



HKGBC
BEAM Affiliate
綠建通才

Candidate Handbook
考生手冊

(2014.05)

BEAM
建築環保評估協會

 HKGBC
香港綠色建築議會

Part A – Introduction

A **BEAM Affiliate** is a person accredited by the Hong Kong Green Building Council Limited (HKGBC) as being competent to support green building design, construction and operations. The BEAM Affiliate Training and Examination, organised by BEAM Society Limited (BSL), aims at equipping participants with knowledge in green building in the areas of design, construction, operation, maintenance, as well as the BEAM Plus rating tool.

The programme welcomes **practitioners or technical staff working in the construction/real estate industry, interior design practitioners, or recent degree graduates** who are in the process of working towards a professional qualification. The credential also provides an individual who cannot yet meet the BEAM Pro requirement with **an alternative route to becoming a BEAM Pro**.

Three major reasons to go for the BEAM Affiliate credential are:

- **Knowledge**
Preparation for the BEAM Affiliate Examination requires training and study. In the process, your knowledge in green building will definitely be enhanced.
- **Recognition**
BEAM Affiliate credential serves as an unbiased endorsement of your green building knowledge.
- **Progression**
A BEAM Affiliate is allowed to proceed to the BEAM Pro Training and Examination after he/she has fulfilled the prescribed requirements. For details of prospect of the credential, please refer to Part F below.

PART B – Applying for BEAM Affiliate Training and Examination

Minimum Qualification Requirements	<p>To enrol the Training and Examination, you must fulfil one of the followings:</p> <p>A degree or equivalent in built environment related disciplines; plus At least 2 years' working experience in the building construction or interior design industry.</p> <p>OR</p> <p>A diploma or equivalent in built environment related disciplines; plus At least 5 years' working experience in the building construction or interior design industry.</p> <p>OR</p> <p>At least 10 years' working experience in the building construction or interior design industry, with completed education at HKCEE/HKDSE level or equivalent.</p> <p>OR</p> <p>Qualification as an Associate Member of one of the five professional institutes: HKIA, HKIE, HKILA, HKIP and HKIS, or equivalent.</p>
Registration	<p>Please click here to download the registration form. You are required to submit the completed registration form with full payment and all relevant supporting documents e.g. Certificates and CV. Applicants will receive an email notifying them if the application is successful or not.</p>

Training and Examination Fee	<p>Special Offer for Member* : HK\$1,500 for Training and Examination Fee for Non-members (Others) : HK\$2,000 for Training and Examination</p> <p><i>* Members refer to the Members of BEAM Society registered before 1 April 2011; or the HKGBC Members since November 2009.</i></p> <p>Payment can be made to BSL by one of the following methods:</p> <p>(A) Cheque</p> <p>Payment should be made by cheque payable to “BEAM Society Limited” and send to the following address:</p> <p>1/F Jockey Club Environmental Building 77 Tat Chee Avenue Kowloon Tong Hong Kong Reference: BEAM Affiliate Training and Examination</p> <p>Please ensure your name, contact number and payment details (BEAM Affiliate Training & Examination) are written on the back of the cheque.</p> <p>(B) Bank Transfer</p> <p>Direct transfer to the BSL’s bank account with details below:</p> <p>Bank : HSBC, Hong Kong Name of Beneficiary : BEAM Society Limited Account No : 640-124970-838 Address : No. 1 Queen’s Road Central, Hong Kong Swift Code : HSBCHKHCHKH</p> <ul style="list-style-type: none"> • To help us identify the bank transfer, you are recommended to mark down “BEAM Affiliate Training & Examination” on the bank transfer slip. • Once payment has been made, please send us a copy of the bank transfer slip to BSL by email to ba.training@beamsociety.org.hk or by fax at 3996 9108 for record. • Any bank charge incurred should be borne by the applicant. 	
	Bulk Scheduling	Special request for bulk scheduling of BEAM Affiliate Training shall be reviewed by BSL based on the group size per training.
	Collection of Personal Data	Your personal data will be collected through BSL and the HKGBC for purposes in connection with BEAM Affiliate Training and Examination. For details of Privacy Policy of BSL and the HKGBC, please visit: www.beamsociety.org.hk/en_privacy.php www.hkgbc.org.hk/eng/privacypolicy.aspx
PART C – BEAM Affiliate Training		
Training Outline	<p>The trainers of BEAM Affiliate Training are invited from the Green Building Faculty, which consist of a group of experts and professionals that supports the initiatives of green building and sustainable environment in Hong Kong.</p> <p>The half-day training includes BEAM Plus New, Existing Buildings & Interiors rating tools associated with major components, namely Framework and Innovations (IA), Site Aspects (SA), Materials Aspects (MA), Energy Use (EU), Water Use (WU) and Indoor Environmental Quality (IEQ).</p>	

