

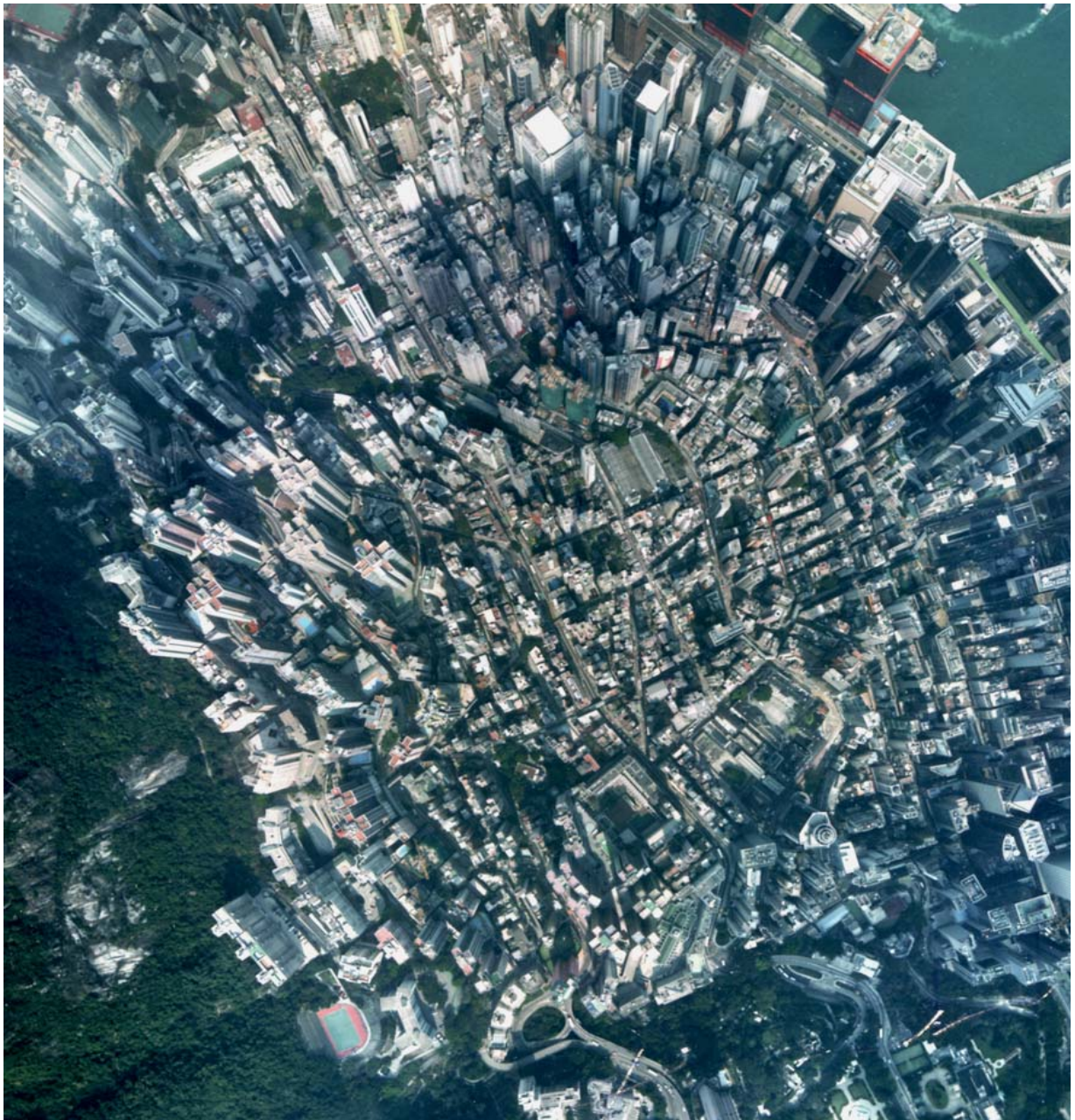


Buildings Department, the Government of the HKSAR
Consultancy Agreement No. BA/01/2006

