



GBI ASSESSMENT CRITERIA
FOR
RESIDENTIAL NEW CONSTRUCTION (RNC)

VERSION 2.0 | MARCH 2011

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INTRODUCTION

WHAT IS THE GREEN BUILDING INDEX (GBI)?

The Green Building Index is an environmental rating system for buildings developed by PAM (Pertubuhan Arkitek Malaysia / Malaysian Institute of Architects) and ACEM (the Association of Consulting Engineers Malaysia). The Green Building Index is Malaysia's first comprehensive rating system for evaluating the environmental design and performance of Malaysian buildings based on the six (6) main criterias of Energy Efficiency, Indoor Environment Quality, Sustainable Site Planning & Management, Materials & Resources, Water Efficiency, and Innovation.

The Green Building Index is developed specifically for the Malaysian tropical weather, environmental and developmental context, cultural and social needs.

The GBI initiative aims to assist the building industry in its march towards sustainable development. The GBI environmental rating system is created to:

- **Define green buildings by establishing a common language and standard of measurement;**
- **Promote integrated, whole-building design;**
- **Recognise and reward environmental leadership;**
- **Transform the built environment to reduce its environmental impact; and**
- **Ensure new buildings remain relevant in the future and existing buildings are refurbished and upgraded properly to remain relevant.**

WHO CAN USE THE GREEN BUILDING INDEX?

GSB encourages all members of Project Teams, Building owners, Developers and other interested parties (including Contractors, Government and Design & Build Contractors) to use the Green Building Index to validate environmental initiatives at the design phase of new construction or base building refurbishment; or construction and procurement phase of buildings. Use of the Green Building Index is encouraged on all such projects to assess and improve their environmental attributes.

Use of the Green Building Index tool without formal certification by an independent accredited GBI Certifier does not entitle the user or any other party to promote the Green Building Index rating achieved. No fee is payable to GSB for such use, however formal recognition of the Green Building Index rating - and the right to promote same - requires undertaking the formal certification process offered by Greenbuildingindex Sdn Bhd.

All Green Building Index rating tools are reviewed annually; please forward any feedback to info@greenbuildingindex.org

PROJECT INFORMATION

PROJECT NAME	
PROJECT ADDRESS	
POSTCODE	
STATE	

APPLICANT	
CONTACT PERSON	

ARCHITECT	
CIVIL ENGINEER	
STRUCTURAL ENGINEER	
MECHANICAL ENGINEER	
ELECTRICAL ENGINEER	
QUANTITY SURVEYOR	
LAND SURVEYOR	
LANDSCAPE CONSULTANT	
OTHER SPECIALIST CONSULTANT(S)	
MAIN CONTRACTOR	
LOCAL AUTHORITY	
TOTAL GROSS FLOOR AREA	
LAND AREA FOR LANDED PROPERTY	

BUILDING DESCRIPTION	

ASSESSMENT CRITERIA OVERALL POINTS SCORE

PART	ITEM	MAXIMUM POINTS	SCORE
1	Energy Efficiency	23	
2	Indoor Environmental Quality	12	
3	Sustainable Site Planning & Management	37	
4	Material & Resources	10	
5	Water Efficiency	12	
6	Innovation	6	
TOTAL SCORE		100	

