Professional Green Building Council

15 December 2009

Our Ref. : PGBC/LegCo/KSW/cw/0912

Hon Audrey EU Yuet-mee, SC, JP
Chairman
Panel on Environment Affairs
The Legislative Council
c/o The Legislative Council Secretariat
3rd floor, Citibank Tower
3 Garden Road
Hong Kong

By Email & By Post
Email : zyhtong@legco.gov.hk

Dear Ms Eu

Joint Meeting of Panel on Environmental Affairs and Panel on Development on Green Buildings on 14 December 2009

Subsequent to the presentation of PGBC on Green Buildings delivered in the captioned joint panel meeting chaired by you yesterday, we are pleased to submit a copy of the following documents for consideration by and record of the Panel on Environmental Affairs and Panel on Development :

1) Powerpoint containing case studies of Tokyo and Singapore regarding progressive green building roadmap and green features incentives of respective cities presented in the meeting;

2) The paper of PGBC to respond to the public engagement on building design to foster a quality and sustainable built environment submitted to the Council for Sustainable Development on 6 November 2009.

Thank you for your kind attention.

Yours sincerely

K S Wong
Chairman

Encl

c.c. Hon Lau Wong-fat, GBM, GBS, JP, Chairman, Panel on Development
Prof Hon Patrick Lau, SBS, JP, Architectural, Surveying & Planning Functional Constituency
Ir Dr Andrew Chan, Chairman, Hong Kong Green Building Council, and President, HKIE
Ms Anna Kwong, President, HKIA
Mr Evans Iu, President, HKILA
Mr P Y Tam, President, HKIP
Mr Francis Leung, President, HKIS

Professional **Green Building** Council

環保建築專業議會

2009.12.14

香港

亞洲國際都會?

1

Progressive **Green Building** Roadmap

綠建藍圖

可持續城市計劃目標
City Objective

建築界別目標
Building Sector Objective

指標
Performance Indicators

建築設計指引
Building Design Guidelines

建議做法
Practices: Regulation, Incentives, etc.

東京

Tokyo

TOKYO METROPOLITAN GOVERNMENT

Tokyo Environmental Master Plan (since 2002)

Recognition of the environmental problems that Tokyo is facing

Climate change crisis

- Due to frequent climate crises such as climate anomalies at the global scale, the "global environment basin" for the harmonious existence human and other lives has been threatened.
- These crises represent a "Clear and Present Danger" to Tokyo as they exceed the local levels of pollution.

Anticipate and continuously promulgate measures that combat environmental pollution

- The problems related to maintaining a clean-air environment; including NO_2, photochemical oxidants, and harmful PM2.5, remain unsolved.
- It is concerned that new chemical substances will pollute the environment.
- The anticipation of and a continuous commitment to a pollution-free environment is necessary or pollution will become a serious and direct threat to the health and safety of the residents of Tokyo.

Create a quality urban environment by conserving and enhancing the existent attractive characteristics of the city

- The abundant green and water areas in Tokyo have been decreased in the high urban growth period and the situation continues.
- It is necessary to stop the decrease of green spaces, to create quality abundant green and water areas, and to enhance these urban character of Tokyo.

For pleasant activities and a comfortable lifestyle in Tokyo with low-energy consumption

Tokyo: A city minimizing the environmental impact on the global community through the promotion of high-energy efficiency

Tokyo: A city attracting not only people but also corporations and being consistently chosen among other competitor cities

Tokyo's objectives as a city and its environmental role

Appealing the sustainable city model from Tokyo to the world

-Tokyo will seek an optimized solution for a sustainable city by pursuing various ideas and efforts including technological innovations and creating awareness.

