MOTT MACDONALD

Expansion of Hong Kong International Airport into a Three-Runway System

Supplementary Contamination Assessment Plan

August 2018

Airport Authority Hong Kong

Mott MacDonald
3/F Mapletree Bay Point
348 Kwun Tong Road
Kwun Tong
Kowloon
Hong Kong

T +852 2828 5757
F +852 2827 1823
mottmac.hk

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This Submission of Supplementary Contamination Assessment Plan

has been reviewed and certified by

the Environmental Team Leader (ETL) in accordance with

Condition 2.20 of Environmental Permit No. EP-489/2014.

Certified by:

Terence Kong
Environmental Team Leader (ETL)
Mott MacDonald Hong Kong Limited

Date 31 July 2018

AECOM
8/F, Grand Central Plaza, Tower 2,
138 Shatin Rural Committee Road,
Shatin, Hong Kong
香港新界沙田鄉事會路 138 號新城
市中央廣場第 2 座 8 樓
www.aecom.com

+852 3922 9000 tel
+852 2317 7609 fax

Our Ref : 60440482/C/JCHL180801

By Email

Airport Authority Hong Kong
HKIA Tower, 1 Sky Plaza Road
Hong Kong International Airport
Lantau, Hong Kong

Attn: Mr. Lawrence Tsui, Principal Manager

1 August 2018

Dear Sir,

Contract No. 3102
3RS Independent Environmental Checker Consultancy Services

Supplementary Contamination Assessment Plan

Reference is made to the ET's submission of Supplementary Contamination Assessment Plan under Condition 2.20 of the Environmental Permit No. EP-489/2014 certified by the ET Leader on 31 July 2018.

We would like to inform you that we have no adverse comment on the captioned submission. Therefore we write to verify the captioned submission in accordance with the requirement stipulated in Condition 1.9 of EP-489/2014.

Should you have any query, please feel free to contact the undersigned at 3922 9376.

Yours faithfully,
AECOM Asia Co. Ltd.

Jackel Law
Independent Environmental Checker

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1 Introduction

1.1 Background

The Environmental Impact Assessment (EIA) Report (Register No.: AEIAR-185/2014) prepared for the "Expansion of Hong Kong International Airport into a Three-Runway System" (the project) has been approved by the Director of Environmental Protection, and an Environmental Permit (EP) (Permit No.: EP-489/2014) has been issued for the project under the Environmental Impact Assessment Ordinance.

As part of the EIA study, a Contamination Assessment Plan (CAP) (hereafter referred to as the Approved CAP) was prepared and presented as Appendix 11.1 of the approved EIA Report. In accordance to Section 8.1.1.1 of the Updated Environmental Monitoring and Audit (EM&A) Manual, which was submitted under Condition 3.1 of the EP, and Section 11.10.1.2 of the EIA Report, six areas (i.e. fuel tank room within Terminal 2 (T2) building, fuel tank room to the west of Civil Aviation Department (CAD) antenna farm, seawater pump house, switching station, pumping station and fire training facility), as presented in **Figure 1.1**, were inaccessible for site reconnaissance at the time of preparing the EIA Report.

According to Sections 11.5.4.14 and 11.5.4.37 of the EIA Report, it is anticipated that any potential land contamination concern related to possible leakage/ spillage of fuel in the fuel tank room within T2 building and fuel tank room to the west of CAD antenna farm will not cause any insurmountable impact. Furthermore, as mentioned in Sections 11.5.4.38, 11.5.4.47 and 11.5.4.50 of the EIA Report, the seawater pump house, switching station, pumping station and fire training facility are not identified as potential contaminative land use types as given in Table 2.3 of the Practice Guide for Investigation and Remediation of Contaminated Land, hence no potential land contamination along these areas are anticipated.

As part of the ongoing detailed design of the project, relocation of the switching station is no longer required for the modification of existing North Runway. Hence site appraisal process for land contamination potential at the switching station is considered not necessary. Further site reconnaissance was conducted at the remaining five assessment areas (i.e. the fuel tank room within T2 building, fuel tank room to the west of CAD antenna farm, seawater pump house, pumping station and fire training facility) in third quarter of 2016 and May 2017. Findings and consideration of the above five assessment areas are summarized in this Supplementary CAP.

Through further review of the as-built drawings when taking into account the latest design details of T2 Expansion project and planned site investigation (SI), as well as follow-up site reconnaissance at T2 building undertaking in January 2018 and February 2018 (i.e. fuel tanks and generators within the building), enhanced site investigation (SI) for T2 building are then proposed and included in this Supplementary CAP. Mott MacDonald Hong Kong Limited (MMHK), as the project's Environmental Team, was appointed by Airport Authority Hong Kong (AAHK) to prepare the Supplementary CAP to fulfil the EP Condition 2.20.

1.2 Objectives

This Supplementary CAP are to:

- Fulfil Environmental Permit (EP) (Permit No.: EP-489/2014) Condition 2.20;
- Ascertain and review contamination evaluation and SI proposed in EIA report in Year 2014 base on latest project design and site condition;
- Present the findings of further review of the as-built drawings;
- Present the findings of follow-up site reconnaissance in third quarter of 2016, May 2017, as well as January and February 2018;

- Propose, where necessary, additional and enhancement on site investigation (SI) with justification;
- Propose, where necessary, sampling and laboratory chemical analysis required to confirm if any land contamination occurred, and
- Propose, where necessary, sampling and laboratory chemical analysis required to determine the nature and extent of any potential land contamination identified.

After the completion of SI works, if any, the results will be reported in the Contamination Assessment Report (CAR). Nevertheless, it is anticipated that any potential land contamination concern related to possible leakage/ spillage of fuel is not anticipated to cause any insurmountable impact.

1.3 Report Structure

Section 1 Introduction

Section 2 Assessment Criteria and Methodology

Section 3 Appraisal of Land Contamination Potential

Section 4 Proposed Site Investigation Works

Section 5 Proposed Laboratory Analysis

Section 6 Potential Remediation Measures

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2 Assessment Criteria and Methodology

2.1 Relevant Standards, Guidelines and Requirements

As described in Section 11.2 of the EIA Report, EPD promulgated two guidelines for utilising the Risk-based Remediation Goals (RBRGs) developed for Hong Kong, namely, “Guidance Note for Contaminated Land Assessment and Remediation” (Guidance Note) in August 2007 and “Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management” (Guidance Manual) in December 2007. The land contamination assessment should be carried out in accordance with the Guidance Manual and Guidance Note as well as section 3 of Annex 19 of the Technical Memorandum on EIA Process issued under the EIA Ordinance (EIAO-TM). In addition, reference would also be made to the “Practice Guide for Investigation and Remediation of Contaminated Land” (Practice Guide).

2.2 Assessment Methodology

Site reconnaissance was undertaken to identify the presence of any potentially contaminative land within the assessment areas. Relevant information was gathered with collection of latest records from the relevant Government departments and reviewed in preparing the Supplementary CAP, including:

- The Approved CAP;
- Records of active (current) and inactive (past) registered chemical waste producers at the assessment areas from the EPD;
- Records of current and past dangerous goods (DG) licences at the assessment areas from the Fire Services Department (FSD);
- Records of accidents that involved spillage/ leakage of chemical waste or DG from EPD and FSD; and
- Relevant as-built drawings.

Follow-up site reconnaissance was then conducted accordingly to countercheck with the consolidated information.

3 Appraisal of Land Contamination Potential

3.1 Review of Relevant Information from Government Departments

Information from the EPD and FSD have been collected and reviewed during the EIA stage. The EPD and FSD have been re-contacted to collect the latest information of the assessment areas to confirm the findings in the EIA Report. Latest information collected are listed below:

- Records of active (current) and inactive (past) registered chemical waste producer(s) and any reported accidents of chemical spillage/leakage at the assessment areas; and
- Records of any licensed DG store(s) and any reported accidents of spillage/ leakage of DG at the assessment areas.

Relevant documentation from EPD and FSD is provided in **Appendix A** and the information provided is summarised below.

3.1.1 Environmental Protection Department

A review of the chemical waste producer (CWP) records was conducted at the EPD's Territory Control Office. No registered CWP was identified at the assessment areas.

Based on the information given by EPD, there is no record of chemical spillage/ leakage within the assessment areas as shown in **Appendix A**.

The above-mentioned findings are consistent with the information presented in Section 11.5.1.3 of the EIA Report.

3.1.2 Fire Services Department

According to the reply from FSD, there are three DG records at the assessment areas including a 900 L diesel tank at the fuel tank room to the west of CAD antenna farm, a 3,000 L above-ground diesel tank at the fuel tank room within T2 building and a 10,000 L above-ground kerosene tank at the fire training facility. The DG records are considered valid based on the findings of the site reconnaissance survey as presented in **Section 3.2.**

FSD reported that no incident of spillage/ leakage of DG was found within the assessment areas. The response from FSD is shown in **Appendix A**.

3.2 Site Reconnaissance Survey

As mentioned in Sections 11.5.4.14 and 11.5.4.37 of the EIA Report, the fuel tank room to the west of CAD antenna farm and fuel tank room within T2 building were inaccessible due to safety and operational issues. SI has been proposed at these areas based on relevant drawings during EIA stage. As mentioned in Sections 11.5.4.38, 11.5.4.47 and 11.5.4.50 of the EIA Report, seawater pump house, pumping station and fire training facility were inaccessible. Relevant site reconnaissance surveys of these areas have been conducted in 2016 and 2017. A site walkover checklist has been filled in upon completion of site reconnaissance at each assessment area.

Follow-up site reconnaissance survey of concerned fuel tanks and generators within T2 building was conducted in January and February 2018, so as to countercheck the site condition with consolidated information and as-built drawings, with details elaborated in **Section 3.2.5** of this Supplementary CAP.

3.2.1 Fuel Tank Room to the West of CAD Antenna Farm

Access to the fuel tank room to the west of CAD antenna farm was granted by CAD operator and site reconnaissance survey was carried out on 18 May 2017. During the survey, a 900 L above-ground tank containing diesel fuel was found. The diesel fuel is used for the emergency power supply system. The tank is located on a concrete-paved ground and equipped with drip tray. Bund wall is also provided in the access of the fuel tank room. No oil stain or crack was found on the ground. SI has been proposed in Section 11.6.2.4 of the EIA Report for the above-ground fuel tank to ascertain any potential contamination issues before commencement of any construction works at this area. The proposed SI locations in the EIA Report (i.e. BH16 and BH17) are still considered valid. The drawing MCL/P132/EIA/11-015 documented in the EIA Report is presented in **Appendix C.1** for reference.

The completed site walkover checklist and the photographic records of the fuel tank room to the west of CAD antenna farm are provided in **Appendix B.1** and **Figure 3.1** respectively.

3.2.2 Seawater Pump House

As described in Section 11.5.4.38 of the EIA Report, the seawater pump house is used for delivering cooling water to different facilities for the operation of airport. A site reconnaissance survey was carried out at the seawater pump house on 22 September 2016. During the survey, it was observed that only seawater pumps and control panels are located in the seawater pump house. The ground surfaces of seawater pump house are fully paved with intact concrete and no apparent stains were observed. Therefore, no signs of land contamination were observed at the seawater pump house during the survey.

As mentioned in Section 11.5.4.38 of the EIA Report, seawater pump house is not identified as one of the potential contaminative land use types in accordance with Table 2.3 of the Practice Guide. Therefore, taking into account the latest available information and the findings of site reconnaissance survey, no potential land contamination is anticipated at the seawater pump house and thus SI has not been recommended.

The completed site walkover checklist and the photographic records of the seawater pump house are provided in **Appendix B.2** and **Figure 3.1** respectively.

3.2.3 Pumping Station

As mentioned in Section 11.5.4.47 of the EIA Report, the pumping station is used to convey sewage from T2 building. A site reconnaissance survey was carried out at the pumping station on 8 December 2016. During the survey, it was observed that control panels are located on the concrete-paved ground. Two sewage pumps are located underground to convey sewage from T2 building. No apparent stains were observed at the ground surface. As mentioned in Section 11.5.4.47 of the EIA Report, pumping station is not identified as one of the potential contaminative land use types in accordance with Table 2.3 of the Practice Guide. Therefore, taking into account the latest available information and the findings of site reconnaissance survey, no potential land contamination is anticipated at the pumping station and thus SI has not been recommended.

The completed site walkover checklist and the photographic records of the pumping station are provided in **Appendix B.3** and **Figure 3.2** respectively.

3.2.4 Fire Training Facility

As mentioned in Section 11.5.4.50 of the EIA Report, the fire training facility is used for fire training exercises. Access was granted by FSD operator and a site reconnaissance survey was carried out at the fire training facility in May 2017. A simulator is located at the centre of facility for fire training exercise. The whole training area is concrete paved. No oil stain or crack was found on the ground. An effluent pit is located under the simulator for collection of stormwater and water

generated from fire training exercise. The collected stormwater will be stored in the three underground storage tanks and convey to the wastewater treatment plant for treatment.

As mentioned in Section 11.5.4.50 of the EIA Report, fire training facility is not identified as one of the potential contaminative land use types as given in Table 2.3 of the Practice Guide. During the survey, a 10,000 L above-ground tank containing kerosene was found. The tank is located on a concrete-paved ground and is surrounded by concrete bund wall on all four sides. No oil stain or crack was found on the ground. According to the latest information from detailed design consultant, a new fire training facility is planned to be constructed in the western support area to replace the existing training facility; however, demolition of the existing above-ground kerosene tank is yet to be confirmed and still subject to detailed design. SI is proposed for the kerosene tank to ascertain any potential contamination issues before commencement of any construction works at this area, and details will be discussed in **Section 4**. Nevertheless, it is anticipated that any potential land contamination concern related to possible leakage/spillage of fuel will not cause any insurmountable impact.

The completed site walkover checklist and the photographic records of the fire training facility are provided in **Appendix B.4** and **Figure 3.3** respectively.

3.2.5 T2 Building

T2 building comprises northern and southern sections, where each section consists of number of Emergency Generator Rooms and Fuel Tank Rooms. A site reconnaissance survey was carried out at one of the Fuel Tank Room within T2 building in May 2017, focusing on the 3,000 L above-ground fuel tank (i.e. BH9). Relevant site walkover checklist and photographic records are presented in **Appendix B.5** and **Figure 3.2** respectively.

Follow-up site reconnaissance survey conducted in early 2018 has covered Fuel Tank Rooms and Emergency Generator Rooms in T2 building, including location BH1 – BH10 proposed in the EIA Report, as well as several concerned facilities identified in the as-built drawings. Those identified as potential land contamination sources are provided in **Table 3.1**. Newly identified potential sources thereafter annotated as HS. Locations please refer to the drawing for T2 building MCL/P132/EIA/11-014 with mark-up and associated zoom-in view in **Appendix C.2**.

Table 3.1: Potential Land Contamination Sources in T2 building

Potential Land Contamination Source Reference ID	Description	Emergency Power Supply System	Location
Northern Section			
Potential Land Contamination Sources Proposed in EIA Report as Sampling Location			
BH1	A 2,500 L underground fuel tank	System No.1	
BH3	A 450 L above-ground fuel tank at Emergency Generator Room		
BH2	53 m-in-length underground fuel pipelines connecting the 2,500 L underground fuel tank (i.e. BH1) and the 450 L above-ground fuel tank (i.e. BH3)		
BH4	An emergency generator at Emergency Generator Room, connected to 450 L above-ground fuel tank (i.e. BH3)		
BH9	A 3,000 L above-ground fuel tank at Fuel Tank Room	System No.2	
Newly Identified Facility			
HS1	Two emergency generators at Emergency Generator Room, connected to 3,000 L above-ground fuel tank (i.e. BH9)		
Southern Section			Please refer to in **Appendix C.2**
Potential Land Contamination Sources Proposed in EIA Report as Sampling Location			
BH5	A 3,000 L underground fuel tank	System No.3	
BH7	A 450 L above-ground fuel tank at Emergency Generator Room		
BH6	26 m-in-length underground fuel pipelines connecting the 3,000 L underground fuel tank (i.e. BH5) and the 450 L above-ground fuel tank (i.e. BH7)		
BH8	An emergency generator at Emergency Generator Room, connected to 450 L above-ground tank (i.e. BH7)		
BH10	A 1,500 L above-ground fuel tank at Fuel Tank Room	System No.4	
Newly Identified Facilities			
HS2	An emergency generator at Emergency Generator Room, connected to 1,500 L above-ground fuel tank (BH10)		
HS3	44 m-in-length underground fuel pipelines connecting the 1,500 L above-ground fuel tank (i.e. BH10) and the emergency generator (i.e. HS2)		
HS4	A 1,500 L above-ground fuel tank at Fuel Tank Room	System No.5	
HS5	An emergency generator at Emergency Generator Room, connected to 1,500 L above-ground fuel tank (i.e. HS4)		

Northern Section of T2 Building

Emergency Power Supply System No.1 (BH1, BH2, BH3 and BH4)

This set of emergency power supply system comprises underground and above-ground section.

Underground section refers to the 2,500 L underground fuel tank containing diesel fuel (i.e. BH1) and its associated underground fuel pipelines 53 m in length (i.e. BH2). The 2,500 L underground fuel tank is fully encased in a 300 mm thick concrete chamber with manhole chamber at floor level for inspection purpose, while space between the tank and the concrete chamber is filled with sand. The quantity of fuel inside the tank is automatically monitored by level sensor. According to available maintenance record, the sensor has been malfunction since August 2016. Instead, manual monthly fuel level measurement and monitoring have been conducted by using dipstick since then. As no abnormality on fuel re-filling record have been observed, it is considered that

there have been no loss of fuel as reported by the maintenance staff. The 53 meter-in-length underground pipeline is laid inside 100mm thick concrete trench backfilled with sand, located approximately 1.5 m below ground level.

Above-ground section refers to the 450 L above-ground fuel tank containing diesel fuel equipped with drip tray (i.e. BH 3) and the emergency generator (i.e. BH 4) both located at an Emergency Generator Room. Both fuel tank and generator are mounted on intact concrete floor with no oil stain. The above-ground fuel tank was surrounded by concrete curb. The fuel pipelines running through BH3 and BH4 are buried by sand inside a concrete and brick trench at floor level. Physical check of pipelines is possible by removing the chequer plate cover. System details are shown in drawings in **Appendix E.1**.

With regard to operation, this set of emergency power supply system (i.e. BH1 – BH4) has operated only for monthly test run (30-60 minutes for each run) since installation. The manhole chamber of underground fuel tank is checked monthly, while the underground fuel tank is re-filled approximately every 6 months.

For above-ground section (i.e. BH3 and BH4), taking into account of the facilities setup and operational schedule, with no record of fuel leakage, the potential of contamination is considered to be very unlikely; therefore, SI is considered not required for the 450 L above-ground fuel tank and the emergency generator. On the contrary, final inspection and record checking should be conducted right before decommissioning/ demolition of these facilities to ensure no contaminative activities during the period from now on till the decommissioning.

For underground section (i.e. BH1 and BH2), even the facilities are installed underground making physical inspection not possible, the high-standard engineering design (i.e. 300 mm thick concrete chamber of the fuel tank and 100 mm thick concrete trench of fuel pipelines), plus no record implying fuel leakage, the potential of contamination is anticipated to be unlikely. To confirm no potential land contamination taken place, an enhanced SI programme is designed for the concerned underground facilities. Therefore, the proposed SI locations in the EIA Report (i.e. BH1 and BH2) are still considered valid in this Supplementary CAP.

Emergency Power Supply System No.2 (BH9 and HS1)

The 3,000 L above-ground fuel tank with drip tray (i.e. BH9) at Fuel Tank Room containing diesel fuel, as recorded in the site reconnaissance survey in May 2017, is connected to two emergency generators located at the adjacent Emergency Generator Room (i.e. HS 1) which was newly identified in January 2018. Fuel pipelines running through the two facilities are either wall penetrating, or through concrete and brick trench filled with sand at floor level. Physical check of pipelines is possible by removing the chequer plate cover. Both of the concerned facilities (i.e. BH9 and HS1) being mounted on intact concrete floor with no oil stain. Bund wall is provided in the access of the fuel tank room. Reference to be made to drawings in **Appendix E.2**.

In terms of operation, this set of emergency power supply system has operated only for monthly test run (30-60 minutes for each run) since installation. The fuel tank is checked monthly and re-filled approximately every 6 months. The quantity of fuel inside the tank is monitored by level sensor while no sign of leakage being detected.

In view of facilities setup and operational schedule, with no record of fuel leakage, the potential of contamination is considered to be very unlikely; therefore, SI is considered not required for the above-ground fuel tank (i.e. BH9). For HS1, even though lubricating oil seepage during machine operation (i.e. Solely monthly test run) from engine flywheel/ engine body of one of the generators was recorded from June 2016 to March 2018 as shown in the available maintenance record, maintenance staff ensured that immediate clean-up of seepage was undertaken after every operation.

No cracks or oil stain on the intact concrete plinth underneath HS1 was observed according to site reconnaissance survey in January 2018. Based on the facility setup and site survey findings,

it is considered that the contamination potential of seepage lubricating oil is very unlikely. (Refer to photo records in **Appendix E.2**). Hence, HS1 shared the same strategy with BH9 where SI works is considered not required. Instead, final inspection and record checking should be conducted right before decommissioning/ demolition of these facilities to ensure no contaminative activities during the period from now on till the decommissioning.

Southern Section of T2 Building

Emergency Power Supply System No.3 (BH5, BH6, BH7 and BH8)

This set of emergency power supply system comprises underground and above-ground section, shared similar component design to the Emergency Power Supply System No.1 (i.e. BH1 – BH4) at northern section.

Underground section refers to the 3,000 L underground fuel tank containing diesel fuel and its associated underground fuel pipelines 26 m in length, known as sampling locations BH5 and BH6 respectively. The 3,000 L underground fuel tank is fully encased in a 300 mm thick concrete chamber with a manhole chamber at floor level for inspection purpose, while space between the tank and the concrete chamber is filled with sand. The quantity of fuel inside the tank is automatically monitored by level sensor while no sign of leakage has been detected. The 26 meter-in-length underground pipeline is laid in 100mm thick concrete trench backfilled with sand.

Above-ground section refers to the 450 L above-ground fuel tank containing diesel fuel equipped with drip tray (i.e. BH7) and the emergency generator (i.e. BH8) both located at an Emergency Generator Room. Both fuel tank and generator are mounted on intact concrete floor with no oil stain.

The above-ground fuel tank was surrounded by concrete curb. The fuel pipelines running through BH7 and BH8 are laid inside sand filled concrete and brick trench at floor level. Physical check of pipelines is possible by removing the chequer plate cover. System details are shown in drawings in **Appendix E.3**.

In operational means, this set of emergency power supply system (i.e. BH5 – BH8) has operated only for monthly test run (30-60 minutes for each run) since installation. The manhole chamber of underground fuel tank is checked monthly, while the underground fuel tank is re-filled approximately every 6 months. Even seepage of lubricating oil from side cover of the emergency generator (i.e. BH8) had been recorded from Jun 2016 to Feb 2017 as shown in the available maintenance record, maintenance staff ensured that immediate clean-up of seepage was undertaken after every operation. The lubricating oil seepage problem was then solved in a comprehensive repair conducted in Feb 2017. Neither cracks nor oil stain was observed on the intact concrete plinth underneath BH8 in site reconnaissance survey in January 2018. Taking into account of facility setup and site survey observation, it is considered that the contamination potential of seepage lubricating oil is very unlikely. (Refer to photo record in **Appendix E.3**)

For above-ground section (i.e. BH7 and BH8), in view of the facilities setup and operational schedule, with no record of fuel leakage, the potential of contamination is considered to be very unlikely; therefore, SI is considered not required for the 450 L above-ground fuel tank and the emergency generator. On the contrary, final inspection and record checking should be conducted right before decommissioning/ demolition of these underground facilities to ensure no contaminative activities during the period from now on till the decommissioning.

For underground section (i.e. BH5 and BH6), even the facilities are installed underground making physical inspection not possible, the high-standard engineering design (i.e. 300 mm thick concrete chamber of the fuel tank and 100 mm thick concrete trench of fuel pipelines), plus no record implying fuel leakage, the potential of contamination is anticipated to be unlikely. To confirm no potential contamination taken place, an enhanced SI programme is designed for the concerned underground facilities. Therefore, the proposed SI locations in the EIA Report (i.e. BH5 and BH6) are still considered valid in this Supplementary CAP.

Emergency Power Supply System No. 4 (BH10, HS2 and HS3)

The system comprises the 1,500 L above-ground fuel tank containing diesel fuel at Fuel Tank Room equipped with drip tray (i.e. BH10) and a newly identified emergency generator at Emergency Generator Room (i.e. HS2) and the 44 m-in-length underground fuel pipelines running through the two facilities (i.e. HS3).

High-standard engineering design was found in facilities setup. Both above-ground facilities (i.e. BH10 and HS2) are mounted on intact concrete floor with no oil stain. Curb by builder is also provided in the Fuel Tank Room. The underground pipeline (i.e. HS3) is laid in concrete trench 1 m below ground level backfilled with mass/sand. System details are shown in drawings in **Appendix E.4**.

In terms of operational schedule, this set of emergency power supply system (i.e. BH10, HS2 and HS3) has operated only for monthly test run (30-60 minutes for each run) since installation. The fuel tank is checked monthly and re-filled approximately every 6 months. Level sensor is incorporated in the above-ground fuel tank to monitor the quantity of fuel while no sign of leakage being detected as illustrated in the available maintenance record.

Through taking into account the facilities setup and operational means, the potential of contamination from BH10 and HS2 are therefore considered to be very unlikely. SI is considered not required for the 1,500 L above-ground fuel tank (i.e. BH10) and the emergency generator (i.e. HS2). For the underground fuel pipelines (i.e. HS3), even physical inspection is not possible, the high-standard engineering design (i.e. concrete trench filled with mass/sand), plus no record implying leakage, supported that the potential of contamination is therefore considered to be unlikely. To confirm no potential contamination taken place, an enhanced SI programme is designed for the concerned underground facilities.

Emergency Power Supply System No. 5 (HS4 and HS5)

This set of emergency power supply system are newly identified in further as-built drawings review. The system comprises the 1,500 L above-ground fuel tank containing diesel fuel with drip tray at Fuel Tank Room (i.e. HS4) and the emergency generator at Emergency Generator Room (i.e. HS5). The fuel pipelines running through the two facilities are either wall penetrating or laid in a concrete and brick trench filled with sand at floor level. Physical check of pipelines is possible by removing the chequer plate cover. Both concerned facilities (i.e. HS4 and HS5) are mounted on intact concrete floor with no oil stain. Curb wall is also provided in the access of the fuel tank room. System details are shown in drawings in **Appendix E.5**.

In terms of operation, this set of emergency power supply system has operated only for monthly test run (30-60 minutes for each run) since installation. The fuel tank is checked monthly and re-filled approximately every 6 months. The quantity of fuel inside the tank is monitored by level sensor while no sign of leakage being detected. Based on the facility setup and site survey observation, it is considered that the contamination potential is very unlikely. (Refer to photo record in **Appendix E.5**)

Even though lubricating oil seepage from engine body and engine flywheel of the emergency generator (i.e. HS5) was recorded from January 2017 to March 2018 in reviewed maintenance record, maintenance staff ensured that immediate clean-up of seepage was undertaken after every operation. Neither cracks nor oil stain was observed on the intact concrete plinth underneath HS5 in site reconnaissance survey in February 2018. Taking into account of facility setup and site survey observation, it is considered that the contamination potential is very unlikely. (Refer to photo record in **Appendix E.5**)

In view of facilities setup and operational schedule, with no record of fuel leakage, the potential of contamination is considered to be very unlikely. Therefore, SI is considered not required for the 1,500 L above-ground fuel tank and the emergency generator. Instead, final inspection and record

checking should be conducted right before decommissioning/ demolition of these facilities to ensure no contaminative activities during the period from now on till the decommissioning.

The completed site walkover checklist and the photographic records of concerned T2 building facilities are provided in **Appendix B.6** and **Appendix E** respectively.

3.3 Identification of Land Contamination Potential

Through consolidation of the findings from further as-built drawing review and the follow-up site reconnaissance survey, sampling location BH1, BH2, BH5, BH6 is still considered to be valid and to be included in the enhanced SI programme. The newly identified underground pipelines (i.e. HS3) of Emergency Power Supply System No. 4 at southern T2 building has also been included as enhancement of SI recommendation. Enhanced SI programme details will be presented in **Section 4.3**.

As described in **Section 3.2.1,** the proposed SI locations at the fuel tank room to the west of CAD antenna farm presented in the EIA Report (i.e. MCL/P132/EIA/11-015 in **Appendix C.1**) is still considered valid.

As presented in the EIA Report Table 3.3 and Section 4.2.2, petrol filling station covered by modification of existing North Runway was considered to have potential leakage/spillage of fuel which may cause land contamination concern. Therefore, site investigation was proposed for the location in sampling location BH11 to BH15. As for the latest programme in July 2018, the detailed design of the present North Runway modification is under review. The petrol filling station remains operating unless the final design being settled and thus confirm the necessity of filling station decommission. The sampling locations (i.e. BH11 – BH15) are still considered to be valid in this supplementary CAP. Subject to the result of detailed design review, site re-appraisal shall be conducted upon affirmation of the need for decommission of the petrol filling station. The proposed SI programme details will be presented in **Section 4.1.3**.

A summary of further site investigation recommended with reference to the observations of site reconnaissance survey conducted in third quarter of 2016 and May 2017 is presented in **Table 3.2**. Enhanced SI recommended for T2 building with reference to the observations of site reconnaissance survey conducted in early 2018 is presented in **Table 3.3**. All SI proposed to the latest available information at different stages are summarized in **Table 3.4**.

Table 3.2: Summary of Further Site Investigation Recommended

Location	Potential Land Contamination Impact	Need for Further Site Investigation	Figure No.
Fuel Tank Room to the West of CAD Antenna Farm	A 900 L above-ground tank containing diesel fuel was found during the site reconnaissance survey. Potential leakage or spillage of fuel may cause land contamination concern.	SI locations have been proposed during EIA stage and are still considered valid. SI will be conducted prior to the commencement of construction works at site. *	Figure 3.1 and EIA drawing MCL/P132/EIA/11-015 as presented in **Appendix C.1**
Fuel Tank Room within T2 Building	After consolidating latest information, the approach towards this facility is updated. Please refer to Potential Contamination Source Reference ID BH9 in **Table 3.3**.		
Seawater Pump House	No contaminative land use types were identified.	No	Figure 3.1
Switching Station	During detailed design of the project, relocation of the switching station is no longer required. Therefore, site appraisal process for land contamination potential is considered not necessary.		Figure 3.1
Pumping Station	No contaminative land use types were identified.	No	Figure 3.2

Location	Potential Land Contamination Impact	Need for Further Site Investigation	Figure No.
Fire Training Facility	A 10,000 L above-ground tank containing kerosene was found during the site reconnaissance survey. Potential leakage or spillage of fuel may cause land contamination concern.	Yes, SI will be conducted prior to the commencement of construction works at site. *	Figure 3.3

* The necessity of recommended Site Investigation (SI) is subject to review after the site re-appraisal to be conducted prior to commencement of SI works. Details is provided in **Section 4.1.1** and **Section 4.2.1** respectively.

Table 3.3: Summary of Enhanced Site Investigation Recommended for T2 building

Potential Land Contamination Source Reference ID	Potential Land Contamination Impact	Need for Enhanced Site Investigation	Figure No.
Northern Section			
BH1	The 2,500 L underground fuel tank containing diesel fuel was reviewed through site reconnaissance survey and as-built drawings. Potential land contamination caused by leakage or spillage of fuel was considered to be unlikely.	SI locations have been proposed during EIA stage and are still considered valid. Enhanced SI will be conducted in decommissioning stage.	System details in **Appendix E.1** and EIA drawing MCL/P132/EIA/11-014 with mark-up as presented in **Appendix C.2**
BH2	The 53 m-in-length underground fuel pipelines connecting the underground fuel tank (i.e. BH1) and the above-ground fuel tank (i.e. BH3) was reviewed through site reconnaissance survey and as-built drawings. Potential land contamination caused by leakage or spillage of fuel was considered to be unlikely.	SI location has been proposed during EIA stage and are still considered valid. Enhanced SI will be conducted in decommissioning stage.	System details in **Appendix E.1** and EIA drawing MCL/P132/EIA/11-014 with mark-up as presented in **Appendix C.2**
BH3*	The 450 L above-ground fuel tank containing diesel fuel was reviewed through site reconnaissance survey and as-built drawings. Potential land contamination caused by leakage or spillage of fuel was considered to be very unlikely.	No	System details in **Appendix E.1** and EIA drawing MCL/P132/EIA/11-014 with mark-up as presented in **Appendix C.2**
BH4*	The emergency generator site was reviewed through site reconnaissance survey and as-built drawings. Potential land contamination caused by leakage or spillage of fuel was considered to be very unlikely.	No	System details in **Appendix E.1** and EIA drawing MCL/P132/EIA/11-014 with mark-up as presented in **Appendix C.2**
BH9*	The 3,000 L above-ground fuel tank containing diesel fuel was further reviewed through site reconnaissance survey and as-built drawings. The previously concerned potential land contamination caused by leakage or spillage of fuel was considered to be very unlikely.	No	System details in **Appendix E.2** and EIA drawing MCL/P132/EIA/11-014 with mark-up as presented in **Appendix C.2**
HS1*	The two emergency generators were identified in site reconnaissance survey. Potential land contamination caused by leakage or spillage of fuel was reviewed and considered to be very unlikely.	No	System details in **Appendix E.2** and EIA drawing MCL/P132/EIA/11-014 with mark-up as presented in **Appendix C.2**

Potential Land Contamination Source Reference ID	Potential Land Contamination Impact	Need for Enhanced Site Investigation	Figure No.
Southern Section			
BH5	The 3,000 L underground fuel tank containing diesel fuel was reviewed through site reconnaissance survey and as-built drawings. Potential land contamination caused by leakage or spillage of fuel was considered to be unlikely.	SI location has been proposed during EIA stage and are still considered valid. Enhanced SI will be conducted in decommissioning stage.	System details in **Appendix E.3** and EIA drawing MCL/P132/EIA/11-014 with mark-up as presented in **Appendix C.2**
BH6	The 26 m-in-length underground fuel pipelines connecting the underground fuel tank (i.e. BH5) and the above-ground fuel tank (i.e. BH7) was reviewed through site reconnaissance survey and as-built drawings. Potential land contamination caused by leakage or spillage of fuel was considered to be unlikely.	SI location has been proposed during EIA stage and are still considered valid. Enhanced SI will be conducted in decommissioning stage.	System details in **Appendix E.3** and EIA drawing MCL/P132/EIA/11-014 with mark-up as presented in **Appendix C.2**
BH7*	The 450 L above-ground fuel tank containing diesel fuel was reviewed through site reconnaissance survey and as-built drawings. Potential land contamination caused by leakage or spillage of fuel was considered to be very unlikely.	No	System details in **Appendix E.3** and EIA drawing MCL/P132/EIA/11-014 with mark-up as presented in **Appendix C.2**
BH8*	The emergency generator was reviewed through site reconnaissance survey and as-built drawings. Potential land contamination caused by leakage or spillage of fuel was considered to be very unlikely.	No	System details in **Appendix E.3** and EIA drawing MCL/P132/EIA/11-014 with mark-up as presented in **Appendix C.2**
BH10*	The 1,500 L above-ground fuel tank containing diesel fuel was reviewed through site reconnaissance survey and as-built drawings. Potential land contamination caused by leakage or spillage of fuel was considered to be very unlikely.	No	System details in **Appendix E.4** and EIA drawing MCL/P132/EIA/11-014 with mark-up as presented in **Appendix C.2**
HS2*	The emergency generator was identified in site reconnaissance survey. Potential land contamination caused by leakage or spillage of fuel was reviewed and considered to be very unlikely.	No	System details in **Appendix E.4** and EIA drawing MCL/P132/EIA/11-014 with mark-up as presented in **Appendix C.2**
HS3	The 44 m-in-length underground fuel pipelines connecting the above-ground fuel tank (i.e. HS4) and the emergency generator (i.e. HS5) were identified in site reconnaissance survey. Potential land contamination caused by leakage or spillage of fuel was reviewed and considered to be unlikely.	Yes, Enhanced SI in decommissioning stage.	System details in **Appendix E.4** and EIA drawing MCL/P132/EIA/11-014 with mark-up as presented in **Appendix C.2**
HS4*	The 1,500 L above-ground fuel tank containing diesel fuel was identified in site reconnaissance survey. Potential land contamination caused by leakage or spillage of fuel was reviewed and considered to be very unlikely.	No	System details in **Appendix E.5** and EIA drawing MCL/P132/EIA/11-014 with mark-up as presented in **Appendix C.2**
HS5*	The emergency generator was identified in site reconnaissance survey. Potential land contamination caused by leakage or spillage of fuel was reviewed and considered to be very unlikely.	No	System details in **Appendix E.5** and EIA drawing MCL/P132/EIA/11-014 with mark-up as presented in **Appendix C.2**

* Subject to final inspection and record checking conducted right before decommissioning/ demolition of the facility to ensure no contaminative activities during the period from now on till the decommissioning.

Table 3.4: Summary of All Site Investigation

Potential Land Contamination Source Reference ID	Location	Source Description	Site Investigation strategy
BH11, BH12, BH13, BH14, BH15	Airside Petrol Filling Station	The underground fuel storage tanks and the petrol dispensers	As in EIA stage *
BH16, BH17	Fuel Tank Room to the West of CAD Antenna Farm	The 900 L above-ground tank containing diesel fuel	As in EIA stage**
BH18	Fire Training Facility	The 10,000 L above-ground tank containing kerosene	As additional site investigation**
BH1	Northern Section of T2	The 2,500 L underground fuel tank containing diesel fuel	As enhanced site investigation
BH2	Northern Section of T2	The 53 m-in-length underground fuel pipelines connecting the underground fuel tank (i.e. BH1) and the above-ground fuel tank (i.e. BH3)	As enhanced site investigation
BH5	Southern Section of T2	The 3,000 L underground fuel tank containing diesel fuel	As enhanced site investigation
BH6	Southern Section of T2	The 26 m-in-length underground fuel pipelines connecting the underground fuel tank (i.e. BH5) and the above-ground fuel tank (i.e. BH7)	As enhanced site investigation
HS3	Southern Section of T2	The 44 m-in-length underground fuel pipelines connecting the above-ground fuel tank (i.e. HS4) and the emergency generator (i.e. HS5)	As enhanced site investigation

* The necessity of recommended Site Investigation (SI) shall be subject to the result of detailed design review. Details are provided in **Section 4.1.3**.

The necessity of recommended Site Investigation (SI) shall be subject to review after the site re-appraisal prior to commencement of SI works. Details are provided in **Section 4.1.1 and **Section 4.2.1** respectively.

4 Proposed Site Investigation Works

4.1 Site Investigation Works Proposed in EIA Stage

4.1.1 Fuel Tank Room to the West of CAD Antenna Farm

As mentioned in **Section 3.2.1**, a 900 L above-ground tank containing diesel fuel was found during the site reconnaissance survey. A total of two boreholes (i.e. BH16 and BH17) were proposed in the EIA drawing MCL/P132/EIA/11-015 as presented in **Appendix C.1** for the above-ground fuel tank. The proposed SI locations were still considered valid in this Supplementary CAP.

It should be noted that site re-appraisal will be conducted prior to commencement of SI works to ascertain initial contamination evaluation of the area and review the necessity of site investigation works proposed in the aforementioned submission. The findings of the re-appraisal will be documented appropriately and seek EPD agreement prior to the commencement of site investigation works, if require. Subsequent sampling and testing works will be conducted prior to commencement of any construction works at this area.

4.1.2 T2 Building

Further to the elaboration in **Section 3.2.5**, SI locations proposed in EIA stage are reviewed after consolidating site reconnaissance survey findings, as-built drawings and on-site personnel interview. SI approach of T2 Building facilities are proposed and presented in **Table 3.3**. Associated enhanced SI programme are elaborated in **Section 4.3**.

4.1.3 Airside Petrol Filling Station

Further to **Section 3.3**, a total of five boreholes (i.e. BH11 to BH15) were proposed for the airside petrol filling station and the tentative sampling locations are shown in the EIA drawing MCL/P132/EIA/11-015 as presented in **Appendix C.1**. Since there is no change in land use, the proposed SI locations were still considered valid in this Supplementary CAP.

Subject to the result of detailed design review (as in July 2018), site re-appraisal shall be conducted upon affirmation of the need for decommission of the petrol filling station. The findings of the re-appraisal (if any) will be documented appropriately and seek EPD agreement prior to the commencement of site investigation works.

4.2 Additional Site Investigation Works

4.2.1 Fire Training Facility

As mentioned in **Section 3.2.4**, the fire training facility is not identified as one of the potential contaminative land use types as given in Table 2.3 of the Practice Guide. A 10,000 L above-ground tank containing kerosene fuel was found during the site reconnaissance survey, hence SI is proposed for this above-ground kerosene tank.

One new borehole (BH18) is proposed at the 10,000 L above-ground fuel tank inside the fire training facility. The tentative sampling location is shown in **Figure 4.1**.

To ascertain contamination evaluation of this facility and review the necessity of additional site investigation works proposed, site re-appraisal will be conducted prior to commencement of SI

works. The findings of the re-appraisal will be documented appropriately and seek EPD agreement prior to the commencement of site investigation works, if require. Subsequent sampling and testing works will be conducted prior to commencement of any construction works at this area.

4.3 Enhanced Site Investigation Works for T2 Building

As mentioned in **Section 3.2.5**, enhanced SI is recommended for the underground facilities in T2 building. Sampling locations included in enhanced SI are provided in **Table 3.4**.

Four sampling locations, BH1, BH2, BH5 and BH6 proposed in the EIA drawing MCL/P132/EIA/11-014 are still considered valid, while sampling location HS3 for the 44 m-in-length underground fuel pipelines at southern section is newly proposed as shown in marked-up EIA drawing MCL/P132/EIA/11-014 in **Appendix C.2**. Sampling and testing works of the enhanced SI will be conducted along with decommissioning/demolition of concerned facilities.

4.4 Sampling Details

4.4.1 Sampling and Testing Plan

The sampling and testing plan for the airside petrol filling station, the fuel tank room to the West of CAD Antenna Farm and Fire Service Facility, including sampling locations and depths, is recommended in accordance with the EPD's Practice Guide for Investigation and Remediation of Contaminated Land as shown in **Table 4.2**.

Enhanced sampling and testing plan for concerned underground facilities of T2 Building, including sampling location and depths, are presented in **Table 4.3**. The exact locations and depths for sand and soil sampling shall be determined by on-site land contamination specialist to suit the actual site condition during site investigation.

4.4.2 Sampling Method and Depth of Sampling

All soil boring/ excavation and sampling should be supervised by a land contamination specialist.

At each sampling location/depth, sufficient quantity of soil/sand sample (as specified by the laboratory) should be taken. All soil/sand samples should be uniquely labelled. Backup samples should be retained and stored at 0-4 ºC in laboratory.

Borehole and Trial Pit Sampling for Airside Petrol Filling Station, West of CAD Antenna Farm and Fire Service Facility

Borehole sampling is designated to sampling plan for the airside petrol filling station, fuel tank room to the West of CAD Antenna Farm and Fire Service Facility.

Borehole should be undertaken by means of dry rotary drilling method, i.e. without the use of flushing medium, to prevent cross-contamination during sampling. For safety reasons, an inspection pit should be excavated down to 1.5 m below ground surface (bgs) to inspect for underground utilities at the proposed borehole location. Disturbed soil samples should be collected at depth of 0.5 m bgs. Soil boring using drill rigs should then be performed from depth of 1.5 m bgs to the maximum boring depth. Undisturbed U100/U76 soil samples should be collected at 1.5 m and 3.0 m bgs as well as above groundwater level. Groundwater samples should be collected at the level of groundwater (if encountered).

Where borehole drilling is not possible due to site constraints (e.g. insufficient head room or accessibility of drilling rigs), sampling using trial pit methods will be adopted. For trial pit methods,

disturbed soil samples, using stainless steel hand tools, will be taken at 0.5 m, 1.5 m and 3.0 m bgs in order to delineate the vertical profile of contamination.

Appropriate safety precautionary measures such as shoring support, stepping/sloping of sides will be implemented for the excavation of trial pit exceeding 1.2 m, with reference to the "Practice Guide for Investigation and Remediation of Contaminated Land" issued by EPD and "Guide to Trench Excavations (Shoring Support and Drainage Measures)" issued by Utilities Technical Liaison Committee of Highway Department and Geotechnical Engineering Office of Civil Engineering Department.

Grab Sampling for Concerned Underground Facilities of T2 Building

Grab sampling is proposed for the locations listed in **Table 4.3** as Enhanced Sampling and Testing plan. Sand and soil samples shall be grabbed manually during decommissioning/ demolition process of concerned underground pipeline trench and fuel tanks. The whole sampling process shall be under the supervision of on-site Contamination Specialist.

Sampling Selection of Underground Fuel Tank

Sand and soil samples should be collected as follows,

- Sand samples should be collected at 0.5 m, 1.5 m and bottom level inside the concrete chamber of underground fuel tank;
- Soil sample should be collected right underneath concrete chamber of underground fuel tank.

Sampling Selection of Underground Fuel Pipelines

Sand and soil samples should be collected as follows,

- Sand samples should be taken at every curvature of pipelines inside the concrete trench;
- Additional sampling points inside the concrete trench are set depending on length of pipeline segment (from curvature/connection to curvature):
  - If pipeline segment is ≤10 m, additional sample is considered not required;
  - If pipeline segment is >10 m and ≤20 m, one sample shall be taken at segment mid-point;
  - If pipeline segment is >20 m and ≤30 m, samples shall be collected at 2 points which are evenly spaced with each other and segment ends.
- Soil samples should be taken right underneath concrete trench at every curvature.

Sampling point annotation and indicative sampling point locations are illustrated in **Appendix F** and **Table 4.1**.

