

ACE Paper 41/2004
For discussion

Hunghom Peninsula

The paper prepared by Sun Hung Kai Properties Limited and New World Development Company Limited concerning the redevelopment of Hunghom Peninsula is attached.

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1 Introduction

1.1 Description of the Existing Development

- 1.1.1 The existing Hunghom Peninsula bounded by Yan Yung Street, Hung Lok Road, Hung Hom South Road and Oi King Street, consists of seven blocks of residential towers, of about 40-storeys.
- 1.1.2 The existing Hunghom Peninsula development is separated by the Hung Hom Road, with four blocks in the northern portion of the development site, and three blocks in the southern portion of the development site. To the immediate north of the existing Hunghom Peninsula are the Polytechnic University Student Hostel and the existing Royal Peninsula. The eastern side are other residential developments separated by the Hung Hom South Road. The southeast is the Ma Tau Chung Government School. The southern side face the Victoria Harbour, and to the immediate west and southwest are hotel developments under construction.

2 Comprehensive Environmental Planning

2.1 General Contract Requirements for Acceptable Works Environment

- 2.1.1 In reaching the decision for demolishing the existing Hunghom Peninsula for further redevelopment, the developer endeavour to take every necessary action to minimise any adverse impact on the environment. As such the requirement for the most environmental friendly demolition process had been written into the tender document.
- 2.1.2 Under the contract requirement for the demolition works, the demolition contractor shall aim to reuse or recycle at least 95% of the material generated from the development. In achieving the target rate of reuse / recycling, the demolition contract shall be required to carry out the demolition works through a “Selective Demolition” process with a comprehensive “Waste Management Plan” be prepared ahead of the actual work and shall be submitted for approval by the client and relevant authorities.
- 2.1.3 In addition, the demolition contractor shall implement sufficient environmental mitigation measures to protect the surrounding environment from possible environmental impacts arising from the execution of the demolition works, such as dust emission impact, construction noise impact, visual impact, and water quality impact. Under the contract requirement, the demolition contractor shall take all the necessary precautionary measures to avoid the generation of any nuisance arising from the demolition works. All works shall be planned and carried out in such a way to minimize any nuisance on the nearby residents, property and the public.

2.2 Statutory Requirements

- 2.2.1 During the execution of the demolition works, the demolition contractor shall be governed by all relevant environmental protection and pollution control ordinances and guidelines. These regulations and guidelines include but not limited to the following:
 - (a) Air Pollution Control Ordinance (Cap. 311), and its subsidiary regulations and technical memorandum;
 - (b) Waste Disposal Ordinance (Cap. 354), and its subsidiary regulations;

- (c) Water Pollution Control Ordinance (Cap. 358), and its subsidiary regulations;
- (d) Noise Control Ordinance (Cap. 400), and its subsidiary regulations;
- (e) Environmental Impact Assessment Ordinance (Cap. 499); and
- (f) Relevant Practice Notes issued by the Professional Persons Environmental Consultative Committee (ProPECC).

2.2.2 Under the contract requirement, the demolition contractor shall design, construct, operate and maintain pollution control measures to ensure compliance with the contract provisions, as well as the latest applicable environmental ordinances, regulations, and guidelines.

2.3 Comprehensive Waste Management Plan

2.3.1 Waste management planning and control is required under the contract requirement, preparation and submission of a comprehensive Waste Management Plan (WMP) shall be required for the demolition works. The WMP shall be prepared with reference to Environmental Transport and Works Bureau (ETWB) Technical Circular No. 15/2003 *Waste Management on Construction Sites* and ETWB Technical Circular No. 33/2002 *Management of Construction and Demolition Material including Rock* and other relevant regulations and guidelines.

2.3.2 In brief, the comprehensive WMP shall include but not limited to the followings:

- Waste management organisation and responsibilities;
- Analysis of waste likely to be generated with types identified and quantified;
- List of each material proposed to be salvaged, and re-used or recycled with quantities;
- Statement of measures taken to reduce, salvage, re-use and recycle waste material on and off site;
- Statement of alternatives to disposal of waste at landfill with the estimated number of trips to landfill sites saved;
- Method statement of implementing the Trip-tick system with the names of the Public Fill and Landfill destinations identified and the predicted frequency of disposal at each site;
- Methods of sorting, segregation, labelling, storing, protecting and disposing of all the various types of waste materials generated;
- Location, layout and details of designated sorting and storage areas;
- Debris management plan describing the method of handling and removing waste from buildings including details of refuse chutes and ground floor waste holding areas prior to leaving the site;
- Method statement of how the site will be kept clean with debris minimised;
- Method to control pollution of the stormwater drainage system;
- Method of maintaining records for the disposal of all materials and monitoring;
- WMP may be revised from time to time to incorporate Nominated Sub-contractors and other party's requirements as and when they are appointed; and
- A Waste Disposal Record.

