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Construction Productivity and
Quality Group

15 April 2017

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Dear Sir/Madam

AMENDMENTS TO BUILDING CONTROL (BUILDABILITY AND PRODUCTIVITY) REGULATIONS 2011 AND REVISIONS TO CODE OF PRACTICE ON BUILDABILITY TO RAISE PRODUCTIVITY IN THE BUILT ENVIRONMENT SECTOR

Objective

1 This circular informs the industry of the changes to the Building Control (Buildability and Productivity) Regulations 2011 (“Buildability Regulations”) and the enhancements made to the Code of Practice on Buildability which will take effect on **1 May 2017**. The changes are:

- (A) Higher minimum level of use of prefabrication systems for developments on sites sold under the Industrial Government Land Sales (IGLS) Programme
- (B) Enhanced Buildable Design Appraisal System (BDAS) incorporating more Design for Manufacturing and Assembly (DfMA) technologies
- (C) Separate minimum Buildable Design Scores for basement and superstructure works.

Background

2 In December 2015, BCA raised the minimum buildability standards and introduced the mandatory adoption of productive technologies such as welded mesh for cast in-situ concrete floor and prefabricated and pre-insulated duct for air-conditioning systems for all developments. As part of the larger drive

towards wider adoption of prefabrication technologies along the Design for Manufacturing and Assembly (DfMA) continuum, there is a need to further enhance the buildability legislative framework to raise construction productivity. BCA has hence amended the Buildability Regulations and enhanced the BDAS as described in detail below.

A) Higher minimum prefabrication level for industrial sites sold under IGLS Programme

3 To promote greater adoption of prefabrication, any building to be built for use as an industrial building with a Gross Floor Area (GFA) greater than or equal to 5,000m² on State land sold under the IGLS Programme on or after **1 May 2017** is required to meet the minimum level of use of prefabrication system as shown in Table 1.

Table 1: Minimum Prefabrication Level

Minimum Prefabrication Level	5,000m ² ≤ GFA < 25,000m ²	GFA ≥ 25,000m ²
Structural system in respect of total structural floor area of the building works	25% (20%)	40% (35%)
Wall system in respect of total wall length of the building works	45% (35%)	60% (50%)

Note: Figures in parentheses denote existing requirements implemented for IGLS sites sold on or after 1 November 2014 and before 1 May 2017

B) Enhanced Buildable Design Appraisal System (BDAS)

4 The BDAS as set out in the new **Code of Practice on Buildability 2017**, which is applicable to project submitted to the Urban Redevelopment Authority (URA) for Planning Permission **on or after 1 May 2017**, will incorporate the following key changes with the objective to encourage designs to place greater emphasis on DfMA :

- (a) A new Table comprising a continuum of DfMA technologies from prefabricated components to fully integrated assemblies across the structural, architectural, as well as Mechanical, Electrical and Plumbing (MEP) disciplines is added. The total points allocated to this DfMA Table is 20 points.

- (b) The current Buildable Design Features under Table 3 of the BDAS will be incorporated under either the Structural System Table or the Wall System Table, where appropriate. The total points for Structural System and Wall System remains at 45 points each.
- (c) The maximum Buildable Design Score achievable for a building design under the 3 main parts of Structural System, Wall System and DfMA Technologies is 110 points instead of the current 100 points.

C) Separate minimum Buildable Design Scores (B-Score) for Basement Works and Superstructure Works

5 Currently, projects with both superstructure and basement works are required to meet a single minimum Buildable Design Score stipulated for the category of development and GFA size. Recognising industry feedback that basement and superstructure works involve different scope for DfMA technologies, project submitted to the Urban Redevelopment Authority (URA) for Planning Permission **on or after 1 May 2017** will be required to meet separate minimum B-Scores for superstructure and basement works, where applicable.

6 The minimum B-Score for superstructure works remains unchanged as per Code of Practice on Buildability 2015 edition. The new minimum B-Score for basement works is set at 68 points and this will apply to all categories of development. Please refer to Annex for the minimum B-Score requirements for both superstructure and basement works.

7 The details of the changes in the Buildability Regulations and the new Code of Practice on Buildability 2017 will be available on BCA website at <http://www.bca.gov.sg> from 1 May 2017.

Clarification

8 Should you or your members have any queries concerning this circular, please contact Ms Jenny Tan at 6804 4230 (email: jenny_xy_tan@bca.gov.sg) or Mr. Chin Kim Hong at 6804 4234 (email: chin_kim_hong@bca.gov.sg).

Thank you.

Yours faithfully

A handwritten signature in black ink, appearing to read 'F. Chay Hong', with a long horizontal stroke extending to the right.

FOO-LEOH CHAY HONG (MRS)
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A New Minimum Buildable Design Score for Basement Works for all new building projects

Year	From 1 May 2017*
CATEGORY OF BUILDING WORK/ DEVELOPMENT	MINIMUM BUILDABLE DESIGN SCORE (FOR BASEMENT WORKS)
	GFA \geq 2,000 m ²
Residential (landed)	68
Residential (non-landed)	
Commercial	
Industrial	
School	
Institutional and others	

**based on date of planning application made to URA except for projects built on land sold under GLS Programme which are based on date of the GLS land sold.*

B Minimum Buildable Design Score for Superstructure Works for all new building projects

Year	From 1 May 2017*		
CATEGORY OF BUILDING WORK/ DEVELOPMENT	MINIMUM BUILDABLE DESIGN SCORE (FOR SUPERSTRUCTURE WORKS)		
	2,000 m ² \leq GFA < 5,000 m ²	5,000 m ² \leq GFA < 25,000 m ²	GFA \geq 25,000 m ²
Residential (landed)	73	78	81
Residential (non-landed)	80	85	88
Commercial	82	87	90
Industrial	82	87	90
School	77	82	85
Institutional and others	73	79	82

**based on date of planning application made to URA except for projects built on land sold under GLS Programme which are based on date of the GLS land sold.*