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ACE Paper 7/2008

For advice

**Report on the 101st
Environmental Impact Assessment Subcommittee Meeting**

INTRODUCTION

On 21 January 2008, the Environmental Impact Assessment (EIA) Subcommittee considered the EIA report on “Wan Chai Development Phase II and Central-Wan Chai Bypass” (ACE-EIA Paper 1/2008 refers).

ADVICE SOUGHT

2. Members are requested to advise whether the EIA report should be endorsed.

VIEWS OF THE SUBCOMMITTEE

Need for the project

3. The Wan Chai Development Phase II (WDII) is the conclusion of a number of planning studies commissioned by the Government, covering transport infrastructure and development along the shoreline of Central and Wan Chai, that date back to the early 1980s. The main purpose of the WDII is to provide land for the construction of the Trunk Road, i.e. Central-Wan Chai Bypass (CWB), and other key transport infrastructure including necessary ground level roads for connection to the Trunk Road and to cater for through traffic from Central to Wan Chai and Causeway Bay. The land formed for the above transport infrastructure will provide opportunities for the Government to develop a waterfront promenade for the enjoyment of the public.

Description of the project

4. The scope of the project consists of an engineering feasibility study of an urban development project with a study area covering approximately 90 ha in Wan Chai North and North Point area, which constitutes a Schedule 3 Designated Project (DP) under the EIA Ordinance (EIAO) being greater than 20 ha in the study area. The following individual Schedule 2 DPs are included in the scope of the development project (the project location is shown in **Figure 1**) –

- (a) **DP1** - The Trunk Road, i.e. CWB, including its road tunnel, slip roads (3 km long dual-3 carriageway with 2.5 km in tunnel form within WDII study area) (Items A.1 and A.7 of Part 1 of Schedule 2 of the EIAO);
- (b) **DP2** - Road P2 (0.6 km long and dual-2 lane primary distributor road within WDII study area) and other roads which are classified as primary/district distributor roads (Item A.1 of Part 1 of Schedule 2 of the EIAO);
- (c) **DP3** - Reclamation works (12.7 ha permanent reclamation and temporary reclamation in ex-Public Cargo Working Area and Causeway Bay Typhoon Shelter (CBTS)) and dredging works (1.15 Mm³) (Items C.1 and C.12 of Part 1 of Schedule 2 of the EIAO);
- (d) **DP4** - Temporary typhoon shelter (4 ha mooring area) (Item C.5 of Part 1 of Schedule 2 of the EIAO);
- (e) **DP5** - Wan Chai East Sewage Outfall (1,600 mm diameter twin-pipe outfall) (Items F.5 and F.6 of Part 1 of Schedule 2 of the EIAO); and
- (f) **DP6** - Dredging for the Cross-harbour Water Mains from Wan Chai to Tsim Sha Tsui (1.1 km long and 1,000 mm diameter twin pipelines requiring dredging of 0.06 Mm³ sediment) (Items C.12 of Part 1 of Schedule 2 of the EIAO).

Members' views

5. Members noted that the Environmental Protection Department (EPD) received three sets of public comments during the public inspection period from 20 December 2007 to 18 January 2008, which had been circulated to Members before the meeting.

6. Members noted that an EIA report on “Wan Chai Development Phase II” was endorsed by the Council in 2001 with some conditions. A separate EIA report on “Central-Wan Chai Bypass and Island Eastern Corridor Link” was also endorsed by the Council in 2001 with a condition. In light of the Court of Final Appeal judgment on the judicial review on the draft Wan Chai North Outline Zoning Plan in 2004 and the Town Planning Board’s request for a review of the WDII proposals, a planning and engineering review of the WDII project was conducted. The current EIA report was submitted under the WDII Planning and Engineering Review.

7. Members noted that one of the conditions in endorsing the EIA report on “Wan Chai Development Phase II” in 2001 was that a trial test on the use of geosynthetic containers and related handling mechanism should be undertaken under the scrutiny of EPD and a report should be made to the Council before implementation. The project proponent had conducted the relevant trial test and the report was incorporated into the current EIA report for the Council’s information.

8. Members agreed that the discussion should focus on the scope of development for the current EIA and related EIAs in 2001, noise impacts, water quality, marine ecology, air quality, landscape and visual impacts as well as options of the Trunk Road.

