Green Building Index

1. Product qualification with Green Building Index Malaysia

The Green Building Index (GBI) is an environmental rating system for buildings developed by PAM (Pertubuhan Akitek Malaysia / Malaysia 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 main criteria of Energy Efficiency, Indoor Environment Quality, Sustainable Site Planning & Management, Materials & Resources, Water Efficiency, and Innovation.

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;
- Recognize 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.

The GBI Rating System

Building will be awarded the GBI rating based on 6 key criteria:

1	Energy Efficiency (EE)
2	Indoor Environmental Quality (IEQ)
3	Sustainable Site Planning & Management (SM)
4	Material and Resource (MR)
5	Water Efficiency (WE)
6	Innovation (IN)

GBI Classification

Points	GBI Rating
86+ points	Platinum
76 to 85 points	Gold
66 to 75 points	Silver
50 to 65 points	Certified

Unimas Student Pavilion with GBI Gold rating.
Photo courtesy of United G.I. Products

2.

GBI Assessment Criteria for Non-Residential New Construction (NRNC)

Part 1 Energy Efficiency (EE)

Item	Area of Assessment	Detail Points
EE1	Minimum EE Performance Establish minimum energy efficiency (EE) performance to reduce energy consumption in buildings, thus reducing CO_2 emission to the atmosphere. Meet the following minimum EE requirements as stipulated in MS 1525:2007: 1) OTTV ⩽ 50, RTTV ⩽ 25. Submit calculations using the BEIT software or other GBI approved software(s), and 2) Provision of Energy Management Control system where air-conditioned space ⩾ 4000m²	1
ROCKWOOL's Contribution	ROCKWOOL insulation provides excellent thermal resistance with a low U-Value and can play a significant role in reducing heat transmittance through building envelope. Hence, it can contribute to energy saving in terms of improving the efficiency of energy consumed through consistent thermal performance.	

Part 2 Indoor Environmental Quality (EQ)

Item	Area of Assessment	Detail Points
EQ4	Indoor Air Pollutants Use products with no added urea formaldehyde. These include: 1) Composite wood and agrifiber products defined as: particleboard, medium density fiberboard (MDF) plywood, wheatboard, strawboard, panel substrates and door cores, and 2) Laminating adhensives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies, and 3) Insulation foam, and 4) Draperies	1
ROCKWOOL's Contribution	ROCKWOOL insulation contains no air pollutants. TÜV SÜD PSB testing services conducted chemical emission test for Formaldehyde Emission Rate on ROCKWOOL products. The emission test can meet / or is significantly below the maximum concentration criteria of IAQ pollutants set out by SGBC (Singapore Green Building Council) requirement. By minimizing the indoor air quality pollutant potential, the comfort and well-being of the construction workers and building occupants are enhanced.	
EQ13	Internal Noise Levels Maintain internal noise levels at an appropriate level. Demonstrate that 90% of the NLA do not exceed the following ambient internal noise levels: Within the entire baseline building general office space, noise from the building services does not exceed 40dBAeq, OR Within the baseline building office space, the sound level does not exceed 45dBAeq for closed offices.	1
ROCKWOOL's Contribution	ROCKWOOL insulation can provide a very high level of sound absorption and reduces noise vibrations, helps to protect against noise and vibrations and to improve the indoor acoustic comfort.	

3.

Part 4 Materials & Resources (MR)

Item	Area of Assessment	Detail Points
Reused and Reduced Materials		
MR1	Material Reuse and Selection Reuse building materials and products to reduce demand for virgin materials and reduce creation of waste. This serves to reduce environmental impact associated within extraction and processing of virgin resources. Integrate building design and its buildability with selection of reused building materials, taking into account their embodied energy, durability, carbon content and life cycle costs: Where reused products/materials constitutes ⩾ 2% of the project's total material cost value, OR Where reused products/materials constitutes ⩾ 5% of the project's total material cost value	1 2
ROCKWOOL's Contribution	ROCKWOOL products are dimensionally stable and sag resistant and when removed undamaged, may be reused and recycled for other projects, enhancing performances and reducing construction waste. ROCKWOOL recommends using skips or bins in construction site for disposing usable insulation so that it can be reused or recycled within the construction site.	
MR2	Recycled Content Materials Increase demand for building products that incorporate recycled content materials in their production: *(Recycled content shall be defined in accordance with the International Organization of Standards Document)* Where use of materials with recycled content is such that the sum of post-consumer recycled plus one-half of the pre-consumer content constitutes ⩾ 10% (based on cost) of the total value of the materials in the project, OR Where use of materials with recycled content is such that the sum of post-consumer recycled plus one-half of the pre-consumer content constitutes at least 30% (based on cost) of the total value of the materials in the project.	1 2
ROCKWOOL's Contribution	ROCKWOOL products contains up to 20% pre-consumer recycled materials. This does not only reduce the impact that results from the extraction and processing of raw materials, but also reduce the volume of solid waste that is produced as a byproduct of our built environment. For detailed percentage of recycled content, please consult your local sales representative.	
Sustainable Resource		
MR3	Regional Materials Use 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: Use building materials or products that have been extracted, harvested or recovered, as well as manufactured, within 500km of the project site ⩾ 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.	1
ROCKWOOL's Contribution	ROCKWOOL has two strategically located factories in Malaysia – one in Selangor and one in Melaka. The two factories are near highly populated areas and in close proximity to major transportation routes and may be within 500 km of the project site. However, for the eligible points, project site distance would have to be calculated.	

