



MALAYSIA'S INTERNATIONAL GREEN BENCHMARK



A Joint Initiative of



# An Overview of Green Building Index

Supported by  **malaysiaGBC**



15 *Years*  
OF GREENING MALAYSIA  
9 MAY 2024



## 1. Introduction to GBI



## 3. Capacity Building



## 5. EE Star Rating



## 2. GBI Project Numbers



## 4. Summary of Projects Submitted for Green Cost Tax Exemption



## 6. GBI Certified Projects



# AGENDA



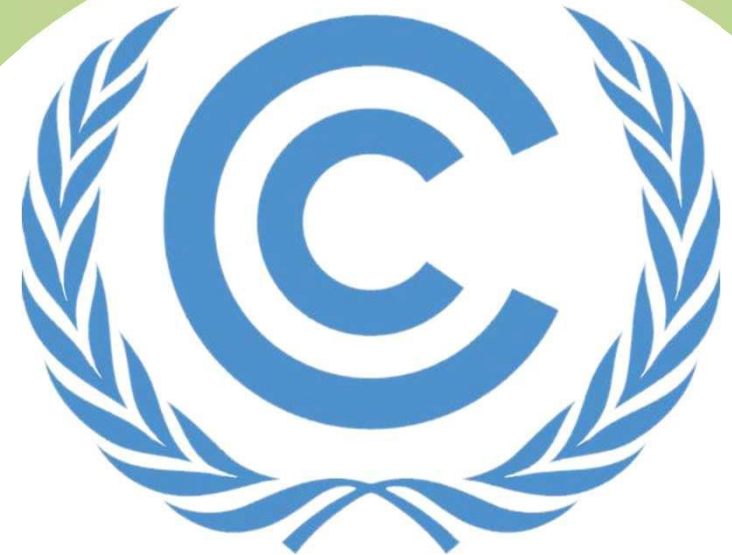
# 01

## Introduction To GBI



## CONTEXT

- Stands for the United Nations Framework Convention on Climate Change
- Parent to both Paris Agreement 2015 and 1997 Kyoto Protocol
- The Convention has near universal membership (197 Parties) and is the parent treaty of the 2015 Paris Agreement.
- The main aim is to keep the global average temperature rise this century as close as possible to 1.5 degrees Celsius above pre-industrial levels.
- Maintains Registry of **Nationally Determined Contributions (NDC)**
- 2023 UN Climate Change Conference (UNFCCC COP 28)



**United Nations** Framework  
Convention on Climate Change

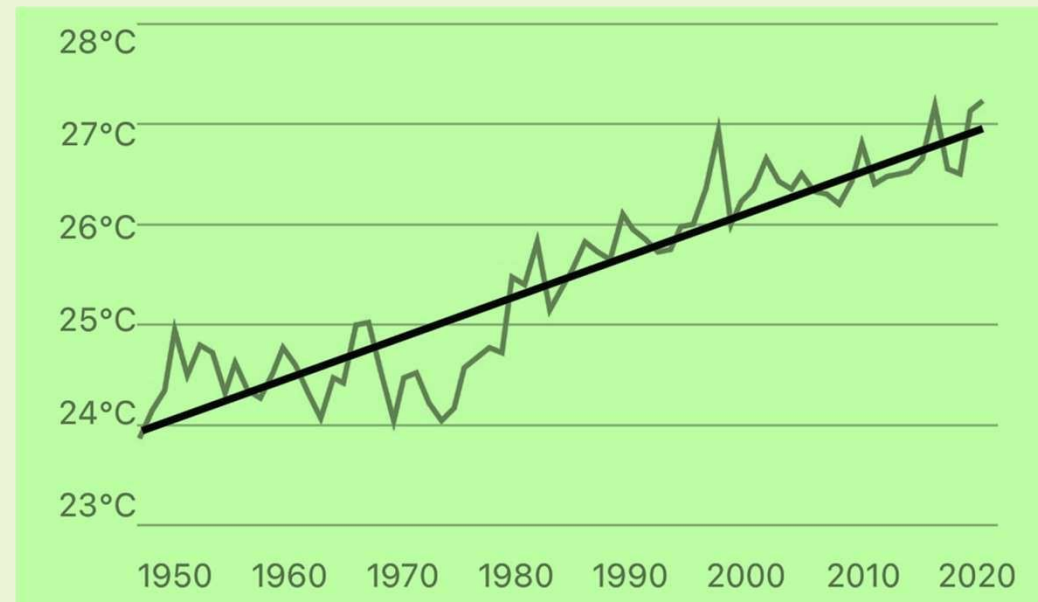
## CONTEXT

### The Nationally Determined Contributions (NDC)

- Malaysia intends to reduce its economy-wide carbon intensity (against GDP) of 45% in 2030 compared to 2005 level. The updated NDC includes the following increased ambition:
- The 45% of carbon intensity reduction is unconditional;
- This target is an increase of 10% from the earlier submission; and
- The GHG coverage is expanded to seven (7) greenhouse gasses (GHG): Carbon dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>), Nitrous oxide (N<sub>2</sub>O), Hydrofluorocarbons (HFCs), Perfluorocarbon (PFCs), Sulphur hexafluoride (SF<sub>6</sub>) and Nitrogen trifluoride (NF<sub>3</sub>)

## Average Temperature by year Kuala Lumpur

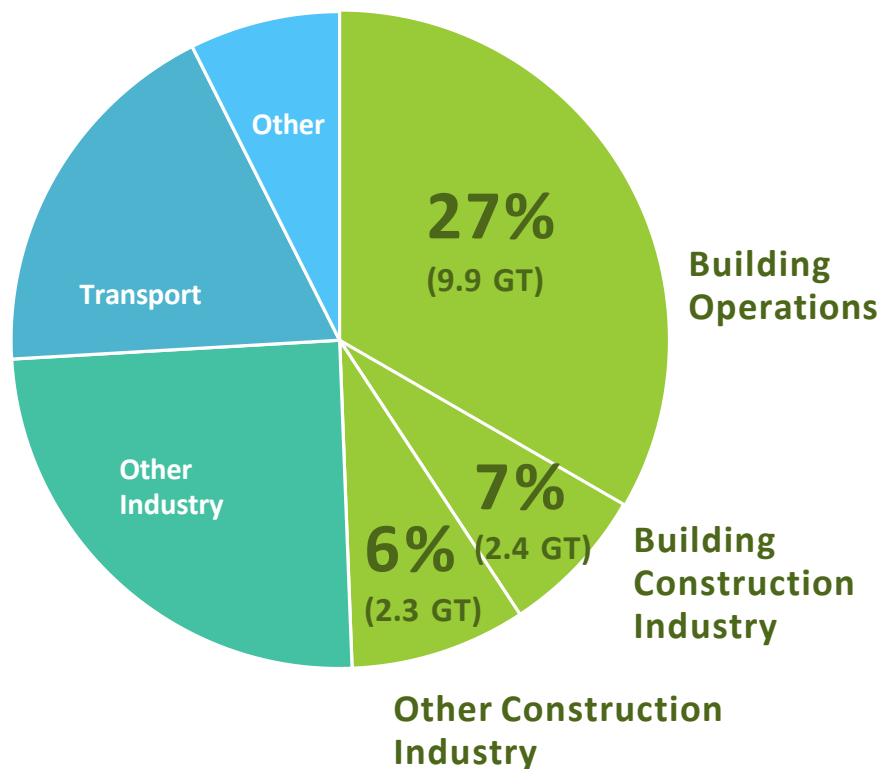
The average annual temperature in KL has increased since 1950.



Source: NOAA



## ANNUAL GLOBAL CO2 EMISSIONS



Data Source: IEA (2022), Buildings, IEA, Paris

## WHY THE BUILT ENVIRONMENT?

- Of those total emissions, building operations are responsible for 27% annually, while building and infrastructure materials and construction (typically referred to as embodied carbon) are responsible for an additional 13% annually.
- In 2040, approximately 2/3 of the global building stock will be buildings that exist today.
- Global building floor area is expected to double by 2060.
- To accommodate the largest wave of urban growth in human history, we expect to add 2.4 trillion ft<sup>2</sup> (230 billion m<sup>2</sup>) of new floor area to the global building stock, the equivalent of adding an entire New York City to the world, every month, for 40 years.