Scope of development for the current EIA and related EIAs in 2001

9. On the difference in the scope of development for the current EIA report and the two related EIA reports submitted to the Council in 2001, the project proponent team advised that the extent of reclamation reduced from 28.5 ha to 12.7 ha which was the absolute minimum requirement. The construction of an elevated road was changed to a tunnel under the Causeway Bay Typhoon Shelter (CBTS). Instead of diverting the existing drainage culverts to the extended reclamation area outside CBTS and re-provisioning some existing mooring areas outside the breakwater, no major change was proposed to CBTS under the current EIA report. Regarding the tunnel, the length was extended from 2.3 km to 3.5 km.

10. In terms of environmental impacts, the project proponent team advised that the previous EIAs did not predict exceedance of Air Quality Objective criteria during the operation phase for the open road sections. Nonetheless, the installation of noise barriers at an open flyover section in Causeway Bay was required due to predicted exceedance of noise level. The tunnel option in the current EIA would help improve the traffic flow direct from Central to the Island Eastern Corridor (IEC) in North Point. It was estimated that about 60% of the traffic would be diverted

underground and hence pedestrians were far less exposed to traffic noise along the shoreline. There would be no adverse environmental impacts due to portal emissions.

Noise Impacts

11. Some Members expressed concern about the predicted noise exceedance in North Point during the construction phase. The predicted noise level would exceed the noise standard of 75 dB(A) by 10dB(A) for 1 month at Mayson Garden; by up to 5 dB(A) for a total of 8 weeks at Harbour Heights; and by up to 9 dB(A) for a total of 16 weeks at City Garden. The project proponent team explained that the predicted noise exceedance was mainly due to the demolition of IEC. In the EIA, the prediction was based on the worst-case scenario. Mitigation measures, such as quiet powered mechanical equipment (PME), movable and temporary noise barriers and PME grouping, would be used as far as practicable to minimize noise impacts to nearby noise sensitive receivers (NSRs). There would be on-going liaison with affected parties, such as the provision of hotline service, to ensure that complaints would be dealt with efficiently.

12. On the possibility of using more quiet PME and minimizing the use of noisy plants, the project proponent team explained that the demolition of IEC would involve the cutting of joints and breaking up of the precast beams. Under certain circumstances, the use of more conventional noisy breakers, such as pneumatic breakers (the noisiest type of PME to be used), would be unavoidable at times for some of the demolition works. The noisy activities would not be a continuous process but only transient and short in duration at certain parts of IEC as the demolition works moved along. Such demolition process was similar to that of the Causeway Bay Flyover reconstruction project.

13. On the possibility of imposing restrictions on the use of particular types of PME, the project proponent team advised that there would be close site monitoring to ensure that the contractors would use the best practicable PME in terms of noise unless there was no other alternative.

14. On the possibility of restricting the time for high noise generating activities, such as using pneumatic breakers, especially during school examination periods, the project proponent team explained that there would be control measures in restricting high noise generating activities to certain durations of the day and certain days of the week having regard to local residents' requests. For the school near IEC which was one of the NSRs, the predicted noise level at the external façade of the school area was about 77 dB(A). The school had already been insulated with air

conditioners and closed windows for screening off existing traffic noise. Thus, the noise impacts at the indoor environment could be avoided. Close liaison would be maintained with the school management and efforts would be made to further reduce the noise level, especially during school examination periods.

15. On the possibility of using alternative demolition methods, such as hydraulic crushers and chemical methods, the project proponent team highlighted that the use of demolition methods was not programme-driven for speeding up the work progress. Considerations had been given to alternative methods, such as saw-cuttings, hydraulic crushers and chemical methods. The major difficulty was that the project adopted a cut-and-build approach with the need to preserve the integrity of some existing structures for in-situ reconstruction. The demolition works thus was not a complete top-to-bottom demolition. In the EIA, saw-cuttings were assumed for some work processes. However, hydraulic crushers, which were mainly used for building demolition, and chemical methods were not practicable.

16. The project proponent team noted Members' concerns about the predicted noise exceedance during the construction phase. They explained that controls could be imposed through the construction contract. The bidders would be required to submit method statements in specifying the demolition methods. The method statements would be assessed by a marking scheme through which the most suitable contractor who could use the best practicable methods to address the noise problem would be considered. There would be difficulty to specify the detailed methods and specific items of plants at this stage. Nonetheless, there were general requirements on the mitigation measures, such as the use of quiet PME and temporary noise barriers, in the Environmental Monitoring and Audit (EM&A) manual.

