



## Update on GBI Malaysia

22<sup>nd</sup> April 2010

# Significant Developments since 21/5/09 launch of GBI

- Over 1,000 GBI Facilitators trained
- 7 GBIF courses conducted to-date
- 123 Registered Facilitators listed on website another 100+ approved for listing
- Guide on GBIF Scope of Works & Fees
- Commissioning Specialists CxS listed on website
- On-going roadshows on BEIT software conducted by ACEM

# Significant Developments

## since 21/5/09 launch of GBI cont'd

- Government incentive for GBI announced in Oct 2009 10MP budget
- Tax exemption and Stamp Duty incentive scheme details firmed up
- GBI Certificate issued by Board of Architect with Green Cost indicated

# GBI Green Cost Items

Part	Criteria	Description
1.1	EE	Energy Efficiency
	EE1	Sun shading devices including automatic controls
	EE1	Sandwich walls; Additional insulation
	EE1	Roof insulation
	EE1	Wall insulation
	EE1	Cavity brick walls
	EE1	Low-E glass of various thickness
	EE1	Double glazing of various thickness
	EE1	Energy Management System

# GBI Green Cost Items cont'd

Part	Criteria	Description
1.1	EE	Energy Efficiency
	EE5	Enhanced HVAC technologies/ strategies viz UFAD, chilled slabs/ ceilings, Active/ Passive chilled beams, etc
	EE5	High Performance Glazing/ Walls
	EE5	EMS integrated to enhance EE Performance
	EE5	EE light fixtures including LEDs
	EE5	Heat Pumps, Heat Machines
	EE5	Gas/ Solar Water Heaters
	EE5	Geothermal Heating/ Cooling

# GBI Green Cost Items cont'd

Part	Criteria	Description
1.2	EQ	Indoor Environmental Quality
	EQ3	CO2 Monitoring & controls for EE & IAQ
	EQ4	Low VOC products
	EQ6	Additional controls and devices to enhance thermal controllability, viz VAV terminals, thermostats, sensors
	EQ7	UFAD system, Dedicated work-station air supply system, Low Level Displacement system
	EQ8	Light Shelves for Daylight Harvesting

# GBI Green Cost Items cont'd

Part	Criteria	Description
1.3	SM	Sustainable Site Planning & Management
	SM2	Decontamination costs
	SM4	Restoration or protection of existing native cultivars
	SM9	Costs incurred in reserving carparks for green/ hybrid vehicles, e.g. additional signages, line marking, etc
	SM12	Green Roof
	SM12	High Albedo Paint (Paint with suitable SRI) to obviate heat island effect
	SM12	Green Walls
	SM12	Pervious Pavers/ Open Grid Pavers

# GBI Green Cost Items cont'd

Part	Criteria	Description
1.4	MR	Material & Resources
	MR1	Reused materials
	MR2	Materials with Recycled Content that qualifies for GBI points
	MR3	Regional materials if proven cost is more than alternatives
	MR4	Sustainable timber
	MR5	Provision of Recycling Facilities/ bins/ balers; and signages
	MR6	Costs incurred in sorting during construction
	MR7	HVAC equipment using zero ODP refrigerants and clean agents for fire fighting system



# GBI Green Cost Items cont'd

Part	Criteria	Description
1.5	WE	Water Efficiency
	WE1	Rainwater Harvesting System
	WE2	Black Water Recycling System
	WE2	Grey Water Recycling System
	WE3	Water Efficient Fixtures & Flow Restrictors, automatic rain sensors and devices
	WE4	Waterless Urinals or Low Flushing fixtures
	WE5	Water sub-meters and monitoring points

# GBI Green Cost Items cont'd

Part	Criteria	Description
1.6	IN	Innovation
	IN1	Solar Thermal Technology e.g. STC
	IN1	Solar Light/ Tube Systems
	IN1	Heat Pipe Technology
	IN1	Heat Recovery System e.g. Heat Wheels
	IN1	Regenerative Lifts and Sensor Controlled Escalators
	IN1	Non-Chemical Cooling Tower Water Treatment System
	IN1	Auto-condenser tube cleaning system
	IN1	Advance Air Filtration technology

