



4th September 2010



GBI Facilitators & Design Team

green building index

GBI Projects – Briefing and Q&A

Submission for Design Assessment

NRNC as Example:

1. Follow DESIGN REFERENCE GUIDE & SUBMISSION FORMAT
2. Start with the Assessment Criteria Score Summary
3. Each criteria to be preceded with criteria sheet duly signed by the correct parties
4. Submit narrative etc to support each criteria

NON-RESIDENTIAL NEW CONSTRUCTION (NRNC) ASSESSMENT CRITERIA SCORE SUMMARY

Part	Criteria	Item	Points	Submitter	GBI
1	EE	Energy Efficiency			
	EE1	Minimum EE Performance	1	1	
	EE2	Lighting Zoning	3	1	
	EE3	Electrical Sub-metering	1	1	
	EE4	Renewable Energy	5	2	
	EE5	Advanced Energy Performance - BEI	15	2	
	EE6	Enhanced Commissioning	3	3	
	EE7	Post Occupancy Commissioning	2	2	
	EE8	EE Verification	2	2	
	EE9	Sustainable Maintenance	3	3	
		EE total		35	17
2	EQ	Indoor Environmental Quality			
	EQ1	Minimum IAQ Performance	1	1	
	EQ2	Environmental Tobacco Control	1	1	
	EQ3	CO2 Monitoring & Control	1	1	
	EQ4	Indoor Air Pollutants	2	2	
	EQ5	Mould Prevention	1	1	
	EQ6	Thermal Comfort	2	2	
	EQ7	Air Change Effectiveness	1	0	
	EQ8	Daylighting	2	1	
	EQ9	Daylight Glare Control	1	1	
	EQ10	Electric Lighting Levels	1	1	
	EQ11	High Frequency Ballasts	1	1	
	EQ12	External Views	2	1	
	EQ13	Internal Noise Levels	1	1	
	EQ14	IAQ Before & During Occupancy	2	2	
EQ15	Post Occupancy Comfort Survey	2	2		
	EQ total		21	18	0

Sustainable Site Planning & Management					
3	SM1	Site Selection	1	1	
	SM2	Brownfield Redevelopment	1	0	
	SM3	Development Density & Community Connectivity	2	2	
	SM4	Environment Management	2	1	
	SM5	Earthworks-Construction Activity Pollution Control	1	1	
	SM6	QLASSIC	1	1	
	SM7	Workers' Site Amenities	1	1	
	SM8	Public Transportation Access	1	1	
	SM9	Green Vehicle Priority	1	1	
	SM10	Parking Capacity	1	1	
	SM11	Stormwater Design - Quantity & Quality Control	1	1	
	SM12	Greenery & Roof	2	1	
	SM13	Building User Manual	1	1	
	SM total	16	13	0	
4	MR	Materials & Resources			
	MR1	Materials selection and reuse	2	1	
	MR2	Recycled content materials	2	1	
	MR3	Regional Materials	1	1	
	MR4	Sustainable Timber	1	1	
	MR5	Storage & Collection of Recyclables	1	1	
	MR6	Construction Waste Management	2	1	
	MR7	Refrigerants & Clean Agents	2	1	
	MR total	11	7	0	

5	WE	Water Efficiency			
	WE1	Rainwater Harvesting	2	1	
	WE2	Water Recycling	2	0	
	WE3	Water Efficient - Irrigation/Landscaping	2	2	
	WE4	Water Efficient Fittings	2	2	
	WE5	Metering & Leak Detection System	2	2	
		WE total	10	7	0
6	IN	Innovation			
	IN1	Innovation in Design & Environmental Design Initiatives	6		
		Waterless urinals		1	
		Recycling of Fire Testing Water		1	
	IN2	Green Building Index Facilitator	1		
		IN total	7	2	0
		TOTAL	100	64	0

Submission for Design Assessment

NRNC as Example:

1. Follow DESIGN REFERENCE GUIDE & SUBMISSION FORMAT
2. Start with the Assessment Criteria Score Summary
3. Each criteria to be preceded with criteria sheet duly signed by the correct parties
4. Submit narrative etc to support each criteria

Submission for Design Assessment

5. Colour drawings where instructed
6. DO NOT enclose catalogues. Attach only relevant page/s with narrative or highlight
7. DO NOT enclose irrelevant information such as SI report etc.
8. Hard copies and soft copies should be identical in contents and sequence

FAQs

General FAQs 1 & 2, NRNC FAQs

EE2 - Lighting zoning:

For shared multi-occupancies (e.g. exhibition hall/ common area for registration & waiting/ conference rooms/ café & restaurant ...) can we provide adequate functionality control to suit their activities?

