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8 Mar 2007

See **Distribution**

Dear Sir/Madam

PROPOSAL FOR AMENDING THE BUILDING CONTROL ACT

The Building and Construction Authority invites you to comment on the proposed Building Control (Amendment) Bill 2007 which addresses amendments to the Building Control Act arising from recommendations of the Report of the Joint MND-MOM Review Committee on Construction Safety (which was published in May 2005) and the subsequent feedback from the industry, and our continual review of the building control system.

The essence of the proposals is grouped into 5 main areas:

- a) approval of underground building works – see description in Annex A;
- b) licensing of builders and specialist builders – see description in Annex B;
- c) use of supervision teams to supervise structural works – see description in Annex C;
- d) requirements on independence of project parties in building works – see description in Annex D;
- e) other amendments to further refine the building control system – see description in Annex E.

The proposed Bill is posted on our website for download and is at: http://www.bca.gov.sg/BuildingControlAct/amendment_bill.pdf. This draft Bill is released only for the purpose of consultation and should therefore not be used for individual or business decisions as it does not represent the final legislation or regulations.

This circular is also posted on our website at: <http://www.bca.gov.sg/>

As the Building and Construction Authority may publish the responses to this consultation, please specify that the response is to be treated as confidential if you do not wish it to be published.

Please return your response to this consultation as soon as possible, and in any event before Sat, 31 Mar 2007, either:

<u>by post to:</u> Choong Teck Min Building Engineering Division Building and Construction Authority #05-00 Tower Block MND Complex 5 Maxwell Road Singapore 069110	<u>or by e-mail to:</u> choong_teck_min@bca.gov.sg
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Thank you.

Yours faithfully



ONG SEE HO
COMMISSIONER OF BUILDING CONTROL
BUILDING AND CONSTRUCTION AUTHORITY

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ANNEX A – APPROVAL OF UNDERGROUND BUILDING WORKS

What constitute underground building works

- A1. Underground building works is defined as:
- (a) any excavation or other building works to make any of the following:
 - (i) a tunnel of more than 2 metres in diameter;
 - (ii) a caisson, cofferdam, trench, ditch, shaft or well that is more than 6 metres in depth,
 - (b) any construction, alteration or repair of any earth retaining structure that is more than 6 metres in depth; and
 - (c) any foundation works for buildings of 30 or more storeys.
- A2. The definition includes temporary earth-retaining or stabilizing structures used for the purposes of excavations.

What is geotechnical aspects of underground building works

- A3. "geotechnical aspects", in relation to any underground building works, is defined as:
- (a) an analysis of the geological structure and earth materials of the site of the underground building works and its influence on the underground building works;
 - (b) an analysis of the groundwater regime and its influence on the wall stability and integrity of the underground building works over time; and
 - (c) such other applications of earth sciences and engineering aspects as may be prescribed.

Professional engineers and accredited checkers in specialised field of geotechnical engineering

- A4. For approval of design and supervision of construction of underground building works, the geotechnical aspects of the underground building works will have to be designed and reviewed during construction by a professional engineer who is registered under the Professional Engineers Act in the specialised branch of geotechnical engineering. The geotechnical aspects will have to be checked and its performance reviewed by a specialist accredited checker who is:
- (a) a professional engineer registered in the specialised branch of geotechnical engineering; and
 - (b) an accredited checker registered by the Commissioner of Building Control in the specialised branch of geotechnical engineering.

- A5. The Table A1 below summarises the requirements for appointment of the Qualified Person (QP) and Accredited Checker (AC) for excavation and underground building works:

Table A1

<i>Appointment of PE & AC for excavation and underground building works</i>		
TYPE OF WORKS	QP	AC
Excavation depth of 1m or less	Approval of plans is not required	
Excavation depth greater than 1m but less than 2m	Any PE can be appointed as the QP for structural works	AC checking is not required
Excavation depth between 2m and 6m	Any PE can be appointed as the QP for structural works	Any AC
Underground building works as defined in para. A1 above	Any PE can be appointed as the QP for structural works. However, if the appointed QP is not a geotechnical engineer, then a geotechnical engineer shall be appointed to undertake the geotechnical aspects of the works.	A Specialist Accredited Checker

ANNEX B – LICENSING OF BUILDERS AND SPECIALIST BUILDERS

Objective of Licensing

- B1. The objective of licensing is to ensure that building works are carried out by builders who will carry out their duties competently and professionally and who are conversant with the statutory requirements in the Building Control Act.

