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Panel on Environmental Affairs

Meeting on 26 March 2007

**Updated background brief on management of
construction and demolition materials
(Position as at 20 March 2007)**

Introduction

Construction and demolition (C&D) materials are a mixture of inert materials and wastes arising from construction, excavation, renovation, demolition and road works. Local construction activities produce about 14 million tonnes of C&D materials a year. The composition of these materials changes from year to year depending on the nature and scale of the construction works that generate the materials. In recent years, the composition of C&D materials is as follows -

- (a) about 70% are soft inert materials comprising soil, earth and slurry that cannot be recycled and can only be reused as fill materials in reclamation and earth filling works;
- (b) about 12% to 15% are hard inert materials comprising rocks, broken concrete and bricks. Some of them can be reused for seawalls in reclamation while others can be recycled as aggregates for concrete production or as granular materials for road sub-base and drainage bedding layers; and
- (c) the remaining 15% to 18% are C&D wastes comprising metal, plastic, timber and packaging waste. Some of them can be recycled if they are not contaminated while the contaminated ones can only be disposed of at landfills.

2. In the past, most of the inert C&D materials were reused at reclamation projects. As there are no approved reclamation projects beyond mid-2002, problem arises as to how to absorb the estimated 69 million tonnes of inert materials to be generated over the period between mid-2002 to end-2005. If nothing is done, all these materials will

have to be disposed of at landfills, thereby shortening the life of the existing three landfills by 10 years. To this end, the Administration has taken a number of measures to manage C&D materials, namely -

- (a) avoiding and minimizing C&D materials;
- (b) sorting of mixed C&D waste;
- (c) reusing inert C&D materials in reclamation projects;
- (d) processing/recycling hard materials;
- (e) establishing temporary fill banks;
- (f) introducing landfill charging; and
- (g) other measures.

The Panel on Environmental Affairs has been monitoring the progress of management of C&D materials. A number of meetings were held to discuss the efficacy of these measures.

Discussion by Panel

Sorting of mixed C&D waste

3. While welcoming the setting up of sorting facilities to help separate inert materials from mixed waste, Panel members pointed out that it would be more convenient if these facilities were centrally located near the landfills. The Government should also encourage the private sector to actively take part in sorting and separation of C&D materials to avoid dumping in the landfills. According to the Administration, sorting facilities were provided in Tuen Mun near West New Territories Landfill and Tseung Kwan O near the South East New Territories Landfill. The provision of sorting facilities near North East New Territories (NENT) Landfill had to be justified given the resource implications and the fact that privately-owned sorting facilities were available in the neighbourhood. Nonetheless, a tripartite discussion was being held on the provision of sorting facilities near NENT Landfill. The Panel would be informed of the outcome of discussion in due course.

Processing/recycling hard materials

4. The Panel generally supported the setting up of a temporary recycling plant in Tuen Mun to process hard materials. Panel members however noted with concern that the plant was only operating at half of its capacity because only some 13% of C&D materials received were suitable for recycling. They therefore considered that efforts should be made to increase the supply of hard inert materials so as to fully utilize the capacity of the recycling facility. According to the Administration, there was no control over the supply of such materials which was dependent on the location, nature

and scale of construction activities during the year. Notwithstanding, initiative had been taken to encourage private developers/contractors to deliver hard inert materials to the recycling facility for recycling.

5. Panel members also expressed concern on the provisions in the Buildings Ordinance (Cap. 123) which prevented the use of recycled materials in building works. As a result, recyclable materials of good quality could only be used for road works rather than large-scale building works. According to the Administration, the construction industry tended not to use recycled materials in building projects owing to the abundant supply of natural rock materials which were of better quality and less expensive. Nevertheless, studies were being conducted on the performance of concrete made from recycled materials which were allowed to be used on works which required a lower strength of concrete, such as road-base and drainage bedding layers. Efforts, including legislative amendment, would be made to encourage the wider application of recycled materials in the construction industry.

