

#### By Post & Fax (2147-0894)

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10 Nov 2022

Dear Mr. Wong

Contract No. CM 4/2017 Independent Environmental Checker for Construction of Dry Weather Flow Interceptor at Cherry Street Box Culvert Submission of Monthly Environmental Audit Report No.58

In accordance with Clause 2.1 of the Environmental Permit for Proposed Sewage Pumping Station and Dry Weather Flow Interceptor at Cherry Street Box Culvert (No. EP-523/2016), we are pleased to submit herewith four hard copies and one electronic copy of the Monthly Environmental Audit Report No.58 for your perusal.

If you require any further information, please do not hesitate to contact the undersigned.

Yours sincerely

Franki Chiu

Independent Environmental Checker

Enc

cc. DSD

Black & Veatch Hong Kong Limited CMGC-TECEL Joint Venture

Mr. Jason Cheung (one hardcopy) Mr. Quentin Yau (one hardcopy) Mr. Benson Yau (one hardcopy)

### **Drainage Services Department**

Contract No. CM 4/2017 Independent Environmental Checker for Construction of Dry Weather Flow Interceptor at Cherry Street Box Culvert

Monthly Environmental Audit Report No.58 (Oct 2022)

Month Environmental Audit Report

First version | Oct 2022

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 258952

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#### 1 INTRODUCTION

#### 1.1 Background

The existing Cherry Street Box Culvert (CSBC) is a reinforced concrete 8-cell stormwater box culvert; each cell is 4.8 m wide and 3.5 m high. The CSBC collects run-off from three upstream box culverts underneath Palm Street, Cheung Wong Road and a section of West Kowloon Corridor West and ultimately discharges into the New Yau Ma Tei Typhoon Shelter (NYMTTS).

At present, the water quality at NYMTTS and the odour associated with it remains unsatisfactory. It is believed that polluted flow, including those from the expedient connections, cross-connections between the foul water sewerage and the stormwater drainage system in the area found their way into the CSBC and in turn discharges into NYMTTS. Measures have to be taken to improve the present conditions at the CSBC.

In 2010, Environmental Protection Department (EPD) completed a West Kowloon and Tsuen Wan Sewerage Master Plans Study Review and recommended to construct a dry weather flow interceptor (DWFI) at the outfall of the CSBC. Upon commissioning of the DWFI system, the intercepted flow would be discharged to the existing sewerage system via proposed discharge sewerage.

The proposed DWFI system will comprise construction of a DWFI at the CSBC to intercept the dry weather flow (DWF) inside the box culvert and construction of a sewage pumping station to pump the intercepted DWF to the existing sewerage network via proposed twin rising mains.

The Project titled "Construction of dry weather flow interceptor at Cherry Street box culvert" mainly comprises the construction of (i) an underground DWFI with automatic penstocks at CSBC; (ii) a pumping station; (iii) an underground stormwater bypass box culvert; and (iv) about 270 metres of underground twin rising main from the pumping station in (ii) above to an existing sewer at Lin Cheung Road. The Project will be implemented under PWP Item No. 4380DS. The Project location is shown in **Figure 1**.

The Project is classified as a designated project under item F.3(b) (i), Part 1 of the Schedule 2 of the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO), since the proposed sewage pumping station has an installed capacity (average dry weather flow) of more than 2,000m<sup>3</sup> per day and its boundary is less than 150 m from an existing residential area.

A project profile (Register No. PP-527/2015) ("Project Profile") entitled "Proposed Sewage Pumping Station and Dry Weather Flow Interceptor at Cherry Street Box Culvert" was submitted to Environmental Protection Department (EPD) under Application No. DIR241/2015. Permission to apply directly for environmental permit was granted by EPD in September 2015. An Environmental Permit (EP-

523/2016) ("EP") to construct and operate the Designated Project was issued to Drainage Services Department (DSD) on 23 December 2016.

According to the EP, DSD shall employ an Independent Environmental Checker ("IEC") to audit the implementation of all mitigation measures recommended in the Project Profile and required under the EP, and certify in writing in the monthly audit report full implementation of the mitigation measures during the construction phase of the Project

Arup was commissioned by DSD as the IEC in accordance with the conditions stipulated in the EP (EP-523/2016) for a period of 64 months from 8 January 2018.

