



**The Government of the Hong Kong Special Administrative Region
Drainage Services Department**

**PWP Item No. 4125DS
Tolo Harbour Sewerage of Unsewered Areas, Stage II**

**Project Profile
for
Shui Chuen Au Street Sewer**

September 2012

AECOM Asia Co. Ltd.

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1. BASIC INFORMATION

1.1 Project Title

- 1.1.1.1 This Project Profile is prepared for “Shui Chuen Au Street Sewer” hereinafter referred to as the “Project”.

1.2 Purpose and Nature of the Project

- 1.2.1.1 The Project is part of Public Works Programme Item 4125DS - Tolo Harbour Sewerage of Unsewered Areas, Stage II, which originates from the findings of the Study “Review of North District and Tolo Harbour Sewerage Master Plan” completed by Environmental Protection Department in 2002. The purpose of the Project is to construct sewer along Shui Chuen Au Street to collect sewage from the Hong Kong Girl Guide Association Pok Hong Camp Site.

1.3 Name of Project Proponent

- 1.3.1.1 The applicant of the environmental permit under Environmental Impact Assessment Ordinance (EIAO) is Drainage Services Department (DSD).

1.4 Location and Scale of Project

- 1.4.1.1 A 150mm diameter proposed sewer (~ 72m in length) runs along existing paved carriageway - Shui Chuen Au Street in Sha Tin, and about 47m long of this proposed sewer is within the Lion Rock Country Park. The location of the Project is shown in **Figure 1**.

1.5 Rationale of the Project

- 1.5.1.1 The proposed sewer is to collect sewage from the Hong Kong Girl Guide Association Pok Hong Camp Site which is part of the proposed sewage catchment. The purpose of this proposed sewer is to serve the said camp site, which is now unsewered, with a view to reduce the pollution loading entering into Tolo Harbour and to improve the environment. The scope of the proposed sewerage works has also been limited to the laying of the sewer from the entrance of the camp site to the nearest public sewerage system with a view to minimize its potential environmental impacts; the recommended sewerage works is considered necessary and unavoidable.

1.6 Number and Type of Designated Project

- 1.6.1.1 The project is a Designated Project under Item Q1, Part 1 of Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO), part of this Project which is about 47m long of the sewer is within the Lion Rock Country Park.

1.7 Name and Telephone Number of Contact Person(s)

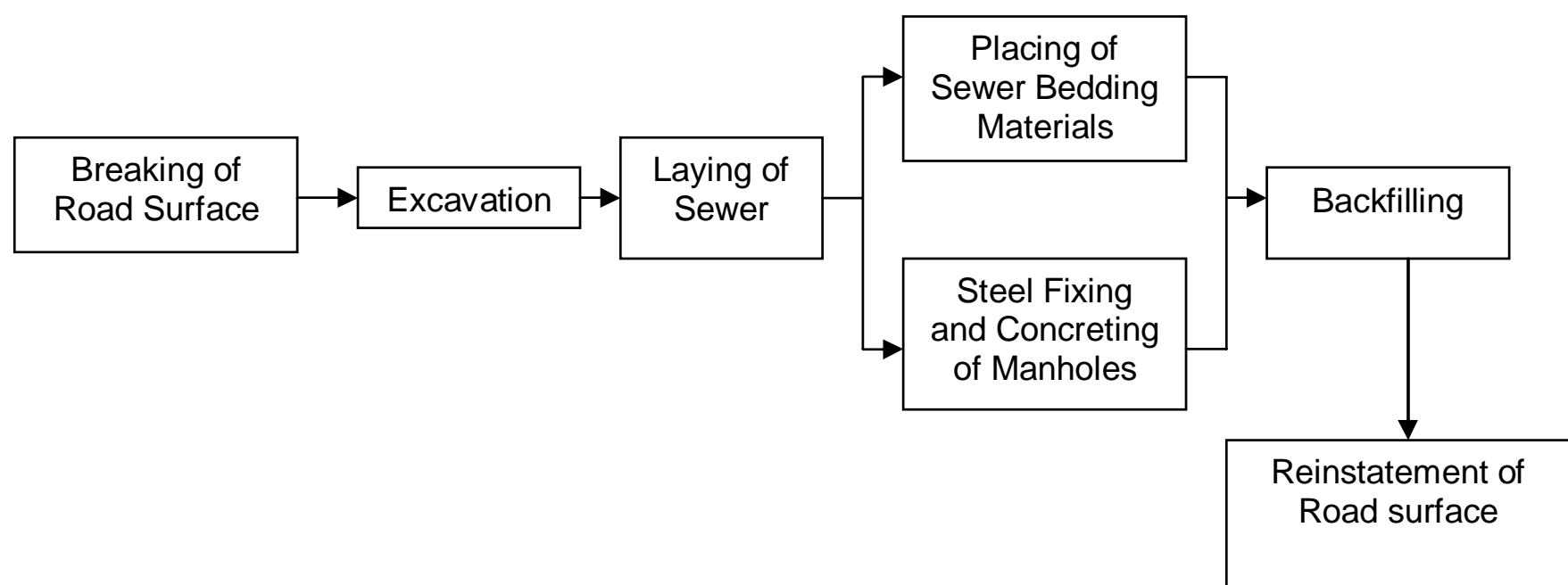
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2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

