

Review of the Mechanism for Encouraging a Quality Built Environment through Gross Floor Area Concession

以總樓面面積寬免促進 優質及可持續建築環境的機制檢討



AD+RG

architecture design and research group ltd.

What is Quality Built Environment? 何謂優質及可持續建築環境?

“Building design considerations **balancing the needs of the present and the future** that having due **considerations to economic, social and environmental perspectives.**”

「平衡當前及未來的需求，同時考慮到經濟，社會和環境的建築設計。」

DevB(PL-CR)12/2010

“Measures to foster a quality and sustainable built environment” 13.10.2010.

「締造優質及可持續建築環境的措施」，2010年10月13日

Policy Address January 2017

二零一七年一月施政報告

*“Under the current arrangement, a private housing development project is required, among other things, to register for Building Environmental Assessment Method Plus (BEAM Plus) as a prerequisite for application for GFA concession for amenity features. We will review this arrangement to further promote green building. In the review, we will consider **tightening the prerequisite** by requiring a development project to **attain specific standards of performance in environmental protection**, or even adopt **performance-based and site-specific approaches** to determine the maximum GFA concession.”*

「現時，私人樓宇發展項目如要就適意設施申請總樓面面積寬免，其中一個先決條件是註冊『綠建環評（BEAM Plus）』認證登記。為進一步推動綠色建築，政府會檢討現時的安排，包括考慮**將先決條件提升**，要求發展項目在環保方面的表現達致**特定標準**，甚或採納**以表現為本及考慮個別地盤情況**的方法，釐定總樓面面積寬免的上限。」

1.0 Consultancy Study Objectives 顧問研究目標

- (a) Review requirement of prerequisite of registration for BEAM Plus Assessment Scheme (BPAS) for application for GFA concession
檢討綠色建築環境評估（綠建環評）的認證註冊登記作為申請總樓面面積寬免先決條件的規定

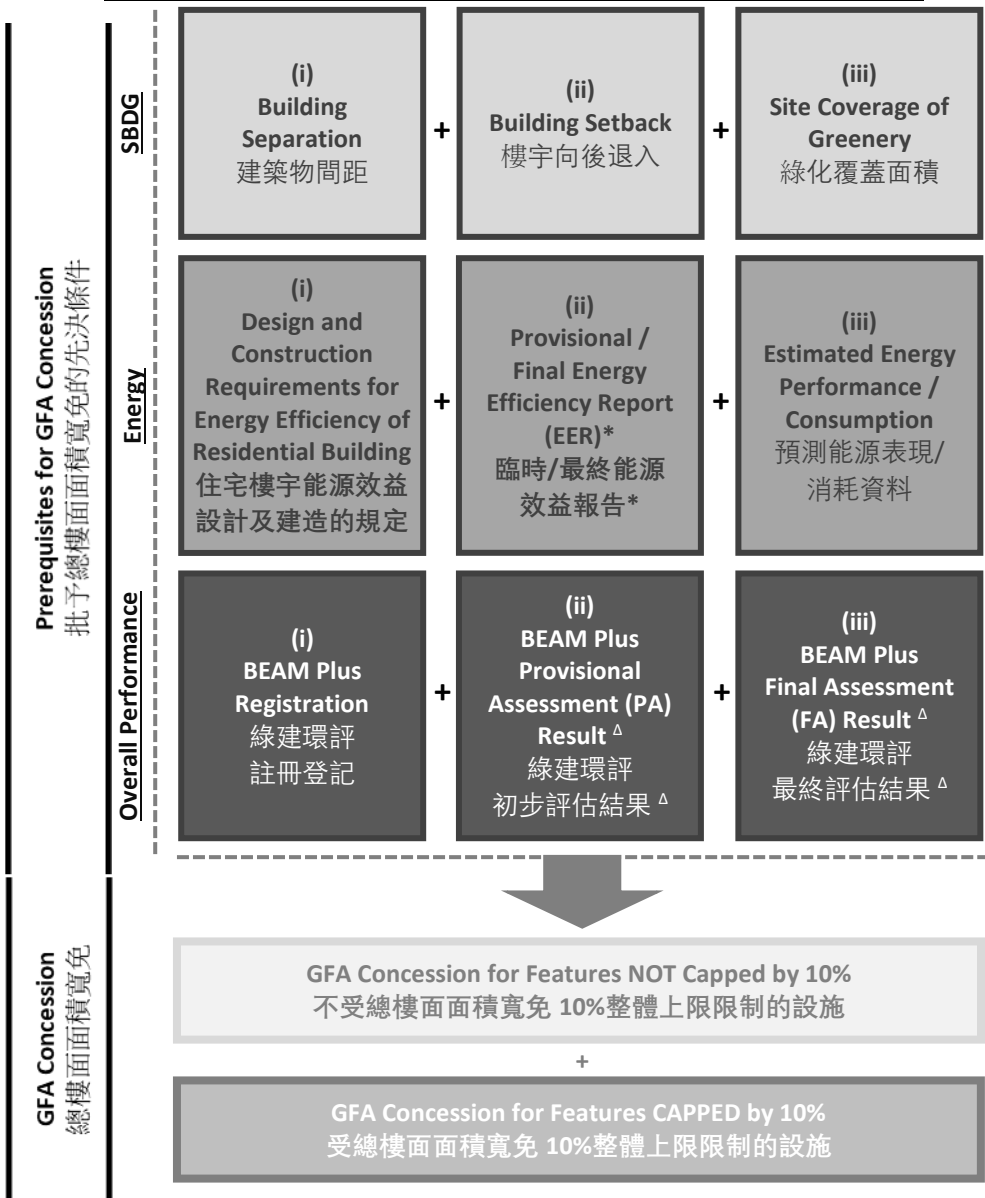
- (b) Explore performance-based and site-specific approaches to determine the maximum GFA concession
探討以表現為本及考慮個別地盤情況的方法釐定總樓面面積寬免的上限

