

The Green Guide and BES 6001:
Responsible Sourcing for Construction
Products

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BREEAM Materials, BRE Global

Our goal at BRE Global

- *to allow industry the recognition for its sustainability endeavours; give a certifiable framework for its measurement, and to produce meaningful messages for stakeholders and specifiers alike.*

Where do the Green Guide and BES 6001 fit?

- BREEAM
- Code for Sustainable Homes
- Quantitative and qualitative impacts
- Environmental and Social impacts
- Supply Chain
- Product Stewardship

BREEAM Offices – Credits relating to materials

- Mat 1, 2 & 6 Green Guide ratings: Major elements, Landscaping & Insulation (6.2%)
- Mat 3 & 4 Reuse of Façade and Building Structure (2%)
- Mat 5 & 6 Responsible Sourcing Major elements & Insulation (4.1%)
- Mat 7 Design for Robustness (1%)
- Wst 1 Construction Site Waste Management (4.3%)
- Wst 2 Recycled Aggregate usage (1.1%)
- Wst 6 Floor finishes (1.1%)
- Man 3 Construction Site Impacts (4.8%)
- Hea 9 VOCs (1.1%)
- Hea 10 Thermal Comfort (1.1%)
- Hea 13 Acoustic Performance (1.1%)

BREEAM 2008 Offices New Build

BES 6001

- Framework Standard for the Responsible Sourcing of Construction Products
- Launched 2008
- www.greenbooklive.com

BRE Environmental & Sustainability Standard



BES 6001: ISSUE 1.0

Framework Standard for the Responsible Sourcing of Construction Products

This BRE Environmental & Sustainability Standard describes the organisational governance, supply chain management and environmental and social aspects to be addressed in the certification and approval of the responsible sourcing of construction products

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Drivers for development of BES 6001

- Target within joint Government/Industry Strategy for Sustainable Construction (released June 08)
- Key target for Construction Products Association in 08/09
- BREEAM/CSH Materials credits
- ODA, Bovis Lend Lease, UKGBC, Eden project etc

Requirements of BES 6001

- Assessed against requirements within three categories:
 - Organisational Management Requirements
 - Supply Chain Management Requirements
 - Environmental and Social Requirements
- Some requirements are compulsory and must be met in order to achieve a 'Pass' Level. Points are awarded for voluntary performance beyond compulsory requirements to reach 'Good', 'Very Good' and 'Excellent' levels.

Organisational Management Requirements

- Compulsory
 - Documented responsible sourcing policy
 - Procedure to identify and meet legal requirements
 - Documented quality management system
 - Documented supplier management system and risk assessments for all suppliers outside EU/OECD.
- Voluntary
 - Certified quality management system to ISO 9001 (or equivalent)

