

Appendix 3 – Environmental Assessment

Section 12A Rezoning Application for Ching To Yuen

Environmental Assessment Report

Ching To Yuen Limited

Revision: 6

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1 Introduction

1.1 Background

- 1.1.1 “Ching To Yuen” (“the Site”) owned by “Ching To Yuen Limited” (the Applicant) is located at the upper part of To Fung Shan, which is a traditional religious district in Shatin and is presently zoned “Green Belt” (“GB”) under the Draft Sha Tin Outline Zoning Plan (“OZP”) No. S/ST/39. The Site is currently occupied by a single-storey columbarium building that can accommodate 6,396 niches, of which 2,993 niches have been sold.
- 1.1.2 The Applicant is submitting a planning application to the Town Planning Board (“TPB”) to rezone the Site from “GB” to “Other Specified Uses” annotated “Columbarium” (“OU(Columbarium)3”), to allow the continued operation of the columbarium uses. To facilitate the continued operation of Application Site, some minor improvement works will be required to upgrade the overall environmental facilities of the Application Site.
- 1.1.3 Continuing operation of the Application Site can also help facilitate government’s commitment to provide columbarium facilities at suitable locations throughout Hong Kong to meeting the urgent demand for niche spaces resulting from an increasing aging population.
- 1.1.4 Aurecon Hong Kong Ltd (“Aurecon”) has been appointed to conduct this Environmental Assessment (“EA”) to support the planning application.

1.2 Objectives of the Environmental Assessment

- 1.2.1 The objective of this Report is to identify the environmental aspects arising from minor improvement works and demonstrate the environmental acceptability of the continued operation of the Application Site. Potential environmental impacts during improvement works phase, though minor and transient, will be reviewed. Mitigation measures will be recommended to reduce any identified environmental impacts at acceptable levels.

1.3 Report Structure

- 1.3.1 The remaining chapters of this report are shown below:
- Chapter 2 – Site Context
 - Chapter 3 – Air Quality Impact
 - Chapter 4 – Noise Impact
 - Chapter 5 – Water Quality Impact
 - Chapter 6 – Waste Management
 - Chapter 7 – Conclusion

2 Site Context

2.1 Site Location and Its Environments

2.1.1 The Site is located at several lots in D.D. 186, To Fung Shan.

2.1.2 As shown on **Figure 1.1**, the Site is surrounded by a natural landscape with shrubs, slopes, mature trees and burial ground. The Lutheran Theological Seminary, Yau Oi Tsuen and To Fung Shan Christian Cemetery are located to the south of the Application Site. To the east of the Application Site are Lin Yuen, Ten Thousand Buddhas Monastery, and Po Fook Memorial Hall. The Site is accessible from To Fung Shan Road via a local access road.

2.1.3 The Site has a long history of institutional use since it was first built as the Bishop's House as early as 1957. It was later renovated as a columbarium, i.e., the Site, to accommodate the needs of a columbarium to continue the traditional institutional and religious uses at the Application Site. No additional building has been added to the Site.

2.2 Proposed Application Site

2.2.1 The existing layout of the Site can be referred to the Planning Statement, which mainly includes the following structures:

- A single-storey columbarium building with 6,396 niches.
- A two-storey management office building.

2.2.2 The master layout plan is provided in **Figure 1.1**. For this proposed application, minor improvement works including the replacement of existing toilets with portable toilet facilities adjacent to the management office building will be conducted during improvement works phase. The tentative duration of the improvement works would be 2 months.

3 Air Quality Impact

3.1 Introduction

3.1.1 This section addresses the potential air quality impacts arising during improvement works and operational phases. Appropriate mitigation measures are proposed to alleviate the potential air quality impact, if necessary.

3.2 Environmental Legislation, Standards and Guidelines

3.2.1 The relevant legislation, standards and guidelines are referenced to the present preliminary environmental review of air quality impacts include:

- Air Pollution Control (Amendment) Ordinance (APCO) (Cap. 311);
- Air Pollution Control (Construction Dust) Regulation (Cap.311R);
- Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation; and
- Hong Kong Planning Standards and Guidelines (HKPSG)

3.2.2 Chapter 9 of the “Hong Kong Planning Standards and Guidelines” (HKPSG) stipulates the Hong Kong Air Quality Objectives (AQOs) issued under the Air Pollution Control Ordinance (APCO). The updated AQOs came into force on 11 April 2025 and the relevant criteria for the assessment are tabulated in **Table 3.1**.

Table 3.1 Hong Kong Air Quality Objectives

Pollutant	Pollutant Concentration at Averaging Time, µg/m ³					
	10min	1-hour	8-hour	24-hour	1 year	Peak Season [#]
Carbon Monoxide	--	30,000 ⁽ⁱ⁾	10,000 ⁽ⁱ⁾	4,000 ⁽ⁱ⁾	--	--
Nitrogen Dioxide	--	200 ⁽ⁱⁱ⁾	--	120 ^(iv)	40	--
Sulphur Dioxide	500 ⁽ⁱⁱⁱ⁾	--	--	40 ⁽ⁱⁱⁱ⁾	--	--
Respirable Suspended Particulates (PM ₁₀)	--	--	--	75 ^(iv)	30	--
Fine Suspended Particulates (PM _{2.5})	--	--	--	37.5 ⁽ⁱⁱ⁾	15	--
Ozone	--	--	160 ^(iv)	--	--	100
Lead	--	--	--	--	0.5	

Notes:

(i) No exceedance allowed

(ii) Not to be exceeded more than 18 times

(iii) Not to be exceeded more than 3 times

(iv) Not to be exceeded more than 9 times

New Parameters added in the Amendment Bill. The calculation of the new parameter peak season ozone should refer to the Amendment Bill.

3.3 Impact Review –Improvement Works Phase

3.3.1 No construction and demolition works will be conducted for the project. Only minor improvement works, including the replacement of existing toilets with portable toilet facilities adjacent to the management office building, will be carried out during the improvement works phase.

3.3.2 Representative Air Sensitive Receivers (ASRs) within the air quality study area of 500m from the boundary of the Site are identified in **Table 3.2** and illustrated in **Figure 3.1**.

Table 3.2 Representative Air Sensitive Receivers

NSRs	Uses	Description	Shortest Distance to the Site (m)
A1	Residential	No.169, Yau Oi Tsuen	~9
A2	Residential	Lutheran Theological Seminary	~135
A3	Residential	Chi Ha Yuen	~195

3.3.3 It is anticipated that fugitive dust emissions from the minor improvement works are not expected, and no special measures are likely necessary for dust control.

3.4 Impact Review – Operational Phase

3.4.1 No additional air polluting source is expected to be induced by the project. To this end, the air quality impacts on the identified ASRs within the study area will be comparable to the existing conditions after the commencement of the Project and no adverse air quality impact due to the proposed development is expected to occur during the operational phase.

Vehicular Emission

3.4.2 Table 3.1 in Chapter 9 of HKPSG stipulates the required buffer distance between the Air Sensitive Receivers (ASRs) and the surrounding roads. Applicable buffer distance requirements are summarised in **Table 3.3** below.

Table 3.3 Required Buffer Distance between the Surrounding Roads and the Air Sensitive Receivers of the Proposed Development.

Road	Type of Road ⁽ⁱ⁾	Required Buffer Distance (m)	Shortest Distance from the Road to the Site (m)
To Fung Shan Road	Local Distributor	>5m	54.10m

Note:

(i) The types of roads were referred to the annual traffic census 2023 issued by Transport Department (TD).

3.4.3 Based on the location of the site, the buffer distance requirements between To Fung Shan Road and the Site have been fulfilled, adverse traffic emission impact from the To Fung Shan Road to the air sensitive uses within the site are not expected.

Chimney Emission

3.4.4 Site survey was conducted on 15 July 2025 to identify any existing chimney located within 200m study area of the proposed development. Based on the observation in site surveys, no chimneys were found within 200m study area from the Site. Therefore, it is anticipated no adverse air quality impact arising from the chimney emission upon the operation of the Site.

Joss Paper Furnace

3.4.5 According to site visit conducted on 15 July 2025, there is no joss paper furnace within the Site. In the future, if joss paper were burnt, a smokeless furnace with high dust and smoke removal efficiency system from the Hong Kong Productivity Council (“HKPC”) or equipment with no less efficient from an equivalent supplier will be installed. The specification of these furnaces is referred to **Appendix A**.

3.4.6 The Applicant is also committed to follow good operation practice and administrative measures recommended in Guidelines on Air Pollution Control for Joss Paper Burning at Chinese Temples, Crematoria and Similar Places published by EPD. This includes:

- Only trained staff can operate the smokeless furnace and prohibit visitors/other people from operating the furnace.
- Ensure that the air pollution control equipment on the furnace has been turned on prior to use and is operating properly.
- Allow smokeless furnace for use in memorial ceremonies upon request only.
- Prohibit burning without the use of the smokeless furnace.
- Prohibit other usage of the smokeless furnace.
- Require visitors to burn only the materials that are provided by the Applicant so as to control the quantity and quality of burning materials.
- Provide guidance to visitors on minimising the quantity of burning materials and removing non-paper materials (such as plastic wrapping) before burning.

Odour Emission from Toilet Facilities

- 3.4.7 Sewage generated from the toilets will be connected to the enclosed sewage holding tanks. The sewage storage tanks will be emptied into the collection tanker using a vacuum system/tankered away by licensed contractor and so there will be no significant odour emission.

3.5 Conclusion

- 3.5.1 During the improvement works phase, only minor improvement works, including the replacement of existing toilets with portable toilet facilities adjacent to the management office building, will be carried out. No construction and demolition works will be conducted for the project. It is anticipated that fugitive dust emissions from the minor improvement works are not expected, and no special measures are likely necessary for dust control.
- 3.5.2 During the operation phase, there will not be significant emissions from vehicles transporting visitors to the Application Site and any potential odour from the portable toilet will be controlled. There are no joss paper furnaces at the Application Site. Smokeless furnace (if used in the future) with dust control measures will be installed and the recommendations in EPD's Guidelines on Air Pollution Control for Joss Paper Burning at Chinese Temples, Crematoria and Similar Places will be followed. Therefore, no adverse air quality impact is anticipated during the operation phase of the Application Site.

