

**Section 16 Planning Application for Regularisation of Pre-cut-off
Columbarium in Ten Thousand Buddhas Monastery, Sha Tin
Environmental Assessment**

Prepared for:
Hong Kong Ten Thousand Buddhas Monastery Management Committee Limited

Prepared by:
Ramboll Hong Kong Limited

Date:
June 2025

Reference Number:
R6400_V1.5

Contents

	Page
1.0 Introduction	1
1.1 Project Background.....	1
1.2 Objectives	1
1.3 Project Location and Environ.....	1
2.0 Air Quality Impact Assessment	2
2.1 Potential Impact due to Operation of the Columbarium	2
2.2 Air Sensitive Receivers (ASRs)	2
2.3 Evaluation of the potential air quality impact	2
2.4 Description of Air Pollution Control Measures	2
2.5 Operational Plan	3
2.6 Maintenance Plan	3
3.0 Sewerage Impact Assessment.....	4
3.1 On-site pollution sources	4
3.2 Sewerage Infrastructure.....	4
3.3 Ancillary Facility for Visitors to the Monastery	4
3.4 Operation Plan to Address Peak Effluent Flow	4
4.0 Noise Impact Assessment.....	5
4.1 Introduction	5
4.2 Relevant Legislation, Standards & Guidelines	5
4.3 Noise Sensitive Receivers (NSRs).....	6
4.4 Identification of Noise Sources	6
4.5 Assessment Approach & Methodology	6
4.6 Assessment Results.....	7
4.7 Summary & Conclusion	8
5.0 Water Quality Impact Assessment	9
5.1 Introduction	9
5.2 Water Sensitive Receiver.....	9
5.3 Potential Impacts during Construction Phase.....	9
5.4 Potential Impacts during Operation Phase	9
6.0 Waste Management.....	10
6.1 Potential Impacts during Construction Phase	10
6.2 Potential Impacts during Operation Phase	10
7.0 Overall Conclusions	11

List of Tables

Table 1.1	Identified Representative ASRs
Table 4.1	Sensitivity Ratings
Table 4.2	Acceptable Noise Levels
Table 4.3	Maximum Allowable SWLs of the Identified Noise Sources

List of Figures

Figure 1.1	Locations of the Subject Site, Air/Noise Sensitive Receivers (ASRs/NSRs) and Joss Paper Furnaces
Figure 3.1	Effluent Producing Facilities and Location of the Nearest Manhole at the Public Sewer
Figure 4.1	Location of noise sources
Figure 5.1	Location of Water Sensitive Receiver

List of Appendices

Appendix 1	DSD Drainage Plan
Appendix 2	Sewerage Impact Assessment
Appendix 3	Fixed Source Noise Impact Assessment
Appendix 4	Details of Joss Paper Burning System

1.0 Introduction

1.1 Project Background

The Subject Site is located at Pai Tau Hang, Shatin, N.T. The subject site is zoned as “Government, Institution or Community” on the approved Sha Tin OZP No. S/ST/34 (Subject OZP). According to the Notes of the subject OZP, the planning intention of the concerned zone is, in brief, for “the provision of Government, institution or community facilities serving the needs of the local residents and/or a wider district, region or the territory”.

The Ten Thousand Buddhas Monastery has been around for over 50 years, and a number of niches inside the four columbarium buildings have been occupied for a long time and many have no grave-sweepers. Of the 1,608 niches in this application, 86 niches are sold; and 1,522 niches are available for sale. According to the traffic impact assessment for this application, the proposed columbarium will be closed on the 3rd, 2nd, 1st Saturday and Sunday before and after the Ching Ming and Chung Yeung Festivals and on the Ching Ming and Chung Yeung Festivals. All the visitors have to follow visit-by-appointment arrangement. The normal opening hours is from 9 am to 5pm, which is the same for weekdays, Saturdays, Sundays and public holidays.

1.2 Objectives

Ramboll Hong Kong Ltd. (the Consultant) has been commissioned by Hong Kong Ten Thousand Buddhas Monastery Management Committee Limited to conduct the Environmental Assessment (EA) for the proposed columbarium regularisation to support the Section 16 planning application.

This report is prepared to support the planning application of the Monastery from an environmental ground. The aims of this environmental assessment are to identify the potential environmental concerns and constraints related to the regularisation, and to recommend likely practical pollution control and mitigation measures that will be required with respect to the Hong Kong Planning Standards and Guidelines (HKPSG) and other relevant legislation.

1.3 Project Location and Environ

The Subject Site is located at hill side of Pai Tau Hang, Shatin, N.T., which is surrounded by monastery and temples to the west and village houses to the south of the Site. Office buildings and a shopping centre is located 150 – 200m south of the Site. Further southeast from the Site is a major road – Tai Po Road (Shatin Section) and MTR (East) railway are located more than 400m away. The location of the Subject Site and its surrounding environs are also depicted in **Figure 1.1**.

2.0 Air Quality Impact Assessment

2.1 Potential Impact due to Operation of the Columbarium

On-site sources

While there is no naked flame allowed inside the Monastery, burning of paper offerings and incense by visitors are unavoidable.

Major air pollution sources include an eco-furnace (**Figure 1.1**) provided for shared use by general worshipping activities and columbarium related uses. Mitigation measures (including water scrubber, electrostatic precipitator and exhaust) have been applied to the eco-furnace. There are few incense furnaces (上香塔) distributed over the Monastery. By comparison, emissions from the incense furnaces are much less than those from the eco-furnace.

2.2 Air Sensitive Receivers (ASRs)

The assessment area is defined within 500m from the Scheme boundary. The identified air sensitive receivers (ASRs) near the Subject Site are located at Pai Tau Village downhill to the southwest of the Subject Site (**Table 1.1**). The shortest distance from the on-site joss paper furnace to the ASR (i.e. SR1) is 85m.