	(A) Framework and Innovations (IA)	框架與創新 (IA)
1	Building Environmental Assessment Method (BEAM)	建築環境評估法
2	BEAM Plus	綠建環評
3	BEAM Affiliate (BA)	綠建通才
4	BEAM Professional (BEAM Pro)	綠建專才
5	BEAM Assessor (BAS)	綠建評委
6	Provisional Assessment (PA)	暫定評估
7	Final Assessment (FA)	最終評估
8	Credit Interpretation Request (CIR)	評分演譯要求
9	Appeal	上訴
10	Bonus	獎勵分
11	Innovative Techniques	創新技術
12	Performance Enhancement	性能提升
	(B) Site Aspects (SA)	用地與室外環境 (SA)
1	Microclimate	微氣候
2	Urban Heat Island	城市熱島效應
3	Building Permeability	建築物通透度
4	Air Ventilation Assessment	空氣流通評估
5	Cool Materials	降溫材料
6	Vertical Daylight Factor	垂直採光系數
7	Ecological Value / Biodiversity	生態價值 / 生物多樣性
8	Pervious / Impervious Hard Landscape	透水 / 不透水地面
	(C) Materials Aspects (MA)	用材 (MA)
1	Construction Waste	建築廢物
2	Waste Minimization	減廢 / 廢物減量
3	Waste Recycling	廢物回收 / 廢物循環再造
4	Ozone Depletion	臭氧層耗蝕 / 臭氧層損耗
5	Waste Management Plan	廢物管理計劃
6	Prefabrication	預製
7	Modular Design	模組化設計
8	Sustainable Timber	可持續木材
9	CFC	氟氯化碳
10	Structural Adaptability	結構可適應性
	(D) Energy Use (EU)	能源使用 (EU)
1	Building Energy Codes	建築物能源效益守則
2	Carbon Emission Reduction	減少碳排放
3	Building Simulation and Exceptional Calculation Method	建築物模擬和特殊計算方法
4	Embodied Energy	內含能源
5	Renewable Energy	可再生能源
6	Energy Management	能源管理
7	Testing and Commissioning	測試及調試

	<p>8 Operation and Maintenance 操作及維修</p> <p>9 Passive Design 被動式設計</p> <p>(E) Water Use (WU) 用水 (WU)</p> <p>1 Quality Water Recognition Scheme (QWRS) 優質食水認可計劃</p> <p>2 Water Efficiency Labelling Scheme (WELS) 用水效益標籤計劃</p> <p>3 Harbour Area Treatment Scheme (HATS) 淨化海港計劃</p> <p>4 Legionella 退伍軍人病桿菌</p> <p>5 Potable Water Storage Tanks 食水缸</p> <p>6 Rainwater Harvesting 雨水收集</p> <p>7 Flushing Water / Sea water 沖廁水 / 海水</p> <p>8 Greywater 中水</p> <p>9 Irrigation 灌溉</p> <p>10 Periodic Inspection 定期檢查</p> <p>(F) Indoor Environmental Quality (IEQ) 室內環境質素 (IEQ)</p> <p>1 Minimum Ventilation 最低限度通風</p> <p>2 Plumbing and Drainage Systems 給排水系統</p> <p>3 Biological Contamination 生物污染</p> <p>4 Waste Disposal 廢物棄置</p> <p>5 Indoor Environmental Quality 室內環境質素</p> <p>6 Outdoor Air Quality 室外空氣質素</p> <p>7 Acceptable Indoor Air Quality 合格室內空氣質素</p> <p>8 Thermal Quality 室溫質量</p> <p>9 Visual Quality 照明質量</p> <p>10 Aural Quality 聲音質量</p>
Programme Rundown	<p>9:30 – 10:00 Registration</p> <p>10:00 – 10:30 Introduction to BEAM Plus Framework & Innovations (IA)</p> <p>10:30 – 10:50 Site Aspects (SA)</p> <p>10:50 – 11:10 Materials Aspects (MA)</p> <p>11:10 – 11:35 Energy Use (EU)</p> <p>11:35 – 11:50 Tea Break</p> <p>11:50 – 12:10 Water Use (WU)</p> <p>12:10 – 12:35 Indoor Environmental Quality (IEQ)</p> <p>12:35 – 13:00 Mini Mock Exam & Wrap Up</p> <p><i>* The above programme rundown is subject to change. Please refer to the latest training flyer on BSL's website. The half day training is equivalent to 3 CPD hours for members of Professional Institutions.</i></p>
Training Date and Venue	Please click here to view the schedule for the next BEAM Affiliate Training.