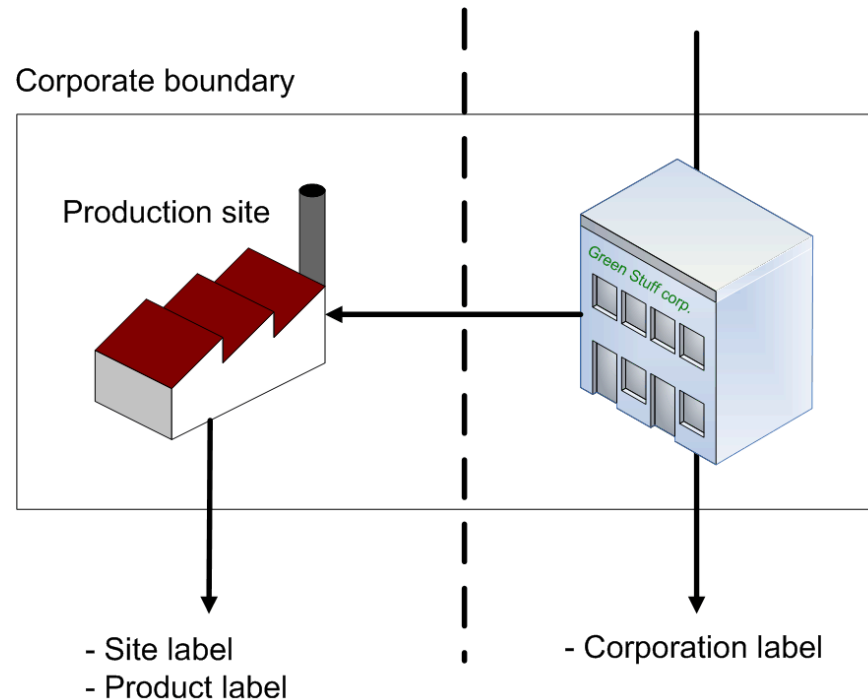
Supply Chain Management Requirements

- Compulsory
 - 60% constituent materials traceable to source
 - Traceable constituent materials from organisation with documented EMS
 - Traceable constituent materials from organisation with documented H&S management system
- Voluntary
 - 75% or 90% constituent materials traceable to source
 - 60%, 75% or 90% traceable constituent materials from organisation with certified EMS
 - 60%, 75% or 90% traceable constituent materials from organisation with certified H&S management system

Environmental/Social Requirements

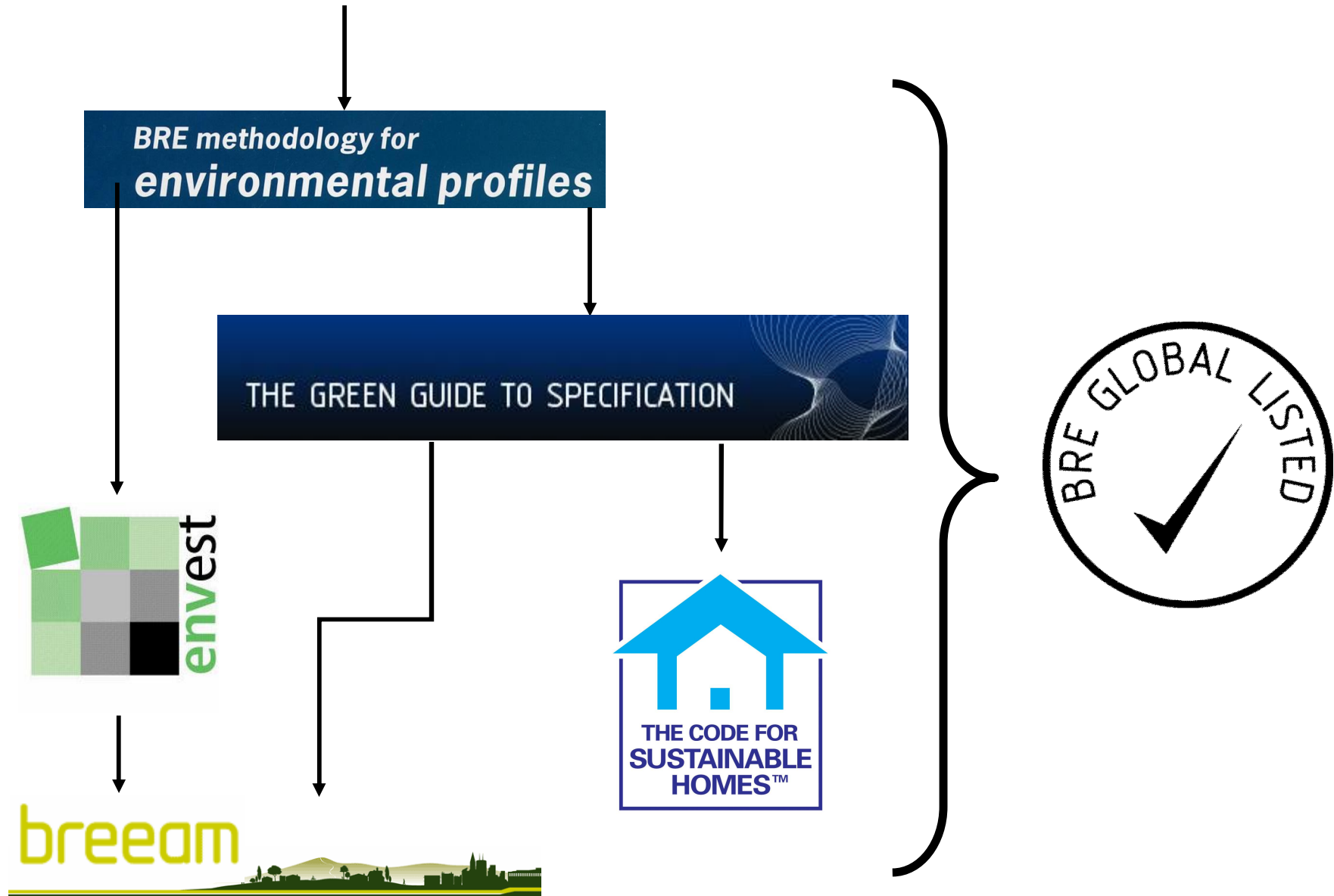
- Based on hierarchy of requirements:
 - Policy and metrics
 - Objectives and targets
 - Stakeholder reporting
 - External verification of data/information
- Compulsory (but points awarded)
 - Policy and metrics for reduction of GHG emissions
 - Policy and metrics for use of primary raw materials and stewardship at source

