土木工程拓展署
CEDD **Civil Engineering and Development Department**
Kowloon Development Office

Agreement No. CE 35/2006 (CE)

Kai Tak Development Engineering Study cum Design and Construction of Advance Works – Investigation, Design and Construction

Decommissioning of the Former Kai Tak Airport
Other than the North Apron
Environmental Impact Assessment Report
Executive Summary

09 October 2007

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Peter Lee

Approved for Issue: _____ 09/10/07
Peter Cheek

MAUNSELL CONSULTANTS ASIA LTD

Agreement No. CE 35/2006(CE)
Kai Tak Development Engineering Study
cum Design and Construction of Advance Works –
Investigation, Design and Construction

DECOMMISSIONING OF THE FORMER KAI TAK AIRPORT OTHER THAN THE NORTH APRON ENVIRONMENTAL IMPACT ASSESSMENT REPORT EXECUTIVE SUMMARY

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1 INTRODUCTION

1.1 Project Background

1.1.1 The "Decommissioning of the Former Kai Tak Airport Other than the North Apron" (hereinafter known as the "Project") will be implemented by the Civil Engineering and Development Department (CEDD). The Project is a designated project under Item 1 of Part II Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO): *"Decommissioning of airports, including fuelling and fuel storage, the aircraft maintenance and repair facilities"*. The Project involves the demolition / removal of the remaining structures and buildings and the abandoned facilities associated with the former Kai Tak Airport and to clean up any contaminated sites within the Project boundary identified during the Environmental Impact Assessment (EIA). **Drawing 1.1** shows the location of the Project.

1.1.2 This Executive Summary provides the key findings of the EIA Report, including results of assessment on different environmental aspects relevant to the Project, and recommendations for mitigation measures to comply with environmental legislation and standards.

1.2 Need for the Project

1.2.1 The nature of the Project is primarily to decommission all remaining facilities, structures and buildings within the former Kai Tak Airport other than the North Apron. Any land contamination, if identified, will be decontaminated as appropriate to facilitate the re-development of the site. The Project will make available the remaining former Kai Tak Airport site for future residential, commercial, tourism and leisure developments to meet the long term development, economic and social needs of Hong Kong.

1.2.2 It should be noted that the disused fuel dolphin, though within the Project area, does not fall within the boundary of the former Kai Tak Airport. However, the fuel dolphin structure and its connecting fuel pipelines are considered as part of the fuelling facilities of the former Kai Tak Airport and hence the possible environmental impacts arising from the decommissioning of these facilities are also reviewed under this EIA study for completeness sake.

1.3 Consideration of Alternative Decommissioning Methods

Decommissioning of Fuel Dolphin Structure and its Connecting Abandoned Fuel Pipelines

1.3.1 In regard to the decommissioning of the fuel dolphin structures and its associated pipelines, two options have been proposed:

- Option 1 – Complete removal of the fuel dolphin structure and the connecting fuel pipelines
- Option 2 – Demolish the fuel dolphin structure down to 1m below existing seabed and leave the connecting fuel pipelines *in-situ*; the disused fuel dolphin structure would be demolished by cutting off the piles with mechanical plant to 1m below existing seabed and the sediment around the piles would be pushed aside to facilitate the pile cutting and no dredging would be required for the demolition works

1.3.2 Since the fuel dolphin structure had ceased in use since 1998 and there appeared at present no other beneficial use of the dolphin structure. Option 2 is a preferred approach over Option 1 on environmental ground as it would eliminate the need for any major dredging, filling, and sediment disposal activities and hence reduce the environmental impacts associated with the decommissioning works.

Decontamination of Contaminated Areas

1.3.3 Remediation is required to clean up the contaminated areas associated with the previous airport operation to ensure the site would be safe and free of hazards for the planned future uses. Common treatment technologies for soil remediation have been reviewed and discussed in details in the EIA Report and are summarised in **Section 3.3** below.

2 PROJECT DESCRIPTION

2.1 Project Scope

2.1.1 The scope of existing structures and buildings for decommissioning as well as the related construction activities for this Project is summarized in **Table 2.1** below and location of the decommissioning / decontamination is depicted in **Drawing 2.1**.

Table 2.1 Summary of Construction Activities

Decommissioning Works	Decontamination Works
• removal of an existing fuel hydrant system buried in south apron of the former Kai Tak Airport; • removal of underground fuel tanks near the ex-Government Flying Service (ex-GFS) building and fuel supply system (including refuelling pits and underground pipelines) in the ex-GFS apron area; and • demolition of the fuel dolphin structure down to 1m below the existing seabed level. The abandoned fuel pipelines would be left in place and, if necessary, grouting it with concrete.	• decontamination works, including excavation and the necessary treatment of the contaminated soil identified at the south apron, the narrow strip of the north apron near the Kai Tak Tunnel and the ex-Government Flying Service (ex-GFS) apron area.

2.1.2 As shown in **Drawings 2.2 - 2.3**, the ex-GFS building, the Radar Station, and the remaining areas that are outside the Project area of this EIA Study but within the boundary of the former Kai Tak Airport will be evaluated and covered under the EIA study for the Engineering Feasibility Study of the Kai Tak Development (KTD).

2.2 Project Programme

2.2.1 The construction activities listed in **Table 2.1** above would be commenced in early 2008 and completed not earlier than late 2009. A summary of the tentative project programme is provided in **Table 2.2** below.

Table 2.2 Summary of Tentative Project Programme

Activity	Preliminary Working Period	
	From	To
Site preparation works	Early 2008	Early 2008
Decommissioning works of the fuel hydrant system, underground fuel tanks and fuel supply system in the south apron and the ex-GFS apron area, including the decontamination works at the south apron, the narrow strip of the north apron and the ex-GFS apron area	Early 2008	Late 2008 / Early 2009
Soil decontamination treatment works at the northern part of the south apron	Mid 2008	Mid 2009
Decommissioning works of fuel dolphin	Not earlier than late 2009 (indicative only)	Not earlier than late 2009 (indicative only)

2.2.2 The proposed decontamination works will be carried out in two phases. The first phase will mainly include the excavation of the contaminated soils identified in the south apron, the narrow strip of the north apron and the ex-GFS apron area. The excavated contaminated soil will then be transported to the decontamination works area proposed in the northern part of the south apron. After confirming that all the contaminated soil has been excavated for treatment, the excavation areas will be backfilled with clean and/or treated soil. During the second phase of the decontamination works, the decontamination activities will be limited to those carried out within the treatment area in the northern part of the south apron. The treatment area will be operated until satisfactory completion of the treatment process. **Drawing 2.4a** and **2.4b** show the concurrent activities anticipated during the first phase and the second phase of the decontamination works in the vicinity of the project area.

2.2.3 As shown in **Drawing 2.4a**, during the first phase of the decontamination works, in Area 1 which include mostly the entire runway area where ground contamination is not found, the construction activities of other projects including the barging points, works area, and the construction site for the proposed cruise terminal would proceed in concurrent with the decontamination works in Area 2 and Area 3. For Area 2 in the south apron area of the former Kai Tak Airport with ground contamination identified, no concurrent construction activities will be carried out in the vicinity of the south apron. The access road crossing the south apron area will be temporarily diverted, if required, to provide sufficient separation of not less than 20m between the access road and the contamination area during excavation. Upon completion of the first phase of the decontamination works, all the contaminated soil should have been removed and the excavation areas will be backfilled with clean soil.