Table 4.1: Sampling Point Annotation of Underground Fuel Pipelines

Proposed Sampling Locations	Annotation of Sampling Point	Type of Sampling Point (Curvature/ Additional)	Figure No.
BH2	BH2-S1	Curvature	**Appendix F.2**
	BH2-S2	Curvature	
	BH2-S3	Curvature	
	BH2-S4	Additional	
	BH2-S5	Additional	
	BH2-S6	Curvature	
	BH2-S7	Additional	
BH6	BH6-S1	Curvature	**Appendix F.4**
	BH6-S2	Additional	
	BH6-S3	Additional	
	BH6-S4	Curvature	
HS3	HS3-S1	Curvature	**Appendix F.5**
	HS3-S2	Additional	
	HS3-S3	Curvature	
	HS3-S4	Curvature	
	HS3-S5	Additional	
	HS3-S6	Additional	
	HS3-S7	Curvature	

Table 4.2: Sampling and Testing Plan for Airside Petrol Filling Station, the fuel tank room to the West of CAD Antenna Farm and Fire Service Facility

Proposed Sampling Locations	Sample Matrix[3]		Parameters to be Tested[4]				Rationale of Sampling
			Heavy Metals	PCRs[5]	VOCs[5]	SVOCs[5]	
Airside Petrol Filling Station[#, *]							
BH11[1]	Soil	0.5 m, 1.5 m, 3.0 m bgs	Full list	✓	✓	✓	Assess potential land contamination impact from petrol filling activities
	GW	If present^	Mercury only	✓	✓	✓	
BH12[1]	Soil	0.5 m, 1.5 m, 3.0 m bgs	Full list	✓	✓	✓	Assess potential land contamination impact from petrol filling activities
	GW	If present^	Mercury only	✓	✓	✓	
BH13[1]	Soil	0.5 m, 1.5 m, 3.0 m below the base of underground fuel tank	Full list	✓	✓	✓	Assess potential land contamination impact from underground fuel tanks
	GW	If present^	Mercury only	✓	✓	✓	
BH14[1]	Soil	0.5 m, 1.5 m, 3.0 m below the base of underground fuel tank	Full list	✓	✓	✓	Assess potential land contamination impact from underground fuel tanks
	GW	If present^	Mercury only	✓	✓	✓	
BH15[1]	Soil	0.5 m, 1.5 m, 3.0 m below the base of underground fuel tank	Full list	✓	✓	✓	Assess potential land contamination impact from underground fuel tanks
	GW	If present^	Mercury only	✓	✓	✓	
Fuel Tank Room to the West of CAD Antenna Farm[#, **]							
BH16[2]	Soil	0.5 m, 1.5 m, 3.0 m bgs	Full list	✓	✓	✓	Assess potential land contamination impact from the fuel tank
	GW	If present^	Mercury only	✓	✓	✓	
BH17[2]	Soil	0.5 m, 1.5 m, 3.0 m bgs	Full list	✓	✓	✓	Assess potential land contamination impact from the fuel tank
	GW	If present^	Mercury only	✓	✓	✓	
Fire Training Facility**							
BH18[2]	Soil	0.5 m, 1.5 m, 3.0 m bgs	Full list	✓	✓	✓	Assess potential land contamination impact from the above-ground fuel tank
	GW	If present^	Mercury only	✓	✓	✓	

Remarks:
[1]Exact sampling locations will be identified on-site after decommissioning of petrol filling station.

[2]Exact sampling locations will be identified on site after the removal of the fuel tank.

[3] bgs = Below Ground Surface; GW = groundwater.

[4]✓ = testing proposed.

[5] PCRs = Petroleum Carbon Ranges; VOCs = Volatile Organic Chemicals; SVOCs = Semi-volatile Organic Chemicals;

^ Samples will only be collected if groundwater is encountered during SI works.

[#]The sampling and testing plan for Airside Petrol Filling Station and fuel tank room to the West of CAD Antenna Farm are extracted from Table 4.2 of the Approved CAP.

* Testing protocol shall be reviewed subject to the result of detailed design review. Details are provided in **Section 4.1.3**.

Testing protocol shall be reviewed after the site re-appraisal prior to commencement of SI works. Details are provided in **Section 4.1.1 and **Section 4.2.1** respectively.

Table 4.3: Enhanced Sampling and Testing Plan for T2 Building

Proposed Sampling Locations	Sample Matrix		Sampling Point Annotation	Parameters to be Tested[1 & 2]				Rationale of Sampling
				Heavy Metals	PCRs[3]	VOCs[3]	SVOCs[3]	
Northern Section								
BH1[4]	Sand[5]	0.5 m, 1.5 m bgs[6] and bottom level inside the concrete chamber	/	Lead only	✓	BTEX[7] and MTBE[8]	PAHs[9]	Confirm no diesel leakage from underground fuel tank
	Soil	Right underneath concrete chamber	/	Lead only	✓	BTEX[7] and MTBE[8]	PAHs[9]	Confirm no leaked diesel (if any) penetrate the concrete chamber
BH2[4]	Sand[5]	At the level of fuel pipelines	BH2S1 - BH2S7	Lead only	✓	BTEX[7] and MTBE[8]	PAHs[9]	Confirm no diesel leakage from underground fuel pipelines
	Soil	Right underneath concrete/brick trench	BH2S1, BH2S2, BH2S3, BH2S6	Lead only	✓	BTEX[7] and MTBE[8]	PAHs[9]	Confirm no leaked diesel (if any) penetrate the concrete /brick trench
Southern Section								
BH5[4]	Sand[5]	0.5 m, 1.5 m bgs[6] and bottom level inside the concrete chamber	/	Lead only	✓	BTEX[7] and MTBE[8]	PAHs[9]	Confirm no diesel leakage from underground fuel tank
	Soil	Right underneath concrete chamber	/	Lead only	✓	BTEX[7] and MTBE[8]	PAHs[9]	Confirm no leaked diesel (if any) penetrate the concrete chamber
BH6[4]	Sand[5]	At the level of fuel pipelines	BH6S1 - BH6S4	Lead only	✓	BTEX[7] and MTBE[8]	PAHs[9]	Confirm no diesel leakage from underground fuel pipelines
	Soil	Right underneath concrete/brick trench	BH6S1, BH6S4	Lead only	✓	BTEX[7] and MTBE[8]	PAHs[9]	Confirm no leaked diesel (if any) penetrate the concrete /brick trench
HS3[4]	Sand[5]	At the level of fuel pipelines	HS3S1 - HS3S7	Lead only	✓	BTEX[7] and MTBE[8]	PAHs[9]	Confirm no diesel leakage from underground fuel pipelines
	Soil	Right underneath concrete/brick trench	HS3S1, HS3S3, HS3S4, HS3S7	Lead only	✓	BTEX[7] and MTBE[8]	PAHs[9]	Confirm no leaked diesel (if any) penetrate the concrete /brick trench

Remarks:

[1] ✓ = testing proposed.

[2] Having reviewed the potentially polluting activities of the site (use of diesel fuel) and S2.4.3 of Practice Guide, it is recommended to analyse the key COCs (i.e. Lead, PCRs, BTEX, MTBE and PAHs) of "Petrol Filling Station" which is the most relevant land use type for the case of T2. The concerned diesel tanks and pipelines are used for storage and transfer of diesel fuel only and only diesel fuel is used for the generator. It is noted BTEX, MTBE and Lead present in gasoline but unlikely to be found in diesel fuel.

[3] PCRs = Petroleum Carbon Ranges; VOCs = Volatile Organic Chemicals; SVOCs = Semi-volatile Organic Chemicals;

[4] Exact sampling locations will be identified on site during the removal of sand/soil during fuel tank and pipelines decommissioning/ demolition.

[5] All sand samples will be collected within the concrete chamber or concrete/brick trench.

[6] bgs = Below Ground Surface.

[7] BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes.

[8] MTBE = Methyl Tert-Butyl Ether.

[9] Polyaromatic hydrocarbons (PAHs) in the RBRGs include, acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene and pyrene.

4.4.3 Strata Logging

Strata logging for boreholes should be undertaken during the course of drilling/digging and sampling by a qualified geologist. The logs should include the general stratigraphic description, depth of soil sampling, sample notation and level of groundwater (if encountered). The presence of rocks/boulders/cobbles and foreign materials such as metals, wood and plastics should also be recorded.

4.4.4 Free Product and Groundwater Level Measurement

The thickness of any free product and ground water level (if present) at sampling locations should be measured with an interface probe. The free product (if encountered in sufficient amounts) should be collected for laboratory analysis to determine the composition.

4.4.5 Groundwater Sampling

It is proposed to collect groundwater samples if groundwater is encountered at the sampling locations.

For each proposed borehole sampling location, a groundwater sampling well should be installed into the boreholes if groundwater is encountered or agreed by the land contamination specialist. A typical configuration of a groundwater monitoring well is shown in **Appendix D**. After installation of the monitoring wells, the depth to water table at all monitoring wells should be measured at the same time with an interface probe in order to delineate the groundwater table contours at the subject site. Well developments (approximately five well volumes) should be carried out to remove silt and drilling fluid residue from the wells. The wells should then be allowed to stand for a day to permit groundwater conditions to equilibrate. Groundwater level and thickness of free product layer, if present, should be measured at each well before groundwater samples are taken.

Prior to groundwater sampling, the monitoring wells should be purged (at least three well volumes) to remove fine-grained materials and to collect freshly refilled representative groundwater samples.

After purging, one groundwater sample should then be collected at each well using Teflon bailer and decanted into appropriate sample vials or bottles in a manner that minimises agitation and volatilization of volatile organic chemicals (VOCs) from the samples. All samples should be uniquely labelled.

If required, one groundwater sample at each trial pit using Teflon bailer should be taken if groundwater is encountered. The groundwater should only be taken after all required soil samples at the sampling location have been collected. The trial pit should be pumped to near dry and allowed to stand for 24 hours before sampling.

If groundwater sample is collected in trial pit, the trial pit should be enclosed on four sides by impervious sheeting at the end of each day to avoid potential contamination such as dust from the surrounding environment during groundwater sampling.

Immediately after collection, groundwater samples should be transferred to new, clean, laboratory-supplied glass jars for sample storage/transport. The sampling glass jars should be of “darkened” type. Groundwater samples should be placed in the glass jars with zero headspace and promptly sealed with a septum-lined cap. Immediately following collection, samples should be placed in ice chests, cooled and maintained at a temperature of about 4 ^{o}C until delivered to the analytical laboratory.

4.4.6 Sample Size and Decontamination Procedures

All equipment in contact with the ground should be thoroughly decontaminated between each excavation, drilling and sampling event to minimise the potential for cross contamination. The equipment (including drilling pit, digging tools and soil/sand/groundwater samplers) should be decontaminated by steam cleaning or high-pressure hot water jet, then washed by phosphate-free detergent and finally rinsed by distilled / deionised water.

Prior to sampling, the laboratory responsible for analysis should be consulted on the particular sample size and preservation procedures that are necessary for each chemical analysis.

The sample containers should be laboratory cleaned, sealable, water-tight, made of glass or other suitable materials with aluminium or Teflon-lined lids, so that the container surface will not react with the sample or adsorb contaminants. No headspace should be allowed in the containers which contain samples to be analysed for VOCs, Petroleum Hydrocarbon Ranges or other volatile chemicals.

The containers should be marked with the sampling location codes and the depths at which the samples were taken. If the contents are hazardous, this should be clearly marked on the container and precautions taken during transport. Samples should be stored at between 0-4 ºC but never frozen. Samples should be delivered to laboratory within 24 hours of the samples being collected and analysed within the respective retention period but should not be more than 10 days.

4.4.7 Quality Assurance / Quality Control Procedures

Quality Assurance / Quality Control (QA/QC) samples should be collected with the following frequency during the SI. Chain of Custody protocol should be adopted.

- One equipment blank per 20 samples for full suite analysis;
- One field blank per 20 samples for full suite analysis;
- One duplicate sample per 20 samples for full suite analysis; and
- One trip blank per trip for the analysis of volatile parameters.

4.4.8 Health and Safety

The specific safety measures to be taken depend on the nature and content of contamination, the site conditions and the regulations related to site safety requirements. Workers Compensation Insurance and third party insurance must be provided for the SI.

Extreme care should be exercised when toxic gases or other hazardous materials are encountered. Any abnormal conditions found shall be reported immediately to the safety officer and the land contamination specialist.

The SI contractor shall establish and maintain a Health and Safety Plan before commencement of the SI that will include the following:

- Instruction of works on work procedures, safe practices, emergency duties, and applicable regulations;
- Regularly scheduled meetings of the workers in which the possible hazards, problems of the job, and related safe practices are emphasised and discussed;
- Good housekeeping practices; and
- Availability of and instruction in the location, use and maintenance of personal protective equipment.

The SI Contractor shall maintain equipment and supplies reasonably required in an emergency, including lifesaving, evacuation, rescue and medical equipment in good working order and condition at all times. The SI Contractor shall use all reasonable means to control and prevent fires and explosions, injury to personnel and damage to equipment of property. Without limiting the foregoing, the SI Contractor shall:

- Maintain proper safety devices and barriers to minimise hazards during performance of the work;
- Prohibit smoking and open flames and the carrying of matches and lighters;
- Develop and maintain a written emergency plan applicable to the work site;
- Maintain equipment in good operating condition and have emergency and first aid equipment ready for immediate use, where applicable;
- Conduct equipment tests to ensure that equipment is properly placed and in good operating condition, and that workers are able to respond to emergency situations;
- Require all workers employed or retained by the Contractor, or a subcontractor, to at all time wear clothing suitable for existing work, weather and environmental conditions;
- Require the site personnel to wear respirator and gloves for vapour exposure protection, if necessary; and
- Ensure all site staff members wear safety helmet and protective boots.

5 Proposed Laboratory Analysis

5.1 Airside Petrol Filling Station, Fuel Tank Room to the West of CAD Antenna Farm and Fire Training Facility

Laboratory analysis is proposed for the soil and groundwater (if any) samples collected at airside petrol filling station, the fuel tank room to the west of CAD antenna farm and fire training facility in order to screen the presence of potential contaminants that are of concerns as shown in **Table 4.2**.

Table 5.1 summarises the parameters, the minimum requirement of the reporting limits and reference methods for the laboratory analyses of soil and groundwater samples.

Table 5.1: Parameters, Detection Limits and Reference Methods for Laboratory Analysis of Samples Collected at Airside Petrol Filling Station, Fuel Tank Room to the West of CAD Antenna Farm and Fire Training Facility

Parameter	Soil		Groundwater	
	Detection Limit (mg/kg) or other stated	Reference Method	Detection Limit (µg/L) or other stated	Reference Method
VOCs				
Acetone	50	USEPA 8260 or similar method*	500	USEPA 8260 or similar method*
Benzene	0.2		5	
Bromodichloromethane	0.1		5	
2-Butanone	5		50	
Chloroform	0.04		5	
Ethylbenzene	0.5		5	
Methyl tert-Butyl Ether	0.5		5	
Methylene Chloride	0.5		50	
Styrene	0.5		5	
Tetrachloroethene	0.04		5	
Toluene	0.5		5	
Trichloroethene	0.1		5	
Xylenes (Total)	2		20	
SVOCs				
Acenaphthene	0.5	USEPA 8270D or similar method*	2	USEPA 8270D or similar method*
Acenaphthylene	0.5		2	
Anthracene	0.5		2	
Benzo(a)anthracene	0.5		N/A	
Benzo(a)pyrene	0.5		N/A	
Benzo(b)fluoranthene	0.5		1	
Benzo(g,h,i)perylene	0.5		N/A	
Benzo(k)fluoranthene	0.5		N/A	
Bis-(2-Ethylhexyl)phthalate	5		N/A	
Chrysene	0.5		1	
Dibenzo(a,h)anthracene	0.5		N/A	

Parameter	Soil		Groundwater	
	Detection Limit (mg/kg) or other stated	Reference Method	Detection Limit (µg/L) or other stated	Reference Method
Fluoranthene	0.5		2	
Fluorene	0.5		2	
Hexachlorobenzene	0.2		4	
Indeno(1,2,3-cd)pyrene	0.5		N/A	
Naphthalene	0.5		2	
Phenanthrene	0.5		2	
Phenol	0.5		N/A	
Pyrene	0.5		2	
Metals				
Antimony	1	USEPA 6020 or similar method*	N/A	USEPA 6020 or similar method*
Arsenic	1		N/A	
Barium	1		N/A	
Cadmium	0.2		N/A	
Chromium III	1		N/A	
Chromium VI	1		N/A	
Cobalt	1		N/A	
Copper	1		N/A	
Lead	1		N/A	
Manganese	1		N/A	
Mercury	0.05		0.5	
Molybdenum	1		N/A	
Nickel	1		N/A	
Tin	1		N/A	
Zinc	1		N/A	
Petroleum Carbon Ranges				
C6 - C8	5	USEPA 8260B / 8015 or similar method*	20	USEPA 8260B / 8015 or similar method*
C9 - C16	200		500	
C17 - C35	500		500	

Remark:

*Alternative testing methods with accreditation by HOKLAS or its Mutual Recognition Arrangement partner are also acceptable.

N/A - Not Available.

5.2 T2 Building

Laboratory analysis is proposed for the sand and soil samples collected at underground facilities in T2 building in order to ensure no potential contaminants present that are of concerns as shown in **Table 4.3**.

Table 5.2 summarises the parameters, the minimum requirement of the reporting limits and reference methods for the laboratory analyses of soil/sand samples.

Table 5.2: Parameters, Detection Limits and Reference Methods for Laboratory Analysis of Samples Collected at T2 Building

Parameter	Soil/Sand		Groundwater	
	Detection Limit (mg/kg) or other stated	Reference Method	Detection Limit (µg/L) or other stated	Reference Method
VOCs				
Benzene	0.2	USEPA 8260 or similar method*	5	USEPA 8260 or similar method*
Ethylbenzene	0.5		5	
Methyl tert-Butyl Ether	0.5		5	
Toluene	0.5		5	
Xylenes (Total)	2		20	
SVOCs				
Acenaphthene	0.5	USEPA 8270D or similar method*	2	USEPA 8270D or similar method*
Acenaphthylene	0.5		2	
Anthracene	0.5		2	
Benzo(a)anthracene	0.5		N/A	
Benzo(a)pyrene	0.5		N/A	
Benzo(b)fluoranthene	0.5		1	
Benzo(g,h,i)perylene	0.5		N/A	
Benzo(k)fluoranthene	0.5		N/A	
Chrysene	0.5		1	
Dibenzo(a,h)anthracene	0.5		N/A	
Fluoranthene	0.5		2	
Fluorene	0.5		2	
Indeno(1,2,3-cd)pyrene	0.5		N/A	
Naphthalene	0.5		2	
Phenanthrene	0.5		2	
Pyrene	0.5		2	
Metals				
Lead	1	USEPA 6020 or similar method*	N/A	USEPA 6020 or similar method*
Petroleum Carbon Ranges				
C6 - C8	5	USEPA 8260B / 8015 or similar method*	20	USEPA 8260B / 8015 or similar method*
C9 - C16	200		500	
C17 - C35	500		500	

Remark:

*Alternative testing methods with accreditation by HOKLAS or its Mutual Recognition Arrangement partner are also acceptable.

N/A - Not Available.

5.3

5.3 Interpretation of Results

The soil, groundwater and sand samples collected from the proposed SI works will be compared with RBRGs as stipulated in Table 2.1 and Table 2.2 of the Guidance Manual.

The RBRGs are developed based on a risk assessment approach to suit the local environmental conditions and community needs in Hong Kong. Decisions on contaminated soil and groundwater (if any) remediation are based on the nature and extent of the potential risks that are posed to human receptors as a result of exposure to chemicals in the soil and/or groundwater. RBRGs are developed for four different land use scenarios reflecting the typical physical settings in Hong Kong under which people could be exposed to contaminated soil and groundwater. Each land use scenario is described below:

- **Urban Residential** – Sites located in an urban area where main activities involve habitation by individuals. The typical physical setting is a high rise residential building situated in a housing estate that has amenity facilities such as landscaped yards and children's playgrounds. The receptors are residents who stay indoors most of the time except for a short period each day, during which they are outdoors and have the chance of being in direct contact with soil at landscaping or play areas within the estate.
- **Rural Residential** – Sites located in a rural area where the main activities involve habitation by individuals. These sites typically have village-type houses or low rise residential blocks surrounded by open space. The receptors are rural residents who stay at home and spend some time each day outdoors on activities such as gardening or light sports. The degree of contact with the soil under the rural setting is more than that under the urban setting both in terms of intensity and frequency of contact.
- **Industrial** – Any site where activities involve manufacturing, chemical or petrochemical processing, storage of raw materials, transport operations, energy production or transmission, etc. Receptors include those at sites where part of the operation is carried out directly on land and the workers are more likely to be exposed to soil than those working in multi-storey factory buildings.
- **Public Parks** – Receptors include individuals and families who frequent parks and play areas where there is contact with soil present in lawns, walkways, gardens and play areas. Parks are considered to be predominantly hard covered with limited areas of predominantly landscaped soil. Furthermore, public parks are not considered to have buildings present on them.

In addition to the RBRGs, screening criteria (soil saturation limits, C_{sat}, developed for Non-aqueous Phase Liquid (NAPL) in soil and water solubility limits for NAPL in groundwater) for the more mobile organic chemicals must be considered to determine whether a site requires further action.

Since the future land uses of airside petrol filling station, the fuel tank room to the west of CAD antenna farm and the fire training facility, will be used for operations of the airport, the RBRGs corresponding to the land use categories of Industrial should be adopted according to the Guidance Note.

For the concerned underground facilities in T2 building, since the future land uses will be airport operation, the RBRGs corresponding to the land use categories of Industrial should be adopted according to the Guidance Note.

The relevant parameters of soil/sand and groundwater RBRGs levels for the SI works are presented in **Table 5.3**.

Table 5.3: Relevant RBRGs for Soil and Groundwater

Parameter	Soil/Sand[1]		Groundwater	
	RBRGs for Industrial (mg/kg)	Soil Saturation Limit (C_{sat}) (mg/kg)	RBRGs for Industrial (mg/L)	Groundwater Solubility Limit (mg/L)
VOCs				
Acetone	10,000*	***	10,000*	N/A
Benzene	9.21	336	54	1750
Bromodichloromethane	2.85	1030	26.2	6740
2-Butanone	10,000*	***	10,000*	N/A
Chloroform	1.54	1100	11.3	7920
Ethylbenzene	8,240	138	10,000*	169
Methyl tert-Butyl Ether	70.1	2380	1,810	N/A
Methylene Chloride	13.9	921	224	N/A
Styrene	10,000*	497	10,000*	310
Tetrachloroethene	0.777	97.1	2.95	200
Toluene	10,000*	235	10,000*	526
Trichloroethene	5.68	488	14.2	1100
Xylenes (Total)	1,230	150	1,570	175
SVOCs				
Acenaphthene	10,000*	60.2	10,000*	4.24
Acenaphthylene	10,000*	19.8	10,000*	3.93
Anthracene	10,000*	2.56	10,000*	0.0434
Benzo(a)anthracene	91.8	N/A	N/A	N/A
Benzo(a)pyrene	9.18	N/A	N/A	N/A
Benzo(b)fluoranthene	17.8	N/A	7.53	0.0015
Benzo(g,h,i)perylene	10,000*	N/A	N/A	N/A
Benzo(k)fluoranthene	918	N/A	N/A	N/A
Bis-(2-Ethylhexyl)phthalate	91.8	N/A	N/A	N/A
Chrysene	1140	N/A	812	0.00160
Dibenzo(a,h)anthracene	9.18	N/A	N/A	N/A
Fluoranthene	10,000*	N/A	10,000*	0.206
Fluorene	10,000*	54.7	10,000*	1.98
Hexachlorobenzene	0.582	N/A	0.695	6.2
Indeno(1,2,3-cd)pyrene	91.8	N/A	N/A	N/A
Naphthalene	453	125	862	31
Phenanthrene	10,000*	28.0	10,000*	1
Phenol	10,000*	7260	N/A	N/A
Pyrene	10,000*	N/A	10,000*	0.135
Metals				
Antimony	261	N/A	N/A	N/A
Arsenic	196	N/A	N/A	N/A
Barium	10,000*	N/A	N/A	N/A
Cadmium	653	N/A	N/A	N/A
Chromium III	10,000*	N/A	N/A	N/A
Chromium VI	1960	N/A	N/A	N/A
Cobalt	10,000*	N/A	N/A	N/A
Copper	10,000*	N/A	N/A	N/A

Parameter	Soil/Sand[1]		Groundwater	
	RBRGs for Industrial (mg/kg)	Soil Saturation Limit (C_{sat}) (mg/kg)	RBRGs for Industrial (mg/L)	Groundwater Solubility Limit (mg/L)
Lead	2290	N/A	N/A	N/A
Manganese	10,000*	N/A	N/A	N/A
Mercury	38.4	N/A	6.79	N/A
Molybdenum	3260	N/A	N/A	N/A
Nickel	10,000*	N/A	N/A	N/A
Tin	10,000*	N/A	N/A	N/A
Zinc	10,000*	N/A	N/A	N/A
Petroleum Carbon Ranges				
C6 - C8	10,000*	1,000	1,150	5.23
C9 - C16	10,000*	3,000	9,980	2.8
C17 - C35	10,000*	5,000	178	2.8
PCBs				
PCBs	0.748	N/A	5.11	0.031

Remark:

*Indicates a 'ceiling limit' concentration.

[1] Sand sample applies to enhanced Site Investigation of T2 Building.

N/A - Not Available.

5.4 Reporting

SI Works at SkyCity Golf Course

According to Section 11.6.1 of the EIA Report, SI works at SkyCity Golf Course (hereafter referred to as the golf course) will be carried out by Airport Management Services (AMSL). The golf course was closed on 31 July 2015 after expiry of operation. SI works proposed in the EIA Report was conducted in August 2015. The SI results were presented in the Contamination Assessment Report (for Golf Course Area) which was approved by EPD on 6 April 2016.

SI Works at Airside Petrol Filling Station, Fuel Tank Room to the West of CAD Antenna Farm and Fire Service Facility

SI work at airside petrol filling station, fuel tank room to the west of CAD antenna farm and fire service facility (Refer to **Table 4.2**) have not been commenced. After the captioned SI works have been completed, a corresponding Contamination Assessment Report (CAR) which documents the detailed methodology of SI, assessment criteria, on-site observations and the analytical results from the SI works will be submitted to EPD for endorsement.

Should remediation be required, Remediation Action Plan (RAP) and Remediation Report (RR) will be prepared for EPD's approval prior to commencement of the proposed remediation and any construction works respectively.

Enhanced SI Works for T2 Building Facilities

In case laboratory testing results from enhanced SI works listed in **Table 4.3** exceeding the corresponding RBRGs as shown in **Table 5.3**, agreement from EPD shall be sought for further sampling strategy. Laboratory testing result shall be presented in Contamination Assessment Report (CAR) which documents the detailed methodology of SI, assessment criteria, on-site observations and the analytical results from the SI works will be submitted to EPD for endorsement.

6 Potential Remediation Measures

The possible contaminants that may be found at the assessment areas in this Supplementary CAP include heavy metals, organic compounds and PCRs. Possible remediation methods will be applied depending on the quantity and quality of contaminated soil. With reference to the Practice Guide, a list of available and commonly adopted remediation methods is presented in **Table 6.1** for the potential contaminated soil.

Table 6.1: List of Potential Remediation Methods

Remediation Options	Possible Contaminants	Descriptions
Contaminated Soil		
Stabilisation/ Solidification	Heavy metals	Ex-situ immobilisation technique treating contaminated soil by mixing soil with binding agents. The most common binding agent is cement
Biopiling	PCRs and Organic contaminants	Ex-situ bioremediation method that facilitate bacterial growth in contaminated soil and degradation of contaminants into harmless products
Soil Vapour Extraction (SVE)	PCRs and Organic contaminants	In-situ bioremediation method by removal of contaminants by suction / volatilisation, in the form of vapours. The vapours can be extracted by applying vacuum
Thermal Desorption	PCRs and Organic contaminants	A method to remove / separate contaminants from the soil matrix. Apply heat to the contaminated soil in order to increase the volatility of contaminants
Contaminated Groundwater		
Air Sparging	PCRs and Organic contaminants	In-situ remediation technique to inject pressurised air into contaminated water enabling a phase transfer of hydrocarbons from a dissolved state to a vapour phase. Vacuum extraction is then applied to remove the contaminants
Recovery Trenches / Wells	PCRs	Pump the groundwater out for recovering of free floating products from a plume

If any contamination is identified and warrant remediation based on the SI result, a RAP presenting the proposed remediation methods will be prepared and submitted to EPD for approval prior to commencement of the remediation works. As the remediation methods are well established and sufficient to deal with the nature of possible contaminants, it is anticipated that any contamination issues at the potentially contaminated areas will not cause any insurmountable impact.

7 Conclusion

This Supplementary CAP has been prepared to ascertain contamination evaluation and review proposed site investigation (SI) in EIA report. Additional SI and enhanced SI programme were established by means of further review of as-built drawings, and site reconnaissance survey conducted in third quarter of 2016, May 2017, as well as January and February 2018.

Engineering details of underground and above-ground fuel tanks, pipelines and emergency generators within/nearby T2 building were reviewed according to as-built drawings and follow-up site reconnaissance survey. It is considered that the possibility of land contamination by concerned above-ground facilities is very unlikely based on high-standard engineering design, operational schedule, no identified fuel leakage record and site survey observations. As such, further SI is considered not necessary. Instead, final inspection and record checking right before decommissioning/ demolition is recommended to ensure no contaminative activities during the period from now on till the decommissioning.

For concerned underground facilities of T2 building, taking into account the consolidated information, the possibility of land contamination is considered to be unlikely. To ensure no leakage taken place, since physical inspection is not possible in this stage, enhanced SI programme is established. The enhanced SI are summarized in the **Table 4.3** at which four SI locations proposed in the EIA Report (BH1, BH2, BH5 and BH6) are included, with one newly proposed sampling location (HS3) for underground fuel pipelines at southern section. All enhanced SI will be conducted alongside with decommissioning/ demolition of the concerned underground facilities. In case laboratory testing results from enhanced SI works exceeding the corresponding RBRGs as stipulated in the EPD's Guidance Manual for Use of RBRGs for Contaminated Land Management, agreement from EPD shall be sought for further sampling strategy.

Additional SI works for fire training facility (i.e. BH18) is proposed and presented as well. Site re-appraisal will be conducted for this facility before commencement of SI works.

SI works proposed in EIA stage for airside petrol filling station (i.e. BH11 to BH15) and fuel tank room to the west of CAD antenna farm (i.e. BH16 and BH17) are still considered to be valid. Site re-appraisal will be conducted for airside petrol filling station, subject to the result of detailed design review of the present North Runway modification. Whereas, site re-appraisal will be conducted for fuel tank room to the west of CAD antenna farm before commencement of SI works.

After completion of SI, the CAR will be prepared and submitted to EPD for approval prior to commencement of the proposed construction works at the assessment areas. Should remediation be required, RAP and RR will be prepared for EPD's approval prior to commencement of the proposed remediation and any construction works respectively.

Appendices

A. Documentation from EPD and FSD

B. Site Walkover Checklists

- B.1 Site Walkover Checklist for Fuel Tank Room to the West of CAD Antenna Farm in May 2017
- B.2 Site Walkover Checklist for Seawater Pump House in September 2016
- B.3 Site Walkover Checklist for Pumping Station in December 2016
- B.4 Site Walkover Checklist for Fire Training Facility in May 2017
- B.5 Site Walkover Checklist for Fuel Tank Room within T2 Building in May 2017
- B.6 Site Walkover Checklist for T2 Building in January and February 2018

C. Proposed SI Locations in the EIA

- C.1 Proposed SI Locations for Airside Petrol Filling Station and Fuel Tank Room in the EIA
- C.2 Proposed SI Locations for Expansion of T2 Building in the EIA with Mark-up

D. Schematic Drawing of Groundwater Monitoring Well

E. Schematic Drawing of Facilities in T2 Building

- E.1 Emergency Power Supply System No.1
- E.2 Emergency Power Supply System No.2
- E.3 Emergency Power Supply System No.3
- E.4 Emergency Power Supply System No.4
- E.5 Emergency Power Supply System No.5

F. Indicative Sampling Point Selection of Underground Pipeline Trench and Underground Fuel Tank of T2 Building

- F.1 Indicative Sampling Point Selection of 2,500 L Underground Fuel Tank of Emergency Power Supply System No.1 (i.e. BH1)
- F.2 Indicative Sampling Point Selection of Underground Pipeline Trench of Emergency Power Supply System No.1 (i.e. BH2)
- F.3 Indicative Sampling Point Selection of 3,000 L Underground Fuel Tank of Emergency Power Supply System No.3 (i.e. BH5)
- F.4 Indicative Sampling Point Selection of Underground Pipeline Trench of Emergency Power Supply System No.3 (i.e. BH6)
- F.5 Indicative Sampling Point Selection of Underground Pipeline Trench of Emergency Power Supply System No.4 (i.e. HS3)

A. Documentation from EPD and FSD

A1. Documentation from EPD

MOTT MACDONALD

Environmental Protection Department
Environmental Compliance Division
Territorial Control Office
Chemical Waste Collection Licensing Section
25th floor, Southorn Centre
130 Hennessy Road
Wan Chai, Hong Kong

Our Reference
JP/EC/TK/T355482/02/02/
L0181

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong
Kowloon
Hong Kong

T +852 2828 5757
F +852 2827 1823
mottmac.com

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information about Chemical Waste Producer and Spillage/ Leakage Incidents

16 March 2017

Dear Sir/ Madam,

As part of the Supplementary Contamination Assessment Plan for the captioned project, we are required to undertake a land contamination assessment in order to identify any potential contaminated sites within the Study Area which includes the existing airside seawater pump house and existing pumping station as shown in the attached drawing **SK/012**. For this, we would like to request for the following information of the Study Area:

1. Records of current and past (as early as the records are available) registered Chemical Waste Producer(s) within the Study Area (preferably with the registration date, nature and quantity of the chemical waste and storage location); and

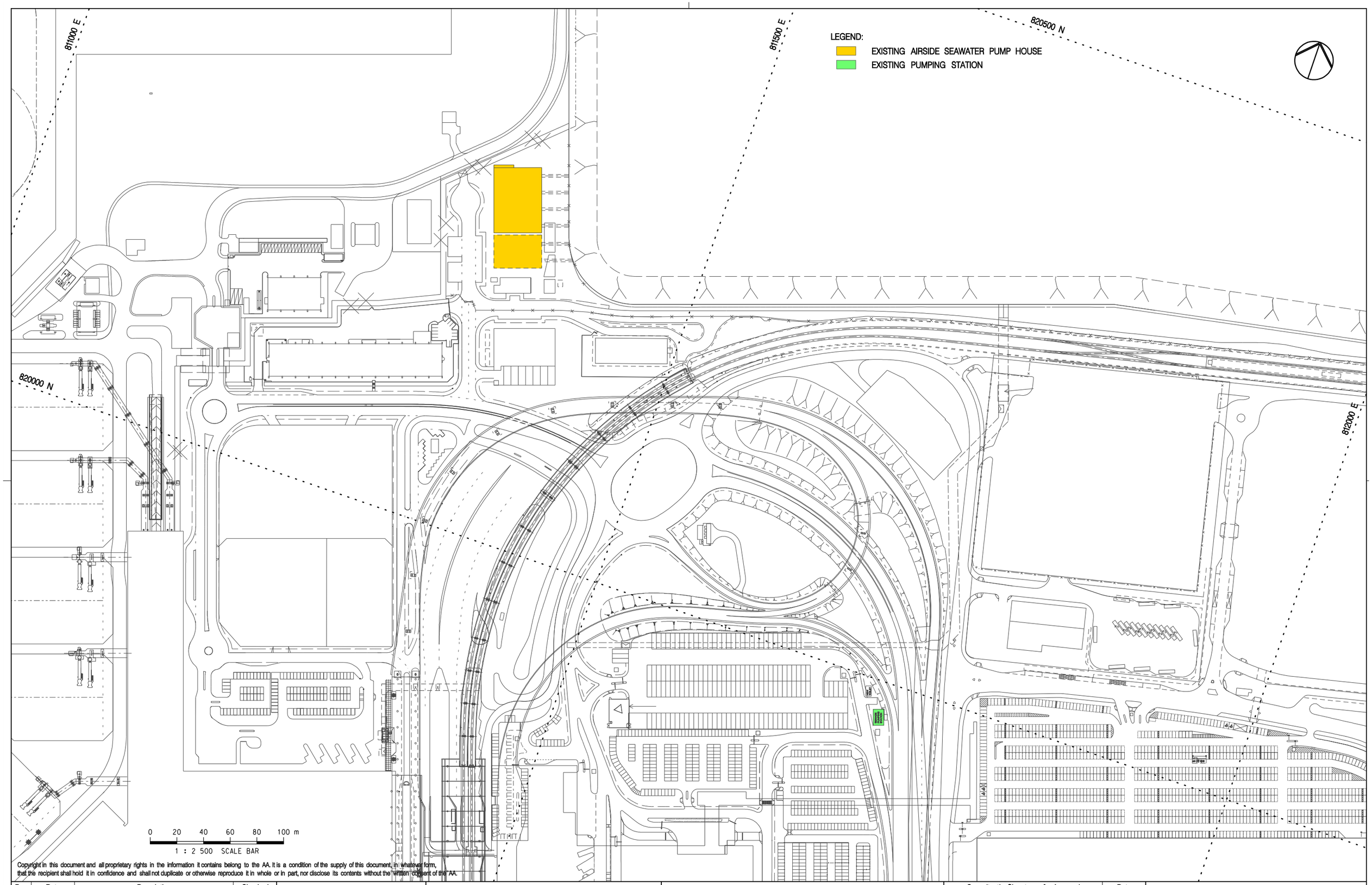
2. Any records of spillage/ leakage of chemical waste or chemicals at the Study Area.

We would be most grateful if you could provide the above information to us at your earliest convenience, preferably by 31 March 2017. Should you have any queries, please do not hesitate to contact our Ms. Ada Mung at 2828 5981 or Mr. Patrick Liu at 2585 8515.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Environmental Team Leader
T +852 2828 5919
terence.kong@mottmac.com

c.c.
Airport Authority Hong Kong Mr. Lawrence Tsui



Rev.	Date	Description	Checked
A	16MAR17	FIRST ISSUE	PL

香港國際機場 HONG KONG INTERNATIONAL AIRPORT
Airport Authority HKIA Tower, 1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2188 7111 Fax : (852) 2824 0777

MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
Design	PL	16MAR17
Checkers	JC / TK	16MAR17
Approver	EC	16MAR17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 012

Scale at A3 1 : 2500

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本署檔案 EP60/C3/3 Annex 5(2)
OUR REF:
來函檔案 JP/EC/TK/T355482/02/02/L0181
YOUR REF:
電　話 2835 1165
TEL NO.:
傳　真 2305 0453
FAX NO.:
電　郵 beatricewong@epd.gov.hk
E-MAIL:
網　址
HOMEPAGE : http://www.epd.gov.hk

Environmental Protection Department
Environmental Compliance Division
Territorial Control Office
28/F, Southorn Centre
130 Hennessy Road
Wan Chai, Hong Kong

環境保護署
環保法規管理科
總區辦事處
香港灣仔
軒尼詩道一百三十號
修頓中心廿八樓

	To	Action	Inform	Copy	Sign	Date
1	BZ		✓		2	29/3
2	PL					
Rec'd	29 MAR 2017					
3	AM					
4						
File No.				MOTT MACDONALD	M	M

By Mail

Mott Macdonald Hong Kong Limited
20/F AIA Kowloon Tower
Landmark East, 100 How Ming Street
Kwun Tong, Kowloon
(Attn : Terence Kong)

24 March 2017

Dear Mr. KONG,

Request for Information of Chemical Waste Producer and Spillage/Leakage incidents for Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014)-Environmental Monitoring and Audit

I refer to your letter dated 16 March 2017 on the captioned.

As registered chemical waste producers at the location are concerned, a register of chemical waste producers is available for inspection in the Territorial Control Office of this department. If you would like to inspect, please contact Mr. HO Shui-lun, Aaron at 2835 1017 for making appointment to view the records.

We have no record of chemical spillage/leakage accident of chemical waste or chemicals at the concerned location.

Should you have any query on the above matter, please contact the undersigned at 2835 1165.

Yours faithfully,

Beatrice

(Ms Beatrice WONG)
Territorial Control Office
for Director of Environmental Protection

c.c. TCG/EPD (Attn: Mr. HO Shui-lun, Aaron Fax: 23050453)

MOTT MACDONALD

Environmental Protection Department
Environmental Compliance Division
Territorial Control Office
Chemical Waste Collection Licensing Section
25th floor, Southorn Centre
130 Hennessy Road
Wan Chai, Hong Kong

Our Reference
JP/EC/TK/T355482/02/02/L0202

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong
Kowloon
Hong Kong

T +852 2828 5757
F +852 2827 1823
mottmac.com

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information about Chemical Waste Producer and Spillage/ Leakage Incidents

28 April 2017

Dear Sir/ Madam,

As part of the environmental monitoring and audit for the captioned project, we are required to undertake a land contamination assessment in order to identify any potential contaminated sites within the Study Area which includes the fire training facility as highlighted in the attached drawing **SK/016**, the airside fuel tank room as highlighted in the attached drawing **SK/017** and the 3,000L above-ground fuel tank room as highlighted in the attached drawing **SK/018**. For this, we would like to request for the following information of the Study Area:

1. Records of current and past (as early as the records are available) registered Chemical Waste Producer(s) within the Study Area (preferably with the registration date, nature and quantity of the chemical waste and storage location); and

2. Any records of spillage/ leakage of chemical waste or chemicals at the Study Area.

We would be most grateful if you could provide the above information to us at your earliest convenience, preferably by 12 May 2017. Should you have any queries, please do not hesitate to contact our Ms. Ada Mung at 2828 5981 or Mr. Patrick Liu at 2585 8515.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Environmental Team Leader
T +852 2828 5919
terence.kong@mottmac.com

c.c.
Airport Authority Hong Kong Mr. Lawrence Tsui

808000 E
809000 E
810000 E
818000 N
817000 N
渡輪碼頭
FERRY PIER
鷂殼灣
HAU HOK WAN
灣
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LEGEND:

FIRE TRAINING FACILITY

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香港國際機場 HONG KONG INTERNATIONAL AIRPORT
Airport Authority HKIA Tower,1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2181 7111 Fax : (852) 2824 0717

MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
Design	PL	27APR17
Checkers	JC / TK	27APR17
Approver	EC	27APR17

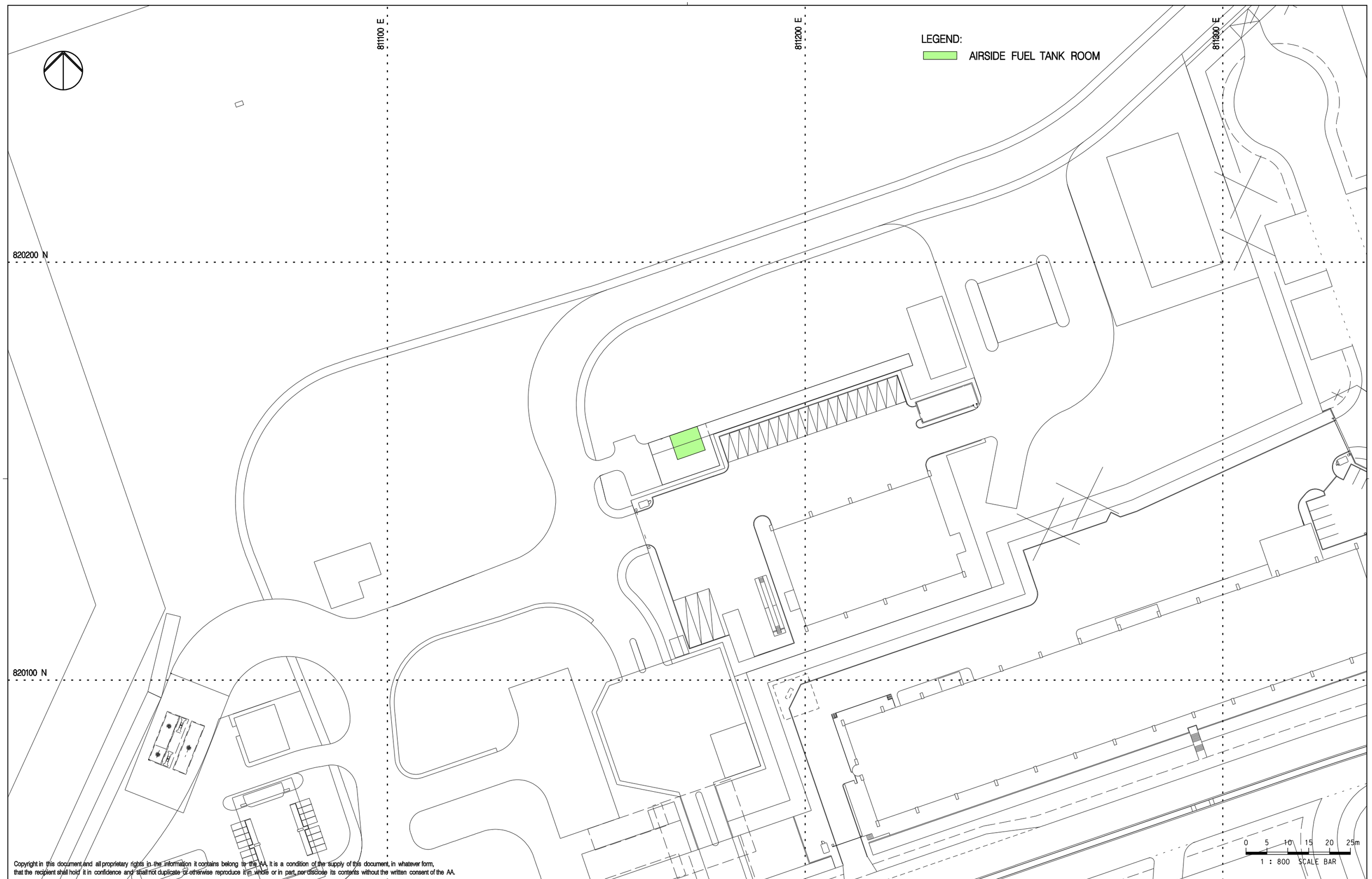
EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 016

Scale at A3 1 : 7000

Rev. A

Filename: J:\355482\SKETCH\SK016-SK017\SK016.dgn



Rev.	Date	Description	Checked
A	28APR17	FIRST ISSUE	PL

香港國際機場 HONG KONG INTERNATIONAL AIRPORT
Airport Authority HKIA Tower, 1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2188 7111 Fax : (852) 2824 0717

MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
Design	PL	28APR17
Checkers	JC / TK	28APR17
Approver	EC	28APR17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 017

Scale at A3 1 : 800

Rev. A

Filename: J:\355482\SKETCH\SK016-SK018\SK017.dgn

811500 E

811600 E

811700 E

819900 N

819800 N

LEGEND:

3000L ABOVE-GROUND FUEL TANK ROOM

0 5 10 15 20 25m

1 : 800 SCALE BAR

Rev.	Date	Description	Checked
A	28APR17	FIRST ISSUE	PL

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Tel : (852) 2188 7111 Fax : (852) 2824 0717

MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
Design	PL	28APR17
Checkers	JC / TK	28APR17
Approver	EC	28APR17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 018

Scale at A3 1 : 800

Rev. A

Filename: J:\355482\SKETCH\SK016-SK018\SK018.dgn

Liu, Patrick

From: tsso@epd.gov.hk [mailto:tsso@epd.gov.hk]
Sent: 31 May 2017 16:29
To: Kong, Terence <Terence.Kong@mottmac.com>
Cc: beatricewong@epd.gov.hk; lokamwah@epd.gov.hk
Subject: Re. Request for information about Chemical Waste Producer and Spillage/Leakage incidents

Dear Terence,

I refer to your attached letter dated 28/4/2017.

2. Please note that according to the past five years record, there was no record of spillage/leakage of chemical waste or chemicals for the past five years at the areas (ie. the fire training facility, the airside fuel tank room, and the 3,000L above-ground fuel tank room) in the Hong Kong International Airport highlighted in your drawings.

3. For the part on chemical waste producer registration, you may contact Mr. HO Shui-lun, Aaron of our Territory Control Group (tel. 2835 1017) for making appointment to view the records.

