

FAQ



ON CHANGES IN BUILDING CONTROL 2007/2008

Building and Construction Authority

ABBREVIATIONS

Abbreviations used in this compilation of “Frequently Asked Questions” (and their answers) have the following meanings:

Abbreviation	Meaning
AC	Accredited checker
AC(Geo)	The specialist accredited checker appointed to undertake the checking of the geotechnical aspects of underground building works
ACO	Accredited Checking Organization
Act	The Building Control Act
BCA	Building and Construction Authority
CBC	Commissioner of Building Control
D&B	Design and Build
Design QP	The qualified person appointed to prepare the plans of the building works
Design QP(Geo)	The qualified person appointed to prepare the plans of the geotechnical aspects of underground building works
Design QP(Struct)	The qualified person appointed to prepare the structural plans
m	Metres
m ²	Square metres
M&E	Mechanical and electrical
PE	Professional engineer
PE(Civil)	Professional engineer registered under the discipline of civil engineering
PE(Geo)	Professional engineer registered under the discipline of geotechnical engineering

Abbreviation	Meaning
QP	Qualified person
QP(Arch)	The qualified person appointed to undertake the architectural works
QP(Geo)	The qualified person appointed to undertake the geotechnical aspects of underground building works
QP(Struct)	The qualified person appointed to undertake the structural works
QSS	Qualified site supervisor, comprising either Resident Engineer or Resident Technical Officer
Reg	Regulation
Supervising QP	The qualified person appointed to supervise the building works
Supervising QP(Arch)	The qualified person appointed to supervise the architectural works
Supervising QP(Geo)	The qualified person appointed to supervise the geotechnical aspects of underground building works
Supervising QP(Struct)	The qualified person appointed to supervise the structural works

SUMMARY OF QUESTIONS

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- Q02 [In a D&B project, is the builder also the developer of the project?](#)
- Q03 [Since the supervising QP\(Struct\) or supervising QP\(Geo\) has to be independent of the developer and the builder, how can he be appointed by either of them since they will be his paymaster?](#)
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- Q12 The Act requires a prescribed supervision team of QSS to be appointed for the entire duration of the project. The full team may not be required at, say, the start or end of the project when the scope or amount of works may be relatively less. Can a smaller team be deployed under such circumstances?
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- Q16 Would an AC or specialist AC be regarded as having a professional or financial interest in the building works of a project if he is from a multi-disciplinary consultant firm which has been appointed for the architectural or M&E works for the same project?
- Q17 The AC and specialist AC are required to be professionally and financially independent of the building works. Can the AC or specialist AC act as the supervising QP for the same project?
- Q17A Can the AC and specialist AC for a project be from the same firm?
- Q18 From 1 Oct 2008, all bridges and deckings, as well as earth-retaining structures will be regarded as permanent building works regardless of the duration of their usage. What are the changes in requirements involved in this provision?

SUPERVISION OF BUILDING WORKS

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DUTIES OF PROJECT PARTIES

- Q24 [The Act requires the developer of any building works to notify the Commissioner of Building Control \(CBC\) of any contravention of the Act or the building regulations that he knows or ought reasonably to know. Is the developer expected to know that a contravention has been committed even if the contravention is of a technical nature and not within his knowledge or expertise?](#)
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ACCREDITED CHECKERS AND SPECIALIST ACCREDITED CHECKERS

- Q31 What is the difference between the AC and the specialist AC?
- Q32 For projects where the value of works exceeds \$10 million, an AC in an accredited checking organization (ACO) has to be appointed. Is it the same for the AC(Geo), i.e. does an AC(Geo) in an ACO have to be appointed where the value of works exceeds \$10 million?
- Q33 What are the types of works that do not require an AC to be appointed?

