MTR Corporation Limited
香港鐵路有限公司
www.mtr.com.hk

The EIA Ordinance Register Office,
27th Floor, Southorn Centre,
130 Hennessy Road,
Wanchai,
Hong Kong

Attention: Mr. Victor Yeung

Your ref :

Our ref: C747-COR-HSD-ENV-010412

2 September, 2010

Dear Mr. Yeung,

MTR West Island Line
Environmental Permit No. EP-313/2008C
Condition 2.12 : Waste Management Plan

In compliance with WIL EP Condition 2.12, I enclose herewith 6 hard copies and one electronic copy of the Waste Management Plan (Rev A) for Civil Works Contract 705 – KET Station and Overrun Tunnel which has been certified by the ET Leader and verified by the IEC.

Yours sincerely,

Glenn Frommer

Dr. Glenn Frommer
Head of Sustainability Development

Encls.

GF/EL/bl

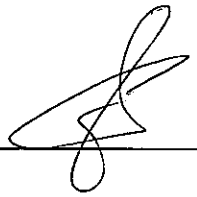
Direct Tel: 2688-1552

MTR Corporation Limited

West Island Line Project

Waste Management Plan (Revision A)

Contract No. 705
KET Station and Overrun Tunnel

Verified by: 

Position: Independent Environmental Checker

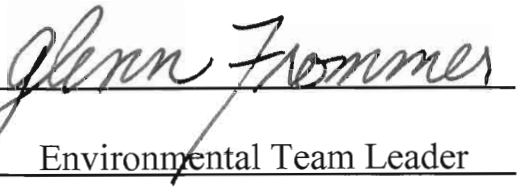
Date: 1 September 2010

MTR Corporation Limited

West Island Line Project

Waste Management Plan (Rev A)

Contract No. 705
KET Station and Overrun Tunnel

Certified by: 

Position: Environmental Team Leader

Date: 30 August 2010

CONTENTS
(1 of 2)

FIGURES

APPENDICES

1 INTRODUCTION

1.1 Requirement for an WMP

This WMP has been prepared in response to the requirements of General Specification for Civil Engineering Works Section 5 – Environmental Requirements and Appendix D – MTR Corporation's Environmental Policy Statement, Appendix I – Environmental Requirement, Environmental Permit, Environmental Impact Assessment Report and Environmental Management and Audit Manual of West Island Line. The document aims at presenting the following information:

– identify the quantity of waste generation from construction;
– assess the environmental impacts that may occur;
– propose options for mitigating the impacts of waste disposal, and
– set out procedures for implementation of the plan.

1.2 Project Description

The West Island Line (WIL) will extend the full Island Line service to Kennedy Town via Sai Ying Pun (SYP) and University, adding approximately 3.3km of underground route length to the Island Line. West of Sheung Wan (SHW), the WIL alignment runs in a westerly direction along the railway reserve until Des Voeux Road West where it swings to run in a south-westerly direction towards SYP. A new tunnel between SHW and SYP will be constructed to form the eastbound tunnel, while the existing overrun tunnel west of SHW will be modified to form the westbound tunnel. To meet the predicted construction programme for drill and blast activities throughout the WIL excavation works, a temporary explosives magazine will be constructed at the western flank of Mount Davis passing underneath Victoria Road. The location plan for the MTRC WIL 705 contract is shown in **Figure 1**.

The works to be executed under this Contract include the following major items:

- Tunnel section from interface with Contract 704 to the end of overrun tunnel. Include RC structure of the Vent shaft and Adit;
- Construction of lift link and escalator link at Sands Street;
- Construction of KET station, including Cable Termination Room, Telecom Equipment Rooms, Platform Supervisor's Booth, Signaling Equipment Room, Power Equipment Room, Platform Screen door Equipment Room, Tunnel Ventilation Fan Rooms, Tunnel Exhaust Fan Room, Tunnel Supply Room Fan Rooms, Air Compressor Rooms etc., KET station PTI, Forbes Street Playground, Toilet, Football Field and LCSD Park; and
- Demolition of swimming pool and ex-police quarters;
- ABWF and building services works KET station, KET station PTI, Forbes Street Playground, Toilet, Football Field and LCSD Park; and
- Hard and soft landscaping works.

The commencement of construction of the MTRC WIL 705 contract is scheduled for February 2010. The project is due for completion in June 2014. The construction programme is given in **Appendix A**.

Environmental protection and sustainable development are part and parcel of the daily operations of the Gammon Construction Limited (GCL). GCL will initiate

appropriate actions in order to minimize, and where possible eliminate, the environmental impact arising from the construction of this Project.

2 Environmental Legislation and Guidelines

This Waste Management Plan (WMP) is prepared in view of the current environmental legislation related to construction activities and specific contractual requirements and expectations relevant to waste management as described in contract documents. This WMP addresses the potential impacts and necessary mitigation measures in the light of GCL's proposed construction methodology and programme.

GCL will comply with all current relevant legislation, regulations and guidelines, which include, but not limited to, the following sections.

2.1 Statutory Obligations

2.1.1 Environmental Impact Assessment (EIA) Ordinance (Cap 499)

The ordinance requires MTRC, the permit holder of the Environmental Permit EP-313/2008/C, under Condition 2.12, to prepare and deposit the Waste Management Plan to the Environmental Protection Department.

All measures recommended in the WMP shall be fully and properly implemented by the contractor and any person working on the project throughout the construction period.

2.1.2 Waste Disposal Ordinance (Cap 354)

This ordinance prohibits any person from using any land or premises for the disposal of waste unless one has been authorized by or has obtained a license from the waste-disposal authority, the Environmental Protection Department.

2.1.3 Waste Disposal (Chemical Waste) (General) Regulation, Enacted Under Waste Disposal Ordinance

This regulation has provisions to require any person who produces chemical waste to register with the Environmental Protection Department as well as to control the processing, storage, collection, transport and disposal of chemical waste. In additional, the regulation also provides for the licensing of waste collection, transport and disposal activities.

Chemical waste includes any scrap materials, or unwanted substances specified under Schedule 1 of this Regulation, if such a substance or chemical occurs in such a form, quantity or concentration that causes pollution or constitutes a danger to health or risk of pollution to the environment.

A person shall not produce, or cause to be produced, chemical wastes unless he is registered with EPD. Any person who contravenes this requirement commits an offence and is liable to a fine and/or imprisonment. Chemical wastes must be treated, minimized on-site plant licensed by EPD or have a licensed collector to transport the wastes to a licensed facility. For each consignment of wastes, the

waste producer, collector and disposer of the wastes must sign all relevant parts of a computerized trip ticket. The system is designed to trace wastes from production to disposal.

This regulation also prescribes the storage facilities to be provided on site including labelling and warning sign. To minimise the risks of pollution and danger to human health or life, the waste producer is required to prepare and make available written emergency procedures for spillage, leakage or accidents arising from storage of chemical wastes, and provide employees with training for such procedures.

2.1.4 Waste Disposal (Charges for Disposal of Construction Waste) Regulation
2.1.5

Construction waste means any substance, matter or thing that is generated from construction work and abandoned, whether or not it has been processed or stockpiled before being abandoned, but does not include any sludge, screenings or matter removed in or generated from any desludging, desilting or dredging works.

Construction waste producers, such as construction contractors, renovation contractors or premises owners, prior to using government waste disposal facilities, need to open a billing account with the Environmental Protection Department and pay for the construction waste disposal charge.

Through the Charging Scheme, construction waste producers are encouraged to reduce, sort and recycle construction waste so that their disposal costs can be minimized and the valuable landfill space can be preserved.

2.1.6 Land (Miscellaneous Provisions) Ordinance (Cap 28)

Inert construction waste may be taken to public dumps. The Land (Miscellaneous Provisions) Ordinance requires that a dumping licence be obtained by individuals, or companies, who deliver suitable construction waste to a public filling facility. The licence is issued by the Civil Engineering Development Department. When public dumping of such material is required, Gammon shall apply for the licence prior to disposal.

2.1.7 Public Health and Municipal Services Ordinance (Cap 132) – Public Cleansing and Prevention of Nuisances Regulation

This ordinance has provisions on the control of the discharge of hazardous material to sewers and for the control of littering. The ordinance prohibits placing or throwing any solid matter, mud or waste into public sewers or drains and also placing those substances in a location where they may fall into public sewers and drains. The ordinance also has provisions to require the owner or occupier of the land adjoining any street or place that is situated near a public sewer to exercise measures to prevent obstruction of sewers and drains caused by soil and waste.

2.2 Additional References and Guidelines

This Waste Management Plan has been prepared with reference to:

- Waste Reduction Framework Plan, 1998 to 2007, Planning, Environment and Lands Bureau, Government Secretariat (5 November 1998);

- 2001 Review of the Waste Reduction Framework Plan, Waste Reduction Committee;
- Site Practice for Waste Reduction in Construction Industry (2001), Environmental Protection Department;
- Environmental Guidelines for Planning in Hong Kong (1990), Hong Kong Planning and Standards Guidelines, Hong Kong Government;
- New Disposal Arrangements for Construction Waste (1992), Environmental Protection Department & Civil Engineering Department;
- A Guide to Chemical Waste Control Scheme and A Guide to the Registration of Chemical Waste Producer, Environmental Protection Department;
- Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes (1992), Environmental Protection Department;
- A Guide to the Control on Import and Export of Waste (1999), Environmental Protection Department;
- Works Branch Technical Circular 32/92, The Use of tropical Hard Wood on Construction Sites, Works Branch;
- Works Bureau Technical Circular No. 2/93, Public Dumps, Works Bureau;
- Works Bureau Technical Circular No. 2/93B, Public Filling Facilities, Works Bureau;
- Works Bureau Technical Circular No. 16/96, Wet Soil in Public Dumps, Works Bureau;
- Works Bureau Technical Circular No. 4/98 and 4/98A, Use of Public Fill in Reclamation and Earth Filling Projects, Works Bureau;
- Works Bureau Technical Circular No. 25/99, 25/99A and 25/99C, Incorporation of Information on Construction and Demolition Material Management in Public Works Sub-committee Papers, Works Bureau;
- Works Bureau Technical Circular No 12/00, Fill Management; Works Bureau;
- Works Bureau Technical Circular No 19/01, Metallic Site Hoardings and Signboards, Works Bureau;
- Works Bureau Technical Circular No 6/02 and 6/02A, Enhancement Specification for Site Cleanliness and Tidiness, Works Bureau;
- Works Bureau Technical Circular No 12/2002, Specification Facilitating the Use of Recycled Aggregates, Works Bureau;
- Environment, Transport and Works Bureau Technical Circular (Works) No 33/2002, Management of Construction and Demolition Material including Rock, Environment, Transport and Works Bureau;
- Environment, Transport and Works Bureau Technical Circular (Works) No 15/2003, Waste Management on Construction Sites, Environment, Transport and Works Bureau;
- Environment, Transport and Works Bureau Technical Circular (Works) No 31/2004, Trip Ticket System for Disposal of Construction & Demolition Materials, Environment, Transport and Works Bureau;
- Memo Ref. (15) in FM PF/GEN/18.01 Pt.4 dated 22 December 2004 on “Enhancement of Trip Ticket System for Disposal of Construction and Demolition Materials – Commencement of Implementation of Using Bar-coded Disposal Delivery Form (DDF) on 15.1.2005”, Secretary, Public Fill Committee, Civil Engineering & Development Department;
- Civil Engineering and Development Department Technical Circular No 05/2005, Management of Construction and Demolition Materials, Environment, Civil Engineering and Development Department;
- West Island Line, Environmental Impact Assessment Report, Oct 2008;
- Environmental Permit No. EP-313/2008, Environmental Protection Department

3 ENVIRONMENTAL POLICY

3.1 Principles

The management of GCL is committed to the planning, implementation and maintenance of an effective environmental management system. In this regard, GCL has implemented an Environmental Management System in accordance with ISO 14001 standards and has been certified by HKQAA on 31 August 2001.

GCL is committed to high standards of environmental management and the highest practicable priority will be given to environmental protection during the implementation of the Works. The Health, Safety and Environmental Policy of GCL is presented in **Appendix B**.

4 ORGANISATION FOR WASTE MANAGEMENT

The project organisation with respect to waste management works is outlined in the following section. The organisational structure for waste management is presented in **Appendix C**, which shows the arrangement for the organization and lines of communication for waste-management issues. Contacts of key waste management personnel are listed in Table 4.1.

Table 4.1 Contacts of Key Waste Management Personnel

Name	Position	Organization	Telephone	Facsimile	E-mail
Brian Gowran	Project Director	Gammon Construction Limited	9685 1330	2547 9700	Brian.Gowran@gammonconstruction.com
Harry Tsang	Project Manager	Gammon Construction Limited	9467 0226	2547 9700	harrytsang@gammonconstruction.com
Kevin Hui	Assistant Production Manager	Gammon Construction Limited	9864 7625	2547 9700	kevin.hui@gammonconstruction.com
M K Cheung	Project Environmental Manager *	Gammon Construction Limited	9096 7254	2547 9700	mingkai.cheung@gammonconstruction.com

* Contact for environmental protection issues

5 INDIVIDUAL RESPONSIBILITIES

5.1 Project Director

The Project Director has the following duties in relation to waste management control:

- be responsible for overall project management and shall have the day-to-day authority and responsibility for time, cost, safety, environmental and quality management;
- be responsible for the provision of sufficient resources and facilities for the implementation of the Waste Management Plan.