2.2.4 Subsequently in the second phase of the decontamination works, as shown in **Drawing 2.4b**, only the decontamination works area in the northern part of the south apron will be operational. The construction activities of the Advance Works of the Kai Tak Development would only be commenced in the ex-GFS apron area after the site clean up in that area is confirmed through the submission of site closure assessment report to EPD. These construction activities would be in concurrent with the soil decontamination treatment works to be carried out in Area 3.

2.2.5 In summary, given the comparatively minor in scale of the decommissioning and decontamination works in such a large area and the pressing need to proceed with the permanent development, construction in some areas where ground contamination is found, would immediately commence after the site clean up is confirmed. Elsewhere ground contamination is not found, the construction would proceed upon the approval of the EIA report in concurrent with the decontamination works as long as they are demonstrated to be environmentally compatible and acceptable. Based on the latest information, the cruise terminal construction and its associated advance works will be carried out while the decommissioning / decontamination works at other parts of the Project area are underway.

3 ENVIRONMENTAL IMPACT ASSESSMENT

3.1 Introduction

3.1.1 An EIA Study in response to EIA Study Brief No. ESB-160/2006 was conducted in accordance with the guidelines on assessment methodologies provided in the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM).

3.1.2 Uncertainties in the assessment of impacts were considered when drawing conclusions from the assessment. In carrying out the assessment, realistic worst case assumptions based on the latest available information were made in order to provide a conservative assessment of environmental impacts.

3.1.3 The main findings of the EIA study are summarised below.

3.2 Description of the Assessment Area

3.2.1 The Project area covers the former Kai Tak Airport south apron, runway and ex-GFS apron areas together with the disused fuel dolphin. The locality is adjacent to Kowloon Bay, Kai Tak Approach Channel and Kwun Tong Typhoon Shelter. To the east of the Project area is mainly industrial / commercial uses while the nearest residential development is at the north-western side of the Project site at To Kwa Wan and Ma Tau Kok areas.

3.2.2 During the operation of the former Kai Tak Airport, the south apron and the ex-GFS apron were used for aircraft / helicopter loading, unloading, fuelling, parking and maintenance while the runway area was only used as the airport runway. After the closure of Kai Tak Airport, the Project area has been occupied by various temporary uses such as public fill banks, bus depots, car sales exhibitions and recreational grounds.

3.3 Results of Assessment

Land Contamination Impact

Soil Contamination

3.3.1 Site investigations for the land contamination assessment conducted at the Project area identified that some areas in the ex-GFS apron area and the south apron of the former Kai Tak Airport were contaminated with metals, total petroleum hydrocarbons (TPH) and/or volatile organic compounds (VOCs) namely ethylbenzene and xylenes while an area in the narrow strip of the north apron near the Kai Tak Tunnel was contaminated with semi-VOC (SVOC) namely benzo(a)pyrene. No contamination was found in the former airport runway and the area is suitable for immediate development. Locations with identified soil contamination are shown in **Drawing 3.1**.

3.3.2 The volumes of soils contaminated by different types of contaminants have been estimated as tabulated in **Table 3.1** below.

Table 3.1 Estimated Volume of Different Type of Contaminated Soil

Land	Metals Only	TPH / VOCs / SVOC	Metals and TPH
South Apron Area	311.3 m^3	169.8 m^3	113.2 m^3
Ex-GFS Apron Area	155.8 m^3	17,488.6 m^3	Nil
Narrow Strip of the North Apron	Nil	49.5 m^3	Nil
Runway Area	Nil	Nil	Nil
Total	**467.1 m^3**	**17,707.9 m^3**	**113.2 m^3**

Note: The actual volume may be different and is subject to confirmatory sampling and testing to be conducted during the course of proposed remediation processes.

Groundwater Contamination

3.3.3 The laboratory results of groundwater samples reveal some exceedances in the screening criteria. A risk assessment has been undertaken to assess the risk posed by the contaminants in groundwater. The results of the risk assessment reveal that the concentrations of all chemicals of concern do not exceed the calculated 'allowable' concentrations except TPH at a few locations within the ex-GFS apron area.

3.3.4 In accordance with the on-site measurement records, TPH free product was discovered on the groundwater table in 3 monitoring wells during the site investigation conducted at the ex-GFS apron area. The free product was tested to be identical to petroleum hydrocarbons with resemblance to kerosene. The estimated quantity of free product at the ex-GFS apron area is approximately 6.8m^3.

Remediation Methods

3.3.5 The objectives of the remediation are:

- To clean up the site to the remediation targets and within the overall development programme with cost effective and well established method;
- To minimise the environmental impacts during the remediation processes; and
- To protect construction workers adequately from site hazards.

Selection of Remediation Method for Metals Contaminated Soil

3.3.6 Three types of remediation methods, including soil washing, electrokinetic separation and solidification / stabilization, for heavy metals contaminated soil have been evaluated. Based on the comparative analysis in terms of applicability / environmental benefits and limitations / environmental dis-benefits, solidification / stabilization is proposed for the treatment of metals contaminated soil. The treated soil should be backfilled on-site and covered by 1m of clean fill.

Selection of Remediation Method for TPH / VOCs / SVOC Contaminated Soil

3.3.7 Five types of remediation methods, including excavation and biopiling, landfarming, soil venting, soil washing and landfill disposal, for TPH / VOCs / SVOC contaminated soil have been evaluated. Based on the comparative analysis in terms of applicability / environmental benefits and limitations / environmental dis-benefits, excavation and biopiling are proposed for the treatment of TPH / VOCs / SVOC contaminated soil. The biopile treated soil should be reused on-site as filling material as far as practical.

Selection of Remediation Method for Metals and TPH Contaminated Soil

3.3.8 Soil contaminated with metals and TPH is proposed to first be treated by biopiling and then by solidification / stabilization since organic compounds may interfere with the process of solidification / stabilization.

Selection of Remediation Method for Free Product Recovery

3.3.9 Four types of remediation methods, including skimming, free product recovery with water table depression, vapour extraction / groundwater extraction and dual phase recovery, for free product recovery have been evaluated.

3.3.10 Based on the comparative analysis in terms of applicability and limitations, skimming is considered as the most practical and cost-effective method for recovery of free product. The free product should be skimmed off from water surface and then drummed properly and collected by a licensed chemical waste collector for proper disposal.

Outline of Proposed Implementation Option

3.3.11 The proposed implementation option is recapitulated in **Table 3.2**. During remediation, the contaminated soils should be excavated from the excavation zones (as shown in **Drawing 3.2**) and then transported to a centralized decontamination works area for treatment by biopiling and solidification / stabilization. The decontamination works area would be located at the northern part of the South Apron as depicted in **Drawing 3.3**.