- (c) Propose appropriate mechanism to assess environmental performance
提議適當的表現評估機制

- (d) Explore the mechanism for treating the cases of non-performance
探討處理項目環境表現遜於預期的機制

- (e) Improve the effectiveness in promoting green buildings
改善推動綠色建築的效應

2.0 Framework of the Existing Mechanism 現有機制框架



Remarks 備註:

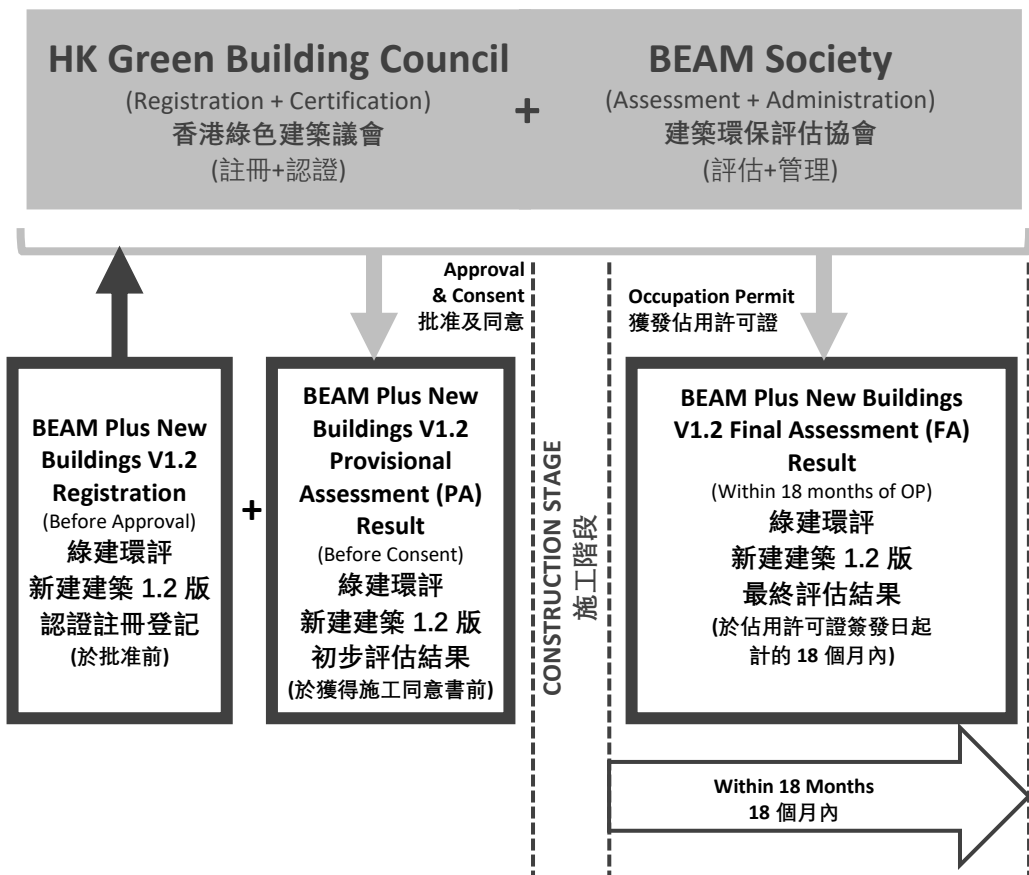
* EER also required to provide extent of compliance with natural ventilation in window design for maintaining thermal comfort (NVrc) requirements (for approval on/ after 1 April 2015)

能源效益報告亦要求提交說明舒適自然通風規定的遵從情況的資料 (適用於 2015 年 4 月 1 日或之後批准圖則)

Δ It is required to submit to Buildings Department the results of the BEAM Plus Provisional Assessment and Final Assessment, i.e. from Unclassified (also known as Prerequisites Achieved) to Platinum grading under the conditions of PNAP APP-151. 根據作業備考 APP-151, 申請者需要向屋宇署提交綠建環評初步評估和最終評估的結果。這可包括「不予評級」(也稱為先決條件達成) 至鉑金評級中的任何評級。

2.1 HKGBC and BEAM Society, Role in the Mechanism

現行機制中 HKGBC 和 BEAM Society 的角色



2.2 BEAM Plus New Buildings V1.2 Credit Composition

綠建環評 新建建築 1.2 版 分數的組成

Aspects 範疇

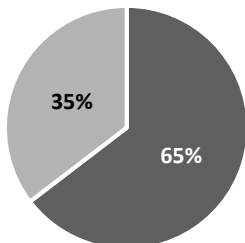
Site Aspects (SA) 用地與 室外環境	Materials Aspects (MA) 用材	Energy Use (EU) 能源使用	Water Use (WU) 用水	Indoor Environmental Quality (IEQ) 室內環境質素	Innovation and Additions (IA) 創新
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3.0 Data Analysis 數據分析