4 Noise Impact

4.1 Introduction

4.1.1 This section identifies and evaluates the potential noise impact likely to arise during improvement works and operations phases of the Applicant Site. Practical mitigation measures are proposed to reduce environmental impacts to acceptable level, if necessary.

4.2 Environmental Legislation, Standards and Guidelines

4.2.1 The Noise Control Ordinance (NCO) provides the statutory framework for noise control. Assessment procedures and standards relevant to the Project are set out in the Technical Memoranda (TM) and guidelines listed below:

- Chapter 9 “Environment” of the Hong Kong Planning Standards and Guidelines (HKSPG);
- Practice Note for Professional Persons No. ProPECC PN No.1/24 "Noise from Construction Activities - Non-Statutory Controls";
- Practice Note for Professional Persons No. ProPECC PN No.4/23 "Planning and Designing Noise Sensitive Developments";
- Noise Control Ordinance (NCO) (Cap.400);
- Technical Memorandum on Noise from Construction Work other than Percussive Piling (GW-TM);
- Technical Memorandum on Noise from Construction Work in Designated Areas (DA-TM); and
- Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (IND-TM).

4.3 Assessment Locations

4.3.1 The Study Area for noise impact assessment includes all area within 300m from the Project boundary. Representative Noise Sensitive Receivers (NSRs) located in the closest proximity to the Site Boundary of the proposed redevelopment are identified and detailed in **Table 4.1**. The locations of the NSRs are provided in **Figure 4.1**.

Table 4.1 Representative Noise Sensitive Receivers

NSRs	Uses	Description	Shortest Distance to the Site (m)
N1	Residential	No.169, Yau Oi Tsuen	~90
N2	Residential	Lutheran Theological Seminary	~135
N3	Residential	Chi Ha Yuen	~195

- 4.3.2 The selection of noise assessment locations for N1 and N2 would be based on openable window at the top floor which is considered at the closest distance to the site with direct line of sight. For N3, as observed during site visit and desktop study, there is no direct line of sight to the site for the openable window at N3. The noise assessment location is selected at the closest distance to the Site with openable window.

4.4 Impact Review – Improvement Works Phase

- 4.4.1 No construction and demolition works will be conducted for the project. Only minor improvement works, including the replacement of existing toilets with portable toilet facilities adjacent to the management office building, will be carried out during the improvement works phase. Therefore, a CNP will not be required, as significant noise from the minor improvement work is not expected and no special measures are likely necessary for noise control.

4.5 Impact Review – Operational Phase

- 4.5.1 The operating hours of the Application Site will be from 9:30am to 5:30pm. Sources of potential noise include religious ceremonies/ activities, traffic noise, and noise from the operation of building services equipment, such as air-conditioners.

Religious Ceremonies/Activities

- 4.5.2 The Application Site will be used for peaceful and quiet contemplation and, upon request, only small-scale religious ceremonies/activities are allowed to be carried out inside the buildings during non-festival periods. As such, no adverse noise impact to the nearby NSRs is anticipated.

Traffic Noise

- 4.5.3 Noise impact due to vehicular access to the Application Site will be negligible during non-festival periods due to the minimal number of visitors (i.e. not more than 10/day). During festival periods, shuttle buses will be provided to deliver the visitors to and from the Site. No notifiable traffic noise impact on NSRs is anticipated.

Operation of Building Services (“BS”) Equipment

- 4.5.4 Split type air conditioners are currently installed at the columbarium building, the air conditioners are at the fully screened from NSRs by building structures within the Application Site and the surrounding topography. Thus, no adverse noise impact on the nearby NSRs is anticipated.

Operation of Smokeless Furnace

4.5.5 According to site visit conducted on 15 July 2025, there is no joss paper furnace within the Site. In the future, if joss paper furnace were burnt, a smokeless furnace with high dust and smoke removal efficiency system from the Hong Kong Productivity Council (“HKPC”) or equipment with no less efficient from an equivalent supplier will be installed. The specification of these furnaces is referred to Appendix A. The Applicant is also committed to follow good operation practice and administrative measures recommended in Guidelines on Air Pollution Control for Joss Paper Burning at Chinese Temples, Crematoria and Similar Places published by EPD. This includes:

- Only trained staff can operate the smokeless furnace and prohibit visitors/other people from operating the furnace.
- Ensure that the air pollution control equipment on the furnace has been turned on prior to use and is operating properly.
- Allow smokeless furnace for use in memorial ceremonies upon request only.
- Prohibit burning without the use of the smokeless furnace apart from joss paper/ sticks burning.
- Prohibit other usage of the smokeless furnace.
- Require visitors to burn only the joss paper/ sticks materials that are provided by the Applicant so as to control the quantity and quality of burning materials.
- Provide guidance to visitors on minimising the quantity of burning materials and removing non-paper materials (such as plastic wrapping) before burning.

4.5.6 As mentioned in **Section 3.4.5**, there is no joss paper furnace on site at the time of this planning application. If joss paper were burnt in the future, a smokeless furnace will be purchased as mentioned **Section 3.4.5**. The major sources from the operation of the smokeless furnace will include water pumps, fans and scrubber. However, significant noise impact arising from these noise sources is not anticipated as the closest N1 is located approximately 90m from the Site Boundary, which is far away from the furnace. In addition, the noise arising from the smokeless furnace, if any, will be fully screened by the surrounding topography. Therefore, no adverse noise impact due to smokeless furnace (if any) is anticipated.

4.6 Conclusions

4.6.1 During the improvement works phase, only minor improvement works, including the replacement of existing toilets with portable toilet facilities adjacent to the management office building, will be carried out during the improvement works phase. No construction and demolition works will be conducted for the project. Therefore, no adverse noise impact from the minor improvement works is anticipated during the improvement works phase and no special measures are likely necessary for noise control.

4.6.2 During the operation phase, no adverse noise impact is anticipated from religious ceremonies/ activities, traffic, the operation of building services equipment and the smokeless furnace (if any). Therefore, no adverse noise impact is anticipated during the operation phase of the Application Site.

5 Water Quality Impact

5.1 Introduction

5.1.1 This section discusses the potential water impact likely arising during improvement works and operations phases of the proposed development. Practical mitigation measures are proposed to reduce environmental impacts to acceptable level, if necessary.

5.2 Environmental Legislation, Standards and Guidelines

5.2.1 The relevant legislation and associated guidance applicable to this EA for the assessment of water quality impacts include:

- Water Pollution Control Ordinance (WPCO) (Cap. 358)
- Water Pollution Control (General) Regulations
- Water Pollution Control (Sewerage) Regulation
- Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS)
- Chapter 9 “Environment” of the Hong Kong Planning Standards and Guidelines (HKSPG)
- Professional Persons Environmental Consultative Committee Practice Note 1/94 Construction Site Drainage (ProPECC PN 2/24)
- Professional Persons Environmental Consultative Committee Practice Note 1/23 Drainage Plans subject to Comment by the Environmental Protection Department (ProPECC PN 1/23)

5.3 Impact Review – Improvement Works Phase

5.3.1 The Application Site is located at several lots in D.D. 186, To Fung Shan. Part of the Application Site is located within the boundary of a Lower Indirect Water Gathering Ground (“LIWGG”), for which the Water Supplies Department (“WSD”) takes responsibility. Water collected in the LIWGG is stored in Lower Shing Mun Reservoir for future potable use after treatment.

5.3.2 No construction and demolition works will be conducted for the project. Only minor improvement works, including the replacement of existing toilets with portable toilet facilities adjacent to the management office building, will be carried out during the improvement works phase. Hence, water pollution generated from the improvement works is not expected, and no special measures are likely to be necessary for water control.

5.4 Impact Review – Operational Phase

- 5.4.1 The ProPECC PN 1/23, Drainage Plans subject to Comments by Environmental Protection Department, provides guidelines and practices for handling, treatment and disposal of various effluent discharges to stormwater drains and foul sewers. The design of site drainage and disposal of site effluents generated within the proposed development area should follow the relevant guidelines and practices as given in the ProPECC PN 1/23.
- 5.4.2 The sewage from the portable toilets will be collected regularly.
- 5.4.3 According to the Water Quality Assessment Report (WQA) which is provided separately in this Section 12A Rezoning Application Submission, the possible impacts on the local sewerage network due to the operation of the proposed development has been evaluated. The assessment findings demonstrated and confirmed that there should be sufficient capacity for the public sewer to handle the change of sewage generation due to the proposed uses. Therefore, adverse impact on water quality during the operation phase of the Project is not anticipated.
- 5.4.4 During operation phase, surface runoff is also considered as a potential source of water quality impact due to the additional paved areas created by the proposed development. However, as the surface runoff would be collected and discharged to adequate drainage system, minimal impact is anticipated.

5.5 Conclusions

- 5.5.1 During the improvement works phase, only minor improvement works, including the replacement of existing toilets with portable toilet facilities adjacent to the management office building, will be carried out during the improvement works phase. No construction and demolition works will be conducted for the project. Hence, water pollution generated from the improvement works is not expected, and no special measures are likely to be necessary for water control.
- 5.5.2 During the operation phase, adverse impact on water quality is not anticipated. Although surface runoff is also considered as a potential source of water quality impact due to the additional paved areas created by the proposed development, as the surface runoff would be collected and discharged to adequate drainage system, minimal impact is anticipated.

6 Waste Management

6.1 Introduction

6.1.1 This section identifies the types of wastes that are likely to be generated during the improvement works and operation of the proposed development and evaluates the associated waste management implication that may result from these waste types.