#### 1.2 Scope of the Assignment

Scope of work of this Assignment includes:

- (i) Provide the continual services of an IEC as stipulated in the Project Profile and the EP and reporting the findings to the Employer and the Engineer. The role of the IEC shall be independent from the Contractors;
- (ii) Conduct monthly site audits on the implementation of all mitigation measures recommended in the Project Profile and the EP and reporting the findings to the Employer and the Engineer;
- (iii) Advise the Engineer and the Employer on environmental issues related to the implementation of environmental mitigation measures under Contract No. DC/2017/01;
- (iv) Provide comments on the environmental aspects of the works programme, method statements and other relevant submissions by the Contractors;
- (v) Attend the monthly Site Safety and Environmental Management Committee (SSEMC) meetings;
- (vi) Report the findings of the site inspection and other environmental performance reviews to the Engineer and the Employer; and
- (vii) Submit monthly audit reports to EPD and confirming in writing in the report full implementation of the mitigation measures as recommended in the Project Profile and EP during and upon completion of the construction works under Contract No. DC/2017/01.

### 2 Project Organization

### 2.1 Project Organization and Management Structure

The project organization and contacts of key personnel of the Project are shown in **Appendix A**.

## **3** Concise Overview of Assignment Period

### 3.1 Construction Activities in the Reporting Period

The construction activities carried out by the Contractor during the reporting period included the following:

 Painting of floor in Sewage Pumping Station and Maintenance Corridor was in progress.

The environmental performance was considered acceptable during the assignment period from 1 Oct 2022 to 31 Oct 2022.

# 4 Status on Implementation of Environmental Mitigation Measures

The potential environmental impacts and proposed mitigation measures to be incorporated into the design and construction of the Project are summarised in **Table 4.1** below.

Table 4.1 Summary of potential environmental impacts and proposed

environmental mitigation measures

environmental mitigation measures	Implementation				
Mitigation Measures	Agent	Status			
Dust nuisance		1			
Adopt dust control and suppression measures as stipulated in the Air Pollution Control (Construction Dust) Regulation.		Implemented			
Water spraying on exposed area and during excavation.		Implemented			
3. Provide wheel-washing facilities.		Implemented			
4. Cover stockpile of dusty materials by impervious sheets.		Implemented			
5. Provide hoarding of not less than 2.4m high from ground level along the site boundary adjoining Hoi Fai Road.	Contractor (Construction Phase)	N/A due to site constraint. (Contractor will increase the watering frequency as mitigation measures.)			
6. Cover dusty load on trucks before they		Implemented			
7. Avoid concurrent excavation activities for construction of underground DWFI, underground emergency stormwater bypass culvert and CSBCSPS.	for construction of underground DWFI, underground emergency stormwater				
8. Minimize area involving dusty construction activities by arrangement of construction activities and methods.		Implemented			
Odour		1			
1. Locate the inlet chamber, screen chamber, valve chamber and wet well of the sewage pumping station underground and enclose them by a reinforced concrete structure.	Contractor (Construction	Implemented			
2. Install and properly maintain a deodorizer with a forced ventilation system and an odour removal efficiency of at least 99.5%.	Phase)  DSD (Operational Phase)	N/A for the reporting month and shall be implemented in the later months			

Mitigation Measures	Implementation Agent	Status
Water Quality		
1. Control construction surface run-off according to ProPECC PN1/94, EPD's Practice Note for Professional Persons, Construction Site Drainage.		Implemented
2. All chemical tanks and storage areas will be provided with locks and placed on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank.	Contractor (Construction Phase)	Implemented
3. Install and properly maintain a standby pump and dual power supply.	Contractor (Construction	Implemented
4. Provide a telemetry system to transmit signals showing irregularity or operational problem of the sewage pumping station and the dry weather flow interceptor to the Stonecutters Island Sewage Treatment Works.	Phase)  DSD (Operational Phase)	N/A for the reporting month and shall be implemented in the later months
Noise		
Adoption of standard control measures such as adopting quiet mechanical equipment, temporary noise barriers and good site practices etc.		Implemented
Construction Noise Permit is required for construction work during restricted hours as defined under the Noise Control Ordinance.	Contractor (Construction Phase)	Implemented
3. Locate the pumps and screening facilities of the sewage pumping station underground and enclose them by a reinforced concrete structure.		Implemented