Regards,
TS SO
EPD

MOTT
MACDONALD

Environmental Protection Department
Environmental Compliance Division
Regional Office (West)
8th floor, Tsuen Wan Government Offices
38 Sai Lau Kok Road
Tsuen Wan, New Territories

By Fax (2411 3073) and Post

Our Reference
JP/EC/TK/T355482/02/02/
L0303

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong
Kowloon
Hong Kong

T +852 2828 5757
F +852 2827 1823
mottmac.com

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP- 489/2014) – Environmental Monitoring and Audit
Request for Information about Chemical Waste Producer and Spillage/ Leakage Incidents

8 May 2018

Dear Sir/ Madam,

As part of the environmental monitoring and audit for the captioned project, we are required to undertake a land contamination assessment in order to identify any potential contaminated sites within the Study Area which includes Hong Kong International Airport (HKIA) Terminal 2 Building as highlighted in the attached drawing **SK/0049**. For this, we would like to request for the following information of the Study Area:

1. Records of current and past (as early as the records are available) registered Chemical Waste Producer(s) within the Study Area (preferably with the registration date, nature and quantity of the chemical waste and storage location); and

2. Any records of spillage/ leakage of chemical waste or chemicals at the Study Area.

We would be most grateful if you could provide the above information to us at your earliest convenience, preferably by 17 May 2018. Should you have any queries, please do not hesitate to contact our Mr. Thomas Chan at 2828 5967 or Ms. Liz Lo at 2828 5751.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Environmental Team Leader
T +852 2828 5919
terence.kong@mottmac.com

c.c.
Airport Authority Hong Kong Mr. Lawrence Tsui

811000 E

812000 E

820000 N

Gheong Hong Rd

Airport Rd

Sky Plaza Rd

Airport Rd

Sky Plaza Rd

Hong Kong International
Airport
Terminal 1

Airport Rd

Cheong Lin Rd

Sky Plaza Rd

Sky Plaza Rd S

Cheong Wong Rd

LEGEND:

STUDY AREA

0 50 100 150 200 m

1 : 6 000 SCALE BAR

Rev.	Date	Description	Checked
A	01NOV13	FIRST ISSUE	EC

香港國際機場 | HONG KONG INTERNATIONAL AIRPORT
Airport Authority HKIA Tower, 1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2181 7111 Fax : (852) 2824 0707

Mott MacDonald
In association with
ARUP
Atkins China Limited
Clymene Enterprises
Deltares
Ecosystems Limited
SDA Marine Limited
Urbis Limited
URS Limited

Title

LAYOUT PLAN

Consultant's Signatures for Approval		Date
Design	AM	01NOV13
Checkers	AM	01NOV13
Design Supervisor		
Authorised Representative		

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK /0049

Scale at A3 1 : 6000

Rev. A

Filename: j:\308875\sketch\sk0048-sk0049\SK0049.dgn

User name: yim42169

Plote Date: 01/11/2013 Time: 14:21:07

Lo, Liz

From:	Kong, Terence
Sent:	14 May 2018 16:09
To:	Lo, Liz
Cc:	Chan, Thomas T; Sum, Daniel D
Subject:	FW: Request for information about Chemical Waste Producer and Spillage/Leakage incidents
Attachments:	MM's letter of 2018-05-08.pdf

Dear Liz,
Please find the below email from EPD regarding the information of chemical wastes producer registration and

From: tsso@epd.gov.hk [mailto:tsso@epd.gov.hk]
Sent: 14 May 2018 15:41
To: Kong, Terence <Terence.Kong@mottmac.com>
Cc: beatricewong@epd.gov.hk; kymac@epd.gov.hk
Subject: Request for information about Chemical Waste Producer and Spillage/Leakage incidents

Dear Terence,

I refer to your attached letter dated 8/5/2018.

2. Please note that according to our record, there was no record of spillage/leakage of chemical waste or chemicals at said location highlighted in your drawing.

3. For the part on chemical waste producer registration, you may contact Mr. HO Shui-lun, Aaron of our Territory Control Group (tel. 2835 1017) for making appointment to view the records.

Regards,
TS SO
EPD

A2. Documentation from FSD

MOTT MACDONALD

Fire Services Department
Fire Services Headquarters Command
9th Floor, Fire Services HQ Building
1 Hong Chong Road
Tsim Sha Tsui East
Kowloon

Our Reference
JP/EC/TK/T355482/02/02/
L0182

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong
Kowloon
Hong Kong

T +852 2828 5757
F +852 2827 1823
mottmac.com

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information about Dangerous Goods Storage and Spillage/ Leakage Incidents

16 March 2017

Dear Sir/ Madam,

As part of the Supplementary Contamination Assessment Plan for the captioned project, we are required to undertake a land contamination assessment in order to identify any potential contaminated sites within the Study Area which includes the existing airside seawater pump house and existing pumping station as shown in the attached drawing **SK/012**. For this, we would like to request for the following information of the Study Area:

1. Records of current and past (as early as the records are available) registered of storage of dangerous goods within the Study Area (with type of dangerous goods, storage method, quantity, licence No./ date of issue, and location of storage); and

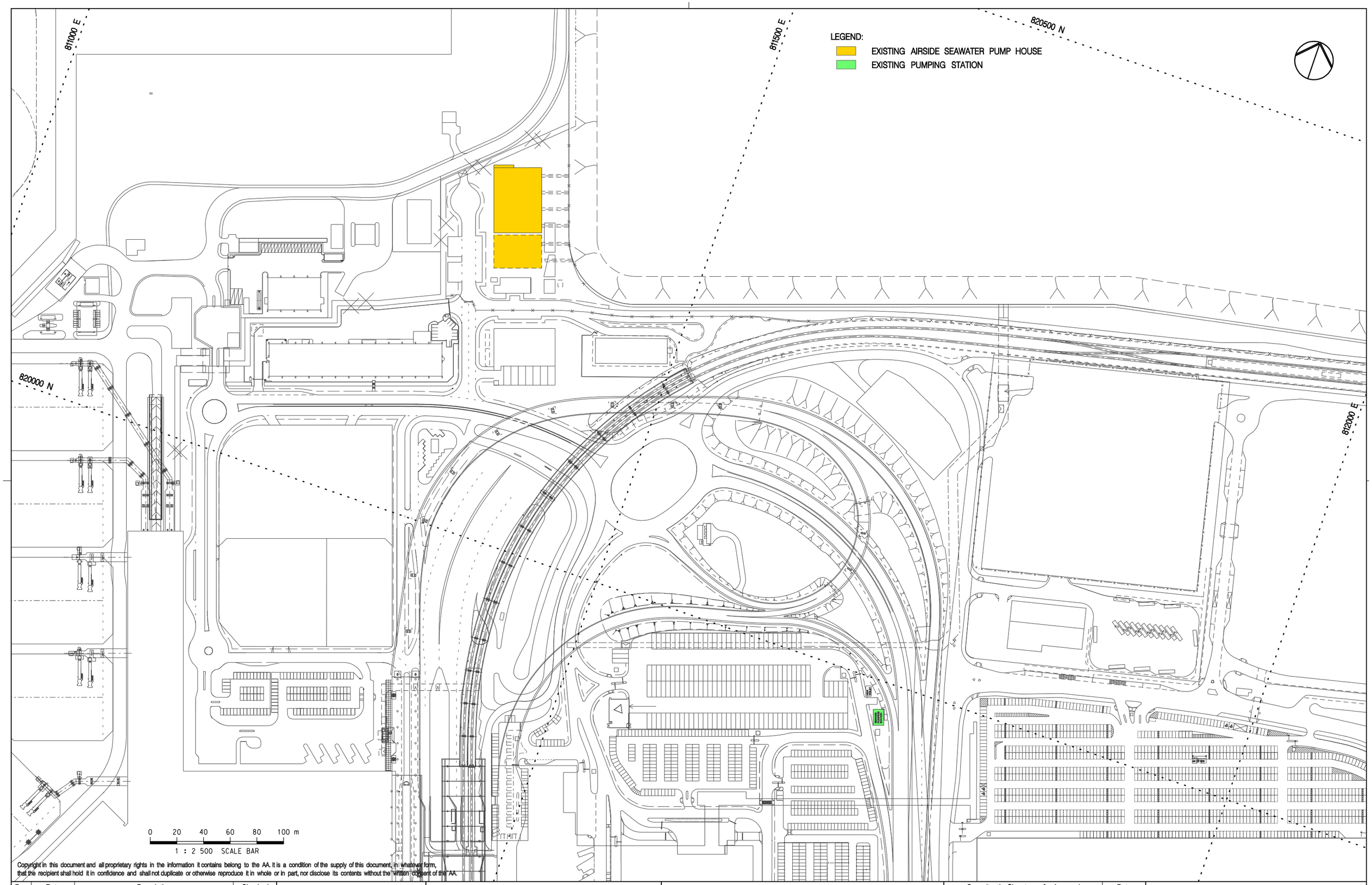
2. Any records of spillage/ leakage of dangerous goods at the Study Area.

We would be most grateful if you could provide the above information to us at your earliest convenience, preferably by 31 March 2017. Should you have any queries, please do not hesitate to contact our Ms. Ada Mung at 2828 5981 or Mr. Patrick Liu at 2585 8515.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Environmental Team Leader
T +852 2828 5919
terence.kong@mottmac.com

c.c.
Airport Authority Hong Kong Mr. Lawrence Tsui



Rev.	Date	Description	Checked
A	16MAR17	FIRST ISSUE	PL

香港國際機場 HONG KONG INTERNATIONAL AIRPORT
Airport Authority HKIA Tower, 1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2188 7111 Fax : (852) 2824 0777

MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
Design	PL	16MAR17
Checkers	JC / TK	16MAR17
Approver	EC	16MAR17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 012

Scale at A3 1 : 2500

Rev. A

Filename: J:\355482\SKETCH\SK012\SK012.dgn

消 防 處
香港九龍尖沙咀東部康莊道 1 號
消防總部大廈

FIRE SERVICES DEPARTMENT
FIRE SERVICES HEADQUARTERS BUILDING,
No.1 Hong Chong Road,
Tsim Sha Tsui East, Kowloon,
Hong Kong.

本處檔號 **OUR REF.** : (159) in FSD GR 6-5/4 R Pt. 14
來函檔號 **YOUR REF.** : JP/EC/TK/T355482/02/02/L0182
電子郵件 **E-mail** : hkfsdenq@hkfsd.gov.hk
圖文傳真 **FAX NO.** : 2739 5879
電　　話 **TEL NO.** : 2733 7741

3 April 2017

Mott MacDonald Hong Kong Limited,
20/F, AIA Kowloon Tower,
Landmark East,
100 How Ming Street,
Kwun Tong, Kowloon
Hong Kong
(Attn: Mr. Terence KONG, Environmental Team Leader)

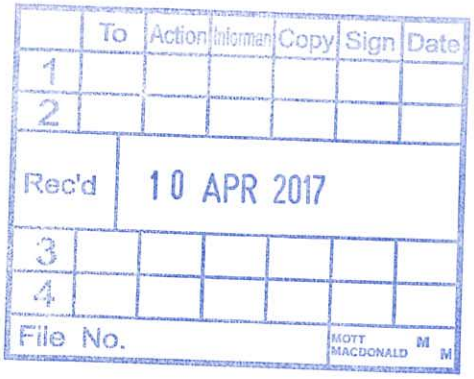
Dear Mr. KONG,

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information of Dangerous Goods & Incident Records

I refer to your letter of 16.3.2017 regarding the captioned request and reply below in response to your questions.

1. No Dangerous Goods Licence was issued in respect of the captioned address.

2. A total of three incident records was found at the subject location. Please refer to **Appendix A** for details.



Yours sincerely,

(CHEU Yu-kok)
for Director of Fire Services

Appendix A

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information of Dangerous Goods & Incident Records

No.	Date	Type of Incident	Address
1.	21.5.2014	Special Service	Baggage Hall, Level 2, Hong Kong International Airport
2.	17.2.2015	Special Service	Parking Stand, Hong Kong International Airport
3.	29.5.2015	Special Service	Parking Stand, Hong Kong International Airport

Liu, Patrick

From: yu_kok_cheu@hkfsd.gov.hk on behalf of ado_mg_1@hkfsd.gov.hk
Sent: 20 April 2017 08:48
To: Liu, Patrick
Subject: Re: 3RS - Request for Information of Dangerous Goods & Incident Records

Dear Patrick,

Please be informed that the 3 incident records in Appendix A of my previous letter ref. (159) in FSD GR 6-5/4R Pt. 14 were found outside the Study Area as demarcated in the attachment "SK_012 - Study Area of the Project.pdf".

Best Regards,

(CHEU Yu-kok)
Assistant Divisional Officer (Management Group)1
Fire Services Department
Tel: 2733 7741

From: "Liu, Patrick" <Patrick.Liu@mottmac.com>
To: "ado_mg_1@hkfsd.gov.hk" <ado_mg_1@hkfsd.gov.hk>
Cc: "Mung, Ada" <Ada.Mung@mottmac.com>
Date: 13/04/2017 18:18
Subject: 3RS - Request for Information of Dangerous Goods & Incident Records

---

Dear Mr. Cheu,

We spoke this afternoon. Further to your letter providing information of dangerous goods and incident records (Your Ref.: (159) in FSD GR 6-5/4 R Pt. 14), a total of three incident records was found at the subject location and the detailed locations of the incident records were located at baggage hall and parking stand of Hong Kong International Airport as mentioned in Appendix A of your letter.

However, the Study Area of our Project is limited to the airside seawater pump house and pumping station only, as highlighted in yellow and green in the attached SK/012 figure respectively (This is the same figure as enclosed in our letter of information request (Our ref: JP/EC/TK/T355482/02/02/L0182) dated 16 Mar 2017). Therefore, we are writing to seek your clarification on whether the three incident records were found at the Study Area of our Project or not.

We would be most grateful if you could provide the clarification to us at your earliest convenience, preferably by 28 Apr 2017. Should you have any queries, please feel free to contact me at 2585 8515. Thank you.

Regards,
Patrick

[attachment "SK_012 - Study Area of the Project.pdf" deleted by yu_kok CHEU/FSD/HKSARG]

MOTT MACDONALD

Fire Services Department
Fire Services Headquarters Command
9th Floor, Fire Services HQ Building
1 Hong Chong Road
Tsim Sha Tsui East
Kowloon

Our Reference
JP/EC/TK/T355482/02/02/L0203

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong
Kowloon
Hong Kong

T +852 2828 5757
F +852 2827 1823
mottmac.com

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information about Dangerous Goods Storage and Spillage/ Leakage Incidents

28 April 2017

Dear Sir/ Madam,

As part of the environmental monitoring and audit for the captioned project, we are required to undertake a land contamination assessment in order to identify any potential contaminated sites within the Study Area which includes the fire training facility as highlighted in the attached drawing **SK/016**, the airside fuel tank room as highlighted in the attached drawing **SK/017** and the 3,000L above-ground fuel tank room as highlighted in the attached drawing **SK/018**. For this, we would like to request for the following information of the Study Area:

1. Records of current and past (as early as the records are available) registered of storage of dangerous goods within the Study Area (with type of dangerous goods, storage method, quantity, licence No./ date of issue, and location of storage); and

2. Any records of spillage/ leakage of dangerous goods at the Study Area.

We would be most grateful if you could provide the above information to us at your earliest convenience, preferably by 12 May 2017. Should you have any queries, please do not hesitate to contact our Ms. Ada Mung at 2828 5981 or Mr. Patrick Liu at 2585 8515.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Environmental Team Leader
T +852 2828 5919
terence.kong@mottmac.com

c.c.
Airport Authority Hong Kong Mr. Lawrence Tsui

808000 E
809000 E
810000 E
818000 N
817000 N
渡輪碼頭
FERRY PIER
鷂殼灣
HAU HOK WAN
灣
WAN
85
152
較寮
KAU LIU
田心
TIN SAM
磡頭
HAM TAU

LEGEND:

FIRE TRAINING FACILITY

0 50 100 150 200 m
1 : 7 000 SCALE BAR

Rev.	Date	Description	Checked
A	27APR17	FIRST ISSUE	PL

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Airport Authority HKIA Tower,1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2181 7111 Fax : (852) 2824 0717

MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
Design	PL	27APR17
Checkers	JC / TK	27APR17
Approver	EC	27APR17

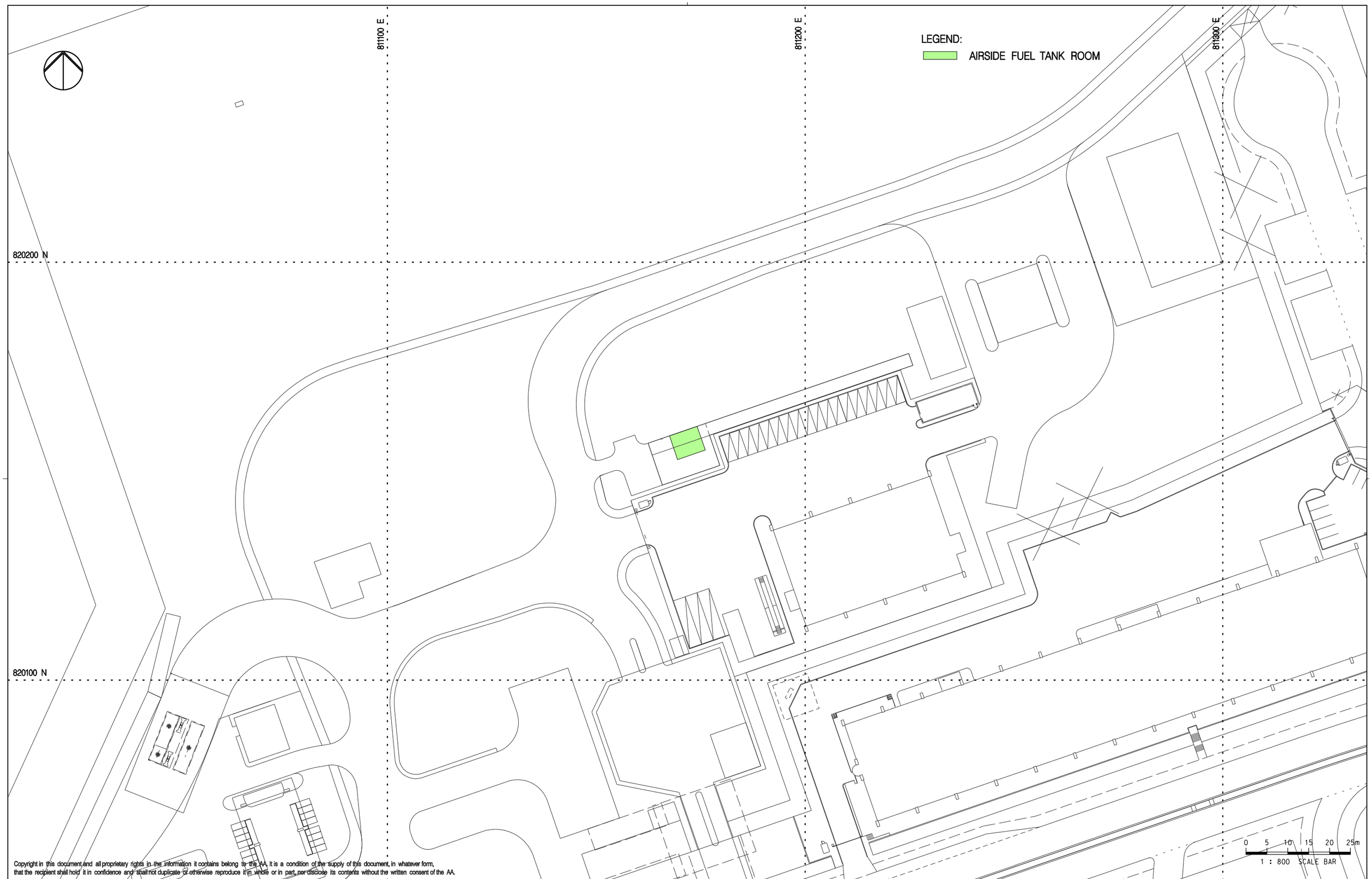
EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 016

Scale at A3 1 : 7000

Rev. A

Filename: J:\355482\SKETCH\SK016-SK017\SK016.dgn



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Tel : (852) 2188 7111 Fax : (852) 2824 0717

MOTT MACDONALD

Title

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Approver	EC	28APR17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 017

Scale at A3 1 : 800

Rev. A

Filename: J:\355482\SKETCH\SK016-SK018\SK017.dgn

811500 E

811600 E

811700 E

819900 N

819800 N

LEGEND:

3000L ABOVE-GROUND FUEL TANK ROOM

0 5 10 15 20 25m

1 : 800 SCALE BAR

Rev.	Date	Description	Checked
A	28APR17	FIRST ISSUE	PL

香港國際機場 HONG KONG INTERNATIONAL AIRPORT
Airport Authority HKIA Tower, 1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2188 7111 Fax : (852) 2824 0717

MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
Design	PL	28APR17
Checkers	JC / TK	28APR17
Approver	EC	28APR17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 018

Scale at A3 1 : 800

Rev. A

Filename: J:\355482\SKETCH\SK016-SK018\SK018.dgn

消 防 處
香港九龍尖沙咀東部康莊道 1 號
消防總部大廈

FIRE SERVICES DEPARTMENT
FIRE SERVICES HEADQUARTERS BUILDING,
No.1 Hong Chong Road,
Tsim Sha Tsui East, Kowloon,
Hong Kong.

本處檔號 **OUR REF.** : (108) in FSD GR 6-5/4 R Pt. 15
來函檔號 **YOUR REF.** : JP/EC/TK/T355482/02/02/L0203
電子郵件 **E-mail** : hkfsdenq@hkfsd.gov.hk
圖文傳真 **FAX NO.** : 2739 5879
電 話 **TEL NO.** : 2733 7741

31 May 2017

Mott MacDonald Hong Kong Limited
20/F, AIA Kowloon Tower,
Landmark East,
100 How Ming Street,
(Attn: Mr. Terence KONG, Environmental Team Leader)

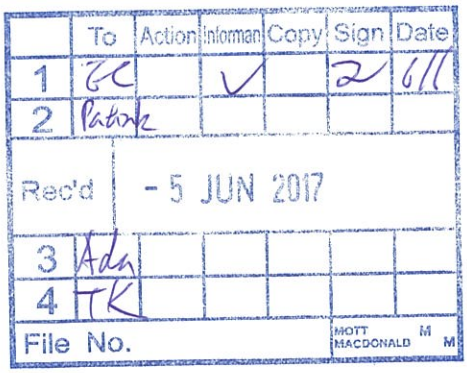
Dear Mr. KONG,

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014)
Request for Information of Dangerous Goods & Incident Records

I refer to your letter of 28.4.2017 regarding the captioned request and reply below in response to your questions:-

According to our record, from the year of 1990 to present moment, dangerous goods licenses have been issued by this department to the subject address, with details as shown in **Appendix A**. No incident record was found at the aforesaid location with your given conditions.

If you have further questions, please feel free to contact the undersigned.



Yours sincerely,

(CHEU Yu-kok)
for Director of Fire Services

Appendix A

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014)
Request for Information on Dangerous Goods and Incident Records

Item	Type of DG	Quantity	Storage Method
1.	Diesel (Cat.5/Class 3)	i) 30,000 litres; ii) 2 x 500 litres	i) U/G tank; and ii) Oil tanks
2.	Diesel (Cat.5/Class 3)	3,000 litres	A/G tank;

MOTT MACDONALD

Fire Services Department
Fire Services Headquarters Command
9th Floor, Fire Services HQ Building
1 Hong Chong Road
Tsim Sha Tsui East
Kowloon

Our Reference
JP/EC/TK/T355482/02/02/
L0219

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong
Kowloon
Hong Kong

T +852 2828 5757
F +852 2827 1823
mottmac.com

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information about Dangerous Goods Storage and Spillage/ Leakage Incidents

22 June 2017

Dear Sir/ Madam,

Further to your letter on 31 May 2017 providing information about dangerous goods storage and spillage/leakage incidents for the captioned project (Your ref.: (108) in FSD GR 6-5/4 R Pt. 15), we would like to request for the following:

1. During our site reconnaissance survey conducted at the **fire training facility** (refer to the enclosed drawing **SK/016** for the location), a 1,000L above-ground tank containing kerosene was observed. Hence we would like to request for records of dangerous goods storage and/or spillage/leakage incidents at this area.

2. During our site reconnaissance survey conducted at the **airside fuel tank room** (refer to the enclosed drawing **SK/017** for the location), a 900L above-ground tank containing diesel fuel was found. Hence we would like to request for records of dangerous goods storage and/or spillage/leakage incidents at this area.

3. In Item 1 of Appendix A of your letter, it is noted that there is a dangerous goods record of a 30,000L underground diesel tank and two 500L diesel tanks. We would like to clarify whether these dangerous goods are located at the fire training facility and airside fuel tank room (refer to enclosed drawings **SK/016** and **SK/017**).

We would be most grateful if you could provide the above information to us at your earliest convenience, preferably by 30 June 2017. Should you have any queries, please do not hesitate to contact our Ms. Ada Mung at 2828 5981 or Mr. Patrick Liu at 2585 8515.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Environmental Team Leader
T +852 2828 5919
terence.kong@mottmac.com

c.c.
Airport Authority Hong Kong Mr. Lawrence Tsui

808000 E
809000 E
810000 E
818000 N
817000 N
渡輪碼頭
FERRY PIER
鷂殼灣
HAU HOK WAN
灣
WAN
85
152
較寮
KAU LIU
田心
TIN SAM
磡頭
HAM TAU

LEGEND:

FIRE TRAINING FACILITY

0 50 100 150 200 m
1 : 7 000 SCALE BAR

Rev.	Date	Description	Checked
A	27APR17	FIRST ISSUE	PL

香港國際機場 HONG KONG INTERNATIONAL AIRPORT
Airport Authority HKIA Tower,1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2181 7111 Fax : (852) 2824 0717

MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

Consultant's Signatures for Approval		Date
Design	PL	27APR17
Checkers	JC / TK	27APR17
Approver	EC	27APR17

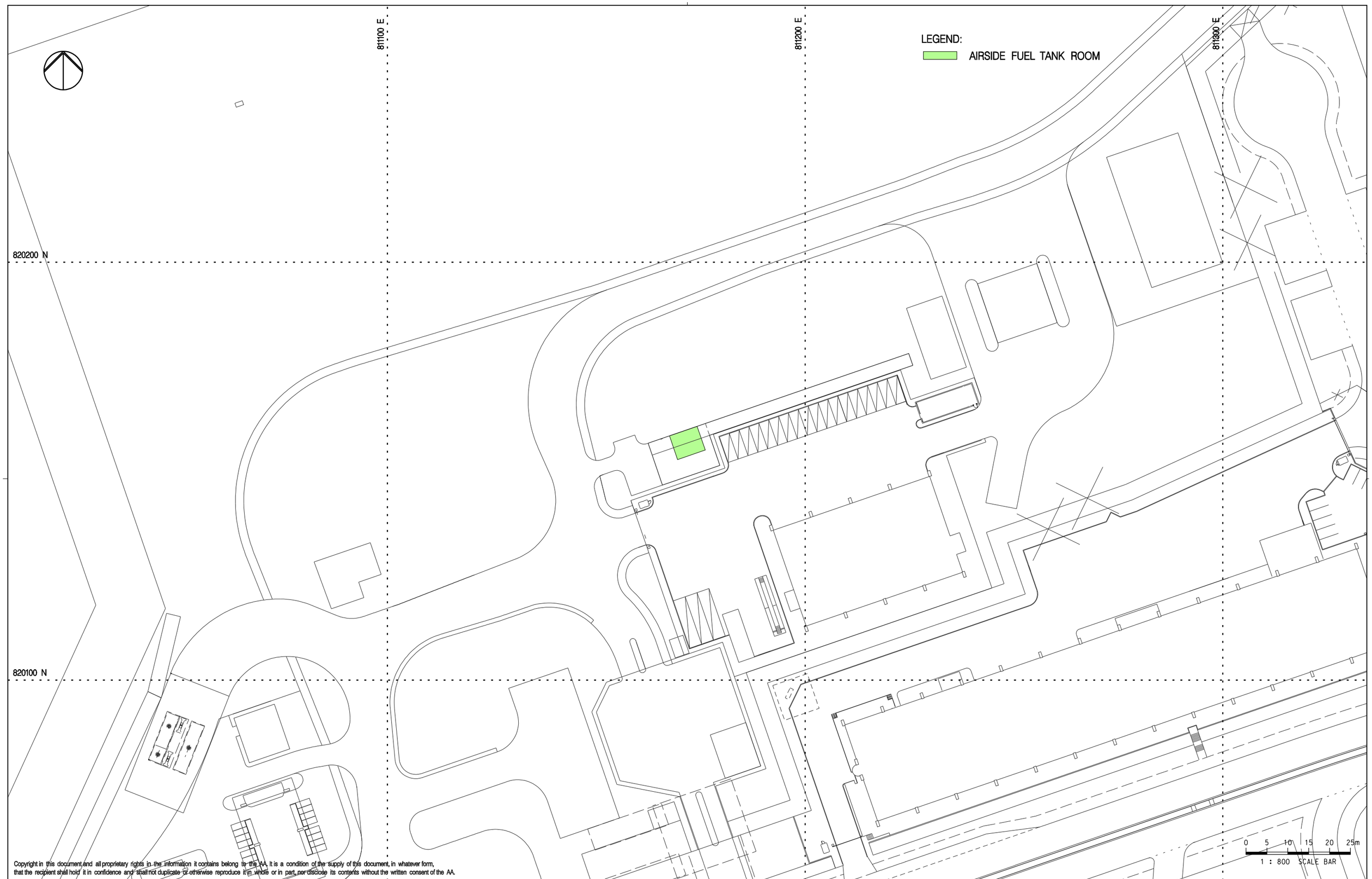
EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 016

Scale at A3 1 : 7000

Rev. A

Filename: J:\355482\SKETCH\SK016-SK017\SK016.dgn



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MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREA

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Approver	EC	28APR17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 017

Scale at A3 1 : 800

Rev. A

Filename: J:\355482\SKETCH\SK016-SK018\SK017.dgn

消 防 處
香港九龍尖沙咀東部康莊道 1 號
消防總部大廈

FIRE SERVICES DEPARTMENT
FIRE SERVICES HEADQUARTERS BUILDING,
No.1 Hong Chong Road,
Tsim Sha Tsui East, Kowloon,
Hong Kong.

本處檔號 **OUR REF.** : (89) in FSD GR 6-5/4 R Pt. 16
來函檔號 **YOUR REF.** : JP/EC/TK/T355482/02/02/L0219
電子郵件 **E-mail** : hkfsdenq@hkfsd.gov.hk
圖文傳真 **FAX NO.** : 2739 5879
電 話 **TEL NO.** : 2733 7741

21 August 2017

Mott MacDonald Hong Kong Limited
20/F, AIA Kowloon Tower,
Landmark East,
100 How Ming Street,
(Attn: Mr. Terence KONG, Environmental Team Leader)

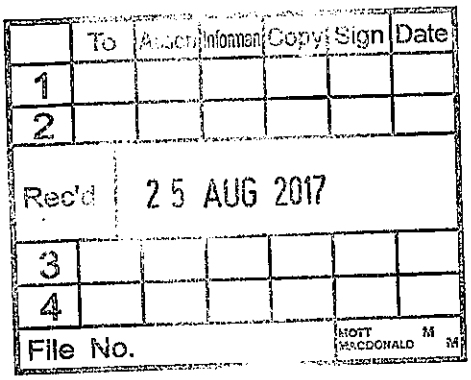
Dear Mr. KONG,

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information of Dangerous Goods

I refer to your letter of 22.6.2017 regarding the captioned request and reply below in response to your questions:-

According to our record, from the year of 1990 to present moment, dangerous goods licenses had been issued by this department to the subject address, with details as shown in **Appendix A**.

If you have further questions, please feel free to contact the undersigned.



Yours sincerely,

(KONG Wai-chung)
for Director of Fire Services

Appendix A

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit

Request for Information of Dangerous Goods

Item	Type of DG	Quantity	Licensed Premises	Storage Method
1.	Kerosene #1 (Category 5 Class 2 Div.1)	10,000 Litres	Airside Southern Main Rescue and Fire Fighting Station, HKIA, Chek Lap Kok	An A/G Storage tank on open ground inside the fire station
2.	Kerosene #2 (Category 5 Class 2 Div.1)	10,000 Litres		

Remarks

#1 The DG Licence no. 17418 was cancelled w.e.f. on 15.9.1999.

#2 The DG Licence no. 17499 was cancelled w.e.f. on 10.11.2000.

3. FSD has no objection to the provision of an A/G Storage tank of 10,000 litres to store kerosene (Cat.5 Class 2 Div.1) at Airside Southern Main Rescue and Fire Fighting Station, HKIA, Chek Lap Kok as from 22.12.2000 to present.

4. FSD has no objection to the provision of a 1 x 900L diesel fuel oil (Cat.5 Class 3) tank housed in a fuel tank room on G/F for emergency generator – Contract No. C402, West CAD Antenna Farm Building, Northern Runway, Chek Lap Kok as from 28.5.1999 to present.

Liu, Patrick

From: wai_chung_kong@hkfsd.gov.hk on behalf of ado_mg_1@hkfsd.gov.hk
Sent: 06 October 2017 18:23
To: Liu, Patrick
Cc: Mung, Ada
Subject: Re: Three Runway System - Request for Information of Dangerous Goods & Incident Records

Dear Patrick,

Please be advised that the previous mentioned DG record of ONE 30,000 L underground diesel tank and TWO 500 L diesel tanks are located outside the areas in your drawings SK/016 and SK/017.

If you have further questions, please feel free to contact me.

Best regards,

(KONG Wai-chung, Wilson)
Acting Assistant Divisional Officer
(Management Group)1
Fire Services Department
Office: 2733 7741
Mobile: 9338 1007
Fax: 2739 5879

From: "Liu, Patrick" <Patrick.Liu@mottmac.com>
To: "ado_mg_1@hkfsd.gov.hk" <ado_mg_1@hkfsd.gov.hk>
Cc: "Mung, Ada" <Ada.Mung@mottmac.com>
Date: 06/10/2017 17:39
Subject: Three Runway System - Request for Information of Dangerous Goods & Incident Records

---

Dear Mr. Kong,

We spoke this afternoon. Further to your letter dated 31 May 2017 providing information of dangerous goods and incident records (Your Ref.: (108) in FSD GR 6-5/4 R Pt. 15) and our subsequent letter dated 22 June 2017 requesting for clarification of dangerous goods record (Our ref.: JP/EC/TK/T355482/02/02/L0219), please kindly confirm whether the dangerous goods records of a 30,000L underground diesel tank and two 500L diesel tanks listed on your letter are located outside of our Study Area, that is the fire training facility and airside fuel tank room as indicated in the drawings SK/016 and SK/017 enclosed with our letter.

Should you have any queries, please feel free to contact me at 2585 8515. Thank you.

Regards,
Patrick

Patrick Liu
Assistant Environmental Consultant

D +852 2585 8515 T +852 2828 5757 F +852 2827 1823
Patrick.Liu@mottmac.com

Mott MacDonald
20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong
Kowloon
Hong Kong

Website | **Twitter** | **LinkedIn** | **Facebook** | **YouTube**

MOTT MACDONALD

Fire Services Department
Fire Services Headquarters Command
9th Floor, Fire Services HQ Building
1 Hong Chong Road
Tsim Sha Tsui East
Kowloon

By Fax (2739 5879) and Post

Our Reference
JP/EC/TK/T355482/02/02/
L0302

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong
Kowloon
Hong Kong

T +852 2828 5757
F +852 2827 1823
mottmac.com

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP- 489/2014) – Environmental Monitoring and Audit
Request for Information about Dangerous Goods Storage and Spillage/ Leakage Incidents

8 May 2018

Dear Sir/ Madam,

As part of the environmental monitoring and audit for the captioned project, we are required to undertake a land contamination assessment in order to identify any potential contaminated sites within the Study Area which includes Hong Kong International Airport (HKIA) Terminal 2 Building as highlighted in the attached drawing **SK/0049**.

Dangerous Goods in Hong Kong International Airport (HKIA) Terminal 2 Building were identified according to our desktop study and site reconnaissance survey as of April 2018 and compiled into a list (as attached in **Appendix A**). We would like to seek your confirmation whether the listed items matched with your Dangerous Goods record and any relevant record of spillage/ leakage of dangerous goods.

If any Dangerous Goods items in your record within the Study Area are not in **Appendix A**, we would like to have the following information,

1. Records of valid registered storage of dangerous goods as of April 2018 (with type of dangerous goods, storage method, quantity, licence No./ date of issue, and location of storage); and
2. Any records of spillage/ leakage of dangerous goods relevant to Item 1.

We would be most grateful if you could provide the above information to us at your earliest convenience, preferably by 17 May 2018. Should you have any queries, please do not hesitate to our Mr. Thomas Chan at 2828 5967 or Ms. Liz Lo at 2828 5751.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED

Terence Kong
Environmental Team Leader
T +852 2828 5919
terence.kong@mottmac.com

c.c.
Airport Authority Hong Kong — Mr. Lawrence Tsui

MOTT MACDONALD

Appendix A

List of Dangerous Goods Identified in Hong Kong International Airport (HKIA) Terminal 2 Building as of April 2018

No.	Location	Type of Dangerous Goods	Quantity	Method of Storage
1	Underground	Diesel	2,500 litres	Underground Tank
2	Emergency Generator Room	Diesel	450 litres	Above-ground Tank
3	Fuel Tank Room	Diesel	3,000 litres	Above-ground Tank
4	Underground	Diesel	3,000 litres	Underground Tank
5	Emergency Generator Room	Diesel	450 litres	Above-ground Tank
6	Fuel Tank Room	Diesel	1,500 litres	Above-ground Tank
7	Fuel Tank Room	Diesel	1,500 litres	Above-ground Tank

811000 E

812000 E

820000 N

Gheong Hong Rd

Airport Rd

Sky Plaza Rd

Airport Rd

Sky Plaza Rd

Hong Kong International
Airport
Terminal 1

Sky Plaza Rd

Airport Rd

Cheong Lin Rd

Sky Plaza Rd

Sky Plaza Rd S

Cheong Wong Rd

LEGEND:

STUDY AREA

0 50 100 150 200 m

1 : 6 000 SCALE BAR

Rev.	Date	Description	Checked
A	01NOV13	FIRST ISSUE	EC

香港國際機場 HONG KONG INTERNATIONAL AIRPORT
Airport Authority HKIA Tower, 1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2188 7111 Fax : (852) 2824 0747

Mott MacDonald
In association with
ARUP
Atkins China Limited
Clymene Enterprises
Deltares
Ecosystems Limited
SDA Marine Limited
Urbis Limited
URS Limited

Title

LAYOUT PLAN

Consultant's Signatures for Approval		Date
Design	AM	01NOV13
Checkers	AM	01NOV13
Design Supervisor		
Authorised Representative		

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. SK / 0049

Scale at A3 1 : 6000

Rev. A

Filename: j:\308875\sketch\sk0048-sk0049\SK0049.dgn

User name: yim42169

Plote Date: 01/11/2013 Time: 14:21:07

消 防 處
香港九龍尖沙咀東部廣華道 1 號
消防處總部大廈

FIRE SERVICES DEPARTMENT
FIRE SERVICES HEADQUARTERS BUILDING,
No.1 Hong Chong Road,
Tsim Sha Tsui East, Kowloon,
Hong Kong.

本處檔號 OUR REF. : (46) in FSD GR 6-5/4 R Pt. 19
來函檔號 YOUR REF. : JP/EC/TK/T355482/02/02/L0302
電子郵件 E-mail : hkfsdcnq@hkfsd.gov.hk
圖文傳真 FAX NO. : 2739 5879
電 話 TEL NO. : 2733 7741

8 June 2018

Mott MacDonald Hong Kong Limited
20/F, AIA Kowloon Tower,
Landmark East,
100 How Ming Street,
(Attn: Mr. Terence KONG, Environmental Team Leader)

Dear Mr. KONG,

Expansion of Hong Kong International Airport (HKIA) into a Three-Runway System (Environmental Permit No. EP-489/2014) – Environmental Monitoring and Audit
Request for Information of Dangerous Goods

I refer to your letter of 8.5.2018 regarding the captioned request and reply below in response to your questions:-

According to our record, from the year of 1990 to present moment, dangerous goods licenses have been issued by this department to the subject address, with details as shown in **Appendix A**.

If you have further questions, please feel free to contact the undersigned.

Yours sincerely,

(KONG Wai-chung)
for Director of Fire Services

Appendix A

Expansion of Hong Kong International Airport (HKIA)
into a Three-Runway System
(Environmental Permit No. EP-489/2014)
– Environmental Monitoring and Audit
Request for Information of Dangerous Goods

Item	Type of DG	Quantity	Storage Method
1.	Cat. 5 DG	3,000 Litres	U/G Fuel Tank
2.		2,500 Litres	
3.		3,000 Litres	A/G Fuel Tank
4.		1,500 Litres	
5.		1,500 Litres	

B. Site Walkover Checklists

Appendix B.1

Site Walkover Checklist for Fuel Tank Room to the West of CAD Antenna Farm

1. General Site Details

Site Owner / Client: Civil Aviation Department

Property Address: Refer to Figure 3.1

Person Conducting the Questionnaire

Name: Mott MacDonald HK Ltd.

Position: N/A

Date of Site Walkover: 18 May 2017

Authorized Owner / Client Representative (if applicable)

Name: N/A

Position: N/A

Telephone: N/A

2. Site Activities

Briefly describe activities carried out on site, including types of products / chemicals / materials handled.

Number of employees:	Full-time:	N/A
	Part-time:	N/A
	Temporary / Seasonal:	N/A
Maximum no. of people on site at any time:		N/A

Typical hours of operation: 24 hours

Number of shifts: N/A

Days per week: 7

Weeks per year: 52

Scheduled plant shut-down: N/A

Detail the main sources of energy at the site:

Gas	No
Electricity	Yes
Coal	No
Oil	No
Other	No

3. Site Description

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: approx. 45 m^2

What area of the site is covered by buildings (%): 100%

Please list all current and previous owners / occupiers of possible.

N/A

Is a site plan available? If yes, please attach. No

Are there any other parties on site as tenants or sub-tenants? No

If yes, identify those parties: N/A

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Existing North Runway

South: Gatehouse and vehicle inspection centre

East: Parking area

West: Parking area

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.)

Flat concrete ground

State the size and location of the nearest residential communities.

No residential community nearby

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or site of special scientific interest?

No

4. Questionnaire with Existing / Previous Site Owner or Occupier

Questions	Yes / No	Notes
1. What are the main activities / operations at the site?	--	For emergency power supply
2. How long have you been occupying the site?	--	Operation since 1998
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	Yes	--
4. Prior to your occupancy, who occupied the site?	--	It was a reclaimed land
5. What were the main activities / operations during their occupancy?	--	--
6. Have there been any major changes in operations carried out at the site in the last 10 years?	No	--
7. Have any polluting activities been carried out in the vicinity of the site in the past?	No	--
8. To the best of your knowledge, has the site ever been used as a petrol filling station / car service garage?	No	--
9. Are there any boreholes / wells or natural springs either on the site or in the surrounding area?	No	--
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	Yes	Diesel fuel
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	No	--
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	No	--
13. Has the facility produced a separate hazardous substance inventory?	No	--
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details)	No	--
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	--	Stored in a 900 L above-ground tank within drip tray
16. Do you have any underground storage tanks? (If yes, please provide details.)	No	--
17. Are there any disused underground storage tanks?	No	--
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	Yes	Monthly regular maintenance of the above-ground tank is carried out by EMSD.
19. How are the wastes disposed of?	--	No chemical waste generated on-site
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	--
21. Have you spills occurred on site? (If yes, please provide details.)	No	--
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work / underground tanks (If yes, please provide details.)	No	--
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	--
24. Are there any known contaminations on site? (If yes, please provide details.)	No	--
25. Has the site ever been remediated? (If yes, please provide details.)	No	--

Observations

	Yes / No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	Yes	Bund wall and drip tray are provided
2. What are the conditions of the bund walls and floors?	--	Good conditions
3. Are there any surface water drains located near to drum storage and unloading areas?	No	--
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	No	--
5. Is there a storage site for the wastes?	No	--
6. Is there an on-site landfill?	No	--
7. Were any stressed vegetation noted on site during the site reconnaissance? (if yes, please indicate location and approximate size.)	No	--
8. Were any stained surfaces noted on-site during the site reconnaissance? (if yes, please provide details.)	No	--
9. Are there any potential off-site sources of contamination?	No	--
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	--
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	No	--
12. Any noticeable odours during site walkover?	No	--
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ask, oil tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	Yes	Diesel fuel

Appendix B.2

Site Walkover Checklist for Seawater Pump House

1. General Site Details

Site Owner / Client: Airport Authority

Property Address: Refer to Figure 3.1

Person Conducting the Questionnaire

Name: Mott MacDonald HK Ltd.

Position: N/A

Date of Site Walkover: 22 September 2016

Authorized Owner / Client Representative (if applicable)

Name: N/A

Position: N/A

Telephone: N/A

2. Site Activities

Briefly describe activities carried out on site, including types of products / chemicals / materials handled.

Number of employees:	Full-time:	*8*
	Part-time:	N/A
	Temporary / Seasonal:	N/A
Maximum no. of people on site at any time:		N/A

Typical hours of operation: 24 hours

Number of shifts: *2 shifts*

Days per week: 7

Weeks per year: 52

Scheduled plant shut-down: N/A

Detail the main sources of energy at the site:

Gas	No
Electricity	Yes
Coal	No
Oil	No
Other	No

3. Site Description

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: 2,300 m^2

What area of the site is covered by buildings (%): 100%

Please list all current and previous owners / occupiers of possible.

N/A

Is a site plan available? If yes, please attach.

Are there any other parties on site as tenants or sub-tenants? No

If yes, identify those parties: N/A

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Existing North Runway

South: Airside switching station and road networks

East: Eastern seawall

West: Airside facilities

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.)

Flat concrete ground

State the size and location of the nearest residential communities.

No residential community nearby

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or site of special scientific interest?

No

4. Questionnaire with Existing / Previous Site Owner or Occupier

Questions	Yes / No	Notes
1. What are the main activities / operations at the site?	--	Deliver cooling water to different facilities for the operation of the airport
2. How long have you been occupying the site?	--	Operation since 1998
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	No	--
4. Prior to your occupancy, who occupied the site?	--	It was a reclaimed land
5. What were the main activities / operations during their occupancy?	--	Operation and maintenance of seawater pumping system
6. Have there been any major changes in operations carried out at the site in the last 10 years?	No	--
7. Have any polluting activities been carried out in the vicinity of the site in the past?	No	--
8. To the best of your knowledge, has the site ever been used as a petrol filling station / car service garage?	No	--
9. Are there any boreholes / wells or natural springs either on the site or in the surrounding area?	No	--
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	No	--
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	No	--
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	No	--
13. Has the facility produced a separate hazardous substance inventory?	No	--
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details)	No	--
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	--	--
16. Do you have any underground storage tanks? (If yes, please provide details.)	No	--
17. Are there any disused underground storage tanks?	No	--
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	--	No chemicals handled on site
19. How are the wastes disposed of?	--	No chemical waste generated on-site
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	--
21. Have you spills occurred on site? (If yes, please provide details.)	No	--
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work / underground tanks (If yes, please provide details.)	No	--
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	--
24. Are there any known contaminations on site? (If yes, please provide details.)	No	--
25. Has the site ever been remediated? (If yes, please provide details.)	No	--

Observations

	Yes / No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	No	No chemical storage on site
2. What are the conditions of the bund walls and floors?	--	--
3. Are there any surface water drains located near to drum storage and unloading areas?	No	--
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	No	--
5. Is there a storage site for the wastes?	--	--
6. Is there an on-site landfill?	No	--
7. Were any stressed vegetation noted on site during the site reconnaissance? (if yes, please indicate location and approximate size.)	No	--
8. Were any stained surfaces noted on-site during the site reconnaissance? (if yes, please provide details.)	No	--
9. Are there any potential off-site sources of contamination?	No	--
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	--
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	No	--
12. Any noticeable odours during site walkover?	No	--
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ask, oil tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	No	--

Appendix B.3

Site Walkover Checklist for Pumping Station

1. General Site Details

Site Owner / Client: Airport Authority

Property Address: Refer to Figure 3.2

Person Conducting the Questionnaire

Name: Mott MacDonald HK Ltd.

