

Our Ref : BCA BC 15.0.3 VOL 11

Building Engineering Division (#05-00)

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7 Jan 2008

See **Distribution**

Dear Sir/Madam

AMENDMENTS TO THE BUILDING CONTROL (ACCREDITED CHECKERS AND ACCREDITED CHECKING ORGANISATIONS) REGULATIONS

The Building Control (Accredited Checkers and Accredited Checking Organisations) Regulations is being amended to accommodate changes in the Building Control (Amendment) Act 2007. Key changes in the proposed amendment to the Building Control (Accredited Checkers and Accredited Checking Organisations) Regulations are listed in Annex A. The changes are to prescribe provisions for specialist accredited checkers. The Building and Construction Authority invites you to comment on these key changes.

2 Please return your response as soon as possible and in any event not later than Fri, 18 Jan 2008, either:

by post to:

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3 I would appreciate it if you could bring the contents of this circular to your members' attention. Thank you.

Yours faithfully,



ONG SEE HO
COMMISSIONER OF BUILDING CONTROL

ANNEX A

KEY CHANGES IN THE PROPOSED BUILDING CONTROL (ACCREDITED CHECKERS AND ACCREDITED CHECKING ORGANISATIONS) (AMENDMENT) REGULATIONS 2008

Regulation (changes are shown in red+ underlined)	Comments
<p>3(1) Qualifications for registration and renewal of registration as accredited checkers</p> <p>(1) No person shall be registered under the Act as an accredited checker, or have his registration as an accredited checker renewed, unless he can satisfy the Commissioner of Building Control that —</p> <ul style="list-style-type: none"> (a) he possesses such qualifications as will entitle him to be registered as a professional engineer under the Professional Engineers Act (Cap. 253); (b) he is a professional engineer registered under the Professional Engineers Act in the civil or structural engineering discipline; (c) he has had, after such registration as a professional engineer, practical experience in the design and construction of buildings in Singapore at a professional level for a period of not less than 10 years; (d) by virtue of his ability, standing in the profession or special knowledge or practical experience in civil or structural engineering he is deserving of such distinction; and (e) he is insured against professional liability for a minimum sum of not less than \$500,000. 	<p>Practical experience in both design and construction is required.</p>
<p><u>3A Qualifications for registration and renewal of registration as specialist accredited checkers</u></p> <p><u>(1) No person shall be registered under the Act as a specialist accredited checker, or have his registration as a specialist accredited checker renewed, unless he can satisfy the Commissioner of Building Control that -</u></p> <ul style="list-style-type: none"> <u>(a) he is a professional engineer registered under the Professional Engineers Act (Cap. 253) as a specialist professional engineer in the specialized branch of engineering known as geotechnical engineering;</u> <u>(b) he has had, after registration as a professional engineer under the Professional Engineers Act, practical experience in civil or structural engineering at a professional level for a period of not less than 10 years, of which at least 5 years shall be in geotechnical engineering in Singapore;</u> 	<p>New regulation on requirements for registration and renewal of registration for specialist accredited checkers.</p>

Regulation (changes are shown in red+ underlined)	Comments
<p>(c) <u>by virtue of his ability, standing in the profession or special knowledge or practical experience in geotechnical engineering he is deserving of such distinction; and</u></p> <p>(d) <u>he is insured against professional liability for a minimum sum of not less than \$500,000.</u></p> <p>(2) <u>The Commissioner of Building Control may, subject to such conditions as he may specify, waive the requirements of paragraph (1)(d) in respect of any period if the applicant satisfies the Commissioner that he will not undertake work as a specialist accredited checker on his own behalf during that period.</u></p> <p>(3) <u>The Commissioner of Building Control may refuse to renew any registration as a specialist accredited checker which has previously been suspended or cancelled.</u></p>	
<p><u>7A Duties of specialist accredited checkers</u></p> <p>(1) <u>It shall be the duty of a specialist accredited checker appointed in respect of building works which comprise wholly or partly of any underground building works to -</u></p> <p>(a) <u>evaluate, analyse and review the geotechnical aspects of the underground building works and perform such original calculations with a view to determining the adequacy of the geotechnical aspects of those underground building works to be erected or carried out in accordance with the plans of those building works; and</u></p> <p>(b) <u>verify that the geotechnical aspects of the underground building works are consistent with the plans of those underground building works and any amendment thereto.</u></p> <p>(2) <u>Without prejudice to paragraph (1), a specialist accredited checker shall in relation to any plans of underground building works carry out the tasks set out in the Third Schedule.</u></p> <p>(3) <u>It shall be the duty of the specialist accredited checker appointed under section 8(1) of the Act in respect of building works which comprise wholly or partly of any underground building works to notify the Commissioner of Building Control of any contravention or non-compliance with the provisions of the Act in connection with any of the geotechnical aspects of the underground building works.</u></p>	<p>New regulation on duties of specialist accredited checkers</p>