# GBI Green Cost M&E Items

Service	Criteria	Green Item	Ref Base Cost	Remarks
<b>ACMV</b>				
Cooling Plant/ Eqpt	EE5	DX ACPU and WCPU	Minimum COP in MS 1525	Compare 'Like with Like' eqpt; e.g. WCPU to WCPU
	EE5; MR7	Absorption Chiller	Electric Chiller with min. COP in MS 1525	
	EE5; MR7	Chiller/ Unitary AC using 'Zero ODP'/ 'Natural' refrigerant	Min. COP in MS 1525	Compare 'Like with Like'

# GBI Green Cost M&E Items cont'd

Service	Criteria	Green Item	Ref Base Cost	Remarks
<b>ACMV</b>				
Other Eqpts & Accessories	EE1	Energy Management System	Basic EMS installation	100% claimable if ac space < 4000 sqm. Otherwise, only the additional cost apply
	EE5	VSD	Nil	100% claimable
	EQ3	CO2 Sensor & Monitoring	Nil	100% claimable
	IN1	Heat Pipes	Nil	100% claimable
	IN1	Heat Recovery Wheels	Nil	100% claimable

# GBI Green Cost M&E Items cont'd

Service	Criteria	Green Item	Ref Base Cost	Remarks
<b>Electrical System</b>				
Others	EE2	Occupancy/ Motion Sensors	Nil	100% claimable
	EE2	Photo Sensors	Nil	100% claimable
	EE3	Electric Sub- metering	Base sub- metering	Cost of additional EE monitoring meters
	EE4	PVs	Nil	100% claimable
	EE4	BIPVs	Base roofing	
	EE4	Other RE devices	Nil	100% claimable
	IN1	Solar Light Pipes/ Tubes	Nil	100% claimable

# GBI Green Cost M&E Items cont'd

Service	Criteria	Green Item	Ref Base Cost	Remarks
<b>Elevators &amp; Escalators</b>				
Lifts	EE5	ACVVVF Gearless Lifts	ACVVVF Geared Lifts	Applicable only if Geared Lifts are available for the installed speed & capacity
	EE5; IN1	Regenerative Lifts/ Variable Speed Lifts or Equiv	ACVVVF Geared Lifts	If Geared Lifts are not available for the installed speed & capacity then Gearless apply
Escalators	EE5	Variable Speed/ Auto Start Stop or Equiv Escalators	Single Speed Escalators	

# GBI Green Cost M&E Items cont'd

Service	Criteria	Green Item	Ref Base Cost	Remarks
<b>Hydraulics System</b>				
Plumbing System	WE1	Rainwater Harvesting System	Nil	100% claimable
	WE2	Grey Water Recycling Sys	Nil	100% claimable
	WE2	Black Water Recycling Sys	Nil	100% claimable
	WE3	WE Irrigation System	Conventional Base Design	
	WE5	Water Sub-metering	Nil	100% claimable

# GBI Green Cost M&E Items cont'd

Service	Criteria	Green Item	Ref Base Cost	Remarks
<b>Others &amp; Innovations</b>				
Motors	EE5	Eff1 Motors	Standard Motors	
Innovation	IN1	Central Vacuum System	Nil	100% claimable
	IN1	Central Pneumatic Waste System	Nil	100% claimable
	IN1	Condensate Water Harvesting	Base Condensate Water Piping	Associated Additional Cost
	IN1	Recycled Fire System Piping	Nil	100% claimable



GREEN BUILDING INDEX CERTIFICATE NO.  
GBI-NR-XXXX

# 123 TOWERS

HAS BEEN AWARDED



## GOLD

24 JULY 2009 - 23 JULY 2012

The certified GBI Green Cost Sum is  
Ringgit Malaysia XXXXX (RM XXXXX)

NO.	CRITERIA	GBI GREEN COST (RM)
1	Energy Efficiency (EE)	XXX,XXX.00
2	Indoor Environmental Quality (EQ)	X,XXX,XXX.00
3	Sustainable Site Planning & Management (SM)	X,XXX,XXX.00
4	Material and Resources (MR)	XXX,XXX.00
5	Water Efficiency (WE)	XX,XXX.00
6	Innovation (IN)	XX,XXX.00
TOTAL CERTIFIED GBI GREEN COST SUM (RM)		X,XXX,XXX.00

OWNER 123 HOLDINGS

ARCHITECT ABC ASSOCIATES (Professional Registration No.)