GBI similar to MS1525, encourages the creativity of designers. Therefore, GBI does accept justification for functionality control-type designs.

EE5 - Advanced EE performance:
The BEI values for office, retail, hospital and hotel are listed in the GBI NRNC FAQs.

BEI

EE5 pts	Office	Retail	Hotel	Hospital	Etc
2	150	240	200	200	?
3	140	225	190	190	?
5	130	210	175	175	?
8	120	195	160	160	?
10	110	180	150	150	?
12	100	160	135	135	?
15	90	145	120	120	?

EE5 - Advanced EE performance:

What is the BEI for Convention Centre?

As stated in the posted FAQs, BEI for all other applications will be determined on a case-to-case basis upon application. For the example on Convention Centre, GBI will need to assess the project in totality in terms of the actual convention facility component.

EE5 - Advanced EE performance:

Can we follow office BEI as a guideline?

If the office component is substantial then the office BEI guideline is applicable. Note that GBIAP has recently accepted the use of PUE (Power Usage Effectiveness) in lieu of BEI for a Data Centre building.

If the chilled water is served by a District Cooling Plant, what adjustment should we apply?

Where a District Cooling Plant is used, the COP of the DCP will be used.

EQ8 - Daylighting:

How to define NLA of Convention Center for this criterion?

Can we base it on GFA excluding exhibition hall, conference rooms, multi-purpose hall, M&E rooms and car park area?

Please read up NRNC FAQs Q4 on a similar query on Retail Malls to understand the intent of EQ8.

A case-to-case submission for clarification is necessary.

Please note Car Park area is excluded in GBI v1.0 criteria.

EQ13 - Internal noise levels:

For convention center, office areas consist of small percentage of building area.

Can we score this criterion by complying with international Acoustic Criteria Standard such as Australian/ New Zealand Standards 2107:2000- Recommended Design Sound Levels for Building Elements and Interiors?

1. Internal noise level includes all occupied areas including the convention halls etc.
2. Compliance with AS (or any other GBI recognised standard) is acceptable

EE5 - Advanced EE performance:

We have tried many rounds of calculation using the BEIT software (ACEM BEI v1 Feb2010.xls), and found the final result of BEI for AC floor area is not rationalized based on AC operating hours of 2700hrs/yrs.

Please attend the ACEM-GBI BEIT roadshow to familiarize yourself with this software.

SM12 - Greenery and roof:

Is driveway within site boundary considered as hardscape?

YES

2 towers share a common podium. Can the 2 towers share GBI points for the following?

EQ2 environmental tobacco smoke control

SM4 Environment management

SM5 Earthworks-construction activity pollution control

SM6 QLASSIC

SM9 Green vehicle priority

SM10 Parking capacity

SM11 Storm water design- quantity & quality control

SM12 Greenery & roof

MR3 Regional material

MR4 Sustainable timber

MR5 Storage & collection of recyclables

MR6 Construction waste management

WE3 Water efficient landscape

In principle, the answer is YES.
However, it may be advisable for the podium to be submitted as a separate entity or assigned to one of the towers.
This is because if combined, then the worst score for each criterion of either tower or podium will be applicable to the final GBI score.

After DA submission, the design team discovers they can score additional points for certain criteria. Can we submit additional points during the construction stage or do we submit during verification stage?

There are only 2 stages of GBI Assessments; namely DA and CVA. Submission is not entertained in between. Points can be gained or lost at the CVA stage submission.

Are there any additional charges incurred?

Additional fee is applicable only for appeal cases at DA or CVA stages.

