



**GBI ASSESSMENT CRITERIA
FOR
INTERIORS**

VERSION 1.1 | JANUARY 2015

www.greenbuildingindex.org | info@greenbuildingindex.org

GREENBUILDINGINDEX SDN BHD (845666-V) A-12-13A, Menara UOA Bangsar, 5 Jalan Bangsar Utama 1, 59000 Kuala Lumpur Tel 603 2693 4182 Fax 603 2692 8782

CONTENTS

PAGE	3	ACKNOWLEDGMENT & COPYRIGHT
		INTRODUCTION
PAGE	4	What is the Green Building Index (GBI)?
PAGE	4	Who can use the Green Building Index?
PAGE	5	PROJECT INFORMATION
PAGE	6	CONSULTANTS INFORMATION
		ASSESSMENT CRITERIA
PAGE	7	Overall Points Score
PAGE	8	Summary Criteria Score
		INDIVIDUAL ITEM SCORE
PAGE	10	PART 1: Energy Efficiency (EE)
PAGE	12	PART 2: Indoor Environmental Quality (EQ)
PAGE	14	PART 3: Sustainable Site Planning & Management (SM)
PAGE	16	PART 4: Materials & Resources (MR)
PAGE	17	PART 5: Water Efficiency (WE)
PAGE	18	PART 6: Innovation (IN)
PAGE	19	Acknowledgements

ACKNOWLEDGEMENT & COPYRIGHT

The Green Building Index (GBI) Interior Tool was jointly developed by the Malaysia Green Building Confederation (MGBC) and the Malaysian Institute of Interior Designers (MIID) and the GBI Technical Committee for Green Building Index for the purposes as mentioned herein and may be subject to updating and/or modification in future.

While every care has been taken by MGBC and MIID in the development of the GBI Interiors Tool to establish and acknowledge copyright of the information and materials used, and contact the copyright owners known to MGBC/MIID, MGBC and MIID tender their apologies for any accidental omissions.

Green Building Index and GBI is a copyright of Greenbuildingindex Sdn Bhd (in short "GSB") in which GSB reserves all rights. GSB is the custodian of all rights of MGBC and MIID in the GBI Interiors Tool. No part of the GBI Interiors Tool may be used, modified, reproduced, stored in a retrieval system or transmitted in any form, or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of GSB.

DISCLAIMERS

MGBC and/or MIID and/or GSB shall not be held liable for any improper or incorrect use of the GBI Interiors Tool (inclusive of the materials and/or information contained therein) and assume no responsibility for any user's use of it. In no event shall MGBC and/or MIID and/or GSB be liable for any damages whatsoever, whether direct, indirect, incidental, special, exemplary or consequential (including, but not limited to business interruption or loss of use, data or profits) regardless of cause, and on any basis of liability, whether in contract, strict liability or tort (including negligence, misrepresentation or otherwise) arising in any way out of the use of the GBI Interiors Tool or the information and materials contained therein.

The information and materials in the GBI are provided "as is" and without warranties of any kind expressed or implied. MGBC, MIID and GSB do not warrant or make representations as to the accuracy and completeness of any information and/or materials contained therein. While every effort has been made to check the accuracy and completeness of the information and materials given, the users should always make their own relevant checks. Accordingly, MGBC, MIID and GSB do not accept responsibility and liability for misstatements made in it or misunderstanding from it.

The GBI Interiors Tool is no substitute for professional advice. Users are advised to consult with appropriate and accredited professional advisors for advice concerning specific matters pertaining to the GBI Interiors Tool before adopting or using it. MGBC, MIID and GSB disclaim any responsibility for positions taken by users in their individual cases or for any misunderstandings and losses, direct or indirectly, on the part of the users.

MGBC, MIID and GSB do not endorse or otherwise acknowledge the GBI Interiors Tool rating achieved by the use of the GBI Interiors Tool. GSB offers a formal certification process for ratings; which service provides for independent third party review of points claimed to ensure that all credits can be demonstrated to be achieved by the provision of the necessary documentary evidence. Use of the GBI Interiors Tool without formal certification by GSB does not entitle the user or any other party to promote the achieved GBI Interiors Tool rating.

INDEMNIFICATION

To the extent permitted by applicable law, by using GSB's GBI Interiors Tool, the user agrees to defend, indemnify, and hold harmless, MGBC and/or MIID and/or GSB, their officers, employees, members, representatives and agents from and against all claims and expenses of whatsoever kind and amount, arising out of the user's use of the GBI Interiors Tool or materials and information contained therein and not to pursue any cause of action whatsoever against MGBC and/or MIID and/or GSB under any conceivable circumstances.