- Monitor and control the works including those of subcontractors to ensure compliance of WMP;
- Report to the Project manager regarding non-compliance of any waste management issues;
- Ensure the remedial actions or mitigation measures are carried out as planned; and
- Supervise and arrange the maintenance of waste management facilities.

5.2 Project Manager

The Project Manager is responsible to the Project Director for overall planning, site operations, appoint of committee members for waste management, staff supervision control co-ordination and external liaison. He is ultimately responsible for all aspects of waste management issues within the Project, which they achieve by implementation of the WMP.

He is also responsible for provision of necessary support to the environmental engineer for the preparation and review of WMP and arrangement of site staff to attend environmental training with regard to waste management organised by other bodies or the environmental engineer.

He shall ensure the recommendations from the Client, Independent Environmental Consultant (IEC), Engineer, Environmental Team (ET), environmental engineer or Gammon's internal audit team are implemented to improve the waste management practices and carry out immediate action to rectify the non-compliance of waste management requirements. The Project Manager has the following responsibilities in relation to waste management:

(a) Keep abreast of the requirements of the statutory regulations in relation to waste management;
(b) Ensure works are executed in accordance with the WMP;
(c) Arrange routine joint site inspection with environmental engineer and review environmental inspection report submitted by the environmental engineer;
(d) Ensure works are undertaken in accordance with the recommendations made by the Client, IEC, Engineer, ET and environmental engineer;
(e) Monitor and control the works including those of subcontractors to ensure compliance with specified requirements;
(f) Ensure appropriate waste management mitigation measures are properly implemented;
(g) Ensure follow up actions are properly undertaken in the event of non-compliance of the WMP;
(h) Review method statement to ensure appropriate mitigation measures are implemented prior to execution of work;
(i) Liaise with Client, IEC, Engineer, ET and environmental engineer on waste management issues;
(j) Monitor records of all trained personnel in the site offices; and
(k) Monitor the following documents.
    - any statutory required waste management permits/licenses including dumping licence, chemical waste producer, admission ticket and etc.;
    - C&D material disposal delivery record; and
    - waste reuse / recycle / disposal summary.

5.3 Assistant Production Manager /Site Agent /Superintendent/ Engineer/ Foreman/Administrator & Survey Team

They are responsible for the following duties in relation to environmental control:

(a) Assist the Project Manager in implementing the WMP;
(b) Control the works including those of subcontractors to fulfil the requirement of waste management issues;
(c) Report to the Project Manager any non-compliance of any waste management issues;
(d) Maintain the on-site waste management facilities including sorting area, temporary storage area, general refuse bins, recycling bins and etc;
(e) Carry out remedial actions or mitigation measures to rectify the non-compliance;
(f) Conduct environmental toolbox talks with respect to waste management to labourers and workers regularly; and
(g) Carry out routine maintenance of waste management facilities. Maintenance records shall be kept in site office.

5.4 Subcontractors and other Employees

Every employee and subcontractor has the duty to carry out agreed waste management practices as instructed by the Site Agent/Superintendent/Engineer /Foreman /Administration & Survey Team.

Every employee and subcontractor shall report promptly to the Site Agent/Superintendent/Engineer/Supervisor/Administration & Survey Team any non-compliance of waste management issues.

On-site supervisor of each subcontractor shall conduct environmental toolbox talks with respect to waste management to their labourers and workers on a regular basis.

5.5 Project Environmental Manager

The project environmental manager shall be responsible for:

(a) Preparing and revising the WMP during the construction stage;
(b) Reviewing works programmes, method statements, licence application and other relevant documentation so as to ensure the best practice would be implemented to generate no unacceptable impacts with respect to waste management to the established guidelines/standards;
(c) Identifying any potential unanticipated or greater than expected waste impacts;
(d) Formulating any necessary preventative or remedial measures to be taken for these potential impacts;
(e) Liaising with the Engineer, IEC, ET and Contractors on waste management both regularly and as necessary;
(f) Carrying out complaint investigation, evaluation and identification of preventive and corrective actions
(g) Assisting ET in undertaking regular and ad hoc environmental site inspection and audit, including waste management issues, and supplying the IEC with Corrective Action Reports for any deficiencies after completion of the inspection or audit;
(h) Liaising and consulting with all relevant parties during the implementation of the WMP;

(i) Preparing training material for environmental toolbox talks with regard to waste management and provide dissemination of guidance notes to operatives; and Assist the Project Manager in preparing waste flow table and monthly summary of the implementation of WMP.

5.6 Environmental Engineer

The environmental engineer shall be responsible for assisting the Project Environmental Manager to perform his duties as listed in section 5.5 (a) - (h).

5.7 Environmental Team

The ET shall not be in any way an associated body of the Contractor and it should be managed by the ET leader. The ET leader shall be a person who has at least 7 years' experience in EM&A and has relevant professional qualification. The appointment of ET Leader should be subject to approval of EPD. The ET should:

(a) Review the EIA Report and the detailed designs to ensure that the EIA recommendations and any other measures identified during the reviews are incorporated into the designs;
(b) Review works programmes, method statements, licence application and other relevant documentation so as to ensure the best practice would be implemented to generate no unacceptable impacts with respect to waste management to the established guidelines/standards;
(c) Identify any potential unanticipated or greater than expected waste impacts; (d) Formulate any necessary preventative or remedial measures to be taken for these potential impacts;
(d) Liaise with the Engineer and Contractor on waste management both regularly and as necessary;
(e) Carry out complaint investigation, evaluation and identification of preventive and corrective actions
(f) Undertake environmental site inspection and audit with respect to waste management both regularly and on ad hoc basis at a frequency appropriate to the intensity of the works;
(g) Liaise and consult with all relevant parties during the implementation of the WMP;
(h) Address waste management issues in the EM&A Report for submission to the – Engineer and EPD; and
(i) Report the findings of the site inspections and other environmental performance reviews to the ER, IEC and Contractor.

5.8 Independent Environmental Checker (IEC)

The IEC shall advise the Engineer on environmental issues related to the project. The role of the IEC shall be independent from the management of construction works; but the IEC shall be empowered to audit the environmental performance of construction.

The main duties of the IEC include the followings:

(a) Audit the overall waste management programme including the implementation of all waste management mitigation measures and submissions relating to WMP;

(b) Conduct random site inspection;
(c) Report the findings of the site inspections and other environmental performance reviews to the Engineer; and
(d) Review and verify the monthly EM&A reports.

6 WASTE MANAGEMENT

6.1 Potential Sources of Impact

The Works will involve the following activities that may give rise to waste issues on the Site:

- Construction of KET Station using cut and cover method.
- Construction of the overrun tunnel west of KET Station.
- Tunnel works at east of KET Station at the interface with Contract 704.
- Demolition of existing Kennedy Town Swimming Pool and Blocks A and C of the Ex-Police Quarters at Ka Wai Man Road

The predicted monthly disposal schedule of different categories of waste is summarised in the Disposal Schedule in **Appendix D**. The Disposal Schedule shall be reviewed regularly, by taking into account of the permanent work design and site work planning/programme/progress to reflect actual quantity of waste materials arising.

6.1.1 Construction and Demolition Materials

Construction and Demolition (C&D) materials refer to both inert and non-inert materials generated from construction activities of the Works. The inert portion of the C&D materials include materials such as soil, building debris, broken rock, concrete, and the non-inert portion comprises tree debris, vegetation, timber, paper, plastics, general refuse and the like.

6.1.2 Chemical Waste

Chemical waste, as defined under the *Waste Disposal (Chemical Waste) (General) Regulation*, includes any substance being scrap material, or unwanted substances specified under Schedule 1 of the Regulation. A complete list of such substances is provided under the Regulation, however substances likely to be generated by construction activities include, but need not be limited to the following:

- Scrap batteries or spent acid/alkali from maintenance;
- Used paint, engine oils, hydraulic fluids and waste fuel;
- Spent material oils/cleaning fluids from mechanical machinery; and,
- Spend solvents/solutions.

6.1.3 Packaging Waste

Many types of material and components are delivered to site in cardboard, plastic or timber packaging.

6.1.4 General Refuse

The presence of a construction site with large numbers of workers and site office will result in the generation of a variety of general refuse requiring disposal. General refuse will mainly consist of food wastes, aluminium cans and waste paper.

6.2 Waste Reduction Measures

6.2.1 Waste Reduction through proper planning and good site management

As presented in the Waste Management Hierarchy, GCL accords the highest priority to managing waste through reduction at source. To this end, the following measures shall be implemented.

- Management of construction materials such that over-ordering, poor storage and maintenance, mishandling as well as improper operation procedures shall be avoided;
- Restriction on use of hardwood such that softwood, metal props and/or proprietary steel system shall be considered for false work and the shoring of trenches and pits;
- The formwork shall be designed to maximize the use of standard wooden panels so that high reuse levels can be achieved. More durable alternatives such as steel formwork or plastic facing shall be considered for repetitive areas to increase the potential for reuse;
- C&D materials shall be, as much as possible and practicable, separated into reusable items and materials to be disposed of or recycled. It shall be conducted at the immediate working area to avoid loss/leakage and cross contamination during handling;
- All C&D materials arising from or in connection with the construction and demolition work shall be sorted on-site and be separated into different categories for disposal at landfills, public filling areas, or reuse and recycling as appropriate. The sorting area may be revised from time to time in order to suit the construction activities;
- Useful materials such as timber, rubble and steel/metal shall be segregated for reuse. For example formwork and timber shall be cleaned for reuse, off-cuts of reinforcement shall be sorted into usable lengths and short off cuts stacked for scrap metal. Where it is no longer reusable, scrap steel and metal items will be collected by recycling companies;
- Segregated materials shall be temporarily stored at designated areas for reuse on site. Steel will be stored at the reinforcement yards, timber at the formwork yard and rubble in a stockpile (either covered or sprayed to control dust). Cardboard and paper packaging recovered from site shall be properly stockpiled in dry condition and covered;
- The remaining non-reusable C&D materials shall be sorted on-site into the inert portion (e.g. rock, brick, bituminous material, concrete and soil, etc.) as the "public fill" and the non-inert portion (e.g. timber, vegetation and paper, etc.) as the "C&D waste".
- The inert C&D materials shall be broken down in accordance with the approved reception site for filling purposes in Hong Kong or Mainland. Disposal of inert C&D materials to the government approved public filling outlets would be the last resort once the barging point is operational from September 2010 onwards. The hard inert construction and demolition (C&D) materials, such as broken rock and

concrete which can be recycled into aggregates for reuse in construction works, shall be delivered to the C&D material dumping facility at Tuen Mun Area 38, before the operation of the barging facilities.

- For the non-recyclable portion of C&D waste (containing no more than 30% by weight of inert content) shall be tipped at the landfill such as SENT Landfill. Recycling companies will be arranged to collect the recyclable portion of C&D waste;
- In order to avoid over-order of concrete, accurate calculation shall be made prior to concrete pouring. Close supervision shall also be arranged during concrete pouring to avoid over-cast; and
- Surplus concrete shall be used for paving of temporary road or cast of concrete blocks for bunding etc. as far as practicable. In case immediate use of surplus concrete cannot be identified, the surplus concrete will be temporarily poured into designated surplus concrete pouring areas on site for further disposal to public filling areas.

6.2.2 Reuse of C&D Material Generated

Some of the C&D materials may be stockpiled at the Ex-Abattoir site and reused on site as backfill material. It is estimated that 33,600 m3 of rock will be reused as backfill material. Concrete debris will not be used as an on-site backfill material due to its relatively large size and also difficulty to control the quality of compaction using concrete debris as fill.

6.3 Handling of Surplus C&D Materials

There will be three approaches to the disposal of surplus C&D materials:

(a) Surplus spoil and rock material generated could be reused as rock fill by other projects, either in the HKSAR, mainland China or Macau.

(b) Reuse of surplus inert C&D materials to Hong Kong or Mainland; or disposal of surplus inert C&D materials to Mainland via the Government of the HKSAR under the “Waste Disposal (Charges for Disposal of Construction Waste) Regulation”.

(c) The remaining C&D materials will be disposed of at the Government’s Public Fill Reception Facilities (PFRFs).

6.3.1 Surplus Rock Material Reused as Rock Fill by Other Projects

The first priority is to reuse surplus spoil and rock material as fill material on other projects. Gammon operates a Web-based Spoil Exchange Database whereby Gammon projects can check on the availability of fill within Gammon Group. The aim is to seek a balance between cut and fill volumes across projects and thereby provide a sustainable solution to fill disposal.

The Engineer shall approve C&D material reuse at other project by third parties. A confirmation letter will be required from the Engineer and that at all time such materials shall be handled and disposed of in accordance with statutory provisions.

6.3.2 Reuse or Disposal of Surplus Inert C&D materials to Approved Reception Site in Hong Kong and Mainland (By Barge)

As stated in the Clause 7.15 of the approved EIA report, the disposal of C&D materials to PFRFs should be considered as the last resort with the preferred approach to reuse materials within the project or in other projects. Since the local reclamation and site formation project might not able to accept all the C&D material from this project, Gammon have explored some appropriate disposal outlets in Hong Kong and Mainland.

