BREEAM International

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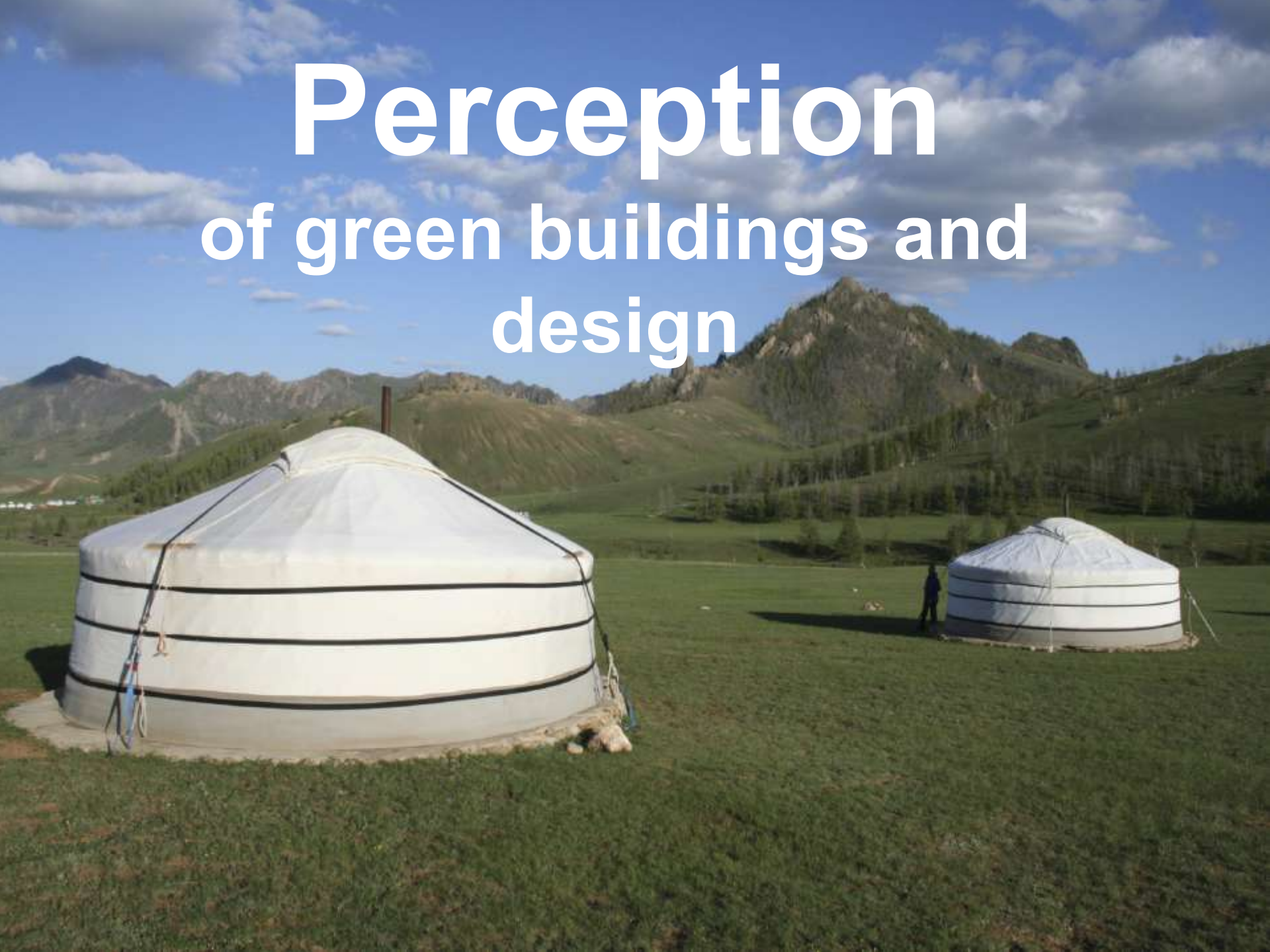
Introduction to BREEAM


Perception
of green buildings and
design


Reality
201 Bishopsgate & The Broadgate Tower

SHOWCASING: BRE'S INNOVATION PARK

What is BREEAM?