- 2.1.1.1 The Consultants, which was engaged by the Consultants Management Division of DSD, will carry out the design and construction supervision of the Project. The Mainland South Division of DSD will operate and maintain the completed works.
- 2.1.1.2 Planning and design of the proposed works has been in process since January 2007. Construction is scheduled to commence in early 2014 for completion by 2014.
- 2.1.1.3 Except Water Supplies Department's (WSD) water mains replacement and rehabilitation works contract no. 15/WSD/08, there are no major projects in the vicinity of the Project with overlapping implementation programme. The two projects would be well coordinated by re-scheduling of the site works as confirmed with WSD, there would be no concurrent works to be undertaken at the Project area. Therefore, there will be no cumulative environmental impacts.

3. POSSIBLE IMPACTS ON THE ENVIRONMENT

- 3.1.1.1 The processes flow diagram of typical sewerage construction works is illustrated as follows:



3.2 Possible Environmental Impacts during Construction Phase

3.2.1 Air Quality

- 3.2.1.1 Dust would be generated from construction activities such as road breaking, excavation and backfilling.

3.2.2 Water Quality

- 3.2.2.1 Potential impacts would be arisen from surface runoff and erosion of exposed soil and stockpiles during storm events. Muddy water may also be generated from the construction activities such as dust suppression sprays, dewatering during excavation and washing of construction equipment.

3.2.3 Noise

- 3.2.3.1 Noise would be generated from construction activities such as road breaking and excavation works. The detailed noise impact assessment is shown in **Appendix A**.

3.2.4 Waste Management

- 3.2.4.1 Construction and demolition (C&D) material and waste such as excavated spoil (soil and rock), unusable concrete and grout, wood, metal scraps, equipment parts and packaging materials would be generated.

3.2.5 Landscape and Visual

- 3.2.5.1 All the works will be conducted within the existing carriageway, and no trees or plants will be affected. In addition, potential visual impact during the construction phase may arise from the construction plant, materials and site traffic. However, the impact is anticipated to be insignificant due to the small scale of the Project and only have transient effect on the existing carriageway setting.

3.2.6 Ecology

- 3.2.6.1 No direct impact on ecology is expected during construction phase as the proposed sewer alignment is along existing Shui Chuen Au Street where the area has already been disturbed. Potential indirect impacts such as disturbance to nearby habitats and wildlife utilizing these habitats would be caused by increased human activities/disturbance during the construction phase. A watercourse located approximately 50m to the north of the proposed sewer alignment may receive indirect impact, including construction site runoff, if no pollution control measures are implemented.
- 3.2.6.2 Considering the works would be located on the edge of the Country Park boundary, no construction works would be conducted within the watercourse, and that the existing condition of the surrounding environment is developed and already disturbed by traffic and human activities, the potential indirect impacts on ecology is considered to be minimal with the implementation of good site practice and standard measures to minimize the surface runoff.