To handle and dispose the large quantity of surplus C&D materials off-site from the works areas with least environmental impact to the local community, barging points for the Project would be erected at the KET Abattoir Site. The Baring point and its associated facilities are shown in **Figure 3.** The C&D materials from demolition and construction of tunnel, shaft and KET station with its associated adits would be transported a short distance by trucks to the barging point at the KET Abattoir Site. The C&D materials will be unloaded into the barge and will be subsequently transported to the approved reception sites in Hong Kong or Mainland.

A stockpile area will be provided at the Ex-Abattoir site to allow for situations where barge disposal is disrupted such as adverse weather conditions or problems at receptor sites.

Other disposal option will include the disposal ground coordinated by CEDD/EPD in Mainland. The disposal of surplus inert C&D materials to Mainland might be carried out via CEDD/EPD and coordinated by MTRC under the "Waste Disposal (Charges for Disposal of Construction Waste) Regulation"

6.3.3 Disposal of C&D Materials at Public Fill Reception Facilities (PFRFs)

The disposal of material to PFRFs will be considered as the last resort. Prior to disposal of the C&D materials, the Fill Management Committee of CEDD will be approached in respect of achieving the necessary approvals. On contract award Gammon will establish the account for payment of the construct waste disposal charges and will operate a trip ticket management system in respect of disposal of C&D materials in accordance with the requirements of CEDD/EPD.

To handle and dispose of the large quantity of surplus C&D materials off site from the work areas with least environmental impacts to the local community, a barging point will be set up at the Ex-Abattoir site.

Before transporting the surplus C&D materials to the Ex-Abattoir site, C&D materials will be sorted on site; inert C&D material, oversized C&D material, reuseable and recyclable material will be separated out. The C&D materials from the KET Station and Overrun Tunnel will be transported a short distance by trucks to the barging point at the Ex-Abattoir site. The C&D materials will be directly unloaded from the trucks into the barge and will be subsequently transported by barge to the designated PFRFs at Tuen Mun Area 38 and/or Tseung Kwan O Area 137 as last resort. For oversized materials which is not accepted by the designated PFRFs, will be broken to a size less than 250mm or other sizes as agreed with the secretary of the Public Fill Committee. A stockpile area will be provided at the Ex-Abattoir site to

allow for situations where barge disposal is disrupted such as adverse weather conditions or problems at receptor sites.

6.3.4 On-site Sorting of Construction and Demolition Materials

All Construction and Demolition (C&D) materials arising from or in connection with the Works will be sorted on the Site to recover reusable and/or recyclable materials such as using as backfilling materials and for landscaping works for other WIL contracts as far as possible. All sorted and processed surplus materials arising from or in connection with the Works from the Site will be promptly removed to minimise temporary stockpiling on the Site.

A system will be devised for on-site sorting of C&D materials. The system will include the identification of the source of generation, estimated quantity, arrangement for on-site sorting and/or collection, temporary storage areas, frequency of collection by recycling contractors or frequency of removal off the Site, etc.

GCL will sort the materials at source into the following categories:

- hard rock and large broken concrete suitable for reuse on the Site or recycling at a designated location;
- metals;
- paper and plastics;
- chemical waste; and
- materials suitable for disposal at public fill reception facilities and landfills.

Sufficient space for temporary storage of C&D materials will be identified and provided to facilitate collection and/or sorting on the Site. Except for those inert C&D materials to be reused on the Site, all other C&D materials off the Site will be removed as soon as practicable to optimise the use of the on-site storage space.

A system for proper handling and storage of chemical waste generated from the Site will be established in accordance with the *Waste Disposal (Chemical Waste) (General) Regulation* and *the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*. Arrangements will be made with specialist contractors for the collection and disposal of chemical waste.

The temporary on site sorting facilities for C&D materials is presented in **Figure 2**.

6.3.5 Recycling

To minimise the amount of waste disposal to landfills, the general refuse or C&D waste shall be reused and recycled as much as practical. Waste sorting and segregation shall be carried out in accordance with the following categories for recycling:

- Plastic (i.e. plastic bag, plastic bottle, plastic packaging, etc.)
- Rubber;
- Paper;
- Wood/ timber;
- Glass;
- Textile; and

- Metal (i.e. aluminium can, steel metal, ferrous metal, and non-ferrous metal).

Equipment and material packaging (ie paper and cardboard) will be recovered, properly stockpiled in dry and covered condition to prevent cross contamination by other C&D materials. Particular attention will be paid to avoid cross contamination in the course of collecting paper for recycling. Arrangements will be made with recycling contractors to ensure that recyclable materials sorted from the Site are collected with reasonable care.

GCL shall employ waste recycling collector - Confidential Materials Destruction Service Ltd or Fok Woo Group to collect the recyclable material which include paper, metal and plastic waste. The volume of collected recyclable will be reported in the quarterly waste flow table. The location for collection of recyclable materials is presented in **Figure 2**.

In order to maximize the amount of C&D materials diverted from disposal of at fill bank/landfill, there are two alternatives grounds proposed by GCL to collect and recycle the surplus C&D materials/wastes produced from this project.

(a) Recycler Hung Wai for Wood waste.

(b) Recycler Tailor Recycle Aggregates - those acceptable C&D waste such as broken concrete, rocks, boulders, rubbles and brick would be collected by the recycler for producing concrete aggregates for use in various building and civil engineering construction works

Apart from the above, GCL is exploring other alternatives to collect and recycle the surplus C&D materials. For example, liaison with other Gammon projects at University of Hong Kong are underway.

The amount of the recyclables materials shall be depended on the available space/production rate of the recycler. GCL shall liaise with the collector before truck/barge is arranged to the approved alternative outlets. For the excessive C&D materials which could not be handled by the recycler, the C&D materials shall be handled, transported and disposal of as per this Waste Management Plan.

6.3.6 Disposal of Artificial Hard Materials

Artificial Hard Materials (AHMs) will mainly be generated during demolition of the existing structure comprising concrete debris. The estimated quantity of AHMs is 89,000 m^3. All AHMs will be delivered to TKO Area 137 recycling plant or similar facilities for recycling.

6.4 Management of Chemical Waste

Containers used for the storage of chemical waste will:

- be suitable for the substance they are holding, resistant to corrosion, maintained in a good condition, and securely closed;
- have a capacity of less than 450 litres unless the specification have been approved by the EPD; and

- display a label in English and Chinese in accordance with instruction prescribed in *Schedule 2* of the Waste Disposal (Chemical Waste)(General) Regulation.

The storage area for chemical wastes will:

- be clearly labelled and used solely for the storage of chemical waste;
- be enclosed on at least three sides;
- have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area;
- have adequate ventilation;
- be covered to prevent rainfall entering (water collected within the bund must be tested and disposed as chemical waste if necessary); and
- be arranged so that incompatible materials are adequately separated.

The location of the chemical waste store is presented in **Figure 2**.

Disposal of chemical waste will:

- be via a licensed waste collector; and
- be to an off site facility licensed to receive chemical waste, such as a recycling facility located in Yuen Long Industrial Estate or the Chemical Waste Treatment Facility located in Tsing Yi; or
- to be a reuser of the waste, under the approval from the EPD.

When a chemical spill has been discovered one shall take the following actions:

- Alert all persons in the vicinity and inform the person in-charge of the site.
- Assess the situation and if the spill is serious which will cause danger to nearby people, water bodies, natural habitats, etc., the Fire Service Department shall be informed and the affected area shall be fenced off.
- All personnel shall evacuate from the area and wait for the Fire Services Department to arrive.
- The work area supervisor shall be present at the scene to provide the details of the chemical used and the occurrence of the incident.
- If safe to do so, take the following actions:

  (i) Where available, follow the emergency procedure as stipulated in the label on the container,
  (ii) Put on personal protective equipment;
  (iii) Stop the spillage;
  (iv) Confine the spill with earth barriers;
  (v) Contain the spill inside the work area and prevent it from entering water ways and drainage systems, etc.;
  (vi) Switch off all heat and ignitable sources.

6.5 Management of General Refuse

General refuse generated on site will be stored in enclosed bins separate from construction and chemical wastes. A reputable waste collector will be employed by the contractor to remove general refuse from the site, separately from construction

and chemical wastes, on a daily basis to minimise odour, pest and litter impacts. The burning of refuse on construction site is prohibited by law.

Aluminium cans are often recovered from the waste stream by individual collectors if they are segregated and made easily accessible, so separate, labelled bins for their deposit will be provided if feasible.

Office wastes will be reduced through the recycling of paper. Participation in a local collection scheme will be considered if one is available. In addition, waste separation facilities for paper, aluminium cans, plastic bottles etc., should be provided.

The location of the general refuse collection bins is presented in **Figure 2**.

6.6 Asbestos Containing Materials

Different types of asbestos waste shall be kept from each other and from other construction and demolition wastes. While conducting demolition activities, the working area shall be fully enclosed. Packing, labelling and handling of asbestos waste shall follow EPD requirements.

Loading and unloading of asbestos waste

- Bags shall not be thrown or dropped;
- Workers shall wear approved face masks, heavy duty rubber gloves, overalls and working safety shoes.

Storage of Asbestos waste

All storage of asbestos waste shall be carried out properly in a secure place isolated from other substances so as to prevent any possible release of asbestos fibres into the atmosphere and contamination of other substances. Type 1 waste shall not be stored together with Type 2 and 3 wastes so as to avoid damage to the plastic bags of Type 2 and 3 wastes, unless the bags are packed in boxes or drums for additional protection. Bagged asbestos waste shall not be stacked more than 3 bags high in order to avoid damage to the bottom bag. The storage shall be isolated from other working areas and bear warning panels to alert people of the presence of asbestos waste.

Transport Asbestos waste to the disposal site

Type 2 and 3 asbestos wastes contained in plastic bags must be transported in enclosed skips which meet the following specifications:

- Dedicated skips must be exclusively used to transport asbestos waste;
- Skips must be constructed of steel and possess sealable drain outlet;
- Skips must be fully enclosed and be of the walk-in type with double lockable door at the rear end. The doors and joints of the skips must be rubber sealed, and the doors must be locked during transport;
- The capacity of the skips will normally be 9 or 15 m^3, and the skips must not be overloaded;

- Loading and unloading of the bagged waste must be conducted by hand whilst the skip is on the ground;
- The bagged asbestos waste shall not be stacked indiscriminately resulting in damage to the bottom bag due to the weight at top;
- Contaminated skips must be washed down at the disposal sites where wash water may be drained into reception trenches; and
- Proper warning panels must be placed on the skip to indicate the carriage of asbestos waste.

6.7 Estimated Quantities and Disposal of Waste by Type

The estimated quantities of C&D materials requiring disposal are presented in **Appendix D**.

Table 6.1 provides a summary of the various waste types likely to be generated during the construction activities for the Project, together with the handling and disposal methods.

Table 6.1 Summary of Waste Handling Procedures and Disposal Routes

Waste Material Type	Generated from works item	Total Quantity Generated	Quantity to be disposed off-site	Disposal or Use	Handling
C&D Material	1. *Before Barging Point is available:* Construction of KET Station; Demolition at Ex Police Quarter A	294,851m^3 (Whole Project) 89,000m^3 (Demolition) 5100Kg (Wood material)	261,251 m^3 (Re-use on site ~33,600 m^3 for backfilling) (Quantities to be recycled by the collector shall be depended upon available space/(production rate) of the recycler)	1. Designated disposal ground, mainly : a.) Tuen Mun 38 Fill Bank; 2. Alternative Outlet: a).Reuse 450 tons for backfilling on site b) About 1050 tons was recycled and collected by the *Tailor Aggregates Limited* c) Hung Wai Wooden Board Company	Segregate rock to avoid contamination from other wastes. Truck to transfer inert C&D material to/from Tuen Mun Area 38 Fill Bank, or other projects Acceptable C&D material such as broken concrete, rocks, boulders, rubbles, bricks would be recycled by the recycler to produce Recycled Aggregates that can be used as road sub-base, paving blocks, concrete drainage layer, filter layer, stone column and concrete fill. Wooden material, timber door, waste wood products, would be collected by the recycler to produce wooden board.
	2. Once Barging Point operational : Construction of KET Station and Overrun tunnel, associates adits. Demolition at Ex Police Quarter C, Swimming pool			Surplus inert C&D material to be reused in other projects or in Mainland, or delivered to PFRFs for beneficial uses.	Segregate rock to avoid contamination from other wastes. Inert C&D material produced from sites would be transported to the barging point. Subsequent, C&D material will be transported by Barge to the approved reception sites in HKSAR or Mainland. Disposal to PFRFs (e.g.TM38) would be the last resort once the barging point is operational in September 2010.