- Environmental Assessment Method
- Certification scheme
- Voluntary
- Independent & credible
- Holistic
- Customer focused
- Credits based

- The world's longest established and most widely used environmental assessment method for buildings
  - Created in 1988 and launched in 1990

- Over 116,000 buildings certified, over 714,000 buildings registered

But more importantly ……

- Recent studies have shown that BREEAM has helped save 4.5 million tonnes of CO2 since its inception

Development history

- 1990: Launch of BREEAM Offices
- 1991: Launch of BREEAM Industrial
- 1993: Launch of version for retail superstores
- 1998: Launch of BREEAM 98
  - Major overhaul of the schemes (current layout, weightings etc)
- 2002 – 2006:
  - Annual update process
  - Development of Bespoke BREEAM process
  - Development of more schemes

Development history

- 2008:
  - Major update
  - Introduction of new schemes
  - International development

- As a consequence:
  - More than 5,000 buildings registered for assessment in 2008 compared to 1600 in 2007 (300% increase)
  - 680 buildings certified in 2008 compared to 362 in 2007
  - 1200 individuals trained on the non domestic side compared to 761 in 2007.
  - 17,000 worldwide public downloads of the new BREEAM 2008 Guidance

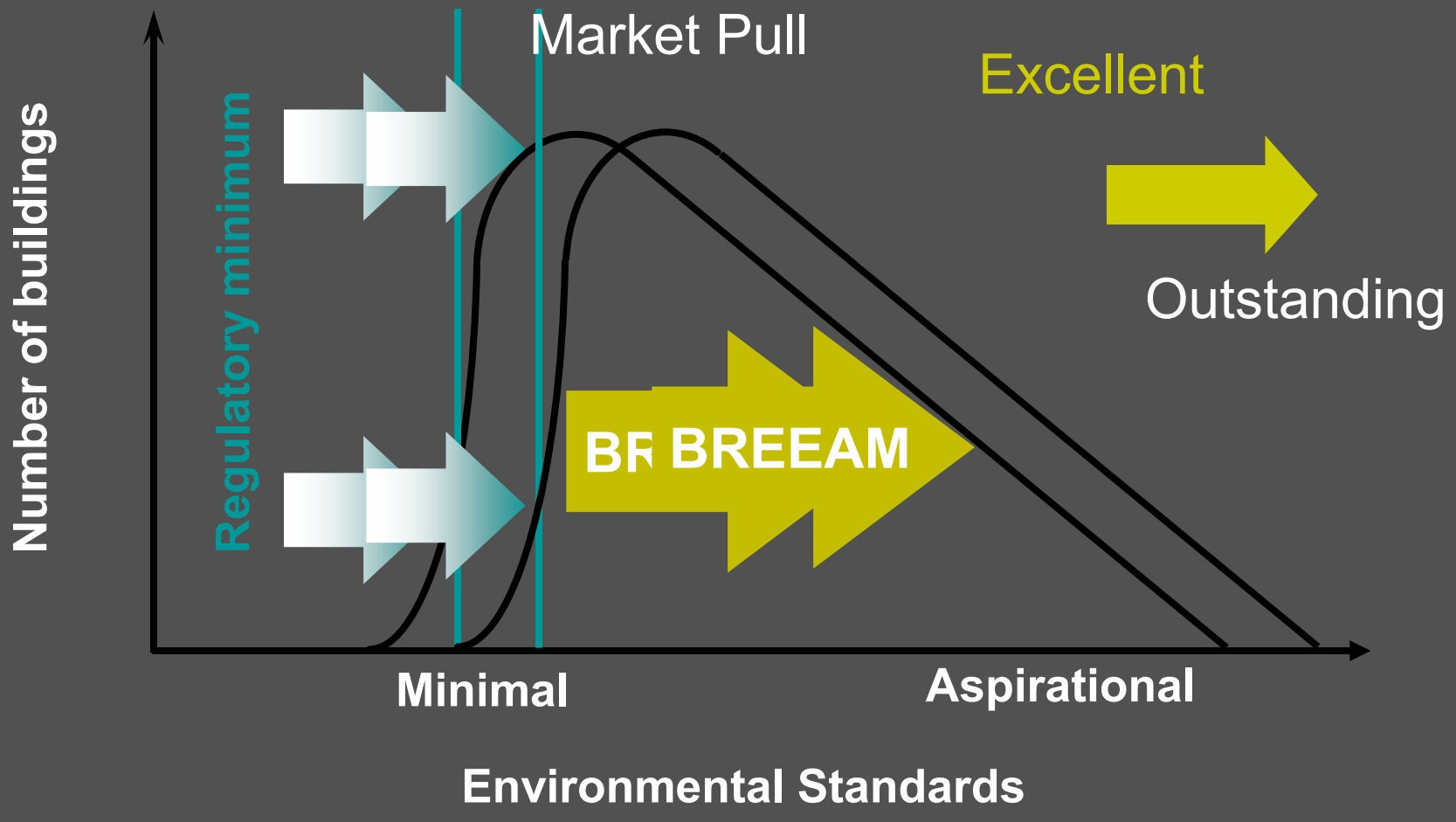
Aims

- Improve environmental performance of buildings
- Improve internal environment for occupants

Objectives

- Reduce environmental impacts of buildings
- Provide a credible environmental label
- Allow a transparent comparison of buildings
- Set criteria and standards over and above those required by legislation
- Challenge the market for more innovative solutions
- Stimulate the demand for sustainable buildings
- Allow organisations to demonstrate their progress towards achieving their CSR objectives

Setting the standard



Global demands

- Improvement of environmental credentials is a global debate – numerous systems are available

- Common metrics exist in all assessment tools, this enables comparison on certain elements, sharing of best practice and knowledge.