4.

GBI Assessment Criteria for Residential New Construction (RNC)

Part 1 Energy Efficiency (EE)

Item	Area of Assessment	Detail Points
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 MS1525 for residential buildings. OTTV ≤ 50 W/m², RTTV ≤ 25 W/m² Roof U ≤ 0.4 W/m²K (Lightweight) Roof U ≤ 0.6 W/m²K (Heavyweight)	3
ROCKWOOL's Contribution	ROCKWOOL insulation provides excellent thermal resistance with a low U-value and can play a significant role in reducing heat transmittance through building envelope. Hence, it can contribute to energy saving in terms of improving the efficiency of energy consumed through consistent thermal performance.	
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. A) OTTV OTTV ≤ 46 W/m² OTTV ≤ 44 W/m² OTTV ≤ 42 W/m² OTTV ≤ 40 W/m² OTTV ≤ 38W/m² B) RTTV Lightweight Roof U-value ≤ 0.35 W/m²K Heavyweight Roof U-value ≤ 0.5 W/m²K Lightweight Roof U-value ≤ 0.3 W/m²K Heavyweight Roof U-value ≤ 0.4W/m²K Lightweight Roof U-value ≤ 0.25 W/m²K Heavyweight Roof U-value ≤ 0.3 W/m²K Lightweight Roof U-value ≤ 0.2 W/m²K Heavyweight Roof U-value ≤ 0.2 W/m²K Lightweight Roof U-value ≤ 0.15 W/m²K Heavyweight Roof U-value ≤ 0.15 W/m²K	 1 2 3 4 5 1 2 3 4 5
ROCKWOOL's Contribution	ROCKWOOL insulation can be used for external wall and roof application, with providing excellent thermal resistance with a low U-value and can play a significant role in reducing the energy used in the cooling of building.	

5.

Part 2 Indoor Environmental Quality (EQ)

Item	Area of Assessment	Detail Points
EQ3	Sound Insulation Encourage and recognize building that is designed with adequate insulation between dwelling units. Ensure that the airborne sound penetration between spaces are controlled within the following criteria: Sound Transmission Class (STC) between dwelling units ≥ 45 Intra dwelling sound insulation in the same dwelling unit should exceed the following STC values: Bedroom ≥ 40 Other area ≥ 35	 1 1
ROCKWOOL's Contribution	ROCKWOOL insulation can provide a very high level of sound absorption and reduces noise vibrations, helps to protect against noise and vibrations and to improve the indoor acoustic comfort.	
EQ6	Formaldehyde Minimisation Reduced 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, 2) Weather-board, strawboard, panel substrates and door cores OR none used; 3) Laminating adhensives used to fabricate on-site and shop-applied composite wood and agrifiber assemblies OR none used; 4) Insulation foam OR none used; 5) Draperies OR none used	 1
ROCKWOOL's Contribution	ROCKWOOL insulation contains no air pollutants. TÜV SÜD PSB testing services conducted chemical emission test for Formaldehyde Emission Rate on ROCKWOOL products. The emission test can meet / or is significantly below the maximum concentration criteria of IAQ pollutants set out by SGBC (Singapore Green Building Council) requirement. By minimizing the indoor air quality pollutant potential, the comfort and well-being of the construction workers and building occupants are enhanced.	

6.

Part 4 Materials & Resources (MR)

Item	Area of Assessment	Detail Points
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. During Construction, provide dedicated areas and storage for collection of non-hazardous materials for recycling. During Building Occupancy, provide permanent recycle bins.	 1 1
ROCKWOOL's Contribution	ROCKWOOL products are dimensionally stable and sag resistant and when removed undamaged, may be reused and recycled for other projects, enhancing performances and reducing construction waste. ROCKWOOL recommends using skips or bins in construction site for disposing usable insulation so that it can be reused or recycled within the construction site.	
Sustainable Resources		
MR4	Recycled Content Materials Increase demand for building products that incorporated recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials. 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 Standard Document. 0.5 point for 10% and 0.25 point for every additional 5% up to a maximum of 1 point.	 1
ROCKWOOL's Contribution	ROCKWOOL products contains up to 20% pre-consumer recycled materials. This does not only reduce the impact that results from the extraction and processing of raw materials, but also reduce the volume of solid waste that is produced as a byproduct of our built environment. For detailed percentage of recycled content, please consult your local sales representative.	
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. 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. 0.5 point for 20% and 0.25 for every additional 5% up to a maximum of 1 point.	 1
ROCKWOOL's Contribution	ROCKWOOL has two strategically located factories in Malaysia – one in Selangor and one in Melaka. The two factories are near highly populated areas and in close proximity to major transportation routes and may be within 500 km of the project site. However, for the eligible points, project site distance would have to be calculated.	

Reference Projects

PTM Green Energy Office Building is Malaysia's first GBI Certified Building

The Unimas Student Pavilion with GBI Gold rating

Setia City Mall with GBI Silver rating

WILHAMS

Wilhams Insulation Far East Sdn Bhd
15 & 17 Jalan Utarid U5/23
Mah Sing Integrated Industrial Park 40150
Shah Alam, Selangor, Malaysia
Tel : 603-7846 6728
E-mail : wilhams@wilhams.com.my
Website : www.wilhams.com.my