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5 July 2004

Clerk to Panel
Panel on Environmental Affairs
Legislative Council
Legislative Council Building
8 Jackson Road
Central
Hong Kong
(Attn : Miss Becky Yu)
(Fax No: 2869 6794)

Dear Miss YU,

**Panel on Environmental Affairs
Measures to Prevent and Minimize Construction and Demolition
Materials by Private Construction Works**

I refer to the meeting of the Panel on Environmental Affairs on 26 April 2004 at which Members requested for the following:-

- (a) a clearer trend of production of construction and demolition (C&D) materials in the past years
- (b) provide more information on the Practice Note for authorized persons and registered structural engineers on waste minimization in the planning, design and construction for private developments; and
- (c) consider the feasibility of requiring contractors to apply selective demolition in their demolition projects

The annual generation of C&D materials in Hong Kong for the past years is as follows:-

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003
Quantity (Million tonnes)	11.7	11.2	10.4	11.9	13.5	13.8	14.2	16.4	19.6

The upsurge in 2002 and 2003 was due to surplus materials generated from a mega housing project entitled 'Development at Choi Wan Road and Jordan Valley' commencing in 2002.

The Practice Note for Authorized Persons and Registered Structural Engineer on Construction and Demolition Waste issued by the Building Department contained detailed information on waste minimization during the planning, design, and construction stages for private developments. The Practice Note also recommends that Waste Management Plans be drawn up by contractors to include measures to reduce C&D materials during the construction stage. A copy of the Practice Note is enclosed for Members' reference.

The Buildings Department has also issued a Code of Practice on Demolition of Buildings recommending, among other things, the sequence of demolition so as to facilitate separation and sorting of demolished materials. For government works, the contractor is required to submit a method statement on the sequence of demolition to facilitate effective recovery of reusable/recyclable portions of the C&D materials as part of the Waste Management Plan.

Yours sincerely,

(Mrs Teresa Wong)
for Secretary for the Environment, Transport and Works

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;

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- 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.

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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

**Appendix A
PNAP 243****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.

**Annex I of Appendix A
PNAP 243**

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.

**Annex II of Appendix A
PNAP 243**

**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 : _____

Authorised Chop of
Engineer's Representative/
Architect's Representative *

* Delete whichever inappropriate

Annex III
FNAP 243

傾卸泥土執照申請表格(每輛運泥車須填一張執照)
APPLICATION FOR DUMPING LICENCE (ONE LICENCE FOR EACH VEHICLE)

(申請人在傾卸車運泥的登記車主。如係登記車主或公司名義，本表格則須由該公司所指定及授權的人士填寫及簽署。並須將全名寫在其簽署下面。)

(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 authorized 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之個人資料 PRESENT PARTICULARS OF REGISTERED OWNER OF THE VEHICLE

- (i) 中文姓名: _____ (ii) 英文姓名: _____
Name in Chinese: _____ 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: _____ (vi) 日間聯絡電話號碼: _____
Vehicle Registration No.: _____ Daytime Telephone No.: _____

2. 申請 APPLICATION

- 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複本。申請的理由是：
 - 本人的傾卸泥土執照已遺失。(如經交有關證明文件，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、裂在交通。
My Dumping Licence was damaged and returned herewith.
 - 其他。請說明： _____

3. 聲明 DECLARATION

- (i) 本人聲稱，據本人所知，以上所填寫的資料均屬真實及並無遺漏。
I declare that to the best of my knowledge and belief the information given above is true, correct and complete.
- (ii) 本人附附上的車輛登記文件副本，為原來文件的真本。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(及公司蓋印如適用者): _____
 Signature of Applicant (and Company Chop if applicable): _____
 簽署人全名: _____
 Name of Signer in full: _____
 日期: _____
 Date: _____

* 請在適當表格內劃上「✓」號。
* Please tick the appropriate box

註： 填妥的申請表格，須附原有申請人簽署的有關車輛登記文件真印本，交回九龍公眾碼頭一號土木工程大樓五樓，土木工程署牌照工程處。

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 5/F, Civil Engineering Building, 101 Princess Margaret Road, Kowloon.