UNDERGROUND BUILDING WORKS

- Q34 For underground building works, the Act states that the developer has to appoint the specialist builder to monitor instruments measuring pore pressures for saturated and unsaturated levels, ground-water levels, ground movements or building movements and to measure forces, deformations or displacements. (This specialist builder is commonly referred to as the instrumentation contractor). In some projects, this specialist builder is later novated to the builder. Is this allowed?
- Q35 Must all soil investigation reports be endorsed by a PE(Geo)?
- Q36 Must the impact assessment report be endorsed by a PE(Geo)?
- Q37 For projects involving an excavation deeper than 6 m, which part of the work requires a QP(Geo) and AC(Geo)?
- Q38 Who should submit the plans of underground building works – the Design QP(Struct) or the Design QP(Geo)?
- Q39 Does the AC(Geo) need to inspect the site? If yes, how frequent?
- Q40 Can the QP(Geo) be from the same firm as the AC or AC(Geo)?
- Q41 Underground building works are defined in the Act as any excavation or building works to make a caisson, cofferdam trench, ditch, shaft or well with a depth of more than 6 meters. Does the 6 metres include the design assumption of over-excavation of 0.5 metre?
- Q42 Can the QP(Struct) and the QP(Geo) share the same team of QSS?

- Q43 Suppose that the design QP(Struct) has been appointed by the developer of a project. Can the builder appoint that same person, who is also a PE(Geo), to act as the design QP(Geo) for the underground building works in the project?
- Q44 Who is it that has to endorse or make certifications on the plans of underground building works?
- Q45 The Act states that underground building works include building works associated with any excavation that is more than 6 metres deep. How is the measurement of the 6 metres determined?

APPOINTMENTS

GENERAL ISSUES

Q01 There are various appointments to be made in a building project. Is there a summary explaining who can appoint who?

A01 The following table is a summary of the appointments to be made in building works:

The developer <u>must</u> appoint (if any of the party to the right column has to be appointed):	a) the builder b) the accredited checker c) the specialist accredited checker d) the specialist builder to monitor instruments measuring pore pressures for saturated and unsaturated levels, groundwater levels, ground movements or building movements and to measure forces, deformations or displacements
The supervising qualified person <u>must</u> appoint:	a) the required number of qualified site supervisors working under his control and direction
The developer or the builder can appoint (if any of the party to the right column has to be appointed):	a) any of the qualified persons required (architectural, structural, geotechnical) to prepare the plans or to supervise the relevant building works in the project

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Q02 In a D&B project, is the builder also the developer of the project?

A02 No, the builder is not the developer of the project. The person who commissions the builder remains as the developer under the Act, regardless of his involvement or the type of procurement that he chooses for his project.

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QUALIFIED PERSONS

Q03 Since the supervising QP(Struct) or supervising QP(Geo) has to be independent of the developer and the builder, how can he be appointed by either of them since they will be his paymaster?

A03 In the case of the supervising QP(Struct) or supervising QP(Geo), the independence requirement is that the supervising QP cannot be a partner, officer or employee of the developer and the builder or their associates. There is no prohibition in the Act on his entitlement to any fee paid for his function as the supervising QP.

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Q04 Can a professional engineer (PE) appoint himself to be the supervising QP(Struct) for the construction of his own house since he is also the developer of the project? Is there a conflict of interest?

A04 The construction of any detached house, semi-detached house, terraced or linked house not exceeding 3 storeys for residential purposes is classified as minor building works, to which the independence requirement on the supervising QP(Struct) does not apply. For these works, a PE can therefore act as the Supervising QP for the structural works even if he is also the developer. The PE can also act as the design QP(Struct).

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Q05 In a D&B project, can a builder appoint his staff or employee (who is a PE) as the design QP(Struct) or design QP(Geo) for the project? Can the builder appoint his staff as the supervising QP(Struct) or supervising QP(Geo)?

A05 The builder may appoint his staff as the design QP(Struct) or design QP(Geo) but not as supervising QP(Struct) or supervising QP(Geo).

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Q06 Can the design QP and the supervising QP be the same person in a building project, since the Act requires the separate appointments of a design QP and a supervising QP?

