

**Contract No. P1000427**  
**Term Consultancy for Minor Works to Government Properties**  
**Consultancy Agreement No. 9AN03R**  
**Slope Upgrading Works of Geotechnical Feature No. 11SW-A/R526 at King's College,**  
**Hong Kong**

**Monthly EM&A Report for May 2019**

**Mannings Asia Consultants Ltd.**

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## EXECUTIVE SUMMARY

The Project comprises of one retaining wall, Feature no. 11SW-A/R526 at King's college, Hong Kong.

The Consultants, which was engaged by the Geotechnical Engineering Office (GEO) of CEDD, carried out the design and construction supervision of the Project. The Architectural Service Department (ArchSD) is the maintenance department.

The EM&A programme commenced on 1 March 2019.

This report document the findings of EM&A works conducted in the period between 1 and 31 May 2019. As informed by the Contractor, the major activities in the reporting period were:

Location	Site Activities
11SW-A/R526	<ul style="list-style-type: none"><li>- Granite block removal</li><li>- Drilling trial</li><li>- CCTV for drill hole</li></ul>

### Complaint, Notification of Summons and Successful Prosecution

No environmental complaint, notification of summons and successful prosecution were received in the reporting month.

### Reporting Changes

There was no reporting change in the reporting month.

### Site Inspection by External Parties

No any site inspection by external parties in this Reporting Month.

### Future Key Issues

Key issues to be considered in the forthcoming month included:-

Location	Site Activities
11SW-A/R526	<ul style="list-style-type: none"><li>- Drill hole CCTV</li><li>- Water analysis test</li><li>- CCTV for Catchpit, Catchpit Cleaning, drainage CCTV</li><li>- Leak Noise Correlation Survey</li><li>- Drilling and installation of soil nails</li></ul>

Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, construction noise and waste management.

## **1 INTRODUCTION**

### **1.1 Purpose of the Report**

1.1.1 This is the eighth monthly EM&A Report which summaries audit findings for the project during the reporting period between 1 and 31 May 2019.

### **1.2 Report Structure**

1.2.1 This monthly EM&A Report is organized as follows:

Section 1: Introduction

Section 2: Project Information

Section 3: Implementation Status of Environmental Mitigation Measures

Section 4: Monitoring Results

Section 5: Environmental Site Inspection and Audit

Section 6: Environmental Non-conformance

Section 7: Government Authority Inspection

Section 8: Future Key Issues

Section 9: Conclusions and Recommendations

Section 10: Adjustment

## **2 PROJECT INFORMATION**

### **2.1 Background**

2.1.1 The Project comprises of a retaining wall (Feature No. 11SW-A/R526) located at the north of King's college, 63 A Bonham Road. The location of the Project is shown in Project Profile plan.

2.1.2 The Project Profile (PP) for the above feature (Register No.: PP-567/2018) under the Environmental Impact Assessment Ordinance (EIAO). Following the submitted PP, the Director of Environmental Protection (DEP)'s letter of permission to apply directly for environmental permit on 22 June 2018 (Ref.: (15) in EP2/H3/Q/04). Environmental Permit (EP) (EP No. EP-562/2018) was granted on 24 July 2018, which covers Feature No. 11SW-A/R526.

### **2.2 Site Description**

2.2.1 The main scope of works for the feature comprises the following as shown:

#### **Feature no. 11SW-A/R526**

- Temporary removal of the existing masonry granite block facing
- Drilling of soil nail holes by coring machine, pneumatic drilling rig and using permanent casing
- Fixing and installation of soil nail bars
- Grouting of soil nails holes
- Construction of soil nail heads
- Reinstatement of the existing masonry stone facing

## 2.3 Construction Programme and Activities

2.3.1 The major construction activities undertaken in the reporting month were summarized below:

Location	Site Activities
11SW-A/R526	<ul style="list-style-type: none"> <li>- Granite block removal</li> <li>- Drilling trial</li> <li>- CCTV for drill hole</li> </ul>