3.2.7 Cultural Heritage

- 3.2.7.1 As all the works will be conducted within the existing carriageway, no impacts on historic monuments or buildings are expected during the construction phase.

3.2.8 Traffic Generation

- 3.2.8.1 Additional traffic flow will be generated due to the construction activities; however, it would be minor due to the small scale of works and short construction duration.

3.3 Possible Environmental Impacts During Operation Phase

- 3.3.1.1 Adverse environmental impacts are not anticipated during operation phase. As the Project would reduce the pollution loading entering into Tolo Harbour and enhance the water quality of Tolo Harbour, which will have positive environmental effects after operation of the system.

4. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

- 4.1.1.1 The proposed site is located at Shui Chuen Au Street, Shatin. It is an existing carriageway leading to Lion Rock Country Park and Tsok Pok Hang Village, and part of this carriageway falls within the Lion Rock Country Park boundary. Photos showing the existing site condition are shown in **Figure 2**.
- 4.1.1.2 There are man-made slopes located along the eastern and western boundaries of this carriageway. Bush and grass are scattered on these slopes. A watercourse located approximately 50m to the north of the proposed works is observed to be lined with large boulders on the banks and at the bottom, with no emergent vegetation. Based on site observation, the stream water is cloudy. Channelized banks are also observed along part of the watercourse.
- 4.1.1.3 The representative air and noise sensitive receiver of the Country Park as well as the surrounding environment of the Site is summarized in **Table 4.1** and shown in **Figure 1**. The Lion Rock Country Park is also as an ecological sensitive receiver.

Table 4.1 - Representative Sensitive Receiver in the Vicinity of the Project

Sensitive Receiver Number	Description	Nature of Sensitive Receiver
PHC	Hong Kong Girl Guide Association Pok Hong Camp Site	Hostel

- 4.1.1.4 The proposed sewerage works will only be conducted along the carriageway which is a disturbed ground, and there are frequent traffic flows at this road to the nearby Tsok Pok Hang Village. Tree felling will not be required, and there is no heritage sensitive receivers are identified in the surrounding environment. Therefore, landscape and cultural heritage impacts are not anticipated.
- 4.1.1.5 Due to the small scale of works, which requires only a few small to medium size of power mechanical equipment, and limit numbers of construction vehicles, the air and noise impacts, and the human disturbance during construction phase would be minimal. Therefore, the Project will not affect the present setting of the Country Park.

5. ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN AND FURTHER ENVIRONMENTAL IMPLICATIONS

5.1 Construction Phase

5.1.1 Air Quality

- 5.1.1.1 No adverse impact on air quality is expected during construction phase considering the small scale of works. The extent of dust generation from the construction works is expected to be insignificant with the implementation of standard dust suppression measures as stipulated in the Air Pollution Control (Construction Dust) Regulation of Air Pollution Control Ordinance (APCO). These measures would be incorporated into the specifications for the works contract.

5.1.2 Water Quality

- 5.1.2.1 The construction activities in the Project would include road breaking, excavation and backfilling. Necessary silt removal facilities will be provided so as to remove any silt before discharge of site runoff into the nearby stormwater drains. Standard mitigation measures would be provided prior to the commencement of excavation. The design of temporary on-site drainage and silt removal facilities would follow the guidelines stipulated in EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). The above measures would be incorporated into the specifications of the works contract. With the adoption of such mitigation measures, no adverse impacts on water quality are expected during construction phase.

5.1.3 Noise

- 5.1.3.1 A quantitative construction noise assessment is shown in **Appendix A**. With the adoption of standard control measures such as adopting quiet mechanical equipment and movable noise barriers, etc., the predicted noise level would comply with the daytime noise criterion of 75dB(A) for domestic premises. The relevant regulations and the Noise Control Ordinance (NCO) will be complied to limit the construction noise within acceptable limits during the construction phase. A Construction Noise Permit is required under the NCO in case the construction works are to be carried out during nighttime (1900 – 0700), Sundays and public holidays.
- 5.1.3.2 Although no adverse noise impact is anticipated during construction, standard measures is still recommended to carry out the good site practices listed below during the construction phase of the Project.
- Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction phase;
 - Silencers or mufflers on construction equipment, if applicable, should be utilized and should be properly maintained during the construction program;
 - Powered mechanical equipment that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;
 - Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and
 - Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.

