Fforwm BREEAM

BREEAM New Construction 2011 Explained

Before 2011

BREEAM 2008 - the good old days!

Huw Jenkins
Centre for Research in the Built Environment
Welsh School of Architecture
ACRONYMS

**BRE** = Building Research Establishment

**BREEAM** = Building Research Establishment Environmental Assessment Method

**SBEM** = Simplified Building Energy Method
What is BREEAM?

• Environmental Assessment Method

• Certification scheme

• Independent & credible

• Holistic

• Customer focused

• Credits based
The Main Aims:

• To reduce the environmental impacts of developments.

• To provide a credible, environmental label for buildings.

• To stimulate demand & illustrate economic benefits of environmentally sustainable buildings to stakeholders & clients.

• Recognise best practice.

• Provide comprehensive method of measuring and monitoring environmental performance.
Number of buildings

Regulatory minimum

BREEAM

Minimal

Aspirational
The Demand “Early Aspirations”

• Feb 2007 “All new buildings in Wales to be zero carbon by 2011…..BREEAM excellent as a core condition for all Assembly Government funding, grants, investments, joint ventures and land disposals.” Carwyn Jones, Statement to National Assembly

• 2009 Planning Policy Wales require any non domestic building over 1000m$^2$ to achieve BREEAM very good plus mandatory energy credits for excellent.
<table>
<thead>
<tr>
<th>Building Types</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offices</td>
<td>✔</td>
</tr>
<tr>
<td>Homes</td>
<td>✔</td>
</tr>
<tr>
<td>Shopping Malls</td>
<td>✔</td>
</tr>
<tr>
<td>Light Industrial Buildings</td>
<td>✔</td>
</tr>
<tr>
<td>Schools</td>
<td>✔</td>
</tr>
<tr>
<td>Prison House Blocks</td>
<td>✔</td>
</tr>
<tr>
<td>Crown Courts</td>
<td>✔</td>
</tr>
<tr>
<td>Job Centres</td>
<td>✔</td>
</tr>
<tr>
<td>Health Buildings</td>
<td>✔</td>
</tr>
<tr>
<td>Heavy Industrial Buildings</td>
<td>✔</td>
</tr>
<tr>
<td>Sports Facilities</td>
<td>✔</td>
</tr>
<tr>
<td>Higher Education</td>
<td>✔</td>
</tr>
<tr>
<td>Garden Sheds</td>
<td>✔</td>
</tr>
</tbody>
</table>
The Different Schemes:

- Offices
- Schools
- Industrial
- Retail
- Code for Sustainable Homes
- Multi-Residential
- EcoHomes XB
- Courts
- Prisons
- Bespoke
What is the methodology?

- A method for scoring a building or development’s environmental performance. The development scores credits by achieving different criteria.

- This leads to a percentage score, e.g. 62%

- The development will then achieve a BREEAM rating of ‘PASS’, ‘GOOD’, ‘VERY GOOD’, ‘EXCELLENT’ or even ‘OUTSTANDING’.

- The major advantage of the scheme is that it allows developments to use very different methods to achieve the same score, instead of specifiers using strict, restrictive criteria. However there are now a few mandatory credits that have to be achieved!
BREEAM Categories

Energy

Water

Materials

Transport

Waste

Pollution

Health & Well-being

Management

Land Use & Ecology

Innovation
Fforwm BREEAM

Assessment Credits
- Management
- Health & Wellbeing
- Energy
- Transport
- Water
- Materials
- Waste
- Pollution
- Land Use & Ecology
- Innovation

