Green Building Progress & Codes in Energy Efficiency

Ir. Rana Yusuf Nasir GP IPM

- Core Founder & Past Director of Green Building Council Indonesia
- Chief of Board of Experts MASKEEI – Indonesia Society for Energy Conservation & Efficiency
- Board of Governance ASHRAE Indonesia Chapter
- Founder PT Airkon Pratama
Green Movement
Road Map of Green Building Movement

- **2009**
  - Establishment GBCI

- **2010**
  - Launching Greenship Rating Tools

- **2012**
  - Jakarta Governor Decree No. 38/2012 for Green Building

- **2015**
  - Ministry Decree No. 2/2015 for Green Building
Government Role in Green Building & Energy Efficiency
JAKARTA GREEN BUILDING REGULATION
Governor Decree No.38/2012

GOAL & VALUE

AS A COMMITMENT FOR DECREASING CO2 EMISSION

BUILDING OWNER, TENANTS AND VISITOR
GREEN BUILDING DESIGN, CONSTRUCTION AND OPERATION
(covering: electricity, water, site design, IAQ, O&M)

GOAL SEGMENTS

OFFICE, MALL, APARTMENT
TOTAL FLOOR AREA ≥ 50.000 M²

HOTEL, HEALTH FACILITY
TOTAL FLOOR AREA ≥ 20.000 M²

EDUCATION FACILITY
TOTAL FLOOR AREA ≥ 10.000 M²
JAKARTA GREEN BUILDINGS

NEW BUILDING

EXISTING BUILDING

GOVERNOR DECREE FOR GREEN BUILDING MANDATORY

GREEN BUILDING CERTIFICATION BY GBCI VOLUNTARY
Ministry of Public Works & Housing Decree No.2/2015 for Green Building

- To be implemented at National Level
  - To all 34 provinces

- 3 Levels of Participation:
  - Mandatory: for big scale building (complex structure)
  - Recommended: for medium scale building
  - Voluntary: for small scale building (incl. housing)

- Certification
  - Will be done by each Local Government
  - No incentive policy yet

- Demonstration projects
  - 7 provinces appointed

- Projects scale:
  - Medium size
  - 1500 – 3000 m² floor area
  - 2 storey building
  - Just appropriate for ZEB

- Current status:
  - Retrofitting for existing buildings to achieve Green Building
  - Socialization to stakeholders at province level
  - Setting up infrastructure: capacity building for inspectors and professionals
Comparison of:

Green Building Rating Tools
<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>LEED NC</th>
<th>Green Mark NRB</th>
<th>GRESNSHIP NB</th>
<th>Permen PU No.2/2015</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of Credit</td>
<td>%</td>
<td>No. of Credit</td>
<td>%</td>
</tr>
<tr>
<td>Sites</td>
<td>26</td>
<td>23.6%</td>
<td>32</td>
<td>22.86%</td>
</tr>
<tr>
<td>Water</td>
<td>10</td>
<td>9.1%</td>
<td>14</td>
<td>10%</td>
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<tr>
<td>Energy</td>
<td>35</td>
<td>31.8%</td>
<td>79</td>
<td>56.43%</td>
</tr>
<tr>
<td>Material</td>
<td>14</td>
<td>12.3%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IEQ</td>
<td>15</td>
<td>13.6%</td>
<td>8</td>
<td>5.71%</td>
</tr>
<tr>
<td>Management</td>
<td>-</td>
<td>-</td>
<td>Incl in Site</td>
<td>-</td>
</tr>
<tr>
<td>Waste Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste Water</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation</td>
<td>6</td>
<td>5.5%</td>
<td>7</td>
<td>5%</td>
</tr>
<tr>
<td>Reg. Priority</td>
<td>4</td>
<td>3.6%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>110</td>
<td>100%</td>
<td>140</td>
<td>100%</td>
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</table>
# Green Building Certification Level

<table>
<thead>
<tr>
<th>BREEAM</th>
<th>LEED</th>
<th>Green Mark</th>
<th>GREENSHIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pass</td>
<td>Certified</td>
<td>Certified</td>
<td>Bronze</td>
</tr>
<tr>
<td></td>
<td>30 %</td>
<td>37 %</td>
<td>35 %</td>
</tr>
<tr>
<td>Good</td>
<td>Silver</td>
<td>Gold</td>
<td>Silver</td>
</tr>
<tr>
<td>45 %</td>
<td>46 %</td>
<td>54 %</td>
<td>46 %</td>
</tr>
<tr>
<td>Very Good</td>
<td>Gold</td>
<td>Gold Plus</td>
<td>Gold</td>
</tr>
<tr>
<td>55 %</td>
<td>55 %</td>
<td>61 %</td>
<td>57 %</td>
</tr>
<tr>
<td>Excellent</td>
<td>Platinum</td>
<td>Platinum</td>
<td>Platinum</td>
</tr>
<tr>
<td>70 %</td>
<td>72 %</td>
<td>65 %</td>
<td>73 %</td>
</tr>
</tbody>
</table>