2.4 Sustainable Selective Demolition Procedures

2.4.1 To achieve the most sustainable demolition work for the building blocks, "Selective Demolition" method have been selected, which involves demolition and removal of Construction and Demolition (C&D) and other recoverable materials of the same category at a time.

- 2.4.2 Under the contract requirement, the contractor shall aim to divert 95% of waste (by weight) from landfill disposal through proper re-use and recycling. Prior to actual demolition of the buildings, salvageable materials shall be carefully removed, sorted and stored for future re-use or recycle by Selective Demolition Method. Salvageable materials include but not limited to the followings are identified for re-used or recycle:
- Furniture, and loose fixtures, sorted into different salvageable categories including timber, paper, plastic and metal;
 - Electrical appliances;
 - Electrical cables and switches;
 - Ceramics sanitary fittings and glazed wall tiles apart from water tanks;
 - Metallic fixtures such as metal gates, handrails, etc;
 - Timber doors and timber door frames;
 - Windows and window frames and window grilles;
 - Exposed plastic water pipes;
 - Exposed metallic water pipes; and
 - Mastic asphalt water proofing layer at roofs.
- 2.4.3 A detail method statement of the sequence of works specified to use the selective demolition with procedures and safety precautions shall be prepared and submitted by the demolition contractor as included in the comprehensive WMP for approval prior to the commencement of the demolition works.

3 Proposed Demolition Works

3.1 Work Sequence

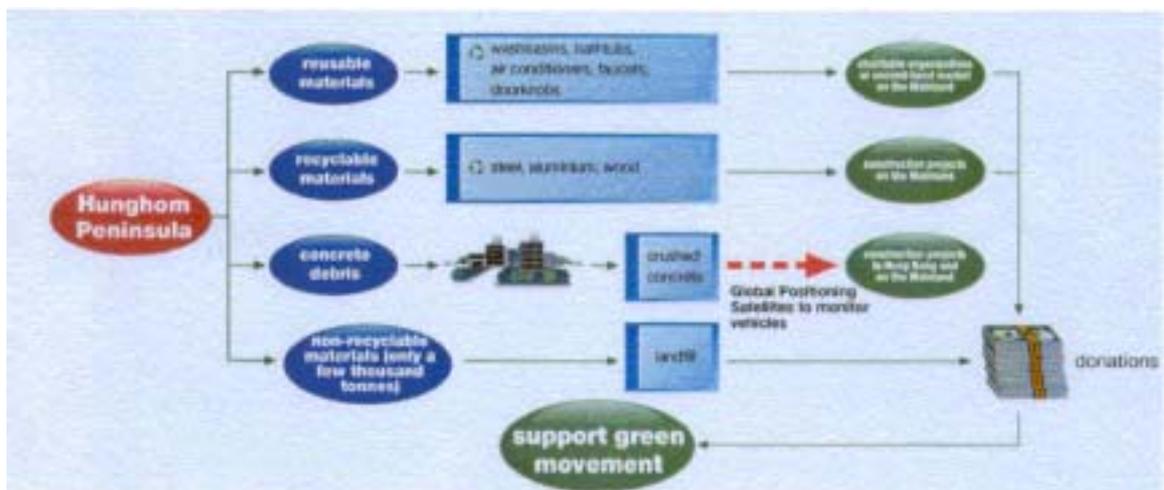
- 3.1.1 During the execution of the demolition works, the demolition of the building structures shall be carried out into two zones, namely the top zone and the bottom zone. The upper roofs shall be demolished using Hand-held breaker method, and other typical floors, hydraulic machinery shall be used for the demolition. All salvageable material in the top and bottom zones shall be removed for reuse and recycling.
- 3.1.2 After removal of all salvageable materials, demolition shall be carried out on the building structures. Inert and non-inert construction and demolition (C&D) materials shall be separated out into different categories for further reuse and recycling.

3.2 Re-use and Recycling Approach

- 3.2.1 It is anticipated the demolition works for the existing Hunghom Peninsula shall generated approximately 190,000 tonnes of C&D material. Among the C&D material generated, about 95% shall be reused or recycled locally or in Mainland China, with only less than 10,000 tonnes of C&D waste shall be disposed of at landfill.
- 3.2.2 As mentioned from the previous section, all salvageable material shall be removed for reuse or recycle. Reusable materials including bathroom sinks, bathtubs, air-conditioning system, door locks, water taps etc. will be removed and possibly be donated for charitable use or resell and reuse in second-hand markets in the Mainland.
- 3.2.3 Recyclable materials including aluminium, steel, plastic, PVC, wood, cables etc. will be

reprocessed and recycled for future projects in the Mainland China.