Position: N/A

Date of Site Walkover: 8 December 2016

Authorized Owner / Client Representative (if applicable)

Name: N/A

Position: N/A

Telephone: N/A

2. Site Activities

Briefly describe activities carried out on site, including types of products / chemicals / materials handled.

Number of employees:	Full-time:	N/A
	Part-time:	N/A
	Temporary / Seasonal:	N/A
Maximum no. of people on site at any time:		N/A

Typical hours of operation: 24 hours

Number of shifts: N/A

Days per week: 7

Weeks per year: 52

Scheduled plant shut-down: N/A

Detail the main sources of energy at the site:

Gas	No
Electricity	Yes
Coal	No
Oil	No
Other	No

3. Site Description

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: approx. 100 m^2

What area of the site is covered by buildings (%): 20%

Please list all current and previous owners / occupiers of possible.

N/A

Is a site plan available? If yes, please attach. No

Are there any other parties on site as tenants or sub-tenants? No

If yes, identify those parties: N/A

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Road networks and vegetated area

South: Parking area

East: Road networks and parking area

West: Parking area

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.)

Flat concrete ground with vegetation

State the size and location of the nearest residential communities.

No residential community nearby

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or site of special scientific interest?

No

4. Questionnaire with Existing / Previous Site Owner or Occupier

Questions	Yes / No	Notes
1. What are the main activities / operations at the site?	--	To convey sewage from T2 building
2. How long have you been occupying the site?	--	Operation since 1998
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	Yes	--
4. Prior to your occupancy, who occupied the site?	--	It was a reclaimed land
5. What were the main activities / operations during their occupancy?	--	--
6. Have there been any major changes in operations carried out at the site in the last 10 years?	No	--
7. Have any polluting activities been carried out in the vicinity of the site in the past?	No	--
8. To the best of your knowledge, has the site ever been used as a petrol filling station / car service garage?	No	--
9. Are there any boreholes / wells or natural springs either on the site or in the surrounding area?	No	--
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	No	--
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	No	--
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	No	--
13. Has the facility produced a separate hazardous substance inventory?	No	--
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details)	No	--
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	--	--
16. Do you have any underground storage tanks? (If yes, please provide details.)	No	--
17. Are there any disused underground storage tanks?	No	--
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	No	
19. How are the wastes disposed of?	--	--
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	--
21. Have you spills occurred on site? (If yes, please provide details.)	No	--
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work / underground tanks (If yes, please provide details.)	No	--
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	--
24. Are there any known contaminations on site? (If yes, please provide details.)	No	--
25. Has the site ever been remediated? (If yes, please provide details.)	No	--

Observations

	Yes / No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	No	--
2. What are the conditions of the bund walls and floors?	--	--
3. Are there any surface water drains located near to drum storage and unloading areas?	No	--
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	No	--
5. Is there a storage site for the wastes?	No	--
6. Is there an on-site landfill?	No	--
7. Were any stressed vegetation noted on site during the site reconnaissance? (if yes, please indicate location and approximate size.)	No	--
8. Were any stained surfaces noted on-site during the site reconnaissance? (if yes, please provide details.)	No	--
9. Are there any potential off-site sources of contamination?	No	--
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	--
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	No	--
12. Any noticeable odours during site walkover?	No	--
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ask, oil tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	No	--

Appendix B.4

Site Walkover Checklist for Fire Training Facility

1. General Site Details

Site Owner / Client: Fire Services Department

Property Address: Refer to Figure 3.3

Person Conducting the Questionnaire

Name: Mott MacDonald HK Ltd.

Position: N/A

Date of Site Walkover: 11 May 2017

Authorized Owner / Client Representative (if applicable)

Name: N/A

Position: N/A

Telephone: N/A

2. Site Activities

Briefly describe activities carried out on site, including types of products / chemicals / materials handled.

Number of employees:	Full-time:	Approximately 120
	Part-time:	N/A
	Temporary / Seasonal:	N/A
Maximum no. of people on site at any time:		Approximately 40
Typical hours of operation:	24 hours	
Number of shifts:	3 shifts	
Days per week:	7	
Weeks per year:	52	
Scheduled plant shut-down:	N/A	

Detail the main sources of energy at the site:

Gas	Yes
Electricity	Yes
Coal	No
Oil	No
Other	No

3. Site Description

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: approx. 34,000 m^2

What area of the site is covered by buildings (%): 0%

Please list all current and previous owners / occupiers of possible.

N/A

Is a site plan available? If yes, please attach. No

Are there any other parties on site as tenants or sub-tenants? No

If yes, identify those parties: N/A

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Existing South Runway

South: DHL Central Asia Hub and road networks

East: Airport taxiways

West: HK Business Aviation Centre

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.)

Flat concrete ground

State the size and location of the nearest residential communities.

No residential community nearby

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or site of special scientific interest?

No

4. Questionnaire with Existing / Previous Site Owner or Occupier

Questions	Yes / No	Notes
1. What are the main activities / operations at the site?	--	Fire training exercise
2. How long have you been occupying the site?	--	Operation since 1998
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	Yes	--
4. Prior to your occupancy, who occupied the site?	--	It was a reclaimed land
5. What were the main activities / operations during their occupancy?	--	--
6. Have there been any major changes in operations carried out at the site in the last 10 years?	No	--
7. Have any polluting activities been carried out in the vicinity of the site in the past?	No	--
8. To the best of your knowledge, has the site ever been used as a petrol filling station / car service garage?	No	--
9. Are there any boreholes / wells or natural springs either on the site or in the surrounding area?	No	--
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	Yes	Kerosene
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	No	--
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	No	--
13. Has the facility produced a separate hazardous substance inventory?	No	--
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details)	No	--
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	--	Stored in a 10,000 L above-ground tank within concrete bund wall
16. Do you have any underground storage tanks? (If yes, please provide details.)	Yes	3 underground storage tanks for receiving wastewater generated from fire training activity
17. Are there any disused underground storage tanks?	Yes	The abovementioned tanks in item 16 are no longer in used.
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	Yes	Regular visual inspection is carried out to check if any spillage of above-ground tank.
19. How are the wastes disposed of?	--	No chemical waste generated on-site
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	--
21. Have you spills occurred on site? (If yes, please provide details.)	No	--
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work / underground tanks (If yes, please provide details.)	No	--
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	--
24. Are there any known contaminations on site? (If yes, please provide details.)	No	--
25. Has the site ever been remediated? (If yes, please provide details.)	No	--

Observations

	Yes / No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	Yes	An above-ground tank is made of steel and fabricated with concrete.
2. What are the conditions of the bund walls and floors?	--	Good conditions
3. Are there any surface water drains located near to drum storage and unloading areas?	No	--
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	No	--
5. Is there a storage site for the wastes?	No	--
6. Is there an on-site landfill?	No	--
7. Were any stressed vegetation noted on site during the site reconnaissance? (if yes, please indicate location and approximate size.)	No	--
8. Were any stained surfaces noted on-site during the site reconnaissance? (if yes, please provide details.)	No	--
9. Are there any potential off-site sources of contamination?	No	--
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	--
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	Yes	An effluent pit for collection of rainwater
12. Any noticeable odours during site walkover?	No	--
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ask, oil tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	Yes	Kerosene

Appendix B.5

Site Walkover Checklist for Fuel Tank Room within T2 Building

1. General Site Details

Site Owner / Client: Airport Authority

Property Address: Refer to Figure 3.2

Person Conducting the Questionnaire

Name: Mott MacDonald HK Ltd.

Position: N/A

Date of Site Walkover: 11 May 2017

Authorized Owner / Client Representative (if applicable)

Name: N/A

Position: N/A

Telephone: N/A

2. Site Activities

Briefly describe activities carried out on site, including types of products / chemicals / materials handled.

Number of employees: Full-time: N/A

Part-time: N/A

Temporary / Seasonal: N/A

Maximum no. of people on site at any time: N/A

Typical hours of operation: 24 hours

Number of shifts: N/A

Days per week: 7

Weeks per year: 52

Scheduled plant shut-down: N/A

Detail the main sources of energy at the site:

Gas No

Electricity Yes

Coal No

Oil No

Other No

3. Site Description

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: 12 m^2

What area of the site is covered by buildings (%): 100%

Please list all current and previous owners / occupiers of possible.

N/A

Is a site plan available? If yes, please attach. No

Are there any other parties on site as tenants or sub-tenants? No

If yes, identify those parties: N/A

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Parking area

South: Terminal 2 building

East: Parking area

West: Terminal 1 building

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.)

Flat concrete ground

State the size and location of the nearest residential communities.

No residential community nearby

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or site of special scientific interest?

No

4. Questionnaire with Existing / Previous Site Owner or Occupier

Questions	Yes / No	Notes
1. What are the main activities / operations at the site?	--	For emergency power supply
2. How long have you been occupying the site?	--	Since the operation of T2 building
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	Yes	--
4. Prior to your occupancy, who occupied the site?	--	It was a reclaimed land
5. What were the main activities / operations during their occupancy?	--	--
6. Have there been any major changes in operations carried out at the site in the last 10 years?	No	--
7. Have any polluting activities been carried out in the vicinity of the site in the past?	No	--
8. To the best of your knowledge, has the site ever been used as a petrol filling station / car service garage?	No	--
9. Are there any boreholes / wells or natural springs either on the site or in the surrounding area?	No	--
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	Yes	Diesel fuel
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	No	--
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	No	--
13. Has the facility produced a separate hazardous substance inventory?	No	--
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details)	No	--
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	--	Stored in a 3000 L above-ground tank within drip tray
16. Do you have any underground storage tanks? (If yes, please provide details.)	No	--
17. Are there any disused underground storage tanks?	No	--
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	Yes	Monthly visual checking is carried out to check if any spillage of above-ground tank.
19. How are the wastes disposed of?	--	No chemical waste generated on-site
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	--
21. Have you spills occurred on site? (If yes, please provide details.)	No	--
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work / underground tanks (If yes, please provide details.)	No	--
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	--
24. Are there any known contaminations on site? (If yes, please provide details.)	No	--
25. Has the site ever been remediated? (If yes, please provide details.)	No	--

Observations

	Yes / No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	Yes	Bund wall and drip tray are provided
2. What are the conditions of the bund walls and floors?	--	Good conditions
3. Are there any surface water drains located near to drum storage and unloading areas?	No	--
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	No	--
5. Is there a storage site for the wastes?	No	--
6. Is there an on-site landfill?	No	--
7. Were any stressed vegetation noted on site during the site reconnaissance? (if yes, please indicate location and approximate size.)	No	--
8. Were any stained surfaces noted on-site during the site reconnaissance? (if yes, please provide details.)	No	--
9. Are there any potential off-site sources of contamination?	No	--
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	--
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	No	--
12. Any noticeable odours during site walkover?	No	--
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ask, oil tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	Yes	Diesel fuel

Appendix B.6

Site Walkover Checklist for Fuel Tank Rooms and Emergency Generator Rooms within Northern Section of T2 Building

1. General Site Details

Site Owner / Client:	Airport Authority
Property Address:	Fuel Tank Rooms and Emergency Generator Rooms within Northern Section of T2 Building: - a 2,500 L underground fuel tank (BH1) - emergency generator room (with 450 L above-ground fuel tank, BH3, and an emergency generator, BH4) - fuel tank room (with a 3,000 L above-ground fuel tank, BH9) - emergency generator room (with two emergency generators, HS1) (Refer to EIA drawing MCL/P132/EAI/11-014 with markup and Schematic drawing 3.1-3.3)

Person Conducting the Questionnaire

Name:	Mott MacDonald HK Ltd.
Position:	N/A
Date if Site Walkover:	31 January 2018

Authorized Owner / Client Representative (if applicable)

Name:	N/A
Position:	N/A
Telephone:	N/A

2. Site Activities

Briefly describe activities carried out on site, including types of products / chemicals / materials handled.

Number of employees:	Full-time:	N/A
	Part-time:	N/A
	Temporary / Seasonal:	N/A
Maximum no. of people on site at any time:		N/A
Typical hours of operation:	24 hours	
Number of shifts:	N/A	
Days per week:	7	
Weeks per year:	52	
Scheduled plant shut-down:	N/A	

Detail the main sources of energy at the site:

Gas No

Electricity Yes

Coal No

Oil No

Other No

3. Site Description

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: approx. 100 m^2

What area of the site is covered by buildings (%): 100%

Please list all current and previous owners / occupiers of possible.

N/A

Is a site plan available? If yes, please attach. No

Are there any other parties on site as tenants or sub-tenants? No

If yes, identify those parties: N/A

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Parking area

South: Terminal 2 building

East: Road networks and parking area

West: Terminal 1 building and Road networks

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.)

Flat concrete ground

State the size and location of the nearest residential communities.

No residential community nearby

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or site of special scientific interest?

No

4. Questionnaire with Existing / Previous Site Owner or Occupier

Questions	Yes / No	Notes
1. What are the main activities / operations at the site?	--	Emergency power supply systems of T2 building. Only monthly test performed since operation.
2. How long have you been occupying the site?	--	Since the operation of T2 building
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	Yes	--
4. Prior to your occupancy, who occupied the site?	--	It was a reclaimed land
5. What were the main activities / operations during their occupancy?	--	--
6. Have there been any major changes in operations carried out at the site in the last 10 years?	No	--
7. Have any polluting activities been carried out in the vicinity of the site in the past?	No	--
8. To the best of your knowledge, has the site ever been used as a petrol filling station / car service garage?	No	--
9. Are there any boreholes / wells or natural springs either on the site or in the surrounding area?	No	--
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	Yes	Diesel fuel
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	No	--
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	No	--
13. Has the facility produced a separate hazardous substance inventory?	No	--
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details)	No	--
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	--	Store in a 2,500 L underground fuel tank, a 450 L above-ground fuel tank and a 3,000 L above-ground fuel tank
16. Do you have any underground storage tanks? (If yes, please provide details.)	Yes	A 2,500 L underground fuel tank was located in the inspection area.
17. Are there any disused underground storage tanks?	No	--
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	Yes	Monthly visual checking is carried out to check if any spillage of above-ground tank
19. How are the wastes disposed of?	--	No chemical waste generated on-site
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	--
21. Have you spills occurred on site? (If yes, please provide details.)	No	--
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work / underground tanks (If yes, please provide details.)	No	--
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	--
24. Are there any known contaminations on site? (If yes, please provide details.)	No	--
25. Has the site ever been remediated? (If yes, please provide details.)	No	--

Observations

	Yes / No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	Yes	Bund wall and drip tray are provided
2. What are the conditions of the bund walls and floors?	--	Good condition
3. Are there any surface water drains located near to drum storage and unloading areas?	No	--
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	No	--
5. Is there a storage site for the wastes?	No	--
6. Is there an on-site landfill?	No	--
7. Were any stressed vegetation noted on site during the site reconnaissance? (if yes, please indicate location and approximate size.)	No	--
8. Were any stained surfaces noted on-site during the site reconnaissance? (if yes, please provide details.)	No	--
9. Are there any potential off-site sources of contamination?	No	--
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	--
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	No	--
12. Any noticeable odours during site walkover?	No	--
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ask, oil tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	Yes	Diesel fuel

Appendix B.6

Site Walkover Checklist for Fuel Tank Rooms and Emergency Generator Rooms within Southern Section of T2 Building

1. General Site Details

Site Owner / Client: Airport Authority

Property Address: Fuel Tank Rooms and Emergency Generator Rooms within Southern Section of T2 Building:
- a 3,000 L underground fuel tank (BH5)
- emergency generator room (with a 450 L above-ground fuel tank, BH7)
- emergency generator room (with an emergency generator, BH8)
- fuel tank room (with a 1,500 L above-ground fuel tank, BH10)
- emergency generator room (with an emergency generator, HS2),

(Refer to EIA drawing MCL/P132/EAI/11-014 with markup and Schematic drawing 3.4-3.6)

Person Conducting the Questionnaire

Name: Mott MacDonald HK Ltd.

Position: N/A

Date if Site Walkover: 31 January 2018

Authorized Owner / Client Representative (if applicable)

Name: N/A

Position: N/A

Telephone: N/A

2. Site Activities

Briefly describe activities carried out on site, including types of products / chemicals / materials handled.

Number of employees:	Full-time:	N/A
	Part-time:	N/A
	Temporary / Seasonal:	N/A
Maximum no. of people on site at any time:		N/A
Typical hours of operation:	24 hours	
Number of shifts:	N/A	
Days per week:	7	
Weeks per year:	52	
Scheduled plant shut-down:	N/A	

Detail the main sources of energy at the site:

Gas No

Electricity Yes

Coal No

Oil No

Other No

3. Site Description

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: approx. 100 m^2

What area of the site is covered by buildings (%): 100%

Please list all current and previous owners / occupiers of possible.

N/A

Is a site plan available? If yes, please attach. No

Are there any other parties on site as tenants or sub-tenants? No

If yes, identify those parties: N/A

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Terminal 2 building

South: Parking area

East: Road networks and parking area

West: Terminal 1 building and Road networks

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.)

Flat concrete ground

State the size and location of the nearest residential communities.

No residential community nearby

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or site of special scientific interest?

No

4. Questionnaire with Existing / Previous Site Owner or Occupier

Questions	Yes / No	Notes
1. What are the main activities / operations at the site?	--	Emergency power supply systems of T2 building. Only monthly test performed since operation.
2. How long have you been occupying the site?	--	Since the operation of T2 building
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	Yes	--
4. Prior to your occupancy, who occupied the site?	--	It was a reclaimed land
5. What were the main activities / operations during their occupancy?	--	--
6. Have there been any major changes in operations carried out at the site in the last 10 years?	No	--
7. Have any polluting activities been carried out in the vicinity of the site in the past?	No	--
8. To the best of your knowledge, has the site ever been used as a petrol filling station / car service garage?	No	--
9. Are there any boreholes / wells or natural springs either on the site or in the surrounding area?	No	--
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	Yes	Diesel fuel
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	No	--
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	No	--
13. Has the facility produced a separate hazardous substance inventory?	No	--
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details)	No	--
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	--	Store in a 3,000 L underground fuel tank, a 450 L above-ground fuel tank and a 1,500 L above-ground fuel tank
16. Do you have any underground storage tanks? (If yes, please provide details.)	Yes	A 3,000 L underground fuel tank was located in the inspection area.
17. Are there any disused underground storage tanks?	No	--
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	Yes	Monthly visual checking is carried out to check if any spillage of above-ground tank
19. How are the wastes disposed of?	--	No chemical waste generated on-site
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	--
21. Have you spills occurred on site? (If yes, please provide details.)	No	--
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work / underground tanks (If yes, please provide details.)	No	--
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	--
24. Are there any known contaminations on site? (If yes, please provide details.)	No	--
25. Has the site ever been remediated? (If yes, please provide details.)	No	--

Observations

	Yes / No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	Yes	Bund wall and drip tray are provided
2. What are the conditions of the bund walls and floors?	--	Good condition
3. Are there any surface water drains located near to drum storage and unloading areas?	No	--
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	No	--
5. Is there a storage site for the wastes?	No	--
6. Is there an on-site landfill?	No	--
7. Were any stressed vegetation noted on site during the site reconnaissance? (if yes, please indicate location and approximate size.)	No	--
8. Were any stained surfaces noted on-site during the site reconnaissance? (if yes, please provide details.)	No	--
9. Are there any potential off-site sources of contamination?	No	--
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	--
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	No	--
12. Any noticeable odours during site walkover?	No	--
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ask, oil tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	Yes	Diesel fuel

Appendix B.6

Site Walkover Checklist for Fuel Tank Room and Emergency Generator Room within Southern Section of T2 Building

1. General Site Details

Site Owner / Client:	Airport Authority
Property Address:	Fuel Tank Room and Emergency Generator Room within Southern Section of T2 Building: - fuel tank room (with a 1,500 L above-ground fuel tank, HS4) - emergency Generator Room (with an emergency generator, HS5) (Refer to EIA drawing MCL/P132/EAI/11-014 with markup and Schematic drawing 3.7)

Person Conducting the Questionnaire

Name:	Mott MacDonald HK Ltd.
Position:	N/A
Date if Site Walkover:	27 February 2018

Authorized Owner / Client Representative (if applicable)

Name:	N/A
Position:	N/A
Telephone:	N/A

2. Site Activities

Briefly describe activities carried out on site, including types of products / chemicals / materials handled.

Number of employees:	Full-time:	N/A
	Part-time:	N/A
	Temporary / Seasonal:	N/A
Maximum no. of people on site at any time:		N/A

Typical hours of operation:	24 hours
Number of shifts:	N/A
Days per week:	7
Weeks per year:	52
Scheduled plant shut-down:	N/A

Detail the main sources of energy at the site:

Gas	No
Electricity	Yes
Coal	No
Oil	No
Other	No

3. Site Description

This section is intended to gather information on site setting and environmental receptors on, adjacent or close to the site.

What is the total site area: approx. 10 m^2

What area of the site is covered by buildings (%): 100%

Please list all current and previous owners / occupiers of possible.

N/A

Is a site plan available? If yes, please attach. No

Are there any other parties on site as tenants or sub-tenants? No

If yes, identify those parties: N/A

Describe surrounding land use (residential, industrial, rural, etc.) and identify neighbouring facilities and types of industry.

North: Terminal 2 building

South: Parking area

East: Road networks and parking area

West: Terminal 1 building and Road networks

Describe the topography of the area (flat terrain, rolling hills, mountains, by a large body of water, vegetation, etc.)

Flat concrete ground

State the size and location of the nearest residential communities.

No residential community nearby

Are there any sensitive habitats nearby, such as nature reserves, parks, wetlands or site of special scientific interest?

No

4. Questionnaire with Existing / Previous Site Owner or Occupier

Questions	Yes / No	Notes
1. What are the main activities / operations at the site?	--	Emergency power supply systems of T2 building. Only monthly test performed since operation.
2. How long have you been occupying the site?	--	Since the operation of T2 building
3. Were you the first occupant on site? (If yes, what was the usage of the site prior to occupancy.)	Yes	--
4. Prior to your occupancy, who occupied the site?	--	It was a reclaimed land
5. What were the main activities / operations during their occupancy?	--	--
6. Have there been any major changes in operations carried out at the site in the last 10 years?	No	--
7. Have any polluting activities been carried out in the vicinity of the site in the past?	No	--
8. To the best of your knowledge, has the site ever been used as a petrol filling station / car service garage?	No	--
9. Are there any boreholes / wells or natural springs either on the site or in the surrounding area?	No	--
10. Do you have any registered hazardous installations as defined under relevant ordinances? (If yes, please provide details.)	Yes	--
11. Are any chemicals used in your daily operations? (If yes, please provide details.)	No	--
12. Material inventory lists, including quantities and locations available? (If yes, how often are these inventories updated?)	No	--
13. Has the facility produced a separate hazardous substance inventory?	No	--
14. Have there ever been any incidents or accidents (e.g. spills, fires, injuries, etc.) involving any of these materials? (If yes, please provide details)	No	--
15. How are materials received (e.g. rail, truck, etc.) and stored on site (e.g. drums, tanks, carboys, bags, silos, cisterns, vaults and cylinders)?	--	Store in a 1,500 L above-ground tank with drip tray
16. Do you have any underground storage tanks? (If yes, please provide details.)	No	--
17. Are there any disused underground storage tanks?	No	--
18. Do you have regular check for any spillage and monitoring of chemicals handled? (If yes, please provide details.)	Yes	Monthly visual checking is carried out to check if any spillage of above-ground tank
19. How are the wastes disposed of?	--	No chemical waste generated on-site
20. Have you ever received any notices of violation of environmental regulations or received public complaints? (If yes, please provide details.)	No	--
21. Have you spills occurred on site? (If yes, please provide details.)	No	--
22. Do you have any records of major renovation of your site or re-arrangement of underground utilities, pipe work / underground tanks (If yes, please provide details.)	No	--
23. Have disused underground tanks been removed or otherwise secured (e.g. concrete, sand, etc.)?	No	--
24. Are there any known contaminations on site? (If yes, please provide details.)	No	--
25. Has the site ever been remediated? (If yes, please provide details.)	No	--

Observations

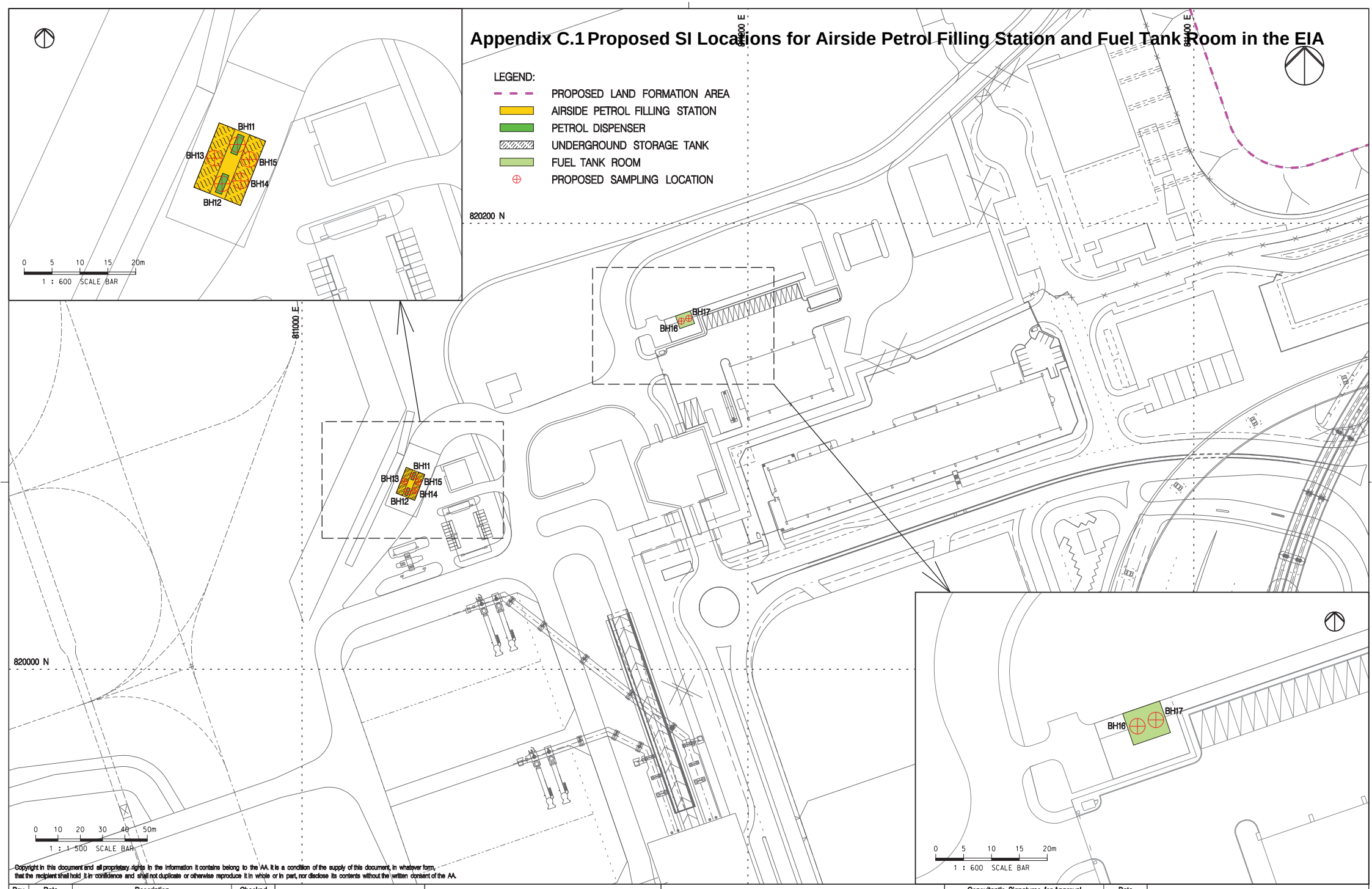
	Yes / No	Notes
1. Are chemical storage areas provided with secondary containment (i.e. bund walls and floors)?	Yes	Bund wall and drip tray are provided
2. What are the conditions of the bund walls and floors?	--	Good condition
3. Are there any surface water drains located near to drum storage and unloading areas?	No	--
4. Are any solid or liquid waste (other than wastewater) generated at the site? (If yes, please provide details.)	No	--
5. Is there a storage site for the wastes?	No	--
6. Is there an on-site landfill?	No	--
7. Were any stressed vegetation noted on site during the site reconnaissance? (if yes, please indicate location and approximate size.)	No	--
8. Were any stained surfaces noted on-site during the site reconnaissance? (if yes, please provide details.)	No	--
9. Are there any potential off-site sources of contamination?	No	--
10. Does the site have any equipment which might contain polychlorinated biphenyls (PCBs)?	No	--
11. Are there any sumps, effluent pits, interceptors or lagoons on site?	No	--
12. Any noticeable odours during site walkover?	No	--
13. Are any of the following chemicals used on site: fuels, lubricating oils, hydraulic fluids, cleaning solvents, used chemical solutions, acids, anti-corrosive paints, thinners, coal, ask, oil tanks and bilge sludge, metal wastes, wood preservatives and polyurethane foam?	Yes	Diesel fuel

C. Proposed SI Locations in the EIA

C.1 Proposed SI Locations for Airside Petrol Filling Station and Fuel Tank Room in the EIA

C.2 Proposed SI Locations for Expansion of T2 Building in the EIA with Mark-up

Appendix C.1 Proposed SI Locations for Airside Petrol Filling Station and Fuel Tank Room in the EIA



Rev.	Date	Description	Checked
A	23OCT13	FIRST ISSUE	EC
B	28NOV13	GENERAL REVISION	AM

香港國際機場 HONG KONG INTERNATIONAL AIRPORT

Mott MacDonald
In association with
ARUP
Atkins China Limited
Clymene Enterprises
Deltares
Ecosystems Limited
SDA Marine Limited
Urbis Limited
URS Limited

Title

PROPOSED SAMPLING LOCATIONS FOR AIRSIDE PETROL FILLING STATION AND FUEL TANK ROOM

Consultant's Signatures for Approval		Date
Design	AM	23OCT13
Checkers	AM	23OCT13
Design Supervisor	EC	21MAR14
Authorised Representative	AFK	21MAR14

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. MCL / P132 / EIA / 11–015

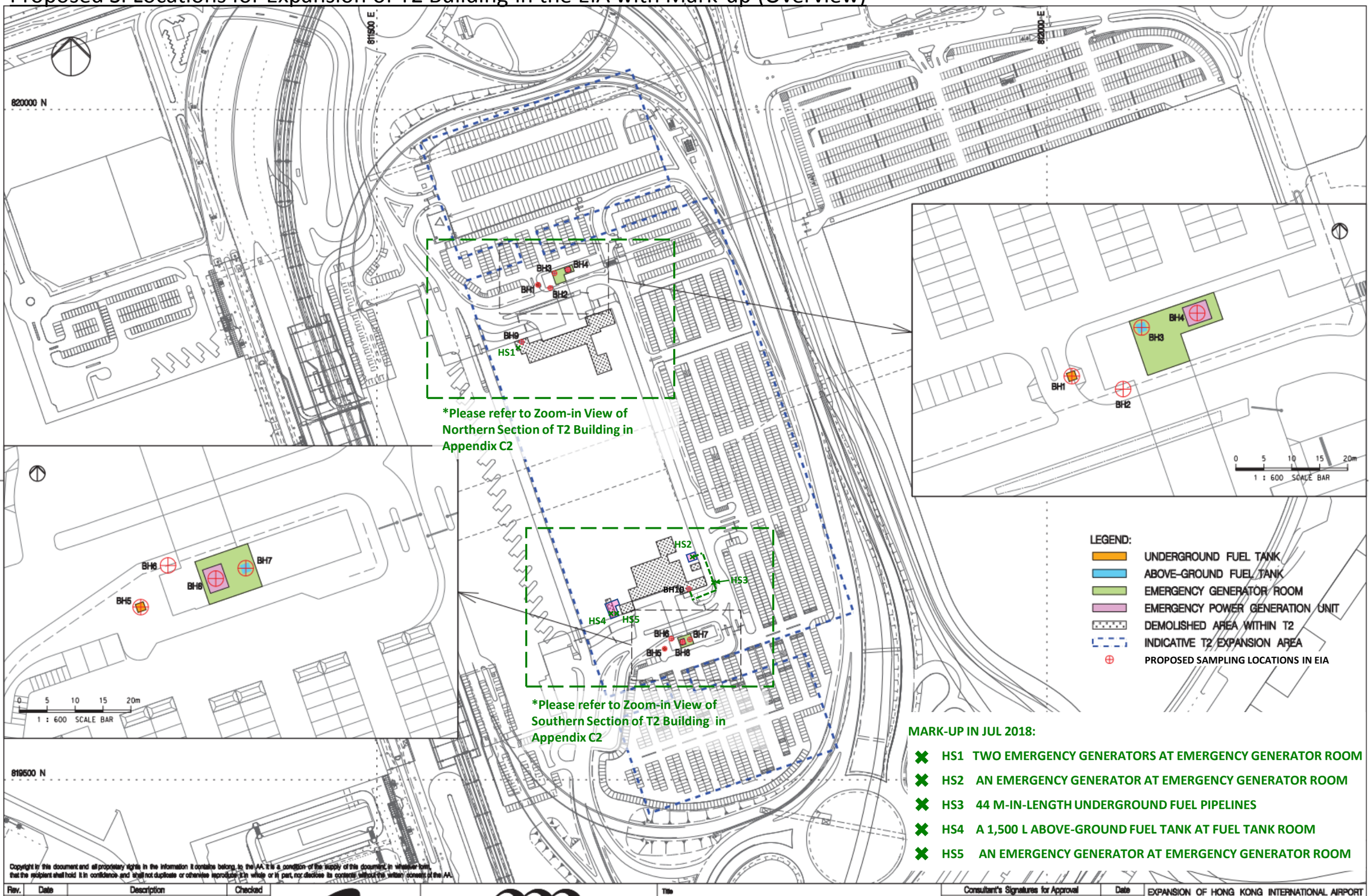
Scale at A3 1 : 1500

Rev. B

Filename: J:\308875\REPORT\ENV\EIA\140321\MCL-P132-EIA-11-015.dgn

Appendix C.2

Proposed SI Locations for Expansion of T2 Building in the EIA with Mark-up (Overview)



MARK-UP IN JUL 2018:

- ✖ HS1 TWO EMERGENCY GENERATORS AT EMERGENCY GENERATOR ROOM
- ✖ HS2 AN EMERGENCY GENERATOR AT EMERGENCY GENERATOR ROOM
- ✖ HS3 44 M-IN-LENGTH UNDERGROUND FUEL PIPELINES
- ✖ HS4 A 1,500 L ABOVE-GROUND FUEL TANK AT FUEL TANK ROOM
- ✖ HS5 AN EMERGENCY GENERATOR AT EMERGENCY GENERATOR ROOM

Rev.	Date	Description	Checked
A	23OCT13	FIRST ISSUE	EC
B	21NOV13	GENERAL REVISION	AM
C	17DEC13	GENERAL REVISION	AM

香港國際機場 HONG KONG INTERNATIONAL AIRPORT

Mott MacDonald in association with
ARUP, Atkins China Limited, Clymene Enterprises, Deltares, Ecosystems Limited, SDA Marine Limited, Urbis Limited, URS Limited

Title: PROPOSED SAMPLING LOCATIONS FOR EXPANSION OF T2 BUILDING

Consultant's Signatures for Approval		Date
Design	AM	23OCT13
Checkers	AM	23OCT13
Design Supervisor	EC	21MAR14
Authorised Representative	AFK	21MAR14

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

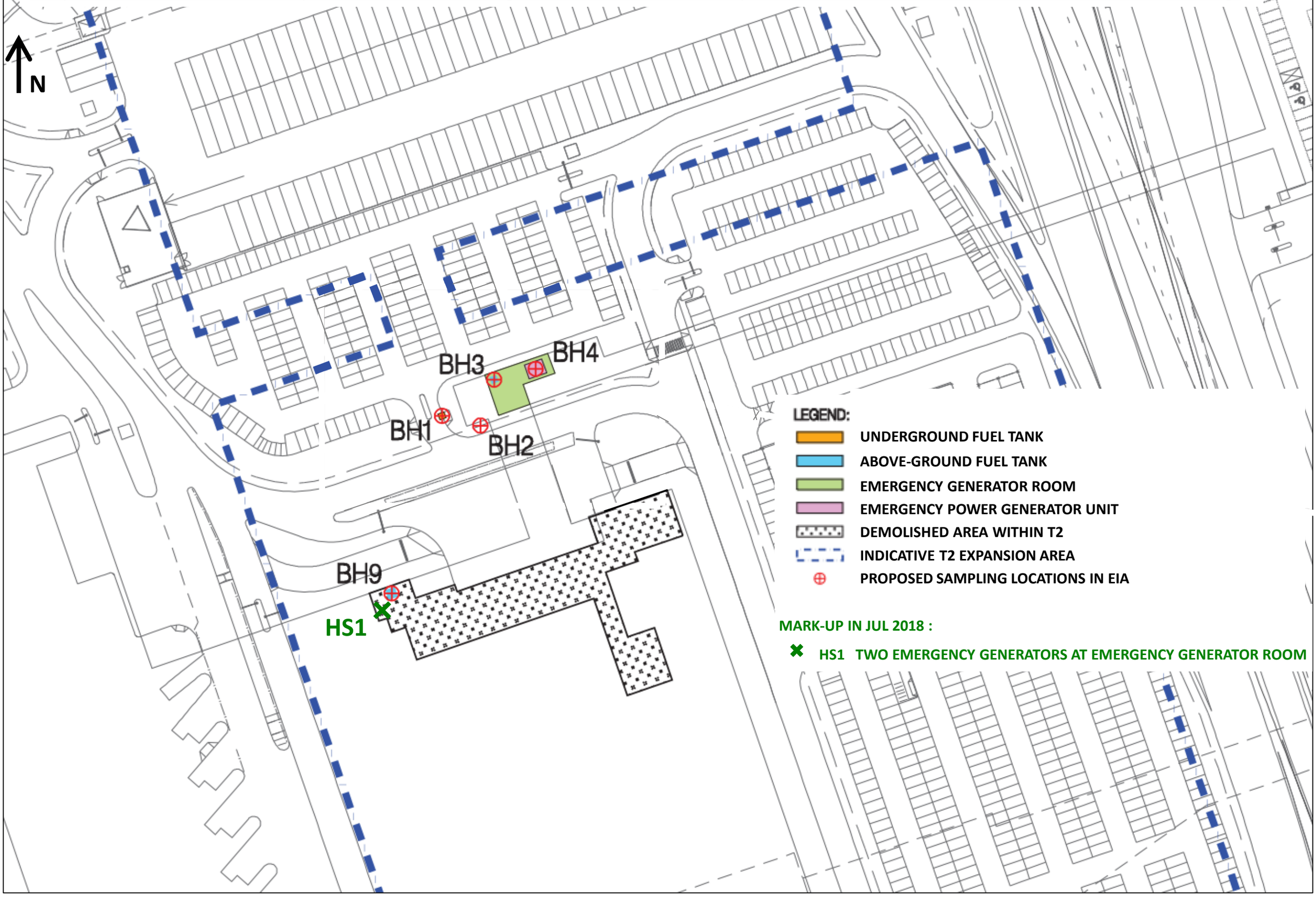
Drawing No. MCL / P132 / EIA / 11–014

Scale at A3 1 : 2500

Rev. C

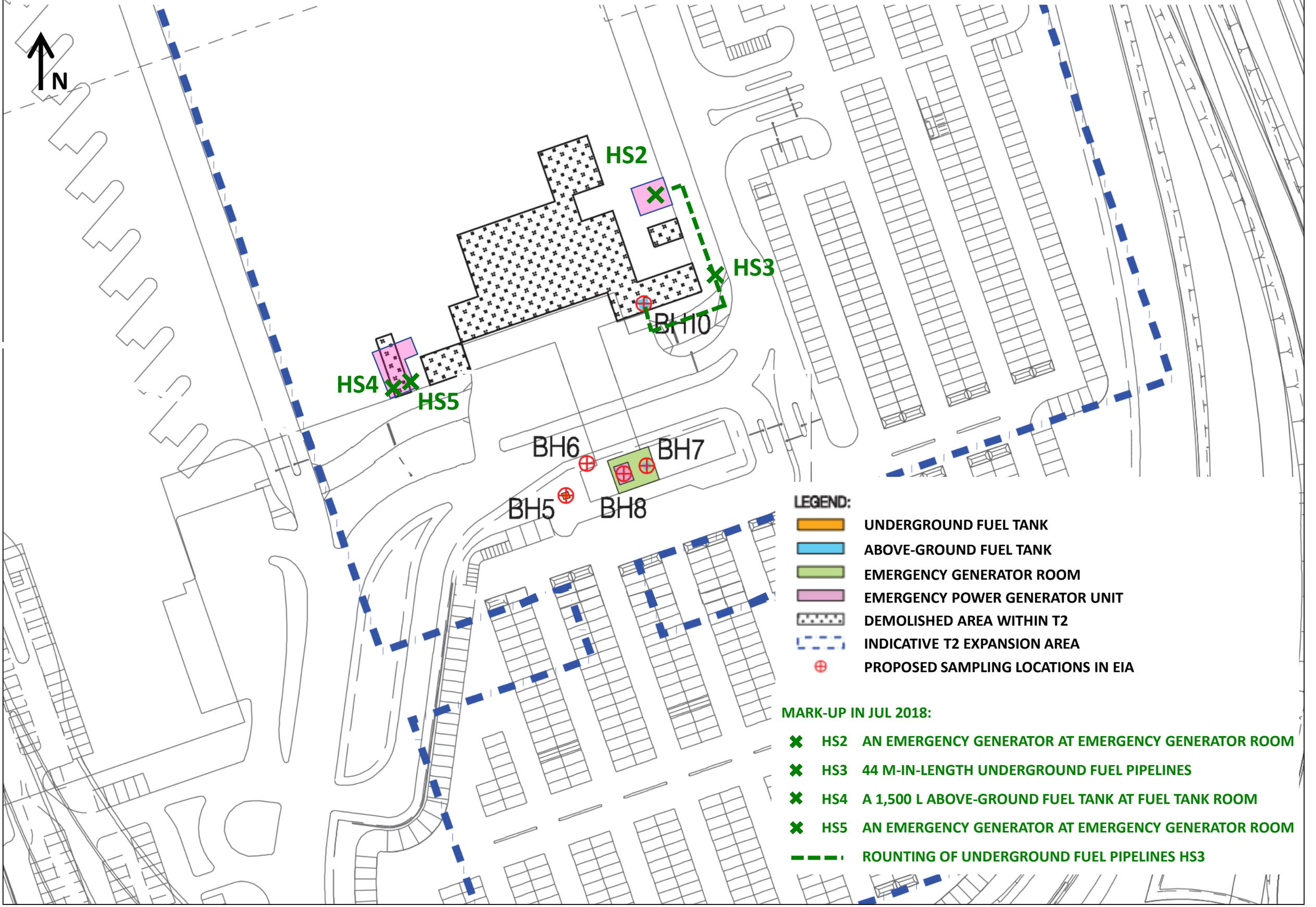
Appendix C.2

Proposed SI Locations for Expansion of T2 Building in the EIA with Mark-up (Zoom-in View of Northern Section of T2 Building)

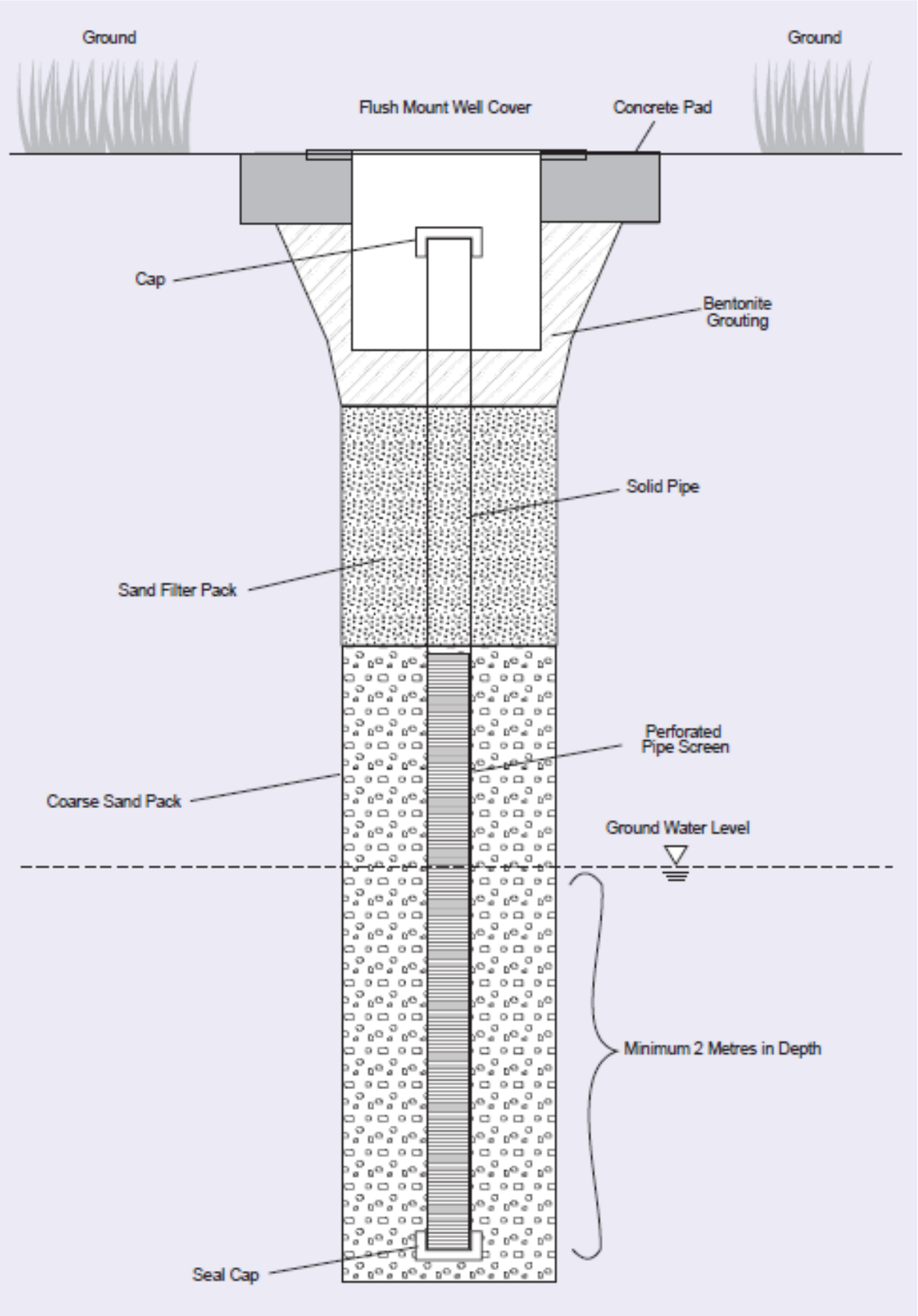


Appendix C.2

Proposed SI Locations for Expansion of T2 Building in the EIA with Mark-up (Zoom-in View of Southern Section of T2 Building)



D. Schematic Drawing of Groundwater Monitoring Well



Remarks: Reference from Practice Guide for Investigation and Remediation of Contaminated Land, Annex E, EPD

