Circular Letter No.: 2023.184

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Application: BEAM Plus NB Version 2.0

Effective Date: 1 August 2023

IDCM 3b Integrated Design Process – Early Design Consideration of Buildability/ Constructability

1. The Technical Circular Letter hereby announces an update to the credit content for **IDCM 3b Integrated Design Process – Early Design Consideration of Buildability/ Constructability** under BEAM Plus NB v2.0.

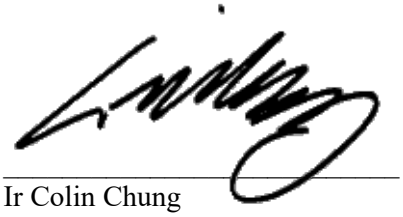
2. The aim of the update is to clarify the credit requirement of item (b) 1.3 under IDCM 3b on adopting 3S concept measures.

3. The requirements given in Section 2.1 of the BEAM Plus NB v2.0 Manual (2021 Edition) are hereby updated with the enclosures in Annex A of this Technical Circular Letter.

    - Pages Annex A-1 to A-8 shall replace all contents in Section 2.1 on IDCM 3 specified in Pages 52 to 59 of the Manual.

4. Approved PA projects: For projects that have already completed PA and have certain assessment approach approved, the Applicant may opt to adopt the same assessment criteria for FA or voluntarily comply with this Technical Circular Letter. For the avoidance of doubt, the Applicant shall provide PA evidence (e.g., extract of the PA report, documents submitted for assessment in PA, etc.) in subsequent assessments to support the intention of using the same assessment methodology as in PA.

5. For the ease of reading, the credit content in Pages Annex A-1 to A-8 of this Technical Circular Letter has incorporated the previously published FAQ #129 for IDCM 3c. The Applicant shall observe the respective FAQ for the issue date.



Ir Colin Chung
Chairperson of Standards Sub-committee

Annex A:
Updated Credit Content for Section 2.1 under BEAM Plus NB v2.0

2 Integrated Design and Construction Management

2.1 Integrated Design Process

IDCM 3 Integrated Design Process

Extent of Application All buildings

Objective Encourage early consideration of the integrated building design process, buildability and operational issues to support holistic and cost-effective outcomes of building performance, human health and environmental benefits.

Credits Attainable 4

Credit Requirement

(a) Early Considerations for Integrated Building Design

1 credit for consideration of the integrated design process regarding whole-system thinking to explore the interrelationships among green building design strategies and systems in the conceptual design stage.

1 additional credit for organising at least one multi-disciplinary design charrette to formulate passive and active design strategies in the conceptual/ schematic design stages.

(b) Early Design Consideration of Buildability/ Constructability

1 credit for early design consideration of buildability to ease construction and save on-site materials/ labour before completion of the design development stage.

(c) Design Consideration for Operation and Maintenance

1 credit for design consideration of the long-term operation and maintenance needs of the building and its engineering services.

Assessment

(a) Early Considerations for Integrated Building Design

1. <u>Exploration of interrelationships among green building design strategies and systems</u>

Provide a design review report in comparing preliminary sustainable design benefits for at least one (1) baseline and one (1) alternative design option for each issue.

The report should at least have the sections below with no less than 500 words for each identified issue:

i. Executive Summary

ii. Project Program

iii. Workshop arranged for integrated design process (with date of workshop, number or arrangement of attendances)

iv. Selected consideration, each with:

A baseline with the same development potentials as the design options. The design should conform to the statutory requirements such as Building Ordinance and Town Planning Ordinance.

An alternative design option with graphical support at concept stage level and board brush calculation in supporting the argument.

v. Conclusion

One or multiple design options is demonstrated to address at least two (2) issues of each of the following considerations:

Considerations	Issues
Site planning and outdoor environmental quality	- Building permeability/ air ventilation/ thermal comfort; - Landscaping/ site coverage with greenery; - Neighbourhood daylight access; - Ecological value; - Climate resilience.
Built form/ orientation and energy use/ generation	- Cooling load reduction; - Lighting load reduction; - Natural ventilation potential; - Renewable energy opportunities.
Building envelope attributes[1] and energy use	- Cooling load reduction/ OTTV/ RTTV estimation; - Lighting load reduction; - Natural ventilation potential.
Note: 1. Building envelope attributes refer to: - insulation values; - window-to-wall ratios; - glazing characteristics; - shading; - window operability.	

Strategies addressing multiple consideration and issues are acceptable.

The sustainable design benefits for respective considerations shall be demonstrated in design appraisal by either:

1) Qualitative assessment report making reference to the Urban Design Guidelines of the Hong Kong Planning Standards and Guidelines Chapter 11 as appropriate:
   a) Identify good design features;
   b) Identify obvious problematic areas and propose some mitigation measures;
   c) Define “focus” and methodologies of any further study in the schematic or design development stages;
2) Spreadsheet calculations; or
3) “Simple box” environmental/ energy modelling (simplified massing model that may not include detail of systems).