Waste Material Type	Generated from works item	Total Quantity Generated	Quantity to be disposed off-site	Disposal or Use	Handling
C&D Waste	Site clearance at works areas	100 ton	100 ton	To be disposed of to the designated landfill site	Trucks to transfer non-inert C&D material to SENT Landfill
General Refuse	Waste paper, discarded containers, etc. generated from workforce	1900 ton	1900 ton	Refuse transfer station for compaction and containerisation and then to landfill or transported by trucks and disposed of at Landfill	Provide on-site refuse collection points.
Chemical Waste	Cleansing fluids, solvent, lubrication oil and fuel from construction plant and equipment	4660 kg (solid) & 3960 L (liquid)	4660 kg (solid) & 3960 L (liquid)	Chemical Waste Treatment Centre	Recycle and collect by licensed collector. Stored on-site within suitably designed containers

The inert portion of the C&D materials will generally be transported by trucks to barging point at KET or other disposal outlets as directed by the Engineer. Barge will transfer the C&D material to/from the Tuen Mun Area 38 Fill Bank or other projects or Mainland. The trucks will be tentatively undertaking a routing in the following directions to the barging point at KET or Tuen Mun Area 38 Fill Bank:

Route to barging point at KET

- Starting from Forbes Street /Smithfield Road / Ka Wai Man Road construction site
- Cadogen Street
- Finishing at barging point at KET

Route to Tuen Mun Area 38 Fill Bank, by Truck (Before Barging point at KET is available)

- Starting from Forbes Street /Smithfield Road / Ka Wai Man Road construction site
- Cadogen Street
- Barging point at KET
- Finishing at Tuen Mun Area Fill Bank by Sea
- Starting from Forbes Street /Smithfield Road / Ka Wai Man Road construction site
- Connaught Road West & Connaught Road Central
- Harcourt Road
- Gloucester Road
- Cross Harbour Tunnel
- Hong Chong Road
- West Kowloon Expressway
- Cheung Tsing Tunnel
- Tuen Mun Road
- Lung Mun Road
- Finishing at Tuen Mun Area 38 Fill Bank

Route to the proposed alternative disposal grounds/recyclers, (i.e. Hung Wai Wooden Broad Company and Tailor Recycled Aggregates Limited) would be similar to that of the Tuen Mun Area 38 Fill Bank. The locations of these recyclers are located at EcoPark in Tuen Mun and DD134 Lung Kwu Sheung Tan, Tuen Mun respectively. Both of them are very closed to the Fill Bank at Tuen Mun Area 38.

The above routing is only indicative and shall be subject to change according to traffic conditions.

The non-inert portion of the C&D materials that are not recyclable will be transported by trucks and disposed of at refuse transfer station or SENT Landfill.

More alternative disposal ground may also be explored to ensure reuse of the inert C&D materials to the fullest extent but prior approval from the Engineer will be sought before any disposal at alternative locations.

6.7.1 Recording the quantities of Reused, Recycled and Disposed Construction and Demolition Materials

For the purpose of facilitating the Employer's Sustainability Reporting, the quantities of wastes reused, recycled and disposed relating to construction activities will be submitted on a quarterly basis. The quarterly summary for waste flow table (WFT) is shown in **Appendix E**.

6.8 Procedure for Trip-Ticket System Implementation

1) Transportation to Designated Public Filling Facilities/Landfill

GCL shall provide a Chit (as shown in **Appendix F**) for disposal at Designated Public Filling Facilities/Landfill for each and every vehicular /vessel trip transporting construction-and-demolition materials, i.e. public fill or construction waste, off site. GCL shall complete all relevant details on the form in duplicate. The form shall be carried on board the vehicle/ vessel at all times throughout the vehicular/vessel trip.

For each vehicular/ vessel trip, GCL (or the Driver) shall present to the operator of the designated public filling facility/landfill the stamped form prior to the disposal of the construction and demolition material. The operator shall stamp and return the Form to GCL (or the Driver) together with a computer print-out receipt to acknowledge the disposal of public fill/construction and demolition waste. GCL shall keep record of the stamped form and the original receipt for inspection by the Engineer's representative when required.

2) Transportation to Approved Reception Site

For the vehicular trip delivery C&D materials to the approved outlets which is not run by the Government, GCL shall implement a trip ticket system to control C&D materials leaving from the site. A designated Materials Delivery Form shall present to the operators of the approved outlet. Information such as material type, approx load, vehicle no. date/time of departure shall be completed before truck is allowed to be leaving from the site. The operator of the approved reception facility shall stamp and return the form to the truck driver to acknowledge the reception of the truck load. The sample form is shown in Appendix H.

GCL shall keep record of the stamped form for inspection by the Engineer's representative when required. This approach could provide a better control of the load of truck which is not going to the government disposal facility and thereby avoid occurrence of illegal dumping.

3) Internal Movement from Sites to Barging Point

GCL shall provide a Construction and Demolition Material Disposal Delivery Form (Form) is shown in **Appendix H** for every internal movement by Truck, from site to the barging point for onward disposal.

Prior to the vehicle leaving from the construction site to the Project barging point, the person-in-charge at site shall insert the Truck License Plate No., Time of Departure, Approx. Load, and stamp the Form to endorse the delivery. Only trucks with authorized form will be allowed entering to the Project Barging Point for disposal.

4) Transportation to Reception Site by Barge

Before truck can be allowed entering/leaving into/from the jetty ramp, spot checking will be carried out to ensure no any unacceptable materials being unloaded into the barge (as agreed with the reception site). After spot checking, all truck must go to the weigh station (bridge) before and after unloading. Net weigh could be measured from before & after the unloading.

A designated Construction and Demolition Material Disposal Delivery Form (For Barge) would be used to control every vessel trip to the designated reception site. (**Appendix H**)

Prior to leaving from the Parking Area, Barging Point Coordinator shall ensure all information such as Barge No., Approx. load, Time of Departure, Destination etc. is registered and completed on the Form. No overloaded barge will be allowed to leave. The barging point coordinator will check the Deck Level against the permissible mark on the barge.

For the vessel trip delivery C&D materials to the approved alternative outlets which is not run by the government. The aforesaid DDF(Barge) shall be completed and present to the operators of the approved outlet. The operator of reception site shall stamp and return the form to the barge operator to acknowledge the reception of the load.

Delivery C&D materials to the government reception facilities such as public filling facility/landfill would be considered the last resort.
In such arrangement, Barging Point Coordinator shall give the Barge Operator a completed DDF (By Barge) as well as the completed CHIT under the Waste Disposal Charging Scheme for disposal. The operator of the designated facilities shall stamp and return the form to GCL together with a computer print-out acknowledgement receipt for recording purposes.

GCL shall keep record of the stamped form and the original receipt for inspection by the Engineer's Representative when required. This approach could provide a better control of the load of truck/barge which is not going to the government disposal facility and thereby avoid occurrence of illegal dumping.

GCL shall also maintain a daily record of disposal of C&D materials from the Site including details of the C&D materials, the truck/barge number, departure time, etc, using the Daily Record Summary (DRS), a sample of which is given in **Appendix G**.

For each trip of off-site disposal of chemical waste, trip tickets issued for every chemical waste collection made by the licensed waste collector shall be copied to the Engineer and the original be maintained on site for future references.

6.9 Site Tidiness

The site shall be kept in a tidy manner at all times. The site establishment shall be planned with areas allocated for containers, plant, storage of material and waste skips. Direct and subcontract labour shall be responsible for making sure that the site is kept in a tidy manner. All labour involved on the site shall be responsible for making sure that tools are cleaned and put away, equipment is stored away after use, and un-used material is neatly stacked or stored in areas provided. All areas of the site shall be kept clean and tidy, access/egress points shall be swept, and passageways shall be kept free from material and plant or equipment. Waste material shall be stored in the receptacles provided, which shall be emptied regularly.

7 SURVILLANCE SYSTEM

The Person-in-charge at each Site and the Barging Point Coordinator shall establish a surveillance system to remind and check that the disposal activities comply with but not only limited to the requirements described in the following sections.

7.1 By Truck

- Each truck carrying C&D materials leaving the Site for any internal movement must bear a duly completed and stamped Form,
- Tarpaulin covering of all dusty vehicle loads transported to, from and between sites /barging point.
- use of vehicle wheel and body washing facilities at the exit points of the site to ensure no earth, mud, debris would be deposited on roads.
- For truck carrying C&D material to the government reception facilities, the Truck drivers must bear a valid Dumping Licence which he can apply from the Civil Engineering and Development Department (CEDD).
- All conditions and terms listed on the CHIT and dumpling license must be followed.
- Any loaded dump truck, which is rejected by the disposal grounds as stipulated in the CHIT the truck drivers should deliver the unacceptable mixed waste back to the site for further sorting;
- What constitutes an improper disposal where the Public Fill Committee (PFC) will consider revoking the Dumping Licence from the holder of the offending trucks; and
- Each truck carrying a load from the construction site should not be overloaded;
- Each truck should be covered with an impervious sheet when carrying dusty materials off-site;

7.2 By Barge

- The site staff at barging point will also inspect to ensure no any unsuitable material type;
- A designated Disposal Delivery Form (For Barge), stamped by Contractor will be issued for each barge load;
- The barging point coordinator/barge operator shall ensure all necessary information on the DDF is completed before leaving from the barging point;
- In case of any unsuitable material loaded into the barge, the unsuitable material will be set aside and brought back to the barging point in latter stage. Any unsuitable material loaded into the barge will not be disposed at the facilities. Any non-compliance with unsuitable material shall be reported to MTRCL Engineer's Representatives.
- Stop delivering when a typhoon or rainstorm is imminent or forecast.
- Check the deck level against the permissible 'mark' on the barge body to avoid overloading.
- Upon the arrival at reception site, the respective management team will be notified. The loaded barge shall follow the instructions of the management team at the reception site for unloading.

7.3 Enhanced Measures

The following measures will be implemented continuously to improve C&D waste materials sorting on-site.

Training

Ongoing training sessions on waste handling, sorting and disposal, in the form of induction training and tool box talk, is continued to provide to the frontline workers,

project team members, subcontractor and dump truck subcontractor's representative to enhance their awareness.

Waste Facilities

Waste facilities to facilitate on-site sorting, collection and temporary storage of waste materials is continued to maintain. The waste facilities including the following:

1. Designated area for temporary storage of Inert C&D Material
2. Designated area for temporary storage of non-inert C&D Material
3. Recycling area for collection of waste metal, plastic and paper.
4. Recycling bins for collection of waste papers, cans and plastic bottles
5. Designated storage area for chemical waste
6. Weigh Bridge for truck unloading at Barging Point at KET Abattoir Site
7. Emergency Stockpile Area at KET Abattoir Site

Administrative Control

To ensure there is no waste to be disposed to sorting facility in future, we have mandated any loaded dump truck, which is rejected by either Public Fill Reception Facility or Landfill, to deliver the unacceptable mixed waste back to the site for further sorting.

GCL will closely monitor the efficiency and effectiveness of on site sorting and ensure that no waste is allowed to dispose to the sorting facility and are obliged to fully comply with the trip ticket system and the requirements as stipulated in the Employer's Requirement.

7.4 Routine Inspection and Audit

The environmental engineer shall be responsible for auditing of the waste management practice during the weekly site inspection in order to ensure that appropriate control measures are properly implemented.

Should deficiency of waste control measures are identified during the site inspection, the environmental engineer shall discuss with the Project Manager for formulation of remedial measures and the Project Manager shall implement the remedial measures promptly to rectify the situation. If deficiency persists, alternatives and/or addition control measures shall be proposed. The environmental engineer shall also assist the ET in undertaking regular and ad hoc environmental site inspection and audit, including waste management issues, and supplying the IEC with Corrective Action Reports for any deficiencies after completion of the inspection or audit.

In addition to the weekly site inspection, actual quantities of waste produced and disposed of shall be determined on a monthly basis and recorded on the Waste Flow Table. A sample of the form to be used is included as **Appendix E**. The table shall be submitted to the Engineer no later than the 15th day of each month.

7.5 Record System

GCL shall keep adequate and proper records such as delivery dockets, records and reports relating to the implementation of WMP. The records shall include trip-tickets, completed inspection checklists and training records.

For disposal at other approved site, Delivery Record Form, every truck unloaded into the barge will be recorded whereas disposal at government disposal facilities such as public fill or landfill which is managed by CEDD or EPD, GCL will check the information recorded in the Daily Record Summary (DRS) against available information including our own records and data from the following websites and make it available for inspection by the Engineer's Representative upon request.

CEDD's website (For Inert Materials)
www.cedd.gov.hk/eng/services/tripticket/index.html

EPD's website (For Non-inert Waste)
www.epd.gov.hk/epd/misc/cdm/trip.htm

7.6 Performance Monitoring

The following item will be discussed at every Site Safety and Environmental Management Committee meeting, and Site Safety and Environmental Committee meeting or other established channels as agreed:

1. review the waste management plan; including the quantities and types of construction and demolition material generated, re-used and disposed off-site;
2. review incidents of non-compliance and discuss the necessary follow-up actions; and
3. monitor the follow-up action on defects and deficiencies identified.

