Ir. KOK Yen-Kwan
PEng | MIEM | GBIF | MGBC Board Member
PRESENTATION OUTLINE

GREEN BUILDING: Simple Definition

GREEN BUILDING TOOLS: The Global Picture

THE GREEN BUILDING INDEX (GBI) & Government’s Support

GBI – The Available Tools; Structure; Application Process; Fees

GBI – The Criteria; Rating & Classifications

Cost of Going Green; Incentives

GBI Buildings; Facts & Figures
WHAT is a Green Building?

A Green building focuses on increasing the efficiency of resource use – energy, water, and materials – while reducing building impact on human health and the environment during the building’s lifecycle, through better sitting, design, construction, operation, maintenance, and removal. Green Buildings should be designed and operated to reduce the overall impact of the built environment on its surroundings.
GREEN BUILDING TOOLS: THE GLOBAL PICTURE

- BREEAM
- LEED
- BCA Green Mark
- CASBEE
- Green Star
- World Green Building Council

Timeline:
- 1990
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010

World Green Building Council
www.worldgbc.org
THE GREEN BUILDING INDEX (GBI)

What is the Green Building Index?

The Green Building Index (GBI) is Malaysia’s industry recognised green rating tool for buildings to promote sustainability in the built environment and raise awareness among Developers, Architects, Engineers, Planners, Designers, Contractors and the Public about environmental issues and our responsibility to the future generations.

The GBI rating tool provides an opportunity for developers and building owners to design and construct green, sustainable buildings that can provide energy savings, water savings, a healthier indoor environment, better connectivity to public transport and the adoption of recycling and greenery for their projects and reduce our impact on the environment.

GBI is developed specifically for the Malaysian-tropical climate, environmental and developmental context, cultural and social needs and is created to:

- Define green buildings by establishing a common language and standard of measurement;
- Promote integrated, whole-building designs that provides a better environment for all;
- Recognise and reward environmental leadership;
- Transform the built environment to reduce its negative environmental impact; and
- Ensure new buildings remain relevant in the future and existing buildings are refurbished and upgraded to improve the overall quality of our building stock.
THE GREEN BUILDING INDEX (GBI) (con’t)

for Malaysia

- our climate
- our resources
- our development priorities
THE GREEN BUILDING INDEX (GBI) (con’t)

- voluntary
- broad-base
- incentives - performance, premium, government

for Malaysia
I wish to congratulate Persatuan Arsitek Malaysia (PAM) and the
Government’s support of the new Green Building Initiative (GBI) to upgrade their existing buildings.

This is an important step as we need to reduce all losses and unplanned wastages that contribute to time in contributing to the environment. This GBI will help us make efficient buildings to become sustainable.

The Government’s commitment in the form of tax exemptions for buyers of properties has been provided in Budget 2013 and more Green buildings and a healthier environment.

In addition, GBI Malaysia is a good example of how the private sector, professionals and NGOs can work together to come up with an internationally accepted standard for Green Buildings in the tropics. We appreciate and encourage more of such innovation and creative input.

I support and wish you every success in its implementation.

“1 MALAYSIA” People First. Performance Now.

YAB DATO’ SRI MOHD NAJIB

I support and wish you every success in its implementation.

“1 MALAYSIA” People First. Performance Now.

YAB DATO’ SRI MOHD NAJIB
GBI: THE AVAILABLE TOOLS

- GBI NRNC (v1.0)
- GBI RNC (v2.0)
- GBI NREB (v1.1)
- GBI NRNC DC (v1.0)
- GBI NREB DC (v1.0)
- GBI Township (v1.01)
- GBI INC (v1.0)
- GBI IEB (v1.0)
1) GBI ACCREDITATION PANEL (GBIAP)

The GBI rating system will be regulated by the GBI Accreditation Panel (GBIAP), an independent committee consisting of senior building professionals that will be reviewing and awarding the GBI rating to qualified projects.

The GBIAP comprises leading industry professionals recognised for their contribution in sustainable developments in Malaysia. They have been actively involved in every step of the rating system’s development, ensuring that the rating system is fully tested and compliant to both local and international standards and best practices.

2) GBI CERTIFIERS

The roles and responsibility of GBI Certifiers are to perform the detailed assessment and accreditation of building projects submitted to the GBI Accreditation Panel for GBI Certification.