5.1.4 Waste Management

- 5.1.4.1 Due to the small scale of the Project, the quantities of C&D wastes are minimal (i.e. ~ 100m³). Nevertheless, the Contractor would be required to sort all C&D material and waste into different categories for reuse on site and disposal of at public filling, landfills, or recycling facilities as appropriate. The excavated soil would be re-used as backfill materials. The rest would be disposed of at Public Filling Facility.
- 5.1.4.2 Provided that these wastes are handled, transported and disposed of properly in accordance with the appropriate Regulations, adverse environmental impacts are not expected.

5.1.5 Ecology

- 5.1.5.1 No direct impacts on the habitat within the Lion Rock Country Park are expected as the proposed sewerage works would be along the carriageway which is a disturbed ground. However, indirect impacts on the Lion Rock Country Park would be anticipated due to the minor increased in the human activities/ disturbance during construction phase. Given that the small scale of sewer and implementation of proposed noise, dust and water control measures, the indirect impact is considered temporary and minor in scale.
- 5.1.5.2 The following measures would be implemented to avoid and minimize ecological impacts during construction phase:
- The proposed work site should be confined to existing carriageway;
 - Standard good site practices (e.g. hoarding of works areas, placement of equipment or stockpile at designated area, etc.) should be implemented in construction phase to minimize potential disturbance impact;
 - Practical dust and noise control measures (e.g. regular watering, use of quiet mechanical plant, temporary noise barrier, etc.) should be implemented during construction phase; and
 - Effective site run-off control measures (e.g. provision of surface drainage system, use of sand / silt traps, etc.) should be provided during the construction phase to minimize impacts on adjacent water bodies.

5.2 Operation Phase

- 5.2.1.1 Mitigation measures are not required during operation phase of the Project as adverse environmental impacts are not anticipated.

