Construction and Demolition Waste

Introduction

The landfills used for disposal of solid waste are being filled up at an alarming rate. Of particular concern is the increasing amount of construction and demolition (C&D) materials being dumped at the landfills. More than one quarter of the total solid waste disposed of in landfills is generated from building construction. Careful consideration given to waste generation and management at the planning stage of a building development will lead to less waste later on for disposal at landfills.

Waste Minimization

2. Waste prevention not only reduces the need for landfill space, but also conserves natural resources and reduces pollution. Opportunities to prevent waste can be identified during both the project planning and design stage as well as construction stage. Measures may include:

Planning and Design

i) Precast and prefabrication including modular design, precast façade, precast staircase, precast slab, prefabricated external elements, precast bridge-decks or footbridges, precast blocks for pavement paving, prefabricated kitchen or bathroom accessories, proprietary doorset and partition wall;
ii) Sprayed plaster;
iii) Balancing cut and fill;
iv) Use of pulverised fuel ash in concrete for substructure, superstructure and streetwork;
v) Combine services trenches to reduce excavation;
vi) Purchasers’ choice for finishes and fittings;
vii) Minimised use of timber from non-sustainable sources; and
viii) System formwork.

Construction and Site Management

i) Waste Management Plan;
ii) Non-timber hoarding;
iii) Metal formwork and metal falsework;
iv) On-site sorting of C&D materials;
v) On-site water conservation;
vi) Recycling of concrete for use as fill or hardcore;
vii) Recycling of aggregate for concrete for non-structural work;

viii) Identification of available recycling facilities for waste materials generated; and

ix) Installation of underground mechanical spray wheel wash.

Waste Management Plan

3. As a Waste Management Plan (the Plan) is a useful tool in ensuring that measures are taken during the construction stage to reduce C&D materials, it is recommended that you advise your client to require the contractor to submit such a plan to you for agreement. The following are the areas that may be covered in the Plan:

i) the types of waste and their estimated quantities;

ii) the timing of waste arising;

iii) measures for reducing waste generation;

iv) on-site waste separation;

v) on-site and off-site material reuse;

vi) areas for waste storage;

vii) quantities of waste requiring off-site disposal;

viii) disposal outlets;

ix) monitoring and auditing programme;

x) organisation structure for waste management;

xi) a list of materials to be reused or recycled with estimated quantities;

xii) implementation of the trip ticket system (see paragraph 5 below for reference);

xiii) method of processing, storing and disposal of hazardous waste; and

xiv) method of dealing with packaging material.

4. For projects that produce more than 300,000 cu.m. of construction and demolition material, the Director of Environmental Protection has indicated that he is prepared to offer advice to you prior to your acceptance of the Plan. The Public Fill Committee of Civil Engineering Department is also prepared to offer advice to AP & RSE on the management and beneficial reuse of C&D material.

Trip Ticket System

5. The problem of illegal dumping has attracted adverse publicity and most illegally dumped materials are generated from construction activities. For more effective control, the Works Bureau has established a Trip-ticket System in public works contracts for the proper disposal of construction and demolition (C&D) material at public filling facilities or landfills. This policy is promulgated under the Works Bureau Technical Circular (WBTC) No.5/99, which is effective on 1 July 1999. The policy is that all public fill (being the inert portion of C&D material) shall be disposed of at designated public filling facilities managed by Civil Engineering Department (CED), and all C&D waste (being the non-inert portion of C&D material) shall be disposed of at designated landfills managed by Environmental Protection Department (EPD). A brief description of the Trip-ticket System is described in Appendix A.
6. The system has been adopted by the Housing Authority and the Works Departments. The same system could be applied to the disposal of C&D material in private sector projects. The project administrators for private developments could apply, through CED and EPD, for designated public filling facilities and landfills for the disposal of the public fill and C&D waste respectively. The Building Authority strongly recommends that the system be implemented in private sites for better control of the C&D material disposal.

7. For details of the WBTC No.5/99, please go to the web site of Works Bureau @ http://www.wb.gov.hk. For details on the disposal of public fill, please refer to the web site of CED @ http://www.info.gov.hk/ced and the notes at Annex I of Appendix A.