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 Interior Tool is jointly developed by MGBC (Malaysia Green Building Confederation) and MIID (Malaysian Institute of Interior Designers) and the GBI Technical Committee for Green Building Index. 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 it's 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	

INTERIOR DESIGNER	
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	

PROJECT DESCRIPTION	

CONSULTANTS INFORMATION

OWNER'S NAME		
COMPANY		
OWNER'S REPRESENTATIVE	NAME	DESIGNATION

ARCHITECT	NAME	PROFESSIONAL REG. NO. A/	COMPANY
CIVIL ENGINEER	NAME	PROFESSIONAL REG. NO.	COMPANY
STRUCTURAL ENGINEER	NAME	PROFESSIONAL REG. NO.	COMPANY
MECHANICAL ENGINEER	NAME	PROFESSIONAL REG. NO.	COMPANY
ELECTRICAL ENGINEER	NAME	PROFESSIONAL REG. NO.	COMPANY
QUANTITY SURVEYOR	NAME	PROFESSIONAL REG. NO.	COMPANY
LAND SURVEYOR	NAME	PROFESSIONAL REG. NO.	COMPANY
LANDSCAPE ARCHITECT	NAME	PROFESSIONAL REG. NO.	COMPANY
COMMISSIONING SPECIALIST (CxS)	NAME	PROFESSIONAL REG. NO. GBICxS/	COMPANY
GBI FACILITATOR	NAME	PROFESSIONAL REG. NO. GBIF/	COMPANY
OTHER SPECIALIST CONSULTANT(S)			
MAIN CONTRACTOR			
LOCAL AUTHORITY			

ASSESSMENT CRITERIA OVERALL POINTS SCORE

PART	ITEM	MAXIMUM POINTS	SCORE
1	Energy Efficiency (EE)	28	
2	Indoor Environmental Quality (EQ)	19	
3	Sustainable Site Planning & Management (SM)	25	
4	Material & Resources (MR)	14	
5	Water Efficiency (WE)	4	
6	Innovation (IN)	10	
TOTAL SCORE		100	

GREEN BUILDING INDEX CLASSIFICATION

POINTS	GBI RATING
86 to 100 points	Platinum
76 to 85 points	Gold
66 to 75 points	Silver
50 to 65 points	Certified

DETAIL ASSESSMENT CRITERIA SUMMARY OF CONTENT

PART	CRITERIA	ITEM	POINTS	TOTAL
1	EE	ENERGY EFFICIENCY		28
	EE1	Engagement Of Qualified Professionals	2	
	EE2	Lighting & Plug Load	12	
	EE3	Air Conditioning System	6	
	EE4	Measurement, Verification & EE Performance	8	
2	EQ	INDOOR ENVIRONMENTAL QUALITY		19
	Air Quality			
	EQ1	Minimum IAQ Performance	2	
	EQ2	Indoor Air Pollutants	3	
	Thermal Comfort			
	EQ3	Thermal Comfort: Design & Controllability of Systems	2	
	EQ4	Carbon Dioxide Monitoring & Control	2	
	EQ5	Mould Prevention	2	
	Lighting, Visual & Acoustic Comfort			
	EQ6	Daylighting	1	
	EQ7	Daylight Glare Control	1	
	EQ8	Electrical Lighting Levels	1	
	EQ9	High Frequency Ballasts	1	
	EQ10	External Views	1	
EQ11	Internal Noise Levels	1		
Verification				
EQ12	IAQ Before & During Occupancy	1		
EQ13	Post Occupancy Comfort Survey: Verification	1		
3	SM	SUSTAINABLE PLANNING & MANAGEMENT		25
	Site Planning			
	SM1	Building Selection	1	
	SM2	Refurbishment of Existing or Abandoned Interior Space	1	
	SM3	Public Transportation Access	1	
	SM4	Community Connectivity	1	
	Interior Space Design & Quality			
	SM5	Sustainable Space Design	10	
	SM6	Indoor Greenscape & Indoor Water Feature	2	
	Construction Management			
	SM7	Sustainable Construction	1	
	SM8	Construction Pollution Control Policy	1	
	SM9	Storage & Collection of Recyclables	1	
	SM10	Construction Waste Management	1	
SM11	Site Safety	1		
Operation				
SM12	Green Procurement & Operation Policy	2		
SM13	Sustainable Maintenance & Green Office Guide	2		

GREEN BUILDING INDEX ASSESSMENT CRITERIA FOR INTERIORS

PART	CRITERIA	ITEM	POINTS	TOTAL	
4	MR	MATERIALS & RESOURCES			
	Reused & Recycled Materials				14
	MR1	Materials Reuse & Selection	2		
	MR2	Recycled Content Materials	4		
	Sustainable Resources				
	MR3	Regional Materials	1		
	MR4	Rapidly Renewable Materials & Sustainable Timber	3		
	Green Products				
MR5	Material Manufacture & Ingredients	2			
5	WE	WATER EFFICIENCY			
	Increased Efficiency & Recycling				4
	WE1	Water Efficient Landscaping & Water Feature	1		
	WE2	Water Efficient Fittings	2		
WE3	Drinking Water Quality	1			
6	IN	INNOVATION			
	IN1	Innovation in Design & Environmental Design Initiatives	9	10	
	IN2	Green Building Index Accredited Facilitator	1		
			TOTAL POINTS	100	

1

ENERGY EFFICIENCY (EE)

