

Division of Responsibilities between Authorized Person, Registered Structural Engineer and Registered Geotechnical Engineer

Introduction

The Buildings Ordinance (BO) requires the appointment of an authorized person (AP) as coordinator of building works and a registered structural engineer (RSE) for the structural elements of the building works. In the past where there were geotechnical matters and/or geotechnical elements involved, the AP and/or the RSE would take up the responsibility. In many cases, geotechnical engineers were engaged as sub-consultant for the design and supervision of the geotechnical works but the AP still had to be held statutorily responsible for the works.

2. The Buildings (Amendment) Ordinance 2004 established a register of geotechnical engineers and introduced the requirement for the appointment of a registered geotechnical engineer (RGE) for the geotechnical elements of building works. This will enhance the public safety since only suitably qualified and experienced geotechnical engineers may undertake the design and supervision of geotechnical works and they will be held statutorily responsible for the quality of their work.

Duties and functions of the RGE

3. The duties and functions of a RGE under the BO are classified into “executive role” and “advisory role” as appropriate in respect of the geotechnical elements of building works as outlined at Appendix A.

Division of responsibilities between AP, RSE and RGE

4. With effect from 31 December 2005, an RGE is required to be appointed for the geotechnical elements of building works as stipulated in section 4(1)(c) of the BO. The RGE will take up the statutory responsibility for the geotechnical elements. The respective responsibilities of AP, RSE and RGE in building works under the BO are mainly specified in Building (Administration) Regulation 12 with reference to the prescribed plans and documents they are required to prepare and sign. While the AP is the co-ordinator of all building works, this practice note gives detailed guidelines on the division of responsibilities in building works involving geotechnical elements as described at Appendix B. This practice note should be read in conjunction with all the PNAPs relevant to building works involving geotechnical elements, particularly PNAP 50, 77, 83, 85, 132, 148, 161, 200, 283 & 284.

5. The RGE would take up an “executive role” for tasks 2A, 2B, 4, 7A, 7B, 10 and 11. For these executive tasks, the RGE shall prepare and sign the prescribed geotechnical plans and reports. For example in task 11, the submission of monitoring reports, justifying the proper functioning of permanent anchors and horizontal drains, should be prepared and signed by the RGE. For the geotechnical works for which the

RGE takes up an executive role, the RGE shall also be required to certify that the works have been carried out in accordance with the approved plans and that the works completed are geotechnically safe.

6. Tasks 1, 3, 5A, 5B, 6 and 8 are duties and functions of the RGE in an "advisory role" in geotechnical related matters. In all these advisory tasks, the geotechnical report/supporting documentation should be prepared and signed by the RGE. The signature is deemed to indicate the RGE's acceptance of responsibility for the geotechnical report/supporting documentation. The AP or RSE should be responsible to prepare and sign as appropriate the plans concerned and the associated reports and documentations relating to non-geotechnical matters.

Sanctions

7. Similar to AP and RSE, the RGE will also be subject to prosecution or disciplinary action where an offence is committed or when matters justifying the taking of disciplinary action arise, as stipulated under section 40 and 7 respectively of the BO.



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Appendix A
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**Geotechnical Tasks Under the Buildings Ordinance and
Regulations to be undertaken by the RGE**

Role	Geotechnical Task
Executive	Ground Investigation in Scheduled Areas (Task 2A in Appendix B)
	Ground Investigation in Non-scheduled Areas (Task 2B in Appendix B)
	Site Formation (Task 4 in Appendix B)
	Groundwater Drainage Works in Scheduled Area 1 (Task 7A in Appendix B)
	Water Supply and Wells (Task 7B in Appendix B)
	Remedial Works to Dangerous Hillsides (Task 10 in Appendix B)
	Long Term Monitoring (Post Occupation Permit) (Task 11 in Appendix B)
Advisory	Demolition Affecting Slopes and Retaining Walls (Task 1 in Appendix B)
	Geotechnical Assessment for General Building Plan where required (Task 3 in Appendix B)
	Foundation in Scheduled Areas Nos. 1, 2 & 4 and Designated Area of Northshore Lantau (Task 5A in Appendix B)
	Foundation Affecting Slope and Retaining Wall (Task 5B in Appendix B)
	Excavation and Lateral Support (Task 6 in Appendix B)
	Superstructure (Report on geotechnical design parameters) (Task 8 in Appendix B)