Table 3.2 Proposed Remediation Methods for Soil Contamination

Soil Contaminant	Proposed Remediation Method
Metals only	Solidification / Stabilization
TPH / VOCs / SVOC	Biopiling
Metals and TPH	Biopiling followed by Solidification / Stabilization

Confirmation Sampling and Testing

3.3.12 Confirmation sampling and testing have been proposed during the course of the following remediation processes:

- Soil excavation to ensure complete removal of all contaminated soil;
- Biopiling to ensure attainment of cleanup targets for soil contaminated with TPH / SVOCs;
- Solidification / stabilization to ensure attainment of cleanup targets for soil contaminated with metals; and
- Skimming of any TPH free product encountered at excavation areas to ensure complete removal of the TPH free product.

Mitigation Measures

3.3.13 Various environmental mitigation measures and health and safety measures have been proposed for the decontamination activities. With the incorporation of these measures during excavation and operation of the remediation system, as well as the provision of safety measures to site workers, no residual impact arising from land contamination would be expected.

Waste Management Implications

3.3.14 Wastes generated from the decommissioning works are likely to include construction and demolition (C&D) material from demolition of the remaining structures within the Project boundary, general refuse from the workforce and chemical waste from the maintenance of construction plant and equipment and from the soil and groundwater remediation process. It is estimated about 200 m^3 of inert C&D material and 3900 m^3 of C&D waste would be generated from the Project. The C&D material should be sorted on-site into inert C&D material and C&D waste for disposal to public fill reception facilities and landfill respectively.

3.3.15 Provided that these identified waste arising are handled, transported and disposed of using approved methods and that the recommended good site practices are strictly followed, adverse environmental impacts would not be expected during the decommissioning works of the Project.

Water Quality Impact

3.3.16 The proposed method for decommissioning of the disused fuel dolphin would not involve any dredging and in view that the works area would be small, any potential marine water quality impact arising from the decommissioning works would be minor and localized and no unacceptable marine water quality impact would be expected.

3.3.17 Water quality impacts for the land-based decontamination works, associated with leachate and contaminated runoff, can be controlled to acceptable levels by recommended mitigation measures. All the effluents and runoff generated from the works areas shall be treated and their quality be monitored before discharged. No unacceptable water quality impacts would be expected from the land-based decommissioning activities.

3.3.18 Proper site management and good housekeeping practices shall be implemented to ensure that construction wastes and other construction-related materials would not enter into the nearby water bodies and the public drainage system. Sewage effluent arising from the construction workforce would be managed through provision of portable toilets. With the implementation of the recommended mitigation measures, the decommissioning works of the Project would not result in unacceptable impacts on water quality. Site inspections should be undertaken routinely to inspect the works areas to ensure that the recommended mitigation measures are implemented properly.

Air Quality Impact

3.3.19 With the implementation of appropriate dust suppression measures as stipulated in the Air Pollution Control (Construction Dust) Regulation, adverse dust impacts associated with the decommissioning works would not be expected. A dust monitoring and audit programme will be carried out to ensure that the recommended mitigation measures are implemented effectively.

3.3.20 Negligible soil gas emission from the excavation works at the identified contaminated spots within the south apron area and the narrow strip of the north apron would be expected in view of the small and localized excavation areas. Potential air emissions at the contaminated areas within the ex-GFS apron area include TPH, ethylbenzene and xylenes. Modelling results indicated that the predicted air pollutant concentrations would comply with and are far below the respective assessment criteria at the nearest air sensitive receivers and no exceedances of the respective criteria are predicted at the excavation works boundary.

3.3.21 Biopiling and solidification / stabilization would be conducted at the proposed decontamination works area located at the northern part of the South Apron. No adverse air quality impact would be expected during transportation and unloading of excavated contaminated soil with implementation of the recommended mitigation measures. Carbon absorber with 99% removal efficiency would be installed at biopile(s) facilities to treat off-

gas prior to discharge and the solidification / stabilization process could immobilise the toxic material, adverse air quality impact from these decontamination works is therefore not anticipated.

Noise Impact

3.3.22 Construction noise generated from demolition and decontamination works are identified as the potential sources of noise impacts from the Project. In view of the large separation distance between the construction sites and the nearby noise sensitive receivers, the assessment results indicated that no adverse construction noise impact would be expected at the noise sensitive receivers in the vicinity of the work sites. Mitigation measures and noise monitoring are therefore not required. However, it is suggested that appropriate good site practices should be implemented to ameliorate the construction noise impacts.

Impact on Cultural Heritage

3.3.23 A desk-based study and a built heritage field survey have been conducted for the Project area and revealed several heritage resources associated with the former Kai Tak Airport, which include three wind poles, the airport pier, Fire Station B (and associated pier), Fire Station C, seawall and the runway. None of the heritage resources examined will be affected by this Project, no mitigation is required.

3.3.24 The findings of the assessment for the identified heritage resources are summarised below:

- Wind Poles (WP-1, WP-2 and WP-3): The three wind poles located on the former runway and adjacent to Fire Station C are easily identifiable with the old airport and as such can act as visual links to the aviation history of the site. However, the wind poles were located in areas that were not accessible to the public during the operation of the former airport and as such they are not valued highly for community associations. Based on the above factors, the three wind poles have low cultural heritage significance. A full cartographic and photographic survey of the wind poles has been undertaken in their existing locations.
- Airport Pier: The airport pier is not associated with any technological advances in the aviation history of the site and it does not have any special architectural elements. The pier also does not contain any specific features identifiable with the site usage as an airport and as such does not have value as a representative link to the former site usage for educational or tourism purposes. Based upon the above factors the airport pier has low cultural heritage significance. A full cartographic and photographic survey of the Airport Pier has been conducted.
- Fire Station B and Associated Pier: Fire Station B and the associated pier were located in areas that were not accessible to the public during the operation of the former airport and are not structures that draw automatic associations with aviation, as do the wind poles. As such they are not valued highly for community associations. The site does also not have any particular historical or technological associations during the operational years of the airport and rates low on heritage significance with regards to these factors. The Fire Station B is located in an area that is compatible with current development plans. If the future use of Fire Station B is identified, it is worth considering incorporating the Fire Station B into the Kai Tak Development for education and tourism purposes. Fire Station B has undergone full cartographic and photographic survey.
- Fire Station C: Fire Station C was located in an area that was not accessible to the public and was not a structure automatically associated with the aviation history of the site. Based upon the above factors, Fire Station C has low cultural heritage significance. In addition, the proposed Central Kowloon Route / Trunk Road T2 interchange would impinge and surround the fire station at its current location. The structure of Fire Station C has been fully recorded by cartographic and photographic survey.

- Seawall and Runway: The significance of the runway is exemplified by its location which is intrinsically connected with the operation of the former airport. The actual structural elements of the runway and seawall do not have heritage value. As such, the heritage significance of the remaining runway and seawall structure is low. In order to maintain the shape of the runway, unnecessary disturbance to the seawall outside the project area of the cruise terminal project should be avoided as far as practicable. There are no other structural elements of the runway that contain heritage value.