Referring to the recommended GBI Facilitators' scale of fees in the 'Guidelines on GBI facilitators' scope of work and fees'.

If the Project consist of many separate buildings components (such as bungalow units, commercial buildings, hospital, etc) going for GBI certifications, would the total GBI fees be calculated based on the value bracket of each building component or value bracket based on the overall cost of construction ?

The GBIF fee guideline is but a guideline. It is up to the individual GBIF to quote whatever fee he is comfortable with. However, it should be noted that each building may need to be submitted separately for GBI certification. In RNC repetitive housing, OTTV of each building type of different orientations will need to be submitted separately.

Is there be any guideline for repetitive work such as the typical bungalows?

There is no GBIF guideline on repetitive fee. Note that the respective professional boards (LAM & LJM) do publish fee calculations for repetitive work, and this may serve as guide for repetitive work.

Appreciate if you could also clarify on the registration fees on the same context of mixed development.

For GBI registration fee of such development, please refer to GSB for a case-by-case review.

Would GBI issue certificate for a condominium/service apartment building as well as for each individual apartment unit after certification for stamp duty exemption?

Individual GBI certificate will be issued for each condo unit with the green cost stated for stamp duty exemption calculation.

If after 3 years when the certificate needs to be renewed, who will take charge of the renewal application?

GBI renewal application will need to be done by the management company for the whole building based on the current rating tools available.

If a fraction of the total apartment units does not meet the requirement, would the building lose its GBI certified rating or rather apartment units can be assessed separately and maintain its rating individually if it complies?

At present, GBI does not certify each apartment unit separately and as such the whole building needs to be GBI rated.

We would entrust the management company to take charge of the renewal (assuming the fees are included in the sinking fund) but how do they set strict house rules to ensure that the building maintains its GBI status?

The management company will have to work this out with the unit owners.

Scope of works between the GBIF and the client's team of consultants (ie Architect and M&E consultants).

Is it the scope of work for the M&E Consultant to provide all calculations and detail designs for the GBIF to assess and/or revise their designs according to a Green brief provided by the GBIF?

For a green building, the design team comprises the whole design team led by the architect. At the onset, the GBIF needs to clarify the scope of services and work split. Unless previously agreed in the M& E consultants' scope to include additional calculations as required for GBI Certification, e.g. BEIT, Water calculations, then the M&E consultant should also be able to claim for additional fees.

Secondly, if a specialist system is required but is not within the scope of work of the consultant, such as wind turbine, etc, would the GBIF be required to carry out the design?

For specialist green elements to be designed, the respective professional's code of conduct and ethics apply, which permits the engagement of specialist consultant/s to undertake such scope, if it is not within the original service agreement. Likewise, GBIF's responsibility should follow the terms of his service agreement.

NRNC EQ4

“Using low VOC paint for internal walls and non-formaldehyde products for internal doors only are insufficient”.

Please advise which areas need to be included in order to obtain these credit points?

1 point :

Use low VOC paint and coating throughout the building
(NOT ONLY WALLS !!), AND

Use low VOC carpet or flooring throughout the building, AND

Use low VOC adhesive and sealant or no adhesive or sealant
used.

1 point :

Use products with no added urea formaldehyde. These include:

1. Composite wood and agrifiber products etc, AND
2. Laminating adhesives used to fabricate ... , AND
3. Insulation foam, AND
4. Draperies

(NOT ONLY DOORS !!!)

“To use the consistent population density of (10m²/person)”.

Our design for M&E is based on 14m²/person, can we standardise to 14m²/person and not 10m²/person?

Then ensure calculations for all other criteria (eg water use, sewerage discharge etc) are also based on the same population density and not pick and choose for advantageous application. Note that in all cases, the UBBL shall take precedence .

EQ8 on GBI rating assessment, where it states 'daylight factor in the range 1.0-3.5% as measured at floor level'

What about daylight factor more than 3.5%?

Daylight factor exceeding 3.5% is not suitable for the working environment of an office space and hence no credit points will be given.

Please also refer to the website FAQs NRNC Q3 & 4.