(C M LEUNG)
Building Authority

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Index under : Construction waste
Demolition waste
Trip-ticket system
Waste management plan
Trip Ticket System

(i) At the planning stage of a contract, the project officer seeks confirmation from CED (Public Fill Committee) whether public filling facilities are available for disposal of the public fill, and from EPD (Facilities Management Group) whether landfills are available for disposal of the C&D waste.

(ii) The project officer shall provide the following information to CED and EPD in the application for designated disposal outlets:

(a) Contract number and title;
(b) Site location;
(c) Anticipated quantities of disposal;
(d) Programme for disposal;
(e) Recommended disposal arrangement in Environmental Impact Assessment/Contamination Assessment Report, if any;
(f) Test results identifying the type and level of contaminants present, if any;
(g) Types of the public fill and/or C&D waste;
(h) Contact details of the project officer.

(iii) CED and EPD will designate the public filling facilities and landfills respectively for the project and advise the project officer the acceptance criteria of the respective facilities. As a general policy to conserve the limited landfill void space, public fill (such as soil, rock, concrete, bricks, bituminous materials etc.) should be delivered to public filling facilities instead of to landfills (see Annex I regarding disposal of public fill).

(iv) The project officer then specifies the names of the facilities and acceptance criteria in the tender documents.

(v) A trip ticket (i.e., a Disposal Delivery Form) is required for each truckload delivered to the public filling facilities and landfills. (Sample of the Form is shown in Annex II and also available in the WBTC No.5/99).

(vi) Upon commencement of construction, the Contractor shall carry the trip ticket (Disposal Delivery Form) issued by the project officer for every vehicular trip transporting the public fill and C&D waste to the designated public filling facilities and landfills respectively.

(vii) For each vehicular trip on arrival at the disposal facility, the Contractor shall present the Form at the entrance gate, proceed with the disposal operation and then obtain a receipt from the operator of the public filling facility or landfill at the exit gate. The Contractor is required to submit the original receipt to the Engineer’s/Architect’s Representative of the project office. The project office then approaches CED or EPD for a monthly report of the relevant transaction records and carries out the reconciliation for compliance checking.
Disposal of Public Fill

(a) For each truckload delivered to the public filling facilities a trip ticket (i.e. a Disposal Delivery Form) is required. Please see Annex II.

(b) The dump trucks should also have valid Dumping Licences issued by CED. Dump trucks without Dumping Licences will be rejected.

(c) Application form for Dumping Licence and the associated conditions as stipulated in the Dumping Licence can be collected from the Port Works Division, 5/F., Civil Engineering Building, 101 Princess Margaret Road, Homantin, Kowloon or downloaded from CED’s web site at http://www.info.gov.hk/ced/. A sample is at Annex III.

(d) The inert construction and demolition (C&D) materials to be delivered to the public filling facilities should be in accordance with the conditions as stipulated in the Dumping Licence (copy attached).

(e) The normal opening hours of the public filling facilities will be from 8:30 a.m. to 12:00 noon and then from 1:00 p.m. to 6:00 p.m.

(f) All public filling facilities are open to the public free of charge for land delivery of inert construction and demolition material by vehicles.
Construction and Demolition Material Disposal Delivery Form

Department: __________________________ Contract No.: ____________

Contractor: ____________________________________________________

Contract Title: __________________________________________________

Location of Site: _________________________________________________

Location of Public Filling Facility/Landfill *: _________________________

Vehicle Registration No.: ____________ Date: ________________

Approximate Load: Full / three quarter / half / one quarter *

Remark: _________________________________________________________

_____________________________________________________________

Time of Departure: __________________________

Authorized Chop of Engineer’s Representative/ Architect’s Representative *

* Delete whichever inappropriate
APPLICATION FOR DUMPING LICENCE

(ONE LICENCE FOR EACH VEHICLE)

The applicant should be the registered owner of the vehicle. In the case of the registered owner being a Company, this form should be completed and signed by a person nominated and authorised by the Company. He should also put down his name in full under his signature.