Mitigation Measures	Implementation Agent	Status
4. Install all outlets of the extraction fans with acoustic louvers.	· ·	Implemented
Waste Management		
Standard waste management measures and good site practices in waste handling, disposal and transportation will be implemented.		Implemented
2. The Contractor will be required to sort all C&D materials and general refuse into different categories for reuse on site, recycling and disposal at designated public fill reception facilities or landfills. Disposal of C&D materials will be managed through the trip-ticket system as stipulated in DEVB TC(W) No. 6/2010.	Contractor (Construction	Implemented
3. All chemical wastes due to maintenance of equipment will be handled, stored and disposed of in accordance with the requirements of the Waste Disposal (Chemical Waste) (Chemical) Regulation.	Phase)	Implemented
4. General refuse will be stored and disposed of separately from general construction waste and chemical waste. The storage bins for general refuse will be provided with lids, which should be kept closed to avoid odour nuisance and windblown litter. General refuse will be removed regularly and disposed of to landfills.		Implemented
Landscape and Visual		
Erect site hoarding with decorative features that are compatible with the surrounding environment;	Contractor	Implemented
2. Maintain site cleanliness and tidiness;	(Construction Phase)	Implemented
3. Properly manage construction waste in the works area;	DSD (Operational	Implemented
4. Reinstate all temporary works areas to its original conditions upon completion of works.	Phase)	N/A for the reporting month and

Mitigation Measures	Implementation Agent	Status
		shall be implemented in the later months
5. Implement and properly maintain the landscape and visual mitigation measures (e.g. rooftop greening, grasscrete, paving lock, vertical greening, permanent shrub planter, removable shrub planter, bench with shelter, and removable planter with trees) as shown in Figure 2 of the EP.		N/A for the reporting month and shall be implemented in the later months

## 5 Major Accomplishment

#### 5.1 Deliverables

Deliverables completed in the reporting period are summarised in **Table 5.1**.

**Table 5.1** Completed deliverables

Description	Submitted by IEC
Monthly Environmental Audit Report No. 57	10 Oct 2022
(Sep 2022)	

Planned deliverables to be completed in the coming reporting period is summarised in **Table 5.2**.

**Table 5.2** Planned deliverables

Description	Planned Submission Date	Status	
Monthly Environmental Audit Report No. 58 (Oct 2022)	10 Nov 2022	On schedule	

## 5.2 Meetings

No meeting was held in the reporting month.

### 5.3 Summary of Work Done

Upon commencement of the Assignment, accumulated numbers of IEC monthly environmental audit report submission and various kinds of meetings are summarized in **Table 5.3**.

Table 5.3 Summary of work done

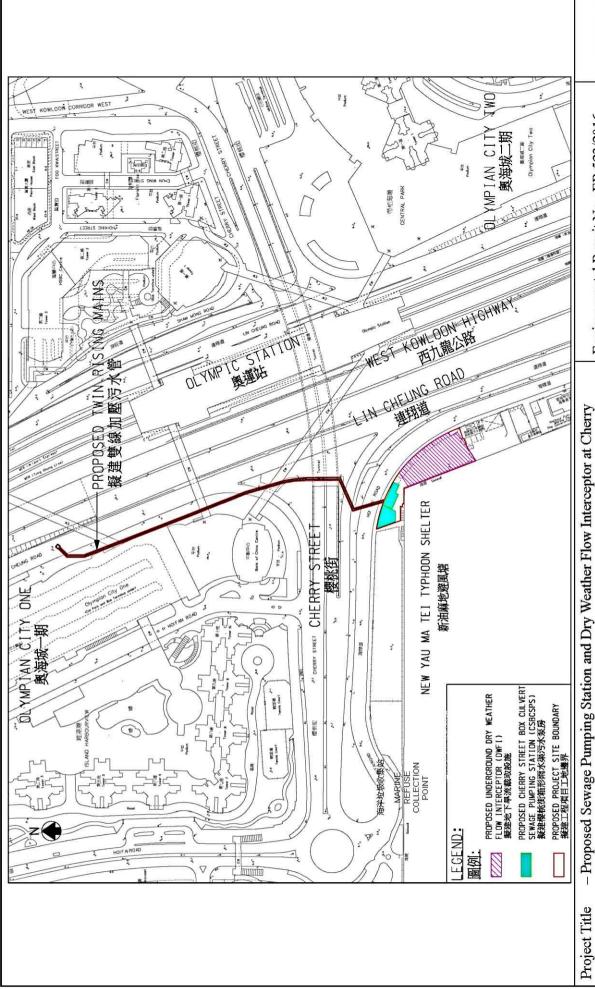
Work	Number
Reports	
IEC Monthly Environmental Audit Report	58
Meeting	
IEC monthly site inspection with DSD, Engineer Representative and Contractor	54
Project related meeting with DSD and EPD	1