Marine Ecological Impact

3.3.25 Marine habitats within the Project area include soft bottom seabed, artificial seawalls, subtidal habitats and feeding ground of waterbirds. Literature reviews of existing information with supplement findings from recent field surveys indicated that the marine habitats identified within the Project area are of generally very low ecological value due to their highly artificial and disturbed nature. Species diversity and abundance of these habitats are low and no rare or restricted species has been recorded.

3.3.26 The species of conservation interest recorded within the Project area only include a single species of common hard coral (*Oulastrea crispata*) (but all colonies found are small in size, sparsely distributed and in very low coverage) and few species of waterbirds such as Little Egret and Great Egret. All these species are common and widespread in other Hong Kong waters.

3.3.27 Direct and indirect ecological impacts arising from the Project have been identified and evaluated. The Project will result in the permanent loss of small area of subtidal hard substratum of the disused fuel dolphin and no adverse impact is expected. No coral colonies were found at the hard subtidal substrate of the disused fuel dolphin. Potential direct disturbance on benthic habitats and associated marine life would be resulted from the proposed decommissioning of the disused fuel dolphin. Considering that the benthic habitats within the Project area are of very low ecological value, no adverse impact is expected also. Other indirect impacts arsing from the Project would be temporary and considered as negligible in nature.

3.3.28 In summary, ecological impact on marine life recorded in the Project area is expected to be minor or minimal. No mitigation measures or monitoring programme specific for marine ecology would be required.

4 ENVIRONMENTAL MONITORING AND AUDIT

4.1.1 An environmental monitoring and audit (EM&A) programme has been recommended for implementation during the course of the Project to ensure compliance with environmental legislation and standards during Project implementation.

4.1.2 The EM&A programme comprises of confirmation sampling / testing for contaminated soil excavation and remediation processes, site inspections and compliance audit for wastewater discharges, dust and VOC monitoring for decontamination processes, as well as regular environmental audits and reporting. Details of the EM&A requirements are stipulated in a stand-alone EM&A Manual prepared under this Project.

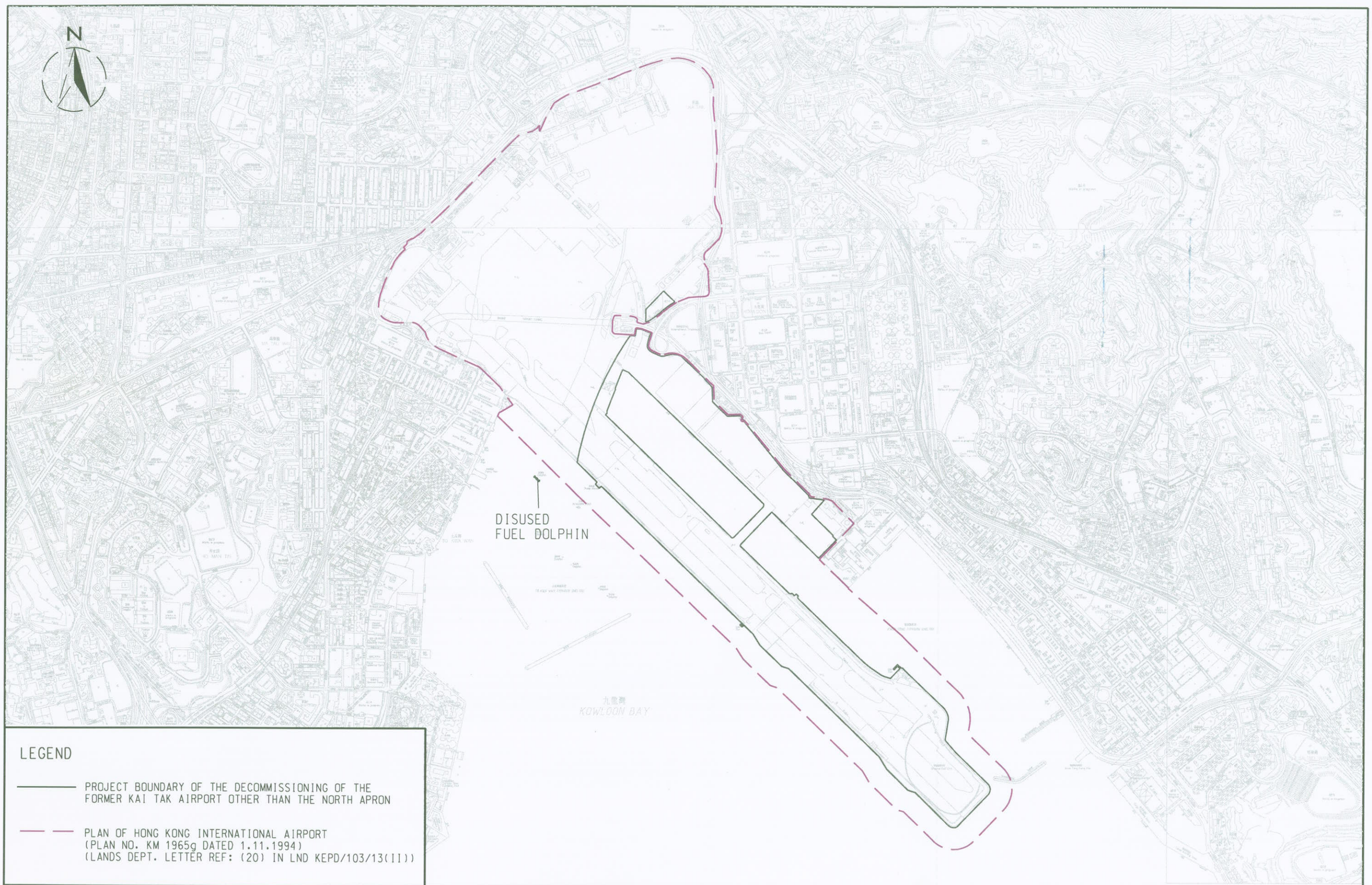
5 CONCLUSION

5.1.1 The proposed Project will make available the remaining former Kai Tak Airport site for future residential, commercial, tourism and leisure developments to meet the long term development, economic and social needs of Hong Kong.

5.1.2 The EIA study confirmed that no contamination is identified in the former airport runway and the area is ready for development. For the other parts of the Project area, the construction activities at each particular site(s) will only commence after the completion of the decommissioning / decontamination works, if required, at the respective site(s). Based on the latest information, the advance works of the Kai Tak Development and the proposed cruise terminal construction will be carried out in concurrent with the decommissioning / decontamination works at other parts of the Project Area during different phases of the decommissioning / decontamination works.

5.1.3 The EIA study has identified and assessed the potential environmental impacts of the proposed Project. All direct and indirect, as well as cumulative impacts likely to arise during the course of the Project have been evaluated using suitable and agreed evaluation methods. With the implementation of the recommended mitigation measures, the Project would be environmentally acceptable and no adverse residual impacts would be expected.