6.2 Environmental Legislation, Standards and Guidelines

6.2.1 The relevant legislation and associated guidance applicable to this report for the review of waste management implications include:

- Waste Disposal Ordinance (WDO) (Cap. 354);
- Waste Disposal (Chemical Waste) (General) Regulation;
- Waste Disposal (Charges for Disposal of Construction Waste) Regulation;
- Public Health and Municipal Services Ordinance (Cap. 132) – Public Cleansing and Prevention of Nuisances Regulation; and
- Land (Miscellaneous Provisions) Ordinance (Cap. 28).
- Development Bureau Technical Circular (Works) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials (“DEVB TC(W) No. 6/2010”);
- Building Department Practice Note for Registered Contractors (“PNRC 17”), Control of Environmental Nuisance from Construction Sites;
- Environmental, Transport and Works Bureau (ETWB) Technical Circular (Works) No. 22/2003A, Additional Measures to improve Site Cleanliness and Control Mosquito Breeding on Construction Sites;
- Building Department’s Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers No. ADV-19 Construction and Demolition Waste
- ETWB TCW No. 6/2002A, Enhanced Specification for Site Cleanliness and Tidiness;
- Code of Practice of the Packaging, Labelling and Storage of Chemical Waste, EPD (2022);
- A Guide to the Chemical Waste Control Scheme, EPD (2022)

6.3 Impact Review – Improvement Works Phase

6.3.1 The proposed improvement is located in a private low density residential area and will involve **the replacement of existing toilets with portable toilet facilities adjacent to the management office building. No construction and demolition works will be conducted for the project.** The activity is expected to generate general refuse **by site workers.**

General Refuse

6.3.2 The workforce would generate refuse comprising food scraps, paper waste, empty containers, etc. Such refuse will be properly stored in a designated area prior to collection and disposal. Disposal of refuse at site other than approved waste transfer or disposal facilities is prohibited. Effective collection of the on-site wastes will prevent waste materials being blown around by wind, or creating an odour nuisance or pest and vermin problems. Waste storage areas will be well maintained and cleaned regularly.

6.3.3 To minimize the disposal quantities of general refuse, recycle bins for different types of recyclable waste should be provided together with general refuse bins. Arrangements should be made with the recycling contractor to collect the recycled material regularly. The Contractor shall provide briefing for workers regarding avoiding, reducing, reusing and recycling of general refuse during induction training.

6.3.4 With the implementation of good waste management practices at the Site, adverse environmental impacts are not expected to arise from the storage, handling and transportation of workforce wastes.

Mitigation Measures

6.3.5 In line with the Hong Kong Government's position on waste minimisation, the practice of avoiding and minimising waste generation and waste recycling should be adopted as far as practicable throughout the improvement works phase. With implementation of below recommended mitigation measures, no adverse waste management impact is anticipated to occur.

- Waste management shall be controlled through contractual requirements as well as through statutory requirements.
- For general refuse, provisions of recycle bins for different types of recyclable waste should be provided together with a general refuse bin. Arrangements should be made with the recycling companies to collect the recycle waste. A reputable waste collector should be employed by the construction contractor to remove general refuse from the Site. Preferably an enclosed and covered area should be provided to reduce the occurrence of "wind-blown" materials.

6.4 Impact Review – Operational Phase

- 6.4.1 During operational phase, general refuse anticipated from the proposed development include daily activities of residents, staff and visitors. Waste would include general food waste and other recyclable waste including paper, glass and metal containers, etc.
- 6.4.2 General refuse generated during the operational stage will be collected at the refuse collection point provided within the Site for further collection. The waste management practice will comply with the statutory requirements.
- 6.4.3 With the implementation of good waste management practices at the Site, the environmental impacts caused by storage, handling, transport and disposal of general refuse are expected to be minimal.

6.5 Conclusions

- 6.5.1 During the improvement works phase, only minor improvement works, including the replacement of existing toilets with portable toilet facilities adjacent to the management office building, will be carried out during the improvement works phase. No construction and demolition works will be conducted for the project. With the implementation of good waste management practices at the Site, adverse environmental impacts are not expected to arise from the storage, handling and transportation of workforce wastes.
- 6.5.2 During the operation phase, general refuse, which including general food waste and other recyclable waste will be the only major type of waste. With the implementation of good waste management practices at the Site, the environmental impacts caused by storage, handling, transport and disposal of general refuse are expected to be minimal.

7 Conclusion

- 7.1.1 The potential environmental impacts during the improvement work and operation phase of proposed development have been identified and evaluated in this Environmental Assessment Report. The EA report concludes that the improvement works and operation phase of the Applicant Site would be environmentally acceptable and in compliance with the environmental legislation and standards. With the implementation of the recommended environmental mitigation measures, no adverse environment impact from the proposed development is anticipated.