17. On the assessment approach of environmental performance, the project proponent team explained that there was a comprehensive technical score assessment system for Government projects. High scores would be awarded to bidders who could provide technically practicable methods with minimal environmental impacts. Every effort would be made to achieve the minimal noise impacts in the detailed design stage. While there were restrictions on Government tenders in putting too much emphasis on a certain type of performance, the importance of environmental performance would be highlighted to bidders for the current project.

18. On the means to ensure that proposed noise-reduction methods in the contract would be used on the site, the project proponent team explained that the proposed methods would be reviewed by the Environmental Team under the EM&A programme to assess the feasibility and environmental benefits. Auditing of the

EM&A works performed by the Environmental Team would be conducted by Independent Environmental Checkers.

19. Some Members considered that close liaison with the NSRs would be an effective means to manage the noise problem based on past experience. The project proponent team advised that they had been liaising closely with the affected parties since the design consultation stage. Quoting the example of Causeway Bay Flyover reconstruction project, they had issued newsletters to affected parties regularly to keep them posted of the progress of the project and updated information, such as temporary traffic arrangement and alternative routes. The same project management approach would be applied to the current project. They would keep close contacts with the nearby residents through the District Offices, local management offices and owners' corporations. From their experience, the residents would be in a better position to have a closer and more objective surveillance on the contractor's performance on site, especially in the aspect of noise control.

20. On the possible noise impacts of the new Slip Road 8 on users of the Victoria Park, the project proponent team explained that the slip road was a single-lane road linking the Victoria Park Road with the Trunk Road Tunnel for use by light vehicles. The anticipated traffic volume was not heavy with only about 750 passenger car unit per hour in peak periods and heavy vehicles were prohibited. Under the EIAO, park users were not identified as NSRs and no noise assessment was conducted. Nonetheless, measures would be taken to mitigate the noise and visual impacts of the slip road on park users.

21. Some Members expressed concern about the impacts of the slip road on park users as the road intruded into the park. The project proponent team explained that roadside screen planting would be put at the open section of the road and a landscaped deck with aesthetic design would be put on the road section where it landed on the park. The latter part of the slip road would disappear from sight and would not have impacts on park users. In designing this particular part of the park, the project proponent would liaise with the Leisure Services and Cultural Department and Architectural Services Department to take into account the slip road in matching with other facilities. On the request of some Members, the project proponent team agreed to consider using small earth mounts with landscaping to further screen off traffic noise and improve the visual impact. Detailed design would be worked out at a later stage.

22. On the predicted increase in traffic volume on IEC and thus noise impacts on nearby residents after completion, the project proponent team advised that

the Trunk Road was to resolve the traffic congestion problems along the east-west Connaught Road Central/Harcourt Road/Gloucester Road corridor. Based on the traffic impact assessment, there would not be much difference in traffic volume on IEC after completion of the project. The predicted traffic volume would slightly increase by about 0.17% by 2031, which was mainly due to natural growth. The assessment had taken into account traffic patterns on a territory-wide scale and sensitivity tests of toll fares.

23. On the possibility of improving noise impacts on the existing IEC section, the project proponent team explained that the major problem was that the foundation of the existing section was not strong enough to support the installation of noise barriers. It was necessary to demolish the whole section and rebuild it.

24. On the possibility of using new road surfacing technology for reducing noise impacts, the project proponent team advised that the “low noise road surfacing” (LNRS) method, which was used extensively, would be employed for the current projects as far as practicable. The LNRS was a layer of some 20 mm porous aggregates with special bitumen mixture which would be able to absorb noise generated from engines and tyres. It could reduce the noise level up to 3 dB(A) in the initial stage. Nonetheless, regular maintenance for every 2 to 3 years would be required and LNRS could not be used on some parts of IEC due to the structural capacity.

25. On the temporary noise barriers, the project proponent team explained that movable and temporary noise barriers would be used as a noise mitigation measure. The noise barriers were made up of acoustic sound absorptive lining with a cantilevered upper portion which could be erected independently near the plants to achieve maximum screening effect. Figures 4.9 and 4.9a of the EIA report showed the locations of temporary noise barriers during the construction phase.

26. EPD advised that as stipulated in the Technical Memorandum on EIA Process, the noise criteria for construction or decommissioning of designated projects should be met as far as practicable. All practicable mitigation measures should be exhausted and the residual impacts were minimized. Thus, it was recognized that there would be practical difficulties for the project proponents to meet the noise criteria strictly. As elaborated in paragraph 12 of the paper, efforts had been made by the project proponent to minimize the impacts. With the implementation of practicable measures, under a reasonable worst-case scenario, the maximum potential noise impact had been reduced from 101 dB(A) to 85 dB(A) and the period of such noise exceedance had been reduced from 8 months to 1 month within the 8 years

construction period. From experience, transparent and close liaison with affected parties would be an effective means in managing the problem of unavoidable noise problem.