Query in Chiller compliance to ARI Standard as stated in MS1525:2007

Based on MS1525:2007 page 36, section 8.11.1 states chiller shall comply to ARI Std 550/590-98.

We were informed by X, who is a dealer for Y make of chiller that the JIS standard is also acceptable by GSB.

Kindly reconfirm to us what is the parameter in Section 8.11.1 of MS1525 that would be replaced by JIS.

Query in Chiller compliance to ARI Standard as stated in MS1525:2007

Based on MS1525:2007 page 36, section 8.11.1 states chiller shall comply to ARI Std 550/590-98.

GBI does not stipulate that chillers must specifically comply with ARI Standards.

As for reference to MS1525, the parameters listed in Section 8.11.1 refer to Standard Rating Conditions for which chillers must be tested to, and also that for applications in Malaysia, chillers must use the NPLV conditions to determine their energy efficiency COP values.

We were informed by X, who is a dealer for Y make of chiller that the JIS standard is also acceptable by GSB. Kindly reconfirm to us what is the parameter in Section 8.11.1 of MS1525 that would be replaced by JIS.

Therefore testing to ARI or JIS or any other third party standards is acceptable provided these are conducted in accordance with the stipulated Standard Rating Conditions and NPLV conditions.

Note that the energy performance of the whole building is what GBI is interested in as per criteria EE5 on BEI value, and not just the chillers.

Please also note that **GSB does not endorse or approve any make of equipment or material.**

Use of gas fired boilers rather than heat pumps for hot water supply – is there need to convert the gas supply to its equivalent electrical energy for BEI computation?

The purpose of energy efficiency in green buildings is to reduce environmental pollution, and the BEI is used as a measurement index to encourage reduction of environmentally polluting energy source.

Any form of non-renewable primary fuel source that contributes to environmental pollution will affect the BEI computation.

Therefore, gas used as the primary fuel source to generate hot water, will need to be converted to its equivalent electrical energy for BEI computation.

However, if the energy source is a renewable source then there is no need for conversion. Such RE examples will include generation of hot water supply using bio-fuel fired boilers and solar heated hot water.

Under FAQs 2 Q6, 'potable water consumption' referred to under WE1 (rainwater harvesting) is based on 'metered treated water supplied by the water authority'.

Are the previous examples, as lectured at GBI Facilitator courses no longer valid (the % reduction was computed based on irrigation and/or WC consumption only)?

If 'potable water consumption' refers to DCW (e.g. SYABAS guidelines), irrigation purpose and AC make-up water, we found it almost impossible to achieve even 10% water reduction (what more 15%) during our project. Am I mistaken?

For WE1, savings is derived by the amount of rainwater actually collected and utilised to reduce the potable water consumption in the building.

In GBI Facilitator (GBIF7) course notes, use of water efficient fittings resulting in reduction of annual potable water consumption is shown as an example under WE2 (Water Recycling) instead of WE4 (Water Efficient Fittings). Is there an error here?

For WE2, GSB did not provide any examples previously. How about now?

The example depicted in the course notes is to demonstrate that the use of water efficient fittings can reduce the amount of greywater generated in the building (hence the possibility of a smaller greywater tank / treatment system, etc.)

Those examples are for illustration purposes and should no way be regarded as calculation templates required by GSB. The applicant should submit calculations based on actual design parameters of wastewater generation.

Under SM13 (Building User Manual), who is responsible for the production of the proper Building User Manual?

Fellow consultants (each preparing their own scope and compiled, say, by Architect), GBI Facilitator (if there is one) or the Main Contractor (to be provided under the Building Contract)?

The Manual should be produced by the GBI Facilitator (or GBI Coordinator if there is no Facilitator) with relevant inputs from the respective Design Team members.

One of our clients attended a talk on tax incentives by Pricewaterhouse Coopers and was informed that the Developers are not entitled to the tax incentives.

Appreciate if you could clarify.

Please refer to the website on FAQs 2, Q12 which states that the Owner named in the GBI Certificate is entitled to the tax incentive.