2. <u>Multi-disciplinary design charrette</u>

Provide evidence that at least one *multi-disciplinary design charrette* has been held before the completion of schematic design stage.

The *charrette* shall, at minimum, address the following issues:

2.1. Participants:

a) Developer/ owner representative;

b) User representative (if users are known in design stage);

c) Operation and maintenance team representative (if identified in schematic design stage);

d) Members from core design disciplines as defined in IDCM 1;

2.2. Introduce fundamentals of integrated design process [1]:

a) Well-defined vision, goals and objectives;

b) Collaborative team and open communication;

c) Whole-system thinking and innovative synthesis, and

d) Iterative process and feedback cycles;

2.3. Review and agree on following principal design strategies:

a) Key stakeholders' values, aspirations and requirements;

b) Functional programming;

c) Site planning and outdoor environmental quality;

d) Built form and orientation;

e) Building envelope attributes;

f) Key active building systems for energy saving/ generation;

g) Other strategies to be proposed by the Applicant.

(b) Early Design Consideration of Buildability/ Constructability

1. Demonstrate early consideration of buildability to ease construction and save on-site materials/ labour before the completion of the design development stage, either by:

1.1. engaging a construction management consultant or contractor who should be with adequate experience such as at least 10 years of experience OR at least 5 years of experience across 2 projects or more in building construction industry and should not be under the design team (e.g. the client's representative or construction team member with relevant experience);

1 BC Green Building Roundtable. Roadmap for the Integrated Design Process. [ONLINE]. Available at: http://www.greenspacencr.org/events/IDProadmap.pdf. [Accessed April 2021].

1.2. design optimisation of voids and complex form; or

1.3. adopting at least 75% of design measures on the 3S concept (standardisation, simplification and single integrated element) as promulgated in the Development Bureau's Guidelines [2].

1.4. Alternative standard could be proposed.

2. For item (b) 1.1, provide evidence demonstrating that recommendations/ inputs by the construction management consultant/ contractor have been reviewed/ adopted. This shall include the following:

2.1. Appointment letter of the construction management consultant or the contractors;

2.2. Correspondence or any of the meeting minute(s) (confidential/ sensitive project information is not required and shall be excluded) demonstrating that the design has been reviewed and recommendations have been suggested; and

2.3. The recommendations have been adopted.

3. For item (b) 1.2, provide evidence demonstrating that design of *high voids* and *complex forms*, if any, have been optimised:

3.1. Percentage of high voids to total building height is below 15%; and

3.2. Complexity of tower-built form in terms of tilting, tapering, twisting or free form has been optimised to fulfill both requirements:

Height of building	**Maximum offset of the building measuring against the ground floor plate or any typical floor plate**	**Maximum percentage of total number of floors with offsets measured against the total number of floors of the building**
< 45m	4m	35%
≥ 45m and < 90m	3m	25%
≥ 90m and <135m	2m	15%
≥ 135m	1m	5%

4. For item (b) 1.3, provide report with completed prescribed form to demonstrate implementation of at least 75% of listed 3S concept measures.

2 Development Bureau – Guidelines for Enhancement of Productivity of Skilled Workers in Public Works Projects. [ONLINE]. Available at: https://www.devb.gov.hk/filemanager/en/content_29/Guidelines_Enhancement_of_Productivity_(Mar_2013)_English.pdf. [Accessed April 2021].

(c) Design Consideration for Operation and Maintenance

1. Provide evidence that the design has considered the long-term operation and maintenance needs for the building and its engineering services by providing at least 5 of the following features:

   1.1. Building Management System (BMS);

   1.2. Davit arm/ gondola system;

   1.3. External pipe duct or pipe duct in communal areas;

   1.4. Fall arrest system;

   1.5. Maintenance platform for building services installations;

   1.6. Maintenance workshop for facility management (shall refer to a room designated for carrying out maintenance activities and repairing works. The maintenance workshop shall be equipped with worktable, repairing tools and any other equipment/ facilities for fulfilling the function of the space);

   1.7. Movable working platform for maintenance;

   1.8. Access and safety provision for external air-conditioning unit at height without use of scaffolding;

   1.9. Others, to be proposed by the Applicant with justification.

Submittals

(a) Early Considerations for Integrative Building Design

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
IDCM_03a_00	BEAM Plus NB submission template for IDCM 3a	✓	✓
IDCM_03a_01	Design review report on preliminary sustainable design benefits	✓	✓[#]
IDCM_03a_02	Multi-disciplinary design charrette report (if the additional credit is targeted)	✓	✓[#]
[#] The supporting document(s) is/ are not required in FA if the credit(s) is/ are achieved in PA.			