Figure 1.1 Site Location and its Environ

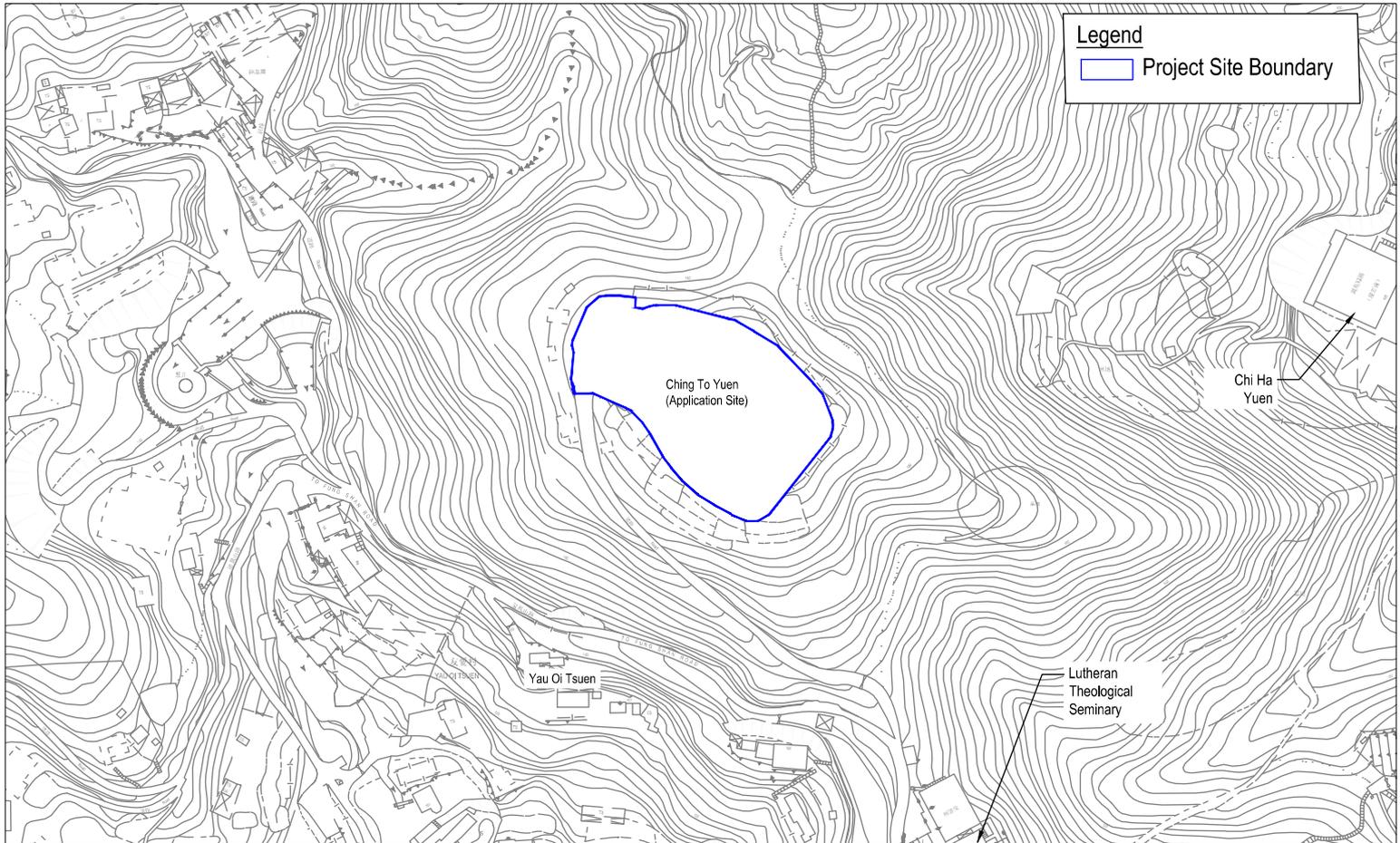


Figure 3.1 Representative Air Sensitive Receivers

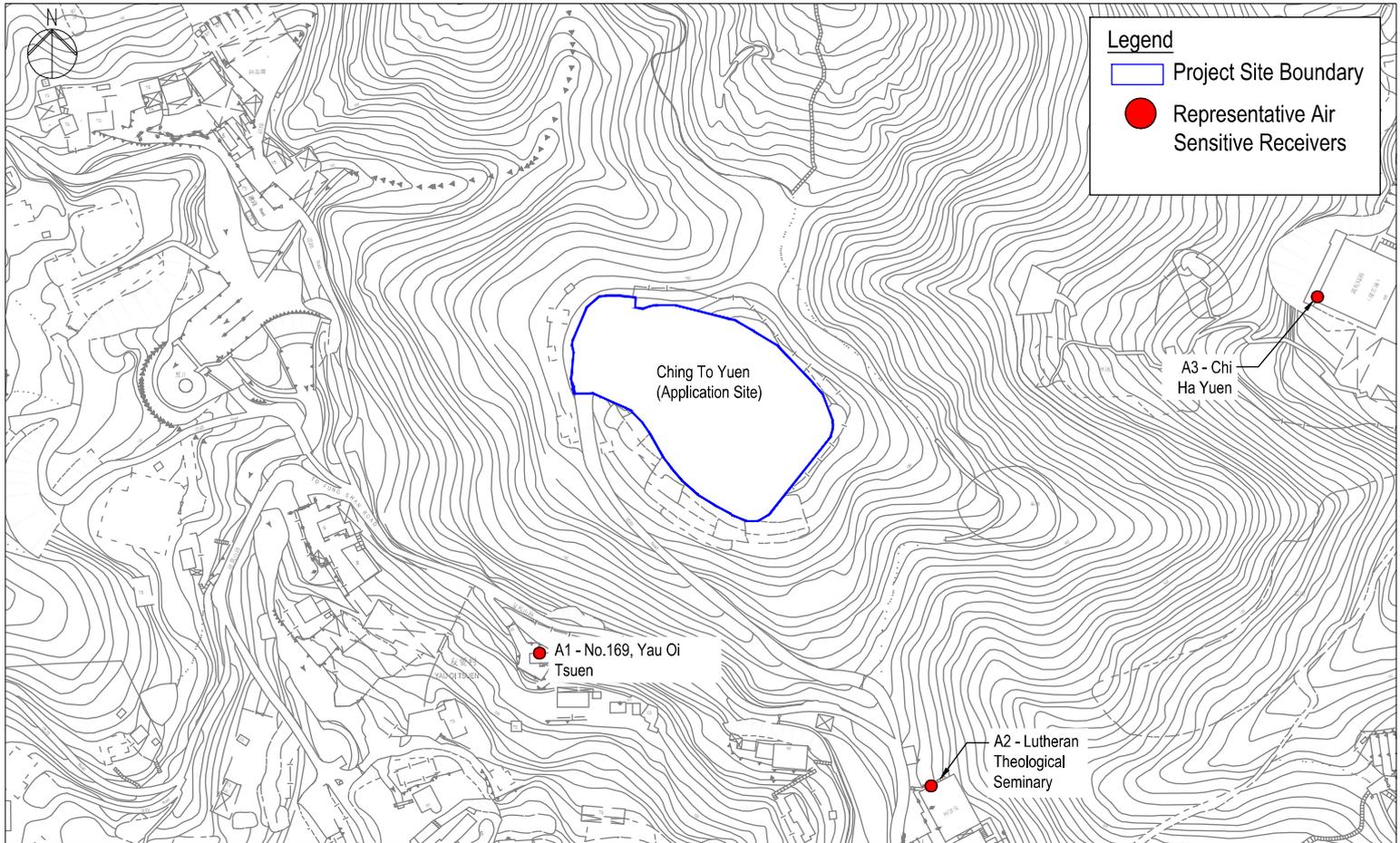
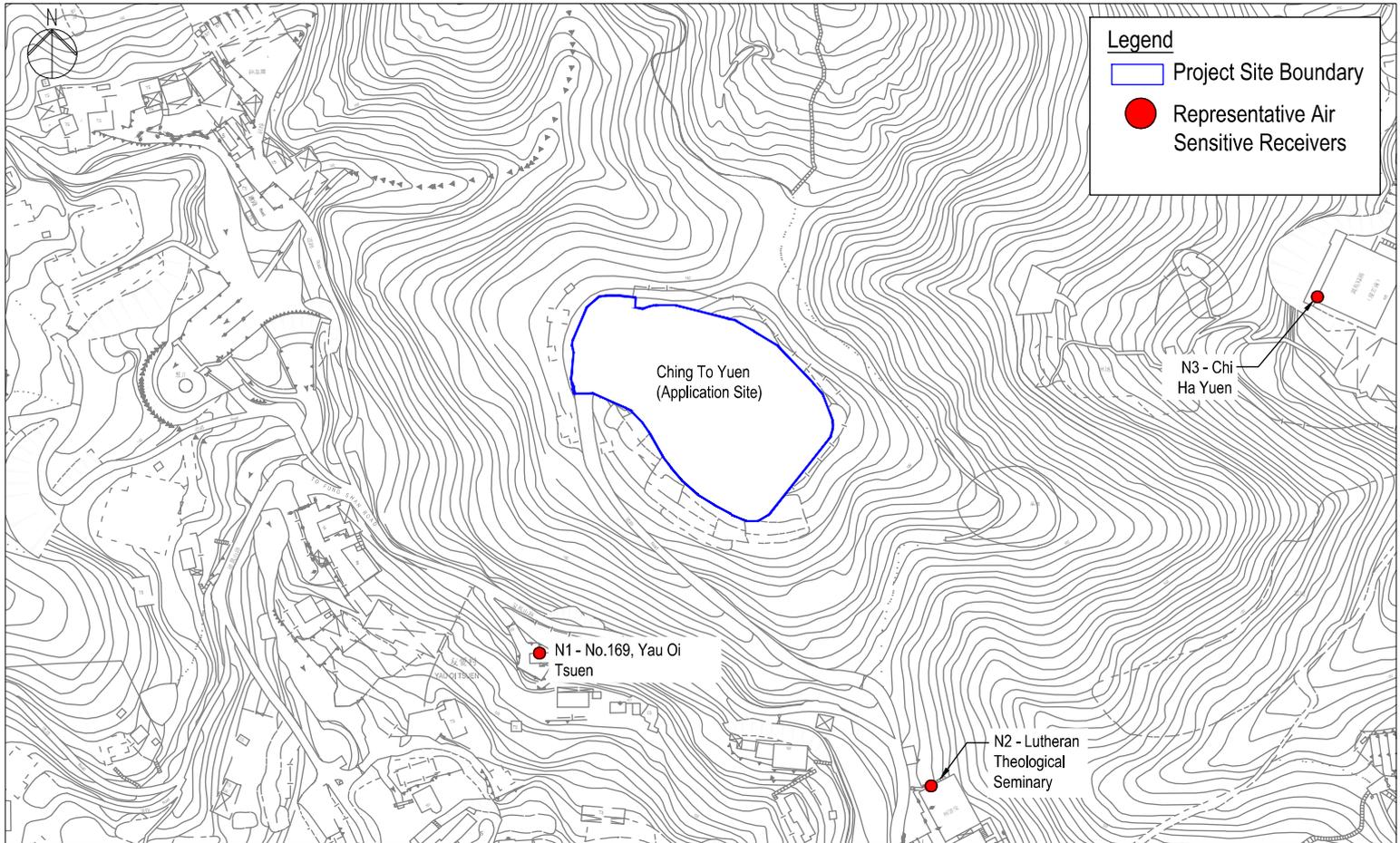


Figure 4.1 Representative Noise Sensitive Receivers



Appendix A

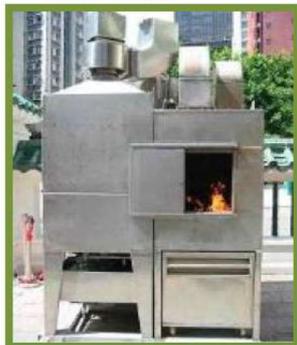


燃燒紙錢及紙紮祭品的 空氣污染控制技術



All-round Productivity Partner
全方位企業伙伴

“Qing Yan” Eco-Furnace
「清煙」化寶爐



2003

Paper Artifact Furnace 紙紮爐



2008

Mobile Furnace 流動化寶爐

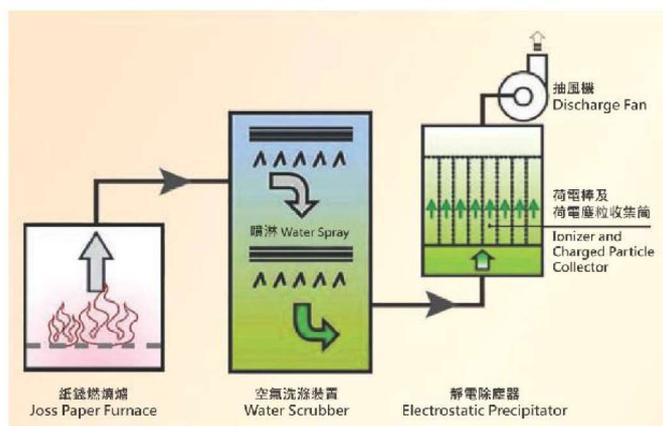


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適合燃燒祭品	小型紙紮祭品如紙錢、衣包
處理量	每小時40公斤
設備尺寸	1800(W) x 1800(D) x 2900mm(H)
燃燒室尺寸	內部：700(W) x 800(D) x 1100mm(H) 爐口：600(W) x 400mm(H)
適合場所	廟宇、道觀、火葬場、醫院等
項目經驗	共42台（到2014年2月為止）

HKPC®

“Qing Yan” Eco-Furnace 清煙化寶爐

	地點	客戶	年份
1.	上環文武廟	東華三院	2003
2.	紅磡觀音廟	華人廟宇委員會	2004
3.	赤柱天后廟	赤柱街坊福利會	2005
4.	旺角水月宮	東華三院	2005
5.	上環通靈壇(2台)	通靈壇	2006
6.	天后天后廟	康民署/仁利建築	2006
7.	九龍城侯王廟	偉業聯和/華人廟宇委員會	2006
8.	紅磡觀音廟	華人廟宇委員會	2006
9.	大坑蓮花宮	華人廟宇委員會	2007
10.	彌石山火葬場(4台)	食環署/建築署/華高營造	2008
11.	黃大仙祠	色齋園	2009
12.	北區醫院	醫院管理局	2010
13.	大埔那打素醫院	醫院管理局	2011
14.	大埔醫院	醫院管理局	2011
15.	沙田醫院	醫院管理局	2011
16.	沙田威爾斯親王醫院	醫院管理局	2012
17.	秀茂坪天后廟	藝琳建築	2012
18.	和合石骨灰龕園(12台)	食環署/建築署/安保工程	2012
19.	和合石火葬場(3台)	食環署/建築署/宏宗建築	2012
20.	北大嶼山醫院	醫院管理局	2013
21.	柴灣歌連臣角火葬場(2台)	食環署/建築署/順昌機電	2013
22.	將軍澳醫院	醫院管理局	2014
23.	忠和精舍(2台)	忠和精舍	2014