Drawings



LEGEND

PROJECT BOUNDARY OF THE DECOMMISSIONING OF THE FORMER KAI TAK AIRPORT OTHER THAN THE NORTH APRON

PLAN OF HONG KONG INTERNATIONAL AIRPORT (PLAN NO. KM 1965g DATED 1.11.1994) (LANDS DEPT. LETTER REF: (20) IN LND KEPD/103/13(II))

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AGREEMENT NO. CE 35/2006 (CE)
KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION

PROJECT LOCATION

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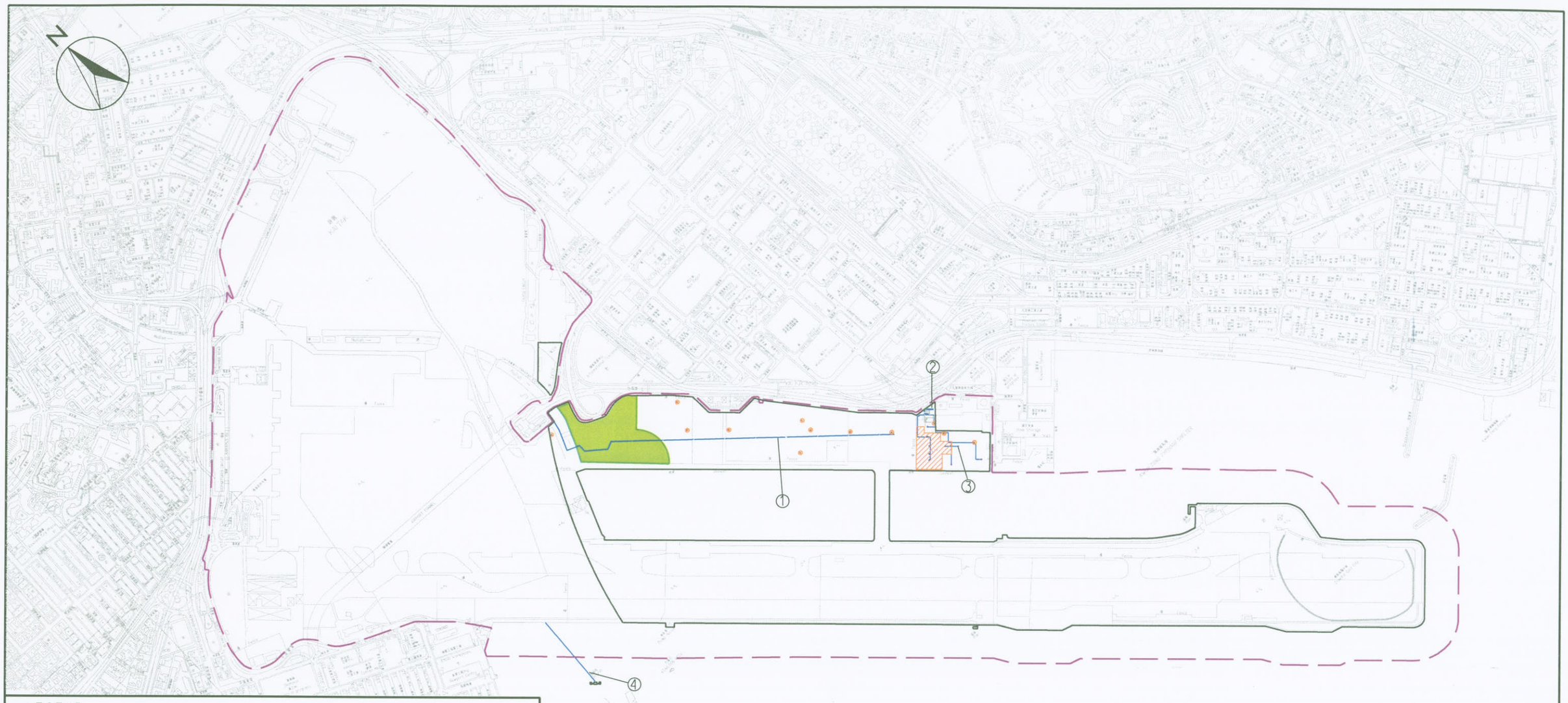

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——— PROJECT BOUNDARY OF THE DECOMMISSIONING OF THE FORMER KAI TAK AIRPORT OTHER THAN THE NORTH APRON

— — PLAN OF HONG KONG INTERNATIONAL AIRPORT (PLAN NO. KM 1965g DATED 1.11.1994) (LANDS DEPT. LETTER REF: (20) IN LND KEPD/103/13(II))

EXISTING STRUCTURES & BUILDINGS FOR DECOMMISSIONING

① FUEL PIPELINE/HYDRANT SYSTEM

② UNDERGROUND FUEL TANKS IN EX-GFS APRON AREA

③ FUEL DELIVERY SYSTEM (REFUELLING PITS AND U/G PIPELINES) IN EX-GFS APRON AREA

④ DISUSED FUEL DOLPHIN & ITS ASSOCIATED FUEL PIPELINE

DECONTAMINATION WORKS

PROPOSED CONTAMINATED AREAS FOR EXCAVATION

PROPOSED DECONTAMINATION WORKS AREA

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LOCATIONS OF DECOMMISSIONING/DECONTAMINATION WORKS

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EMSD HEADQUARTERS

RADAR STATION

EX-GFS BUILDING

HK AVIATION CLUB

DISUSED FUEL DOLPHIN

KOWLOON BAY

LEGEND

- PROJECT BOUNDARY OF THE DECOMMISSIONING OF THE FORMER KAI TAK AIRPORT OTHER THAN THE NORTH APRON
- WATER BODY
- PLAN OF HONG KONG INTERNATIONAL AIRPORT (PLAN NO. KM 1965g DATED 1.11.1994) (LANDS DEPT. LETTER REF: (20) IN LND KEPD/103/13(II))
- STUDY AREA COVERED BY KAI TAK AIRPORT NORTH APRON DECOMMISSIONING EIA (EIAO REGISTER NO. AEIAR-002/1998 AND EP NO.: EP_007/1998)
- STUDY AREA COVERED BY AGREEMENT NO. KDO 02/05 ASSESSMENT OF POSSIBLE LAND CONTAMINATION ASSOCIATED WITH DECOMMISSIONED FUEL PIPELINE AND HYDRANT SYSTEM AT SOUTH APRON OF FORMER KAI TAK AIRPORT
- STUDY AREA COVERED BY AGREEMENT NO. KDO 01/2006 SITE INVESTIGATION AND CONTAMINATION ASSESSMENT AT REMAINING AREA OF FORMER KAI TAK AIRPORT AND PROPOSED CRUISE TERMINAL

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KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION

EXISTING BUILDINGS AND DIFFERENT STUDY AREAS WITHIN THE FORMER KAI TAK AIRPORT

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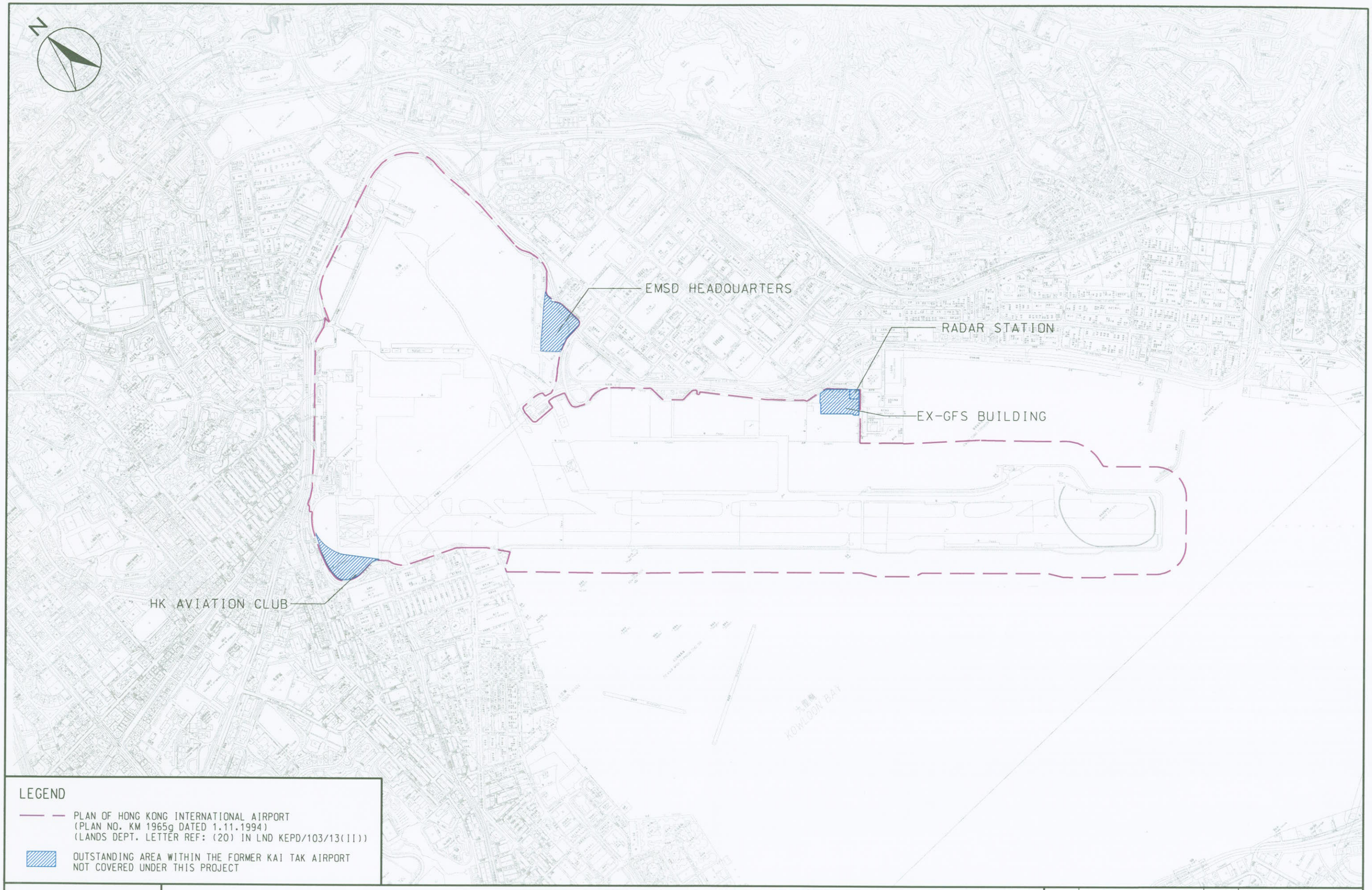

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▨ OUTSTANDING AREA WITHIN THE FORMER KAI TAK AIRPORT NOT COVERED UNDER THIS PROJECT

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AGREEMENT NO. CE 35/2006 (CE)
KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND
CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION

OUTSTANDING AREAS WITHIN THE FORMER KAI TAK AIRPORT NOT COVERED UNDER THIS PROJECT

SCALE	A3 1:15000	DATE	JUL 07
CHECK	KYTT	DRAWN	POHM
JOB No.	60022408	DRAWING No.	2.3
		REV	-

P:/60022503/DRAWINGS/DRAWING/REPORT/KTA DECOMMISSIONING EIA/JUL/FIG2.2A.DGN

N

DURING EXCAVATION OF CONTAMINATED SOIL, ACCESS ROAD WILL BE TEMPORARILY DIVERTED TO PROVIDE SUFFICIENT SEPARATION

WORKS AREA (FOR DEVELOPMENT AT CHOI WAN AND JORDAN VALLEY)

BARGING POINT (FOR DEVELOPMENT AT ANDERSON ROAD)

BARGING POINT (FOR DEVELOPMENT AT CHOI WAN AND JORDAN VALLEY)

KOWLOON BAY

KAI TAK DEVELOPMENT ADVANCE WORKS

CRUISE TERMINAL CONSTRUCTION

LEGEND

- PROJECT BOUNDARY OF THE DECOMMISSIONING OF THE FORMER KAI TAK AIRPORT OTHER THAN THE NORTH APRON
- ACCESS ROADS IN THE VICINITY OF THE PROJECT AREA
- AREA ①: AREAS WITH NO CONTAMINATION IDENTIFIED. CONSTRUCTION ACTIVITIES OF OTHER PROJECTS TO BE CARRIED OUT IN CONCURRENT WITH THE PROPOSED DECONTAMINATION WORKS IN AREA ② AND AREA ③
- AREA ②: AREAS WITH CONTAMINATION IDENTIFIED. THE CONTAMINATION SOIL WILL BE EXCAVATED FOR TREATMENT AT AREA ③
- AREA ③: PROPOSED DECONTAMINATION WORKS. AREAS FOR TREATMENT OF EXCAVATED CONTAMINATED SOIL FROM AREA ②

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CONCURRENT ACTIVITIES BEFORE COMPLETION OF CONTAMINATED SOIL EXCAVATION

SCALE	A3 1:18000	DATE	OCT 07
CHECK	LCWK	DRAWN	–
JOB No.	60022408	DRAWING No.	2.4a
		REV	–

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N

CONSTRUCTION ACTIVITIES OF THE KAI TAK DEVELOPMENT ADVANCE WORKS WOULD ONLY BE COMMENCED IN THE EX-GFS APRON AREA AFTER THE SITE CLEAN UP THAT AREA IS CONFIRMED THROUGH THE SUBMISSION OF SITE CLOSURE ASSESSMENT REPORT TO EPD.

