

## **Building Design to Foster a Quality and Sustainable Built Environment**

There has been rising public concern over the quality and sustainability of the built environment, including issues regarding building bulk and height, air ventilation, greening and energy efficiency in buildings. In 2009, the Council for Sustainable Development launched a public engagement process entitled “Building Design to Foster a Quality and Sustainable Built Environment” in collaboration with the Government. The exercise has pointed to a need for putting in place a package of new measures to foster a quality and sustainable built environment. This practice note sets out a package of measures, covering the following major elements, to promote a quality and sustainable built environment:

- (a) sustainable building design guidelines (SBD Guidelines) on building separation, building setback and site coverage of greenery;
- (b) gross floor area (GFA) concessions; and
- (c) energy efficiency of buildings.

### **Sustainable Building Design Guidelines**

2. The Buildings Department (BD) has commissioned a consultancy study on “Building Design that Supports Sustainable Urban Living Space in Hong Kong”. Based on the study, a set of SBD Guidelines has been developed to promote building separation, building setback and site coverage of greenery as promulgated in the Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP) APP-152.

3. To enhance the quality and sustainability of the built environment, the Building Authority (BA) will take account of the compliance with the SBD Guidelines as promulgated in the PNAP APP-152, where applicable, as a pre-requisite in exempting or disregarding green/amenity features and non-mandatory/non-essential plant rooms and services from GFA and/or site coverage calculations (GFA concessions) in new building developments. Such green/amenity features and non-mandatory/non-essential plant rooms and services and the relevant practice notes promulgating the criteria and requirements for granting GFA concessions are summarised in Appendix A.

## **Overall Cap on GFA Concessions**

4. To contain the effect on the building bulk while allowing flexibility in the design for incorporating desirable green/amenity features and non-mandatory/non-essential plant rooms and services, an overall cap will be imposed on the total amount of GFA concessions for these features, except those features described in paragraph 5 below. This cap is set at 10% of the total GFA of the development. If a development comprises both domestic and non-domestic buildings or in the case of a composite building, GFA concessions for features serving the domestic part or the non-domestic part of the development will be calculated separately such that GFA concessions for each part will be capped at 10%, based on the total GFA of the respective part of the development. Features that are subject to this overall cap of GFA concessions are listed in the table at Appendix A.

5. GFA concessions for the following features, which may have to satisfy their own individual acceptance criteria, will not be subject to the overall cap:

- (a) Mandatory features and essential plant rooms such as refuse storage chambers, telecommunications and broadcasting rooms;
- (b) Communal podium gardens and sky gardens that improve permeability of a development to its neighbourhood;
- (c) Floor space used solely for parking motor vehicles and loading and unloading of motor vehicles which is separately controlled given its significant impact on building bulk and height and the relevant transport, planning and environmental policies;
- (d) Voids in front of cinemas or in shopping arcades, etc. with operational needs in non-domestic developments;
- (e) Bonus GFA and/or GFA exemptions relating to dedication for public passage or surrender for road widening and building setback in accordance with the SBD Guidelines; and
- (f) Hotel concessions granted under regulation 23A of the Building (Planning) Regulations.

## **Pre-requisites for Granting GFA Concessions**

6. The 2017 Policy Address announced a review on the GFA concession mechanism to further promote green buildings. Taking into account the recommendation of a consultancy study commissioned by BD, the GFA concession mechanism has been enhanced and compliance with the following requirements will be pre-requisites for the granting of GFA concessions for all green/amenity features and non-mandatory/non-essential plant rooms and services provided in a proposed development as described in Appendix A:

/(a) ...

- (a) Compliance with the SBD Guidelines on building separation, building setback and site coverage of greenery in PNAP APP-152, where applicable;
- (b) For domestic or composite development, compliance with the requirements of PNAP APP-156 on Design and Construction Requirements for Energy Efficiency of Residential Buildings, where applicable;
- (c) Submission of the official letter issued by the Hong Kong Green Building Council acknowledging the satisfactory completion of project registration for certification under BEAM Plus New Buildings Version 2.0 or above (BEAM Plus NB);
- (d) State in the general building plans (GBP)<sup>2</sup> the target rating to be achieved in the Compliance Assessment (CA) under the BEAM Plus NB and the provision of specific standard(s) (if so required) in accordance with one of the following options<sup>3</sup>:
  - (i) “Anticipated Gold” rating. No provision of specific standard is required;
  - (ii) “Anticipated Silver” rating, and compliance with one of the specific standards on quality built environment; or
  - (iii) “Anticipated Bronze” rating, and compliance with two of the specific standards on quality built environment.

Requirements on compliance with the specific standards are given in Appendix C;

- (e) Submit to the BD the following documents:
  - (i) Letter acknowledging the satisfactory submission of Provisional Assessment credit summary (which should align with the target rating in paragraph 6(d) above) under the BEAM Plus NB issued by the BEAM Society Limited (BSL) to be submitted prior to the application for consent to commence the superstructure works shown on the approved plans (consent);

/(ii) ...

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<sup>2</sup> Refer to the template in the sample drawing no. C042 in Appendix A4 in PNAP ADV-33.

<sup>3</sup> The target rating and the selection of specific standards could be changed at any time upon the application for approval of amendment of the GBP before application for occupation permit.

- (ii) Information on the estimated energy performance/ consumption for the common parts (for domestic developments) or for the entire building (for non-domestic developments including hotels) to be submitted in the standard form (Appendix B) prior to the consent application;
  - (iii) Information specified in item (ii) above to be updated and submitted at the time of submitting application for occupation permit (OP);
  - (iv) Result of the CA under the BEAM Plus NB conferred by BSL certifying the achievement of the target rating stated in the approved GBP to be submitted at the time of submitting application for OP;
  - (v) Summary of the provisional energy efficiency report prior to the consent application in accordance with PNAP APP-156, where applicable; and
  - (vi) Final energy efficiency report upon application for an OP in accordance with PNAP APP-156, where applicable;
- (f) Compliance with the overall cap on GFA concessions as described in paragraph 4 above, where applicable; and
  - (g) Compliance with the relevant acceptance criteria for the individual green and amenity features.

### **Conditions for Granting GFA Concessions**

7. In addition to the acceptance criteria and conditions that may be imposed for granting GFA concessions as detailed in the relevant practice notes for the green/amenity features and non-mandatory/non-essential plant rooms and services described in paragraph 6 above, the following conditions may be imposed:

- (a) Information described in paragraph 6(e)(i), (ii) and (v) above shall be submitted to the BD prior to the consent application;
- (b) Information described in paragraph 6(e)(iii), (iv) and (vi) above shall be submitted to the BD at the time of submitting application for OP; and
- (c) The modification will be revoked if the consent application is submitted prior to the submission of information specified in item (a) above.

8. Authorized persons should consult a registered professional engineer under the Engineers Registration Ordinance of the relevant discipline in assessing the energy efficiency of the building and in completing the standard form at Appendix B.

**/Disclosure ...**

## **Disclosure for Public Information**

9. To increase the transparency of information to the public, the following information will be uploaded onto the BD website after the issuance of the OP:

- (a) The estimated energy performance/consumption information as described in paragraph 6(e)(iii) above;
- (b) The results of the CA under the BEAM Plus NB as described in paragraph 6(e)(iv) above; and
- (c) The finalised Residential Thermal Transfer Value and Overall Thermal Transfer Value for residential recreational facilities as recorded in the final energy efficiency report.

## **Implementation**

10. The pre-requisites for granting GFA concessions and relevant provisions in paragraphs 6 to 9 above are applicable to all new GBP or major revision of GBP for development proposals submitted to the BA for approval on or after 30 June 2024, and to GBP which have been previously disapproved and are resubmitted for approval on or after 30 June 2024. Subject to section 16(3)(d) of the BO, GBP approved by the BA prior to the implementation of this revision should make reference to the “August 2022” version of this PNAP at Appendix D.

( YU Po-mei, Clarice )  
Building Authority

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**List of GFA Concessions**

		Practice Notes	Features subject to compliance with the pre-requisites in para. 6 & 7 of PNAP APP-151	Features subject to the overall cap of 10% in para.4 of PNAP APP-151
<b>Disregarded GFA under regulation 23(3)(b) of the Building (Planning) Regulations (B(P)R)</b>				
1.	Carpark and loading/unloading area excluding public transport terminus	PNAP APP-2 & APP-111		
2.	<b>Plant rooms and similar services</b>			
2.1	Mandatory feature or essential plant room, area of which is limited by respective PNAP or regulation, such as lift machine room, telecommunications and broadcasting (TBE) room, TBE room for access facilities for mobile services, rooftop telecommunications equipment room, intermediate telecommunications equipment room, refuse storage chamber, etc. <sup>(1)</sup>	PNAP APP-35 & APP-84		
2.2	Mandatory feature or essential plant room, areas of which is NOT limited by any PNAP or regulation, such as room occupied solely by fire service installations (FSI) and equipment, meter room, transformer room, potable and flushing water tank, etc. <sup>(2)</sup>	PNAP APP-2 & APP-42		
2.3	Non-mandatory or non-essential plant room, such as air conditioning (A/C) plant room, air handling unit (AHU) room, etc. <sup>(3)</sup>	PNAP APP-2 & APP-42	✓	✓
<b>Disregarded GFA under regulation 23A(3) of the B(P)R</b>				
3.	Area for picking up and setting down persons departing from or arriving at the hotel by vehicle	PNAP APP-40		
4.	Supporting facilities for a hotel	PNAP APP-40		
<b>Green Features under Joint Practice Notes (JPNs)</b>				
5.	Balcony for residential buildings	JPN1	✓	✓
6.	Wider common corridor and lift lobby	JPN1	✓	✓
7.	Communal sky garden	JPN1 & 2 PNAP APP-122	✓	
8.	Communal podium garden for non-residential buildings	JPN1	✓	
9.	Acoustic fin	JPN1	✓	
10.	Wing wall, wind catcher and funnel	JPN1	✓	
11.	Non-structural prefabricated external wall	JPN2	✓	✓
12.	Utility platform	JPN2	✓	✓
13.	Noise barrier	JPN2	✓	

<b>Amenity Features</b>				
14.	Caretakers' quarters, counter, office, store, guard room and lavatory for watchman and management staff and owners' corporation office	PNAP APP-42	✓	✓
15.	Residential recreational facilities including void, plant room, swimming pool filtration plant room, covered walkway, etc. serving solely the recreational facilities	PNAP APP-2, APP-42 & APP-104	✓	✓
16.	Covered landscaped and play area	PNAP APP-42	✓	
17.	Horizontal screen/covered walkway and trellis	PNAP APP-42	✓	✓ <sup>(10)</sup>
18.	Larger lift shaft	PNAP APP-89	✓	✓
19.	Chimney shaft	PNAP APP-2	✓	✓
20.	Other non-mandatory or non-essential plant room, such as boiler room, SMATV room <sup>(4)</sup>	PNAP APP-2	✓	✓
21.	Pipe duct, air duct and vertical riser for mandatory feature or essential plant room <sup>(5)</sup>	PNAP APP-2, APP-84 & APP-93		
22.	Pipe duct, air duct for non-mandatory or non-essential plant room <sup>(6)</sup>	PNAP APP-2	✓	✓
23.	Plant room, pipe duct, air duct for environmentally friendly system and feature <sup>(7)</sup>	PNAP APP-2	✓	
24.	High headroom and void in front of cinema, shopping arcade etc. in non-domestic development <sup>(8)</sup>	PNAP APP-2	✓	
25.	Void over main common entrance (prestige entrance) in non-domestic development	PNAP APP-2 & APP-42	✓	✓
26.	Void in duplex domestic flat and house	PNAP APP-2	✓	✓
27.	Sunshade and reflector	PNAP APP-19, APP-67 & APP-156		
28.	Projecting planters and minor projection such as A/C box, A/C platform <sup>(9)</sup> , window cill, projecting window	PNAP APP-19 & APP-42		
29.	Other projection such as A/C box and A/C platform not covered in paragraph 3(b) and (c) of PNAP APP-19, and maintenance walkway	PNAP APP-19	✓	✓
<b>Other Items</b>				
30.	Refuge floor including refuge floor cum sky garden	PNAP APP-2 & APP-122		
31.	Covered area under large projecting/overhanging feature	PNAP APP-19		
32.	Public transport terminus	PNAP APP-2		
33.	Party structure and common staircase	PNAP ADM-2		
34.	Horizontal area of staircase, lift shaft and vertical duct solely serving floor accepted as not being accountable for GFA	PNAP APP-2		
35.	Public passage	PNAP APP-108		
36.	Covered setback area	PNAP APP-152		

<b>Bonus GFA</b>				
37.	Bonus GFA	PNAP APP-108		
<b>Additional Green Features under JPN</b>				
38.	Buildings adopting Modular Integrated Construction	JPN8		

- Note<sup>(1)</sup> : Mandatory feature or essential plant room, area of which is limited by respective PNAP or regulation, include duct for basement smoke extraction system, lift machine room, TBE room, TBE room for access facilities for mobile services, rooftop telecommunications equipment room, intermediate telecommunications equipment room, refuse storage chamber, refuse storage and material recovery chamber, material recovery chamber, refuse storage and material recovery room, or similar feature/plant room, and pipe and air ducts which are part of the distribution network for such mandatory feature or essential plant and contained within such room.
- Note<sup>(2)</sup> : Mandatory feature or essential plant room, area of which is NOT limited by any PNAP or regulation\*, include electrical switch room, meter room, transformer room, generator room, potable and flushing water tank and pump room, sewage treatment plant room, refuse chute, refuse hopper room, room occupied solely by FSI and equipment such as fire service/sprinkler water tank and pump room, fire control centre, CO<sub>2</sub> room, fan for smoke extraction system/ staircase pressurization system, hose reel closet, sump pump room/pump room for rainwater, soil and waste disposal, or similar feature/plant room and pipe and air ducts which are part of the distribution network for such mandatory feature or essential plant and contained within such room.
- Note<sup>(3)</sup> : Non-mandatory feature or non-essential plant room, area of which may be disregarded under regulation 23(3)(b) of the B(P)R, include plant room occupied solely by machinery or equipment for A/C or heating system such as A/C plant room, AHU room, or similar plant room, and pipe and air ducts which are part of the distribution network for such feature or plant and contained within such room.
- Note<sup>(4)</sup> : Other non-mandatory feature or non-essential plant room, area of which may be exempted under regulation 23(3)(a) of the B(P)R, include hot water boiler room, filtration plant room for swimming pool in a hotel or for a water feature in a communal garden/landscape area, SMATV room, or similar plant room, and pipe and air ducts which are part of the distribution network for such feature or plant and contained within such room.
- Note<sup>(5)</sup> : Pipe duct, air duct and vertical riser for mandatory feature or essential plant room include pipe duct for rainwater, soil and waste disposal and individual pipe and air ducts which are part of the distribution network for such mandatory feature or essential plant as described in notes 1 and 2 above, and located outside such plant room.
- Note<sup>(6)</sup> : Pipe duct, air duct for non-mandatory feature or non-essential plant room include individual pipe and air ducts which are part of the distribution network for such non-mandatory feature or non-essential plant as described in notes 3 and 4 above and located outside such plant room.