TOKYO METROPOLITAN GOVERNMENT

Tokyo Environmental Master Plan: Objectives

Tokyo as the Sustainable City Model in the World: For pleasant activities and a comfortable lifestyle with low energy consumption

Reduce **GHG** emissions by **25%** by **2020** as compared to 2000 level

Satisfy all environmental standards in all **Air** Pollution Monitoring Stations by **2010**

Create 1000 ha of new **green** area and 1M roadside trees + Improve thermal environment in all **anti-Heat Island** action areas by **2016**

TOKYO METROPOLITAN GOVERNMENT

Tokyo Green Building Program (since 2002)

Tokyo Green Building Program
+ Green Labeling System of Condominiums

6

1. **Green Building Labeling**

2. **Environmental Performance Indicator**
   (for Market Transparency)

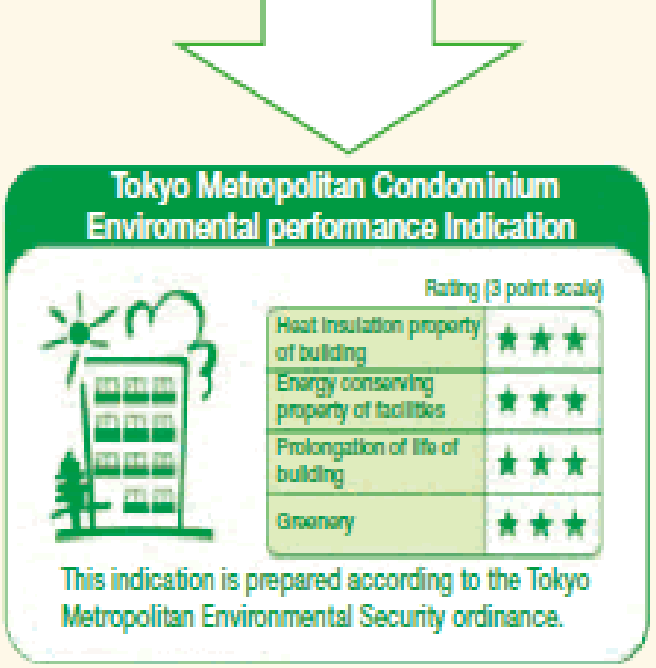
3. **Energy Conservation Evaluation** …

The four items reflecting environmental performance arerated on a 1-to-3 scale
(★~★★★)

★.....Standard level specified by building regulations

★★.....Level higher than the above standard level with respect to environmental-awareness

★★★.....Highest level with respect to environmental-awareness



新加坡

Singapore

Ministry of the Environment and Water Resources

Singapore Sustainable Blueprint

(by Inter-Ministerial Committee on SD)

Efficient, Clean & Green

*Our vision is to make Singapore a **liveable and lively** city state, one that Singaporeans love and are proud to call **home***

Singapore Sustainable Blueprint: Objectives

BOOSTING OUR RESOURCE EFFICIENCY

We will improve the way we use key resources such as energy and water, even as we seek to expand our use of renewable resources, so that we can achieve growth with fewer resources and make Singapore more competitive in the long run.

We aim to achieve a 35% improvement in energy efficiency from 2005 levels by 2030.

We will make optimum use of land.

We aim to attain a recycling rate of 70% by 2030.

We will ensure adequate supplies of water for future generations, and we aim to reduce domestic water consumption to 140L per person per day by 2030.

ENHANCING OUR URBAN ENVIRONMENT

Our aim is to become a top city in Asia in terms of quality of life. Singapore will develop as a sustainable, high-density city that is clean and green, with excellent connectivity and a sense of space.