Certification options



- Sector Specific
- Company Specific

Life Cycle Assessment

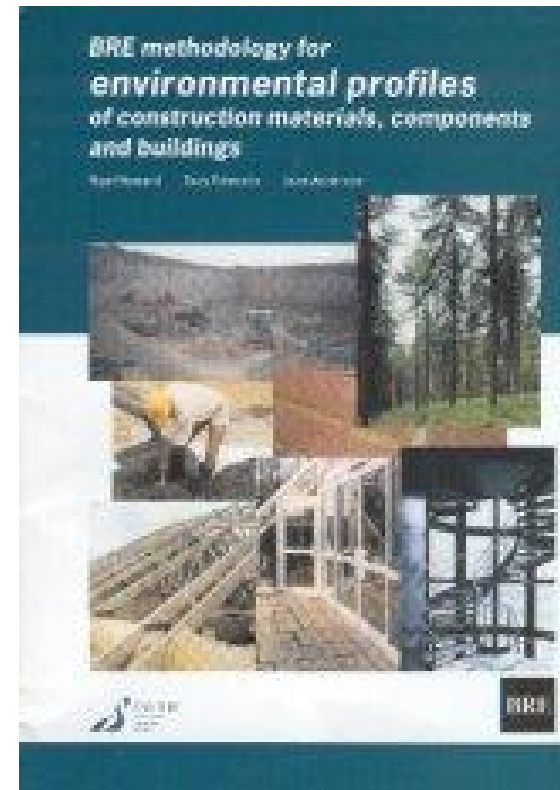


Life Cycle Assessment (LCA)

- A method to measure and evaluate the environmental burdens associated with a product system or activity, by describing and assessing the energy and materials used and released to the environment over the life cycle
- “cradle to cradle” or “cradle to grave” assessment

Environmental Profiles Methodology

- Originally published in 1999
- LCA method for built environment
- Scope is “cradle to grave”
- “Level playing field”
- Funded by Government
- Extensive Industry Involvement in Steering Group

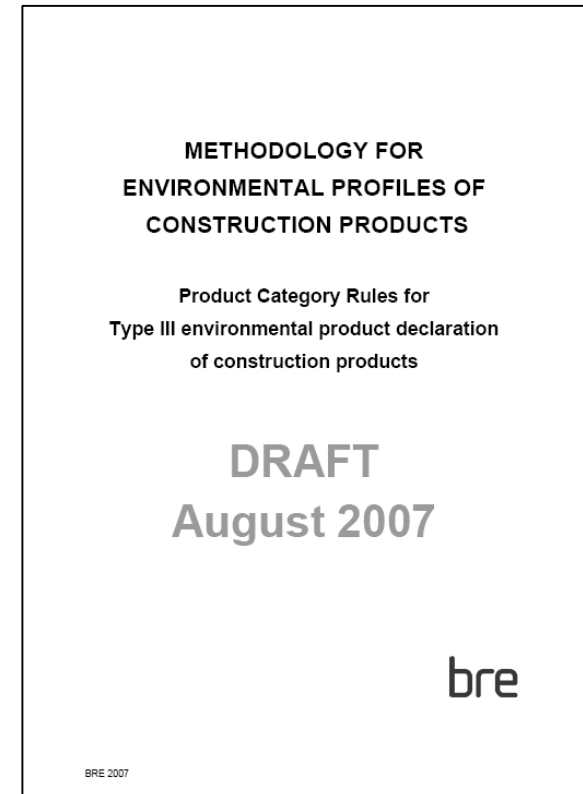


Updating the Environmental Profiles Methodology

- Evolving ISO standards
- Developing CEN agenda – Mandate 350
- New impact assessment methods
- Normalisation approach now European based
- Change in environmental priorities
- Detailed methodology application evolved
- Greater transparency
- A firmer platform for future years
- Founded on principle of industry consultation and consensus
- Developed as a transparent approach
- Independent governance process

Update Process

- Key Areas identified
- Briefing papers issued online
- Circulated to broad distribution list
- Responses collated and published
- BRE responses provided
- Ongoing dialogue
- BRE Global Sustainability Board Governance process
- Methodology published online 2007
- www.bre.co.uk/greenguide



Methodology Aspects

- Cut Off Criteria - >98%
- Data sources
- Carbon Sequestration
- Green Energy Tariffs
- Co-Product Allocation
- End of life recycling Allocation
- Recycled content
- Infrastructure
- Site Wastage
- Minerals Extraction
- etc...