- Note <sup>(7)</sup> : Plant room for environmentally friendly system and feature, area of which may be exempted under regulation 23(3)(a) of the B(P)R includes plant room for rainwater harvesting/grey water recycling system, battery room for solar panels, or similar system/feature, and pipe and air ducts which are part of the distribution network for such system and feature.
- Note <sup>(8)</sup> : High headroom and void in front of cinema, shopping arcade etc. in non-domestic development include void in front of cinema, theatre balcony, banking hall, shopping arcade, cockloft floor for storage within the ground storey in single-staircase building, auditorium, sports hall, school hall and religious institution that has operational justifications.
- Note <sup>(9)</sup> : It includes A/C platforms complying with Appendix B or Appendix C of the Code of Practice on Access for External Maintenance.
- Note <sup>(10)</sup> : Horizontal screen/covered walkway/trellis may be excluded from the overall cap on GFA concessions subject to provision of greenery to BA's satisfaction as stipulated under PNAP APP-42.
- \* Although the area of feature or plant room is not limited by any PNAP or regulation, only the minimum amount of GFA necessary for accommodating and maintaining the services and commensurating with the development would be allowed to be disregarded as stated in PNAP APP-2.

(Rev. 8/2024)

**Declaration on Annual Energy Use of a Building Development****建築發展項目每年能源消耗量聲明****Part I: Building Particulars****第一部：樓宇詳情**(a) Building name 樓宇名稱 (if known 如知悉): (English) \_\_\_\_\_ (中文) \_\_\_\_\_(b) Address of site 地盤地址: (English) \_\_\_\_\_

(中文) \_\_\_\_\_

(c) Lot number 地段編號: \_\_\_\_\_

(d) Type of building 樓宇類型:

\* Domestic Building 住宅樓宇 / Non-domestic Building 非住宅樓宇 / Composite Building 綜合用途樓宇

(e) Provision of Central Air Conditioning 提供中央空調 \*YES 是 / NO 否

(f) Provision of Energy Efficient Features 提供具能源效益的設施 \*YES 是 / NO 否

(g) Please list the \* proposed / installed Energy Efficient Features (add separate sheet if necessary)

請列出 \* 擬安裝／已安裝的具能源效益的設施 (如有需要, 請另頁說明)

English中文

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**Part II: Predicted Annual Energy Use<sup>①</sup> of the \* Proposed / Completed \* Building / Part of the Building****第二部：\* 擬興建／已竣工 \* 樓宇／樓宇部分預計每年能源消耗量<sup>①</sup>**

Type of Development 發展項目類型	Location 位置	Internal Floor Area Served (m <sup>2</sup> ) 使用有關裝置的內部樓面面積 (平方米)	Annual Energy Use of the Baseline Building <sup>②</sup> (m <sup>2</sup> /annum) 基線樓宇 <sup>②</sup> 每年能源消耗量 (平方米／年)		Annual Energy Use of the Proposed/Completed Building (m <sup>2</sup> /annum) 擬興建／已竣工樓宇每年能源消耗量 (平方米／年)	
			Electricity 電力 kWh 千瓦小時	Town Gas / LPG 煤氣／石油氣 unit 用量單位	Electricity 電力 kWh 千瓦小時	Town Gas / LPG 煤氣／石油氣 unit 用量單位
Domestic Development (excluding hotel) 住用發展項目 (不包括旅館)	Central building services installation <sup>③</sup> 中央屋宇裝備裝置 <sup>③</sup>					
Non-domestic Development <sup>④</sup> (including hotel) 非住用發展項目 <sup>④</sup> (包括旅館)	Podium(s) (central building services installation) 平台 (中央屋宇裝備裝置)					
	Podium(s) (non - central building services installation) 平台 (非中央屋宇裝備裝置)					

	Tower(s) (central building services installation) 塔樓（中央屋宇裝備裝置）					
	Tower(s) (non - central building services installation) 塔樓（非中央屋宇裝備裝置）					

**Note:** In general, the lower the estimated “Annual Energy Use” of the building, the more efficient the building is in terms of energy use. For example, if the estimated “annual energy use of the proposed building” is less than the estimated “annual energy use of the baseline building”, it means that the predicted use of energy is more efficient in the proposed building than in the baseline building. The larger the reduction, the greater the efficiency.

**註：** 一般而言，樓宇的預計每年能源消耗量愈低，其能源效益愈高。如擬建樓宇的預計每年能源消耗量低於基線樓宇，則表示擬建樓宇較基線樓宇有更高的能源效益。削減幅度愈大，能源效益愈高。

### Part III 第三部

The following installation(s) \* is / are \* designed / completed in accordance with the relevant Codes of Practice published by the Electrical and Mechanical Services Department:-

以下裝置按機電工程署公布的相關實務守則設計／完成：

Type of Installations 裝置類型	YES 是	NO 否	N/A 不適用
Lighting Installations 照明裝置			
Air Conditioning Installations 空調裝置			
Electrical Installations 電力裝置			
Lift & Escalator Installations 升降機及自動梯裝置			
Performance-based Approach 以成效為本的方法			

Please (✓) where appropriate 請在適當方格內填上(✓)號

\_\_\_\_\_  
Signature 簽署#  
(Registered Professional Engineer 註冊專業工程師 /  
Registered Energy Assessor 註冊能源效益評核人)

\_\_\_\_\_  
Certificate of Registration No. 註冊證書編號#

\_\_\_\_\_  
Date of expiry of registration 註冊屆滿日期#

\_\_\_\_\_  
Signature 簽署#  
(Authorized Person 認可人士)

\_\_\_\_\_  
Certificate of Registration No. 註冊證書編號#

\_\_\_\_\_  
Date of expiry of registration 註冊屆滿日期#

\_\_\_\_\_  
Company Chop 公司印章 / Signature of applicant 申請人簽署

\_\_\_\_\_  
Date 日期

# In accordance with the registration record 與註冊記錄相符

\* Delete whichever is inapplicable 請刪去不適用者

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- ① The predicted annual energy use per m<sup>2</sup>, in terms of electricity consumption (kWh) and town gas/LPG consumption (unit) of the development by the internal floor area served, where:-  
預計每年每平方米的能源消耗量，以發展項目的耗電量（千瓦小時）及煤氣／石油氣消耗量（用量單位）除以使用有關裝置的內部樓面面積所得，其中：
- (a) “total annual energy use” has the same meaning of “annual energy use” under the BEAM Plus for New Building (current version); and  
“每年總能源消耗量”與新建建築的綠建環評標準（現行版本）中的「年度能源使用量」具有相同涵義；及
- (b) “internal floor area”, in relation to a building, a space or a unit means the floor area of all enclosed space measured to the internal faces of enclosing external and/or party walls.  
樓宇、空間或單位的“內部樓面面積”，指量度至圍封外牆及／或共用牆內壁之內的所有圍封空間樓面面積。
- ② “Baseline Building” has the same meaning as “Baseline Building Model” under the BEAM Plus for New Building (current version).  
“基線樓宇”與新建建築的綠建環評標準（現行版本）中的“基線建築模型”具有相同涵義。
- ③ “Central Building Services Installation” has the same meaning as that in the Code of Practice for Energy Efficiency of Building Services Installation issued by the Electrical and Mechanical Services Department.  
“中央屋宇裝備裝置”與機電工程署發出的《屋宇裝備裝置能源效益實務守則》中的涵義相同。
- ④ Podium(s) normally means the lowest part of the development (usually the lowest 15m of the development and its basement, if any) carrying different use(s) from that of the tower(s) above. For development without clear demarcation between podium(s) and tower(s), the development, as a whole, should be considered as tower(s).  
平台一般指發展項目最低的部分，通常為發展項目最低15米的部分及地庫（如適用），用途與上層的塔樓不同。如發展項目無明確劃分平台與塔樓，整個項目應視為塔樓。

(Rev. 9/2023)

### **Specific Standards on Quality Built Environment**

According to the enhanced GFA concession mechanism, if a project can only achieve “Anticipated Silver” or “Anticipated Bronze” rating in the Compliance Assessment (CA) under the BEAM Plus NB, it may still apply for GFA concession for its green/amenity features and non-mandatory/non-essential plant rooms and services if it can demonstrate compliance with one (for “Anticipated Silver” rating) or two (for “Anticipated Bronze” rating) specific standards which promote a quality built environment. Such specific standards include:

- (a) enhanced greenery provision;
- (b) health and well-being;
- (c) enhanced natural ventilation;
- (d) adoption of Building Information Modelling (BIM) in plan submission; and
- (e) adoption of multi-trade integrated mechanical, electrical and plumbing in building services (MiMEP).

2. The provision of the selected specific standards<sup>1</sup> should be stated in the general building plans (GBP). In addition, compliance with the specific standards on quality built environment under paragraph 6(d) of this PNAP should be demonstrated at appropriate stage of a development as follows:

	<b>Application for approval of plans</b>	<b>Prior to application of first super-structure consent</b>	<b>Prior to application of occupation permit</b>	<b>Detailed requirements</b>
<b>(a) Enhanced Greenery Provision</b>	Demonstrate compliance in GBP.	-	Relevant letter of undertaking registered in the Land Registry, if applicable.	Appendix C1
<b>(b) Health and Well-Being</b>	Relevant letter of undertaking, if applicable.	-	(i) Demonstrate compliance in GBP and submit relevant documents, if applicable; and	Appendix C2

<sup>1</sup> The selection of specific standards can be changed at any time before application for occupation permit.

	<b>Application for approval of plans</b>	<b>Prior to application of first super-structure consent</b>	<b>Prior to application of occupation permit</b>	<b>Detailed requirements</b>
			(ii) Relevant letter of undertaking registered in the Land Registry, if applicable.	
<b>(c) Enhanced Natural Ventilation</b>	Demonstrate compliance in GBP on design of light well, if applicable.	-	(i) Demonstrate extent of compliance with NV <sub>TC</sub> ; and (ii) Undertaking letter relevant to light well registered in the Land Registry, if applicable.	Appendix C3
<b>(d) Adoption of BIM</b>	Submit BIM models for all GBP (in Stage II amendment submission) and superstructure plans (framing plans only) (in any submission prior to the application for consent to commence the superstructure works), and for all subsequent amendment submissions.	-	Submit BIM model with drainage layout floor plans showing drainage works as completed.	Appendix C4
<b>(e) Adoption of MiMEP</b>	-	Submit calculations based on the preliminary design.	Submit final calculations and photo records showing MiMEP as completed.	Appendix C5

(9/2023)

## Enhanced Greenery Provision

### Background

One of the requirements of the Sustainable Building Design Guidelines (SBDG) as promulgated in PNAP APP-152 is site coverage of greenery (SCG). This specific standard serves to enhance the provision of greenery in a development project on top of the requirements of SCG under PNAP APP-152.

### Requirements

2. This specific standard comprises three types of **specific greening features** namely, (i) skyrise greening, (ii) green buffer and (iii) tree cluster. The adoption of this specific standard should comply with the following requirements:

	Minimum additional greenery area over the SCG requirement	Minimum type of specific greening feature(s) to be provided
Site area < 1 000m <sup>2</sup>	5% of site area	1
Site area ≥ 1 000m <sup>2</sup> & < 20 000m <sup>2</sup>	5% of site area	2
Site area ≥ 20 000m <sup>2</sup>	7.5% of site area	2

3. For the avoidance of doubt, there is no minimum requirement on the percentage of greenery area to be provided by each type of specific greening feature. In addition, any greenery area provided over and above the SBDG under PNAP APP-152 will be included in the calculation of the above additional greenery area over the SCG requirement.

4. In case of a small site not exceeding 1 000m<sup>2</sup> and complying with the alternative approach of the building setback requirement<sup>1</sup>, the requirement on additional 5% greenery area can be waived if either the specific greening feature of green buffer or tree cluster is provided.

5. The SCG requirements and measurement guidelines stipulated in Appendix D of PNAP APP-152 are applicable to the specific greening features. The design requirements of the three specific greening features are specified in paragraphs 6 to 10 below.

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<sup>1</sup> According to paragraph 10 of Appendix E to PNAP APP-152, for small sites not exceeding 1 000m<sup>2</sup>, requirement for building setback may be relaxed if full height and full frontage setback area of not less than 15% of the site area is provided together with greenery of not less than 50% of such setback area provided at the Primary Zone.

## Additional Design Requirements on Specific Greening Features

### *Skyrise Greening*

6. Skyrise greening refers to greening above primary zone<sup>2</sup> which covers:
- (a) Vertical greening in the form of metal supporting frames for growing of plants (including vertical frame for climbing and/or weeping plants and panel/modular planters);
  - (b) Planter projecting from the external wall<sup>3</sup>.
7. Skyrise greening projecting from external wall should follow the respective requirements stipulated in paragraphs 3(n) and 9 of PNAP APP-19 and Appendix D of PNAP APP-152.

### *Green Buffer*

8. In order to improve the urban environment at street level, tree planting along the site boundary abutting a street should be encouraged. The specific greening feature of green buffer should comply with the following requirements:
- (a) A strip of greenery of not less than **2m wide** comprising **tree pits**<sup>4</sup>, should be provided along one of the street frontages (i.e. the full length of a site boundary abutting a street). Hard paving is allowed for points providing vehicular or pedestrian access such as means of access, means of escape and entrance. A sample is provided in Diagram 1 for reference;
  - (b) **Every tree pit** should be provided with **6m<sup>2</sup>** greenery area (including the area of the tree pit) and **at least 1 tree pit with 6m<sup>2</sup> greenery area** should be provided under this specific greening feature. A sample is provided in Diagram 2 for reference; and
  - (c) Zero irrigation system should be adopted. Samples are provided in Diagrams 3 and 4 for reference.
9. In recognition of the significant benefit to the street environment, **a multiplying factor of 2** in computing the greenery area of a green buffer is allowed.

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<sup>2</sup> There is an exception that for a building of a height not exceeding the primary zone, any vertical greening provided for such a building can be regarded as skyrise greening.

<sup>3</sup> If vertical frame for climbing and/or weeping plants is provided above the planter, the greenery areas should be measured as vertical greening in accordance with Appendix D of PNAP-152.

<sup>4</sup> A tree pit to be accepted for this specific greening feature should have internal dimensions of not less than 1.5m (W), 1.5m (L) and 1.2m (D).