6. CONCLUSION

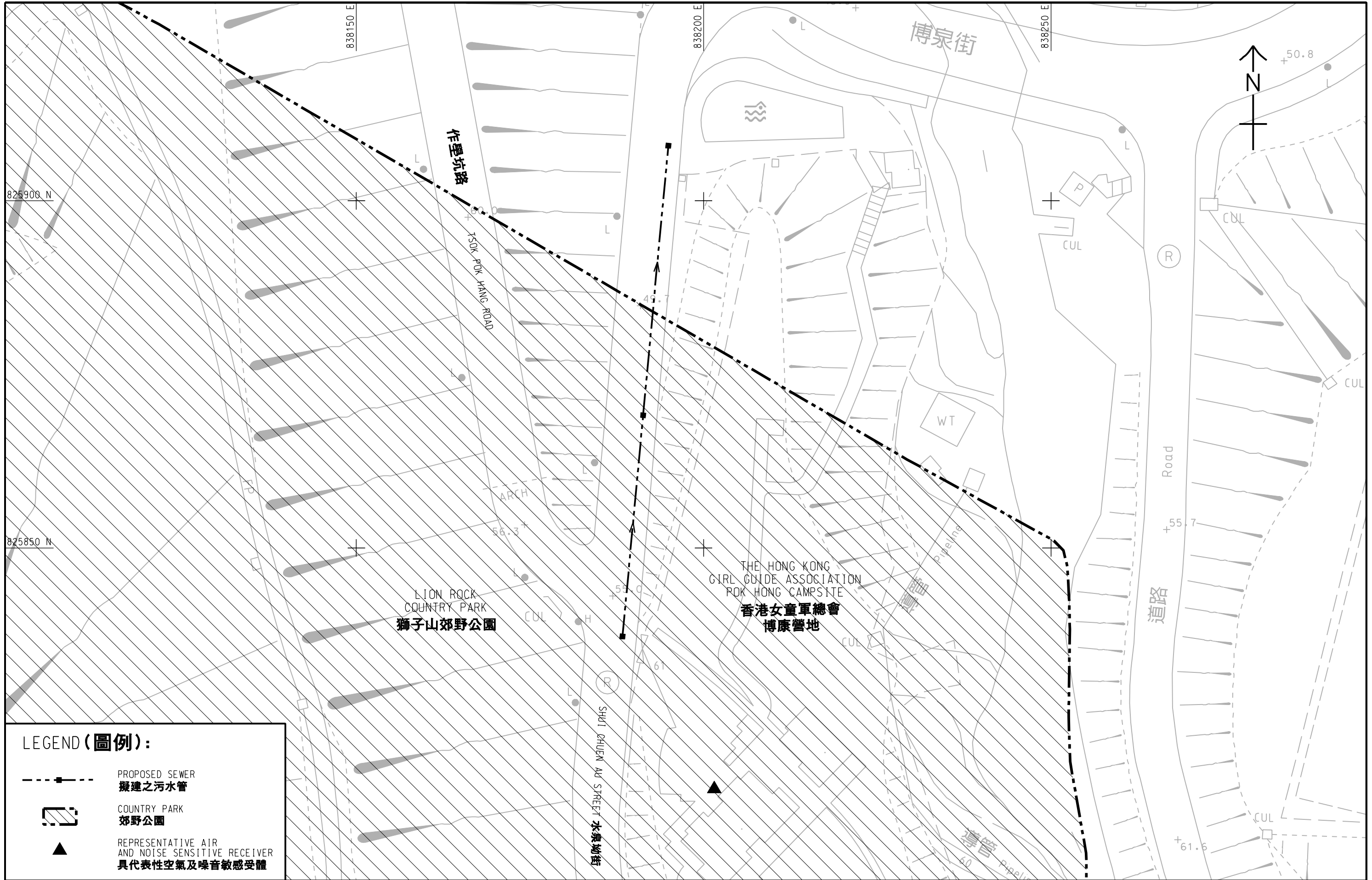
- 6.1.1.1 The Project only involves small scale sewerage installation. The environmental impacts would be minimal and short term during construction phase and therefore significant impact is not anticipated.
- 6.1.1.2 As the Project would reduce the pollution loading entering into Tolo Harbour and enhance the water quality of Tolo Harbour, it will have positive environmental effects after operation of the system. Adverse environmental impact during operation phase is also not anticipated.

- 6.1.1.3 Shatin Rural Committee and District Council were consulted on 13 March 2009 and 30 April 2009 respectively, and they expressed support to the Project.

7. USE OF PREVIOUSLY APPROVED EIA REPORTS

- 7.1.1.1 There is no previously approved EIA study conducted in vicinity or nearby the Project area.

FIGURE



LEGEND (圖例):

- PROPOSED SEWER
擬建之污水管
- COUNTRY PARK
郊野公園
- REPRESENTATIVE AIR
AND NOISE SENSITIVE RECEIVER
具代表性空氣及噪音敏感受體

 DRAINAGE SERVICES DEPARTMENT, THE GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION		工務計劃項目編號4125DS - 吐露港未敷設污水設施地區的污水收集系統第 2 階段 PWP ITEM NO. 4125DS - TOLO HARBOUR SEWERAGE OF UNSEWERED AREAS, STAGE II				SCALE	A3 1 : 500	DATE	SEP. 2012		
		工程項目地點及具代表性的空氣及噪音敏感受體地點				CHECK	YJP	DRAWN	CZP		
		LOCATIONS OF PROJECT SITE AND REPRESENTATIVE AIR AND NOISE SENSITIVE RECEIVER				JOB No.	60022486	DRAWING No.	FIG.1 (圖1)	REV	—



APPENDIX A

Noise Impact Assessment

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Annex 1 Construction Noise Assessment (Unmitigated)

Annex 2 Construction Noise Assessment (Mitigated)

1 NOISE IMPACT

1.1 Introduction

- 1.1.1.1 This section presents the assessment on noise impact during construction phase of the Project. Potential noise impacts at the noise sensitive receivers are assessed and appropriate noise mitigation measures, if required, are recommended.

