

Hong Kong Green Building Council Limited (HKGBC)

Invitation for Expression of Interest (EoI) to Tender for Study on Urban Micro-climate

Introduction

Urban micro-climate is known as localised climate conditions within an urban area or neighbourhood. The design of a building and its surroundings has significant impact on the urban micro-climate and the liveability of the occupants. Urban micro-climate design is a site-specific design approach which enables human well-being and healthy lifestyle in close contact with the surroundings, while placing a minimal burden on the natural environment and local ecosystem. Micro-climate design aims to:

- 1) Form healthy and liveable built environments
- 2) Preserve or revitalise natural environment
- 3) Reduce building energy consumption and CO₂ emissions

It is suggested that urban micro-climate affects passive and low energy designs in terms of strategies and performance, including natural or hybrid ventilation, natural lighting, shading and the use of renewable technologies etc. in urban areas. However, achievement of passive design in high-rise and dense urban built environments is rather challenging. The urban micro-climate associated with the dense development in some parts of Hong Kong may impose negative or positive consequences on passive design, building energy use, health, and the quality of life.

With an overarching aim to provide design guidance on achieving good micro-climate in Hong Kong, the purpose of this invitation is to engage consultants to express their interest in submitting a proposal on the study of maximising the benefits of adopting urban micro-climate studies and considerations into planning and design of building and neighbourhood.

Background

HKGBC is an industry-based overarching body driving the promotion and creation of green and sustainable buildings throughout the Hong Kong Special Administrative Region, for engaging community, industry and Government to create a greener and more sustainable environment.

HKGBC has engaged the stakeholders of the building industry (including architects, engineers, surveyors, property/ facility managers, developers and related Government

bodies) to publish a series of best practice guides to facilitate different types of premises in the transformation to green buildings. HKGBC wishes to engage a consultant to develop a state-of-the-art and programmatic Guidebook to provide the practitioners, decision makers and other stakeholders with practical information regarding the benefits of adopting micro-climate studies and considerations to building and neighbourhood planning and design. A non-exhaustive background to the work and key scope areas is outlined below.

Objectives

As part of the HKGBC's efforts in promoting green buildings and a sustainable built environment, this project aims to provide forward looking, user-friendly and applicable design guidelines on maximising the benefits of adopting urban micro-climate studies and considerations into building and neighbourhood planning and design. The project shall review local good practices and Air Ventilation Assessment (AVA) to assist practitioners while implementing passive design as well as to facilitate applicants to address related BEAM Plus requirements. Overall, the study will contribute to the development of green buildings and neighbourhoods and promote sub-tropical passive building design in Hong Kong.

Scope of the Project

The project involves desktop studies with recommendations to practitioners and the building industry. The main content of the project shall include but not limited to:

- 1) An extensive review of local practices of implementing micro-climate studies into building design and the built environment including AVA, and identifying good practices;
- 2) Comprehensive studies on sub-tropical micro-climate design, urban context and pattern in Hong Kong, scope and parameters, design guidelines, local/overseas good-practices including vernacular architecture and simulation tools for the practitioners, decision makers as well as other stakeholders. The study should take into consideration on similar or related studies previously conducted by the Government or Universities;
- 3) In-depth analysis, supported by quantitative findings such as graphs and illustrations, evaluation on local good practices and AVA, addressing difficulties and benefits of adopting passive design strategies, to complement with local environmental assessment (e.g. BEAM Plus rating system) and to facilitate integrated building design process;
- 4) Working Templates, checklist and practical recommendations on application of urban micro-climate studies and principles to building and neighbourhood design and planning, knowledge transfer of urban micro-climate studies into building design and

neighbourhood planning, possible linkage between the study and BEAM Plus rating system, and findings that are preliminary considered feasible for adoption in Hong Kong; and

5) Recommendations on future studies.

Apart from the deliverables as specified in the following section, the appointed consultant will also need to assist HKGBC in liaising with locally and internationally renowned speakers related to this topic for HKGBC's seminar or conference or publicity events.

