

bre

WALES & SOUTH WEST

ABOUT US

BRE is an independent research-based consultancy, testing and training organisation, offering expertise in every aspect of the built environment



We help clients create better, safer and more sustainable products, buildings, communities and businesses. BRE is wholly owned by the BRE Trust, with profits used to progress the state of knowledge in the construction industry and drive forward cutting edge research and the dissemination of information.

Since setting up its Welsh office, BRE has become a strategic player in improving the sustainability of the construction industry, reducing emissions that contribute to harmful climate change and leading innovation to help Welsh businesses become recognised for delivering practical, affordable and sustainable solutions at a National level.

BRE Wales' strategic position

BRE Wales act as Technical Advisors to the Welsh Assembly Government on issues such as the implementation of the Code for Sustainable Homes and BREEAM, strategic regeneration within the Heads of the Valleys region and the allocation of Government funding under the Arbed grant scheme.

We are a founding member of the Wales Low/Zero Carbon Hub, supporting the Welsh Assembly's carbon reduction aspirations. We also have strong working partnerships with many other key organisations and research institutions, such as Constructing Excellence Wales, Construct Wales, the Carbon Trust and Warm Wales to name but a few.

Research

In keeping with BRE's heritage of research and development, BRE funds Research Chairs at Cardiff University within the School of Architecture (human impacts of sustainable design) and the School of Engineering (sustainable construction informatics). We are also involved with the Prince of Wales Innovation Scholarship Programme, carrying out industry based Doctorate projects with real-world applications.

BRE Wales additionally runs the secretariat for WoodKnowledge Wales, with input from several academic, industrial, research and government bodies. The aim is to provide innovation support, technical guidance and knowledge transfer in order to improve the potential of the Welsh timber industry. BRE has a dedicated project officer for developing research and innovation opportunities with Welsh timber businesses.

Consultancy

BRE Wales offers consultancy services to public and private clients on issues relating to construction sustainability. This is backed by the wealth of expertise and facilities available through our National headquarters and other regional offices, ensuring that we can form the right team and find the best solutions for the job at hand.

We now also have representatives based in the South West of England delivering our range of services and developing our research interests. More information is provided in the BRE South West Section (page 10)



This brochure gives details of a selection of BRE Wales' popular consultancy services, which are also available through our BRE South West operation. However the nature of our expertise is extremely broad, allowing us to offer a range of services from technical advisory roles, research studies, writing publications, delivering events and more. Hence, we are more than happy to discuss your specific needs to see how we may be of service

CONTENTS

| | | |
|---|---------------------|----|
| New Build | - BREEAM & The Code | 4 |
| | - Passivhaus | 5 |
| Refurbishment | - WHQS | 6 |
| Waste Management & Resource Efficiency | | 7 |
| Energy Strategies | | 8 |
| Energy Modelling | | 9 |
| BRE South West | | 10 |
| Training Services | | 11 |
| Contact Us | | 12 |



NEW BUILD

BREEAM - the BRE Environmental Assessment Method and the Code for Sustainable Homes

BRE developed BREEAM for non-domestic buildings and the Code for Sustainable Homes as a means of assessing and driving forward the environmental performance of buildings.

We act as technical advisors to Government on the implementation of these schemes. In Wales, buildings need to be assessed under BREEAM or the Code as a condition of Planning, with the need for certain minimum performance standards to be achieved.

BRE is in a unique position to provide holistic consultancy and research on the affordable delivery of high BREEAM and Code rated buildings to developers, clients, designers and contractors, demonstrating the benefits and savings for owners and building users.

We work with design teams to seek cost effective solutions for developments, ranging from advice on specific issues to a comprehensive one-stop package that includes full building Certification via our partner consultants.

We can tailor the package of services to meet specific requirements, including initial scoping studies, in-house training sessions, design team meeting facilitation, provision of design details or development of specifications.

TOWERS & BEACONS, CODE 4 DEVELOPMENT

BRE Wales have helped Cynon Taf Housing Association attain the highest achieving Code 4 scheme in WAG's Pathfinders pilot project (at design stage).

The development of 34 units achieved this without the use of renewables by taking a 'fabric first' approach, leaving scope for further improvement in the future.

BRE provided sustainable design advice for the scheme as well as design SAP assessments, daylighting calculations, bridging detail calculations, a water strategy, waste management advice and guidance on material selection.