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

ASSESSMENT CRITERIA SCORE SUMMARY

PART	CRITERIA	ITEM	POINTS	TOTAL	
1	EE	ENERGY EFFICIENCY			
	EE1	Minimum EE Performance	3	23	
	EE2	Renewable Energy	5		
	EE3	Advanced EE Performance based on OTTV & RTTV	10		
	EE4	Home Office & Connectivity	2		
	EE5	Sustainable Maintenance	3		
2	EQ	INDOOR ENVIRONMENTAL QUALITY			
	Air Quality, Lighting, Visual & Acoustic Comfort				
	EQ1	Minimum IAQ Performance	2	12	
	EQ2	Daylighting	2		
	EQ3	Sound Insulation	2		
	EQ4	Good Quality Construction	1		
	EQ5	Volatile Organic Compounds	2		
	EQ6	Formaldehyde Minimisation	1		
Verification					
EQ7	Post Occupancy Evaluation: Verification	2			
3	SM	SUSTAINABLE SITE PLANNING & MANAGEMENT			
	Site Planning & Transport				
	SM1	Site Selection	1	37	
	SM2	Public Transportation Access	12		
	SM3	Community Services & Connectivity	8		
	SM4	Open Spaces, Landscaping & Heat Island Effect	4		
	Site & Construction Management				
	SM5	Construction System & Site Management	3		
	SM6	Stormwater Management	3		
	SM7	Re-development of Existing Sites & Brownfield Re-development	2		
SM8	Avoiding Environmentally Sensitive Areas	2			
SM9	Building User Manual	2			
4	MR	MATERIALS & RESOURCES			
	Reused & Recycled Materials				
	MR1	Storage & Collection of recyclables	2	10	
	MR2	Materials Reuse and Selection	2		
	MR3	Construction Waste Management	2		
	Sustainable Resources				
	MR4	Recycled Content Materials	1		
MR5	Regional Materials	1			
MR6	Sustainable Timber	2			
5	WE	WATER EFFICIENCY			
	Water Harvesting & Recycling				
	WE1	Rainwater Harvesting	4	12	
	WE2	Water Recycling	2		
	Increased Efficiency				
WE3	Water Efficient Landscaping	2			
WE4	Water Efficient Fittings	4			
6	IN	INNOVATION			
	IN1	Innovation in Design & Environmental Design Initiatives	5	6	
	IN2	Green Building Index Facilitator (GBIF)	1		
TOTAL POINTS				100	

1

ENERGY EFFICIENCY (EE)