Water quality

27. On the temporary reclamation, the project proponent team explained that the purpose of temporary reclamation was to provide a temporary work platform to facilitate cut-and-cover tunnel construction of the Trunk Road. It would not form any land for any land use purpose. The temporary reclamation works would be carried out by 4 phases, 1 to 2 years each, with about 1 to 2 blocks of temporary platforms at any one time. The platforms of each stage would be removed and seabed reinstated after moving to the next stage. Through the staging approach, it was possible to ensure water circulation, maintain existing drainage culverts and minimize adverse impacts on the existing moorings. Figure 2.7 in the EIA Report showed the reclamation stages.

28. The project proponent team confirmed that water quality of the temporary reclamation was included in the water quality modelling in the EIA. The result showed that there would be some localized exceedances within CBTS for a short period of time. Suitable mitigation measures to reduce adverse impacts would be put in place. Dredging works would be done within silt curtains, filling works would be done behind seawalls and silt screens would be installed at the water intake areas. While there would be some effects on water circulation, the staging approach would avoid the creation of a stagnant water body. Some flushing would be allowed as far as practicable. During the operation phase, there would be no adverse water quality impacts.

29. Some Members expressed concern about the deterioration of odour nuisance due to the temporary dredging. The project proponent team advised that investigation was conducted. In the dredging process, the main source of odour was from the sediment. While the temporary reclamation would have some impacts on circulation of water body in the area, it would at the same time take out the odorous materials from deposited sediments. Thus, there would actually be an improvement of the existing odour problem.

30. On the materials for reclamation, the project proponent team advised that the plan was to use public fill materials for temporary reclamation. For permanent reclamation, a combination of marine sand and public fill materials would be used. Sand fill materials would be mainly used for areas below the sea level while

public fill materials would be used for areas above the sea level based on engineering requirements for reclamation settlement performance.

31. On the impacts of the temporary CBTS rubble mound breakwater, the project proponent team explained that the temporary structure was the same as the existing one consisting of rubbles and sloping seawall. The hydrodynamic and water quality aspects of the structure were modelled in the EIA and found acceptable. The criteria for minimal wave reflection by the port works authority were complied with. As regards the new permanent seawall, it would be wave energy absorbing and vertically erected with frontal chambers. The design and structure were similar to those under the Central Reclamation Phase III project. The design complied with the wave reflection criteria and was an improved version over the existing solid seawall. As regards the habitats of waterbirds, there would be no major change to CBTS and thus the habitat of the waterbirds.

Marine ecology

32. Members noted that there were concerns about the translocation of the coral colonies. The project proponent team explained that as only two common coral species of tolerant nature were found in turbid waters inside Victoria Harbour, the timing of the translocation was not particularly critical. Nonetheless, they would draw up detailed translocation plan with the avoidance of spawning season to minimize disturbance to the coral colonies. Regarding the monitoring programme after transplantation, the frequency of monitoring on a quarterly basis for one year as recommended in the EM&A manual was considered adequate. Based on experience, translocated corals which survived after the first year should have no problem to continue to flourish. Moreover, the coral species found were of tolerant nature.

33. Members noted that a Council Member recommended that conditions should be set regarding the translocation of coral in that the EM&A programme should be reviewed to recommend a definite translocation period for the coral colonies; to include colony growth in the monitoring programme for the transplanted coral colonies; and to extend the coral monitoring programme from one year to three years.

34. On the colony species found, AFCD confirmed that the corals found were common species, small in size and isolated colonies attached to movable boulders. Given the nature of the corals found and that the project proponent had committed to draw up a detailed translocation plan with the avoidance of spawning seasons to minimize disturbance to the coral colonies, Members considered that the

proposed quarterly monitoring for one year in the EM&A programme was sufficient.