### ***Tree Cluster***

10. Tree planting can provide localised thermal relief in an urban environment and should therefore be encouraged. The specific greening feature of tree cluster should comply with the following requirements:

- (a) At least **two adjoining tree pits**<sup>4</sup> should be provided in the open area on grade or on roofs at the primary zone (including sunken/semi-sunken plaza);
- (b) Every tree pit should be provided with 6m<sup>2</sup> greenery area (including the area of the tree pit) and the minimum greenery area to be provided by **a tree cluster is 12m<sup>2</sup>**; and
- (c) Zero irrigation system should be adopted.

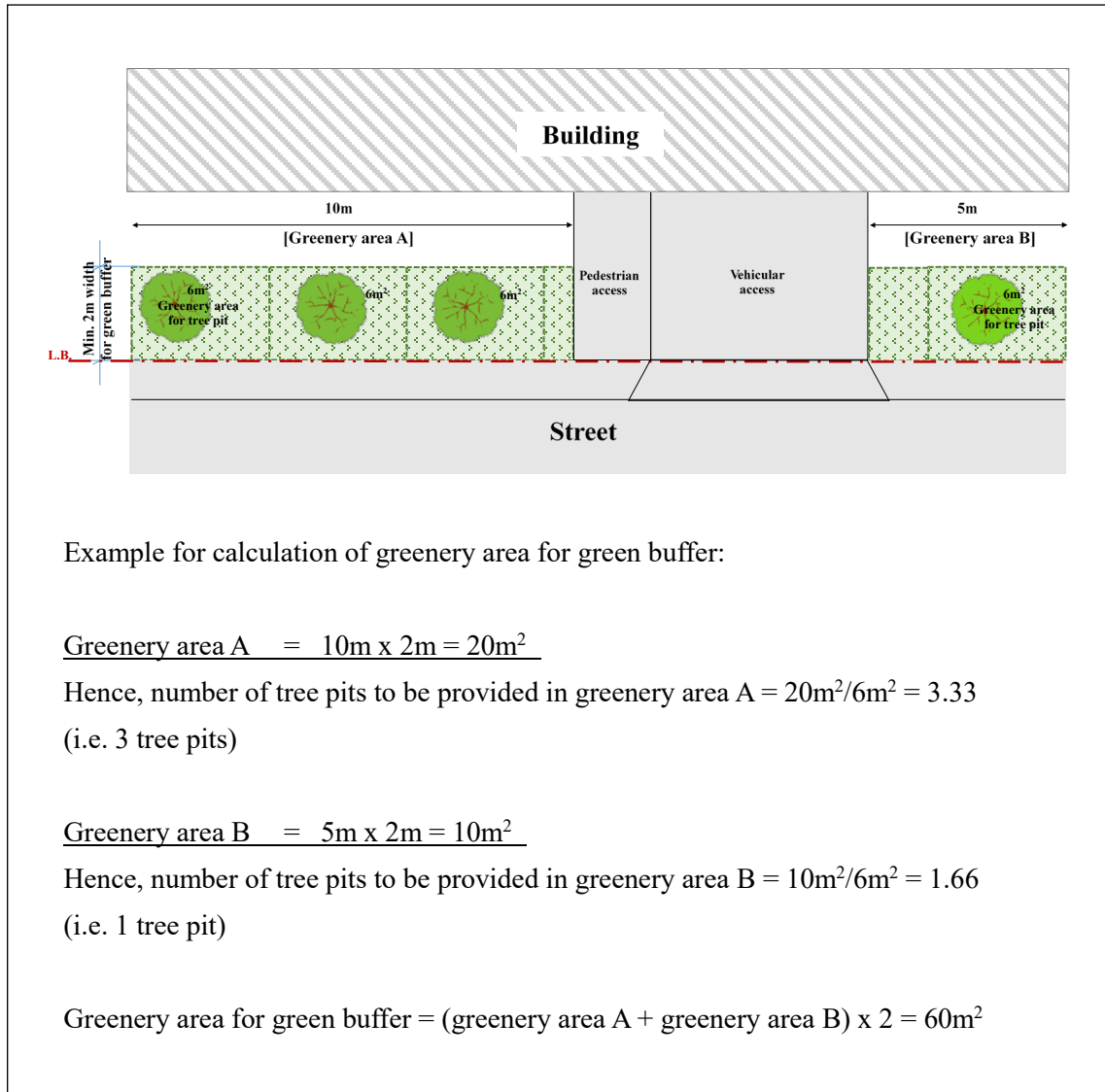


Diagram 1 – Sample of green buffer along the site boundary

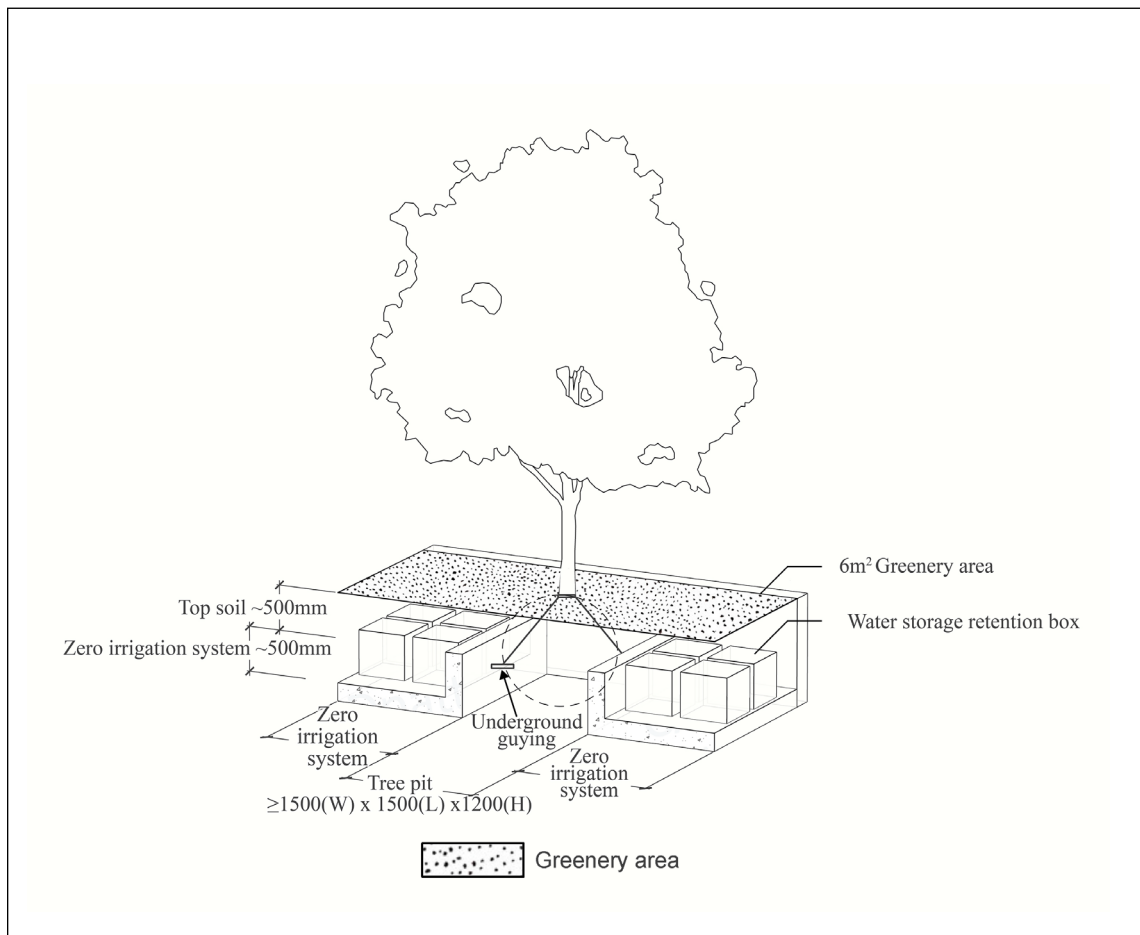


Diagram 2 – Sample of tree pit with zero irrigation system

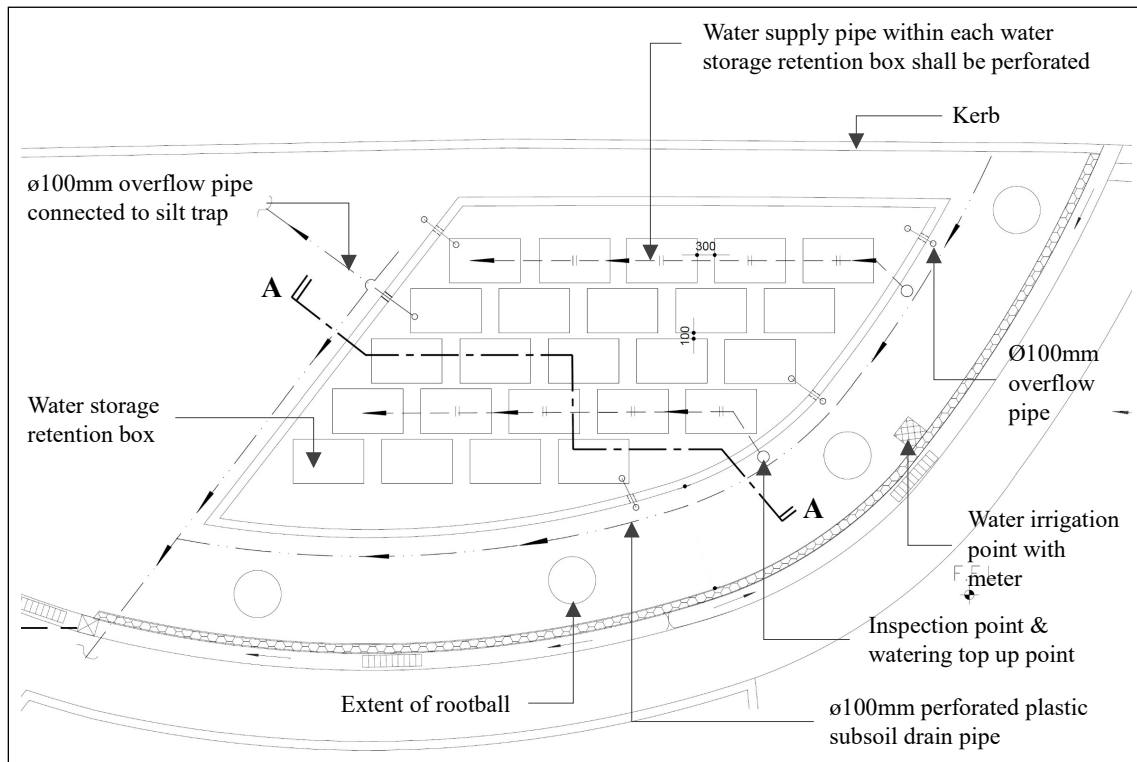


Diagram 3 – Sample of zero irrigation system

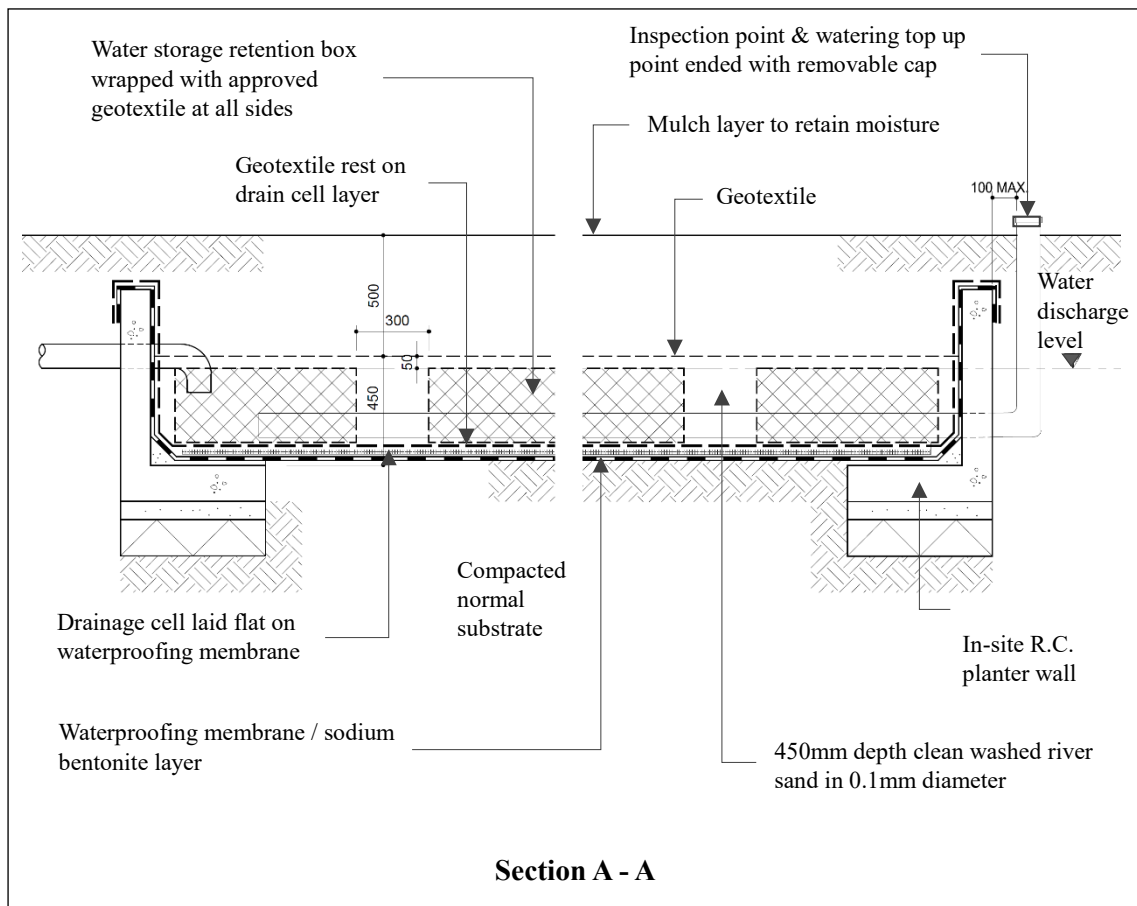


Diagram 4 – Sample of zero irrigation system

(9/2023)

## **Health and Well-Being**

### **Background**

It is the Government's policy to build a quality living environment for our people. This specific standard on "Health and Well-being" is devised to advance such purpose.

### **Requirements**

2. There are in total 17 features under this specific standard and the detailed design requirements are provided in paragraphs 4 to 22 below. Their applicability<sup>1</sup> in respect of types of buildings are specified in Table 1. Provision of **any five or more** of these features would be considered as complying with this specific standard.