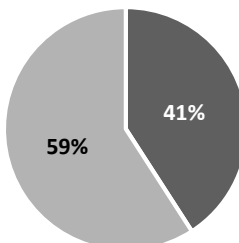
3.1 PNAP-APP151 New Scheme (2015 to 2017) – Projects Obtained Occupation Permit (OP)

作業備考 APP-151 新制 (2015 至 2017)-已獲佔用許可證的項目

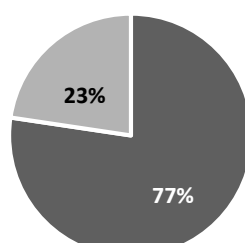
Domestic Projects
住用項目





Non-Domestic Projects
非住用項目



Composite Projects
綜合用途項目



Remarks 備註:

-  Projects participated in PNAP APP-151, with GFA Concession
參與作業備考 APP-151 的項目，已獲總樓面面積寬免
-  Projects did not participate in PNAP APP-151, without granting GFA Concession
沒有參與作業備考 APP-151 的項目，沒有獲得總樓面面積寬免

Goal of Environment Bureau 環境局目標

*“New government buildings with construction floor area of >5,000 m² with central air-conditioning or >10,000m² to achieve **at least BEAM Plus Gold**; and New public housing to achieve **at least BEAM Plus Gold ready**.”*

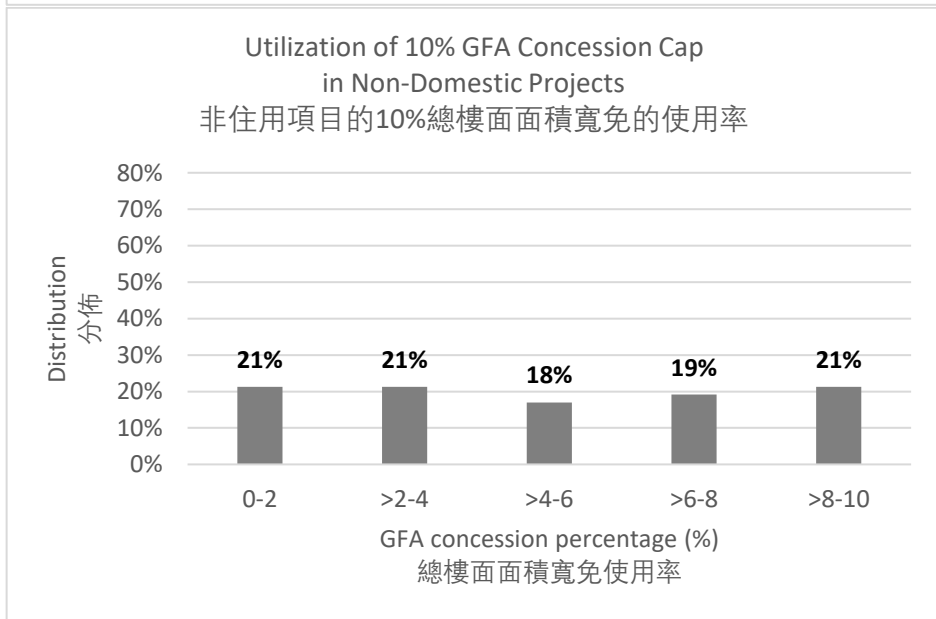
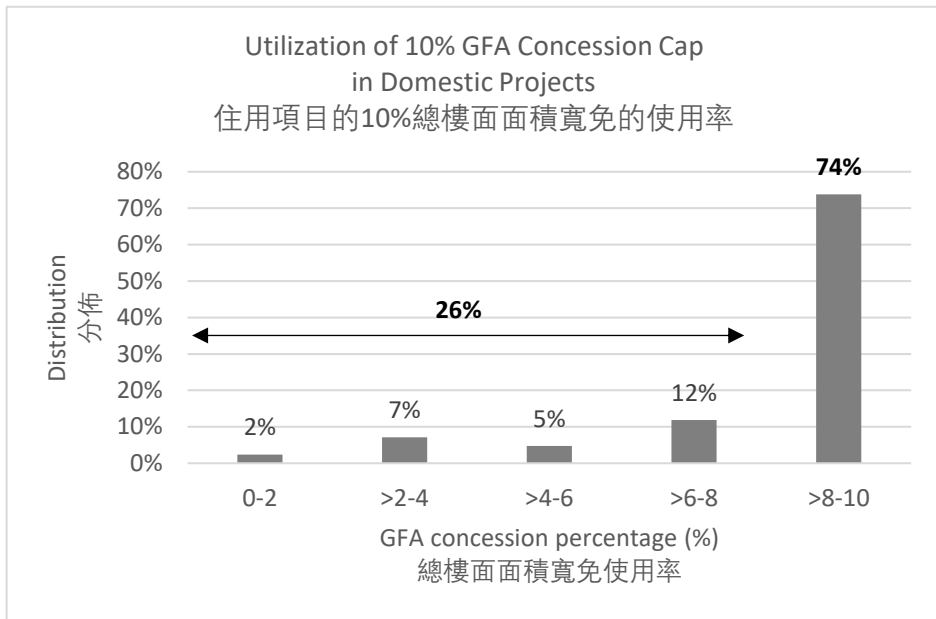
“Energy Saving Plan for Hong Kong’s Built Environment”,
Environment Bureau, May 2015.