MINIMUM EE PERFORMANCE | RENEWABLE ENERGY | ADVANCED EE PERFORMANCE | HOME OFFICE & CONNECTIVITY

23 POINTS

ITEM	AREA OF ASSESSMENT	DETAIL POINTS	MAX POINTS	SCORE
EE1	MINIMUM EE PERFORMANCE			
	Establish minimum Energy Efficiency (EE) performance to reduce energy consumption in buildings, thus reducing CO ₂ emission to the atmosphere. Apply OTTV and RTTV formulas of MS 1525 for residential buildings. OTTV ≤ 50 W/m ² , RTTV ≤ 25 W/m ² Roof U ≤ 0.4 W/m ² K (Lightweight) Roof U ≤ 0.6 W/m ² K (Heavyweight)	3	3	
EE2	RENEWABLE ENERGY			
	Encourage use of renewable energy.		5	
	A) Low-rise (3-Storeys and below ie. landed buildings, terrace, semi-detached & detached):			
	Where 1 kWp is generated by renewable energy, OR	1		
	Where 40% of building energy consumption or 2 kWp (whichever is the lower) is generated by renewable energy, OR	2		
	Where 60% of building energy consumption or 3 kWp (whichever is the lower), OR	3		
	Where 80% of building energy consumption or 4 kWp (whichever is the lower), OR	4		
	100% of building energy consumption or 5 kWp (whichever is the lower)	5		
	B) Hi-rise (Above 3-Storeys Building Energy Consumption here shall apply to Energy Consumption at common areas only and not to the Residential Units):			
	Where 0.5% of building energy consumption or 5 kWp (whichever is the higher) is generated by renewable energy, OR	1		
	Where 1.0% of building energy consumption or 10 kWp (whichever is the higher), OR	2		
	Where 1.5% of building energy consumption or 20 kWp (whichever is the higher), OR	3		
	Where 2.0% of building energy consumption or 30 kWp (whichever is the higher), OR	4		
	Where 2.5% of building energy consumption or 40 kWp (whichever is the higher)	5		
EE3	ADVANCED EE PERFORMANCE BASED ON OTTV & RTTV			
	Establish EE Performance to reduce dependence on Energy to keep indoor environment at satisfactory comfort level. Computed OTTV and RTTV to show lower dependence on Energy to maintain indoor thermal comfort.		10	
	A) OTTV			
	OTTV ≤ 46 W/m ²	1		
	OTTV ≤ 44 W/m ²	2		
	OTTV ≤ 42 W/m ²	3		
	OTTV ≤ 40 W/m ²	4		
	OTTV ≤ 38 W/m ²	5		
	B) RTTV			
	Lightweight Roof U-value ≤ 0.35 W/m ² K Heavyweight Roof U-value ≤ 0.5 W/m ² K	1		
	Lightweight Roof U-value ≤ 0.3-0 W/m ² K Heavyweight Roof U-value ≤ 0.4 W/m ² K	2		
	Lightweight Roof U-value ≤ 0.25 W/m ² K Heavyweight Roof U-value ≤ 0.3 W/m ² K	3		
	Lightweight Roof U-value ≤ 0.2 W/m ² K Heavyweight Roof U-value ≤ 0.2 W/m ² K	4		
	Lightweight Roof U-value ≤ 0.15 W/m ² K Heavyweight Roof U-value ≤ 0.15 W/m ² K	5		
EE4	HOME OFFICE & CONNECTIVITY			
	Encourage dual use spaces and working from Home thereby discourage avoidable commuting.		2	
	Multiple-use type developments, OR High speed internet access available at homes > 1MB/s	2		
EE5	SUSTAINABLE MAINTENANCE			
	Ensure that the building's energy related systems will continue to perform as intended beyond the 12 months Defects & Liability Period. Document Green Building Design features and strategies for user information and guide to sustain performance during occupancy.		3	
	Buildings With Common Management: 1. Provide a designated building maintenance office equipped with facilities (including tools and instrumentation) and inventory storage; 2. Provide evidence of documented plan for at least 3-year facility maintenance and preventive maintenance budget; 3. Provide full set of all Building, Structural and M&E Plans and Maintenance manuals to maintenance team; OR	3		
	Buildings Without Common Management: 1. Provide a evidence of documented plan for at least 3-year preventive maintenance budget. 2. Provide full set of all Building, Structural and M&E Plans and Maintenance manuals to every building owner.	3		
ENERGY EFFICIENCY (EE) TOTAL			23	

2

INDOOR ENVIRONMENTAL QUALITY (EQ)