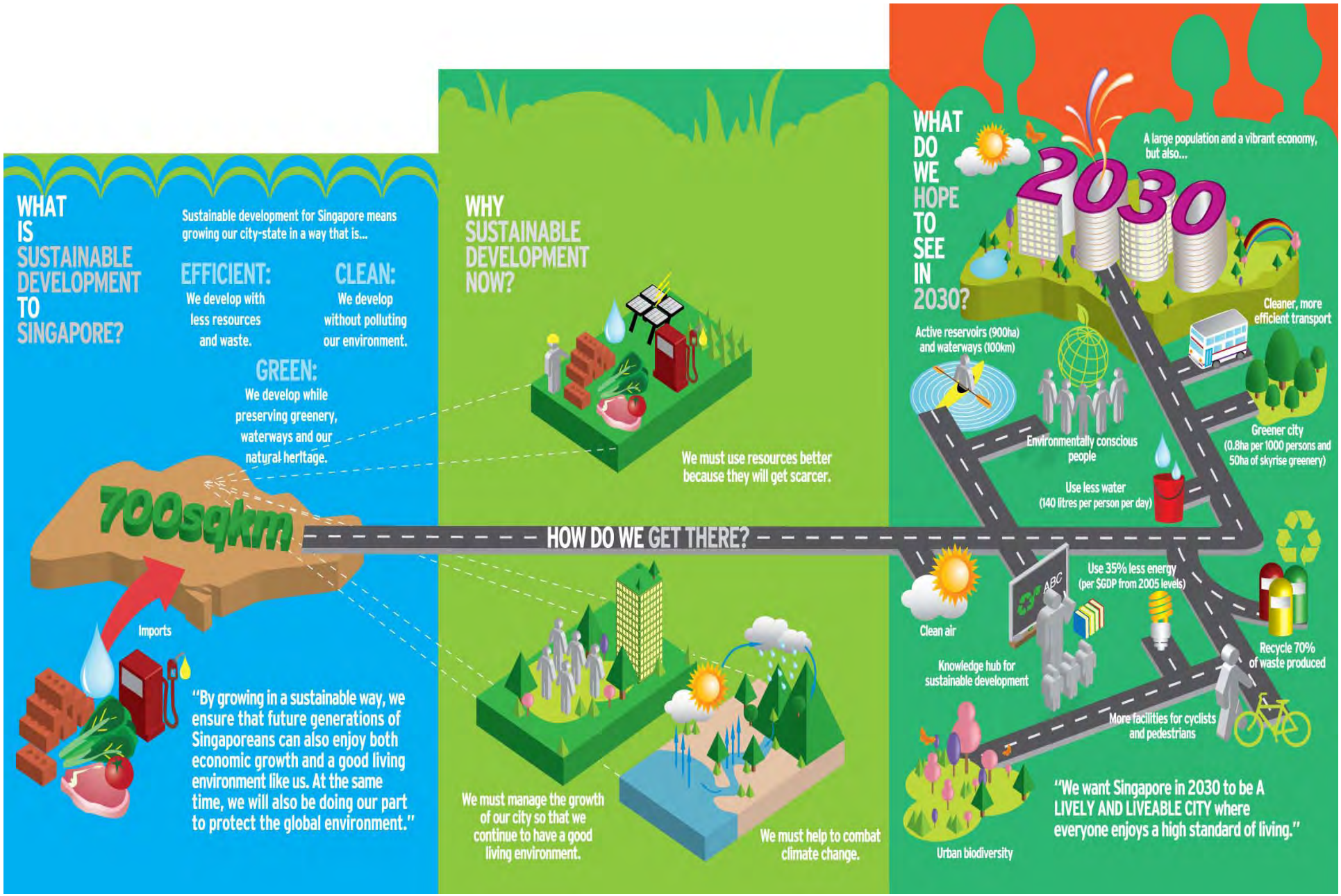
We aim to reduce the level of fine particles in the air (PM2.5) to 12$\mu g/m^3$ and cap Sulphur Dioxide (SO_2) levels at 15$\mu g/m^3$ by 2020, and maintain the same levels up to 2030.

We aim to have 0.8ha of green space for every 1,000 persons and increase greenery in high-rise buildings to 50ha by 2030.

We aim to open up 900ha of reservoirs and 100km of waterways for recreational activities by 2030.

We aim to improve accessibility for pedestrians and cyclists and have 70% of all journeys made via public transport.

Singapore Sustainable Blueprint: Roadmap



Singapore Sustainable Blueprint: Roadmap

Singapore Green Building Master Plan (since 2005)

Building and Construction Authority

We shape a safe, high quality, sustainable and friendly built environment.

***Mission**: We shape a safe, high quality, **sustainable** & friendly built environment*

***Action**: Set up the BCA **Green Mark** Department*

BCA GREEN MARK

BCA GREEN MARK

Singapore Green Building Masterplan
2nd GBMP in 2009

Singapore Green Building Masterplan
2nd GBMP in 2009

Target:

*At least **80%** building with **Green Mark by 2030***

Other Initiatives:

Condition for the Land Sales: A higher rating of **Green Mark Gold Plus /Platinum** for new buildings within strategic districts