References – BEAM Plus Manual	<ul style="list-style-type: none"> • BEAM Plus for New Buildings Version 1.2 • BEAM Plus for Existing Buildings Version 1.2 • BEAM Plus Interiors Version 1.0
PART D – BEAM Affiliate Examination	
Examination Format and Language	<p>The purpose of BEAM Affiliate Examination is to test the core concept of the aspects under BEAM Plus assessment tools and the knowledge to support BEAM Plus projects and green buildings in the areas of design, construction, operation and maintenance.</p> <p>The Examination is computer-based test and questions are randomly generated. Candidates are required to answer 60 multiple-choice questions within 90 minutes. A score of 75% must be achieved to pass the examination.</p> <p>This is an open-booked examination; however, candidates attend the examination are ONLY allowed to bring their respective identification documents into the examination room. A hard copy of Training Materials will be provided at the examination centre.</p> <p>The language for the Examination is English only.</p>
Examination Date and Venue	<p>Candidates can choose their preferred session of Examination as shown on the registration form. Final assigned session will depend upon availability. Please refer to the latest training flyer on BSL’s website.</p> <p>Candidates must arrive the examination centre 20 minutes before the Examination.</p> <p><u>Address of the examination centre:</u> Hong Kong Examinations and Assessment Authority 17 Tseuk Luk Street San Po Kong Kowloon Hong Kong</p>
Identification Requirements	Candidates have to ensure their English Name and HKID/Passport No. are identical to those shown on their HKID/Passport presented at the examination centre.
Examination Rescheduling	<p>Rescheduling of the Examination is permitted; and candidate is allowed to submit an application ONCE, if he/she cannot attend the original scheduled date of examination. The application must be submitted to the BSL at least 10 working days before the original scheduled date of examination. An Administration Fee of HK\$600 will be applied per application. The Applicant will be advised to choose two more options for the new schedule (subject to seats availability).</p> <p>If the candidate fails to attend the examination per the new schedule, he/she will be required to apply for re-sit the examination.</p> <p>Payment can be made to BSL by cheque or bank transfer. Please refer to the “Training and Examination Fee” section for details of the payment method.</p>
Failing to Appear for a Scheduled Examination	<p>Any candidate who is absent from the examination due to medical reason or personal issue is eligible to re-sit the examination subject to the same additional payment.</p> <p>Please refer to “Failing the Examination” section in Part E.</p>
Examination Centre Regulations	Candidates attending the examination are only allowed to bring their respective identification documents into the examination room. No papers, books, food, beverages, bags (including pocketbooks and purses), writing or drawing instruments (including pencils which will be provided) or electronic devices (including calculators, computers,

	<p>cellular phones and any other communication devices) are allowed in the examination room.</p> <p>A hard copy of Training Materials, scratch papers and pencils will be provided by the examination centre. Candidates are not allowed to take away anything from the examination centre after they finish the examination.</p>
Breach of Examination Regulations	<p>Candidates are warned that any of the following offences may lead to disqualification from the examination:</p> <ul style="list-style-type: none"> • Obtaining knowledge of contents of questions prior to the examination. • Copying from notes, books or electronic devices brought into the examination room or from the work of other candidates. (Note: Possession of unauthorised material / devices found on / in the examination desk or on the candidate will be considered sufficient grounds for a charge of premeditated cheating and this will lead to disqualification.) • Communicating or attempting to communicate in any form with persons inside or outside the examination centre during an examination session. • Attempting to take away any examination material from the examination centre. • Attempting to tamper with a computer. • Attempting to copy or record examination questions (in any format) from the examination centre. • Impersonation or requesting others to impersonate. • Deliberately disturbing or causing a nuisance to other candidates. • Disobeying the instructions of the Centre Supervisor and/or being excessively rude to the Centre Supervisor. • Leaving the examination room before the end of the session without authorisation.
Arrangement of BEAM Affiliate Examination during Bad Weather	<p>Please refer to our memo.</p>
Services to Special Needs Candidates	<p>The Hong Kong Examinations and Assessment Authority (HKEAA) provides special examination arrangements for candidates with special needs and disabilities. Please click here for details.</p>
Sample Q&A (English version only)	<p>1. Negative impact on microclimate will be resulted by using:</p> <p>A. non-renewable energy sources. B. materials of high Volatile Organic Compound level. C. water inefficient planting. D. impervious paving surfaces on the ground.</p> <p><u>Answer: D</u></p> <p>2. Which of the following features will likely improve the microclimate near the ground around a high-rise office building?</p> <p>A. roof gardens. B. photovoltaic panels. C. vertical greenery on podium facades (less than 15m above ground). D. water features on podium gardens (over 15m above ground).</p> <p><u>Answer: C</u></p> <p>3. The use of indigenous / native plant species will enhance the ecological value of a site because they are likely to:</p> <p>A. create a better microclimate.</p>