**By 2021, 4.2 billion square meters of green building space had been certified around the world through member Green Building Councils.**

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World GBC recognizes the power that building certifications have had in transforming the sustainability of building practices, and firmly supports their use.

**World Green Building Council**



1. ARZ Rating System
2. Assessment Standard of Green Building of China
3. BEAM Plus
4. BERDE
5. B.E.S.T Residential
6. B.E.S.T – Commercial Building Certification
7. BREEAM – NOR
8. BREEAM – NL
9. BREEAM – SE
10. BREEAM
11. Casa (Columbia)
12. CASBEE
13. Citylab
14. DGNB System
15. DCBC Woonmerk

16. EDGE
17. GreenBuilding
18. GBC Brasil CASA
19. Greenship

## **20. Green Building Index**

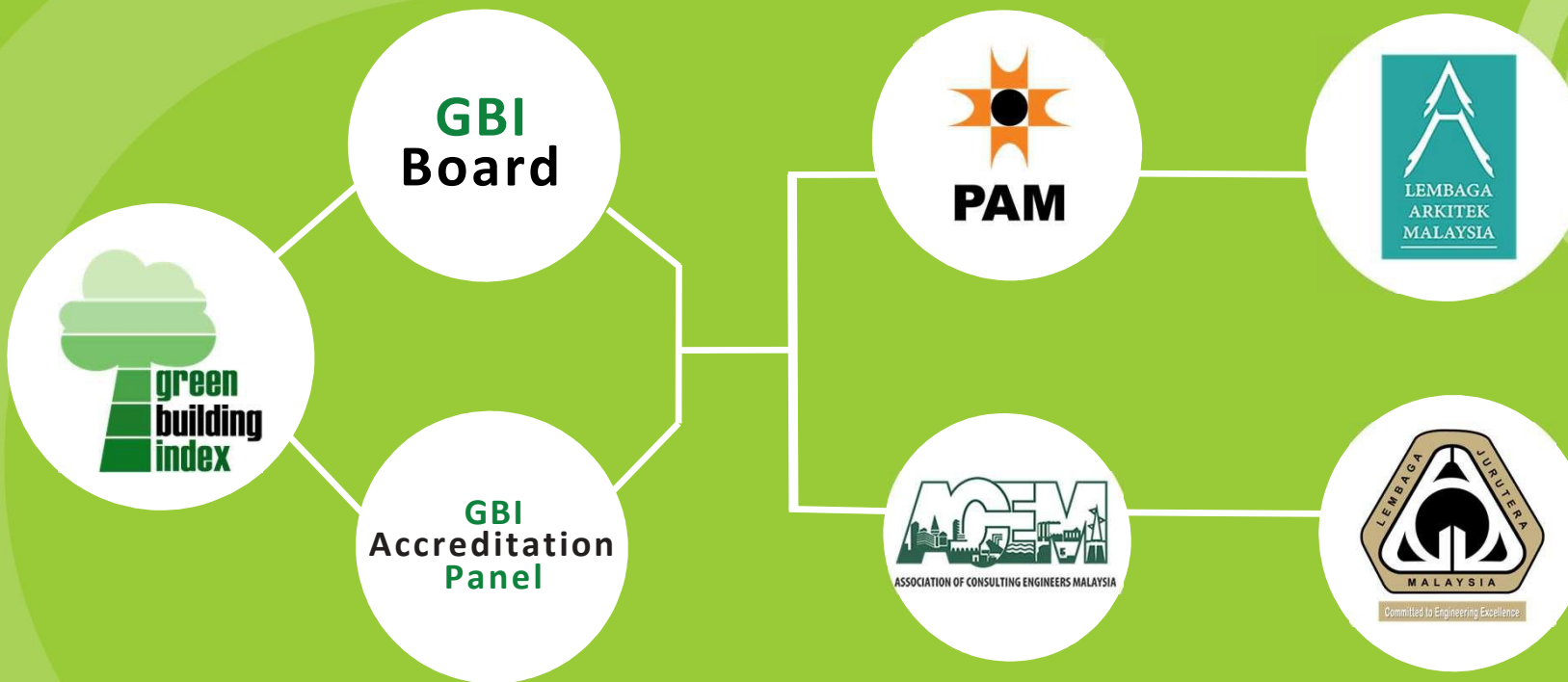
21. Green Key
22. Green Key Global
23. Green SL
24. Green Star
25. GBC - Home
26. GBC - Historic Building
27. GBC - Quartieri
28. GBC - Condomini
29. Green Star SA
30. Green Star SA Kenya

**World Green Building Council – recognized Global Green Rating Tools**



- |                                         |                                                |
|-----------------------------------------|------------------------------------------------|
| 31. GRESB                               | 46. PEARL (Abu Dhabi)                          |
| 32. Home Performance Index              | 47. PEER                                       |
| 33. Homestar                            | 48. RELi                                       |
| 34. HQE                                 | 49. Green Mark                                 |
| 35. ICP                                 | 50. Singapore GB Product Labelling             |
| 36. IGBC                                | 51. Singapore GB Services Certification Scheme |
| 37. ILFI Zero Energy & Zero Carbon      | 52. SITES                                      |
| 38. INSIDE/INSIDE                       | 53. Swiss DGNB System                          |
| 39. Korea Green Building Certification  | 54. TARSHEED                                   |
| 40. LOTUS                               | 55. TRUE                                       |
| 41. LEED                                | 56. VERDE                                      |
| 42. Miljöbyggnad                        | 57. The WELL Building Standard                 |
| 43. NABERSNZ                            | 58. Zero Waste                                 |
| 44. Pakistan GB Guideline (PGBG) BD + C |                                                |
| 45. Parksmart                           |                                                |