Table 1.1 Identified Representative ASRs

ASR	Distance from Eco-Furnace (m)
SR1 – village house at Pai Tau Village	85
SR2 – village house at Pai Tau Village	98

2.3 Evaluation of the potential air quality impact

In view of the small amount of air emissions from the eco-furnace, its infrequent use and the large source-to-receiver distance, the potential air quality impact on the nearby ASRs are expected to be small. To further reduce the potential impact, the eco-furnace to be equipped with an Air Pollution Control Equipment (“APCE”) which is described in detail below.

2.4 Description of Air Pollution Control Measures

The Applicant is recommended to retro-fit the APCE in line with recommendations given in the “Guidelines on Air Pollution Control for Joss Paper Burning at Chinese Temples, Crematoria and Similar Places”. The eco-furnace has been equipped with APCE (i.e. water scrubber, electrostatic precipitator and exhaust).

Appendix 4 shows the catalogue of the proposed eco-furnaces, named Bamako Burner™. It can filter black smoke and Total Suspended Particulates with over 90% removal efficiency and achieve zero emission of black smoke. It has been applied for temples, cemeteries, crematoria, mortuaries and columbaria in Hong Kong.

2.5 Operational Plan

In order to ensure proper use of joss paper furnace with APCE, the applicant committed to adopt the following operation and maintenance practices:

1. All joss paper burning is carried out by trained operator to ensure proper operation. Furnace is guided and turned off when not operating, to prevent visitors burning joss paper without assistance of operator.
2. The operator would make sure the air pollution control equipment has been turned on and running normally when burning paper offering.
3. Only paper-made offerings material can be burnt in the furnace. Other wrapping materials, e.g. plastic materials, would be removed before burning.
4. The operator would control the feeding rate of joss paper to the furnace not exceeding the designed capacity. In case visible emissions are observed at the flue gas discharge, the feeding rate should be reduced as appropriate. If the visible emissions persist, the operator would stop burning activities and call for maintenance.
5. The operator would clean the burning chamber regularly to clear away ash remains inside the burning chamber. The ash would be wetted sufficiently by water spraying during ash clearing process to prevent emission.

2.6 Maintenance Plan

Maintenance and repair would be carried out by manufacturer's competent personnel with sufficient training. All components would be inspected, cleaned and serviced regularly. A tentative maintenance plan is shown below:

Table 1.2 Maintenance Plan for Joss Paper Furnace cum APCE

Description	Recommended Schedule
Clear the ash from joss paper burner • Open the access door at the bottom of the joss paper burner • Clear the ash from the joss paper burner by using shovel	Daily
Check the following items: • The condition of treated flue gas discharge (i.e. the colour and the flow rate) • Running current of blower • Any abnormal noise or vibration during the operation • Performance of back flow function	Monthly

3.0 Sewerage Impact Assessment

3.1 On-site pollution sources

Main existing facilities that produce effluent include toilets and hand washing basins at the western part of Site A. The location of the facilities are shown in **Figure 3.1**.

3.2 Sewerage Infrastructure

Areas around the Site is currently served by public sewerage network as shown in **Appendix 1** extracted from drainage record plans available from DSD. The nearest manhole (No. FMH4045402) which is located to the west of Site A, has been connected to for discharge of toilets via pipe located underneath the floor. Given the availability of public sewer, there are no wastewater treatment facilities needed.

3.3 Ancillary Facility for Visitors to the Monastery

The toilets/urinals and hand-washing basins in the toilets are connected to the manhole (No. FMH4045402) leading to the public sewer shown in **Figure 3.1**.

3.4 Operation Plan to Address Peak Effluent Flow

It is envisaged that some 2,000 nos. of visitors per day would be extreme upper estimate when all visitors were assumed to come on the very same day during the Ching Ming or Chung Yeung Festivals. From past experience/ observations, visitors usually stay for 30 minutes to an hour, and hence the toilet usage rate is not particularly high. Given the relative short stay, the surge in sewage generation is not envisaged due to a high number of visitors.

With reference to the EIA Report, Agreement No. CE 1/2013 (CE) Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery – Design and Construction (ref. AEIAR-198/2016, hereinafter refers to “the EIA Report”), it is assumed that 70% of the total number of visitors will use toilet and contribute to sewage flow generation. The sewage flow calculations in the EIA Report refer to the Tai Po Tsz Shan Monastery project, in which 50% of the total number visitors were assumed to contribute sewage flow generation. Due to the remoteness of the reference EIA report, a more conservative assumption has been made that 70% of the total visitors will use toilet and contribute to sewage flow generation. For this project, the “70% assumption” shall be applied.

Based on the no. of visitors and staff as well as daily use duration/ pattern, the amount of effluent generation from all on-site facilities applied has been estimated at 0.0020 m³/s. As shown in **Appendix 2**, the public sewer is capable of handling effluent generated from the Site.

Based on the information provided by the applicant, water scrubber type dust removal system would not be adopted and the wastewater will be collected by a licensed collector regularly from the recirculation tank. Therefore, there would not be any sewage generated from the operation of the dust removal system.

4.0 Noise Impact Assessment

4.1 Introduction

This section evaluates the potential off-site noise impacts that could be caused by noise sources on-site during operations of the Monastery and its related activities. The PA system installed at different buildings in Site A and Site B and few window units of air conditioners are the identified existing noise sources (**Figure 4.1**). While retrofit of the APCE is subject to the Applicant's decision, components of the APCE are identified as planned noise sources for a conservative assessment. The planned noise sources are the electrostatic precipitator and an exhaust fan associated with the recommended APCE.

There is no funeral ceremony in the operations of the Monastery and the general operation is carried out indoor. No operation is conducted beyond 6pm.