- B. require less maintenance.
- C. support a diverse assemblage of local animal species.
- D. consume less water.

Answer: C

4. The primary objective of the Air Ventilation Assessment method is to evaluate the impact of:

- A. wind on structural design of buildings.
- B. natural ventilation design of buildings on energy use.
- C. building separation on risk of fire spread.
- D. building design on the wind environment.

Answer: D

5. According to Environmental Protection Department, in how many years will all Hong Kong's landfills be full?

- A. 1-5 years.
- B. 6-10 years.
- C. 10-15 years.
- D. 15-20 years.

Answer: B

6. Which of the following refrigerant shall not be used in HVAC&R or other equipment in BEAM Plus?

- A. CFC
- B. Ethane
- C. Dimethyl ether
- D. Propane

Answer: A

7. How many assessment tools are currently available to be registered under BEAM Plus?

- A. 1
- B. 2
- C. 3
- D. 4

Answer: C

8. Which of the following development project cannot be assessed by BEAM Plus NB?

- A. Commercial building
- B. Residential building
- C. Complex building with shopping mall on the ground floor and residential tower on top
- D. Open garden with no building

Answer: D

9. What kind of "Innovative Technology" can be considered under BEAM Plus?

- A. Advance technique which has not yet been widely adopted in HK or even elsewhere with environmental benefit.
- B. LED lighting in office area
- C. Solar panel for hot water system
- D. Natural ventilation in residential unit

Answer: A

10. 70% of Hong Kong's raw water is provided from:

- A. Dongjiang.
- B. Shenzhen.
- C. Huangpu.
- D. Dongguan.

Answer: A

11. Under BEAM Plus NB WU 2 Water monitoring, which of the following areas can be omitted?

- A. Plant room areas.
- B. Concealed areas.
- C. Toilet areas.
- D. Pipe ducts.

Answer: C

12. What is the most important issue to consider in design relating to indoor environmental quality?

- A. Ventilation.
- B. Thermal comfort.
- C. Aural comfort.
- D. Visual comfort.

Answer: A

13. Ventilation protects indoor users against poor indoor air quality by limiting pollutant levels. What is the document referred to as assessment criteria for pollutant levels?

- A. ASHRAE Standard 62 for minimum ventilation rate.
- B. IAQ Certification Scheme of EPD.
- C. BEAM Plus NB Version 1.2.
- D. CIBSE Handbook.

Answer: B

14. Objective of IEQ assessment is to engender a feeling of well-being amongst building users. Which of the following is not considered as 'well-being' under BEAM Plus NB and EB:

- A. Indoor air quality.
- B. Health and safety.
- C. Social interaction.
- D. Security.

Answer: C

15. Assessment of biological contamination in BEAM Plus refers to prevention of:

- A. Avian flu.
- B. Infection due to virus and fungi.
- C. Legionnaires' disease.
- D. Pneumonia.

Answer: C

16. Which of the following is a common energy saving method used in car park

ventilation?

- A. CO monitoring
- B. Decoupler system
- C. Occupancy sensor
- D. Free air cooling

Answer: A

17. Which of the following systems carries the highest electricity load in commercial buildings?

- A. Electrical lighting.
- B. Air-conditioning and refrigeration plant.
- C. Lift and escalators.
- D. Building management system.

Answer: B

18. Which of the following electrical appliances is currently not included under MEELS of the EMSD energy label certification list?

- A. Washing machine.
- B. Room air conditioner.
- C. Electric storage water heater.
- D. Microwave oven.