Scope of Licensing

- B2. Licensing will apply to builders who undertake the following works:
- (a) all building works where plans are required to be approved by BCA; and
 - (b) works in specialist areas (listed in para. B8) which have a high impact on public safety and require specific expertise, skill or resources for their proper execution.
- B3. Builders will be licensed under 2 registers, each of which will be renewable on a 3-yearly basis:
- (a) Licensed General Builder (GB); and
 - (b) Licensed Specialist Builder (SB)

Licensed General Builders (GB)

- B4. There will be two categories in this register of General Builder:
- Class 1: General building works of unlimited value;
 - Class 2: General building works of contract value \$3 million or less.
- B5. GBs will carry out general building works excluding works that have been designated as specialist works to be carried out by SBs.
- B6. GBs will also be allowed to carry out the following minor specialist building works:
- a) Structural steelwork comprising fabrication and erection work for structures with a cantilever length of not more than 2m, a clear span of less than 6m and a plan area not exceeding 150m²;
 - b) Precast concrete work comprising casting of pre-cast reinforced concrete elements on site;
 - c) Other minor work for which an accredited checker is not required for the checking of the structural design.
- B7. Class 2 GBs will only be allowed to carry out work up to the contract value of \$3 million. Sole proprietorships, partnerships and limited liability partnerships (LLP), will only be eligible to apply for Class 2 licence.

Licensed Specialist Builders (SB)

- B8. The register of specialist builders will be classified into the following categories based on the types of work to be carried out:
- a) Piling works comprising installation and testing of precast reinforced or prestressed concrete piles, steel piles, bored cast-in-place reinforced concrete piles, caissons and special pile types like micro-piles, barrettes piles and composite piles, embedded retaining wall piles like diaphragm walls, contiguous bored piles or secant piles;
 - b) Ground support and stabilization works, including installation and testing of ground anchors, soil nails, rock bolts, ground treatment like chemical grouting and jet-grouting, reinforced-earth, shotcreting and tunnel supports;
 - c) Site investigation work comprising field investigations, exploratory drilling or boring, logging, sampling, coring, in-situ plate-loading tests, pressuremeter tests, penetration tests, vane shear tests, probing tests, permeability tests, geological mapping and geophysical surveys, and installation and monitoring of instruments measuring forces, deformation, displacements, pore and earth pressures, and ground-water levels;
 - d) Structural steelwork comprising –
 - i) fabrication of structural elements;
 - ii) erection work like site cutting, site welding and site bolting; and
 - iii) installation of steel supports for underground building works;
 - e) Pre-cast concrete work comprising fabrication of precast structural elements;
 - f) In-situ post-tensioning work comprising setting out of tendon profiles, laying of conduits, anchorages and bursting reinforcement, pulling or stressing of cables, pressure grouting of conduits.
- B9. GBs will be eligible to register as SBs so long as they meet the SB licensing requirements. There will be no restriction on the number of specialist categories that a GB may seek.

Additional duties of builder and specialist builder

- B10. The additional duties of the builder are:
- a) to keep and make available on request by any specialist builders all approved plans of building works supplied to him by the QP;
 - b) to provide adequate number of construction supervisor to ensure that building works are properly carried out;
 - c) notify the Commissioner of Building Control of any changes in specialist builders appointed to carry out specialist building works comprised in the same building works.
- B11. The main duties of the SB are:
- a) to carry out specialist works in accordance with approved plans;
 - b) to notify the Commissioner of Building Control of any contravention of the Building Control Act and Regulations.

