

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.23 (November 2019)

First version | November 2019

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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**ARUP**

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# 1 INTRODUCTION

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## 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**.

### 2.2 Construction Activities in the Reporting Period

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

- Base slab of Wet Well (1<sup>st</sup> pour) in ELS Stage B was concreted;
- Erection of formwork and installation of reinforcement for the 2<sup>nd</sup> pour in ELS Stage B was in progress;
- Repair of damaged grout curtain in ELS Stage C was in progress;
- Slab opening of box culvert for Cell 3 and 4 was completed;
- ELS works of Cell 9 was in progress; and
- Fabrication of DfMA segments of Maintenance Corridor of Cell 3 and 4 was in progress.

## 3 Concise Overview of Assignment Progress

Construction of ELS Stage B and Cell 9; repair damaged curtain in ELS Stage C and fabrication of maintenance corridor of Cell 3 and 4 were carried out by the Contractor. The environmental performance was considered acceptable during the assignment period from 1 November 2019 to 30 November 2019.

## 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

Mitigation Measures	Implementation Agent	Status
Dust nuisance		
1. Adopt dust control and suppression measures as stipulated in the Air Pollution Control (Construction Dust) Regulation.	Contractor (Construction Phase)	Implemented
2. Water spraying on exposed area and during excavation.		Implemented

Mitigation Measures	Implementation Agent	Status
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.		Being Implemented
6. Cover dusty load on trucks before they leave the construction site.		N/A for the reporting month and shall be implemented in the latter months
7. Avoid concurrent excavation activities for construction of underground DWFI, underground emergency stormwater bypass culvert and CSBCSPS.		N/A for the reporting month and shall be implemented in the latter months
8. Minimize area involving dusty construction activities by arrangement of construction activities and methods.		Implemented
<b>Odour</b>		
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 Phase)	N/A for the reporting month and shall be implemented in the latter months
2. Install and properly maintain a deodorizer with a forced ventilation system and an odour removal efficiency of at least 99.5%.	DSD (Operational Phase)	N/A for the reporting month and shall be implemented in the latter months
<b>Water Quality</b>		
1. Control construction surface run-off according to ProPECC PN1/94, EPD's Practice Note for Professional Persons, Construction Site Drainage.	Contractor (Construction Phase)	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.		N/A for the reporting month and shall be implemented in the latter months
3. Install and properly maintain a standby pump and dual power supply.	Contractor (Construction Phase)	N/A for the reporting month and shall be implemented in the latter months
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.	DSD (Operational Phase)	N/A for the reporting month and shall be implemented in the latter months
<b>Noise</b>		
1. Adoption of standard control measures such as adopting quiet mechanical equipment, temporary noise barriers and good site practices etc.	Contractor (Construction Phase)	Implemented
2. Construction Noise Permit is required for construction work during restricted hours as		N/A for the reporting month and shall be

Mitigation Measures	Implementation Agent	Status
defined under the Noise Control Ordinance.		implemented in the latter months
3. Locate the pumps and screening facilities of the sewage pumping station underground and enclose them by a reinforced concrete structure.		N/A for the reporting month and shall be implemented in the latter months
4. Install all outlets of the extraction fans with acoustic louvers.		N/A for the reporting month and shall be implemented in the latter months
<b>Waste Management</b>		
1. Standard waste management measures and good site practices in waste handling, disposal and transportation will be implemented.	Contractor (Construction Phase)	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.		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.		N/A for the reporting month and shall be implemented in the latter months
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
<b>Landscape and Visual</b>		
1. Erect site hoarding with decorative features that are compatible with the surrounding environment;	Contractor (Construction Phase)  DSD (Operational Phase)	Implemented
2. Maintain site cleanliness and tidiness;		Implemented
3. Properly manage construction waste in the works area;		Implemented
4. Reinstate all temporary works areas to its original conditions upon completion of works.		N/A for the reporting month and shall be implemented in the latter 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		N/A for the reporting month and shall be implemented in the latter months

Mitigation Measures	Implementation Agent	Status
Figure 2 of the EP.		

