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Group : 5, 7, 12

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Environment, Transport and Works Bureau
Technical Circular (Works) No. 33/2002

Management of Construction and Demolition Material Including Rock

Scope

This Circular introduces measures to enhance the management of construction and demolition (C&D) material including rock in public works projects.

Effective Date

2. This Circular shall take immediate effect

Effect on Existing Circulars

3. This Circular should be read in conjunction with the following WBTCs:

WBTC No. 2/93 - Public Dumps

WBTC No. 2/93B - Public Filling Facilities

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| WBTC No. 16/96 | - | Wet Soil in Public Dumps |
| WBTC No. 4/98 |) | Use of Public Fill in Reclamation |
| 4/98A |) | and Earth Filling Projects |
| WBTC No. 5/98 | - | On Site Sorting of Construction Waste on Demolition Sites |
| WBTC No. 25/99 |) | Incorporation of Information on |
| 25/99A |) | Construction and Demolition |
| 25/99C |) | Material Management in PWSC Papers |
| WBTC No. 12/2000 | - | Fill Management |
| WBTC No. 29/2000 | - | Waste Management Plan |
| WBTC No. 11/2002 | - | Control of Site Crushers |
| WBTC No. 12/2002 | - | Specifications Facilitating the Use of Recycled Aggregates |
| WBTC No. 21/2002 | - | Trip-ticket System for Disposal of Construction and Demolition Material |

Introduction

4. The local construction industry generates some 14 million tonnes of C&D material a year. Of this, about 12 million tonnes is inert C&D material. Reclamation has hitherto been the major outlet for inert C&D material, but opportunities are limited to securing new reclamation projects. As a result, a shortfall in public filling capacity is anticipated in the coming years.

5. The measures introduced in this Circular aim at further enhancing the management of C&D material including rock, and to minimize its generation at source. The enhancement measures include: (i) drawing up a Construction and Demolition Material Management Plan (C&DMMP) at an early design stage to minimize C&D material generation; (ii) vetting of the C&DMMP prior to upgrading of the project to Category A in

the Public Works Programme; and (iii) providing the contractor with information from the C&DMMP in order to facilitate him in the preparation of the Waste Management Plan (WMP) and to minimize C&D material generation during construction. Guidelines on the preparation of the WMP are given in WBTC No. 29/2000.

Policy

6. Project offices in the planning and design of a project should actively seek to minimize C&D material generation and to reuse inert material generated including rock, as far as possible. To achieve this, the project office is required to draw up a C&DMMP at the feasibility study or preliminary design stage for each project, which generates more than 50,000 m³ of C&D material including rock or that requiring imported fill in excess of 50,000 m³. The C&DMMP shall be signed off by a D1 officer. Guidelines for preparing the C&DMMP are appended (see [Appendix A](#)).

Vetting Committee

7. The project department should set up a departmental Vetting Committee on C&D material management. The responsibilities of the Vetting Committee include: (a) scrutinising and endorsing the C&DMMP to ensure that appropriate measures have been incorporated to minimise C&D material generation; (b) ensuring the project office has made every endeavour to identify outlets for beneficial reuse and/or recycling of any surplus excavated material including rock; and (c) monitoring the implementation of the C&DMMP and its revisions. The project office should prepare and submit the revised C&DMMP for endorsement by the Vetting Committee. In the course of project delivery, the project office should also monitor the implementation of the C&DMMP and submit regular reports to the Vetting Committee.

8. The suggested composition and terms of reference of the Vetting Committee are appended (see [Appendix B](#)). Guidelines for minimizing the generation of C&D material and maximizing its reuse are also appended (see [Appendix C](#)).

Exemption

9. Projects generating C&D material less than 50,000 m³ or importing fill material less than 50,000 m³ are exempt from the C&DMMP. However, the project office should establish a system similar to the C&DMMP in order to minimise C&D material generation.

The Vetting Committee should monitor and check that the actual amount of materials generated do not exceed the estimates that justify the exemption. Should the estimated or actual quantities of C&D material exceed 50,000 m³ in the course of project delivery, appropriate control measures should be implemented and the situation should be highlighted in the half-yearly status report to be submitted to the Public Fill Committee (PFC). Further details on the submission of the report are given in Paragraph 10.

Procedures for Submission of C&D Material Management Half-yearly Status Report

10. The project office managing the project should monitor the C&DMMP and prepare a half-yearly status report. The Vetting Committee should scrutinize the report before submitting it to the PFC in **June** and **December**. The report should include the following :

- (i) a checklist for the C&DMMP endorsed by the Vetting Committee or the PFC,
- (ii) any changes to the plan with detailed justifications,
- (iii) the previous and latest estimates of the total amount of surplus C&D material including rock that is expected to be generated by the project, and a breakdown of the nature (e.g. inert C&D material (public fill), rock, C&D waste, etc) and corresponding quantities.
- (iv) the amount of surplus C&D material including rock that has been generated during the reporting period,
- (v) the total accumulative amount of surplus C&D material including rock that has been generated since the project's inception; and
- (vi) the programme for disposal of surplus C&D material including rock and disposal outlets.