4.2 Relevant Legislation, Standards & Guidelines

In accordance with the Hong Kong Planning Standards and Guideline (HKPSG), the standard for fixed noise source shall be (a) 5dB(A) below appropriate Acceptable Noise Levels (ANLs) shown in Table 2 of the Technical Memorandum for the Assessment of Noise from Places Other Than Domestic Premises, Public Places or Construction Sites (IND-TM); and (b) the prevailing background noise, whichever is lower.

The applicable Acceptable Noise Levels (ANLs) for Noise Sensitive Receivers (NSRs) are dependent on the Area Sensitivity Rating (ASR) and the time period concerned, as stipulated in Table 1 of IND-TM (reproduced in **Table 4.1**). The ASR of NSR is determined based on the perceived usage of the study area and the presence of any influencing factors such as major roads, industrial areas and airports.

Table 4.1 Area Sensitivity Ratings (ASRs)

Type of Area Containing NSR	Degree to which NSR is affected by Influencing Factor		
	Not Affected	Indirectly Affected	Directly Affected
(i) Rural area, including country parks or village type developments	A	B	B
(ii) Low density residential area consisting of low-rise or isolated high-rise developments	A	B	C
(iii) Urban area	B	C	C
(iv) Area other than those above	B	B	C

Source: Table 1 of Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites

An ASR of "A" is considered as the site and surrounding area is located in the rural area and not affected by influencing factors. There is no night-time operations at the Monastery, therefore only the daytime and evening time noise criterion (ANL) of 60 dB(A) is considered. Since the subject site is considered as planned fixed plant noise source, the stringent noise criteria of 55dB(A) (i.e. ANL-5) will be adopted.

The appropriate ANLs for NSRs around have been determined as shaded in **Table 4.2**.

Table 4.2 Acceptable Noise Levels (ANLs), dB(A)

Time Period	Acceptable Noise Level -5, Leq (30 minutes) dB(A)
Day (0700 to 1900 hours)	55
Evening (1900 to 2300 hours)	

Source: Table 2 of Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites

4.3 Noise Sensitive Receivers (NSRs)

The assessment area is defined within 300m from the Scheme boundary. The nearest identified NSRs (SR1 and SR2 shown in **Figure 1.1**) from the Subject Site are located at Pai Tau Village downhill to the southwest of the Subject Site.

4.4 Identification of Noise Sources

The identified existing noise sources are window units of air conditioners and PA system installed on different buildings. There are planned noise sources associated with the recommended APCE to the existing joss paper furnace, to mitigate air pollution impacts arising from its use, in line with recommendations given in the “Guidelines on Air Pollution Control for Joss Paper Burning at Chinese Temples, Crematoria and Similar Places”. Based on the information provided by the applicant, no water scrubber would be provided to avoid additional sewage amount generation, instead, electrostatic precipitator and the associated exhaust fan would be provided, and these would be planned noise sources. The noise sources are shown in **Figure 4.1**.

4.5 Assessment Approach & Methodology

The assessment of noise impact arising from various fixed noise source(s) has been based on standard acoustic principles, and procedures given in the Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (“IND-TM”) issued under the NCO.

Impacts due to individual noise source(s) have been calculated and logarithmically summed at the individual NSRs for calculation of the overall impacts:

$$PNL = \sum [SWL_i + C_{dist} + C_{impulse} + C_{tonality} + C_{barrier} + C_{facade}]$$

where

PNL = Overall predicted noise level arising from individual source after various corrections

SWL_i = Sound power level of individual noise source

C_{dist}	=	Correction for distance attenuation
$C_{impulse}$	=	Correction [+3 dB(A)] for impulsive noise in IND-TM, if applicable
$C_{tonality}$	=	Correction [+6 dB(A)] for tonality as in IND-TM, if applicable
$C_{barrier}$	=	Correction [-5 to -10 dB(A)] for barrier effects due to various architectural features/ topography/ obstacles/ purpose-built noise barrier/ parapet wall, if any
C_{facade}	=	Correction [+3 dB(A)] for façade reflection at receiver

The steps of calculations are outlined below:

- Identify the relevant noise source(s) on-site;
- Prepare an inventory of noise source(s) that will impact on the selected representative NSRs in the Assessment Area;
- Calculate the overall Predicted Noise Level (“PNL”) at each representative NSR after adjustments for various applicable corrections;
- Compare the PNL with the noise criterion to evaluate if there will be any potential exceedance, and the need for further mitigation;
- Recommend the appropriate mitigation measures and re-model with a view to achieving no noise exceedance.

4.6 Assessment Results

To ensure compliance with the noise criteria [i.e. $Leq(30 \text{ min}) \leq 55 \text{ dB(A)}$ at daytime/evening] at the nearest NSRs SR1 and SR2, **Table 4.3** shows the maximum allowable SWLs of the identified noise sources without any mitigation. The detailed calculations are attached in **Appendix 3**.

Table 4.3 Maximum Allowable SWLs of the Identified Noise Sources

Description of the Identified Noise Sources	Maximum Allowable SWL, dB(A)
Electrostatic Precipitator of APCE (2 Nos.)	82.0 each unit
Exhaust Outlet of APCE (2 Nos.)	90.0
PA loudspeaker (Site A)	90.0
PA loudspeaker (Site B)	90.0
Window Unit A/C (4 Nos.)	80.0 each unit

It should note that the above SWLs represent the worst-case levels for the same types of noise equipment. For instance, the typical SWLs for “water scrubber + electrostatic precipitator” and window unit A/C are less than 80 and 70 dB(A), respectively.

4.7 Summary & Conclusion

The current assessment has revealed that the major noise sources of concern are attributed to the noise sources associated with the APCE. The maximum allowable SWLs of the identified noise sources without any mitigation were recommended to ensure compliance with the noise criteria. The noise impact on the NSRs is considered acceptable when the Applicant uses the noise equipment with the SWLs below the maximum allowable levels.

