Green Rating for Integrated Habitat Assessment

Tool to facilitate design, construction, operation of a green building, and in turn ....measure “greenness” of a building in India

What gets measured gets managed
Key Highlights of GRIHA
Timeline for GRIHA ratings

TERI- GRIHA

GRIHA Council established

Adoption by:

Cities: Pune, Pimpri Chinchwad, Noida, Greater Noida

States: Delhi, Punjab, Goa, Sikkim

Organizations: CPWD, NBCC

2005

2007

2009

2016

MNRE support to GRIHA

GRIHA rating launched

About 700 projects registered - almost 280 million sq.ft. built up area

Over 30 projects rated 100 EoIs under process
Impact

- 30%-50% reduction in energy consumption compared to GRIHA benchmarks
- 40%-65% reduction in building water consumption compared to GRIHA base case
- At no/negligible incremental cost

Typical office building - 8 hour use

- Passive architectural design
- Daylight integration
- Shaded windows
- Roof insulation
- RE integration
- Solar water heaters
- Low flow fixtures
Current Impact of GRIHA rated projects (30)

Impact of the GRIHA programme

- Resource use optimization
- Social transformation
- Market transformation
- Green jobs
- Synergies across policies and programmes to implement objectives
- Enhancing capacities of stakeholders

Energy Savings = 74,000 MWh/annum

Renewable Energy installed = 14.5 MWp

CO₂ emissions offset = 78,516 tCO₂/annum
Growth trends of GRIHA rating system

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of projects</th>
<th>Built up area (mn sq ft)</th>
<th>Cumulative growth in no. of projects</th>
<th>Cumulative growth in built up area</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-09</td>
<td>13.6</td>
<td>45</td>
<td>13.6</td>
<td>0.0</td>
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<tr>
<td>2009-10</td>
<td>40</td>
<td>45</td>
<td>42.5</td>
<td>45.0</td>
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<tr>
<td>2010-11</td>
<td>85</td>
<td>18.4</td>
<td>80.7</td>
<td>227.5</td>
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<tr>
<td>2011-12</td>
<td>194</td>
<td>38.2</td>
<td>109</td>
<td>365.7</td>
</tr>
<tr>
<td>2012-13</td>
<td>296</td>
<td>26.9</td>
<td>107.6</td>
<td>638.6</td>
</tr>
<tr>
<td>2013-14</td>
<td>440</td>
<td>48.5</td>
<td>156.2</td>
<td>894.1</td>
</tr>
<tr>
<td>2014-15</td>
<td>638</td>
<td>75.3</td>
<td>231.5</td>
<td>1129.4</td>
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</tbody>
</table>
Trends in training programme
Evaluators and trainers

TOTAL Evaluators & Trainers

Total number of Evaluators - 560

Total number of trainers - 420

Engagement with Evaluators & Trainers

Engagement with Evaluators – 123

Total number of projects rated - 45
Associate Members
GRIHA Product Catalog -
## GRIHA Adoption till 2015

GRIHA has been adopted for implementation of sustainability in the built environment by the following organizations, cities and States:

<table>
<thead>
<tr>
<th>Cities</th>
<th>States</th>
<th>Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pune</td>
<td>Delhi</td>
<td>CPWD</td>
</tr>
<tr>
<td>Pimpri Chinchwad</td>
<td>Punjab</td>
<td>NBCC</td>
</tr>
<tr>
<td>Noida</td>
<td>Goa</td>
<td>OTDC</td>
</tr>
<tr>
<td>Greater Noida</td>
<td>Sikkim</td>
<td>Some PSUs (GAIL, BPCL)</td>
</tr>
<tr>
<td>Delhi</td>
<td>Rajasthan</td>
<td></td>
</tr>
<tr>
<td>Chandigarh</td>
<td>Assam</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kerala</td>
<td></td>
</tr>
<tr>
<td></td>
<td>West Bengal</td>
<td></td>
</tr>
</tbody>
</table>
GRIHA Projects’ Update & Linked Incentives

**Ministry of Urban Development (MoUD) gives 1% to 5% extra ground coverage and FAR for projects of more than 5,000 m² plot size on the basis of GRIHA evaluation.**

- **Noida & G.Noida**: 5% Additional FAR for projects of plot area > 5,000 m²
- **5% Additional FAR for projects of plot area > 5,000m²**

**GRIHA REGISTERED PROJECTS=700**

**GRIHA FOOTPRINT=28MN/M² (APP)**

**Audacity**: 5% discount on chargeable FAR payable to approving authority

- **PMO & POMC** (payable to Municipal Corporation) for both GRIHA & SVA GRIHA
- **PMO & POMC**: Up to 10% discount on Property Tax for home-owners for GRIHA projects. Up to 15% discount on Property Tax for home-owners for SVA GRIHA projects

**Others**
1. Fast track Environmental Clearance by Ministry of Environment, Forest and Climate Change (MoEF&CC) for GRIHA pre-certified projects.
2. Financial assistance of INR 5 lakh by Ministry of New and Renewable Energy (MNRE) for each of the proposed 100 Small Townships/Campus.
3. Concession on rate of interest (presently 5% basis point) by Small Industries Development Bank of India, SIDBI.

*The numbers indicated in the map represent registered projects for Rating with GRIHA Council.*
New activities and initiatives

- Scaling up current activities and servicing of registered projects.
- Strengthening relationship with Government at Centre and States
- Making online content more user friendly
- Engagement with end user to create awareness
- Upgrading and operationalizing GRIHA rating to version 2015
- Charitable activities of GRIHA Council and taking up CSR activities of other organizations
Contribution to Ongoing Programmes

- Smart Cities
- Atal Mission for Rejuvenation and Urban Transformation (AMRUT)
- Swachh Bharat
- 82 GW installed capacity of RE by 2022
- Sansad Adarsh Gram Yojana
- Housing for All
- Incorporates social aspects of sustainability

_**Pune launched ‘GRIHA’ as part of ‘Smarter City’ initiative**_
Challenges

Quality –
• Reviews are not of acceptable quality, revising all comments is time consuming.
• Review comments are not consistent.

Delay –
• Since there are multiple reviews the clients delay in providing review responses, often times they do not furnish any additional information.
• There is delay in receiving NDA from the Evaluators.

Proposed changes

Improving Facilitation - Change of name from Trainers to ‘Certified Professionals’

Change in steps process flow of GRIHA

Check the possibility of online NDA as soon as the evaluator logs in to his/her review account instead of paper based signatures.

Create Discussion Forums
Thank You