

**Appendix 1-3**  
**EIA Study Brief No. ESB-083/2001**

**Environmental Impact Assessment Ordinance (Cap. 499)  
Section 5(7)**

**Environmental Impact Assessment Study Brief No. ESB-083/2001**

**Project Title : Fill Bank at Tseung Kwan O Area 137**

**Name of Applicant : Civil Engineering Department**

**1. BACKGROUND**

- 1.1 An application (No. ESB-083/2001) for an Environmental Impact Assessment (EIA) study brief under section 5(1) of the Environmental Impact Assessment Ordinance (EIAO) was submitted by the captioned Applicant on 17 August 2001 with a project profile (No. PP-140/2001) (the Project Profile).

**Purpose of the Project**

- 1.2 The purpose of the Project is to establish and operate a fill bank at Tseung Kwan O Area 137 (Figure 1) for temporary stockpiling of public fill to supplement the projected shortfall in the overall territory-wide public fill capacity, particularly between 2002 and 2005. When surplus public fill capacity is available in the territory, the stockpile in TKO Area 137 will be removed and delivered, mainly by barges, to the public fill areas with surplus capacities.
- 1.3 A Construction and Demolition Material Sorting Facility (C&DMSF) will be established within the fill bank for sorting mixed construction and demolition (C&D) materials and reducing the over-sized materials contained in C&D materials.
- 1.4 Construction and demolition (C&D) materials are a mixture of inert materials (e.g. soil, rocks and broken concrete) and wastes arising from construction activities. Local construction industry annually produces about 14 million tonnes of C&D materials. At the moment, most of the inert materials (also known as public fill) are reused at reclamation projects, which hitherto have been the major outlet for these materials. It is anticipated that by mid-2002 most of the approved reclamation projects will no longer be able to absorb further public fill.

**Project Location**

- 1.5 The Project site is located in Tseung Kwan O Area 137 covering an area of approximately 104 hectares. To the east of the Project site is Clear Water Bay Country Park and to its north are the SENT Landfill and the Tseung Kwan O Industrial Estate (Figure 2). The TVB Broadcast and Production Centre in the

Tseung Kwan O Industrial Estate adjoining the northern boundary of the Project site is anticipated to commence operation in early 2003.

- 1.6 Further north in Tseung Kwan O Area 85 and Area 86 are planned residential developments and schools; in Area 50 two planned schools and Area 51 Oscar By The Sea. To the south across the harbour falling in sight are Island Resort and Fullview Garden in Siu Sai Wan (Figure 2).

### **Project Scope**

- 1.7 The scope of the Project comprises:

- (i) site clearance;
- (ii) construction of a temporary storm water system;
- (iii) stockpiling of 6 million cubic metres (Mm<sup>3</sup>) or 10.8 million tonnes of public fill to be delivered by trucks or barges;
- (iv) setting up a barging point for transporting the stockpiled public fill by barges; and
- (v) constructing and operating a Construction and Demolition Material Sorting Facility (C&DMSF).

### **Designated Project**

- 1.8 The Project is a designated project by virtue of C.11 of Schedule 2, Part I of the EIAO, which specifies that a public dumping area of not less than 2 ha in size is a designated project.
- 1.9 Pursuant to section 5(7)(a) of the EIAO, the Director of Environmental Protection (the Director) issues this EIA study brief to the Applicant to carry out an EIA study for the Project.
- 1.10 The purpose of the EIA study is to provide information on the nature and extent of environmental impacts arising from the establishment, operation and decommissioning of the Project and related activities taking place concurrently. This information will contribute to decisions by the Director on :
- (i) the overall acceptability of any adverse environmental consequences that are likely to arise as a result of the Project;
  - (ii) the conditions and requirements for the detailed design, establishment, operation and decommissioning of the Project to mitigate against adverse environmental consequences wherever practicable; and
  - (iii) the acceptability of residual impacts after implementation of the proposed mitigation measures.

## 2. OBJECTIVES OF THE EIA STUDY

2.1 The objectives of the EIA study are as follows:

- (i) to describe the Project and associated works together with the requirements for carrying out the Project;
- (ii) to identify and describe the elements of the community and environment likely to be affected by the Project and/or likely to cause adverse impacts to the Project, including both the natural and man-made environment;
- (iii) to consider alternatives with a view to avoiding or minimizing the potential environmental impacts, to compare the environmental benefits and dis-benefits of each of the different options, to provide reasons for selecting the preferred option and to describe the part environmental factors played in the selection;
- (iv) to identify and quantify emission sources and determine the significance of impacts on sensitive receivers and potential affected uses;
- (v) to identify any potential water quality impacts on sensitive receivers during the establishment, operation and decommissioning stages;
- (vi) to identify and quantify any potential landscape and visual impacts and to propose measures to mitigate these impacts;
- (vii) to propose the provision of infrastructure or mitigation measures so as to minimize pollution, environmental disturbance and nuisance during establishment, operation and decommissioning of the Project;
- (viii) to investigate the feasibility, effectiveness and implications of the proposed mitigation measures;
- (ix) to identify, predict and evaluate the residual environmental impacts (i.e. after practicable mitigation) and the cumulative effects expected to arise during establishment, operation and decommissioning of the Project in relation to the sensitive receivers and potential affected uses;
- (x) to identify, assess and specify methods, measures and standards to be included in the detailed design, establishment, operation and decommissioning of the Project which are necessary to mitigate these environmental impacts and reduce them to acceptable levels;
- (xi) to investigate the extent of side-effects of the proposed mitigation measures that may lead to other forms of impacts;
- (xii) to identify constraints associated with the mitigation measures recommended in the EIA study, as well as provision of any necessary modification; and

- (xiii) to design and specify environmental monitoring and audit requirements, if required, to ensure effective implementation of the recommended environmental protection and pollution control measures.

