facility near VAB will be provided by CSHK. All dump trucks will go through the wheel washing facility before entering the VAB. WPIC will check to ensure that the vehicle wheels are clean and free of mud and muddy water.

CP escort will be required for all dump trucks travelling in OA areas, especially travelling to barging point via OA areas.

CSHK will liaise with MTR depot about the procedures of opening the access gate at Seawall barging area before using the seawall.

Automatic Wheel Washing Facility

The details of the Automatic Wheel Washing Facility are in Appendix. The location of the facility is shown in the below Figure. The exact location of the wheel washing facility will be subjected to the site condition.

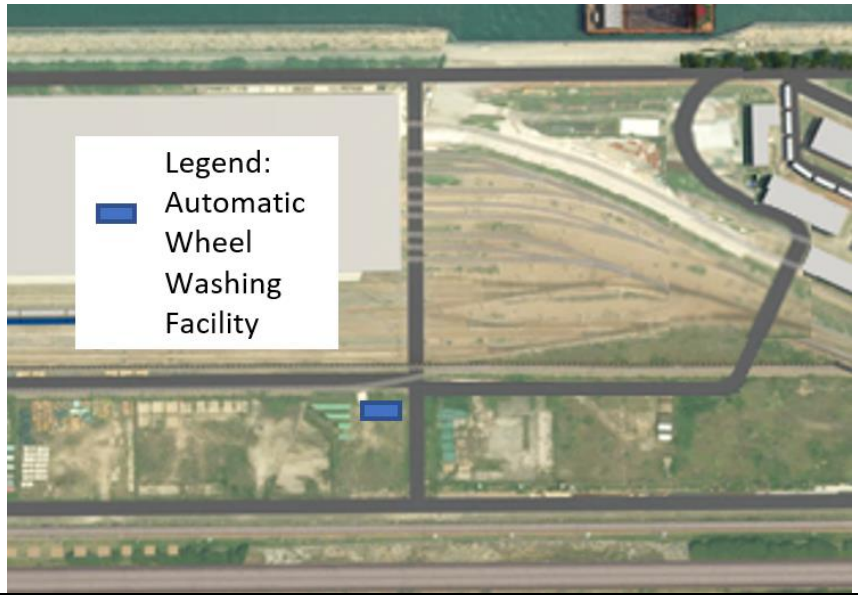

Figure.7.1 – Wheel washing facility layout plan

7.4.2 From Seawall to Barge

The barging facility would be used for the disposal of C&D materials. A roro barge would work as the floating device such that the disposal trucks could drive on them to reach the hopper barge or delivery barge. The arrangement for loading the excavated materials is illustrated in **Figure 7.1**.

CSHK will further liaise with depot and CEDD about the actual date of the C&D disposal and using the seawall. CSHK will treat the delivery of MTR trains and materials as first priority, to ensure that the delivery of MTR trains and materials using seawall will not be affected.

All barging operations will be curtailed if the visibility falls below 1.0 nautical mile, or Typhoon Signal No.3 or above or Black Rainstorm Warning is hoisted. All barges will go to the nearest typhoon shelter when typhoon signal No.3 or above is hoisted.

There will be a net provided at the sides of the tipping haul during the disposal process of C&D materials from the dump truck to the barges for dust mitigation purpose.

C&D materials will be unloaded into an area of the hopper barge directly below the tipping hall. If there is a need to spread out the materials in the barge, CSHK will move the barge, such that any further C&D materials can be loaded into an empty area of the barge, or if there is plant or equipment on the barge, we will utilize it to spread out the materials without the need for the barge to reposition. Mitigation measures such as water spraying will be implemented to minimize dust emission.

There will be load lines at the hull of the barges. The load line indicates the maximum weight a vessel can carry. After the loading of C&D materials, CSHK will check and ensure that the load line is still above water level to prevent overloading problems.