ENGAGEMENT OF QUALIFIED PROFESSIONALS | LIGHTING & PLUG LOAD | AIR CONDITIONING SYSTEM | MEASUREMENT, VERIFICATION & EE PERFORMANCE

28 POINTS

ITEM	AREA OF ASSESSMENT	DETAIL POINTS	MAX POINTS	SCORE
EE1	ENGAGEMENT OF QUALIFIED PROFESSIONALS			
	Selection of a qualified and a professional team of design consultants who, apart from the Interiors Designers, represent the other interior fit out trades who as shall consist of (a minimum of 2 is required): i. MEP Engineers ii. C&S Engineers iii. Commissioning Specialists iv. Sustainability Consultants v. Quantity Surveyors	1	2	
	Pre and post construction signoff of construction/fit-out designs, drawings and Bill of Quantities.	1		
EE2	LIGHTING & PLUG LOAD (INTERIOR SPACES LARGER THAN 300m²)			
	LIGHTING			
	All individual or enclosed spaces to be individually switched. For open spaces individual switches to be provided for control over space lighting use. Switches are to be clearly labelled and easily accessible. Demonstrate that lighting system is flexible for changes without disruption to operation.	1	6	
	Demonstrate use of auto-sensor controlled lighting in conjunction with daylighting strategy for all perimeter zones & daylighting areas.	1		
	Demonstrate use of motion sensors or equivalent to complement lighting zoning control for rooms and open spaces.	1		
	Demonstrate that the Lighting Power Intensity does not exceed:			
	9 W/m ² , OR	1		
	7 W/m ² , OR	2		
	5 W/m ²	3		
	PLUG LOAD			
	All plugged equipment has energy rating label from Suruhanjaya Tenaga or standards acceptable by GBI. Document policy on standby equipment load control, energy efficient equipment procurement and use of equipment.	1	6	
	Plug load density does not exceed:			
	12 W/m ² , OR	1		
	10 W/m ² , OR	3		
	8 W/m ²	5		
EE2	LIGHTING & PLUG LOAD (INTERIOR SPACES 300m² AND SMALLER)			
	All individual or enclosed spaces to be individually switched. For open spaces individual switches to be provided for control over space lighting use. Switches are to be clearly labelled and easily accessible. Demonstrate that lighting system is flexible for changes without disruption to operation.	1	12	
	Demonstrate use of auto-sensor controlled lighting in conjunction with daylighting strategy for all perimeter zones & daylighting areas.	1		
	Demonstrate use of motion sensors or equivalent to complement lighting zoning control for rooms and open spaces.	1		
	All plugged equipment has energy rating label from Suruhanjaya Tenaga or standards acceptable by GBI. Document policy on standby equipment load control, energy efficient equipment procurement and use of equipment.	1		
	Combined lighting and plug load density is lower than:			
	17 W/m ² , OR	2		
	12 W/m ² , OR	5		
	8 W/m ²	8		

GREEN BUILDING INDEX ASSESSMENT CRITERIA FOR INTERIORS

EE3	AIR CONDITIONING SYSTEM			
	On Demand Airside System (e.g Multiple ACSUs for open spaces, VAV Boxes)	1	6	
	5 Star EE Rating from Suruhanjaya Tenaga for ACSUs, or Equipment COP shall be better than MS1525 by 25%	1		
	Separate air conditioned zoning for interior and perimeter areas	2		
	Separate air conditioned zoning for areas with different functions and equipped with dedicated controls	2		
EE4	MEASUREMENT, VERIFICATION AND EE PERFORMANCE			
	Provide sub-metering for lighting and/or plug load and air conditioning at each floor of tenancy. Document energy management policy, and demonstrate the use of energy sub metering to monitor and analyse overall energy use.	1	8	
	Exceed energy performance by improving Space Energy Intensity (SEI), where:			
	SEI ≤ 85 kWh/m ² yr, OR	1		
	SEI ≤ 80 kWh/m ² yr, OR	2		
	SEI ≤ 75 kWh/m ² yr, OR	3		
	SEI ≤ 65 kWh/m ² yr, OR	4		
	SEI ≤ 60 kWh/m ² yr, OR	5		
	SEI ≤ 55 kWh/m ² yr, OR	6		
	SEI ≤ 50 kWh/m ² yr	7		
ENERGY EFFICIENCY (EE) TOTAL			28	

2

INDOOR ENVIRONMENTAL QUALITY (EQ)