### 3. DETAILED REQUIREMENTS OF THE EIA STUDY

#### **The Purpose**

- 3.1 The purpose of this study brief is to scope the key issues for the EIA Study. The Applicant has to demonstrate in the EIA report that the criteria set out in the relevant sections of the Technical Memorandum on EIA Process of the Environmental Impact Assessment Ordinance (hereinafter referred to as the TM) and the requirements specified below are fully complied with.

#### **The Scope & Programme**

- 3.2. The EIA study shall cover the Project scope mentioned in section 1.7 above. In the EIA study the Applicant shall describe in detail the nature, scope and extent of the Project, covering all phases and key sequences of the Project. The EIA report shall contain a development programme for the Project indicating the duration of the establishment, operation and decommissioning phases.

The EIA study shall address the likely key issues described below, together with any other key issues identified during the course of the EIA study :

- (i) the dust/air quality impact due to the establishment, operation and decommissioning of the Project. ASRs along Wan Po Road (such as TVB Broadcast and Production Centre, Nam Fung Plaza, On Ning Garden and etc.) should be addressed;
- (ii) the construction noise, fixed noise sources and traffic noise impacts due to the establishment, operation and decommissioning of the Project. Traffic noise impacts on NSRs along Wan Po Road (including Nam Fung Plaza, On Ning Garden and etc.) should be addressed;
- (iii) the landscape and visual impact due to the establishment, operation and decommissioning of the Project;
- (iv) the likely water quality impact of the Project; and
- (v) the qualitative landfill gas hazards assessment on the Project.

#### **Purpose of the Project**

- 3.3 The Applicant shall state clearly the purpose of the Project, in particular the

problem(s) or opportunity(s) that the Project is intended to solve or satisfy, and what is to be achieved by carrying out the Project.

### **Consideration of Alternatives**

- 3.4 When preparing the EIA report in accordance with the technical requirements below and the TM, the Applicant shall indicate in the EIA report that he has considered different alternatives and means in respect of project siting, design, construction, operation and decommissioning methods, and etc., with an aim to avoid or minimize the potential environmental impacts of the Project. The Applicant shall objectively compare the environmental impacts, environmental benefits and dis-benefits of each of the different alternatives, set out the reasons for selecting the final preferred option, and adequately describe the environmental factors played in the selection.

### **Technical Requirements**

- 3.5 The Applicant shall conduct the EIA study to address all environmental aspects of the activities covered by the Project scope. The EIA study shall address the following technical requirements on specific impacts :

#### **3.5.1 Air Quality Impact**

- 3.5.1.1 The Applicant shall follow the criteria and guidelines as stated respectively in section 1 of Annex 4 and Annex 12 of the TM for evaluating and assessing the air quality impact.
- 3.5.1.2 The assessment area for air quality impact generally shall be defined by a distance of 500 m from the boundary of the Project site. For this case, the assessment shall also include the existing, planned and committed sensitive receivers along Wan Po Road such as the TVB Broadcast and Production Centre, residential developments and schools in Area 85 and Area 86, Nam Fung Plaza, On Ning Garden, and etc.
- 3.5.1.3 The Applicant shall assess the air pollutant concentrations with reference to the latest set of Guidelines for Local-Scale Air Quality Assessment Using Models issued by Environmental Protection Department, HKSAR.
- 3.5.1.4 The air quality assessment shall include the following:

#### **Background and Analysis of Activities**

- (i) Provide background information on air quality issues relevant

to the Project, including description of the Project activities that may affect the air quality during establishment, operation and decommissioning of the Project.

- (ii) Present the background air quality levels in the assessment area for the purpose of evaluating the cumulative air quality impact during establishment, operation and decommissioning of the Project.
- (iii) Give an account, where appropriate, of the consideration/ measures that have been taken into consideration in planning the Project to abate the air pollution impact. That is, the Applicant shall consider alternative construction methods, phasing, programming and operation modes to minimize the air quality impact arising respectively from the establishment, operation and decommissioning of the Project.

Identification of Air Sensitive Receivers (ASRs) and Examination of Emission/Dispersion Characteristics

- (iv) Identify and describe representative existing, planned and committed ASRs that would likely be affected by the Project, including those earmarked on the latest relevant Outline Zoning Plans, Outline Development Plans and Layout Plans. The Applicant shall select the assessment points of the identified ASRs that represent the worst impact points of these ASRs. A good quality to-scale map showing the locations of the assessment points with a description, including buildings' names, uses and heights, shall be included in the report. The separation distances of these ASRs from the nearest emission sources should also be given.
- (v) Provide an exhaustive list of air pollutant emission sources, including any nearby emission sources, which are likely to have impact related to the Project. Examples of establishment, operational and decommissioning emission sources include sorting and crushing of the C&D materials, stock-piling of fill, compaction of fill, removal of fill, as well as vehicular flow and movements on unpaved haul roads on site, along Wan Po Road, and etc. Confirmation of the validity of the assumptions and the magnitude of the activities shall be obtained from the relevant government/authorities and documented.

