

## BEAM Society Limited

### BEAM Pro Training and Examination

#### Introduction and Building Certification Procedure

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25 July 2012

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## Introduction



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# What is BEAM?

**BEAM =**  
**Building Environmental  
Assessment Method**

A renowned green building labelling tool in HK to evaluate the environmental performance of buildings

# BEAM Evolution

- First standards launched in 1996
- Revised in 1999, 2003, 2005, 2009 **and 2012** with widespread technical input from Hong Kong professionals (advisory panels, peer review, weighting surveys)



## BEAM Plus

BEAM Plus is the 5<sup>th</sup> generation of BEAM

- **First Launched:**  
Nov 2009
- **Commencement:**  
Apr 2010
- **Official registration for project assessment:**  
Aug 2010
- **Launch of Version 1.2**  
July 2012



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## Hong Kong Green Building Council (HKGBC)

In 2009, four industry leaders united to establish the HKGBC



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## Hong Kong Green Building Council (HKGBC)

<http://www.hkgbc.org.hk>

HKGBC devotes its energies to initiating the market transformation to green building

- **Green Building Certification and Promulgation**
- **Influencing & Advising on the Drive for Green Building Growth**
- **Leading the Community to Adopt Green Building Practices**
- **Protecting the Environment in an Urban Context**
- **Reducing Carbon Emissions**

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## BEAM Society Limited

<http://www.beamsociety.org.hk>

BEAM Society Limited is a non-profit organization which is committed to promote, and develop the BEAM assessment tools, assessing green buildings and training professionals.

### **The mission of the BEAM Society is to:**

- Improve the environmental performance of buildings across their life cycle;
- Provide healthier, higher quality, more durable and efficient working and living environments for building occupants;
- Contribute significantly towards sustainable development in Hong Kong;
- Build capacity in the industry to move quickly towards;
- Educate the Hong Kong community to the concepts of eco-efficiency and sustainability;
- Extend these sound practices beyond Hong Kong, and into the Asia Pacific region.

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## BEAM Professionals (BEAM Pro)

- The key roles of **BEAM** Pro are to **integrate** the green building standards and practices into everyday building planning, design, construction & operation, and to assist the clients to achieve the desired **green building rating level**.
- BEAM Society Limited organises BEAM Pro Trainings.

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## BEAM Assessors

- **2 groups of BEAM Assessors**

Initial Group of Expert BEAM Assessors

Recurring Group of BEAM Assessors

Initial Group of Expert  
BEAM Assessors

**10**

Recurring Group of  
BEAM Assessors

**>20**

- **Ready to support the BEAM Plus project assessment**

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## Recurring Group of BEAM Assessors

- Academic **qualification** meeting the requirement of BEAM Professional (**BEAM Pro**); AND
- **Minimum ten (10) years relevant post-graduate working experience** in the building sector; AND
- Sufficient technical involvement in previous BEAM / BEAM Plus certification projects, completing **at least one (1) BEAM / BEAM Plus Gold project** at point of application.

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## BEAM Assessors for Project Assessment

- Under BEAM Plus rating scheme, **BEAM Assessors are anonymous** to clients and applicants.
- BEAM Society will **assign respective BEAM Assessor** to undertake project assessments **based on the profile of the experts**.
- **could involve more than one BEAM Assessor** for one project.



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# 2010



# 2012

- ~30 BEAM Assessors
- ~150+ Candidates per BEAM Pro Training Session
- ~1,900+ Candidates have been trained on BEAM Pro
- ~1,600+ Candidates have been accredited as BEAM Pro
- ~290+ Accredited BEAM Pro in the year of 2012
- ~200+ BEAM Plus projects registered with HKGBC

**More BEAM Plus NB and EB Projects!**

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## BEAM Plus NB

- BEAM Plus covers all building types
- New Building – New Buildings or Buildings involving major retrofitting works( 50% rule)
- Examples – Revitalization of Industrial Buildings to Commercial Building or A&A works with majority of façade and building services equipment being upgraded or replaced.



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## BEAM Plus EB

- Existing Building – evaluate the performance of Existing Buildings (need 3 year maintenance records).



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## Updates

- BEAM Plus version 1.2 of New Buildings and Existing Buildings have been launched on 3 July 2012 covering Passive design and amendment to Version 1.1.
- A grace period of 6 months will be given to applicants, in which projects may choose to be assessed with the existing BEAM Plus Version 1.1 or Version 1.2. The grace period will be effective until 31 December 2012, and the Version 1.2 will become mandatory from 1 January 2013
- A “Commercial Interior” version is under developed.