AIR QUALITY, LIGHTING, VISUAL & ACOUSTIC COMFORT | VERIFICATION

12 POINTS

ITEM	AREA OF ASSESSMENT	DETAIL POINTS	MAX POINTS	SCORE
AIR QUALITY, LIGHTING, VISUAL & ACOUSTIC COMFORT				
EQ1	MINIMUM IAQ PERFORMANCE			
	Establish minimum indoor air quality (IAQ) performance to enhance indoor air quality in building, thus contributing to the comfort and well-being of the occupants.		2	
	Meet the minimum requirements of ventilation rate in the local building code	1		
	Provide cross ventilation for all public and circulation spaces	2		
EQ2	DAYLIGHTING			
	Encourage and recognise designs that provide good levels of daylighting for building occupants. Demonstrate that a nominated percentage of the Habitable Rooms as defined under UBBL has a daylight factor of minimum 1% as measured at floor level;		2	
	if > 50% of Habitable spaces, OR	1		
	if > 75% of Habitable spaces	2		
EQ3	SOUND INSULATION			
	Encourage and recognise building that is designed with adequate insulation between dwelling units. Ensure that the airborne sound penetration between spaces are controlled within the following criteria;		2	
	Sound Transmission Class (STC) between dwelling units ≥ 45	1		
	Intra dwelling sound insulation in the same dwelling unit should exceed the following STC values: Bedroom ≥ 40 Other areas ≥ 35	1		
EQ4	GOOD QUALITY CONSTRUCTION			
	Encourage and recognise good quality construction – first time right – that does not require re-work that wastes materials and labour.		1	
	Subscribe to independent method to assess and evaluate quality of workmanship of building project based on CIDB's CIS 7: Quality Assessment System for Building Construction Work (QLASSIC). Submit a PQP – Project Quality Plan to outline how to achieve the targets set. Must achieve a minimum score of 70%	1		
EQ5	VOLATILE ORGANIC COMPOUNDS			
	Encourage and recognise projects that reduce the detrimental impact on occupant health from finishes emitting internal air pollutants. Reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants. Volatile Organic Compound (VOC) content to comply with requirements specified in international labelling schemes recognised by GBI. 0.5 point is awarded for each of the following up to a maximum of 1 point: 1. Low VOC paint and coating to walls (at least 90% of overall used) OR no paint and coating used. 2. Low VOC paint and coating to ceilings (at least 90% of overall used) OR no paint and coating used. 3. Low VOC carpet or interior flooring (at least 90% of overall used) OR no carpet or interior flooring used. 4. Low VOC adhesive and sealant (at least 90% of overall used) OR no adhesive and sealant used.	2	2	
EQ6	FORMALDEHYDE MINIMISATION			
	Reduce the exposure of occupants to formaldehyde and promote good indoor air quality in the living space. Products with no added urea formaldehyde are to be used. 0.5 point is awarded for each of the following up to a maximum of 1 point: 1. Composite wood and agrifiber products defined as: particleboard, medium density fiberboard (MDF), plywood, weather-board, strawboard, panel substrates and door cores OR none used; 2. Laminating adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies OR none used; 3. Insulation foam OR none used; 4. Draperies OR none used	1	1	
VERIFICATION				
EQ7	POST OCCUPANCY EVALUATION: VERIFICATION			
	Provide for the assessment of quality and comfort of the building occupants over time.		2	
	Commit to implement a post-occupancy comfort survey of building occupants within a period of one month after issuance of CCC. This survey should collect anonymous responses about thermal comfort, visual comfort and acoustic comfort in a building. This should include measurement of overall thermal, daylight and acoustic performance and identification of thermal-related, visual-related and acoustic-related problems.	1		
	Develop a plan for corrective action if the survey results indicate that more than 20% of survey respondents are dissatisfied with the surveyed information on the building. This plan should include measurement of relevant environmental variables in problem areas.	1		
INDOOR ENVIRONMENTAL QUALITY (EQ) TOTAL			12	

3

SUSTAINABLE SITE PLANNING & MANAGEMENT (SM)