We are the GBI Facilitator for a developer to build a government owned building. GSB had advised that since this is a government building project, the tax exemption entitlement for green cost will be to the developer. If so, would the following GBI registration information be correct?

- a. Owner's name : Named Government Agency
- b. Project contact : Developer

Incentive will be given to whoever is the applicant for the GBI certification. Yes it can be the developer but the tax exemption will only apply to revenue generated from that particular building and not from their overall business.

- a. Owner's name : Developer
- b. Project contact : Facilitator

Since it will be under developer entitlement then the green cost is to be compiled by developer's Quantity Surveyor ?

YES

As the developer will provide 25 years of comprehensive service and maintenance to the owner, the subsequent GBI renewal every 3 years is part of the agreement. What is the process and anticipated renewal fee to be charged by GSB?

If there is no retrofit, then renewal will be merely a verification exercise. Renewal Fee will be less than for NRNC and will be uploaded soon.

GBI NRNC EE4 - Renewable Energy

In order to score points under this category, is the application limited to putting up PV systems?

Can other renewable energy solution, for example solar thermal absorption cooling system and solar hot water system also score points under this category?

Reference Guide states ...

In the context of the built environment in Malaysia, the most likely form of RE would be derived from BIPV. Other forms of RE are also applicable with their appropriate conversion into equivalent energy for calculation purposes.

GBI is very DIFFICULT ?

GBI is very EXPENSIVE ?

GBI NRNC			GBI Score	
Part	Criteria	Item	Max Points	MS
1	EE	Energy Efficiency		
	EE1	Minimum EE Performance	1	1
	EE2	Lighting Zoning	3	1
	EE3	Electrical Sub-metering	1	1
	EE4	Renewable Energy	5	0
	EE5	Advanced Energy Performance - BEI	15	0
	EE6	Enhanced Commissioning	3	0
	EE7	Post Occupancy Commissioning	2	1
	EE8	EE Verification	2	2
	EE9	Sustainable Maintenance	3	3
		EE total	35	9

2	EQ	Indoor Environmental Quality		
	EQ1	Minimum IAQ Performance	1	0
	EQ2	Environmental Tobacco Control	1	1
	EQ3	CO2 Monitoring & Control	1	0
	EQ4	Indoor Air Pollutants	2	0
	EQ5	Mould Prevention	1	1
	EQ6	Thermal Comfort	2	1
	EQ7	Air Change Effectiveness	1	0
	EQ8	Daylighting	2	1
	EQ9	Daylight Glare Control	1	0
	EQ10	Electric Lighting Levels	1	1
	EQ11	High Frequency Ballasts	1	0
	EQ12	External Views	2	1
	EQ13	Internal Noise Levels	1	1
	EQ14	IAQ Before & During Occupancy	2	2
EQ15	Post Occupancy Comfort Survey	2	2	
	EQ total	21	11	

3	Sustainable Site Planning & Management			
	SM1	Site Selection	1	1
	SM2	Brownfield Redevelopment	1	0
	SM3	Development Density & Community Connectivity	2	2
	SM4	Environment Management	2	2
	SM5	Earthworks-Construction Activity Pollution Control	1	1
	SM6	QLASSIC	1	0
	SM7	Workers' Site Amenities	1	1
	SM8	Public Transportation Access	1	1
	SM9	Green Vehicle Priority	1	1
	SM10	Parking Capacity	1	1
	SM11	Stormwater Design - Quantity & Quality Control	1	1
	SM12	Greenery & Roof	2	0
	SM13	Building User Manual	1	1
	SM total	16	12	

4	MR	Materials & Resources		
	MR1	Materials selection and reuse	2	0
	MR2	Recycled content materials	2	0
	MR3	Regional Materials	1	1
	MR4	Sustainable Timber	1	0
	MR5	Storage & Collection of Recyclables	1	0
	MR6	Construction Waste Management	2	0
	MR7	Refrigerants & Clean Agents	2	1
		MR total	11	2
5	WE	Water Efficiency		
	WE1	Rainwater Harvesting	2	0
	WE2	Water Recycling	2	0
	WE3	Water Efficient - Irrigation/Landscaping	2	0
	WE4	Water Efficient Fittings	2	1
	WE5	Metering & Leak Detection System	2	0
			WE total	10