The Alliance has the objective of:

- Establishment a common core of issues and metrics, and rules
- Co-ordination and sharing of research efforts.

Working with Corporate business across international boundaries. Different rating tools, but still able to Measure the impacts.

What does BREEAM cover?

- All building types
  - Standard schemes for common building types
  - Bespoke BREEAM for others

- All stages
  - Design – new build and refurbishments
  - Construction – new build and refurbishments
  - Operation – existing buildings

Life cycle stages

- Design stage
  - Based on specifications and pre-development information
  - Options for shell & core or fit-out assessments
- Post construction review
  - ‘As built’ review and verification of design stage assessment
  - Full assessment may be carried out post construction (but limited potential to influence performance)
- BREEAM In Use
  - Environmental management tool for property portfolios
  - Formal certification possible

BREEAM Categories

- Management

- Energy

- Water

- Land Use & Ecology

- Health & Wellbeing

- Transport

- Materials

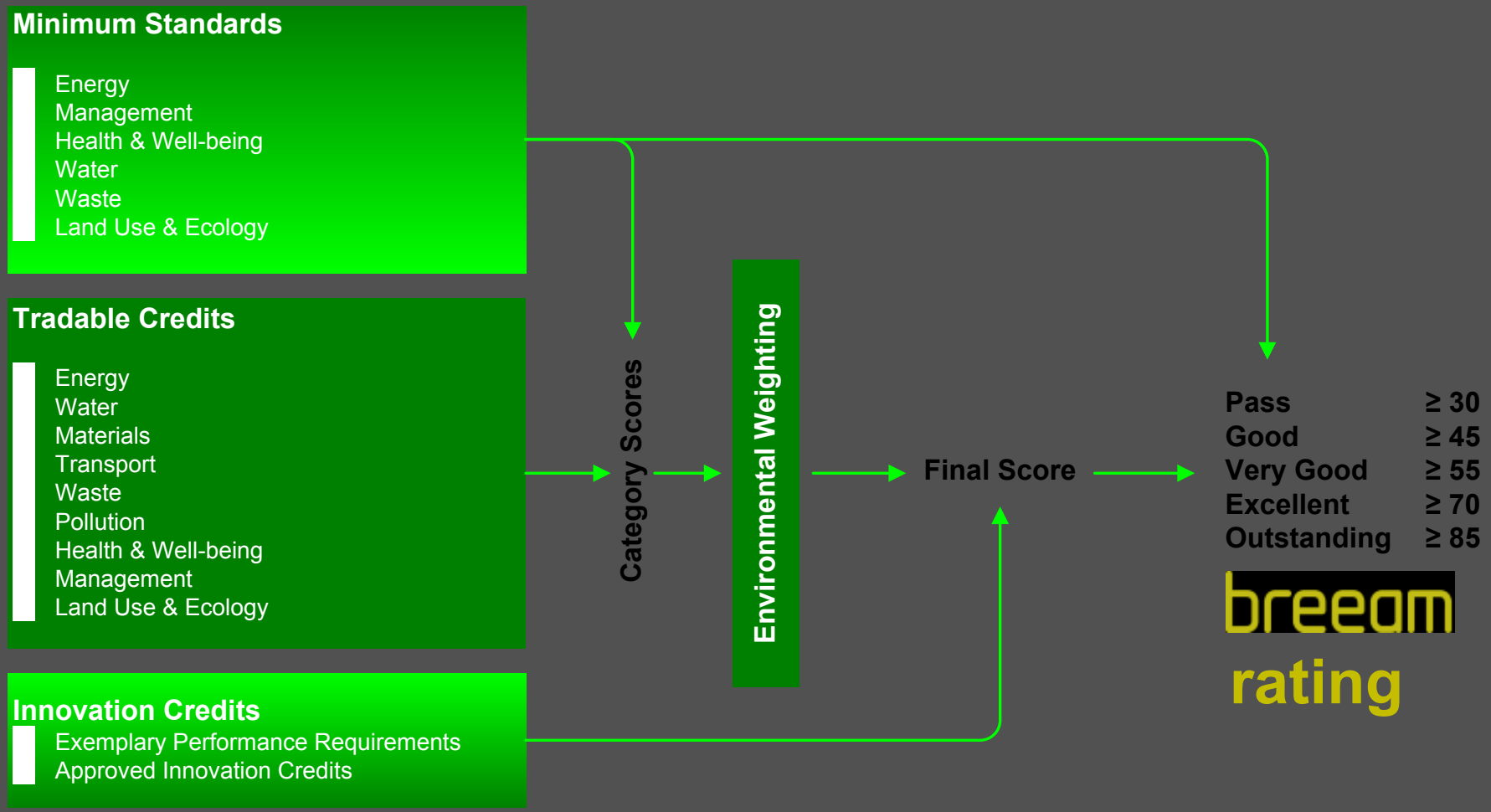
- Waste

- Pollution

Weighting system

Category	Weighting
Management	12%
Health & Wellbeing	15%
Energy	19%
Transport	8%
Water	6%
Materials	12.5%
Waste	7.5%
Land Use & Ecology	10%
Pollution	10%