3. The provision of the selected features should be stated on the general building plans (GBP). The compliance of the detailed design requirements should be demonstrated in GBP prior to application for occupation permit, except for situations specified in paragraph 19 and 20 below. When granting modifications under section 42 of the Buildings Ordinance (BO) for gross floor area (GFA) concession, the Building Authority (BA) may impose, but not limited to, the condition that the letter of undertaking for provision of these features<sup>2</sup>, submitted by the developer or owner in support of the application for GFA concession, should be registered in the Land Registry before applying for the occupation permit. Failure to comply with the condition would render the modification invalid.

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<sup>1</sup> The features should be located at the common parts of the building except those specified in Table 1.

<sup>2</sup> Undertaking letter should be submitted by the developer or owner to designate the features as common parts in the Deed of Mutual Covenant (DMC) with details of the use and location clearly indicated. Such DMC should contain binding and enforceable terms and conditions included for the control, management and maintenance of the facilities where applicable, of such features. Where no DMC is to be in force for a development, such designation shall be incorporated into the Sales and Purchase Agreement, Assignment, Tenancy Agreement or conveyancing document such that the future owners or tenants are aware of their rights and liabilities (if applicable).

## **Design Requirements of the Features**

### ***Feature 1 – Automatic door to main entrance***

4. Automatic door should be provided to all main entrances which are commonly used by the public, of sports stadium, town hall, civic centre, theatre, museum, public library, shopping complex, sports complex, public swimming pool complex, office building, hotel, hospital, residential home for the elderly, welfare centre and transport station and interchange. For other types of buildings, at least one of the main entrances of the building should be provided with an automatic door. The minimum clear width of the automatic door should be 850mm. With reference to paragraph B(d) of Division 10 of the Design Manual: Barrier Free Access 2008 (DMBFA), the concerned automatic door should comply with the following requirements:

- (a) remain open for a minimum of 5 seconds;
- (b) have a guardrail where it opens into a route of travel;
- (c) have a sign showing automatic door; and
- (d) provided with an overhead sensor operating device or manual large button control. For swing door, such device/control should be actuated by user outside the door swing.

### ***Feature 2 – Automatic door to accessible toilet***

5. For all the accessible toilets located at the common parts of a building, the doors of such toilets and those leading to such toilets at the common parts should be automatic ones. In addition, the concerned automatic door should comply with the following requirements:

- (a) The requirements in paragraph 4 (a) to (d) above; and
- (b) Subsection B13 and C16 of the Code of Practice for Fire Safety in Buildings 2011 (FS Code) for fire rated doors located in the protected corridor and lobby.

### ***Feature 3 – Internal circulation staircase***

6. At least one internal staircase in a conspicuous and accessible location connecting two or more floors, which may or may not be a required staircase, complying with the following<sup>3</sup> requirements should be provided (paragraphs B(a) and (b) of Division 7 of the DMBFA are relevant):

- (a) Height of risers should not exceed 150mm and depth of treads should not be less than 300mm, or in the case of a school or a kindergarten, the depth of treads should not be less than 250mm; and

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<sup>3</sup> The requirements in paragraph 6(a) & (b) should be applicable to the entire staircase.

- (b) Individual flights should not exceed 1 800mm in height, and should not exceed a total of 12 risers.

***Feature 4 – Resting facilities in long corridors or passages***

7. All communal corridors and passages<sup>4</sup> more than 50m in length measured along the centerline should be provided with at least two resting facilities (i.e. seats including fold-down seats or lean-on railings). Such resting facilities should not be more than 50m apart, measuring along the centerline of the corridor or passage. Such resting facilities should not reduce the statutory requirements on the clear width of exit/access and manoeuvring space and should not cause obstruction to exit, access and circulation routes.

***Feature 5 – Resting facilities for passenger lifts***

8. For all passenger lifts excluding fireman's lifts of a building, resting facilities (i.e. seats including folding seats or lean-on railings) should be provided within the lift cars or alternatively, at all the lift lobbies<sup>5</sup> serving such lifts.

***Feature 6 – Additional lift control buttons and mirror in accessible lifts***

9. Additional lift control buttons and mirror specified in the recommended design requirements in paragraphs B(ba) and (i) of Division 19 of the DMBFA should be provided to all accessible lifts of the building. To avoid confusion to users, this feature is not applicable to tall buildings with essential lift control buttons already being split into 2 or more sets in order to fulfill the requirements in paragraph 80(1) of Division 19 of the DMBFA.

***Feature 7 – Enlarged fireman's lift for ambulance operation***

10. To cater for the use of a stretcher, all fireman's lifts should comply with the following:

- (a) Lift car should have minimum internal clear dimensions of 1.6m x 1.5m;
- (b) Lift car door should have minimum clear width of 800mm; and
- (c) All the lobbies to the fireman's lifts should be of a minimum dimension of 1.8m on plan.

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<sup>4</sup> Include corridor and passage in shopping arcade and landscaped area in recreational facilities or podium garden but exclude the common corridor in typical floor for residential flats or office units and those serving plant room, back of house and car parking spaces.

<sup>5</sup> Resting facilities may be provided if the lift lobbies serve both passenger lifts and fireman lift subject to the compliance with Clause D11.1 or D16.1(a) of the FS Code.

### ***Feature 8 – Charging of electric wheelchair***

11. At least one charging point of minimum dimension of 1.5m x 1.5m on plan should be provided per 1 000m<sup>2</sup> of usable floor area of the premises, or at least five charging points should be provided to premises with more than 5 000m<sup>2</sup> of usable floor area. The charging point(s) should be located at a conspicuous location at the common parts of the building (e.g. information counter of shopping arcade or reception at the main lobby, etc.) not within any protected exits. The location(s) should be shown in the braille and tactile floor plan under paragraph 69(2) of DMBFA.

### ***Feature 9 – Fitness facility for the elderly***

12. A recreational space of at least 25m<sup>2</sup> for group exercise/activities and another adjoining recreational space of suitable size to place at least two fitness equipment for the elderly should be provided at the common parts of the building, e.g. residents' recreational facilities or covered landscaped area.

### ***Feature 10 – Fitness facility at places of work***

13. A jogging path of at least 100m in length or a recreational space of at least 25m<sup>2</sup> for group exercise/activities; and another adjoining recreational space of suitable size to place at least two fitness equipment should be provided at the common parts of the building that is readily accessible by all employees.

### ***Feature 11 – Elderly friendly facilities in toilets***

14. At least one cubicle in each communal toilet<sup>6</sup> should be provided with elderly friendly facilities including:

- (a) Grab bars on both sides of the cubicle;
- (b) Emergency call buttons complying with Division 17 of DMBFA in the cubicle;
- (c) Hands-free sensor type toilet flush;
- (d) Holding device for walking sticks and bags;
- (e) Minimum internal width 900mm and door width 800mm;
- (f) Adequate manoeuvring space of 300mm diameter; and
- (g) A sign installed outside showing the cubicle is equipped with elderly friendly facilities.

A sample is shown in Diagram 1.

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<sup>6</sup> Not including an accessible toilet.



### ***Feature 12 – Child-friendly facilities in toilets***

15. At least one cubicle in each communal toilet<sup>7</sup> should be provided with a child protection seat with safety belt and a sign installed outside showing the cubicle is equipped with such seat. The provision should be counted and provided separately for male and female toilets. A sample is shown in Diagram 2.

16. For every 20 water closets provided in the male or female communal toilets, sanitary fitments for use by children including at least one water closet, one urinal (for male toilets only) and one basin should be provided. The provision should be counted and provided separately for male and female toilets. If more than one set of such sanitary fitments is required, they should be evenly distributed amongst the communal toilets as far as possible (e.g. for 45 water closets provided in six female communal toilets located in three storeys, two sets of sanitary fitments for use by children should be provided in two of the female communal toilets located in two different storeys). Also, such sanitary fitments for use by children should not be counted for meeting the prescribed requirements under Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations.

### ***Feature 13 – Family toilet***

17. At least one family toilet should be provided for the building. A family toilet should be equipped with an adult water closet, a child water closet, a child basin, a diaper changing station, a child protection seat and adequate park area for baby carriage. The sanitary fitments for use by children should not be counted for meeting the prescribed requirements under Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations. For avoidance of doubt, a family toilet should not be counted as the accessible toilet required under the Building (Planning) Regulations.

### ***Feature 14 – Baby care room***

18. At least two baby care rooms (one for single and one for multiple users) should be provided for the building. The design should comply with the detailed requirements set out in PNAP ADV-32.

### ***Feature 15 – Lactation room***

19. At least one lactation room should be provided for the building. The design should comply with the detailed requirements set out in PNAP ADV-32.

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<sup>7</sup> Not including an accessible toilet.

### ***Feature 16 – Larger residential units***

20. At least 80% of the residential units<sup>8</sup> in the building development should be of saleable area not less than 26 m<sup>2</sup>. When proposing to adopt this feature of health and well-being, the developer or owner should submit an undertaking letter for compliance with the requirement when applying for GFA concession. The developer or owner should submit a confirmation letter certified by the authorized person stating the percentage of the residential units in the building development with saleable area not less than 26 m<sup>2</sup> prior to application for occupation permit.

### ***Feature 17 – Adaptive design of residential units***

21. At least 50% of the residential units in the building development should comply with, or be convertible without alteration of structural elements to a layout complying with the following requirements for convenient use by persons with disability:

- (a) A clear manoeuvring space of 1.5m diameter measured with doors closed should be provided at the flat entrance inside the flat, within the kitchen and at least one bedroom and one bathroom;
- (b) Door opening should have a clear width of 850mm for the abovementioned rooms;
- (c) Corridors leading to the abovementioned rooms should have a clear width of 1.2m measured with doors closed;
- (d) Swinging doors, including the unit entrance door, should comply with paragraph 39 of the DMBFA; and
- (e) There should be no thresholds at the entrances of bathrooms and shower compartments. Adequate drainage channels should be provided outside the shower to prevent egress of water.

22. The units complying with the above requirements should be listed and indicated on the GBP. The indicative layout showing feasible conversion in compliance with the above requirements should be submitted (need not be shown in the GBP) prior to application for occupation permit. A sample is provided at Diagram 3.

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<sup>8</sup> “Residential units” here means flats in a domestic building as defined in section 2(1) of the BO but does not include those premises having an air-conditioning operation profile not similar to that of a normal domestic household, such as hotel, guesthouse or residential care home for the elderly/persons with a disability.