「建築面積 5,000 平方米以上並備有中央供冷系統及 10,000 平方米以上的新建政府建築物至少要達到綠建環評金級評級，以及新建公共房屋至少要達到綠建環評準金級。」

「香港都市節能藍圖」，環境局，2015 年 5 月

3.2 PNAP-APP151 New Scheme (2015 to 2017) – Utilization of the 10% GFA Concession Cap

作業備考 APP-151 新制 (2015 至 2017) 10%總樓面面積寬免的使用率



3.3 Features related to Urban Heat Island Effect Mitigation

減輕都市熱島效應的相關設施

Domestic Projects 住用項目

Non-Capped Features 不限於 10%整體上限限制的設施		
16	Covered landscaped and play area 有上蓋的園景區及遊樂場	45%
7	Communal sky garden 公用空中花園	0%

Non-Domestic Projects 非住用項目

Non-Capped Features 不限於 10%整體上限限制的設施		
8	Communal podium garden for non-residential buildings 非住宅樓宇的公用平台花園	9%

3.4 Features Promoting High Buildability

達致高可建性的相關設施

3.4.1 Prefabrication Element 預製組件

(Thickness accountable for GFA concession = 150mm)

(可獲總樓面面積寬免的厚度 = 150mm)



Domestic Projects 住用項目

Features Subject to Overall Cap of 10% 限於 10%整體上限限制的設施		
11	Non-structural prefabricated external wall 非結構預製外牆	45%

Non-Domestic Projects 非住用項目

Non-Capped Features 不限於 10%整體上限限制的設施		
11	Non-structural prefabricated external wall 非結構預製外牆	0%

Remarks 備註:

-  Features with relative high application rate 較高應用率的設施
-  Features with relative low application rate 較低應用率的設施

3.4.2 Modular Integrated Construction (MiC) 「組裝合成」 建築法

PNAP ADV-36

作業備考 ADV-36

3.4.3 Curtain Wall 幕牆

PNAP APP-2

作業備考 APP-2

Thickness not accountable for GFA =

200mm (Domestic Projects) or 250mm (Non-Domestic Projects)

無須計算總樓面面積內的厚度= **200mm (住用項目) 或 250mm (非住用項目)**

Initiative from Housing Authority 房委會的倡議

*"In 2008, the [Housing Authority] began to adopt modular flat design to optimise site potential under the principle of 'functional and cost-effective' design. The **volume of precast concrete of the public housing developments with the basic PCCs was about 20 per cent then, which would be increased to 35 per cent if volumetric precast bathrooms were adopted.***

"Housing Authority increases use of precast concrete components and mechanised construction", Press Releases from Hong Kong SAR Government, 15 September, 2018.

「在『實而不華』的設計方針下，房委會於二〇〇八年開始採用構件式單位設計，藉以盡量提高地盤發展潛力。在公營房屋發展項目中，基本預製組件使用的預製混凝土佔總混凝土用量約 20%；若再加上『立體預製浴室』，使用率更增至 35%。」

「房委會更廣泛使用預製組件及機械化建築法」，
香港特別行政區政府新聞公報，2018年9月15日

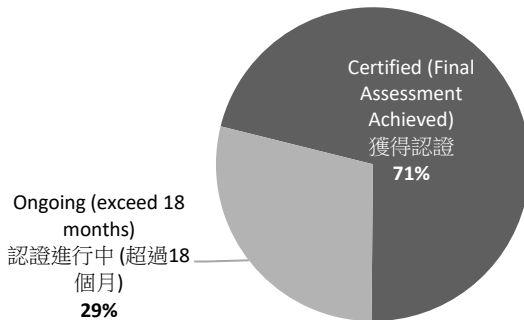
3.5 Study of the Existing Application of BEAM Plus as prerequisite for obtaining GFA concession

現行使用綠建環評為總樓面面積寬免的先決條件的研究

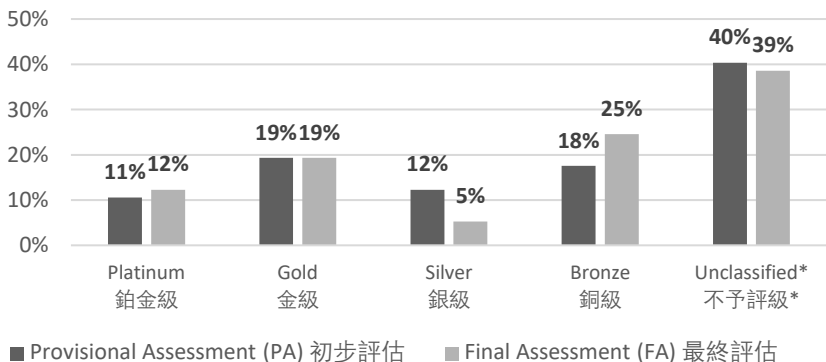
Information from BEAM Society (based on completed projects during 2014-2016)

資料來源自建業環保評估協會 (基於 2014 至 2016 年間完成的項目)

Distribution of **BEAM Plus New Buildings V1.2 Final Assessment Result** for Projects (obtained OP) participated in PNAP-APP 151
 通過PNAP-APP 151獲得總樓面面積寬免項目(已獲佔用許可證)的
 綠建環評 新建建築 1.2版 最終評估結果分佈



BEAM Plus New Buildings V1.2 Provisional Assessment vs Final Assessment Result
 綠建環評 新建建築 1.2版 初步評估及最終評估的結果對比