E. Schematic Drawing of Facilities in T2 Building

E.1 Emergency Power Supply System No.1

E.2 Emergency Power Supply System No.2

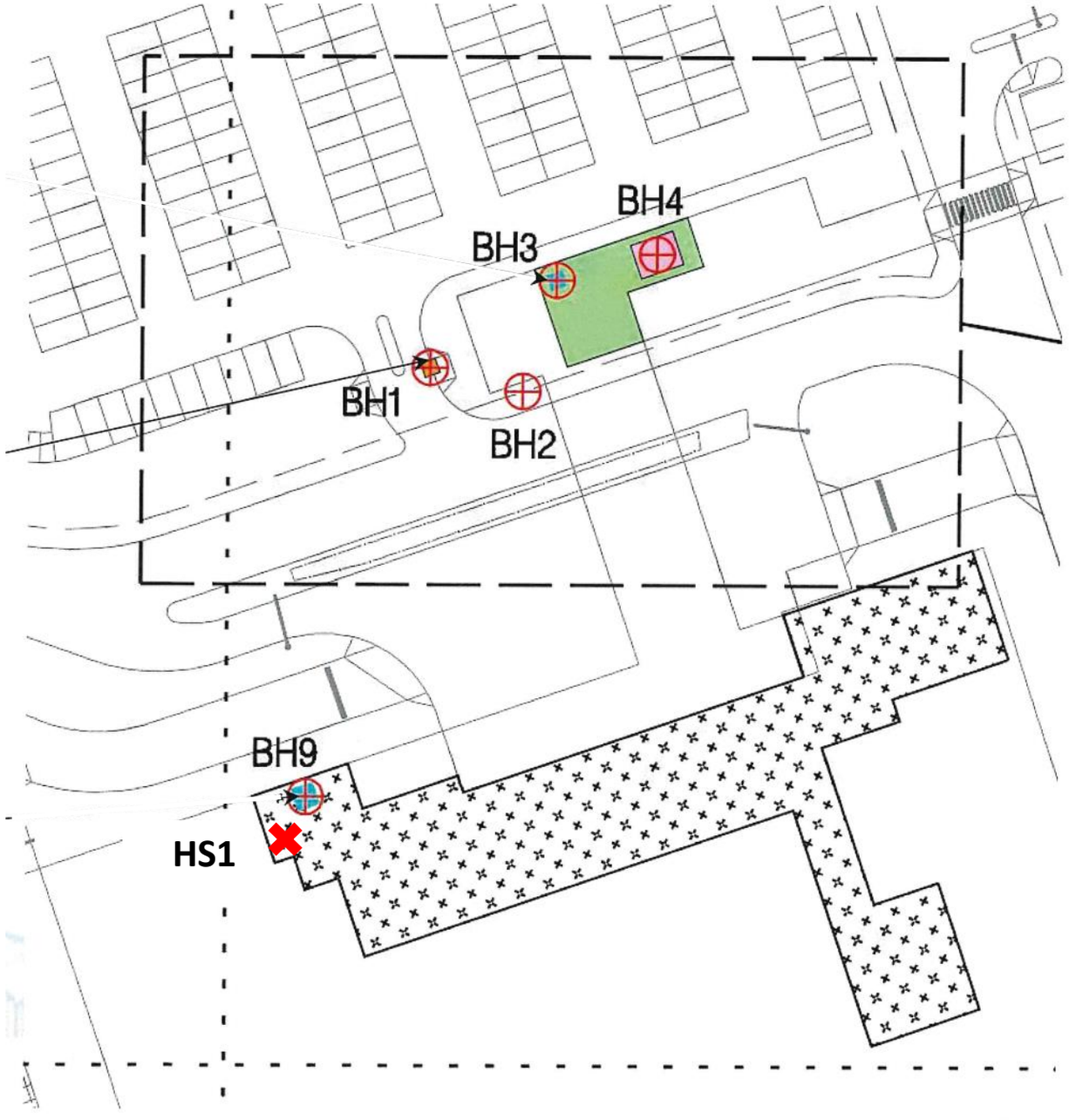
E.3 Emergency Power Supply System No.3

E.4 Emergency Power Supply System No.4

E.5 Emergency Power Supply System No.5

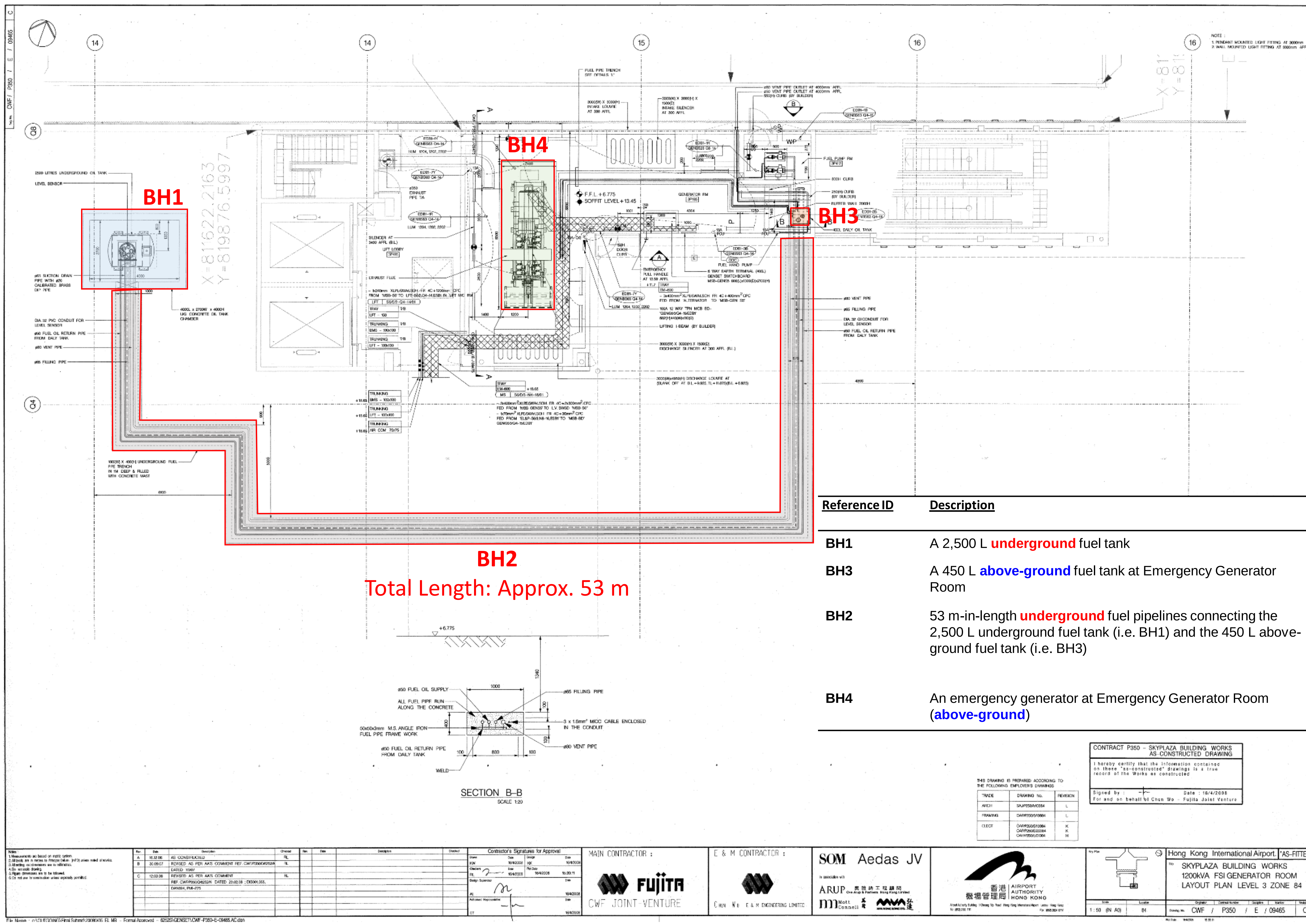
Appendix E.1 Emergency Power Supply System No. 1 (**BH 1**, **BH2**, **BH3** and **BH4**)

Northern Section of T2 Building



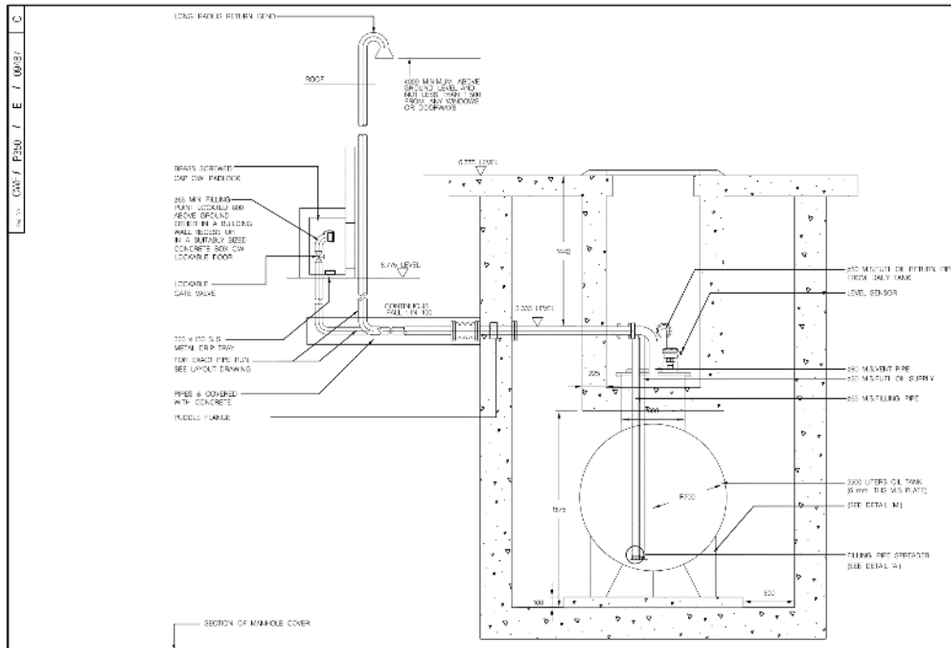
Reference ID	Description
BH1	A 2,500 L **underground** fuel tank
BH3	A 450 L **above-ground** fuel tank at Emergency Generator Room
BH2	53 m-in-length **underground** fuel pipelines connecting the 2,500 L underground fuel tank (i.e. BH1) and the 450 L above-ground fuel tank (i.e. BH3)
BH4	An emergency generator at Emergency Generator Room (**above-ground**)

Appendix E.1 Emergency Power Supply System No. 1 (BH 1, BH2, BH3 and BH4)

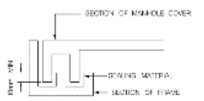


Reference ID	Description
BH1	A 2,500 L **underground** fuel tank
BH3	A 450 L **above-ground** fuel tank at Emergency Generator Room
BH2	53 m-in-length **underground** fuel pipelines connecting the 2,500 L underground fuel tank (i.e. BH1) and the 450 L above-ground fuel tank (i.e. BH3)
BH4	An emergency generator at Emergency Generator Room (**above-ground**)

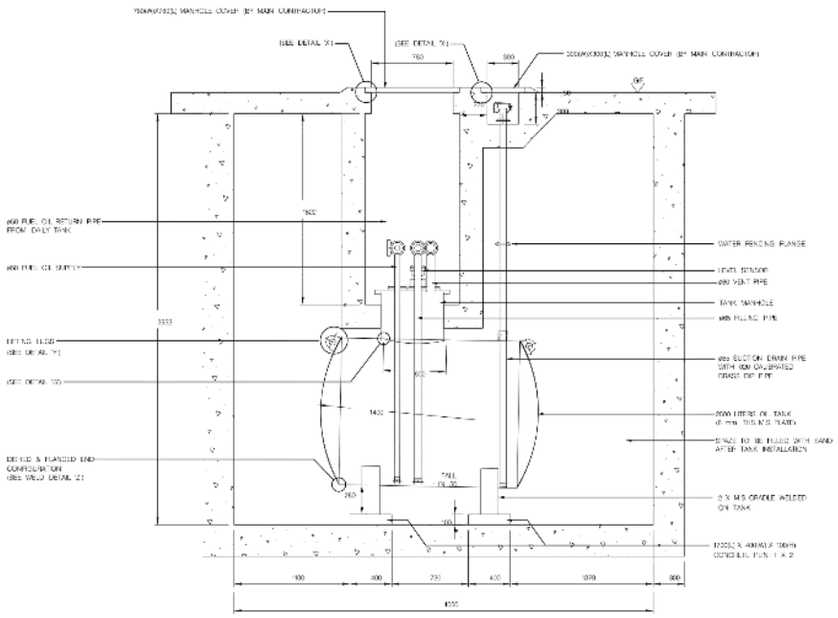
Appendix E.1 Emergency Power Supply System No. 1 (BH 1, BH2, BH3 and BH4)



SECTIONAL ELEVATION 'B-B'



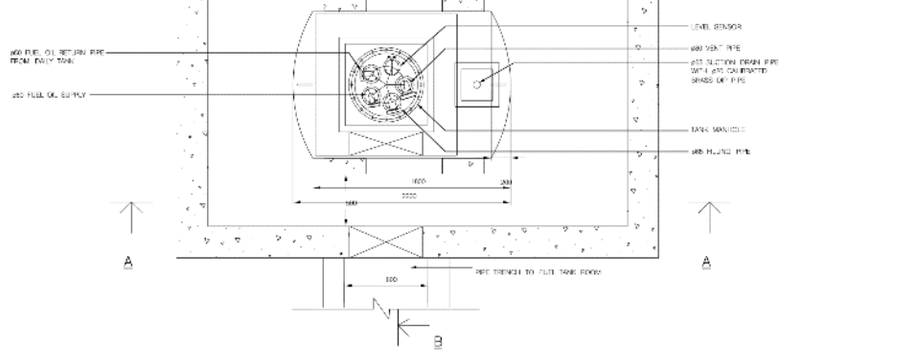
PART SECTION OF SEALED MANHOLE COVER DETAIL 'X'



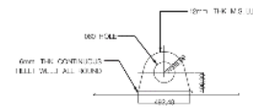
LONGITUDINAL SECTION 'A-A'

NOTES:

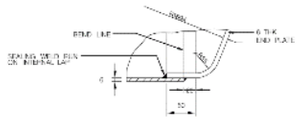
1. ALL DIMENSIONS ARE IN mm.
2. SUPPLY AND INSTALLATION OF ALL STORAGE TANK DRAWER MANHOLE AND MANHOLE COVERS AND FRAME REQUIRED SHALL BE INCLUDED IN BUILDING DIVISION AFTER COMPLETION OF RELEVANT MECHANICAL WORKS.
3. LAYING OF TILE TOP SLAB IS TO BE INCLUDED IN BUILDING WORKS AFTER TANK IS IN POSITION AND ALL PIPEWORKS PROPERLY CONNECTED UP AND CERTIFIED CORRECT.
4. AFTER COMPLETION OF TANK INSTALLATION, TILE TANK CHAMBER SHALL BE BACKFILLED WITH CLEAN DRY SAND BY BUILDER'S AGENCY. SHOULD BE FIRMLY TAMPED. SPREAD SALT BEACH SAND OR PUDDLE HAVING A CONSTANT EFFECT SHALL NOT BE USED.
5. WATER TIGHT & CORROSION SEAL MANHOLE FRAMES AND COVERS ARE KEY PARTS AND DESIGNING WORK CONSTRUCTION IN CONFORMING WITH BS 497 PART 1 ARE TO BE SUPPLIED & INSTALLED BY BUILDER. ALL MANHOLE COVERS SHALL BE SEALED AS SHOWN IN FIGURE 'X' BY BUILDER AFTER COMPLETION OF TANK INSTALLATION.
6. ALL UNDERGROUND TANK MANHOLES AND HANDHOLES SHALL BE ENCLOSED IN A PIT OF CONCRETE OR BRICK WORK AND RENDERED ON THE INSIDE WITH WATER PROOF CEMENT BY BUILDER.
7. THE TANK SHALL BE HYDROSTATICALLY TESTED INTERNALLY OF ALL LOOSE MATTER AND THEN TESTED TO A PRESSURE OF 35 m/s ALL PNEUMATIC SHALL BE SATISFACTORY TO A HYDRAULIC TEST OF A PRESSURE OF 200 m/s.



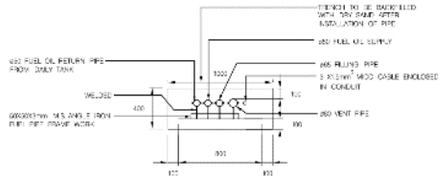
2500 LITRES STORAGE TANK LAYOUT



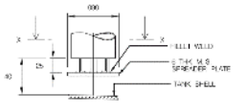
DETAIL 'Y'
N.T.S



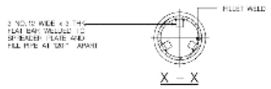
WELD DETAIL 'Z' (DISH END)
N.T.S



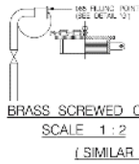
TRENCH DETAILS



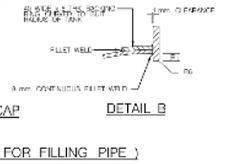
DETAIL 'A'
N.T.S



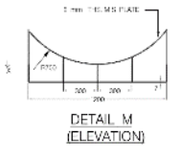
X – X
N.T.S



BRASS SCREWED CAP
SCALE 1 : 2



DETAIL 'B'



DETAIL 'M'
(ELEVATION)

SECTION X–X

(SIMILAR FOR FILLING PIPE)

CONTRACT P350 – SKYPLAZA BUILDING WORKS
AS CONSTRUCTED DRAWING

I hereby certify that the information contained on these "as-constructed" drawings is a true record of the works as constructed

Signed by : Date : 8/OCT/08
For and on behalf of Chun Wo – Fujita Joint Venture

Rev.	Date	Description	Checked
A	16.12.05	AS CONSTRUCTED	RL
B	30.03.07	REVISED AS PER AAS COMMENT PER CWF/P350/0402/SR	RL
C	17.09.08	REVISED AS PER AAS COMMENT PER CWF/P350/0602/SR DATED 09.09.08	IE

Contractor's Signatures for Approval

Chun Wo	Date	Design	Date
	SDATE$	KW	SDATE$
Checked	Date	Approved	
IE	SDATE$		SSTATE
Fujita Technical Director	Date		
KL	SDATE$		
Authorised Project Director	Date		
ET	SDATE$		

MAIN CONTRACTOR : FUJITA
CWF JOINT-VENTURE

E & M CONTRACTOR : Chun Wo E & M ENGINEERING LIMITED

SOM Aedas JV in association with ARUP 奧雅納工程顧問 Mott Connell 香港 MVA HONG KONG LTD 亞

香港 AIRPORT 機場管理局 AUTHORITY HONG KONG
Airport Authority Building, 1 Kwong Yip Road, Hong Kong International Airport, Lantau, Hong Kong
Tel: (852) 2181 2111 Fax: (852) 2181 3277

Hong Kong International Airport "AS FITTED"

Title: SKYPLAZA BUILDING WORKS
2500 LITRES UNDERGROUND FUEL STORAGE TANK LAYOUT AND ELEVATION AND DETAILS (ZONE 84)

Originator	Contract Number	Discipline	Number	Revision
CWF	P350	E	09487	C

Drawing No.: CWF / P350 / E / 09487 / C

Scale: 1 : 50 (IN A0) | Location: 84

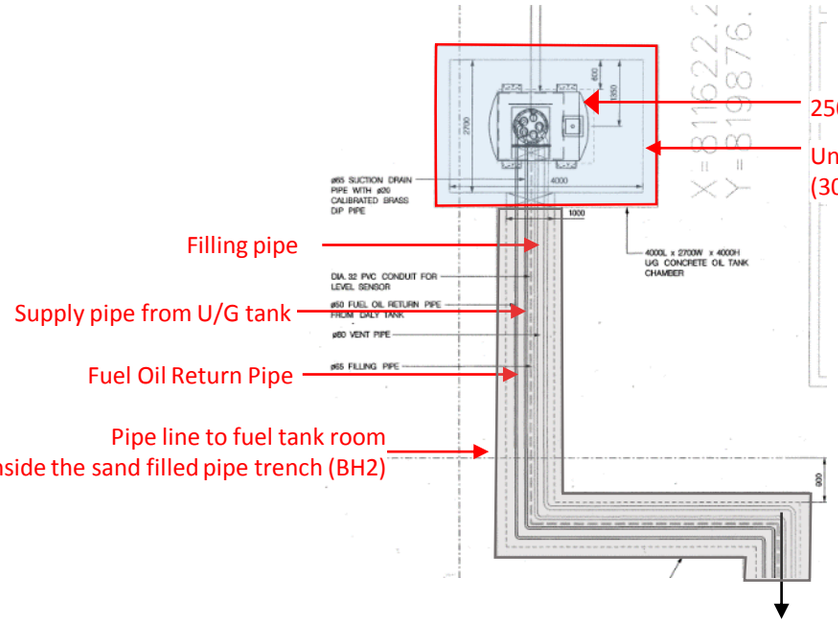
Appendix E.1 Emergency Power Supply System No. 1

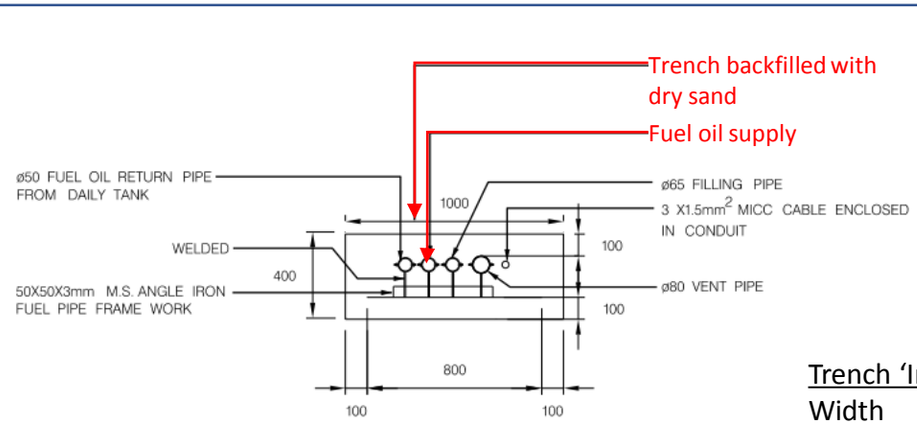
Details of **BH1** (2,500 L **Underground** Fuel Tank) & **BH2** (**Underground** Fuel Pipeline)

Notes

- Underground fuel tank fully encased in 300mm thick concrete chamber
- Space between the tank and the chamber is filled with sand
- Test run of emergency generator conducted monthly (for 30-60 mins)
- Manhole chamber of U/G tank is checked monthly and re-filled approx. every 6 months
- The quantity of fuel inside the tank is automatically monitored by level sensor. No sign of leakage is detected.

PLAN VIEW

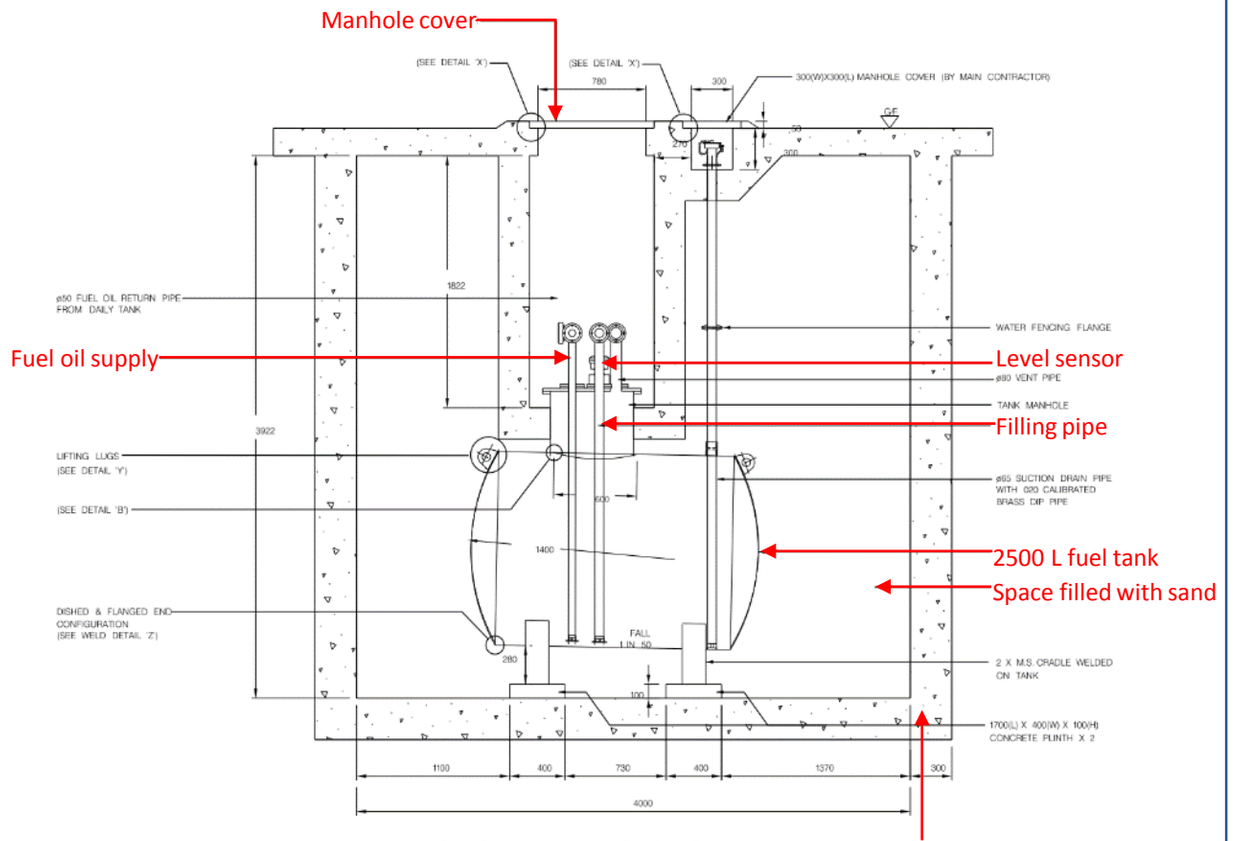




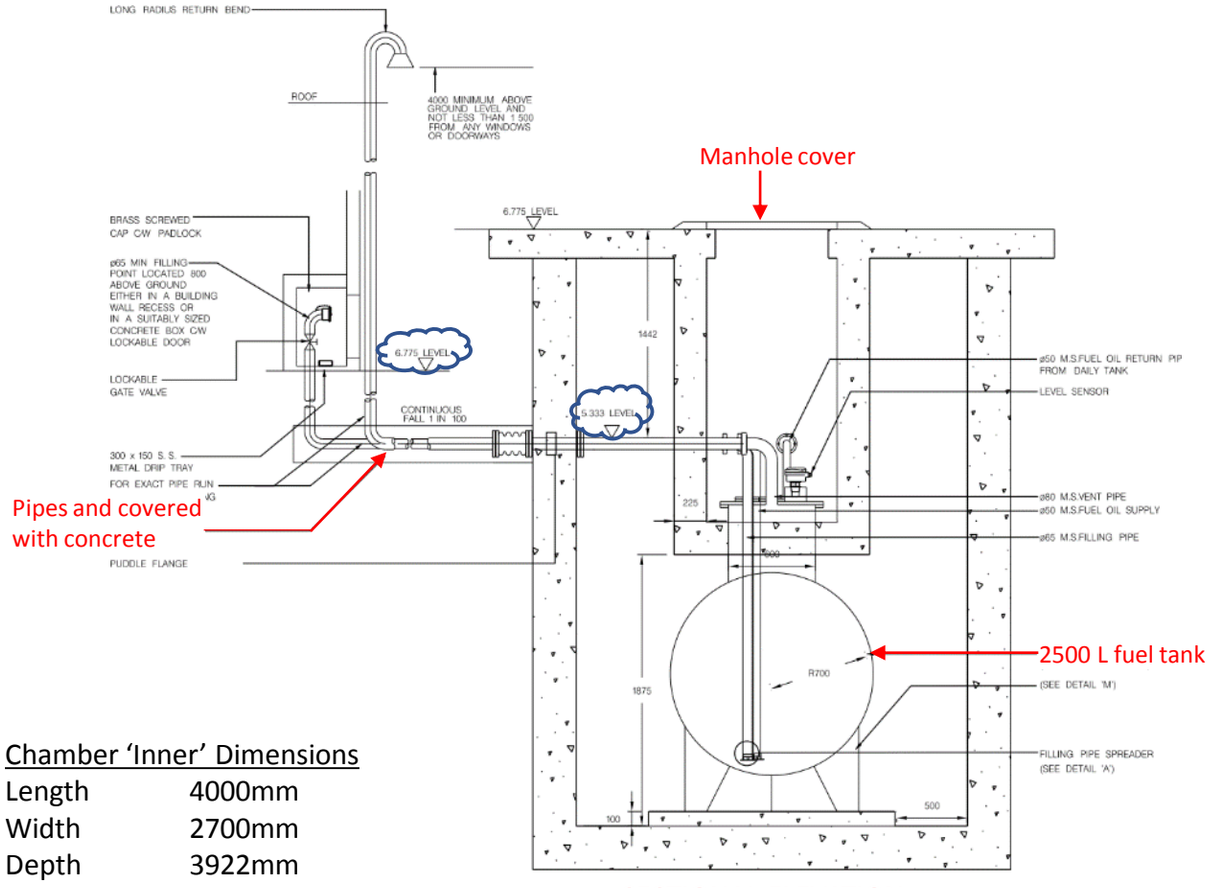
TRENCH DETAILS
(Underground Pipeline (BH2) – Approx. 1.5m below ground level)

Trench 'Inner' Dimensions

Width	800mm
Depth	300mm
Thickness	100mm



LONGITUDINAL SECTION



Chamber 'Inner' Dimensions

Length	4000mm
Width	2700mm
Depth	3922mm
Thickness	300mm

SECTIONAL ELEVATION

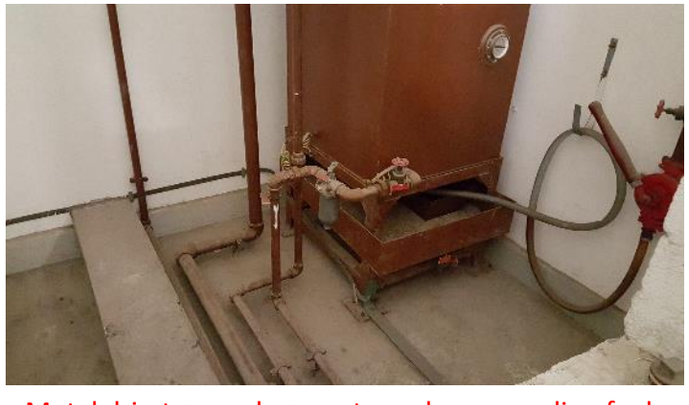
Appendix E.1 Emergency Power Supply System No. 1

Details of **BH3** (450 L **Above-ground** Fuel Tank) & **BH4** (**Above-ground** Emergency Generator)

Fuel pump room

450 L fuel tank (BH3)

Fuel pipes within the fuel tank chamber (leading to generator BH4)



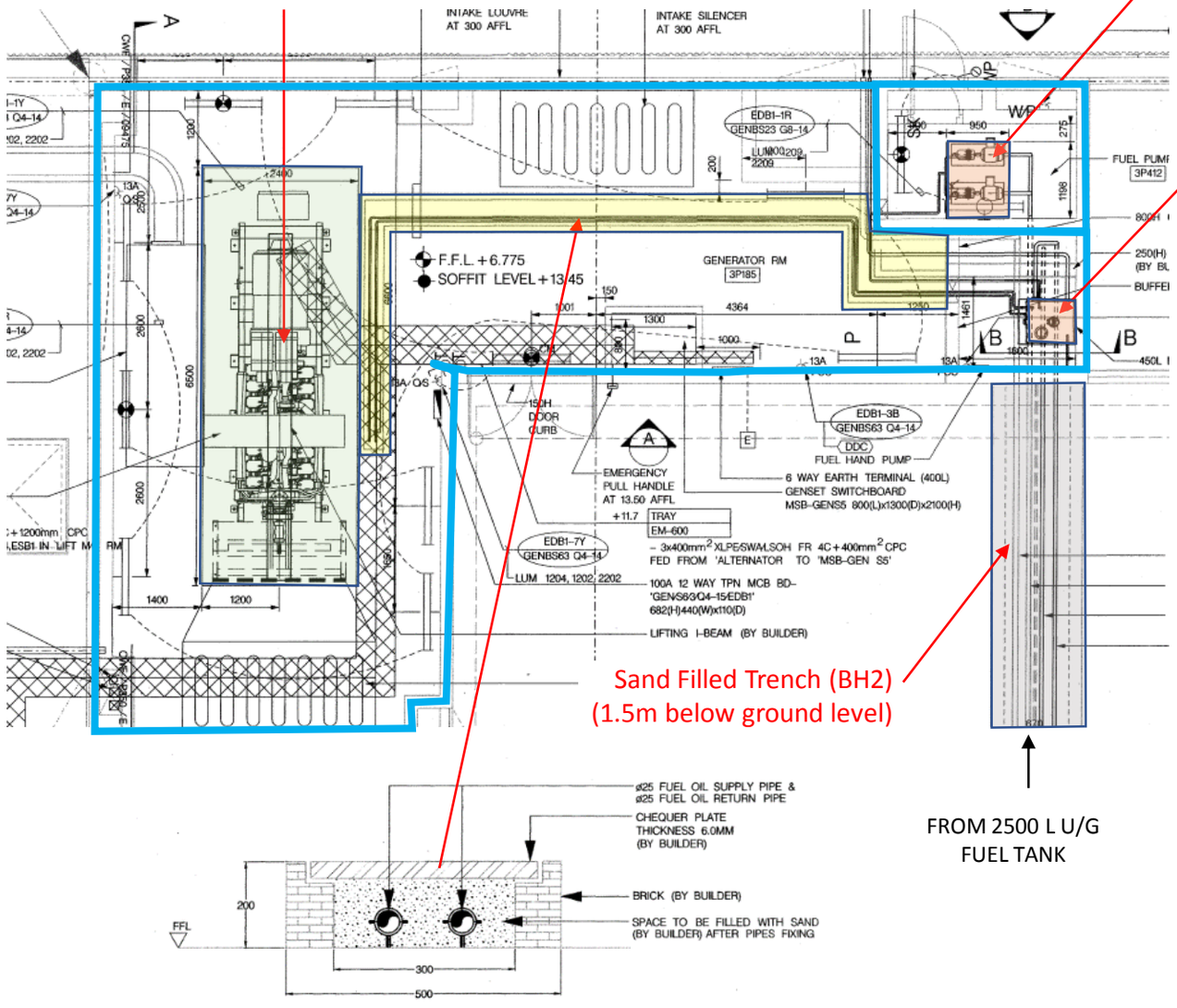
Metal drip tray and concrete curb surrounding fuel tank

PLAN VIEW

Emergency Generator (BH4)
(Mounted on **200mm-thick concrete plinth**)

Fuel pump room

450 L Fuel Tank (BH3)



Sand Filled Trench (BH2)
(1.5m below ground level)

FROM 2500 L U/G FUEL TANK

Supply and return pipe from fuel oil tank
(Sand Filled Trench at floor level)

Fuel pipes to/from 450L fuel tank and the generator

Sand filled trench containing fuel pipes (outside the fuel tank chamber)

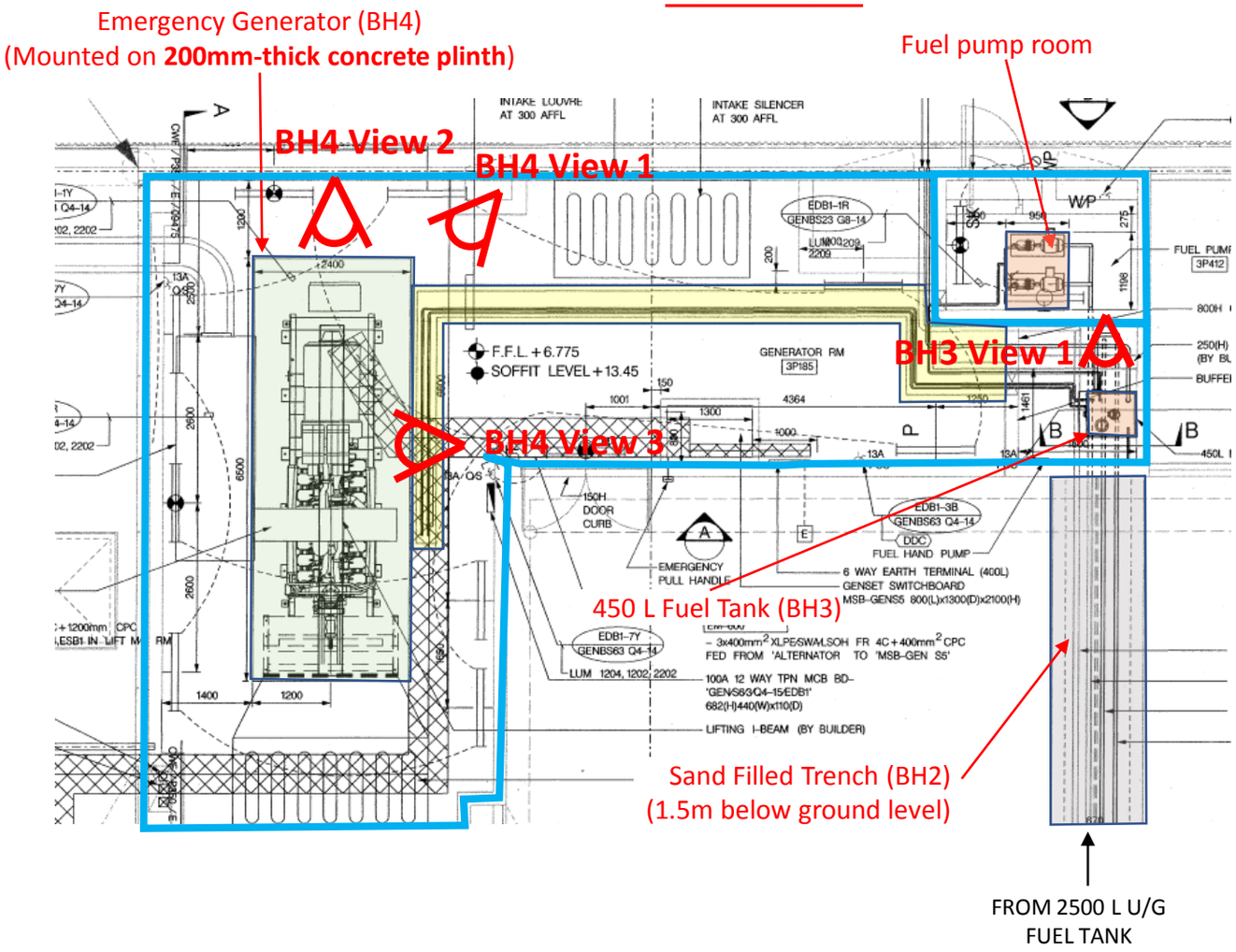
Notes

- Both the fuel tank and generator mounted on intact concrete floor with no any oil stain.
- Fuel tank with metal drip tray and surrounded by concrete curb
- Fuel pipes inside sand filled concrete trench
- Test run of emergency generator conducted monthly (for 30-60 mins)
- Fuel tank is checked monthly and re-filled approx. every 6 months. No fuel leakage was recorded.

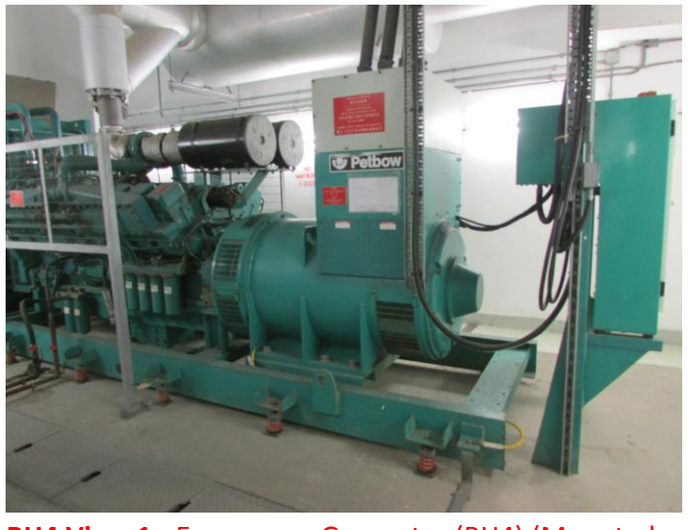
Appendix E.1 Emergency Power Supply System No. 1

Details of **BH3** (450 L **Above-ground** Fuel Tank) & **BH4** (**Above-ground** Emergency Generator)

PLAN VIEW



BH3 View 1 – concrete floor condition underneath 450 L fuel tank

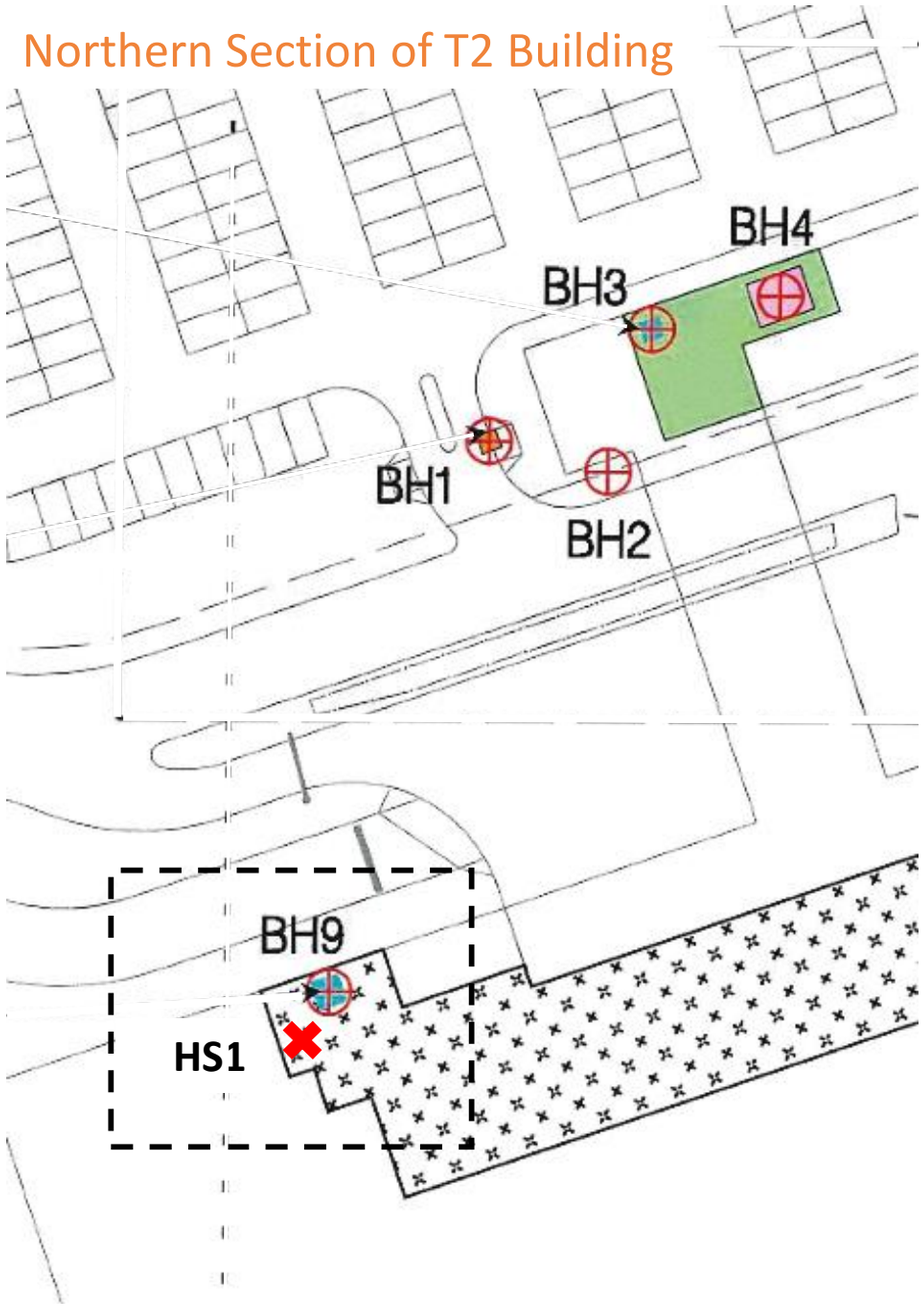


BH4 View 1 - Emergency Generator (BH4) (Mounted on **200mm-thick concrete plinth**)

BH4 View 2 - concrete floor condition underneath Emergency Generator

BH4 View 3 - concrete floor condition underneath Emergency Generator

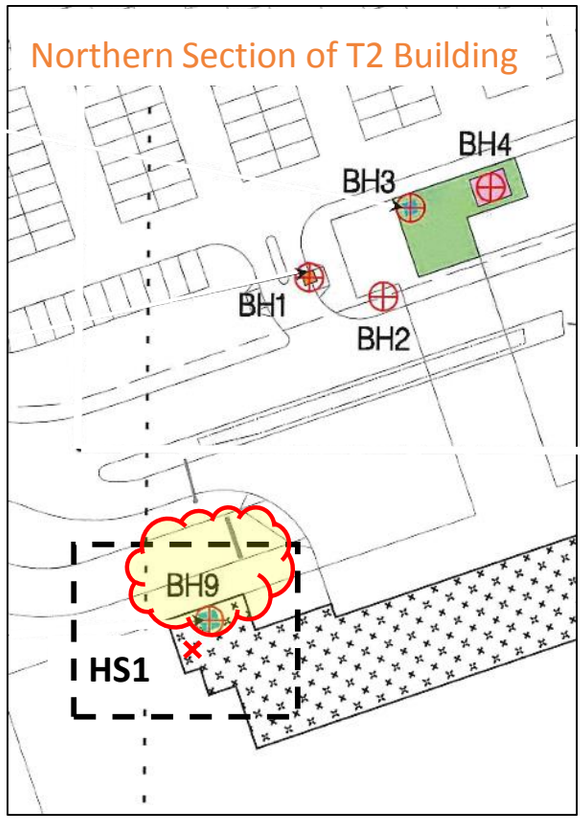
Appendix E.2 Emergency Power Supply System No. 2 (**BH 9** and **HS1**)