2.3.2 The construction programme was presented in **Appendix A**.

## 2.4 Project Personnel

2.4.1 The key personnel contact names and numbers for the Project were summarized in **Table 2.1**.

**Table 2.1 Contact Information of Key Personnel**

<u>Party</u>	<u>Position</u>	<u>Name</u>	<u>Telephone</u>
Mannings Consultants Ltd.	IEC	Mark Cheung	3970 8640
Ove Arup & Partners	Resident Engineer	Andrew Ng	9654 7434
Contractor - Geotech Engineering Ltd.	Project Manager	Andy Lai	6308 3660
	Site Agent	Ng Sui Kwong	9488 8129

**2.5 Status of Environmental Licenses, Notification and Permits**

2.5.1 Relevant valid environmental licenses, permits and/or notifications on environmental protection for this Project in the reporting month were summarized in **Table 2.2**.

**Table 2.2 Status of Environmental Licenses, Notifications and Permits**

Permit / License No. / Notification/ Reference No.	Valid Period		Status	Remarks
	From	To		
<b><i>Environmental Permit</i></b>				
EP-562/2018	27-7-2018	-	Valid	-
<b><i>Billing Account for Construction Waste Disposal</i></b>				
7031646	23-8-2018	End of project	Account Active	-



### 3 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

- 3.1.1 The Contractor had implemented environmental mitigation measures and requirements as stated in the PP and the EP. The implementation status of the environmental mitigation measures during the reporting period was summarized in **Appendix B**. Status of required submissions under the EP during the reporting period was summarized in **Table 3.1**.

**Table 3.1 Status of Required Submission under Environmental Permit**

<u>EP Condition</u>	<u>Submission</u>	<u>Submission Due Date</u>
Condition 2.1	Monthly Monitoring Report	15 June 2019

## **4 MONITORING RESULTS**

### **4.1 Waste Management**

- 4.1.1 The C&D materials and waste sorting were carried out on site. Receptacles were available for C&D wastes and general refuse collection.
- 4.1.2 Due to initial stage of the project and no non-inert C&D waste were generated in the reporting month. No paper/cardboard packaging material, metal or plastic was collected by recycling contractor in the reporting month.
- 4.1.3 The record of disposal shall be summarized in **Appendix C** once waste shall be disposed from the site.
- 4.1.4 The Contractor was advised to properly maintain on site sorting for the C&D materials and wastes collection and recording system and maximize reuse / recycle of the C&D materials and wastes. The Contractor was reminded to properly maintain the site tidiness and dispose of the wastes accumulated on site regularly and properly.

### **4.2 Noise Management**

- 4.2.1 Noise mitigation measures, which mentioned in PP, had strictly implemented.
- 4.2.2 Noise monitoring was conducted in every week at 9 No. of Noise Sensitive Receiver which mentioned in the PP. The results of the noise level had fully complied with the standard as in the PP.

### **4.3 Cultural Heritage Management**

- 4.3.1 Ground settlement markers, tilting monitoring markers and vibration monitoring points were installed around the construction site.
- 4.3.2 Reading of the ground settlement, tilting monitoring and vibration monitoring were obtained at a daily interval. The reading of the above monitoring had fully complied with the standard in the PP.

### **4.4 Wastewater Management**

- 4.4.1 There was not wastewater generated from construction activities in the reporting month. Any wastewater generated shall be collected and pumped to the storage tanks for reuse on site. The Surplus water shall be temporarily stored in the water tanks, when necessary; the suction truck would be displayed to collect the surplus water by a licensed discharged sub-contractor.

## 5 ENVIRONMENTAL SITE INSPECTION AND AUDIT

- 5.1.1 Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. The summary of the mitigation measures implementation schedule was provided in **Appendix B**.
- 5.1.2 In this reporting month, site inspection with the IEC, RE's representatives and the Contractor was carried out on 9 May 2019. The IEC site audit checklists were provided in **Appendix D**. No non-compliance was recorded during the site inspections. Details of observations recorded during the site inspections were summarized in **Table 5.1**.

