A BETTER TOMORROW...
31st October 2011

7 Billion
How your world will change
Wow! How we have Grown ...
Absorbs CO$_2$ and Emits O$_2$

From the Beginning …

Mass destruction since Man started to build

Combusts O$_2$ and Emits CO$_2$

Invented by Karl Benz, 1885
Gasoline engine

Mass production by Henry Ford, 1914
Ivan Illich calculated that, in America in the 70's, if you add the time spent in the car (including traffic jam), the time spent in the health care industry because of a car crash, the time spent in the oil industry to fuel cars...etc, and you divide that by the number of kilometres traveled per year, you obtain the average speed of 6 km per hour.
Los Angeles County Drainage Area channel
Collection/overflow facility at downstream end of swale to acceptable disposal point per Section 1.4

3-5” deep check dams @ 12’ to 20’ intervals or minimum 2 dams per swale

For parking lots: tire stops or curb w/ cuts

6” min

6” to 12” swale depth.

For parking lots: 12” x 12” clear flow area at cutouts

5 ft. minimum, 12 ft. maximum

Section Not to Scale
TAKING BACK THE LAND

BETTER USE AND STEWARDSHIP
Paolo Soleri, (1919 - )
Ron Herron, Archigram – The Walking City, 1964
MALAYSIA GREEN WORLD

THE GBI RATING TOOLS

NON-RESIDENTIAL

The GBI Non-Residential Rating tool evaluates the sustainable aspects of buildings that are commercial, institutional and industrial in nature. This includes factories, offices, hospitals, universities, colleges, hotels and shopping complexes.

Of the six criteria that make up the GBI rating, emphasis is placed on energy efficiency and indoor environmental quality as these have the greatest impact in the areas of energy use and well-being of the occupants and users of the building.

By improving on the efficiency of active (mechanical and electrical) systems as well as incorporating good passive designs together with proper sustainable maintenance regimes, significant reductions in consumed energy can be realised. This can lead to a reduced carbon footprint and also offers long-term savings for the building owners.

RESIDENTIAL

The GBI Residential Rating tool evaluates the sustainable aspects of residential buildings. This includes linked houses, apartments, condominiums, townhouses, semi-detached and bungalows.

This tool places more emphasis on sustainable site planning & management, followed by energy efficiency. This serves to encourage developers and home owners to consider the environmental quality of homes and their inhabitants through better site selection, provision of public transport access, increased community services and connectivity, as well as improved infrastructure.

Such achievements will help reduce the negative impact to the environment and create a better and safer place for residents and the community as a whole.

GBI POINTS ALLOCATION CHART (NON-RESIDENTIAL)

<table>
<thead>
<tr>
<th>PART ITEM</th>
<th>MAXIMUM POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Efficiency</td>
<td>25</td>
</tr>
<tr>
<td>Indoor Environmental Quality</td>
<td>21</td>
</tr>
<tr>
<td>Sustainable Site Planning &amp; Management</td>
<td>16</td>
</tr>
<tr>
<td>Material &amp; Resources</td>
<td>11</td>
</tr>
<tr>
<td>Water Efficiency</td>
<td>10</td>
</tr>
<tr>
<td>Innovation</td>
<td>7</td>
</tr>
<tr>
<td>TOTAL SCORE</td>
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</table>

GBI POINTS ALLOCATION CHART (RESIDENTIAL)

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All forms and tools can be downloaded from www.greenbuildingindex.org

For more information please contact us at info@greenbuildingindex.org

LAUNCHED 21 MAY 2009

PAM
Malaysian Architects leading the green revolution
GREENING MALAYSIA
Over 26 Million Square Feet of Green Building in 3 years
S11 HOUSE
7 LORONG 11/NE, 46200 PETALING JAYA, SELANGOR, MALAYSIA

HAS BEEN AWARDED

PLATINUM
PROVISIONAL GBI CERTIFICATION

OWNER/APPLICANT
DR TAN LOKE MUN & CHEW MAY-ANN

AR. BOON CHEW WEI
CHAIRMAN
GREEN BUILDING INDEX (GBI) ACCREDITATION PANEL
THE SHELTER OF THE TREE
THE SHELTER OF THE TREE
THE SHELTER OF THE TREE
THE SHELTER OF THE TREE
THE SHELTER OF THE TREE
THE SHELTER OF THE TREE
SITE PLANNING
THE BIG CANOPY ROOF
WHY THE NEED FOR A MALAYSIAN GREEN RATING TOOL?

