

The Development of GBI Malaysia (GBI)

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What and Why Green Buildings?

1. Green buildings are designed to save energy and resources, recycle materials and minimise the emission of toxic substances throughout its life cycle,
2. They harmonise with the local climate, traditions, culture and the surrounding environment, and
3. Green buildings are able to sustain and improve the quality of human life whilst maintaining the capacity of the ecosystem at local and global levels
4. Green buildings have many benefits, such as better use of building resources, significant operational savings, and increased workplace productivity
5. Building green sends the right message about a company or organization – that it is well run, responsible, and committed to the future

Background

Greenhouse gasses and ozone depletion became household words following the Earth Summit in Rio, 1992. Since then Green building ratings began to be developed in the 1990s with BREEAM (UK, 1990) and later LEED (USA, 1996) being the better known ones. This was the result of the realization that buildings and the built environment contributes significantly to green house gas emissions and thus they needed to be re-designed to reduce their negative impact to the environment. The notion of buildings being “machines for living” is proven true as buildings do last a long time and over that lifetime they do play a part in adding to the destruction of the environment. Green rating tools were conceived to be able to assist architects, designers, builders, government bodies, building owners, developers and end users to understand the impact of each design choice and solution. By so doing, the final built product would perform better in its location whilst also reducing its harmful impact on the surroundings.

Green rating tools by its nature and role is very dependent upon location and environment and thus climate. A quick survey of existing Green Rating tools available in the world today will show all of them concentrated within the temperate climate zones. Some better known ones include UK's BREEAM, USA's LEED, Japan's CASBEE and Australia's GREENSTAR.

Malaysia' Green Building Index or GBI will be the only rating tool for the tropical zones other than Singapore Government's GREENMARK. GREENMARK was first launched in 2005. In April 2008, it became mandatory for all new buildings or works on existing buildings exceeding 2,000sq.m in floor area to achieve a minimum GREENMARK Certified rating in Singapore. Whilst GREENMARK's operational

parameters are within the tropical climate, its scoring priorities are very much customized for the current state of Singapore where a lot of priority is given to energy and water efficiency scores. In addition its public transport network is also already in place and thus little priority is given to this in the ratings. Malaysia differs markedly in these areas and thus understandably our rating priorities should be likewise customized to suit – both to our climate and also the current state of our country's development and existing resources.

PAM's leadership role in driving the development of the Green Building Index Malaysia

PAM's Architects have over the years been developing and working towards a more sustainable and green architecture. In 2008, the need for a localized Green Building rating tool became more evident especially in the light of increasing demand from building end-users for Green rated buildings that would not overly and adversely contribute to the destruction of the environment. This was also in-line with the objectives of many companies today where good corporate social responsibility (CSR) calls for them to only support environmentally friendly initiatives including their office premises.

In August 2008, PAM Council endorsed and approved the formation of the new Sustainability Committee who was tasked primarily to develop and set-up the Green Building Index Malaysia and the accompanying Panel for certifying and accreditation of Green rated buildings. A target deadline of April/May 2009 was set to launch this Green rating.

In-line with the goal, the Committee has since undertaken the following:

1. Initiated discussion and presentation of the proposal to all the stakeholders of the building industry via the members of the Building Industry Presidents Council (BIPC). This was done in August 2008 and full support was obtained from members of the BIPC (REHDA, MBAM, ACEM, IEM, MIP, ISM, etc).
2. August 2008, invited the Association of Consulting Engineers of Malaysia (ACEM) to jointly work with PAM. Presidents of PAM and ACEM met and agreed on the joint co-operation. Ir TL Chen and Ir HP Looi were invited to join the Committee.
3. September/October 2008 – carried out comparative studies on better known green rating models such as BREEAM, LEED, GREENMARK and GREENSTAR to establish criteria.
4. October 2008 – Visited Singapore to study GREENMARK and discussions with the Building Construction Authority (BCA) Singapore as well as the Singapore Institute of Architects (SIA). Hosted by Mr Tan Tian Chong, BCA's director for GREENMARK and Ar. Tai Lee Siang, President SIA.