**Table 5.1 Observations and Recommendations of Site Audit**

<b>Parameters</b>	<b>Date</b>	<b>Observations and Recommendations</b>	<b>Follow-up</b>
<b>Water Quality</b>	9 May 2019	The contractor was reminded to adequately cover and seal the manholes	31 May 2019
<b>Air Quality</b>	9 May 2019	The contractor shall use regular watering, with coverage to reduce dust emissions from exposed site surfaces, particularly during dry weather.	To be followed up
<b>Noise</b>	9 May 2019	The contractor was reminded to use noise enclosure for static PME.	Nil
<b>Waste/ Chemical Management</b>	9 May 2019	The contractor was reminded to provide training for the site personnel for site cleanliness and waste management.	To be followed up
<b>Landscape &amp; Visual</b>	9 May 2019	The contractor shall erect temporary hoarding along the boundary of the works site to provide some screening effect to the surrounding sensitive receivers.	To be followed up
<b>Cultural Heritage</b>	9 May 2019	The contractor shall operate drilling process manually under full-time supervision of experienced works supervisor.	To be followed up
<b>Permits/Licenses</b>	Nil	Nil	Nil

**6 ENVIRONMENTAL NON-CONFORMANCE**

**6.1 Summary of Environmental Non-Compliance**

6.1.1 No environmental non-compliance was recorded in the reporting month.

**6.2 Summary of Environmental Complaints**

6.2.1 No environmental complaint was recorded in the reporting month.

**6.3 Summary of Environmental Summon and Successful Prosecutions**

6.3.1 No environmental related prosecution or notification of summons was received in the reporting month.

**7 GOVERNMENT AUTHORITY INSPECTION**

- 7.1.1 There was no any inspection from Environmental Protection Department (EPD) or other government authorities in this report period.

## 8 FUTURE KEY ISSUES

### 8.1 Construction Programme for the Forthcoming Month

8.1.1 Potential environmental impacts arising from the below construction activities were mainly associated with construction dust, construction noise, water quality and waste management.

Location	Site Activities
11SW-A/R526	<ul style="list-style-type: none"><li>- Drill hole CCTV</li><li>- Water analysis test</li><li>- CCTV for Catchpit, Catchpit Cleaning, drainage CCTV</li><li>- Leak Noise Correlation Survey</li><li>- Drilling and installation of soil nails</li></ul>

## **9 CONCLUSIONS AND RECOMMENDATIONS**

### **9.1 Conclusions**

- 9.1.1 In this reporting month, site inspection with the IEC, RE's representatives and the Contractor was carried out on 9 May 2019. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site audit.
- 9.1.2 Referring to the Contractor's information, no environmental complaint, notification of summons and successful prosecution was received in this reporting month.

### **9.2 Recommendations**

- 9.2.1 According to the environmental site inspections performed in the reporting month, the following recommendations were provided:

#### Air Quality Impact

- No specific observation was identified in this reporting month.

#### Construction Noise Impact

- Recording of PME used on site on daily basis was recommended.

#### Water Quality Impact

- Obtain an effluent discharge license was recommended.
- Due to appeared water leakage on the retaining wall Water Analysis is recommended.
- Drill holes collapsed due to underground water, CCTV of drill hole is recommended.
- Cleaning of blocked manhole and CCTV was recommended.
- Leak Noise Correlation Survey was recommended.

#### Waste Management

- Provision of training for the site personnel for site cleanliness and waste management; maintenance of panels for Chemical waste in order to remind the workers were recommended.

#### Cultural Heritage

- Manual drilling process under full-time supervision of experienced works supervisor was recommended.

#### Permits/licenses

- No specific observation was identified in this reporting month.