Requirements for licensing

- B12. The following criteria would be considered in the evaluation of applications -
- a) the good character of the applicant, or if the applicant is a corporation or partnership, the general character of the management of the corporation or of the partners, as the case may be;
 - b) the financial condition of the applicant;
 - c) whether the public interest will be served by the granting of the licence, including:
 - seeking confirmation about the experience of applicants through site inspections and referee checks; and
 - carrying out checks with the Commissioner for Workplace Safety and Health.
- B13. The Commissioner of Building Control may refuse to grant a licence to any corporation or partnership if the past conduct of any director, manager or employee of the corporation or any partner, manager or employee of the partnership affords reasonable grounds for believing that the corporation or partnership, as the case may be, will not carry on the business of a builder in accordance with any written law with honesty and integrity.
- B14. Applications for a licence will also need to satisfy the Commissioner of Building Control on requirements on key personnel and authorised capital as follows -
- a) the management of the business, in so far it relates to building works, shall at all times be under the charge and direction of a designated person (referred to as "Approved Person") who should be either:
 - the sole proprietor;
 - a partner; or
 - a director of the corporation, or a member of the board of management of the corporation, or an employee (being a person employed in such a manner and with such similar duties and responsibilities of a director or member of its board of management);
 - b) the execution and performance of any building works undertaken shall be under the personal supervision of a designated person (referred to as "Technical Controller") who should be either:
 - the sole proprietor or at least one of his employees who meets the prescribed qualification and experience;
 - a partner or at least one of its employees, being a person employed in such a manner and with such similar duties and responsibilities of a partner to manage and supervise the building work undertaken; or
 - one director of the corporation or a member of its board of management or at least one of its employees, being a person employed in such a manner and with such similar duties and responsibilities of a director or member of its board of management to manage and supervise the general building work undertaken.

- c) The authorised capital of the corporation that is paid up is not less than S\$25,000 where it is applying for a Class 2 GB licence or SB licence; and S\$300,000 where it is applying for a Class 1 GB licence

B15. The Approved Person and Technical Controller should possess certain qualification and experience which will be worked out and prescribed in the Regulations at a later stage. Table B1 below contains a draft write-up and an example of the requirements to be considered in the Regulations. Although Table B1 is not in the proposed Bill, you can also provide comments on the requirements in Table B1.

Table B1

<i>Example of requirements for Class 1 General Builder</i>			
Approved Person (AP)		Technical Controller (TC)	
Qualifications	Experience	Qualifications	Experience
A Bachelor or higher degree in any field	3 years' of practical experience in the execution of construction projects, obtained after attaining the approved qualifications	A bachelor or higher degree in a construction-related field ^{1, 2}	5 years' practical experience in the execution of construction projects, obtained after attaining the approved qualifications
A diploma in a construction-related field ¹	5 years' practical experience on the execution of construction projects, obtained after attaining the approved qualifications		
None of the above qualifications ³	10 years' local practical experience in the execution of construction projects		
¹ Construction-related fields include architecture, civil or structural engineering, mechanical or electrical engineering, quantity surveying, and building science. ² The degree shall be awarded by a local university constituted under an Act of Parliament. Degrees awarded by other universities or institutions of higher learning must have been justified by a relevant public organization or professional institution for academic accreditation. ³ Attendance at a prescribed short course may be required.			

<i>Example of requirements for Class 2 General Builder</i>			
Approved Person (AP)		Technical Controller (TC)	
Qualifications	Experience	Qualifications	Experience
A diploma in a construction-related field ⁴	3 years' practical experience in the execution of construction projects, obtained after attaining the approved qualifications	A diploma in a construction-related field ⁴	5 years' practical experience in the execution of construction projects, obtained after attaining the approved qualifications
None of the above qualifications ⁵	8 years' local practical experience in the execution of construction projects		
⁴ Construction-related fields include architecture, civil or structural engineering, mechanical or electrical engineering, quantity surveying, and building science. ⁵ Attendance at stipulated courses may be required.			
<i>Example of requirements for Specialist Builder</i>			
Approved Person (AP)		Technical Controller (TC)	
Qualifications	Experience	Qualifications	Experience
A diploma in a construction-related field ⁶	3 years' practical experience in the execution of construction projects, obtained after attaining the approved qualifications	A bachelor or higher degree in the field of civil or structural engineering ⁷	5 years practical experience in the execution of the appropriate specialist works, obtained after attaining the approved qualifications
None of the above qualifications ⁸	8 years' local practical experience in the execution of construction projects		
⁶ Construction-related fields include architecture, civil or structural engineering, mechanical or electrical engineering, quantity surveying, and building science. ⁷ The degree shall be awarded by a local university constituted under an Act of Parliament. Degrees awarded by other universities or institutions of higher learning must have been justified by a relevant public organization or professional institution for academic accreditation. ⁸ Attendance at stipulated courses may be required.			