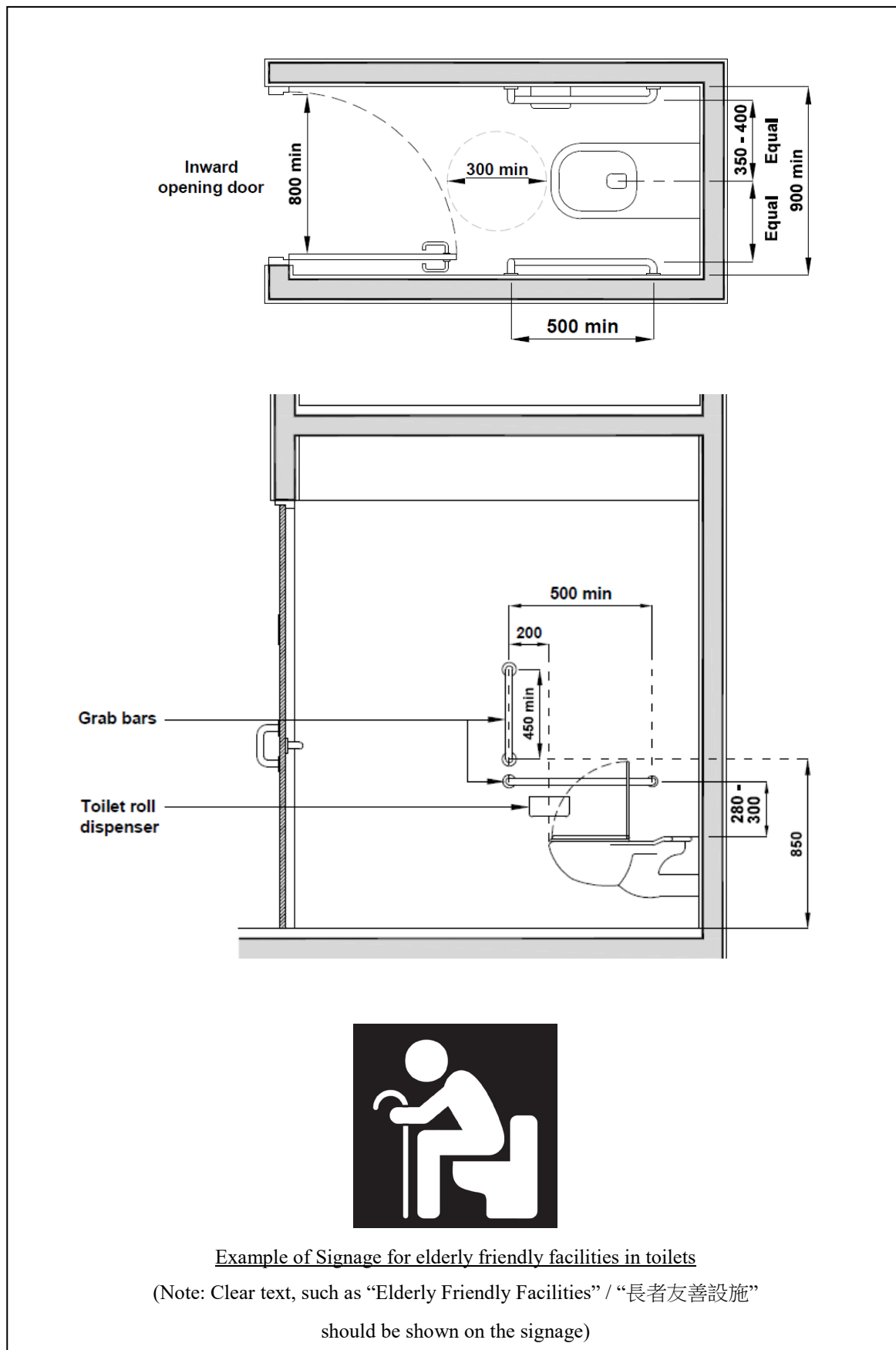


Diagram 1

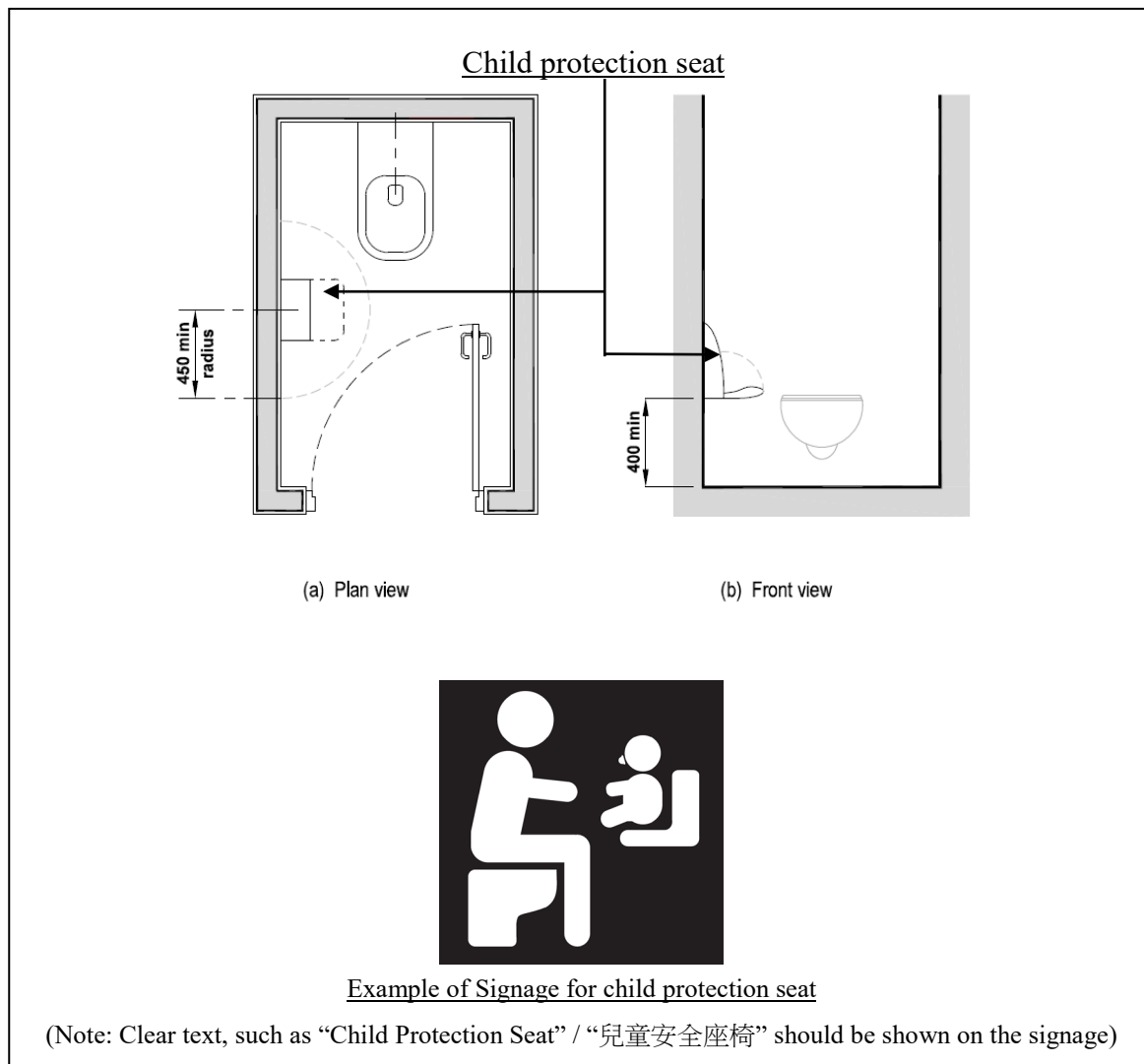


Diagram 2

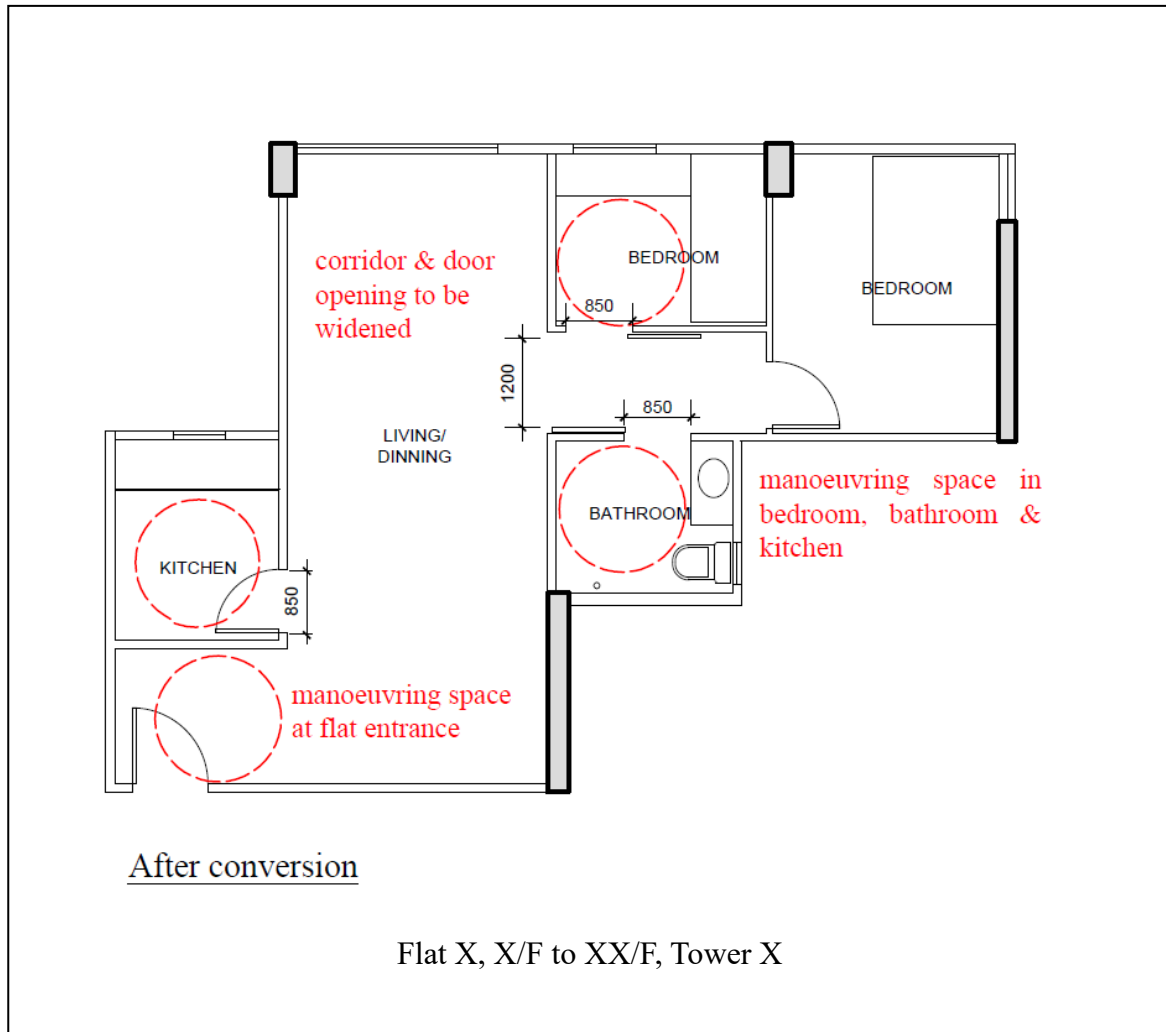


Diagram 3

**Table 1 – Extent of Application**

“Y” denotes “Applicable”

“-” denotes “Not Applicable”

		Domestic	Residents' recreational facilities in Domestic building	Office	Department Store, Shopping Complex, Restaurant, Food Court and Supermarket	Hotel, Guesthouse and Hostel	Place of Worship	Cinema, Theatre, Concert Hall, Stadium, Museum, theme Park and purpose-built Family Amusement Centre, Club House	School, College and University	Factory, Workshop and Place for Industrial Use	Public Library, Sports Complex and Public Swimming Pool Complex	Hospital and purpose-built Clinic	Residential Home for Elderly and Welfare Centre	Transport Station, Interchange, Passenger Terminal
1	Automatic door to main entrance	Y	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
2	Automatic door to accessible toilet	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
3	Internal circulation staircase	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4	Resting facilities in long corridor or passage	Y	Y	-	Y	Y	Y	Y	-	-	Y	Y	Y	Y
5	Resting facilities for passenger lifts	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
6	Additional lift control buttons and mirror in accessible lifts	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
7	Enlarged fireman's lift for ambulance operation	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
8	Charging of electric wheelchair	-	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
9	Fitness facility for elderly	Y	Y	-	-	-	-	-	-	-	-	-	Y	-
10	Fitness facility at place of work	-	-	Y	-	-	-	-	-	Y	-	-	-	-
11	Elderly-friendly facilities in toilets	-	Y	-	Y	Y	Y	Y	-	-	Y	Y	Y	Y
12	Child-friendly facilities in toilets	-	Y	-	Y	Y	Y	Y	-	-	Y	Y	-	Y
13	Family toilet	-	Y	-	Y	Y	Y	Y	-	-	Y	-	-	Y
14	Babycare room	-	Y	-	Y	Y	Y	Y	-	-	Y	Y	-	Y
15	Lactation room	-	Y	Y	-	Y	-	-	-	Y	-	-	-	-
16	Larger residential units*	Y	-	-	-	-	-	-	-	-	-	-	-	-
17	Adaptive design of residential units*	Y	-	-	-	-	-	-	-	-	-	-	-	-

*\*Need not be located at the common parts of the building*

(9/2023)

## **Enhanced Natural Ventilation for Residential Buildings**

### **Background**

Sufficient natural ventilation could prevent the accumulation of air pollutant and enhance thermal comfort, thus improving the sanitary conditions, energy efficiency and sustainability of the living environment.

### **Requirements**

2. The requirements of the specific standard on enhanced natural ventilation in residential buildings<sup>1</sup> are as follows:

- (a) At least **50%** of the area of all habitable spaces of each and every residential building in the development shall comply with Section 3 of the “Guidelines on Design and Construction Requirements for Energy Efficiency of Residential Buildings” (Guidelines) on NV<sub>TC</sub>; and
- (b) Where light well is provided in a residential building for the purpose of compliance with regulation 36 of the Building (Planning) Regulations, the following additional requirements shall be complied with:
  - (i) The bottom of the light well should be fully opened. The floor below should be fully opened on at least two sides with aggregate opening area of not less than that of the horizontal area of the light well for providing ventilation through draught effect;
  - (ii) Other than pipe works and maximum 100mm window heads/sills, no projection should be installed inside the light well;
  - (iii) There should be no exhaust outlet (other than exhaust from the relevant toilet/bathroom) or other pollutant discharging into the light well. Also, no windows other than that for the toilets/bathrooms should open to the light well. Lastly, no fresh air intake for mechanical ventilation should be drawn from the light well; and

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<sup>1</sup> “Residential building” in the context of this specific standard means a domestic building or domestic part of a composite building as defined in section 2(1) of the Buildings Ordinance but does not include those premises having an air-conditioning operation profile not similar to that of a normal domestic household, such as hotel, guesthouse, residential care home for the elderly/persons with a disability.

- (iv) The light well and the required open area of the floor below should be designated as common parts in the Deed of Mutual Covenant (DMC), which should also specify that no combustible installation should be added inside the light well<sup>2</sup>.

3. In order to comply with this specific standard, the NV<sub>TC</sub> requirement in paragraph 2(a) above should be stated in the general building plans (GBP) and the compliance of any light well(s) with the requirements in paragraph 2(b) above should be demonstrated in the GBP when applying for GFA concession under PNAP APP-151. Demonstration of compliance with the NV<sub>TC</sub> requirements in paragraph 2(a) above in accordance with Appendix VI of the Guidelines should be submitted before application for occupation permit (OP). The letter of undertaking<sup>2</sup> should be registered in the Land Registry before application for OP, if applicable. The requirements in this paragraph would be imposed as a condition when granting GFA concession under section 42 of the Buildings Ordinance and failure to comply with this condition would render the modification invalid.

(9/2023)

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<sup>2</sup> Undertaking letter should be submitted by the developer or owner to designate the light well and the required open area of the floor below as common parts in the DMC with details of the use and location clearly indicated. Such DMC should contain binding and enforceable terms and conditions governing the control, management and maintenance of the facilities where applicable, of such areas. Where no DMC is to be in force for a development, such designation shall be incorporated into the Sales and Purchase Agreement, Assignment, Tenancy Agreement or conveyancing document such that the future owners or tenants are aware of their rights and liabilities.



## Adoption of Building Information Modelling (BIM)

### Background

BIM technology is identified as one of the key drivers to enhance architectural, engineering and construction industry practitioners to holistically manage information related to construction projects. Adopting BIM where appropriate from planning stage onwards could optimise project design development and site construction activities for the benefits of minimising abortive works and construction wastes on site, enhancing construction safety and optimising operation efficiency and thus improving the overall productivity.

2. BIM technology has been widely adopted in Government capital works projects<sup>1</sup>. Recognising the benefits of BIM technology, there is a need to encourage its adoption in private development projects.

### Requirements

3. For new building developments adopting this specific standard, the requirements are as follows:

- (a) Application for approval of **general building plans** and **superstructure plans (framing plans only)** should include the following:
  - (i) 3D BIM model representing the proposal; and
  - (ii) 2D prescribed plans which are directly generated from the BIM model that complies with the required standards;
- (b) The submission with BIM model for prescribed **general building plans** should be made in the **Stage II amendment submission** (paragraph 16 of PNAP ADM-19 refers) and **for all subsequent amendment submissions**;
- (c) The submission with BIM model for prescribed **superstructure plans (framing plans only)** should be made in **any submission prior to the application for consent to commence the superstructure works** and **for all subsequent amendment submissions**. When the first submission of the BIM model is submitted, it should be accompanied by the full set of framing plans;

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<sup>1</sup> The Technical Circular (Works) No 2/2021 sets out the policy and requirements on the adoption of BIM technology in Government capital works projects as well as the sub-vented capital works projects and works that are undertaken by private parties but will be handed back to Government for maintenance.

- (d) The BIM models and prescribed plans in sub-paragraph (a) to (c) above should be prepared in accordance with relevant guidelines and standards published by the Buildings Department and the Construction Industry Council from time to time, including the “Guidelines for using Building Information Modelling” and “CIC BIM Standards for Preparation of Statutory Plan Submissions”; and
- (e) A 3D BIM model representing the **drainage works as completed** together with a set of 2D drainage layout floor plans generated from the BIM model should be submitted before the application for the occupation permit.

4. In order to comply with this specific standard, the adoption of BIM should be stated in the general building plans before or at the Stage II amendment submission. The requirements for submission of BIM model for the various kinds of plans or works in paragraph 3 above would be imposed as a condition when granting GFA concession under section 42 of the Buildings Ordinance and failure to comply with this condition would render the modification invalid.