3) GBI FACILITATORS

The roles and responsibility of GBI Facilitators are to provide services to enable building projects to achieve GBI accreditation.
GBI: THE APPLICATION & ASSESSMENT PROCESS

**STAGE 1**
**APPLICATION & REGISTRATION**

- Complete and submit the Application & Registration Form to GSB with supporting documents

  - **Is the Application complete?**
    - **COMPLETE**
      - GSB processes application and notifies Applicant of the Registration Fee
    - **INCOMPLETE**
      - GSB to request for more information from Applicant

  - Applicant to make the necessary Registration Fee payment to GSB and submit any other additional required information

  - GSB registers the application and gives a GBI Registration Number to the Applicant
    - GBI Agreement to be signed between GSB and Applicant

  - GSB assigns GBI Certifier at appropriate time
GBI: THE APPLICATION & ASSESSMENT PROCESS (con’t)

STAGE 2
DESIGN ASSESSMENT (DA)

Applicant to appoint their Project Coordinator/GBI Facilitator and submit for Design Assessment (DA) to GSB

GSB to return and request for completed DA submission

Is the DA Submission complete?

INCOMPLETE

COMPLETE

GBI Certifier undertakes the DA

GSB notifies Applicant of DA result

Appeal by Applicant?

APPEAL

APPEAL

NO APPEAL

GSB issues provisional GBI Certificate to Applicant
GSB records & publishes in GBI Register

*GBS = Greenbuildingindex Sdn Bhd
STAGE 3
COMPLETION & VERIFICATION ASSESSMENT (CVA)

Applicant to submit for Completion & Verification Assessment (CVA) upon completion of project

GBI Certifier undertakes CVA

GSB notifies Applicant of CVA result

Appeal by Applicant?

NO APPEAL

APPEAL

APPEAL

• Fail
• Request Review for a Higher Rating

To Submit Appeal Form & Fees

GSB issues GBI Certificate to Applicant
GSB records & publishes in GBI Register

GBI: THE APPLICATION & ASSESSMENT PROCESS (con’t)
## GBI: REGISTRATION FEES

<table>
<thead>
<tr>
<th>SIZE OF PROJECT</th>
<th>TOTAL GROSS FLOOR AREA (m²)</th>
<th>REGISTRATION FEES (RM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGLE RESIDENCE</td>
<td>Below 2,000</td>
<td>5,000.00</td>
</tr>
<tr>
<td>SMALL</td>
<td>Up to 4,000</td>
<td>8,000.00</td>
</tr>
<tr>
<td>INTERMEDIATE</td>
<td>4,001 to 10,000</td>
<td>10,000.00</td>
</tr>
<tr>
<td>MEDIUM</td>
<td>10,001 to 30,000</td>
<td>20,000.00</td>
</tr>
<tr>
<td>LARGE</td>
<td>30,001 to 50,000</td>
<td>32,000.00</td>
</tr>
<tr>
<td>EXTRA LARGE</td>
<td>50,001 to 100,000</td>
<td>45,000.00</td>
</tr>
<tr>
<td>MEGA PROJECT</td>
<td>Above 100,000</td>
<td>Assessment fee will be determined on a project-by-project basis</td>
</tr>
</tbody>
</table>

* Rates shown are as of the date of the application and registration and may be revised from time to time as appropriate.
* Rates shown are excluding Government Service Tax (GST)

### PROJECT ASSESSMENT
Fee as per prescribed includes:

- 1 Design Assessment (DA)
- 1 Completion & Verification Assessment (CVA)

### APPEAL
A flat rate of RM1,000.00 per credit point
ENERGY EFFICIENCY (EE)
Improve energy consumption by optimising building orientation, minimizing solar heat gain through the building envelope, harvesting natural lighting, adopting the best practices in building services including use of renewable energy, and ensuring proper testing, commissioning and regular maintenance.

INDOOR ENVIRONMENT QUALITY (EQ)
Achieve good quality performance in indoor air quality, acoustics, visual and thermal comfort. These will involve the use of low volatile organic compound materials, application of quality air filtration, proper control of air temperature, movement and humidity.

SUSTAINABLE SITE PLANNING (SM)
Selecting appropriate sites with planned access to public transportation, community services, open spaces and landscaping. Avoiding and conserving environmentally sensitive areas through the redevelopment of existing sites and brownfields. Implementing proper construction management, storm water management and reducing the strain on existing infrastructure capacity.

MATERIALS & RESOURCES (MR)
Promote the use of environment-friendly materials sourced from sustainable sources and recycling. Implement proper construction waste management with storage, collection and re-use of recyclables and construction formwork and waste.

WATER EFFICIENCY (WE)
Rainwater harvesting, water recycling and water-saving fittings.