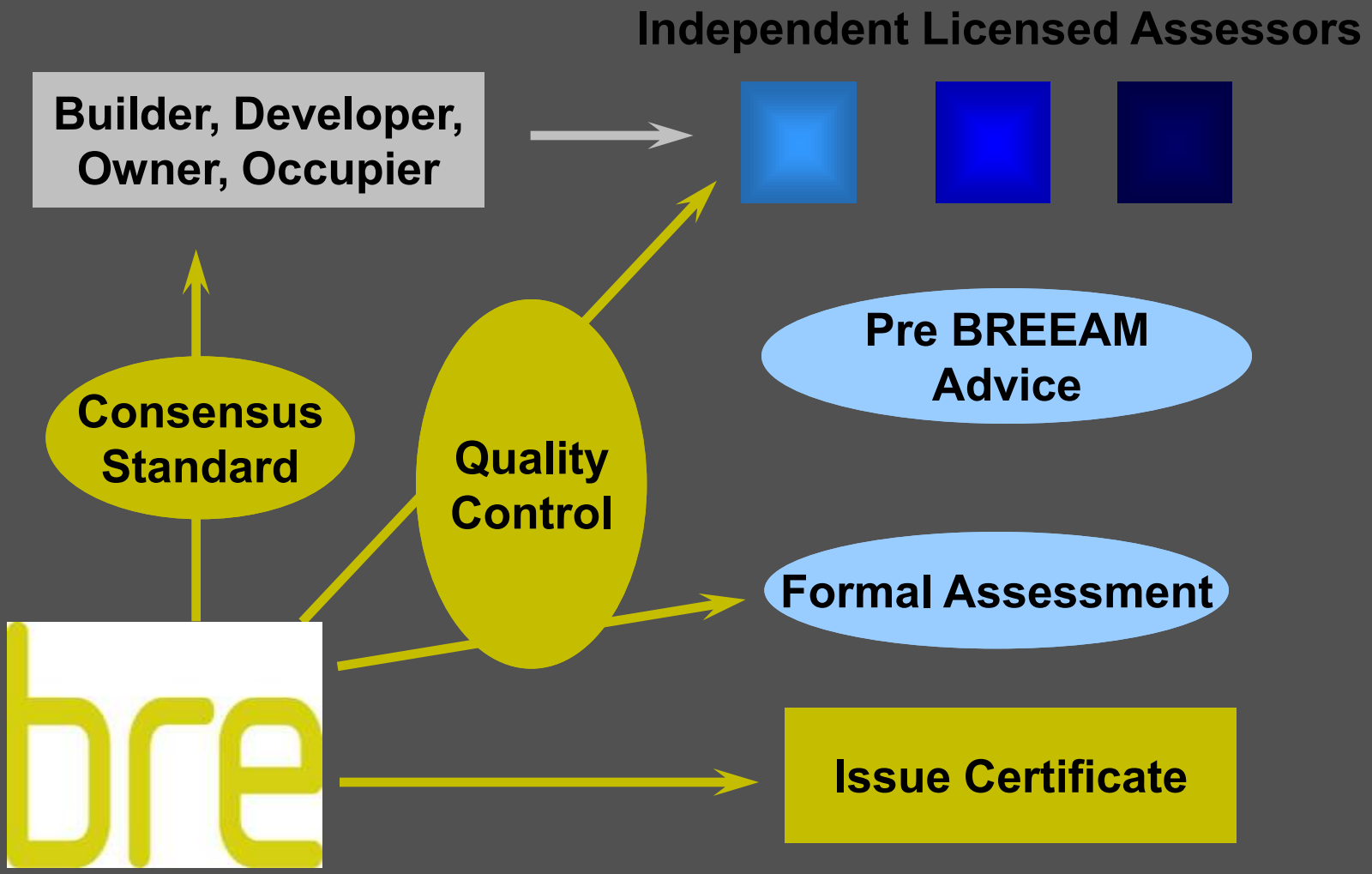
General BREEAM process

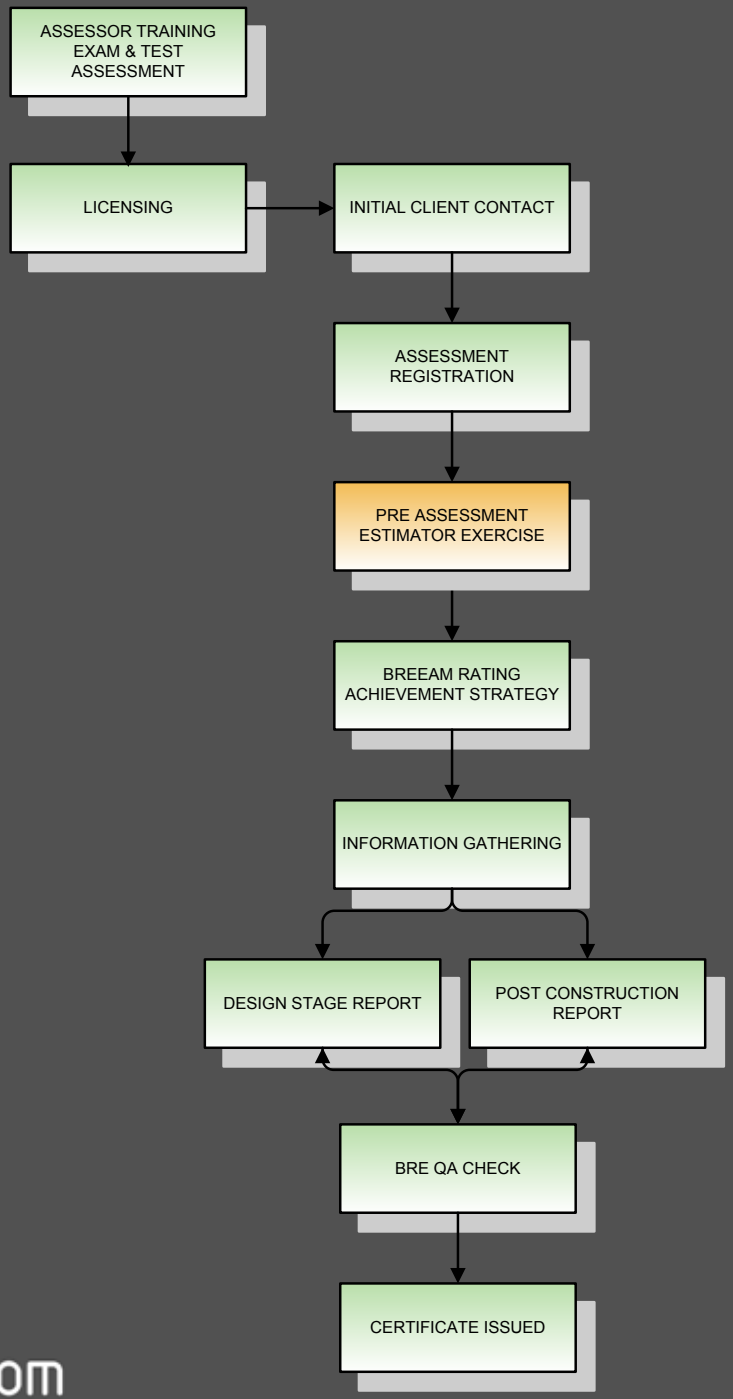


BREEAM International Logo

- BREEAM International schemes also use star rating system
  - **1 Star** **30%**
  - **2 Stars** **45%**
  - **3 Stars** **55%**
  - **4 Stars** **70%**
  - **5 Stars** **85%**

Assessment process




ASSESSOR TRAINING EXAM & TEST ASSESSMENT
LICENSING
INITIAL CLIENT CONTACT
ASSESSMENT REGISTRATION
PRE ASSESSMENT ESTIMATOR EXERCISE
BREEAM RATING ACHIEVEMENT STRATEGY
INFORMATION GATHERING
DESIGN STAGE REPORT
POST CONSTRUCTION REPORT
BRE QA CHECK
CERTIFICATE ISSUED