**World Green Building Council – recognized Global Green Rating Tools**



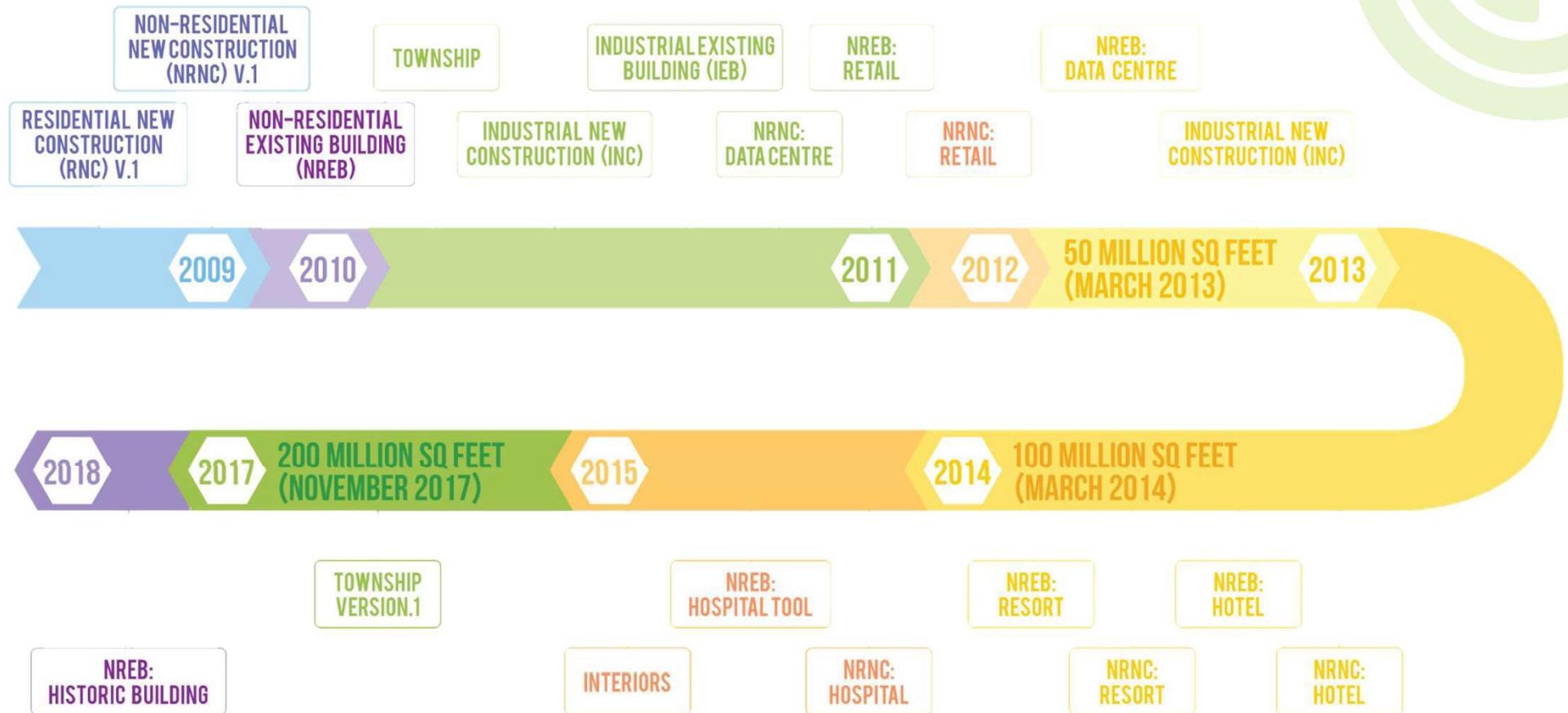
**GBIC  
Certifiers**

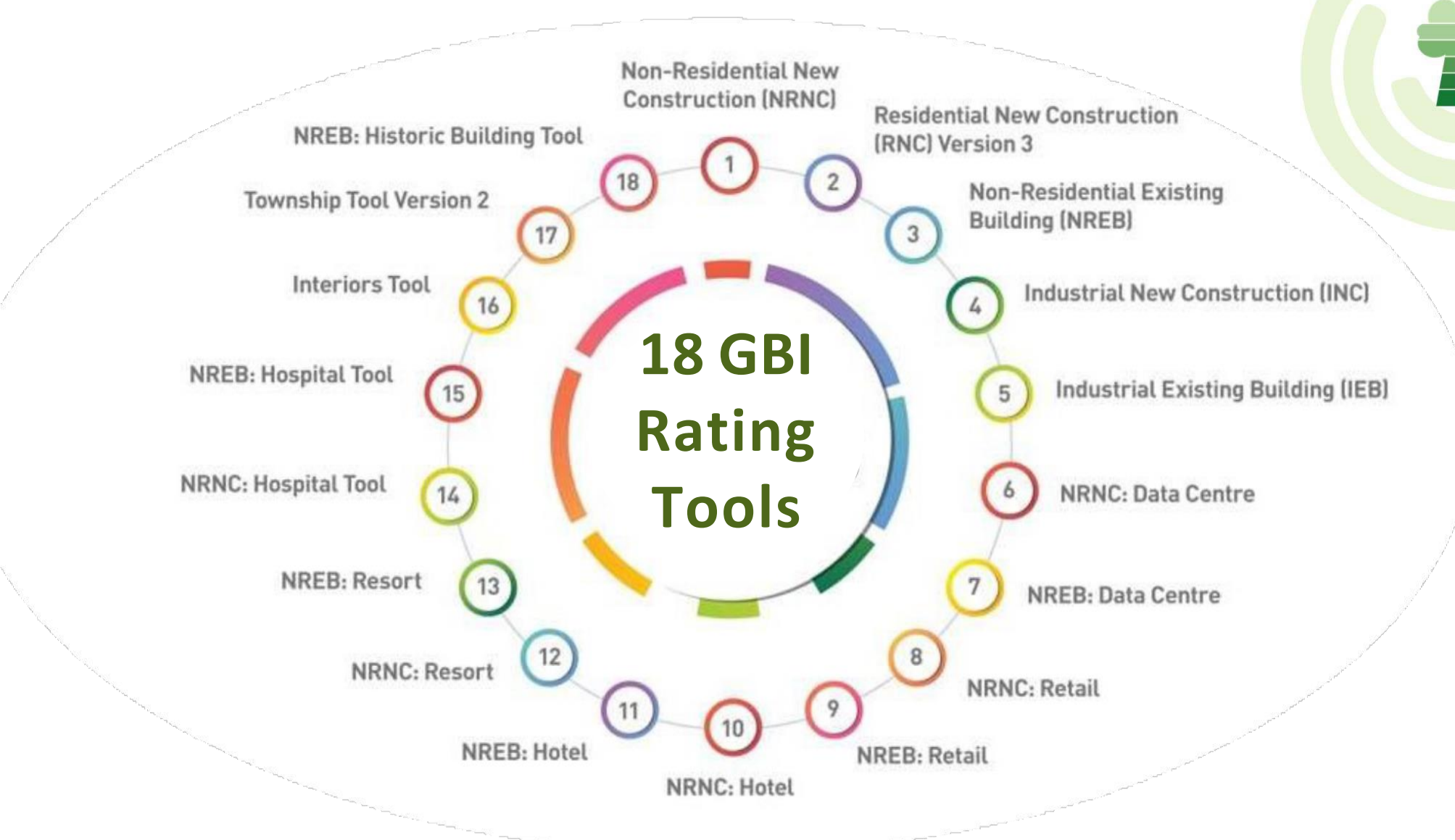
**GBIAP  
Accreditation Panel  
Independent Review  
PAM, ACEM, MIID, ILAM,  
RISM, MIP**

**GBI Joint Initiative  
of PAM & ACEM**

**Lembaga Arkitek  
Malaysia  
Endorsing Body**

# Green Building Index Milestones





Non-Residential New Construction (NRNC)

Residential New Construction (RNC) Version 3

Non-Residential Existing Building (NREB)

Industrial New Construction (INC)

Industrial Existing Building (IEB)