AIR QUALITY | THERMAL COMFORT | LIGHTING, VISUAL & ACOUSTIC COMFORT | VERIFICATION

19 POINTS

ITEM	AREA OF ASSESSMENT	DETAIL POINTS	MAX POINTS	SCORE
AIR QUALITY				
EQ1	MINIMUM IAQ PERFORMANCE			
	Carry out an internal air quality (IAQ) audit to determine present IAQ condition in the tenanted space to ensure the health and well-being of occupants. To meet the minimum ventilation rates in the latest edition of ASHRAE Standard 62.1 (Ventilation for Acceptable Indoor Air Quality) or local building code, whichever is more stringent, for all interior spaces. If the IAQ Audit result fails to meet specified parameters of the point-checks, undertake improvement measures to meet the failed parameters and carry out fresh IAQ Tests to verify efficacy of the improvement measures.	1	2	
	Develop and implement an active IAQ management program to meet the minimum ventilation rates in the latest edition of ASHRAE Standard 62.1 (Ventilation for Acceptable Indoor Air Quality) or local building code, whichever is more stringent, for all interior spaces.	1		
EQ2	INDOOR AIR POLLUTANTS			
	Minimise airborne contaminants, mainly from inside sources to promote a healthy indoor environment. Purchase and use of sustainable and environmentally friendly products recognized by approved local certification body or equivalent environmental certification (where applicable) for: 1) Ceiling 2) Wall 3) Floor 4) Furniture/Finishes/Furnishing 5) Fittings	1	3	
	1) Where applicable all new paints and surface coverings shall use low VOC emission paints and wall coverings throughout the building. Paints and wall coverings to comply with requirements specified in international labelling schemes recognized by GBI; AND 2) Where applicable all new flooring coverings shall use low VOC emission flooring materials throughout the building. Flooring materials to comply with requirements specified in international labelling schemes recognized by GBI; AND 3) Where applicable all new adhesive and sealant shall use low VOC emission adhesive and sealant or no adhesive or sealant used.	1		
	Where applicable use products with no added urea formaldehyde. These include (but are not limited to the following): 1) Composite wood and agrifiber products defined as: particleboard, medium density fiberboard (MDF), plywood, wheatboard, strawboard, panel substrates and door cores, AND 2) Laminating adhesives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies, AND 3) Insulation foam, AND 4) Draperies	1		
THERMAL COMFORT				
EQ3	THERMAL COMFORT: DESIGN & CONTROLLABILITY OF SYSTEMS			
	Provide a high level of thermal comfort system control by individual occupants or by specific groups in multi occupants spaces to promote the productivity, comfort and wellbeing of building occupants.		2	
	Design to the latest edition of ASHRAE Standard 55 (Thermal Environmental Conditions For Human Occupancy) in conjunction with the relevant localized parameters as listed in MS1525.	1		
	Provide individual comfort controls for all interior spaces to enable adjustments to suit individual task needs and preferences. OR Provide comfort system controls for all shared multi-occupant spaces to enable adjustments to suit group needs and preferences.	1		
EQ4	CARBON DIOXIDE MONITORING & CONTROL			
	Provide response monitoring of carbon dioxide levels to ensure delivery of minimum indoor air requirements: Facilitate continuous monitoring and adjustment of indoor air ventilation rates to maintain CO2 level ≤ 1,000 ppm.	1	2	
	Independent space monitoring adjustment system of CO2 rates at all interior spaces by design, and ensure independent control of ventilation rates to maintain CO2 level ≤ 1,000 ppm.	1		
EQ5	MOULD PREVENTION			
	Design system(s) which reduce the risk of mould growth and its associated detrimental impact on occupant health: Effective control of the indoor environment where it is demonstrated that the mechanical air-conditioned ventilation system will maintain a positive indoor air pressure relative to the exterior and can actively control indoor air humidity to be no more than 70% RH without the use of active control that will consume additional energy,	1	2	
	Prevent against the growth of mould of materials that; Naturally prohibit the growth of mould, AND/OR Discourage the growth of mould when applied to; AND Ensure that excessive moisture in tenant space is controlled during renovations by the consideration and the control of the following: 1) Rainwater leakage through façade and walls, 2) Infiltration of moist air, 3) Diffusion of moisture through façade and walls, 4) Leaking or burst pipes, 5) Indoor moisture sources, OR 6) The tenant space is fully naturally ventilated	1		