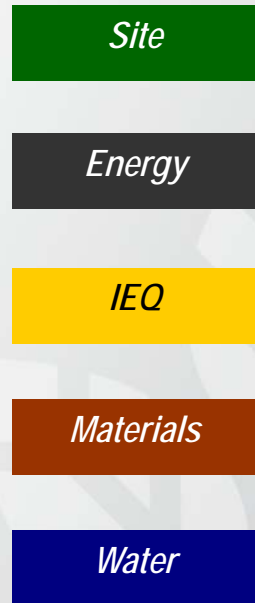
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## BEAM Plus Assessment Scope

### “Whole-Life” Approach

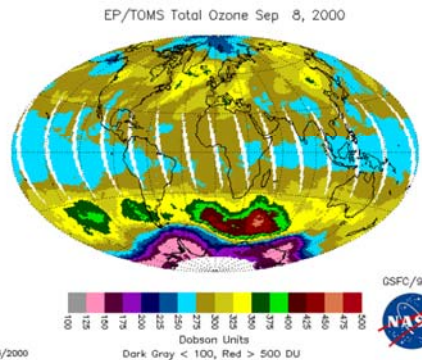
- Planning
- Design
- Construction
- Commissioning
- Completion
- Operation
- Maintenance
- Management



Nov 2009:12.00am

## BEAM Plus Prerequisites

- **Minimum Landscaping Area (20%) (NB)**
- **Environmentally Purchasing Plan (EB)**
- **No Virgin forest products for temporary works (NB)**
- **No CFC-based refrigerants in HVAC&R systems**

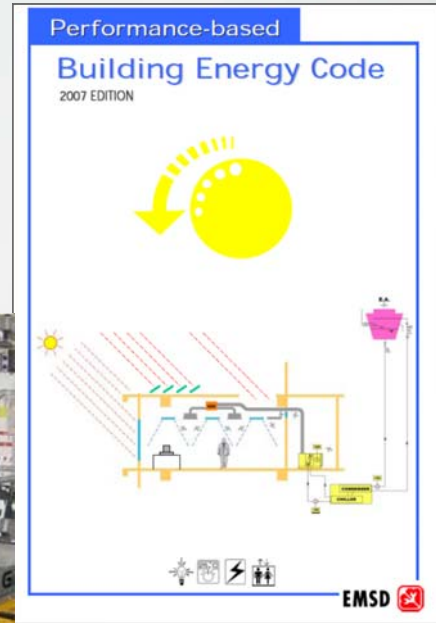


**Ozone Depletion**

09H/253/2009

## BEAM Plus Prerequisites

- Implementation of construction waste management plan (NB)
- Provision of waste recycle facilities
- Compliance with Building Energy Codes (BEC)



## BEAM Plus Prerequisites

- Water quality (WSD)
- 10% annual water saving
- Water Conservation Plan (EB)
- Compliance with minimum ventilation requirement for acceptable air quality

(ASHRAE 62.1-2007)



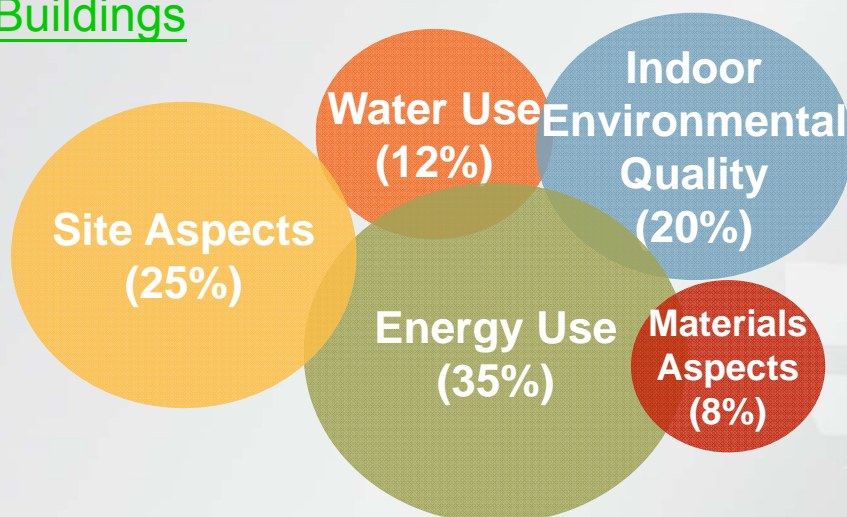
## BEAM Plus Scoring

	Overall	Site	Energy	IEQ	IA (credit)
<i>PLATINUM</i>	75%	70%	70%	70%	3
<i>GOLD</i>	65%	60%	60%	60%	2
<i>SILVER</i>	55%	50%	50%	50%	1
<i>BRONZE</i>	40%	40%	40%	40%	-