Actions against licensee

B16. The Commissioner of Building Control may take one of the following actions against a licensed builder or specialist builder:

- a) revoke the licence;
- b) suspend the licence for a period not exceeding 6 months;
- c) impose a financial penalty not exceeding \$20,000;
- d) censure the builder/specialist builder; or
- e) impose such other direction or restriction as the Commissioner of Building Control considers appropriate on the builder's business,

under any of the following conditions:

- i) builder/specialist builder fails to comply with licensing requirements/conditions;
- ii) builder/specialist builder ceases to have key personnel personally supervising the execution and performance of building work for a period exceeding 14 days;
- iii) licence had been obtained by fraud or misrepresentation;
- iv) builder/specialist builder ceases to carry on business;
- v) builder/specialist builder has been declared bankrupt or has gone into compulsory or voluntary liquidation other than for the purpose of amalgamation or reconstruction;
- vi) builder/specialist builder has been convicted of an offence under the Building Control Act;
- vii) conduct of any director, partner, manager or employee, as the case may be, affords grounds for believing that the firm will not carry on the business of a builder/specialist builder in accordance with any written law and with honesty and integrity;
- viii) public interest or national security of Singapore so requires; or
- ix) builder/specialist builder has refused or failed to comply with an order of the Commissioner of Building Control.

B17. The Commissioner of Building Control will not take the above action unless an opportunity of being heard by a representative in writing or by counsel had been given to the builder/specialist builder.

Construction Registration of Tradesmen Scheme

B18. Licensed General Builder Class 1 will also need to comply with the requirements on Construction Registration of Tradesmen Scheme (referred to CoreTrade in short) on construction personnel. The objective of CoreTrade is to build up a permanent core of localised workers in key trades for the retention of skills and experience. A core group of experienced and skilled workers will enable the industry to enhance quality and safety standards and raise the professionalism of the workforce.

Outline of CoreTrade Scheme

- B19. Under CoreTrade, main contractors have to ensure that, at project level, a stipulated number (the number to be specified in the regulations) of their construction personnel (Tradesmen and Trade Foremen) are localised workers, i.e. Singaporeans, Permanent Residents or TS workers, deployed in key trades. Key trades are high value added trades that have high impact on construction quality, site safety and productivity. There are ten key trades identified. Only the first few key trades will be implemented in the first year.
- B20. For the first year of implementation, the number of stipulated localised workers will start low, i.e. not more than 5% of the total manpower requirements for a project. This number will be gradually raised to 20% over 10 years, with periodic reviews on the industry situation.
- B21. The main contractor (Licensed General Builder Class 1) for the project has to submit a manpower programme to BCA showing the deployment of the localised workers for their project. This is further explained in paragraph B23 below.
- B22. Table B2 below contains a draft write-up and an example of the requirements to be considered in the Regulations at a later stage. Although Table B2 is not in the proposed Bill, you can also provide comments on the requirements in Table B2.

Submission of the Manpower Programme

- B23. All Licensed General Builder Class 1 carrying out building works with project contract value \$10 million and above will be required to submit a Project Employment Plan (PEP) to BCA. The PEP will set out the number and proportion of registered construction personnel (for the first year of implementation, this will refer to registered Tradesmen and Trade Foremen) to be deployed for the key trades for the duration of the project. Submission of the PEP will be a requirement for the issue of the permit to carry out building works.
- B24. It is the responsibility of the Licensed General Builder Class 1 to ensure that the deployment requirements are met and changes to the PEP have to be submitted to the Commissioner of Building Control within 7 days after the change.

Table B2

**Description of Construction Registration of Tradesmen Scheme
(CoreTrade)**

a) Outline of Scheme:

- i) Main contractors for building works of \$10 million contract value and above, i.e. Licensed General Builder Class 1 will have to employ a stipulated number of registered construction personnel comprising both registered Trade Foremen and registered Tradesmen in key trades. The number of registered construction personnel is stipulated in paragraph B23.
- ii) Trade Foremen and Tradesmen will need to register with BCA before they can be deployed as registered construction personnel.
- iii) The manpower programme stipulating the deployment of the registered construction personnel is to be submitted when applying for a permit to carry out building works.