Regulation (changes are shown in red+ underlined)	Comments
<p><u>(4) Nothing in this regulation shall impose any such duty referred to in paragraph (3) on a specialist accredited checker in respect of any such contravention or non-compliance which he or it, as the case may be, did not know and could not reasonably have discovered.</u></p>	
<p>8</p> <p><u>Certificate of adequacy</u></p> <p><u>(1) An accredited checker or specialist accredited checker shall, without delay after performing his duty in relation to any plans of building works or in geotechnical engineering aspects of underground building works, prepare and submit to Commissioner of Building Control—</u></p> <p>(a) a certificate in Form A set out in the First Schedule Part I for accredited checker or Part II for specialist accredited checker as the case may be;</p> <p>(b) an evaluation report including the analysis and calculations performed by the accredited checker or specialist accredited checker.</p> <p><u>(2) A specialist accredited checker shall, without delay after performing his duty in relation to any plans of building works which comprise wholly or partly of any underground building works, prepare and submit to the Commissioner of Building Control -</u></p> <p><u>(a) a certificate in the Form B set out in the First Schedule; and</u></p> <p><u>(b) an evaluation report including the analysis and calculations performed by the specialist accredited checker.</u></p>	<p>Similar duties to submit certificate and evaluation report for specialist accredited checkers</p>
<p>9</p> <p>Declaration of professional and financial independence</p> <p>(1) Where the accredited checker has completed his duty in relation to any plans of building works —</p> <p>(a) the accredited checker; and</p> <p>(b) where an accredited checking organisation is appointed under section 17 of the Act —</p> <p>(i) the accredited checking organisation that is a corporation and each of its directors; and</p> <p>(ii) every partner of the accredited checking organisation that is a partnership,</p> <p>shall without delay submit to the Commissioner of Building Control a declaration that he or it, as the case may be, has no professional or financial interest in the building works.</p> <p><u>(2) Where a specialist accredited checker has completed his duty in relation to any plans of underground building works, he shall without delay submit to the Commissioner of</u></p>	<p>Similar independence declaration to be</p>