IN PRACTICE





PASSIVHAUS

Passivhaus is a specific construction standard that delivers buildings with extremely high energy efficiency and low running costs

Passivhaus dwellings typically achieve energy efficiency savings of 90% compared to existing housing.

BRE is registered with the Passivhaus Institut Darmstadt, Germany and are able to offer a complete design and certification service for those interested in building to this standard.

Advice can be provided on issues such as heating and ventilation strategies, occupancy comfort and construction detailing and can be applied to either a one-off building or an entire community development.

The guidance will be of particular use to professionals who have limited exposure to Passivhaus design, as these standards poses new challenges and risks, which can be minimised by employing an experienced consultant.

BRE uses PHPP – the Passivhaus Planning Package to assess compliance with the Passivhaus standard. We also offer a range of specialist training and consultancy services to advanced users, including the generation of site specific climate data files for use in PHPP as well as thermal bridging and condensation risk calculations.

THE WELSH PASSIVHAUS COMPETITION

BRE Wales, in conjunction with Blaenau Gwent County Council and United Welsh Housing Association, ran the first ever Passivhaus design competition in November 2009 to procure the best possible Passivhaus dwellings for the Ebbw Vale 'Works' redevelopment site.

BRE Wales worked closely with the competition winners, Bere Architects, on the design and construction of the first Social Passivhaus to be built in the UK.

IN PRACTICE





REFURBISHMENT

While modern building standards are driving forward sustainability improvements in new construction projects, a significant burden still remains within the existing stock

Older buildings are typically far less energy efficient than their modern equivalents, however the inherent character and existing investment in materials and resources encourages us to look at sustainable refurbishment as a means of economically upgrading our built environment.

BRE is able to offer a wide range of advice, from identifying strategic renewal areas, right through to assistance with detailed design and energy and condensation risk modelling.

The Welsh Housing Quality Standard

Domestic dwellings are an important focus in Wales for reducing energy demand and hence carbon emissions, while simultaneously reducing the risk of fuel poverty in vulnerable households by lowering fuel bills.

A significant portion of BRE Wales' work goes towards assisting the Welsh Assembly Government in bringing all housing across Wales in line with the Welsh Housing Quality Standard (WHQS) and driving forward energy efficiency improvements.

BRE work with owners of social housing stock to:

- Identify cost effective ways of meeting the WHQS for dwellings, through adopting a whole house approach
- Carry out stock evaluation and benchmarking exercises using tools such as EcoHomes XB, allowing priorities to be identified and refurbishment programmes to be better managed
- Develop specifications to ensure refurbishment programmes are approached holistically and that sustainability measures are written in from the start
- Look at cyclic issues inherent to the Standard to identify how longer term problems can be reduced or avoided (i.e. material selection, waste management, etc)
- Identify and help apply for funding options that may be available to support their aspirations

IN PRACTICE

TSB RETROFIT FOR THE FUTURE

BRE Wales have worked on a series of trial projects for the Technology Strategy Board, investigating ways in which an 80% carbon reduction may be achieved in existing housing.

Studies looked at the applicability and practical issues associated with the use of innovative, cutting edge technologies to see how they may become mainstream solutions in the future to help drive down energy use in homes.





WASTE MANAGEMENT & RESOURCE EFFICIENCY

Waste management

BRE can help with many aspects of waste and resource management, from working with designers to 'design waste out' of projects, to helping contractors reduce arisings and divert waste from landfill disposal.

Taking better control of waste and managing resources efficiently throughout the course of a project can bring about significant benefits, both financially and environmentally.

BRE have tools available that can assist with Site Waste Management Planning, monitoring waste arisings and waste costs on projects, which is key to providing valuable feedback for continual improvement.

Examples of our services include:

- Assistance in the development of Site Waste Management Plans at Design and Site level
- Training in the use of BRE's SMARTWaste tools for waste planning and monitoring
- Carrying out pre-demolition and/or pre-refurbishment audits to identify key wastes and prioritise options for landfill diversion
- Assisting with waste minimisation strategies during design
- Helping comply with the waste credit requirements of BREEAM and the Code for Sustainable Homes

Wider resource efficiency

BRE have been involved in strategic studies into the recyclability and end of life options for various materials/products, including consideration of lifecycle impacts to minimise resource use and reduce other environmental impacts.

For example, BRE Wales have written a 'Waste Strategy for the Welsh Housing Quality Standard' for the Welsh Assembly Government and Constructing Excellence Wales and have carried out other investigative studies on end of life options for insulation materials and the potential use of recycled aggregates in Welsh roads.