Figure 1

Site Boundary

PROJECT SITE OFFICE & BARGING FACILITY

DEMOLITION OF SWIMMING POOL

DEMOLITION OF EX-POLICE HEADQUARTERS

OVERRUN TUNNEL

KET STATION

REPROVISION WORKS AT FORBES STREET PLAYGROUND

SOFT / MIXED GROUND TUNNEL

DEMOLITION OF FORBES STREET PLAYGROUND

NOISE MITIGATION
- NOISE ENCLOSURE FOR MUCK OUT & TUNNEL CONSTRUCTION

VENTILATION SHAFT

GAZETTE BOUNDARY

KET STATION

CONTRACT 704 TUNNEL

CONTRACT 705 KENNEDY TOWN STATION

OVERRUN TUNNEL

LEGEND :

WORKS AREA/WORKS SITE

WORKS AREA(UNDERGROUND)

0 20 40 60 80 100
METRES
1 : 1500

PLOT DRV: $PLTDRVL$
MODEL:NAME: $MODEL$
FILENAME: $FILE$
PRINTED BY: $USER$ $DATE$ $TIME$

REV	DESCRIPTION	BY	DATE	APPROVED
B	FOR EPD SUBMISSION	MKC	25JAN10	PJC
-	FOR TENDER SUBMISSION	SKC	18SEP09	PJC

DRAWN	BW
DESIGNED	MKC
CHECKED	SKC
APPROVED	PJC
DATE	18SEP2009

MTR

WEST ISLAND LINE

CONTRACTOR: Gammon

ORIGINATOR: LAMBETH

CADD REF. 705_T_KET_GAM_T01_001B.DGN

TITLE
CONTRACT 705
KET STATION & OVERRUN TUNNEL

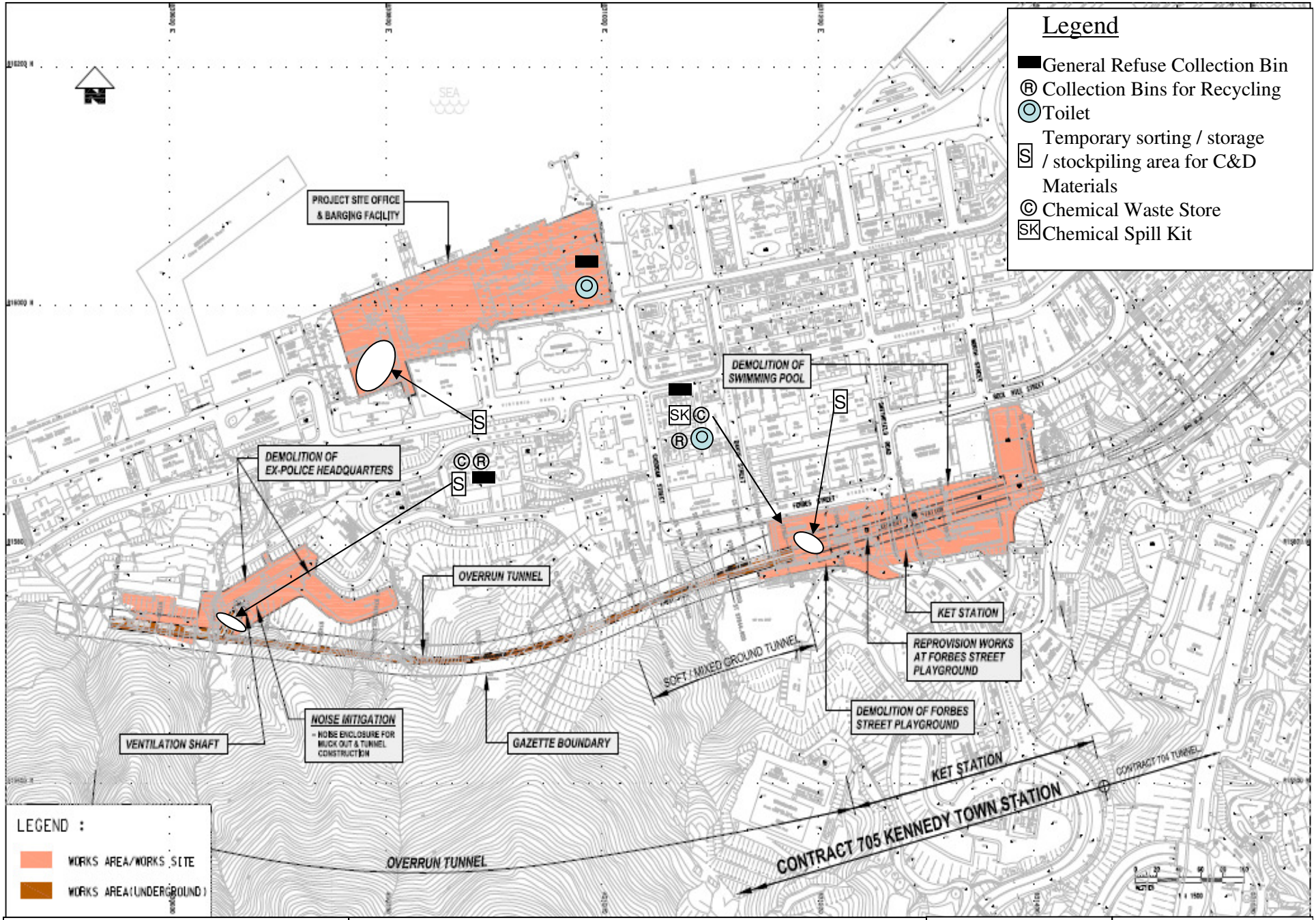
SCALE 1:1500 @ A1

DRAWING NO. 705/T/KET/GAM/T01/001a

REV. B

Figure 2

Temporary On-site Waste Sorting Facilities



MTRC WIL Contract No. 705 KET Station and Overrun Tunnel	**Figure 2 –** **Temporary On-site Waste Sorting Facilities**	Drawn by: KL Checked by: MKC Date: 27 Jan 10	Scale: NTS Drawing No.: WMP-002_r1

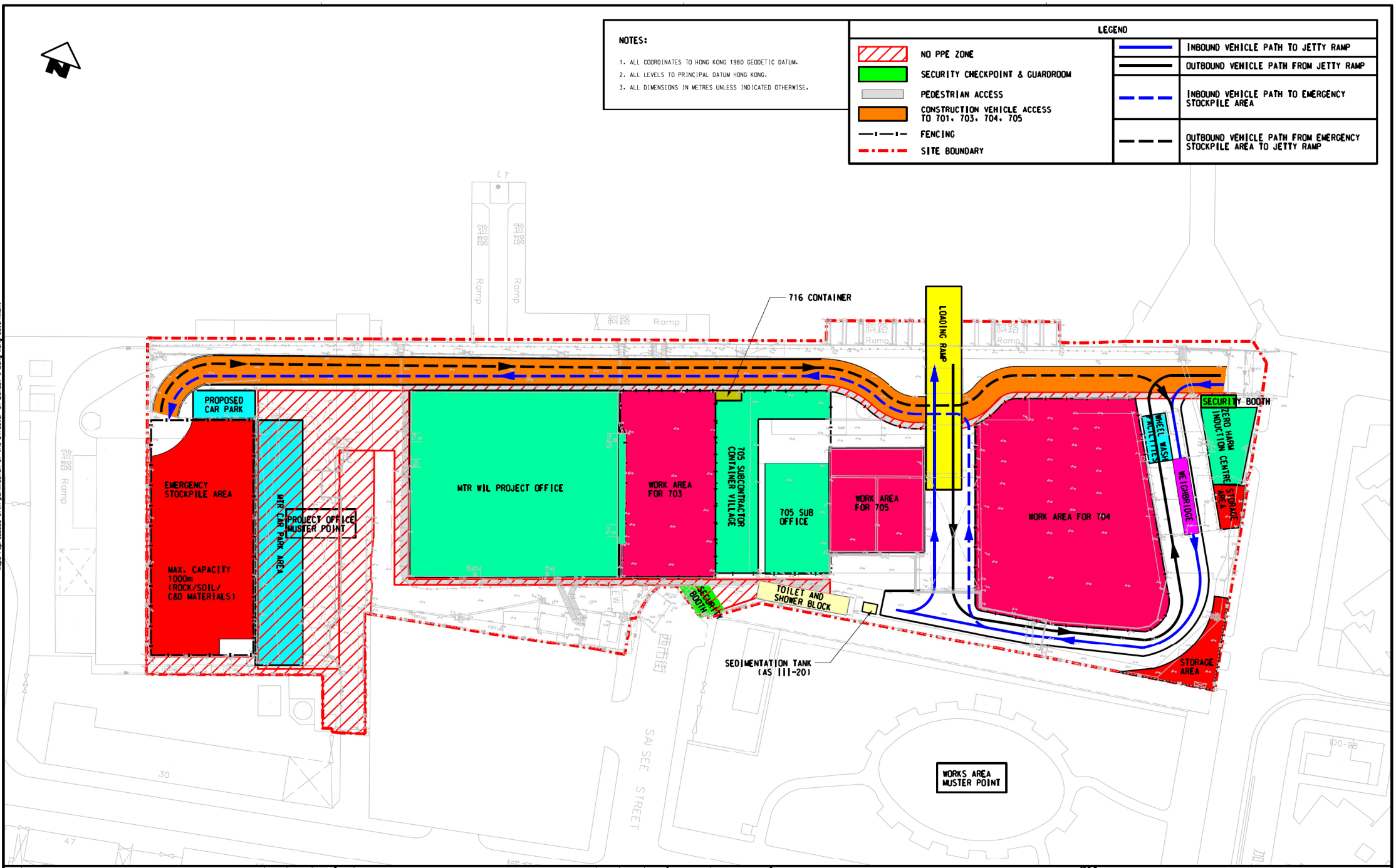


Figure 3 –

Layout Plan for Project Barging Point

DRAWN	KWL	
DESIGNED	EL	
CHECKED	EL	
APPROVED	PL	
DATE	-	

EL 14.JUL.10 PL
EL 25.JUN.10 PL

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REV | DESCRIPTION | BY | DATE | APPROVED | REV | DESCRIPTION | BY | DATE | APPROVED