C&S CONSULTANT XYZ JURURUNDING SDN BHD (Professional Registration No.)

M&E CONSULTANT LMN ASSOCIATES SDN BHD (Professional Registration No.)

QUANTITY SURVEYOR JURUKUR BAHAN PQR SDN BHD (Professional Registration No.)

GBI FACILITATOR OPQ CONSULTANTS SDN BHD (Professional Registration No.)

MAIN CONTRACTOR RST CONSTRUCTION SDN BHD (CIDB Registration No.)

DATO' AR. NUR HAZI ABDUL HAI  
PRESIDENT  
BOARD OF ARCHITECTS MALAYSIA

LEMBAGA ARKITEK MALAYSIA (BOARD OF ARCHITECTS MALAYSIA)  
Tingkat 17, Blok F, Ibu pejabat JKR, Jalan Sultan Salahuddin, 50582 Kuala Lumpur  
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4 & 6 Jalan Tangsi, 50480 Kuala Lumpur, Malaysia Tel 603 2693 4182 Fax 603 2692 8782  
www.greenbuildingindex.org | info@greenbuildingindex.org

Cert No.

Name of Building

GBI Rating Grade  
& Validity Period

Green Cost in RM

Breakdown Green Cost  
for each of the 6 Criteria

Owner &  
Key Consultants

Signed by President,  
Board of Architects

GREEN BUILDING INDEX CERTIFICATE NO.  
GBI-R-XXXX

# XYZ CONDOMINIUM (UNIT NO 9/15F)

HAS BEEN AWARDED



## GOLD

24 JULY 2009 - 23 JULY 2012

The certified GBI Green Cost Sum is  
Ringgit Malaysia XXXXX (RM XXXXX)

NO.	CRITERIA	GBI GREEN COST (RM)
1	Energy Efficiency (EE)	XXX,XXX.00
2	Indoor Environmental Quality (EQ)	X,XXX,XXX.00
3	Sustainable Site Planning & Management (SM)	X,XXX,XXX.00
4	Material and Resources (MR)	XXX,XXX.00
5	Water Efficiency (WE)	XX,XXX.00
6	Innovation (IN)	XX,XXX.00
<b>TOTAL CERTIFIED GBI GREEN COST SUM (RM)</b>		<b>X,XXX,XXX.00</b>

**DEVELOPER** XYZ HOLDINGS

**ARCHITECT** ABC ASSOCIATES (Professional Registration No.)

**C&S CONSULTANT** XYZ JURURUNDING SDN BHD (Professional Registration No.)

**M&E CONSULTANT** LMN ASSOCIATES SDN BHD (Professional Registration No.)

**QUANTITY SURVEYOR** JURUKUR BAHAN PQR SDN BHD (Professional Registration No.)

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Individual GBI Cert  
for each condo unit

# Significant Developments

## since 21/5/09 launch of GBI cont'd

- Over 80 applications received
- DA submissions = 5
- Pre-certifications issued
- 1 GBI certificate issued
- Reference Guide for Facilitators updated on website

# GREEN BUILDING INDEX CLASSIFICATION

POINTS	GBI RATING
86+ points	Platinum
76 to 85 points	Gold
66 to 75 points	Silver
50 to 65 points	Certified

PTM GEO Building  
GBI Certified 24.7.09



# Significant Developments

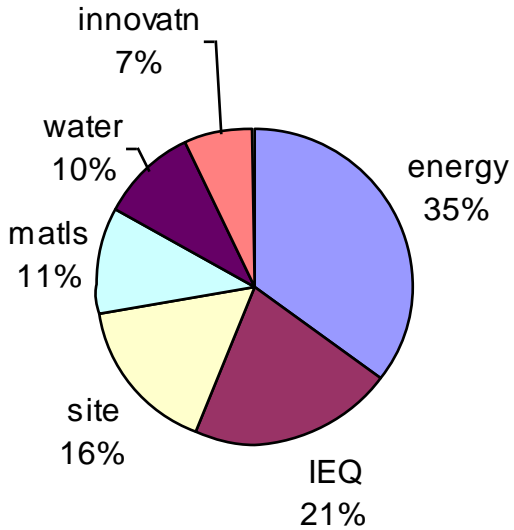
## since 21/5/09 launch of GBI cont'd

- GBI Rating tool for Non-Residential Existing Building to be launched on 26 April 2010
- New Rating tools in the pipeline are:
  - Township tool
  - Industrial/Factory tool