***Remark:** Under BEAM Plus New Buildings V1.2, Unclassified means the Applicant has not met the minimum requirements in achieving any rating as set out in the BEAM Plus Manual

備註：於綠建環評 新建建築 1.2 版，不予評級是指申請人未達至綠建環評工具手冊中所規定的評級的最低要求。

4.0 International Green Building Assessment Schemes

國際上的綠色建築認證評估方案

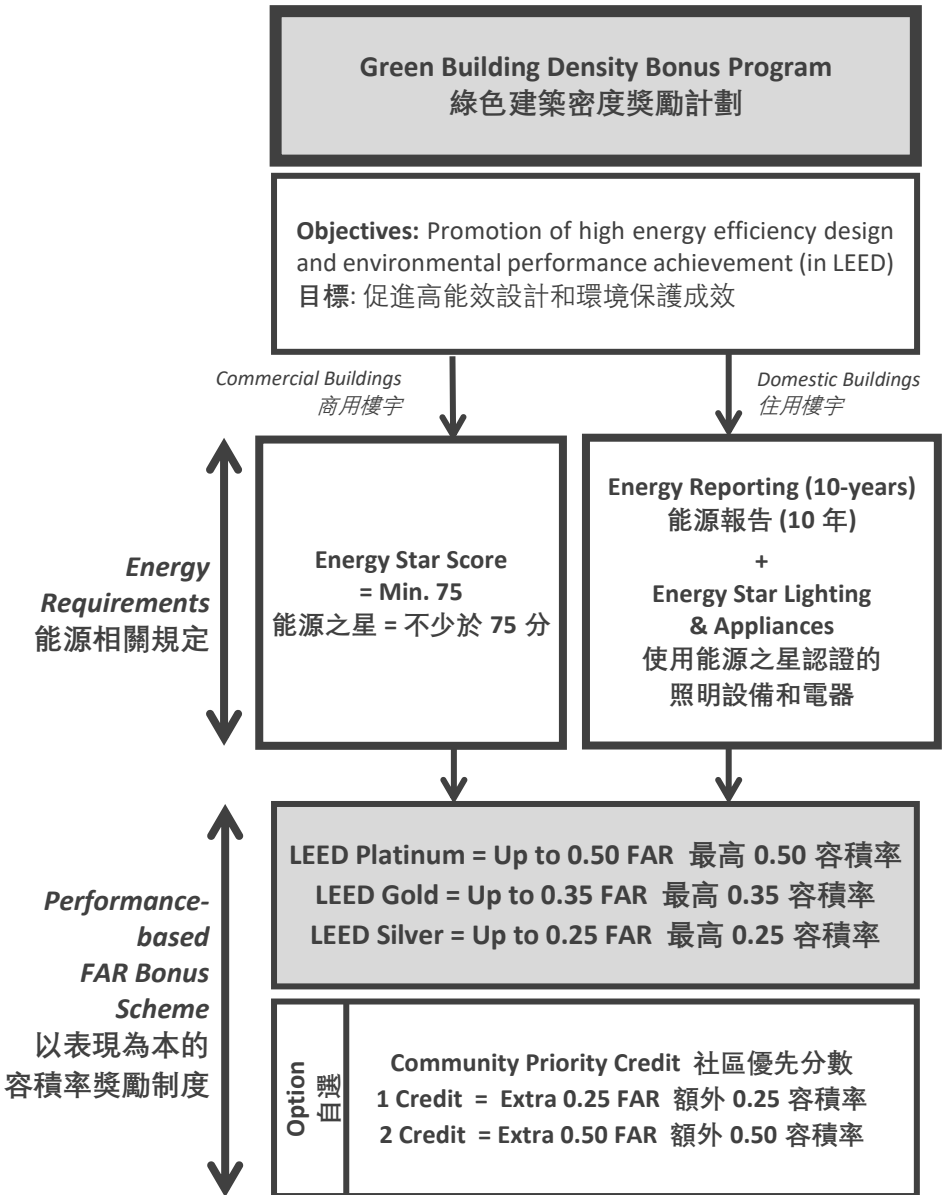
	<u>Schemes related to GFA Concession / Bonus</u> 總樓面面積寬免相關的評估方案				<u>Scheme independent to GFA Concession / Bonus</u> 獨立於總樓面面積寬免的評估方案		
	<u>BEAM Plus</u>	<u>Green Mark</u>	<u>LEED</u>	<u>CASBEE</u>	<u>Green Star</u>	<u>BREEAM</u>	<u>Three Star</u>
Country/ City 國家/城市	Hong Kong 香港	Singapore 新加坡	USA 美國	Japan 日本	Australia 澳洲	UK 英國	China 中國
Accreditation Body 認證機構	HKGBC 香港綠色建築議會	BCA 建設局	USGBC	IBEC	GBCA	BRE	MOHURD 住房和城鄉建設部
Administrative Body 行政機構	BSL 建築環保評估協會		GBCI	IBEC		BRE Global	
Application of GFA Concession / Bonus 適用於總樓面面積寬免/獎勵	✓	✓	✗ (Applicable for limited areas 只適用於部分地區)	✗ (Voluntary reporting-based assessment 自願報告性質認證評估)	Not Applicable 不適用	Not Applicable 不適用	Not Applicable 不適用

Remark: Apart from GFA concession / bonus as incentives for promoting high tier achievement in green building assessment schemes, there are other approaches (e.g. tax break, subsidy) adopted locally and internationally for new/existing buildings.