總數:
42台

HKPC®

“Qing Yan” Eco-Furnace 清煙化寶爐



系統	紙紮爐除煙系統
設計專利編號	HK1166930
適合燃燒祭品	大型紙紮祭品 / 大量燃燒小型紙祭品
處理量	每小時400公斤
設備尺寸	除煙設備空間約12m x 7m x 5m(H)
燃燒室尺寸	內部: 1300(W) x 2500(D) x 2000mm(H) 爐口: 1300(W) x 1600mm(H)
適合場所	殯儀館、墳場、骨灰龕等
項目經驗	共9套系統 (4套建造中) (到2014年2月為止)

HKPC®

Paper Artifact Furnace 紙紮爐

項目	地點	開始運作年份
1.	大圍寶福紀念館 (殯儀館)	2008
2.	九龍塘一佛堂	2009
3.	大角咀九龍殯儀館	2010
4.	沙田寶福山 (骨灰龕)	2011
5.	澳門永念庭 (骨灰龕)	2012
6.	香港殯儀館	建造中
7.	大圍寶福紀念館新系統	建造中
8.	鑽石山殯儀館	建造中
9.	世界殯儀館	建造中



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Paper Artifact Furnace 紙紮爐



系統	流動化竇爐
設計專利編號	HK1174188
適合燃燒祭品	小型紙祭品如紙錢、衣包（另附有香爐）
處理量	每小時20公斤
設備尺寸	2100(W) x 1050(D) x 2600mm(H)
燃燒室尺寸	內部：600(W) x 600(D) x 600mm(H) 爐口：600(W) x 220mm(H)
適合場所	屋苑、盂蘭節「燒街衣」活動及其他用量較低場所
項目經驗	2013年推出、試驗機曾於一私人屋苑實地試用

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Mobile Furnace 流動化竇爐



Thank You!
谢谢!

Contacts:



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Appendix B



Water Sample Test Result Summary 水樣本測試結果總結

Sampling Date 樣本採集日期:	11 March 2011
Sampling Location 樣本採集地點:	Joss Paper Furnace System in a Funeral Parlour in Hong Kong 位於香港一殯儀館的燒衣爐系統
Sample Type 樣本性質:	Waste water collected at the bottom storage tank of water spray tower (After one day of operation and before daily drain off to building foul sewer) 從噴淋塔底部儲水缸中採集的污水(經過一天運作後,在每天進行排放至污水渠的步驟之前)
Water sample taken at bottom storage tank of water spray tower of the joss paper furnace system	Water sample
	

Relevant Paragraph in Appendix 9 附件九相關段落*	Parameter 物質/參數	Macau Limit* 澳門廢水標準* (mg/L)	Method 檢測方法	Detection Limit 檢測極限 (mg/L)	Result of Waste Water Test** 廢水樣本檢測結果**(mg/L)	Comply with Discharge Limit
段落四	pH 值	6<pH<10	APHA 4500-H+B	-	8.1	Yes
	Temperature 溫度	<45°C	On-site measurement	-	21 °C	Yes
	Colour 色度	80 TCU	APHA 20ed 2120B	5 TCU	25 TCU	Yes
	Particle size 最大固體尺寸	< 5cm	In-house (qualitative)	-	<5cm	Yes
	Total Suspended Solids 懸浮固體總數	1000	APHA 2540 D	2.5	37	Yes
	Oil & Grease 油及脂肪成份	100	APHA 5520 B	10	<10	Yes
	Sulphide 硫化物	1	HACH DR/3000 S.2	0.1	<0.1	Yes
段落五 (a)	Biochemical Oxygen Demand 生化需氧量	1000	BS6068:Section2.14:1996	3	14	Yes
段落五 (b)	Chemical Oxygen Demand 化學需氧量	2000	APHA 5220	5	36	Yes
段落五 (c)	Total Surfactants 總表面活性劑	75	In-house method	0.6	<0.6	Yes
段落五 (d)	Arsenic 砷	1	ICP-MSD	0.001	0.005	Yes

Relevant Paragraph in Appendix 9 附件九相關段落*	Parameter 物質/參數	Macau Limit* 澳門廢水標準* (mg/L)	Method 檢測方法	Detection Limit 檢測極限 (mg/L)	Result of Waste Water Test** 廢水樣本檢測結果**(mg/L)	Comply with Discharge Limit
	Cadmium 鎘	0.2	ICP-MSD	0.0002	<0.0002	Yes
	Lead 鉛	2.5	ICP-MSD	0.002	0.005	Yes
	Copper 銅	5	ICP-MSD	0.001	0.041	Yes
	Chromium 鉻	2	ICP-MSD	0.001	0.005	Yes
	Chromium (VI)六價鉻	0.1	APHA 18ed 3500-Cr D	0.1	<0.1	Yes
	Mercury 汞	0.05	ICP-MSD	0.0005	<0.0005	Yes
	Nickel 鎳	4	ICP-MSD	0.001	0.023	Yes
	Cyanide 氰化物	1	APHA 4500-CN C&F	0.05	<0.05	Yes
	Phenols 酚	10	APHA 5530 A,B &D	0.1	0.3	Yes
	Mineral oil 礦物油	15	USEPA method 8015B by GC/FID	0.5	<0.5	Yes
	Total residual chlorine 總有效餘氯	1.0	HACH DR/3000 Procedure C.2	0.1	0.3	Yes

* 《澳門供排水規章》第九十三條“准許廢水注入下水道網路之一般規定”中及附件九所列的要求

** 請參見附件香港生產力促進局實驗室化驗報告編號 C0002724 (日期: 24/03/2011)

Other Relevant Paragraph in Appendix 9 附件九相關段落*	Macau Limit 澳門廢水標準* (mg/L)	Reason of Compliance 符合廢水排放標準的原因	Comply with Discharge Limit
段落五 (e)	No materials that are hazardous to the ecosystem 廢水應沒有引致破壞生態系統之物質	As the waste water only contains mainly small amount of suspended solid upon scrubbing of the exhaust air from the joss paper furnace, it would not affect the ecosystem or contain any other restricted materials as stipulated in paragraph 6.	Yes
段落六	No other restricted materials stated in this paragraph 應沒有此段落限制的其它物質	由於廢水只含主要為燒衣爐排煙被水噴淋後收集的固體懸浮物，而且數量少，並不會引致破壞生態系統，也沒有含有段落六所列的限制物質	Yes

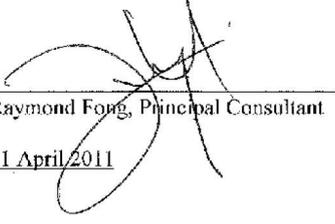
* 《澳門供排水規章》第九十三條“准許廢水注入下水道網路之一般規定”中及附件九所列的要求

Conclusion 結論

The waste water sample collected from the joss paper furnace system can fully comply with the requirements stated in Appendix 9 of the Macau waste water discharge code.

從燒衣爐系統抽取的廢水樣本完全符合《澳門供排水規章》第九十三條“准許廢水注入下水道網路之一般規定”附件九所列的要求

Reported Endorsed by:


Raymond Fong, Principal Consultant

Date:

11 April 2011

Hong Kong
Head Office
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HKPC-A120



TEST REPORT

Test Report No : C0002724
Folder No : 1101877
Page No : 1 of 3
Date of Issue : 24/03/2011

Client : EMD Unit 4101
Address :

Sample Description : 1 wastewater sample was collected by HKPC staff

Sample Received Date : 11/03/2011

Test Completed Date : 24/03/2011

Approved Signatory : Fung Kam Wing
Remarks : Requested by : David Lo

Analytical Results:

Parameter	Sample Name	Unit	Test Results	Analysis Date	Method Code
	Sample Name		KFP-B		
	Sample ID		WC-1103-0134		
Biochemical Oxygen Demand	(mg O ₂ /L)		14	11/3/2011	WTM-BOD-3
Mineral Oil	(mg/L)		< 0.5	22/3/2011	WTM-DRO-3
Particle size >or= 5cm			Not observed	22/3/2011	In-house method
Chemical Oxygen Demand	(mg O ₂ /L)		36	16/3/2011	WTM-COD-5
Hexavalent Chromium	(mg/L)		<0.10	16/3/2011	WTM-CR6-1
Oil and Grease	(mg/L)		<10	18/3/2011	WTM-O&G-2
pH			8.1 (at 21°C)	11/3/2011	WTM-PH-1
Phenol	(mg/L)		0.3	15/3/2011	WTM-PHEN-2
Sulphide	(mg/L)		<0.1	15/3/2011	WTM-S-2
Temperature	(°C)		21	14/3/2011	WTM-TEMP-1
Total Arsenic	(ug/L)		5	14/3/2011	WTM-ICPMS-1
Total Cadmium	(ug/L)		<0.2	14/3/2011	WTM-ICPMS-1
Total Chlorine	(mg/L)		0.3	11/3/2011	WTM-CL2-2
Total Chromium	(ug/L)		5	14/3/2011	WTM-ICPMS-1
Total Color	(TCU)		25 (pH 8.1)	15/3/2011	WTM-COLOR-2
Total Copper	(ug/L)		41	14/3/2011	WTM-ICPMS-1

Approval Signatory:

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TEST REPORT

Test Report No : C0002724
Folder No : 1101877
Page No : 2 of 3
Date of Issue : 24/03/2011

Client : EMD Unit 4101
Address :

Sample Description : 1 wastewater sample was collected by HKPC staff

Sample Received Date : 11/03/2011

Test Completed Date : 24/03/2011

Approved Signatory : Fung Kam Wing
Remarks : Requested by : David Lo

Analytical Results:

Parameter	Sample Name	Test Results	Analysis Date	Method Code
	Sample ID			
Total Cyanide	KFP-B WC-1103-0134 (mg/L)	<0.05	21/3/2011	WTM-CN-3
Total Lead	(ug/L)	5	14/3/2011	WTM-ICPMS-1
Total Mercury	(ug/L)	<0.5	14/3/2011	WTM-ICPMS-1
Total Nickel	(ug/L)	23	14/3/2011	WTM-ICPMS-1
Total Surfactant	(mg/L)	<0.6	17/3/2011	WTM-TSURF-2
Total Suspended Solids	(mg/L)	37	11/3/2011	WTM-SS-1

Approval Signatory:

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TESTING METHODS – INORGANICS

Parameter	Method	Reference	Parameter	Method	Reference
Water/Wastewater (Physical Properties & Nutrients)					
Acidity	WTM-ACID-1	APHA 18ed 2310B	Sulphate	WTM-SO4-1	In-house method
Alkalinity (as CaCO ₃)	WTM-ALKA-1	APHA 21ed 2320B	Sulphide	WTM-IC-1	Ion Chromatography
Alkalinity (as NaOH)	WTM-ALKA-1	APHA 21ed 2320B (modified)		WTM-S-1	APHA 18ed 4500-S ² C&E
Ammonia-N	WTM-NH3-2	APHA 17ed 4500-NH ₃ B,E		WTM-S-2	"HACH" DR/3000 Procedure S.5
	WTM-NH3-4	Flow Injection Analysis	Sulphite	WTM-SO3-1	APHA 18ed 4500-SO ₃ ² B
Bicarbonate	WTM-HCO3-1	APHA 18ed 2320B	Titration curve	WTM-TIC-1	Potentiometric Titration Method
BOD ₅ (5 days Biochemical Oxygen Demand)	WTM-BOD-1	APHA 17ed 5210B&4500-O C	Total Dissolved Solids	WTM-TDS-1	APHA 17ed 2540C
	WTM-BOD-2	APHA 17ed 5210 B & BS6068: Section2.15:1986	Total Hardness	WTM-HARD-1	APHA 21ed 2340C
	WTM-BOD-3*	BS6068:Section 2.14:1990	Total Organic Carbon (TOC)	WTM-TOC-1	ISO8245:1987 (E)
Bromine	WTM-BR-1	HACH DR/3000 Procedure B.3	Total Solids	WTM-TS-1	APHA 18ed 2540D
Carbonate	WTM-CO3-1	APHA 21ed 2320B	Total Suspended Solids	WTM-SS-1	APHA 17ed 2540D
Chloride	WTM-CL-1	APHA 21ed 4500-ClB	Total Surfactant (Sum of Anionic and nonionic surfactant)		
	WTM-IC-1	Ion Chromatography	Anionic Surfactant	WTM-MBAS-1	In house method
Chlorine, Residual	WTM-CL2-1	APHA 21ed 4500-Cl B	Nonionic Surfactant	WTM-NIS-1	(MBAS calculated as Aerosol OT, mol. Wt. At 444)
Total Residual Chlorine	WTM-CL2-2	"HACH" DR/3000 Procedure C.2	Turbidity	WTM-TURB-1	APHA 20ed 5540 Surfactants B&C
Chlorophyll-a	WTM-CHL-1	APHA 19ed 10200H	UV Transmittance at 253.7nm	WTM-UV-1	In House Method
COD (Chemical Oxygen Demand)	WTM-COD-1	APHA 21ed 5220B	Volatile Acids	WTM-VA-1	APHA 18ed 5560C
	WTM-COD-2	APHA 18ed 5220D	Volatile Suspended Solids (VSS)	WTM-VSS-1	APHA 17ed 2540E
	WTM-COD-3	In House Method			
	WTM-COD-5	ASTM D 1252-88 Method B 1992	Water/Wastewater (Cations & Trace Metals)		
Sample preparation for settled COD	WTM-COD-4	TES Scheme S.S. No.5 to Gazette Ext. No. 9/1995	Pretreatment for soluble metals		APHA 18ed 3030B
			Pretreatment for total metals		APHA 17ed 3030E
Colour (Lovibond Unit)	WTM-COLOR-1	Lovibond Tintometer 25mm cell			APHA 18ed 3030A, E&F3b
Colour (Total Color Unit)	WTM-COLOR-2	APHA 20e 2120 B			APHA 19ed 3030F
Conductivity	WTM-COND-1	APHA 21ed 2510B	Metals (for ppm level)	WTM-METAL-1	APHA 17ed 3111 by AAS
Cyanide, Total	WTM-CN-1	APHA 17ed 4500-CN C&D	(for ppb level)	WTM-METAL-4	In House Method by GFAA
	WTM-CN-2	APHA 18ed 4500-CN C&F		WTM-ICPMS-1	In House Method by ICP/MS
	WTM-CN-3	Flow Injection Analysis	Antimony	WTM-METAL-6	In House Method by GFAA
Dissolved Oxygen	WTM-DO-1	APHA 18ed 4500C			(Digestion: APHA 18ed 3030F 3a)
	WTM-DO-2	BS6068:Section2.15:1986	Boron (total)	WTM-TB-1	APHA 19ed 4500-B B
Dry Solid Content	WTM-DS-1	In House Method	Calcium	WTM-CA-1	Flame Photometry
Fluoride	WTM-F-1	APHA 21ed 4500-F C		WTM-CA-2	APHA 18ed 3500-Ca D
	WTM-IC-1	Ion Chromatography		WTM-CA-3	APHA 18ed 3111
Moisture Content	WTM-MOIST-1	In House Method	Gold	WTM-AU-1	In House Method by AAS
Nitrogen, Total (Sum of Nitrite-N, Nitrate-N and Total Kjeldahl-N)			Hexavalent Chromium	WTM-CR6-1	APHA 18ed 3500-Cr D
	WTM-TN-3	Flow Injection Analysis	Iron	WTM-FE-1	HACH DR5000 Method 8008
Nitrite-N	WTM-NO2-1	APHA 21ed 4500-NO ₂ B	Mercury	WTM-HG-2	Cold Vapour Atomic Absorption
	WTM-NO2-2	Flow Injection Analysis	Potassium	WTM-K-1	APHA 17ed 3500-K D
	WTM-IC-1	Ion Chromatography	Sodium	WTM-NA-1	APHA 17ed 3500-Na D
Nitrate-N	WTM-NO3-2	APHA 18ed 4500-NO ₃ D	Sodium, Potassium, Calcium, Magnesium	WTM-IC-2	Ion Chromatography
	WTM-NO3-3	APHA 21ed 4500-NO ₃ E			
	WTM-NO3-4	Flow Injection Analysis	Water/Wastewater (Microbiological Tests)		
Total Kjeldahl Nitrogen	WTM-KN-1	APHA 17ed 4500NorgB & NH ₃ E	E.coli	MTM-ECOLI-1	DoE 7.8 & 7.9 plus in-situ urease test
	WTM-KN-2	Flow Injection Analysis	Fecal Coliform	MTM-FECO-1	APHA 18ed 9222D
Oxidized-N (Sum of NO ₂ & NO ₃)	WTM-NO3-3	APHA 18ed 4500-NO ₃ E	Heterotrophic Plate Count (Total Bacterial Count)	MTM-SPC-1	APHA 20ed 9215 A&B
Odour	WTM-ODOR-1	APHA 21ed 2150B	Total Coliform	MTM-COLI-1	DoE 7.8 & 7.9
Oil & Grease	WTM-O&G-2	APHA 20ed 5520B	Legionellae pneumophila	MTM-LEG-1	AS/NZS 3896:1998
Organophosphonic Acid	WTM-OPA-1	HACH DR/3000 Procedure P.2	Vibrio including		The Microbiology of Drinking Water (2002) part 10, Environment Agency, UK and Chapter 9 of BAM Online, 8 th Edition, FDA US, 2001
Oxygen Absorbed Value	WTM-OAV-1	Water Treatment Handbook Degrement, 1973 P.603	Vibrio cholera	MTM-VC-1	
			Vibrio parahaemolyticus	MTM-VP-1	
pH	WTM-PH-1	APHA 21ed 4500-H ⁺ B	II Sediment/Soil		
Phenols	WTM-PHEN-1	APHA 18ed 5530 A,B&C	Dry Solid Content/ Moisture Content	SEDIMENT-DS-1	Gravimetric method
	WTM-PHEN-2	APHA 18ed 5530 A,B&D	Mercury	SEDIMENT-HG-2	Cold Vapour Atomic Absorption
Phosphorus (soluble)	WTM-P-1	APHA 18ed 4500-P C	Metals	SEDIMENT-METAL-2	Digestion : Aqua Regia Analysis : AAS/GFAAS
	WTM-IC-1	Ion Chromatography		SEDIMENT-METAL-3	Digestion : Aqua Regia Analysis : ICP/MS
Total Reactive Phosphorus	WTM-P-2	APHA 21ed 4500-P E	Total Organic Carbon/Total Carbon	SEDIMENT-TOC-1	Oxidation by Combustion
	WTM-P-3	Flow Injection Analysis	Total Nitrogen	SEDIMENT-TN-1	APHA 17ed 4500NorgB & NH ₃ E & APHA 18ed 4500-NO ₃ E
Total Phosphorus	WTM-TP-1	APHA 18ed 4500-P B&C			
	WTM-TP-2	APHA 21ed 4500-P B5&E	III Biological Tissues		
	WTM-TP-3	Flow Injection Analysis	Metals	FD-METAL-1	Digestion : Microwave digestion Analysis : ICP/MS
Salinity	WTM-SALL-2	Refractometer			
Settleable Solids	WTM-SETT-1	APHA 17ed 2540F	VI Proprietary Chinese Medicine & Chinese Herbal Medicine		
Silica	WTM-SIO4-1	Test Kit Method	Metals	TCM-METAL-1	In House Method by ICP/MS
	WTM-SIO4-2	APHA 20e 4500-SIO ₂ C&D			
Sludge Volume Index (S.V.I.)	WTM-SVI-1	APHA 18ed 2710D			