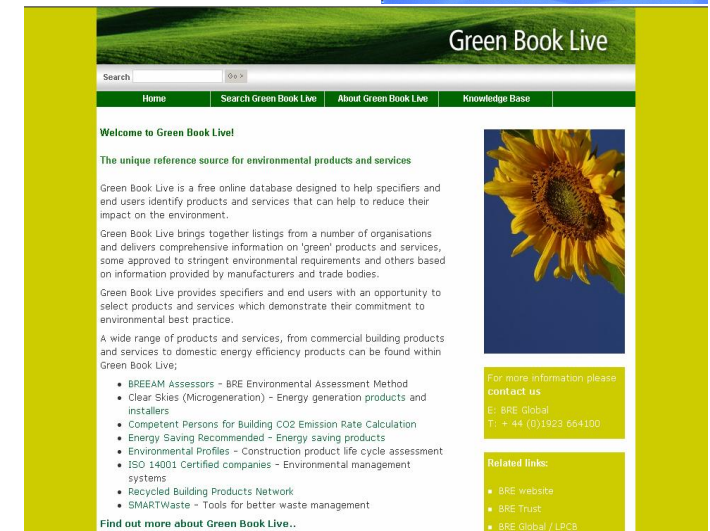
Updating the Green Guide

- Working with industry
- Detailed LCA database

Trade Association or Body	LCA Environmental Profile data	<ul style="list-style-type: none"> • Building and material specification design details • Material and component service life • Material site waste rates • Material waste disposal routes
ACA		P
APA	P	P
BCA	P	P
BDA	P	P
BLA	P	
BPCF		P
BPF, Plastics Europe	P	P
BRMCA	P	P
BRUFMA	P	P
BWF	P	P
CAB, EAA	P	P
CBA	P	P
CDA, Deutsches Kupferinstitut	P	P
CPA		P
CSMA	P	
EPIC		P
Eurisol	P	P
FRA		P
GPDA	P	
GUT	P	P
Interpave	P	P
LSA		P
PFF	P	P
QPA	P	P
SCI / IISI / Corus	P	P
SFGB	P	P
SPRA	P	P
SWA		P
TCC		P
UKFPA		P
UKQAA	P	
UKRFA, ERFMI	P	P
WPIF	P	P

Certified Environmental Profiles

- Data verification process – evidence checked
- Supports external claims
- 3 years validity
- An independent environmental product declaration
- www.thegreenbooklive.com



The Environmental Profile – An Environmental Product Declaration

Issue	Characterised Data	Unit
Climate Change	25	kg CO2 eq. (100yr)
Acid Deposition	0.2	kg SO2 eq.
Ozone Depletion	0.000022	kg CFC11 eq.
Pollution to Air: Human Toxicity	0.32	kg tox.
Pollution to Air: Photochemical Ozone Creation Potential	0.039	kg ethene eq.
Pollution to Water: Human Toxicity	0	kg tox.
Pollution to Water: Ecotoxicity	500	m ³ tox.
Pollution to Water: Eutrophication	0.015	kg PO4 eq.
Fossil Fuel Depletion	0.018	toe
Minerals Extraction	0.02	tonnes
Water Extraction	720	litres
Waste Disposal	0.02	tonnes
Transport Pollution & Congestion: Freight	17	tonne.km

Issue	Normalised Data	UK Citizen's Impacts
Climate Change	0.002	12300 kg CO2 eq. (100yr)
Acid Deposition	0.0034	58.9 kg SO2 eq.
Ozone Depletion	0.000077	0.296 kg CFC11 eq.
Pollution to Air: Human Toxicity	0.0035	90.7 kg tox.
Pollution to Air: Photochemical Ozone Creation Potential	0.0012	32.2 kg ethene eq.
Pollution to Water: Human Toxicity	0	0.0117 kg tox.
Pollution to Water: Ecotoxicity	0.0028	178000 m ³ tox.
Pollution to Water: Eutrophication	0.0019	8.01 kg PO4 eq.
Fossil Fuel Depletion	0.0043	4.00 toe
Minerals Extraction	0.004	5.04 tonnes
Water Extraction	0.0017	418000 litres
Waste Disposal	0.0028	7.19 tonnes
Transport Pollution & Congestion: Freight	0.0041	4140 tonne.km
Primary Energy	0.3	GJ
BRE Ecopoints Score	0.24	Ecopoints