(9/2023)

## **Adoption of Multi-trade Integrated Mechanical, Electrical and Plumbing (MiMEP)**

### **Background**

MiMEP refers to the integration of multi-trade building services components, into a single volumetric assembly of prefabricated modules, manufactured offsite in a workshop, then transported to the site for connection of modules to complete various trades of building services installations to minimise on-site works (i.e. plug and play concept). MiMEP can integrate with structural elements, architectural builders' works and finishes to form an advanced assembly, such as false ceiling unit and plant room unit to enhance the productivity.

2. MiMEP may contribute not only to enhancing the quality and safety of construction works and mitigating environmental impacts and waste generation, but also help relieving the challenges to the local building industry, including reduction of on-site labour demand and alleviating tight construction programme. The Government has advocated to promote such innovative construction initiative to enhance productivity and sustainable building developments.

### **Requirements**

3. To encourage the wider adoption of MiMEP, the adoption of this specific standard should comply with the following requirements:

- (a) The coverage of MiMEP should be **at least 50%** of the qualifying area of the building<sup>1</sup>;
- (b) The adoption of this specific standard should be stated in the general building plans when applying for GFA concession under PNAP APP-151. Calculations based on the preliminary design with indicative diagrams/ figures showing compliance with the MiMEP coverage should be submitted before application for the first consent for commencement of superstructure works; and
- (c) Final calculation and photo records showing the manufacturing of modules in the factory/workshop and the assembly of modules on site should be submitted before application for occupation permit.

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<sup>1</sup> Applicable to all building types, including domestic and non-domestic buildings. The methodology of calculation of MiMEP coverage is illustrated in paragraphs 6 to 14.

4. Authorized persons (AP) should consult registered professional engineers (RPE) under the Engineers Registration Ordinance of the relevant discipline in assessing the coverage of MiMEP and the submission in paragraph 3(c) above should be certified by the RPE.

5. The requirements in paragraphs 3 above would be imposed as a condition when granting GFA concession under section 42 of the Buildings Ordinance and failure to comply with this condition would render the modification invalid.

### **Calculation of MiMEP Coverage**

6. MiMEP modules should cover the following building services in a building:

- (a) fire services (e.g. FS pump sets, sprinkler pipework, riser main, etc.);
- (b) mechanical ventilation and air-conditioning (e.g. cooling towers, chillers, chilled water pumps, condenser water pumps, air handling units, air ductwork and water supply and return pipes, etc.);
- (c) plumbing (e.g. water services pump sets and pipe risers, etc.);
- (d) drainage (e.g. drainage pipes and risers, etc.);
- (e) electrical services (e.g. electrical cabling system and trunking, etc.) excluding transformer room/consumer substation and the like used by power companies; and
- (f) lift services (lift machine room) excluding lift shaft.

7. Provision of MiMEP should include the following categories:

- (a) plant room module;
- (b) plant/equipment module not housed in a dedicated room;
- (c) horizontal ceiling module; and
- (d) vertical riser module.

8. Examples of common types of MiMEP modules are listed in Table 1.

9. The coverage of MiMEP should be **at least 50%** of the qualifying area of the building calculated by the following formula:

$\text{MiMEP Coverage} = \frac{\text{Total Area with MiMEP adopted (m}^2\text{) [A]}}{\text{Total Qualifying Area (m}^2\text{) [B]}} \times 100\% > 50\%$
---

Total Area with MiMEP adopted [A] = (A1) + (A2) + (A3) + (A4)

(A1): Area of Plant Room Module

(A2): Area of Plant/Equipment Module not housed in a dedicated room

(A3): Area of Horizontal Ceiling Module

(A4): Area of Vertical Riser Module

Total Qualifying Area [B] = (B1) + (A2) + (A3) + (A4)

(B1): Qualifying Plant Room Area

**Plant Room Module** (see Diagram 1)

10. Area of Plant Room Module (A1) is:

- (a) The internal floor area<sup>2</sup> of a plant room if  $\geq 65\%$  of the major plant/equipment<sup>3</sup> (by nos.) in the plant room is MiMEP; or
- (b) In other cases, the total plan area of all MiMEP modules in a plant room, but not more than the internal floor area of the plant room.

11. Qualifying Plant Room Area (B1) is:

- (a) The internal floor area of all the plant rooms for the **listed building services mentioned in paragraph 6**; and
- (b) Excluding the area of lift machine room(s) without MiMEP module.

<sup>2</sup> “Internal floor area” means the floor area of all enclosed space measured to the internal faces of the enclosing walls.

<sup>3</sup> See Table 1 for examples, excluding their associated components, pipework, ducting, trunkings and fittings, etc.

***Plant/Equipment Module not housed in a dedicated room*** (see Diagram 2)

12. Area of Plant/Equipment Module not housed in a dedicated room (**A2**) (e.g. cooling tower module on roof) is the plan area of the module.

***Horizontal Ceiling Module*** (see Diagram 3)

13. Area of Horizontal Ceiling Module<sup>4,5</sup> (**A3**) is the plan area of the module.

***Vertical Riser Module*** (see Diagram 4)

14. Area of Vertical Riser Module<sup>6,7</sup> (**A4**) is the elevation area of the module, measured by multiplying the longest width and the longest height of the module.

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<sup>4</sup> The horizontal ceiling module should contain more than one type of the applicable building services as mentioned in paragraph 6.

<sup>5</sup> Exclude horizontal ceiling modules inside plant rooms.

<sup>6</sup> Exclude risers with one pipe/duct only, or 2 nos. of pipes/ducts and any of them less than 20mm dia.

<sup>7</sup> Exclude vertical riser modules inside plant rooms that are not housed in a pipe duct.