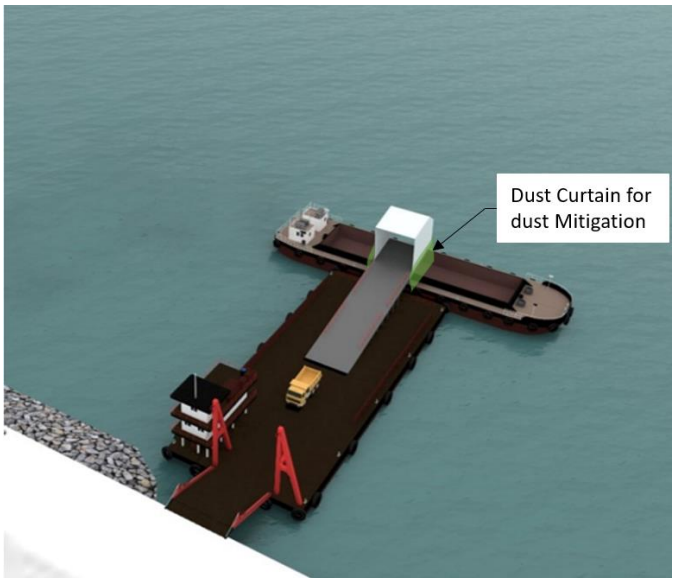

Figure 7.1 Disposal Operation with a RoRo Barge

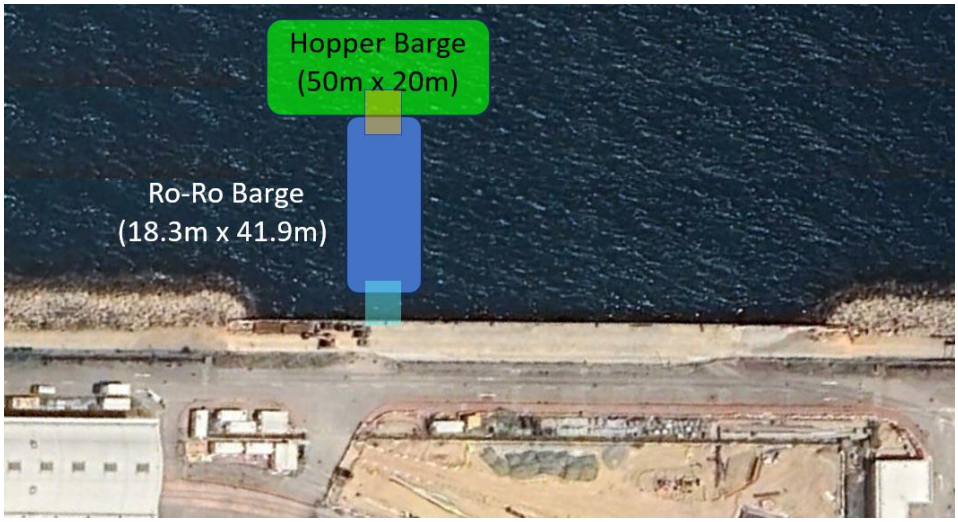

Figure 7.2 RoRo Barge Arrangement for Disposal Operation

7.4.2.1. Barging Arrangement

For barging arrangements, please refer to the separate submission 1701/W/000/CSC/760/000204 Method Statement for Seawall Arrangement.

7.4.2.3. Booking Arrangement for Seawall

At the start of the barging works, there were limited barging works. CSHK will follow the booking system and propose the date, time, location of berthing for the disposal of C&D materials to liaise with the Contractor of C7. CSHK will also provide the traffic controller at the main road near seawall area to manage the traffic. There will be 20 nos. of dump trucks per hour travelling from W11 to seawall for disposal of C&D materials.

Between Mid 2024 – Mid 2026, CSHK will have more barging works from Monday to Saturday. We propose to have a regular date and time in each week for our berthing works. For the location of berthing, we will further liaise with Contract C7 and avoid using the portion of seawall which is their works area.

CSHK will treat the delivery of MTR trains and materials as first priority, to ensure that the delivery of MTR trains and materials using seawall will not be affected.

7.4.2.4. Gate Management

At the start of the barging works, there will be very limited barges using the seawall. CSHK will inform depot about the barging works and borrow the gate key from depot.

When the barging works becomes more frequent and regular, we will liaise with depot about the seawall gate arrangements. CSHK can help to manage the seawall gates and keep the gate keys. The seawall gates will be locked after the barging works.

7.4.2.5. Anchoring of Barges

The barges will be anchored at the bollards at the seawall. The bollards are shown in the following Figure.