*Remarks for BOD (WTM-BOD-3) (1) Method of storage of sample : 4°C (2) Type of Seed : Polysed (3) Number of days of incubation : 5 (4) Nitrification inhibitor was used Total Organic Carbon (TOC) (1) Method of storage of sample : 4°C (2) Preservation method of sample : Add H₃PO₄ to pH 2

Reference Notes: APEA American Public Health Association "Standard Methods for Examination of Water and Wastewater" Annual Book of American Society for Testing and Materials Standard, Vol. 11.01 & 11.02
 ASTM
 BS British Standard Institution
 ISO International Organization for Standardization
 USEPA United States Environmental Protection Agency
 DoE Department of the Environment, Department of Health & Social Security, Public Health Laboratory Service (1983). The Bacteriological Examination of Drinking Water Supplies 1982. A.P. Dufour & V.J. Cabellet, Applied Microbiology, June 1975, p.826-833.
 In-situ urease test

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Rev. 3 (Oct. 2009)



水務署
Water Supplies Department
九龍灣辦事處
Kowloon Bay Office

九龍 九龍灣 大業里十一號
 11 Tai Yip Lane, Kowloon Bay, Kowloon

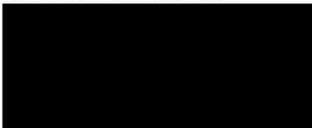
電話 2152 5610
Telephone

圖文傳真 2354 5737
Facsimile

檔號 (3) in WSD 3051/7/1S/95 Pt 2
Reference

12 Sep 2014

SMEC Asia Limited



(Attn: Mr Alexi BHANJA – Technical Director)

Dear Sirs,

Development at Lots 374, 375 A (Part) and 375 B (Part)
in DD 186, To Fung Shan, Sha Tin
Request for Information

Your letter dated 18 August 2014 about the captioned issue refers.

We return herewith one copy of our plan with the existing water mains and waterworks installations indicated. You are requested to note that the alignment of the water mains shown on the plan returned is indicative only. Although it is our intention to provide you with the most up-to-date information, we cannot guarantee that the information returned to you is exhaustive. In particular, we cannot guarantee that all our water mains, especially those laid only recently, have been incorporated in our central records and hence on the plan returned. A copy of "Mains Records Sign Conventions and Designations" (SK3988B) is also attached for your reference.

In addition, please note that the water collected in the Water Gathering Grounds in the vicinity will be stored in Lower Shing Mun Reservoir for future

potable use					
SMEC ASIA LTD					
To	Action	Info	Copy	Sign	Date
AB					
Am					
Wm					
Rec'd	19 SEP 2014				
Doc. Reg. No.	7076312				
Encl.	8860				

Yours faithfully,

(Ricky LIU)

for Chief Engineer/New Territories East
 Water Supplies Department

SIGN CONVENTIONS

MAINS

FRESH/SALT WATER MAINS
 RAW/UNTREATED WATER MAINS/CONDUIT
 BEING LAID MAINS
 PROPOSED MAINS
 WASHOUT PIPE
 SLUDGE PIPE
 TREATED EFFLUENT MAINS
 WATER MAINS REQUIRE REGULAR FLUSHING
 PRIVATE MAINS (SEE NOTE 2)
 MAINS OF OTHER DEPARTMENTS (SEE NOTE 3)
 REPLACEMENT AND REHABILITATION MAINS
 PENDING HANDOVER TO WSD

FIRE SERVICES

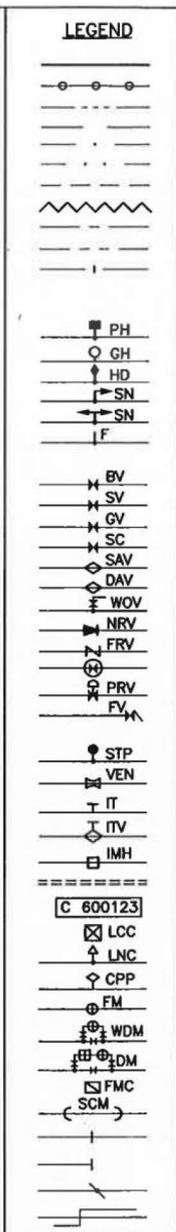
PEDESTAL FIRE HYDRANT
 GROUND FIRE HYDRANT
 HEAVY DRAW-OFF FIRE HYDRANT
 SWAN NECK FIRE HYDRANT
 TWIN OUTLET SWAN NECK FIRE HYDRANT
 FIRE SERVICES CONNECTION

VALVES

BUTTERFLY VALVE
 SLUICE VALVE
 GATE VALVE
 STOP COCK
 SINGLE AIR VALVE
 DOUBLE AIR VALVE
 WASHOUT VALVE
 NON RETURN/REFLUX VALVE
 FLOW REGULATING VALVE
 NORMALLY CLOSED VALVE
 PRESSURE CONTROL/REDUCING/RELIEF VALVE
 FLAP VALVE

OTHERS

STANDPIPE
 VENTURI TUBE
 INSPECTION MANHOLE TEE
 AIR VALVE ON INSPECTION MANHOLE TEE
 INSPECTION MANHOLE
 WATER TUNNEL
 ESSENTIAL VALVE REFERENCE NUMBER
 LEAKAGE COLLECTION CHAMBER
 LEAK NOISE CORRELATION POINT
 CATHODIC PROTECTION POINT
 CHECK METER/FLOWMETER
 WASTE DETECTION METER
 DISTRICT METER WITH STRAINER
 FLOW MEASUREMENT CHAMBER FOR ULTRASONIC FLOW METER
 SHALLOW COVERED WATER MAINS
 CHANGE IN PIPE
 BLANK FLANGE/END CAP
 PIPES CONNECTED
 PIPES CROSS OVER



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- NOTES:**
- WSD MAINS INCLUDE:
 - MAINS LAID AND MAINTAINED BY WSD.
 - MAINS LAID BY OTHER DEPARTMENTS OR PRIVATE PARTIES BUT MAINTAINED BY WSD AT WSD'S COST.
 - PRIVATE MAINS INCLUDE MAINS IN PRIVATE ROADS, PRIVATE HOUSING ESTATES, ETC. NOT MAINTAINED BY WSD.
 - MAINS OF OTHER DEPARTMENTS INCLUDE MAINS LAID BY OTHER GOVERNMENT DEPARTMENTS NOT MAINTAINED BY WSD.

ABBREVIATIONS

PIPE MATERIALS

AC	ASBESTOS CEMENT
CI	CAST IRON
CONC	CONCRETE
COPP	COPPER ALLOY
DI	DUCTILE IRON
GI	GALVANIZED IRON
GIL	LINED GALVANIZED IRON
GRP	GLASS FIBRE REINFORCED PLASTIC
HDPE	HIGH DENSITY POLYETHYLENE
MDPE	MEDIUM DENSITY POLYETHYLENE
PE	POLYETHYLENE
GMS	GALVANIZED MILD STEEL
MS	MILD STEEL
S	STEEL
UPVC	UNPLASTICISED POLYVINYL CHLORIDE

REHABILITATION METHODS

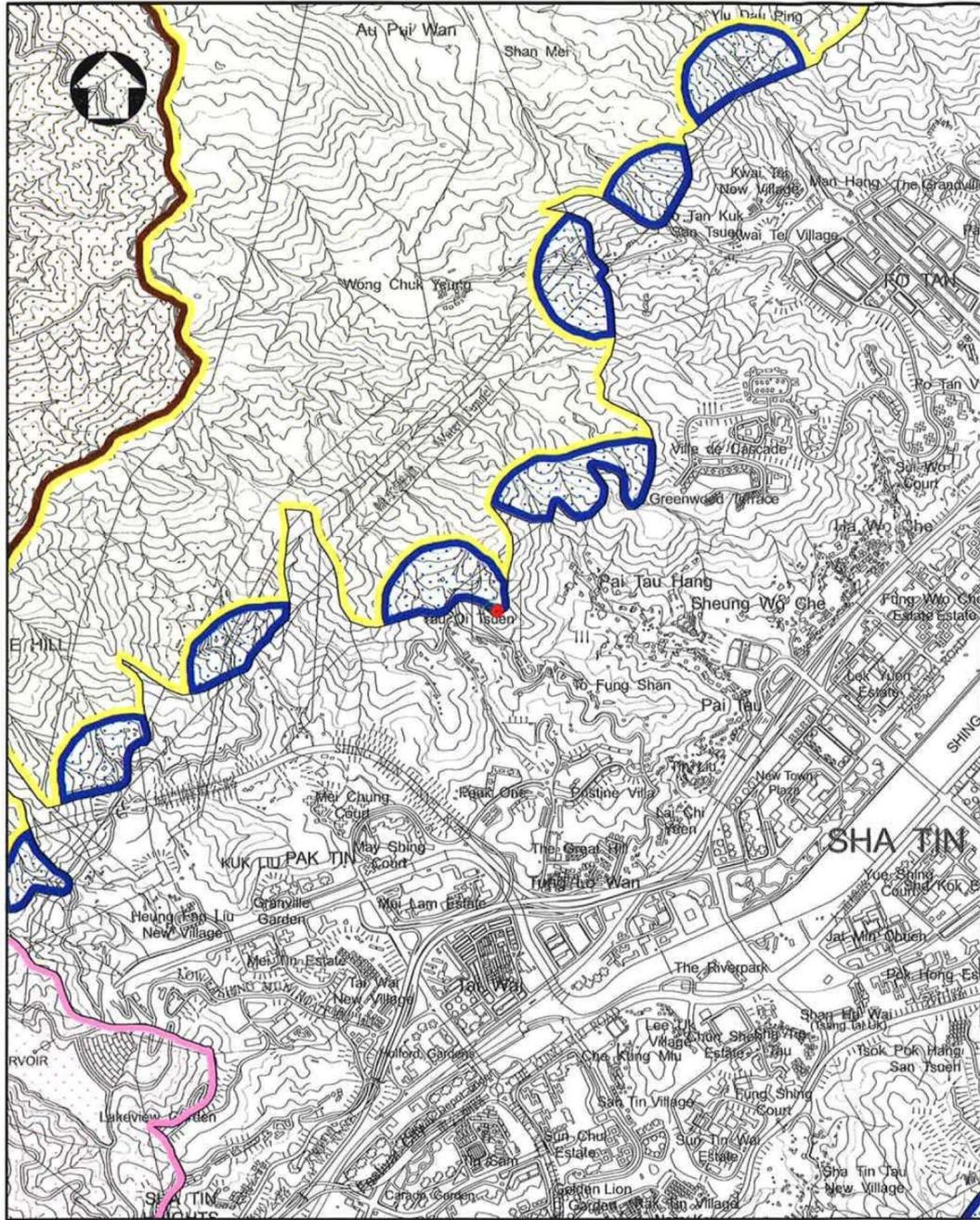
RA	CURED IN PLACE PIPE (CIPP)
RB	CLOSE FIT ("FOLD AND FORM" SYSTEM)
RC	PIPE BURSTING
RD	SLIP LINING/SLIP INSERTION
RE	CLOSE FIT ("SWAGELINING" SYSTEM)
RF	FIBRE REINFORCED PLASTIC (FRP) SYSTEM
RG	INTERNAL LINING REPAIRED
RH	EXTERNAL COATING REPAIRED
RJ	CATHODIC PROTECTION INSTALLED