Category Score

Environmental Weightings

Single Score

BREEAM Rating
<table>
<thead>
<tr>
<th>Section</th>
<th>Environmental weighting</th>
<th>Credits available</th>
<th>Credits achieved</th>
<th>% Achieved</th>
<th>Weighted Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>12.00%</td>
<td>10.00</td>
<td>9.00</td>
<td>90.00%</td>
<td>10.80%</td>
</tr>
<tr>
<td>Health &amp; Wellbeing</td>
<td>15.00%</td>
<td>13.00</td>
<td>12.00</td>
<td>92.31%</td>
<td>13.85%</td>
</tr>
<tr>
<td>Energy</td>
<td>19.00%</td>
<td>21.00</td>
<td>10.00</td>
<td>47.62%</td>
<td>9.05%</td>
</tr>
<tr>
<td>Transport</td>
<td>8.00%</td>
<td>10.00</td>
<td>8.00</td>
<td>80.00%</td>
<td>6.40%</td>
</tr>
<tr>
<td>Water</td>
<td>6.00%</td>
<td>6.00</td>
<td>5.00</td>
<td>83.33%</td>
<td>5.00%</td>
</tr>
<tr>
<td>Materials</td>
<td>12.50%</td>
<td>13.00</td>
<td>7.00</td>
<td>53.85%</td>
<td>6.73%</td>
</tr>
<tr>
<td>Waste</td>
<td>7.50%</td>
<td>7.00</td>
<td>6.00</td>
<td>85.71%</td>
<td>6.43%</td>
</tr>
<tr>
<td>Land Use &amp; Ecology</td>
<td>10.00%</td>
<td>10.00</td>
<td>10.00</td>
<td>100.00%</td>
<td>10.00%</td>
</tr>
<tr>
<td>Pollution</td>
<td>10.00%</td>
<td>12.00</td>
<td>7.00</td>
<td>58.33%</td>
<td>5.83%</td>
</tr>
<tr>
<td>Innovation</td>
<td>10.00%</td>
<td>10.00</td>
<td>2.00</td>
<td>20.00%</td>
<td>2.00%</td>
</tr>
<tr>
<td><strong>Total BREEAM Score</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>76.09%</strong></td>
<td></td>
</tr>
</tbody>
</table>
BREEAM Ratings

Assessment is awarded on overall weighted score:

Non-Domestic Assessments (not Retail)

30%+ = Pass
45%+ = Good
55%+ = Very Good
70%+ = Excellent
85%+ = Outstanding
Assessment Process

1. Employ BREEAM licensed assessor
2. Assessment Registered
3. Assessment Meeting
4. Final Report
5. BRE QA Check
6. Interim Certificate Issued
7. Post Construction Review
8. BRE QA Check
9. Final Certificate Issued
10. Draft Report
11. Information

Design Stage
Building Completed
BREEAM

Environmental Assessment Award

This is to certify that

National Assembly for Wales, Cardiff Bay, Wales

has achieved the rating of

EXCELLENT

Under

Bespoke BREEAM

This assessment was carried out at the DESIGN STAGE

Signed on behalf of Building Research Establishment Ltd.

Steve Webster

TPS Consult

National Assembly for Wales

Taylor Woodrow Construction Ltd

Richard Rogers Partnership

BDSP Partnership

BRE

24 January 2006
Key Performance Indicator

- Attempting to quantify the indefinable

- Must be, and perceived to be rigorous

- All credits awarded must be based on auditable trail of evidence (Note these are generally assessments on a design stage and can only be assessed on evidence of commitment).
Key Performance Indicator

- Assessors manual and guidance extremely prescriptive and assessment report heavily QA’d, by BRE.

- **There is no scope for discretionary license.** (Its not our fault if we appear to be awkward )

- This rigor is to ensure that quality of certification is uniform and continues to be credible.
BREEAM 2011 Changes

- Drivers
- Structural
- Technical
- Operational
Timings:
Drivers & Influences

• New regulation & standards
• Industry/user feedback
• Continual improvement
New and up-coming regulation and standards
Scope of BREEAM 2011

- Consolidation: One ‘assessment manual’
- 49 assessment issues, across 9 environmental sections
- Scheme defines and measures ‘core’ issues and impacts (links to the CSBE)
- Criteria still accounts for;
  - building type, occupancy and usage differences
  - standards, opportunities and niches
## Scope of BREEAM 2011: building types

<table>
<thead>
<tr>
<th>Sector</th>
<th>Building type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>Offices, Industrial, Retail</td>
</tr>
<tr>
<td>Public (non housing)</td>
<td>Education, Healthcare, Prisons, Law courts</td>
</tr>
<tr>
<td>Multi-residential accommodation</td>
<td>Sheltered accommodation, Halls of residence, Residential care homes, Military barrack, Local Authority secure accommodation</td>
</tr>
<tr>
<td>Assembly and Leisure</td>
<td>Cinema, Theatre/music/concert hall, Exhibition/conference hall, Indoor or outdoor sports/fitness and recreation</td>
</tr>
<tr>
<td>Other non residential</td>
<td>Art gallery, Museum, Library, Day centre, hall/civic/community centre, Place of worship</td>
</tr>
<tr>
<td>Other residential</td>
<td>Hotel, Hostel, Boarding and guest house, Secure training centre, Residential training centre</td>
</tr>
</tbody>
</table>
## Minimum standards