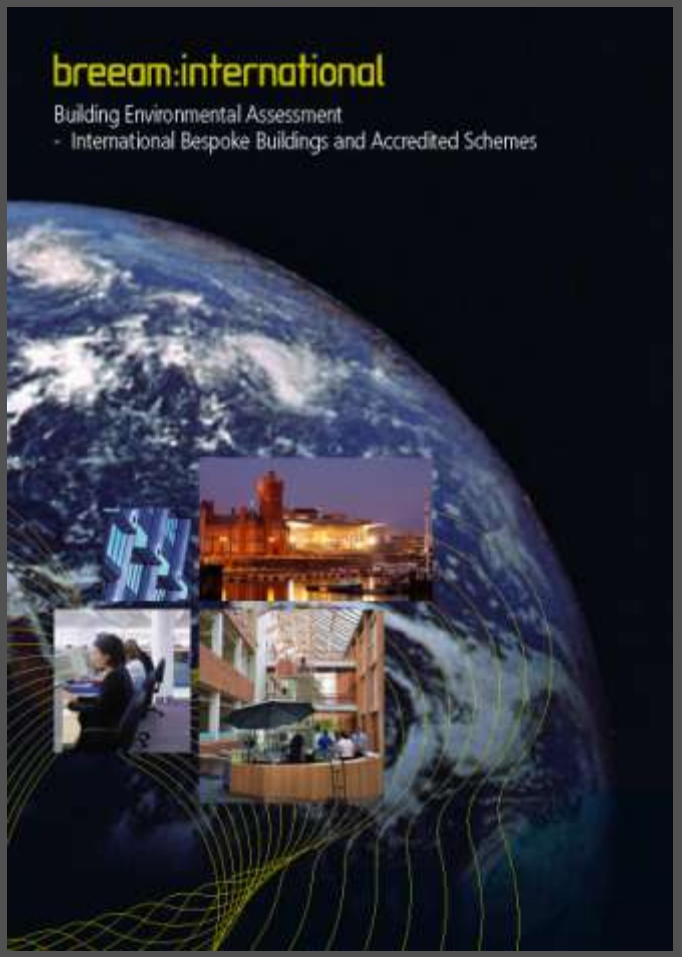
Assessments of buildings outside the UK

BREEAM International

- Banner under which all BREEAM assessments outside the UK are undertaken

Includes

- Regional standard Schemes
- ‘One off’ tailored assessments
- Country specific schemes

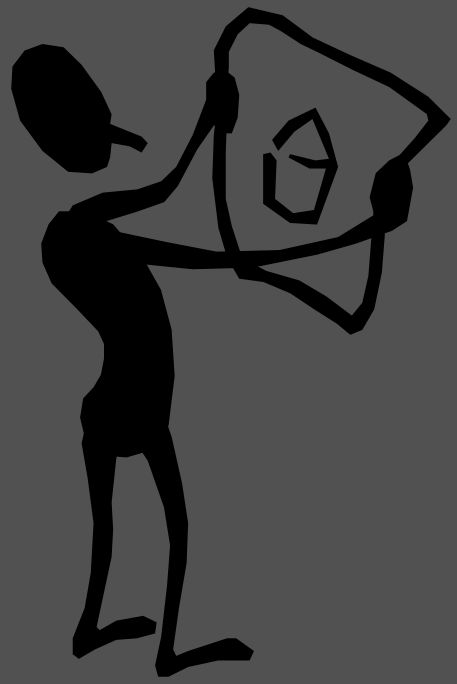


BREEAM International

- Buildings already certified or under assessment in 12 countries in Europe as well as in:
  - United States
  - Algeria
  - Dubai
  - Mauritius
  - Philippines
  - Qatar
  - Lebanon
  - Morocco
  - Malaysia

Who is using BREEAM International?

- International institutions
- Private Property Developers/Investors
  - Multinational companies
  - Smaller companies
- Government/Public sector in countries where there is no national tool



Key objectives

- Maintain consistency and comparability with other BREEAM assessments in other locations
  - Same assessment methodology
  - Same categories
  - Minimum proportion of core issues

- Comparison against national baseline
  - Measure the improvement compared to the national Building Regulations
  - Use of national best practice standards or nationally acceptable ones

Key factors to be taken into account

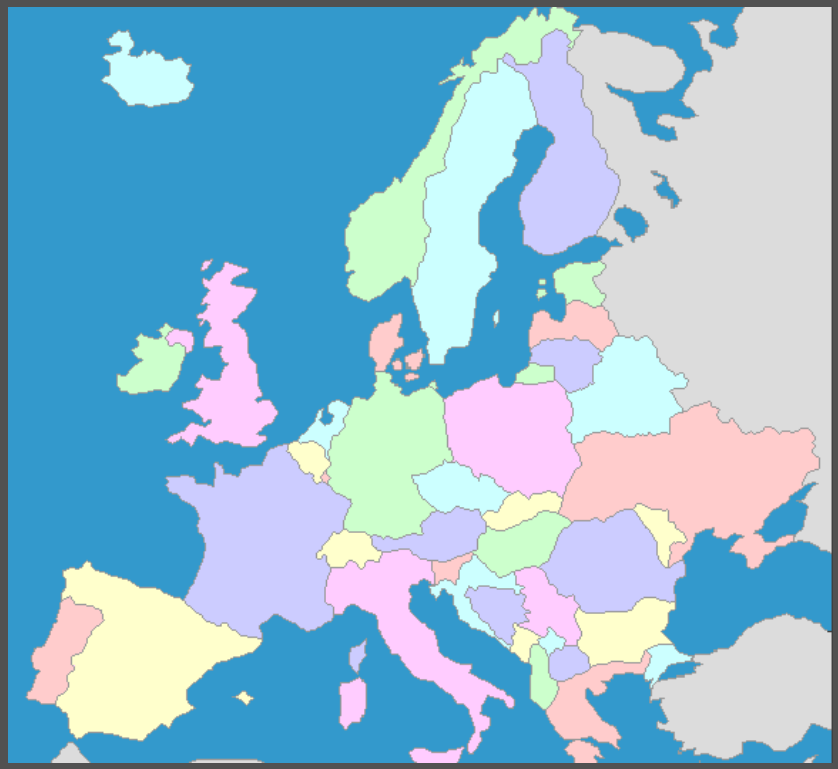
- Climate
- Ecology
- Construction materials
- Culture
- Construction practices
- Building Regulations
- Infrastructure
- Historical context
- Political decisions
- Geography…

