

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 (SDC) 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 summarized in Appendix A.

/Overall...

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) The subject development complies with the SBD Guidelines on building separation, building set back and site coverage of greenery, where applicable. PNAP APP 152 is relevant;
- (b) 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;
- (c) 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 Hong Kong Green Building Council to be submitted prior to the application for consent to commence the building works shown on the approved plans;
 - (ii) Information on the estimated energy performance / consumption for the common parts (for domestic developments) or for the entire building (for non-domestic developments) to be submitted in the standard form (Appendix B) prior to the application for consent to commence the building works shown on the approved plans;
 - (iii) Information specified in item (ii) above to be updated and submitted at the time of submitting application for occupation permit; and
 - (iv) Result of the Final Assessment under the BEAM Plus certification conferred / issued by the Hong Kong Green Building Council, within 6 months of the date of issuance of the occupation permit by the BA;
- (d) Compliance with the overall cap on GFA concessions as described in paragraph 4 above, where applicable; and
- (e) 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) The modification is given in recognition of the undertaking submitted by the developer or owner as described in paragraph 6(c) above;
- (b) Information described in paragraph 6(c)(i) and (ii) above shall be submitted to the BD prior to the application for consent to commence the building works shown on the approved plans;
- (c) Information described in paragraph 6(c)(iii) above shall be submitted to the BD at the time of submitting application for occupation permit;

/(d)...

- (d) Information described in paragraph 6(c)(iv) above shall be submitted to the BD within 6 months of the date of the occupation permit; and
- (e) The modification will be revoked if the application for consent to commence the building works is submitted prior to the submission of information specified in item (b) above.

8. The Authorized Person 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(c)(iii) above; and
- (b) The results of the Provisional Assessment under the BEAM Plus certification as described in paragraph 6(c)(i) above, which will be replaced by the results of the Final Assessment described in paragraph 6(c)(iv) above, upon receipt.

Implementation

10. This practice note is applicable to all new building plans or major revision of building plans for development proposals submitted to the BA for approval on or after 1 April 2011. Subject to paragraph 11 below, this practice note is also applicable to building plans which have been previously disapproved and are resubmitted for approval on or after 1 April 2011.

/11. ...

11. For building plans which have been firstly submitted on or before 31 March 2011 and subsequently disapproved by the BA but not on ground relating to proof of ownership or realistic prospect of control of the land forming the site, the first resubmission of such plans to the BA on or after 1 April 2011, which is submitted within 6 months from the date of disapproval of the firstly submitted plans would not be subject to the requirements of this practice note. For the avoidance of doubt, if such first resubmission of plans eventually has been disapproved by the BA, any further resubmission of the plans would be subject to the requirements of this practice note.

(AU Choi-Kai)
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
Disregarded GFA under Building (Planning) Regulations 23(3)(b)				
1.	Carpark and loading/unloading area excluding public transport terminus	PNAP APP-2 and APP-111		
2.	Plant rooms and similar services			
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. ¹	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. ²	PNAP APP-2 and APP-42		
2.3	Non-mandatory or non-essential plant room, such as A/C plant room, AHU room, etc. ³	PNAP APP-2 and APP-42	✓	✓
Disregarded GFA under Building (Planning) Regulations 23A(3)				
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		
Green Features under JPNs				
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	✓	
Amenity Features				
14.	Counter, office, store, guard room and lavatory for watchman and management staff, 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 and APP-104	✓	✓

16.	Covered landscaped and play area	PNAP APP-42	✓	
17.	Horizontal screen/covered walkway, trellis	PNAP APP-42	✓	✓ ⁹
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 ⁴	PNAP APP-2	✓	✓
21.	Pipe duct, air duct for mandatory feature or essential plant room ⁵	PNAP APP-2 & APP-93		
22.	Pipe duct, air duct for non-mandatory or non-essential plant room ⁶	PNAP APP-2	✓	✓
23.	Plant room, pipe duct, air duct for environmentally friendly system and feature ⁷	PNAP APP-2	✓	
24.	High headroom and void in front of cinema, shopping arcade etc. in non-domestic development ⁸	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		
28.	Minor projection such as AC box, window cill, projecting window	PNAP APP-19 & APP-42		
29.	Other projection such as air-conditioning box and platform with a projection of more than 750mm from the external wall	PNAP APP-19	✓	✓
Other Items				
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		
Bonus GFA				
37.	Bonus GFA	PNAP APP-108		

Notes:

- 1 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.
- 2 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, CO2 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.

- 3 Non-mandatory feature or non-essential plant room, area of which may be disregarded under B(P)R23(3)(b), 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.
- 4 Other non-mandatory feature or non-essential plant room, area of which may be exempted under B(P)R23(3)(a), 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.
- 5 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.
- 6 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.
- 7 Plant room for environmentally friendly system and feature, area of which may be exempted under B(P)R23(3)(a), 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.
- 8 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.
- 9 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.

Declaration on Annual Energy Use of a Building Development

Part I: Building Particulars

- (a) Building name (if known): _____
- (b) Address of site : _____
- (c) Lot number : _____
- (d) Type of building * Domestic Building / Non – Domestic Building / Composite Building
- (e) Provision of Central Air Conditioning *YES / NO
- (f) Provision of Energy Efficient Features *YES / NO
- (g) Please list the proposed/installed* Energy Efficient Features (add separate sheet if necessary):-
1. _____
2. _____
3. _____

Part II:

The predicted annual energy use[†] of the proposed / completed* building/part of building*:-

The predicted annual energy use of the proposed / completed building part of building .						
Type of Development	Location	Internal Floor Area Served (m ²)	Annual Energy Use of Baseline Building [‡]		Annual Energy Use of Proposed/Completed* Building	
			<u>Electricity</u> kWh/m ² /annum	<u>Town Gas/LPG</u> unit/m ² /annum	<u>Electricity</u> kWh/m ² /annum	<u>Town Gas/LPG</u> unit/m ² /annum
Domestic Development	Central building services installation [§]					
Non-domestic Development**	Podium(s) (central building services installation)					
	Podium(s) (non - central building services installation)					
	Tower(s) (central building services installation)					
	Tower(s) (non - central building services installation)					

† The predicted annual energy use, in term of electricity consumption (kWh/m²/annum) and town gas/LPG consumption (unit/m²/annum), of the development by the internal floor area served, where:-

- (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
- (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.

‡ “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).

§ ‘Central Building Services Installation’ has the same meaning as that in the Code of Practice for Energy Efficiency of Building Services Installations in Buildings (February 2010 edition)(Draft)

** Podium(s) normally means the lowest part of the development (usually the lowerest 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).

Part III

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

Type of Installations	YES	NO	N/A
Lighting Installations			
Air Conditioning Installations			
Electrical Installations			
Lift & Escalator Installations			
Performance-based Approach			

Please (x) where appropriate

Signature
(Registered Professional Engineer / Registered Energy Assessor)
Certificate of Registration No.: _____
Date of expiry of registration: _____

Signature
(Authorized Person)
Certificate of Registration No.: _____
Date of expiry of registration: _____

Company Chop / Signature of applicant
Date: _____

*Delete whichever is inapplicable