A06 Yes, the same person can be appointed to undertake both roles. This applies to all the QPs – i.e. architectural, structural and geotechnical QPs. However, the supervising QP(Struct) and the supervising QP(Geo) must not be a partner, officer or employee of the developer and the builder or their associates.

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Q07 When must a QP(Geo) and a specialist AC be appointed?

A07 A QP(Geo) and a specialist AC must be appointed to undertake works associated with the geotechnical aspects of underground building works. Underground building works are defined as follows:

- a) any excavation or other building works to make —
 - (i) a tunnel with a diameter, width or height of more than 2 metres;
 - (ii) a caisson, cofferdam, trench, ditch, shaft or well with a depth of more than 6 metres;
- b) any building works for constructing, altering or repairing any earth retaining structure in or for a trench, ditch, shaft or well with a depth or height of more than 6 metres; or
- c) any foundation works for buildings of 30 or more storeys.

Examples of underground building works can be found in the BCA website. Please refer to the Guidebook found at the following url:

<http://www.bca.gov.sg/Publications/publications.html>

Click on the link to Building Control Act / Regulations.

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QUALIFIED SITE SUPERVISORS

Q08 Must the QP pay the QSS that he is required to appoint?

A08 The supervising QP(Struct) or the supervising QP(Geo) has to appoint the QSS because the QSS has to work under his control and direction. While the QSS has to be appointed by the QP, there may be cases where the developer or builder may choose to help the QP in the procurement of the QSS. This may be done in the form of a procurement contract between the developer or builder and the QSS.

While such procurement can be allowed, the contract must be clear that the QSS is procured to fulfill his statutory requirements under the Act and that he works under the control and direction of the QP. The QSS cannot be made to work for the developer or the builder, otherwise it will be taken that the QSS is an employee of the developer or builder respectively. Under the Act, the QSS cannot be a partner, officer or employee of the developer and the builder.

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Q09 Can the developer or builder appoint the QSS? If not, can the developer or builder pay the salary of the QSS?

A09 The developer and the builder cannot appoint the QSS. The QSS can only be appointed by the supervising QP(Struct) or supervising QP(Geo). The Act also provides that the appointed QSS shall not be a partner, officer or employee of the developer and the builder or their associates.

However, there is no prohibition in the Act on the QSS with regards to his entitlement to any fee paid for carrying out his function as the QSS. So, while the QSS has to be appointed by the supervising QP, there may be cases where the developer or builder may choose to help the QP in the procurement of the QSS. This may be done in the form of a procurement contract between the developer or builder and the QSS.

While such procurement can be allowed, the contract must be clear that the QSS is procured to fulfill his statutory requirements under the Act and that he works under the control and direction of the supervising QP. The QSS cannot be made to work for the developer or the builder, otherwise it will be taken that the QSS is an employee of the developer or builder respectively.

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Q10 The supervising QP for the main structural works usually appoints the prescribed supervision team of QSS. In many projects, there are other QPs appointed for specific parts or aspects of the building works. Examples would be the QP for the cladding works or the QP for the geotechnical aspects of underground building works. Do these other QPs also have to appoint their own supervision team, similar in composition to that already appointed for the main structural works?

A10 For building works in a project that must be carried out under the supervision of QSS, all the works can be supervised by the supervision team appointed by the supervising QP(Struct) for the main building works. However, the other QPs may want to appoint their own additional QSS to carry out the supervision of their respective parts or aspects of the building works. That is allowed and these other QPs may decide how many additional QSS is required. Where appropriate, these works may be carried out under full-time or part-time supervision by these other additional QSS, as determined by the QP who is responsible for supervision of the work.

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Q11 Can the appointed QSS also work under the control and direction of the QP(Arch) to supervise the architectural elements of the building works?