## Category Weighting - NB

Category Weighting → Importance & Global Trends

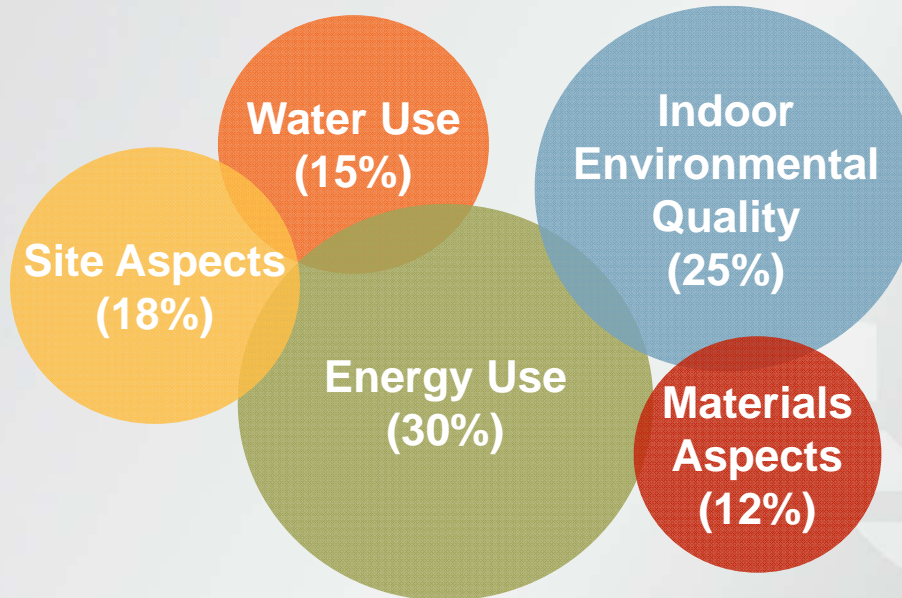
### New Buildings





## Category Weighting - EB

### Existing Buildings



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## Scoring Example - NB

Category	Applicable Credits	Achieved Credits	% of Achieved Credits	Category Weight Factor	Weighted Achieved Score	Achieved Sub-Rating
Site Aspects	21	14	67%	25%	16.7	Gold
Materials Aspects	18	8	44%	8%	3.6	
Energy Use	40	15	38%	35%	13.1	Uncertified
Water Use	7	4	57%	12%	6.9	
Indoor Environmental Quality	32	27	84%	20%	16.9	Platinum
Innovation and Additions	1	3	300%	---	3.0	Platinum
<b>Overall Rating</b>					<b>60.1</b>	<b>Uncertified</b>

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## Scoring Example - EB

Category	Applicable Credits	Achieved Credits	% of Achieved Credits	Category Weight Factor	Weighted Achieved Score	Achieved Sub-Rating
Site Aspects	21	16	76%	18%	13.7	Platinum
Materials Aspects	18	15	83%	12%	10.0	
Energy Use	40	30	75%	30%	22.5	Platinum
Water Use	7	4	57%	15%	8.6	
Indoor Environmental Quality	32	27	84%	25%	21.1	Platinum
Innovation and Additions	1.0	3	600%	---	3.0	Platinum
<b>Overall Rating</b>					<b>78.9</b>	<b>Platinum</b>

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## BEAM Plus Certification Procedures