## 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. 22 (October 2019)	19 October 2019

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. 23 (November 2019)	16 November 2019	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	22
Meeting	



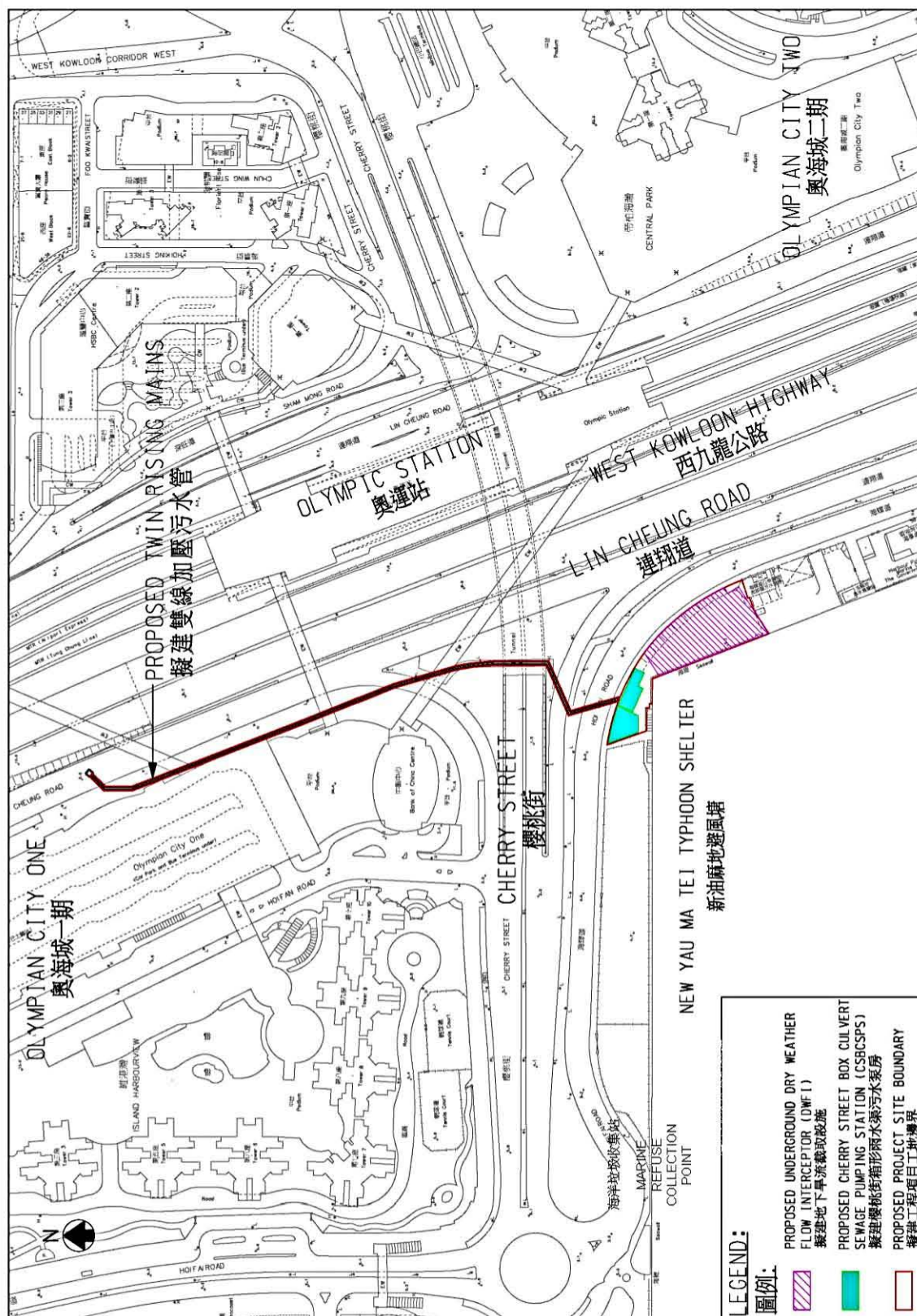
<b>Work</b>	<b>Number</b>
IEC monthly site inspection with DSD, Engineer Representative and Contractor	18
Project related meeting with DSD and EPD	1

## 5.4 IEC Site Audit

IEC site audit was conducted on 29 November 2019 (Fri) with the presence of DSD, Resident Site Engineer, Contractor and IEC. No major site defect was observed in the reporting month.