NRNC: Data Centre

NREB: Data Centre

NRNC: Retail

NREB: Retail

NRNC: Hotel

NREB: Hotel

NRNC: Resort

NREB: Resort

NRNC: Hospital Tool

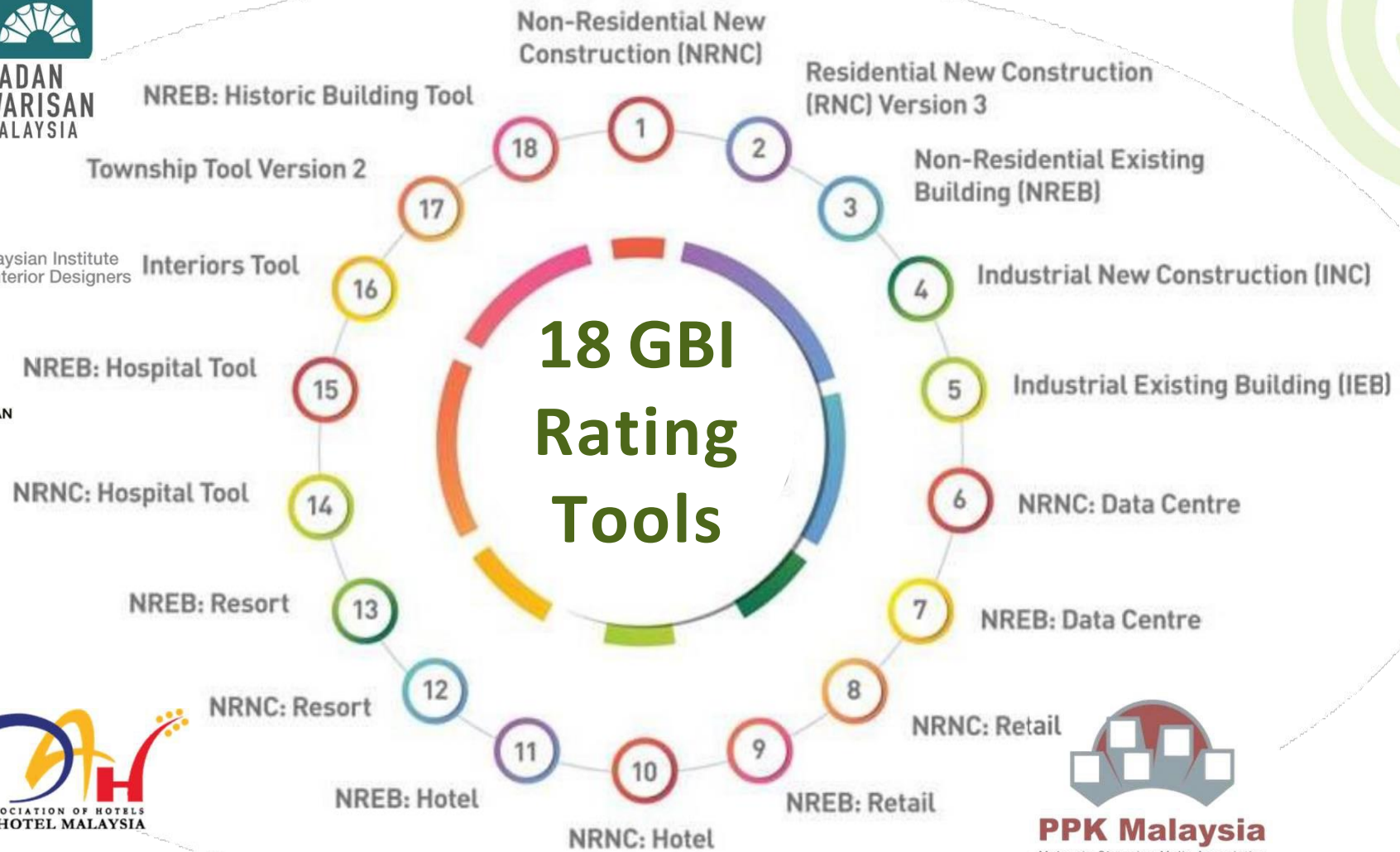
NREB: Hospital Tool

Interiors Tool

Township Tool Version 2

NREB: Historic Building Tool

# 18 GBI Rating Tools

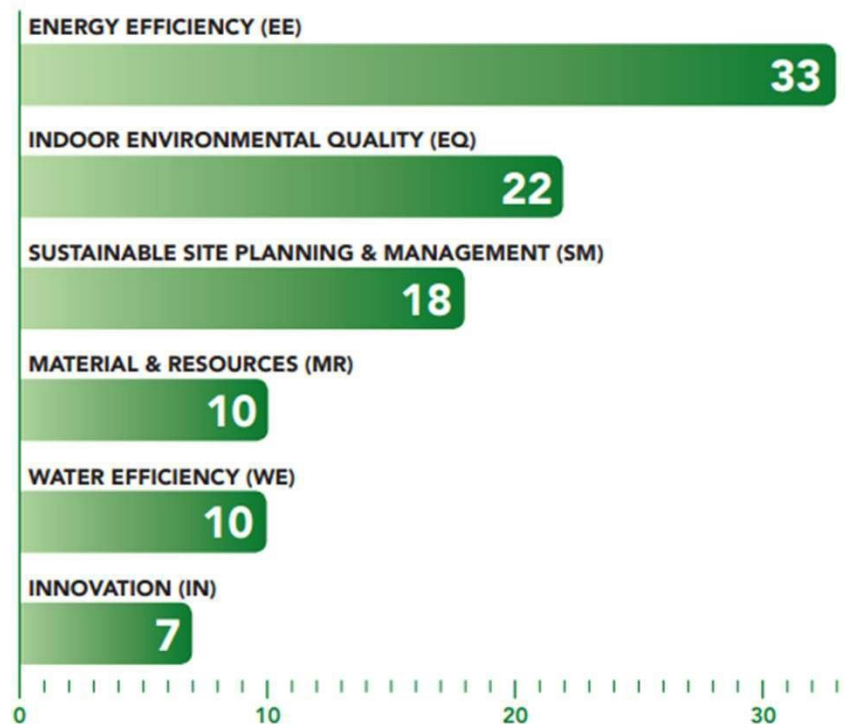


# GBI Industrial Rating Tools

## INDUSTRIAL NEW CONSTRUCTION (INC)

The INC Rating Tool adopts the established 6 GBI criteria with emphasis placed on Energy Efficiency and Indoor Environmental Quality (IEQ). These have the greatest impact on energy use and the well-being of occupants and workers in the industrial building. On-site energy capture and improvement in process-energy-use are given prominence with provision of breakout space to reduce workers' fatigue. Proximity to cargo transportation also reduces environmental pollution. The tool evaluates some credits prescriptively but the majority of credits are performance based.

### GBI POINTS ALLOCATION CHART (INC)



# GBI Industrial Rating Tools

## INDUSTRIAL EXISTING BUILDING (IEB)

The IEB Rating Tool evaluates the sustainability aspects of existing industrial buildings including their processes. Additional credits are given to encourage higher Energy Efficiency which is still lacking priority because of subsidised energy tariffs. The prominence and importance of IEQ is maintained to ensure the well-being and productivity of the occupants and workers. Credit points are also increased for Water Efficiency and Innovation to encourage improvement and modification. Facility Management is introduced to inculcate good sustainable management practices. This will improve environmental protection through the appropriate the use of chemicals, pesticides and procurement policies.

### GBI POINTS ALLOCATION CHART (IEB)



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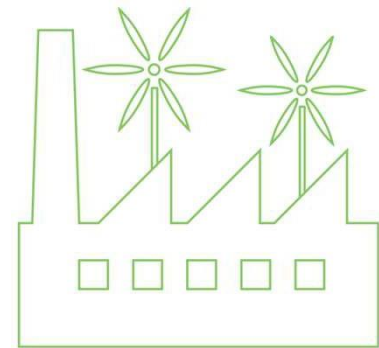
## Why Green Factories?

The industrial sector consumes over 40% of the final energy use in Malaysia. In terms of electricity, this sector consumes almost 50% of the national electricity production which is equal to the combined consumption of the commercial and domestic sectors. These statistics point to the importance and need for greening the factories to achieve a sustainable built environment. Since the successful launch of GBI, industrial players have expressed keen interest to green their factories. To cater for this demand, GBI worked with the Federation of Malaysian Manufacturers (FMM) to develop a rating tool with flexibility to suit all types of factories prevalent in Malaysia. The resultant Industrial New Construction (INC) Tool includes the assessment of industrial resources and processes, unlike other international rating tools which tend to only evaluate the sustainable aspects of buildings.



## WHAT ABOUT OLD FACTORIES?

Existing buildings constitute more than 90% of the building stock and this statistics also applies to the industrial building stock. GBI recognises that Company Corporate Policy and demand by Importers are increasing the pressure to green existing factories. To meet this need, GBI launched both the INC and IEB simultaneously in 2011 – a first by any global green rating tool.



# Industrial New Construction (INC)



| PART | CRITERIA                   | ITEM                                                 | POINTS | TOTAL |
|------|----------------------------|------------------------------------------------------|--------|-------|
| 1    | EE                         | ENERGY EFFICIENCY                                    |        |       |
|      | Design & Performance       |                                                      |        | 33    |
|      | EE1                        | Minimum EE Performance                               | 1      |       |
|      | EE2                        | Lighting Zoning                                      | 3      |       |
|      | EE3                        | Electrical Sub-metering                              | 1      |       |
|      | EE4                        | Renewable Energy & Onsite Energy Capture/Recovery    | 8      |       |
|      | EE5                        | Advanced or Improved EE Performance - BEI and/or EUI | 10     |       |
|      | Commissioning              |                                                      |        |       |
|      | EE6                        | Enhanced Commissioning                               | 4      |       |
|      | EE7                        | On-going Post Occupancy Commissioning                | 2      |       |
|      | Verification & Maintenance |                                                      |        |       |
|      | EE8                        | EE Verification                                      | 2      |       |
| EE9  | Sustainable Maintenance    | 2                                                    |        |       |