備註: 除了使用總樓面面積寬免/獎勵作為提高綠色建築認證評估評級的誘因，本地和其他國家也採立不同的手法（如稅務寬免、津貼）來提高新建/已落成建築的綠色建築認證評估的評級。

4.1 USA (Arlington County, Virginia) – Density Bonus Scheme for Promoting Higher Tier LEED Rating

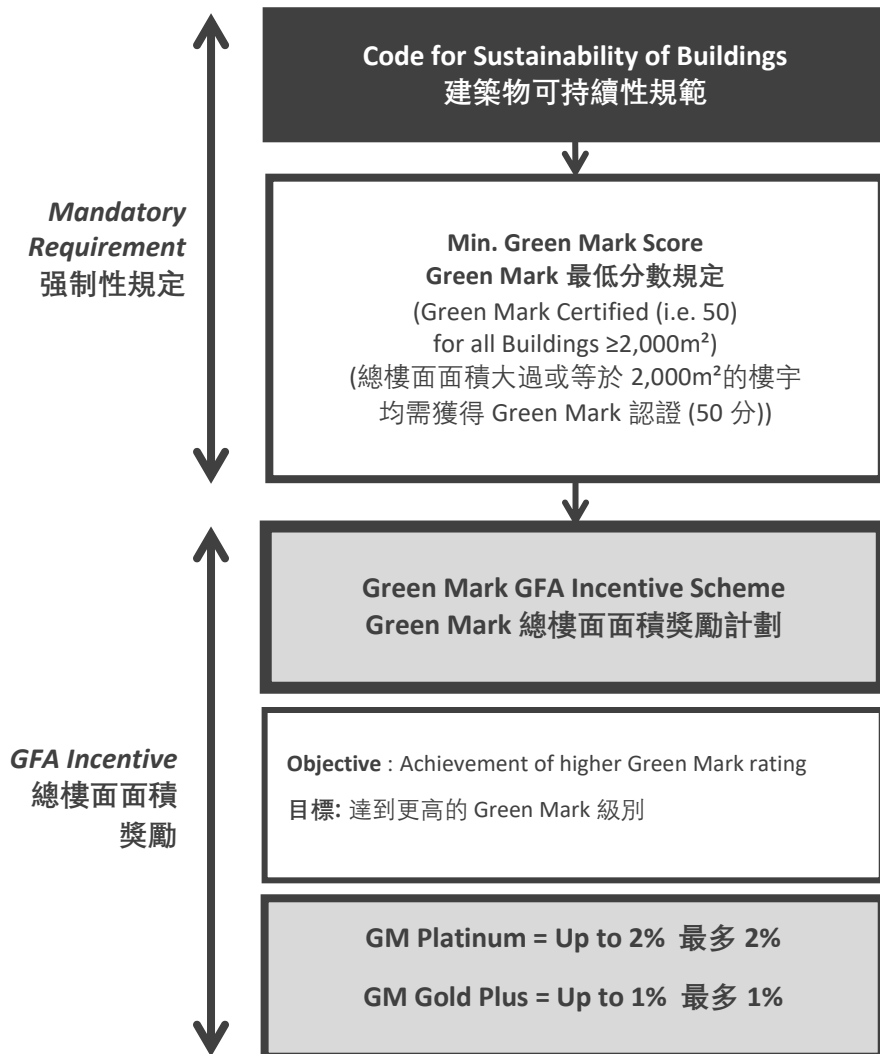
美國 (阿靈頓郡, 維吉尼亞州) - 促進更高 LEED 評級的建築密度獎勵制度



Remark: FAR refers to Floor Area Ratio, equivalent to Gross Floor Area (GFA).
備注: FAR 為容積率, 類似於總樓面面積。

4.2 Singapore – Green Mark GFA Incentive Scheme

新加坡 – Green Mark 總樓面面積獎勵制度



Remark: “GFA” refers to the GFA permitted according to the corresponding plot ratio stipulated in the latest Singapore’s Master Plan.