Deliverables

The Consultant shall provide the following deliverables during the project development:

- 1) An inception report including the initial findings from the study, and the project framework and schedule;
- 2) An Executive Summary with approximately 5 double-sided pages and a simplified reading guide with attractive graphics to be submitted before the development of the Working Group's easy reference and approval;
- 3) A detail research report with the analysis and evaluation of local good practices, supplemented with figures, comparison table, schematic diagram, etc., to support the recommendations on the measures and means for the adoption of micro-climate design in Hong Kong;
- 4) Two stakeholder engagement workshops that will be organised and conducted by the appointed Consultant to collect feedback on the content of the Guidebook during different stages of Guidebook development. Participants of the following groups shall be invited to join the stakeholder engagement workshops:
 - a. Stakeholders of premises (e.g. residences, developers, property/facility managers, single/multi-tenants, etc.);
 - b. Building professionals and academia (e.g. architects, planners, contractors, project managers, landscape architects, surveyors, environmental engineers, BEAM assessors, BIM modellers, etc.);
 - c. Relevant Government Departments (e.g. Buildings Department, Architectural Services Department, Environmental Protection Department, etc.); and
 - d. Working Group members.

During the stakeholder engagement workshops, the Consultant shall give presentation on the Guidebook introduction, and undertake surveys and discussions with key stakeholder groups in order to align the Guidebook with their needs and expectations.

- 5) The Guidebook will be delivered to the public through 1000 copies and a web version with clickable interface from the HKGBC website (<http://www.hkgbc.org.hk>). The Guidebook will be presented in both English and Traditional Chinese versions, with no more than 50 double-sided pages in A4 size with perfect binding in each version with presentable layout and recycling paper publication.

The project will be steered and overseen by HKGBC Steering Committee members, with project management by the HKGBC Secretariat. The project is expected to be conducted in 15 months and completed by the first quarter of 2017. HKGBC reserves the right to edit any item of work subject to mutual agreement of both Parties.

Pre-qualification Requirement

Consultants complying with the following minimum requirements will be considered for pre-qualification:

- (i) History of establishment: established at least 3 years;
- (ii) Local research experience relating to micro-climate studies within the last five years;
- (iii) Connections with local and international renowned researchers /institutions/ organisations related to research/implementation of micro-climate design;
- (iv) A competent team with relevant working experience in micro-climate related research projects or passive design on green buildings and related issues (local and /or overseas). (The involvement of overseas renowned academics/experts in the proposed team is highly preferred.)
- (v) A competent team comprising at least a BEAM Professional and staff with local expertise in following areas:
 - a. Architectural design
 - b. Urban Planning and design
 - c. Computer-based simulation (AVA, CFD, etc.)
 - d. Environmental engineering / studies
 - e. BEAM Plus consultancy
 - f. Professional writing in English and Chinese
 - g. Graphic and publication design

Relevant experience in publication will be a plus. The Consultant may attach example(s) of its own publication with the submission of expression of interest for HKGBC's reference.

Submission

Any parties interest in this project are invited to submit their expression of interest including their company information with details key personnel and relevant job reference (both local and overseas) and a proposed framework and programme of the research with no more than FOUR A4 pages (supplementary materials can be supplied as appendices) by mail or in person to the following address **before 6:00pm** on **7 August 2015 (Friday)**. (Please be reminded that all documents shall be put into the drop box at the reception area)

Attention:

Study on Urban Micro-climate

**Hong Kong Green Building Council Ltd.
1/F Jockey Club Environmental Building
77 Tat Chee Avenue Kowloon Tong**

Late submission will not be considered. Parties that are successfully shortlisted after the Expression of Interest, with or without interview, will subsequently be invited to submit detailed proposals. Only shortlisted consultants will be informed.

Note: Should you require access to any additional information, for example, project brief, Task Force meeting powerpoint, minutes and other references regarding the study before submission of EoI, you may contact Ms Jennifer Cheung at 3994 8816 or jennifer.cheung@hkgbc.org.hk for appointment. Please note that the additional information is only available in hard copies at the HKGBC. No parties are entitled to borrow, copy, photograph or reproduce the information.

Issued: July, 2015