|              |                                             |                                                      |   |
|--------------|---------------------------------------------|------------------------------------------------------|---|
| 2            | EQ                                          | INDOOR ENVIRONMENTAL QUALITY                         |   |
|              | Air Quality                                 |                                                      |   |
|              | EQ1                                         | Minimum IAQ Performance                              | 1 |
|              | EQ2                                         | Environmental Tobacco Smoke (ETS) Control            | 1 |
|              | EQ3                                         | Carbon Dioxide Monitoring and Control                | 1 |
|              | EQ4                                         | Indoor Air Pollutant & Industrial Chemical Exposure  | 3 |
|              | EQ5                                         | Mould Prevention                                     | 1 |
|              | Occupant Comfort                            |                                                      |   |
|              | EQ6                                         | Thermal Comfort: Design & Controllability of Systems | 2 |
|              | EQ7                                         | Air Change Effectiveness                             | 1 |
|              | EQ8                                         | Breakout Spaces                                      | 1 |
|              | Lighting, Visual & Acoustic Comfort         |                                                      |   |
|              | EQ9                                         | Daylighting                                          | 2 |
|              | EQ10                                        | Daylight Glare Control                               | 1 |
|              | EQ11                                        | Electric Lighting Levels                             | 1 |
|              | EQ12                                        | High Frequency Ballasts                              | 1 |
|              | EQ13                                        | External Views                                       | 2 |
| EQ14         | Internal Noise Levels                       | 1                                                    |   |
| Verification |                                             |                                                      |   |
| EQ15         | IAQ Before & During Occupancy               | 2                                                    |   |
| EQ16         | Post Occupancy Comfort Survey: Verification | 1                                                    |   |
|              |                                             | 22                                                   |   |



| PART | CRITERIA                | ITEM                                                 | POINTS | TOTAL |
|------|-------------------------|------------------------------------------------------|--------|-------|
| 3    | SM                      | SUSTAINABLE SITE PLANNING & MANAGEMENT               |        |       |
|      | Site Planning           |                                                      |        | 18    |
|      | SM1                     | Site Selection                                       | 1      |       |
|      | SM2                     | Brownfield Redevelopment                             | 1      |       |
|      | SM3                     | Development Density & Community Connectivity         | 2      |       |
|      | SM4                     | Environment Management                               | 2      |       |
|      | SM5                     | Noise Pollution                                      | 1      |       |
|      | Construction Management |                                                      |        |       |
|      | SM6                     | Earthworks - Construction Activity Pollution Control | 1      |       |
|      | SM7                     | QLASSIC                                              | 1      |       |
|      | SM8                     | Workers' Site Amenities                              | 1      |       |
|      | Transportation          |                                                      |        |       |
|      | SM9                     | Public Transportation Access & Transportation Plan   | 1      |       |
|      | SM10                    | Green Vehicle Priority                               | 1      |       |
|      | SM11                    | Parking Capacity                                     | 1      |       |
|      | SM12                    | Cargo Delivery Route and Proximity                   | 1      |       |
|      | Design                  |                                                      |        |       |
|      | SM13                    | Stormwater Design – Quality & Quantity               | 1      |       |
| SM14 | Greenery & Roof         | 2                                                    |        |       |
| SM15 | Building User Manual    | 1                                                    |        |       |



|     |                              |                                          |   |    |
|-----|------------------------------|------------------------------------------|---|----|
| 4   | MR                           | MATERIALS & RESOURCES                    |   | 10 |
|     | Reused & Recycled Materials  |                                          |   |    |
|     | MR1                          | Materials Reuse and Selection            | 2 |    |
|     | MR2                          | Recycled Content Materials               | 2 |    |
|     | Sustainable Resources        |                                          |   |    |
|     | MR3                          | Regional Materials                       | 1 |    |
|     | MR4                          | Sustainable Timber                       | 1 |    |
|     | Waste Management             |                                          |   |    |
|     | MR5                          | Storage & Collection of Recyclables      | 1 |    |
|     | MR6                          | Construction Waste Management            | 2 |    |
|     | Green Products               |                                          |   |    |
| MR7 | Refrigerants & Clean Agents  | 1                                        |   |    |
| 5   | WE                           | WATER EFFICIENCY                         |   | 10 |
|     | Water Harvesting & Recycling |                                          |   |    |
|     | WE1                          | Rainwater Harvesting                     | 2 |    |
|     | WE2                          | Water Recycling                          | 2 |    |
|     | Increased Efficiency         |                                          |   |    |
|     | WE3                          | Water Efficient - Irrigation/Landscaping | 2 |    |
|     | WE4                          | Water Reduction                          | 2 |    |
|     | WE5                          | Metering & Leak Detection System         | 2 |    |



|              |     |                                               |   |     |
|--------------|-----|-----------------------------------------------|---|-----|
| 6            | IN  | INNOVATION                                    |   |     |
|              | IN1 | Innovation & Environmental Design Initiatives | 6 | 7   |
|              | IN2 | Green Building Index Facilitator              | 1 |     |
| TOTAL POINTS |     |                                               |   | 100 |



# Industrial Existing Building (IEB)



| PART | CRITERIA                              | ITEM                                                 | POINTS | TOTAL |
|------|---------------------------------------|------------------------------------------------------|--------|-------|
| 1    | EE                                    | ENERGY EFFICIENCY                                    |        |       |
|      | Design & Performance                  |                                                      |        | 38    |
|      | EE1                                   | Minimum EE Performance                               | 2      |       |
|      | EE2                                   | Lighting Zoning                                      | 3      |       |
|      | EE3                                   | Electrical Sub-metering                              | 2      |       |
|      | EE4                                   | Renewable Energy & Onsite Energy Capture             | 8      |       |
|      | EE5                                   | Advanced or Improved EE Performance - BEI and/or EUI | 10     |       |
|      | Commissioning                         |                                                      |        |       |
|      | EE6                                   | Enhanced or Re-Commissioning or Retro Commissioning  | 5      |       |
|      | EE7                                   | On-going Post Occupancy Commissioning                | 2      |       |
|      | Monitoring, Improvement & Maintenance |                                                      |        |       |
|      | EE8                                   | EE Monitoring & Improvement                          | 2      |       |
|      | EE9                                   | Sustainable Maintenance                              | 4      |       |

|      |                                             |                                             |   |    |
|------|---------------------------------------------|---------------------------------------------|---|----|
| 2    | EQ                                          | INDOOR ENVIRONMENTAL QUALITY                |   | 22 |
|      | Air Quality                                 |                                             |   |    |
|      | EQ1                                         | Minimum IAQ Performance                     | 1 |    |
|      | EQ2                                         | Environmental Tobacco Smoke (ETS) Control   | 1 |    |
|      | EQ3                                         | Carbon Dioxide Monitoring and Control       | 1 |    |
|      | EQ4                                         | Indoor Air Pollutant & Industrial Chemicals | 3 |    |
|      | EQ5                                         | Mould Prevention                            | 1 |    |
|      | Occupant Comfort                            |                                             |   |    |
|      | EQ6                                         | Thermal Comfort: Controllability of Systems | 2 |    |
|      | EQ7                                         | Air Change Effectiveness                    | 1 |    |
|      | EQ8                                         | Breakout Space                              | 1 |    |
|      | Lighting, Visual & Acoustic Comfort         |                                             |   |    |
|      | EQ9                                         | Daylighting                                 | 2 |    |
|      | EQ10                                        | Daylight Glare Control                      | 1 |    |
|      | EQ11                                        | Electric Lighting Levels                    | 1 |    |
|      | EQ12                                        | High Frequency Ballasts                     | 1 |    |
|      | EQ13                                        | External Views                              | 2 |    |
|      | EQ14                                        | Internal Noise Levels                       | 1 |    |
|      | Verification                                |                                             |   |    |
| EQ15 | IAQ Before & During Occupancy               | 2                                           |   |    |
| EQ16 | Post Occupancy Comfort Survey: Verification | 1                                           |   |    |



| PART | CRITERIA                  | ITEM                                                               | POINTS | TOTAL |
|------|---------------------------|--------------------------------------------------------------------|--------|-------|
| 3    | SM                        | SUSTAINABLE SITE PLANNING & MANAGEMENT                             |        |       |
|      | Facility Management       |                                                                    |        | 10    |
|      | SM1                       | GBI Rated Design & Construction                                    | 1      |       |
|      | SM2                       | Building Exterior Management                                       | 1      |       |
|      | SM3                       | Integrated Pest Management, Erosion Control & Landscape Management | 1      |       |
|      | Transportation            |                                                                    |        |       |
|      | SM4                       | Green Vehicle Priority                                             | 1      |       |
|      | SM5                       | Parking Capacity                                                   | 1      |       |
|      | Reduce Heat Island Effect |                                                                    |        |       |
|      | SM6                       | Greenery & Roof                                                    | 4      |       |
| SM7  | Building User Manual      | 1                                                                  |        |       |



