

## **9. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS**

### **9.1 General**

- 9.1.1 An environmental monitoring and audit (EM&A) programme performs three functions. It ensures that environmental impact from the construction of the project is kept within acceptable levels; it establishes procedures for checking the application and effectiveness of mitigation measures; and it provides the means by which compliance can be checked, exceedances documented, and corrective action implemented and recorded.
- 9.1.2 In view of the close proximity of the Improvement works to the identified sensitive receivers, an EM&A programme for dust, noise waste management and visual & landscape is considered necessary during the construction period.
- 9.1.3 Detailed monitoring schedules and audit requirements should be incorporated into the construction contract for the proposed Engineering Works at the junction of T1/P1/P2. The clauses containing these schedules and requirements should be formulated in consultation with EPD.
- 9.1.4 In order to verify the effectiveness of noise mitigation measures, operation noise monitoring is also recommended.

### **9.2 Air Quality**

- 9.2.1 1-hour and 24-hour TSP levels should be measured to indicate the impacts of construction dust on air quality. The air quality monitoring locations are proposed on top of the Indoor Recreation Centre in Area 24 and the church in Area 37 along Road P1. The monitoring locations are shown in Figure 9-1.
- 9.2.2 In the case that the church is not yet completed at the commencement of the baseline monitoring, the podium of residential development in Area 37 located in the adjacent lot can be considered as an alternative monitoring location.

### **9.3 Noise**

- 9.3.1 The construction noise level should be measured in terms of the A-weighted equivalent continuous sound pressure level (Leq). The proposed noise monitoring locations are proposed on top of the library in Area 24 and the church in Area 37 along Road P1 as shown in Figure 9-2.
- 9.3.2 The operation traffic noise level should be measured at one of the residential floors between 5/F to 15/F of NSRs CM4 and ON6 using L10 (30-minutes). The monitoring locations are also shown in Figure 9-2.

### **9.4 Waste Management**

- 9.4.1 The Contractor is responsible for waste control within the construction site, removal of the waste material produced from the site and to implement any mitigation measures necessary to minimise waste or redress problems arising from the waste on-site. Site inspections/audits and document review should be carried out.

## **9.5 Visual and Landscape**

### **9.5.1 Pre-Construction**

Checks should be carried out to ensure that all design input proposed for both hard and soft mitigation measures have been incorporated into the design of the tender package. This would include design of road flyover profiles, noise barriers and pavement materials as well as screen and streetscape planting.

### **9.5.2 During Construction**

Monitoring should be carried out to ensure that the works programme is organised to ensure that areas to receive screen and streetscape planting are planted as early as possible within the construction phase.

### **9.5.3 Post Construction**

An audit should be carried out to ensure all proposed mitigation works have been completed.

## **9.6 Monitoring and Audit Manual**

### **9.6.1 An Environmental Monitoring and Audit Manual detailing the monitoring and audit schedules and requirements is included in a separate document. This will be the basis for carrying out relevant monitoring and auditing procedures during the construction and operation period.**