Constructional (Establishment) Air Quality Impact

- (vi) The Applicant shall follow the requirements of the Air Pollution Control (Construction Dust) Regulation in dust

control to ensure that construction dust impact during the establishment stage is controlled within the relevant standards as stipulated in section 1 of Annex 4 of the TM.

- (vii) If the Applicant anticipates a significant construction dust impact that will likely cause exceedance of the recommended limits in the TM at the ASRs despite incorporation of the dust control measures stated in (vi) above, a quantitative assessment should be carried out to evaluate the construction dust impact at the identified ASRs. An audit and monitoring programme during the establishment stage shall be initiated to verify the effectiveness of the control measures and to ensure that the construction dust levels be brought under control. The Applicant shall follow (ix) to (xi) below when carrying out the quantitative assessment.

#### Operational and Decommissioning Air Quality Impact

- (viii) Quantitative assessments should be carried out to evaluate the dust and vehicular emission impacts during both the operational and decommissioning stages. Calculations shall be based on an assumed reasonably worst case scenario. An audit and monitoring programme during operational and decommissioning stages shall be initiated to verify the effectiveness of the control measures and to ensure that the dust levels be brought under control. The Applicant shall follow (ix) to (xi) below when carrying out the quantitative assessment.

#### Quantitative Assessment Methodology

- (ix) The Applicant shall apply the general principles enunciated in the modeling guidelines (section 3.5.1.3) while making allowance for the specific characteristic of the Project. This specific methodology must be documented in such level of details (preferably with tables and diagrams) to allow the readers of the assessment report to grasp how the model is set up to simulate the situation at hand without referring to the model input files. Details of the calculation of the emission rates of air pollutants for input to the modeling shall be presented in the report. The Applicant must ensure consistency between the text description and the model files at every stage of submission. In case of doubt, prior agreement between the Applicant and the Director on the specific modelling details is advised.
- (x) The Applicant shall identify the key/representative air pollutant parameters (types of pollutants and the averaging time



concentration) to be evaluated and provide explanation for choosing these parameters for the assessment of the impact of the Project.

- (xi) The Applicant shall calculate the cumulative air quality impact at the identified ASRs and compare these results against the criteria set out in section 1 of Annex 4 in the TM. The predicted air quality impacts (both unmitigated and mitigated) shall be presented in the form of a summary table and pollution contours, for comparison with the relevant air quality standards and examination of the land use implications of these impacts. Plans of suitable scales should be used for the presentation of pollution contours for determining the buffer distances required.

#### Mitigation Measures for Non-compliance

- (xii) The Applicant shall propose remedies and mitigation measures where the predicted air quality impact exceeds the criteria set out in section 1 of Annex 4 in the TM. These measures and any constraints on future land use planning shall be agreed with the relevant government departments/authorities and documented. The Applicant shall demonstrate quantitatively that the resultant impacts after incorporation of the proposed mitigation measures will comply with the criteria stipulated in section 1 of Annex 4 in the TM.

#### Submission of Model Files

- (xiii) All input and output file(s) of the model run(s) shall be submitted to the Director in an electronic format.

### 3.5.2 Noise Impact

3.5.2.1 The Applicant shall follow the criteria and guidelines as stated respectively in Annex 5 and Annex 13 of the TM for evaluating and assessing the noise impact.

3.5.2.2 The noise impact assessment shall include the following:

- (i) Determination of Assessment Area

The "Assessment Area" for the noise impact assessment shall include all areas within 300 m from the Project boundary. For this case, the assessment shall also include the existing,

planned and committed sensitive receivers along Wan Po Road subject to traffic noise impact, such as residential developments and schools in Area 85 and Area 86, Nam Fung Plaza, On Ning Garden, and etc.

(ii) Provision of Background Information and Existing Noise Levels

The Applicant shall provide all background information relevant to the Project, e.g. relevant previous or current studies. Unless it is required to determine the assessment criterion, no existing noise levels are particularly required.

(iii) Identification of Noise Sensitive Receivers

(a) The Applicant shall refer to Annex 13 of the TM when identifying the NSRs. The NSRs shall include all existing, planned and committed noise sensitive developments and uses earmarked on the latest relevant Outline Zoning Plans, Outline Development Plans and Layout Plans.

(b) The Applicant shall select assessment points to represent all identified NSRs for carrying out a quantitative noise assessment described below. The assessment points shall be agreed with the Director prior to undertaking the quantitative noise assessment. A good quality and to scale map showing the locations of selected assessment points with a description, including buildings' names, uses and floors, shall be given. For planned noise sensitive land uses without committed site layouts, the Applicant should use the relevant planning parameters to work out site layouts for the operational noise assessment purpose.

(iv) Provision of an Emission Inventory of Noise Sources

The Applicant shall provide an inventory of noise sources including construction equipment for the construction noise assessment and fixed plant equipment, as appropriate, for the operational noise assessment. Confirmation of the validity of the inventory shall be obtained from the relevant government departments/authorities and documented.

All noise sources identified shall be evaluated, with proposal of mitigation measures if required, in accordance with the criteria and guidelines stated in Annex 5 and Annex 13 of the TM.