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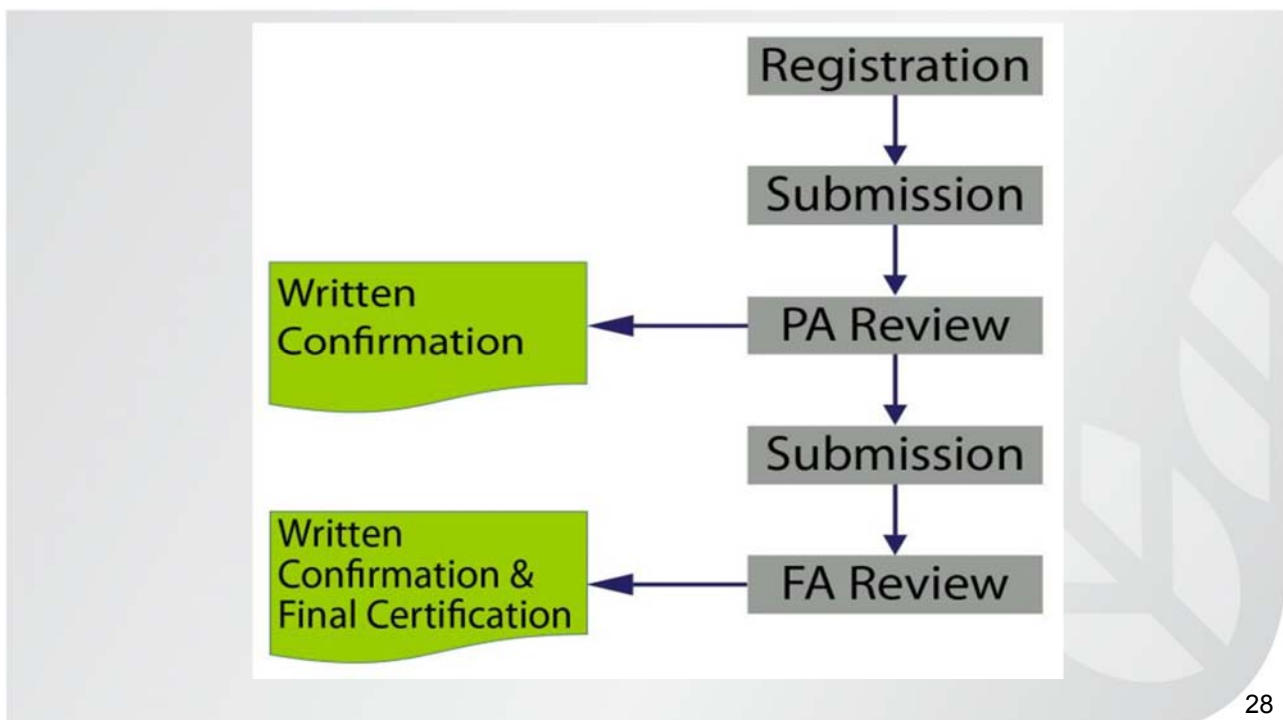
## BEAM Plus Certification Procedures

### DEFINITIONS

- “**Applicant**” means client, project team members or BEAM Pro
- “**BEAM Pro**” means BEAM Professional(s)
- “**Contract**” means the Agreement between BEAM Society Limited and the Applicant to conduct the BEAM Plus Assessment
- “**CIR**” means Credit Interpretation Request
- “**FA**” means Final Assessment
- “**PA**” means Provisional Assessment
- “**TRC**” means Technical Review Committee

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## BEAM Plus Certification Procedures



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## General Notes

- BEAM Society will assign BEAM Assessor(s) to handle the project.
- Once registered, the PA/ FA results will be disclosed.
- There is only **1** chance of assessment and **1** opportunity for re-submission for each PA and FA stage.
- The validity period for all BEAM Plus certificates is **5** years from the date of issue.