5.0 Water Quality Impact Assessment

5.1 Introduction

This section presents a water quality impact assessment for the construction and operation of the Proposed Development, assessing the potential impacts and recommending mitigation measures where required.

5.2 Water Sensitive Receiver

The major existing watercourse identified within 500m from the Project Site are stream. The location of water sensitive receiver is shown in **Figure 5.1**.

5.3 Potential Impacts during Construction Phase

The application is intended to regularise the ancillary columbarium long existed at the Monastery. It involves no change in the overall building form and no additional building has been proposed at the Monastery. There is no construction work involved, water quality impact due to construction works is not anticipated.

5.4 Potential Impacts during Operation Phase

Sewage Discharge

As the sewage generated from the proposed development will be discharged to the public sewer, and the sewerage facilities will be commissioned before occupation, no adverse water quality impact from sewage discharge is anticipated.

Surface Runoff

Having considered the following points, the water quality impact from stormwater / surface runoff is not anticipated.

- The Site do not have any car parking space and the visitors need to walk along the staircase to the Site. Pollution such as vehicle dust, tyre scraps and oils from the Site is negligible.
- The Site is almost paved and the surface run-off generated from unpaved (landscape) area is very small. The application of fertilizer or pesticide for the potted plants within the Site is rare so the surface runoff containing agrochemicals is negligible.
- The Site is installed with channel drainage system, the stormwater / surface runoff will be collected and directed to the designated location. The surface runoff to the nearby water sensitive receivers is minimized.
- Regular cleaning and sweeping of road surface/ open areas with the Site is carried out so the pollution levels from stormwater would be much reduced.
- Any effluent discharge from the proposed development will be pre-treated to comply with the Water Pollution Control Ordinance (Cap. 358) requirements and sited away from any natural watercourses.

6.0 Waste Management

6.1 Potential Impacts during Construction Phase

The application is intended to regularise the ancillary columbarium long existed at the Monastery. It involves no change in the overall building form and no additional building has been proposed at the Monastery. There is no construction work involved, waste generation due to construction works is not anticipated.

6.2 Potential Impacts during Operation Phase

General refuse will be the main waste generation during the operation phase.

General refuse should be collected on a daily basis and delivered to the refuse collection point accordingly. A reputable waste collector should be employed to remove general refuse regularly to avoid odour nuisance or pest/vermin problem. Sufficient recycling containers are recommended to be provided at suitable locations of the site to encourage recycling of waste such as aluminium cans, plastics and waste paper.

Ash will also be generated during the joss paper burning activities and accumulated inside the burning chamber of furnace. Relevant legislations, regulations and circulars/ guidelines for proper handling and disposal of the ash and other waste types generated during the operation phase will be complied.

7.0 Overall Conclusions

Environmental issues during the operational phase have been identified and mitigation measures (if any) have also been proposed to minimise the environmental impacts.

Major source of air pollutants during the operation of the Monastery would be burning of ritual papers at the columbarium. As the eco-furnace are equipped with APCE, significant air quality impacts on the ASRs are not expected.

The maximum flow rate projected from the Monastery had been estimated by considering the sewage generated during peak periods. It is concluded that the existing sewerage system is adequate to cope with the future demand of sewage discharge and the sewerage impact due to the Monastery is insignificant. No upgrading of the existing sewerage system is required due to the Monastery.

The current assessment has revealed that the major noise sources of concern are attributed to the noise sources associated with the APCE. The maximum allowable SWLs of the identified noise sources without any mitigation were recommended to ensure compliance with the noise criteria. The noise impact on the NSRs is considered acceptable when the Applicant uses the noise equipment with the SWLs below the maximum allowable levels.

Water sensitive receivers are identified in the assessment. There is no construction work involved, so water quality impact due to construction works is not anticipated. During the operation phase, as the sewage generated from the proposed development will be discharged to the public sewer, and the sewerage facilities will be commissioned before occupation, no adverse water quality impact from sewage discharge is anticipated.

For waste management, as there is no construction work involved, waste generation due to construction works is not anticipated. General refuse will be the main waste generation during the operation phase. It should be collected on a daily basis and delivered to the refuse collection point accordingly. The disposal of Ash generated during the joss paper burning activities and accumulated inside the burning chamber of furnace will comply with the relevant legislations, regulations and circulars/ guidelines for proper handling and disposal of the ash.

To this end, it is concluded that the Monastery is considered environmentally acceptable.