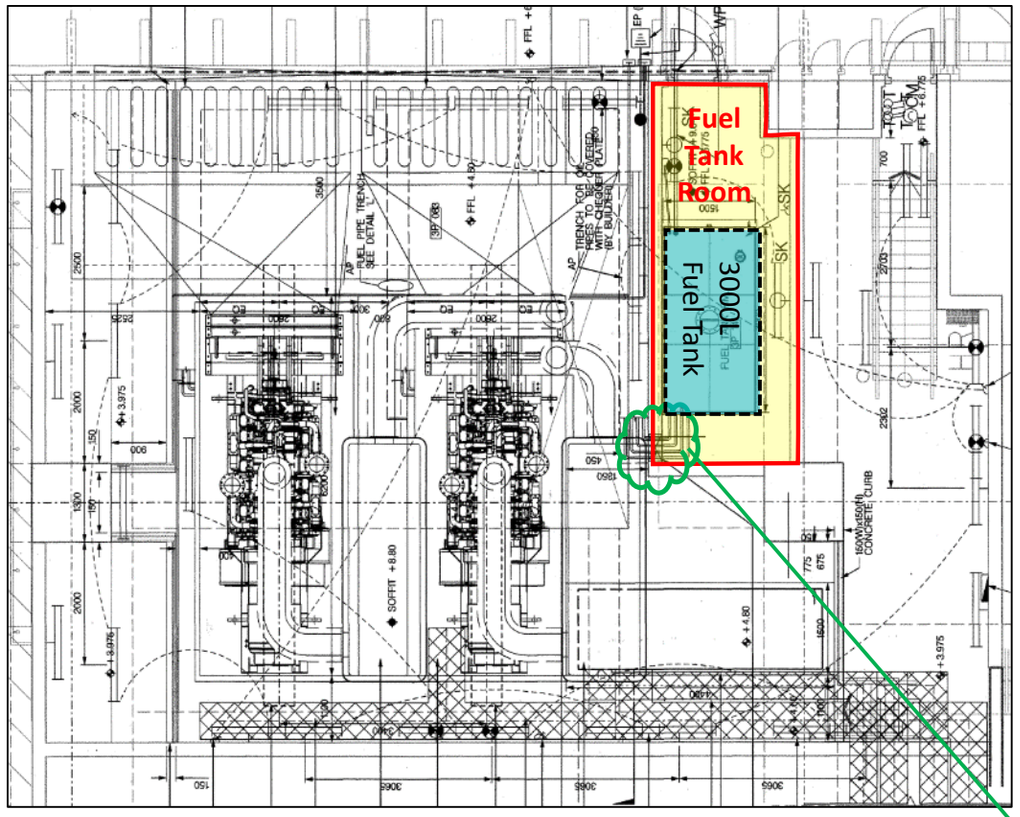


Reference ID	Description
BH9	A 3,000 L **above-ground** fuel tank at Fuel Tank Room
HS1	Two emergency generators at Emergency Generator Room, connected to 3,000 L above-ground fuel tank (i.e. BH9) (**above-ground**)

Appendix E.2 Emergency Power Supply System No. 2

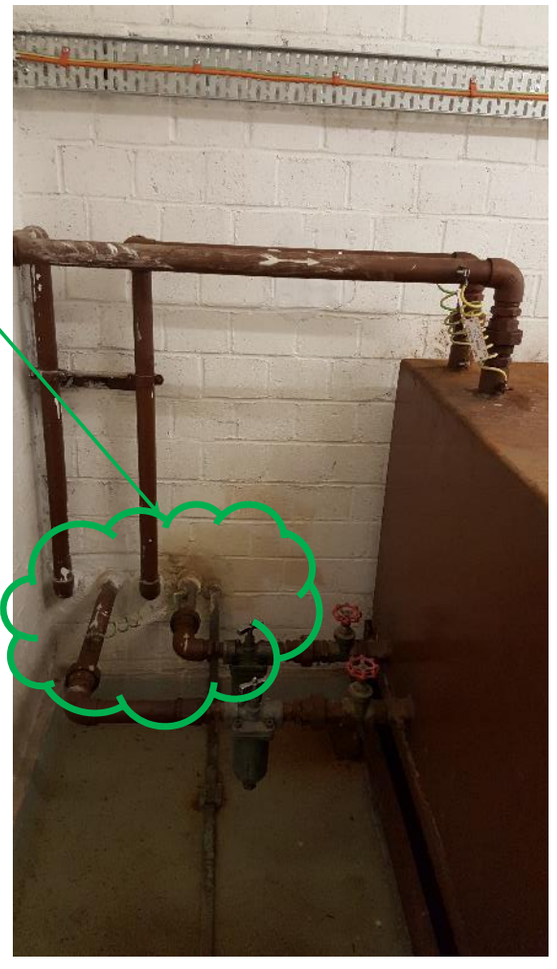
Details of **BH9** (3000L **Above-ground** Fuel Tank inside T2)





Reference ID	Description
BH9	A 3,000 L **above-ground** fuel tank at Fuel Tank Room
HS1	Two **above-ground** emergency generators at Emergency Generator Room, connected to 3,000 L above-ground fuel tank (i.e. BH9)

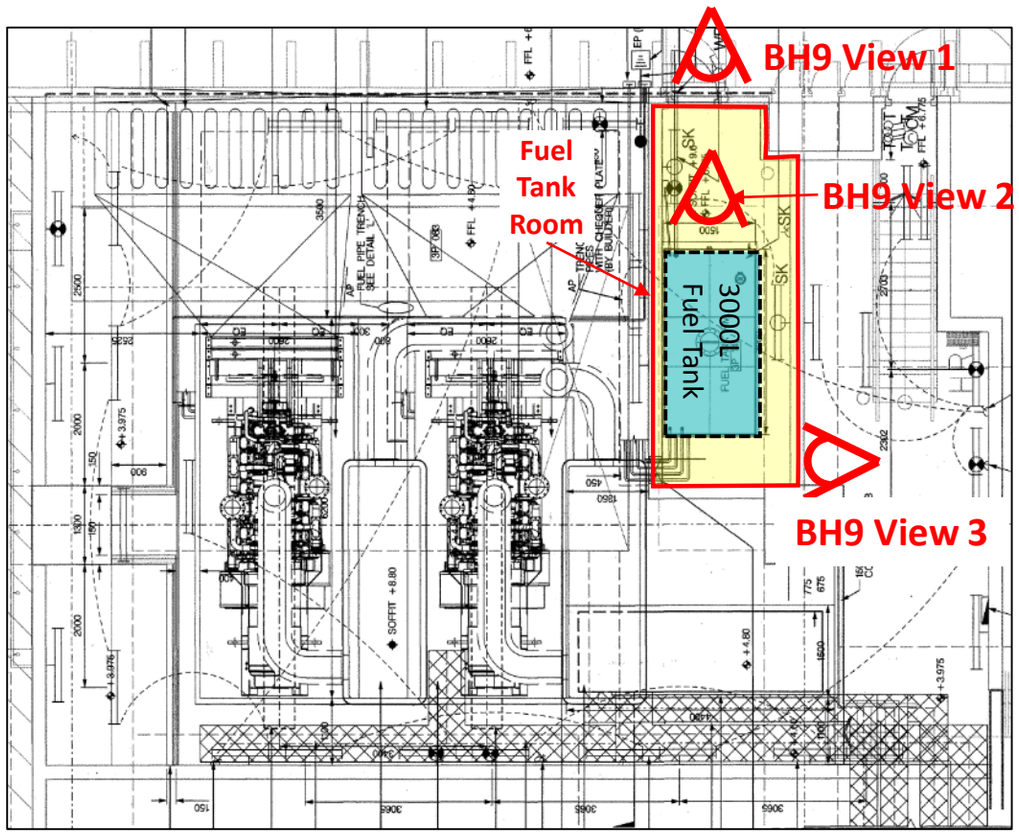
3000 L fuel tank with metal drip tray



Fuel pipes penetrating the wall and connect to the generators at lower floor

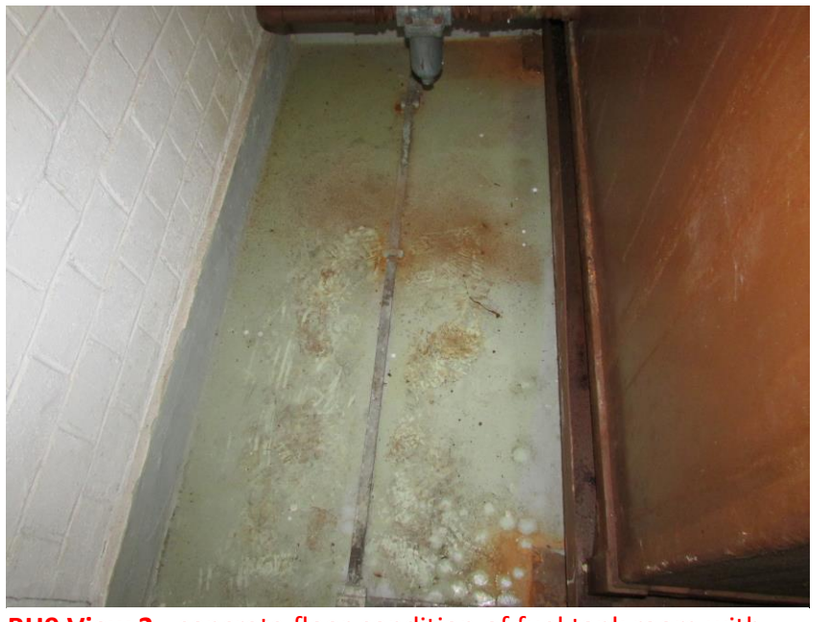
Appendix E.2 Emergency Power Supply System No. 2

Details of **BH9** (3000L **Above-ground** Fuel Tank inside T2)



BH9 View 1 - 3000L Above-ground Fuel Tank (BH9)

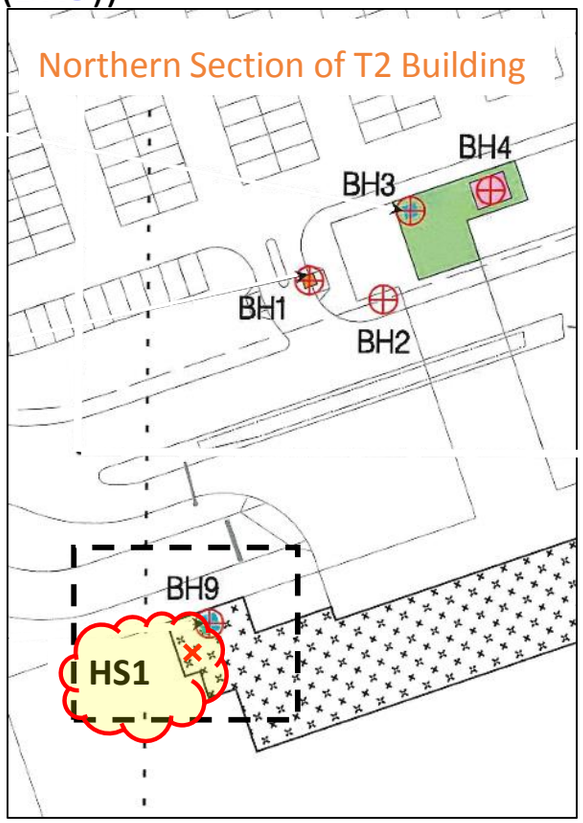
BH9 View 2 - concrete floor condition underneath 3000L Above-ground Fuel Tank

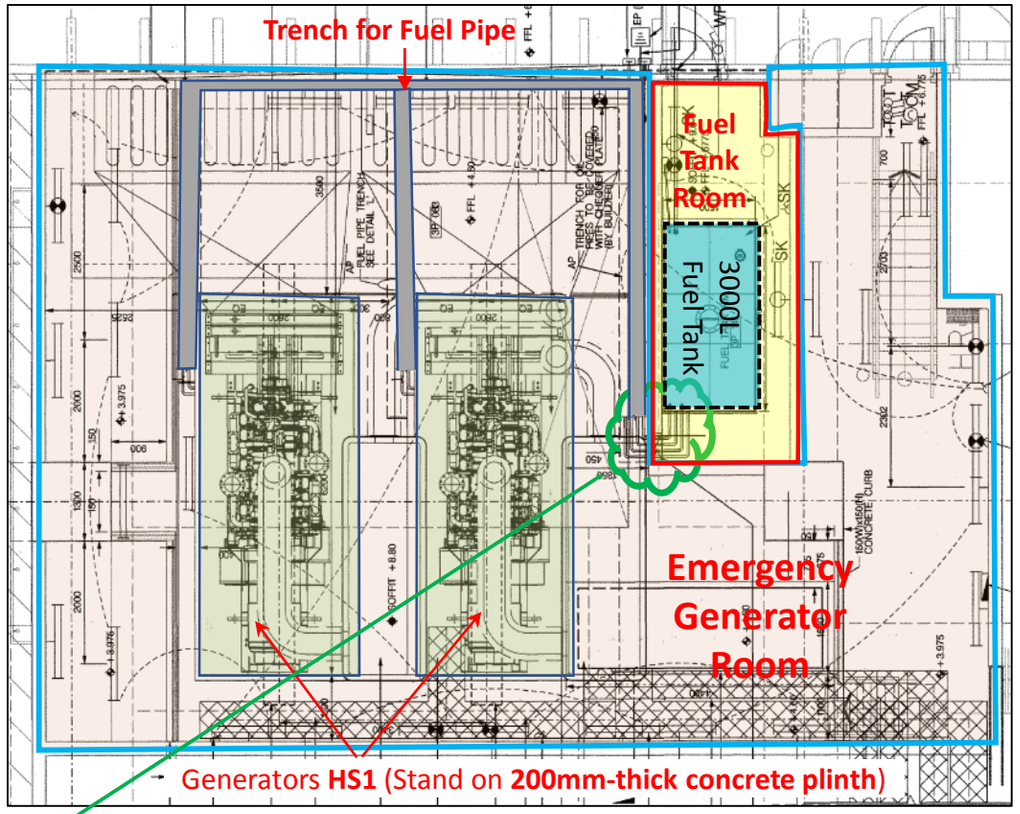


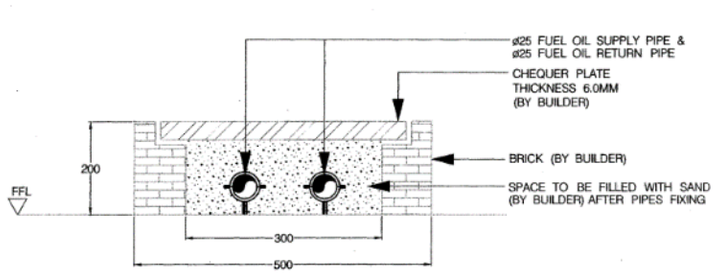
BH9 View 3 - concrete floor condition of fuel tank room with 3000L Above-ground Fuel Tank

Appendix E.2 Emergency Power Supply System No. 2

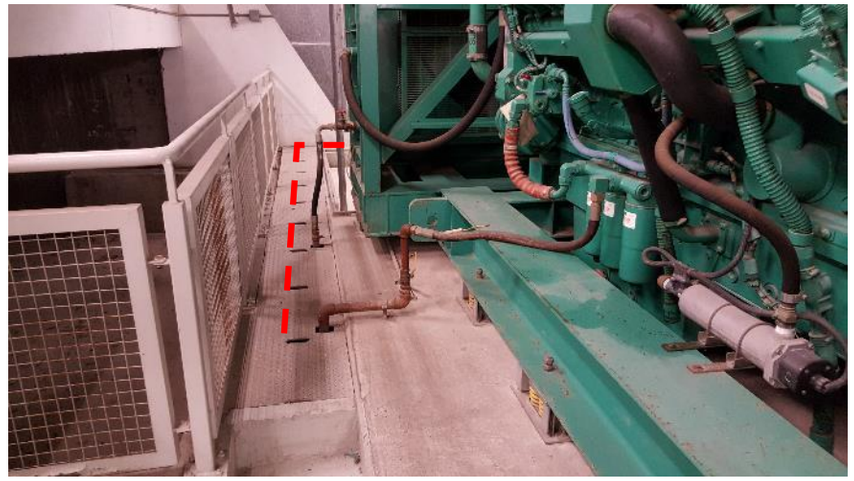
Details of **HS1** (2 **Newly identified above-ground** Emergency generators connected with 3,000 L **Above-ground** Fuel Tank inside (**BH9**))

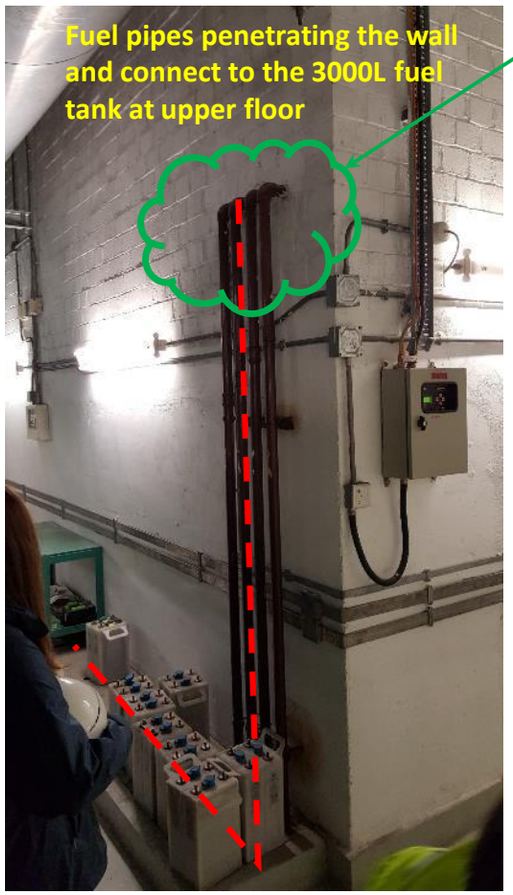




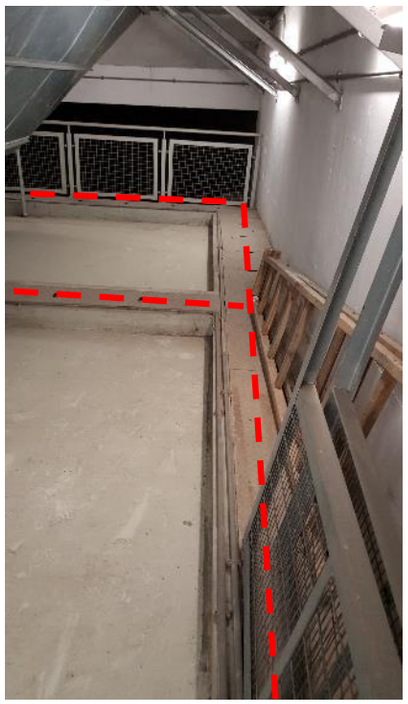


Supply and return pipe from fuel oil tank
(Sand Filled Trench at floor level)





Fuel pipes to/from 3000L fuel tank and the generators

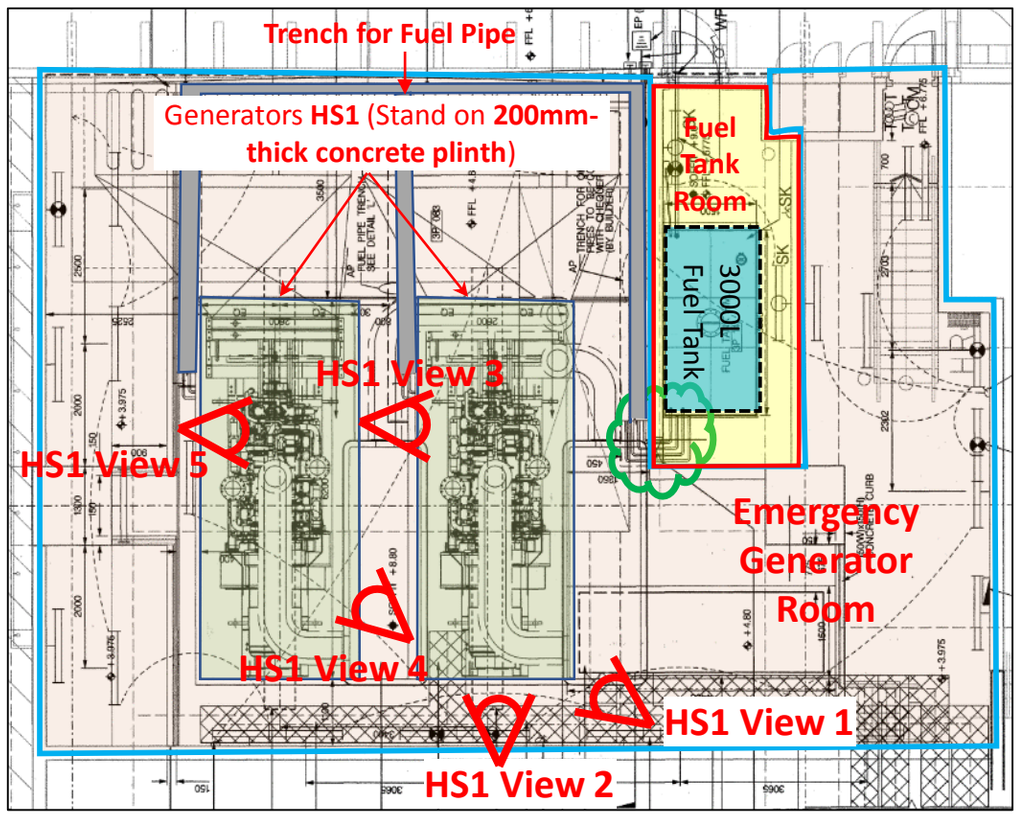


Notes

- Both the fuel tank and generator mounted on intact concrete floor with no any oil stain.
- Test run of emergency generator conducted monthly (for 30-60 mins)
- The fuel tank is checked monthly and re-filled approx. every 6 months
- The quantity of fuel inside the tank is monitored by level sensor. No sign of leakage is detected.

Appendix E.2 Emergency Power Supply System No. 2

Details of **HS1** (2 **Newly identified above-ground** Emergency generators connected with 3,000 L **Above-ground** Fuel Tank inside (**BH9**))



HS1 View 1 - concrete floor condition underneath emergency generators

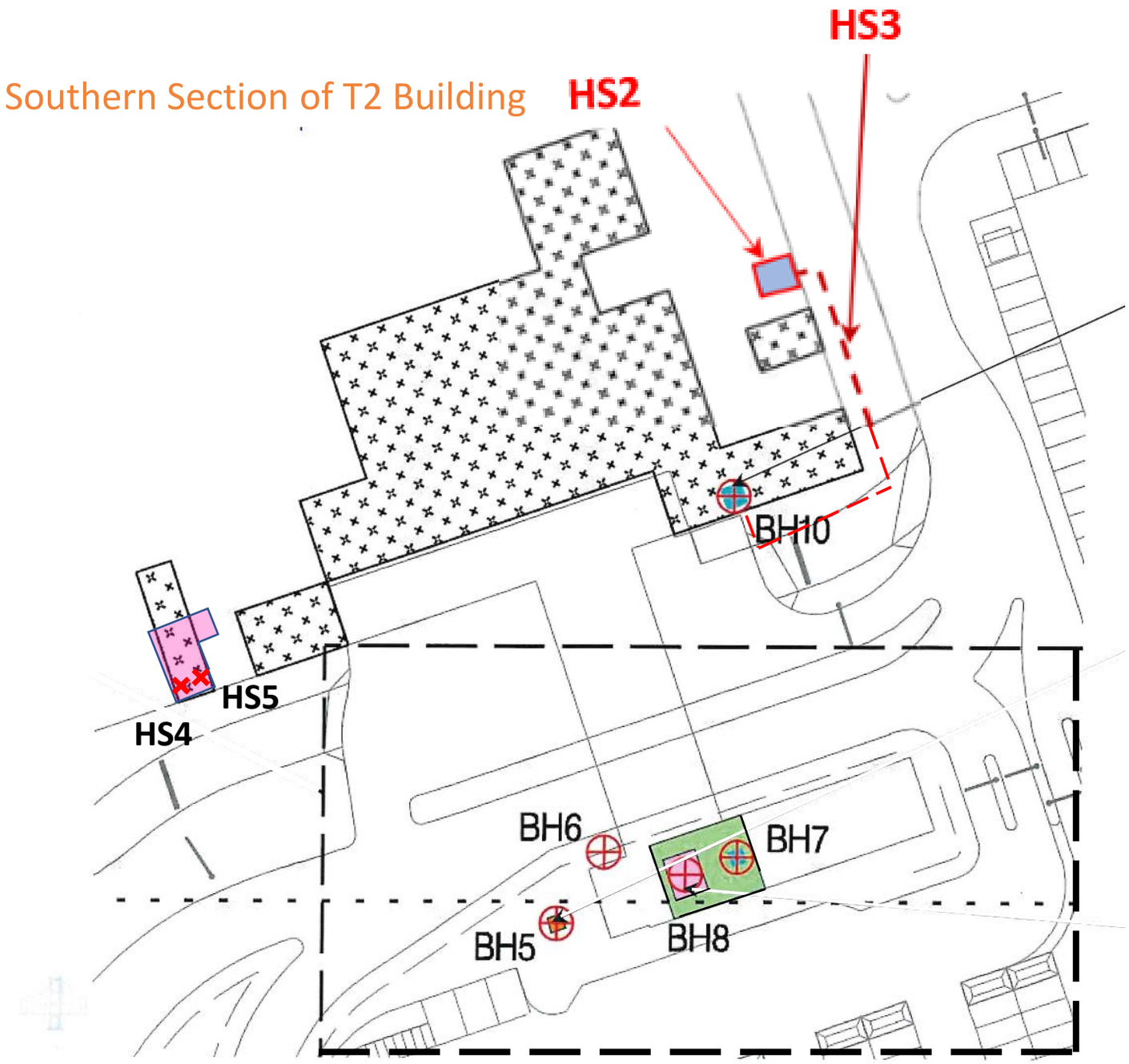
HS1 View 2 - concrete floor condition underneath emergency generators

HS1 View 3 - concrete floor condition underneath emergency generators

HS1 View 4 - concrete floor condition underneath emergency generators

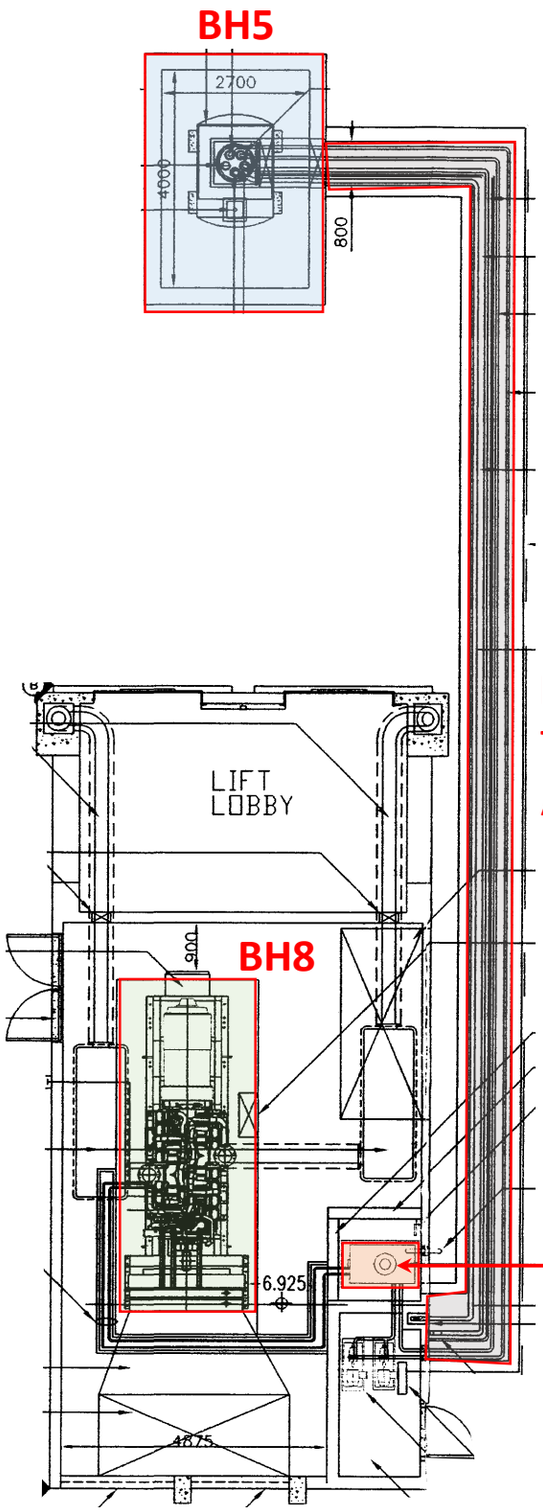
HS1 View 5 - concrete floor condition underneath emergency generators

Appendix E.3 Emergency Power Supply System No. 3 (**BH 5, BH6, BH7** and **BH8**)

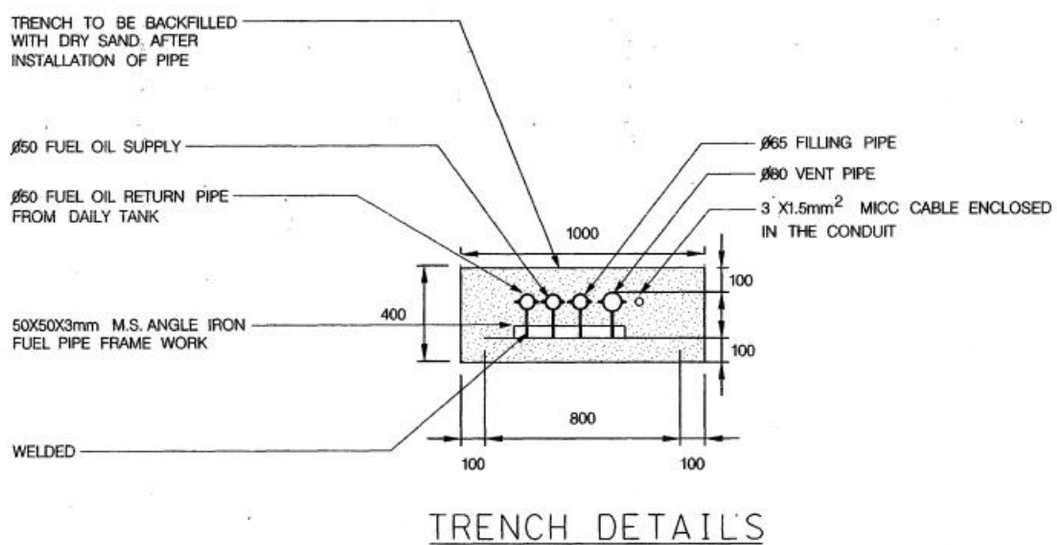


Reference ID	Description
BH5	A 3,000 L **underground** fuel tank
BH7	A 450 L **above-ground** fuel tank at Emergency Generator Room
BH6	26 m-in-length **underground** fuel pipelines connecting the 3,000 L underground fuel tank (i.e. BH5) and the 450 L above-ground fuel tank (i.e. BH7)
BH8	An emergency generator at Emergency Generator Room (**above-ground**)

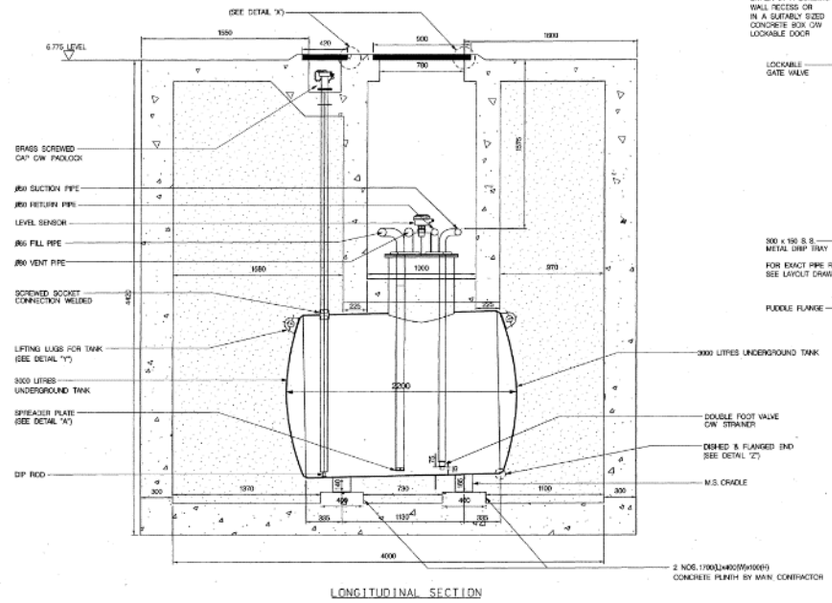
Appendix E.3 Emergency Power Supply System No. 3 (BH 5, BH6, BH7 and BH8)



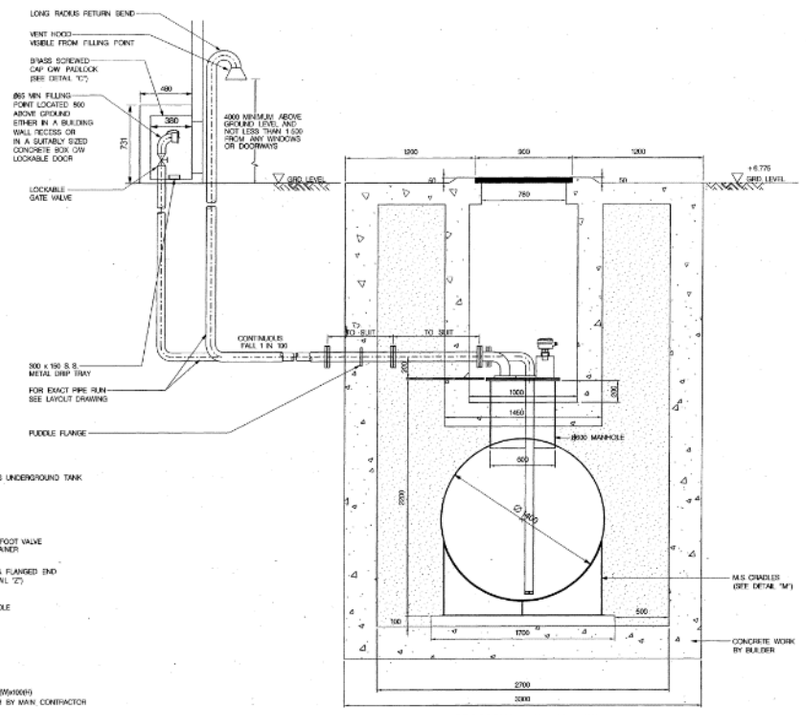
Reference ID	Description
BH5	A 3,000 L **underground** fuel tank
BH7	A 450 L **above-ground** fuel tank at Emergency Generator Room
BH6	26 m-in-length **underground** fuel pipelines connecting the 3,000 L underground fuel tank (i.e. BH5) and the 450 L above-ground fuel tank (i.e. BH7)
BH8	An emergency generator at Emergency Generator Room (**above-ground**)



Appendix E.3 Emergency Power Supply System No. 3 (BH 5, BH6, BH7 and BH8)



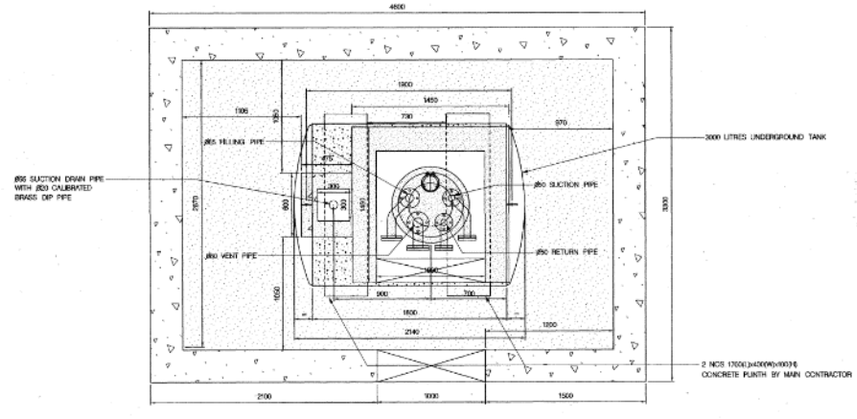
LONGITUDINAL SECTION



SECTIONAL ELEVATION

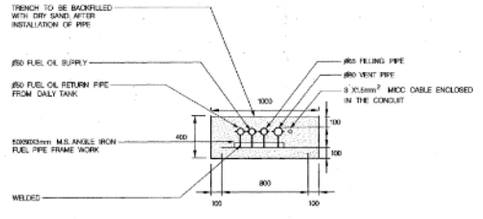
NOTES :

1. ALL DIMENSIONS ARE IN mm.
2. SUPPLY AND INSTALLATION OF ALL STORAGE TANK CHAMBER MANHOLE AND MANHOLE COVERS AND FRAME REQUIRED SHALL BEINCLUDED IN BUILDING WORKS AFTER COMPLETION OF RELEVANT MECHANICAL WORKS.
3. LAYING OF THE TOP SLAB IS TO BE INCLUDED IN BUILDING WORKS AFTER THE TANK IS IN POSITION AND ALL PIPEWORKS PROPERLY CONNECTED UP AND CERTIFIED CORRECT.
4. AFTER COMPLETION OF TANK INSTALLATION,THE TANK CHAMBER SHALL BE BACKFILLED WITH CLEAR DRY SAND BY BUILDER. BACKFILL SHOULD BE FIRMLY TAMPED. BREEZE SALT BEACH SAND OR RUBBLE HAVING A CORROSIVE EFFECT SHALL NOT BE USED.
5. WATER-TIGHT & DOUBLE-SEAL MANHOLE FRAMES AND COVERS C/W KEY HOLES AND M.S. LIFTING KEYS, GENERAL IN COMPLYING WITH B.S. 497 PART 1 ARE TO BE SUPPLIED & INSTALLED BY BUILDER. ALL MANHOLE COVERS SHALL BE SEALED AS SHOWN IN FIGURE "X" BY BUILDINGER AFTER COMPLETION OF TANK INSTALLATION.
6. ALL UNDERGROUND TANK MANHOLES AND HANDHOLES SHALL BE ENCLOSED IN A PIT OF CONCRETE OR BRICK WORK AND RENDERED ON THE INSIDE WITH WATER-PROOF CEMENT BY BUILDER.
7. THE TANK SHALL BE THOROUGHLY CLEANED INTERNAL-LY OF ALL LOOSE MATTER AND THEN TESTED TO A PRESSURE OF 70 kPa. ALL PIPEWORK SHALL BE SUBJECTED TO A HYDRAULIC TEST TO A PRESSURE OF 700 kPa.

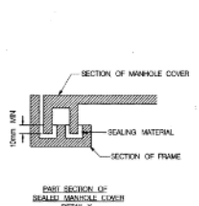


CONVENTIONAL PLAN

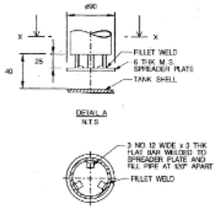
DETAIL OF TANK



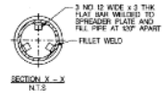
TRENCH DETAILS



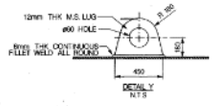
PART SECTION OF SEALED MANHOLE COVER DETAIL X

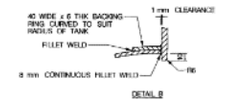


DETAIL A N.T.S

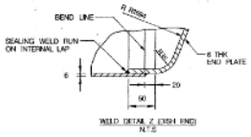


SECTION X – X N.T.S

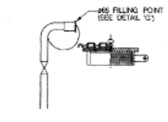




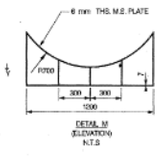
DETAIL B



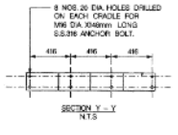
WELD DETAIL Z (DISH END) N.T.S



DETAIL C SCALE 1 : 2 (SIMILAR FOR FILLING PIPE)



DETAIL M (ELEVATION) N.T.S



SECTION Y – Y N.T.S

THIS DRAWING IS PREPARED ACCORDING TO THE FOLLOWING EMPLOYER'S DRAWINGS

TRADE	DRAWING Nos.	REVISION
ARCH	SAJ/P250/M/0364	K
FRAMING	OAR/P250/S/10084	I
ELECT	OAR/P250/E/00120	H

CONTRACT P350 – SKYPLAZA BUILDING WORKS AS-CONSTRUCTED DRAWING

I hereby certify that the information contained on these "as-constructed" drawings is a true record of the Works as constructed

Signed by : Date : 16/4/2008

For and on behalf of Chun Wo – Fujita Joint Venture

Notes:
1. Measurements are based on metric system.
2. All levels are in metres to Principal Datum (PD) unless noted otherwise.
3. All setting out dimensions are in millimetres.
4. Do not scale drawing.
5. Figure dimensions are to be followed.
6. Do not use for construction unless expressly permitted.

Rev.	Date	Description	Checked
A	16.12.06	AS CONSTRUCTED	PC
B	30.09.07	REVISED AS PER AA'S COMMENT REF. CWF/P350/O/4252/R DATED 29/07	RL
C	17.03.08	REVISED AS PER AA'S COMMENT REF. CWF/P350/O/4252/R DATED 29.02.08	RL

Contractor's Signatures for Approval

Drawn	Date	Design	Date
KW	16/4/2008	HK	16/4/2008
Checked	Date	Plot Date	
PC	16/4/2008	16/4/2008	15:39:54
Design Supervisor			Date
AL			16/4/2008
Authorised Representative			Date
ET			16/4/2008

MAIN CONTRACTOR : FUJITA CWF JOINT-VENTURE

E & M CONTRACTOR : Chun Wo E & M ENGINEERING LIMITED

SOM Aedas JV in association with ARUP 奧雅納工程顧問 Ove Arup & Partners Hong Kong Limited; Mott Connell 萬宜; MVA 盟威

香港機場管理局 AIRPORT AUTHORITY HONG KONG

Hong Kong International Airport. "AS-FITTED"

SKYPLAZA BUILDING WORKS 1800kVA FSI GENERATOR SET UNDERGROUND FUEL TANK (3000 LITRES) WITH PLINTH LAYOUT LEVEL 3 (ZONE 64)

Scale	Location	Originator	Contract Number	Discipline	Number	Revision
1 : 20 (IN A0)	64	CWF	P350	E	09481	C

Plot Date : 16/4/2008 15:39:54

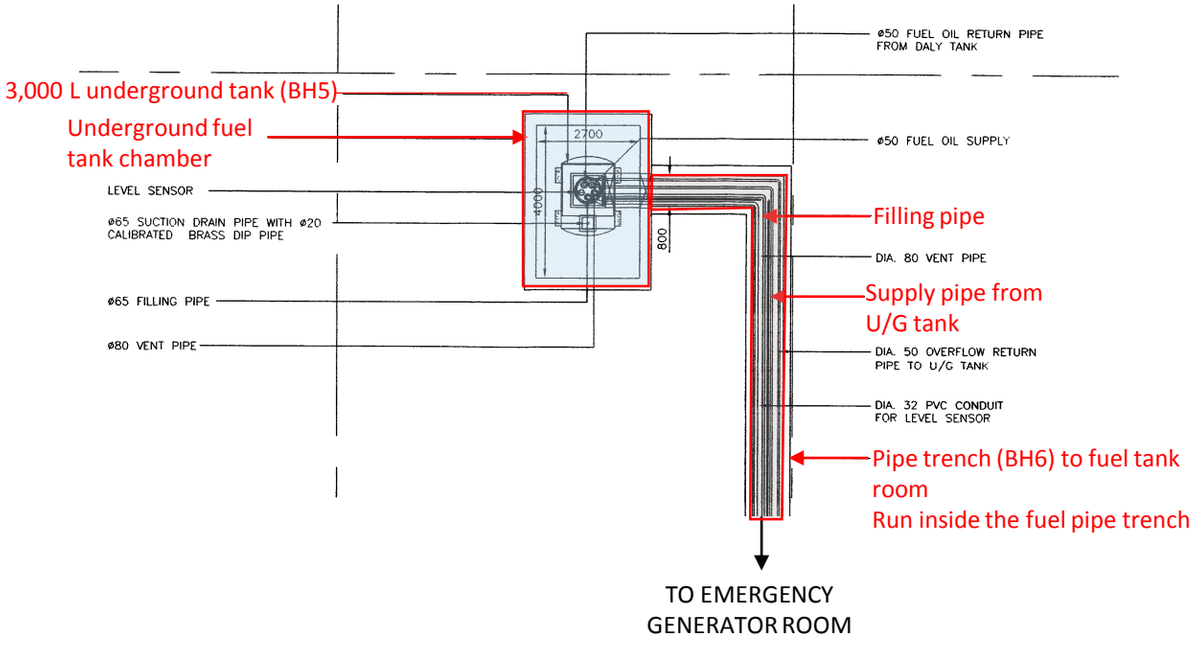
File Name : o:\OUTSOING\Final Submit\20080416 EL MB – Formal Approved – 6252S\GENSET\CWF-P350 E-09481JC.dgn

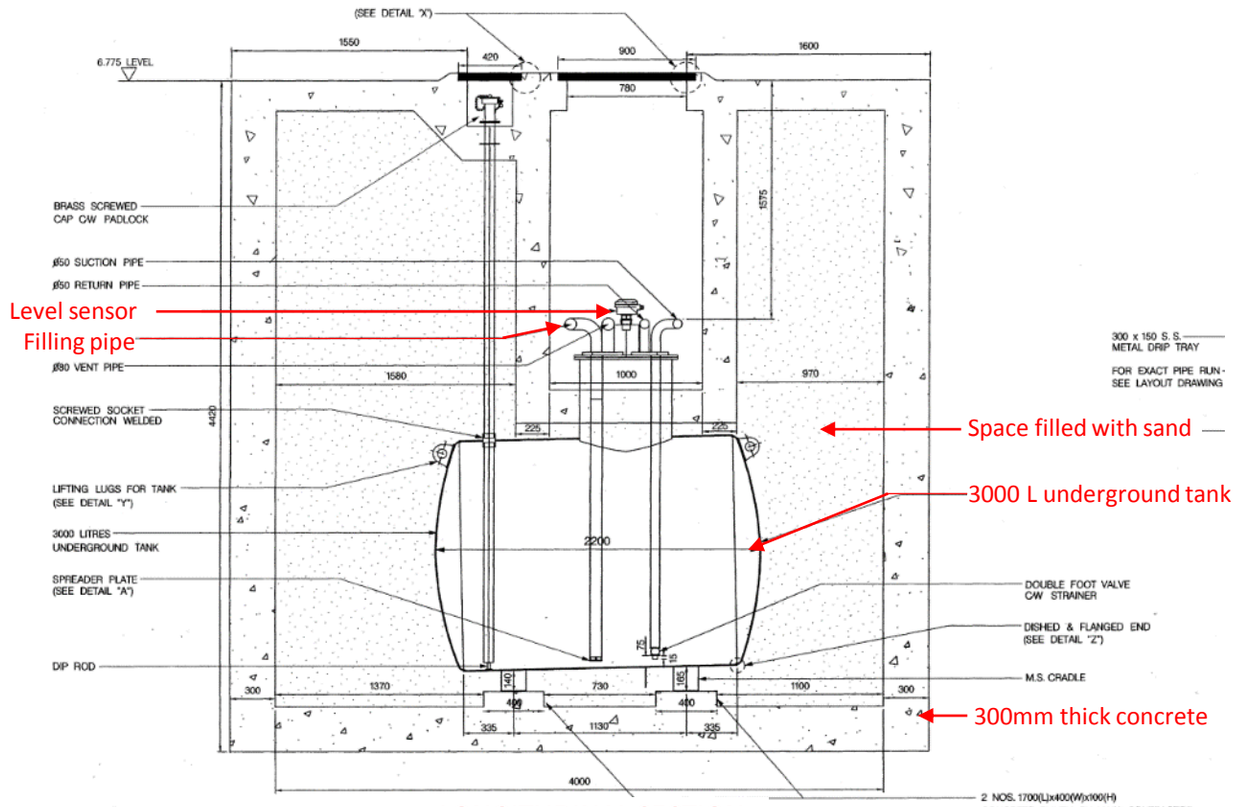
Appendix E.3 Emergency Power Supply System No. 3 – Details of **BH5** (3,000 L **Underground** Fuel Tank) & **BH6** (**Underground** Fuel Pipeline)

Notes

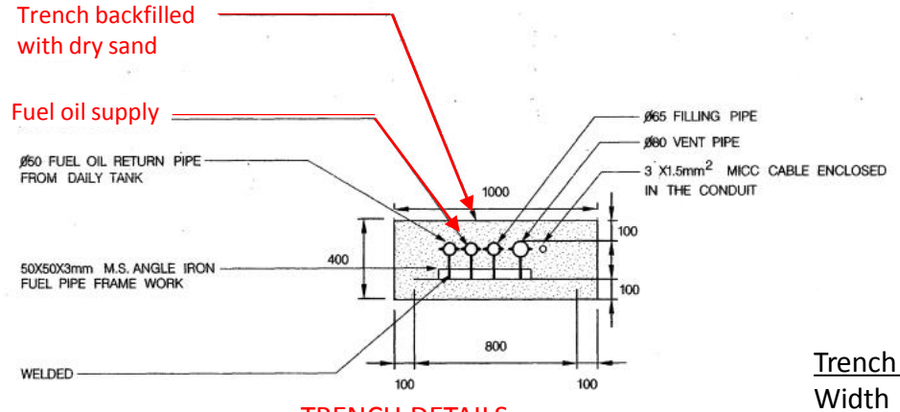
- Underground fuel tank fully encased in 300mm thick concrete chamber
- Space between the tank and the chamber is filled with sand
- Test run of emergency generator conducted monthly (for 30-60 mins)
- Manhole chamber of U/G tank is checked monthly and re-filled approx. every 6 months
- The quantity of fuel inside the tank is automatically monitored by level sensor. No sign of leakage is detected.