(v) Construction Noise Assessment

- (a) The Applicant shall carry out an assessment of noise impact from construction (excluding percussive piling) of the Project during day time, i.e. 7 a.m. to 7 p.m. on weekdays other than general holidays, in accordance with the methodology stipulated in sections 5.3 and 5.4 of Annex 13 of the TM. The criteria in Table 1B of Annex 5 of the TM shall be adopted in the assessment.
- (b) If the unmitigated construction noise levels are found exceeding the relevant criteria, the Applicant shall propose practicable direct mitigation measures (including movable barriers, enclosures, quieter alternative methods, re-scheduling and restricting hours of operation of noisy tasks) to minimize the impact. If the mitigated noise levels still exceed the relevant criteria, the duration of the noise exceedance shall be given.
- (c) In case the Applicant would like to evaluate whether construction works in restricted hours as defined under the Noise Control Ordinance (NCO) are feasible or not in the context of programming construction works, reference should be made to the relevant technical memoranda issued under the NCO. Regardless of the results of the construction noise impact assessment for restricted hours, the Noise Control Authority will process the Construction Noise Permit (CNP) application, if necessary, based on the NCO, the relevant technical memoranda issued under the NCO, and the contemporary conditions/situations. This aspect should be explicitly stated in the noise chapter and the conclusions and recommendations chapter in the EIA report.

(vi) Fixed Noise sources

If the Project will cause any fixed noise sources, such as operation of the Fill Bank, the following assessment shall be followed :

(a) Assessment of Fixed Source Noise Levels

The Applicant shall calculate the expected noise using standard acoustics principles. Calculations of the expected noise shall be based on the assumed plant inventories and utilization schedule for the worst case scenario. The Applicant shall calculate the noise levels taking into account correction of tonality, impulsiveness

and intermittence in accordance with the Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites.

(b) Presentation of Noise Levels

The Applicant shall present the existing and future noise levels in Leq (30 min) at the NSRs at various representative floor levels ( in m P.D.) on tables and plans of suitable scales.

A quantitative assessment at the NSRs for the proposed fixed noise sources(s) shall be carried out and compared against the criteria set out in Table 1A of Annex 5 of the TM.

(c) Proposals for Noise Mitigation Measures

The Applicant shall propose direct technical remedies within the Project limits in all situations where the predicted noise level exceeds the criteria set out in Table 1A of Annex 5 of the TM to protect the affected NSRs.

(vii) Road Traffic Noise

(a) Calculation of Noise Levels

The Applicant shall calculate the expected road traffic noise from Wan Po Road using the methods described in the U.K. Department of Transport's "Calculation of Road Traffic Noise" (1988). Calculations of future road traffic noise shall be based on the peak hour traffic flow in respect of the maximum traffic projection within a 15 year period upon commencement of operation of the proposed roadwork. The Applicant shall calculate the traffic noise levels at the NSRs along Wan Po Road.

(b) Presentation of Noise Levels

The Applicant shall present the prevailing and future traffic noise levels in L10 (1hr) at the NSRs on tables and plans of suitable scales.

A quantitative assessment at the NSRs along Wan Po Road shall be carried out and compared against the criteria set out in Table 1A of Annex 5 in the TM. The potential noise impact along Wan Po Road shall be

quantified by estimating the total number of dwellings, classrooms and other noise sensitive elements that will be exposed to noise levels exceeding the criteria set out in Table 1A of Annex 5 of the TM.

(c) Traffic Noise Model

The report shall contain sample calculation and input parameters for 5 assessment points as requested by the Director. Also, the Applicant shall provide the input data set of the traffic noise model in the format of electronic files in the report.

The Applicant shall prepare and provide drawings of appropriate scales to show the road segments, topographic barriers, and assessment points of sensitive receivers input into the traffic noise model.

(d) Proposals for Noise Mitigation Measures

After rounding of the predicted noise levels according to the U.K. Department of Transport's "Calculation of Road Traffic Noise"(1988), the Applicant shall propose direct technical remedies in all situations where the predicted traffic noise level exceeds the criteria set out in Table 1A of Annex 5 in the TM by 1 dB(A) or more. Specific reasons for not adopting certain direct technical remedies in the design to reduce the traffic noise to a level meeting the criteria in the TM or to maximize the protection for the NSRs as far as possible should be clearly laid down and quantified. The total number of dwellings, classrooms and other noise sensitive elements that will be benefited by the provision of direct technical remedies should be provided.

The total number of dwellings, classrooms and other noise sensitive elements that will still be exposed to noise levels above the criteria with implementation of all recommended direct technical remedies shall be quantified.

(viii) Assessment of Side Effects and Constraints

The Applicant shall identify, assess and propose means to minimize any side effects and to resolve any potential constraints due to the inclusion of any recommended direct technical remedies.

(ix) Evaluation of Constraints on Planned Noise Sensitive Project/Landuses

- (a) In the event that there are planned noise sensitive uses which will still be affected even with all practicable direct technical remedies in place, the Applicant shall propose, evaluate and confirm the practicality of additional measures within the planned noise sensitive uses and shall make recommendations on how these noise sensitive uses will be designed for information of the relevant parties.
- (b) The Applicant shall take into account the agreed environmental requirements/constraints identified by the study to assess the development potential of the concerned sites, which shall be made known to the relevant parties.

