

### **Geotechnical Control on Developments in Mid-levels Scheduled Area**

Certain Mid-levels area has been designated as Area Number 1 of the Scheduled Areas (Scheduled Area No. 1) in Schedule 5 to the Buildings Ordinance (BO). Building works in Scheduled Area No. 1 are subject to additional geotechnical controls under the BO and its subsidiary regulations.

2. As Scheduled Area No. 1 is located in the region of sloping ground, all geotechnical aspects of works require input from a registered geotechnical engineer (RGE), in particular at the early planning stage of the building works. An RGE should be appointed under the BO to undertake the following tasks involving geotechnical elements.

#### **Ground Investigation**

3. By virtue of section 41(3) of the BO, ground investigation in Scheduled Area No. 1 requires approval from the Building Authority (BA). As such, ground investigation plans including laboratory testing as prescribed in regulation 8(1)(l) of the Building (Administration) Regulations (B(A)R) should be submitted to BA for approval and consent before the commencement of the works.

4. Ground investigation should conform to standards laid down in the Geoguide 2 - Guide to Site Investigation, and the Geoguide 3 - Guide to Rock and Soil Descriptions issued by the Geotechnical Engineering Office (GEO) of the Civil Engineering and Development Department (CEDD). As a general rule, a requirement will be made under section 17(1)(6)(e) of the BO that ground investigation is adequately supervised on site by a suitably experienced engineer or engineering geologist, and the cores recovered are carefully examined and properly logged. Reference should be made to Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP) APP-49 on site investigation and ground investigation.

#### **Demolition**

5. Demolition plans as prescribed in regulation 8(3) and (4) of the B(A)R must be submitted for approval.

#### **Bulk Excavation**

6. Section 25 of the Building (Construction) Regulation (B(C)R) stipulates that bulk excavation carried out in Scheduled Area No. 1 must be limited to a level (hereinafter referred to as the bulk excavation limit (BEL)) that minimises the cumulative adverse effect to the area. Cumulative adverse effect, in relation to Schedule Area No. 1, means the overall adverse effects on the stability of the hillside in the area due to bulk excavation at 2 or more sites in the area.

7. To assist the early planning of a development proposal, the authorized person (AP) and RGE are advised to request GEO to provide a provisional determination of BEL as soon as they are commissioned for any building works in Scheduled Area No. 1. GEO will normally issue a plan showing the tentative BEL within 10 working days upon receipt of such request.

8. The AP and RGE should, with the input of a registered structural engineer (RSE) if necessary, submit their assessment on the determination of BEL to BD for agreement prior to submission of the site formation, foundation, excavation and lateral support plans, or other structural plans which may be subject to the constraint of the BEL. The AP/RSE/RGE should make reference to GEO Technical Guidance Note No. 50 (TGN 50) on Technical Requirements for Determination of Bulk Excavation Limit in the Mid-levels Scheduled Area for the determination of BEL. The BEL determined in accordance with these technical requirements is deemed to have satisfied the requirements of section 25 of the B(C)R. BD's agreement on the assessment of the BEL by the AP and RGE will generally be issued within one month from the date of receipt of such assessment. BD's agreement will be considered as the final determination of the BEL of the site.

9. The envelope of all bulk excavation and the BEL should be shown on the site formation plans in accordance with regulation 8(1)(bb)(vii) of the B(A)R.

#### **Foundation**

10. Regulation 11A of the B(A)R requires that for sites in Scheduled Area No. 1, the foundation plan is to be submitted with the site formation plan. This is to enable BA to give due consideration to effects on the stability of the hillside resulting from factors such as changes in groundwater levels or surcharge loading which can be caused by the foundation system itself. Submissions not in compliance with this requirement may be refused under sections 16(1)(a), (e) or (i) of the BO.

#### **Performance Review**

11. The requirement for a performance review as defined in section 2(1) of the BO may be imposed as a condition upon giving approval or consent for the commencement of building works in Scheduled Area No. 1. However, it is not intended to impose the requirement for every development/redevelopment site within the area. Where a performance review is required, it should demonstrate that the building works have been adequately inspected and monitored in the course of construction and that the geotechnical design assumptions upon which the building works have been based are valid. Otherwise, an application for an occupation permit or a temporary occupation permit may be refused under section 21(6)(f) of the BO.

#### **Other Geotechnical Control**

12. There may be additional geotechnical control applicable to sites in Scheduled Area No. 1, covering landslip debris resistance, sequence of works and groundwater drainage works under sections 16(1)(q), 17(1)(6)(f) and 28A to D of the BO.

/Extra ...

### **Extra Set of Plans**

13. In order to facilitate processing of development proposals in Scheduled Area No. 1, one extra set of the following plans should be submitted:

- (a) general building plans;
- (b) site formation plans together with relevant reports and calculations;
- (c) foundation plans including pile cap details, relevant reports and calculations; and
- (d) excavation and lateral support plans.

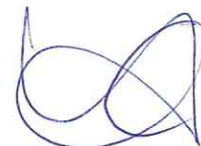
### **Geotechnical Information**

14. The Mid-levels Consultancy Study was summarised in the Mid-levels Study: Report on Geology, Hydrology and Soil Properties (1982). The report has been uploaded to CEDD website [www.cedd.gov.hk](http://www.cedd.gov.hk).

15. In addition, all factual data on geology, hydrology and soil properties collected in the course of the Mid-levels Consultancy Study between 1979 and 1981 are available from the Geotechnical Information Unit of the Civil Engineering Library under GEO according to PNAP ADM-7. These data may assist in the geotechnical appraisal of a site.

### **Boundary of Scheduled Area No. 1**

16. A plan showing the boundary of Scheduled Area No. 1 is on display in the Geotechnical Information Unit. The plan is available for inspection in the Building Information Centre of BD and viewing in BD website [www.bd.gov.hk/en/resources/codes-and-references/scheduled-areas/index.html](http://www.bd.gov.hk/en/resources/codes-and-references/scheduled-areas/index.html).



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