WORKS AREA (FOR DEVELOPMENT AT CHOI WAN AND JORDAN VALLEY)

BARGING POINT (FOR DEVELOPMENT AT ANDERSON ROAD)

BARGING POINT (FOR DEVELOPMENT AT CHOI WAN AND JORDAN VALLEY)

KOWLOON BAY

KAI TAK DEVELOPMENT ADVANCE WORKS

CRUISE TERMINAL CONSTRUCTION

LEGEND

- PROJECT BOUNDARY OF THE DECOMMISSIONING OF THE FORMER KAI TAK AIRPORT OTHER THAN THE NORTH APRON
- ACCESS ROADS IN THE VICINITY OF THE PROJECT AREA
- AREA ① — AREAS WITH NO CONTAMINATION IDENTIFIED. CONSTRUCTION ACTIVITIES OF OTHER PROJECTS TO BE CARRIED OUT IN CONCURRENT WITH THE PROPOSED DECONTAMINATION WORKS IN AREA ③
- AREA ③ — PROPOSED DECONTAMINATION WORKS. AREAS FOR TREATMENT OF EXCAVATED CONTAMINATED SOIL FROM AREA ② (SEE DRAWING 2.4a)

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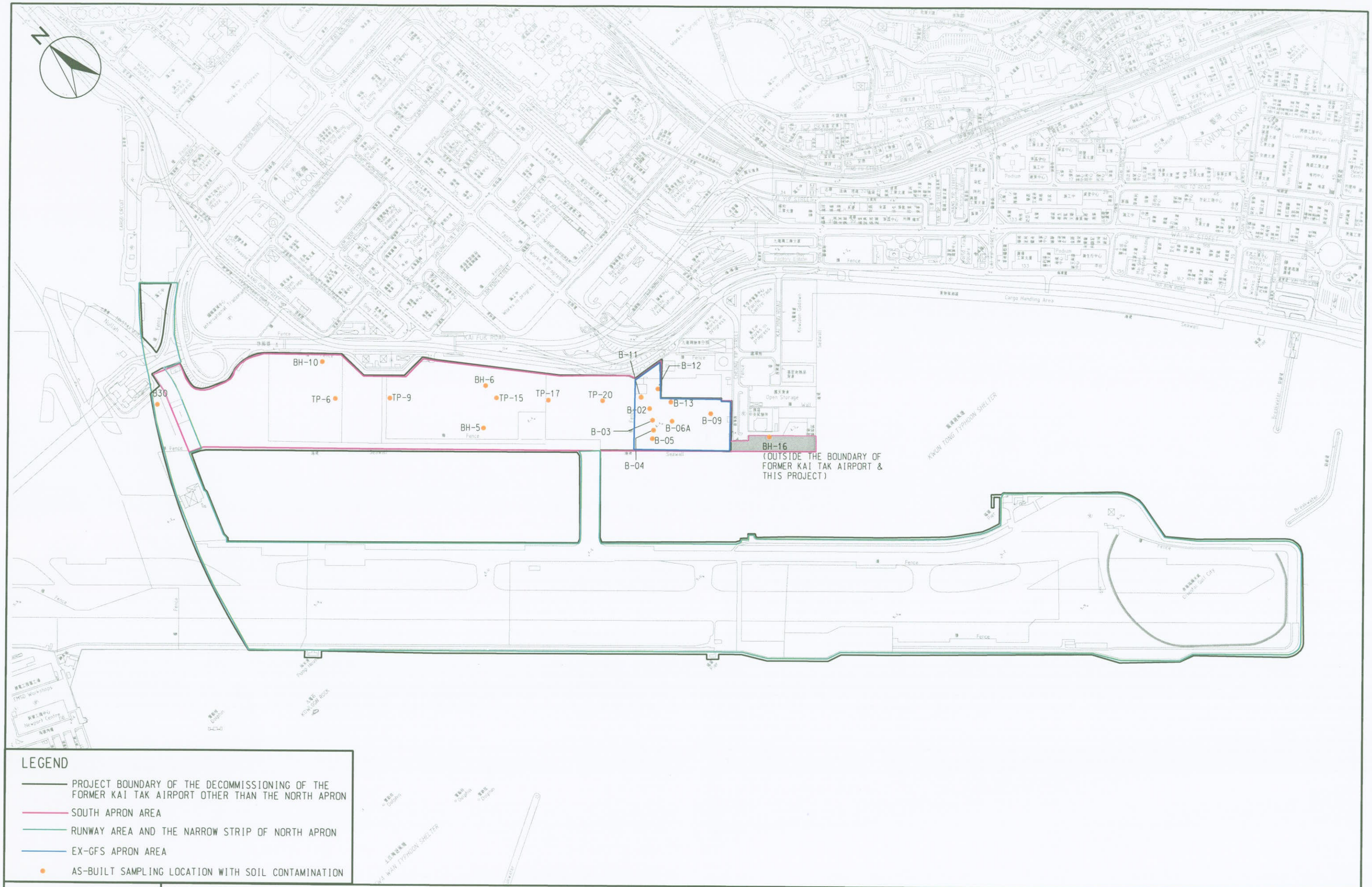
CONCURRENT ACTIVITIES AFTER COMPLETION OF CONTAMINATED SOIL EXCAVATION

SCALE	A3 1:18000	DATE	OCT 07
CHECK	LCWK	DRAWN	–
JOB No.	60022408	DRAWING No.	2.4b
		REV	–

P:\60022503\Drawings\Drawing\Report\KTA decommissioning EIA\executive summary_ENG\FIG_2-4B-eng.DGN



LEGEND

- PROJECT BOUNDARY OF THE DECOMMISSIONING OF THE FORMER KAI TAK AIRPORT OTHER THAN THE NORTH APRON
- SOUTH APRON AREA
- RUNWAY AREA AND THE NARROW STRIP OF NORTH APRON
- EX-GFS APRON AREA
- AS-BUILT SAMPLING LOCATION WITH SOIL CONTAMINATION

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AS-BUILT SAMPLING LOCATIONS WITH CONTAMINANTS EXCEEDING DUTCH B/C LEVELS