|     |                                              |                                               |   |    |
|-----|----------------------------------------------|-----------------------------------------------|---|----|
| 4   | MR                                           | MATERIALS & RESOURCES                         |   | 8  |
|     | Reused & Recycled Materials                  |                                               |   |    |
|     | MR1                                          | Materials Reuse and Selection                 | 1 |    |
|     | MR2                                          | Recycled Content Materials                    | 1 |    |
|     | Sustainable Materials & Resources and Policy |                                               |   |    |
|     | MR3                                          | Sustainable Timber                            | 1 |    |
|     | MR4                                          | Sustainable Purchasing Policy                 | 1 |    |
|     | Waste Management                             |                                               |   |    |
|     | MR5                                          | Storage, Collection & Disposal of Recyclables | 3 |    |
|     | Green Products                               |                                               |   |    |
| MR6 | Refrigerants & Clean Agents                  | 1                                             |   |    |
| 5   | WE                                           | WATER EFFICIENCY                              |   | 12 |
|     | Water Harvesting & Recycling                 |                                               |   |    |
|     | WE1                                          | Rainwater Harvesting                          | 3 |    |
|     | WE2                                          | Water Recycling                               | 3 |    |
|     | Increased Efficiency                         |                                               |   |    |
|     | WE3                                          | Water Efficient - Irrigation/Landscaping      | 2 |    |
|     | WE4                                          | Water Efficient Fittings                      | 2 |    |
|     | WE5                                          | Metering & Leak Detection System              | 2 |    |



| 6            | IN  | INNOVATION                             |   |     |
|--------------|-----|----------------------------------------|---|-----|
|              | IN1 | Innovation & Environmental Initiatives | 9 | 10  |
|              | IN2 | Green Building Index Facilitator       | 1 |     |
| TOTAL POINTS |     |                                        |   | 100 |





## 6 Main Criteria

Covering everything from EE to Innovation, with all the latest Malaysian Standards and meet International level of certification.





# 02

## GBI Project Numbers



GREENING MALAYSIA ONE BUILDING AT A TIME

300

MILLION SQUARE FEET  
OF CERTIFIED GREEN BUILDINGS

 **greenbuildingindex**

Officiated by

**YB TUAN NGA KOR MING**  
MINISTER OF LOCAL GOVERNMENT DEVELOPMENT





As of June 2024,

**696 Projects Certified**

(1,306 Projects applied)

**29.1 Million Square Meters**

(313.1 Million sqft)

**1,815,000 tCO2E/Annum**





# GBI REGISTERED PROJECTS

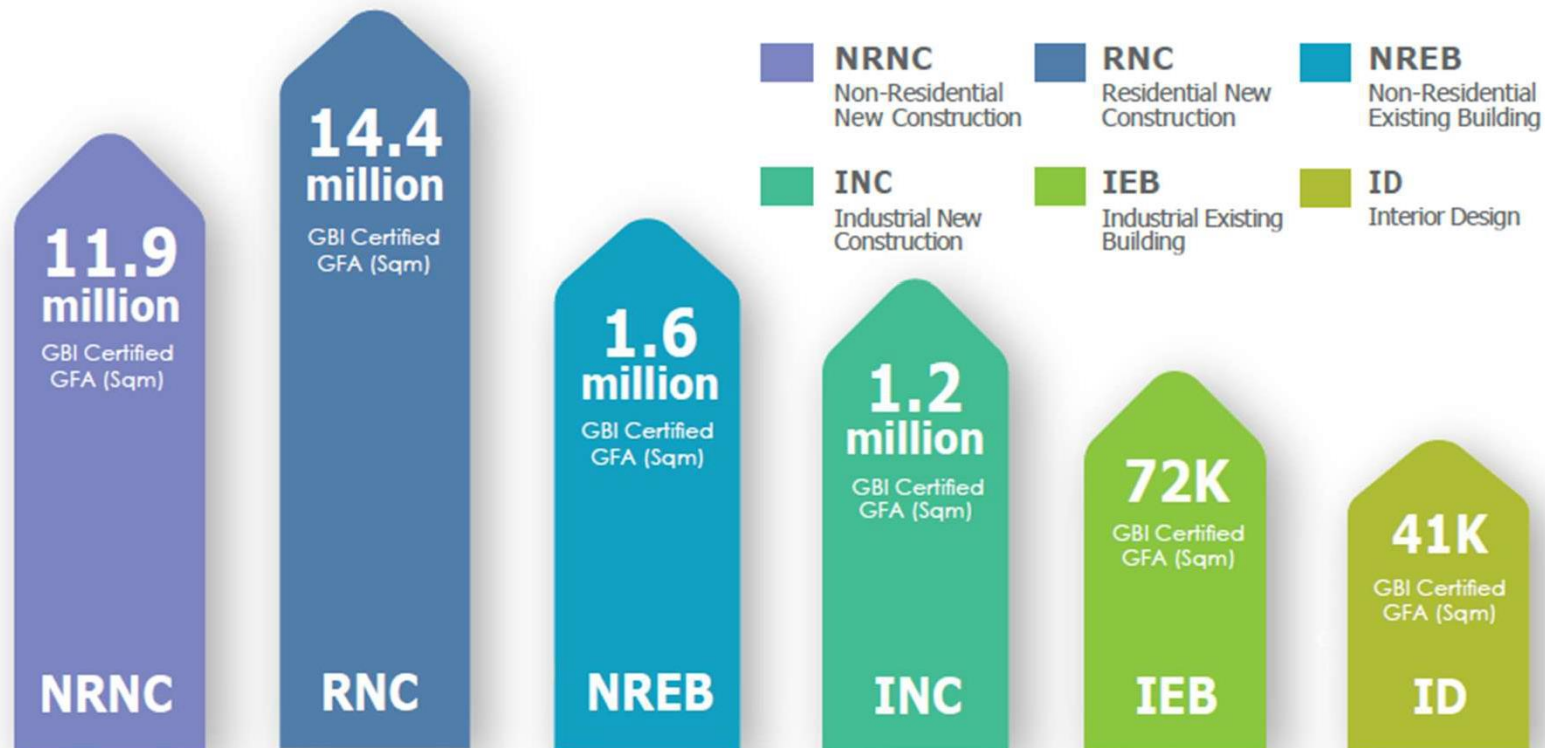
| Stage                               | Applied      | Registered   | Total Certified   | Provisional Certification DA/PA | Final Planning Certification FPA | Final Certification CVA | Renewal Certification RVA |
|-------------------------------------|--------------|--------------|-------------------|---------------------------------|----------------------------------|-------------------------|---------------------------|
| NRNC                                | 687          | 643          | 353 (51%)         | 220                             | N/A                              | 100                     | 33                        |
| RNC                                 | 407          | 383          | 240 (35%)         | 143                             | N/A                              | 97                      | -                         |
| NREB                                | 76           | 71           | 37 (5%)           | 17                              | N/A                              | 13                      | 7                         |
| INC                                 | 87           | 79           | 36 (4%)           | 26                              | N/A                              | 6                       | 4                         |
| IEB                                 | 10           | 9            | 4 (1%)            | 1                               | N/A                              | 2                       | 1                         |
| ID                                  | 15           | 15           | 11 (2%)           | 3                               | N/A                              | 8                       | -                         |
| T                                   | 24           | 23           | 15 (2%)           | 11                              | 4                                | -                       | -                         |
| <b>Total as of<br/>30 June 2024</b> | <b>1,306</b> | <b>1,223</b> | <b>696 (100%)</b> | <b>421</b>                      | <b>4</b>                         | <b>226</b>              | <b>45</b>                 |