PLAN VIEW



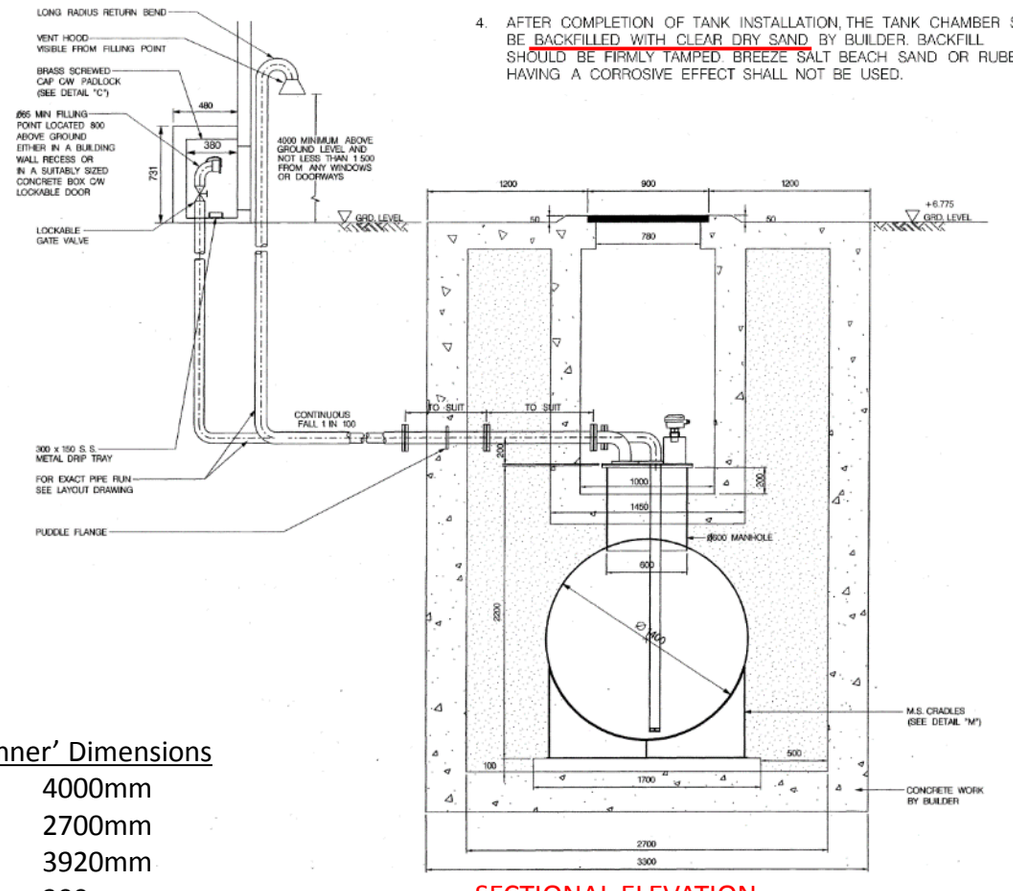


LONGITUDINAL SECTION



TRENCH DETAILS
(Underground Pipeline (BH6) – Approx. 1.5m below ground level)

Trench 'Inner' Dimensions	
Width	800mm
Depth	300mm
Thickness	100mm



Chamber 'Inner' Dimensions	
Length	4000mm
Width	2700mm
Depth	3920mm
Thickness	300mm

SECTIONAL ELEVATION

Appendix E.3 Emergency Power Supply System No. 3 –
Details of **BH7** (450 L **Above-ground** Fuel Tank) & **BH8** (Emergency Generator)

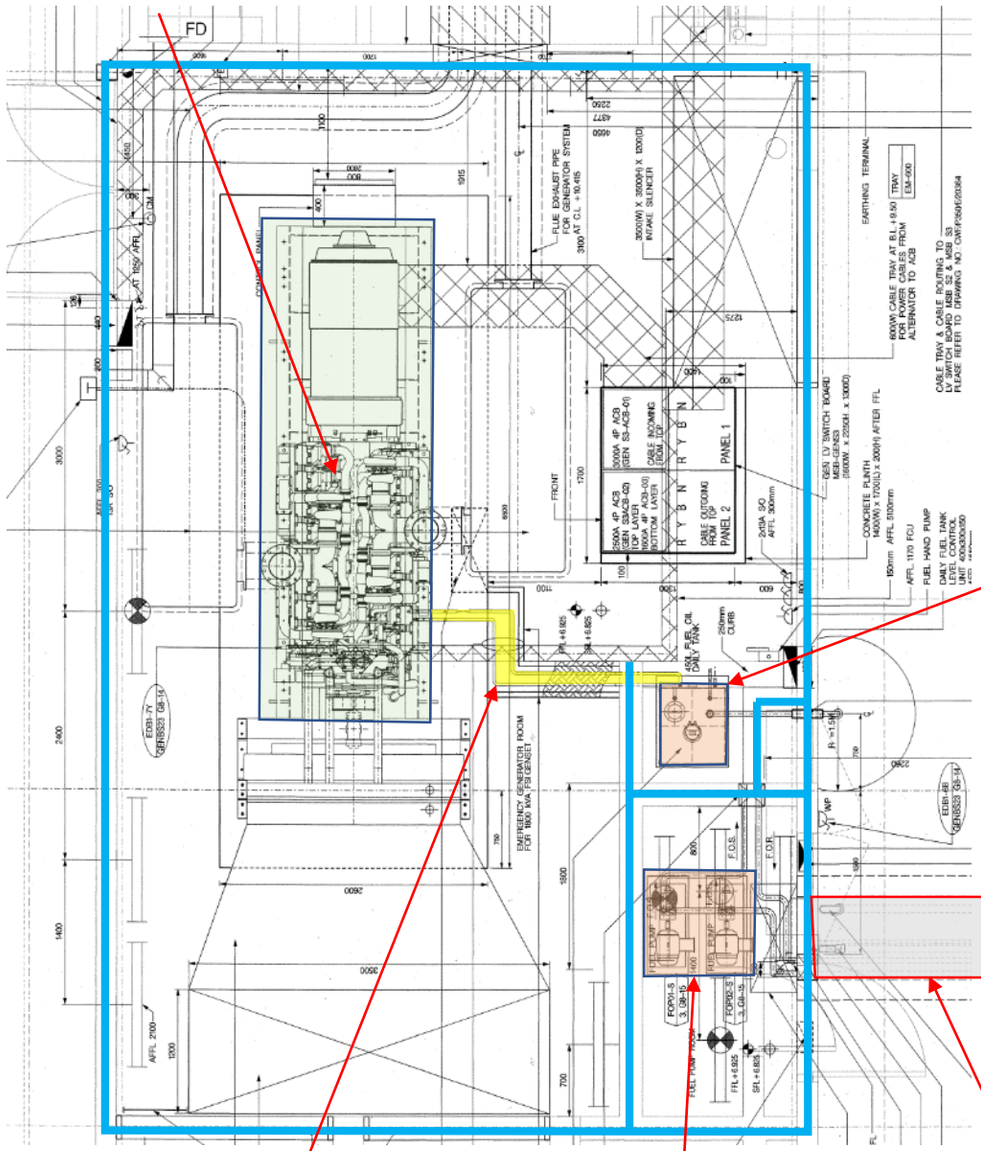
Fuel pipes to/from fuel tank and the generator

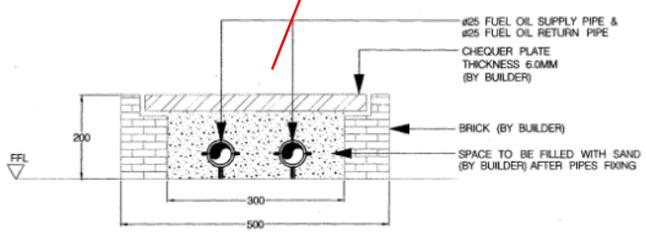
Sand filled trench containing fuel pipes (outside the fuel tank chamber)

Exposed fuel pipes

Emergency Generator (BH8)
(Stand on **200mm-thick concrete plinth**)

PLAN VIEW





Supply and return pipe from fuel oil tank
(Sand Filled Trench at floor level)

Fuel pump room

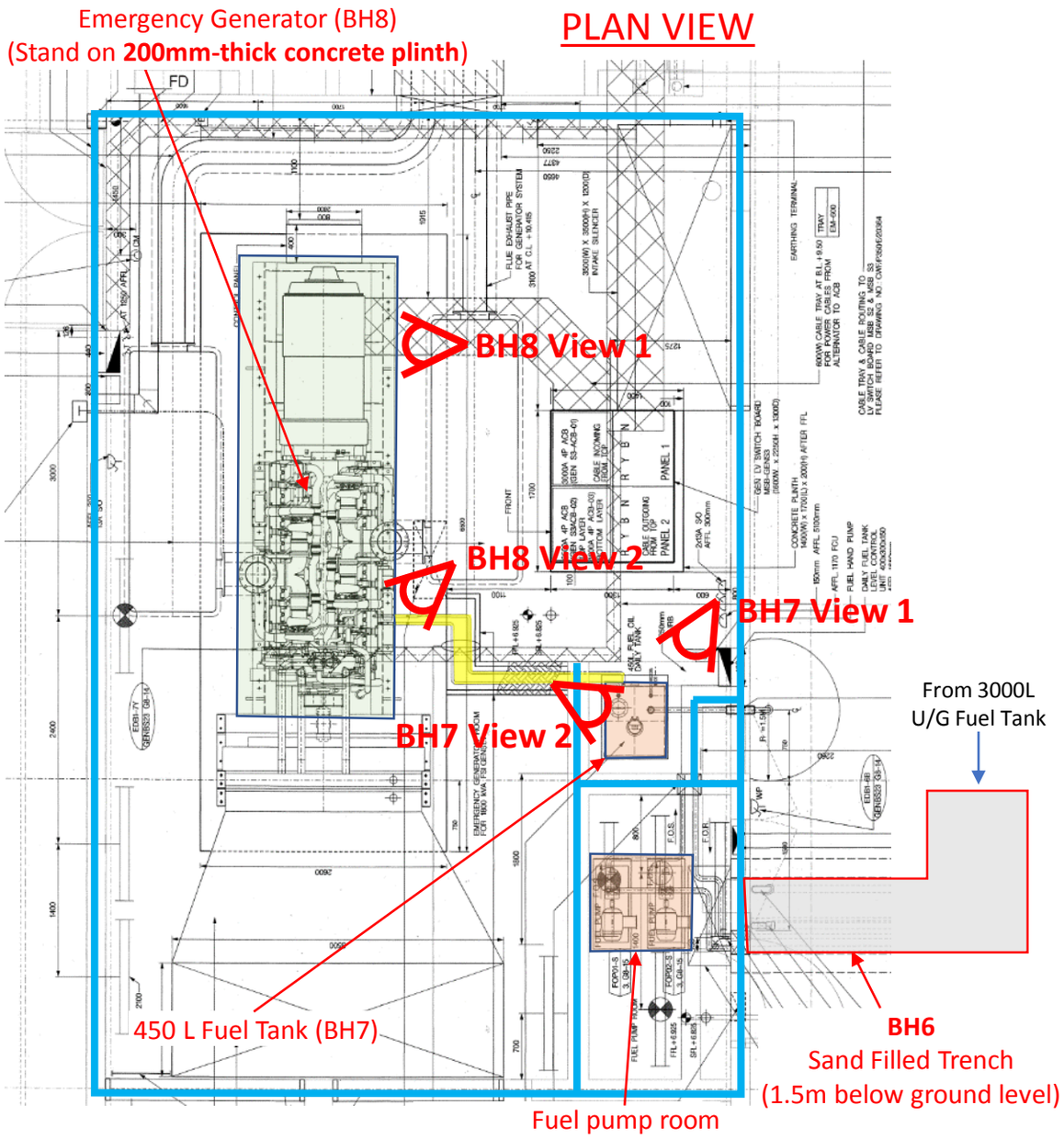
450 L fuel tank (BH7)

Metal drip tray and concrete curb surrounding fuel tank

Notes

- Both the fuel tank and generator mounted on intact concrete floor with no any oil stain.
- Test run of emergency generator conducted monthly (for 30-60 mins)
- Fuel tank is checked monthly and re-filled approx. every 6 months.
- The quantity of fuel inside the tank is monitored by level sensor. No sign of leakage is detected.

Appendix E.3 Emergency Power Supply System No. 3 –
Details of **BH7** (450 L **Above-ground** Fuel Tank) & **BH8** (Emergency Generator)



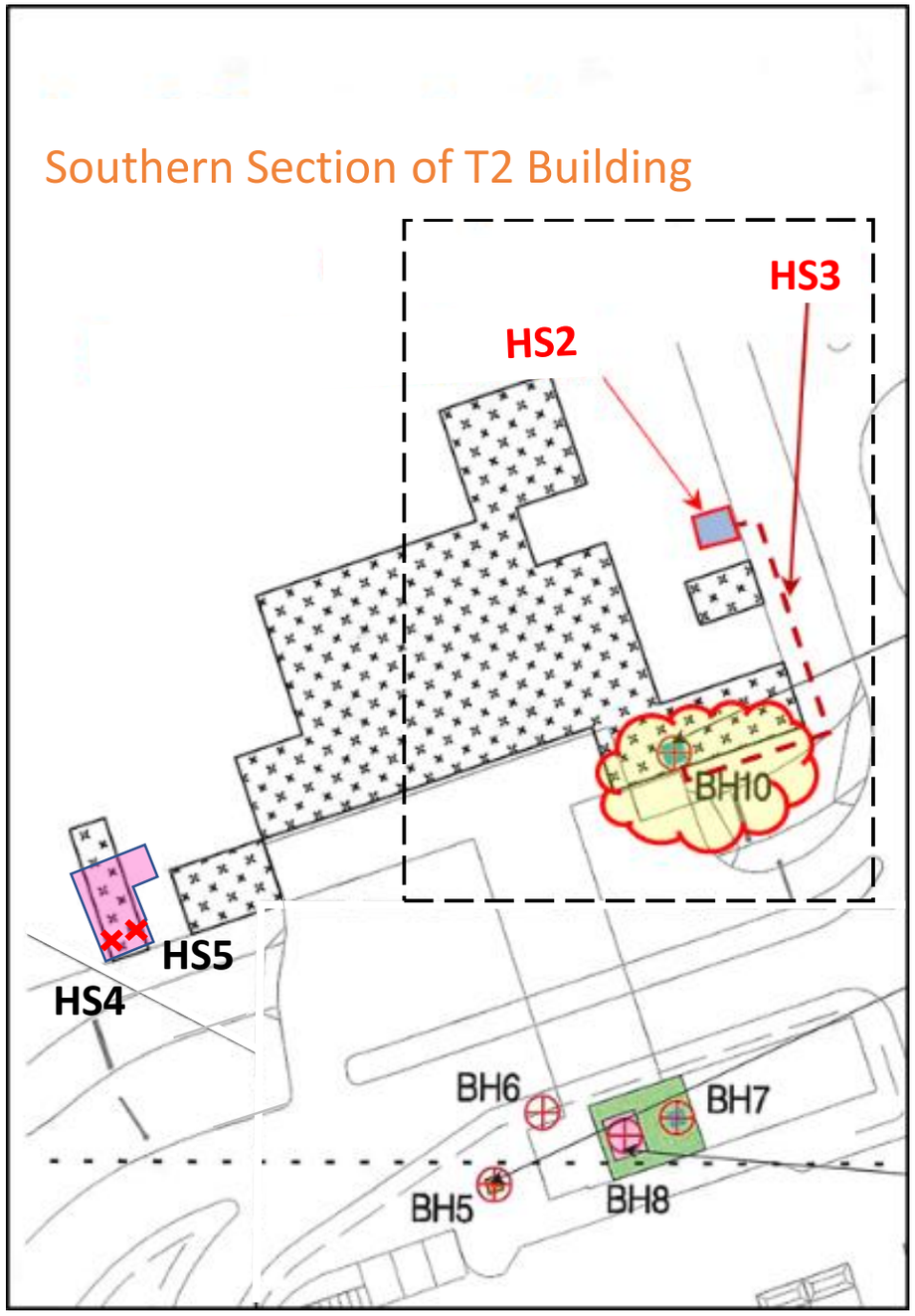
BH8 View 1 - concrete floor condition underneath emergency generator

BH8 View 2 - concrete floor condition underneath emergency generator

BH7 View 1 - 450 L Above-ground Fuel Tank

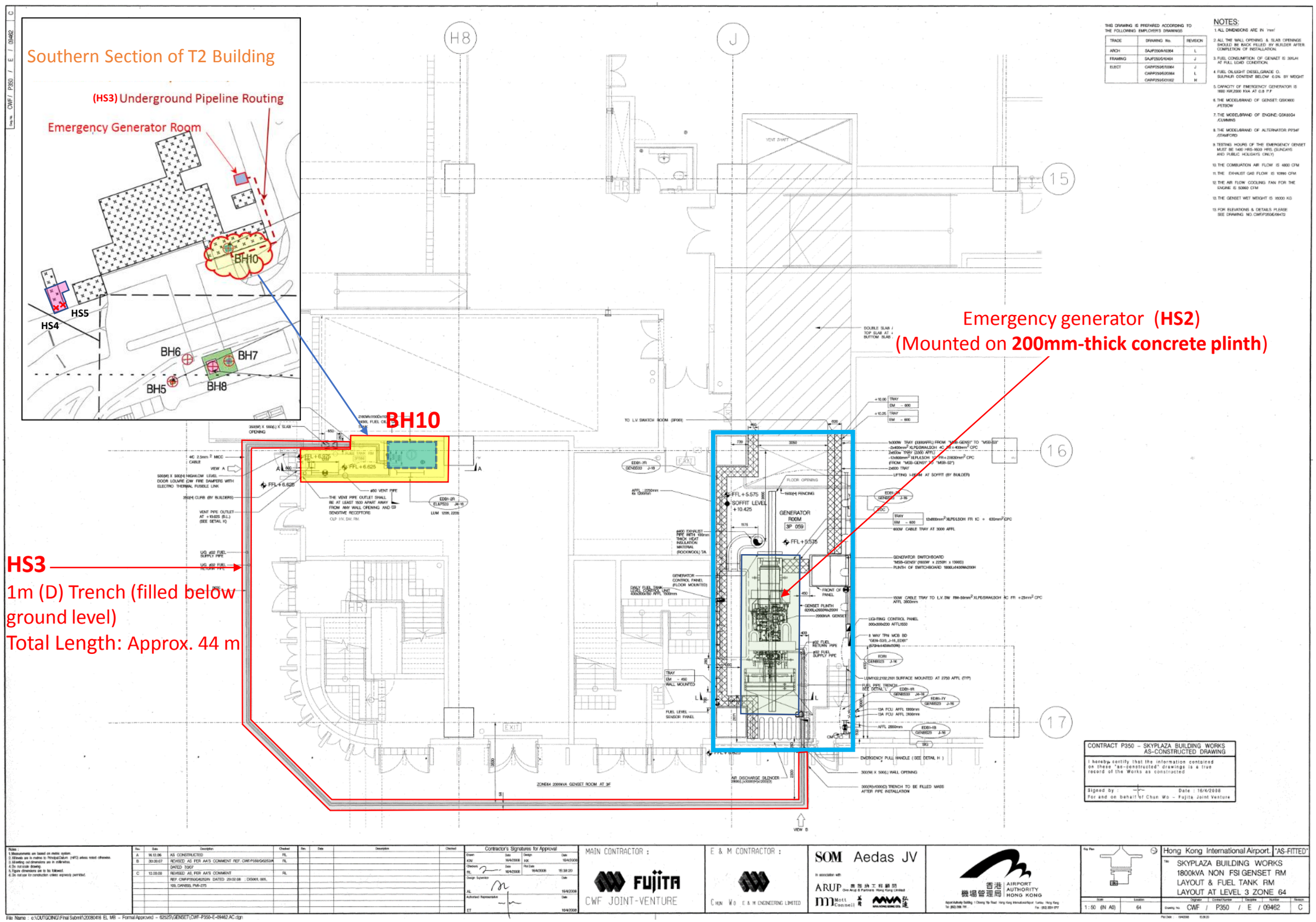
BH7 View 2 - concrete floor condition underneath 450 L Above-ground Fuel Tank

Appendix E.4 Emergency Power Supply System No. 4 (**BH10**, **HS2** and **HS3**)

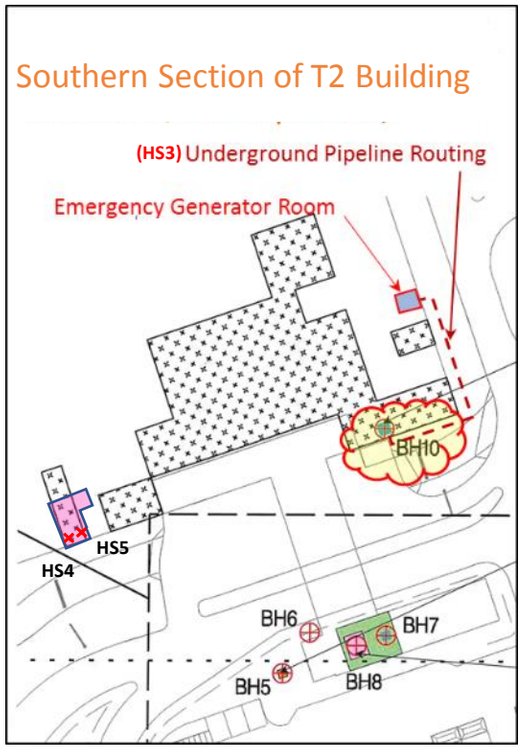


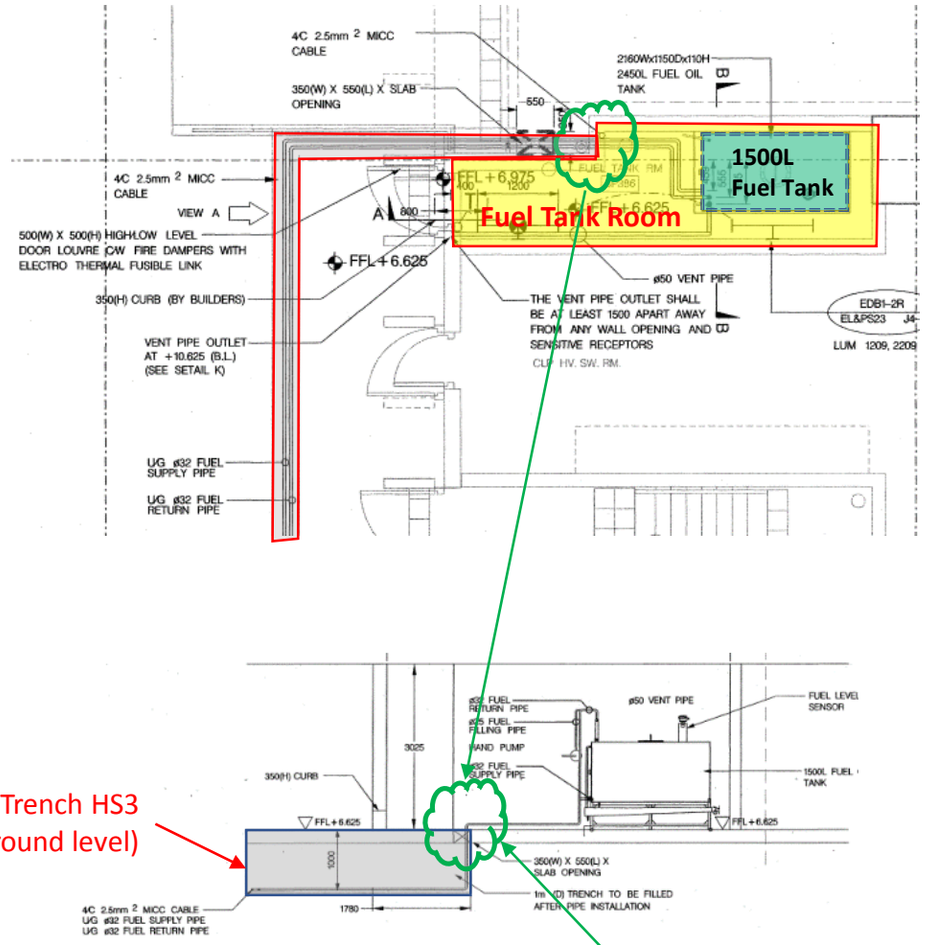
Reference ID	Description
BH10	A 1,500 L **above-ground** fuel tank at Fuel Tank Room
HS2	**(Newly Identified)** An emergency generator at Emergency Generator Room (**above-ground**)
HS3	**(Newly Identified)** 44 m-in-length **underground** fuel pipelines connecting the 1,500 L above-ground fuel tank (i.e. BH10) and the emergency generator (i.e. HS2)

Appendix E.4 Emergency Power Supply System No. 4 - **BH10** (1,500L **Above-ground** Fuel Tank inside T2), **HS2** (**Newly Identified** emergency generator at Emergency Generator Room) and **HS3** (**underground** fuel pipelines connecting **BH10** and **HS2**)



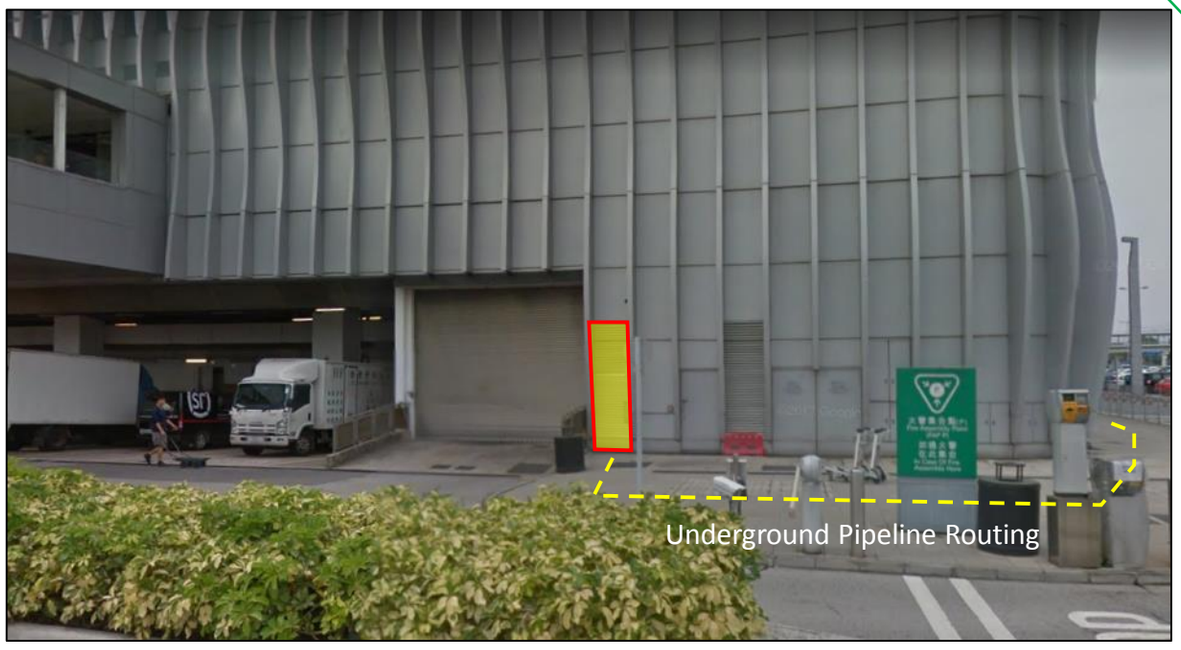
Appendix E.4 Emergency Power Supply System No. 4 - Details of **BH10** (1,500L **Above-ground** Fuel Tank inside T2) and **HS3** (**Newly identified underground** fuel pipelines connecting **BH10** and **HS2**)



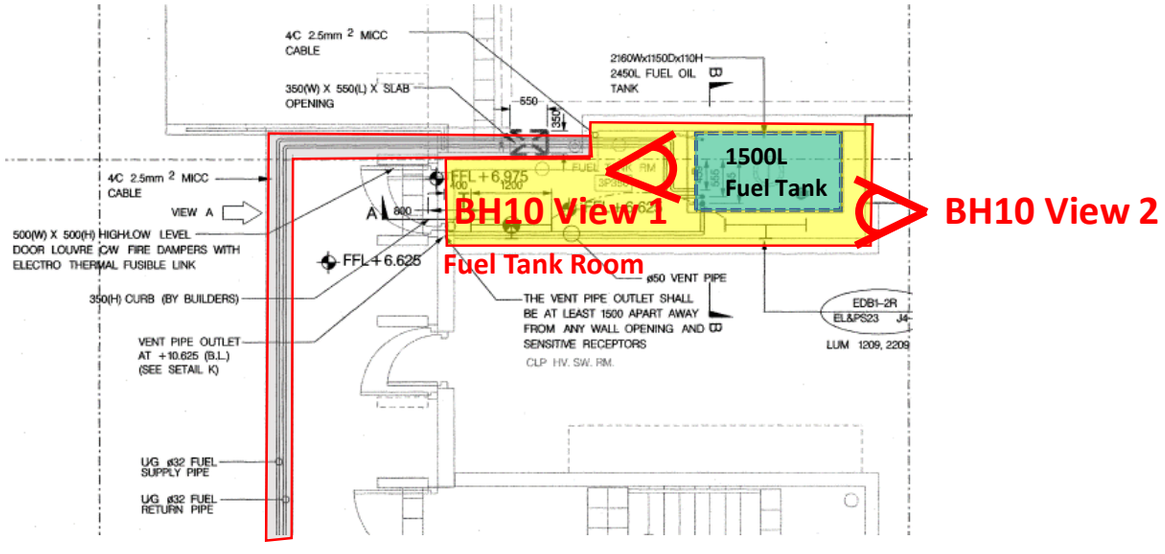


1,500L fuel tank (BH10) with metal drip tray

1m (D) Trench HS3
(filled below ground level)



Appendix E.4 Emergency Power Supply System No. 4 - Details of **BH10** (1,500L **Above-ground** Fuel Tank inside T2)

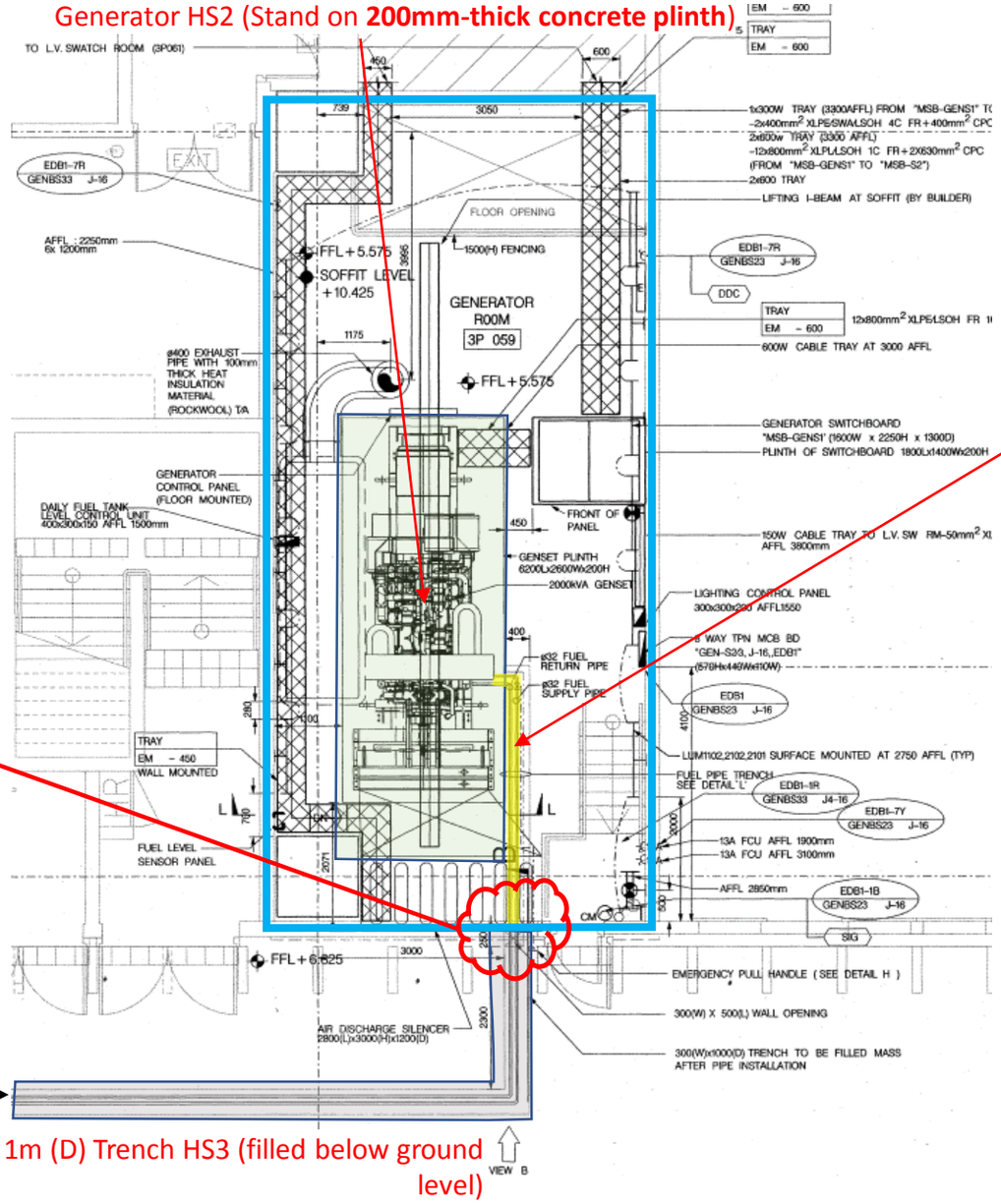


BH10 View 1 - concrete floor condition underneath 1,500L Above-ground Fuel Tank

BH10 View 2 - concrete floor condition underneath 1,500L Above-ground Fuel Tank

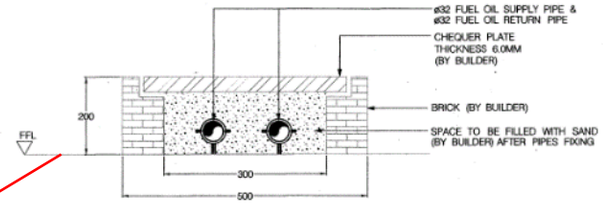
Appendix E.4 Emergency Power Supply System No. 4 – Details of **HS2** (Emergency Generator connected to 1,500L **Above-ground** Fuel Tank inside T2 (**BH10**))

Generator HS2 (Stand on **200mm-thick concrete plinth**)

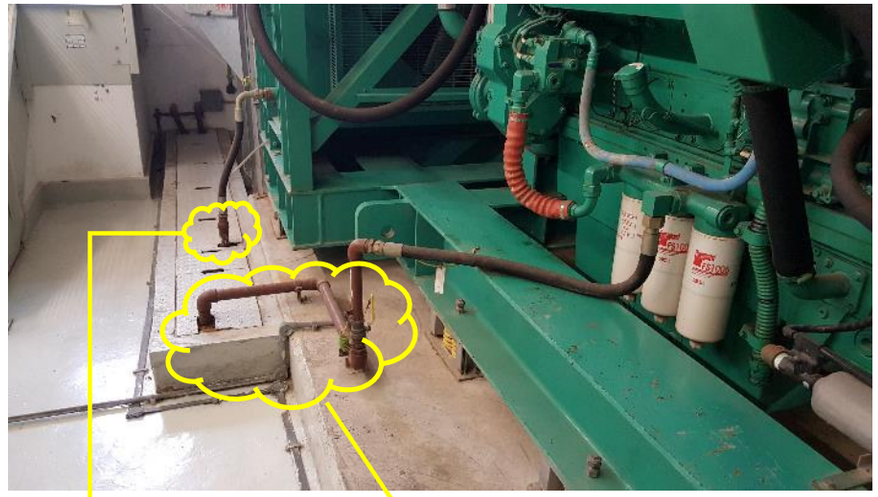


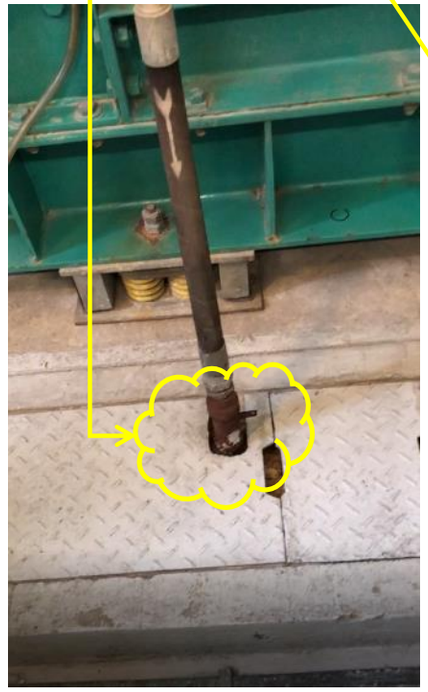
From 1500 L Fuel Tank

1m (D) Trench HS3 (filled below ground level)



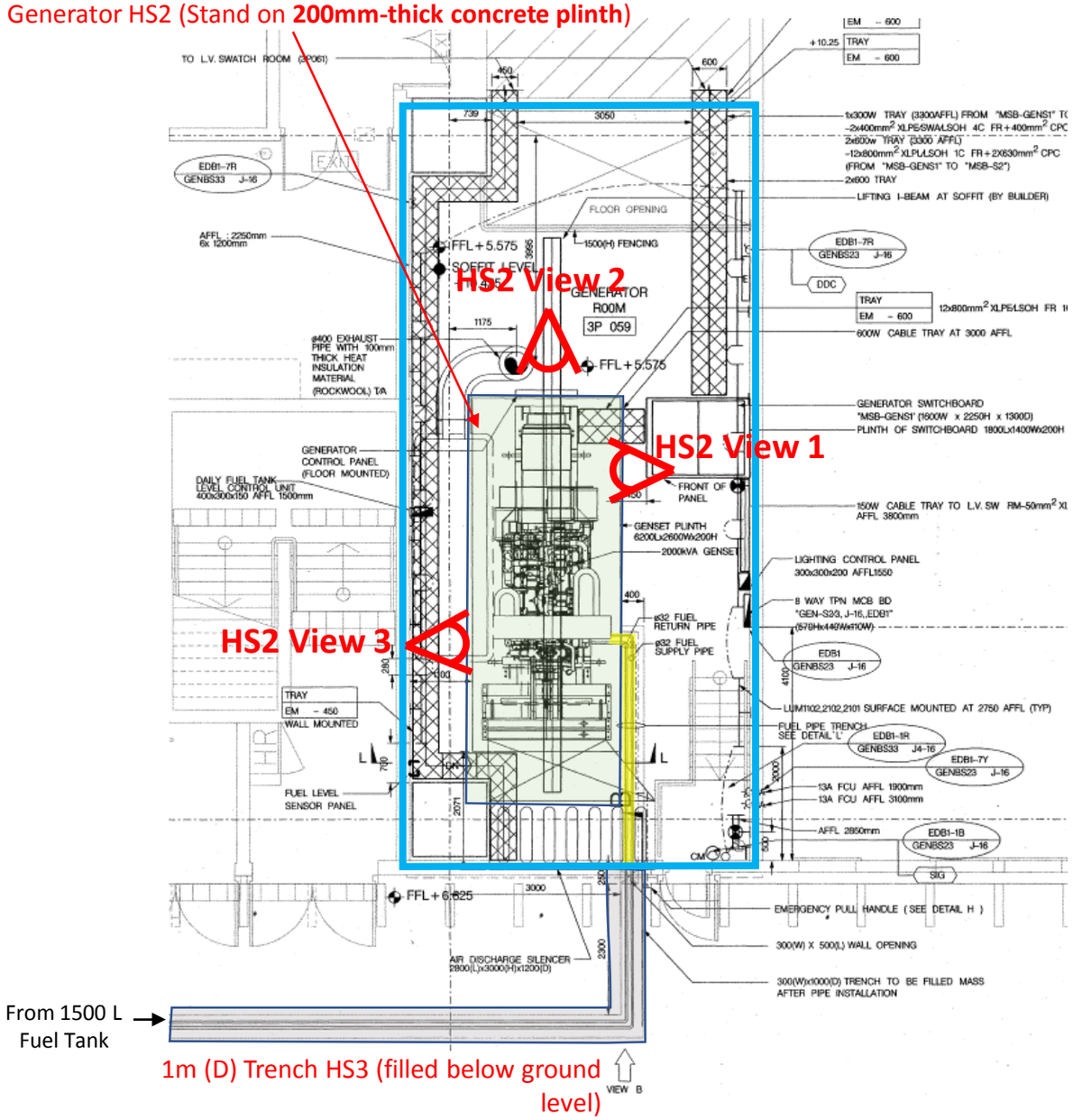
Supply and return pipe from fuel oil tank (Sand Filled Trench at floor level)





Appendix E.4 Emergency Power Supply System No. 4 – Details of **HS2** (Emergency Generator connected to 1,500L **Above-ground** Fuel Tank inside T2 (**BH10**))

Generator HS2 (Stand on **200mm-thick concrete plinth**)



From 1500 L Fuel Tank →

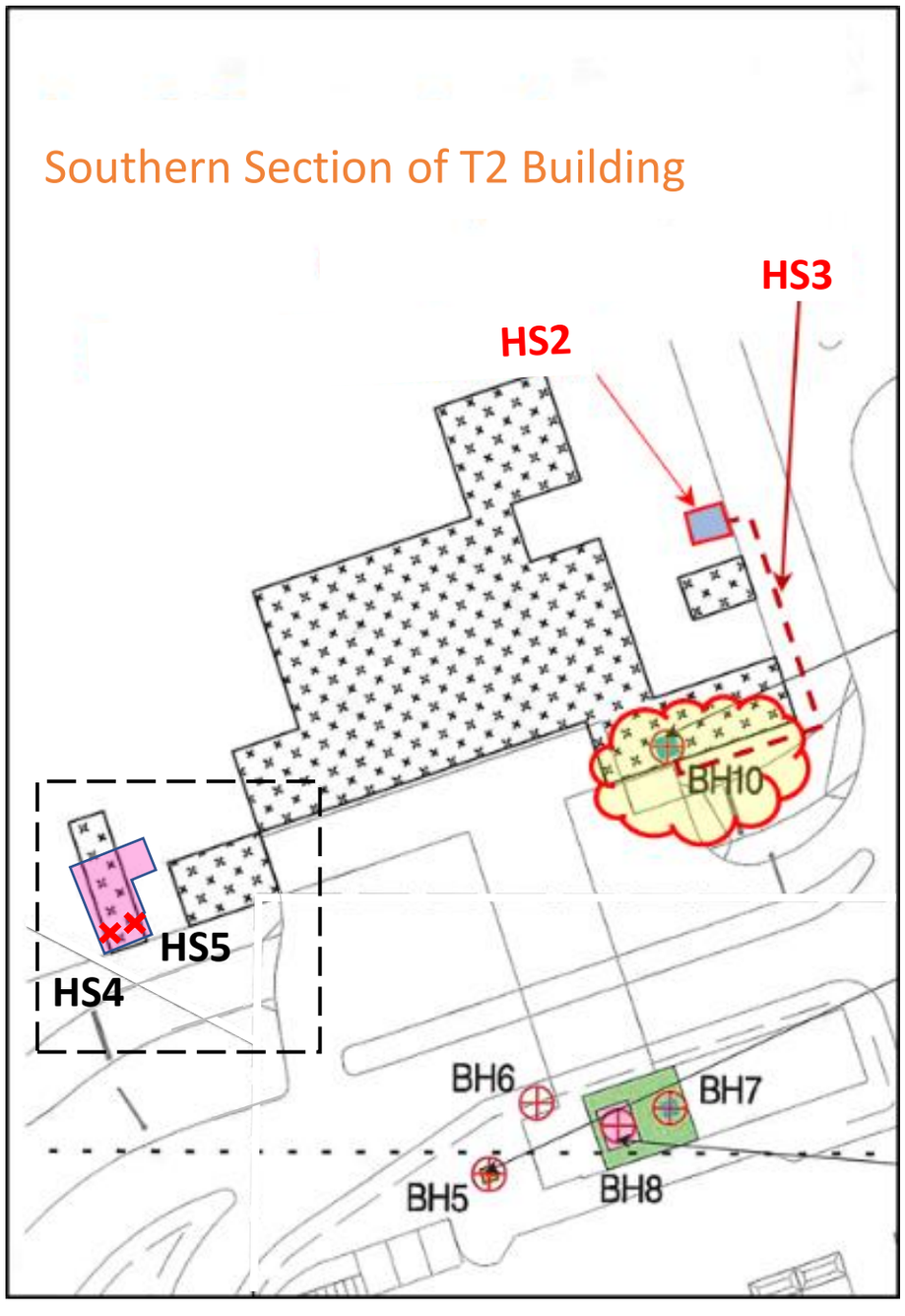
1m (D) Trench HS3 (filled below ground level)

