TRANSFORMATION OF GREEN BUILDING IN MALAYSIA
BIO-CLIMATIC DESIGN

RAIN

ROOF-TOP GARDEN

CONTINUOUS PLANTING SPIRALING UP.

WIND

TERRACES AS WIND-CATCHERS

Spiraling system of sky-courts

RAIN

BALANCE OF RAIN WATER RETURNED TO GROUND WATER.

WIND

PLANTING
BIO-CLIMATIC DESIGN
MESINIAGA, MALAYSIA
T.R.HAMZAH & YEANG
1989
AGA KHAN AWARD FOR ARCHITECTURE 1995

Ecologically and environmentally sound design strategies reduce long-term maintenance costs by lowering energy use.

Successful and promising approach to the design of many-storied structures in a tropical climate.
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T.R.HAMZAH & YEANG

AGA KHAN AWARD FOR ARCHITECTURE 1995

Ecologically and environmentally sound design strategies reduce long-term maintenance costs by lowering energy use.

Successful and promising approach to the design of many-storied structures in a tropical climate.
SECURITIES COMMISSION  (Hijjas Kasturi Associates, 1999)

FROM ‘EE’ TO ‘LEO’

'ZE0' ZERO ENERGY OFFICE
Malaysia Energy centre (Ruslan Khalid Associates, 2007)

First zero-energy building in South East Asia
Malaysia Energy centre (Ruslan Khalid Associates, 2007)
First zero-energy building in South East Asia
ASEAN Energy Awards
For Energy Efficient Buildings
By ASEAN Centre for Energy

2001
• Winner (New & Existing) – Securities Commission Malaysia
• Runner-up (Retrofitted) - Sultanah Zanariah, University Technology Malaysia

2002
• Special Submission Category (Cutting Edge Technology) – Sutera Harbour Resort Malaysia

2003
• 2nd Runner-up (Retrofitted) – Malaysia Electronics Materials Building

2004
• 1st Runner-up (New & Existing) – Main Terminal, Kuala Lumpur International Airport

2005
• 1st Runner-up (New & Existing) – Telekom Malaysia Tower
• Winner (Special Submission) – Solar-Hydrogen House Malaysia

2006
• Winner (New & Existing) - Low Energy Office Malaysia (Ministry of Energy Water and Communication Building)

2007
• Winner (New & Existing) – National Library Singapore
• 1st Runner-up (New & Existing) – Putrajaya International Convention Centre Malaysia
• 2nd Runner-up (Tropical) – The Street Mall Cyberjaya Malaysia

2008
• 2nd Runner-up (New & Existing) – Putrajaya Corporation Complex Malaysia
building

32% world resources
>32% world resources
>40% energy
building

>32% world resources
>40% energy
>40% ghg
greenbuilding

knowledge
technology
green building

opportunity
green building rating for Malaysia?
LEED Malaysia?

GREEN STAR Malaysia?

GREEN MARK Malaysia?
Green building rating for Malaysia!
- environment
- resources
- climate
September 2008
PAM Education Fund
RM100,000.00 Seed Funding
September 2008
PAM Education Fund
RM100,000.00 Seed Funding
PAM + Association of Consulting Engineers Malaysia

- Building Industry Presidents Council
BIPC: Profession Driven!

Industry Driven?

Government Driven?
Profession Driven

+ Industry Recognised

+ Government Endorsed
Top down – by legislation

Bottom up - market driven

By demand!
- Public education
Green Design Forum
& Preview of Malaysia's Green Building Index

Saturday 3rd January 2009
9.00 am - 12.30 pm
Kuala Lumpur Convention Centre

KEYNOTE SPEAKER

Senator the Hon Penny Wong
Minister for Climate Change and Water, Australia

"Moving To A Lower Carbon Future -- Perspective From Australia"

PANELS

Jr Chen Thiam Leong
President, Malaysia Association of Consulting Engineers (2008-2010)

"Malaysia Green Building Index (Non-Residential)"

Ar Chan Seng Aun

"Malaysia Green Building Index (Residential)"

Ar Di Tan Loke Mun

"Malaysia Green Building Index (Non-Residential)"

FREE ADMISSION
Limited seats, please register early.