Appendix No: 200s Valid From: 16/06/03 Valid To: 15/06/08
 Issue No: 1
 Signed on behalf of BRE Certification: R A Zammit

 BRE Certification Ltd., Gunton, Welford (WCC) 910A, Tel:01923 664100 Fax:01923 664003 www.brecertification.co.uk
 This certificate remains the property of BRE Certification Ltd and is issued subject to terms and conditions
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How can we use Environmental Profiles

Manufacturers – Environmental Management

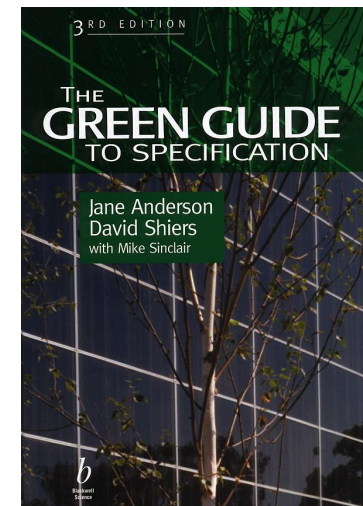
- To measure existing performance and monitor improvements
- To identify hot spots in the supply chain
- To understand implications of product stewardship
- To assess benefits of innovative processes

Architects – As Environmental Profiles or in Green Guide

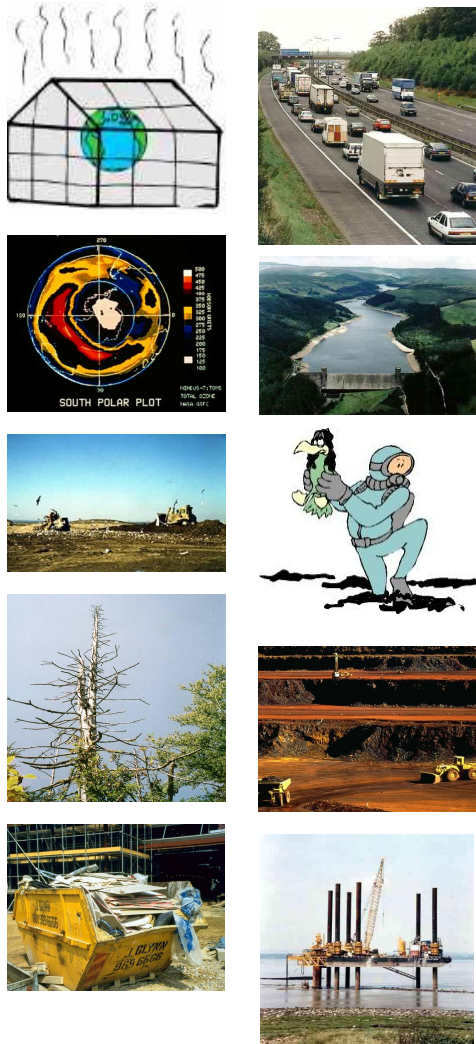
- To compare materials which offer the similar functions, eg facing bricks
- To compare specifications which offer similar functions, eg external walls
- To compare building designs over their expected lifetimes

The Green Guide to Specification: Background

- Post Office Internal Publication 1995
- Green Guide to Specification 1998
- Green Guide to Housing Specification 2000
- Green Guide to Specification 2002