**3.5.3 Landscape and Visual Impact**

- 3.5.3.1 The Applicant shall follow the criteria and guidelines as stated respectively in Annex 10 and Annex 18 of the TM for evaluating and assessing the landscape and visual impact arising from the establishment, operation and decommissioning of the Project.
- 3.5.3.2 The assessment area for the landscape impact assessment shall include all areas within a 500 m distance from the Project boundary. The study area for the visual impact assessment shall be defined by the visual envelope of the Project.
- 3.5.3.3 The Applicant shall describe, appraise, analyse and evaluate the existing landscape resources and character of the assessment area. A system should be derived for judging landscape and visual impact significance as required under the TM. The sensitivity of the landscape framework and its ability to accommodate change shall be particularly focused on. The Applicant shall identify the degree of compatibility of the Project with the existing landscape. The landscape impact assessment shall quantify the potential landscape impact as far as possible so as to illustrate the significance of such impacts arising from the Project. Clear mapping of the landscape impact is required.
- 3.5.3.4 The Applicant shall assess the visual impacts of the Project. Clear illustrations including mapping of the visual impact is required. The assessment shall include the following :
  - (i) identification and plotting of visual envelope of the Project;

- (ii) identification of the key groups of sensitive receivers within the visual envelope with regard to views from both ground, sea level and elevated vantage points;
- (iii) description of the visual compatibility of the Project with the surrounding and the planned setting, and its obstruction and interference with key views of the adjacent areas, including Clear Water Bay Country Park; and
- (iv) the severity of visual impact in terms of nature, distance and number of sensitive receivers shall be identified. The visual impacts of the Project with and without mitigation measures shall be included so as to demonstrate the effectiveness of the proposed mitigation measures.

3.5.3.5 Alternative design that would avoid or reduce the landscape and visual impact shall be evaluated for comparison before adopting other mitigation or compensatory measures to alleviate the impacts. The mitigation measures proposed shall not only be concerned with damage reduction but should also include consideration of potential enhancement of the existing landscape. The Applicant shall recommend mitigation measures to minimize the adverse effects identified above during the establishment, operation and decommissioning stages, including provision of a landscape design.

3.5.3.6 The mitigation measures shall also include preservation of vegetation, design of structures, provision of finishes to structures, colour scheme and texture of materials used, provision of screen tree planting along the site boundary, re-vegetation of disturbed land, hydroseeding on the surface of the stockpile, compensatory planting, and any measures to mitigate the disturbance on the existing land uses. Coloured spray concrete should be avoided as far as possible. A similar approach should be taken similar to the SENT Landfill where temporary stockpile slopes of waste material were hydroseeded to minimize the dust, erosion and associated visual impact to the adjacent Clear Water Bay Country Park and High Peak Junk Trail prior to any final restoration of the landfill. Parties shall be identified for the on-going management and maintenance of any proposed mitigation measures to ensure their effectiveness throughout the establishment, operation and decommissioning stages of the Project. A practical programme and funding proposal for the implementation of the recommended measures shall be provided.

3.5.3.7 Annotated illustration materials such as coloured perspective drawings, plans and section/elevation diagrams, annotated oblique aerial photographs, photographs taken at vantage points, photo-retouching and computer-generated photomontage shall be

adopted to illustrate the landscape and visual impacts of the Project to the satisfaction of the Director. All computer graphics shall be compatible with Microstation DGN file format. The Applicant shall record the technical details such as system set-up, software, data and function in preparing the illustration, which may need to be submitted for verification of the accuracy of the illustrations.

#### **3.5.4 Water Quality Impact**

- 3.5.4.1 The Applicant shall follow the criteria and guidelines as respectively stated in Annex 6 and Annex 14 of the TM for evaluating and assessing the water quality impact of the Project.
- 3.5.4.2 All physical, chemical and biological disruptions of marine, estuarine, fresh/storm water or ground water system(s) due to the establishment, operation and decommissioning of the Project shall be identified and analysed in the impact assessment.
- 3.5.4.3 Identification, analysis and evaluation of all existing and likely future water pollution sources, including point discharges and non-point sources to surface water runoff.
- 3.5.4.4 Analysis on the provision and adequacy of the existing and planned future facilities to reduce pollution arising from the non-point sources identified in section 3.5.4.3.
- 3.5.4.5 Proposal of effective and practicable infrastructure upgrading or provision, water pollution prevention and mitigation measures to be implemented during the establishment, operation and decommissioning stages so as to reduce the water quality impacts to within acceptable levels of standards. Also, appropriate measures should be recommended to contain and regularly remove marine refuse from the barging point. Requirements to be incorporated in the Project contract document shall also be proposed.
- 3.5.4.6 Best management practices to reduce storm water and non-point source pollution shall be investigated and proposed as appropriate. Attention shall be made to the water quality control and mitigation measures recommended in the ProPECC PN 1/94 on Construction Site Drainage.

#### **3.5.5 Landfill Gas Hazards Assessment**

- 3.5.5.1 The Applicant shall follow the guidelines as stated respectively in Annex 7 and Annex 19 of the TM for evaluating and assessing landfill gas hazards.



3.5.5.2 The landfill gas hazards assessment shall include a qualitative risk assessment and landfill gas precautionary/protection design. Specifically, the assessment shall include the following tasks :

- (a) review of background information and studies related to SENT Landfill;
- (b) identification of the nature and extent of the sources, including the likely concentrations/amounts of hazardous emissions which might have the potential for causing impacts on the Project;
- (c) identification of possible pathways through the ground, underground cavities, utilities or groundwater and the nature of these pathways through which hazardous emissions must traverse if they were to reach the facilities within the Project site;
- (d) identification of the potential targets associated with the proposed facilities which are sensitive to the impacts of the hazardous emissions;
- (e) qualitative assessment on the degrees of risk which the hazardous emissions may pose to the target for each of the source-pathway-target combinations;
- (f) design of suitable level of precautionary measures and the types of protection measures for the establishment, operation and decommissioning of the Project; and
- (g) identification of monitoring requirement for assessing the adequacy and performance of the implemented protection measures.