HARVESTING NATURE
SUNLIGHT IS FILTERED AND CAPTURED THROUGH THE LIGHT BOX AT THE TOP OF THE ROOF AND CHANNELED DOWN TO THE SPACES BELOW.
4 feet X 8 feet plywood module

Door Module
3 feet X 7 feet
= 34% Wastage
The green building products and services directory

The Malaysia Green Building Confederation is proud to present the Green Pages Malaysia, the first green building products and services directory for Malaysia's building industry.

PRODUCT CATEGORIES

- Architectural Building Materials
- Energy Efficiency
- Lighting, Visual & Acoustic Comfort
- Indoor Environmental Quality
- Recycled Content Materials
- Site & Environmental Protection
- Water Efficiency
- Waste Management
- Renewable Energy
- Green Building Consultants & Service Providers

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NEW GREEN VISION AND OPPORTUNITIES
NEW GREEN VISION AND OPPORTUNITIES
NEW LIFE FOR OLD
PLUGGING THE LEAKS IN EXISTING BUILDINGS

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

TIME
10.00AM - 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 THIAM LEONG
GBIAP

MESSAGES

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

I wish to congratulate Perbadanan Akitak 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 unneeded 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 green house 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

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

Congratulations to Perbadanan Akitak 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 gross 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 recognized 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.

YB DATO’ SRI PETER CHIN FAH KUI

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 siting, 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.

THE GBI NREB RATING TOOL

THE GBI NREB RATING TOOL

The GBI Non-Residential Existing Building Rating Tool evaluates the sustainable aspects of existing non-residential buildings.

For the Existing Building Tool, the highest emphasis is on Energy Efficiency and Indoor Environmental Quality to address energy use and well-being and productivity of the users of the building. These two criteria together account for 55% of the total credit points. Credit points are also increased for Water Efficiency and Innovation to encourage such improvements and modifications. Facilities Management is introduced for Sustainable Site Planning & Management and Materials & Resources to reflect the need for environmental protection in the use of chemicals, pesticides and procurement policy.

GBI POINTS ALLOCATION TABLE (NREB)

<table>
<thead>
<tr>
<th>Category</th>
<th>Maximum Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Efficiency</td>
<td>20</td>
</tr>
<tr>
<td>Indoor Environmental Quality</td>
<td>21</td>
</tr>
<tr>
<td>Sustainable Site Planning &amp; Mgmt</td>
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</tr>
<tr>
<td><strong>Total Score</strong></td>
<td><strong>190</strong></td>
</tr>
</tbody>
</table>
273 kWhr/ms yr
Reduced to
100.40 kWhr/ms yr

MS1525, Energy Efficiency Code – 150 kWhr/ms/yr
SUSTAINABLE TOWNSHIPS
BUILDING BETTER GREEN COMMUNITIES

What is a Sustainable Township?
Sustainable Townships are livable places that meet the diverse needs of the community, both now and in the future. They are places that are well planned and designed, safe and secure, and enhances the surrounding environment, thus providing a high quality of life for the people who live, work and play there.

Drivers for Sustainable Development
Climate change and the impacts of global warming have forced both governments and industry to make substantial changes to the way that they operate and function – the old business-as-usual adage is no longer acceptable in anyone’s language.

In recognition of this, the Malaysian Government has taken a significant step forward, especially as a developing nation, by committing to a minimum reduction of 40% of its carbon emissions by 2020 (based on 2005 carbon emission levels).