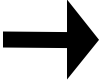
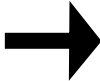
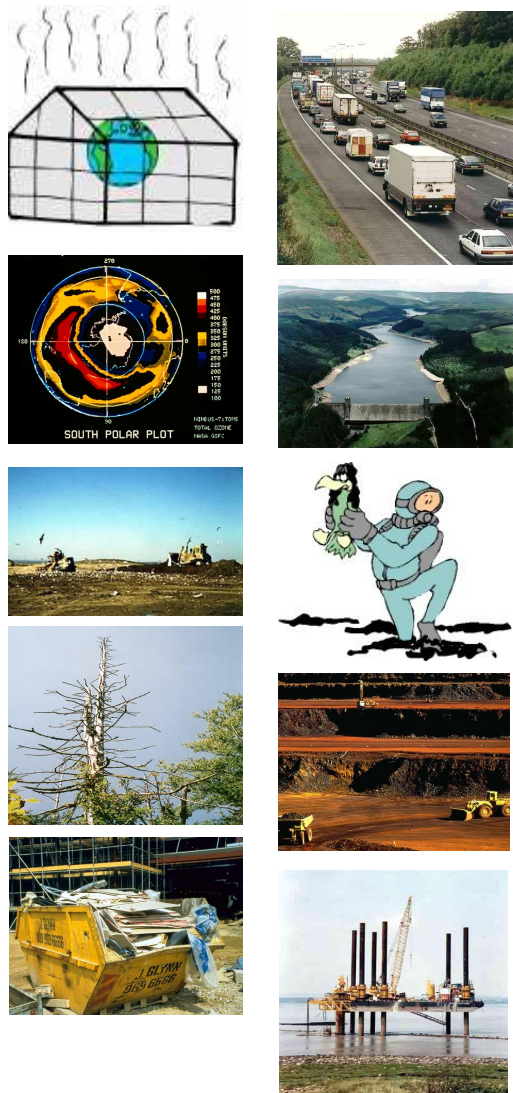


Impact categories



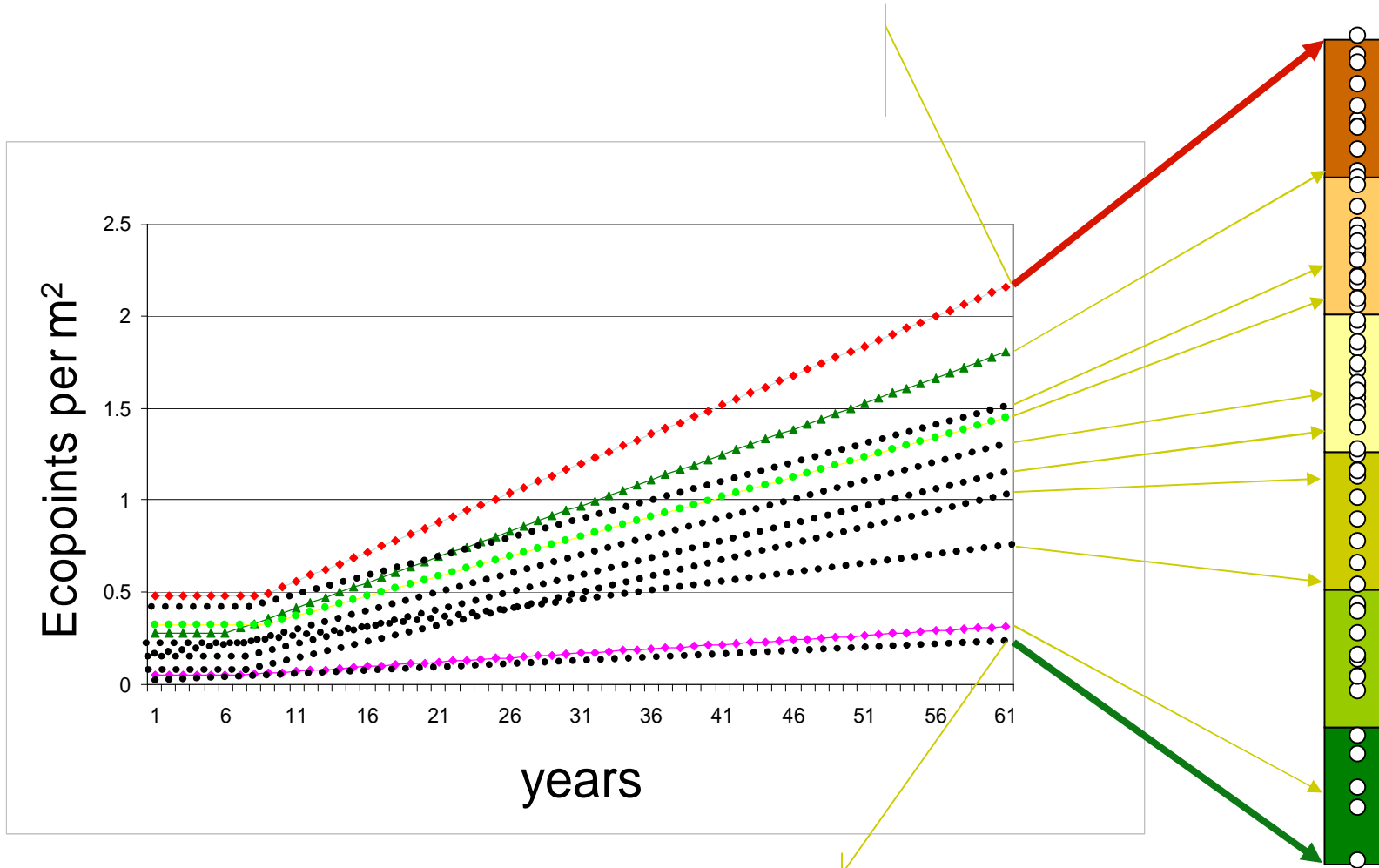
1. Climate Change
2. Water extraction
3. Mineral extraction
4. Ozone depletion
5. Human toxicity
6. Ecotoxicity to water
7. Nuclear waste (higher level)
8. Ecotoxicity to land
9. Waste generation
10. Fossil fuel depletion
11. Eutrophication
12. Low level ozone creation
13. Acid deposition

