

## MEBS6020 Sustainable Building Design

<http://ibse.hk/MEBS6020/>

### Assignment 02: Assessment of Sustainable Building Project (2020-2021)

The University of Hong Kong is planning to apply green building assessment and certification for the following building complex at the main campus. Two assessment methods are being considered including BEAM Plus and LEED. As the green building consultant of the project, you are required to study the feasibility and provide professional advice to the client on the assessment process and important requirements.

HKU Graduate House 香港大學研究生堂, No. 3 University Drive <https://www.gradhse.hku.hk/>

The HKU Graduate House, completed in March 1998, was awarded a Silver Medal - the highest recognition of architectural design excellence by the Hong Kong Institute of Architects. It is a composite building consisting of a residential complex, a conference centre and an amenities centre. The residential complex is the only residential hall on the HKU main campus, which offers accommodation to full-time postgraduate students from all over the world. It has 188 single rooms, all of which have a bathroom shared between the adjacent rooms and 9 double rooms with private bathrooms for married students without children. The amenities centre houses the Postgraduate Hub, the Graduate School Office and other sub-offices of the University. The conference centre consists of Wang Gungwu Lecture Hall and two seminar rooms, which could be let to both HKU and non-HKU hirers for holding events.



Figure 1. Location map of HKU Graduate House (source: <http://hk.centamap.com/>)

Case Studies on Sustainable Buildings - HKU Graduate House

[http://ibse.hk/sbe/case\\_study/case/hk/graduate/graduate.htm](http://ibse.hk/sbe/case_study/case/hk/graduate/graduate.htm)

Project information from Rocco Design Architects:

<https://www.rocco.hk/?lang=en&view=projects.all&p=graduate-house-the-university-of-hong-kong>

You should examine the two assessment methods (BEAM Plus and LEED) and identify suitable system(s) for application with consideration of the assessment criteria, potential credit points, and strategy to improve the built environment and operational efficiency. You should evaluate the information requirements for the assessment process and suggest appropriate analysis methods or tools to develop the information. If needed, you may suggest improvement measures for enhancing the building environmental performance.

You should prepare a technical report of not more than 20 nos. of A4 pages to present the professional advice to the client in a concise and systematic way. The report shall address the following issues for effective implementation of the project. Other important issues may also be included.

- (a) Comparison of the two assessment methods (BEAM Plus and LEED) and identification of suitable system(s) for certification of the project.
- (b) Critical evaluation of the important issues and assessment criteria for the project.
- (c) Guidance on the assessment process and information requirements.
- (d) Advice on analysis methods and/or tools and suggestion on improvement measures for enhancing the building environmental performance.
- (e) Proposed target(s) and strategy for the green building assessment.

The report shall be submitted in electronic PDF format to the Moodle of MEBS6020. The assessment criteria of the report include quality of the content, organization, clarity of thought, and report writing skills. The report will be evaluated on synthesis of information during the course and from your own reading/study, and evidence that you have thought about the subject and the lecture topics in some depth. A clear structure and a logical argument is important and you should provide evidence of critical thinking, originality and effective writing.

Report submission (via Moodle): **on or before 6 August 2021 (Fri)**

### **Useful References**

- HKGBC & BSL, 2016a. *BEAM Plus Existing Buildings Version 2.0 (2016.3) Comprehensive Scheme*, Hong Kong Green Building Council (HKGBC) & BEAM Society Limited (BSL), Hong Kong.
- HKGBC & BSL, 2016b. *BEAM Plus Existing Buildings Version 2.0 (2016.3) Selective Scheme*, Hong Kong Green Building Council (HKGBC) & BEAM Society Limited (BSL), Hong Kong.
- Jaffe S. B., Fleming R. M., Karlen M. & Roberts S. H., 2020. *Sustainable Design Basics: A Methodology for the Schematic Design of Sustainable Buildings*, John Wiley & Sons, Inc., Hoboken, NJ.
- Kibert C. J., 2016. *Sustainable Construction: Green Building Design and Delivery*, 4th ed., John Wiley & Sons, Hoboken, NJ.
- Kubba S., 2016. *LEED v4 Practices, Certification, and Accreditation Handbook*, Butterworth-Heinemann/Elsevier, Burlington, MA.

### **Useful Websites**

- BEAM Plus <https://www.hkgbc.org.hk/eng/beam-plus/introduction/>
- BEAM Plus Existing Buildings (EB) <https://eb.beamplus.org.hk/>
- LEED USGBC <http://www.usgbc.org/leed>