此圖紙供部門人員填寫 For Official Use only

收件日期 _____ 執照號碼 _____ 寄出日期 _____
 Date received _____ Licence No. _____ Date Dispatched _____

C. Eng. 9 (CC03) 22A (Rev. 04/11/98)

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傾卸泥土執照所規定的各項條件

The conditions as stipulated in the Dumping Licence

1. 執照不得轉借別人持用。
The licence is not transferable.
2. 執照須由執照持有人/泥頭車司機攜帶，並須隨時向填土站出示執照。
The licence must be carried by the licensee/driver and produced on demand to the Filling Station.
3. 執照會連同輔助一紙牌附，該輔助紙牌將在車輛牌照號碼的右取用。
The licence is issued together with a whiteboard label which must be prominently displayed on the vehicle.
4. 執照特別作填土用途，對公眾人士或車輛造成任何意外或損害，不論在填土站或填土站外進行填土時，執照持有人應即通知填土站。
The licence is issued on the express understanding that the Government of the Hong Kong Special Administrative Region accepts no responsibility for any accident which may befall the licensee/driver or vehicle employed by the licensee at public filling facilities. The licensee shall advise the filling station in the event of any accident which may befall the licensee/driver or vehicle employed by the licensee at public filling facilities.
5. 執照持有人須對在本執照規定下，因進行填土而引致的損壞負責，並須支付有關的任何修理費用。
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. 執照持有人可根據執照內列明之填土時間及地點，進入公眾填土站填土。
Public filling may be carried out on the days and between the hours as advertised in the licence and at individual public filling facilities.
7. 本執照准許填土下列物料於公眾填土站內：
The following materials may be disposed of in public filling facilities under this licence:
 - (a) 泥土；
earth;
 - (b) 建築廢料；及
building detritus; and
 - (c) 碎石和泥塊。
broken rock and concrete.

上述物料不得含有腐蝕、軍火、毒藥、炸藥、金屬、工業及化學廢料、廢物以及禁止貯存或貯存不宜棄置於公眾填土站的任何物料。由公眾填土站填土之小量木料亦可棄置於填土站。
The materials shall be free from radioactive, hazardous waste, plastic, metal, industrial and chemical waste, animal and vegetable matter, and other material considered unsuitable by the Filling Supervisor. Small quantities of timber mixed with other suitable material will be permitted.
8. 物料之傾卸，須按填土站牌照所指示的地點及方法進行。
The materials shall be unloaded at the location and in the manner instructed by the Filling Supervisor.
9. 執照持有人/泥頭車司機須根據填土站牌照的要求，報告有關物料來源。
The licensee/driver shall report the source of material when required by the Filling Supervisor.
10. 執照持有人/泥頭車司機須確保泥頭車在填土站內，車輛已於填土站內所獲供的車輛清洗設施清洗。
The licensee/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. 執照持有人/泥頭車司機須防止物料從泥頭車上掉落到公眾填土站。
Care shall be taken to prevent any material being dropped from lorries into public roads.
12. 如違反上述條件，當局可能會撤銷執照或暫停任何填土，並可將會採取法律行動。
Non-compliance with these conditions will entail withdrawal of the licence without notice and may result in legal action being taken.
13. 當局保留權利，可隨時對執照在有效期限內予以取消及/或限制於任何公眾填土站填土，而毋須事先通知，亦毋須另填土站牌照的公眾填土站。
The right is reserved to cancel this licence at any time before the date of expiry and or to close any public filling facility without prior notice and without provision of an alternative public filling facility.
14. 任何執照持有人/泥頭車司機若被發現非法傾卸物料，當局會將其執照撤銷。
Any licensee/driver who is convicted in court for illegal dumping will entail withdrawal of the licence.
15. 執照持有人/泥頭車司機不得讓泥頭車重量超過填土站牌照所規定的重量。
The licensee/driver shall not load his/her lorry exceeding the permitted gross vehicle weight.