Derivation of Ecopoints



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The Ecopoint and A+ to E ratings

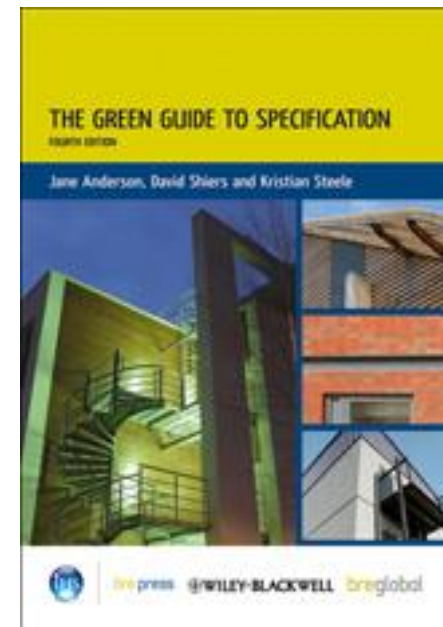
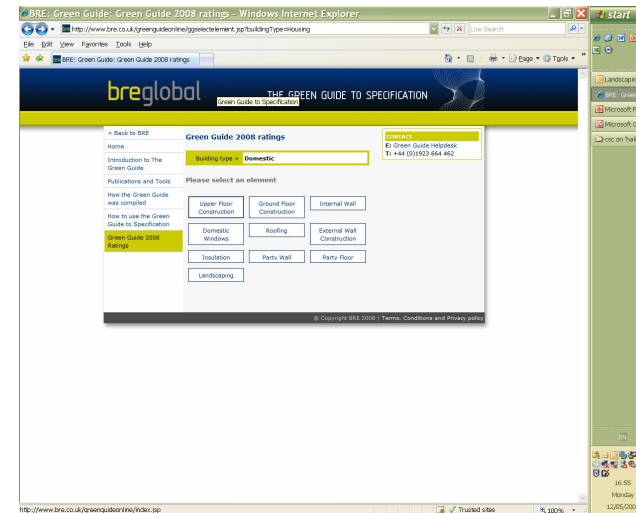


Updating the Green Guide to Specification

- Methodology updated
- Updated manufacturing information
- Building Regulations have changed
- Functional unit update
- New versions of BREEAM, EcoHomes and Code for Sustainable Homes demand more sophisticated specifications:
 - Commercial
 - Domestic
 - Retail
 - Health
 - Education
 - Industrial

The Green Guide to Specification

- 1300+ generic specifications
- 1800+ Summary Ratings
- Ratings A+ to E
- Online version (free)
- www.thegreenguide.org.uk
- Paper version (£69.50)
www.brebookshop.com



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Green Guide 2008 ratings

Building type > **Domestic**

Please select an element

Upper Floor Construction

Ground Floor Construction

Internal Wall

Domestic Windows

External Wall Construction

Insulation

Separating Wall

Separating Floor

Roof Construction

Landscaping

CONTACT

E: Technical Customer Service

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Green Guide 2008 ratings

Building type > **Domestic**

Category > **External Wall Construction**

External Walls

External wall ratings are the same for the following building types:

Domestic, Health, Commercial, Retail, Industrial, Education

Functional unit for External Walls:

1m² of external wall construction, to satisfy current building regulations, and a U value of 0.3 W/m²K. Where relevant, the specification will also include an internal wall finish.