CoreTrade requirements are applicable to all building works that are above \$10 million contract value except the following:

- Process construction works;
- Building works which do not require building plan approval.

b) Types of key trades:

Key trades are high value added trades that have high impact on construction quality, site safety and productivity. During the first year of implementation, Tradesmen will have to be deployed in the key trades of electrical installation, plumbing, tiling & stone laying and plant operation trades. Other key trades will be introduced progressively over the subsequent years. As for Trade Foremen, there will be six key trades. The types of key trades to be considered are:

Types of Key Trades	
<u>Tradesmen</u>	<u>Trade Foremen</u>
<ul style="list-style-type: none"> - Electrical Installation - Plumbing - Tiling & Stone Laying - Construction Plant Operation - Drywall installation - Plastering - Fire Protection - Painting - Doors & Windows - Air-Con Installation 	<ul style="list-style-type: none"> - Plumbing - Electrical Installation - Tiling & Stone Laying - Waterproofing - Reinforced Concrete - Structural Steelwork

c) Stipulated number of registered construction personnel

The stipulated number of registered construction personnel consisting of Tradesmen and Trade Foremen to be deployed for the first year of implementation is 5 man-years per \$10 million of contract value.

d) Registration of construction personnel

Construction personnel who wish to qualify as registered Trade Foremen or registered Tradesmen must register with BCA. Only construction personnel who are Singaporeans, Permanent Residents or TS workers may apply for registration.

e) Registration requirements

To qualify as registered Tradesmen, applicants must possess skills certificate in the relevant trade. During the first 12 months of implementation (or further extension of the duration as may be necessary), applicants without the relevant skills certificate may apply to register as Tradesmen if they show evidence that they possess at least 10 years of practical construction experience in the relevant trade, and they may be required to pass a bridging course in that trade.

To qualify as registered Trade Foremen, applicants must possess a trade diploma certificate in the relevant trade. Practical experience will not be accepted in lieu of the trade diploma certificate.

ANNEX C – USE OF SUPERVISION TEAMS TO SUPERVISE STRUCTURAL WORKS

- C1. The QP for supervision of structural works will be required to appoint supervision teams working under his direction and control to assist him in the supervision duties.
- C2. Site supervisors will have to remain accredited with BCA or an approved accreditation scheme managed by a prescribed professional body.
- C3. The composition of the supervision team will be worked out and prescribed in the Regulations at a later stage. Table C1 below contains an example of the requirements to be considered in the Regulations. Although Table C1 is not in the proposed Bill, you can also provide comments on the requirements in Table C1.

Table C1

<i>Example of composition of QP's supervision team</i>	
Project cost	Minimum number of RE¹ and RTO² in supervision team
Between \$3 million and \$6 million	1 RTO
Above \$6 million and up to \$15 million	1 RE
Above \$15 million and up to \$60 million	1 RE + 1 RTO
Above \$60 million and up to \$90 million	1 RE + 2 RTO
Above \$90 million	2 RE + 3 RTO
¹ RE means resident engineer. ² RTO means resident technical officer (RTO) who is currently referred to as Clerk-of-Works.	

ANNEX D – REQUIREMENTS ON INDEPENDENCE OF PROJECT PARTIES IN BUILDING WORKS

Supervision QP

- D1. A QP carrying out supervision of structural works should not be a partner, an officer or an employee of the developer/owner of the property or his associates. This requirement applies only to major projects where the certification of an accredited checker is required.

Instrumentation Contractor

- D2. For the underground building works referred to in paragraph A1, the developer/owner (instead of the builder) will have to appoint the specialist builder to carry out instrumentation works for monitoring of ground movements and condition.

ANNEX E – MISCELLANEOUS AMENDMENTS TO FURTHER REFINE THE BUILDING CONTROL SYSTEM

Bridge, Bridge Decking and Earth Retaining Structures

- E1. The definition of temporary buildings will exclude any bridge, bridge decking and earth-retaining structures, regardless of the tenure of usage. These are critical structures and will be subjected to requirements similar to permanent works, including the need for checking by an accredited checker.

Ensuring continued compliance with disability and prescribed performance requirements

- E2. The owner has a duty to ensure that physical features that were provided to comply with requirements to facilitate the use by persons with disabilities or to meet other specific performance will not be altered, removed or obstructed so as to cause these physical features to cease to be in compliance with the requirements.

Dangerous occurrence

- E3. For any building (including a building in proximity to premises where building works are being carried out) that is or is likely to be dangerous, the Commissioner of Building Control may direct any person that he authorises to inspect and investigate the circumstances of the occurrence. The Commissioner of Building Control may order the building owner or the person on whose behalf the building works are carried out to reimburse him the cost of such inspection and investigation.

Additional duties of developer

- E4. The developer shall notify the Commissioner of Building Control of any contraventions of the Act or Regulations relating to his building works that he knows about or ought to reasonably know about.

General revision on penalties

- E5. The penalties for offences, especially those in Part II, are generally revised to make them commensurate with those in the Workplace Health and Safety Act 2006.