5. Early November 2008 – ARCASIA Sustainability Meeting in Busan, South Korea to network and exchange information with regional Asian countries. Met and reported to Ar Kazuo Iwamura, Director of World Green Building Council, Union of International Architects (UIA) Chair for Sustainability and ARCASIA Chair for Sustainability on the plan to set up Malaysia's own Green Building rating tool.
6. Mid-November 2008 – Study visit to Green Building Council of Australia's GREENSTAR. Site visits to GREENSTAR rated buildings – CH2, 500 Collins Street, The Gauge @ Victoria Harbour, Automotive Excellence College, Chadstone Shopping Centre New Wing and Aurora, Epping North by VicUrban. Hosted by Ms Trudy-Ann King of the Green Building Council Australia (GBCA)
7. Discussions and technical exchange with Prof. Emeritus Allan Rodger (University of Melbourne) and Prof. Roger Fay (University of Tasmania). Prof. Roger Fay co-authored the NABERS rating tool currently in use by New South Wales government.
8. 28th November 2008, networking and information exchange on alternative renewable energies with Pusat Tenaga Malaysia (PTM) in Bangi hosted by Ir Ahmad Hadri.
9. December 2008 – Final drafting of both the Residential and Non-Residential rating tools. Name of tools established as Green Building Index Malaysia. Drafting of the Residential tool is headed by Ar Chan Seong Aun and the Non-Residential tool by Ir TL Chen.
10. The Green Building Index Malaysia (GBI Malaysia) was introduced on 3rd January 2009 at the Green Design Forum held at Kuala Lumpur Convention Centre. Keynote speaker was the Minister of Climate Change and Water, Australia, the Hon. Senator Penny Wong. Other speakers were Ar Chan Seong Aun and Ir TL Chen who presented the salient points on GBI Malaysia. The session was moderated by Ar Dr Tan Loke Mun. The website greenbuildingindex.org was also launched to disseminate information.
11. A steering committee workshop was held on the afternoon of 3rd January where the Committee met with prominent green proponents to fine-tune the GBI. Steering committee members included Mr Tan Tian Chong from BCA's GREENMARK, Ms Trudy-Ann King of GBCA's GREENSTAR, Ir Ahmad Hadri of PTM, Prof. Emeritus Allan Rodger (University of Melbourne), Prof. Roger Fay (University of Tasmania), Assoc Professor Dr Faridah Shafii of Institute Sultan Iskandar, UTM (Pro-tem Chair of the MBGC) and Dato' Professor Dr Elias Salleh of University Putra Malaysia (UPM)
12. On 16th January 2009, PAM Council approved the setting up of the GBI Malaysia assessment and accreditation framework including the terms of reference for the GBI Accreditation Panel (GBIAP), GBI Certifiers and GBI Facilitators. GBI Malaysia will be managed by Greenbuildingindex Sdn. Bhd.

Seven senior members of the profession were elected by PAM and ACEM to form the inaugural GBIAP. They were Ar Lee Chor Wah, Ar Chan Seong Aun, Ar Serina Hijjas, Ar Dr Tan Loke Mun and Ir Dr Abdul Majid, Ir TL Chen and Ir HP Looi.

13. On 16th January 2009, PAM Council also approved the one-year joint-cooperation to field-test the GBI tools with tertiary higher education institutions. University of Tasmania (UTAS), University Putra Malaysia (UPM) and University Sains Malaysia (USM) were selected. A further overseas university will be added at a later date.
14. GBIAP held its inaugural meeting with full attendance on Friday, 6th February 2009 and confirmed the terms of reference for GBI Certifiers and Facilitators.
15. On 23rd February 2009 ACEM confirmed that they would join PAM as shareholders of Greenbuilding index Sdn. Bhd. The following are the founding directors; Ar Tan Pei Ing, Ar Chee Soo Teng, Ar Boon Che Wee, Ir Dr Abdul Majid (ACEM President) and Ir Bruce Chang (ACEM Hon. Treasurer)
16. Ar Chan Seong Aun and Ar Michael Ching attended the GREENMARK Manager course in Singapore. The training curriculum for GBI Facilitators is currently being developed concurrently and will be ready by end April 2009.
17. A competition was called by PAM to select a winning design for the GBI logo. The competition closed on 28th February 2009 with more than 100 entries received. Two designs were short-listed and the winning design was adopted as the new logo for GBI.
18. Lunch meeting on 12th February 2009 with the BIPC to brief and update all parties and stakeholders on the development and progress of the GBI. The lunch meeting was hosted by PAM President, Ar Lee Chor Wah. Members at the meeting were PAM (Ar Dr Tan Loke Mun, Zarina Ibrahim), ACEM (Ir. Dr Abdul Majid, Ir TL Chen, Ir HP Looi), IEM (Ir Dato Keizrul Abdullah), ISM (Sr Wan Maimun Wan Abdullah), MBAM (Kwan Foh Kwai), REHDA (Dato' Chan Sau Lai) and MIP (Norliza Hashim).
19. PAM commenced one-day training sessions for Architects and Engineers on the MS1525: Code for Energy Efficiency in Non-Residential Buildings. First session was held on the 14th February and the second repeat session was held on the 28th February. Speakers were Ar Serina Hijjas, Ar Chan Seong Aun, Ir TL Chen and Ir HP Looi. Two sessions will be held each month until June 2009 to ensure that all professionals understand the workings of the code that forms the baseline benchmark for the GBI.
20. From March through to April 2009, GBI Malaysia will commence assessment and accreditation of several pilot projects.