- 3.2.4 In order to prepare for the intake of potential volume of reusable and recyclable materials for the second-hand markets, the demolition contractor has already engaged with potential recycling collectors for reuse / recycling in the Mainland China.
- 3.2.5 One of the most concerned C&D materials to be generated from the demolition works is the large volume of concrete and demolition debris. Concrete and demolition debris generated from the demolition works will be crushed to suitable sizes as filling material for future private and government infrastructure projects either in Hong Kong or in the Mainland China. The use of crushed concrete and demolition debris as filling material effectively reduces the need for dredging for marine sand for filling, or removal of existing slopes in the case of Mainland China, thereby reduces possible ecological damages to the environment.
- 3.2.6 With the signage of the Cooperation Agreement on Cross-boundary Marine Dumping in Guangzhou between the Hong Kong Government and the Deputy General of the State Oceanic Administration earlier in March 2004, the possibility on the transport of C&D material as filling material for future projects in the Guangdong are enhanced. The Cooperation Agreement provides a foundation for closer cooperation and communication between the two sides on the management of cross-boundary dumping of dredge materials generated the accommodation of inert construction and demolition material in Hong Kong and in Mainland China. The Cooperation Agreement shall support cross-boundary dumping of dredged materials and the use of inert C&D materials in reclamation projects in the Mainland China. Where possible, inert C&D material generated from this project shall utilise this opportunity for sustainable development in Guangdong and Hong Kong.
- 3.2.7 To support and promote environmental development, the project proponent shall donate all the saving from the selling of reuse and recycle materials, and in addition, an equivalent amount of money as for the disposal to landfill shall also be donated to support and promote environmental and landscape design in the Hung Hom Area.
- 3.2.8 A general summary for the reuse / recycling approach is illustrated in the following flowchart below:



3.3 Planned Environmental Protection Measures for the Works

- 3.3.1 During the execution of the demolition works, covered walkway shall be provided alongside the corner of Yan Yung Street and Hung Hom South Road and alongside of Oi King Street to ensure safe travel by pedestrian.
- 3.3.2 To reduce the noise impact to the surrounding environment during the demolition process, instead of the traditional pneumatic breaker, hydraulic machinery shall be used. Based on past experiences from other projects, the noise level generated by use of hydraulic machineries could be significantly less than those generated by the use of traditional pneumatic breakers.
- 3.3.3 To further mitigate the potential noise and air impact to the surrounding environment, the erection of the scaffolding for the demolition works shall be covered by two layers of tarpaulin sheet and netting to further control fugitive dust generation and further reduce the potential noise impact to the surrounding environment.
- 3.3.4 As good house keeping, during the execution of the demolition works, appropriate air pollution control measures shall be imposed for control of fugitive dust, the demolition site shall be sprayed with water to maintain a wet surface for control of dust generation, vehicle washing facilities including a high-pressure water jet will be provided at every discernible or designated vehicle exit point. Immediately before leaving the site, vehicles will be washed to remove any dusty materials or earth from the vehicle bodies and wheels. Where a vehicle leaving or entering the demolition site is carrying a load of dusty materials, the load will be within the level of the enclosure and the dusty material shall be fully enclosed by metal gate.
- 3.3.5 In addition, all dump trucks for the projects shall be installed with a Global Positioning System (GPS) to avoid all possible illegal dumping. A control centre has already been setup for such purpose.
- 3.3.6 During the course of the demolition works, air and noise levels at identified sensitive receivers shall be monitoring by following the procedures laid down under the Environmental Impact Assessment Ordinance to ensure the ambient air and noise levels are in compliance to all environmental standards at all time.
- 3.3.7 To further ensure that there shall be minimal disturbance and to protect the safety of students at the nearby Ma Tau Chung Government School, transportation of materials shall be restricted during the morning and afternoon period while students are travelling to and off from school. The demolition contractor shall continuous communicate with representatives from the school so as to schedule the works programme to ensure there shall have minimal disturbance to the school.
- 3.3.8 Management and Coordination meeting with stakeholders shall be set up prior to the actual works. Enquiry and complaint hotline will be setup for the nearby residents and the general public. Any complaints will be investigated and verified to ensure the remedial actions or mitigation measures are carried out as appropriate.