GREEN BUILDING INDEX ASSESSMENT CRITERIA FOR INTERIORS

LIGHTING, VISUAL & ACOUSTIC COMFORT				
EQ6	DAYLIGHTING			
	Provide good levels of daylighting for building occupants: Demonstrate that ≥ 50% of all interior spaces has a daylight factor in the range of 1.0 – 3.5% as measured at the working plane, 800mm from floor level.	1	1	
EQ7	DAYLIGHT GLARE CONTROL			
	Reduce discomfort of glare from natural light. Where blinds or screens are fitted on all glazing and atrium as a base building, incorporate provisions to meet the following criteria: 1) Eliminate glare from all direct sun penetration and keep horizontal workspace lux level below 2,000; 2) Eliminate glare from diffuse sky radiation for occupant workspace at viewing angles of 15° to 60° from the horizontal at eye level (typically 1.2m from floor level); 3) Control with an automatic monitoring system (for atrium and windows with incident direct sunlight only – not applicable for fixed blinds / screens); AND 4) Equip with a manual override function accessible by occupants (not applicable for fixed blinds / screens)	1	1	
EQ8	ELECTRIC LIGHTING LEVELS			
	Baseline building office lighting not to be over designed: Demonstrate that office lighting design maintains a luminance level of no more than specified in MS1525 for 90% of interior spaces as measured at the working plane (800mm above the floor level).	1	1	
EQ9	HIGH FREQUENCY BALLASTS			
	Increase workplace amenity by avoiding low frequency flicker that may be associated with fluorescent lighting: Install high frequency ballasts in fluorescent luminaires for 100% of interior spaces.	1	1	
EQ10	EXTERNAL VIEWS			
	Reduce eyestrain for building occupants by allowing long distance views and provision of visual connection to the outdoor. Increase view for building occupants by allowing long view and provision of visual connection to the indoor.		1	
	Demonstrate that ≥ 75% of all working spaces have a direct line of sight through vision indoor and outdoor glazing at a height of 1.2m from floor level.	1		
EQ11	INTERNAL NOISE LEVELS			
	Maintain internal noise levels at an appropriate level. Demonstrate all working spaces do not exceed the following ambient internal noise levels: Within the entire baseline, space noise does not exceed 40dBAeq, OR Within the baseline building office space, the sound level does not exceed 45dBAeq for open plan and does not exceed 40dBAeq for closed office.	1	1	
VERIFICATION				
EQ12	IAQ BEFORE & DURING OCCUPANCY			
	Reduce indoor air quality problems resulting from the construction process in order to help sustain the comfort and well-being of building occupants. Develop and implement an Indoor Air Quality (IAQ) Management Plan for the Pre-Occupancy phase as follows: 1) Perform a building flush out by supplying outdoor air to provide not less than 10 airchanges/hour for at least 30 minutes operation before occupancy and continuous minimum 1 ACH during the initial 14 days occupancy of the completed building, OR 2) If low VOC emission indoor building materials are used, then building flush out can be performed by supplying outdoor air to provide not less than 10 airchanges/hour for at least 15 minutes operation or not less than 6 airchanges/hour for at least 30 minutes operation and continuous 1 ACH during the initial 7 days occupancy of the completed building. OR 3) Within 6 months of occupancy, conduct IAQ testing to demonstrate maximum concentrations for pollutants are not exceeded according to the Indoor Air Quality Code of Malaysia. AND 4) During Occupancy Stage: An IAQ Audit will be carried out to determine if present IAQ is conducive or detrimental to occupants.	1	1	
EQ13	POST OCCUPANCY COMFORT SURVEY: VERIFICATION			
	Provide for the assessment of comfort of the occupants: 1) Conduct a post-occupancy comfort survey of occupants within 3 to 6 months after occupancy. This survey should collect anonymous responses about thermal comfort, visual comfort and acoustic comfort in interior spaces. It should include an assessment of overall satisfaction with thermal, visual and acoustic performance and identification of thermal-related, visual-related and acoustic-related problems. AND 2) Develop a plan for corrective action if the survey results indicate that more than 20% of occupants are dissatisfied with the overall comfort in the tenant space. This plan should include measurement of relevant environmental variables in problem areas.	1	1	
INDOOR ENVIRONMENTAL QUALITY (EQ) TOTAL			19	

3

SUSTAINABLE PLANNING & MANAGEMENT (SM)