SCALE	A3 1:8000	DATE	JUL 07
CHECK	KYTT	DRAWN	POHM
JOB No.	60022408	DRAWING No.	3.1
		REV	–

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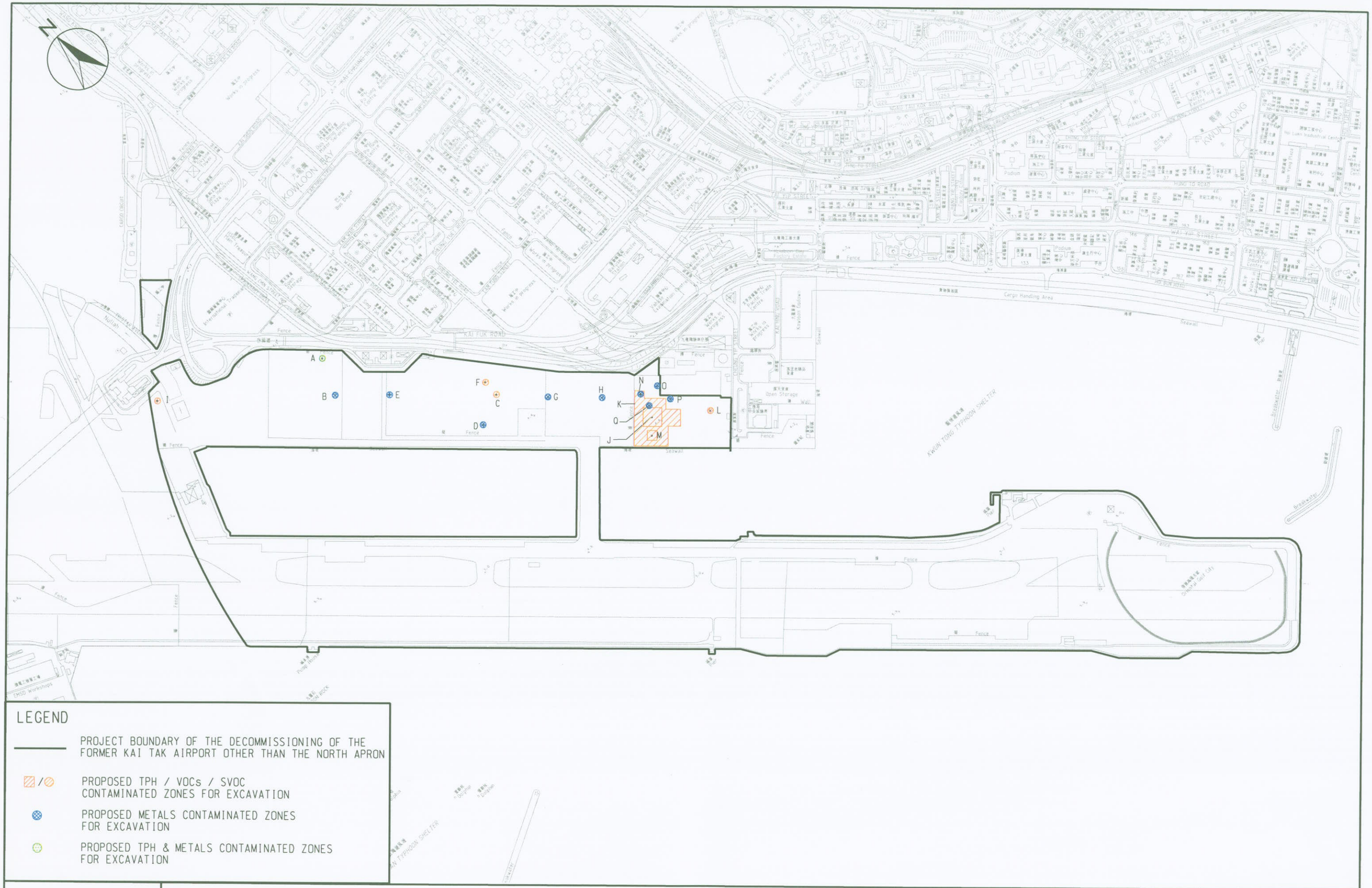

LEGEND

- PROJECT BOUNDARY OF THE DECOMMISSIONING OF THE FORMER KAI TAK AIRPORT OTHER THAN THE NORTH APRON
- PROPOSED TPH / VOCs / SVOC CONTAMINATED ZONES FOR EXCAVATION
- PROPOSED METALS CONTAMINATED ZONES FOR EXCAVATION
- PROPOSED TPH & METALS CONTAMINATED ZONES FOR EXCAVATION

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CONTAMINATED ZONES PROPOSED FOR EXCAVATION

SCALE	N.T.S	DATE	JUL 07
CHECK	KYTT	DRAWN	POHM
JOB No.	60022408	DRAWING No.	3.2
		REV	-

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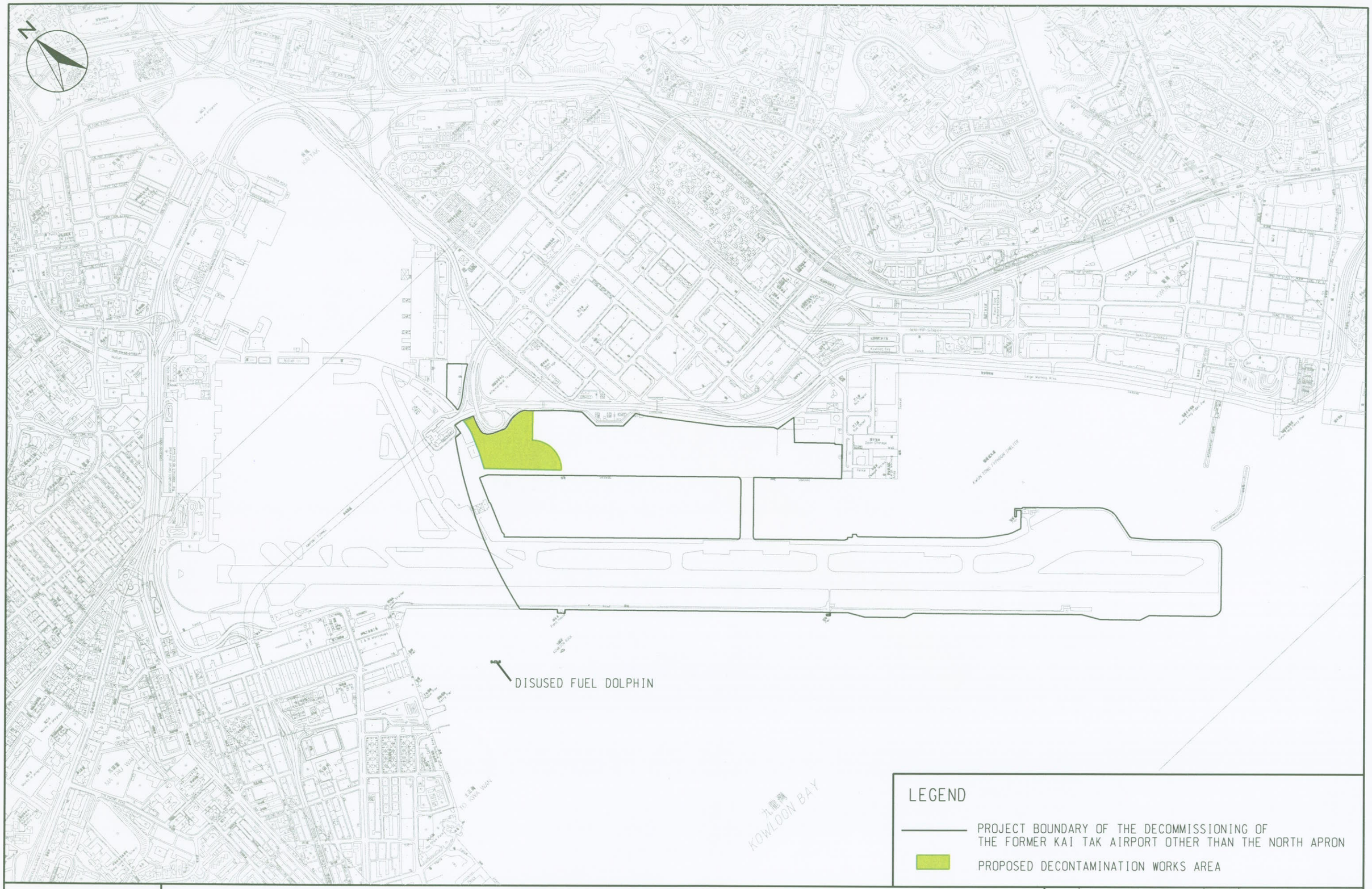

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LOCATION OF DECONTAMINATION WORKS AREA

SCALE	A3 1:12000	DATE	JUN 07
CHECK	KYTT	DRAWN	POHM
JOB No.	60022408	DRAWING No.	3.3
		REV	–

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