A11 The requirement for the QSS is to supervise the structural (or geotechnical) aspects of the building works and he is to work under the control and direction of the supervising QP(Struct) or supervising QP(Geo) who appointed him. There is no provision in the Act or Regulation that requires the appointment of any QSS to supervise architectural works and hence, it is up to the supervising QP(Struct), or supervising QP(Geo), and the supervising QP(Arch) to determine whether the QSS appointed to supervise the structural or geotechnical works could also be asked to supervise architectural works. This would depend on, for example, whether the QSS is able to take on this additional duty besides the mandatory duty to supervise structural or geotechnical works and whether the QSS is competent to do so.

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Q12 The Act requires a prescribed supervision team of QSS to be appointed for the entire duration of the project. The full team may not be required at, say, the start or end of the project when the scope or amount of works may be relatively less. Can a smaller team be deployed under such circumstances?

A12 If the supervising QP is certain that the supervision duties for which he is responsible for can be achieved with a smaller supervision team during a specific duration of the project for a good reason (for example, where the extent of works requiring supervision is relatively less), he may submit to the CBC an application for waiver or modification of the prescribed requirements, stating the justifications for deploying a smaller team. The smaller team may be deployed if the application is approved by the CBC.

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VALUE OF BUILDING WORKS

Q13 The number of QSS to be appointed depends on the value of the building works in the project. Does the value of building works include the cost of equipment or machinery?

A13 In some industrial projects, the contractual costs may include the costs of various equipment or machinery to be installed for the operational purpose of the building. While these equipment or machinery are part and parcel of the building contract, they are not relevant in so far as the value of the design and construction processes of the building are concerned. In computing the value of building works, the cost of such equipment or machinery need not be included.

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BUILDERS AND SPECIALIST BUILDERS

Q14 Can the instrumentation contractor be appointed by the builder?

A14 Where the building works consists wholly or partly of underground building works, the instrumentation contractor must be appointed by the developer (and not the builder). In all cases, the instrumentation contractor cannot be a partner, an officer or an employee of the developer, the builder or their associates.

Note: The instrumentation contractor is defined in the Act as the *specialist builder* who is appointed to monitor instruments measuring pore pressures for saturated and unsaturated levels, ground-water levels, ground movements or building movements, and to measure forces, deformations or displacements. The requirements concerning the instrumentation contractor will be applicable only after the licensing of builder and specialist builders comes into effect.

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ACCREDITED CHECKERS AND SPECIALIST ACCREDITED CHECKERS

Q15 Is there a difference between the AC and the specialist AC? Can they be appointed to check any building works?

A15 The appointments of the AC and the specialist AC are not interchangeable. The AC is to be appointed only to undertake the checking of structural works while the specialist AC can only undertake the checking of the geotechnical aspects of building works.

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Q16 Would an AC or specialist AC be regarded as having a professional or financial interest in the building works of a project if he is from a multi-disciplinary consultant firm which has been appointed for the architectural or M&E works for the same project?

A16 Since an AC or specialist AC shall be regarded as having a professional or financial interest in any building works if he is a member or an officer or employee of a company or other body which has a professional or financial interest in the building works **in any capacity** (except for certain minor alterations works), it follows that the answer to the question above is yes.

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Q17 The AC and specialist AC are required to be professionally and financially independent of the building works. Can the AC or specialist AC act as the supervising QP for the same project?

A17 No. The Act states that an AC or specialist AC shall be regarded as having a professional or financial interest in any building works if he is or has been responsible for the design or construction of the building or any of the building works in any capacity. He would be responsible for the construction of the building works if he acts as the supervising QP for those building works. Consequently, he cannot act as the AC or specialist AC for the same project that he will be supervising.

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Q17A Can the AC and specialist AC for a project be from the same firm?

A17A Yes, the AC and specialist AC can be from the same firm since they are not involved in the design or construction of the building works. The Act states that an AC or specialist AC shall be regarded as having a professional or financial interest in any building works if he is or has been responsible for the design or construction of the building or any of the building works in any capacity.

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BRIDGES, DECKINGS AND EARTH-RETAINING STRUCTURES

Q18 From 1 Oct 2008, all bridges and deckings, as well as earth-retaining structures will be regarded as permanent building works regardless of the duration of their usage. What are the changes in requirements involved in this provision?