SITE PLANNING | INTERIOR SPACE DESIGN & QUALITY | CONSTRUCTION MANAGEMENT | OPERATION

25 POINTS

ITEM	AREA OF ASSESSMENT	DETAIL POINTS	MAX POINTS	SCORE
SITE PLANNING				
SM1	BUILDING SELECTION			
	Encourage the selection of a sustainable base building that is awarded with a GBI certificate.		1	
	1 Point is awarded for the selection of a GBI-certified building	1		
SM2	REFURBISHMENT OF EXISTING OR ABANDONED INTERIOR SPACE			
	Encourage retrofitting existing or abandoned interior space.		1	
	Refurbishment of existing interior space that maintain >25% (based on cost/volume/area) of the existing fit-out and/or finishes.	1		
SM3	PUBLIC TRANSPORTATION ACCESS			
	Encourage the reduction of heavy dependence on private transport, which is a big contributor of Green House Gases (GHG).		1	
	1 point is awarded for: 1) Interior spaces within a building that is located within 500m from a Public Transportation Stop/Stand OR 2) Interior spaces within a building that is located within 1km from a Public Transportation Hub/Interchange.	1		
SM4	COMMUNITY CONNECTIVITY			
	Encourage the selection of a building close to basic community amenities.		1	
	Point is awarded for any 10 of the Basic Services listed below that are within 1km AND with availability of pedestrian access between the building and the services. 1) Bank / Electronic Banking Centre 2) Place of Worship 3) Convenience Store / Grocery / Supermarket 4) Day Care 5) Police Station 6) Fire Station 7) Beauty Salon 8) Hardware Shop 9) Laundry 10) Library 11) Medical / Dental 12) Senior Care Facility 13) Park / Recreational Facilities 14) Pharmacy 15) Post Office 16) Restaurant 17) School 18) Theatre 19) Community Centre 20) Fitness Centre	1		
INTERIOR SPACE DESIGN & QUALITY				
SM5	SUSTAINABLE SPACE DESIGN			
	Encourage the practice of sustainable interior space design. 1 point is awarded for each sustainable space design listed below, up to a maximum of 10 points. Project team may submit any new items not listed below to GBI for consideration and approval.		10	
	1) Provision of an open planning layout ≥50% OR any other equivalent space 2) Provision of flexible planning layout ≥25% OR any other equivalent space 3) Provision of wireless connectivity 4) Use of demountable partition OR any other equivalent pre-fabricated systems 5) Provision of a dedicated enclosed space with an exhaust fan to accommodate the photocopy and/or plotter to contain the emissions of O ₃ OR any other equivalent space 6) Provision of a dedicated Recreation OR Break-out OR any other equivalent space to cater to occupant needs 7) Provision of Nursing Room OR Child Care Space OR Sick Bay with First-Aid-Kit Facility OR any other equivalent space 8) Provision of Surau OR any other equivalent space 9) Provision of Universal Access Design 10) Hot desking 30% of work stations 11) Provision of a fully equipped pantry to cater to occupant needs 12) Provision of a fully equipped Library/ resource centre to cater occupant need	10		
SM6	INDOOR GREENSCAPE & WATER FEATURE			
	Encourage the provision of indoor greenscape within the interior space design. Points are awarded according to the percentage of the indoor greenscape (inclusive of wall area) comparative to total Interior Floor Space.		2	
	1) Provide indoor greenscape with native/adaptive plants to ≥ 1% equivalent of the total Interior Floor Space, OR	1		
	2) Provide indoor greenscape with native/adaptive plants to ≥ 3% equivalent of the total Interior Floor Space.	2		

GREEN BUILDING INDEX ASSESSMENT CRITERIA FOR INTERIORS

CONSTRUCTION MANAGEMENT			
SM7	SUSTAINABLE CONSTRUCTION		
	Adopt and implement Sustainable Construction strategies during the fit-out period.		
	1 point will be awarded for any of the items listed below: 1) Reduce potable water consumption by reducing wet trades, 2) Reduce energy use by harnessing daylight, 3) Reduce energy use through energy efficient equipment and/or appliances.	1	1
SM8	CONSTRUCTION POLLUTION CONTROL POLICY		
	Implement policy / strategies for construction pollution during the fit-out phase.		
	Implement policy / strategies to reduce construction related dust, noise, water, air pollution and vibration.	1	1
SM9	STORAGE & COLLECTION OF RECYCLABLES		
	Encourage the reduction of waste generated during construction and during building occupancy that is hauled and disposed of in landfills:		
	1) During Construction, provide dedicated area/s and storage for collection of non-hazardous materials for recycling, AND 2) During Building Occupancy, provide permanent recycle bins for both non-hazardous and waste material.	1	1
SM10	CONSTRUCTION WASTE MANAGEMENT		
	Develop and implement a construction waste management plan to reduce and recycle construction waste materials and divert from disposal to landfills.		
	1) Recycle and/or salvage $\geq 75\%$ volume of non-hazardous construction debris.	1	1
SM11	SITE SAFETY		
	Implement a Site Amenities Plan AND Safety and Health strategies for all construction workers.		
	1) Implement a Site Amenities Plan; e.g. accommodation, toilet facilities and any other Site Amenities deemed applicable for construction works, AND 2) Implement strategies to meet the requirements of the Occupational Safety and Health Act 1994 (Act514).	1	1
OPERATION			
SM12	GREEN PROCUREMENT & OPERATION POLICY		
	Commit to and demonstrate best practice in green purchasing and sustainable daily operational solutions that are environmentally responsible and create a culture where sustainability is integrated into daily activities.		
	1 point will be awarded for any 2 of the items listed below, up to a maximum of 2 points: 1) Procure and/or use multi-functional office equipment and/or appliances for entire office operations. 2) Procure and use environment friendly cleaning products and/or services. 3) Procure and use environment friendly stationery for $\geq 75\%$ of total stationery. 4) Procure and use paper, which consists of $\geq 50\%$ recycled content. 5) Procure and use paper products, which consist of $\geq 50\%$ recycle content or alternative fiber products. 6) Paperless office 7) Any other relevant Green Procurement and Operation initiatives accepted by GBI	2	2
SM13	SUSTAINABLE MAINTENANCE & GREEN OFFICE GUIDE		
	Ensure the space will continue to perform as intended. Document all features and strategies in a Green Office Guide (GOG) for users information and in guiding them to sustain performance during occupancy.		
	1) Planned and scheduled educational programmes for occupants on both the passive and active green features, AND 2) Trained personnel for monitoring and analysing all active green features, AND 3) Preventive maintenance plan for at least 3 years.	1	2
	Provide a Green Office Guide which documents both the passive and active green design features.	1	
SUSTAINABLE PLANNING & MANAGEMENT (SM) TOTAL			25

4

MATERIALS & RESOURCES (MR)