#### 5.4 IEC Site Audit

IEC site audit was conducted on 28 Oct 2022 with the presence of DSD, Resident Site Engineer, Contractor and IEC. No major site defect was observed in the reporting month. The IEC site audit checklist is given in Appendix B.

## Figure 1

Project Location





Environmental Permit No.: EP-523/2016

環境許可證編號: EP-523/2016

Project Location Plan 工程項目位置圖 Figure 1 圖 1

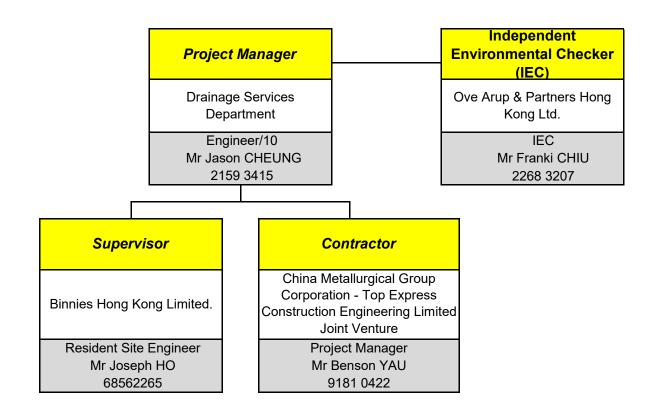
- 櫻桃街箱形雨水渠擬建污水泵房及旱流截取設施

Street Box Culvert

工程項目名稱

## **Appendix A**

Project Organization and Contacts of Key Personnel



———Contractual Relationship

## Appendix B

IEC Site Audit Checklist

## Construction of Dry Weather Flow Interceptor at Cherry Street Box Culvert Independent Environmental Checker Environmental Site Inspection Checklist