Figures

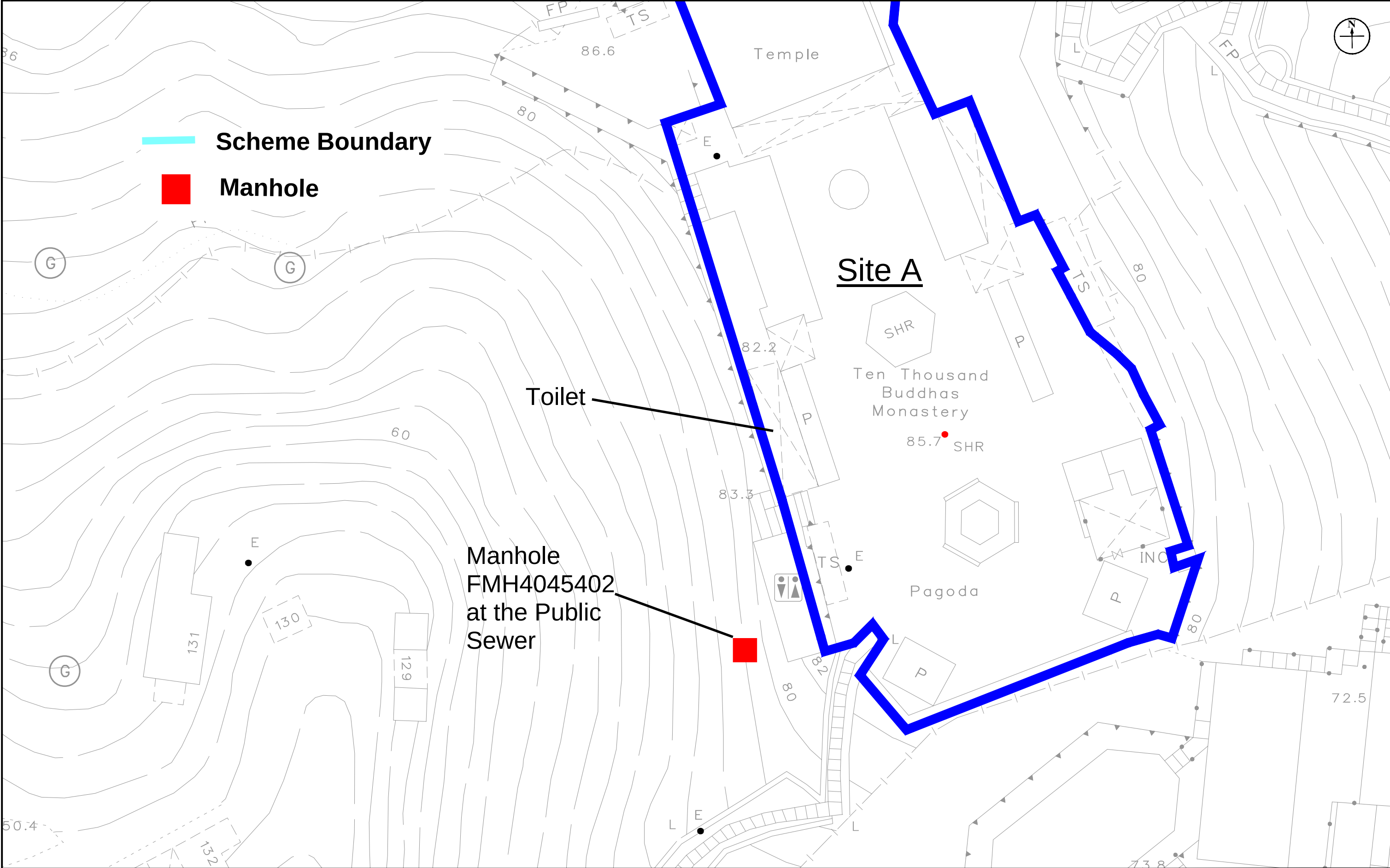


Figure: 3.1		RAMBOLL	
Title: Effluent Producing Facilities and Location of the Nearest Manhole at the Public Sewer		Drawn by: KW	
Project: S.16 Planning Application for Regularisation of Pre-cut-off Columbarium in Ten Thousand Buddhas Monastery, Sha Tin		Checked by: TC	
		Rev.: 1.0	
		Date: Jul 2018	