<table>
<thead>
<tr>
<th>BREEAM issue</th>
<th>PASS</th>
<th>GOOD</th>
<th>VERY GOOD</th>
<th>EXCELLENT</th>
<th>OUTSTANDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Man01: Sustainable procurement</td>
<td>One credit</td>
<td>One credit</td>
<td>One credit</td>
<td>One credit</td>
<td>Two credits</td>
</tr>
<tr>
<td>Man02: Responsible construction practices</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>One credit</td>
<td>Two credits</td>
</tr>
<tr>
<td>Man04: Stakeholder participation</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>One credit (Building User Guide)</td>
<td>One credit (Building User Guide)</td>
</tr>
<tr>
<td>Hea01: Visual comfort</td>
<td>Criterion 1 only</td>
<td>Criterion 1 only</td>
<td>Criterion 1 only</td>
<td>Criterion 1 only</td>
<td>Criterion 1 only</td>
</tr>
<tr>
<td>Hea04: Water quality</td>
<td>Criterion 1 only</td>
<td>Criterion 1 only</td>
<td>Criterion 1 only</td>
<td>Criterion 1 only</td>
<td>Criterion 1 only</td>
</tr>
<tr>
<td>EnE01: Reduction of CO₂ emissions</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Six credits</td>
<td>Ten credits</td>
</tr>
<tr>
<td>EnE02: Energy monitoring</td>
<td>-</td>
<td>-</td>
<td>One credit (sub-metering)</td>
<td>One credit (sub-metering)</td>
<td>One credit (sub-metering)</td>
</tr>
<tr>
<td>EnE04: Low or zero carbon technologies</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>One credit</td>
<td>One credit</td>
</tr>
<tr>
<td>Wat01: Water consumption</td>
<td>-</td>
<td>One credit</td>
<td>One credit</td>
<td>One credit</td>
<td>Two credits</td>
</tr>
<tr>
<td>Wat02: Water monitoring</td>
<td>-</td>
<td>Criterion 1 only</td>
<td>Criterion 1 only</td>
<td>Criterion 1 only</td>
<td>Criterion 1 only</td>
</tr>
<tr>
<td>Mat03: Responsible Sourcing</td>
<td>Criterion 3 only</td>
<td>Criterion 3 only</td>
<td>Criterion 3 only</td>
<td>Criterion 3 only</td>
<td>Criterion 3 only</td>
</tr>
<tr>
<td>Wat01: Construction waste management</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>One credit</td>
</tr>
<tr>
<td>Wat03: Operational waste</td>
<td>-</td>
<td>-</td>
<td>One credit</td>
<td>One credit</td>
<td>One credit</td>
</tr>
<tr>
<td>LE03: Mitigating ecological impact</td>
<td>-</td>
<td>-</td>
<td>One credit</td>
<td>One credit</td>
<td>One credit</td>
</tr>
</tbody>
</table>
Technical changes and additions

- Energy & reduction of CO₂ emissions
- Water consumption
- Low or zero carbon technologies
- Life cycle impacts (building elements/materials)
- Sustainable procurement
- Other changes to look out for
Man 01: Sustainable procurement

- New approach; embodying and consolidating existing BREEAM 2008 elements

- Aligns with the principles of the ‘soft landings’ framework

- Project brief and design (4 credits)
  - Defining main stakeholders roles and responsibilities
    - End user reqs > design strategy > handover and occupation
  - Use of BREEAM Accredited Professional (at key stages)
    - Facilitation, monitoring and reporting progress
    - BREEAM performance targets contractually set and agreed

- Construction and handover (2 credits)
  - Targeting construction defects (thermographic survey)
  - Building services commissioning (as existing criteria)
• ‘Aftercare’ (2 credits) - Aim: deliver a functional, sustainable asset in accordance with expectations
  • Assessment criteria
    – First 12 months after handover
    – Seasonal commissioning (as existing)
    – Mechanism for building data collection, comparability and analysis
    – Provision of ‘aftercare’ support to building occupants
      • Aftercare team/individual
      • Building user guides
      • FM support
  • Exemplary level of performance
    – First three years of occupation
    – FM collection of occupant satisfaction, energy and water data
    – Check performance, set targets
    – Provision of data to BRE Global
    – BREEAM In Use scheme

Man 01: Sustainable procurement
Technical Advice Note 22 & Planning Policy Wales
## Technical Advice Note 22 & Planning Policy Wales