21. The Malaysian Construction Development Board (CIDB) wrote to confirm their support for GBI Malaysia. A meeting was hosted by CIDB and chaired by Ir Elias Ismail on 2nd March 2009 to be briefed on GBI and further discuss how CIDB could assist in the promotion and development of GBI. PAM President, Ar Lee Chor Wah, Ar Dr Tan Loke Mun, ACEM President Ir Dr Abdul Majid and Ir TL Chen attended. CIDB offered their assistance to document the GBI to form part of their series of Construction Industry Standards (CIS). Options for incentives from CIDB were also discussed including also the part that QLASSIC plays in the GBI. PAM/ACEM to work together with CIDB to develop common incentives to encourage the use of GBI.
22. On 6th March 2009, Ar Dr Tan Loke Mun and Ir TL Chen briefed staff and students from the School of Architecture, USM on the role and workings of GBI. In the joint cooperation, USM will incorporate the GBI into their curriculum for students to apply and test.
23. On 7th March 2009, Ir TL Chen, Ir Gurmeet Singh, Ar Chan Seong Aun and Dr Abdul Malek of USM presented the GBI to PAM Northern Chapter in Penang.
24. 12th March 2009, Ar Dr Tan Loke Mun, Ar Chan Seong Aun and Ir TL Chen briefed staff and 4th Year students from the School of Architecture, UPM on the role and workings of GBI. In the joint cooperation, UPM will incorporate the GBI into their curriculum for students to apply and test.
25. 18th March 2009, presentation of GBI Malaysia to Kementerian Tenaga, Air dan Komunikasi (KTAK) in Putrajaya. KTAK confirmed their support for GBI Malaysia and requested for joint co-operation to further develop incentives, promotion and also inclusion into the overall Energy Efficiency Masterplan.
26. 19th March 2009, presentation of GBI Malaysia to Malaysian Industrial Development Authority (MIDA) in KL Sentral. MIDA confirmed their support for GBI Malaysia and would like to work with PAM/ACEM on capacity building for professionals in the construction industry including the training of GBI facilitators and other related outreach programs. MIDA advised PAM/ACEM to apply for funding of the GBI initiatives under the Service Sector Capacity Development Fund available at MIDA through the Ministry of International Trade and Industry (MITI)
27. 23rd March 2009, presentation of GBI Malaysia to Local Authority Majlis Perbandaran Petaling Jaya (MBPJ). MBPJ confirmed their support for GBI and requested for a working group to be formed to see how to implement it. Councilor Derek Fernandez was appointed to be the MBPJ contact person for this work group.
28. 24th March 2009, information on GBI Malaysia was disseminated at the World Class Sustainable Cities 2009 conference (WCSC 09) held in Kuala Lumpur. Datuk Bandar Dewan Bandaraya Kuala Lumpur (DBKL) confirmed DBKL's

support for GBI Malaysia and proposed to work together to promote green and sustainable development for Kuala Lumpur.