REUSED & RECYCLED MATERIALS | SUSTAINABLE RESOURCES | GREEN PRODUCTS

14 POINTS

ITEM	AREA OF ASSESSMENT	DETAIL POINTS	MAX POINTS	SCORE
REUSED & RECYCLED MATERIALS				
MR1	MATERIALS REUSE & SELECTION			
	Reuse non-structural building interior materials, components and products to reduce demand for virgin materials and reduce creation of waste. This serves to reduce environmental impact associated with extraction and processing of virgin resources. Integrate interior design and its buildability with careful selection of building interior products considering its embodied energy and durability of the material in order to lower carbon foot print and improve material's life cycle. <i>Mechanical, electrical and plumbing components shall not be included. Only include materials permanently installed in the project.</i>		2	
	Where reused building interior materials, components and products (eg. floor, walls, ceilings, furniture, fixtures and furnishings) constitute ≥10% of total cost value of interior fitout, OR	1		
	Where reused non-structural building interior materials,, components and products (eg. floor, walls, ceilings, furniture, fixtures and furnishings) constitute ≥25% of total cost value of interior fitout.	2		
MR2	RECYCLED CONTENT MATERIALS			
	Increase demand for building interior materials, components and products that incorporate recycled content materials in their production: <i>Recycled content shall be defined in accordance with the ISO 14021 document. Mechanical, electrical and plumbing components shall not be included. Only include materials permanently installed in the project.</i>		4	
	Where use of floor materials, components and products with recycled content is such that the sum of post-consumer recycled plus one-half of the pre-consumer content constitute ≥30% of total cost value of interior fitout	1		
	Where use of wall materials, components and products with recycled content is such that the sum of post-consumer recycled plus one-half of the pre-consumer content constitute ≥30% of total cost value of interior fitout	1		
	Where use of ceiling materials, components and products with recycled content is such that the sum of post-consumer recycled plus one-half of the pre-consumer content constitute ≥30% of total cost value of interior fitout	1		
	Where use of furniture and fittings materials, components and products with recycled content is such that the sum of post-consumer recycled plus one-half of the pre-consumer content constitute ≥30% of total cost value of interior fitout	1		
SUSTAINABLE RESOURCES				
MR3	REGIONAL MATERIALS			
	To encourage use building interior materials, components and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing environmental impact resulting from transportation:		1	
	Use local building interior materials, components and products that have been extracted, harvested, or recovered, as well as manufactured, within 500km radius of the project site for ≥ 50% (based on cost) of total cost value of interior fitout. <i>Mechanical, electrical and plumbing components shall not be included. To include only materials permanently installed in the project.</i>	1		
MR4	RAPIDLY RENEWABLE MATERIALS & SUSTAINABLE TIMBER			
	Encourage use of rapidly renewable natural materials and non-wood based products to reduce environmental impact. <i>Mechanical, electrical and plumbing components shall not be included. Only include materials permanently installed in the project.</i>		3	
	Use new building interior materials, components and products consisting of 75% rapidly renewable or non-wood based natural material, where its sum value is ≥10% of the total cost value of interior fitout.	1		
	To encourage environmentally responsible forest management: <i>These components include, but are not limited to, structural framing and general dimensional framing if any, flooring, sub-flooring, wood doors and finishes. To include wood materials permanently installed and also temporarily purchased for the project. Compliance with Forest Stewardship Council OR Malaysian Timber Certification Scheme requirements.</i>			
	Where ≥ 50% by volume of wood-based building interior materials, components, products and finishes used are certified, OR	1		
	Where ≥ 75% by volume of wood-based building interior materials, components, products, and finishes used are certified.	2		
GREEN PRODUCTS				
MR5	MATERIAL MANUFACTURE & INGREDIENTS			
	To encourage use of environmentally preferred building interior materials, components, products with labeling or certification acceptable to GBI.		2	
	Use ≥ 5 different, permanently installed building interior materials, components and products from manufacturers with verified commitment to responsible extraction/sourcing and manufacturing processes; whose product has minimal use and generation of harmful chemical substances.	1		
	Use ≥ 10 different, permanently installed building interior materials, components and products from manufacturers with verified commitment to responsible extraction/sourcing and manufacturing processes; whose product has minimal use and generation of harmful chemical substances.	1		
MR6	REFRIGERANTS & CLEAN AGENTS			
	Use environmentally-friendly Refrigerants and Clean Agents exceeding Malaysia's commitment to the Montreal & Kyoto protocols:		2	
	Use zero Ozone Depleting Potential (ODP) products: non-CFC and non-HCFC refrigerants / AND fire suppression clean agents.	1		
	Use non-synthetic (natural) refrigerants / AND fire suppression clean agents with zero ODP and negligible Global Warming (GWP) Potential of ≤ 10.	1		
MATERIALS & RESOURCES (MR) TOTAL			14	

5

WATER EFFICIENCY (WE)