Figure 7.3 Bollards at Seawall

7.4.2.6. Details and Certification of Barges

The details and certification of the barges are attached in the Appendix.

7.4.2.7. Maintenance and Inspection of Barges

The maintenance and inspection of Barges will follow the guidelines and requirement of the Marine Department (MD). After passing the inspections of the vessels by the MD, certificates will be awarded to the vessels including the Certificate of Survey and Records of safety equipment and key installations. The certificates of the vessels are attached in the Appendix.

7.4.2.8. Ramp Arrangements

There should only be one dump truck on the ramp at the same time to avoid crashing of vehicles on the ramp.

7.4.2.9. Dust Enclosure

For disposal of C&D materials, water spray will be carried out during the work to prevent dust generation. There will be steel cover at the top of the ramp at the disposal area as shown in Figure 7.1. Also, there will be a net provided at the sides of the tipping haul during the disposal process of C&D materials from the dump truck to the barges for dust mitigation purpose.

7.4.2.10. Swept Paths for turn around

The swept path for turn around for dump tracks on the Roro barge is attached in Appendix.

7.4.2.11. Tracking System

All barges shall be equipped with the Front-End Mobile Unit (FEMU) system. FEMU is a key component of the RTTMV system. The FEMU system (i.e. FEMU together with peripheral

items connected) consists of a data capturing and communication unit, a processing unit, data storage media, a portable printer, a GPS receiver, a draught sensor, a split-bottom control button, a network camera and backup batteries. The FEMU is housed in a waterproof enclosure with key locks. Real-time data are received, recorded and stored in the FEMU and transmitted to the EPD Control Centre.

RTTMV system is a real-time monitoring system basically comprising a Control Centre at EPD and Front-End Mobile Units (FEMUs) to be provided by permit holders on board of dumping vessels. In this system, a Control Centre is set up in the office of the EPD to receive and monitor the operation of all dumping vessels under the DASO. Each of these vessels will have a FEMU aboard to receive, record and transmit real-time data direct from the vessel at sea to the EPD Control Centre through mobile communication network. The data include the vessel's position (by means of Global Positioning System), draught, and status of bottom opening. The EPD has established a website for the RTTMV system. All permit holders and other eligible parties would be provided free (read-only) access to the website for monitoring of their own vessels and take snapshots of the vessel operation by remote control of the cameras connected to their FEMUs. With the aid of the system, the industry can also enhance their fleet management.

CSHK will also gain access to the free RTTMV system website provided by the EPD to monitor and manage the dumping fleets online through the internet. CSHK Environmental team will monitor the barge routings through the website in case the barge enters the marine park, once barges are found to pass through the marine park, CSHK Environmental Team will inform CSHK Construction Team, Engineer, and ET and IEC.