SITE PLANNING & TRANSPORT | SITE & CONSTRUCTION MANAGEMENT

37 POINTS

ITEM	AREA OF ASSESSMENT	DETAIL POINTS	MAX POINTS	SCORE																				
SITE PLANNING & TRANSPORT																								
SM1	SITE SELECTION & PLANNING																							
	<p>Proposed development is appropriate for the site and complies with the Local Plan or Structure Plan for the area.</p> <p>The proposed building must comply with the following requirements:</p> <ol style="list-style-type: none"> The Structure Plan for the area AND/OR The Local Plan where available Infrastructure requirement is available for the area. 	1	1																					
SM2	PUBLIC TRANSPORTATION ACCESS																							
	<p>Encourage the selection of sites close to transport hubs and the planning of new housing areas to encourage the use of public transport. This is to reduce the current and future heavy dependence on private transport, which is the greatest contributor to Green House Gas (GHG) emission.</p> <p>Points are awarded according to proximity of the development to public transport hubs and quality of the access to the transport hub. For new housing areas, the provision of transport hubs for the housing concerned with proper shelter, amenities, shuttle facilities and parking facilities are encouraged. Points are awarded according to the subsection categories.</p> <p>NOTE: SELECT EITHER SM2A & SM2B OR SM2C & SM2D</p>		12																					
SM2A	<p>Distance from Mass Transport Station/Hub (Transport Station/Hub is where more than 1 transport route intersects and connects. Eg. Train Station, Monorail or Bus Transit Terminal) to building within 1km (50% of points if from Shuttle Bus Stop)</p> <table border="1"> <tr> <td>0 - 250m</td> <td>8</td> </tr> <tr> <td>251 - 500m</td> <td>6</td> </tr> <tr> <td>501 - 750m</td> <td>4</td> </tr> <tr> <td>751m - 1km</td> <td>2</td> </tr> </table>	0 - 250m	8	251 - 500m	6	501 - 750m	4	751m - 1km	2		8													
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751m - 1km	2																							
SM2B	<p>Walkway from building to Mass Transport Station/Hub if less than 750m from Mass Transport Station/Hub</p> <table border="1"> <tr> <td>Dedicated walkway – Public access path/ route</td> <td>2</td> </tr> <tr> <td>Dedicated Covered walkway – Dedicated walkway with man-made shadings or regular arrays of shaded trees covering at least 70% of route</td> <td>3</td> </tr> <tr> <td>Dedicated Covered walkway that incorporates provision for the handicapped</td> <td>4</td> </tr> <tr> <td>OR</td> <td></td> </tr> <tr> <td>Sheltered and secured waiting area for shuttle van or bus in the residential building if more than 750m from Mass Transport Station</td> <td>4</td> </tr> </table>	Dedicated walkway – Public access path/ route	2	Dedicated Covered walkway – Dedicated walkway with man-made shadings or regular arrays of shaded trees covering at least 70% of route	3	Dedicated Covered walkway that incorporates provision for the handicapped	4	OR		Sheltered and secured waiting area for shuttle van or bus in the residential building if more than 750m from Mass Transport Station	4		4											
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SM2C	<p>Sheltered Transport Stops (Taxi OR Bus) within the Residential Area with covered seating and waiting area for a minimum of 10% of the total number of residential units</p> <p>Score is average of points of all residential units in the residential area as for SM2A</p>	8	8																					
SM2D	<p>Walkway from building to Transport Stops if less than 750m from Transport Stops:</p> <table border="1"> <tr> <td>Dedicated walkway – Public access path/ route</td> <td>2</td> </tr> <tr> <td>Dedicated Covered walkway – Dedicated walkway with man-made shadings or regular arrays of shaded trees covering at least 70% of route</td> <td>3</td> </tr> <tr> <td>Dedicated Covered walkway that incorporates provision for the handicapped</td> <td>4</td> </tr> <tr> <td>OR</td> <td></td> </tr> <tr> <td>Car park provision next to Transport Terminal:</td> <td></td> </tr> <tr> <td>Car park provision for at least 20% of total number of residential units not more than 250m from the Terminal</td> <td>4</td> </tr> <tr> <td>OR</td> <td></td> </tr> <tr> <td>Designated bicycle lane provision in at least 90% of the Residential area and a Secured bicycle parking area in the Transport Terminal for 10% of the total number of residential units:</td> <td></td> </tr> <tr> <td>Provision of Bicycle Lanes</td> <td>2</td> </tr> <tr> <td>AND Provision of Bicycle Parking Area</td> <td>2</td> </tr> </table>	Dedicated walkway – Public access path/ route	2	Dedicated Covered walkway – Dedicated walkway with man-made shadings or regular arrays of shaded trees covering at least 70% of route	3	Dedicated Covered walkway that incorporates provision for the handicapped	4	OR		Car park provision next to Transport Terminal:		Car park provision for at least 20% of total number of residential units not more than 250m from the Terminal	4	OR		Designated bicycle lane provision in at least 90% of the Residential area and a Secured bicycle parking area in the Transport Terminal for 10% of the total number of residential units:		Provision of Bicycle Lanes	2	AND Provision of Bicycle Parking Area	2		4	
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GREEN BUILDING INDEX ASSESSMENT CRITERIA FOR RNC