<table>
<thead>
<tr>
<th>Date</th>
<th>Type</th>
<th>Threshold</th>
<th>Standard Expected</th>
<th>Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st September 2009</td>
<td>Residential</td>
<td>5 units or more</td>
<td>CSH Level 3</td>
<td>6 credits for Ene1 31% reduction in CO₂</td>
</tr>
<tr>
<td></td>
<td>Non-residential</td>
<td>1,000 sqm or more</td>
<td>BREEAM 'Very Good'</td>
<td>6 credits for Ene1 CO₂ index (EPC rating) &lt;40</td>
</tr>
<tr>
<td>1st September 2010</td>
<td>Residential</td>
<td>1 or more units</td>
<td>CSH Level 3</td>
<td>6 credits for Ene1 31% reduction in CO₂</td>
</tr>
</tbody>
</table>
Part L2A 2010 requirements

Recap on 5 criteria for Building Regulations Part L2A compliance

Criteria:

1. Building Emission Rate ≤ Target Emission Rate
2. Limits on design flexibility
3. Limiting the effects of solar gains in summer
4. Quality of construction & commissioning
5. Providing information / O&M instructions
Criterion 1
Building Emission Rate ≤ Target Emission Rate
## Criterion 1

### Building Emission Rate ≤ Target Emission Rate

<table>
<thead>
<tr>
<th>Element</th>
<th>Notional building</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2006</td>
</tr>
<tr>
<td>Roof (W/m².K)</td>
<td>0.22</td>
</tr>
<tr>
<td>Wall (W/m².K)</td>
<td>0.30</td>
</tr>
<tr>
<td>Floor (W/m².K)</td>
<td>0.25</td>
</tr>
<tr>
<td>Window (W/m².K)</td>
<td>2.20</td>
</tr>
<tr>
<td>Lumens/Circuit Watt</td>
<td>55</td>
</tr>
<tr>
<td>Space heating</td>
<td>0.73 – 0.83</td>
</tr>
<tr>
<td>Cooling</td>
<td>1.67</td>
</tr>
<tr>
<td>Air permeability</td>
<td>10 m³/hr.m²</td>
</tr>
</tbody>
</table>
SBEM is not a design tool!!!!!!
ENE1

AIM: To recognise and encourage buildings designed to minimise operational energy demand, consumption and CO₂ emissions

Available credits: 15

Minimum required for PPW: 6

Minimum required for ‘Excellent’ rating: 6
ENE1

How is it calculated?

Requires the use of BREEAM ENE1 calculator to give us an EPC ratio
ENE1

What does it mean?

In a nutshell – 25% improvement over 2010 ADL2A regulations for an Excellent rating or to comply with Planning Policy Wales
ENE1 calculator

Stage 1 – The BRUKL report
EN 1 calculator

Stage 2 – The all important figures
## ENE1 calculator

<table>
<thead>
<tr>
<th>BRUKL Output</th>
<th>Actual</th>
<th>Notional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating &amp; Cooling demand [MJ/m²]</td>
<td>113.81</td>
<td>138.31</td>
</tr>
<tr>
<td>Total consumption [kWh/m²]</td>
<td>64.43</td>
<td>83.59</td>
</tr>
<tr>
<td>Total emissions [Kg/m²]</td>
<td>19.50</td>
<td>19.80</td>
</tr>
<tr>
<td>BREEAM credits</td>
<td>EPC ratio</td>
<td>Minimum requirements</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------</td>
<td>---------------------</td>
</tr>
<tr>
<td>1</td>
<td>0.05</td>
<td>• Requires a performance improvement progressively better than the Target Emission Rate (TER) required for Building Regulations approval.</td>
</tr>
<tr>
<td>2</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0.35</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>0.45</td>
<td></td>
</tr>
</tbody>
</table>
| 6              | 0.55      | • BREEAM Excellent: 6 credits  
• Also requires a CO\textsubscript{2} calculation of 0.22 which is equivalent to a 25% improvement over current Part L regulations |
| 7              | 0.59      |                     |
| 8              | 0.63      |                     |
| 9              | 0.67      |                     |
| 10             | 0.72      | • BREEAM Outstanding: 10 credits  
• Also requires a CO\textsubscript{2} calculation of 0.30 which is equivalent to a 40% improvement over current Part L regulations |
| 11             | 0.75      |                     |
| 12             | 0.79      |                     |
| 13             | 0.83      |                     |
| 14             | 0.87      |                     |
| 15             | 0.90      |                     |
Excellent - Also requires a CO$_2$ calculation of 0.22 which is equivalent to a 25% improvement over current Part L regulations
Putting it in perspective
Case Study 1
Fforum BREEAM