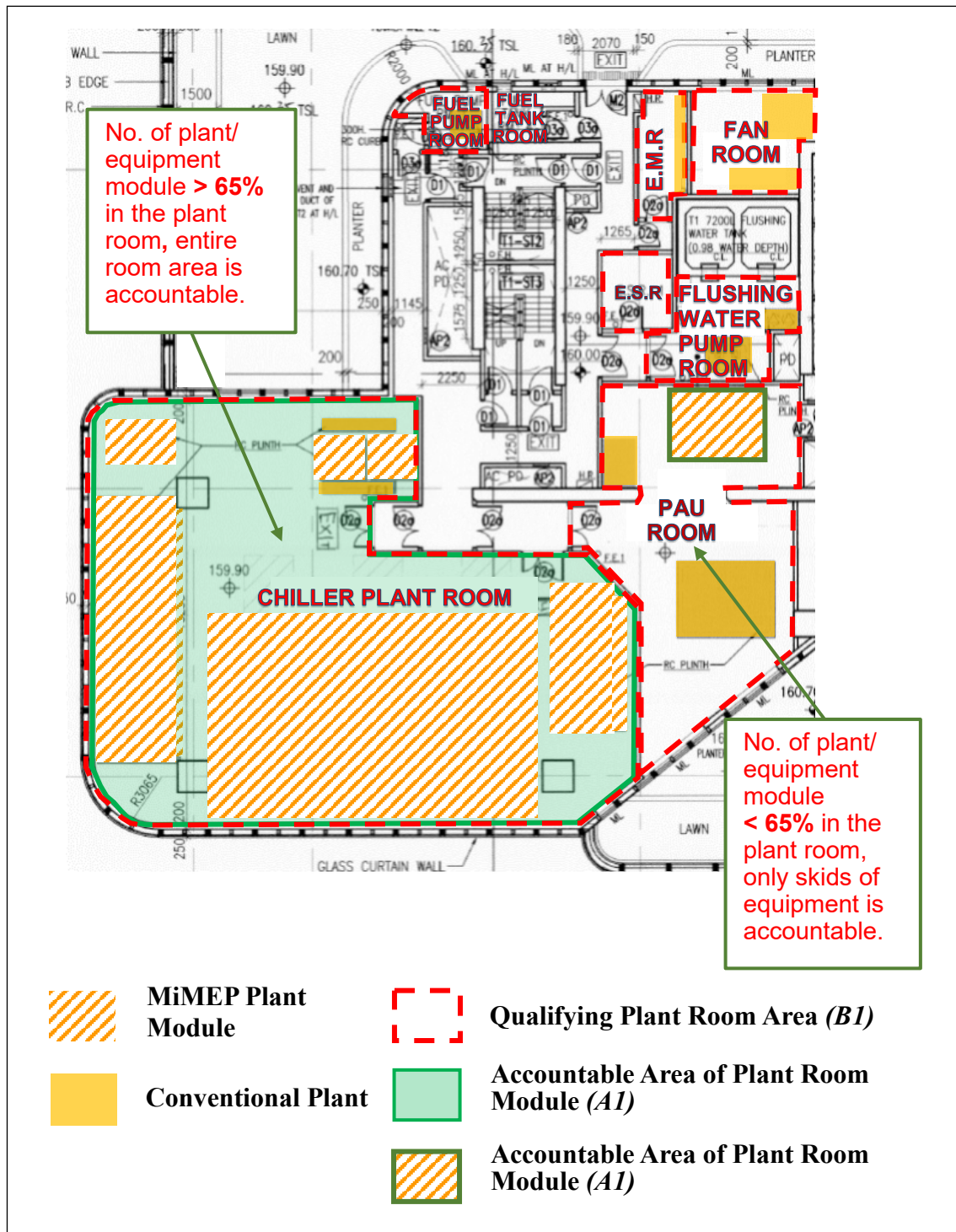


Diagram 1





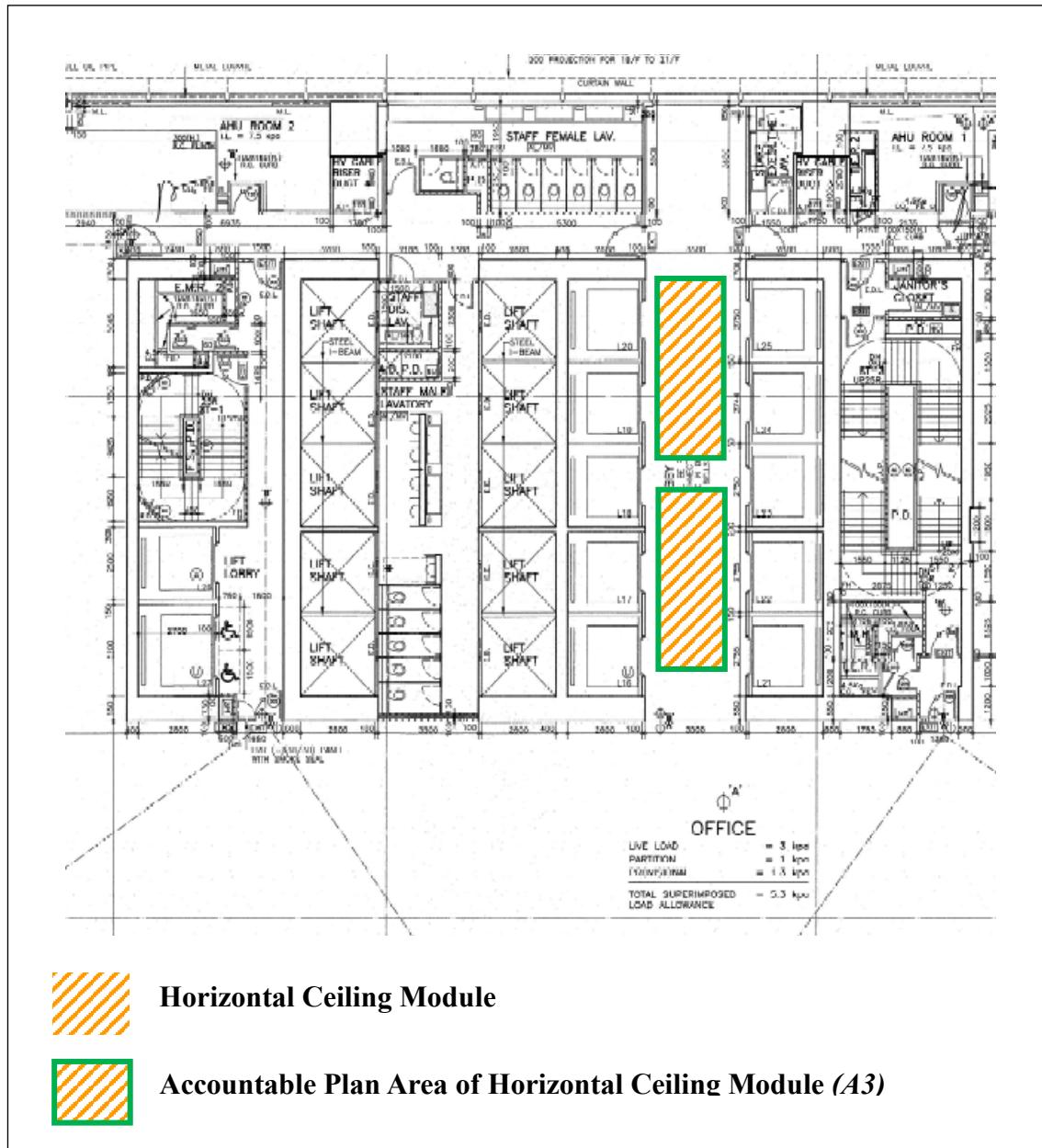


Diagram 3

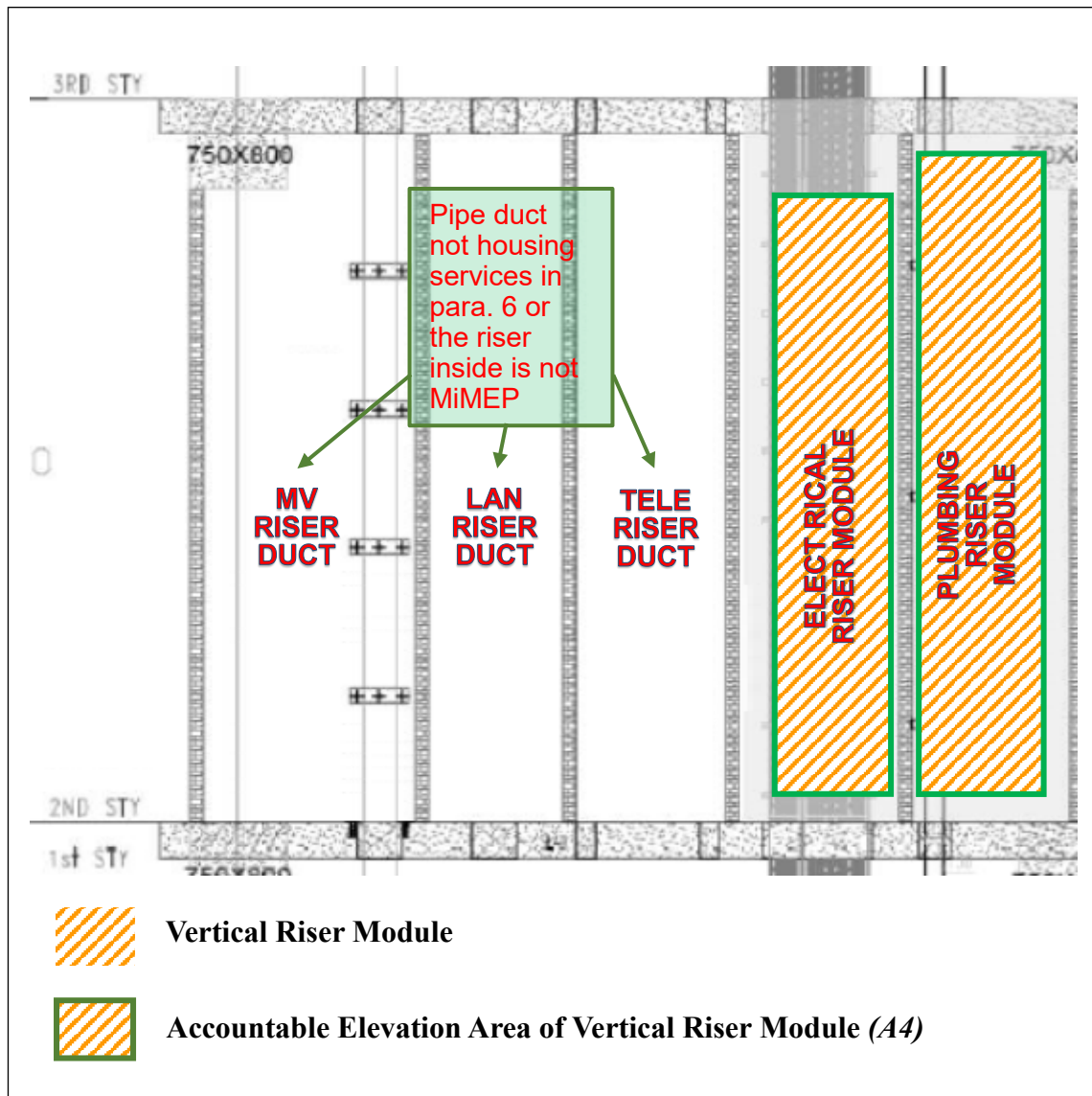


Diagram 4

**Table 1 - Common types of MiMEP modules<sup>8</sup>**

<b>MiMEP modules</b>	<b>Components</b>	<b>Examples of major plant/equipment</b>
Chilled Water Plant And Pipework Module	Chilled water plant and pipework system should be constructed in sectional modules and assembled to form a complete system. The sectional modules may comprise chiller units, pipe headers, straight pipes, bends, thermal insulation, cladding, valves, fittings, pump set module, associated electrical and control accessories, metering accessories, steel frame, hanger fixing, provision of vibration isolation accessories and maintenance platform where applicable.	Chiller unit, pump set
Cooling Tower Plant And Condensing Water Pipework Module	Cooling tower and condensing water pipework system should be constructed in sectional modules and assembled to form a complete system for the proper operation of the condensing water system. The sectional modules may comprise cooling tower units, pipe headers, straight pipes, bends, cladding, valves, fittings, pump set modules, associated electrical and control accessories, metering accessories, steel frame, hanger fixing, provision of vibration isolation accessories and maintenance platform where applicable.	Cooling tower unit, pump set
Modular Water Pump Set	Modular water pump set should be constructed as a self-contained packaged module comprises of pump, motor, header pipes, sectional pipework, valves, fittings, thermal insulation, cladding, power supply connection to the pump motor from the motor control panel, control and metering accessories, skid plate and the mounting framework, as appropriate.	Pump set
Integrated Air Handling Unit And Primary Air Handling Unit	The integrated air handling unit/Primary air handling unit should be factory-assembled, integrated with a pre-wired control module and water pipe connection to facilitate plug-and-play installation upon delivery on site. The packaged module should comprise of the casing and frame, fan, motor, chilled water/hot water pipework connected to the coils, cladding, valves, fittings, air treatment facilities, built-in with direct digital control panels, sensors, associated electrical and control accessories, metering accessories and water pipe connection terminals and provision of vibration isolation accessories and maintenance platform, where applicable. Supporting base frame and lifting lugs should be provided for transportation, delivery and services connection on site.	Air handling unit

<sup>8</sup> Adopted from Section 2.2.2 of General Specification for Building Services Installation in Government Buildings of the Hong Kong Special Administrative Region 2022 Edition issued by Architectural Services Department and draft specifications of Housing Department.

<b>MiMEP modules</b>	<b>Components</b>	<b>Examples of major plant/equipment</b>
Electrical Services in Electrical Rooms	The electrical services in electrical and/or extra low voltage (ELV) rooms comprising molded case circuit breakers (MCCB)/miniature circuit breakers (MCB) distribution boards, electrical/ELV panels, metering devices, cable containments, connection boxes and other accessories should be installed on purposely-built bracketry framework to form standalone module for delivery to and assembly on site.	MCCB/MCB distribution board, electrical/ELV panel, metering device
Generator Set Module	The generator set module should comprise a diesel engine directly coupled to an alternator, mounted on a common steel base frame. Each generator set should be provided with a control cubicle housing all control equipment.	Generator set
Lift Traction Module	The lift traction module should comprise lift motor, traction machine, overspeed governor, control panel and associated accessories including trunking and wiring, mounted on a common steel base frame as an integrated assembly for direct mounting to the building structure.	Lift machinery
Panelised Electrical Module	Panelised electrical module should comprise modular cables and connection components. The cables should be accommodated in cable containment, i.e. cable trays or trunkings.	
Sprinkler Control Valve Set	Sprinkler control valve set module should comprise the completed sprinkler control valve set, cable containment, monitoring and control devices, wirings of completed circuits within the module, identification plates, tagging, earth bonding, associated components and steel framework for direct mounting to building structure.	
Pressure Reducing Valve Set Module	The module should comprise pressure reducing valve, pipework, fittings, gate valves, flanges joints, pressure gauge, associated accessories including identification plates and earth bonding as an integrated assembly for direct mounting to the building structure.	
Ceiling Mounted Multi-trade Horizontal Services Module	The multi-trade horizontal services module (comprising components such as electrical trunkings, cable trays, light fittings, air conditioning ductwork, air terminal boxes and water pipes, etc.) should be pre-fabricated in sections for assembly on site to form a completed system.	
Building Services Riser Module	Building services riser module in a standardized configuration should be pre-fabricated in sections for assembly on site.	

<b>MiMEP modules</b>	<b>Components</b>	<b>Examples of major plant/equipment</b>
Hose Reel Cabinet (measured under vertical riser module)	Comprises of hose reel, hose reel guide, pipework, manual call point, alarm bell, visual fire alarm, monitor and control modules, power supply/control cables of completed circuit within module, cable containments, emergency luminaire and operation instruction as required.	
Prefabricated Water Meters Cupboard Module	The module should comprise water meter positions, pipework, fittings, valves, long screw connectors, bass pipes, reducers, valves, associated accessories including identification plates, earth bonding and steel framework as an integrated assembly for direct mounting to the building structure.	
Sprinkler Subsidiary Stop Valve Set	Sprinkler subsidiary stop valve set module should be completed with pipework, subsidiary stop valve, flow alarm switches, gate valves, monitor modules, signal cables, earth bonding, associated accessories and steel framework as an integrated assembly.	

(9/2023)

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<b>Buildings Department</b>	<b>Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers</b>	<b>APP-151</b>
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### **Building Design to Foster a Quality and Sustainable Built Environment**

There has been rising public concern over the quality and sustainability of the built environment, including issues regarding building bulk and height, air ventilation, greening and energy efficiency in buildings. In 2009, the Council for Sustainable Development launched a public engagement process entitled “Building Design to Foster a Quality and Sustainable Built Environment” in collaboration with the Government. The exercise has pointed to a need for putting in place a package of new measures to foster a quality and sustainable built environment. This practice note sets out a package of measures, covering the following major elements, to promote a quality and sustainable built environment:

- (a) sustainable building design guidelines (SBD Guidelines) on building separation, building set back and site coverage of greenery;
- (b) gross floor area (GFA) concessions; and
- (c) energy efficiency of buildings.

#### **Sustainable Building Design Guidelines**

2. The Buildings Department (BD) has commissioned a consultancy study on “Building Design that Supports Sustainable Urban Living Space in Hong Kong”. Based on the study, a set of SBD Guidelines has been developed to promote building separation, building set back and site coverage of greenery as promulgated in the Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP) APP-152.

3. To enhance the quality and sustainability of the built environment, the Building Authority (BA) will take account of the compliance with the SBD Guidelines as promulgated in the PNAP APP-152, where applicable, as a pre-requisite in exempting or disregarding green/amenity features and non-mandatory/non-essential plant rooms and services from GFA and/or site coverage calculations (GFA concessions) in new building developments. Such green/amenity features and non-mandatory/non-essential plant rooms and services and the relevant practice notes promulgating the criteria and requirements for granting GFA concessions are summarised in Appendix A.



**Overall Cap on GFA Concessions**

4. To contain the effect on the building bulk while allowing flexibility in the design for incorporating desirable green/amenity features and non-mandatory/non-essential plant rooms and services, an overall cap will be imposed on the total amount of GFA concessions for these features, except those features described in paragraph 5 below. This cap is set at 10% of the total GFA of the development. If a development comprises both domestic and non-domestic buildings or in the case of a composite building, GFA concessions for features serving the domestic part or the non-domestic part of the development will be calculated separately such that GFA concessions for each part will be capped at 10%, based on the total GFA of the respective part of the development. Features that are subject to this overall cap of GFA concessions are listed in the table at Appendix A.

5. GFA concessions for the following features, which may have to satisfy their own individual acceptance criteria, will not be subject to the overall cap:

- (a) Mandatory features and essential plant rooms such as refuse storage chamber, telecommunications and broadcasting rooms;
- (b) Communal podium gardens and sky gardens that improve permeability of a development to its neighbourhood;
- (c) Floor space used solely for parking motor vehicles and loading and unloading of motor vehicles which is separately controlled given its significant impact on building bulk and height and the relevant transport, planning and environmental policies;
- (d) Voids in front of cinemas or in shopping arcades, etc. with operational needs in non-domestic developments;
- (e) Bonus GFA and/or GFA exemptions relating to dedication for public passage or surrender for road widening and building set back in accordance with the SBD Guidelines; and
- (f) Hotel concessions granted under regulation 23A of the Building (Planning) Regulations.

**Pre-requisites for Granting GFA Concessions**

6. To promote sustainable building designs and energy efficient features in new developments, compliance with the following requirements will be pre-requisites for the granting of GFA concessions for all green/amenity features and non-mandatory/non-essential plant rooms and services provided in a proposed development as described in Appendix A:

/(a) ...

- (a) Compliance with the SBD Guidelines on building separation, building set back and site coverage of greenery in PNAP APP-152, where applicable;
- (b) For domestic or composite development, compliance with the requirements of PNAP APP-156 on Design and Construction Requirements for Energy Efficiency of Residential Buildings, where applicable;
- (c) Submission of the official letter issued by the Hong Kong Green Building Council (HKGBC) acknowledging the satisfactory completion of project registration application for BEAM Plus certification;
- (d) Submission of a letter by the developer or owner undertaking to submit to the BD the following documents:
  - (i) Result of the Provisional Assessment under the BEAM Plus certification conferred/issued by the HKGBC to be submitted prior to the application for consent to commence the building works shown on the approved plans (consent);
  - (ii) Information on the estimated energy performance/consumption for the common parts (for domestic developments) or for the entire building (for non-domestic developments including hotels) to be submitted in the standard form (Appendix B) prior to the consent application;
  - (iii) Information specified in item (ii) above to be updated and submitted at the time of submitting application for occupation permit (OP);
  - (iv) Result of the Final Assessment under the BEAM Plus certification conferred/issued by the HKGBC, within 18 months of the date of issuance of the OP by the BA;
  - (v) Provisional energy efficiency report prior to the consent application in accordance with PNAP APP-156, where applicable; and
  - (vi) Final energy efficiency report upon application for an OP in accordance with PNAP APP-156, where applicable ;
- (e) Compliance with the overall cap on GFA concessions as described in paragraph 4 above, where applicable; and
- (f) Compliance with the relevant acceptance criteria for the individual green and amenity features.

/Conditions ...



**Conditions for Granting GFA Concessions**

7. In addition to the acceptance criteria and conditions that may be imposed for granting GFA concessions as detailed in the relevant practice notes for the green/amenity features and non-mandatory/non-essential plant rooms and services described in paragraph 6 above, the following conditions may be imposed:

- (a) The modification is given in recognition of the undertaking submitted by the developer or owner as described in paragraph 6(d) above;
- (b) Information described in paragraph 6(d)(i), (ii) and (v) above shall be submitted to the BD prior to the consent application;
- (c) Information described in paragraph 6(d)(iii) and (vi) above shall be submitted to the BD at the time of submitting application for OP;
- (d) Information described in paragraph 6(d)(iv) above shall be submitted to the BD within 18 months of the date of the OP; and
- (e) The modification will be revoked if the consent application is submitted prior to the submission of information specified in item (b) above.

8. Authorized persons should consult a registered professional engineer under the Engineers Registration Ordinance of the relevant discipline in assessing the energy efficiency of the building and in completing the standard form at Appendix B.

**Disclosure for Public Information**

9. To increase the transparency of information to the public, the following information will be uploaded onto the BD website after the issuance of the occupation permit:

- (a) The estimated energy performance/consumption information as described in paragraph 6(d)(iii) above;
- (b) The results of the Provisional Assessment under the BEAM Plus certification as described in paragraph 6(d)(i) above, which will be replaced by the results of the Final Assessment described in paragraph 6(d)(iv) above, upon receipt; and

/(c) ...

- (c) The finalised RTTV and OTTV for RRF as recorded in the final energy efficiency report.