## GBI REGISTRY- BY RATING LEVEL

| RATING LEVEL                            | PLATINUM<br>GLOBAL EXCELLENCE<br>86-100Points | GOLD<br>NATIONAL EXCELLENCE<br>76-85Points | SILVER<br>EXCELLENT PRACTICE<br>66-75Points | CERTIFIED<br>GOOD PRACTICE<br>50-65Points | Total Certified |
|-----------------------------------------|-----------------------------------------------|--------------------------------------------|---------------------------------------------|-------------------------------------------|-----------------|
|                                         |                                               |                                            |                                             |                                           |                 |
| NRNC                                    | 17                                            | 69                                         | 49                                          | 218                                       | 353             |
| RNC                                     | 6                                             | 43                                         | 20                                          | 171                                       | 240             |
| NREB                                    | 1                                             | 3                                          | 2                                           | 31                                        | 37              |
| INC                                     | -                                             | 6                                          | 8                                           | 22                                        | 36              |
| IEB                                     | -                                             | 1                                          | -                                           | 3                                         | 4               |
| ID                                      | -                                             | 4                                          | 2                                           | 5                                         | 11              |
| T                                       | 1                                             | 3                                          | 4                                           | 7                                         | 15              |
| <b>Total as of<br/>30 June<br/>2024</b> | <b>25 (4%)</b>                                | <b>129 (19%)</b>                           | <b>85 (12%)</b>                             | <b>457 (65%)</b>                          | <b>696</b>      |

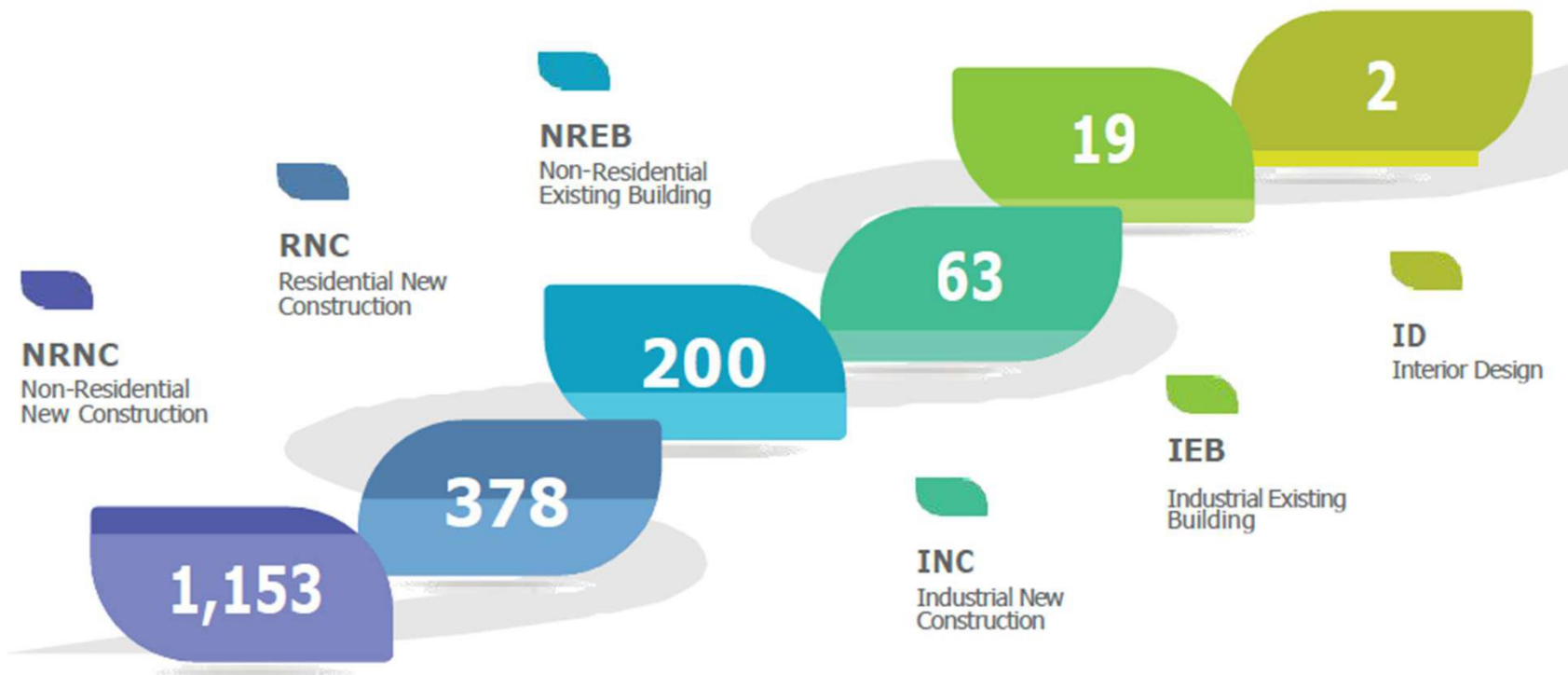


## GLOSS FLOOR AREA (GFA) OF GBI RATED BUILDINGS



Total as of 30 June 2024 : **29.1 million sqm (313.1 million sqft)**

# CARBON DIOXIDE (CO<sub>2</sub>) EMISSION REDUCTION OF GBI RATED BUILDINGS



**Total as of**  
30 June  
2024 : **1,815**

CO<sub>2</sub> Emission Reduction : (ktCO<sub>2</sub>e/annum, based on electricity energy reduction only @ 1kWh = 0.780kg CO<sub>2</sub>  
- Peninsular / 0.222 kg CO<sub>2</sub>- Sarawak / 0.527 kg CO<sub>2</sub>- Sabah )

# GBI PROJECTS BY STATES/TERRITORIES



## Nos. Registered

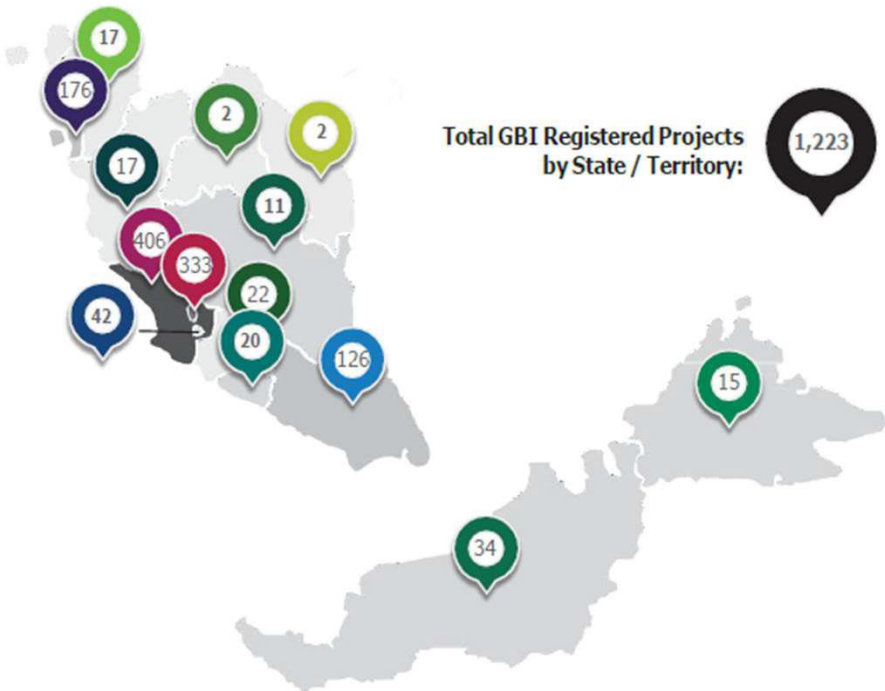


## Nos. Rated

## GBI PROJECTS REGISTERED BY STATES/TERRITORIES



GBI Project **Registered** - by State/Territory



GBI Project **Rated** - by State/Territory



Number of projects: 0 1 - 10 10 - 50 50 - 100 100 - 150 150 - 200 200 - 250 250 - 300



# 03

## Capacity Building





# GBI FACILITATOR COURSE : OBJECTIVE & EXAMINATION

## OBJECTIVE

The GBI Facilitator Program is a training that covers all aspects of the GBI certification process for buildings, including all the tools and application procedures. The GBI Facilitator Program is open to all. Completion of the full program is required for participants to qualify for the GBI Facilitator Examination. A participant must attend not less than nine (9) modules of the GBI Facilitator Course to complete the program.

## EXAMINATION

Only those who intend to be GBI Facilitators need to sit for the examination, comprising a one hour multiple choice question (MCQ) examination; and a group project presentation. The pre-requisite for the examination is 75% of the course attendance.