Public housing estates: Improve energy efficiency by **20~30%**

2

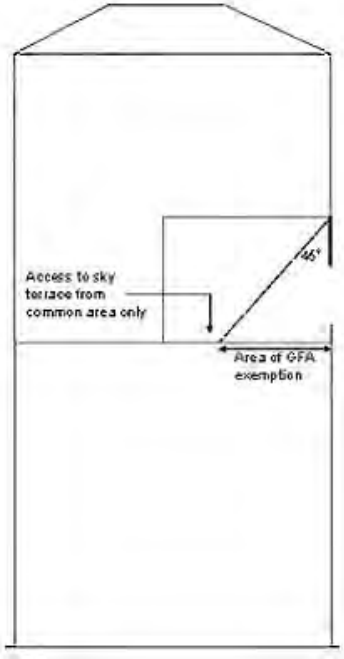
Progressive **Green Feature** Incentives

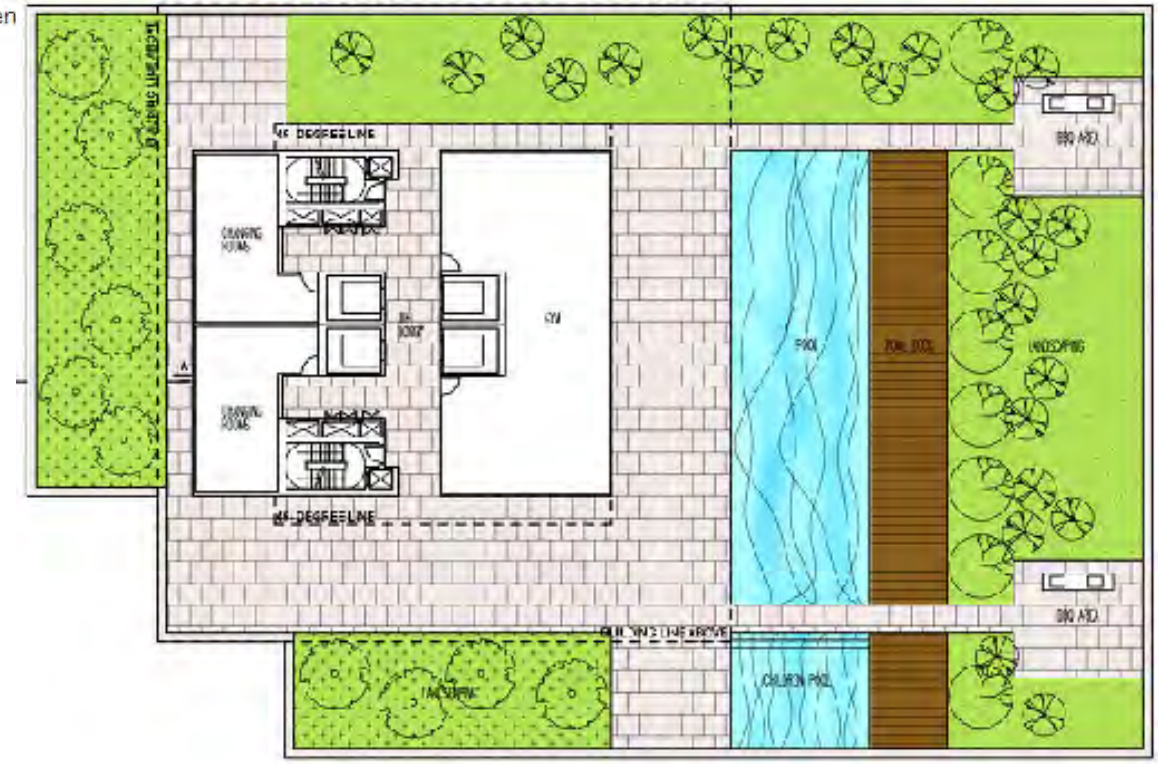
環保設備

Singapore Urban Redevelopment Authority Circular 2009/4:

