

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.28 (April 2020)

First version | May 2020

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 2,000m³ 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:

- Erection of formwork and fixing reinforcement for the 4th and 5th pour in ELS Stage B, C and D was in progress;
- Excavation works for Cell 9 was in progress;
- Fabrication of DfMA segments of Cell 9 was in progress;
- Fabrication of DfMA segments of pumping station was in progress;
- Installation of stoplog in Cell 5 was completed;
- Installation of penstock in Cell 5 was in progress;
- Pipe jacking for twin rising mains from Ch. 22 to 37 was in progress; and
- Site hoarding outside the Olympian City 2 was completed.

3 Concise Overview of Assignment Progress

Formwork and fixing reinforcement in ELS Stage B, C & D; pump test in ELS Stage D; excavation works and fabrication of Maintenance Corridor for Cell 9; fabrication of pumping station; installation of stoplog and penstock at Cell 5; pipe jacking for twin rising mains and site hoarding outside the Olympian City 2 were carried out by the Contractor. The environmental performance was considered acceptable during the assignment period from 1 April 2020 to 30 April 2020.

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		

Mitigation Measures	Implementation Agent	Status
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
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.		Implemented
6. Cover dusty load on trucks before they leave the construction site.		Implemented
7. Avoid concurrent excavation activities for construction of underground DWFI, underground emergency stormwater bypass culvert and CSBCSPS.		Implemented
8. Minimize area involving dusty construction activities by arrangement of construction activities and methods.		Implemented
Odour		
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
Water Quality		
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
Noise		
1. Adoption of standard control measures such as adopting quiet mechanical equipment, temporary noise barriers and good site practices	Contractor (Construction Phase)	Implemented

Mitigation Measures	Implementation Agent	Status
etc.		
2. Construction Noise Permit is required for construction work during restricted hours as defined under the Noise Control Ordinance.		Implemented
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
Waste Management		
1. 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.		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.	Contractor (Construction Phase)	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
Landscape and Visual		
1. Erect site hoarding with decorative features that are compatible with the surrounding environment;		Implemented
2. Maintain site cleanliness and tidiness;		Implemented
3. Properly manage construction waste in the works area;	Contractor (Construction Phase)	Implemented
4. Reinstate all temporary works areas to its original conditions upon completion of works.	DSD (Operational Phase)	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		N/A for the reporting month and shall be implemented in the latter months

Mitigation Measures	Implementation Agent	Status
shrub planter, bench with shelter, and removable planter with trees) as shown in 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. 27 (March 2020)	20 April 2020

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. 28 (April 2020)	7 May 2020	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	27

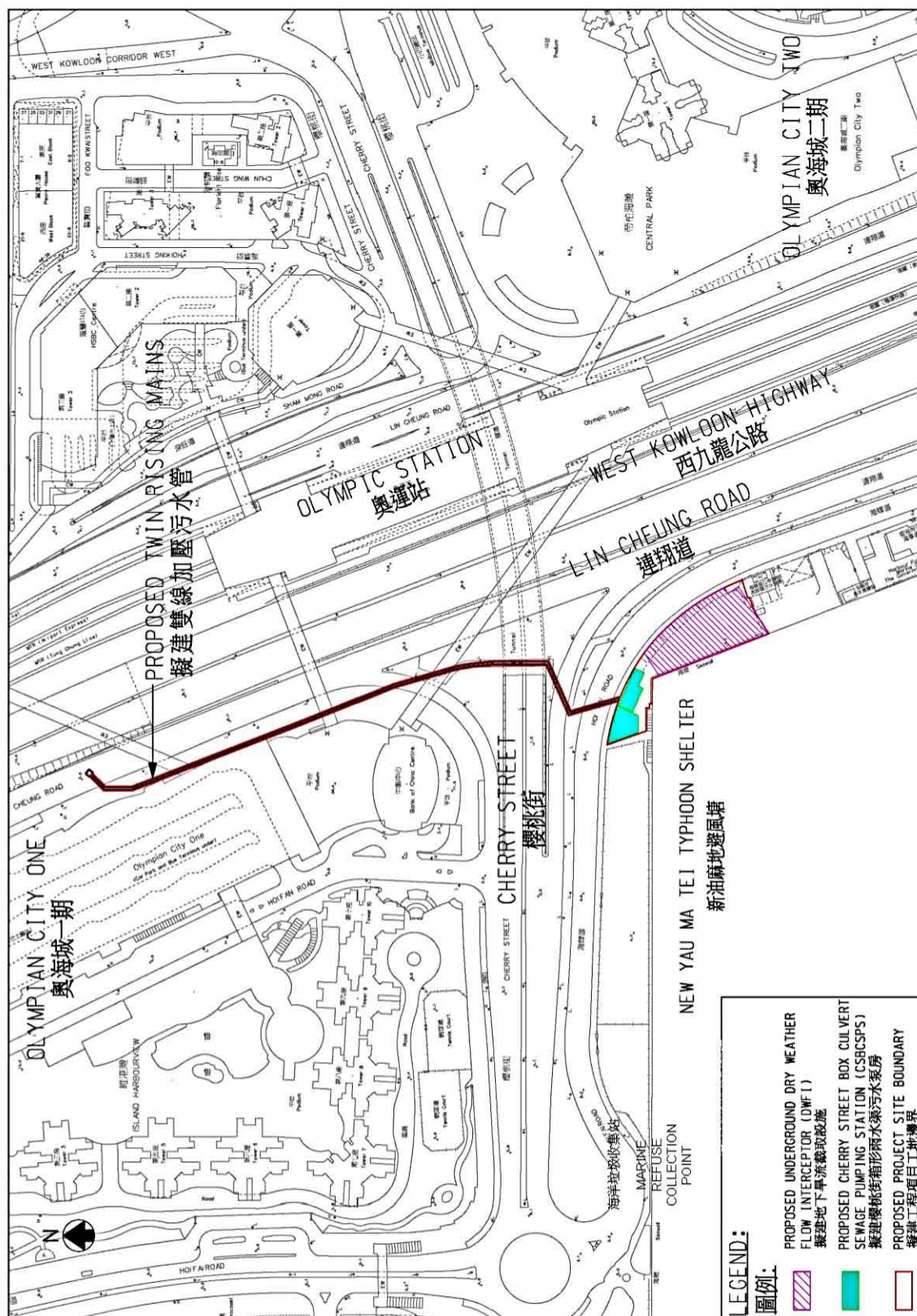
Work	Number
Meeting	
IEC monthly site inspection with DSD, Engineer Representative and Contractor	23
Project related meeting with DSD and EPD	1