Variation for retail/industrial

1m² of external wall construction, to satisfy current building regulations, and a U value of 0.3 W/m²K.

Perhaps more than any decision facing the designer, the choice of the external wall specification is subject to the widest range of practical, economic and visual considerations, some of which may be beyond the control of the design team.

External walls can have a significant contribution to the impacts of the building. The external wall can also account for around 30% of building costs. External wall specifications include a diverse range of construction types and materials; it is therefore no surprise that a wide range of environmental impacts is exhibited with this element.



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Super Lightweight block/blockwork ($\approx 850 \text{ kg/m}^3$)

BREEAM Schemes to which this element applies:

Elements	Non-domestic schemes											Domestic			
	BREEAM											Code for Sustainable Homes	Code for Sustainable Homes		
	Baseline	Offices - Design	Offices - Fitout	Habitat - Design	Public - Fit Out	NEAT (NHS)	Healthcare	Prisons	Schools	Courts	Industrial			Fuel/low Emission	Practitioner
Upper Floors	Y	Y		Y		Y	Y	Y	Y	Y		Y	Y	Y	Y
Ground Floors															
External Walls	Y	Y		Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Roofs	Y	Y		Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Floor Finishes	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Windows	Y	Y		Y		Y	Y		Y	Y		Y	Y	Y	Y
Internal Walls/Partitions	Y		Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Hard Landscaping	Y			Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Boundary Protection	Y			Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

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Please select the element type of External Wall Construction ratings you wish to review:

Blockwork Cavity Wall	Rendered or Fairfaced Blockwork Cavity Wall	Brickwork on Framed Construction
Rendered or Fairfaced Blockwork	Cladding on Framed Construction	Cladding on Masonry
Rainscreen Cladding	Insulated Cladding	Insulated Render Systems
Curtainwalling	Loadbearing Precast Concrete	



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Green Guide 2008 ratings

Building type >	Domestic
Category >	External Wall Construction
Sub-category >	Rainscreen Cladding
Element type >	Masonry Cavity Wall

	Element number	Summary rating
Clay tiles on timber battens, aircrete block cavity wall, insulation, plasterboard on battens, paint	806290615	A
Clay tiles on timber battens, lightweight solid block cavity wall, insulation, plasterboard on battens, paint	806290605	A
Clay tiles on timber battens, lightweight solid block outer, insulation, aircrete block inner, plasterboard on battens, paint	806290606	A
Clay tiles on timber battens, medium dense solid block outer, insulation, aircrete block inner, plasterboard on battens, paint	806290604	A
Clay tiles on timber battens, medium dense solid block outer, insulation, lightweight solid block inner, plasterboard on battens, paint	806290603	A
Clay tiles on timber battens, thin joint aircrete block cavity wall, insulation, plasterboard on battens, paint	806290616	A
Treated softwood boarding on timber battens, aircrete blockwork cavity wall, insulation, plasterboard on battens, paint	806290617	A+
Treated softwood boarding on timber battens, lightweight solid block outer, insulation, aircrete block inner, plasterboard on battens, paint	806290614	A+



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Green Guide 2008 ratings

Building type >	Domestic
Category >	External Wall Construction
Sub-category >	Rainscreen Cladding
Element type >	Masonry Cavity Wall

Element	Clay tiles on timber battens, thin joint aircrete block cavity wall, insulation, plasterboard on battens, paint
Element Number	806290616
Summary Rating	A
Climate Change	A
Water Extraction	A
Mineral Resource Extraction	A+
Stratospheric Ozone Depletion	B
Human Toxicity	A+
Ecotoxicity to Freshwater	A+
Nuclear Waste (higher level)	A
Ecotoxicity to Land	A+
Waste Disposal	A+
Fossil Fuel Depletion	B
Eutrophication	A+

Thank you

- Material manufacturers, trade associations and the Construction Products Association
- Project Steer Group
 - BERR
 - BRE Trust
 - Construction Products Association
 - DFES
 - English Partnerships
 - EST
 - Housing Corporation
 - HSBC
- BREEAM Materials Team
 - NBS
 - NHBC
 - OGC
 - Oxford Brookes University
 - Post Office/Royal Mail
 - RIBA
 - RICS
 - Royal Bank of Scotland
 - Taylor Woodrow
 - Willmott Dixon
 - WRAP

Thank you

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