PAM
PERDURIAN AKTEN MALAYSIA
INSTITUTI MAHATMAKOSAPSAR

For registration, contact 03-9521 4102, 013-782 3182
And visit www.greenindex.org.my
WHAT IS THE GREEN BUILDING INDEX?

Buildings and the built environment contribute significantly to greenhouse gas emissions and need to be designed to minimize their negative impact on the environment.

Green Building Index (GBI) is developed by Perbadanan Air Minyak Asia (PAMA) and the Association of Consulting Engineers Malaysia (ACEM). It is a professional-driven initiative to encourage the development of environmentally friendly buildings.

The rating system gives opportunity for developers and building owners to design and construct green buildings that can provide energy and water savings, improved indoor environmental quality, and enhanced access to public transport and the adoption of recycling and greenery for their projects.

BUILDINGS ARE RATED BASED ON 6 CRITERIA:

- Energy Efficiency
- Indoor Environmental Quality
- Sustainable Site Planning and Management
- Materials and Resources
- Water Efficiency
- Innovation

BUILDINGS ARE AWARDED GBI MALAYSIA PLATINUM, GOLD, SILVER OR CERTIFIED RATING DEPENDING ON THE SCORES ACHIEVED:

GBI is designed for the tropical climate of Malaysia, and incorporates internationally recognized best practices in environmental design and performance.

WHY GREEN BUILDINGS?

1. Green buildings are designed to save energy and resources, reduce operational costs and the demand for non-renewable materials through the life cycle.
2. Green buildings harmonize with the local climate, traditions, culture and the surrounding environment.
3. Green buildings are designed to reduce and improve the quality of human life while maintaining the capacity of the ecosystem at local and global levels.
4. Green building make efficient use of resources, have significant operational benefits, and increase workplace productivity.
5. Building green and doing things right now can reduce the risk of future problems and ensure a green future.

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Sime Darby
Developing Sustainable Futures
CONGRATULATIONS

to the
MINISTRY OF ENERGY, GREEN TECHNOLOGY AND WATER

ON THE
LAUNCH OF THE NATIONAL GREEN TECHNOLOGY POLICY
AND THE
OPENING CEREMONY OF THE PTM GEO BUILDING
MALAYSIA’S FIRST GBI CERTIFIED GREEN BUILDING

OFFICIATED BY

Y.A.B. DATO' SRI MOHD MAJID
BIN TUN HAJI ABDUL RAZAK
PRIME MINISTER OF MALAYSIA

IN
24TH JULY 2009
Malaysia Energy centre (Ruslan Khalid Associates, 2007)
First zero-energy building in South East Asia
From ‘ZEO’ To ‘GEO’
Green Energy Office

green building
Green Building Rating
- By nature ‘voluntary’

Encourage by incentive
- Carrot first
INCENTIVES FOR greenbuilding index
Stage One: Broad base!

- Demand side?

- Supply side?
Stage One : Broad base!

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.
FACILITATOR COURSE

green building index

- Trained over 1000 potential facilitators
  - Including Penang & Sarawak
  - Public Works Department
- Target all building professional
UPDATED APRIL 2010

INCLUDES
Information on
GBI Non-Residential Existing
Building Tool (NREB)
Incentives for GBI and
green buildings

www.greennbuildingindex.org
THE GBI ASSESSMENT PROCESS

STAGE 1 | APPLICATION & REGISTRATION
---
Complete and submit the Application & Registration Form to GSB with supporting documents

*GSB processes application and notifies Applicant of the Registration Fee

GSB processes application and notifies Applicant of the Registration Fee

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 = Greenbuildingindex Sdn Bhd

STAGE 2 | DESIGN ASSESSMENT (DA)
---
Applicant to appoint their Project Coordination GBI Facilitator and submit for Design Assessment (DA) to GSB

In the DA Submission complete?