6. The Panel further noted the Administration was examining the option of extending the operation of the recycling facility upon the expiry of the current contract in October 2004 or putting in place a replacement facility in a more convenient location to facilitate the delivery of hard inert materials from urban construction sites. Members opined that consideration should be given to offering short-term leases at concessionary rates to contractors to set up sorting facilities adjacent to construction sites for sorting and recycling of C&D materials.

Establishing temporary fill banks

7. The Panel noted that two temporary fill banks in Tseung Kwan O (TKO) and Tuen Mun were set up to stockpile soft inert C&D materials. As at October 2003, over eight million tonnes of soft inert C&D materials had been stockpiled in these two fill banks. It was estimated that unless new outlets for these materials were available, the two fill banks would be filled to their capacity in late 2004 or early 2005.

8. Concern was raised on the practicability of stockpiling inert C&D materials. By way of illustration, the stockpiling of large amount of inert C&D materials in the temporary fill bank at TKO might further aggravate the problem of ground settlement. It might also give rise to environmental nuisance. The Administration's explanation was that the fill bank site at TKO was a reclaimed land, the stockpiling would have the added benefit of expediting the settlement process. Furthermore, as the C&D materials to be stockpiled at the fill banks were inert materials, these would unlikely cause any environmental nuisance.

Introducing landfill charging

9. The Waste Disposal (Amendment) Ordinance 2004, which aimed to provide the statutory basis for the making of regulations for introducing a charging scheme for the disposal of construction waste at landfills, sorting facilities and public fill facilities, was

passed in July 2004. Meanwhile, the two related regulations, namely the Waste Disposal Facility (Amendment) Regulation 2004 and the Waste Disposal (Charges for Disposal of Construction Waste) Regulation, which set out details of the charging scheme were passed by the Legislative Council in January 2005 for implementation in the second half of 2005.

10. The Construction Waste Disposal Charging Scheme (the Scheme) was introduced in December 2005. Under the regulatory regime, construction waste containing not more than 50% by weight of inert construction waste will be accepted at landfills. Construction waste containing more than 50% by weight of inert construction waste will be accepted at sorting facilities while construction waste consisting entirely of inert construction waste will be accepted at public fill reception facilities. Disposal fees for landfills, sorting facilities and public fill reception facilities will be charged at \$125, \$100 and \$27 per tonne respectively. At its meeting on 24 April 2006, the Panel noted that the amount of C&D waste disposed of in landfills had been reduced by about 30% since the implementation of the Scheme. However, the figure might not be indicative given that the Scheme was only put in place for a short period of time with the intervening Chinese New Year, during which less construction works were carried out. A more comprehensive review of the actual situation would be made after the Scheme had been implemented for six months.

11. While agreeing that the Scheme was a step in the right direction, there was concern that it might not be able to curb the problem of fly-tipping on agricultural land by unscrupulous developers/contractors. The problem was further aggravated as some landowners had allowed the disposal of C&D waste on their agricultural land for profiteering. This had caused unacceptable impact on the surrounding environment. To prevent fly-tipping under the disguise of land filling, members considered it necessary for the Administration to set out clear guidelines to differentiate between these activities to plug the loophole. Consideration should also be given to establishing a central mechanism to control the use of inert C&D materials. Construction projects in need of such materials had to apply to the Government for central allocation. This would not only prevent fly-tipping but also ensure an adequate supply of unpolluted materials for reuse.

Other measures

12. Concern was raised on the use of soft inert materials in lieu of dredged mud in the capping layer of the contaminated mud pits in East Sha Chau. It was pointed out that soft inert materials were a main source of pollution to the marine environment as they would tend to disperse and form a black odorous substance covering the seabed, thereby destroying the marine life through deprivation of oxygen. By way of illustration, the dumping of inert materials from the construction works at Pak Shek Kok had completely destroyed marine life in the surrounding waters. According to the Administration, East Sha Chau was a dumping site for contaminated dredged mud. In the past, clean dredged mud from the sea would be used as a capping layer to prevent the contaminated mud in the mud pits from dispersing. As the soft inert materials

were excavated soil, which had similar properties as dredged mud, they could be used to replace dredged mud for the capping work. Members were assured that stringent inspection would be carried out at the reception facilities to ensure that the soft inert materials were clean, and that such an arrangement would not lead to other environmental problems. Some members however held the view that the Administration was downplaying the effects of the proposal, particularly when no studies had ever been made on its impact on the marine environment. At members' request, the Administration provided a report on the environmental assessment of public fill capping on the marine ecology at the East of Sha Chau, which was circulated under LC Paper No. CB(1) 1365/04-05 on 25 April 2005.