WASTE MANAGEMENT PLANNING

BRE has helped many construction companies implement waste planning and monitoring systems that have allowed them to identify key wastes to target for reduction strategies, opportunities to recycle more waste and reduce over ordering levels and ultimately to realise cost savings.

IN PRACTICE





ENERGY STRATEGIES

BRE has extensive knowledge of microgeneration and medium scale renewable and low carbon technologies

Changes in Welsh planning policies will open the door to a wider uptake of these systems. BRE can help maximise the benefit of any low/zero carbon technology.

BRE provides the following services:

- Feed in Tariff (FIT) feasibility studies
- Development of Sustainable Energy Strategies - for regions/masterplans or individual developments
- Advice on the feasibility and implementation of community heat and power projects
- Renewable energy feasibility studies for new and existing buildings – where building performance, site characteristics and energy demand profiles are assessed to demonstrate environmental and financial benefits
- Independent assessments/surveys of user satisfaction and real-world performance of low carbon/renewable installations





ENERGY MODELLING

To support our wider consultancy, BRE offer a range of modelling services

These include:

- Energy strategies/stock energy assessments
- Thermal/Building performance modelling (whole building – domestic or commercial)
- Thermal bridging analysis (2D and 3D calculations using Therm and Trisco)
- PHPP (Passivhaus Planning Package) assessments
- SAP and SBEM analysis
- Window U value and psi value calculations to EN ISO 10077
- Daylighting calculations
- Strategies and design guidance to improve air tightness

THERMAL BRIDGING ANALYSIS

Thermal bridging is becoming an increasingly critical issue in the design of low energy and low carbon buildings. It takes place at all geometric junctions in a building and whenever a structural member breaches the insulation layer.

Thermal bridging can significantly increase heat loss and gain from a building, diminishing the value of the insulation and leading to elevated heating and cooling demands.

It can also lower the dew point within a construction, leading to surface and interstitial condensation.

BRE offers a specialist thermal bridging calculation and assessment service to help mitigate these potential problems and verify anticipated performance of details for planning approval. We can provide calculations that comply with EN ISO 10211 for use in SAP and PHPP.

IN PRACTICE



BRE SOUTH WEST

BRE South West has recently been established to address the needs of the South West of England

In addition to having staff within the region, we utilise expertise across our other offices, particularly BRE Wales, due to the many similarities in regional circumstances and the demand for comparable consultancy solutions.

All of the technical services described in this brochure are available through BRE South West, including:

- Support with the delivery of high BREEAM and Code for Sustainable Homes rated buildings
- Passivhaus design consultancy and Certification services
- Refurbishment advice, including support with the delivery of Decent Homes programmes
- Help complying with England's mandatory Site Waste Management Planning Regulations
- Energy strategies and Renewable Energy feasibility studies

BRE South West set up the Centre for Innovative Construction Materials within Bath University's Faculty of Engineering and Design to provide research and development on sustainable construction materials.

We have recently appointed a research fellow to work with local architects, housing associations and developers to advance the use of renewable materials such as wood and hemp.

We also work closely with our partners Constructing Excellence South West, the Energy Saving Trust, Cornwall Development Company, Community Energy Plus and Regen South West on various projects.

CORNWALL ECOTOWN PARTNERSHIP

BRE have formed a strategic partnership with Cornwall Council to assist them in maximising the achievements and benefits of the St Austell EcoTown for the wider Cornish community. This role includes engaging with both retrofit and new build projects, together with engendering skills and supply chain to deliver local economic benefits from the major new low carbon development.

IN PRACTICE



TRAINING SERVICES

Our training draws on the combined expertise of the BRE Group, tuned to the specific needs of those working in Wales and the South West

We provide a portfolio of training courses and accreditation schemes that can help companies and individuals extend their skills and capabilities to increase their efficiency and competitiveness.

Sessions range from general interest and CPD accreditation levels through to courses resulting in a formal qualification.

BRE has a significant track record of working with other organisations, such as Constructing Excellence Wales and RIBA/RSAW to provide sessions tailored to their specific interests.

We are formally recognised by the RIBA CPD Providers Network and the Construction CPD Certification Service as well as providing our own Accreditation.

Courses are run at venues all over Wales and the South West, but some can be provided on company premises for convenience.