DESIGNATIONS

'450D199' DESIGNATES 450mm DIAMETER DUCTILE IRON PIPE LAID IN 1999.
 '600S03(E)' DESIGNATES 600mm DIAMETER STEEL PIPE LAID IN 2003 (ENTRUSTMENT).
 '600D197(W10582/2B)' DESIGNATES 600mm DIAMETER DUCTILE IRON PIPE LAID IN 1997 WITH DRAWING REFERENCE (W10582/2B).
 '150D104W, 150D104F, 150D104OF' DESIGNATES 150mm DIAMETER, DUCTILE IRON PIPE MATERIAL, LAID IN 2004, OF TYPE WASHOUT PIPE, FIRE SERVICE MAINS AND OVERFLOW PIPE RESPECTIVELY.
 '150CIRA04' DESIGNATES 150mm DIAMETER CAST IRON PIPE REHABILITATED IN 2004 BY CURED IN PLACE PIPE METHOD (SEE ABBREVIATIONS).
 '600S03(L), 600S03(DRY), 600S03(PC)' DESIGNATES 600mm DIAMETER, STEEL PIPE MATERIAL, LAID IN 2003 WITH LEAKAGE COLLECTION SYSTEM, DRY MAINS AND PENDING COMMISSION MAINS RESPECTIVELY.
 '80PE09(TM)' DESIGNATES 80mm DIAMETER, POLYETHYLENE PIPE MATERIAL, LAID IN 2009, TEMPORARY MAINS FOR FLUSHING.

B	11/02/11	GENERAL REVISION	
A	16/06/05	GENERAL REVISION	(Signed) K.T. CHAN SE/AM
編號 no.	日期 date	摘要 description	簽署 initial
修訂 REVISION			

圖則名稱 drawing title MAINS RECORDS SIGN CONVENTIONS AND DESIGNATIONS	簽署 initial	日期 date	圖則編號 drawing no.	比例 scale
	繪製 drawn (Signed) C.M. CHAN	16/06/05	SK 3988B	NOT APPLICABLE
	核對 checked			
	加簽 endorsed			
	核准 approved (Signed) c.c. CHAN CE/RA	12/03/98	 水務署 Water Supplies Department	



- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
 2. ALL LEVELS ARE IN METRES ABOVE PRINCIPAL DATUM.
 3. THE SITE IS WITHIN LOWER INDIRECT GATHERING GROUNDS.
 4. THIS PART PRINT IS EXTRACTED FROM WSD GATHERING GROUNDS DRAWING W7955 SERIES.
 5. THIS PART PRINT IS MARKED UP WITH DIRECT, INDIRECT & FLOOD PUMPING GATHERING GROUNDS DELINEATION, IF ANY. THE INFORMATION IS BASED ON DRAWING W10246 SERIES.

LEGEND:

- SUBJECT SITE
- ▨ WSD GATHERING GROUNDS
- UPPER DIRECT
- LOWER DIRECT
- UPPER INDIRECT
- LOWER INDIRECT
- FLOOD PUMPING

PART COPY OF WSD GATHERING GROUNDS DRAWING(S)

W7955/7

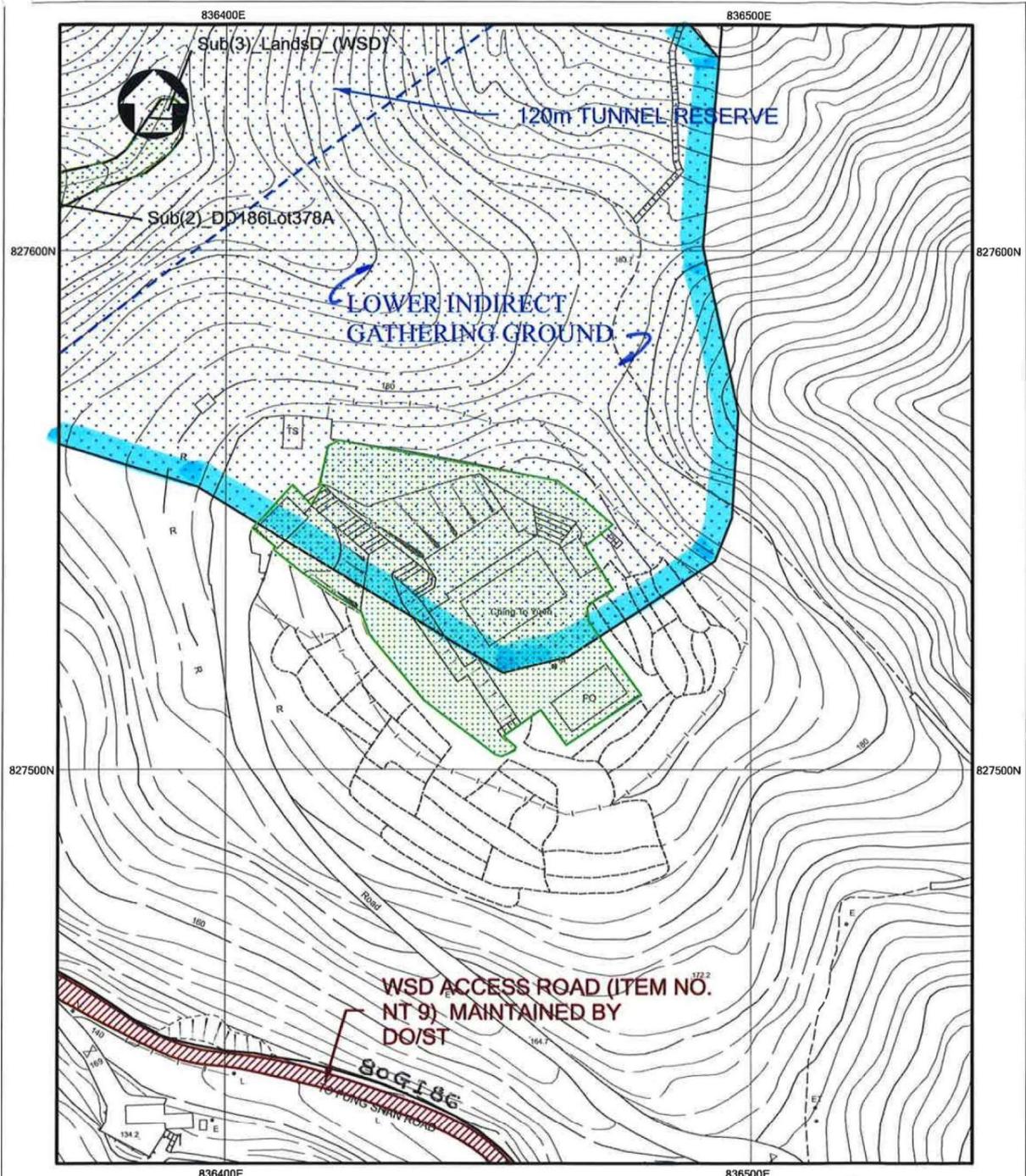
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SHEET: 1 OF 1

SCALE 1:20000



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- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
 2. ALL LEVELS ARE IN METRES ABOVE PRINCIPAL DATUM.
 3. INFORMATION ON ALIGNMENT OF MAINS IS OF INDICATIVE VALUE ONLY. WHERE POSITIONAL ACCURACY MAY BE OF IMPORTANCE, DETAILS SHOULD BE SITE CHECKED.
 4. FOR MAINS RECORDS SIGN CONVENTIONS AND DESIGNATIONS SEE SKETCH NO. 3988.
 5. NO EXISTING SALT WATER MAINS IN THE VICINITY OF THE SITE.
 6. NO EXISTING WSD CABLE IN THE VICINITY OF THE SITE.
 7. NO PROPOSED WSD CABLE IN THE VICINITY OF THE SITE.
 8. THE SITE IS WITHIN WSD LOWER INDIRECT GATHERING GROUNDS.

SUBJECT SITE



WSD SLOPE



PART COPY OF FRESH WATER MAINS RECORD PLAN(S)

W67880/7-SW-10C & 15A

REF. CODE: 36W14M

SHEET 1 OF 1

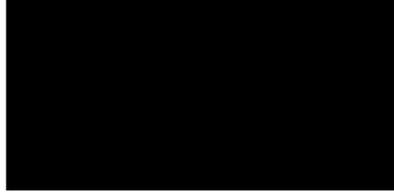
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Document prepared by

Aurecon Hong Kong Limited



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