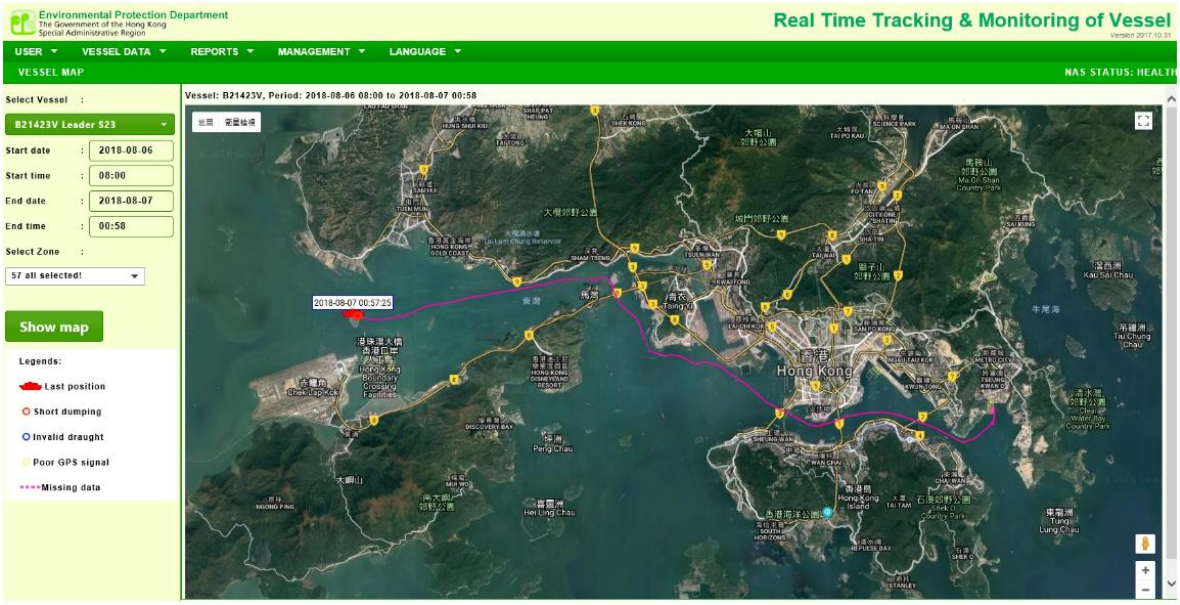

Figure 7.3.1 Seamap showing the track of a vessel in RTTMV system website

7.4.3 Travelling Route to Disposal Area

For land travelling routes from depot to West New Territories (WENT) Landfill or Public Filling Facility at Tuen Mun Area 38 Fill Bank (TM38FB), please refer to separate submission 1701/W/000/CSC/790/000029 Spoil Disposal Plan. The non-inert materials will only be transported by land from depot to WENT.

Inert portion of C&D materials will be disposed to Public Filling Facility at Tuen Mun Area 38 Fill Bank (TM38FB). The marine travelling route is as shown in the following Figure.

Figure 7.4 Disposal Route for Inert C&D Materials

When the delivery barge arrives the seawall of the TM38FB, the barge operator will inform the Management Team of TM38FB. The delivery barge operator will then follow the instruction given by the Management Team staff and manoeuvre the delivery barge into the specified grab crane operating site. The grab crane will start removing the inert C&D materials from the barge. When all the inert materials are removed, the barge operator may inform the Management Team of TM38FB, then leave TM38FB seawall.

Type 1 Marine sediments will be disposed at the subarea “SHW Depot Phase 1 & Adv” within the South Cheung Chau Open Sea Sediment Disposal Area as shown on Drawing No. MFC/002-SHW Depot Phase 1 & Adv. The marine travelling route is as shown in the following Figure.