Appendix B
(PNAP 294)

Division of Responsibilities between AP, RSE and RGE

1. Demolition Affecting Slopes and Retaining Walls

Buildings Ordinance & Regulations	Brief Description of the Requirement	Signing of Plans	Signing of Supporting Documents	Supervision of Works	Certification of Completion
BO s16(3)bb	BA may refuse consent when precautionary and other protective measures are not adequately provided.	AP and RSE to prepare and sign demolition plans. RSE should ensure all the relevant recommendations by the RGE are incorporated in the plans. Any difference in opinion should be resolved between the RSE and RGE before submission to BD.	RGE to sign Geotechnical Reports and supporting documentations RSE to sign Structural calculations for structural supports and structural assessment report relating to the demolition	RGE – Qualified supervision on geotechnical aspects imposed under BOs.17(1)(6)(e) as a condition of approval RSE – All supervision of structural works apart from the above	To be certified by AP & RSE
B(A)R 8(3)	Demolition plans as prescribed plans				
B(C)R 7	Building works not to adversely affect adjoining buildings etc.				

2A. Ground Investigation in Scheduled Areas

Buildings Ordinance & Regulations	Brief Description of the Requirement	Signing of Plans	Signing of Supporting Documents	Supervision of Works	Certification of Completion
B(A)R 8(1)(l)	Ground investigation plan in the scheduled areas are prescribed plans	RGE – Ground investigation plans in Scheduled Areas	RGE to sign Geotechnical Reports and supporting documentations where submitted.	The RGE appointed shall give such periodic supervision and make such inspection as may be necessary to ensure that the geotechnical works are being carried out in general accordance with the provisions of the Ordinance and regulations and with the plans approved by the BA, and the supervision plan prepared in compliance with the technical memorandum issued under section 39A of BO.	RGE – ground investigation in Scheduled Areas
B(C)R9	Site investigation to be carried out to recognized standards as to provide adequate geotechnical data			Qualified supervision imposed under BOs.17(1)(6)(e) to be provided by RGE as set out in PNAP 132.	
B(C)R24	Site investigation to be carried out to provide necessary information for design and construction of foundations				

2B. Ground Investigation in Non-scheduled Areas

Buildings Ordinance & Regulations	Brief Description of the Requirement	Signing of Plans	Signing of Supporting Documents	Supervision of Works	Certification of Completion
B(C)R9	Site investigation to be carried out to recognized standards as to provide adequate geotechnical data	Submission of plans to BA for approval is not a statutory requirement under BO.	RGE to sign Geotechnical Reports and supporting documentations where submitted*	The RGE appointed shall give such periodic supervision and make such inspection as may be necessary to ensure that the geotechnical works are being carried out in general accordance with the Ordinance and regulations. Details are set out in PNAP 132.	RGE – ground investigation
B(C)R24	Site investigation to be carried out to provide necessary information for design and construction of foundations				

* The relevant foundation, site formation, excavation or other plans may be disapproved if the ground investigation report-

- is found not acceptable;
- does not include the required certificate from Registered Specialist Contractor (Ground Investigation Field Works) or RGE; or
- does not include a proper surveyed record of the boreholes.

3. Geotechnical Assessment for General Building Plan when required

Buildings Ordinance & Regulations	Brief Description of the Requirement	Signing of Plans	Signing of Supporting Documents	Supervision of Works	Certification of Completion
B(A)R 8(1)(ba)	BA may require geotechnical assessment of adequacy of the site for the proposed building works	N/A	RGE to sign Geotechnical Assessment Reports and supporting documentations where submitted	N/A	N/A