# GBI FACILITATOR COURSE : PROGRAMME

(SUBJECT TO CHANGE BASED ON  
AVAILAIBILITY OF THE SPEAKERS)

| TIME              | Day 1<br>Webinar 1<br>Introduction of GBI, Rating<br>Tools & Green Cost | Day 2<br>Webinar 2<br>Passive Design in GBI<br>Tools               | Day 3<br>Webinar 3<br>Active Design in GBI Tools | Exam &<br>Presentation<br>Day              |  |
|-------------------|-------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------|--|
| 08.00AM - 08.30AM | Registration                                                            |                                                                    |                                                  |                                            |  |
| 08.30AM - 09.00AM | Introduction to GBI<br>& Township                                       | Passive Design                                                     | EE HVAC Systems &<br>Design                      | Online MCQ                                 |  |
| 09.00AM - 09.30AM |                                                                         |                                                                    |                                                  |                                            |  |
| 09.30AM - 10.00AM | Introduction to<br>RNC v3                                               | Building Envelope                                                  |                                                  |                                            |  |
| 10.00AM - 10.30AM |                                                                         |                                                                    |                                                  |                                            |  |
| 10.30AM - 10.45AM | Tea Break                                                               |                                                                    |                                                  |                                            |  |
| 10.45AM - 11.15AM | Intro to NRNC, NREB and<br>NRNC Genetic Tools                           | Building Envelope                                                  | EE Lighting                                      | Group Assignment<br>Presentation/Examiners |  |
| 11.15AM - 11.45AM |                                                                         |                                                                    |                                                  |                                            |  |
| 11.45AM - 12.15PM | Water Efficiency                                                        | Intro to Interior Tools                                            | Renewable Energy                                 |                                            |  |
| 12.15AM - 12.45PM |                                                                         |                                                                    |                                                  |                                            |  |
| 12.45PM - 01.45PM | Lunch & Friday Prayer                                                   | Lunch                                                              |                                                  |                                            |  |
| 01.45PM - 02.15PM |                                                                         |                                                                    |                                                  |                                            |  |
| 02.15PM - 02.45PM | Project Green Cost<br>Preparation & Tax<br>Incentives                   | Indoor Environmental<br>Quality/Daylight<br>& Ventilation/Acoustic | BEI/EUI/PUE/MDL                                  |                                            |  |
| 02.45PM - 03.15PM |                                                                         |                                                                    |                                                  |                                            |  |
| 03.15PM - 03.45PM |                                                                         |                                                                    |                                                  |                                            |  |
| 03.45PM - 04.00PM | Tea Break                                                               |                                                                    |                                                  |                                            |  |
| 04.00PM - 04.30PM | GBI Procedure, Actual<br>Data<br>and Submission                         | Sustainable Site                                                   | Indoor Environment<br>Quality Advanced<br>(HVAC) |                                            |  |
| 04.30PM - 05.00PM |                                                                         |                                                                    |                                                  |                                            |  |
| 05.00PM - 05.30PM | Exam Briefing & Group<br>Project Discussion                             | Construction & Materials                                           | EE HVAC Strategies,<br>malaysiaGBC/GPM/AOB       |                                            |  |
| 05.30PM - 06.00PM |                                                                         |                                                                    |                                                  |                                            |  |





# GBI FACILITATOR COURSE : OBJECTIVE & EXAMINATION

## PRE-REQUISITES TO BE GBI FACILITATORS

Participants who intend to be GBI Facilitators must fulfill the following pre-requisites:

1. A registered professional member of Board of Architects, Board of Engineers or Board of Quantity Surveyors;

**OR**

A recognised degree in architecture, engineering, quantity surveying or other building related disciplines as approved by the GBI Accreditation Panel; and with a minimum of 3 years relevant working experience acceptable to the GBI Accreditation Panel;

**OR**

Other building practitioners with minimum of 5 years relevant working experience acceptable to the GBI Accreditation Panel;

**AND**

2. Successfully completed the GBI Facilitator Program and passing the examination.



## GBI FACILITATOR COURSE : STATISTICS

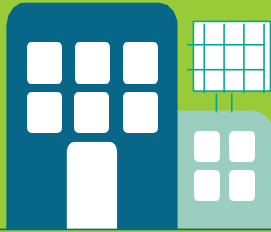
|                                                    |       |
|----------------------------------------------------|-------|
| <b>Total GBIF Courses<br/>(As of Jan 2024)</b>     | 52    |
| <b>Total Participants</b>                          | 3,271 |
| <b>Total Passed</b>                                | 2,012 |
| <b>Total Registered GBIFs<br/>(As of Jan 2024)</b> | 1,133 |



# 04

## Summary of Projects Submitted for Green Cost Tax Exemption

# Green Technology Incentive, Income Tax Act 1967



Investment Tax Allowance (ITA) Project (Own Consumption) + ITA Asset



(ITA) Project (business purposes) + Income Tax Exemption (ITE) for Solar Leasing



## National Budget 2024

- Green Investment Tax Allowance (GITA) Project (Own Consumption) merged with GITA Asset
- **GITA Project (Own Consumption) : New Applications to be submitted to MGTC within the stipulated timeframe (effective 1 Jan 2024 – 31 Dec 2026)**
  - Extension of period of the Green Investment Tax Allowance (GITA) Project for business purposes and Green Income Tax Exemption (GITE) for Solar Leasing until 31 Dec 2026

## BENEFITS OF GREEN

## INCREMENTAL COST OF GOING GREEN



| Projected data by Ir TL Chen in 2009; not verified |                                 | Average M'sian Bldg | Meets MS1525      | GBI Certified     | GBI Silver         | GBI Gold             | GBI Platinum     |
|----------------------------------------------------|---------------------------------|---------------------|-------------------|-------------------|--------------------|----------------------|------------------|
|                                                    | BEI kWh/m <sup>2</sup> .year    | 250                 | 200 - 220         | 150 - 180         | 120 - 150          | 100 - 120            | <100             |
|                                                    | Energy Savings %                | Base                | 10 - 20           | 30 - 40           | 40 - 50            | 50 - 60              | > 60             |
|                                                    | Incremental construction cost % | Base<br>2011        | 1 - 3<br>(0 - 3)* | 5 - 8<br>(1 - 5)* | 8 - 12<br>(3 - 8)* | 12 - 15<br>(5 - 10)* | >15<br>(6 - 13)* |

GBI data in 2014

Average

0.7 - 2%  
1%

2 - 4%  
3%

3.5 - 8%  
5%

6.5 - 11%  
8%

Incremental cost of GBI certification 2012 - 2019

Average

0 - 2%  
1.1%

1 - 3%  
1.8%

2 - 6%  
3.8%

5 - 10%  
Small sample

Data for Qualifying Green Cost for GITA up to 2022  
(not applicable for existing buildings)

Average

0.22 - 3%  
1.87%

1 - 5%  
2.97%

2 - 9%  
4.54%

5 - 11%  
8.7%  
Small sample



# 05

## EE Star Rating



## EE STAR RATING - BASED ON BEI/PUE/EUI AWARDED



| INC/IEB |     |         |                   |
|---------|-----|---------|-------------------|
| EE5     | BEI | EE Star | EUI % improvement |
| 0       | 250 | 0       | 0                 |
| 0       | 200 | 1       | 5                 |
| 1       | 180 | 1       | 10                |
| 3       | 150 | 2       | 25                |
| 4       | 140 | 3       | 30                |
| 5       | 130 | 3.5     | 35                |
| 6       | 120 | 4       | 40                |
| 7       | 110 | 4.5     | 45                |
| 8       | 100 | 5       | 50                |
| 10      | 90  | 5       | 55                |





# 06

## GBI Certified Projects



1

Lam Soon Distribution Centre  
RVA#3 Certified (INC)



2

**Artmatrix Factory  
RVA#2 Certified (INC)**



3

**Sena Diecasting Industries Sdn Bhd**  
**RVA#1 Certified (IEB)**



4

The Hershey Company  
RVA Gold (INC)



5

**New Pharmaceutical Plant for Ain Medicare (Ain 5)  
CVA Certified (INC)**



6

## IKEA Distribution Centre Port Klang, Malaysia CVA Silver (INC)





Greening Malaysia One Building At A Time

# Thank you!

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<https://www.greenbuildingindex.org>



<https://youtu.be/UNtudsyHonE>





MALAYSIA'S INTERNATIONAL GREEN BENCHMARK