## Operation of BEAM Plus Certification

**HKGBC**

**Green Labelling Committee**

**Accreditation** of BEAM Assessors

**Certification** of BEAM Plus Rating

**Adjudication** of Final Appeal

**BEAM**

**Technical Review Committee**

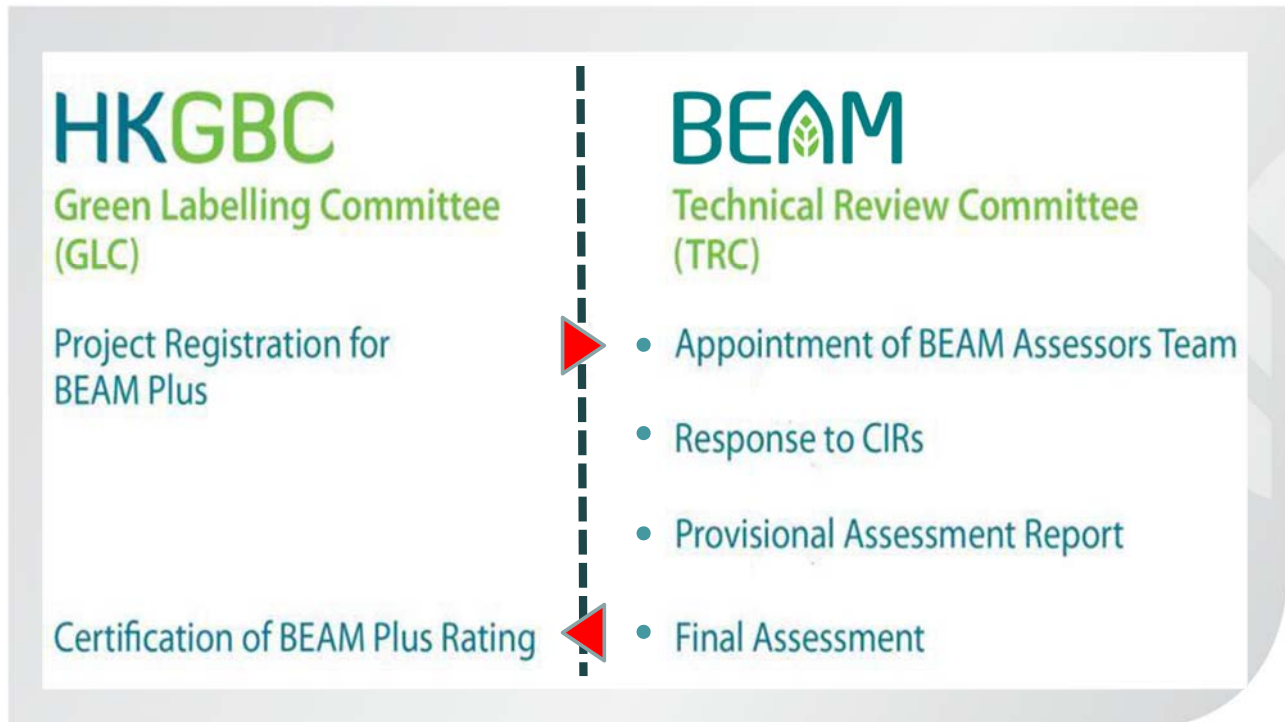
**Engagement** of BEAM Assessors

**Recommendation** of Rating

**Response** of CIR

**Adjudication** of First Appeal

## Operation of BEAM Plus Certification



## BEAM Plus Assessment Process

- The Assessment fee scale can be found on the following page

Please visit the link below for up-to-date information:

[http://www.beamsociety.org.hk/en\\_beam\\_assessment\\_project\\_1.php](http://www.beamsociety.org.hk/en_beam_assessment_project_1.php)

## BEAM Plus Assessment Process

- **For NB Projects (Two-step approach)**
  - The Assessment Fee covers
    - Provisional Assessment
    - Final Assessment
- **For EB Projects (One-step approach)**
  - The Assessment Fee covers
    - Final Assessment

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## BEAM Plus Assessment Process

- Apart from the assessment fee, there are other charges including:
- **Credit Interpretation Request** – CIR is not used for adjusting the assessment system. The argument on the applicability of the credits will not be entertained.
- **Appeal** – When the Applicant disagree to or not accept the decision, the Applicant is entitled to submit a credit appeal.

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## Appeal System

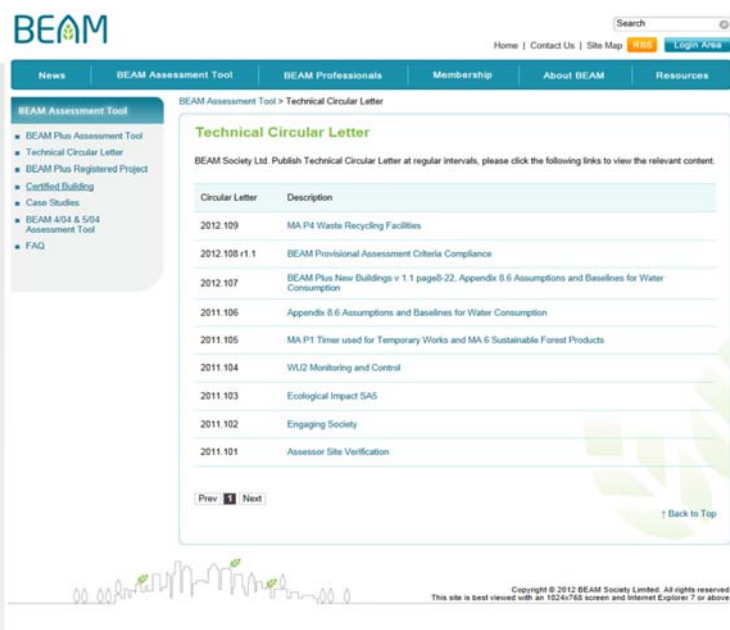
The following rules and condition shall be addressed:

- The Appeal should be submitted in writing to BSL within 30 calendar days after receiving the PA result from BSL. Appeal response shall be issued within 60 calendar days;
- Only credits can be appealed.
- The First Appeal submission will be reviewed by the TRC of BSL.
- The Final appeal will be addressed by HKGBC. A Final Appeal Panel will be formed. Feedback shall be issued within 90 calendar days after the formation of the Panel.
- Repeated submission of the same item will not be entertained.