Consultancy Study on Building Design that Supports Sustainable Urban Living Space in HK

EXECUTIVE SUMMARY

Jan 2009



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Background

Following up on the First Sustainable Development Strategy for Hong Kong in response to the "Report on the Engagement Process for a First Sustainable Development Strategy" issued by the Council for Sustainable Development in 2005, the Buildings Department has commissioned this consultancy study to advise on the design of new buildings that would enhance the environmental sustainability of urban living space.

The consultant was formally appointed in April 2006, and a stakeholder consultation workshop was held in August 2006. The main purpose of the stakeholder consultation was to collect views of the stakeholders on the generic sustainable urban living space issues that new building design should address in Hong Kong.

Design Guidelines

Through the review on local legislation and practices, the research on overseas requirements and practices, and the parametric study based on computational fluid dynamics study on air ventilation performance under different degree of building permeability and separation, the consultant has specifically recommended the following key guidelines on sustainable building design for enhancing air ventilation, environmental quality of pedestrian level and greenery as well as mitigating urban heat island effect:

| | Design Features | Application Criteria | Objectives |
|----|---|--|---|
| I. | Building Separation Buildings in large development sites should be separated by intervening spaces. | Site area not less than 2 hectares or buildings with a continuous projected facade length greater than 60 metres. The minimum area of building separation measured in a vertical plane should be 20% to 33.3% of the sum of the facade area and the separation area measured in the vertical plane, depending on the site area and building height. | To enhance air ventilation and environmental quality of pedestrian level as well as to mitigate urban heat island effect. |

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| II. | Building Setback Building setback should be provided at pedestrian zone for developments abutting narrow streets less than 15-metre wide. | For development sites abutting narrow streets less than 15-metre wide. The building measured from ground level to a height of 15m should be set back from the street so as to provide an air volume not less than 7.5-metre wide measured from the centre line of the abutting street. | To enhance air ventilation and environmental quality of pedestrian level as well as to mitigate deep street canyon effect. |
| III. | Site Coverage of Greenery Provision of greenery according to site area. | For sites larger than 1,000 square metres. Fixed planting areas equivalent to 20% to 30% of the site areas should be provided. While the planting location is preferably in proximity to pedestrian for wider public benefits, other locations at ground floor, podium, roof and other levels are acceptable. | To improve the environmental quality of living space as well as to mitigate urban heat island effect. |

Note: For design flexibility, allowance for the corresponding performance-based approach or design equivalence as well as exemption scenarios is also recommended in the design guidelines wherever appropriate.

Proposed Implementation

The study has investigated into the advisory, incentive and regulatory approaches for implementation of the proposed design guidelines. For effective transformation of the mainstream practice, a multitude of implementation strategies should be adopted in an incremental and interactive way.

Voluntary adoption should be promoted, especially in government and public funded projects. Recognition through building environmental performance assessment scheme should also be dovetailed.

However, for more effective market transformation in the short term, an administrative approach should be adopted to kick off wider and quicker adoption of the proposed design guidelines. An option is to dovetail certain existing incentive scheme under the Joint Practice Notes and/or Practice Notes for Authorized Persons and Registered Structural Engineers. For instance, the implementation of the guidelines can become a condition for granting gross floor area concessions in future.

As inspired by other progressive cities, regulatory approach is favoured in the long run with a view to providing a level playing field for all. This is certainly dependent on the popularity of the measures and public feedback as well as further scientific research in the local building industry.

Way Forward

According to the brief, this study only focuses on new buildings. It represents a starting point to address the critical issues of sustainable urban living space in Hong Kong. When the proposed sustainable building design guidelines are found acceptable to the public and the stakeholders, consideration could be given to extend separate studies to the stock of existing buildings.