### 3.5.6 **Cultural Heritage Impact**

3.5.6.1 The Applicant shall adopt mitigation measures such as fencing along the Project site boundary to ensure a better protection to the heritage site of the Junk Island House Ruin on Fat Tong Chau.

## 4. **ENVIRONMENTAL MONITORING & AUDIT (EM&A) REQUIREMENTS**

4.1 The Applicant shall identify in the EIA study whether there is any need for EM&A activities during the establishment, operation and decommissioning stages of the Project and, if affirmative, to define the scope of the EM&A requirements for the Project in the EIA study.

- 4.2 Subject to the confirmation of the EIA study findings, the Applicant shall comply with the requirements as stipulated in Annex 21 of the TM. The Applicant shall also propose real-time reporting of monitoring data for the Project through a dedicated internet website.
- 4.3 The Applicant shall prepare a project implementation schedule, in the form of a checklist as shown in Appendix 1 of this EIA Study, containing all the EIA study recommendations and mitigation measures with reference to the implementation programme.

## **5. SUMMARY OF ENVIRONMENTAL OUTCOMES**

- 5.1 The EIA report shall contain a summary of the key environmental outcomes arising from the EIA study, including the population and environmentally sensitive areas protected, environmentally friendly designs recommended, key environmental problems avoided, and environmental benefits of environmental protection measures recommended.

## **6. DURATION OF VALIDITY**

- 6.1 This EIA study brief is valid for 24 months after the date of issue. If the EIA study does not commence within this period, the Applicant shall apply to the Director for another EIA study brief afresh before commencement of the EIA study for the Project.

## **7. REPORT REQUIREMENTS**

- 7.1 In preparing the EIA report, the Applicant shall refer to Annex 11 of the TM for the contents of an EIA report. The Applicant shall also refer to Annex 20 of the TM, which stipulates the guidelines for the review of an EIA report.
- 7.2 The Applicant shall supply the Director with the following number of copies of the EIA report and the Executive Summary:
- (i) 40 copies of the EIA report in English and 80 copies of the Executive Summary (each bilingual in both English and Chinese) as required under section 6(2) of the EIAO to be supplied at the time of application for approval of the EIA report.
  - (ii) when necessary, addendum to the EIA report and the Executive Summary submitted in 7.2 (i) above as required under section 7(1) of the EIAO, to

be supplied upon advice by the Director for public inspection.

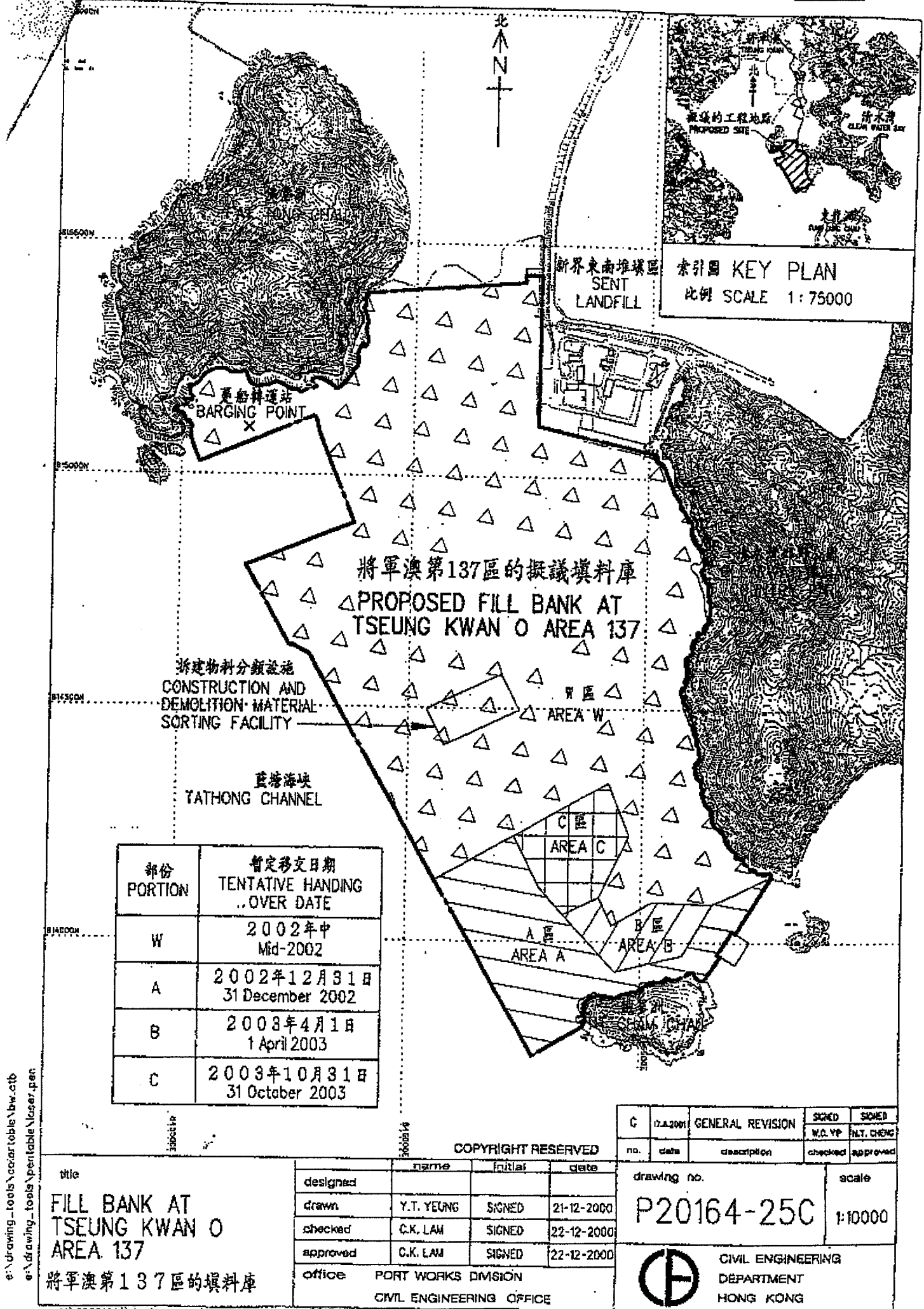
- (iii) 20 copies of the EIA report in English and 50 copies of the Executive Summary (each bilingual in both English and Chinese) with or without Addendum as required under section 7(5) of the EIAO, to be supplied upon advice by the Director for consultation with the Advisory Council on the Environment.
- 7.3 The Applicant shall, upon request, make additional copies of the above documents available to the public, subject to payment by the interested parties of full costs of printing.
- 7.4 In addition, to facilitate the public inspection of the EIA Report via the EIAO Internet Website, the Applicant shall provide electronic copies of both the EIA Report and the Executive Summary Report prepared in Hyper Text Markup Language (HTML) (version 4.0 or later) and in DynaDoc Format (version 3.0 or later) [for Chinese documents] and in Portable Document Format (PDF version 4.0 or later) [for English documents], unless otherwise agreed by the Director. For the HTML version, a content page capable of providing hyperlink to each section and sub-section of the EIA Report and the Executive Summary Report shall be included in the beginning of the document. Hyperlinks to all figures, drawings and tables in the EIA report and Executive Summary shall be provided in the main text from where the respective references are made. All graphics in the report shall be in interlaced GIF format unless otherwise agreed by the Director.
- 7.5 The electronic copies of the EIA report and the Executive Summary shall be submitted to the Director at the time of application for approval of the EIA Report.
- 7.6 When the EIA Report and the Executive Summary are made available for public inspection under section 7(1) of the EIAO, the content of the electronic copies of the EIA Report and the Executive Summary must be the same as the hard copies and the Director shall be provided with the most updated electronic copies.
- 7.7 To promote environmentally friendly and efficient dissemination of information, both hard copies and electronic copies of future EM&A reports recommended by the EIA study shall be required and their format shall be agreed by the Director.