A18 Before 1 Oct 2008, temporary bridges and bridge deckings were regulated under the permit for temporary buildings while temporary earth-retaining structures were regulated under the conditions of permit. (Note: This practice still applies to all such temporary structures in projects where the first structural submission (ST01) has been made before 1 Oct 2008, regardless of whether the submission has been approved or not by 1 October 2008.)

However, such structures submitted in projects where the first structural submission is made on or after 1 Oct 2008 will no longer be regulated in this manner. Regardless of their duration of use, these structures will be regulated in the same manner as that for permanent works.

Essentially, a QP will have to be appointed to design and supervise the construction of these structures. The plans of these building works will have to be submitted for approval. A permit will also be required to carry out these building works.

In the case of earth-retaining structures, the appointment of QPs and ACs will follow the same rules as those required for permanent structures. The following table (next page) summarizes the appointments required for all earth-retaining structures, whether they are for permanent or temporary usage.

All permanent or temporary building works that involve	Appointments Required	
	Qualified Person	Accredited Checker
Excavation not more than 1.5 m** deep	Plan approval is not required	
Excavation more than 1.5 m** deep but not exceeding 4 m deep	Any professional engineer can act as the qualified person for structural works	No accredited checker required
Excavation more than 4 m deep but not exceeding 6 m deep		An accredited checker to check structural works
Excavation more than 6 m deep and all underground building works	Any professional engineer can act as qualified person for structural works (however, if he is not a geotechnical engineer, then a geotechnical engineer is needed for the geotechnical aspects)	An accredited checker to check structural works (and a specialist accredited checker is needed for the geotechnical aspects)
** If the structure that retains earth (either as a retaining wall or for excavation purposes) is not constructed of reinforced concrete or steel, then the applicable depth is 1 m instead of 1.5 m.		

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SUPERVISION OF BUILDING WORKS

GENERAL ISSUES

Q19 Does the supervising QP(Arch) have to appoint a team of QSS to supervise the architectural works? Can he use the supervision team appointed by the supervising QP(Struct) instead?

A19 The supervision team of QSS working under the control and direction of the supervising QP(Struct) or supervising QP(Geo) is appointed as a mandatory requirement under the Act. The requirement for the QSS is to supervise the structural (or geotechnical) aspects of the building works and he is to work under the control and direction of the supervising QP(Struct) or supervising QP(Geo) who appointed him.

There is no provision in the Act or Regulation that requires the appointment of any QSS to supervise architectural works and hence, it is up to the supervising QP(Struct), or supervising QP(Geo), and the supervising QP(Arch) to determine whether the QSS appointed to supervise the structural or geotechnical works could also be asked to supervise architectural works. This would depend on, for example, whether the QSS is able to take on this additional duty besides the mandatory duty to supervise structural or geotechnical works and whether the QSS is competent to do so.

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Q20 When will the new requirement for accreditation of (QSS) come into force?

A20 From 15 February 2009 onwards, all QSS are required to be accredited by the Joint Accreditation Committee of the Institution of Engineers Singapore (IES) and the Association of Consulting Engineers Singapore (ACES).

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Q20A How do I apply to be accredited by the Joint Accreditation Committee of the Institution of Engineers Singapore (IES) and the Association of Consulting Engineers Singapore (ACES)?

A20A Application can be made to the following address:

The Institution of Engineers Singapore
70 Bukit Tinggi Road (Off Swiss Club Road)
Singapore 289758
Tel. : 64695000
Fax : 64671108

Application can also be made online at the following url:

http://www.ies.org.sg/pageview.php?page_id=212

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Q21 Depending on the value of building works, QSS are appointed for part-time or full-time supervision of the structural works. What are the requirements for part-time and full-time supervision?

A21 For part-time supervision, the QSS has to carry out "immediate supervision" of critical structural works. This means he must be present at the site to personally and directly exercise oversight and inspection of the carrying out of the critical structural works, which include works like concreting, piling, pre-stressing, tightening of high-friction grip bolts and welding. He does not need to be stationed at the site when there are no critical structural works in progress.