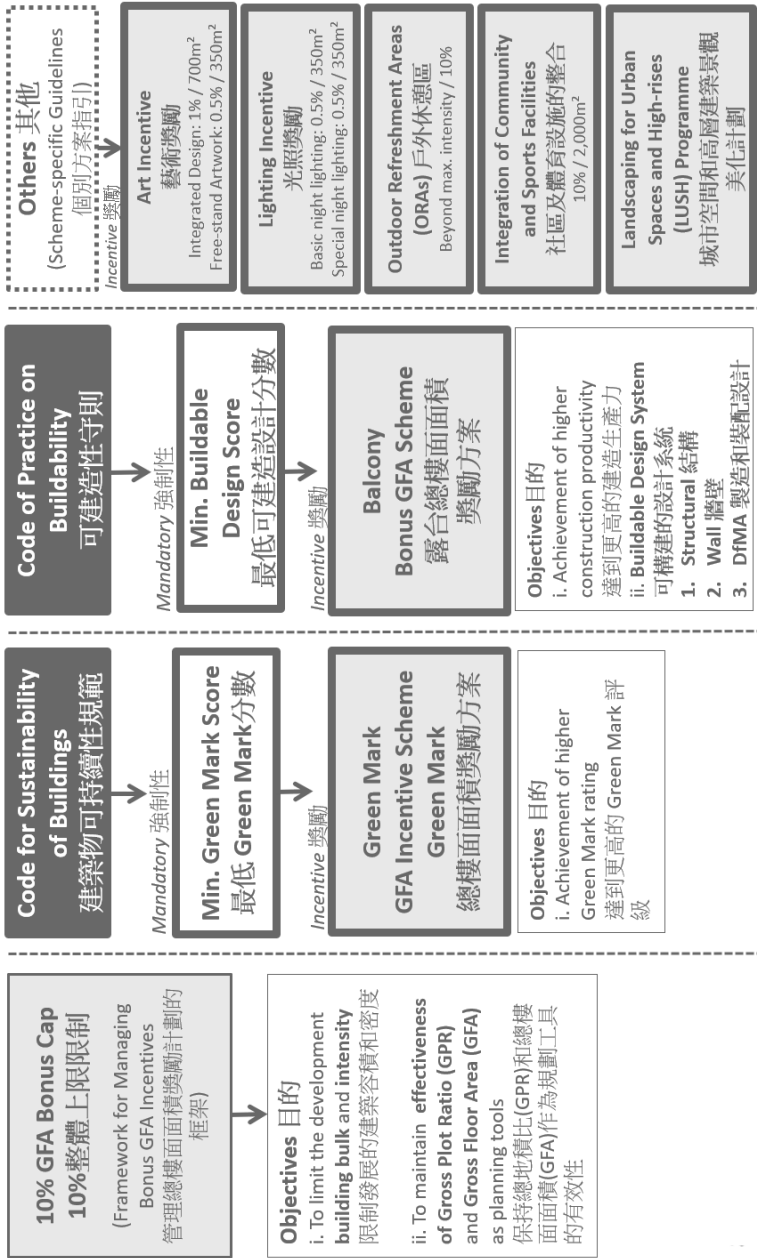
備注: 「總樓面面積」為根據新加坡最新的總體規劃中規定的相應地積比率所容許的總樓面面積。

5.0 International Practices of GFA Incentive Schemes based on Specific Standards

國際上其他以特定標準為本的總樓面面積獎勵方案

5.1 GFA Incentive Schemes Promoting Sustainable Developments – Singapore – GFA Bonus Schemes (Mechanism)

通過總樓面面積寬免促進優質建築環境獎勵 – 新加坡 – 總樓面面積獎勵計劃



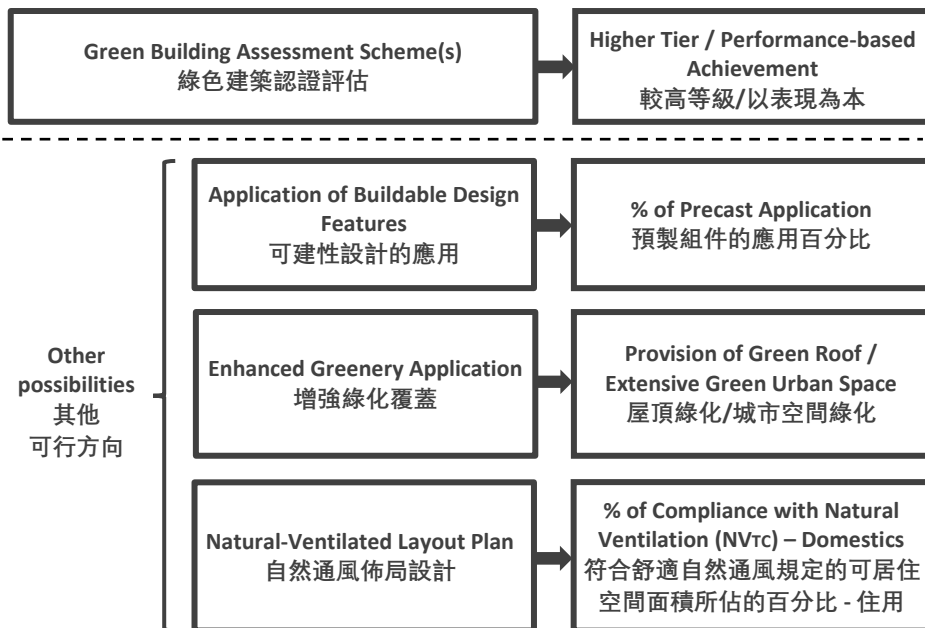
5.2 Flexibility of the Singapore's GFA Incentive Mechanism 新加坡總樓面面積獎勵計劃機制的靈活性

10% GFA Bonus Cap 10%總樓面面積獎勵上限

Location Non-Specific Allocation 沒有特定位置規定		Specific Location Required 有特定位置規定	
Lighting Incentive 光照獎勵	Art Incentive 藝術獎勵	Green Mark GFA Incentive Scheme GM 總樓面面 積獎勵計劃	Balcony Bonus GFA Scheme 露台總樓面 面積獎勵
Special Light 特殊照明	Integrated 整合	Platinum	Outdoor Refreshment Areas (ORAs) 戶外休憩區
0.5% Up to 最高	1% Up to 最高	2% Up to 最高	10% Up to 最高
+ / or 或	+ / or 或	or 或	10% Up to 最高
Basic Light 基本照明	Free-stand 自由擺放	Gold Plus	Integration of Community and Sports Facilities 社區及體育 設施的整合
0.5% Up to 最高	0.5% Up to 最高	1% Up to 最高	10% Up to 最高
			Exemption 豁免
			LUSH Programme 城市空間和 高層建築景 觀美化計劃