## **8. OTHER PROCEDURAL REQUIREMENTS**

- 8.1 During the EIA study, if there is any change in the name of the Applicant for this EIA study brief, the Applicant mentioned in this study brief must notify the Director immediately.
- 8.2 If there is any key change in the scope of the Project mentioned in section 1.7 of

this EIA study brief and in Project Profile (No. PP-140/2001), the Applicant must seek confirmation from the Director in writing on whether or not the scope of issues covered by this EIA study brief can still cover the key changes, and the additional issues, if any, that the EIA study must also address. If the changes to the Project fundamentally alter the key scope of the EIA study brief, the Applicant shall apply to the Director for a fresh EIA study brief.

EIA Study Brief No. ESB-083/2001



索引圖 KEY PLAN  
比例 SCALE 1:75000

拆建物料分類設施  
CONSTRUCTION AND  
DEMOLITION MATERIAL  
SORTING FACILITY

藍塘海峽  
TATHONG CHANNEL

將軍澳第137區的擬議填料庫  
PROPOSED FILL BANK AT  
TSEUNG KWAN O AREA 137

部份 PORTION	暫定移交日期 TENTATIVE HANDING ..OVER DATE
W	2002年中 Mid-2002
A	2002年12月31日 31 December 2002
B	2003年4月1日 1 April 2003
C	2003年10月31日 31 October 2003

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title  
FILL BANK AT  
TSEUNG KWAN O  
AREA 137

將軍澳第137區的填料庫

	name	initial	date
designed			
drawn	Y.T. YEUNG	SIGNED	21-12-2000
checked	C.K. LAM	SIGNED	22-12-2000
approved	C.K. LAM	SIGNED	22-12-2000
office	PORT WORKS DIVISION CIVIL ENGINEERING OFFICE		

no.	date	description	checked	approved
C	12.12.2001	GENERAL REVISION	SIGNED W.C. YIP	SIGNED M.T. CHENG