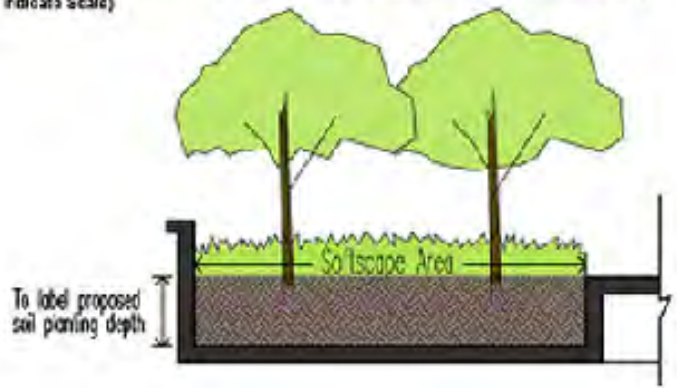
REVISED GFA EXEMPTION CRITERIA FOR **SKY TERRACES** TO ENCOURAGE MORE ATTRACTIVE COMMUNAL SPACES AND **GREATER PROVISION OF PLANTING**

The area of GFA exemption is defined by the 45-degree line taken from the outer edge of the building.





EXAMPLE OF A SECTION THROUGH A PLANTING BED (SECTION A-A)
(To indicate Scale)



Podium/Sky **Gardens**

Singapore Urban Redevelopment Authority Circular 2009/4:

REVISED GFA EXEMPTION CRITERIA FOR **SKY TERRACES** TO ENCOURAGE MORE ATTRACTIVE COMMUNAL SPACES AND **GREATER PROVISION OF PLANTING**

Podium/Sky **Gardens**

Singapore Urban Redevelopment Authority Circular 2008/7:

CHANGES TO GFA EXEMPTION GUIDELINES – BAY WINDOWS

Bay windows have been found to have contributed significantly to the **building bulk**, affect the design of buildings and generally **don't encourage energy efficiency**.

No More GFA Exemption for Bay Windows

Singapore URA Circular 2001/6 & 2008/7:

GFA EXEMPTION GUIDELINES – BALCONIES

Recent review for enhancing usability in high floors of high-rise residential buildings

Design Flexibility w/ Overall Cap

Singapore Urban Redevelopment Authority Circular 2009/4:

BONUS GROSS FLOOR AREA INCENTIVES

Sustainable Framework for Managing Bonus GFA Incentives
i.e., **Overall Bonus GFA Budget**

Green Mark GFA Incentive Scheme for Private Developments that **Achieved Higher-Tier Ratings**

Overall Cap +
Performance Basis

Progressive **Green Building** Roadmap

綠建藍圖

Progressive **Green Feature** Incentives

環保設備

Professional Green Building Council

6 November 2009

Our Ref. : PGBC/BDQSBE/KSW/cw/0911

Mr Bernard C Chan
Chairman
Council for Sustainable Development
c/o Sustainable Development Division
Environment Bureau
M/F Murray Building
Garden Road
Hong Kong

By Fax and By Post
Fax No. : 3150 8168

Dear Bernard

Public Engagement on Building Design to Foster a Quality and Sustainable Built Environment

Further to our acceptance of your invitation to be a partner organization for the captioned public engagement exercise launched by the Council for Sustainable Development in June 2009, the Professional Green Building Council (PGBC) co-organized a forum on 11 July 2009 in which members of the HKIA, HKIE, HKILA, HKIP and HKIS expressed their initial views on this topic. In October 2009, the PGBC also organized two site visits to some of the awarded / short-listed buildings under the Green Building Award 2008 with a view to letting students experience what better and more sustainable designs mean in dense urban context.

The goal of the PGBC is to promote a better sustainable built environment through professional involvement. We certainly support building designs that would foster a quality and sustainable built environment for Hong Kong, including the proposed sustainable building design guidelines about building separation, building setback and green coverage. From our professional viewpoint, the resultant reduction in podium coverage and addition of green space are of utmost significance in our dense urban areas. To this end, we are keen to further offer our professional views at two levels – the overall framework and the feature details. Please find enclosed herewith our written views for your consideration and record.

We earnestly look forward to seeing quick steps for transforming the practice towards a quality and sustainable built environment for Hong Kong. Since this public engagement exercise was only limited to a few key aspects and merely applicable to new constructions, we also anticipate a more comprehensive framework together with regulatory measures to accelerate the market transformation, including both new and existing buildings. The PGBC also looks forward to having a continued collaboration with the Council for Sustainable Development to promote a quality sustainable built environment for the betterment of our community.