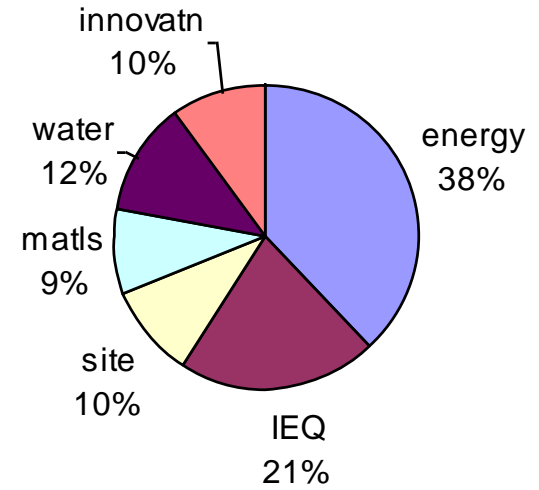


# INTRODUCTION TO GBI NREB RATING TOOL

# Green Building Index



**NRNC**



**NREB**

# 1) Energy Efficiency

**38 points**

<b><i>Design &amp; Performance</i></b>	
EE1	Minimum EE Performance
EE2	Lighting Zoning
EE3	Electrical Sub-Metering
EE4	Renewable Energy
EE5	Advanced Energy Performance - BEI
<b><i>Commissioning</i></b>	
EE6	Enhanced or Re-commissioning
EE7	On-going Post Occupancy Commissioning
<b><i>Monitoring, Improvement &amp; Maintenance</i></b>	
EE8	EE Monitoring & Improvement
EE9	Sustainable Maintenance



## 2) Indoor Environmental Quality

21 pts

<b><i>Air Quality</i></b>	
EQ1	Minimum IAQ Performance
EQ2	Environmental Tobacco Control
EQ3	Carbon Dioxide Monitoring & Control
EQ4	Indoor Air Pollutants
EQ5	Mould Prevention
<b><i>Thermal Comfort</i></b>	
EQ6	Thermal Comfort Control
EQ7	Air Change Effectiveness

## ***Lighting, Visual & Acoustic Comfort***

EQ8 Daylighting

EQ9 Daylight Glare Control

EQ10 Electric Lighting Levels

EQ11 High Frequency Ballasts

EQ12 External Views

EQ13 Internal Noise Levels

## ***Verification***

EQ14 IAQ Before/During Occupancy

EQ15 Occupancy Comfort Survey

# 3. Sustainable Site Planning & Management

10 pts

<b><i>Facility Management</i></b>
SM1 GBI Rated Design & Construction
SM2 Building Exterior Management
SM3 Integrated Pest Management, Erosion Control & Landscape Mgt
<b><i>Transportation</i></b>
SM4 Green Vehicle Priority
SM5 Parking Capacity
<b><i>Reduce Heat Island Effect</i></b>
SM6 Greenery & Roof
SM7 Building User Manual

## 4) Materials & Resources

9 pts

### ***Reused & Recycled Materials***

MR1 Material reuse and selection

MR2 Recycled Content Materials

### ***Sustainable Materials & Resources and Policy***

MR3 Sustainable Timber

MR4 Sustainable Purchasing Policy

### ***Waste Management***

MR5 Storage, Collection & Disposal of Recyclables

### ***Green Products***

MR6 Refrigerants & Clean Agents

## 5) Water Efficiency

12 points

### ***Water Harvesting & Recycling***

WE1 Rainwater Harvesting

WE2 Water Recycling

### ***Increased Efficiency***

WE3 Water Efficient Irrigation/ Landscaping

WE4 Water Efficient Fittings

WE5 Metering and Leak Detection System

## 6) Innovation

**10 points**

IN1	Innovation Environmental Initiatives
IN2	Green Building Index Facilitator



**THANK YOU**

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