4. Site Formation

Buildings Ordinance & Regulations	Brief Description of the Requirement	Signing of Plans	Signing of Supporting Documents	Supervision of Works	Certification of Completion
B(A)R 8(1)(bb)	Site formation plans are prescribed plans	AP* - General layout plan showing location of site and extent of works, and connection of proposed surface drainage to public drains	RGE to sign Geotechnical Reports and supporting documentations	The RGE appointed shall give such periodic supervision and make such inspections as may be necessary to ensure that the geotechnical works are being carried out in general accordance with the provisions of the Ordinance and regulations and with the plans approved by the BA, and the supervision plan prepared in compliance with the technical memorandum issued under section 39A of BO,	AP* to certify completion of site formation works
B(A)R 11A	In area number 1 of the scheduled areas, foundation plan to be submitted with site formation plan	RGE - All site formation plan except general layout plan and plans involving structural details only	RGE to sign Performance Review Reports and supporting documentations on the completed site formation works as required under BOs.17(1)(6)(g).	and Qualified Supervision imposed under BOs.17(1)(6)(e) as set out in PNAP 83	RGE to certify completion of geotechnical aspects of site formation works
B(C)R 20	Site formation works to be designed and constructed to have adequate margin of safety and would not adversely affect any structure, etc.	RSE - plans showing structural details	RSE to sign structural calculations and structural assessment reports	RSE- supervision of structural works	If structural works are involved, RSE to certify the structural works.

* If the proposed works encroaches on Government land, AP shall arrange for permission from Lands Department.

5A. Foundation in Scheduled Areas Nos. 1, 2 & 4 and Designated Area of Northshore Lantau

Buildings Ordinance & Regulations	Brief Description of the Requirement	Signing of Plans	Signing of Supporting Documents	Supervision of Works	Certification of Completion
B(A)R 8(1)(d)(i) B(A)R11A	Foundation plan to show size & position of foundation together with site investigation work undertaken and grouting works to be carried out In Designated Area of Northshore Lantau, the submission of foundation plan to follow the conditions set out in PNAP 283	To be signed by RSE	RGE to sign Geotechnical Reports and supporting documentations	RGE – Qualified supervision on the geotechnical aspects imposed under BOs.17(1)(6)(e) as a condition of approval as set out in PNAP 83	AP & RSE to certify completion of foundation works
B(A)R 8(1)(d)(ii)	Foundation plan in scheduled areas 2 & 4 to be accompanied by supporting documentation including schedule of geotechnical design assumptions and discussion of anticipated geotechnical problems etc		RGE to sign Performance Review reports on the completed foundation in Scheduled Areas Nos.1, 2 & 4	RSE – All supervision of structural works apart from the above	
B(C)R23	Foundation works not to adversely affect any building etc		RSE to sign structural design calculations of foundations and structural assessment reports		

5B. Foundation Affecting Slopes and Retaining Walls

Buildings Ordinance & Regulations	Brief Description of the Requirement	Signing of Plans	Signing of Supporting Documents	Supervision of Works	Certification of Completion
B(C)R 23	Foundation works not to adversely affect any building, structure, land, street or services	To be signed by RSE	RGE to sign Geotechnical Reports and supporting documentations RSE to sign structural design calculations of foundations and structural assessment reports	RGE – Qualified supervision in the geotechnical aspects imposed under BOs.17(1)(6)(e) as a condition of approval as set out in PNAP 83 RSE – All supervision of structural works apart from the above	AP & RSE to certify completion of foundation works

6. Excavation and Lateral Support

Buildings Ordinance & Regulations	Brief Description of the Requirement	Signing of Plans	Signing of Supporting Documents	Supervision of Works	Certification of Completion
B(A)R 8(1)(bc)	Excavation and lateral support plans required to be submitted for approval as stipulated in PNAP 148 shall include a schedule of geotechnical design assumptions, and a report to include discussion of anticipated geotechnical problems	RSE to sign plans RSE shall ensure that all the relevant recommendations by the RGE are incorporated in the plans. Any difference in opinion should be resolved between the RSE and RGE before submission to BD.	RGE to sign Geotechnical Reports and supporting documentations RSE to sign structural design of shoring and structural assessment report of the effects of the excavation and dewatering on adjoining structures	RGE – Qualified supervision on the geotechnical aspects imposed under BOs.17(1)(6)(e) as a condition of approval as set out in PNAP 83 RSE – All supervision of structural works apart from the above	To be certified by AP & RSE
B(C)R7	Building works not to adversely affect adjoining building etc				
B(C)R 20& 23	Site formation and foundation works shall not render inadequate margin of safety of adjoining building etc				