Building details

- A small classroom block for a comprehensive school in Swansea
- Single storey
- Independent heating and DHW provision
SBEM is not a design tool!!!!!!
## Designed parameters

<table>
<thead>
<tr>
<th>Element</th>
<th>Designed building</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual</td>
</tr>
<tr>
<td>Roof (W/m².K)</td>
<td>0.16</td>
</tr>
<tr>
<td>Wall (W/m².K)</td>
<td>0.35</td>
</tr>
<tr>
<td>Floor (W/m².K)</td>
<td>0.25</td>
</tr>
<tr>
<td>Window (W/m².K)</td>
<td>2.20</td>
</tr>
<tr>
<td>Lumens/Circuit Watt</td>
<td>T5 lamps</td>
</tr>
<tr>
<td>Space heating</td>
<td>0.89</td>
</tr>
<tr>
<td>Cooling</td>
<td>n/a</td>
</tr>
<tr>
<td>Air permeability</td>
<td>10 m³/hr.m²</td>
</tr>
<tr>
<td>Renewable</td>
<td>n/a</td>
</tr>
<tr>
<td>Element</td>
<td>Designed building</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td></td>
<td>Actual</td>
</tr>
<tr>
<td>Roof (W/m².K)</td>
<td>0.15</td>
</tr>
<tr>
<td>Wall (W/m².K)</td>
<td>0.25</td>
</tr>
<tr>
<td>Floor (W/m².K)</td>
<td>0.16</td>
</tr>
<tr>
<td>Window (W/m².K)</td>
<td>1.60</td>
</tr>
<tr>
<td>Lumens/Circuit Watt</td>
<td>T5 lamps</td>
</tr>
<tr>
<td>Space heating</td>
<td>0.90</td>
</tr>
<tr>
<td>Cooling</td>
<td>n/a</td>
</tr>
<tr>
<td>Air permeability</td>
<td>5m³/hr.m²</td>
</tr>
<tr>
<td>Renewable</td>
<td>20m² solar thermal</td>
</tr>
</tbody>
</table>
## ENE1 Calculator

<table>
<thead>
<tr>
<th>BRUKL Output</th>
<th>Actual</th>
<th>Notional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating &amp; Cooling demand [MJ/m²]</td>
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</tr>
<tr>
<td>Total emissions [Kg/m²]</td>
<td>19.50</td>
<td>19.80</td>
</tr>
</tbody>
</table>
Calibrating performance

- Building regulation compliant
- 5% improvement: 1 BREEAM credit
- 25% improvement: Excellent minimum standard (6 credits)
- 40% improvement: Outstanding minimum standard (10 credits)
- Net zero carbon: (15 credits)
- Carbon negative: (15 + 5 innovation credits)

<table>
<thead>
<tr>
<th>BREEAM credits</th>
<th>EPR_{pc}</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.05</td>
</tr>
<tr>
<td>2</td>
<td>0.15</td>
</tr>
<tr>
<td>3</td>
<td>0.25</td>
</tr>
<tr>
<td>4</td>
<td>0.35</td>
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<tr>
<td>5</td>
<td>0.45</td>
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<tr>
<td>6</td>
<td>0.55</td>
</tr>
<tr>
<td>7</td>
<td>0.59</td>
</tr>
<tr>
<td>8</td>
<td>0.63</td>
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<tr>
<td>9</td>
<td>0.67</td>
</tr>
<tr>
<td>10</td>
<td>0.72</td>
</tr>
<tr>
<td>11</td>
<td>0.75</td>
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<tr>
<td>12</td>
<td>0.79</td>
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<tr>
<td>13</td>
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<tr>
<td>14</td>
<td>0.87</td>
</tr>
<tr>
<td>15</td>
<td>0.90</td>
</tr>
</tbody>
</table>
Translating performance

- Performance expressed as a ratio \( (EPR_{NC}) = \) BREEAM credits
- BREEAM Performance \( EPR_{NC} \) Total = \( EPR_{NC} \) Demand + \( EPR_{NC} \) Consumption + \( EPR_{NC} \) CO\(_2\)
- 3 steps to determining \( EPR_{NC} \)
  - Step 1: Calculate actual performance as a proportion of notional/TER
  - Step 2: “Translated” in to \( EPR_{NC} \)
  - Step 3: Demand/consumption/CO\(_2\) weighting applied
Sourcing required data for Energy & CO₂ Emissions Summary