供________年使用

FOR YEAR ___________

1. 車輛的登記車主現時的個人資料

Present Particulars of Registered Owner of the Vehicle

(i) 文姓名:
Name in Chinese: ______________________________

(ii) 英文姓名:
Name in English: ______________________________

(iii) 地址 (中文):
Address in Chinese: ______________________________

(iv) 地址 (英文):
Address in English: ______________________________

(v) 車輛登記(車牌)號碼:
Vehicle Registration No.: ______________________________

(vi) 日間聯絡電話及碼:
Daytime Telephone No.: ______________________________

2. 申請

Application

(i) *□ 本人現為上述車輛申請一張上述年度的傾卸泥土執照。
I hereby apply for a Dumping Licence for the above listed vehicle for the above-mentioned year.

□ 本人現為上述車輛申請一張傾卸泥土執照副本，申請的理由是：
I hereby apply for a Duplicate Dumping Licence for the above listed vehicle and the reason is:

□ 本人的傾卸泥土執照已遺失。 (請提交有關證明文件，例如向警方報失的紀錄。)
My Dumping Licence was lost. (Please submit the relevant proof document, such as record of loss report to the police.)

□ 本人的傾卸泥土執照已損壞，現在交還。
My Dumping Licence was damaged and returned herewith.

□ 其他，請說明：
Other, please specify: ______________________________

3. 誓 言

Declaration

(i) 本人現聲明，確本人所知，以上所填報的資料均屬真確及並無遺漏。
I declare that to the best of my knowledge and belief the information given above is true, correct and complete.

(ii) 本人現聲明附上的車輛登記文件副本，是原文件的真本，該文件在本申請表格提交當日仍然有效。
I certify that the enclosed copy of the Vehicle Registration Document is a true copy of the original document which is still valid on the date of this application.

(iii) 本人願意遵守傾卸泥土執照所規定的各項條件(見背面)。
I will abide by all the conditions as stipulated in the Dumping Licence (see the back page).

申請人簽署（及公司蓋章如適用者）:
Signature of Applicant (and Company Chop if applicable):

簽署人全名:
Name of Signee in full: ______________________________

日期:
Date: ______________________________

* 請在適當的格內加上 '✓' 號
* Please tick the appropriate box

注: 申請表格須連同申請人簽署的有效車輛登記文件影印本，交回九龍公主道一０一号土木工程署大樓五樓，土木工程署海港工程部。
Note: The completed application together with a copy of the valid Vehicle Registration Document of the vehicle (duly signed by the applicant) should be returned to Port Works Division, Civil Engineering Department at SIF, Civil Engineering Building, 101 Princess Margaret Road, Kowloon.

C Eng D (CEC) 83A (Revised 11/99)
The conditions as stipulated in the Dumping Licence

1. This licence is not transferable.

2. The licence must be carried by the licensee/lorry driver and produced on demand to the Filling Supervisor.

3. The licence is issued together with a windscreen label which must be prominently displayed on the vehicle.

4. The Government of the Hong Kong Special Administrative Region accepts no responsibility for any accident which may befall the licensee or the staff or vehicles employed by the licensee at public filling facilities. The licensee shall ensure that every safety precaution is taken when operating at public filling facilities.

5. The licensee will be responsible for the cost of any repairs necessary as a result of damage caused by public filling under this licence.

6. Public filling may be carried out on the days and between the hours as advertised in the press and posted at individual public filling facility.

7. The following materials may be disposed of at public filling facilities under this licence:
   (a) soil, earth,
   (b) building debris, and
   (c) broken rock and concrete.

8. The materials shall be unloaded at the location and in the manner instructed by the Filling Supervisor.

9. The licensee/lorry driver shall report the source of material when required by the Filling Supervisor.

10. The licensee/lorry driver shall ensure that his/her lorry is cleaned at the wheel washing facilities provided at the public filling facility before leaving the public filling facility.

11. Care shall be taken to prevent any material being dropped from lorries onto public roads.

12. Non-compliance with these conditions will entail withdrawal of the licence without notice and may result in legal action being taken.

13. The right is reserved to cancel this licence at any time before the date of expiry or to close any public filling facility without prior notice and without provision of an alternative public filling facility.

14. Any licence/lorry driver who is convicted in court for illegal dumping will entail withdrawal of the licence.

15. The licensee/lorry driver shall ensure that the material being carried is covered with suitable impervious sheeting such as tarpaulin.

16. The licensee/lorry driver shall not load his/her lorry exceeding the permitted gross vehicle weight.