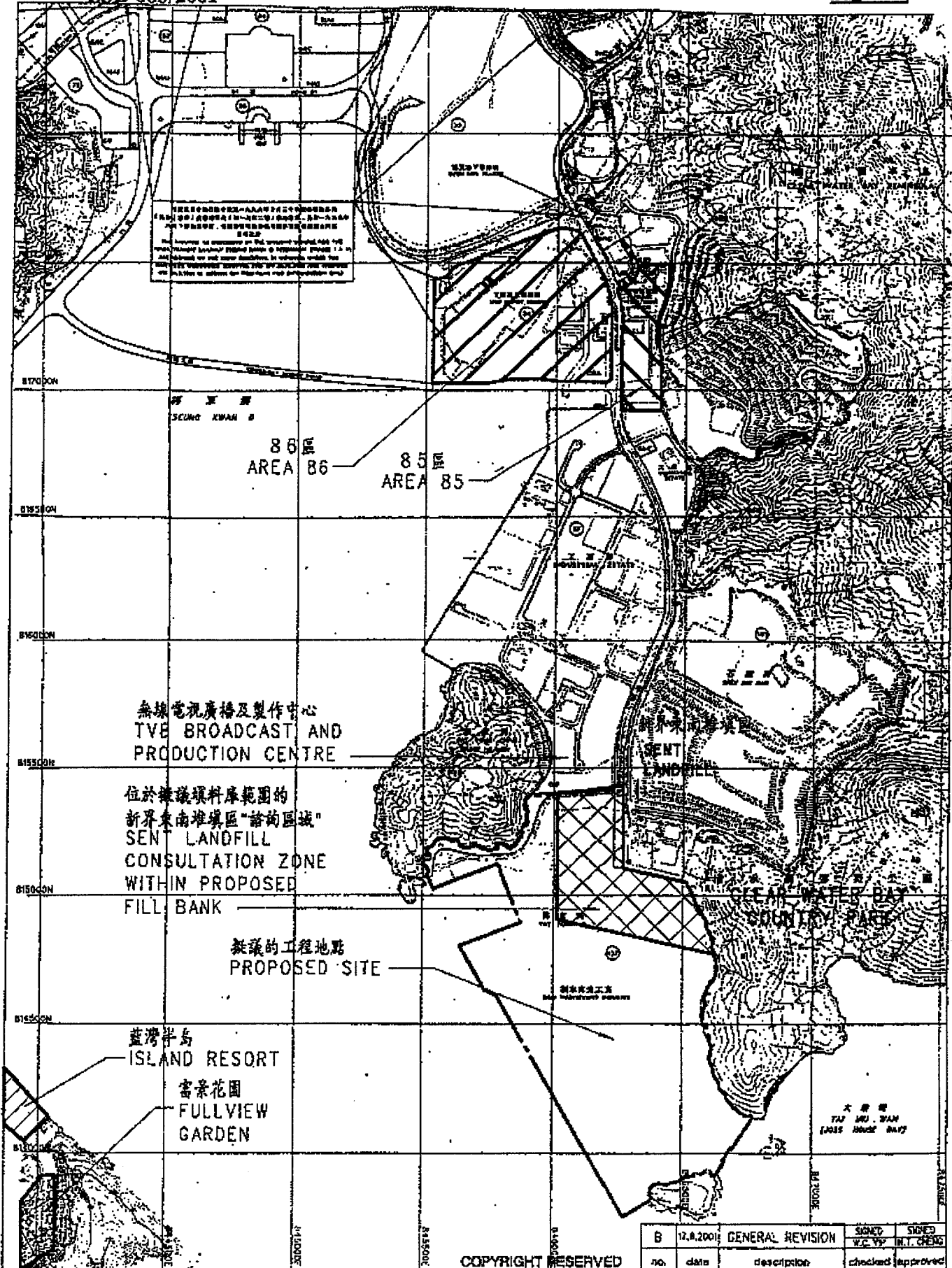
  

drawing no.	scale
P20164-25C	1:10000

	CIVIL ENGINEERING DEPARTMENT HONG KONG
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此圖乃根據香港測量師學會註冊測量師所繪製之地形圖及航空照片而製成。圖中所有之界線、點位、高度、面積、長度、角度、方位等，均經測量師核實。此圖之用途，須以測量師之專業意見為準。如有任何疑難之處，請向測量師查詢。

無線電視廣播及製作中心  
TVE BROADCAST AND  
PRODUCTION CENTRE

位於建議填土庫範圍的  
新界東南堆填區“諮詢區域”  
SENT LANDFILL  
CONSULTATION ZONE  
WITHIN PROPOSED  
FILL BANK

擬議的工程地點  
PROPOSED SITE

藍灣半島  
ISLAND RESORT  
密景花園  
FULLVIEW  
GARDEN

大潭  
TAP MU WAN  
(2015 填海區)


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B	12.4.2001	GENERAL REVISION	SIGNED W.C. YIP	SIGNED N.T. CHENG
no.	date	description	checked	approved

111a  
FILL BANK AT  
TSEUNG KWAN O AREA 137  
- EXISTING AND PLANNED  
SENSITIVE RECEIVERS  
將軍澳第137區的填土庫  
- 現存及計劃中易受影響受體位置

	name	initial	date
designed			
drawn	S.K. CHAN	SIGNED	13-6-2001
checked	W.C. YIP	SIGNED	14-6-2001
approved	N.T. CHENG	SIGNED	14-6-2001
office	PORT WORKS DIVISION CIVIL ENGINEERING OFFICE		

drawing no. P20164-26B scale 1:20000



CIVIL ENGINEERING  
DEPARTMENT  
HONG KONG

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**IMPLEMENTATION SCHEDULE**

EIA* Ref.	EM&A Log Ref.	Environmental Protection Measures*	Location/Duration of Measures/ Timing of Completion of Measures	Implementation Agent	Implementation Stage **			Relevant Legislation & Guidelines
					Des	C	O	

\* All recommendations and requirements resulted during the course of EIA Process, including ACE and/or accepted public comment to the proposed project.  
 \*\* Des=Design; C=Construction; O=Operation; Dec=Decommissioning