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## BEAM Circular Letters

- Any update on BEAM Plus assessment criteria will be announced to BEAM Pro via BEAM circular letters.
- All circular letters shall be uploaded to BEAM Society website.



BEAM Assessment Tool > Technical Circular Letter

BEAM Society Ltd. Publish Technical Circular Letter at regular intervals, please click the following links to view the relevant content.

Circular Letter	Description
2012.109	MA-P4 Waste Recycling Facilities
2012.109-r1.1	BEAM Provisional Assessment Criteria Compliance
2012.107	BEAM Plus New Buildings v 1.1 page0-22, Appendix 0.6 Assumptions and Baselines for Water Consumption
2011.106	Appendix 0.6 Assumptions and Baselines for Water Consumption
2011.105	MA-P1 Timer used for Temporary Works and MA 6 Sustainable Forest Products
2011.104	WU2 Monitoring and Control
2011.103	Ecological Impact SAS
2011.102	Engaging Society
2011.101	Assessor Site Verification

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This site is best viewed with an 1024x768 screen and Internet Explorer 7 or above.

Please visit the following webpage

[http://www.beamsociety.org.hk/en\\_beam\\_assessment\\_project\\_2.php](http://www.beamsociety.org.hk/en_beam_assessment_project_2.php)

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# BEAM Circular Letters 2011.101

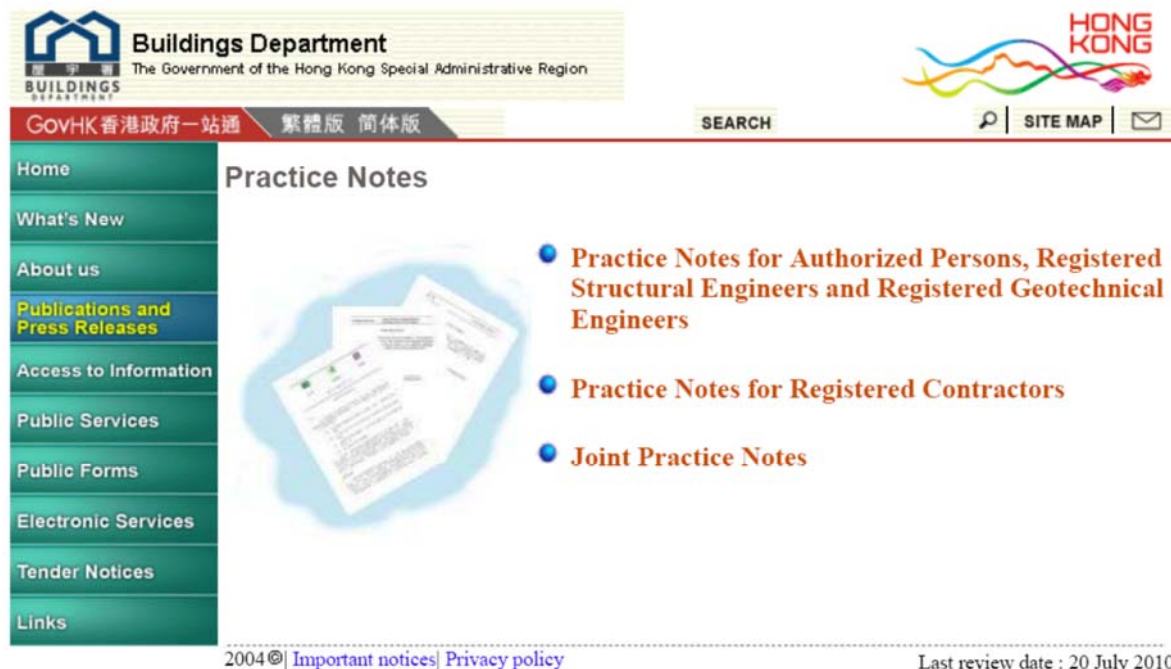
## Assessor Site Verification

This circular letter announces the change of verification method from visual site inspection to documentary submission by Applicant as the prescribed methodology for demonstrating compliance with individual credit requirements.

The existing BEAM Plus guide books contain several clauses stating that the BEAM Assessor will visit the site to verify certain criteria and conditions have been achieved. Under the new regime, assessments shall be undertaken anonymously and therefore the Assessor will not physically visit the site; therefore the Applicant must submit all necessary evidence, in the form of but not limited to, documents or photographic records to demonstrate compliance with relevant criteria to the satisfaction of the Assessor.