On the other hand, full-time supervision means that the QSS has to be stationed at the site throughout the duration of the project when structural or geotechnical works are in progress and the QSS cannot act as the QSS for any other project. The QSS has to personally and directly exercise oversight and inspection of the carrying out of all structural works and carry out any other supervision duties as directed by the supervising QP who appointed him. Where there is more than one QSS in a project, the supervising QP has to direct how and by who each supervision duty is to be carried out.

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Q22 Is there still a requirement to submit quarterly structural reports?

A22 With effect from 1 Feb 2008, there is no need for submission of quarterly structural reports.

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Q23 Does the builder need to appoint QSS to supervise the building works?

A23 The Act requires the builder to have an adequate number of construction supervisors working under his direction to help him ensure that the building works are carried out in compliance with the provisions of this Act, the building regulations, the approved plans and any terms and conditions imposed by the CBC.

The Act does not explicitly prescribe how many site supervisors the builder should deploy but the builder is expected to provide sufficient personnel to fulfil this provision.

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DUTIES OF PROJECT PARTIES

DEVELOPER

Q24 The Act requires the developer of any building works to notify the Commissioner of Building Control (CBC) of any contravention of the Act or the building regulations that he knows or ought reasonably to know. Is the developer expected to know that a contravention has been committed even if the contravention is of a technical nature and not within his knowledge or expertise?

A24 Some contraventions may involve matters which are of a very technical nature, where specific knowledge in architecture or engineering is necessary to know that a contravention has occurred. For such cases, the CBC will not expect that a person who does not possess such knowledge could reasonably have discovered the contravention, provided that the person was not involved in any way in directing or instructing another party who have such knowledge not to notify the CBC. On this matter, there are already specific sections under the Act which allow it to be a defence for any person charged to prove to the satisfaction of the court that he did not know and could not reasonably have discovered the contravention referred to in the charge.

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Q25 Would the developer still have to notify the CBC if a particular contravention has been rectified?

A25 Some contraventions may be easily and quickly rectified. Where a contravention has been rectified, the CBC may take that into consideration in deciding any enforcement action for that contravention. However, should the CBC discovers a contravention before notification by any party, subsequent rectification of the contravention cannot be used as an excuse to absolve any party of the failure to notify the CBC of the contravention.

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Q26 Several parties (namely, the developer, QP, builder and specialist builder) have the similar duty of notifying the CBC when they are aware of any contravention. Must all the parties notify the CBC separately?

A26 If one of these parties has notified the CBC of the contravention immediately or within a reasonable time of the occurrence of the contravention, and has also informed the other parties of the notification, it may not be necessary for the other parties to notify the CBC of the same contravention.

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QUALIFIED PERSON

Q27 After 1 October 2008, design of temporary earth-retaining structures will have to be submitted by a QP for approval, like permanent works. As some temporary earth-retaining works are extracted after completion, must the QP also submit as-built drawings of these works?

A27 In the case of temporary works or structures which will be extracted or demolished at the end of construction, such record plans have no meaning and are not required to be submitted to CBC.

As-built plans are also not required for temporary works or structures that are left in the ground but are redundant, i.e. they do not contribute to the performance of the permanent works.

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Q28 I am a supervising QP(Struct) who took over from the first supervising QP(Struct) midway through a project. The first supervising QP(Struct) was also the design QP(Struct) who had submitted the structural plans, which had been approved. After the permit has been granted, he had also supervised a part of the structural works. Before the structural works was completed, he decided to leave the project and I was appointed as the supervising QP(Struct) to replace him. What are the things I need to do and what are my areas of responsibilities? Will I be liable for the design submitted by the design QP(Struct) and the supervision carried out by him?