29. 28th March 2009, presentation of GBI Malaysia to architects and the building industry at the Design Forum in Kuching, Sarawak. Information on GBI Malaysia was disseminated at the Building Trade Show 2009 (BTS 09).
30. 31st March 2009, Ar Chan Seong Aun and Ir TL Chen presented at a seminar conducted to brief professional engineers of IEM and ACEM on the detailed workings of GBI Malaysia at Armada Hotel, Petaling Jaya
31. 1st April 2009, Ir. TL Chen presented GBI at the Fiabci monthly talks where some 70+ people attended.
32. 7th April 2009, first media information full page colour advertisement in Star sponsored by Sime Darby group with the support of the following bodies and agencies – Lembaga Arkitek Malaysia (LAM), Lembaga Jurutera Malaysia (LJM), Lembaga Juruukur Bahan Malaysia (LJBM), Institute of Engineers Malaysia (IEM), Institute of Surveyors Malaysia (ISM), Master Builders Association of Malaysia (MBAM), Malaysian Institute of Planners (MIP), Real Estate and Housing Developers Association (REHDA), Chartered Institute of Builders (CIOB), Balai Ikhtisas Malaysia (BIM), Institute of Landscape Architects (ILAM), Institute Perekabentuk Dalaman (IPDM), Malaysian Society of Interior Designers (MSID), Pusat Tenaga Malaysia (PTM), Fiabci Malaysia and Professional Services Development Corporation (PSDC).
33. 9th April 2009, presentation of GBI Malaysia to JKR under Lembaga Arkitek Malaysia by Ar. Dr Tan Loke Mun, Ar. Serina Hijjas and Ir T.L Chen. JKR projects have already started to incorporate the inclusion of green features into their design briefs.
34. 17th April 2009, presentation of GBI Malaysia to Iskandar Regional Development Authority (IRDA) by Ar. Dr Tan Loke Mun, Ar. Serina Hijjas and Ir T.L Chen.
35. Briefing to YB Elizabeth Wong's office, Selangor State Government was held on 20 April 2009. YB Edward Lee and YB Tuan Iskandar also attended. Ar Boon Che Wee, Ar Dr Tan Loke Mun and Ir TL Chen gave the briefing.
36. End April and May 2009, GBI awareness campaign with full page adverts in the Star to commence with the support of the following bodies and agencies – Lembaga Arkitek Malaysia (LAM), Lembaga Jurutera Malaysia (LJM), Lembaga Juruukur Bahan Malaysia (LJBM), Construction Industry Development Board (CIDB), Institute of Engineers Malaysia (IEM), Institute of Surveyors Malaysia (ISM), Master Builders Association of Malaysia (MBAM), Malaysian Institute of Planners (MIP), Real Estate and Housing Developers Association (REHDA), Chartered Institute of Builders (CIOB), Balai Ikhtisas Malaysia (BIM), Institute of Landscape Architects (ILAM), Institute Perekabentuk Dalaman (IPDM),

Malaysian Society of Interior Designers (MSID), Pusat Tenaga Malaysia (PTM), Fiabci Malaysia and Professional Services Development Corporation (PSDC).

37. 7th, 8th and 16th May 2009, the first intake for the GBI Facilitator's Course starts with a target of 100 participants to be held at PAM Centre
38. GBI Malaysia is scheduled to be officially launched on 21st May 2009.

Summary

GBI Malaysia is developed by Pertubuhan Akitik Malaysia (PAM) and the Association of Consulting Engineers Malaysia (ACEM). It is a profession driven initiative to lead the Malaysian property industry towards becoming more environment-friendly. From its inception GBI has received the full support of Malaysia's building and property players. It is intended to promote sustainability in the built environment and raise awareness among Developers, Architects, Engineers, Planners, Designers, Contractors and the Public about environmental issues. The rating system will provide opportunity for developers 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.

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

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

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.

The assessment process involves an assessment at design stage (Design Assessment – DA) leading to the award of the provisional GBI rating. Final award is given one year after the building is first occupied (Completion and Verification Assessment – CVA). Buildings will also have to be re-assessed every three years in order to maintain their GBI rating to ensure that buildings are well-maintained. Buildings are awarded GBI Malaysia - Platinum, Gold, Silver or Certified ratings depending on the scores achieved.

Building owners, developers and consultants can make application for GBI Malaysia assessment via submission of an application form and payment of the requisite fee to Greenbuildingindex Sdn. Bhd. (GBISB) Applicants may then choose to appoint a GBI accredited Facilitator to provide professional services. GBISB will appoint accredited Certifiers to assess the projects. Upon completion of the assessment

process, the Certifier's report will be forwarded to the GBI Accreditation Panel (GBIAP) to register and award the certification.

GBI will provide an assessable differentiation to promote environment-friendly buildings for the future of Malaysia. It is a benchmarking rating system that incorporates internationally recognised best practices in environmental design and performance.

Ar. Dr Tan Loke Mun

Chairman, PAM Sustainability Committee

Board Member, Green Building Index Accreditation Panel

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