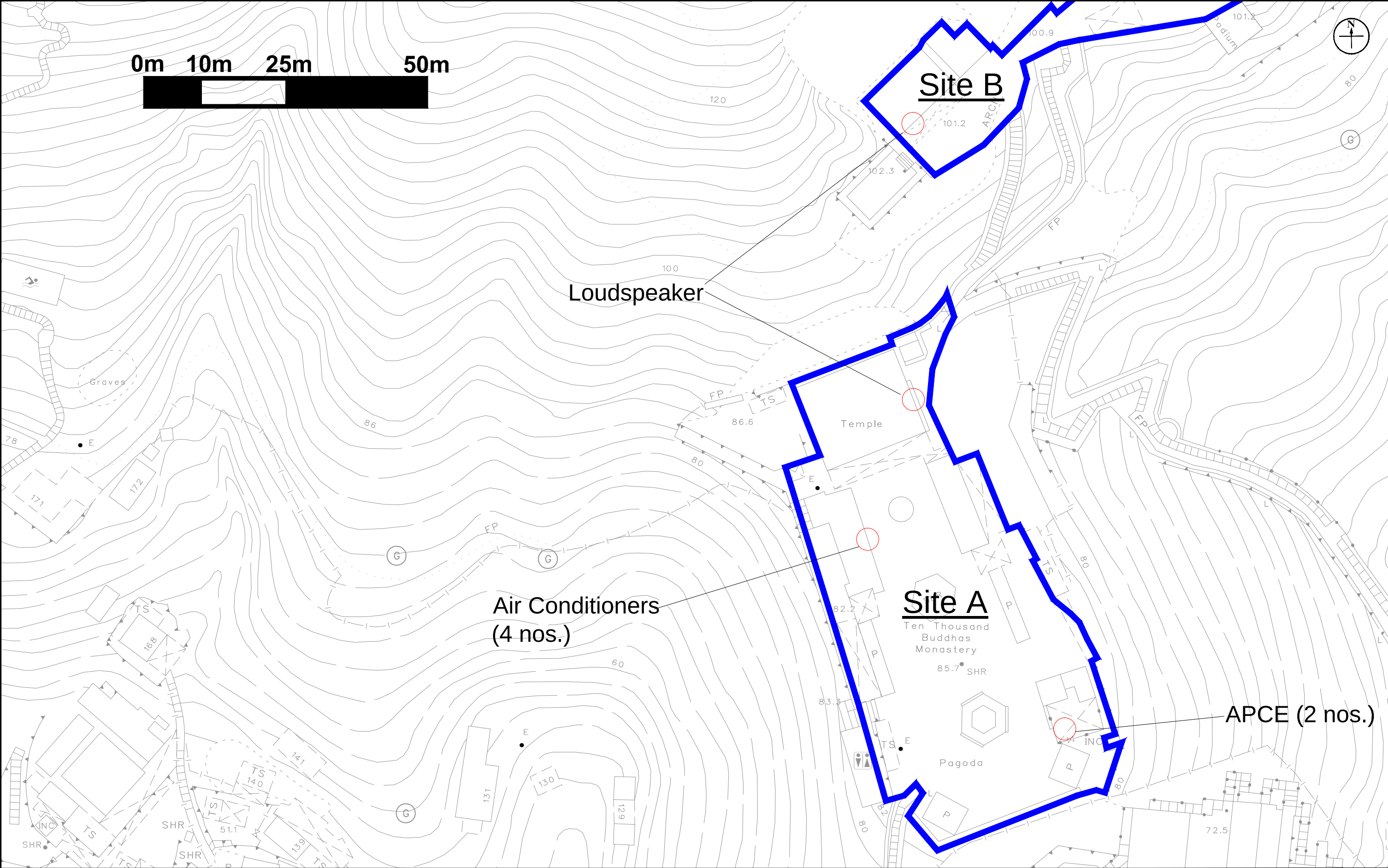


Figure: 4.1	RAMBOLL	
	Drawn by:	KW
	Checked by:	TC
	Rev.:	1.0
Title: Location of noise sources		Date: Jul 2018
Project: S.16 Planning Application for Regularisation of Pre-cut-off Columbarium in Ten Thousand Buddhas Monastery, Sha Tin		

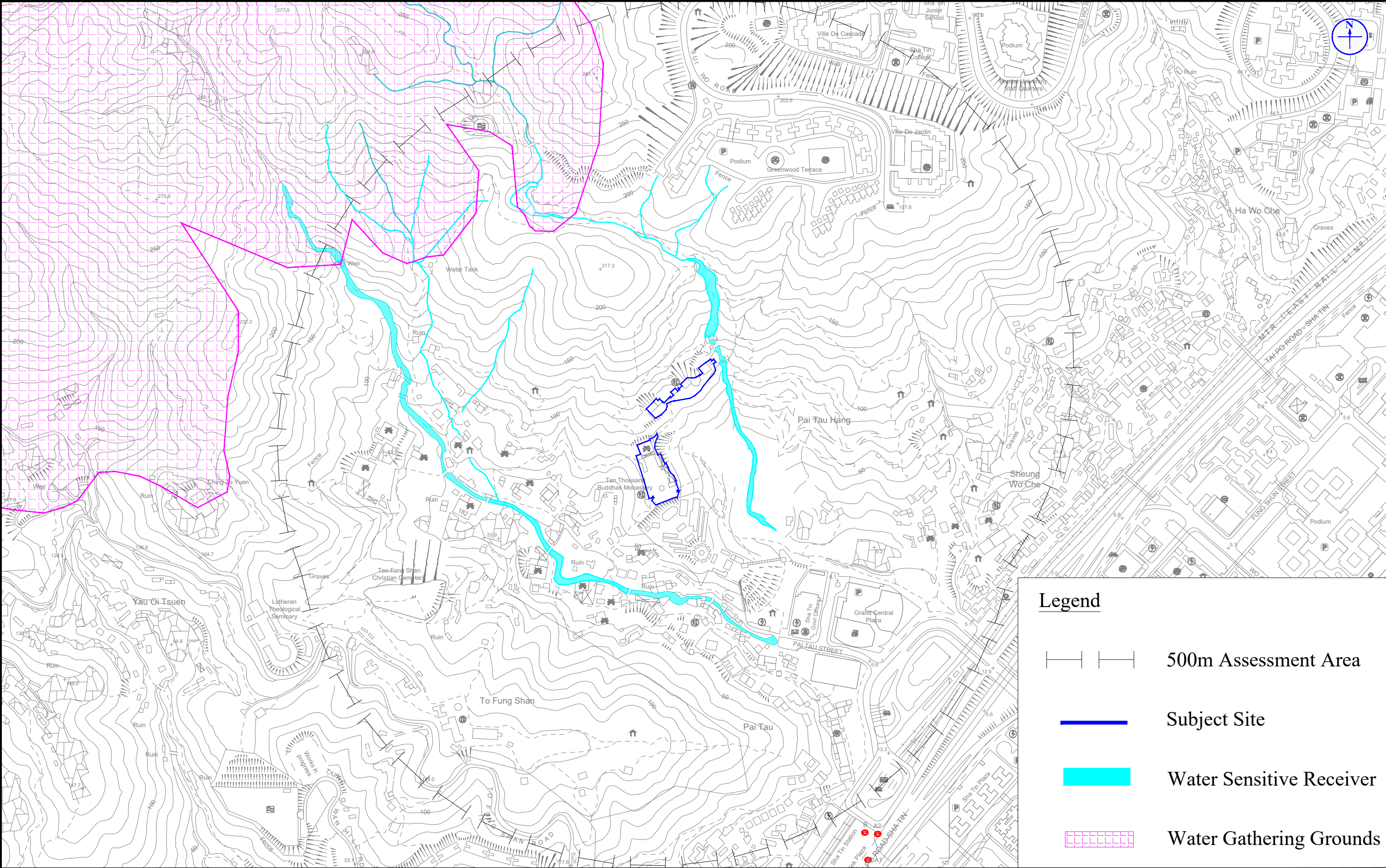


Figure: 5.1			
Title: Location of Water Sensitive Receiver		Drawn by: SC	
		Checked by: TC	
Project: S.16 Planning Application for Regularisation of Pre-cut-off Columbarium in Ten Thousand Buddhas Monastery, Sha Tin		Rev.: 1.4	
		Date: Nov 2025	

Appendix 1: DSD Drainage Plan

EXISTING SEWER
EXISTING S.W.D.
SEWER ALIGNMENT AND LEVELS SHOWN
ARE SUBJECT TO SITE VERIFICATION
PART OF DRG. NO.: 7-SW-15B-1
SCALE 1:500