Submission of C&D Material Management Plan to PFC

11. For projects classified as “designated” projects under Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO), the C&DMMP where required under Paragraph 6 of this Circular should be submitted together with the environmental impact

assessment (EIA) report to PFC for approval. The procedures for submission of the EIA report are given in WBTC No. 25/99A. It is advisable that the management of C&D material in the EIA report adopts a similar approach as the C&DMMP, where appropriate, for consistency.

12. For projects which are not classified as “designated” projects under Schedule 2 of the EIAO but generating surplus C&D material in excess of 300,000 m³ or requiring imported fill exceeding 300,000 m³, the C&DMMP should be submitted to PFC for in-principle approval prior to commencement of the detailed design. The C&DMMP should be vetted and endorsed by the departmental Vetting Committee before submitting it to PFC for approval.

Provision of Information on C&D Material Management to Contractors

13. The project office should provide the contractor with information on the estimated quantities and types of C&D material, which are expected to be generated or reused in the course of the works, in order to facilitate him in drawing up the WMP. The contractor should be provided with such information preferably within 14 days after the award of the contract.

(W S Chan)

**Deputy Secretary for the Environment,
Transport and Works (Transport and Works) W2**

**Guidelines for Preparation of Construction and
Demolition Material Management Plan**

A Construction and Demolition Material Management Plan (C&DMMP) shall include the following information:

Purpose

- Spell out the purpose of the C&DMMP

Background

- Highlight some background information of the project including policy commitment or pledge

Scope of Project

- Spell out the scope of project (with layout plans)

Implementation Programme

- Supply an implementation programme (with critical paths shown)

Development Constraints

- Highlight the development constraints and assess whether these could be overcome

Development Options

- Spell out the preferred development option
- Give full justifications for adopting the preferred option
- Spell out other development options considered
- For each development option, estimate the quantity of C&D materials produced or imported fill required and the associated technical, financial and programming implications

Management of C&D Material

- Give an overview of:
 - Total quantity of C&D material generated with breakdown of different types of material (e.g. inert soft C&D material, Grade II or above rock (granitic or volcanic or others), Grade III or below rock, C&D waste, etc.)
 - Ways to minimize the generation of C&D material
 - Ways to maximize the use of inert C&D material

- Ways to maximize the reuse of C&D material and/or rock on site
- Ways to maximize the use of recycled C&D material
- Disposal programme for each type of surplus C&D materials (i.e. inert soft portions, rock and non-inert portions, etc.)

Conclusions

- Sum up the C&DMMP

Recommendations

- Give recommendations on the way forward

Subsumed

Departmental Construction and Demolition Material Vetting Committee

Suggested Composition and Terms of Reference

Composition

- Chairman : D2 or above level
Secretary : senior professional rank or above
Members : at least one D1 officer and one senior professional
(both of whom are not involved in the project being examined)

Terms of Reference

- (a) To scrutinise and endorse construction and demolition material management plan (C&DMMP) and its revisions prepared by project proponent;
- (b) To monitor the implementation of the C&DMMP;
- (c) To submit a half-yearly status report on the implementation of C&DMMP in June and December to the Public Fill Committee (PFC) for consideration; and
- (d) To review those projects exempt from the C&DMMP and check if the actual quantities of materials generated exceed the estimates that justify the exemption. If so, take appropriate control measures and highlight the situation in the half-yearly report for submission to PFC.

**Guidelines for Minimizing the Generation and
Maximizing the Use of Construction and Demolition Material**

- (a) For reclamation or earth-filling projects, maximize the use of inert C&D material (known as public fill) in lieu of imported marine or river sand or fill from other sources. Consideration should also be given wherever possible to raise the formation level of the project to increase the receiving capacity for public fill.
- (b) For large-scale site formation projects, considerations should be given wherever possible to adopt a terracing design for the platform, and/or raise the platform level with a view to maximising filling or minimising cutting with retaining structures and other slope stabilization techniques.
- (c) For large-scale site formation projects involving disposal of large amount of surplus rock, consideration should be given at feasibility study or preliminary design stage :
 - (i) to introduce an advance quarry contract or on-site crushing facilities to process the surplus rock for on-site or off-site use; and
 - (ii) if (i) is not practicable, arrangements should be made to process the good quality rock at existing quarries.

Where necessary, project officers should consult the Chief Geotechnical Engineer of the Mines & Quarries Division, GEO for advice on the appropriate arrangement to put to full use the good quality rock.

- (d) Maximize the reuse of inert C&D material on site.
- (e) Maximize the use of recycled inert C&D material or products with recycled aggregates such as concrete or paving blocks.
- (f) Maximize the use of steel or aluminium formworks and falseworks.

- (g) Identify and make provisions for on-site sorting as far as practicable.
- (h) Project departments should monitor the annual amount of surplus C&D materials generated from all their projects, with a view to limiting the annual surplus to less than 0.3 million m³ for each project wherever possible.

Subsumed