INCREASED EFFICIENCY & RECYCLING

4 POINTS

ITEM	AREA OF ASSESSMENT	DETAIL POINTS	MAX POINTS	SCORE
INCREASED EFFICIENCY & RECYCLING				
WE1	WATER EFFICIENT LANDSCAPING & WATER FEATURE			
	To encourage and recognise the design of landscaping and water feature system that minimizes or does not require the use of potable water supply from the local water authority.		1	
	Reduce potable water consumption for indoor landscape and water feature irrigation by 30% (e.g. Through use of native or adaptive plants to reduce or eliminate irrigation requirement. Encourage water recycling.)	1		
WE2	WATER EFFICIENT FITTINGS			
	Encourage reduction in potable water consumption through the use of water efficient fittings and devices covered under the Water Efficient Product Labeling Scheme (WEPLS) or adopt equivalent water efficiency standard.		2	
	Reduce potable water consumption through the use of all water closet and basin devices labelled under Water Efficiency Product Labelling (WELPS) or adopt equivalent water efficiency label, OR	1		
	Reduce potable water consumption through the use of all water closet, basin, urinal, bidet, shower and tap devices labelled under Water Efficiency Product Labelling (WELPS) or adopt equivalent water efficiency label	2		
WE3	DRINKING WATER QUALITY			
	Encourage use of drinking water filtration system to discourage the use of bottled drinking water.	1	1	
WATER EFFICIENCY (WE) TOTAL			4	

6

INNOVATION (IN)

INNOVATION IN DESIGN & ENVIRONMENTAL DESIGN INITIATIVES | GREEN BUILDING INDEX FACILITATOR

10 POINTS

ITEM	AREA OF ASSESSMENT	DETAIL POINTS	MAX POINTS	SCORE
IN1	INNOVATION IN DESIGN & ENVIRONMENTAL DESIGN INITIATIVES			
	<p>Provide design team and project the opportunity to be awarded points for exceptional performance above the requirements set by GBI rating system:</p> <p>1 point for each approved innovation and environmental design initiative up to a maximum of 9 points, such as:</p> <ul style="list-style-type: none"> • Night watchman software installed for auto lights off and appliances • Sweeper for power off • Special materials usage • Zoning and deployment of special working environment – like activity based settings etc. • Any energy reduction design elements like screening / space planning that minimises heat gain within the office environment • Psycho-escapism - use of color / green elements / art works/ murals/ paintings etc. • Harvesting light via design; vertical atriums • Rainwater harvesting • Water recycling • Metering & leak detection system • 90% of the occupants seated with a view parallel to the outdoor 	9	9	
IN2	GREEN BUILDING INDEX FACILITATOR (GBIF)			
	<p>To support and encourage the design integration required for Green Building Index rated buildings and to streamline the application and certification process.</p>		1	
	<p>At least one principal participant of the project team shall be a Green Building Index Facilitator who is engaged at the onset of the design process until completion of construction and Green Building Index certification is obtained.</p>	1		
INNOVATION (IN) TOTAL			10	

ACKNOWLEDGEMENTS

GSB would like to thank all contributors for efforts in preparing the INTERIORS TOOL. The following are the main contributors to the formation of this document:

GBI INTERIORS TOOL

Ar. Von Kok Leong	GBI
Ir. Soong Peng Soon	IEM
Ir. Lucas Lim Kek Sia	IEM
Ir. Thirukumaran Jallendran	MGBC
Ir. Ahmad Izdihar	MGBC
Ir. Kok Yen Kwan	MGBC
Ar. Michael Ching Chee Hoong	MGBC
Ar. Alice Leong Pek Lian	MGBC
Ir. Ng Yong Kong	MGBC
Ir. Lam Kim Seong	MGBC
Angelina Ong Khong Khee	MGBC
Tay Kian Guan	MGBC
Tan Hwee Yin	MGBC
Bikash Kumar Sinha	MGBC
Ir. Wong Choong Yee	MGBC
Chong Lee Hooi	MGBC
Ang Aik Fei	MGBC
Lee Kok Keong	MGBC
Dr. Chan Siew Chong	MGBC
Tang Chee Khoay	MGBC
Gregers Peter Reimann	MGBC
Jonathan Lim	MGBC
Harriet C'hng	MGBC
Ng Chee Peng	MGBC
Ir. Tan Khim Bok	MGBC
Ir. Chan Weng Loon	MGBC
Ar. Chris Yap Seng Chye	MIID
Ku Saodah Ku Shaari	MIID
Ronnie Choong Swee Beng	MIID
Rostam Yaman	MIID
Sharifah Suzana Simmonds	MIID
Leong Ta Wah	MIID
Saw Quee Kim	MIID
Ar. Vincent K.K. Lee	MIID
Mohd Noor bin Ariffin	MIID
Mohamad Faisal Ghazali	MIID
Indra K. Ramanathan	MIID
Ahmad bin Haji Abdul Razak	MIID
Rohailan Bin Mohamad	MIID
Eng Kong Ming	MIID
Ariff Budiman bin Mohamad	MIID
Chan Wai Tatt	MIID
Wong Weng Heng	