Signed:   
Chair of Technical Review Committee

## BEAM Plus and PNAPs



**Buildings Department**  
The Government of the Hong Kong Special Administrative Region

GOVHK 香港政府一站通 | 繁體版 | 简体版 | SEARCH | SITE MAP

**Practice Notes**

- Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers
- Practice Notes for Registered Contractors
- Joint Practice Notes

2004© | [Important notices](#) | [Privacy policy](#) | Last review date : 20 July 2010

PNAP APP-130

Lighting & Ventilation Requirements Performance-based Approach

a) Natural Lighting

<i>Room of domestic building</i>	<i>Vertical Daylight Factor (VDF)<sup>1</sup> (measurement taken on the centre of the window pane)</i>
Habitable Room	8%
Kitchen	4%

b) Natural Ventilation

<i>Room of domestic building</i>	<i>Air Change per Hour (ACH)</i>
Habitable Room	1.5 (natural means)
Kitchen	1.5 (natural means) plus 5 (mechanical means)

- Achieve 40% of EU and IEQ on BEAM Plus PA

BEAM Plus and PNAPs

PNAP APP-150

Wholesale Conversion of Industrial Buildings

- Exemption/modification to natural lighting & Ventilation
- Meet 40% of BEAM Plus certification, PA on Energy Use (EU) and Indoor Environmental Quality (IEQ)



## BEAM Plus and PNAPs

### PNAP APP-151

#### Building Design to Foster a Quality and Sustainable Built Environment

Effective **1st April 2011**, BEAM Plus will be applied to measure new buildings development which include the following:

- require **BEAM Plus** green building certification process as a prerequisite for 10% gross floor area (GFA) concessions for green / amenity features and non-mandatory / non-essential plant rooms and services in new building developments.

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## BEAM Plus and PNAPs

### PNAP APP-152

#### Sustainable Building Design Guidelines

- Buildings with special functional requirements cannot fulfill the building separation requirements.....
- Can be considered exempting by
  - a) Fulfill BEAM Plus NB **SA 8c (AVA)**; AND
  - b) **Either** BEAM Plus NB **SA 8a, SA 8b**.

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## Innovations & Additions

- Bonus credits in the rest of the sections are counted in this section.
- All innovative credits will be reviewed and approved by TRC.
- **Innovative Techniques** – Advance practices and new techniques not yet been widely adopted in Hong Kong or even elsewhere.
- **Performance Enhancements** - Strategies and techniques perform significantly better than BEAM requirements.

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## Innovations & Additions

		Credits Applicable	Credit(s) Achieved	Possible Credit(s)	Remark
<b>3</b>	<b>MATERIALS ASPECTS</b>				
<b>3.P</b>	<b>PREREQUISITE</b>				
<b>MA P1</b>	<b>TIMBER USED FOR TEMPORARY WORKS</b> Virgin forest products are not used for temporary works during construction.	Pre-requisite			
<b>MA P2</b>	<b>USE OF NON-CFC BASED REFRIGERANTS</b> Using no chlorofluorocarbon (CFC)-based refrigerants in HVAC&R systems.	Pre-requisite			
<b>MA P3</b>	<b>CONSTRUCTION/DEMOLITION WASTE MANAGEMENT PLAN</b> Implementation with proof of documentation of awaste management system that provides for the sorting, recycling and proper disposal of construction / demolition materials. <i>EXCLUSIONS: Project where demolition is not required or is not under the Client's control.</i>	Pre-requisite			
<b>MA P4</b>	<b>WASTE RECYCLING FACILITIES</b> Provision of facilities for the collection, sorting, storage and disposal of waste and recovered materials.	Pre-requisite			
<b>3.1</b>	<b>EFFICIENT USE OF MATERIALS</b>				
<b>MA 1</b>	<b>BUILDING REUSE</b> 1 credit for the reuse of 30% or more of existing sub-structure or shell. 2 credits for the reuse of 60% or more of existing sub-structure or shell. 1 additional <b>BONUS</b> credit for use of 90% or more of existing substructure or shell. <i>EXCLUSIONS: Buildings on reclaimed land or Greenfield sites.</i>	1 2 Bonus	1 1 1		
<b>MA 2</b>	<b>MODULAR AND STANDARDISED DESIGN</b> 1 credit for demonstrating the application of modular and standardized design.	1	1		
<b>MA 3</b>	<b>PREFABRICATION</b> 1 credit when the manufacture of 20% of listed prefabricated building elements has been off-site. 2 credits where the manufacture of 40% of listed prefabricated building elements has been off-site.	1 1	0 0		
<b>MA 4</b>	<b>ADAPTABILITY AND DECONSTRUCTION</b> a) Spatial adaptability 1 credit for designs providing spatial flexibility that can adapt spaces for different uses, and allows for expansion to permit additional spatial requirements to be accommodated. b) Flexible engineering services 1 credit for flexible design of services that can adapt to changes of layout and use.	1 1	1 1		