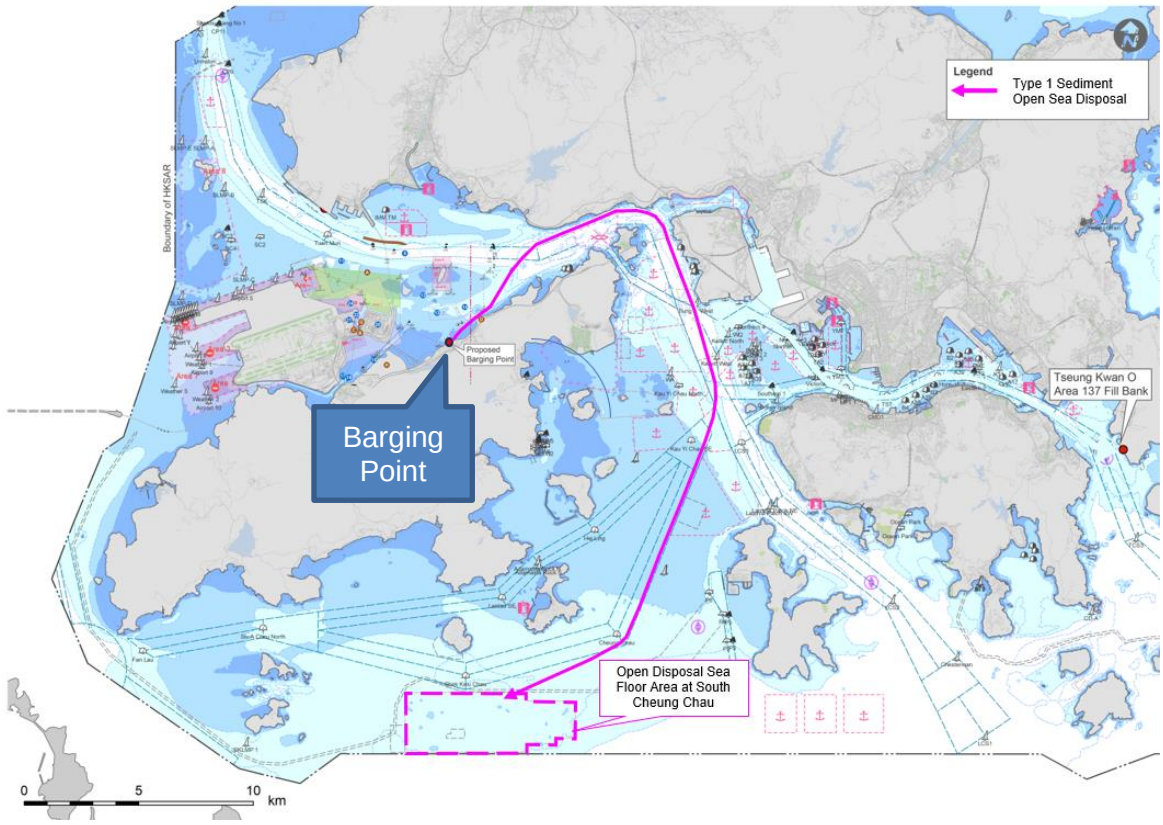

Figure 7.5 Marine Disposal Route (Type 1 Sediment - Open Sea Disposal)

Type 1- Open Sea Disposal (Dedicated Site) and Type 2 – Confined Marine Disposal will be disposed at the subareas to be directed on site within the Mud Pit of the Confined Marine Sediment Disposal Facility at the East of Sha Chau. The marine travelling route is as shown in the following Figure.

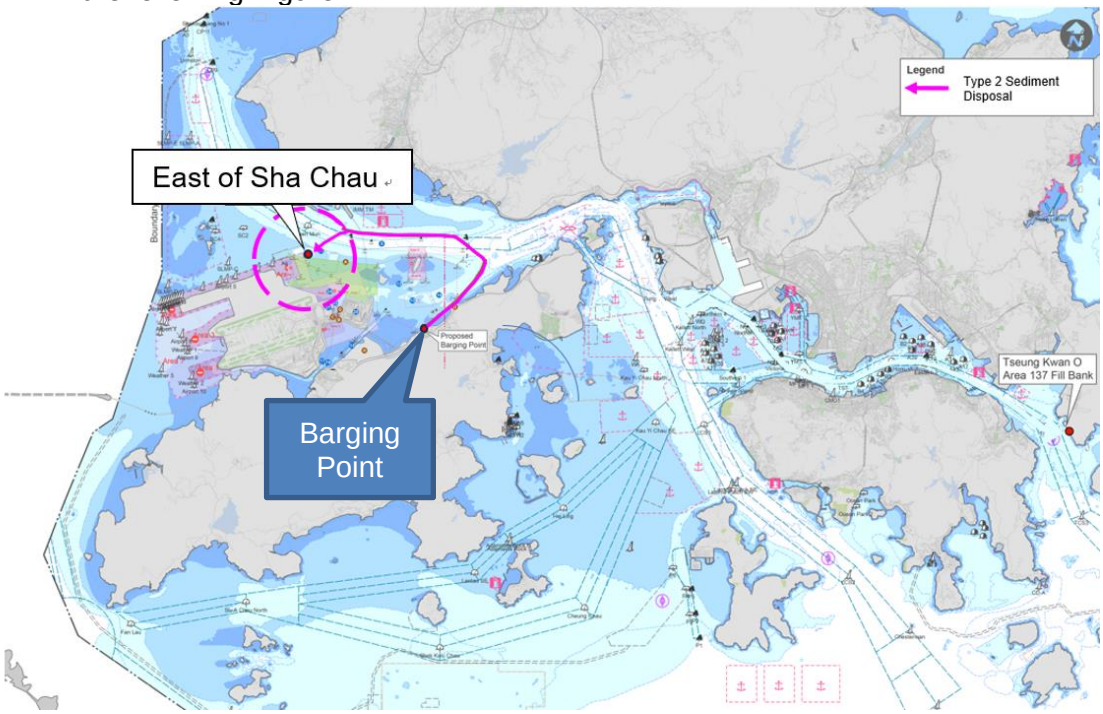

Figure 7.6 Marine Disposal Route (Type 1- Open Sea Disposal (Dedicated Site) and Type 2 – Confined Marine Disposal)