7A. Groundwater Drainage Works in Scheduled Area 1

Buildings Ordinance & Regulations	Brief Description of the Requirement	Signing of Plans	Signing of Supporting Documents	Supervision of Works	Certification of Completion
BO s28A	BA may require plans prescribed by regulations to show groundwater drainage works whether or not extending beyond the site boundary in Schedule Area No. 1	RGE AP* to prepare and sign general layout plan if proposed works extend beyond the site boundary	RGE to sign Geotechnical reports and supporting documentations RGE to sign Performance Review reports on the completion of the groundwater drainage works in Scheduled Area No.1	The RGE appointed shall give such periodic supervision and make such inspections as may be necessary to ensure that the geotechnical works are being carried out in general accordance with the provisions of the Ordinance and regulations and with the plans approved by the BA, and the supervision plan prepared in compliance with the technical memorandum issued under section 39A of BO, and Qualified supervision imposed under BOs17(1)(6)(e) to be provided by RGE	To be certified by AP* & RGE

* If the proposed works encroaches on Government land or adjoining private lots, AP shall arrange for permission from Lands Department or adjoining lot owners, and certify completion of works.

7B. Water Supply and Wells

Buildings & Ordinance & Regulations	Brief Description of the Requirement	Signing of Plans	Signing of Supporting Documents	Supervision of Works	Certification of Completion
B(C)R 85-89	Wells to be designed, constructed and operated so as not to impair the stability of, or cause damage to any building etc.	AP – General layout plan showing location of well, proposed rate and duration of water extraction per day RGE – plans showing details of proposed well, services in the vicinity, and the proposal for well yield test	RGE to sign Geotechnical assessment supported by calculation, of the effect of proposed water extraction	The RGE appointed shall give such periodic supervision and make such inspections as may be necessary to ensure that the geotechnical works are being carried out in general accordance with the provisions of the Ordinance and regulations and with the plans approved by the BA, and the supervision plan prepared in compliance with the technical memorandum issued under section 39A of BO Qualified supervision imposed under BOs.17(1)(6)(e) to be provided by RGE	AP & RGE to certify completion of proposed well

8. Superstructure

Buildings Ordinance & Regulations	Brief Description of the Requirement	Signing of Plans	Signing of Supporting Documents	Supervision of Works	Certification of Completion
B(A)R 8(1)(i)	Prescribed plan to show structural details	RSE	RGE to sign Report on geotechnical design parameters for the superstructure RSE to sign structural design calculations of the superstructure	RGE's input as necessary.	To be certified by AP & RSE

9. Qualified Supervision (Already included in other items)

10. Remedial Works to Dangerous Hillside

Buildings Ordinance & Regulations	Brief Description of the Requirement	Signing of Plans	Signing of Supporting Documents	Supervision of Works	Certification of Completion
BOs.27A	BA may order owners of natural, formed or man-made land, or earth-retaining structure considered to be dangerous or liable to become dangerous, to do works or to carry out investigation and remedial measures as specified	AP* – General layout plan showing location and extent of works, and connection of proposed surface drainage to public drains RGE – remedial works plan except plans involving structural details only RSE – plans showing structural details	RGE to sign Geotechnical reports and supporting documentations RSE to sign structural calculations and structural assessment report	The RGE appointed shall give such periodic supervision and make such inspections as may be necessary to ensure that the geotechnical works are being carried out in general accordance with the provisions of Ordinance and regulations and with the plans approved by the BA, and the supervisions plan prepared in compliance with the technical memorandum issued under section 39A of BO Qualified supervision imposed under BOs.17(1)(6)(e) to be provided by RGE RSE – supervision of structural works	AP* & RGE to certify completion of investigation/slope stabilization works If structural works are involved, RSE to certify the structural works

* . AP is required for the following circumstances–

- (1) if the proposed works encroaches on Government land or adjoining private lots, or
- (2) if the works involve not only geotechnical works and structural works.

In respect of (1) above, AP shall arrange for permission from Lands Department or adjoining lot owners.

11. Long Term Monitoring (Post Occupation Permit)

Buildings Ordinance & Regulations	Brief Description of the Requirement	Signing of Plans	Signing of Supporting Documents	Supervision of Works	Certification of Completion
No statutory requirement but Practice Note for AP&RSE	PNAP 50 – Monitoring of pre-stressed ground anchors PNAP 137- Monitoring of horizontal drains	Submission of such monitoring report is not a statutory requirement, except when a Dangerous Hillside Order under BOs.27A is issued	RGE to sign Geotechnical reports, including interpretation of the monitoring data, and periodic monitoring records	RGE to supervise the monitoring works	N/A