Regulation (changes are shown in red+ underlined)		Comments
	<u>Building Control a declaration that he has no professional or financial interest in those underground building works.</u>	submitted by specialist accredited checkers
10	<u>Failure to meet standards of performance</u> <u>(1) For the purposes of section 17(1)(g) of the Act –</u> <u>(a) an accredited checker, or an accredited checker who is a director, partner, member or an employee of an accredited checking organisation and acting on its behalf, shall be regarded as failing to meet the prescribed standards of performance for that section if he fails, in relation to any plans of building works, to carry out the tasks set out in the Second Schedule; and</u> <u>(b) a specialist accredited checker shall be regarded as failing to meet the prescribed standards of performance for that section if he fails, in relation to the geotechnical aspects of any underground building works, to carry out the tasks set out in the Third Schedule.</u>	Redrafting of existing provision to include specialist accredited checkers
	<div><div>FORM B</div><div>Regulation 8(2)(a)</div><div>CERTIFICATE</div><div>1. I _____ of _____ NRIC No./Passport No. _____, being a registered specialist accredited checker, hereby certify that I have in accordance with the Building Control (Accredited Checkers and Accredited Checking Organisations) Regulations carried out an evaluation, analysis and review of the plans of the underground building works attached, and to the best of my knowledge and belief the plans do not show any inadequacy in the geotechnical aspects relating to the underground building works if carried out in accordance with those plans.</div><div>2. In arriving at my conclusion, I confirm that I have reviewed and evaluated the design in relation to the geotechnical aspects of the underground building works in accordance with regulation 6A of the Building Control (Accredited Checkers and Accredited Checking Organisations) Regulations.</div><div>3. I append my Geotechnical Report (comprising _____ pages) as well as the analyses and calculations I have performed in carrying out the evaluation, analyses and review of the geotechnical aspects relating to the plans of the underground building works.</div><div><div>Date: _____</div><div>Signature: _____</div></div></div>	Prescribed certificate for specialist accredited checkers (similar to existing certificate prescribed for accredited checkers)

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<p><u>THIRD SCHEDULE</u></p> <p style="text-align: right;"><u>Regulations 7A(2) and 10(1)(b)</u></p> <p><u>TASKS THAT MUST BE CARRIED OUT BY SPECIALIST ACCREDITED CHECKERS</u></p> <p><u>The specialist accredited checker in relation to the geotechnical aspects of any underground building works shall —</u></p> <ul style="list-style-type: none"> <u>(a) determine the adequacy of site investigation and laboratory tests results including the considerations of analysis of the site investigation and laboratory tests results and ground conditions;</u> <u>(b) analyse the geotechnical parameters, and check the design assumptions and loadings for design and construction of the underground building works including consideration of onerous water conditions, seepage pressures, and surcharge, earth, water, construction and accidental loadings;</u> <u>(c) determine and use appropriate methods and models in the analysis and design including the consideration of drained, undrained and consolidation analyses, and appropriate drainage conditions;</u> <u>(d) determine the adequacy of the instrumentation and monitoring of geotechnical engineering parameters such as pore pressures, ground deformation and stresses including the consideration of location, type and number of instruments, and frequency of monitoring and reporting;</u> <u>(e) check the drawings of the underground building works to ensure that they are consistent with the calculations relating to the geotechnical aspects;</u> <u>(f) check monitoring results regularly including at every critical construction stage and determine the need to review or modify the geotechnical engineering parameters and design assumptions;</u> <u>(g) in respect of any excavation or other building works to construct a tunnel with a diameter, width or height of more than 2 metres —</u> <ul style="list-style-type: none"> <u>(i) determine suitability of tunnelling method and sequence of construction;</u> <u>(ii) determine suitability of tunnel support systems including face pressures and ground support system;</u> <u>(iii) analyse the stability of excavation;</u> <u>(iv) analyse the ground stabilization or improvement works;</u> <u>(v) analyse the soil or rock reinforcement, where</u> 	<p>New Third Schedule that prescribes tasks to be carried out by specialist accredited checkers</p>

