

## Tentative Agenda - GRIHA Training Programme for Evaluators & Trainers

Date: 5<sup>th</sup> to 7<sup>th</sup> March 2012

Venue: TERI University, Plot No. 10, Institutional Area, Vasant Kunj, New Delhi – 110 070

### 1st Day

|               |   |   |   |
|---------------|---|---|---|
| 09.30 - 10.00 | <b>Inaugural Session</b>                                    | Overview of GRIHA   | TERI, ADaRSH & BEE  |
| 10.00 - 11.45 | <b>Session-1: Sustainable Site planning Presentation</b>    | Criterion 1 Site selection<br>Criterion 2 Preserve and protect landscape during construction<br>Criterion 3 Soil conservation (till post-construction)<br>Criterion 4 Design to include existing site features<br>Criterion 5 Reduce hard paving on-site and/or provide shaded hard paved surfaces.<br>Criterion 7 Plan utilities efficiently and optimise on-site circulation efficiency<br>Criterion 8 Provide minimum level of sanitation/safety facilities for construction workers<br>Criterion 9 Reduce air pollution during construction | The session shall start with a detailed presentation on sustainable site planning criteria of GRIHA with examples .During the practical session, the participants shall be divided in to multiple groups by the facilitator. A design problem shall be given to the groups. The group shall be required to carry out a sustainable site planning exercise based on the problem. Scale models for varied site features (trees, lights, utility corridors) shall be used to carry out the exercise. The group representative shall be required to make a presentation on the proposed scheme by the respective group. The facilitator shall evaluate each scheme and give a critique on the same. |
| 11.45 - 12.00 | Tea Break   |   |   |
| 12.00 - 12.45 | Exercise on site planning                                   |   |   |
| 12.45 - 01.15 | Presentation by participants                                |   |   |
| 01.15 - 01.30 | Discussion of proposed scheme                               |   |   |
| 01.30 - 02.00 | Lunch Break   |   |   |
| 02.00 - 4.00  | <b>Session-2: Building Design Optimisation Presentation</b> |   |   |
| 4.00 - 4.15   | Tea Break   | Criterion 13 Optimise building design to reduce conventional energy demand (part)   |   |
| 4.15 - 4.45   | Exercise on Building design optimisation                    |   |   |
| 4.45 - 5.15   | Presentation of answer by participants                      |   |   |
| 5.15 - 5.30   | Final Answer Discussion                                     |   |   |

The second session on building design optimisation shall focus on two broad parameters; namely the basics of solar passive building design and the quantitative analysis based on criterion-13 of GRIHA. This shall be followed by a detailed individual exercise on laptop. The exercise shall be based on the basic understanding of the criterion and the correct answer shall be discussed at the end of the session.

| 2nd Day       |   |  |  |
|---------------|---|--|--|
| 9.30 - 10.30  | <b>Session-3: Artificial Lighting Presentation</b>                                    | Criterion 13 Optimise building design to reduce conventional energy demand (part)  | A detailed presentation on energy efficient artificial lighting design as per requirements of Criterion 13 shall be followed by software demonstration for artificial lighting. The presentation and demonstration shall be followed by hands-on exercise on the demonstrated software. An evaluation copy for the same shall be provided to the participants and the participant shall be required to carry out a design exercise on the respective criterion of GRIHA .                                  |
| 10.30 - 11.00 | Exercise on Artificial lighting   |  |  |
| 11.00 - 11.30 | Software Demonstration  |  |  |
| 11.30 - 11.45 | Tea Break   |  |  |
| 11.45 - 1.00  | <b>Session-4: Energy Performance Optimisation Presentation</b>                        | Criterion 14 Optimise energy performance of building within specified comfort limits   | This session shall cover basics of thermal comfort analysis, HVAC design, energy optimisation of building energy systems and requirements of GRIHA. Requirements of Energy Conservation Building Code 2007 shall also be covered. Demonstration of software tools that are used to estimate energy consumption in buildings and to optimise energy systems shall be done. Software tools used to predict thermal comfort in non air conditioned/naturally ventilated buildings shall also be demonstrated. |
| 1.00 - 1.30   | Lunch Break   |  |  |
| 1.30 - 2.15   | Exercise on Energy Performance Optimisation   | Criterion 14 Optimise energy performance of building within specified comfort limits   | Hands on training on select demonstration software shall be given (limited scope)  |
| 2.15 - 3.15   | Session-5: Renewable energy utilization   | Criterion 6 Enhance outdoor-lighting system efficiency using renewable energy system,<br>Criterion 18 Renewable energy utilisation,<br>Criterion 19 Renewable-energy-based hot water system                    | This session shall cover renewable energy applications in buildings. The facilitator shall present the applications through the specified criteria of GRIHA, with examples and exercises.  |
| 3.15 - 3.30   | Tea Break   |  |  |
| 3.30 - 5.00   | <b>Session-6: Sustainable Building Material &amp; Construction Tech. Presentation</b> | Criterion 15 Utilisation of fly ash in building structure<br>Criterion 16 Reduce volume, weight, and construction time by adopting efficient technologies<br>Criterion 17 Use low-energy material in interiors | A detailed presentation shall be made on low-energy building material and its implication in GRIHA with appropriate examples.  |