6	IN	Innovation			
	IN1	Innovation in Design & Environmental Design Initiatives	6		
		Recycling of Fire Testing Water		1	
	IN2	Green Building Index Facilitator	1	0	
		IN total	7	1	
		TOTAL	100	36	

GBI NRNC			GBI Score		
Part	Criteria	Item	Max Points	MS	GBI Certified
1	EE	Energy Efficiency			
	EE1	Minimum EE Performance	1	1	1
	EE2	Lighting Zoning	3	1	2
	EE3	Electrical Sub-metering	1	1	1
	EE4	Renewable Energy	5	0	0
	EE5	Advanced Energy Performance - BEI	15	0	0
	EE6	Enhanced Commissioning	3	0	0
	EE7	Post Occupancy Commissioning	2	1	1
	EE8	EE Verification	2	2	2
	EE9	Sustainable Maintenance	3	3	3
		EE total	35	9	10

2	EQ	Indoor Environmental Quality			
	EQ1	Minimum IAQ Performance	1	0	1
	EQ2	Environmental Tobacco Control	1	1	1
	EQ3	CO2 Monitoring & Control	1	0	1
	EQ4	Indoor Air Pollutants	2	0	0
	EQ5	Mould Prevention	1	1	1
	EQ6	Thermal Comfort	2	1	1
	EQ7	Air Change Effectiveness	1	0	0
	EQ8	Daylighting	2	1	1
	EQ9	Daylight Glare Control	1	0	1
	EQ10	Electric Lighting Levels	1	1	1
	EQ11	High Frequency Ballasts	1	0	1
	EQ12	External Views	2	1	1
	EQ13	Internal Noise Levels	1	1	1
	EQ14	IAQ Before & During Occupancy	2	2	2
	EQ15	Post Occupancy Comfort Survey	2	2	2
	EQ total	21	11	15	

3	Sustainable Site Planning & Management				
	SM1	Site Selection	1	1	1
	SM2	Brownfield Redevelopment	1	0	0
	SM3	Development Density & Community Connectivity	2	2	2
	SM4	Environment Management	2	2	2
	SM5	Earthworks-Construction Activity Pollution Control	1	1	1
	SM6	QLASSIC	1	0	1
	SM7	Workers' Site Amenities	1	1	1
	SM8	Public Transportation Access	1	1	1
	SM9	Green Vehicle Priority	1	1	1
	SM10	Parking Capacity	1	1	1
	SM11	Stormwater Design - Quantity & Quality Control	1	1	1
	SM12	Greenery & Roof	2	0	1
	SM13	Building User Manual	1	1	1
	SM total	16	12	14	

4	MR	Materials & Resources			
	MR1	Materials selection and reuse	2	0	0
	MR2	Recycled content materials	2	0	0
	MR3	Regional Materials	1	1	1
	MR4	Sustainable Timber	1	0	1
	MR5	Storage & Collection of Recyclables	1	0	1
	MR6	Construction Waste Management	2	0	2
	MR7	Refrigerants & Clean Agents	2	1	1
		MR total	11	2	6
5	WE	Water Efficiency			
	WE1	Rainwater Harvesting	2	0	1
	WE2	Water Recycling	2	0	0
	WE3	Water Efficient - Irrigation/Landscaping	2	0	1
	WE4	Water Efficient Fittings	2	1	1
	WE5	Metering & Leak Detection System	2	0	1
			WE total	10	1

	IN	Innovation			
6	IN1	Innovation in Design & Environmental Design Initiatives	6		
		Recycling of Fire Testing Water		1	1
	IN2	Green Building Index Facilitator	1	0	1
		IN total	7	1	2
		TOTAL	100	36	51

POINTS	GBI RATING	INFERENCE
50 to 65	GBI CERTIFIED	Good Practice
66 to 75	GBI SILVER	Excellent Practice
76 to 85	GBI GOLD	National Excellence
86 +	GBI PLATINUM	Global Excellence

GBIF CPD

courses

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THANK YOU

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