ITEM	AREA OF ASSESSMENT	DETAIL POINTS	MAX POINTS	SCORE
SM3	COMMUNITY SERVICES & CONNECTIVITY			
	Encourage the selection of sites close to basic community amenities and the planning of new residential areas to encourage the provision of local amenities. This is to reduce the current and future heavy use of private transport after working hours, which is the greatest contributor to GHG emission. Points are awarded according to proximity of the development to community amenities. Points are awarded according to the subsection categories.			
SM3A	Basic Amenities as listed below are provided or are available within 750m of the residential units (Less 1 point if more than 750m away): 1. Grocery Store or Mini-market 2. Restaurant or Coffee Shop 3. Religious Centre (eg. Surau, Mosque, Church, Temple) 4. Playground or Public Park	4	8	
SM3B	Other Amenities as listed below are provided or are available within 750m of the residential units (0.5 point per item or equivalent up to maximum of 2 points. Less 0.5 point if more than 750m away): 1. Clinic or Medical Center 2. Police Station or Police Pondok 3. School or Creche or Kindergarten 4. Bank, Post Office or ATM	2		
SM3C	Additional Amenities as listed below are provided or are available within 750m of the residential units (0.5 point per item or equivalent up to maximum of 2 points. Less 0.5 point if more than 750m away): 1. Library 2. Community Center or Hall 3. Wet Market or Supermarket 4. Barber Shop or Hair Salon 5. Laundry 6. Hardware Store 7. Bakery 8. Newsagent	2		
SM4	OPEN SPACES, LANDSCAPING AND HEAT ISLAND EFFECT			
	Development should have smaller footprints and more landscaping, thereby reducing the well known effects of heat islands around hard scaped areas.		4	
	Provision of landscaping with indigenous plants to 10% of total development area	1		
	Provision of additional similar landscaping of every extra 5%: 1 point up to a maximum of 3 points	3		
SITE & CONSTRUCTION MANAGEMENT				
SM5	CONSTRUCTION SYSTEM & SITE MANAGEMENT			
	Encourage IBS and reduce on-site construction. Reduce material wastage and construction wastage to landfill sites. Reduce the polluting effects of construction and from workers during construction.		3	
	Reduce pollution from construction activities by controlling pollution from waste and rubbish from workers. Create and implement a Site Amenities Plan for all construction workers associated with the project. The plan shall describe the measures implemented to accomplish the following objectives: 1. Proper accommodation for construction workers at the site or at temporary rented accommodation nearby. 2. Prevent pollution of storm sewer or receiving stream by having proper septic tank. 3. Prevent polluting the surrounding area from open burning and proper disposal of domestic waste. 4. Provide adequate health and hygiene facilities for workers on site.	1		
	CIDB IBS score ≥ 50%, OR	1		
	CIDB IBS score ≥ 70%	2		
SM6	STORM WATER MANAGEMENT			
	Manage surface water run off from developments. Reduce the pollution and storm water loading of the river systems from the development. Reduce flood risk. Retain rainwater for recycling and appropriate use.		3	
	Complies with MASMA OR Local equivalent minimum requirements	1		
	Exceeds MASMA requirements by 30%: entitled to 2 additional points pro rated for lower values	2		
SM7	RE-DEVELOPMENT OF EXISTING SITES & BROWNFIELD SITES			
	Discourage development in environmentally sensitive areas. Encourage re-development of existing sites. Reward rehabilitation of Brownfield site and development in the rehabilitated sites.		2	
	Re-development, refurbishment OR extension of existing buildings OR sites OR	2		
	Rehabilitation of brownfield sites			
SM8	AVOIDING ENVIROMENTALLY SENSITIVE AREAS			
	Avoid development of inappropriate sites and reduce the environmental impact from the location of a building on a site.		2	
	Do not develop buildings, hardscape, roads or parking areas on portions of sites that meet any one of the following criteria: <ul style="list-style-type: none"> • Prime agriculture land as defined by the Town and Country Planning Act • Land that is specifically identified as habitat for any species threatened or endangered lists • Within 30 meters of any wetlands as defined by the Structure Plan of the area. OR within setback distances from wetlands prescribed in state or local regulations, as defined by local or state rule or law, whichever is more stringent: <ul style="list-style-type: none"> • Previously undeveloped land that is within 15 meters of a water body, defined as seas, lakes, rivers, streams and tributaries which support or could support fish, recreation or industrial use. • Land which prior to acquisition for the project was public parkland, unless land of equal or greater value as parkland is accepted in trade by the public landowner. • Land which is classified as Class IV (steeper than 30 degrees) 	2		
SM9	BUILDING USER MANUAL			
	Document Green Building Design features & strategies for user information and guide to sustain performance during occupancy. Provide a Building User Manual which documents passive and active features that should not be downgraded.	2	2	
SUSTAINABLE SITE PLANNING & MANAGEMENT (SM) TOTAL			37	