5.4 IEC Site Audit

IEC site audit was conducted on 27 April 2020 (Mon) 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



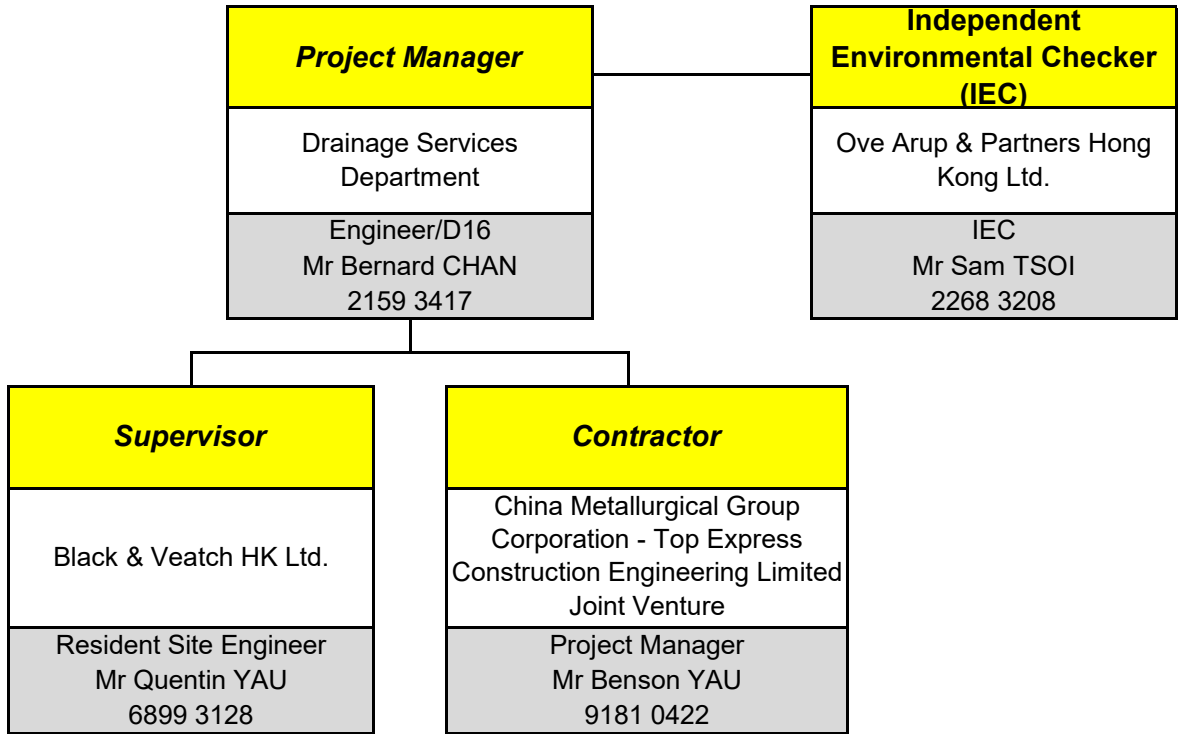
Project Title - Proposed Sewage Pumping Station and Dry Weather Flow Interceptor at Cherry Street Box Culvert
工程項目名稱 - 櫻桃街箱形雨水渠擬建污水泵房及旱流截取設施

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

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