## **10 ADJUSTMENT**

10.1.1 No adjustment of the PME would be updated in the monthly report.



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**Appendix A**

**Construction Programme**

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## **Appendix B**

# **Environmental Mitigation Implementation Schedule**

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## Appendix B Environmental Mitigation Implementation Schedule

Potential Environmental Impacts	Proposed Mitigation Measures
<b>Air Quality</b>	
<ul style="list-style-type: none"> <li>Fugitive dust emissions from construction activities including site formation, drilling, and wind erosion of the excavated areas</li> </ul>	<ul style="list-style-type: none"> <li>Dust suppression measures as stipulated in the <i>Air Pollution Control (Construction Dust) Regulation</i> (Cap. 311R) of <i>Air Pollution Control Ordinance</i> (APCO) (Cap. 311)</li> <li>Good site practices</li> </ul>
<b>Noise</b>	
<ul style="list-style-type: none"> <li>Construction noise from the use of powered mechanical equipment (PME) for the construction activities</li> </ul>	<ul style="list-style-type: none"> <li>Use of quieter PME</li> <li>Use of noise enclosure</li> <li>Use of movable noise barrier</li> <li>Use of noise insulating fabric for certain PME</li> <li>Good site practices</li> </ul>
<b>Water Quality</b>	
<ul style="list-style-type: none"> <li>Water pollution from uncontrolled surface runoff and erosion of exposed soil, earthworks and stockpiles during storm events</li> <li>Muddy water from construction activities such as dust suppression sprays, dewatering during excavation and washing of construction equipment</li> </ul>	<ul style="list-style-type: none"> <li>Good site practices as per <i>Professional Persons Environmental Consultative Committee Practice (ProPECC) Note PN 1/94 "Construction Site Drainage"</i></li> </ul>
<b>Waste Management</b>	
<ul style="list-style-type: none"> <li>Certain amount of C&amp;D materials from construction works</li> </ul>	<ul style="list-style-type: none"> <li>Good waste management plan, practices and waste reduction measures</li> <li>Disposal of C&amp;D materials should be managed in accordance with the <i>Development Bureau Technical Circular (Works) DEVB TC(W)) No. 6/2010 "Trip Ticket System for Disposal of Construction &amp; Demolition Materials"</i>.</li> <li>Proper storage, collection and transportation to designated destination of waste, including C&amp;D materials, general refuse and chemical wastes</li> <li>On-site sorting of all C&amp;D materials to inert or non-inert</li> </ul>
<b>Ecology</b>	
<ul style="list-style-type: none"> <li>No adverse ecological impact is expected.</li> </ul>	<ul style="list-style-type: none"> <li>Not required</li> </ul>
<b>Cultural Heritage</b>	
<ul style="list-style-type: none"> <li>Indirect impact to the historic feature, such as extension of existing cracks on the structures within the Monument or the dislocation of the roof tiles on the Main Building and Annex Block, by ground-borne vibration from the use of PME</li> </ul>	<ul style="list-style-type: none"> <li>Conduct condition survey at the existing components of the Monument prior to the commencement of the construction work</li> <li>Provide protective measures to the structure of HKMMS subject to results of condition survey</li> <li>Provide tarpaulin curtain to protect the Annex Block during the construction phase</li> <li>Conduct detailed photographic and cartographic recording of Feature No. 11SW-A/FR218 to the satisfaction of AMO before the affected masonry work is temporarily removed for the slope works</li> <li>Install ground settlement markers, tilting monitoring markers and vibration monitoring</li> </ul>

	<p>points during the active construction period and obtain readings at a daily interval</p> <ul style="list-style-type: none"><li>● Operate drilling process manually under full-time supervision of experienced works supervisor at Feature No. 11SW-A/R94</li><li>● Reserve clearance distance between the proposed soil nails at Feature No. 11SW-A/R94 and the Annex Block (including the columns in front of the masonry wall)</li><li>● Reinststate the masonry wall of the Feature No. 11SW-A/R94 after the upgrading works</li><li>● Adopt Manual pit by pit excavation</li><li>● Adopt non-excavation type of hoardings at Feature No. 11SW-A/FR218</li></ul>
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## **Appendix C**

### **Record of Disposal**

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**Appendix D**

**IEC Site Audit Checklist**

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