MTR

WEST ISLAND LINE

ORIGINATOR Gammon

CADD REF. 705_CEDD_SK28.DGN

TITLE

CONTRACT 705
KENNEDY TOWN STATION
WIL PROJECT OFFICE AREA
SITE UTILIZATION PLAN

SCALE 1 : 400 @ A1

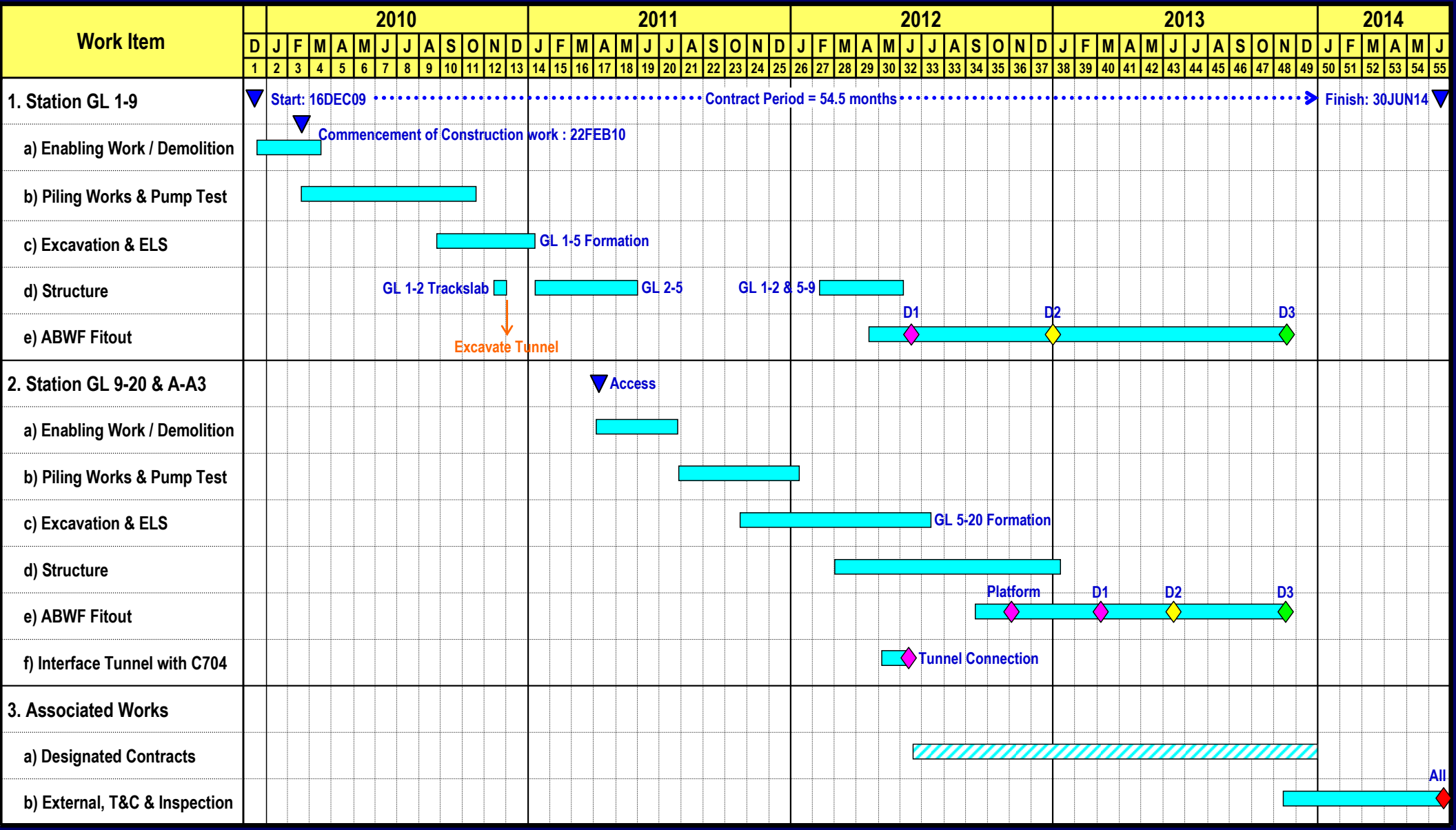
DRAWING NO. 705-CEDD-SK2

REV. B

APPENDIX A

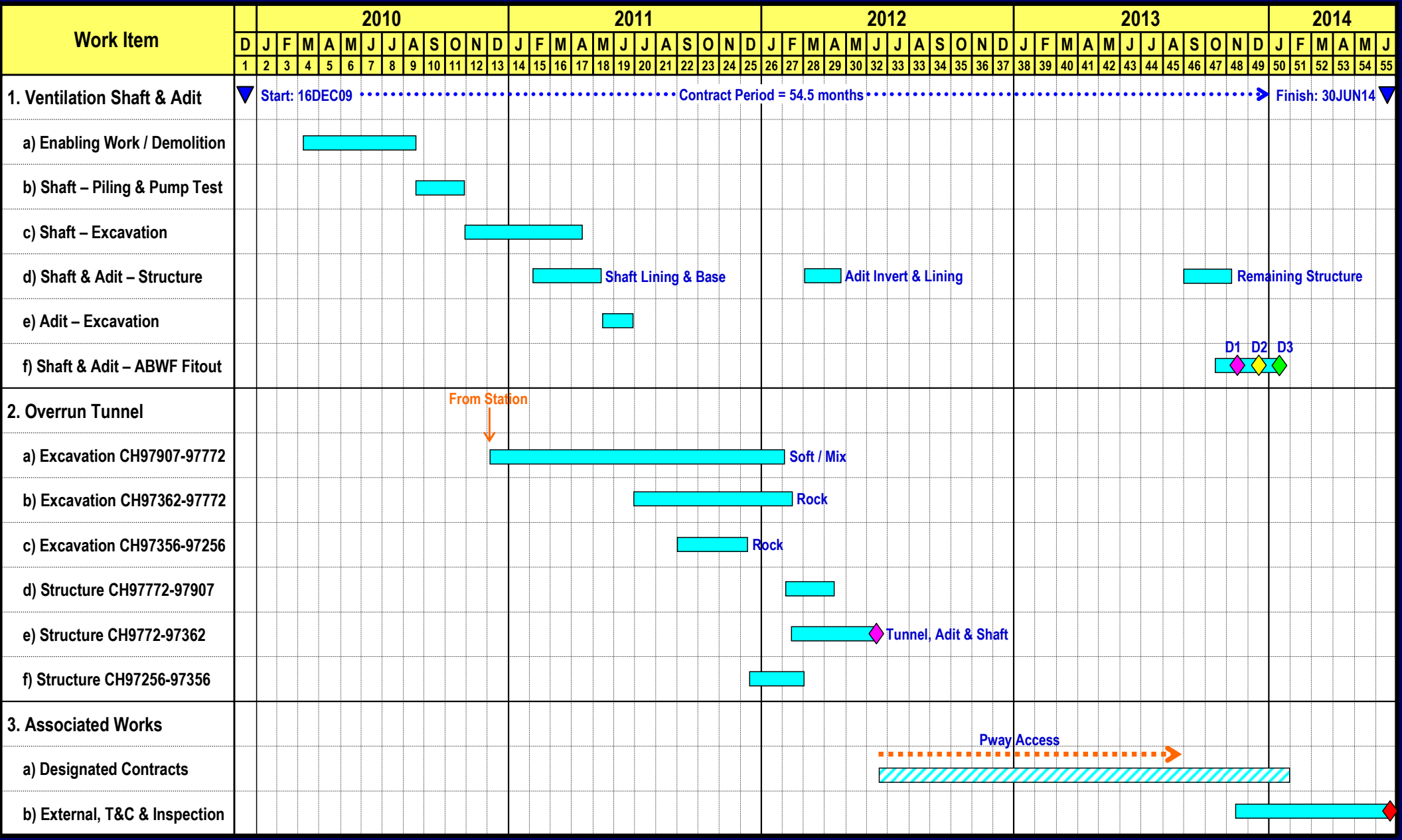
Construction Programme

C705 Programme – KET Station



MTRC WIL Contract No. 705 KET Station and Overrun Tunnel	**Appendix A – Construction Programme (1 of 2)**	Drawn by: GL Checked by: GL Date: 21 Jan 10	Drawing No.: CP-001

C705 Programme – Shaft and Tunnel



MTRC WIL Contract No. 705 KET Station and Overrun Tunnel	**Appendix A – Construction Programme (2 of 2)**	Drawn by: GL Checked by: GL Date: 21 Jan 10

Drawing No.: CP-001

APPENDIX B

The Gammon's Health, Safety and Environmental Policy

Gammon

POLICY ON HEALTH, SAFETY AND THE ENVIRONMENT

The environment, health & safety and well being of everyone employed on Gammon projects, members of the public, and those who may be affected by our activities are afforded the highest concern within Gammon.

We fully recognise the importance of identifying and minimising the risks and impacts that may arise from our activities and believe that no task is so important or urgent as to exclude the prior consideration of health, safety, environmental and community concerns in our decision-making.

We regard excellence in health, safety & environmental performance, the incorporation of sustainability principles and positive engagement with our stakeholders as critical to our success.

We are fully committed to being a company that is Environmentally Responsible and Community Engaged. Further, we commit to demonstrate we are "World Class in Health and Safety" by achieving "Zero Harm" by 2012.

In this regard it is Gammon's policy to:

- Place health and safety as our number one priority over all other Business considerations;
- Require the highest standards of health, safety and environmental leadership from all our managers who should ensure that effective systems of control are in place for all operations;
- Treat compliance with legislation and contractual requirements as a fundamental minimum requirement in delivering Health, Safety and Environmental excellence;
- Allocate sufficient resources to implement a managed system of controls which will deliver our health, safety and environmental objectives;

- Raise the awareness of health, safety, the environment and Gammon's commitment to sustainable development by providing information, training, instruction and supervision to our employees and business partners;
- Pursue innovation and constantly re-examine our design and construction approach so as to remove risk and enhance the health and safety of our workers, prevent pollution and afford better protection to the environment;
- Engage with our industry and challenge ourselves to continually "raise the bar" by improving standards for health, safety and environmental performance;
- Frequently engage with local communities to find ways in which we can minimize impacts and add value to the quality of life of those affected by our operations;
- Seek continual improvement through regular performance monitoring, systematic audits and reviews, and by setting challenging objectives and targets.

The responsibility and accountability for implementing this policy and achieving our "Zero Harm" and Environmental Objectives rests with each and every employee. At stake is your future well-being, your company and your community. Please join me, and lets all ***"Make Safety Personal"***.

T. Ho

Thomas Ho
Chief Executive
Gammon Construction Limited

July 2009

健康、安全及環保政策

環保、健康、安全，以及員工、公眾以至受我們業務運作影響人士的福祉，都是金門最優先關注的事項。

我們完全認同，識別和降低風險以及妥善處理因建造過程可能引起的影響極為重要，而且沒有任何工作比優先處理健康、安全、環保及社群福祉的事項更為緊急和重要。

因為我們確信，只有在健康、安全和環保工作方面表現出色，將可持續發展的原則融入工作，以及與持份者積極互動，才是金門的成功關鍵。

我們致力成為一家對環保盡責和積極服務社群的公司，並矢志要在二零一二年達致「零傷害」，及在健康和安全方面達致世界級水平。

為實踐此承諾，我們在安全、健康和環境保護的政策是：

- 視健康和安全為比任何業務考慮更為重要的優先事項；
- 要求所有經理為員工建立最高準則的健康及安全領導，並確保所有工程遵守有效的管理程序；
- 以遵從法律及合約條款為金門的最基本要求，從而達致卓越的健康、安全及環保成效；
- 投放足夠資源推行一套達致健康、安全和環保目標的管理系統；
- 為員工和業務夥伴提供有關法例和良好作業守則的資訊、培訓、指導和監督，

  從而提升對健康、安全、環保的關注，以及金門對持續發展的承諾；
- 追求創新及持續複檢建造設計和方法，從而消除風險和加強保障員工的健康和安全，預防污染，或更有效地保護環境；
- 與建造行業融合及透過不斷提升健康、安全和環保的表現挑戰自己；
- 繼續與本地社群合作，為可能受我們業務運作影響的人士尋求改善方案或提升生活質素的方法；以及
- 定期跟進工作表現，檢討及訂定具挑戰性的目標，持續改進，精益求精。

每一位員工都有責任推行零傷害和環保目標及以上所有政策，因為它們關乎您

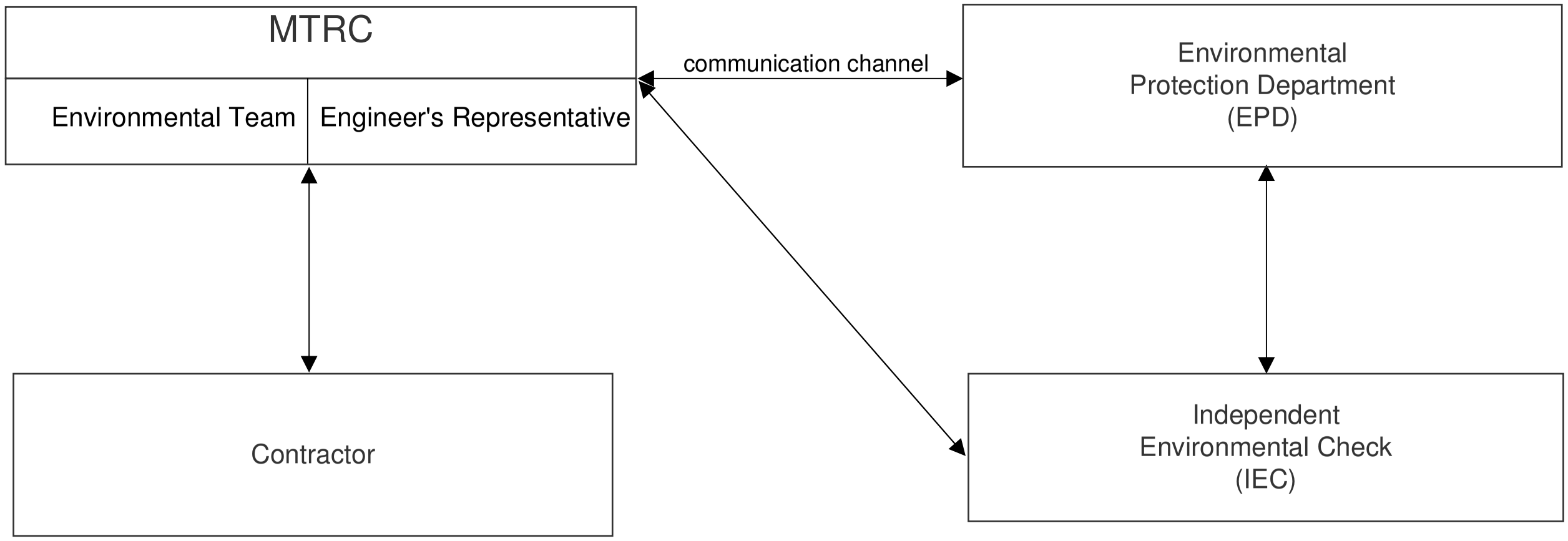
的福祉、您的機構和您的社群。讓我們一起視「安全為己任」！

何安誠

金門建築有限公司
總裁
何安誠
二零零九年七月

APPENDIX C

Organisation Structure for Environmental Management



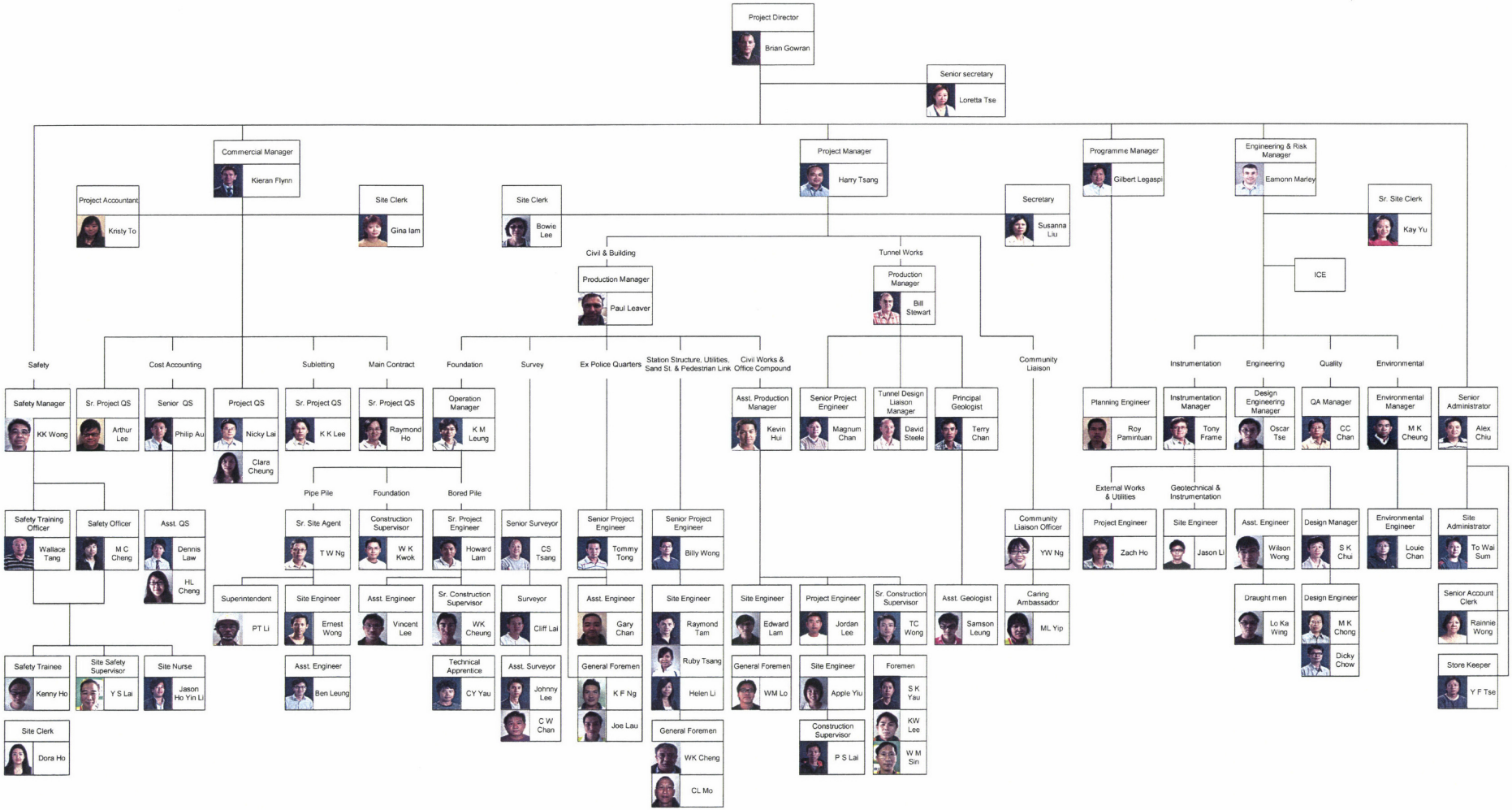
AECOM
ENSR
MAUNSELL
ENSR Asia (HK) Ltd

Consultancy Agreement No. NEX/1023
West Island Line Environmental Impact Assessment