5.3 Aspects / Features Identified for Consideration

可供考慮的方向/項目



6.0 Explore the Mechanism for Treating the Cases of Non-Performance

探討處理項目環境表現遜於預期的機制

	Hong Kong 香港	Singapore 新加坡	USA 美國
Assessment Scheme 認證評估	BEAM Plus	Green Mark	LEED
GFA Concession/ Bonus Related Policy 總樓面面積寬免 相關的政策	✓	✓	✗ (Only applicable to Arlington County, Virginia 只適用於 阿靈頓郡, 維吉尼亞州)
Mechanism for Assurance of Specific Standards Achieved 確保達致特定標準 的機制		Security Deposit 保證金	Financial Security 保證金

6.1 Singapore 新加坡

$$\begin{array}{l}
 \boxed{\text{Security Deposit}} \\
 \text{保證金}
 \end{array}
 = 50\% \times \boxed{\text{Equivalent Market Value (EMV)}} \\
 \text{相等市場價值}$$

$$\boxed{\text{Equivalent Market Value (EMV)}} \\
 \text{相等市場價值}$$

$$= \text{Land Value} \times \text{Green Mark GFA Bonus Granted} \\
 (\$/\text{sq.m}) \quad \text{已獲得的額外總樓面面積} \\
 (\text{sq.m})$$

6.2 USA (Arlington County, Virginia) 美國 (阿靈頓郡, 維吉尼亞州)

$$\boxed{\text{Financial Security}} \\
 \text{保證金}$$

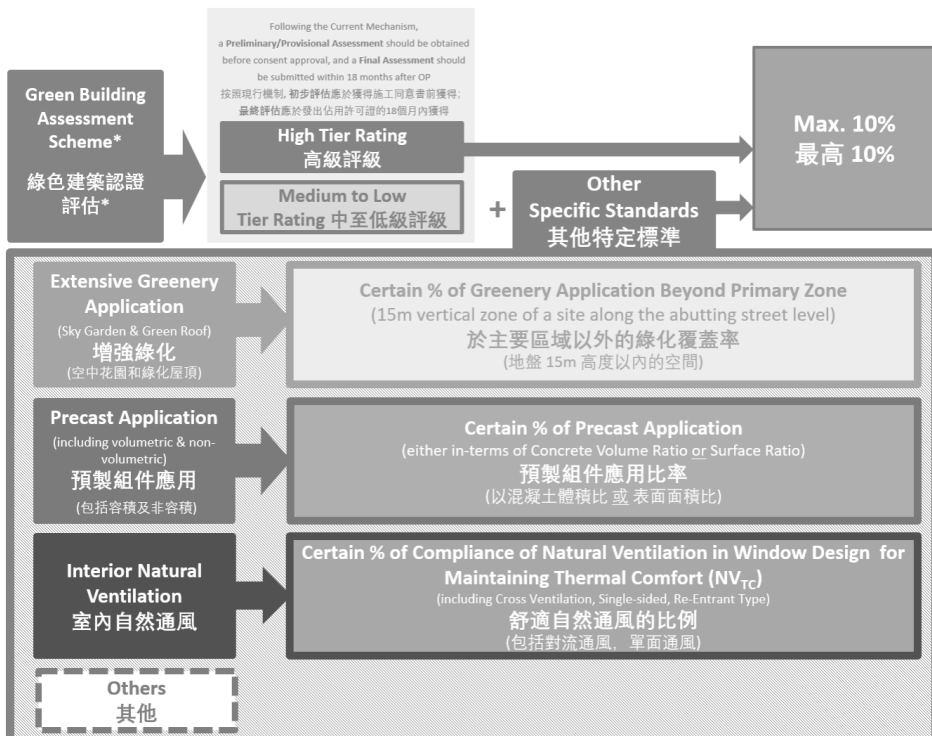
$$= \left[\text{Additional Floor Area approved} \right] \times \left[\text{Average rental rate} \right] \\
 \text{已獲得的額外總樓面面積} \quad \text{平均租金} \\
 (\text{sq.m}) \quad (\$/\text{sq.m})$$

7.0 Possible Options 方案舉例

Possible Option 1 方案舉例 1



Possible Option 2 方案舉例 2



*Remark: Green Building Assessment Scheme(s) should have high percentage of credits related to building performance.

*備注：綠色建築認證的分數制度需要較為側重建築表現

8.0 Topics for Discussion 討論題目

1. **Views/Suggestions** on the existing mechanism for encouraging a Quality Built Environment through GFA Concession
對現行以總樓面面積寬免促進優質及可持續建築環境機制的**意見及建議**
2. Discussion on **factors facilitating, encouraging and prohibiting** (if any) the participation in such mechanism
對協助、促進或防礙（如有）參與現行機制作出討論
3. Any other suggestion(s) for **improvement of the mechanism**
其他的建議

Questionnaire and written comments collection best before 1st March 2019

請於 2019 年 3 月 1 日前提交調查問卷及書面意見

Means of Collection of Views and Suggestions

提交意見及建議的方法

Contact Details 聯繫方式	
Address 地址	Room 1002, 111 Leighton Road, Causeway Bay, Hong Kong 香港銅鑼灣禮頓道 111 號 1002 室
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