8.	**Safety** (Risk Assessments)
	8.1 General Safety ● All workers shall attend a site-specific induction course conducted by Safety Team. The Safety Officer shall explain the necessary safety requirements as identified in the Risk Assessment Record and the Construction Manager/ Engineer / Foreman in charge of the work shall explain the system of work to his supervisors and workers. ● All workers shall be equipped with reflective vests and safety helmets during operation. All workers must go through a briefing by the Construction Manager / Safety Officer / Safety Supervisor before commencement of any works. All workers on site shall obtain an approved "Mandatory Basic Safety Training Certificate". ● Toolbox talk training with reference to the recommended safety and environmental control measures after Construction Risk Assessment will be provided to the site personnel prior to commencing works. ● A pre-meeting will be arranged before commencement of the work among Foreman / Engineer / Construction Manager, MTR's representatives and Safety Department to brief the nature of works, the safety aspects and the requirements. ● Safety helmets fitted with chin straps must be worn within the site, safety boots, hearing protectors (if needed), high visibility jackets / sashes, reflective vest, goggles, gloves and full body harnesses for work at height will be provided to all staff working on site. Warning signs and barriers will be erected where necessary. ● Particular care needs to be taken when working on or near busy roads. No works will be undertaken unless safe access, including approved and fully implemented TTM / TTAs where necessary. ● Any emergency situation shall be reported to Subcontractor and Contractor (i.e. Construction Manager / Engineer / Foreman and Safety Department, etc.) for prompt response. ● All workers should have RSI qualification when working at OA Area such as near the seawall / main road. **8.2. Safety for Marine Sediment Disposal** During the operation of the marine sediment disposal, all the barges and associated tug boats will follow the below safety issues: ● All barges representatives boarding/disembarking the Office Barge shall wear non-slippery shoes and life jackets. Any barge's representative not complying with this requirement will not be permitted to board/disembark from the Office Barge. Any non-compliance will be reported to the relevant Permit Holder and project management office. ● All tug boats and barges will turn on their lights while working in the vicinity of the Mud Pits in dark or with the visibility is poor. ● Any barge while waiting in the vicinity of the Mud Pits to queue up for disposal, the barge will be served / looked after by a tug boat. ● Life jackets and life saver rings will be placed near the bollards at the seawall during the works at seawall. **8.3 Risk Assessment**

	The risk for the works shall be assessed and the Risk Assessment Analysis is shown in **Appendix A.**
9.	**Environmental**
	Key Assumptions • No marine works (e.g. dredging of sediment, modification of existing seawall etc) would be required • Dry goods, steel, rebar, spoils, machineries, DfMA and MiC structural elements would be unloaded via barges • Average 6 trips per day and 7 days per week (i.e. 42 trips per week) would be utilised between Year 2024 and Year 2027 for depot construction. • Spoils will be loaded onto dump trucks within the main construction site. The dump trucks will travel to the vertical seawall and directly onto barges before unloading into the barge. Good site practices and control measures described below would be undertaken. • There would be no residential receivers in the vicinity during the temporary use of the existing vertical seawall. **General mitigation measures:** • General works shall be carried out during normal working hours (08:00 to 18:00). However, should the progress demand for the works to be undertaken from 19:00 to 07:00 next day or on public holidays, construction noise permit shall be obtained as necessary. • Plant with QPME label will be employ if available. • Only plant with NRMM label will be used unless exempted. • For disposal of C&D materials, water spray will be carried out during the work to prevent dust generation. • C&D material for disposal will be water sprayed to supress dust. • Wheel-washing facilities should be provided at the exits from work areas. A hard-surfaced road between any washing facility and the public road should also be provided. • Regular watering of active works areas, exposed areas and paved haul roads. • Drip tray should be provided to chemical waste containers. The drip tray should be clean up regularly. Clean up should be done before foreseeable inclement weather such as typhoon or heavy rain. • The works shall follow relevant mitigation measures as required under the Environmental Permit (EP) / EP submission and Contractor's Environmental Management Plan (EMP). **Mitigation Measures for Potential Ecological and Fisheries Impacts** No specific ecological mitigation measures are deemed necessary. However, it is essential to implement all necessary control measures to avoid and minimise any indirect impacts during the temporary utilisation of existing vertical seawall period. A summary of these control measures is given below. • The Contractor shall ensure the real-time GPS or equivalent system are installed and operating on all the barges during their services to record the marine travel routes and the relevant GPS data including justification and consideration for the use of western marine route shall be sent to the Project Engineer/ full time Resident Site Staff (RSS) for daily review and ET / IEC will support on project where necessary. The daily record

of marine travel route will be reviewed, collected and filed by the RSS for inspection and monitoring purposes;