PROJECT ORGANISATION

SCALE	N.T.S.	DATE	Feb 2008
CHECK	-	DRAWN	LYMR
JOB NO.	60017115	DRAWING No.	FIG 1.2
		Rev.	-

GAMMON CONSTRUCTION LIMITED
West Island Line. Contract No.705
KET Station and Overrun Tunnel
Project Organisation Chart (Rev.E)



Approved by : Brian Gowran

Brian Gowran

Date : July 14, 2010

APPENDIX D

Predicted Waste Quantities from the Project

Prediction of Waste Generation & Recycling				Year:	2009									
				Division:	Civil									
Project Title:	MTRC WIL 705			**Job No:**	3295					**Responsible Person:**	MK Cheung			
Month	**Inert Waste Management**				**Recycling & Reuse**					**Off-site Waste Disposal**				
	Excess Concrete (as wastage or overbreak)[1]		**Inert Waste Reuse on site[2]**	**Inert Waste Reuse at**	**Metal, Steel & Rebar**	**Cardboard Packaging**	**Timber Recycling [5]**	**Plastics Recycled[6]**	**Others[7]**	**Public Fill[8] Disposal**	**Chemical Waste Disposal[9]**		**C&D Waste[10] Disposed**	
	(tonnes)	**%**	**(cu m)**	**(cu m)**	**(kg)**	**(kg)**	**(kg)**	**(kg)**	**(kg)**	**(cu m)**	**Solid (kg)**	**Liquid (litres)**	**(tonnes)**	
January														
February														
March														
Q1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
April														
May														
June														
Q2	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
July														
August														
September														
Q3	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
October														
November														
December	0	0	0	0	0	0	0	0	0	0	0	0	0	
Q4	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

Notes:

1. Excess concrete - the volume of concrete wastage, overbreak and/or over-ordered concrete. Data should be presented as both m^3 and as a percentage of total amount of concrete
2. Reuse includes for infill, grading etc
3. Other projects include other Gammon sites, other construction sites and third-parties such as quarries.
4. Cardboard packaging - recycling must be by a confirmed recycling company. Include supplier take-back only if the supplier can confirm recycling or reuse of the packaging.
5. Insert data where timber used for formwork or falsework is reused for other purposes on site rather than disposed to landfill.
6. Plastic refers to plastic bottles/containers, plastic sheets/foam from packaging material
7. Examples of other waste recycled may include tyres and computer equipment
8. Public fill, is the inert portion of C&D material including debris, rubble, earth and concrete which is taken to a Government Public Fill facility such as Tuen Mun Area 38.
9. Chemical waste is split into 2 components: liquid waste (eg spent lubricating oil) and solid waste (eg spent batteries).
10. C&D waste includes bamboo, timber, vegetation, packaging waste, organic materials and general refuse which will be disposed of at landfills.
11. The C&D waste shall be generated from site clearance prior to commencement of construction works.

Prediction of Waste Generation & Recycling										Year:	2010		
										Division:	Civil		
Project Title:		MTRC WIL 705								**Job No:**	3295	**Responsible Person:**	MK Cheung

Month	Inert Waste Management				Recycling & Reuse					Off-site Waste Disposal			
	Excess Concrete (as wastage or overbreak)[1]		Inert Waste Reuse on site[2]	Inert Waste Reuse at	Metal, Steel & Rebar	Cardboard Packaging	Timber Recycling[5]	Plastics Recycled[6]	Others[7]	Public Fill[8] Disposal	Chemical Waste Disposal[9]		C&D Waste[10] Disposed
											Solid	Liquid	
	(tonnes)	%	(cu m)	(cu m)	(kg)	(kg)	(kg)	(kg)	(kg)	(cu m)	(kg)	(litres)	(tonnes)
January	0		0	0	0	0	0	0	0	0	100	100	100
February	0		0	0	0	0	0	0	0	190	100	100	5
March	0		0	0	0	0	0	0	0	0	100	100	5
Q1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**190**	**300**	**300**	**110**
April	0		0	0	0	0	0	0	0	0	100	100	5
May	0		0	0	0	0	0	0	0	100	100	100	10
June	0		0	0	0	0	0	0	0	660	100	100	15
Q2	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**760**	**300**	**300**	**30**
July	0		0	0	0	0	0	0	0	1650	100	100	15
August	0		0	0	0	0	0	0	0	2000	100	100	15
September	0		0	0	0	0	0	0	0	11000	100	100	40
Q3	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14650**	**300**	**300**	**70**
October	0		0	0	0	0	0	0	0	20000	100	100	40
November	0		0	0	0	0	0	0	0	21000	100	100	40
December	0		0	0	0	0	0	0	0	11000	100	100	40
Q4	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**52000**	**300**	**300**	**120**
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**67600**	**1200**	**1200**	**330**

Notes:

1. Excess concrete - the volume of concrete wastage, overbreak and/or over-ordered concrete. Data should be presented as both m^3 and as a percentage of total amount of concrete
2. Reuse includes for infill, grading etc
3. Other projects include other Gammon sites, other construction sites and third-parties such as quarries.
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10. C&D waste includes bamboo, timber, vegetation, packaging waste, organic materials and general refuse which will be disposed of at landfills.
11. The C&D waste shall be generated from site clearance prior to commencement of construction works.

Prediction of Waste Generation & Recycling										Year:	2011		
										Division:	Civil	GAMMON	
Project Title:		MTRC WIL 705								**Job No:**	3295	**Responsible Person:**	MK Cheung

Month	Inert Waste Management				Recycling & Reuse					Off-site Waste Disposal			
	Excess Concrete (as wastage or overbreak)[1]		Inert Waste Reuse on site[2]	Inert Waste Reuse at	Metal, Steel & Rebar	Cardboard Packaging	Timber Recycling[5]	Plastics Recycled[6]	Others[7]	Public Fill[8] Disposal	Chemical Waste Disposal[9]		C&D Waste[10] Disposed
											Solid	Liquid	
	(tonnes)	%	(cu m)	(cu m)	(kg)	(kg)	(kg)	(kg)	(kg)	(cu m)	(kg)	(litres)	(tonnes)
January	0		0	0	0	0	0	0	0	3500	100	100	40
February	0		1000	0	0	0	0	0	0	600	100	100	40
March	0		1000	0	0	0	0	0	0	900	100	100	40
Q1	**0**	**0**	**2000**	**0**	**0**	**0**	**0**	**0**	**0**	**5000**	**300**	**300**	**120**
April	0		1000	0	0	0	0	0	0	400	100	100	40
May	0		1000	0	0	0	0	0	0	500	100	100	40
June	0		1000	0	0	0	0	0	0	600	100	100	40
Q2	**0**	**0**	**3000**	**0**	**0**	**0**	**0**	**0**	**0**	**1500**	**300**	**300**	**120**
July	0		600	0	0	0	0	0	0	500	100	100	40
August	0		600	0	0	0	0	0	0	400	100	100	40
September	0		600	0	0	0	0	0	0	2800	100	100	40
Q3	**0**	**0**	**1800**	**0**	**0**	**0**	**0**	**0**	**0**	**3700**	**300**	**300**	**120**
October	0		600	0	0	0	0	0	0	5000	100	100	40
November	0		600	0	0	0	0	0	0	8500	100	100	40
December	0		600	0	0	0	0	0	0	20000	100	100	40
Q4	**0**	**0**	**1800**	**0**	**0**	**0**	**0**	**0**	**0**	**33500**	**300**	**300**	**120**
TOTAL	**0**	**0**	**8600**	**0**	**0**	**0**	**0**	**0**	**0**	**43700**	**1200**	**1200**	**480**

Notes:

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2. Reuse includes for infill, grading etc
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11. The C&D waste shall be generated from site clearance prior to commencement of construction works.

Prediction of Waste Generation & Recycling										Year:	2012		
										Division:	Civil	GAMMON	
Project Title:		MTRC WIL 705								**Job No:**	3295	**Responsible Person:**	MK Cheung

Month	Inert Waste Management				Recycling & Reuse					Off-site Waste Disposal			
	Excess Concrete (as wastage or overbreak)[1]		Inert Waste Reuse on site[2]	Inert Waste Reuse at	Metal, Steel & Rebar	Cardboard Packaging	Timber Recycling[5]	Plastics Recycled[6]	Others[7]	Public Fill[8] Disposal	Chemical Waste Disposal[9]		C&D Waste[10] Disposed
											Solid	Liquid	
	(tonnes)	%	(cu m)	(cu m)	(kg)	(kg)	(kg)	(kg)	(kg)	(cu m)	(kg)	(litres)	(tonnes)
January	0		600	0	0	0	0	0	0	19000	100	100	40
February	0		1500	0	0	0	0	0	0	19000	100	100	40
March	0		1500	0	0	0	0	0	0	8000	100	100	40
Q1	**0**	**0**	**3600**	**0**	**0**	**0**	**0**	**0**	**0**	**46000**	**300**	**300**	**120**
April	0		1500	0	0	0	0	0	0	0	100	100	40
May	0		2500	0	0	0	0	0	0	0	100	100	40
June	0		2500	0	0	0	0	0	0	0	100	100	40
Q2	**0**	**0**	**6500**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**300**	**300**	**120**
July	0		2500	0	0	0	0	0	0	0	10	10	40
August	0		2500	0	0	0	0	0	0	0	10	10	40
September	0		2500	0	0	0	0	0	0	0	10	10	40
Q3	**0**	**0**	**7500**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**30**	**30**	**120**
October	0		2500	0	0	0	0	0	0	0	10	10	40
November	0		1800	0	0	0	0	0	0	0	10	10	40
December	0		1600	0	0	0	0	0	0	0	10	10	40
Q4	**0**	**0**	**5900**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**30**	**30**	**120**
TOTAL	**0**	**0**	**23500**	**0**	**0**	**0**	**0**	**0**	**0**	**46000**	**660**	**660**	**480**

Notes:

1. Excess concrete - the volume of concrete wastage, overbreak and/or over-ordered concrete. Data should be presented as both m^3 and as a percentage of total amount of concrete
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11. The C&D waste shall be generated from site clearance prior to commencement of construction works.