Examples

- A different climate may impact on:
  - Weightings
  - Cooling strategy & energy consumption
  - Type of renewable technologies
- Different infrastructures may impact on:
  - Capacity to recycle waste
  - Capacity to cycle to and from buildings
- Different construction practices may impact on:
  - Risk of legionellosis contamination

BREEAM Europe

- Scheme supported and funded by ICSC and AIG Lincoln
- One set of criteria
  - Balance between consistency of assessment and recognition of the local context
  - Country-specific appendices
  - National best practice standards/nationally acceptable standards
  - 25 pilot projects already registered



BREEAM Europe

- Versions for three building types:
  - Industrial
  - Offices
  - Retail
- Any other building type in Europe to be assessed through BREEAM Bespoke International
- Residential scheme soon to be available

BREEAM Bespoke International

- Buildings not covered by standard BREEAM schemes

- BRE develop criteria specific to the building assessed
  - Criteria tailored for the building type and the local context/local conditions
  - Close cooperation with the design team

Country-specific schemes

- A number of GBCs are also looking at adapting BREEAM into their own national environmental assessment method

- Leading to a tool that is:
  - Nationally recognised and endorsed
  - Appropriate and tailored to the local context and conditions
  - Consistent with other international standards and assessment tools
  - Available in the local language

- Advantages:
  - Benefiting from BRE's knowledge and expertise
  - Best practice sharing
  - Less resources required

Country-specific schemes

- Example: BREEAM-NL
  - Developed by the Dutch Green Building Council
  - Endorsed by public and private sector
  - Soft-launched and piloted from January 09

- Covers:
  - Offices
  - Retail
  - Industrial
  - Education
  - Homes

BREEAM in Iceland - Today

- Various projects already being assessed under BREEAM Bespoke International 2008:
  - Visitors centres
  - Centre for Icelandic Studies
- 5 individuals trained to become BREEAM International assessors
- Learning curve really important, feedback to be integrated into the Iceland specific appendix

BREEAM in Iceland – options available

- Individual buildings: BREEAM Europe or BREEAM Bespoke International
  - Direct comparability with similar buildings in Europe
  - Opportunity to feedback and shape the criteria for Iceland
  - Cost associated with the development of criteria for each project

- Possibility to adapt BREEAM into a national environmental assessment tool
  - To be developed with local experts
  - BRE to support through the entire process
  - Opportunity for income revenue

Development of a nationally-endorsed BREEAM tool

Development of a national BREEAM tool

- Business case for the development of a national tool
  - Significant volume of projects
  - Green Business Council or equivalent to be set up to manage and own the proces
- As for any other BREEAM International tool:
  - Appropriate and tailored to the local context and conditions
  - Consistency with other assessment tools in the BREEAM International family

What is a Green Building Council?

- Promote green buildings in the country
- Promote sustainable practices in the national construction industry
- Represent a cross-section of the construction industry stakeholders, including government
- Guidance and principles set out by the World Green Building Council (WGBC)
- Development of an environmental assessment method

Why a Green Building Council?