13. Members also sought elaboration on the cost-effectiveness of using inert C&D materials to backfill quarries. The Administration's explanation was that there were constraints in the proposal as some of the quarries were still in operation while others were designated for other uses. Any changes to such uses would need to have the support of the District Councils concerned. Nevertheless, the Administration would continue to explore the viability of this measure.

14. On the feasibility of exporting C&D materials in Hong Kong to other places for reclamation for other purposes, members noted that following the signing of the Co-operation Agreement on Cross-boundary Marine Dumping between the State Oceanic Administration (SOA) and the Environment, Transport and Works Bureau in March 2004, the Administration reached an agreement with the South China Sea Branch of SOA in June 2005 on the implementation details to ensure that the use of public fill in reclamation projects would not cause any environmental problems. The details included material specifications, delivery requirements, inspection and control measures. In January 2006, SOA designated a trial reclamation site in Guang Hoi Wan of Taishan to receive public fill from Hong Kong. Tenders were invited for delivery of public fills in April 2006. In 2006-07, \$264.3 million had been provided for cross-boundary delivery of public fill. In 2007-08, \$243.7 million had been earmarked for such purpose.

15. Question was raised on the need to deliver public fill to the Mainland in view of the demand for public fill arising from Stage 2 of Penny's Bay Reclamation project. The Administration's explanation was that while the project would be able to use up the annual generation of public fill, there were existing stockpiles of public fill which would need to be disposed of, and arrangement had been made to deliver the public fill to the Mainland for reclamation purposes so that the stockpiles could be cleared and the land released for development use.

Relevant papers

Information paper provided by the Administration for the EA Panel meeting on 5 June 2001

<http://www.legco.gov.hk/yr00-01/english/panels/ea/papers/a1414e03.pdf>

Minutes of the EA Panel meeting on 5 June 2001

<http://www.legco.gov.hk/yr00-01/english/panels/ea/minutes/ea050601.pdf>

Information paper provided by the Administration for the EA Panel meeting on 20 December 2002

<http://www.legco.gov.hk/yr02-03/english/panels/ea/papers/ea1220cb1-548-4-e.pdf>

Minutes of the EA Panel meeting on 20 December 2002

<http://www.legco.gov.hk/yr02-03/english/panels/ea/minutes/ea021220.pdf>

Information paper provided by the Administration for the EA Panel meeting on 27 October 2003

<http://www.legco.gov.hk/yr03-04/english/panels/ea/papers/ea1027cb1-145-5-e.pdf>

Minutes of the EA Panel meeting on 27 October 2003

<http://www.legco.gov.hk/yr03-04/english/panels/ea/minutes/ea031027.pdf>

Information paper provided by the Administration for the EA Panel meeting on 26 April 2004

<http://www.legco.gov.hk/yr03-04/english/panels/ea/papers/ea0426cb1-1587-4-e.pdf>

Minutes of the EA Panel meeting on 26 April 2004

<http://www.legco.gov.hk/yr03-04/english/panels/ea/minutes/ea040426.pdf>

Information paper provided by the Administration for the EA Panel meeting on 24 January 2005

<http://www.legco.gov.hk/yr04-05/english/panels/ea/papers/ea0124cb1-735-4-e.pdf>

Minutes of the EA Panel meeting on 24 January 2005

<http://www.legco.gov.hk/yr04-05/english/panels/ea/minutes/ea050124.pdf>

Information paper provided by the Administration for the EA Panel meeting on 24 April 2006

<http://www.legco.gov.hk/yr05-06/english/panels/ea/papers/ea0424cb1-1300-6-e.pdf>

Minutes of the EA Panel meeting on 24 April 2006

<http://www.legco.gov.hk/yr05-06/english/panels/ea/minutes/ea060424.pdf>