It must be noted that the reduction of carbon emissions is only part of the solution, there is a clear need for a holistic approach to addressing sustainability issues, an approach that incorporates both mitigation and adaptation measures.

Countries throughout the globe have adopted various approaches and strategies for addressing climate change and driving sustainable development. The Malaysian Government has set a range of ambitious policies and targets – what is now needed is a vehicle for the implementation and delivery of projects that support the government’s goals.

What is the GBI Township Tool?
Green Rating tools are conceived to be able to assist architects, planners, designers, builders, property owners, government bodies, developers and end users to understand the impact of each design choice and solution towards being more environment-friendly.

The Malaysian Green Building Index was created to provide the building industry a common and verifiable mechanism to benchmark green property development.

The GBI Township Tool takes it to another level and sets out a vision for sustainability within the built environment and provides guidance to assist end users to deliver sustainable townships.

GBI TOWNSHIP TOOL
Launched 29 March 2011
SETIA CITY
240 acres
Integrated Green Commercial City

D.N.A
FUTURE PROOFING

Environment

Business
Community

All Buildings are connected by elevated pedestrian Sky-Links
Ground level has wide paved walking boulevards linking to parks
The Modern-Day Market Place or Piazza
- Energy Efficient Lighting and Fibreoptics
- Large Canopy Roof with Garden
- Rainwater Harvesting
- Solar Panels for Renewable Energy
- Provision for Electric and Hybrid Cars
- Bicycle and Multi Person Vehicle Priority
- Solar Panels for Renewable Energy
- Low E Double Glazing
- Max Daylighting/Min Heat Gain
- Evaporative Cooling & Water Features
- Access for All and Elevated Links between All buildings
- Raised Floor System for Cooling/cabling
- Fibreoptics
- Energy Efficient Lighting
The Modern-Day Public Events Space
Wow! How we have Grown...
WHAT IS TOMORROW LIKE?

SUSTAINABILITY + SURVIVAL?
food clothing and shelter

[Image of a chicken, pants, and a house]
HOW DO WE FEED BILLIONS?

Food + Culture vs Food Culture
How do we Reconcile?
FOOD SECURITY

PERMACULTURE

Based on the permaculture approach, the pockets of green areas can be used to cultivate Vegetation, fruits and herbs.

Not only does this directly provide food for the community, but it also makes use of the existing natural resources in a sustainable manner. In turn, this will integrate the residents with the land that they live on, so they may care for it better.

By-products and waste provide compost and biofuel
One tree = 40 weeks maturity
One tree = 3 to 5 tubers for 1 week
One tree = 4 X 1 ft stems = 4 new trees

40 trees = sustainable food cycle

Edible Tuber – Carbohydrates
Edible Leaves and shoots
PAW PAW, PAPAYA
One tree = 36 weeks maturity
One tree = 1 fruit for 1 week

20 trees = sustainable food cycle

Edible fruits – ripe or unripe
How do we House Billions?

The rise of ispace?
HELLO ?
Nett Zero Energy – Sustainable, environment friendly, recyclable, re-useable, …
AIR CRAFT

VENICE BIENNALE 2012
1: A machine used for flying. Airplanes, helicopters, blimps and jets are all **aircraft**

2: 1. any machine used for flying. 2. a vehicle that flies through the air.
3: Any structure, machine, or contrivance, especially a vehicle, designed to be supported by the air, being borne up either by the dynamic action of the air upon the surfaces of the structure or object, or by its own buoyancy; such structures, machines, or vehicles collectively, as, fifty aircraft. Aircraft, in its broadest meaning, includes fixed-wing airplanes, helicopters, gliders, airships, free and captive balloons, ornithopters, flying model aircraft, kites, etc., but since the term carries a strong vehicular suggestion, it is more often applied, or recognized to apply, only to such of these craft as are designed to support or convey a burden in or through the air.
WHEN THE LAND IS GONE
S.O.S
HELP

HELIUM

S.O.S

WHEN THE LAND IS GONE

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