## Figure 1

Project Location



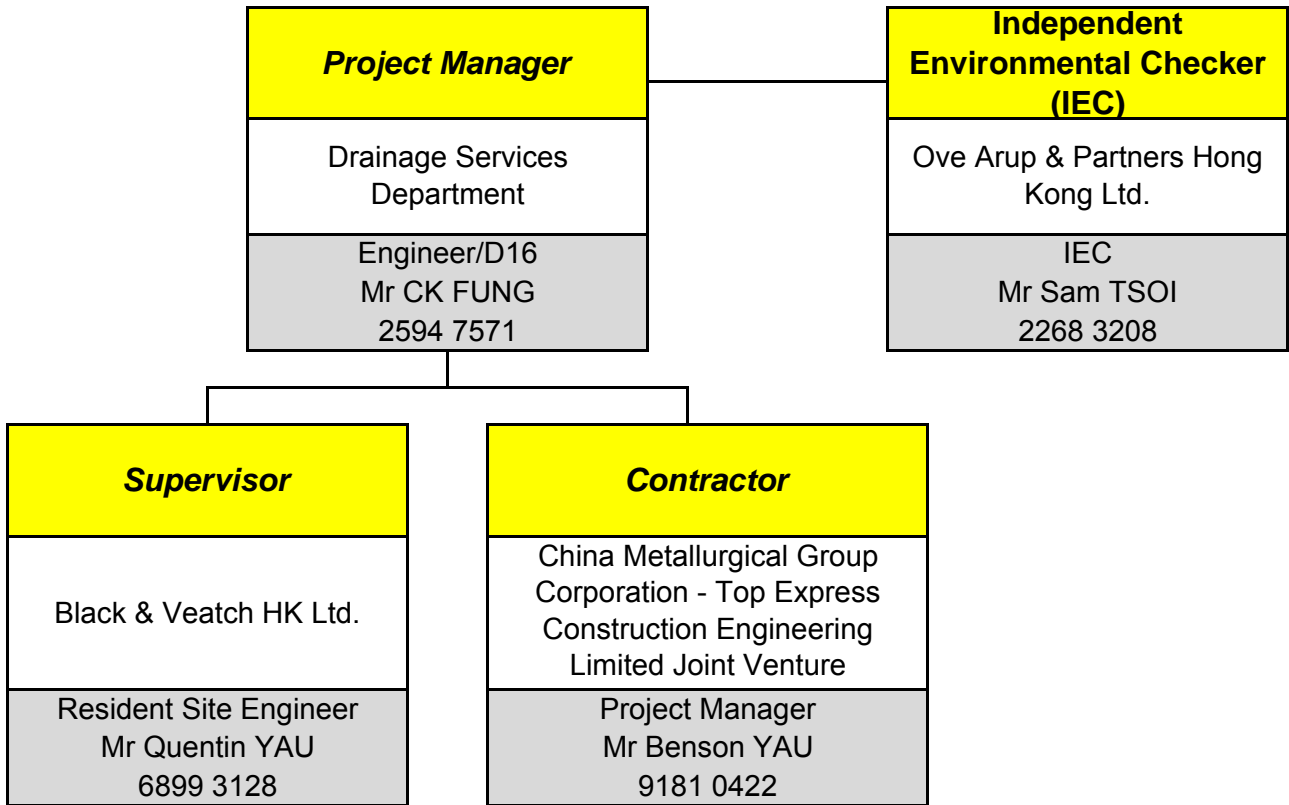
Environmental Permit No.: EP-523/2016  
 環境許可證編號: EP-523/2016

**Project Title** - Proposed Sewage Pumping Station and Dry Weather Flow Interceptor at Cherry Street Box Culvert  
**工程項目名稱** - 櫻桃街箱形雨水渠擬建污水泵房及旱流截取設施

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

## **Appendix A**

### **Project Organization and Contacts of Key Personnel**



———— Contractual Relationship