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<p>applicable;</p> <p>(vi) <u>determine appropriateness of allowable limits of ground deformation and changes in groundwater and piezometric levels;</u></p> <p>(vii) <u>determine adequacy of measures to control groundwater; and</u></p> <p>(viii) <u>inspect the site, and assess monitoring results that the geotechnical aspects during construction, are within the design at every critical stage including the consideration of the site conditions and monitoring results;</u></p> <p>(h) <u>in respect of any excavation or any building works for constructing, altering or repairing any earth retaining structure (including slope) in or for a caisson, cofferdam, trench, ditch, shaft or well with a depth of more than 6 metres —</u></p> <p>(i) <u>determine suitability of earth-retaining structure types and scheme;</u></p> <p>(ii) <u>determine suitability of method and sequence of construction;</u></p> <p>(iii) <u>analyse the stability of the excavation work including the consideration of onerous groundwater conditions and drainage conditions, basal heave, hydraulic uplift and piping;</u></p> <p>(iv) <u>analyse the seepage conditions;</u></p> <p>(v) <u>analyse forces and deformation of the ground at the site and surrounding areas;</u></p> <p>(vi) <u>determine adequacy of the founding or penetration depth of embedded earth-retaining wall;</u></p> <p>(vii) <u>analyse the ground stabilization or improvement works, where applicable;</u></p> <p>(viii) <u>analyse tie-backs and soil or rock reinforcement, where applicable;</u></p> <p>(ix) <u>check the results of instrumentation and monitoring of the works during construction, and determine the need to review or modify the geotechnical engineering parameters to ensure that the design at every critical stage is adequate;</u></p> <p>(x) <u>determine appropriateness of allowable limits of ground deformation and changes in groundwater and piezometric levels;</u></p> <p>(xi) <u>determine adequacy of measures to control groundwater; and</u></p> <p>(xii) <u>inspect the site, and assess monitoring results</u></p>	

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<p><u>that the geotechnical aspects during construction, are within the design at every critical stage including the consideration of the site conditions and monitoring results;</u></p> <p><u>(i) in respect of such type of foundation works for buildings of 30 or more storeys —</u></p> <p><u>(i) determine suitability of foundation types;</u></p> <p><u>(ii) where caissons are adopted —</u></p> <p><u>(A) analyse the geotechnical parameters such as soil strength and deformation characteristics, pile shaft friction and pile base resistance;</u></p> <p><u>(B) determine suitability of method of construction;</u></p> <p><u>(C) where applicable, analyse the stability of excavation for the caisson during construction;</u></p> <p><u>(D) analyse the negative shaft friction;</u></p> <p><u>(E) determine the adequacy of the number, location and types of load tests;</u></p> <p><u>(F) determine the appropriateness of allowable limits for caisson foundation movement;</u></p> <p><u>(G) analyse the design shaft friction and base resistance with test results during construction;</u></p> <p><u>(H) check founding depth on site; and</u></p> <p><u>(I) inspect the site, and assess monitoring results that the geotechnical aspects during construction, are within the design at every critical stage including the consideration of the site conditions and monitoring results; —</u></p> <p><u>(iii) where jacked-in piles or driven piles or bored cast in-place piles or barrettes are adopted —</u></p> <p><u>(A) analyse the geotechnical parameters such as soil strength and deformation characteristics, pile shaft friction and pile base resistance;</u></p> <p><u>(B) determine suitability of method of construction, including stability of the boring holes for pile formation during construction;</u></p> <p><u>(C) analyse the negative shaft friction;</u></p> <p><u>(D) determine the adequacy of the number, location and types of load tests on piles;</u></p>	

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<p>(E) <u>determine the appropriateness of the allowable limits for piled foundation movement;</u></p> <p>(F) <u>analyse the pile group effects;</u></p> <p>(G) <u>analyse shaft friction and base resistance with test results;</u></p> <p>(H) <u>check the founding depth of all piles; and</u></p> <p>(I) <u>check results of instrumentation during construction and determine the need to review or modify the geotechnical engineering parameters and design assumptions;</u></p> <p>(iv) <u>where raft foundation or piled-raft foundation is adopted —</u></p> <p>(A) <u>analyse geotechnical parameters such as soil strength and deformation characteristics, and bearing pressures;</u></p> <p>(B) <u>analyse the forces and deformation of the raft or pile-raft foundation;</u></p> <p>(C) <u>determine the appropriateness of allowable limits for foundation movement;</u></p> <p>(D) <u>analyse the stability of the foundation including the consideration of short-term and long-term conditions;</u></p> <p>(E) <u>determine the adequacy of the number, location and types of tests for the raft foundation;</u></p> <p>(F) <u>check the founding depth on site; and</u></p> <p>(G) <u>review the performance and results of instrumentation and monitoring of the works during construction, and determine the need to review or modify the geotechnical engineering parameters to ensure that the design at every critical stage is adequate.</u></p>	

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