A28 The first design QP(Struct) remains responsible for the approved structural plans. He is also responsible for the structural works that he has supervised. Within 14 days of his ceasing to carry out his duties under the Act, he has to submit to the CBC a summary report of all those structural works which have been carried out under his supervision and a certificate of such supervision.

As the supervising QP(Struct) replacing the first supervising QP(Struct), your responsibilities begin from the point at which you take over. You will be responsible for the supervision of the remaining structural works and all the remaining duties of the supervising QP(Struct). After completion of the structural works, you are also required to submit a summary report of all those structural works that you have supervised and a certificate of such supervision.

If there are design changes made during the construction of the building works, then the QP who prepares and submits the amendment plans for those changes will be responsible for the design changes.

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Q29 What are the duties of the Design QP(Struct) with respect to the carrying out of site investigations necessary for design?

A29 The duties are:

- a) to carry out or cause to be carried out proper and adequate site investigation -
 - i) in accordance with the relevant standards and Codes of Practice, and
 - ii) by conducting adequate investigation boreholes and other appropriate investigation means, in-situ field tests and laboratory tests to establish the ground and groundwater conditions, their variability and the geotechnical aspects for the works to be carried out, and
- b) to submit the site investigation report as part of the plan submissions.

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Q30 Is it a requirement for the design QP(Struct) to submit plans of temporary staging or platforms for approval by the CBC?

A30 The design of temporary staging or platforms should be done by a professional engineer but there is no requirement for such plans to be submitted to the CBC for approval. The Workplace Safety and Health Act may require submission for temporary staging or platforms in some cases.

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ACCREDITED CHECKERS AND SPECIALIST ACCREDITED CHECKERS

GENERAL ISSUES

Q31 What is the difference between the AC and the specialist AC?

A31 The specialist AC is also called the AC(Geo) in the industry. An AC has duties to check the structural elements of building works whereas an AC(Geo) has similar duties to check the geotechnical aspects of underground building works.

The registrations of the ACs and AC(Geo)s are separate and not connected. An AC cannot perform the duties of an AC(Geo) and vice versa, unless he is registered as both an AC and an AC(Geo).

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Q32 For projects where the value of works exceeds \$10 million, an AC in an accredited checking organization or ACO has to be appointed. Is it the same for the AC(Geo), i.e. does an AC(Geo) in an ACO have to be appointed where the value of works exceeds \$10 million?

A32 There is no requirement for the appointment of an AC(Geo) in an ACO for any building works. Currently, the AC(Geo) appointed does not have to be affiliated with any ACO, regardless of the value of the underground building works.

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Q33 What are the types of works that do not require an AC to be appointed?

A33 The Fourth Schedule of the Building Control Regulations prescribes the list of minor building works that do not require a certification of an AC. The list is reproduced below for reference:

BUILDING WORKS THAT DO NOT REQUIRE THE CERTIFICATE OF AN ACCREDITED CHECKER

1. Building works for or in connection with –

- (a) detached houses, semi-detached houses, terraced or linked houses for residential purposes not exceeding 3 storeys
- (b) detached substations not exceeding 2 storeys, detached bin centres, detached guard houses and the like
- (c) retaining walls and earth stabilizing structures not exceeding a visible height of 4m
- (d) shophouses not exceeding 2 storeys (where attic or basement floor exceeding an area of 100 m² shall be considered as a storey)
- (e) single storey buildings, sheds and the like where the span of beams or roof trusses is not more than 6m and the floor area is not more than 150 m²
- (f) underground tank, swimming pool and the like not exceeding a depth of 4m
- (g) single storey covered walkway, car parking shed and the like where the span of the beams or roof trusses is not more than 6m or the span of any cantilever is not more than 3m
- (h) box culverts, canal crossings or link bridges with spans not exceeding 5m
- (i) chimneys, lighting masts and the like not exceeding 20m in height
- (j) foundation for above ground tank structure where the length, width or diameter of the foundation does not exceed 6m
- (k) foundation for gantry cranes with capacity not exceeding 3 tonnes and the span between supports not exceeding 6m in any direction

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UNDERGROUND BUILDING WORKS

GENERAL ISSUES

Q34 For underground building works, the Act states that the developer has to appoint the specialist builder to monitor instruments measuring pore pressures for saturated and unsaturated levels, ground-water levels, ground movements or building movements and to measure forces, deformations or displacements. (This specialist builder is commonly referred to as the instrumentation contractor). In some projects, this specialist builder is later novated to the builder. Is this allowed?