Incomplete

Complete

GSB notifies Applicant of DA result

Appeal by Applicant?

Appeal

No Appeal

GSB records & publishes in GBI Register

LAM issues GBI Certificate to Applicant

STAGE 3 | COMPLETION & VERIFICATION ASSESSMENT (CVA)
---
Applicant to submit for Completion & Verification Assessment (CVA) upon completion of project

GSB notifies Applicant of CVA result

Appeal by Applicant?

Appeal

No Appeal

GSB receives & publishes in GBI Register

LAM issues GBI Certificate to Applicant

INCENTIVES FOR BUILDINGS OBTAINING GREEN BUILDING INDEX CERTIFICATE

- **Tax Exemption**
  - Any person who incurs qualifying expenditure (QE) to obtain GBI certificate for a building used for his business qualify 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 Surplus) incurred in relation to the 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).

- **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 such purposes by UPM.

Please note that a complete set of guidelines on the tax and stamp duty exemption can be obtained from www.land.gov.my.
GREEN BUILDING INDEX STRUCTURE

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.

GREEN BUILDING INDEX RATING SYSTEM

BUILDINGS WILL BE AWARDED THE GBI RATING BASED ON 6 KEY CRITERIA:
1. ENERGY EFFICIENCY
2. INDOOR ENVIRONMENTAL QUALITY
3. SUSTAINABLE SITE PLANNING & MANAGEMENT
4. MATERIAL AND RESOURCES
5. WATER EFFICIENCY
6. INNOVATION

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 ENVIRONMENTAL 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 & MANAGEMENT (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 framework 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.

Achieving points in these targeted areas will mean that the building will likely be more environment-friendly than those that do not address the issues. Under the GBI assessment framework, points will also be awarded for achieving and incorporating environment-friendly features which are above current industry practice.

GREEN BUILDING INDEX 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</td>
<td>Gold</td>
</tr>
<tr>
<td>66 to 75</td>
<td>Silver</td>
</tr>
<tr>
<td>50 to 65</td>
<td>Certified</td>
</tr>
</tbody>
</table>
NEW LIFE FOR OLD
PLUGGING THE LEAKS IN EXISTING BUILDINGS

26 APRIL 2010
LAUNCH OF THE GBI - EXISTING BUILDING RATING TOOL

TIME
9:00AM - 1:00PM
VENUE
KUALA LUMPUR
CONVENTION CENTRE

KEYNOTE SPEECHES BY
YB DATO’ SRI PETER CHIN FAH KUI,
Minister of Energy, Green Technology and Water
Ar. BOON CHEE WEE, GBIAP Chairman, PAM President
Ar. VON KOK LEONG, GBIAP, MGBC President
Ir. CHEN THAM LEONG, GBIAP

GBI IS SUPPORTED BY

www.greenbuildingindex.org | info@greenbuildingindex.org
GREENBUILDINGINDEX SDN BHD (845506-V) | 8 & 9, Jalan Tinggi, 50480 Kuala Lumpur, Malaysia. Tel: 603 2294 4182. Fax: 603 2297 4182.
GBI ASSESSMENT CRITERIA
FOR NON-RESIDENTIAL EXISTING BUILDING (NREB)

FIRST EDITION | MARCH 2010 | BETA VERSION 2.02

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GREENBUILDINGINDEX.COM | 8640 S. Normandie Ave. | Los Angeles, CA 90044 | Tel: 310-284-4862 | Fax: 310-284-4862
NEW LIFE FOR OLD
PLUGGING THE LEAKS IN EXISTING BUILDINGS

GBI - EXISTING BUILDING RATING TOOL

YAB DATO’ SRI MOHD NAJIB
BIN TUN HAJI ABDUL RAZAK
PRIME MINISTER OF MALAYSIA

I wish to congratulate Pertubuhan Akitek Malaysia (PAM) and the Association of Consulting Engineers Malaysia (ACEM) for the launch of the new Green Building Index (GBI) tool to help property owners to upgrade their existing buildings to become more “Green” and sustainable.

