



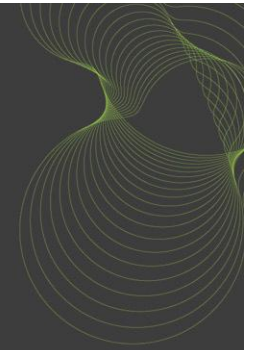
bretrust

Meeting with Royal Academy of Engineering -
Fellows

Christopher Watson

BRE Trust

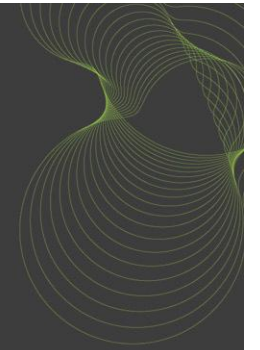
What does BRE Trust do?



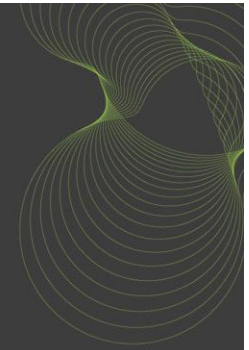
- BRE Trust is a charity which owns the subsidiary trading companies of the BRE Group including BRE, BRE Global and FBE Management Ltd
- This ownership structure enables BRE to be held as a national asset on behalf of the construction industry and its clients, independent of specific commercial interests and protects BRE group impartiality and objectivity in research and advice.
- BRE Trust uses the profit that the BRE Group 'gift aids' up to it to meet its charitable objectives

BRE Trust objectives

- Through education and research, the BRE Trust promotes and supports excellence and innovation in the built environment for the benefit of all.

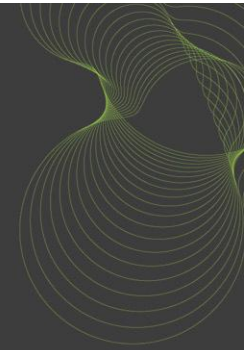


Trustees



- **Sir Neville Simms** (Chairman BRE Trust) Chairman, International Power
- **H W Try CBE** Latterly Deputy Chairman, Galliford Try plc
- **W R Treen** Latterly Director and Chief Executive, Cornhill Insurance plc
- **Professor J Burland CBE** Professor Emeritus, soil mechanics, Imperial FEng, FRS College
- **R Haryott FEng** Chairman, Arup Foundation
- **J Callcutt CBE** Latterly Chairman, The Review of House Building Delivery
- **P Lobban OBE** Latterly Chief Executive, CITB Construction Skills
- **Richard Gillies** Director of Plan A and Sustainable Business, Marks and Spencer plc
- **Mark Farrar** Chief Executive, Construction Skills
- **Mark Clare** Barratt Developments PLC
- **Hugh Ferguson** Thomas Telford Ltd

BRE Trust provides funding for:

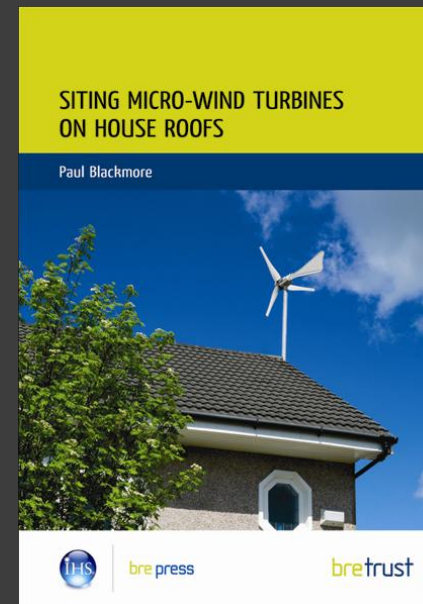


- BRE University Centres of Excellence
 - 5 Centres,
 - Bath, BRE Centre for Innovative Construction Materials
 - Cardiff, BRE Centre for Sustainable Engineering
 - Cardiff, BRE Centre for Sustainable Design
 - Edinburgh (with RAE support), BRE Centre for Fire Safety Engineering
 - Strathclyde – BRE Centre for Energy Utilisation - £140K pa
 - PhD Students
 - 20 active – 5 agreed - £350K pa