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## Innovations & Additions

		<i>Credits Applicable</i>	<i>Credit(s) Achieved</i>	<i>Possible Credit(s)</i>	<i>Remark</i>
<b>7</b>	<b>INNOVATIONS AND ADDITIONS</b>				
SA 1	CONTAMINATED LAND	Bonus	0	0	
SA 4	1 BONUS credit for 100% of relevant sub-items of the Urban Design Guidelines are achieved.	Bonus	0	0	
SA 5	ECOLOGICAL IMPACT	Bonus	1	0	
MA 1	1 BONUS credit for use of 90% or more of existing substructure or shell.	Bonus	1	0	
EU 3	1 BONUS credit for demonstrating the major materials with low embodied energy are used in the project utilizing the LCA results.	Bonus	0	0	
EU 10e	Independent Commissioning Authority	Bonus	1	0	
WU 4c	A combination of rainwater and grey water	Bonus	0	0	
IEQ 12b	Use of natural ventilation	Bonus	0	0	
IEQ 16	1 BONUS credit where provision of automatic control of artificial lighting such as	Bonus	0	0	
IEQ 19	For residential development only, 1 BONUS credit for demonstrating impact noise isolation between floors meets the prescribed criteria.	Bonus	0	0	
IA 1	INNOVATIVE TECHNIQUES	Bonus	0	0	
IA 2	PERFORMANCE ENHANCEMENTS	Bonus	0	0	
IA 3	BEAM PROFESSIONAL	1	1	0	
	Sub-Total Number of Innovative/Performance Enhancement and Bonus Credits	1	4	0	

## Innovations & Additions

If you want to apply for innovation, please provide:

- System design details
- Quantified environmental benefit



## Innovations & Additions

Examples:

- Better daylight factor performance
- More greenery



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## Join In !!!



- YOU are One of stakeholders.

**Sustainable  
/ Green Design  
Movement  
in Hong Kong**



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•Can visitors see a greener H.K. in 5 years time?



**YES.**

## Steps to Green

Thinking Process

Living

Family

Work Place

Project

## Our Thinking Process

- SAVE energy
- SAVE water
- SAVE resources



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## Our Living



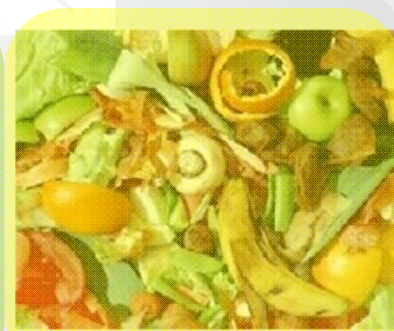
Role Model /  
Set Example



Min. E- Wastes



Carbon Footprint



Min. Food Wastes

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## Our Family Grow A Green Family



**Buy Less Stuff**



**Use Green Cleaning**

**Discuss on GREEN Issues**

**Appreciate & Love Nature**



**Have a Healthy Life**





**Climate Changes**

## Our Work Place

- Green Management – GREEN your Office



realization of zero emission

reduction of the use of Harmful chemical substances

Promotion of Energy Saving

Management to promote energy saving and resources conservation

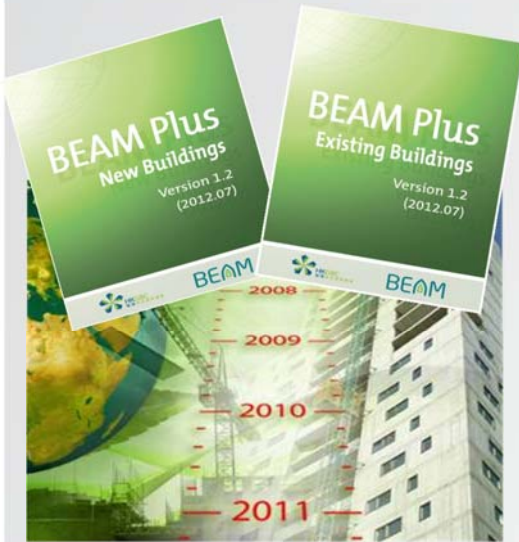
Environmental communication to deepen trust with society



SAVE \$\$ , GAIN Reputation, EARN Profit

## Our Project

- New & AA
- Exceed BEAM Plus



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## Our Project

### Benefits of Saving in Energy & Resources



SAVE Resources SAVE Money SAVE Life

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BEAM

# Thank you

BEAM Society Limited  
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