Prediction of Waste Generation & Recycling					Year:	2013							
					Division:	Civil							
Project Title:	MTRC WIL 705				**Job No:**	3295				**Responsible Person:**	MK Cheung		

Month	Inert Waste Management				Recycling & Reuse					Off-site Waste Disposal			
	Excess Concrete (as wastage or overbreak)[1]		Inert Waste Reuse on site[2]	Inert Waste Reuse at	Metal, Steel & Rebar	Cardboard Packaging	Timber Recycling [5]	Plastics Recycled[6]	Others[7]	Public Fill[8] Disposal	Chemical Waste Disposal[9]		C&D Waste[10] Disposed
											Solid	Liquid	
	(tonnes)	%	(cu m)	(cu m)	(kg)	(kg)	(kg)	(kg)	(kg)	(cu m)	(kg)	(litres)	(tonnes)
January	0		1500	0	0	50	0	0	0	0	100	100	40
February	0		0	0	0	50	0	0	0	0	100	100	40
March	0		0	0	0	50	0	0	0	0	100	100	40
Q1	**0**	**0**	**1500**	**0**	**0**	**150**	**0**	**0**	**0**	**0**	**300**	**300**	**120**
April	0		0	0	0	200	0	0	0	0	100	100	40
May	0		0	0	0	200	0	0	0	0	100	100	40
June	0		0	0	0	200	0	0	0	0	100	100	40
Q2	**0**	**0**	**0**	**0**	**0**	**600**	**0**	**0**	**0**	**0**	**300**	**300**	**120**
July	0		0	0	0	200	0	0	0	0	100	50	40
August	0		0	0	0	200	0	0	0	0	100	50	40
September	0		0	0	0	200	0	0	0	0	100	50	40
Q3	**0**	**0**	**0**	**0**	**0**	**600**	**0**	**0**	**0**	**0**	**300**	**150**	**120**
October	0		0	0	0	100	0	0	0	0	100	50	50
November	0		0	0	0	100	0	0	0	0	100	50	50
December	0		0	0	0	100	0	0	0	0	100	50	50
Q4	**0**	**0**	**0**	**0**	**0**	**300**	**0**	**0**	**0**	**0**	**300**	**150**	**150**
TOTAL	**0**	**0**	**1500**	**0**	**0**	**1650**	**0**	**0**	**0**	**0**	**1200**	**900**	**510**

Notes:

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2. Reuse includes for infill, grading etc
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10. C&D waste includes bamboo, timber, vegetation, packaging waste, organic materials and general refuse which will be disposed of at landfills.
11. The C&D waste shall be generated from site clearance prior to commencement of construction works.

Prediction of Waste Generation & Recycling				Year:	2014	GAMMON	
				Division:	Civil		
Project Title:	MTRC WIL 705			**Job No:**	3295	**Responsible Person:**	MK Cheung

Month	Inert Waste Management				Recycling & Reuse					Off-site Waste Disposal			
	Excess Concrete (as wastage or overbreak)[1]		Inert Waste Reuse on site[2]	Inert Waste Reuse at	Metal, Steel & Rebar	Cardboard Packaging	Timber Recycling[5]	Plastics Recycled[6]	Others[7]	Public Fill[8] Disposal	Chemical Waste Disposal[9]		C&D Waste[10] Disposed
											Solid	Liquid	
	(tonnes)	%	(cu m)	(cu m)	(kg)	(kg)	(kg)	(kg)	(kg)	(cu m)	(kg)	(litres)	(tonnes)
January	0		0	0	0	0	0	0	0	0	100	0	50
February	0		0	0	0	0	0	0	0	0	100	0	50
March	0		0	0	0	0	0	0	0	0	100	0	50
Q1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**300**	**0**	**150**
April	0		0	0	0	0	0	0	0	0	100	0	50
May													
June													
Q2	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**100**	**0**	**50**
July													
August													
September													
Q3	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
October													
November													
December													
Q4	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**400**	**0**	**200**

Notes:

1. Excess concrete - the volume of concrete wastage, overbreak and/or over-ordered concrete. Data should be presented as both m^3 and as a percentage of total amount of concrete
2. Reuse includes for infill, grading etc
3. Other projects include other Gammon sites, other construction sites and third-parties such as quarries.
4. Cardboard packaging - recycling must be by a confirmed recycling company. Include supplier take-back only if the supplier can confirm recycling or reuse of the packaging.
5. Insert data where timber used for formwork or falsework is reused for other purposes on site rather than disposed to landfill.
6. Plastic refers to plastic bottles/containers, plastic sheets/foam from packaging material
7. Examples of other waste recycled may include tyres and computer equipment
8. Public fill, is the inert portion of C&D material including debris, rubble, earth and concrete which is taken to a Government Public Fill facility such as Tuen Mun Area 38.
9. Chemical waste is split into 2 components: liquid waste (eg spent lubricating oil) and solid waste (eg spent batteries).
10. C&D waste includes bamboo, timber, vegetation, packaging waste, organic materials and general refuse which will be disposed of at landfills.
11. The C&D waste shall be generated from site clearance prior to commencement of construction works.

APPENDIX E

Waste Flow Table (WFT)

Prediction of Waste Generation & Recycling					Year:	2009								
					Division:	Civil					GAMMON			
Project Title:		MTRC WIL 705			**Job No:**						**Responsible Person:**			
Month	**Inert Waste Management**				**Recycling & Reuse**					**Off-site Waste Disposal**				
	Excess Concrete (as wastage or overbreak)[1]		**Inert Waste Reuse on site[2]**	**Inert Waste Reuse at other sites[3]**	**Metal, Steel & Rebar**	**Cardboard Packaging Recycled[4]**	**Timber Recycling[5]**	**Plastics Recycled[6]**	**Others[7]**	**Public Fill[8] Disposal**	**Chemical Waste Disposal[9]**		**C&D Waste[10] Disposed**	
											Solid	**Liquid**		
	(tonnes)	**%**	**(tonnes)**	**(tonnes)**	**(kg)**	**(kg)**	**(kg)**	**(kg)**	**(kg)**	**(tonnes)**	**(kg)**	**(litres)**	**(tonnes)**	
January														
February														
March														
Q1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
April														
May														
June														
Q2	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
July														
August														
September														
Q3	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
October														
November														
December														
Q4	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	

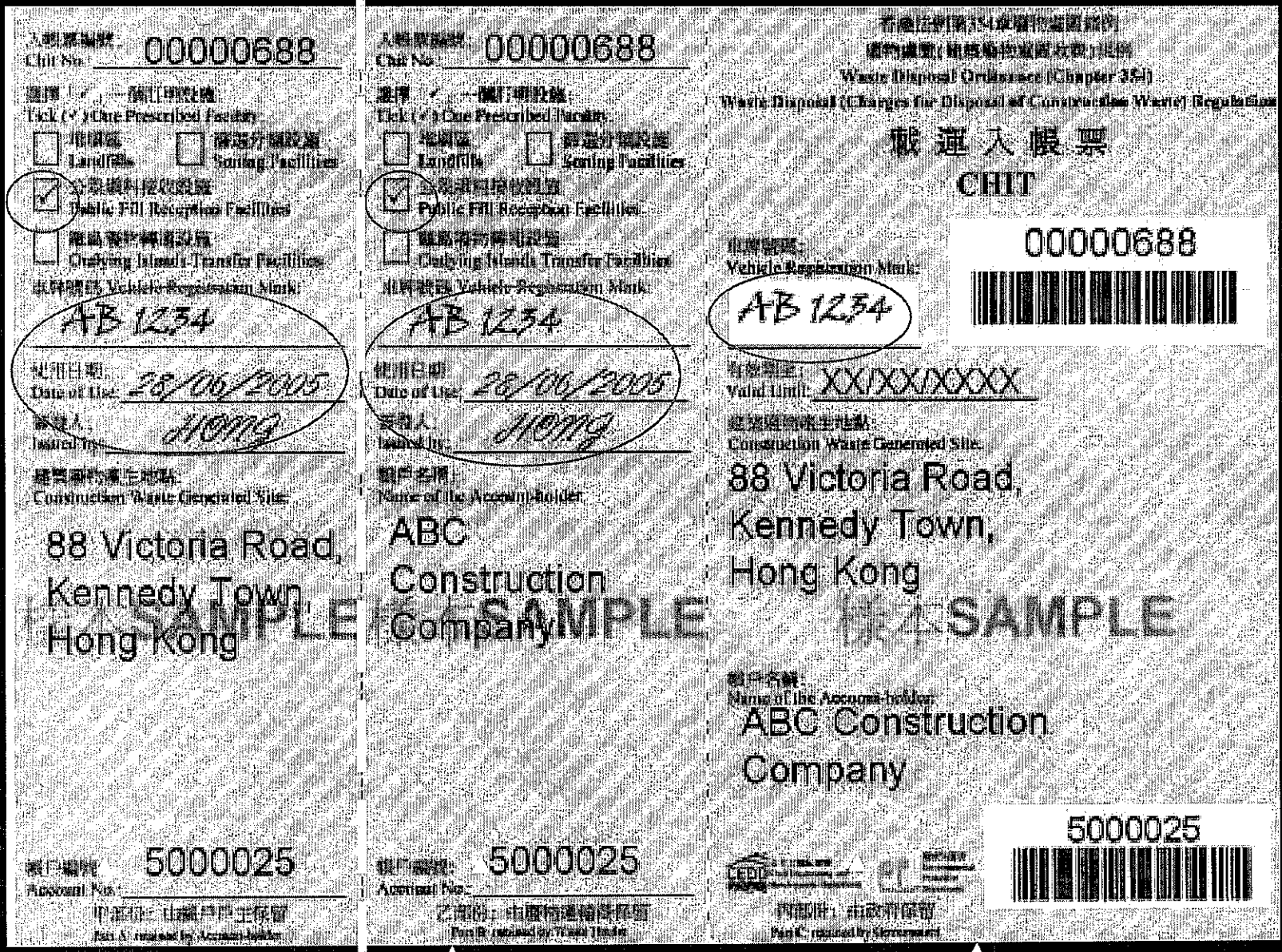
Notes:

1. Excess concrete - the volume of concrete wastage, overbreak and/or over-ordered concrete. Data should be presented as both m^3 and as a percentage of total amount of concrete ordered.
2. Reuse includes for infill, grading etc
3. Other projects include other Gammon sites, other construction sites and third-parties such as quarries.
4. Cardboard packaging - recycling must be by a confirmed recycling company. Include supplier take-back only if the supplier can confirm recycling or reuse of the packaging.
5. Insert data where timber used for formwork or falsework is reused for other purposes on site rather than disposed to landfill.
6. Plastic refers to plastic bottles/containers, plastic sheets/foam from packaging material
7. Examples of other waste recycled may include tyres and computer equipment
8. Public fill, is the inert portion of C&D material including debris, rubble, earth and concrete which is taken to a Government Public Fill facility such as Tuen Mun Area 38.
9. Chemical waste is split into 2 components: liquid waste (eg spent lubricating oil) and solid waste (eg spent batteries).
10. C&D waste includes bamboo, timber, vegetation, packaging waste, organic materials and general refuse which will be disposed of at landfills.

APPENDIX F

Disposal Delivery Form (CHIT)

Part A: retained by Account-holder



Part B: retained by Waste Hauler

Part C: retained by Government

APPENDIX G

Daily Record Summary

A sample of "Daily Record Summary" to record daily disposal of construction & demolition (C&D) materials from the Site

(1) Contract no. & title: _____

(2) Date of disposal: _____

(3) Designated disposal ground(s): (a)
(b)
(c)
others _____

(4) Approved alternative disposal grounds: _____

DDF Serial no.	Vehicle registration no.	Departure time from site	Approx. vol. (e.g. Full/Three Quarter/Half/ One quarter	C&D material type (e.g. inert or non inert)	Actual disposal ground	Arrival time at disposal ground	Acceptance time at disposal ground	Acceptance by designated facility [3]	Chit no./ time of facility operator's stamp	Time of facility operator's stamp on DDF	Remark

←----------Part 1 [1] ----------→			←----------Part 2 [2] ----------→		
Submitted by:		{Name of Contractor's Designated Person}	Submitted by:		Name of Contractor's Designated Person
Signature:			Signature:		
Date:			Date:		
Received by:		{Name and signature of the Engineer's Representative }	Received by:		Name and Signature of the Engineer's Representative }
Post:			Post:		
Date & Time:			Date & Time		

Remark:

1) Part 1 - The Contractor shall complete Part 1 and submit it to the Engineer's Representative by 1:00 pm of the following working day of the disposal trip.

2) Part 2 - The Contractor shall complete Part 2 and submit it to the Engineer's Representative within 3 working days of the disposal trip.

3) The Contractor shall fill in "Accepted", or "Rejected", or "Diversion to alternative facility". If the disposal is diverted to alternative facility, the Contractor shall record details in the "Remarks" column.

APPENDIX H

Materials Delivery Forms

Gammon Construction and Demolition Material Delivery Record Form
(For Barge)
金門建築及拆卸物料運載記錄表
(船運)

Delivery note No. _____

Contact No.: MTR 705	
Date of entry 日期: _____	

Carrying and Unloading of C&D Material to unapproved points is strictly prohibited.
嚴格禁止在未經許可的場地卸載建築及拆卸物料

Name of loading site 裝載場地	Barging Point at KET Abattoir	
Type of materials 物料類別		
Barge name 船名:		
Barge No.船號		
Barge registration mark.船牌登記		
Time of arrival at the loading site 到達裝載場地時間		
Time of commencement for receiving public fill 開始裝載物料時間		
Deck level before loading (1) 甲板刻度 (裝料前)	Front 前: Green _____m Red _____m	Rear 後: Green _____m Red _____m
Deck level after loading (2) 甲板刻度 (裝料後)	Front 前: Green _____m Red _____m	Rear 後: Green _____m Red _____m
Estimated quantity (Based on Barge Info.) 評估裝載料 (依據貨船資料)		
Time of leaving from the loading site 離開運載場地時間		
Destination (of materials) 運料目的地		
Time of arrival from Destination 到達及離開 卸料場地 時間		
Time of commencement and completion of disposal 開始 及 完成卸載物料時間		
Remark :		
Agreed by : _____ **(For Gammon 金門)** _____ **(For Sub-Contractor 分判商)**		
Received by: (Company Chop) 蓋印及簽署 _____ **(For Reception Site 卸料場地)**		

1 Original Copy 正本	2 MTR's Copy 港鐵副本	3 Sub-Contractor's Copy 分判商副本	4 C&D Material Receptor Site Copy 物料接收場地副本