( YU Po-mei, Clarice )  
Building Authority

Ref. : BD GP/BREG/P/49 (XIV)

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**Appendix A**  
(PNAP APP- 151)

**List of GFA Concessions**

		Practice Notes	Features subject to compliance with the pre-requisites in para. 6 & 7 of PNAP APP-151	Features Subject to the Overall Cap of 10% in para.4 of PNAP APP-151
<b>Disregarded GFA under Regulation 23(3)(b) of the Building (Planning) Regulations (B(P)R)</b>				
1.	Carpark and loading/unloading area excluding public transport terminus	PNAP APP-2 & APP-111		
2.	<b>Plant rooms and similar services</b>			
2.1	Mandatory feature or essential plant room, area of which is limited by respective PNAP or regulation, such as lift machine room, TBE room, refuse storage chamber, etc. <sup>(1)</sup>	PNAP APP-35 & APP-84		
2.2	Mandatory feature or essential plant room, areas of which is NOT limited by any PNAP or regulation, such as room occupied solely by FSI and equipment, meter room, transformer room, potable and flushing water tank, etc. <sup>(2)</sup>	PNAP APP-2 & APP-42		
2.3	Non-mandatory or non-essential plant room, such as A/C plant room, AHU room, etc. <sup>(3)</sup>	PNAP APP-2 & APP-42	✓	✓
<b>Disregarded GFA under Regulation 23A(3) of the B(P)R</b>				
3.	Area for picking up and setting down persons departing from or arriving at the hotel by vehicle	PNAP APP-40		
4.	Supporting facilities for a hotel	PNAP APP-40		
<b>Green Features under Joint Practice Notes (JPNs)</b>				
5.	Balcony for residential buildings	JPN1	✓	✓
6.	Wider common corridor and lift lobby	JPN1	✓	✓
7.	Communal sky garden	JPN1 & 2 PNAP APP-122	✓	
8.	Communal podium garden for non-residential buildings	JPN1	✓	
9.	Acoustic fin	JPN1	✓	
10.	Wing wall, wind catcher and funnel	JPN1	✓	
11.	Non-structural prefabricated external wall	JPN2	✓	✓
12.	Utility platform	JPN2	✓	✓
13.	Noise barrier	JPN2	✓	
<b>Amenity Features</b>				
14.	Caretakers' quarters, counter, office, store, guard room and lavatory for watchman and management staff and owners' corporation office	PNAP APP-42	✓	✓

15.	Residential recreational facilities including void, plant room, swimming pool filtration plant room, covered walkway, etc. serving solely the recreational facilities	PNAP APP-2, APP-42 & APP-104	✓	✓
16.	Covered landscaped and play area	PNAP APP-42	✓	
17.	Horizontal screen/covered walkway and trellis	PNAP APP-42	✓	✓ <sup>(10)</sup>
18.	Larger lift shaft	PNAP APP-89	✓	✓
19.	Chimney shaft	PNAP APP-2	✓	✓
20.	Other non-mandatory or non-essential plant room, such as boiler room, SMATV room <sup>(4)</sup>	PNAP APP-2	✓	✓
21.	Pipe duct, air duct for mandatory feature or essential plant room <sup>(5)</sup>	PNAP APP-2 & APP-93		
22.	Pipe duct, air duct for non-mandatory or non-essential plant room <sup>(6)</sup>	PNAP APP-2	✓	✓
23.	Plant room, pipe duct, air duct for environmentally friendly system and feature <sup>(7)</sup>	PNAP APP-2	✓	
24.	High headroom and void in front of cinema, shopping arcade etc. in non-domestic development <sup>(8)</sup>	PNAP APP-2	✓	
25.	Void over main common entrance (prestige entrance) in non-domestic development	PNAP APP-2 & APP-42	✓	✓
26.	Void in duplex domestic flat and house	PNAP APP-2	✓	✓
27.	Sunshade and reflector	PNAP APP-19, APP-67 & APP-156		
28.	Minor projection such as A/C box, A/C platform <sup>(9)</sup> , window cill and projecting window	PNAP APP-19 & APP-42		
29.	Other projection such as A/C box and platform not covered in paragraph 3(b) and (c) of PNAP APP-19	PNAP APP-19	✓	✓
<b>Other Items</b>				
30.	Refuge floor including refuge floor cum sky garden	PNAP APP-2 & APP-122		
31.	Covered area under large projecting/overhanging feature	PNAP APP-19		
32.	Public transport terminus (PTT)	PNAP APP-2		
33.	Party structure and common staircase	PNAP ADM-2		
34.	Horizontal area of staircase, lift shaft and vertical duct solely serving floor accepted as not being accountable for GFA	PNAP APP-2		
35.	Public passage	PNAP APP-108		
36.	Covered set back area	PNAP APP-152		
<b>Bonus GFA</b>				
37.	Bonus GFA	PNAP APP-108		
<b>Additional Green Features under JPN</b>				
38.	Buildings adopting Modular Integrated Construction	JPN8		



- Note<sup>(1)</sup> : Mandatory feature or essential plant room, area of which is limited by respective PNAP or regulation, include duct for basement smoke extraction system, lift machine room, telecommunications and broadcasting room, refuse storage chamber, refuse storage and material recovery chamber, material recovery chamber, refuse storage and material recovery room, or similar feature/plant room, and pipe and air ducts which are part of the distribution network for such mandatory feature or essential plant and contained within such room.
- Note<sup>(2)</sup> : Mandatory feature or essential plant room, area of which is NOT limited by any PNAP or regulation\*, include electrical switch room, meter room, transformer room, generator room, potable and flushing water tank and pump room, sewage treatment plant room, refuse chute, refuse hopper room, room occupied solely by fire service installations and equipment such as fire service/sprinkler water tank and pump room, fire control centre, CO<sub>2</sub> room, fan for smoke extraction system/staircase pressurization system, hose reel closet, sump pump room/pump room for rainwater, soil and waste disposal, or similar feature/plant room and pipe and air ducts which are part of the distribution network for such mandatory feature or essential plant and contained within such room.
- Note<sup>(3)</sup> : Non-mandatory feature or non-essential plant room, area of which may be disregarded under regulation 23(3)(b) of the B(P)R, include plant room occupied solely by machinery or equipment for air-conditioning or heating system such as AC plant room, air handling unit room, or similar plant room, and pipe and air ducts which are part of the distribution network for such feature or plant and contained within such room.
- Note<sup>(4)</sup> : Other non-mandatory feature or non-essential plant room, area of which may be exempted under regulation 23(3)(a) of the B(P)R, include hot water boiler room, filtration plant room for swimming pool in a hotel or for a water feature in a communal garden/landscape area, SMATV room, or similar plant room, and pipe and air ducts which are part of the distribution network for such feature or plant and contained within such room.
- Note<sup>(5)</sup> : Pipe duct, air duct for mandatory feature or essential plant room, include pipe duct for rainwater, soil and waste disposal and individual pipe and air ducts which are part of the distribution network for such mandatory feature or essential plant as described in notes 1 and 2 above, and located outside such plant room.
- Note<sup>(6)</sup> : Pipe duct, air duct for non-mandatory feature or non-essential plant room, include individual pipe and air ducts which are part of the distribution network for such non-mandatory feature or non-essential plant as described in notes 3 and 4 above and located outside such plant room.
- Note<sup>(7)</sup> : Plant room for environmentally friendly system and feature, area of which may be exempted under regulation 23(3)(a) of the B(P)R, include plant room for rainwater harvesting/grey water recycling system, battery room for solar panels, or similar system/feature, and pipe and air ducts which are part of the distribution network for such system and feature.
- Note<sup>(8)</sup> : High headroom and void in front of cinema, shopping arcade etc. in non-domestic development include void in front of cinema, theatre balcony, banking hall, shopping arcade, cockloft floor for storage within the ground storey in single-staircase building, auditorium, sporting hall, school hall and religious institution that have operational justifications.
- Note<sup>(9)</sup> : It includes A/C platforms complying with Appendix B or Appendix C of Code of Practice on Access for External Maintenance.

Notes <sup>(10)</sup> : Horizontal screen/covered walkway/trellis may be excluded from the overall cap on GFA concessions subject to provision of greenery to BA's satisfaction as stipulated under PNAP APP-42.

- \* Although the feature or plant room, area of which is not limited by any PNAP or regulation, only the minimum amount of GFA necessary for accommodating and maintaining the services and commensurate with the the development would be allowed to be disregarded as stated in PNAP APP-2.

(《認可人士、註冊結構工程師及註冊岩土工程師作業備考-151》)

**Declaration on Annual Energy Use of a Building Development**  
**樓宇發展項目每年能源消耗量聲明**

**Part I: Building Particulars**

**第一部分: 樓宇詳情**

(a) Building name 樓宇名稱 (if known 如知悉): (English) \_\_\_\_\_ (中文) \_\_\_\_\_

(b) Address of site 地盤地址: (English) \_\_\_\_\_

(中文) \_\_\_\_\_

(c) Lot number 地段編號: \_\_\_\_\_

(d) Type of building 樓宇類型:

\* Domestic Building 住宅樓宇 / Non-domestic Building 非住宅樓宇/Composite Building 綜合用途樓宇

(e) Provision of Central Air Conditioning 提供中央空調 \*YES 是 / NO 否

(f) Provision of Energy Efficient Features 提供具能源效益的設施 \*YES 是 / NO 否

(g) Please list the \* proposed / installed Energy Efficient Features (add separate sheet if necessary)

請列出 \* 擬安裝 / 已安裝的具能源效益的設施 (如有需要, 請另頁說明)

English

中文

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

**Part II: Predicted Annual Energy Use<sup>①</sup> of \* Proposed / Completed \* Building / Part of Building**

**第二部分: \* 擬興建 / 已竣工 \* 樓宇 / 部分樓宇預計每年能源消耗量<sup>①</sup>**

Type of Development 發展項目類型	Location 位置	Internal Floor Area Served (m <sup>2</sup> ) 使用有關裝置的內部樓面面積 (平方米)	Annual Energy Use of Baseline Building <sup>②</sup> (m <sup>2</sup> /annum) 基線樓宇 <sup>②</sup> 每年能源消耗量 (平方米/年)		Annual Energy Use of Proposed/Completed Building (m <sup>2</sup> /annum) 擬 * 興建/已竣工樓宇每年能源消耗量 (平方米/年)	
			Electricity 電力 kWh 千瓦小時	Town Gas / LPG 煤氣 / 石油氣 unit 用量單位	Electricity 電力 kWh 千瓦小時	Town Gas / LPG 煤氣 / 石油氣 unit 用量單位
Domestic Development (excluding Hotel) 住用發展項目 (不包括酒店)	Central building services installation <sup>③</sup> 中央屋宇裝備裝置 <sup>③</sup>					
Non-domestic Development <sup>④</sup> (including Hotel) 非住用發展項目 <sup>④</sup> (包括酒店)	Podium(s) (central building services installation) 平台 (中央屋宇裝備裝置)					
	Podium(s) (non-central building services installation)					



	平台（非中央屋宇裝備裝置）					
	Tower(s) (central building services installation)					
	塔樓（中央屋宇裝備裝置）					
	Tower(s) (non - central building services installation)					
	塔樓（非中央屋宇裝備裝置）					

**Note:** In general, the lower the estimated “Annual Energy Use” of the building, the more efficient the building in terms of energy use. For example, if the estimated “annual energy use of proposed building” is less than the estimated “annual energy use of baseline building”, it means the predicted use of energy is more efficient in the proposed building than in the baseline building. The larger the reduction, the greater the efficiency.

註：一般來說，樓宇的預計每年每平方米能源消耗量愈低，樓宇的能源消耗愈有效。例如，如果擬興建樓宇的預計每年能源消耗量少於基線樓宇預計的每年能源消耗量，則表示擬興建樓宇的預計能源使用較基線樓宇有效。減少愈多，效能愈大。

### Part III 第三部分

The following installation(s) \* is / are \* designed / completed in accordance with the relevant Codes of Practice published by the Electrical and Mechanical Services Department:-

以下裝置乃按機電工程署公布的相關實務守則 設計 / 完成：-

Type of Installations 裝置類型	YES 是	NO 否	N/A 不適用
Lighting Installations 照明裝置			
Air Conditioning Installations 空調裝置			
Electrical Installations 電力裝置			
Lift & Escalator Installations 升降機及自動梯的裝置			
Performance-based Approach 以總能源為本的方法			

Please (✓) where appropriate 請在適當方格內填上(✓)號

\_\_\_\_\_  
Signature 簽署#  
(Registered Professional Engineer 註冊專業工程師/ Registered  
Energy Assessor 註冊能源效益評核人)

\_\_\_\_\_  
Certificate of Registration No. 註冊證書編號#

\_\_\_\_\_  
Date of expiry of registration 註冊到期日#

\_\_\_\_\_  
Signature 簽署#  
(Authorized Person 認可人士)

\_\_\_\_\_  
Certificate of Registration No. 註冊證書編號#

\_\_\_\_\_  
Date of expiry of registration 註冊到期日#

\_\_\_\_\_  
Company Chop 公司印章/ Signature of applicant 申請人簽署

\_\_\_\_\_  
Date 日期

# In accordance with the registration record 根據註冊記錄

\* Delete whichever is inapplicable 請刪去不適用者



- ① The predicted annual energy use per m<sup>2</sup> per annum, in terms of electricity consumption (kWh) and town gas/LPG consumption (unit) of the development by the internal floor area served, where:-  
預計每年每平方米能源消耗量（以耗電量（千瓦小時）及煤氣/石油氣消耗量用量單位）計算，指將發展項目的每年能源消耗總量除以使用有關裝置的內部樓面面積所得出的商，其中：
- (a) “total annual energy use” has the same meaning of “annual energy use” under Section 4 and Appendix 8 of the BEAM Plus for New Building (current version); and  
“每年能源消耗量”與新建樓宇BEAM Plus標準（現行版本）第4節及附錄8中的「年能源消耗」具有相同涵義；及
- (b) “internal floor area”, in relation to a building, a space or a unit means the floor area of all enclosed space measured to the internal faces of enclosing external and/or party walls.  
樓宇、空間或單位的“內部樓面面積”，指外牆及/或共用牆的內壁之內表面起量度出來的樓面面積。
- ② “Baseline Building” has the same meaning as “Baseline Building Model (zero-credit benchmark)” under Section 4 and Appendix 8 of the BEAM Plus for New Building (current version).  
“基線樓宇”與新建樓宇BEAM Plus標準（現行版本）第4節及附錄8中的“基準建築物模型（零分標準）”具有相同涵義。
- ③ “Central Building Services Installation” has the same meaning as that in the Code of Practice for Energy Efficiency of Building Services Installation issued by the electrical and Mechanical Services Department.  
“中央屋宇裝備裝置”與機電工程署發出的《屋宇裝備裝置能源效益實務守則》中的涵義相同。
- ④ Podium(s) normally means the lowest part of the development (usually the lowest 15m of the development and its basement, if any) carrying different use(s) from that of the tower(s) above. For development without clear demarcation between podium(s) and tower(s), the development, as a whole, should be considered as tower(s).  
平台一般指發展項目的最低部分（通常為發展項目最低15米部分及其地庫(如適用)），並與其上的塔樓具有不同用途。對於並無明確劃分平台與塔樓的發展項目，應視整個發展項目為塔樓。

(9/2014)