BCA BC 15.0.3

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See Distribution List

Dear Sir/Madam

NEW MINIMUM BUILDABILITY SCORES FROM 1 JANUARY 2007 AND NEW INDICES FOR FLAT PLATE/FLAT SLAB

1. The buildable design legislation came into effect on 1 January 2001. Over the years, the minimum buildability scores have been progressively raised. The Code of Practice on Buildable Design (September 2005 edition) has stipulated the minimum buildability scores for 1 September 2005, 1 January 2007 and 1 August 2008.

2. We would like to remind all Qualified Persons (QPs) that the minimum buildability scores for 1 January 2007 shall be as shown in the following table. These minimum buildability scores shall be applicable to building works with applications for planning permission made on or after 1 January 2007.

CATEGORY OF BUILDING/DEVELOPMENT	MINIMUM BUILDABILITY SCORE		
	2000 m^2 ≤ GFA < 5000 m^2	5000 m^2 ≤ GFA < 25000 m^2	GFA ≥ 25000 m^2
Residential landed	60	62	65
Residential non-landed	66	68	71
Commercial	67	74	77
Industrial	69	74	77
School	64	69	72
Institutional and others	60	66	69

3. With effect from 1 January 2007, there will also be some fine tuning to the labour saving indices for structural systems (Table 1) using flat plate or flat slab. The revisions are highlighted in Annexe A.

4. A new set of forms for submission of buildability score calculations, namely BPD_BS01, BEV/A1_BS02 and BPD_BS03 will be available for download from the BCA website (www.bca.gov.sg) from end December 2006. Please use the new forms for projects with planning applications made on or after 1 January 2007. Guidelines on computation of flat plate/flat slab buildability score will also be provided in the revised Guide to the Buildable Design Appraisal System which can be downloaded from the BCA website from end December 2006.

5. We would also like to remind QPs that they should ensure that the building works carried out at the site do not deviate from buildability declarations. If changes are necessary, the QPs must review the buildability score of the project and ensure that the revised buildability score still meets the minimum requirement. If in doubt, QPs are advised to consult BCA before proceeding with the changes.

6. I would appreciate it if you could convey the contents of this circular to members of your organization. For clarification, please contact Mrs Foo-Leoh Chay Hong at 6325-7535 (email: foo-leoh_chay_hong@bca.gov.sg) or Ms Phua Hui Chun at 6325-5024 (email: phua_hui_chun@bca.gov.sg)

7. Thank you.

Yours faithfully

GOH SIAM IMM (MDM)
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ANNEXE A

Table 1: Structural System

STRUCTURAL SYSTEM	DESCRIPTION	LABOUR SAVING INDEX Ss
Precast Concrete System	Full precast	1.00
	Precast beam and precast slab	0.90
	Precast beam and precast column/wall[3]	0.85
	Precast column/wall[3] and precast slab	0.80
	Precast beam only	0.75
	Precast slab only	0.75
	Precast column/wall only[1] [3]	0.75
Structural Steel System (applicable only if steel decking or precast slab is adopted)	Steel beam and steel column (without concrete encasement)	0.95
	Steel beam and steel column (with concrete encasement)	0.85
Cast In-situ System[1]	**Flat plate with no or minimal perimeter beams (slab/beam[2] > 15)**	**0.90[4]**
	Flat plate with perimeter beams (slab/beam[2] ≤15)	**0.80[4]**
	Flat slab with no or minimal perimeter beams (slab/beam[2] > 15)	**0.85[4]**
	Flat slab with perimeter beams (slab/beam[2] ≤15)	**0.75[4]**
	One-directional banded beam	0.75
	Two-directional beam (slab/beam[2] >10)	0.65
	Two-directional beam (slab/beam[2] ≤10)	0.50
Roof System	Integrated metal roof on steel truss	0.90
	Metal roof on steel truss or timber truss	0.85
	Tiled roof on steel beam or precast concrete beam or timber beam	0.75
	Metal roof on cast in-situ beam	0.60
	Tiled roof with cast in-situ beam	0.55

NOTE:

[1] For cast in-situ floor with cast in-situ transfer beam, an index of -0.10 shall be applied to the entire cast in-situ floor area. This requirement does not apply to cast in-situ floor with transfer beam designed for ramp access.

[2] Slab/beam refers to the value of the slab area over number of beams. In flat plate or flat slab cases, this refers to the value of the flat plate area (or flat slab area) over the number of perimeter beams bounding the flat plate (or flat slab).

[3] Precast wall refers to load-bearing walls only.

[4] An additional index of 0.05 would be given if flat plate/flat slab is used with precast columns (or precast load bearing walls). For example, the index for flat plate with no or minimal perimeter beam (slab/beam > 15) with precast column would be 0.95 (0.90 + 0.05).

* An index of 0.03 each would be given if prefabricated reinforcement/cage is used in cast in-situ slab, beam and column.

* Indices for other systems not shown in this table shall be determined by BCA on a case-by-case basis. For such cases, the QPs are advised to seek BCA's comments before proceeding with the designs.