HS2 View 1 - concrete floor condition underneath emergency generator

HS2 View 2 - concrete floor condition underneath emergency generator

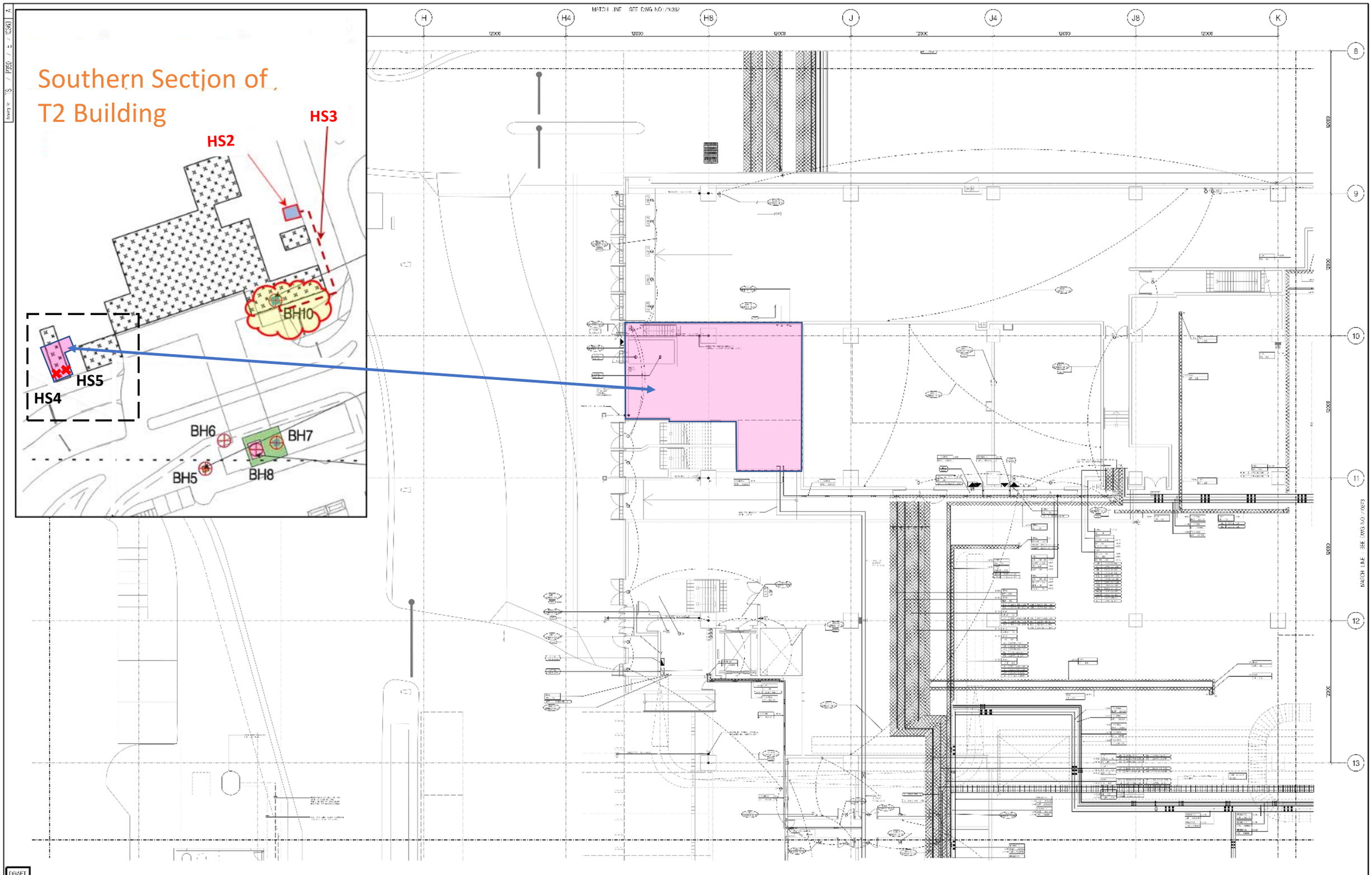
HS2 View 3 - concrete floor condition underneath emergency generator

Appendix E.5 Emergency Power Supply System No. 5 (**HS4** and **HS5**)

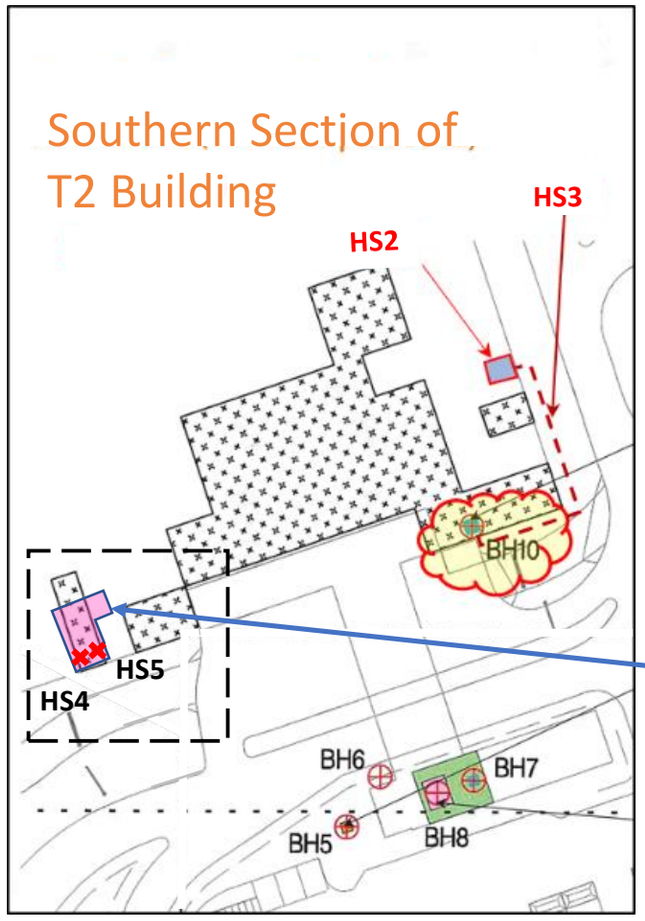


Reference ID	Description
HS4	**(Newly Identified)** A 1,500 L **above-ground** fuel tank at Fuel Tank Room
HS5	**(Newly Identified)** An emergency generator at Emergency Generator Room (**above-ground)**

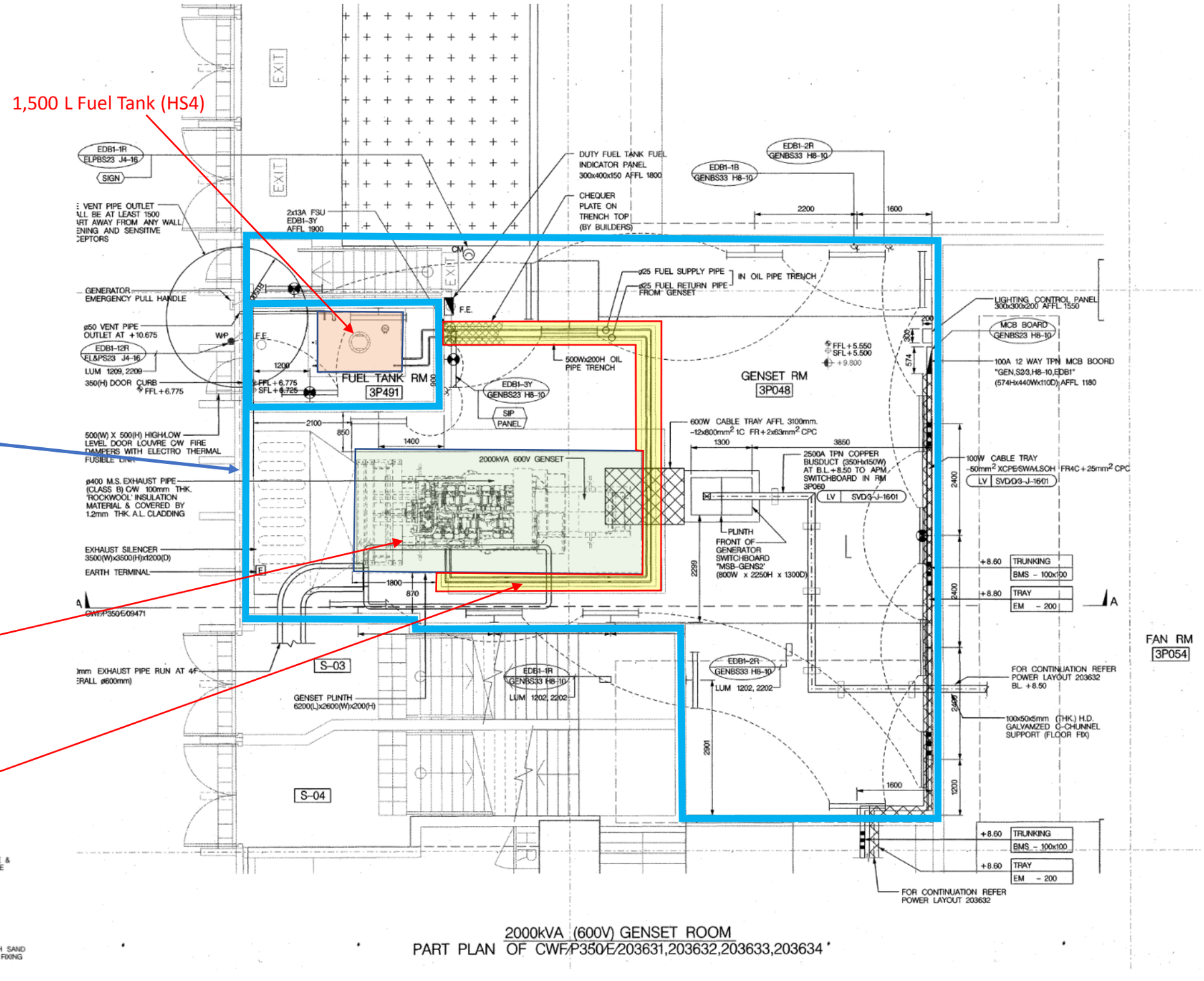
Appendix E.5 Emergency Power Supply System No. 5 – Location of **Newly Identified HS4** (**Above-ground** Fuel Tank) and **Newly identified HS5** (**Above-ground** Emergency Generator)



Appendix E.5 Emergency Power Supply System No. 5 – Details of **Newly identified HS4** (**Above-ground** Fuel Tank) and **Newly identified HS5** (**Above-ground** Emergency Generator)

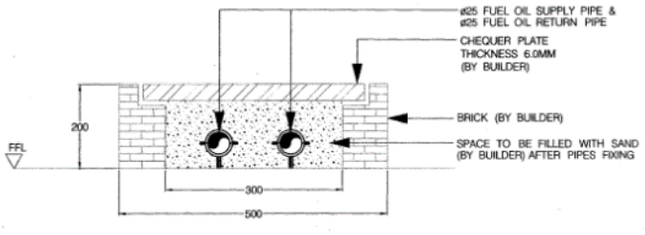


1,500 L Fuel Tank (HS4)



2000kVA (600V) GENSET ROOM
PART PLAN OF CWF/P350/E/203631,203632,203633,203634

Emergency Generator (HS5)
(Mounted on **200mm-thick concrete plinth**)



Supply and return pipe from fuel oil tank
(Sand Filled Trench at floor level)

Notes

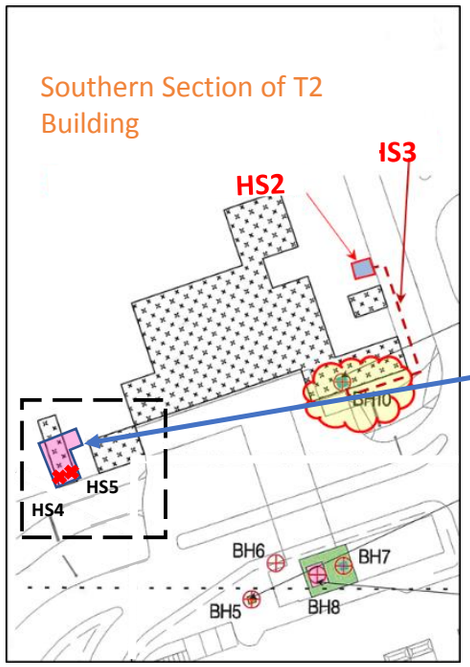
- Both the fuel tank and generator mounted on intact concrete floor with no any oil stain.
- Test run of emergency generator conducted monthly (for 30-60 mins)
- Fuel tank is checked monthly and re-filled approx. every 6 months.
- The quantity of fuel inside the tank is monitored by level sensor. No sign of leakage is detected.

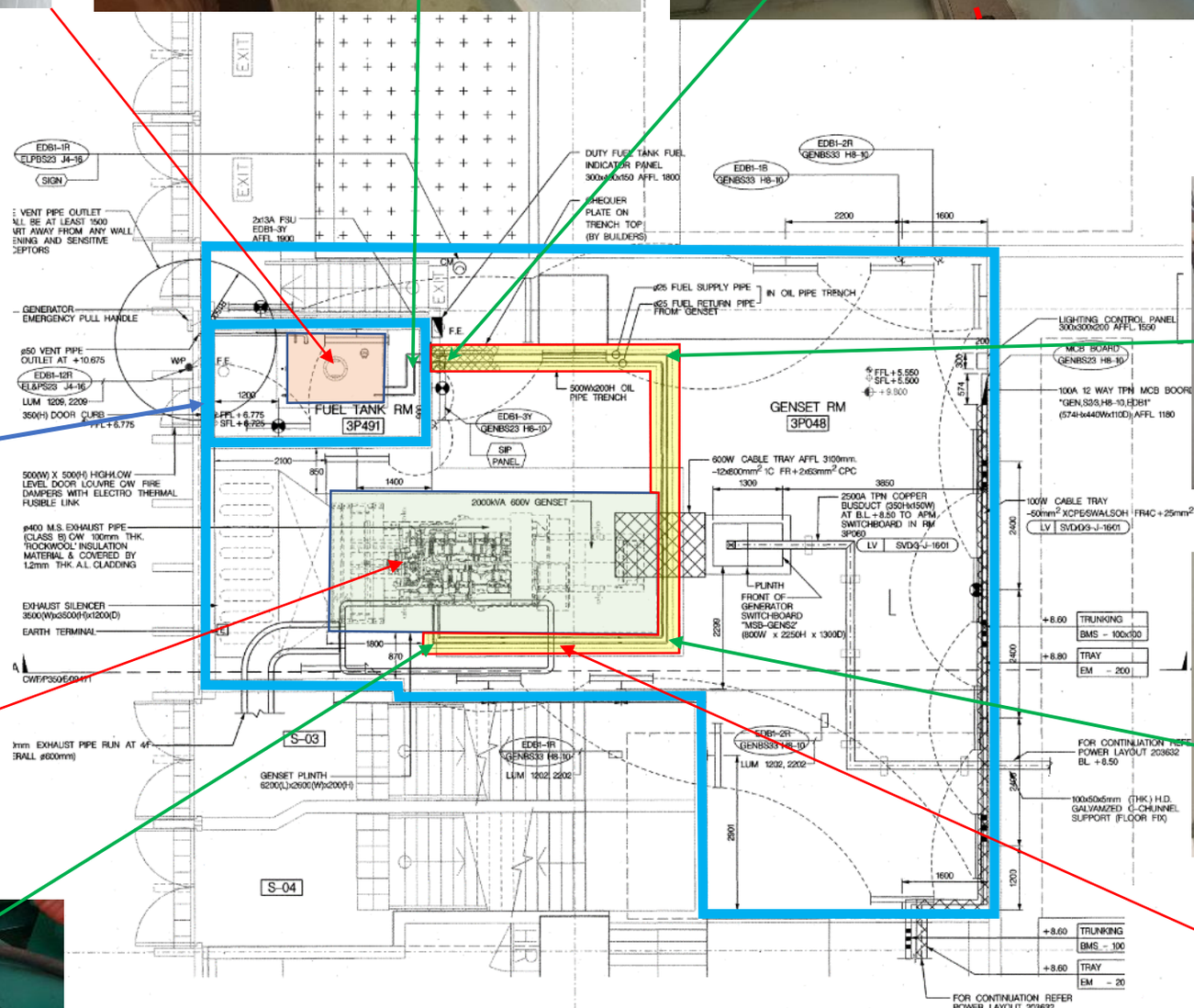
Appendix E.5 Emergency Power Supply System No. 5 – Details of **Newly identified HS4** (**Above-ground** Fuel Tank) and **Newly identified HS5** (**Above-ground** Emergency Generator)

1,500 L fuel tank (HS4) with metal drip tray

Notes

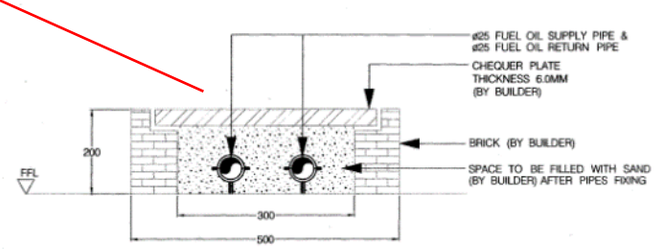
- Both the fuel tank and generator mounted on intact concrete floor with no any oil stain.
- Test run of emergency generator conducted monthly (for 30-60 mins)
- Fuel tank is checked monthly and re-filled approx. every 6 months.
- The quantity of fuel inside the tank is monitored by level sensor. No sign of leakage is detected.





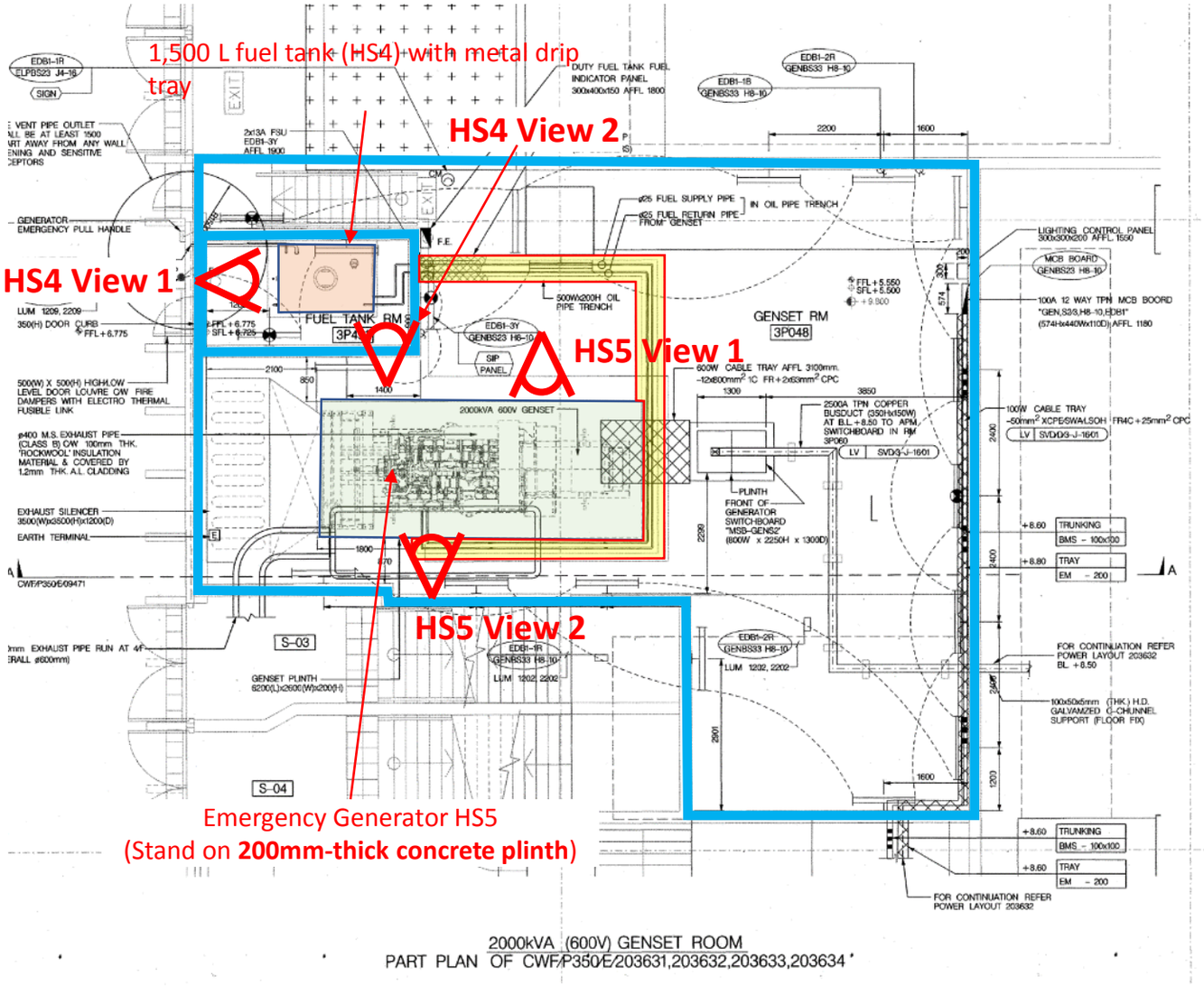
2000kVA (600V) GENSET ROOM
PART PLAN OF CWF/P350/E/203631,203632,203633,203634

Emergency Generator HS5
(Stand on **200mm-thick concrete plinth**)



Supply and return pipe from fuel oil tank
(Sand Filled Trench at floor level)

Appendix E.5 Emergency Power Supply System No. 5 – Details of **Newly identified HS4** (**Above-ground** Fuel Tank) and **Newly identified HS5** (**Above-ground** Emergency Generator)



Emergency Generator HS5
(Stand on **200mm-thick concrete plinth**)

HS4 View 1 - concrete floor condition underneath 1,500L Above-ground Fuel Tank

HS4 View 2 - concrete floor condition of fuel tank room with 1,500 L above-ground fuel tank

HS5 View 1 - concrete floor condition underneath emergency generator

HS5 View 2 - concrete floor condition underneath emergency generator

F. Indicative Sampling Point Selection of Underground Pipeline Trench and Underground Fuel Tank of T2 Building

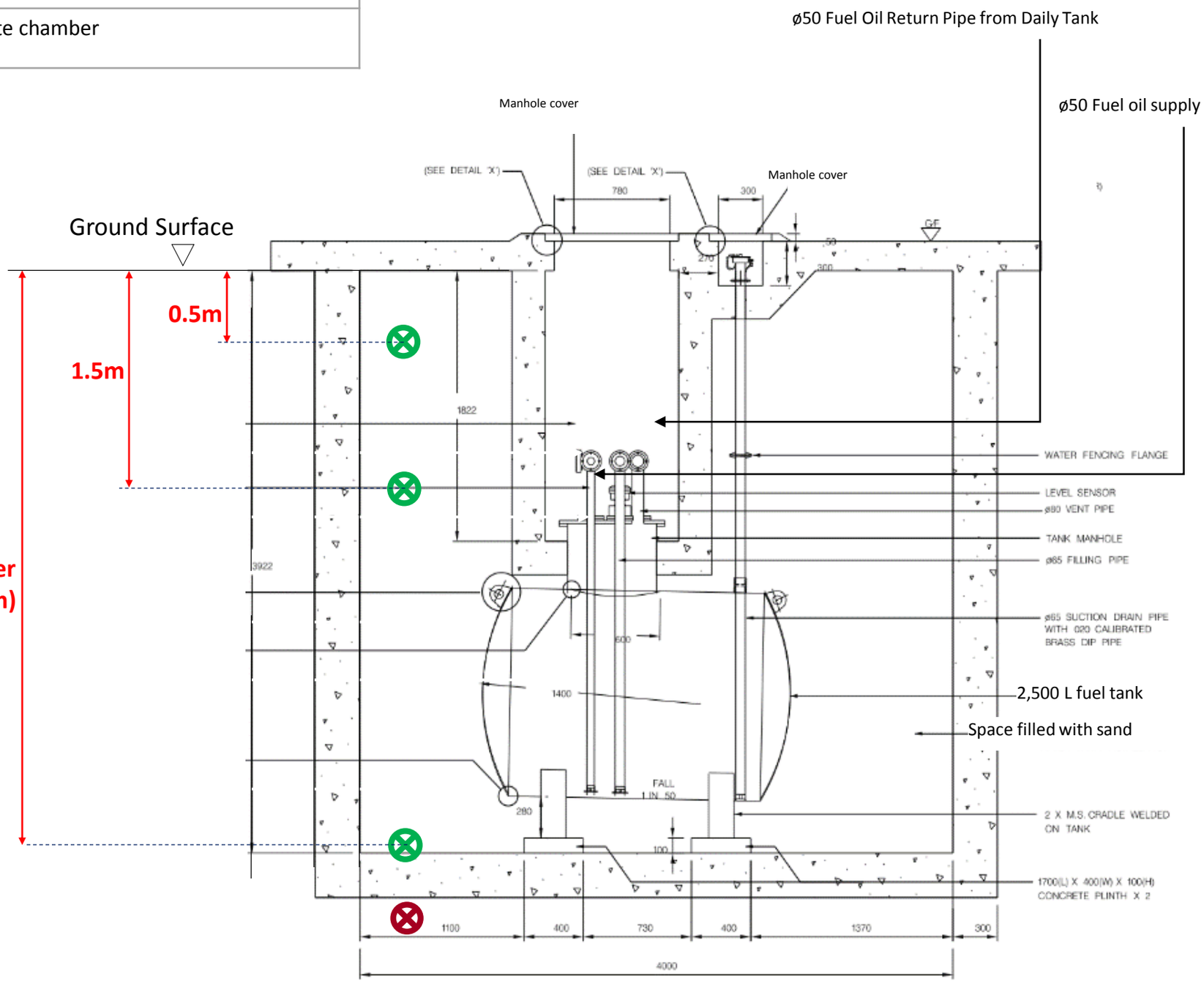
Appendix F.1 Indicative Sampling Point Selection of 2,500 L Underground Fuel Tank of Emergency Power Supply System No.1 (i.e. **BH1**)

Sample	*Sampling Point Selection Strategy*
Sand	0.5 m, 1.5 m Below Ground Surface and bottom level inside the concrete chamber
Soil	Right underneath concrete chamber

Legend:

Sand Sampling Point

Soil Sampling Point



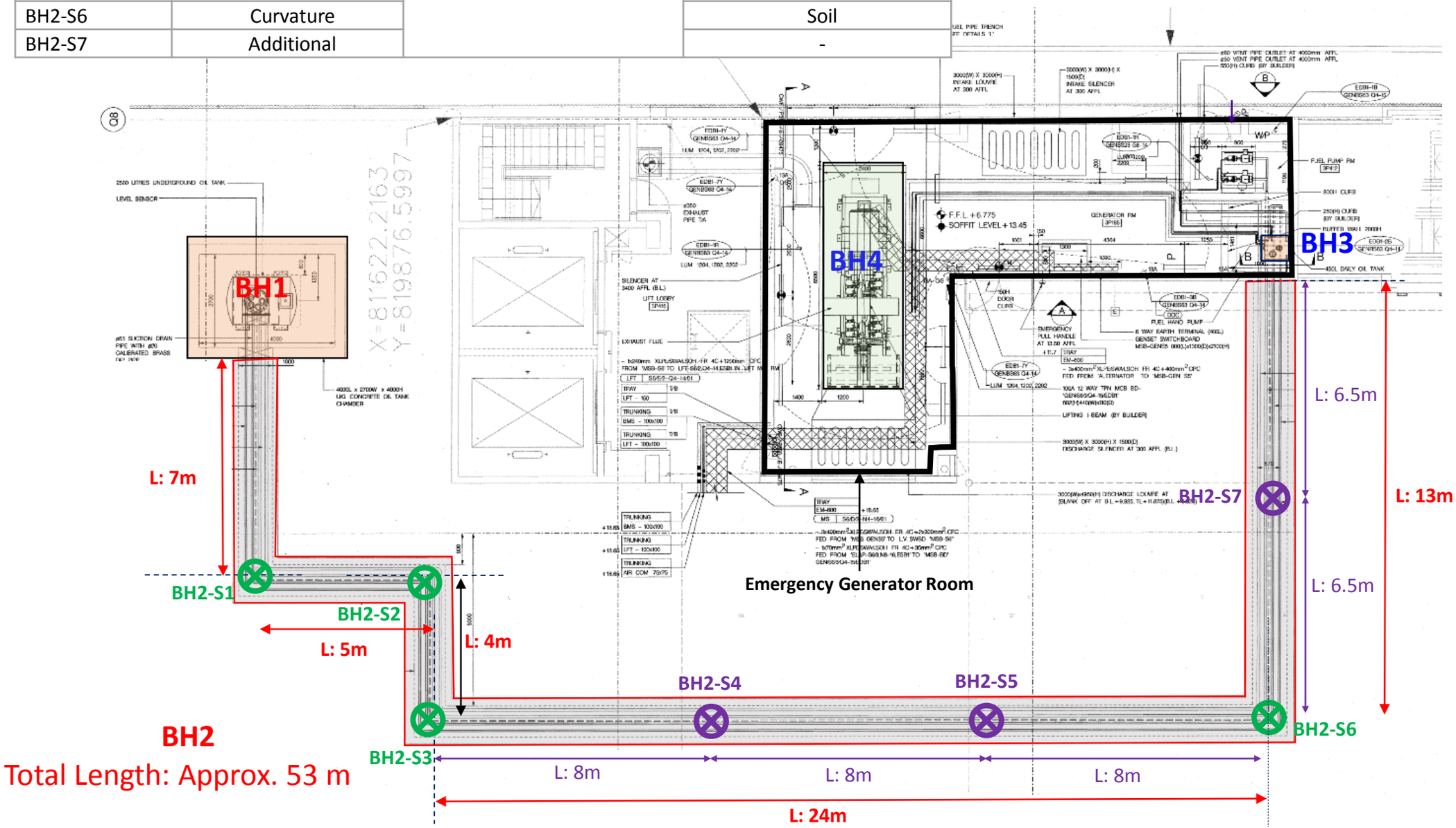
Indicative Sampling Point Selection of 2,500 L Underground Fuel Tank of Emergency Power Supply System No.1 (i.e. **BH1**)

Appendix F.2 Indicative Sampling Point Selection of Underground Pipeline Trench of Emergency Power Supply System No.1 (i.e. **BH2**)

Annotation of Sampling Point	*Type of Sampling Point (Curvature/ Additional)*	*Sample*	
		At the level of fuel pipelines (Within Concrete Trench)	*Right underneath concrete trench*
BH2-S1	Curvature	Sand	Soil
BH2-S2	Curvature		Soil
BH2-S3	Curvature		Soil
BH2-S4	Additional		-
BH2-S5	Additional		-
BH2-S6	Curvature		Soil
BH2-S7	Additional		-

LEGEND:

- Curvature Sampling Point
- Additional Sampling Point



BH2

Total Length: Approx. 53 m

Indicative Sampling Point Selection of Underground Pipeline Trench of Emergency Power Supply System No.1 (i.e. **BH2**)

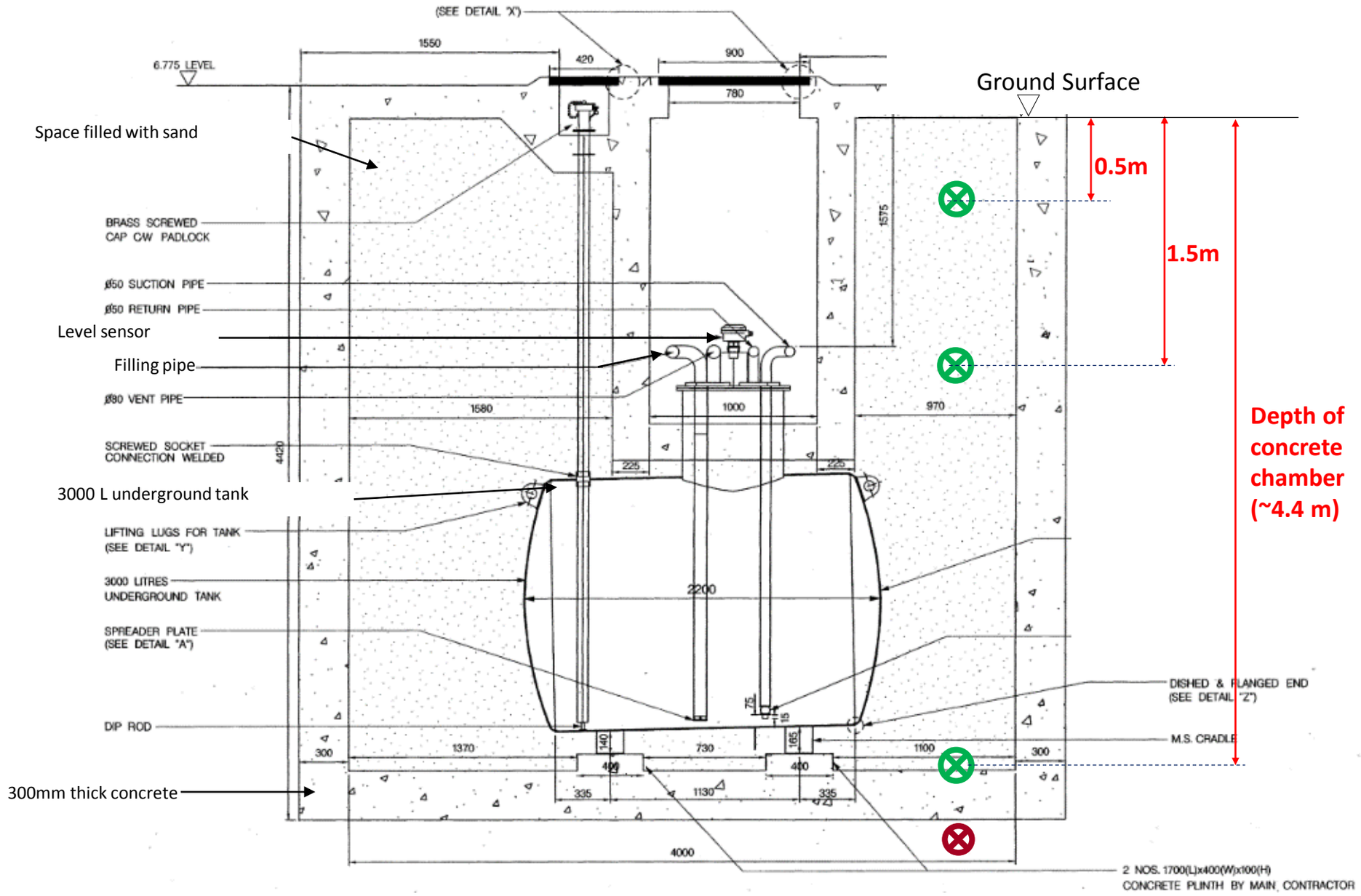
Appendix F.3 Indicative Sampling Point Selection of 3,000 L Underground Fuel Tank of Emergency Power Supply System No.3 (i.e. **BH5**)

Sample	*Sampling Point Selection Strategy*
Sand	0.5 m, 1.5 m Below Ground Surface and bottom level inside the concrete chamber
Soil	Right underneath concrete chamber

Legend:

⊗ Sand Sampling Point

⊗ Soil Sampling Point



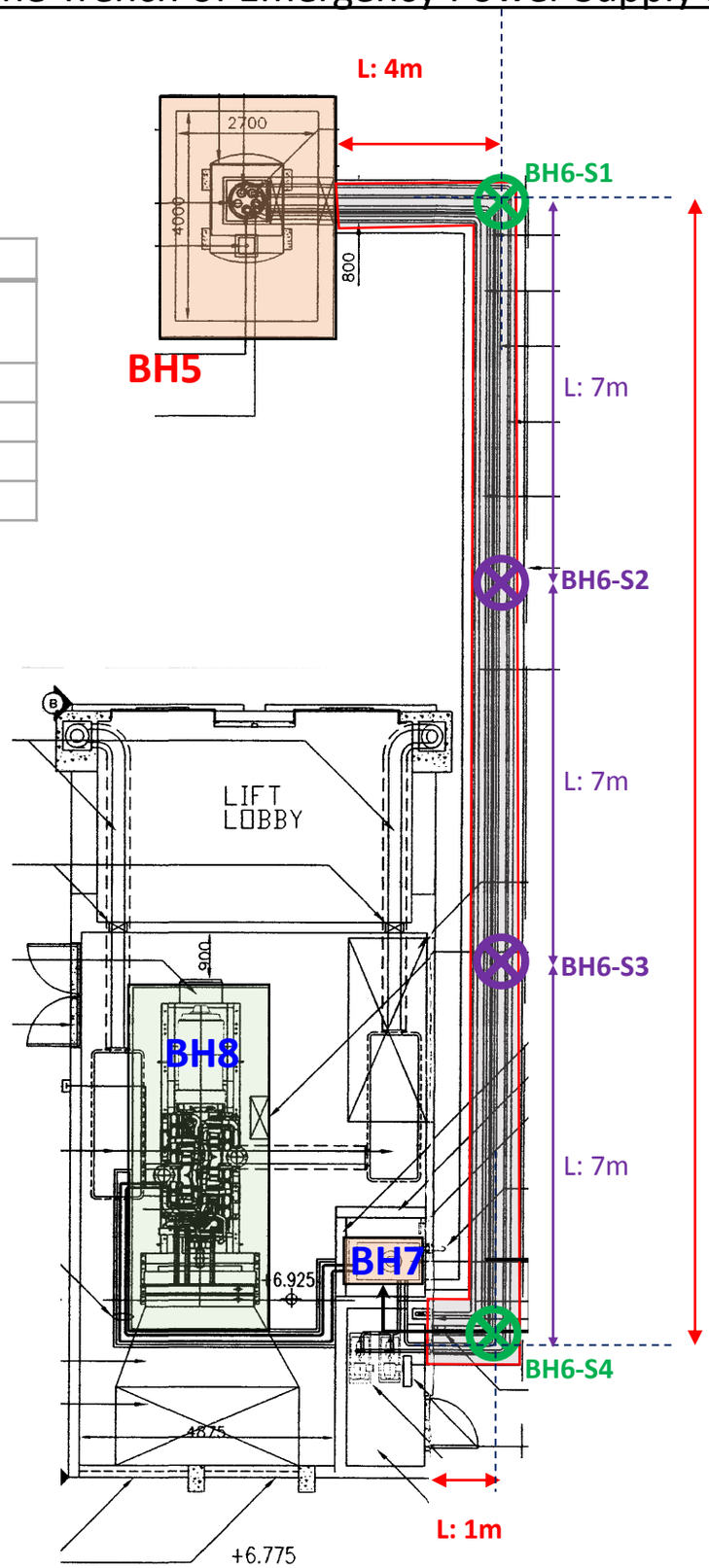
Indicative Sampling Point Selection of 3,000 L Underground Fuel Tank of Emergency Power Supply System No.3 (i.e. **BH5**)

Appendix F.4 Indicative Sampling Point Selection of Underground Pipeline Trench of Emergency Power Supply System No.3 (i.e. **BH6**)

Annotation of Sampling Point	*Type of Sampling Point (Curvature/ Additional)*	*Sample*	
		At the level of fuel pipelines (Within Concrete Trench)	*Right underneath concrete trench*
BH6-S1	Curvature	Sand	Soil
BH6-S2	Additional		-
BH6-S3	Additional		-
BH6-S4	Curvature		Soil

LEGEND:

- Curvature Sampling Point
- Additional Sampling Point



BH6
Total Length:
Approx. 26 m

Indicative Sampling Point Selection of Underground Pipeline Trench of Emergency Power Supply System No.3 (i.e. **BH6**)

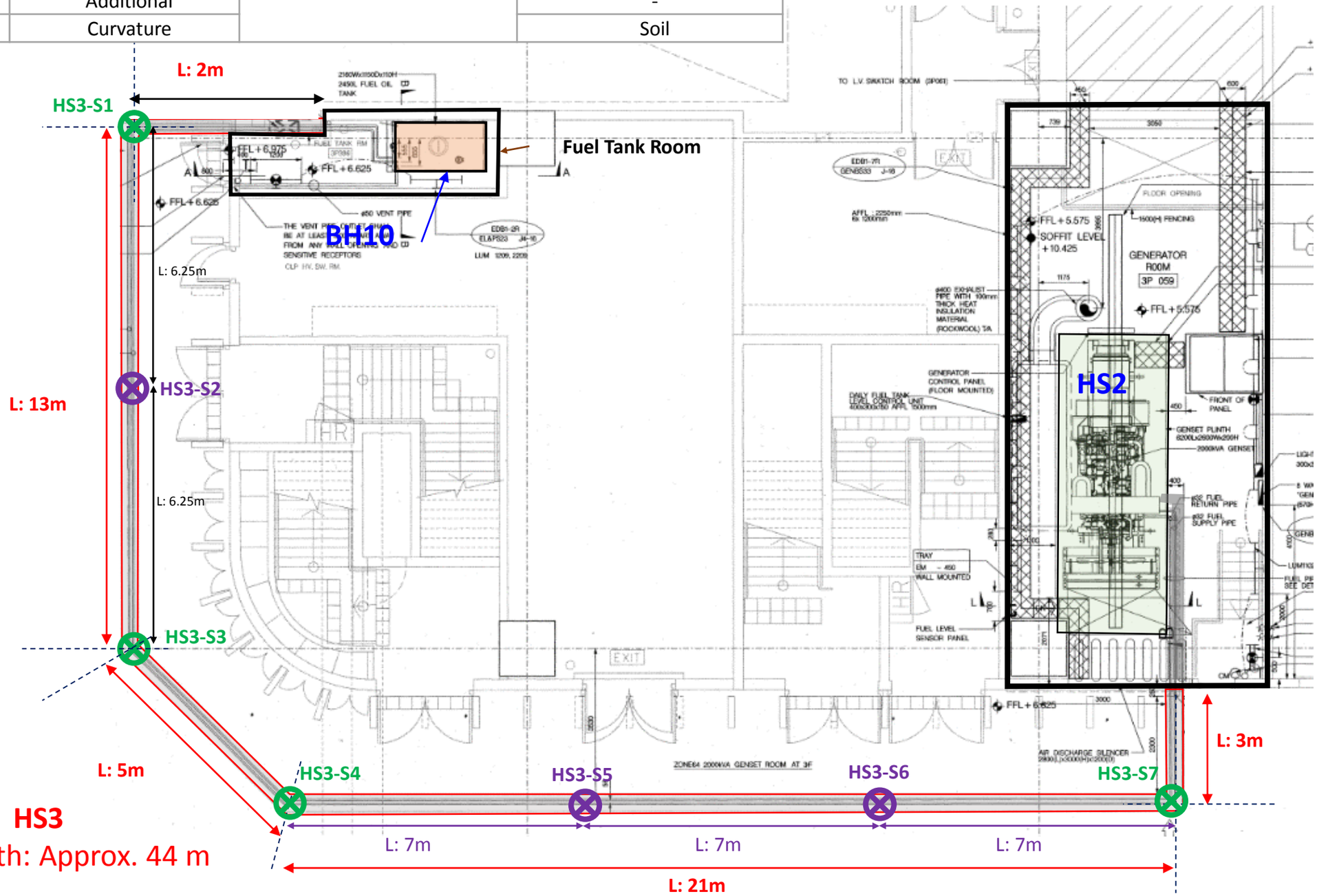
Appendix F.5 Indicative Sampling Point Selection of Underground Pipeline Trench of Emergency Power Supply System No.4 (i.e. **HS3**)

Annotation of Sampling Point	*Type of Sampling Point (Curvature/ Additional)*	*Sample*	
		At the level of fuel pipelines (Within Concrete Trench)	*Right underneath concrete trench*
HS3-S1	Curvature	Sand	Soil
HS3-S2	Additional		-
HS3-S3	Curvature		Soil
HS3-S4	Curvature		Soil
HS3-S5	Additional		-
HS3-S6	Additional		-
HS3-S7	Curvature		Soil

LEGEND:

Curvature Sampling Point

Additional Sampling Point



Indicative Sampling Point Selection of Underground Pipeline Trench of Emergency Power Supply System No.4 (i.e. **HS3**)

Figures

824000 N
822000 N
820000 N
818000 N
804000 E
806000 E
808000 E
810000 E
812000 E
814000 E

LEGEND:
- RECLAMATION AREA
- SEAWATER PUMP HOUSE
- SWITCHING STATION
- PUMPING STATION
- FUEL TANK ROOM WITNIN T2 BUILDING
- FUEL TANK ROOM TO THE WEST OF CAD ANTENNA FARM
- FIRE TRAINING FACILITY

SEAWATER PUMP HOUSE

SWITCHING STATION

FUEL TANK ROOM TO THE WEST OF CAD ANTENNA FARM

PUMPING STATION

FUEL TANK ROOM WITNIN T2 BUILDING

FIRE TRAINING FACILITY

HKSAR BOUNDARY

沙洲 SHA CHAU

PAK CHAU

大廟灣 TAI MO TO

東涌 TUNG CHUNG

白沙咀 Pak Sha Tsui

0 250 500 750 1000 m

1 : 30 000 SCALE BAR

Rev.	Date	Description	Checked
A	28JUL17	FIRST ISSUE	PL
B	13OCT17	GENERAL REVISION	PL

香港國際機場 HONG KONG INTERNATIONAL AIRPORT
Airport Authority HKIA Tower,1 Sky Plaza Road, Hong Kong International Airport, Lantau, Hong Kong
Tel : (852) 2181 7111 Fax : (852) 2024 0717

MOTT MACDONALD

Title

LAND CONTAMINATION ASSESSMENT AREAS

Consultant's Signatures for Approval		Date
Design	PL	13OCT17
Checkers	AM	13OCT17
Approver	EC	13OCT17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No.

FIGURE 1.1

Scale at A3 1 : 30000

Rev. B

Filename: J:\355482\REPORT\ENV\SC\171013\FIG 1-1.dgn

811100 E

820300 N

811400 E

LEGEND:

- SEAWATER PUMP HOUSE
- SWITCHING STATION
- FUEL TANK ROOM TO THE WEST OF CAD ANTENNA FARM

Photo 1

900L above-ground diesel tank eqipped with drip tray

Concrete-paved ground

Photo 2

Concrete-paved ground

Photo 3

0 10 20 30 40 m

1 : 1 000 SCALE BAR

Rev.	Date	Description	Checked
A	17MAR17	FIRST ISSUE	PL
B	27JUL17	GENERAL REVISION	PL

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PHOTOGRAPHIC RECORD OF LAND CONTAMINATION ASSESSMENT AREAS (SHEET 1 OF 3)

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Design	PL	27JUL17
Checkers	AM	27JUL17
Approver	EC	27JUL17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No.

FIGURE 3.1

Scale at A3 1 : 1000

Rev. B

Filename: J:\355482\REPORT\ENV\SC\170727\FIG 3-1.dgn

820000 N

811700 E

NEW TOILET

SEWAGE PUMPING STATION

Photo 5

Photo 4

3,000L above-ground diesel tank equipped with drip tray

Concrete-paved ground

LEGEND:

PUMPING STATION

FUEL TANK ROOM WITHIN T2 BUILDING

0 10 20 30 40 m

1 : 1 000 SCALE BAR

Rev.	Date	Description	Checked
A	27JUL17	FIRST ISSUE	PL

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Design	PL	27JUL17
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Approver	EC	27JUL17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No. FIGURE 3.2

Scale at A3 1 : 1000

Rev. A

Filename: J:\355482\REPORT\ENV\SC\170727\FIG 3-2.dgn

809200 E

809400 E

817800 N

LEGEND:

FIRE TRAINING FACILITY

10,000L above-ground kerosene tank

Photo 7

Bund wall

Photo 6

Concrete-paved ground

0 10 20 30 40 m

1 : 1 000 SCALE BAR

Rev.	Date	Description	Checked
A	21JUN17	FIRST ISSUE	PL

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Title

PHOTOGRAPHIC RECORD OF LAND CONTAMINATION ASSESSMENT AREAS (SHEET 3 OF 3)

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Design	PL	21JUN17
Checkers	AM	21JUN17
Approver	EC	21JUN17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No.

FIGURE 3.3

Scale at A3 1 : 1000

Rev. A

Filename: J:\355482\REPORT\ENV\SC\170621\FIG 3-3.dgn

809200 E

809400 E

817800 N

LEGEND:

FIRE TRAINING FACILITY

10,000L KEROSENE TANK

PROPOSED SAMPLING LOCATIONS

BH18

0 10 20 30 40 m

1 : 1 000 SCALE BAR

Rev.	Date	Description	Checked
A	14AUG17	FIRST ISSUE	PL

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MOTT MACDONALD

Title

PROPOSED SAMPLING LOCATIONS FOR FIRE TRAINING FACILITY

Consultant's Signatures for Approval		Date
Design	PL	14AUG17
Checkers	AM	14AUG17
Approver	EC	14AUG17

EXPANSION OF HONG KONG INTERNATIONAL AIRPORT INTO A THREE-RUNWAY SYSTEM

Drawing No.

FIGURE 4.1

Scale at A3 1 : 1000

Rev. A

Filename: J:\355482\REPORT\ENV\SC\170814\FIG 4-1.dgn