Aims of IGRA

- Promotion of the Green Roof Idea
- Knowledge Transfer
- Sensitization of the Public
- Stimulation of International Standards
- Services: Networking, Conferences, Newsletter, [www.igra-world.com](http://www.igra-world.com)
Why Green Roofs?

Ecological and Economic Benefits

- Water Retention
- Microclimate
- Sound insulation
- Thermal insulation
- Habitat for Flora and Fauna
- Life expectancy
- Additional space
From Nature to the Green Roof Build-up

- Plant level
- System substrate
- Filter Sheet
- Drainage element
- Protection layer(s)

Green Roof Guidelines - Content

- Types of Greening
- Ecological and Economic Functions
- Requirements
- Testing Procedures
Green Roof Guidelines in Europe

<table>
<thead>
<tr>
<th>Country</th>
<th>Status</th>
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<tbody>
<tr>
<td>Germany</td>
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<td>Switzerland</td>
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<tr>
<td>Austria</td>
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<tr>
<td>Italy</td>
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<td>Hungary</td>
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<td>United Kingdom</td>
<td>✓ (Based on FLL)</td>
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</table>

Roof Technology: Basic Technical Issues

- **Protection against wind uplift** must be ensured
- **Fire prevention** regulations must be observed
- **Upstand heights** must be sufficient
- **Roof inclination** has to be considered
- **Drainage** must correspond to standards
- Structural **load bearing capacity** must be adequate
Vegetation Technology: Basic Technical Issues

**Site conditions** (building, climate etc.) must be observed

Type of greening and plant selection must correspond

Selection of the adequate Green Roof Build-up

Application of quality substrates according to guidelines

Professional installation by Roof Gardeners

Planning of upkeep and maintenance

Green Roof Systems – Basic Applications

Extensive Green Roof - Low maintenance Green Roof

Intensive Green Roof – Roof Garden
## Green Roof Systems – Advanced Applications

- Walkways
- Driveways
- Extreme light roofs
- Safety Device
- Pitched Green Roofs
- Green Roofs and Photovoltaics

## Green Roofs & Green Building Ratings

<table>
<thead>
<tr>
<th>Relevant Green Building Categories</th>
<th>Prerequisites</th>
</tr>
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<tbody>
<tr>
<td><strong>LEED</strong></td>
<td></td>
</tr>
<tr>
<td>SUSTAINABLE SITE</td>
<td>Site Development: Protect or Restore Habitat</td>
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<tr>
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<td>Site Development: Maximize Open Space</td>
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<tr>
<td>WATER EFFICIENCY</td>
<td>Storm Water Design: Quantity Control</td>
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<tr>
<td></td>
<td>Storm Water Design: Quality Control</td>
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<tr>
<td></td>
<td>Heat Island Effect: Roof</td>
</tr>
<tr>
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<td>Water Efficient Landscaping</td>
</tr>
<tr>
<td>BREEAM</td>
<td>Mitigating Ecological Impact</td>
</tr>
<tr>
<td>LAND USE AND ECOSYSTEMS</td>
<td>Enhancing Site Ecology</td>
</tr>
<tr>
<td>POLLUTION</td>
<td>Long Term Impact on Biodiversity</td>
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<td>Surface Water Run off</td>
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<tr>
<td>DGNB</td>
<td>Drinking Water Demand &amp; Wastewater Volume</td>
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<tr>
<td>ENVIRONMENTAL QUALITY</td>
<td>Local Environmental Impact</td>
</tr>
<tr>
<td>SOCIOCULTURAL AND FUNCTIONAL QUALITY</td>
<td>Quality of Outdoor Spaces</td>
</tr>
</tbody>
</table>
„CAS“, San Francisco

Hotchkiss School, Lakeville (UK)
VanDusen Botanical Garden, Vancouver

Exploring Green Roofs

Recommended Literature

Green Roofs – Bringing Nature Back to Town

Publisher: IGRA, May 2009
Languages: English / German
Details: www.greenroofworld.com
We invite you to join the global Green Roof community

www.greenroofworld.com

3rd International Green Roof Congress

13 – 15 May 2013 Hamburg

Thank you very much for your attention!