| 3rd Day       |  |   |  |
|---------------|--|---|--|
| 9.30 – 10.30  | <b>Session-7: Health, Wellbeing and Environmental Quality Presentation</b> | Criterion 26 Use low-VOC paints/adhesives/sealants<br>Criterion 27 Minimise ozone depleting substances<br>Criterion 28 Ensure water quality<br>Criterion 29 Acceptable outdoor and indoor noise levels<br>Criterion 30 Tobacco and smoke control<br>Criterion 31 Provide at least, the minimum level of accessibility for persons with disabilities<br>Criterion 32 Energy audit and validation<br>Criterion 33 Operation and maintenance<br>Criterion 34 Innovation points | A detailed presentation shall be made on all other environmental aspects of building design, construction and operation and its implication in GRIHA with appropriate examples.  |
| 10.30 – 11.00 | <b>Session-8: Website Demonstration</b>                                    | GRIHA online documentation tool.  | Project Management and Documentation tool for GRIHA registered projects.   |
| 11.00 – 11.15 | Tea Break  |   |  |
| 11.15 - 11.45 | <b>Session-9: Water Management Presentation</b>                            | Criterion 10 Reduce landscape water requirement<br>Criterion 11 Reduce water use in the building<br>Criterion 12 Efficient water use during construction  | The facilitator shall give a detailed presentation on water related issues and solutions through GRIHA. The presentation shall focus on water management in building sector with examples from current green building projects of GRIHA.   |
| 11.45 – 01.00 | <b>Session-10: Wastewater Management Presentation</b>                      | Criterion 20 Wastewater treatment,<br>Criterion 21 Water recycle and reuse (including rainwater)  | The facilitator shall discuss about the wastewater related issues and solutions through GRIHA. A detailed presentation shall be made on waste water management systems and various technologies available in India with examples from current green building projects of GRIHA. At the end of the session a design exercise shall be conducted along with the Q & A. |
| 1.00 - 1.30   | Lunch Break  |   |  |
| 1.30 - 3.00   | <b>Session-8: Solid waste Management Presentation</b>                      | Criterion 22 Reduction in waste during construction<br>Criterion 23 Efficient waste segregation<br>Criterion 24 Storage and disposal of wastes<br>Criterion 25 Resource recovery from waste   | This session comprises of detailed presentation on solid waste management systems and implications of GRIHA.   |
| 3.00 - 3.45   | Revision time for exam   |   |  |
| 3.45 - 4.00   | Tea Break  |   |  |

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|-------------|--|---|---|
| 4.00 - 5.00 | <b>Session-12: GRIHA TRAINER's EXAMINATION</b>   | One hour written test (Objective Type)            | For the participants who are interested in GRIHA trainer's certificate        |
| 5.00 - 5.45 | <b>Session-13: GRIHA EVALUATOR's EXAMINATION</b> | Forty five minutes written test (Subjective Type) | For the participants who are also interested in GRIHA evaluator's certificate |
| 5.45- 6.00  | <b>Distribution of participation certificate</b> |   |   |
|             |  |   |   |

- **There will be a session on case studies of GRIHA registered projects as per the availability of time**
- **The programme shall, however, cover all the 34 criteria under GRIHA.**