- ET and IEC will carry out sample check of the GPS records regularly (e.g. at least once a month);
- The Project Engineer /RSS would verify the GPS or equivalent data and identify any events when barges incidentally enter into Marine Parks, and instruct the Contractor to investigate and/or rectify such events as soon as practicable;
- Relevant specification clauses related to the above tasks shall be included in the Tender Specification for implementation by the Contractor;
- In case any barges incidentally enter into Marine Parks, the ET / Project Engineer / RSS shall instruct the barge operators to leave Marine Parks as soon as practicable. Nevertheless, the barges are subject to a speed limit of not more than 10 knots at any time inside Marine Park according to the Marine Parks and Marine Reserves Regulation (Cap. 476A). The tender document would also request the Contractor to comply with the statutory requirements; and
- The ET shall report any events when barges incidentally enter into Marine Parks in the EM&A report.

Mitigation Measures for Potential Water Quality Impacts

As the barging point is located near to the Brothers Marine Park, the following good site practices should be implemented to minimise the potential water quality impact due to the usage the barging point:

- The wastes water should be collected within site and would not discharge to the sea;
- All vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to minimise that undue turbidity is not generated by turbulence from vessel movement or propeller wash;
- Loading of barges should be controlled to prevent the splashing of material into the surrounding water;
- Barges shall not be filled to a level which will cause overflow of materials or pollution of water during loading or transportation;
- Excess materials shall be cleaned from the decks and exposed fittings of barges before the vessels are moved; and
- Adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action.

Mitigation Measures for Potential Air Quality Impacts

The Contractor is also obliged to follow the procedures and requirements given in the Air Pollution Control (Construction Dust) Regulation and good site practice as follows:

- Any excavated or stockpile of dusty material including those on barges 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 for the excavation or unloading;
- Any dusty materials remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;
- Any skip hoist for material transport should be totally enclosed by impervious sheeting;

	• The excavated materials produced during the construction would be transported by trucks and then unloaded to the barges. No stockpile area would be provided at vertical seawall; and • The haul roads connecting to vertical seawall would be all paved. Vehicles should be washed to remove dusting materials from its wheels and bodies before leaving the construction site and entering the barging point. To alleviate the potential dust impacts, the dusty materials on the trucks would be well covered and flexible dust curtain would be provided at the loading points (from the berths of vertical seawall to the barges). **Mitigation Measures for Disposal of Marine Sediments** The works shall follow the requirements and conditions from the DASO dumping permit. • All dumping vessels have to be approved in a marine dumping permit issued under the DASO. • Fit all hopper barges with tight fitting seals to their bottom openings to prevent leakage of material. • Dumping should be carried out only at the specified site as shown in the permit. • Size all vessels such that adequate clearance is maintained between the seabed and vessels at all states of the tide, to ensure that undue turbidity is not generated by turbulence from vessel movement of propeller wash. • Release the sediments rapidly and close the hoppers immediately; any materials adhering to the sides of the hopper shall not be washed out of the hopper and the hopper shall remain closed until the barge returns to the disposal site.
10.	**Quality Control**
	Refer to **Appendix B** for Inspection and Test Plan. Construction works shall be fully complied with Quality Plan. For work activity which is classified as “Quality Hold Point”, no subsequent work can be started unless the former work activity was inspected and accepted by MTR’s inspectorate.
11.	**Appendices** (Identify and include additional information in the submission package)
	A. Risk Assessment B. Inspection and Test Plan (ITP) C. Example of Disposal Delivery Form (DDF) D. Application for Marine Dumping Permit under DASO E. Automatic wheel washing facility (EnviroWash) F. Yun Lee Plant List G. Yun Lee Vessels Certifications H. Swept Path for Turn Around for Dump Trucks on Roro Barge