	Ref. No. Project Contract No. Inspected By					IEC Client Contractor Engineer Inspection Dat Time Period	-	Ove Aru Drainage China M Top Exp Black &	Servetallur ress C Veatcl	ices E gical onstr HK t	Departi Group uction Ltd.	ment Corpo	eering Li	mited JV	
	Part I Condition Humidity Wind	Weather □Funny □Righ □Calm	∏ine □Hoderate	□Dvercast □tw □treeze	□storm □strong		brb	zie Tempera		łazy		`	29	_°c	
						·									_
No.	Part II		y and Drainag	je			l	N/A N/C			Obs	N/C	Photo.	s / Remar	ks
1	is drainage sy								ע'ב						
2	Is drainage sy			d 61 6	10				₽⁄/					·····	_
3 4	is drainage sy					-40			₩/						
5	Are there dyk				•				₫′						_
ъ	Are there per runoff from or														_
6	Are sediment							~~		_	_	_			
7	Are there tem					-									_
ľ	watercourse?		s ioi fullon u	ischarge int	o appropriate	5		Ø O							_
8	Are these ten		es with silt ret	ention and r	emoval facili	ities?		n/n				_			
9a	Do permanen				entation basin										-
9b	Do pormano	it di amage on			ind baffles?	•		<b>X</b>	Ξ,						-
10	is site runoff	prohitated from	m enterina th	•				<b>.</b>	3/					•	_
11	ls groundwate	from tunnels or surface runoff collected and discharged						_							
12	Are there sed	•		a runoff pric	or to disposa	17			☒.						
13a	Are the sedim			•					¥,		ä				_
13b				quate capacit					₩,	ä	5	ä	-		_
13c				silt and sedir	•			<u>.</u>							_
14	Are there neu	tralisation tar	nks for concre	ete batching.	/mixing disch	narge?		7,5	8		ā	<u> </u>	-		_
15	Is the dischar	ge diverted to	and treated	in neutralisa	ation tanks?			<b>Ø</b> /0	$\bar{\Box}$	$\overline{\Box}$	ō				
16	Is the dischartanks before t		ralisation tani	ks routed to	silt trap or se	edimentation		<b>a</b> =							_
17	Are there oil is	nterceptors in	n drainage sy	stem?											
18	Are oil and gr	ease remove	d regularly (a	it least week	(ly)?							$\bar{\Box}$			_
19	is there any b	ypass for oil t	to prevent flu	shing during	periods of t	eavy rain?		Ճ∕⊏							
20	Are vehicles a leaving the sil	-	aned of earth.	, mud and de	ebris before				Ø						_
21	Is a wheel wa	shing bay pro	ovided at eve	ry site exit?					፟						
22a	is the wheel v	vashing bay v	with: adequ	ate design?											
22b			adequ	ate settling &	removal of sa	and/silt?			Ū,						
22c					leading to exi				Ø/						
22d					ently backfill to	oward			⊴						
22e				wash bay?					1						
23	is exposed ea		•			10			₩/						_
24 25	Are exposed :				ir otner mear	18)7			巫						_
25 26	Are open stoo Are manholes	•	•	wy iain/				西口							_
26 27	Are mannoles Are accessed			ad stopps of	Colevero										—
28	Are toilets con		•		-	•			9				-		—
29	Are debris an								N N	<u>-</u>					_
30	Is wastewater					·,·			NA NA						
								ם ם	(Z	ü		u			_





No.	Part III Air Quality		N/A,N/O Yes Rdr Obs N/C Pholos / Remarks
1		lling within speed limit of 10 km/h?	
2		onfined to designated haul roads?	
3		site entrance kept clean and free from dust?	
4		traffic movement have hard surface?	
5		egularly to avoid dust disturbance? .	
6		regularly to avoid dust disturbance?	
7	Does the water spraying truc		
8		n or earth moving operation sprayed with	
	water to maintain the entire s	surface wet?	<b>*</b>
9	Are the dusty materials spray	yed with water during transfer operation?	
10	Do the site vehicles use the	wheel wash at the site exits?	
11	Does the wheel wash work e	ffectively?	
12	Are hoarding not less than 2.	4m tall provided beside roads or areas with	
	public access?		/
13		ot less than 1.8m tall provided in the public area	
	affected by exhaust fumes or		/
14	is dark smoke emission avoid		
15	Are dusty materials properly		
16	Are the bags of cement (mor		
17		dropped at minimum practical height?	
18		windboards, transfer points and hoppers	
	enclosed?	to a town of the advanced with a first and will be followed	
19	<b>-</b>	ils stored in closed silos fitted with high level	
20	alarm indicator?  Are air vents on cements silo	o fitted with fahria filtare?	
20 21			
22	Are weigh hoppers vented to	the main dust-generating activities?	-/
23		ealed and hydroseeded and planted as soon	
25	as practicable?	saled and trydrosecoco and planted as soon	
24	Is open burning avoided?		<b>2</b> 00.000
25		switched off while not in use?	
26		el within the side and tall boards?	
27		dump trucks with mechanical cover?	
28	Do the truck covers work effe		
29	Does ULSD used in the cons		
30	Observable dust sources	☐Vind eroston	Vahicle/equipment movements
		loading/unloading of materials	Construction
No.	Part IV Construction N	•	N/A N/O Yes Rdr Obs N/C Pholos / Remarks
1a	Are the construction works sche	eduted to minimize airborne noise nuisance?	
1b		groundborne noise nuisance?	
2a	Are the works or equipment site	d to minimize airbrone noise nuisance?	
2b		groundbrone noise nuisance?	
3		well maintained and in good operating condition?	
4	Are idling equipment throttled		
5		ipment covered or shielded by appropriate	
_	acoustic materials?  Are sitenced equipment used	Lubora prostinoble?	
6	• •	•	
7	where necessary?	arrier, or portable nolse barrier used	
8		er than or equal to 10kg) have valid noise labels?	
9		ical Equipments (QPME) have valid noise labels?	
10	Do air compressors have val		
11	Do compressors operate with		
12	Are Construction Noise Perm		
13		·	_/ <u> </u>
13	Major noise source(s)	Traffic	Construction activities inside of site
13	Major noise source(s)	☐raffic ☐:onstruction activities outside of site	Construction activities inside of site