A34 The Act does not have any provision that prohibits such a procurement method. However, the Act requires that the specialist builder for instrumentation monitoring (that is appointed by the developer) shall not be a partner, an officer or an employee of the developer and the builder, or any of their associates.

Note: The instrumentation contractor is defined in the Act as the *specialist builder* who is appointed to monitor instruments measuring pore pressures for saturated and unsaturated levels, ground-water levels, ground movements or building movements, and to measure forces, deformations or displacements. The requirements concerning the instrumentation contractor will be applicable only after the licensing of builder and specialist builders comes into effect.

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Q35 Must all soil investigation reports be endorsed by a PE(Geo)?

A35 No, a PE(Civil) can endorse a soil investigation report.

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Q36 Must the impact assessment report be endorsed by a PE(Geo)?

A36 No, a PE(Civil) can endorse the impact assessment report.

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Q37 For projects involving an excavation deeper than 6 m, which part of the work requires a QP(Geo) and AC(Geo)?

A37 The QP(Geo) and AC(Geo) are only required for the geotechnical aspects of underground building works.

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Q38 Who should submit the plans of underground building works – the Design QP(Struct) or the Design QP(Geo)?

A38 Either one of the two or both may make the submission of plans. In cases where there are elements of both structural and geotechnical aspects on the same plan, then both must make separate endorsements in the plans that are relevant to their respective duties.

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Q39 Does the AC(Geo) need to inspect the site? If yes, how frequent?

A39 It depends and the AC(Geo) may make the decision. The AC(Geo) needs to determine whether the conditions at the site are in accordance with the assumptions he had adopted when carrying out his independent review. Depending on the information on condition of the site and the results of the monitoring, he may wish to inspect the site and make a review to satisfy himself that the adequacy of the geotechnical aspects is not compromised.

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Q40 Can the QP(Geo) be from the same firm as the AC or AC(Geo)?

A40 No, that would compromise the independence provisions required of the AC and the AC(Geo).

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Q41 Underground building works are defined in the Act as any excavation or building works to make a caisson, cofferdam trench, ditch, shaft or well with a depth of more than 6 meters. Does the 6 metres include the design assumption of over-excavation of 0.5 metre?

A41 No, over-excavation of 0.5 metre is a notional design consideration.

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Q42 Can the QP(Struct) and the QP(Geo) share the same team of QSS?

A42 Yes, as long as the QSS works under the control and direction of each QP in supervising their respective aspects of the building works, and the QPs are satisfied that the QSS are competent to carry out both aspects of the building works.

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Q43 Suppose that the design QP(Struct) has been appointed by the developer of a project. Can the builder appoint that same person, who is also a PE(Geo), to act as the design QP(Geo) for the underground building works in the project?

A43 Yes, there is no provision in the Act that prohibits such appointments.

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Q44 Who is it that has to endorse or make certifications on the plans of underground building works?

A44 If the plan contains both structural and geotechnical aspects of the building works, the design QP(Struct), the design QP(Geo), the AC and the AC(Geo) must all endorse their respective certifications on the plan.

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Q45 The Act states that underground building works include building works associated with any excavation that is more than 6 metres deep. How is the measurement of the 6 metres determined?

A45 The measurement is in respect of the depth of soil supported by the underground building works. To help project parties determine how the 6 metres depth is to be derived, BCA has posted illustrations explaining what constitutes “underground building works” in its website. The illustrations can be found in the Guidebook found at the following url:

<http://www.bca.gov.sg/Publications/publications.html>

Click on the link to Building Control Act / Regulations.

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