16 JUL 2018

© 地圖版權屬香港特區政府
經地政總署署長准許複印

萬佛寺

Ten Thousand Buddhas Monastery

寶塔
Pagoda

普明苑

風采台

7-SW-15B-2

Appendix 2: Sewerage Impact Assessment

1. Estimation of Sewage Peak Flow from Application Site				Remark
Generation from staff and volunteers				
Total no. of staff and volunteers at festival periods	=	20 persons		Information provided by project proponent
Unit flow rate	=	0.28 m ³ /person/day		Commercial Employee, based on Table T-2 J11 Community, Social & Personal Services" of the EPD/TP1/05 ^[1] .
Estimated peak daily flow	=	5.6 m ³ /day		
Generated from Employed Population and Visitors				
Total no. of daily visitors	=	1,840 persons		Information provided by project proponent
		0.01 m ³ /person/day		With reference to the EIA report for Site Formation and Associated Infrastructural Works for Development of Columbarium, Crematorium and Related Facilities at Sandy Ridge Cemetery – Design and Construction
		12.9 m ³ /day		With reference to the EIA report, assumed 70% of the total number of visitors will use toilet and contribute to sewage flow generation
Total Estimated Peak Flow from the Subject Site				
Flow rate	=	18.5 m ³ /day		Sum of above
Flow rate with PCIF (Sha Tin - 1.15)	=	21.3 m ³ /day		With reference to Table T-4 of GESF - Sha Tin - 1.15)
Contributing Population	=	79 people		
Global peaking factor	=	8		Peaking factor for category of population of <1,000 and including stormwater allowance, Table T-5 of the EPD/TP1/05
Estimated total peak flow	=	170.0 m ³ /day		
		0.0020 m ³ /s		
2. Sewerage Impact Assessment				Remark
Sewer pipe immediately downstream of connection point				
Length		15.0 m		Drainage Record Sheet No. : 7-SW-15B-1
US Invert Level, mPD		77.09 mPD		
DS Invert Level, mPD		75.90 mPD		
Internal Diameter of pipe, d		0.150 m		
Wetted Area, A _w		0.018 m ²		
Wetted Perimeter, P _w		0.471 m		
Hydraulic Radius, R (=A _w /P _w)		0.038 m		
Slope of the total energy line, s		0.079		
Manning's roughness coefficient, n		0.016 m ^{-1/3} s		0.016 for fair concrete surface ¹
Velocity of flow calculated based on Manning's Equation, V		1.972 m/s		
Predicted Capacity Flow, Q _c		0.0349 m ³ /s		
Estimated cumulative peak flow, Q _p		0.0020 m ³ /s		
Is Q _c > Q _p ?		Yes		
% of capacity flow due to Subject Site		5.6%		

Note:

¹ EPD/TP 1/05 – Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning v1, March 2005

SIA

12/11/2025

Q:\Projects\TPCTTBMCEI00\04 Deliverables\01 S16 EA Report\2025\App\App 2_SIA_251112.xlsx

Confidential

P.1 of 1

Appendix 3: Fixed Source Noise Impact Assessment

Predicted Industrial Noise Level at selected NSRs (Daytime)

NSRs: SR1			X coordinate =		837035.8					
			Y coordinate =		827529.3					
			Height, mPD =		50.00					
Item	Noise Source	Maximum Allowable SWL	X coor.	Y coor.	Noise Source Height (mPD)	Dist for apply correction (m)	Distance Corr.	Tonality Corr.	Façade Corr.	CNL dB(A)
1	Electrostatic Precipitator of APCE (2 Nos.)	82.0	837114.4	827543.9	84.2	87.0	-46.8	3	3	41
		82.0	837114.4	827543.9	84.2	87.0	-46.8	3	3	41
2	Exhaust Outlet of APCE (2 Nos.)	90.0	837114.4	827543.9	84.2	87.0	-46.8	0	3	46
		90.0	837114.4	827543.9	84.2	87.0	-46.8	0	3	46
3	PA loudspeaker (Site A)	90.0	837087.4	827602.7	89.6	98.1	-47.8	6	3	51
4	PA loudspeaker (Site B)	90.0	837087.3	827652.0	104.2	143.7	-51.2	6	3	48
5	Window Unit A/C (4 Nos.)	80.0	837079.3	827577.7	84.2	73.6	-45.3	0	3	38
		80.0	837079.3	827577.7	84.2	73.6	-45.3	0	3	38
		80.0	837079.3	827577.7	84.2	73.6	-45.3	0	3	38
		80.0	837079.3	827577.7	84.2	73.6	-45.3	0	3	38
									Total	55

NSRs: SR2			X coordinate =		837022.4					
			Y coordinate =		827535.6					
			Height, mPD =		48.00					
Noise Source ID	Noise Source	Maximum Allowable SWL	X coor.	Y coor.	Noise Source Height (mPD)	Dist for apply correction (m)	Distance Corr.	Tonality Corr.	Façade Corr.	CNL dB(A)
1	Electrostatic Precipitator of APCE (2 Nos.)	82.0	837114.4	827543.9	84.2	99.2	-47.9	3	3	40
		82.0	837114.4	827543.9	84.2	99.2	-47.9	3	3	40
2	Exhaust Outlet of APCE (2 Nos.)	90.0	837114.4	827543.9	84.2	99.2	-47.9	0	3	45
		90.0	837114.4	827543.9	84.2	99.2	-47.9	0	3	45
3	PA loudspeaker (Site A)	90.0	837087.4	827602.7	89.6	102.2	-48.2	6	3	51
4	PA loudspeaker (Site B)	90.0	837087.3	827652.0	104.2	144.6	-51.2	6	3	48
5	Window Unit A/C (4 Nos.)	80.0	837079.3	827577.7	84.2	79.5	-46.0	0	3	37
		80.0	837079.3	827577.7	84.2	79.5	-46.0	0	3	37
		80.0	837079.3	827577.7	84.2	79.5	-46.0	0	3	37
		80.0	837079.3	827577.7	84.2	79.5	-46.0	0	3	37
									Total	55