Air quality

35. Members noted that there were concerns about the air emissions from the eastern ventilation shaft/tunnel portal for the CWB. The project proponent team explained that assessment on the cumulative air quality impacts during the operation phase concluded that the Air Quality Objective criteria would be complied. The ventilation design was not a direct mitigation measure in response to any exceedance under the EIAO, it was an initiative taken as part of the design with a view to further enhancing the air quality. The proposed ventilation system included the zero portal emission at the eastern tunnel portal and electrostatic precipitator at the east vent shaft. The system would extract air away from the portal of the trunk tunnel at source. The east vent shaft would be located about 250 m away from the nearby residential developments. As the length of the tunnel was longer than the previous design, conventional longitudinal ventilation system was not recommended. The mechanical semi-transverse ventilation system which had been used in other tunnels such as the Eastern Harbour Cross Tunnel would be used. It could be designed to extract all of the exhaust air from the tunnel portal. The exhaust air would be filtered by the electrostatic precipitator system which would remove as much as 80% of respiratory suspended particulates. For nitrogen dioxide, the impacts would be relatively low and possible filtering systems had not been fully tested. The cost of accommodating such systems would be expensive and would require additional reclamation.

36. Members noted that there were concerns about impacts of the project on the hotel development near Oil Street at North Point. The project proponent team explained that the environmental impacts on the hotel development had been considered in the EIA report. It had been taken into account as an air sensitive receiver in the operation phase. Although it was not listed as a sensitive receiver for construction dust, the contour plans for construction dust impact assessment indicated the extent of impacts on all sensitive receivers in the study area, including the hotel development, and showed that it would comply with the Air Quality Objectives.

Landscape and visual impacts

37. On the visual impacts of the noise semi-enclosure on part of IEC, the project proponent team explained that the noise semi-enclosure was provided in response to the local residents' requests during the public consultation stage. A physical model and photomontage covering the preliminary noise mitigation measures were on display at the public engagement forums with the residents of

North Point. The residents were particularly invited to comment on the provision of noise mitigation measures. The residents considered that noise semi-enclosure, rather than simple noise barrier, would be more effective in tackling the existing traffic noise problem. The Eastern District Council was also consulted. The plan of the noise semi-enclosure was included in the gazetted plans.

38. Some Members noted that the option which would affect the largest number of trees in the Victoria Park was selected in connection with the construction of Slip Road 8 of the Trunk Road. The project proponent team explained that the number of trees affected for the option was reduced from 160 to 84 while the other two options would affect 62 and 57 trees. The 84 number of trees to be affected would be the maximum scenario. None of the affected trees was Champion Trees or Registered Old and Valuable Trees. While every effort had been made to reduce the number of trees affected, it was also necessary to meet the design requirements of reprovisioning the bowling green and other nearby facilities in Victoria Park. The selected option was a trade-off to meet the reprovisioning requirements while affecting the minimum number of trees. The other two options could not satisfactorily reprovision the facilities. After lengthy discussion with relevant government departments, the footprint of the bowling green was reduced by trimming the number of lanes from 12 to 9 in order to further reduce the number of trees affected.

Options of the Trunk Road

39. Members noted that there were concerns about the tunnel option rather than the flyover option for the construction of the Trunk Road. The project proponent team explained that in assessing various options for the trunk road, both the tunnel option and flyover option were included. Thorough considerations, including engineering and environmental aspects, had been given to the choice of the options. The overriding reason for selecting the tunnel option was the need to comply with the Protection of Harbour Ordinance (PHO). The tunnel option was found to perform better as it would comply with the PHO and it would result in less affected areas of the Harbour, give more opportunity for harbour enhancement and cause less traffic disruption. In terms of environmental impacts, the tunnel option would cause less noise and visual impacts.

Conclusion

40. Having regard to the findings and recommendations of the EIA report and information provided by the project proponent, Members agreed to recommend

to the full Council that the EIA report could be endorsed with the following proposed conditions –

- (a) the use of pneumatic breakers, if required for demolishing the existing IEC, should be confined to 0900 to 1700 hours on weekdays (Monday to Friday), and should not be used any time on Saturdays, Sundays and general holidays, and during the school examination hours of the schools near the works site;
- (b) a real-time on-site monitoring system of the noise level around the works sites at North Point and Tin Hau during the construction phase should be put in place;
- (c) a Community Liaison Group comprising representatives of concerned and affected parties, including owners' corporations, management offices, local committees and schools in the North Point and Tin Hau areas, should be set up to facilitate communications, enquiries and complaints handling;
- (d) the water quality monitoring and audit programme should be enhanced to include monitoring of possible deterioration to avoid aggravation of odour nuisance from seawater arising from temporary reclamation in the ex-Public Cargo Working Area and the Causeway Bay Typhoon Shelter, and mitigation measures, if necessary, should be proposed to improve the problem; and
- (e) additional mitigating measures, such as noise screening structures with aesthetic design, should be put in place to reduce the noise and visual impacts of the Slip Road 8 on users of the Victoria Park during the operation phase.