INNOVATION (IN)
Innovative design and initiatives that meet the objectives of the GBI.
# Green Building Index (GBI) Classification

<table>
<thead>
<tr>
<th>Points</th>
<th>GBI Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>86+ points</td>
<td>Platinum</td>
</tr>
<tr>
<td>76 to 85 points</td>
<td>Gold</td>
</tr>
<tr>
<td>66 to 75 points</td>
<td>Silver</td>
</tr>
<tr>
<td>50 to 65 points</td>
<td>Certified</td>
</tr>
</tbody>
</table>
GBI: TRAINING OF GBI FACILITATORS (GBIFs)

- 2600 candidates trained over 21 sessions since May 2009
- Basic course being included in tertiary syllabus
- Towards Self-certification for Certified Level
- 622 GBIFs registered on the GBI website
GBI: TRAINING OF GBI FACILITATORS (GBIFs)

- Green Building Index
- Consultation Session

- Fortnightly

- Pre-Registration
  - General Inquiry
  - Preliminary Consultation for Prospective Applicant

- Post-Registration
  - Design Assessment Consultation
  - Completion & Verification Consultation
## GBI: ESTIMATED COST OF GOING GREEN

<table>
<thead>
<tr>
<th>GBI</th>
<th>Ave. M’sian Bldg</th>
<th>Meets MS1525</th>
<th>GBI Certified</th>
<th>GBI Silver</th>
<th>GBI Gold</th>
<th>GBI Platinum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BEI kWh/m²/yr</strong></td>
<td></td>
<td>250</td>
<td>200 - 220</td>
<td>150 - 180</td>
<td>120 - 150</td>
<td>100 - 120</td>
</tr>
<tr>
<td><strong>Energy Savings %</strong></td>
<td>Base line</td>
<td>10 - 20</td>
<td>30 - 40</td>
<td>40 - 50</td>
<td>50 - 60</td>
<td>&gt; 60</td>
</tr>
<tr>
<td><strong>Incremental construction cost %</strong></td>
<td>Base line</td>
<td>0 – 3%</td>
<td>1% – 5%</td>
<td>5% - 8%</td>
<td>5% - 10%</td>
<td>7% - 13%</td>
</tr>
</tbody>
</table>
TAX INCENTIVES ANNOUNCED IN BUDGET 2010

“Building owners obtaining GBI Certificates from 24 October 2009 until 31 December 2014 be given income tax exemption equivalent to the additional capital expenditure in obtaining such Certificates”

and

“Buyers purchasing buildings with GBI Certificates from developers be given stamp duty exemption on instruments of transfer of ownership.”

excerpts from PM’s Speech, 23 October 2009
INCENTIVES FOR BUILDINGS OBTAINING GREEN BUILDING INDEX CERTIFICATE

A) TAX EXEMPTION
- Any person who incurs qualifying expenditure (QE) to obtain GBI certification for a building used for his business qualifies for tax exemption. This tax incentive provides exemption on the statutory income which is equivalent to 100% of that expenditure.
- Qualifying expenditure means an additional expenditure (known as the Green Building Cost Sum) incurred in relation to construction of a building, alteration, renovation, extension or improvement of an existing building. The exemption can be up to 100% of statutory income for each year of assessment.
- Any unutilised QE can be carried forward to subsequent years of assessment until the amount is fully exempted. This tax exemption only applies once for each building certified from 24 October 2009 until 31 December 2014.
- The types of tax incentive mutually exclusive to this tax exemption are addressed in the guidelines issued by Lembaga Hasil Dalam Negeri Malaysia (LHDNM).

B) STAMP DUTY EXEMPTION
The stamp duty exemption provides exemption on instruments of transfer of ownership of buildings and residential properties acquired from property developers and awarded GBI certificate. The exemption is on the additional cost of the property incurred to obtain the GBI certificate. The exemption is only given for the first transfer of ownership of the building and for sales and purchase agreements executed from 24 October 2009 until 31 December 2014.

Once certified, applicants can claim for the tax exemption or stamp duty exemption in their annual Income Tax return Forms. The GBI Certificate has to be kept for audit purposes by LHDNM.

Please note that a complete set of guidelines on the tax and stamp duty exemption can be obtained from [www.hasil.gov.my](http://www.hasil.gov.my).
Examples of **PASSIVE DESIGN** features where Incentives apply:

1) Building envelope components such as wall and roof insulation and treatment,
2) Wall design additions (e.g., insulated cavity walls),
3) Window design features (IGUs, DGUs),
4) Rainwater harvesting,
5) Waste water recycling,
6) Light tubes, light shelves for enhanced day-lighting, etc
INCENTIVES FOR GBI BUILDINGS

Examples of ACTIVE DESIGN features where Incentives apply:

1) Air-conditioning and ventilation equipment,
2) Lighting systems and controls,
3) Internal transport & miscellaneous power,
4) RE power generation such as BIPV systems, Wind Turbines, etc
5) CO₂ detectors and leak controls
GBI: SOME GBI CERTIFIED BUILDINGS

PTM GEO BUILDING
GBI CERTIFIED
(Final)

ST DIAMOND BUILDING
GBI PLATINUM
(Final)
1 FIRST AVENUE
GBI NRNC GOLD
(Provisional)

DiGi TECHNOLOGY CORP CENTRE
GBI GOLD
(Provisional)
# GBI: FACTS & FIGURES (as of 15th June 2013)