4

MATERIALS & RESOURCES (MR)

REUSED AND RECYCLED MATERIALS | SUSTAINABLE RESOURCES

10 POINTS

ITEM	AREA OF ASSESSMENT	DETAIL POINTS	MAX POINTS	SCORE
REUSED AND RECYCLED MATERIALS				
MR1	STORAGE & COLLECTION OF RECYCLABLES			
	Facilitate the reduction of waste generated by construction that is hauled and disposed off in landfills and recycling after occupancy.		2	
	During Construction, provide dedicated area(s) and storage for collection of non-hazardous materials for recycling.	1		
	During Building Occupancy, provide permanent recycle bins.	1		
MR2	MATERIALS REUSE AND SELECTION			
	Reuse building materials and products in order to reduce demand for virgin materials and to reduce waste, thereby reducing impacts associated with the extraction and processing of virgin resources. Integrate building design and its buildability, with careful selection of building materials in relation with embodied energy and durability of the materials to lower carbon content and better building life cycle.		2	
	Use salvaged, refurbished or used materials such that the sum of these materials constitutes at least 1% (based on cost) of the total materials for the project. The used, refurbished and new building materials concerned are to be assessed for eco preferred content, durability, the product manufacturer's environmental management system and whether the product is modular and/ or designed for disassembly. To include reusability and the number of cycles on the usage (minimum 15 cycles) of temporary materials; such as temporary formwork system, temporary framing or support system, etc. <i>0.5 point for 1.0% and additional 0.25 point for every additional 0.5% up to a maximum of 2 points.</i>	2		
MR3	CONSTRUCTION WASTE MANAGEMENT			
	Divert construction debris from disposal in landfill and incinerator. Redirect recyclable recovered resources back to manufacturing process. Redirect reusable materials to appropriate sites.		2	
	Recycle and/or salvage at least 50% of non-hazardous construction debris. Develop and implement a construction waste management plan that, at a minimum identifies the materials to be diverted from disposal and whether the materials will be sorted on site or co-mingled. Quantify by measuring total tonnage of waste or truck loads of waste disposal. <i>1 point for 50% and additional 0.25 point for every additional 5% up to a maximum of 2 points.</i> <i>If project uses high level of prefabrication with IBS score > 70, 1 point for every 10% increase in prefabrication up to a maximum of 2 points.</i>	2		
SUSTAINABLE RESOURCES				
MR4	RECYCLED CONTENT MATERIALS			
	Increase demand for building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials.		1	
	Use materials with recycled content such that the sum of post-consumer recycled plus one-half of the pre-consumer content constitutes at least 10% (based on cost) of the total value of the materials in the project. Recycled content shall be defined in accordance with the International Organization of Standards Document. <i>0.5 point for 10% and 0.25 point for every additional 5% up to a maximum of 1 point.</i>	1		
MR5	REGIONAL MATERIALS			
	Increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation		1	
	Use building materials or products that have been extracted, harvested or recovered, as well as manufactured, within 500km of the project site for a minimum of 20% (based on cost) of the total material value. Mechanical, electrical and plumbing components shall not be included. Only include materials permanently installed in the project. <i>0.5 point for 20% and 0.25 point for every additional 5% up to a maximum of 1 point.</i>	1		
MR6	SUSTAINABLE TIMBER			
	Encourage environmentally responsible forest management: Where ≥ 50% of wood-based materials and products used are certified. <i>These components include, but are not limited to, structural framing and general dimensional framing, flooring, sub-flooring, wood doors and finishes. To include wood materials permanently installed and also temporarily purchased for the project.</i> <i>Compliance with:</i> <i>1. Forest Stewardship Council (FSC) OR</i> <i>2. Malaysian Timber Certification Council (MTCC) AND Forest Stewardship Council (FSC) requirements.</i> <i>Where the project has no timber content, this credit may be transferred to MR5</i>	2	2	
MATERIALS & RESOURCES (MR) TOTAL			10	

