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See Distribution List

Dear Sir

NEW MINIMUM BUILDABILITY SCORE FROM 1 AUGUST 2002

I refer to my earlier circular of 14 June 2002.

2 We have detected an error in the N value of Table 3: "Other Buildable Design Features". It is to be corrected as follows.

BUILDABLE FEATURES	MODULE	UNIT OF COVERAGE	N VALUE PERCENTAGE OF COVERAGE ≥ 65% to < 80%
2.2 Repetition of floor-to-floor height	0.5M	no.	1 (value in the last circular was 1.5)

3 The erroneous value also appeared in the related forms for submission and are amended accordingly as shown in the attachments.

4 Kindly disseminate the information to your members. Thank you.

Yours faithfully

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Table 1 Structural Systems - Ss Value

Column/beam system \ Slab/beam system		Cast-in-place slab on steel decking	Precast concrete slab	Cast in-situ slab				
				Flat plate	Flat slab	slab/beam[3] > 10		slab/beam ≤ 10
						1-way banded beam	2-way beam	
Steel beam	Steel beam and column sprayed fire proofed	0.95	0.90					
	Steel beam and column encased in concrete	0.85	0.80					
Precast concrete beam	With precast column/wall		1.00					
	With cast in-situ column/wall		0.90					
No internal beam	With precast column/wall			0.95/0.90[1]				
	With cast in-situ column/wall			0.90/0.85[1]	0.85/0.80[1]			
Cast in-situ beam	With cast in-situ column/wall **(without transfer beams)**		0.75/ 0.70[1][2]			0.75/ 0.70[1]	0.70/0.65[1]	0.55/0.50[1]
	With cast in-situ column/wall (with transfer beams)[4]					**0.40**		

[1] The higher index refers to cast in-situ post-tensioned or prestressed slabs/beams.

[2] Both indices will apply where the value of slab area over number of beams is greater than 10. If the value of slab area over number of beams is less than or equal to 10, the index shall be 0.65 for post-tensioned/prestressed and 0.60 for non post-tensioned/prestressed.

[3] Slab/beam refers to the value of slab area over number of beams.

[4] The index of 0.40 is to be applied to the entire cast in-situ floor area with transfer beams, except area with ramp access.

* 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.

Table 1A Roof Systems - Ss Value

No.	Types of Roof	S_S Value
a.	Integrated metal roof on steel truss	0.90
b.	Metal roof on steel truss	0.85
c.	Tiled roof on steel beam or precast concrete beam or timber beam	0.75
d.	Tiled roof with cast in-situ beam	0.55

Note:

All changes are highlighted in bold.

Table 2 Wall Systems - Sw Value

Wall \ Finishes		No finishes/Pre-finished	Paint finish	Skim coat and paint finish	Plaster and paint finish	Tiled/stone finish	Metal/ Plasterboard Cladding
Curtain wall/full height glass partition		1.00					
Precast concrete panel/wall[1]		0.95	0.85	0.80		0.95[4]	
Dry internal walls[2]		1.00	0.90			0.65	
PC formwork[3]		**0.80**	**0.70**	**0.60**		**0.50**	
Precision block wall				0.60		0.50	0.80
Cast in-situ RC wall		**0.75**	0.65	**0.55**	0.50	0.45	0.70
Brickwall	Brickwall				0.40	0.35	0.50
	Half fair-faced	0.40					
	Full fair-faced/ glass block	0.30					

[1] Precast concrete panel/walls includes nominal weight concrete panels, lightweight concrete panels, autoclaved aerated concrete panels.

[2] Dry internal walls include sandwich panel wall system, stud and sheet partition wall systems, demountable wall systems.

[3] PC formwork refer to precast formwork panel with concrete infill.

[4] Tile/stone is pre-stalled in factory. **For tile/stone installed at site, LSI is 0.60**

* Indices for other systems not shown in this table shall be determined by BCA on a case-by-case basis.
* Index for windows/doors/**prefabricated railings** = 1

Note:

All changes are highlighted in bold.

Table 3: Other Buildable Design Features - N value

		Buildable Features	Module	Unit of coverage	N value	
					Percentage of coverage[4]	
					≥65% to < 80%	**≥80%**
1	Standardisation					
	1.1	Columns (3 most common sizes)	0.5M[2]	no.		2.0
	1.2	Beams (3 most common sizes)	0.5M[2]	no.		2.0
	1.3	(a) Standard door leaf openings (width) (3most common sizes) (see Table 3A)		no.	0.5	1.0
		OR				
		(b) Standard door leaf openings (width) and standard structural openings (3most common sizes) (see Table 3A)		no.	1.0	2.0
		OR				
		(c) Standard structural openings for doors (3 most common sizes)(for sizes not within the range stipulated in Table 3A)	**2M or 3M**	**no.**	**0.5**	**1.0**
	1.4	Windows (3most common sizes) [1]	1M/1M[3]	no.	0.5	1.0
2	Grids					
	2.1	Repetition of horizontal grids (between suppports) (3 most common dimensions)	1M	no.	1.0	1.5
			3M	no.	1.5	2.0
	2.2	Repetition of floor-to-floor height	0.5M	no.	1.0	2.0
	2.3	Vertical repetition of structural floor layout		area	1.5	2.0
3	Prefabricated Reinforcement					
	3.1	Floor		area	1.0	1.5
	3.2	Wall		area	1.0	1.5
	3.3	Beam cage		no.	1.5	2.0
	3.4	Column cage		no.	1.5	2.0
4	Others					
	4.1	(a) Prefabricated bathroom/toilet complete with piping/wiring: prefabricated wall panels and floor tray separately assembled	0.5M	no.	1.5	2.0
		OR				
		(b) Prefabricated bathroom/toilet complete with piping/wiring: full prefabricated cell completed with finished wall and floor	0.5M	no.	2.0	3.0
	4.2	(a) Standard precast staircase (see Table 3B)		no.		2.0
		OR				
		(b) Pre-assembled/metal staircase		**no.**		**2.0**
	4.3	Prefabricated vertical shafts (e.g. refuse chutes[5])		no.		1.0
	4.4	Multi-tier precast columns		no.		2.0
	4.5	(a) Precast CD Shelters, minimum 2 panels precast	0.5M	no.	1.0	1.5
		OR				
		(b) Precast CD Shelters, full precast cell	0.5M	no.	2.0	3.0
	4.6	Non-screed floor		area		1.0
	4.7	Columns sit directly on top of piles		no.		0.5
	4.8	Ground beams on top of pilecaps		no.		0.5
	4.9	Diaphragm wall construction		area		1.5

Note:

[1] Sizes based on dimensions of frames

[2] The module of 0.5M does not apply to steel structures.

[3] 1M for width and 1M for height

[4] The percentage of coverage is to be based on total floor area or on total number of components such as columns, beams, doors, windows, etc.

[5] Points will be awarded for use of fully precast refuse chutes which have an external dimension of 850mm x 850mm or 1000mm x 1000mm.

Note:

All changes are highlighted in bold.