1.2 Relevant Environmental Legislation and Standards

1.2.1 General

- 1.2.1.1 The principal legislation relating to the control of construction noise is the Noise Control Ordinance (Cap. 400) (NCO). The technical memoranda (TMs) issued under the NCO to stipulate control approaches and criteria, and that which may be relevant to the Project is Technical Memorandum on Noise from Construction Work other than Percussive Piling (GW-TM).
- 1.2.1.2 Apart from the above, the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM), issued under the EIAO, also provides guidelines and noise criteria for evaluating construction noise impacts.

1.2.2 Construction Noise

- 1.2.2.1 Noise impact on general construction activities during normal working hours (i.e. 0700 to 1900 hours on any day not being a Sunday or public holiday) is controlled by the Criteria for Evaluating Noise Impact stated in Table 1B in Annex 5 of the EIAO-TM. The noise limit is Leq(30 minutes) 75 dB(A) for domestic premises, hotels and hostels. The above standard applies to uses which rely on opened windows for ventilation.

1.2.3 Noise Sensitive Receivers

- 1.2.3.1 Representative NSRs within 300m from the project boundary were identified in accordance with Section 3 of Annex 13 of the EIAO-TM.
- 1.2.3.2 The representative NSR is summarized in **Table 1.1** and location of the representative NSR is shown in **Figure 1** of the project profile.

Table 1.1 - Summary of Representative Noise Assessment Points

ID	Description	Use
PHC	The Hong Kong Girl Guide Association Pok Hong Campsite	Hostel

1.3 Assessment Methodologies

- 1.3.1.1 The methodology outlined in the GW-TM was used to assess the impact of general construction works. Sound Power Levels (SWLs) of the equipment were reference from Table 3 of this TM. Where no sound power level (SWL) was given in the GW-TM, reference was made to previous similar studies in Hong Kong.
- 1.3.1.2 The assessment was based on the total SWL of PME to be used for each construction stage. It is assumed that the PME of each construction stage would be operated concurrently at any time to present the worst case scenario. The sound

pressure level (SPL) of each construction stage at the NSRs was predicted based on the total SWL, barrier corrections, distance attenuation and facade correction.

1.4 Identification of Noise Impacts

- 1.4.1.1 The potential construction noise impact may arise from the following construction activities involving the use of Powered Mechanical Equipment (PME) including generators, backhoe, pokers, lorry, etc. The unmitigated construction plant inventory is summarised in **Annex 1**. The construction noise impact assessment was conducted based on the construction plant inventory. Mitigation measures, if required, will be formulated and the residual construction noise impact will be assessed.

1.5 Prediction and Evaluation of Noise Impacts

- 1.5.1.1 For normal daytime working hours, exceedance of the construction noise criteria ($L_{eq}(30min)$ 75 dB(A) for hostel use) is predicted at PHC in the absence of mitigation measures. Details of construction noise calculations are presented in **Annex 1**. A summary of the unmitigated construction noise levels of the representative NSR is presented in **Table 1.2**.

Table 1.2 - Summary of Unmitigated Construction Noise Levels

NSR	Predicted Maximum Unmitigated Construction Noise Levels during Normal Daytime Working Hour ($L_{eq}(30-min)$, dB(A))	Noise Criteria, dB(A)	Compliance (Y/N)
PHC	94	75	N

1.6 Standard Mitigation of Noise Impacts

- 1.6.1.1 In order to reduce excessive construction noise impacts at the affected NSR during normal daytime working hours, standard mitigation measures such as adopting quiet mechanical equipment and movable noise barriers are recommended. The mitigated construction plant inventory and details of construction noise calculation are summarised in **Table 1.3** and **Annex 2**.