Yours sincerely

K S Wong
Chairman

Encl

c.c. Prof Hon Patrick Lau, SBS, JP, Legislative Councillor (Architectural, Surveying & Planning)
Ms Anna S Y Kwong, MH, President, The Hong Kong Institute of Architects
Ir Dr Andrew Chan, JP, President, The Hong Kong Institution of Engineers
Mr Evans Iu, President, The Hong Kong Institute of Landscape Architects
Mr P Y Tam, President, The Hong Kong Institute of Planners
Mr Francis Leung, President, The Hong Kong Institute of Surveyors

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Professional Green Building Council

Public Engagement on Building Design to Foster a Quality and Sustainable Built Environment
The PGBC Responses

The PGBC refers to the invitation to participate in the public engagement exercise on the issue of "Building Design to Foster a Quality and Sustainable Built Environment" launched by the Council for Sustainable Development in June 2009. As one of the partner organizations in this public engagement exercise, the PGBC co-organized a forum on 11 July 2009 in which members of the HKIA, HKIE, HKILA, HKIP and HKIS expressed their initial views on this topic. In October 2009, the PGBC also organized two site visits to some of the awarded / short-listed buildings under the Green Building Award 2008 with a view to letting students experience what better and more sustainable designs mean in dense urban context.

The goal of the PGBC is to promote a better sustainable built environment through professional involvement. We certainly support building designs that would foster a quality and sustainable built environment for Hong Kong, including the proposed sustainable building design guidelines about building separation, building setback and green coverage. From our professional viewpoint, the resultant reduction in podium coverage and addition of green space are of utmost significance in our dense urban areas. To this end, we are keen to further offer our professional views at two levels – the overall framework and the feature details:

1. Overall Environmental Performance vs. GFA Concession

It appears that most of the latest discussions focus on capping the GFA concessions for green and amenity features. While less GFA concessions tend to result in a smaller overall building bulk, there is no objective correlation between this numerical adjustment and the actual building environmental performance. In other words, such numerical adjustment based on a chain of prescriptive "green features" cannot ensure any real gain in terms of quality and sustainability of our built environment – unless and until the building control measure can be more closely dovetailed with effective sustainable building design guidelines (such as building separation/permeability, podium setback facing deep and narrow street canyon and green coverage, and their equivalence in term of environmental performance) and/or comprehensive building environmental assessment method.

For example, starting from April 2009 in Singapore, GFA concessions are granted for private developments on a sliding scale with reference to individual development's rating in term of Green Mark (Singapore's building environmental assessment method). For transforming such a progressive eco-concept in Hong Kong, we should consider to require all private developments to adopt a recognized local building environmental assessment method as the pre-requisite if they would like to get any GFA concessions for green and amenity features; and the higher their achieved rating is, the more their GFA concessions may be available. As such, we can truly encourage private developments to achieve higher building environmental performance.

With respect to the issue of a recognized building environmental assessment method, it is important for the local rating scheme to specifically address the key environmental challenges such as air ventilation assessment, heat island mitigation, green coverage, etc.

2. Details of Green / Amenity Features to foster Desirable Environmental Performance

While progressing towards a more effective, performance-based regulatory framework as mentioned above, we have to understand that the details of building design control are equally important. God (or the devil) is in the details. Some of the green / amenity features are in need of timely review so as to foster a higher building performance. With reference to the latest regulatory experience of Singapore which shares a similar urban context, the refinement in details such as the following should be duly considered in Hong Kong:

- Promotion of lofty, permeable and lushly landscaped podium gardens for fostering better air ventilation and greenery for the city (and their areas should not be mixed with the proposed GFA concession capping for other green and amenity features); and
- Deletion of the incentive for bay windows which increase not only the overall building bulk by a notable % but also the overall thermal transfer value, thereby discouraging energy efficiency. (Note: In Singapore, the exemption for bay windows will no longer apply from January 2009 based on these reasons.)

We earnestly look forward to seeing quick steps for transforming the practice towards a quality and sustainable built environment for Hong Kong. Since this public engagement exercise was only limited to a few key aspects and merely applicable to new constructions, we also anticipate a more comprehensive framework together with regulatory measures to accelerate the market transformation, including both new and existing buildings.