Appendix 4: Details of Joss Paper Burning System

萬佛寺

設計、供應、安裝及保養

乾式「寶潔科 綠化寶系統™」全功能環保化寶系統工程

附件一

參考編號：8020/19/Q18-2839/WCYT/L002

日期：2019年4月15日

條件及條款

a. 系統規格

設計、供應、安裝及保養兩台乾式「寶潔科 綠化寶系統™」環保化寶系統。
系統規格如下：

設備	規格	型號：FAST-D7
煙氣處理系統	冥鎚燃燒量	7 公斤/小時 (約 4 條兩呎高的四方形元寶紙，適合一般寺院使用)
	總尺寸 (mm) (闊 x 深 x 高)	約 940 x 1496 x 2163
	抽風量 (於室溫時量度)	0.1 m ³ /s
	運行重量	約 0.35 噸
	功率	1 kW
	供電要求	220V/1ph/50Hz
	外殼用料	主要為不銹鋼 304 材料
	煙塵排放濃度	少於 30 mg/m ³
	除塵效率	高於 90%
燃燒倉	爐口尺寸 (mm) (闊 x 高)	約 330 x 400
	爐內尺寸 (mm) (闊 x 深 x 高)	約 400 x 620 x 605
抽風機	數量	一台
乾式濾芯 (連自動反吹裝置)	數量	18 支

*避免煙氣從爐口逸出，使用時請關上爐門。

產品規格 Product Specifications

標準方案 Standard Solution

型號 Model	FAST-20	FAST-20L	FAST-20A	FAST-60A
化寶量 (公斤/小時) Joss Paper Burning Capacity (kg/hr)	20			60
外形尺寸 (闊x深x高)(米) Dimension (W x D x H) (m)	1.79 x 1.72 x 2.82 ¹	2.7 x 1.1 x 2.96 ¹	1.79 x 1.72 x 2.82	2.95 x 2.87 x 3.04
燃燒爐配置 Burning Chamber Configuration	可配用現有或外置燃燒爐 ² Use Existing Burner or Install a New External Burning Chamber ²			內置燃燒爐 Build-in Burning Chamber
燃燒爐口尺寸 (闊x高)(米) Opening Dimension (W x H) (m)				0.6 x 0.47
燃燒爐內部尺寸 (闊x深x高)(米) Interior Dimension (W x D x H) (m)				0.81 x 0.81 x 1.08
運行重量 (噸) Operating Weight (ton)	2.5 ¹			15
額定功率 Rated Power	4kW			9kW
輸入電壓 Input Voltage	220V/1ph/50Hz			380V/3ph/50Hz
煙塵排放濃度 Particulates Matter	少於 Below 30mg/m ³ (最佳可達 Optimum result < 5mg/m ³)			
除煙塵效率 Particulates Matter Removal Efficiency	高於 Above 90% ³			
煙氣排放黑度 Darkness of Smoke	低於林格曼黑度1級 (無黑煙) ³ Below Shade 1 of Ringelmann Smoke Scale (No black smoke) ³			

¹ 未包括燃燒爐
Burning chamber is not included

² 可配用標準外置燃燒爐
It can be equipped with a standard external burning chamber
- 標準外置燃燒爐外形尺寸 (闊x深x高) (米)
Exterior dimension (W x D x H) (m) : 1.09 x 0.97 x 2.2
- 燃燒爐口尺寸 (闊x高) (米)
Opening dimension (W x H) (m) : 0.6 x 0.45
- 燃燒爐內部尺寸 (闊x深x高) (米)
Interior dimension (W x D x H) (m) : 0.78 x 0.66 x 1.1

³ 由廠商會檢定中心進行測試，測試報告編號：AN0007292(9)，黑煙排放低於林格曼黑度1級 (無黑煙) 以及除煙塵效率高於90%
Tested by CMA Testing and Certification Laboratories and test report no: AN0007292(9), Darkness of Smoke is below Shade 1 of Ringelmann Smoke Scale (No black smoke) & Particulates Matter Removal Efficiency is above 90%
黑煙的釋義：根據《空氣污染管制(煙霧)規例》第311C章第2條
Dark Smoke Interpretation: According to "Air Pollution Control (Smoke) Regulations", Chapter 311C Regulation 2

貼心服務 一致好評 5-Star One-stop Services

- ✓ 系統設計及實地評估
- ✓ 供應及安裝
- ✓ 免費24個月上門維修服務
- ✓ 定期清洗循環水缸及靜電除塵器
- ✓ 快速緊急維修服務
- ✓ System design and on-site inspection
- ✓ Supply & installation
- ✓ Free on-site maintenance service for 24-month
- ✓ Regular cleaning sediment tank & electrostatic precipitator
- ✓ Quick response emergency service



如欲查詢更多「寶潔科 綠化寶系統™」的資訊，歡迎與盈電環保科技有限公司聯絡。
For more information of Bamako Burner™, please contact REC Green Technologies Co., Ltd. via any of the below channels.

電話 Tel: (852) 2619-8817 | 傳真 Fax: (852) 2481-2870 | 電郵 E-mail: rgt@rec-eng.com | 網址 Website: www.rec-gt.com

地址: 香港新界葵涌青山道585-609號嘉民葵涌物流中心15樓A-D室

Address: Units A-D, 15/F, Goodman Kwai Chung Logistics Centre, 585-609 Castle Peak Road, Kwai Chung, N.T., Hong Kong