(b) Early Design Consideration of Buildability/ Constructability

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		**PA**	**FA**
IDCM_03b_00	BEAM Plus NB submission template for IDCM 3b with	✓	✓
	Summary of Adoption of 3S Concept [Form S-A] (for Item (b) 1.3 only)	✓	✓

For Item (b) 1.1, please submit the followings:		PA	FA
IDCM_03b_01	Appointment letter of the construction management consultant or contractors	✓	✓#
	Correspondence or any of the meeting minute(s) with construction management consultant or contractors	✓	✓#
	Report on adoption of construction management consultant's (or contractors') recommendations	✓	✓#
	CV of the construction management consultant or contractor	✓	✓#
For Item (b) 1.2, please submit the followings:		**PA**	**FA**
IDCM_03b_02	Design report demonstrating optimisation of high voids and complex forms	✓	✓#
For Item (b) 1.3, please submit the followings:		**PA**	**FA**
IDCM_03b_03	Report with completed prescribed form to demonstrate compliance with 3S concept measures.	✓	✓#
# The supporting document(s) is/ are not required in FA if the credit(s) is/ are achieved in PA.			

(c) Design Consideration for Operation and Maintenance

Supporting Documents *Please provide softcopies with filename prefix as indicated on the leftmost column below.*		PA	FA
IDCM_03c_00	BEAM Plus NB submission template for IDCM 3c	✓	✓
IDCM_03c_01	Design report demonstrating the adoption of O&M features	✓	✓
IDCM_03c_02	Dated photo records of the completed O&M features **[or]** Approved material submission **[or]** Declaration letter signed by the Project Owner undertaking the provision	- - -	✓ ✓* ✓*
* Alternative supporting document is accepted ONLY if photo records of the completed O&M features are not available at the time of FA.			

Remarks

(a) Additional Information

For IDCM 3a

Buildings Department – PNAP APP-152, Sustainable Building Design Guidelines. [ONLINE]. Available at: https://www.bd.gov.hk/doc/en/resources/codes-and-references/practice-notes-and-circular-letters/pnap/APP/APP152.pdf. [Accessed April 2021].

Buildings Department – Codes of Practice and Design Manuals, Code of Practice for Overall Thermal Transfer Value in Buildings 1995. [ONLINE]. Available at: https://www.bd.gov.hk/doc/en/resources/codes-and-references/code-and-design-manuals/OTTV1995_e.pdf. [Accessed April 2021].

Buildings Department – PNAP APP-156, Design and Construction Requirements for Energy Efficiency of Residential Buildings. [ONLINE]. Available at: https://www.bd.gov.hk/doc/en/resources/codes-and-references/practice-notes-and-circular-letters/pnap/APP/APP156.pdf. [Accessed April 2021].

For IDCM 3c

Buildings Department – PNAP ADV-14, Facilities for External Inspection and Maintenance of Buildings. [ONLINE]. Available at: https://www.bd.gov.hk/doc/en/resources/codes-and-references/practice-notes-and-circular-letters/pnap/ADV/ADV014.pdf. [Accessed April 2021].

Buildings Department – Appendix A2 of PNAP ADV-33, Essential Information in Plan Submissions. [ONLINE]. Available at: https://www.bd.gov.hk/doc/en/resources/codes-and-references/practice-notes-and-circular-letters/pnap/ADV/ADV033.pdf. [Accessed April 2021].

Buildings Department – Circular Letter dated 23 December 2016, Guidelines for Designing Access and Safety Provisions for the Maintenance and Repair (M&R) of External Air Conditioners (ACs) at Height. [ONLINE]. Available at: https://www.bd.gov.hk/doc/en/resources/codes-and-references/practice-notes-and-circular-letters/circular/CL_GDASP2016e.pdf. [Accessed April 2021].

(b) Related Credits

IDCM 4 Life Cycle Costing

The related credit encourages the use of life cycle costing to facilitate an investigation of potential design options, specifications, operation and maintenance.

SS P1 Minimum Landscape Requirements

The related prerequisite credit encourages building development to preserve or expand urban greenery.

SS 4 Neighbourhood Daylight Access

The related credit encourages building development which is sensitive to the needs of neighbours in terms of preserving daylight and views.

SS 7 Biodiversity Enhancement

The related credit encourages strategies to preserve and/or enhance the ecological value of the site in terms of habitat and biodiversity.

SS 8 Urban Heat Island Mitigation

The related credit encourages higher overall site coverage of greenery and stipulates minimum site coverage of greenery in the Primary Zone (the 15m vertical zone of a site along the abutting street level).

SS 9 Immediate Neighbourhood Wind Environment

The credit encourages improvement in wind environments around and adjacent to the buildings and adequate considerations of wind amplification, and where appropriate, suitable mitigation measures are provided.

SS 10 Outdoor Thermal Comfort

The related credit considers the positive effect of shading by trees and the surrounding ground surface temperatures of greenery within the site.

EU 1 Low Carbon Passive Design

The related credit encourages passive building design allowing buildings to respond to the local climate; reducing the reliance on active servicing for human comfort.

EU 5 Renewable and Alternative Energy Systems

The related credit encourages the wider application of renewable energy sources in buildings.