## Executive Summary as of 15 June 2013

### GBI Certified Projects by Categories

<table>
<thead>
<tr>
<th>Update on Green Building Index</th>
<th>TOTAL as of 15 June 2013</th>
<th>NRNC Non Residential New Construction</th>
<th>RNC Residential New Construction</th>
<th>INC Non Residential Existing Building</th>
<th>NREB Non Residential Existing Building</th>
<th>IEB Industrial Existing Building</th>
<th>T Township</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied</td>
<td>450</td>
<td>246</td>
<td>164</td>
<td>10</td>
<td>16</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Registered</td>
<td>417</td>
<td>221</td>
<td>157</td>
<td>9</td>
<td>16</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Total certified</td>
<td>137 (100%)</td>
<td>69 (50%)</td>
<td>56 (40%)</td>
<td>2 (2%)</td>
<td>5 (4%)</td>
<td>1 (1%)</td>
<td>4</td>
</tr>
<tr>
<td>Received with Provisional Certification after DA</td>
<td>124</td>
<td>64</td>
<td>52</td>
<td>1</td>
<td>3</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>Received Final Certification after CVA</td>
<td>13</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

### Gross Floor Area (GFA) of GBI Certified Buildings

- **Total as of 15 June 2013**: 5,340,751 sqm (57,487,365.32sqft)
- **Non Residential New Construction**: 2,356,659 sqm
- **RNC Residential New Construction**: 2,766,490 sqm
- **INC Non Residential Existing Building**: 240,273 sqm
- **NREB Non Residential Existing Building**: 27,500 sqm
- **IEB Industrial Existing Building**: 9,829 sqm

### Carbon Dioxide (CO2) Emission Reduction by GBI Certified Buildings

- **CO2 Reduction Projection**: 224,435
- **NRNC Non Residential New Construction**: 140,761
- **RNC Residential New Construction**: 69,963
- **INC Non Residential Existing Building**: 12,423
- **NREB Non Residential Existing Building**: 949
- **IEB Industrial Existing Building**: 339

### GBI Projects by States/Territories

#### GBI Projects by State/Territory

- **Kuala Lumpur**: 51
- **Selangor**: 52
- **Pahang**: 19
- **Putrajaya**: 12
- **Johor**: 3
- **Melaka**: 5
- **Sarawak**: 6

#### GBI Projects by Year/Quarter

- **2009/Q2**: 17
- **2009/Q3**: 12
- **2009/Q4**: 21
- **2010/Q1**: 14
- **2010/Q2**: 23
- **2010/Q3**: 34
- **2010/Q4**: 91

### GBI Certified Projects by Rating Categories

- **RATING**: PLATINUM
  - **66 to 100 points**: 6 (46%)
  - **GOLD**: 32 (23%)
  - **SILVER**: 20 (15%)
- **50 to 65 points**: 79 (56%)
- **Total Certified**: 137

### GBI Projects by Year/Quarter

- **2011/Q2**: 27
- **2011/Q3**: 25
- **2011/Q4**: 39
- **2012/Q1**: 30

### Year Total

- **2011**: 121
- **Year Total**: 42
- **2012**: 27
- **2013/Q1**: 22

### Year Four Total

- **2011**: 121
- **2012/Q2**: 30
- **2013/Q3**: 12
- **2014/Q4**: 12

### Year Five Total

- **2011**: 121
- **2012/Q2**: 30
- **2013/Q3**: 12
- **2014/Q4**: 12

**Source:** GBI Sdn. Bhd.
A membership-based not-for-profit organization formalized in 2009, aiming to promote sustainable built solutions for everyone.

Membership of > 385 as of Apr 2013 with more than 80 Industry Partners (with a year to year growth of > 50%)

Initiated the development of GBI in 2007 and continues to promote the local rating

An emerging member of WGBC, only organization supported by the global body

Membership application forms can be downloaded at www.mgbc.org.my.
an information resource directory for green building products and services.

The primary objective – providing info on sustainable building products and services to architects, engineers, developers and others.

A user-friendly, online interface will be consistently updated.

www.greenpagesmalaysia.com
Sample Product Data Sheets

**ISOLINE UNDER-ROOFING SYSTEM**  
(Product of Onsoline Roofing Sheets/Tiles)  
LEAN GAP BUILDING MATERIALS SDN BHD

**Sample Product Data Sheets**

**GPM: MGBC’s FLAGSHIP GREEN DIRECTORY (con’t)**

**ECO-FRIENDLY (COMPACT FLUORESCENT LAMP)**  
MEGAMAN ELECTRONIC & LIGHTING (M) SDN BHD

**Sample Product Data Sheets**
SUSTAIN THE WORLD...

“SUSTAINABLE DEVELOPMENT is...

Meeting the needs of the present generation without compromising the ability of future generations to meet their own needs”

- Brundtland Commission, 1987

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THANK YOU!