BRE Trust provides funding for:

- Research Programmes

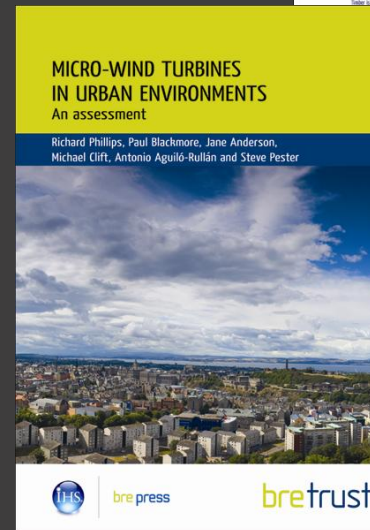
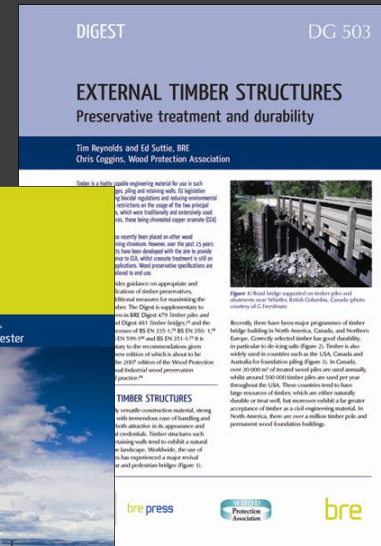
- Managed research – 39 active – this year **£800k**
- Thematic research – 3 year programme under way @ £1.5m - **£500kpa**
- Hot topics – eg Analysis of Display Energy Certificate data for Public Buildings
- MSc Students
- NHBC F / WRAP and other partnerships



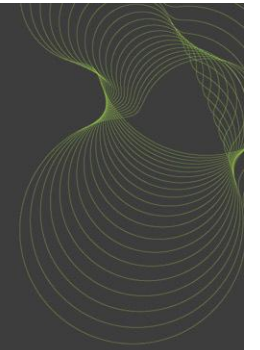
BRE Trust provides funding for:

- Publications
 - 115 BRE Publications are in the pipeline of which
 - BRE Trust Funded (55) £600k pa
 - Outputs from BRE Trust funded research projects (25)
 - NHBC Foundation publications (16)
 - Plus other publications Outputs from research projects – 11 last year

TOTAL annual BRE Trust funding - £2.4M



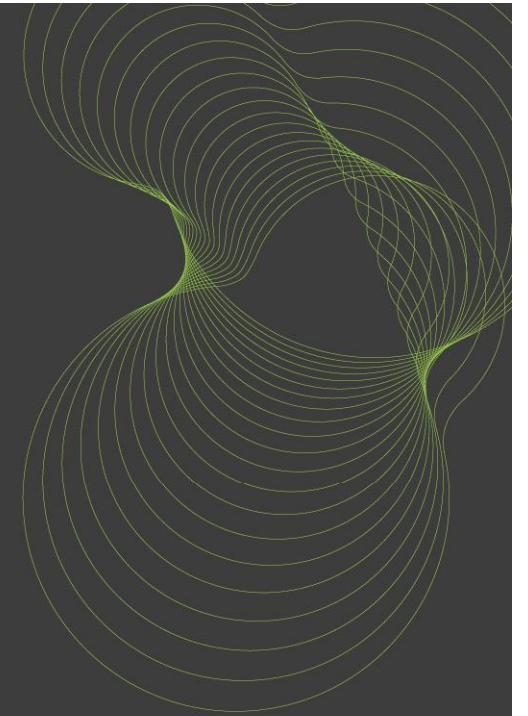
BRE Trust provides funding for:



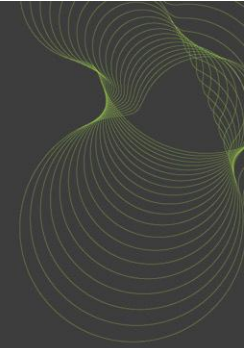
- Sponsorships
 - Conferences
 - *RIBA*
 - *Housing stock Modelling conference*
 - *Major Fires Meeting*
 - *BRE Research Review*
 - *PhD Review*
 - Parmiter's School

bretrust

Thank you

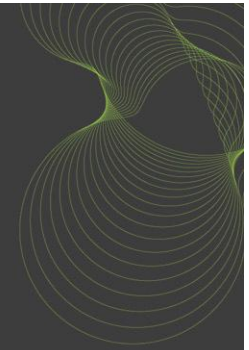


Managed Research Programme (Green Tools)



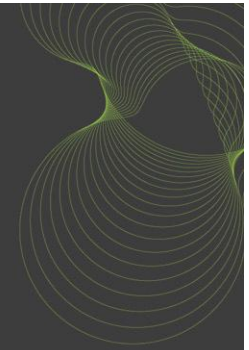
- BREEAM-next generation
- Better BREEAM ratings by integration with RIBA stage plan
- Developing a carbon footprint model for housing
- A balanced scorecard methodology for Environmental Weightings
- Green guide to Civil Engineering specification. Development of life cycle assessment for infrastructure projects and extended application of BREEAM
- Energy payback for renewable energy technologies
- Carbon assessment tool for commercial building portfolios
- Building the future
- A national sustainability model to benchmark Environmental Assessment Methods (EAMs) for the built environment in Ireland
- A BRE design tool for effectively designing buildings in polluted urban areas
- Reducing the environmental impact of measuring ventilation in buildings-final development of replacement short term tracer
- Developing a process for identifying opportunities for low carbon district heating
- Developing guidance for the use of PV systems in buildings

Managed Research Programme (investigations)



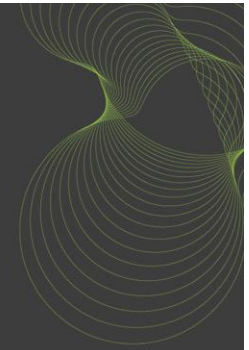
- Are building users sabotaging the move to low carbon buildings?
- DEEPS-Design for Energy Efficient Pumping Systems
- Solid state lighting: overcoming the barriers
- Sustainable foundations: a strategic scoping study
- Demonstrating the cost benefits of environmentally sustainable buildings
- The feasibility of creating a funding mechanism for UK Carbon reduction projects
- Building mounted wind Turbines on high-rise and commercial buildings
- Measuring the impact of innovation on the construction process – the BRE Innovation Park
- Low water use fittings/appliances-will customers accept them?

Managed Research Programme (fire & security)



- Research into the evacuation of people who are elderly, ill, disabled or small children from fire
- Understanding the mechanisms for successful water mist protection systems
- Realistic smoke visualisation from computer fire simulations
- Education on the use of glazing systems in fire safety engineering
- Security glazing-Is it all that it's cracked up to be?
- Smoke detection in big spaces
- Towering infernos-prevention rather than cure
- Smoke ventilation –new design guidance
- External fire spread on high rise buildings-controlling the risks

Managed Research Programme (Innovation, refurbishment, training and CSR)



- Sustainable, high value construction products from domestic black bag waste
- Biometric security-Reliable or not?
- Innovative low carbon cementitious binders based on agricultural and industrial wastes for sustainable construction
- Eco-Bio accelerated Anaerobic Digestion for small-scale renewable energy production
- Flood resilient planning and building

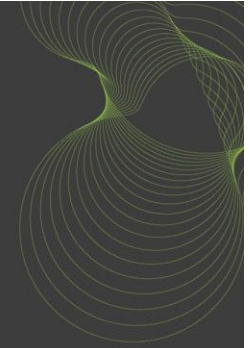
- Developing generic sustainable refurbishment options using the BRE Victorian stable block as a test bed exemplar
- Which route to cost effective carbon reduction-zero carbon for new buildings or improving the existing stock?
- Use of sustainable and low-environmental impact materials in refurbishment projects