- Part L Approved Document checks (BRUKL Output Document)
- SBEM and other approved third party software
- Sourced from the design team

Page 4 on the report, under heading: Energy & CO₂ Emissions Summary
Ene 04: Low & zero carbon technology

- Benchmarks increased (for upper levels)
- Additional BREEAM ‘credit’
- Life cycle carbon impact of technology addressed
  - % reduction in regulated (operational) CO\(_2\) emissions
  - % reduction in embodied and operational CO\(_2\) emissions

<table>
<thead>
<tr>
<th>No of credits</th>
<th>% reduction in operational CO(_2)</th>
<th>Feasibility study</th>
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<tr>
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<td>4 (Exemplary credit)</td>
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<table>
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<tr>
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<td>20%</td>
</tr>
<tr>
<td>5 (Exemplary credit)</td>
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</table>
Wellbeing

- Visual comfort - 3-5 credits
- Indoor air quality - 4-6 credits
- Thermal comfort - 2 credits
- Water quality - 1 credit
- Acoustic performance -
- Safety and security - 2 credits - New issue:
Wat 01: Water consumption

• Expanded water consumption methodology
  – More building types covered
  – Updated occupancy usage data (activity database)
  – Baseline and five performance levels/standards defined
  – Accounts for greywater (BS8525) and rainwater harvesting systems (BS8515)

• Water consumption calculated and reported
  – litres/person/day
  – m³/person/yr

• Minimum standards maintained
  – Good, V Good, Excellent = 1 credit
  – Outstanding = 2 credits
Mat 01: Life cycle impacts

- Use of specific Environmental Product Declaration (EPD) data for an element or part element

- Can be used to calculate a bespoke Green Guide rating

- Accounts for the EPD methodology/type used to verify life cycle impact data

- Reporting of life cycle CO₂ emissions (kgCO₂):
  - Data available via Green Guide online
  - Total by element and for building
Waste Section

• Utilising the SWMP:
  • targets for minimisation should be set
  • Procedures for minimising waste defined
  • Procedures for monitoring and reporting
  • Procedures for sorting
  • Role specified and nominated

• Recycled aggregates:
  • Use in high grade areas
  • Obtained on site or within 30km

• Floor finished to fitted out offices:
  • Small area only
Land Use & Ecology

Ecological value conservation and enhancement

- Re-use of land
- Reclaimed contaminated land
- Ecological value of land
- Protection of ecological features
- Management plan and site practice
- Using an ecologist
Pollution

Air, water and social pollution issues

- Refrigerant / Insulant Global Warming Potential (GWP)
- NO$_x$ emissions
- Minimising flood risk
- Water course pollution
- Renewable energy
- Light pollution
- Noise pollution
Technical changes: ones to look for.

- Stakeholder Participation: consolidation of consultation issues
- Construction waste management: updated benchmarks
- Impact of refrigerants: updated criteria
- Surface water run-off: aligns with CSH
- Responsible sourcing: review of schemes/tiers, hard landscaping element added, minimum req. for timber spec projects
- Ecological value of site: New checklist and data
- Thermal comfort: New criteria and reporting requirements
- Water quality: new issue, includes existing criteria
- Transport: ‘rural location sensitive buildings’
- Indoor air quality: additional credit, criteria and reporting requirements
- Service life planning and costing: re-defined criteria
- Construction site impacts: re-defined criteria
- Recycled aggregates: application specific benchmarks
- New exemplary levels of performance
Operational changes

- Move away from paper-based reports and validation statements
- New assessment reporting and certification tool
- Server for electronic submission of reports/tools and evidence
- Updated licensing structure
- Updated training structure (for new and existing assessors, including no more test assessments)
- Updated registration and certification charging structure
- Listing of certified buildings on Green Book Live
Further information

• BREEAM 2011 live: July 1st 2011

• www.breeam.org/2011 (includes FAQs and technical guides)

• BREEAM certified buildings: www.greenbooklive.com
The way forward...

Important to have central point of contact to act as a hub.
Closing Suggestions

• Integrate BREEAM into page 1 of tenders & clauses
• Clauses raised for ‘Specification Bank’
• Early involvement of ALL
• “Development must achieve BREEAM excellent”
• Lead the team and ensure full proof is provided.
• Pre-assessment estimator checklists - be wary!
Questions?