



# GOLDEN PHAROS GLASS SDN.BHD (265409 W)

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## GREEN BUILDING INDEX

### Non-residential New Construction (NRNC) Design Reference Guide Summary

One of the most prominently recognized architectural standards in green or sustainable building design is the **Green Building Index (GBI) Rating System** developed by Malaysia Institute of Architects (PAM) and Association of Consulting Engineers Malaysia (ACEM). The GBI provides a set of standards for the design, construction and operation of high performance green buildings. GBI was developed specifically for the Malaysia tropical weather, environmental and development context, cultural and social needs. It defines “green building” by establishing a common standard of measurement and recognize environmental leadership in the building industry through a certification process of buildings on a point-system for specific building projects.

While GBI does not certify specific building (glass) products, it does recognize that the selection of products play a significant role in fulfilling GBI point requirements. At **Golden Pharos Glass Sdn. Bhd.**, we are committed to help architects, builders, contractors and others construct greener building by achieving GBI certification for their projects in a number of areas noted below:-

#### **GBI Category: Energy Efficiency (EE)**

##### **EE1: Minimum EE Performance (1 point)**

**Intent:** To create energy efficiency (EE) awareness and promote the use of MS1525.

**Requirements:** OTTV  $\leq$  50 (Calculation using BEIT software) and provision of Energy Management Control system where air-conditioned space  $\geq$  4000m<sup>2</sup>.

**Credit contribution of GP Products:** Many GP glass products are able to achieve the levels of energy performance above the prerequisite standard to reduce environmental impacts associated with excessive energy use. For instant, achieving of **GP “spectrally selective” tinted or GP Low-E glass** with luminous efficacy of 1.0 or higher.

##### **EE5: Advance EE Performance (1 – 15 points)**

**Intent:** To encourage enhancement of building EE performance thereby reducing CO<sub>2</sub> emission.

**Requirements:** Exceed EE Performance better than the baseline minimum to reduce energy consumption in the building. Achieve improvement of Building Energy Intensity (BEI) as defined under GBI reference.

**Credit contribution of GP Products:** Most GP glass products can provide a substantial energy savings and significantly influence the awarding of points for this category by reducing demand and regulated energy systems. For instance, **GP laminated or GP Double Glazing Unit** with low-E products provide excellent solar and thermal control while allowing significant visible and natural light into buildings.

## **GBI Category: Indoor Environmental Quality (EQ)**

### **EQ8: Daylighting (1 – 2 points)**

**Intent:** To encourage use of diffused daylighting into interior of building.

**Requirements:** Demonstrate that  $\geq 30\%$  (1 point) or  $\geq 50\%$  (2 points) of the NLA has a Daylight Factor in the range of 1.0 – 3.5% as measured at the working plane, 800mm from floor level, *OR*

**Credit contribution of GP Products:** GP provides a wide array of clear, tinted and coated glass with varying levels of visible light transmittance combined with solar and thermal control. For example, **GP laminated Green glass** provides 50% or more visible light transmittance for areas requiring daylight transmittance.

### **EQ9: Daylight Glare Control (1 point)**

**Intent:** To reduce discomfort of glare from natural light.

**Requirements:** Reduce discomfort of glare from natural light. Where blinds or screens are fitted on 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 luminance level below 2000 lux;
2. Eliminate glare from diffused 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 sun light only – not applicable for fixed blinds/screens);  
*AND*
4. Equip with a manual override function accessible by occupants (not applicable for fixed blinds/screens).

**Credit contribution of GP Products:** GP offers lustrous color of high performance tinted and coated glass with varying levels of glare control. For example, **GP laminated Blue Reflective Low-E glass** helps to control glare and subsequently reduces the need for blinds or shades.

### **EQ12: External Views (1 – 2 points)**

**Intent:** To reduce eyestrain for building occupants by providing long distance views and visual connection to the outdoor.

**Requirements:** Demonstrating that  $\geq 60\%$  (1 point) or  $\geq 75\%$  (2 points) of the NLA has a direct line of sight through vision glazing at a height of 1.2m from floor level.

**Credit contribution of GP Products:** GP glasses provide building occupants a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building. For instant, GP low iron tempered glass provides 90% or more visible light transmittance for area requiring daylight transmittance.

### **EQ13: Internal Noise Levels (1 point)**

**Intent:** To ensure building is designed to maintain a comfortable acoustic environment for occupants.

**Requirements:** Demonstrate that 90% of the NLA do not exceed the following ambient internal noise level:

1. Within the entire building general office, space noise does not exceed 40dBAeq *OR*

2. Within the baseline building office space, the sound level does not exceed 45dBAeq for open plan and does not exceed 40dBAeq for closed offices.

***Credit contribution of GP Products:*** GP offers various glass thicknesses and glazing methods (GP laminate, GP IGU or combinations of the two) that is effective at controlling the sounds transmit.

### **GBI Category: Material & Resources (MR)**

#### **MR2: Recycled Content Materials (1 – 2 points)**

***Intent:*** To encourage designers to specify the usage of recycled content materials in new buildings.

Increase demand for building products that incorporate recycled content materials in production.

***Requirements:*** 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  $\geq 10\%$  (1 point) or at least 30% (2 points) based on cost of the total value of the materials in the project.

***Credit contribution of GP Products:*** GP always monitor the quantum and value of the recycled content of the glass purchased from our suppliers.

#### **MR3: Regional Materials (1 point)**

***Intent:*** To encourage sourcing of regional materials to reduce environmental impacts due to transportation.

***Requirements:*** Use building materials or products that have been extracted, harvested or recovered, as well as manufactured, within 500km radius of the project site for  $\geq 20\%$  (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.

***Credit contribution of GP Products:*** GP sources raw material mainly from local and supplies value added glass products to numerous glazing fabricators within location throughout Malaysia, capable of providing a manufacturing point within 500km radius of most every project location. **Golden Pharos Glass Sdn Bhd** manufacturing plant is located in Klang, potentially permitting eligibility for regional materials credit.

### **GBI Category: Innovation (IN)**

#### **IN1: Innovation (1 – 6 points)**

***Intent:*** To provide opportunity for the project to be awarded points for exceptional performance above the requirements set by GBI rating system.

***Requirements:*** Encourage project team to score points for exceptional performance above the requirements set by GBI rating system: 1 point for each approved innovation and environmental design initiative up to a maximum of 6 points, for innovative ideas.

***Credit contribution of GP Products:*** At GP, we understand that green building practices continue to evolve and that sustainability is the key to green design. In order to achieve the objectives, GP also sources raw glasses that are Cradle to Cradle Certified.