Table 1.3 - Summary of Mitigated Construction Noise Levels

NSR	Predicted Maximum Unmitigated Construction Noise Levels during Normal Daytime Working Hour ($L_{eq}(30-min)$, dB(A))	Noise Criteria, dB(A)	Compliance (Y/N)
PHC	74	75	Y

- 1.6.1.2 Good site practice listed below shall be adopted by the contractors to further minimise the construction noise impacts:
- Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program;
 - Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program;
 - Powered mechanical equipment that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum;

- Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and
- Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.

1.6.1.3 The above measures will be incorporated into the contract specification.

1.7 Conclusions

1.7.1.1 The noise impacts associated with the construction of the Project were assessed. The assessment result indicated that the mitigated construction noise level predicted at representative NSR would comply with the noise criteria. No adverse noise impact arising from the Project would be expected.

Annex 1
Construction Plant Inventory (Unmitigated Scenario)

Activity A - Breaking of road surface

Powered Mechanical Equipment	Reference	No. of Items	SWL / Item	On-time %	Barrier dB(A)	Total Sound Power Level	
Breaker	*	1	115	70%	0	113	-
Dump Truck with crane/grab	*	1	105	30%	0	-	100
Total						113	100
Max						113	

Activity B - Excavation

Powered Mechanical Equipment	Reference	No. of Items	SWL / Item	On-time %	Barrier dB(A)	Total Sound Power Level	
Backhoe (mini)	*	1	94	100%	0	94	-
Generator	CNP 103	1	95	100%	0	95	-
Water Pump (electric)	CNP 281	1	88	100%	0	88	-
Dump Truck with crane/grab	*	1	105	30%	0	-	100
Total						98	100
Max						100	

Activity C - Laying of sewer

Powered Mechanical Equipment	Reference	No. of Items	SWL / Item	On-time %	Barrier dB(A)	Total Sound Power Level	
Backhoe (mini)	*	1	94	100%	0	94	-
Crane Lorry (<38 tonnes)	*	1	105	30%	0	-	100
Total						94	100
Max						100	

Activity D - Steel fixing and concreting manholes

Powered Mechanical Equipment	Reference	No. of Items	SWL / Item	On-time %	Barrier dB(A)	Total Sound Power Level	
Crane Lorry (<38 tonnes)	*	1	105	30%	0	100	
Generator	CNP 103	1	95	100%	0	-	95
Poker, vibratory, hand-held	*	1	102	100%	0	-	102
Concrete lorry mixer	CNP 044	1	109	100%	0	-	109
Total						100	110
Max						110	

Activity E - Placing of sewer bedding materials

Powered Mechanical Equipment	Reference	No. of Items	SWL / Item	On-time %	Barrier dB(A)	Total Sound Power Level
Generator	CNP 103	1	95	100%	0	95
Poker, vibratory, hand-held	*	1	102	100%	0	102
Concrete lorry mixer	CNP 044	1	109	100%	0	109
Total						110

Activity F - Backfilling

Powered Mechanical Equipment	Reference	No. of Items	SWL / Item	On-time %	Barrier dB(A)	Total Sound Power Level
Compactor, vibratory	CNP 050	1	105	100%	0	105
Total						105

Activity G - Reinstatement of road surface

Powered Mechanical Equipment	Reference	No. of Items	SWL / Item	On-time %	Barrier dB(A)	Total Sound Power Level		
Lorry	*	1	105	30%	0	100		
Roller, vibratory	CNP 185	1	108	100%	0		108	
Asphalt Paver	CNP 004	1	109	100%	0			109
Total						100	108	109
Max						109		

* Reference: http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

Annex 1

Construction Noise Assessment (Unmitigated Scenario)

ID	Description	NSR Type	Approximate Notional Source Distance (m)	SPL at NSR, dB(A)							Predicted Maximum Construction Noise Level, dB(A)	Noise Criteria, dB(A)	Noise Exceedance, dB(A)
				Activity A - Breaking of road surface	Activity B - Excavation	Activity C - Laying of sewer	Activity D - Steel fixing and concreting manholes	Activity E - Placing of sewer bedding materials	Activity F - Backfilling	Activity G - Reinstatement of road surface			
			SWL	113	100	100	110	110	105	109			
PHC	The Hong Kong Girl Guides Pok Hong Campsite	Hostel	12	86	73	73	83	83	78	82	86	75	11