- Need consensus agreement on the national level if the tool is to be successful
  - Involvement of the different stakeholders in the development work
  - National endorsement

- Development of an environmental assessment method is lenghtly and costly

Advantages of adapting BREEAM into a nationally-endorsed assessment tool

- Ownership of the scheme
- Nationally recognised and endorsed
- Available in the local language – increase take up
- More scope for tailoring to the local context
- Benefiting from BRE's knowledge and expertise – save resources
- Best practice sharing
- Income revenue
- Member of the BREEAM International family

The BREEAM International family

- Groups together the GBCs that have adopted BREEAM
- Benefits:
  - Knowledge/expertise sharing
  - Joint events
  - Influence and drive the future of BREEAM International
- BREEAM International ‘club’ to be created:
  - Governing Board: to group together international developers and GBCs
  - Technical Committees

breeam:international

Process for the adaptation of BREEAM

- Establish Advisory Group
  - To cover all interest groups
  - To oversee the development of the methodology
- Establish Expert Groups
  - Technical skills required to ensure the appropriateness of the tool
  - Specific sectors / specific environmental issues
  - To work under the guidance and direction of the Advisory Group

→ GBC ideal body to support the establishment of those groups

→ BRE's input and advice available

Process for the adaptation of BREEAM

- BREEAM Awareness training
  - For members of the Advisory and Expert Groups
  - Essential to ensure they understand the basics and content of BREEAM

Process for the adaptation of BREEAM

- Agreement on the scope of the tool
  - Which schemes for which building types?

- Draft master issue list & Development workshop
  - BRE to provide starting point for the development
  - Traffic light system
  - Detailed explanation of the reasoning and intent of each BREEAM issue

Process for the adaptation of BREEAM

- Technical Development/Research
  - Preliminary Review
  - Action Plan
  - Review/comment from BRE
  - Research of local alternatives where required
  - Pilot testing of critical issues

Process for the adaptation of BREEAM

- Production of technical documentation
- Assessor training
  - Start getting income
- Pilot phase
- Development of licensing, quality control and certification procedures
- Production of training course and examination procedure
- Establish review and update process
- Final endorsement by BREEAM

Technical scope of the adaptation

Technical adaptation process

- Review relevance of the core issues:
  - Based on local knowledge and expertise
  - Based on BRE's experience
- Review national environmental issues:
  - Any issues missing?
  - Any issue not adequately assessed?
- Alternative compliance requirements sourced:
  - Internationally recognised standards already available (e.g ISO, CEN. ASHRAE)
  - Local best practice guidance where possible

Technical adaptation process

- Adaptation of the compliance requirements where necessary:
  - National best practice guidance
  - Alternative assessment methodologies (e.g. energy/materials)
  - Keep generic approach where possible: makes assessors' job easier if the approach is common
- Review benchmarks/thresholds
  - Are they too high/too low?
- Review weightings
  - Local adaptation factors to be identified

Examples: BREEAM Weightings

Category	BREEAM: Europe	BREEAM: Gulf
Management	12%	8%
Health & Wellbeing	15%	15%
Energy	19%	13%
Transport	8%	6%
Water	6%	30%
Materials	12.5%	9%
Waste	7.5%	5%
Land Use & Ecology	10%	7%
Pollution	10%	7%

Examples: BREEAM Gulf

- Issues removed
  - NOx emissions of heating source
  - Potential for natural ventilation
  - Cyclist facilities
- Issues added
  - Smoking policy
  - ODP/GWP of refrigerants
- Issues modified
  - Flood risk
  - Land Use and Ecology
  - Water recycling

Examples: BREEAM NL - draft

- Weightings largely unchanged
- Redistribution of points within Health & Wellbeing
- Changes to criteria to reflect Dutch legislation and regulations
- New credits proposed regarding future adaptability of buildings and flexibility of design
- Hea 12 Microbial Contamination has been omitted as this is incorporated within Dutch legislation

Dutch Green Building Council

Examples: BREEAM NL - draft

Issues modified:

- Wat 2 Water Meter – requirement to connect pulsed meter to Building Management System
- LE1 Reuse of Land is more heavily weighted to discourage building on greenfield sites
- LE4 Impact on Site Ecology – based on Dutch ecology framework
- Pol 4 NOx Emissions from Heating Source – NOx emissions requirement made more stringent

Dutch Green Building Council

Examples: BREEAM NL - draft

Issues modified:

- Hea 8 Indoor Air Quality - CO_2 monitoring made mandatory obligatory
- Ene 1 reduction of CO_2 Emissions – based on the Dutch EPBD method.
- Tra 5 Travel Plan - made more onerous and changed to suit Dutch travel patterns. Extra requirements include provision for working from home, stimulation of more efficient transport and more sustainable way of using cars, where they must be used.

Dutch Green Building Council

Next steps for Iceland

Next steps for Iceland

- Deciding which approach is best for Iceland
  - BREEAM Europe / BREEAM Bespoke International
  - Development of a nationally-endorsed BREEAM scheme
- Development process to be discussed and adapted for Iceland if necessary
- Proposal from BRE Global confirming:
  - Development process
  - Any conditions
  - Business model and timescales

Next steps for Iceland

- Possibility to hold awareness seminars / assessor training course to raise awareness of sustainability issues & BREEAM

- In any case, feedback from projects to feed into the development work of the current BREEAM International tool

Any Questions?