GRIHA LD GRIHA for Large Developments

Inception of GRIHA LD

The GRIHA Council, in association with The Energy and Resources Institute (TERI) and the Ministry of New and Renewable Energy (MNRE), has launched the Green Rating for Integrated Habitat Assessment (GRIHA) in order to address and promote green buildings in India. However, a need was felt to create a framework to assess the environmental performance of larger developments, the singular units which together make up cities - neighbourhoods/townships - and with this focus; GRIHA Council along with TERI has developed a rating system for large developments titled – GRIHA LD (Large Developments).

The intent of GRIHA LD is to provide a consolidated framework for assessment of environmental impacts of large scale developments.

Fee Structure

<table>
<thead>
<tr>
<th>Masterplan Rating &amp; Rating of Each Phase</th>
<th>Only Rating of Each Phase</th>
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<tbody>
<tr>
<td><strong>Masterplan rating:</strong></td>
<td><strong>First Phase:</strong></td>
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<tr>
<td>For the entire masterplan - Rs. 3,25,000/-</td>
<td>For First 50 hectares - Rs. 4,00,000/-</td>
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<tr>
<td>For every additional hectare in the phase (up to a maximum of 50 additional hectares per Phase) - Rs. 5,500/-</td>
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<td><strong>Per Phase (including first phase):</strong></td>
<td><strong>Each subsequent Phase (after first phase):</strong></td>
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<tr>
<td>For First 50 hectares - Rs. 3,00,000/-</td>
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<td>For every additional hectare in the phase (up to a maximum of 50 additional hectares per Phase) - Rs. 5,500/-</td>
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<td>**Taxes:**冯</td>
<td>Applicable</td>
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* Each Phase can have a maximum of 100 hectares of the area. The area above 100 hectares will be considered as a new phase.
** Graciously, the site can also be divided into phases. Fee for each phase will be Rs 3,00,000.
*** Only phase-wise rating can be taken, and phase-wise and masterplan rating can be taken together as per project requirements.
- A list of government laws.
- Fee for orientation workshop is included in the fees mentioned above.
- 50% travel and accommodation of GRIHA professionals is not included in the above cost and shall be arranged by the client.
- Conditions apply.

The overall rating for the project is awarded based on the overall impact reduction. The lower the overall impact percentage, the higher the rating for the project. The net impact on quantitative and qualitative parameters (In and Iq respectively) will be totalled and compared against the base case impact of 100 per cent. The following formula will be used for the same:

\[\text{Overall Impact} = I_c (\text{design case}) + I_q (\text{design case}) \times 100 / I_c (\text{base case}) + I_q (\text{base case})\]
WHAT IS GRIHA LD

All sites in their native state sustain various ecological cycles. Construction leads to disruption of various cycles, as well as exerts demand for various resources like energy, water, etc. Such construction practices have a detrimental impact on their surroundings: GRIHA LD framework stresses on two aspects; first – reduction of detrimental impacts of the projects on the surroundings and secondly, attempt to achieve self-sufficiency in aspects like energy, water, etc. Therefore, a development with low impact on its surroundings will achieve a higher GRIHA LD rating. In GRIHA LD, the development will be evaluated on two aspects; first – reduction of larger environmental issues and their effects that are brought out by the built environment.

Environmental Performance Assessment: for such projects go beyond the environmental design of each building and water, etc. Such construction practices have a detrimental impact on their surroundings. Development Quality aspects deal with the energy, water and organic solid waste) required/treated by the project and Development Quality. Self-sufficiency appraisals deal with total resources (energy, water and organic solid waste) required/treated by the project and Development Quality. Self-sufficiency appraisals.

GRIHA LD Framework

A GRIHA LD project is analyzed through two types of appraisals: Self-Sufficiency and Development Quality. Self-sufficiency appraisals deal with total resources (energy, water and organic solid waste) required/treated by the project and focuses on qualitative assessment. Development Quality aspects deal with qualitative analysis based on several parameters.

SURVIVAL CAPABILITY

• The impact on demand for resources is analyzed through Self-Sufficiency appraisals.
• The energy, water and solid waste management sections contain Net-Zero appraisals. In each section, a single resource parameter has been identified.

Development Quality Appraisals

• Each section includes several qualitative parameters which enable qualitative assessment of the development.
• For example, implementation of Smart Mini-Grids, meeting water quality norms, transport planning, planning for low-income group populations, etc.

Due Diligence III (Final site visit to check systems and equipment)

2 evaluations by external evaluators

Award of Provisional GRIHA Rating

Submission of Post Occupancy Audit Report and Award of Final Rating

Online Registration

Orientation Workshop

Due Diligence I (Site Management Compliance)

Due Diligence II (Building Compliance)

Submission of documentation to GRIHA for evaluation on completion of building

Self-Sufficiency Appraisals

Online Registration

Orientation Workshop

Access to online documentation tool

Receipt and Review of all documentation by GRIHA officials and external evaluators

Award of Masterplan rating

RATING PROCESS - Masterplan rating: It involves overall planning of resources at site level impact

RATING PROCESS - Phase-wise Rating: It involves detailed analysis of phases with building level analysis.

Carrying Capacity and Carbon Footprint

Resource Impact

Environmental Quality

- Storm Water Management
- Hazard Zoning, flood susceptibility
- Manage construction activities to reduce environmental damage
- New plantation on site

- Quality of water
- STP/Septic water treatment
- Rainwater recharge
- Low-flow fixtures
- CPM/CPG for plumbing and water treatment systems

- Handling and treatment of special waste
- Segregation and storage of waste on site
- Construction and demolition waste management

- Transport
- Provisions of footpaths and/or cycling tracks
- Road network planning
- Parking for cars and two wheelers
- Support of bus services
- Electric charging infrastructure for vehicles

- Water
- Factories for construction materials
- Social infrastructure in surrounding area
- Planning for slum clusters with high population density
- Planning for low-income group populations
- Food production on site

Due Diligence I (Final site visit to check systems and equipment)

2 evaluations by external evaluators

Award of Provisional GRIHA Rating

Submission of Post Occupancy Audit Report and Award of Final Rating

Online Registration

Orientation Workshop

Due Diligence I (Site Management Compliance)

Due Diligence II (Building Compliance)

Submission of documents to GRIHA for evaluation on completion of building

What is the need for GRIHA LD?

When a large project is planned and implemented, it comprises of multiple buildings and other infrastructural facilities, on a single site.

Emergence of new large-scale developments/ projects on the surroundings changes to ecology, natural habitats and environment at local, regional and global scales.

It is high time we pay heed to our planning practices and guidelines that are followed to plan large-developments and make them in such a way that they promote sustainable development and minimize adverse impact on environment.

Phase-wise Rating:

It involves detailed analysis of phases beyond the environmental design of each building and water, etc. Such construction practices have a detrimental impact on their surroundings. Development Quality aspects deal with the energy, water and organic solid waste) required/treated by the project and Development Quality. Self-sufficiency appraisals deal with total resources (energy, water and organic solid waste) required/treated by the project and Development Quality. Self-sufficiency appraisals.

All projects with total site area greater than or equal to 50 hectares (125 acres) may apply for a GRIHA LD rating:

Due Diligence III (Final site visit to check systems and equipment)

2 evaluations by external evaluators

Award of Provisional GRIHA Rating

Submission of Post Occupancy Audit Report and Award of Final Rating

Online Registration

Orientation Workshop

Due Diligence I (Site Management Compliance)

Due Diligence II (Building Compliance)

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Self-Sufficiency Appraisals

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