Annex 2

Construction Plant Inventory (Mitigated Scenario)

Activity A - Breaking of road surface

Powered Mechanical Equipment	Reference	No. of Items	SWL / Item	On-time %	Barrier dB(A)	Total Sound Power Level	
Breaker, excavator mounted (hydraulic)	BS5228 C.8, item 12	1	106	70%	-5	99	-
Dump Truck with crane/grab	*	1	105	30%	0	-	100
Total						99	100
Max						100	

Activity B - Excavation

Powered Mechanical Equipment	Reference	No. of Items	SWL / Item	On-time %	Barrier dB(A)	Total Sound Power Level	
Backhoe (mini)	*	1	94	100%	-5	89	-
Generator	QPME EPD-00389 or equivalent	1	87	100%	-10	77	-
Water Pump (electric)	CNP 281	1	88	100%	-10	78	-
Dump Truck with crane/grab	*	1	105	30%	0	-	100
Total						90	100
Max						100	

Activity C - Laying of sewer

Powered Mechanical Equipment	Reference	No. of Items	SWL / Item	On-time %	Barrier dB(A)	Total Sound Power Level	
Backhoe (mini)	*	1	94	100%	-5	89	-
Crane Lorry (<38 tonnes)	*	1	105	30%	0	-	100
Total						89	100
Max						100	

Activity D - Steel fixing and concreting manholes

Powered Mechanical Equipment	Reference	No. of Items	SWL / Item	On-time %	Barrier dB(A)	Total Sound Power Level		
Crane Lorry (<38 tonnes)	*	1	105	30%	0	100	-	-
Generator	QPME EPD-00389 or equivalent	1	87	100%	-10	-	77	77
Poker, vibratory, hand-held	BS5228 C.6, item 40	1	98	100%	-10	-	-	88
Concrete lorry mixer	BS5228 C.6, item 23	1	100	100%	0	-	-	100
Total						100	77	100
Max						100		

Activity E - Placing of sewer bedding materials

Powered Mechanical Equipment	Reference	No. of Items	SWL / Item	On-time %	Barrier dB(A)	Total Sound Power Level
Generator	QPME EPD-00389 or equivalent	1	87	100%	-10	77
Poker, vibratory, hand-held	BS5228 C.6, item 40	1	98	100%	-10	88
Concrete lorry mixer	BS5228 C.6, item 23	1	100	100%	0	100
Total						100

Activity F - Backfilling

Powered Mechanical Equipment	Reference	No. of Items	SWL / Item	On-time %	Barrier dB(A)	Total Sound Power Level
Compactor, vibratory	QPME EPD 00085	1	102	100%	-5	97
Total						97

Activity G - Reinstatement of road surface

Powered Mechanical Equipment	Reference	No. of Items	SWL / Item	On-time %	Barrier dB(A)	Total Sound Power Level		
Lorry	*	1	105	30%	0	100		
Roller, vibratory	BS5228 C.8, item 30	1	101	100%	0		101	
Asphalt Paver	BS5228 C.8, item 24	1	101	100%	0			101
Total						100	101	101
Max						101		

* Reference: http://www.epd.gov.hk/epd/english/application_for_licences/guidance/files/OtherSWLe.pdf

Annex 2
Construction Noise Assessment (Mitigated Scenario)

ID	Description	NSR Type	Approximate Notional Source Distance (m)	SPL at NSR, dB(A)							Predicted Maximum Construction Noise Level, dB(A)	Noise Criteria, dB(A)	Noise Exceedance, dB(A)
				Activity A - Breaking of road surface	Activity B - Excavation	Activity C - Laying of sewer	Activity D - Steel fixing and concreting manholes	Activity E - Placing of sewer bedding materials	Activity F - Backfiling	Activity G - Reinstatement of road surface			
			SWL	100	100	100	100	100	97	101			
PHC	The Hong Kong Girl Guides Pok Hong Campsite	Hostel	12	73	73	73	73	73	70	74	74	75	-