Answer: D

19. In Hong Kong, what percentage of electricity is consumed by buildings?

- A. 50%
- B. 60%
- C. 70%
- D. 90%

Answer: D

20. Which type of lift driving system is the most energy efficient?

- A. AC Variable Frequency Drive
- B. AC Variable Voltage Drive
- C. AC Variable Voltage Variable Frequency Drive
- D. DC Thyristor Leonard Drive

Answer: C

PART E – After your Examination

Examination Result	Provisional examination result slip with the result of pass/fail will be generated immediately after the examination.
Passing the Examination	Candidates who have passed the Examination are required to make formal registration through the webpage of the HKGBC www.hkgbc.org.hk . Upon completion of registration, the HKGBC will send the official result document and Certificate (only e-cert is available) to candidates in a month after the examination.
Failing the Examination	Candidates who fail the examination can re-take the examination after payment of an additional fee each time. Any candidate who is absent from the examination due to medical reason or personal issue is eligible to re-sit the examination subject to the

	<p>same additional payment.</p> <p>The fee for re-take the examination is as follows:</p> <table border="1" data-bbox="359 297 1461 376"> <tr> <td>Member*</td> <td>: HK\$900 per examination session</td> </tr> <tr> <td>Non-members (Others)</td> <td>: HK\$1,200 per examination session</td> </tr> </table> <p><i>* Members refer to the Members of BEAM Society registered before 1 April 2011; or the HKGBC Members since November 2009.</i></p> <p>Payment must be received not less than one month before the new examination date and can be made to BSL by cheque or bank transfer. Please refer to the “Training and Examination Fee” section for details of the payment method.</p> <p>The validity period of examination retake shall be limited to one year from the first Examination date of the candidate; Candidates fail to pass the examination within the one-year period will be required to retake the BEAM Affiliate Training and to pay for the full payment of Training and Examination fee.</p>	Member*	: HK\$900 per examination session	Non-members (Others)	: HK\$1,200 per examination session
Member*	: HK\$900 per examination session				
Non-members (Others)	: HK\$1,200 per examination session				
<p>Appeal to Examination</p>	<p>Similar to most of the worldwide open examinations, “appeal” to the multiple-choice examination is NOT applicable. However, we do accept the “Appeal to Process and Procedure”, for example, delay in allowing candidate enter the examination centre, computer glitch, unclear instructions for the examination, etc.</p> <p>A fee of HK\$500 (non-refundable) will be charged per Appeal Case. Payment can be made to BSL by cheque or bank transfer. Please refer to the “Training and Examination Fee” section for details of the payment method.</p> <p><u>Appeal Process</u></p> <p>Step 1 Click here to download the Appeal Application Form</p> <p>Step 2 Send the completed Appeal Application Form with cheque or a copy of the bank transfer to BSL within 10 working days upon receiving the Examination result</p> <p>Step 3 An acknowledgement via email will be issued to the Appeal Applicant within 3 working days from the day the form and payment are received</p> <p>Step 4 BSL will review the case and get back to the Appeal applicant within 20 working days</p>				
<p>PART F – Credential Maintenance and Prospect of BEAM Affiliate Credential</p>					
<p>Credential Maintenance</p>	<p>A BEAM Affiliate maintains his/her credential by earning 3 Mandatory Continuing Professional Development (CPD) hours and 3 General CPD hours every year.</p> <p>In brief, Mandatory CPD activities are CPD activities specifically designed for BEAM Pro/BEAM Affiliate, which are organised by BSL or the HKGBC; while General CPD activities are other CPD activities related to green buildings, which may be organised by other institutions. Please refer to the websites of BSL (www.beamsociety.org.hk) and the HKGBC (www.hkgbc.org.hk) for the upcoming schedules of CPD Programme.</p>				
<p>Prospect of BEAM Affiliate Credential</p>	<p>BEAM Affiliate will be eligible to apply for BEAM Pro Training and Examination after he/she has fulfilled the prescribed requirements:</p>				



BEAM Pro Training and Examination



Maintain BEAM Affiliate qualification for THREE consecutive years



Involve in at least ONE registered BEAM/BEAM Plus project*



* *Competition/bidding project is not inclusive. Concise log sheets that show the candidate's major involvement during different stages of the project, counter-signed by the project leader, have to be submitted. The registered BEAM/BEAM Plus project number shall be clearly indicated.*

Note: This Handbook has been translated into Chinese. If there is any inconsistency or ambiguity between the English version and the Chinese version, the English version shall prevail.