This is an important step as we press towards a High Income Economy. To achieve this vision we have to plug the leaks to reduce unwanted losses and unplanned wastages. We cannot afford to have buildings that continue to use too much resources and energy whilst at the same time contribute wastes and harmful greenhouse gases that damages the environment. This GBI tool can also help to transform all aging and inefficient buildings to become higher value assets.

The Government’s commitment to a greener future is clear. Incentives in the form of tax exemption for building owners, and stamp duty exemptions for buyers of properties that achieve GBI certification have been provided in Budget 2010. These are to help the country to build more Green buildings and also to develop more Green Technologies.

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

YAB DATO’ SRI PETER CHIN FAH KUI
MINISTER OF ENERGY, GREEN TECHNOLOGY AND WATER MALAYSIA

Congratulations to Pertubuhan Akitek Malaysia and Association of Consulting Engineers Malaysia for the launch of the new GBI Existing Building Rating Tool.

As the majority of existing buildings in Malaysia were built without green considerations, it is timely that GBI has developed a tool to help property owners to upgrade and retrofit their buildings. This will give new life to aging and out-dated buildings. They will become more energy, water and resource efficient, have better indoor working qualities and also contribute less waste and green house gases.

The Ministry of Energy, Green Technology and Water is fully supportive of all such contributions and inputs to help drive the development of Green Technology in Malaysia. I am pleased to note that GBI has received the full support of Malaysia’s building and property players. Incentives for GBI in the 2010 Budget will further propel the development of more green buildings in Malaysia.

In a short time, GBI has become recognised by the world community as Malaysia’s very own green rating tool. It gives building owners who are environment-conscious, as well as business-savvy, the opportunity to build or retrofit buildings that are not only environmentally more friendly but also make economic sense.

Well done PAM, ACEM and GBI.

YAB DATO’ SRI PETER CHIN FAH KUI

GBI CERTIFIED PROJECTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Project Name</th>
<th>Developer/Owner</th>
<th>GBI Rating</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>PNM ECO BUILDING</td>
<td>RUBAT TENAGA MALAYSIA</td>
<td>CERTIFIED</td>
<td>NNC</td>
</tr>
<tr>
<td>02</td>
<td>IRC SALES GALLERY</td>
<td>KALANG RESOURCES CORPORATION SDN BHD</td>
<td>CERTIFIED</td>
<td>NNC</td>
</tr>
<tr>
<td>03</td>
<td>1 PINTA ARIYU</td>
<td>BANDAR UTAMA CITY SDN BHD</td>
<td>CERTIFIED</td>
<td>NNC</td>
</tr>
<tr>
<td>04</td>
<td>KTH WORLDWIDE</td>
<td>CENTRAL HOLDINGS BERHAD</td>
<td>CERTIFIED</td>
<td>NNC</td>
</tr>
<tr>
<td>05</td>
<td>3 HARMONY</td>
<td>SUNWAY SPH HOME SDN BHD</td>
<td>CERTIFIED</td>
<td>NNC</td>
</tr>
<tr>
<td>06</td>
<td>CITY AVESUS</td>
<td>DR TAN LOW SIAH &amp; SIAH NIKWAN</td>
<td>PLATINUM</td>
<td>NNC</td>
</tr>
<tr>
<td>07</td>
<td>KIN BAVAMAR</td>
<td>KKB PROPERTY SDN BHD</td>
<td>GOLD</td>
<td>NNC</td>
</tr>
</tbody>
</table>

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GREENBUILDINGINDEX SDN BHD (525662-V) & B & B Jalan Tungh, 56000 Kuala Lumpur, Malaysia. Tel: 603 2384 4102 Fax: 603 2387 4102
YAB DATO’ SRI MOHD NAJIB
BIN TUN HAJI ABDUL RAZAK
PRIME MINISTER OF MALAYSIA

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FROM "ENERGY EFFICIENT" TO:

greenbuilding index
THANK YOU