5

WATER EFFICIENCY (WE)

WATER HARVESTING & RECYCLING | INCREASED EFFICIENCY

12 POINTS

ITEM	AREA OF ASSESSMENT	DETAIL POINTS	MAX POINTS	SCORE
WATER HARVESTING & RECYCLING				
WE1	RAINWATER HARVESTING			
	Encourage rainwater harvesting that will lead to reduction in potable water consumption (For Hi-rise – above 3-storeys water consumption here shall apply to common area Water Consumption only and not to the Residential Units):			
	Rainwater harvesting that leads to $\geq 10\%$ reduction in potable water consumption, OR	1	4	
	Rainwater harvesting that leads to $> 30\%$ reduction in potable water consumption, OR	2		
	Rainwater harvesting that leads to $> 40\%$ reduction in potable water consumption, OR	3		
	Rainwater harvesting that leads to $> 50\%$ reduction in potable water consumption	4		
WE2	WATER RECYCLING			
	Encourage water recycling that will lead to reduction in potable water consumption:			
	Treat and recycle $\geq 5\%$ wastewater leading to reduction in potable water consumption, OR	0.5	2	
	Treat and recycle $\geq 10\%$ wastewater leading to reduction in potable water consumption, OR	1		
	Treat and recycle $\geq 20\%$ wastewater leading to reduction in potable water consumption, OR	1.5		
	Treat and recycle $\geq 30\%$ wastewater leading to reduction in potable water consumption	2		
INCREASED EFFICIENCY				
WE3	WATER EFFICIENT LANDSCAPING			
	Encourage the design of system that does not require the use of potable water supply from the local water authority:			
	Reduce potable water consumption for landscape irrigation by $\geq 50\%$ (e.g. through use of native or adaptive plants to reduce or eliminate irrigation requirement, OR	1	2	
	Do not use potable water at all for landscape irrigation	2		
WE4	WATER EFFICIENT FITTINGS			
	Encourage reduction in potable water consumption through use of efficient devices:			
	Reduce annual potable water consumption by $> 10\%$, OR	1	4	
	Reduce annual potable water consumption by $> 30\%$, OR	2		
	Reduce annual potable water consumption by $> 40\%$, OR	3		
	Reduce annual potable water consumption by $> 50\%$	4		
WATER EFFICIENCY (WE) TOTAL			12	

6

INNOVATION (IN)

INNOVATION INITIATIVES | MAINTENANCE PROGRAM & GREEN BUILDING INDEX FACILITATOR

6 POINTS

ITEM	AREA OF ASSESSMENT	DETAIL POINTS	MAX POINTS	SCORE
IN1	INNOVATION IN DESIGN & ENVIRONMENTAL DESIGN INITIATIVES			
	Provide design team and project the opportunity to be awarded points for exceptional performance above the requirements set by GBI rating system: <i>1 point for each approved innovation and environmental design initiative up to a maximum of 5 points, such as:</i> <ul style="list-style-type: none"> • Innovative planning that displays “less is more” and “small is beautiful”; • Rehabilitation of existing buildings for re-use in innovative ways; • Innovative use of building features to passively cool the building • Heat recovery system (contributing to at least 10% of total required capacity); • Mixed mode / low energy ventilation system; • Waterless urinals (fitted to all male toilets); • Central waste conveyance system; • Central vacuum system 	5	5	
IN2	GREEN BUILDING INDEX FACILITATOR (GBIF)			
	Green Building Index Facilitator to support and encourage the design integration required for Green Building Index rated buildings and to streamline the application and certification process.		1	
	At least one principle participant of the project team shall be a Green Building Index Facilitator.	1		
INNOVATION (IN) TOTAL			6	