## Permen PU No.2/2018

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Pratama</td>
<td>70 %</td>
</tr>
<tr>
<td>Madya</td>
<td>75 %</td>
</tr>
<tr>
<td>Utama</td>
<td>85 %</td>
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</tbody>
</table>
Building Industry Energy Efficiency Index (KWH/m2.yr)

[japan, JICA Study 2009]

[jakarta, IFC Study 2011]

Building here are not efficient yet !!!
Green Building achievement
Green Building Movements

GBCI CERTIFICATION

- GREENSHIP for New Building (NB)
  - Design Recognition: 25 Projects
  - Final Assessment (Certified): 24 Projects

- GREENSHIP for Existing Building (EB)
  - Design Recognition: (this step is N/A)
  - Final Assessment (Certified): 11 Projects

Resume:
- Registered Prospect: 74 Projects
- Final Certified: 35 Projects
## Total Certified Green Building

<table>
<thead>
<tr>
<th>Nama Proyek</th>
<th>NLA (m²)</th>
<th>Energy Saving</th>
<th>CO2 Reduction (Ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Building (Certified)</td>
<td>93,038</td>
<td>35.0%</td>
<td>10,265,259</td>
</tr>
<tr>
<td>Existing Building</td>
<td>421,209</td>
<td>11.2%</td>
<td>14,565,148</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>514,247</strong></td>
<td><strong>19.3%</strong></td>
<td><strong>24,830,406</strong></td>
</tr>
</tbody>
</table>
THANK YOU

“Start the change from now, to make better life in our earth”
EXTRA SLIDES
Green Building Council of Indonesia

- **Not for profit organization**
  - Starting by 7 initiator
  - Established: April 2008 by 50 core founder: individual professional and practitioner
  - Developer, designer, architect, building & facility management, contractor, supplier etc
  - Architects, mechanical & electrical engineer, interior designer, landscape and etc.
  - 20 corporate founding member

- GBCI is a Member of World Green Building Council (WGBC)
NEW BUILDING CERTIFIED

Gedung Bersertifikat GREENSHIP

Gedung Utama Kementerian PU, Jakarta

Energy saving: 43%

Kantor Manajemen Pusat PT. Dahana, Subang - Jawa Barat

Energy saving: 45%

PLATINUM
GREENSHIP New Building
Tertanggal: 20 Januari 2012

PLATINUM
GREENSHIP New Building
Tertanggal: Maret 2013
Gedung Bersertifikatat GREENSHIP

Gedung Kampus ITSB, Bekasi - Jawa Barat
GOLD
GREENSHIP New Building
Tertanggal: 28 Januari 2014

Energy saving: 33%

GOLD
GREENSHIP New Building
Tertanggal: 10 April 2013

Energy saving: 44%

Bank Indonesia Solo

GREENSHIP New Building
Tertanggal: 28 Januari 2014
Gedung Bersertifikat GROESNSHIP

**GOLD**
GRENSHIP New Building
Tertanggal : 23 Mei 2015

Energy saving : **44%**

Green Office Park 6, Serpong-Banten

**GOLD**
GRENSHIP New Building
Tertanggal : 13 November 2015

Energy saving : **41%**

Santa Fe Head Office
Indonesia, Karangongan-Bogor - Jawab Barat

**GOLD**
GRENSHIP New Building
Tertanggal : 13 November 2015
SILVER
GREENSHIP New Building
Tertanggal : 23 April 2015
Gedung Bersertifikatat GREENSHIP

Grand Indonesia Office Tower, Jakarta

Energy saving : 20%

Pasific Place Mall Jakarta

Energy saving : 8%

PLATINUM
GREENSHIP Existing Building
Tertanggal: 21 Desember 2011

PLATINUM
GREENSHIP Existing Building
Tertanggal: 5 Februari 2014
Gedung Bersertifikatat GREENSHIP

Energy saving : 30%

Graha Telkomsigma- Serpong
GOLD
GREENSHIP Existing Building
Tertanggal : 10 April 2013

Sampoerna Strategic Square,
Jakarta
GOLD
GREENSHIP Existing Building
Tertanggal: 10 September 2012
Gedung Bersertifikat GREENSHIP

Sequis Center, Jakarta
GOLD
GREENSHIP Existing Building
Tertanggal: 13 Juli 2015

Energy saving: 10%

Gedung Waskita, Jakarta
GOLD
GREENSHIP Existing Building
Tertanggal: 13 November 2015

Energy saving: 10%