- Online training programme

- Mind the gap –an assessment of existing Corporate Social Responsibility Indices

Themed Research Programme – 20 projects

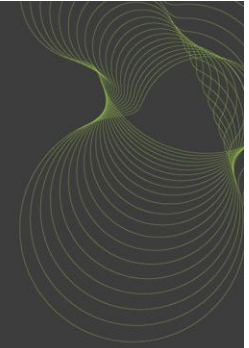
Low Impact Processes Materials and Products



- **Priority Area 1 Quantification of Baseline**
 - High value, low CO2 activated binder concrete products
 - whole life performance to facilitate a step change market
 - Fire retardants - a balancing act
- **Priority Area 2 Definition and Measurement LCA**
 - Implications of LCA methodology choices for the evaluation of construction materials
 - Whole-building life cycle assessment
 - Extending LCA Methodology to the evaluation of building services and other non-building materials
 - Whole life cycle assessment of off-site manufacturing versus traditional methods of construction
 - Liability of buildings at the end of their life
 - Low impact materials in low impact buildings (LIMILIB)

Themed Research Programme – 20 projects

Low Impact Processes Materials and Products



- Priority Area 3 **Quantification of benefits**
 - The integration of renewable technologies, innovative control systems and materials in the Standard Assessment
 - Wireless technologies - providing low impact solutions ?
 - Sustainable shop fit and equipment
 - Phase Change materials
 - Roofing solutions for low impact
 - Sustainable substructures
 - Measuring the wellbeing benefits of interior material selection
 - Integrating Organic PV into the built environment
 - Historic Estates - back to grass roots
- Priority Area 4 **Vulnerability**
 - Long service life concrete structures for aggressive environments: minimising sustainability impacts and whole life
 - Innovation Park Energy Zone 1 - A National Test Installation to Investigate Effective Combined Operation of PVs and Smart Meters
 - Service life performance of low impact materials and products. Do green credentials fade over time?

BRE Trust Publications (2008/09)

- FB15 **Putting a price on sustainable schools.** A Surgenor and I Butterss (May 2008)
- FB16 **Knock it down or do it up? Sustainable housebuilding:** New build and refurbishment in the Sustainable Communities Plan. F Plimmer, G Pottinger, S Harris, M Waters and Y Pocock (October 2008)
- FB18 **Siting micro-wind turbines on house roofs.** P Blackmore (May 2008)
- IP 4/08 **Micro-wind turbines on house roofs** (May 2008)
- IP 5/08 **A guide to certification and approval: for engineers and designers** (May 2008)
- IP 9/08 **Applying the Code for Sustainable Homes on the BRE Innovation Park**
 - Part 1: Lessons learnt about building fabric (August 2008)
 - Part 2: Lessons learnt about energy sources, overheating and ventilation (Sept 2008)
 - Part 3: Lessons learnt about water use, harvesting, recycling and drainage (Oct 2008)
 - Part 4: Lessons learnt about architecture, construction and material sourcing (Nov 2008)
- IP 10/08 **Safe and secure town centres at night** (November 2008)
- IP 2/09 **Structural composite connections for sequential seismic and fire performance** (February 2009)

- BRE Trust part funded NHBC Foundation the following seven reports:
 - NF 8 **Site waste management: Guidance and templates for effective site waste management plans.** (July 2008)
 - NF 9 **Zero carbon: what does it mean to homeowners and housebuilders?** (April 2008)
 - NF 10 **Learning the lessons from systemic building failures** (September 2008)
 - NF 11 **The Merton Rule: A review of the practical, environmental and economic effects** (January 2009)
 - NF 12 **The use of lime-based mortar in new build** (December 2008)
 - NF 13 **Community heating and combined heat and power** (February 2009)
 - NF 14 **Zero carbon homes - an introductory guide for housebuilders** (February 2009)

Publications

- Information Papers
- Digests
- Good Building Guides
- Good Repair Guides
- Reports
- Special reports

- NHBC Foundation