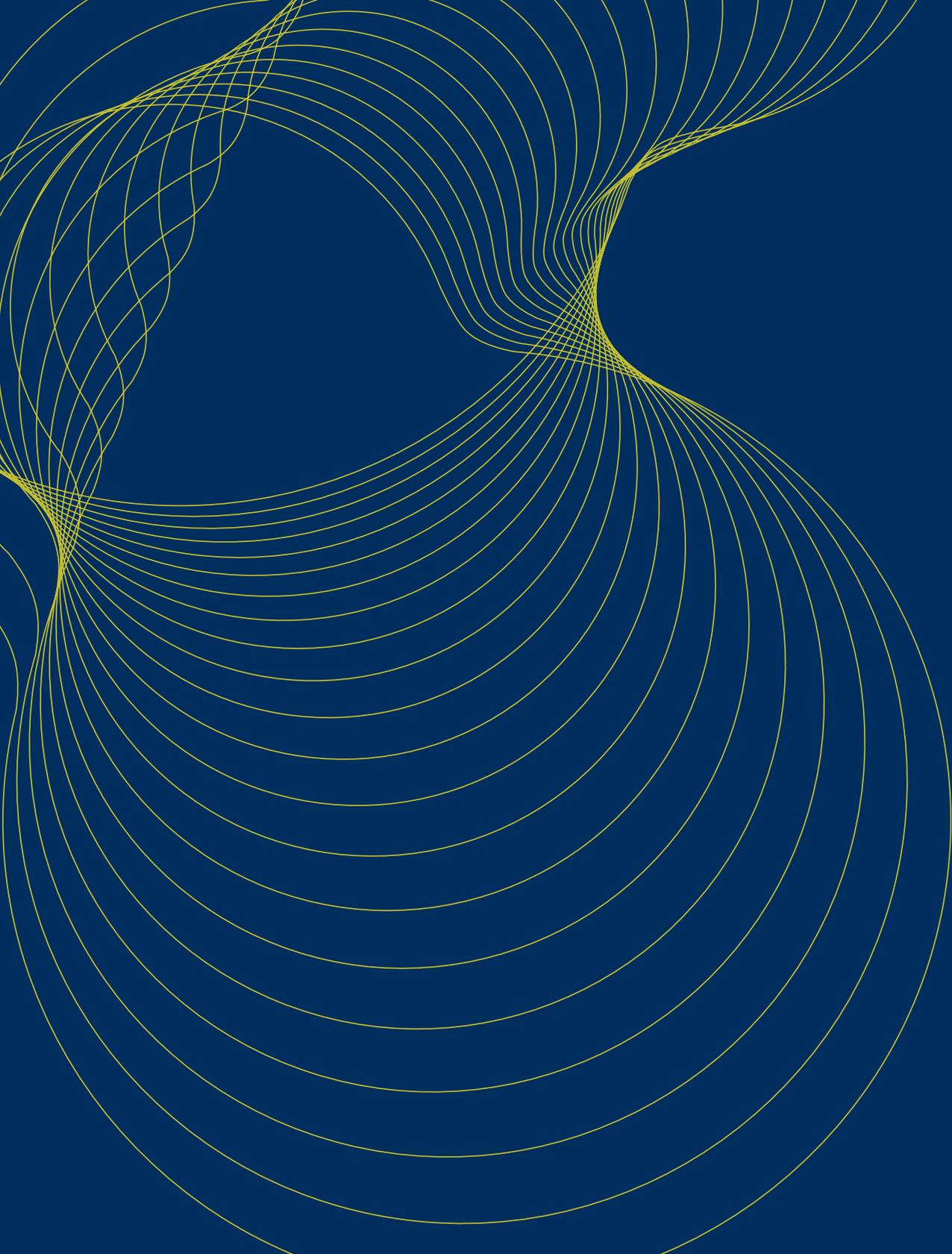
We currently deliver training on a range of topics, including:

Formal qualification:

- Assessor training for various BREEAM schemes (i.e. Commercial, Education, Healthcare)
- Assessor training for The Code for Sustainable Homes

CPD accreditation:

- SMARTWaste Waste Management Planning & Monitoring Tool training
- Local hosting of BREEAM and The Code for Designers
- Production of energy & renewable energy in buildings
- Life Cycle Assessment
- Zero Carbon and carbon offsetting
- Low and very low impact design
- Environmental & building physics
- Water and sewage issues
- In use & post occupancy evaluation
- Refurbishment of buildings



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