GRIHA-Prakriti rating for Existing Day schools

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The GRIHA Summit 2014

GRIHA-Prakriti module

Training cum Rating module
Prakriti focuses on training and GRIHA is centred towards rating and assessment
GRIHA module of the rating

Applicability

• The rating has been designed for existing day schools – other typologies will follow soon

Process

• Teams of students to carry out the survey within the school, under the guidance of teachers
  – Simple excel sheets: self calculating forms
  – Simple survey forms to be use to collect information

• Experts will conduct comfort audit and verify the details collected by the students
Point split across different sections

- Energy: 20%
- Comfort: 20%
- Water: 24%
- Trees: 10%
- SWM: 10%
- Social: 16%

<table>
<thead>
<tr>
<th>Section</th>
<th>Maximum Points</th>
<th>Minimum Threshold (to achieve rating)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Energy</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Comfort</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Trees</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Solid Waste Management</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Social</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>25</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Points Achieved</th>
<th>Star Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 - 30</td>
<td>🟢</td>
</tr>
<tr>
<td>31 - 35</td>
<td>🟢🌟</td>
</tr>
<tr>
<td>36 - 40</td>
<td>🟢🌟🌟</td>
</tr>
<tr>
<td>41 - 45</td>
<td>🟢🌟🌟🌟</td>
</tr>
<tr>
<td>46 - 50</td>
<td>🟢🌟🌟🌟🌟</td>
</tr>
</tbody>
</table>
The Rating Parameters
CO₂ emissions are contributed by:

- Electricity used in building – from local grid/Diesel generators
- Fossil fuels burnt in vehicles for transportation
- Energy generated by renewable sources of energy lead to no CO₂ emissions

\[ \text{Per capita CO}_2 \text{ emissions} = \text{Building CO}_2 \text{ emissions} + \text{Transport CO}_2 \text{ emissions} \]

\[ \text{Total population of the school} \]
Reduction in Connected Load - kW

- The intent of this criterion is to promote retrofit of existing, inefficient internal artificial lighting systems, fans and HVAC (if applicable)

Efficient Outdoor Lights

- Outdoor lamps should be efficient and on automatic controls
Comfort

Visual Comfort

• The indoor spaces should have receive sufficient light for students
• Lighting levels as per National Building Code 2005
Thermal Comfort

• The indoor temperature and relative humidity levels should not exceed NBC 2005 recommendations

Acoustic Comfort

• Outdoor Noise levels on campus should meet CPCB norms
• Sound levels inside the classrooms should meet NBC 2005 norms
Indoor Air Quality

- CO and RSPM levels inside classrooms – only for Air-Conditioned rooms – should be within specified limits
Sufficient Water Availability

- There should be sufficient water for all students and teachers – but not excess

Sufficient Water Availability

Source: http://www.sxc.hu/profile/FleurSuijten

NBC and WHO thresholds

<table>
<thead>
<tr>
<th>Type</th>
<th>NBC recommended lpcd</th>
<th>Lower limit of lpcd as per WHO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>45</td>
<td>15</td>
</tr>
<tr>
<td>Teachers</td>
<td>45</td>
<td>15</td>
</tr>
<tr>
<td>Service Staff</td>
<td>45</td>
<td>15</td>
</tr>
<tr>
<td>Floating Population/Visitors</td>
<td>15</td>
<td>5</td>
</tr>
</tbody>
</table>
Rainwater Harvesting

- Recharge surplus rainwater through filtration into the ground
- It is critical to install a filtration system for the recharge

Water Quality

- The water used in the school should be clean and should meet BIS norms
- This is essential for maintaining hygiene standards in the school
Maintain hygienic conditions

- Maintain healthy sanitation inside the school campus for the students.
- The toilets in the campus should be clean, well-ventilated, free of odour, leaking taps should be fixed etc.

Trees
• The number of trees planted on site should meet the rating threshold

• Plant lots of local, native trees on site

<table>
<thead>
<tr>
<th>Site Area</th>
<th>Number of trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 250 sq.m.</td>
<td>2</td>
</tr>
<tr>
<td>Between 251 sq.m and 750 sq.m.</td>
<td>3</td>
</tr>
<tr>
<td>Site area greater than 750 sq.m.</td>
<td>1 tree per every 250 sq.m. of site area.</td>
</tr>
</tbody>
</table>
Segregation of Waste

• Multi-coloured dustbins in classrooms and infrastructure at school level for waste segregation

Recycle Organic and Inorganic Wastes

• Use strategies like Dailydump - Khamba, OWCs etc. to convert organic waste into manure/biogas etc. in campus
Social

- Built up area per capita – sq.m./capita – should comply with the GRIHA Prakriti threshold

1.1 sqm/capita < X < 8 sqm/capita
• Students should be engaged in more than 10 out-of-classroom environmental activities every year
• Universal Accessibility
• Community work

• Visual representation of energy and water consumption by the school for the students to observe.
• The school should meet Fire Safety norms
Innovation

Thank you

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