## Construction of Dry Weather Flow Interceptor at Cherry Street Box Culvert Independent Environmental Checker Environmental Site Inspection Checklist



	<del></del>	<del></del>
No.	Part V Waste Management and Contamination	N/A N/O Yes, Rdr Obs N/C Photos / Remarks
1a	General refuse: Is accumulation avoided?	
1b	Is receptacies (e.g. rubbish bins) available?	
1c	Is there regular and proper disposal?	
2a	Construction waste: Is there avoidance or minimization of construction	p/□ å □ □ □ <u></u>
	waste generation (e.g. use of steel formwork)?	
2b	is there on site segregation as far as practicable	<b>7</b> 00000
	for reuse and recycle?	,
2c	Is construction waste reused where practicable?	<b>~</b>
2d	Is construction waste disposed at public dumping	
	area or public landfill?	,
2e	Are trip tickets available for inspection?	w/ooooo
За	Chemical waste/waste oil: Is there designated storage area?	
3b	is chemical waste/waste oil stored properly?	
3с	is there proper disposal?	
3d	Are trip tickets available for inspection?	
3е	Is chemical waste license available for	
	inspection?	,
4a	Excavated material: Does excavated material appear uncontaminated	p/o o o o o
	(colour, odour)?	
4b	If contamination is suspected, is appropriate procedure	g/oooo
	followed?	· ·
4c	Are trip tickets available for inspection?	<b>7</b> .0000
5a	Chemical/fuel: Is chemical/fuel stored in bunded area?	
5b	is bund capacity adequate (>110% of the largest tank)?	
5c	Are storage areas provided with locks and located on	
	sealed area?	
6	Are relevant license/permit for disposal of construction waste or excavated	
	materials available for inspection?	
7	Is foam, oil, grease or other objectionable matters in water of nearby drains	ooodoo kir 1
	or sewer avoided?	
No.	Part VI Landscape & Visual Impact and Ecology	N/A,N/O Yes Rdr Obs N/C
1	Is stripped top soil stored for re-use?	
2	Are retained trees protected from damage?	-/ <del></del>
3	· · · · · · · · · · · · · · · · · · ·	
4	Are compensatory trees planted and properly maintained? For trees identified for transplant in EP:	<b></b>
4 4a	•	g/o o o o o
46 4b	sufficient buffer zone allowed prior to transplant?	
	properly maintained following transplant?	
5	Is night-time lighting controlled to minimise glare to sensitive receivers?	
6 7	is the screen hoarding compatible with the surrounding setting?	
,	Do the site clearance and tree felling works at the existing ardeid night roost	<b></b>
	only be carried out at wintering season (November to March inclusive)?	
ki.	Dank VIII Ohborn	AVA NVO Voo Pris Obe NVO
No.	Part VII Others	N/A N/O Yes, Rdr Obs N/C
1	Is a copy of the relevant permits/licences/registrations displayed	
	on the Project site at all vehicular site entrances/exits or at	
	a convenient location for public information all times?	

Part VIII

Follow-up for the Pervious Site Audit

#### Construction of Dry Weather Flow Interceptor at Cherry Street Box Culvert Independent Environmental Checker **Environmental Site Inspection Checklist**

Part IX Remarks

Noted dry season to construction works and slit removal will be conducted in day season with the penstock of box culvert opened. Ha A proper functioned stit curtain shall be provided by contractor before the aforementioned works beging.

Rdr 2: Haight of hoarding along Hot Fat Road to lower than 2.4 m due to 57te Constraints. Contractor is reminded to finish the temporary works as soon as possible, and increase the watering freq to avoid dust distimbance.

Part X Signatures

IEC's Representative

(Name: Hilton

(Name: CHEWNA SHEK

W.W.W