Last month, we looked at the NHBC Foundation, for which the NHBC supplies most of the money and BRE most of the expertise. So what is BRE?

BRE is a part of an organisation which has a complex structure. To understand the name and the organisation, we need to go back in history.

The Building Research Station

BRE began life as the Building Research Station (BRS). This was a government funded laboratory set up in 1921 with a dozen staff – the world’s first building research organisation. Originally based in London, it soon moved to its present site in Watford, Hertfordshire.

Important early work led to improvements in the quality of bricks, and the BRS also helped with the standardisation of brick sizes. More innovative was their building of a house of straw in 1929. The walls were straw panels and so too was the flat roof – asphalted over. Another unusual project was carried out during World War 2: the making of a model of the Möhne Dam in Germany. The model was made across a brook running over the BRS site, and it was used by Barnes Wallis to develop the bouncing bomb which destroyed the dam in 1943.

In 1949, a Scottish branch of the BRS was set up in East Kilbride, not far from Glasgow. This took into account the different building techniques and climate found north of the border.
The Fire Research Station

There were two other early research establishments that we need to consider: for fire and for timber.

Fire testing had been carried out in Manchester from 1909 onwards, funded by the insurance industry. In 1935 a Fire Testing Station was set up in Hertfordshire, funded jointly by the insurance industry and the government. With a broader remit, it became the Fire Research Station in 1949.

The Forest Products Research Laboratory

The Forest Products Research Laboratory was set up in Princes Risborough, Buckinghamshire, in 1927, funded by the government. It investigated the utilisation of timber (including strength testing) and the prevention of decay and insect attack.

BRE

In 1972, the three research organisations – the Building Research Station, the Fire Research Station, and much of the Forest Products Research Laboratory – were merged into the Building Research Establishment, based at Watford.

In 1997, the Building Research Establishment was privatised, and it changed its trading name simply to ‘BRE’. The reasoning for this was that their work was not confined to building, nor to research, and the organisation was no longer a government Establishment.

The present facilities at the Watford site include:

- A structures lab which can house a four storey building. Floods, earthquakes, etc can be simulated.
- Two wind tunnels. Winds of 110 mph can be generated – equivalent to tornados and hurricanes.
- A burn hall where a fire nine metres high can be contained.
- An anechoic chamber which absorbs all sound, enabling accurate measurements to be made of sound intensity, etc.

Most of the Approved Documents of the building regulations have been written by BRE.

BRE do a lot of consultancy work. Through the Nineties, they monitored the leaning Tower of Pisa while its angle of lean was very gradually reduced from 5.5° to 4°. Their expertise was also called upon when the Millennium bridge across the Thames had to be closed after its opening day. Two powerful BRE shakers were used on the bridge to replicate the swaying that had occurred, thereby helping the design problem to be analysed and solved.

BRE is a company owned by the BRE Trust, which is a registered charity.

The BRE Trust

The mission of the BRE Trust is:

‘Through education and research to promote and support excellence and innovation in the built environment for the benefit of all.’
The BRE Trust owns BRE and three other companies, BRE Global, BRE Ventures and FBE Management (see below). Profits from these companies support the trust, and allow it to fund university research.

Between the Trust and these four companies is a layer of management called BRE Group, but we’ll ignore them – even without them the conglomerate is confusing enough.

**BRE Global**

BRE Global is the organisation that tests and certifies products and services.

It has two main areas of expertise:

1. **Fire safety**
   
   As we have seen, BRE has a long history of fire expertise. In 2000, BRE acquired the Loss Prevention Certification Board (LCPB), and they now publish the LPCB Red Book Live. This can be used to specify safe products for your new home (or factory, or whatever) – safe with respect both to fire and to intruders. (See Further Info.)

2. **Environmental impacts of buildings**
   
   It can’t be said that BRE pioneered awareness of the environmental impacts of buildings, but considering that they were part of the ‘establishment’ they did react fairly quickly to the new agenda being introduced by fringe groups and enthusiasts. In 2000, they launched the *EcoHomes* rating system, and this was followed in 2007 by the *Code for Sustainable Homes*.

   BREEAM is the *BRE Environmental Assessment Method*, which has been adopted in many parts of the world. Selfbuilders come across it as SAP (Standard Assessment Procedure).

   Another part of BREEAM is the *Green Guide*, which is freely available online. For nine major elements of a building (roof, external walls, windows, etc) different forms of construction have been given a rating according to their environmental impact. (More details can be found in my May 2011 article – one of a series about the Code for Sustainable Homes.)

   Another BRE offering is *SmartWaste*, a free web procedure for keeping your Site Waste Management Plan in accord with the regulations. (SWMP’s were discussed in the June 2011 article.)

BRE Global undertakes training for professionals, with courses covering energy, sustainability, fire, security, health & safety, etc. Many of these courses lead on to accreditation, eg, as Energy Assessors.

**BRE Ventures**

BRE Ventures is about innovation, about turning an idea in someone’s head into a product on the market. The idea should, of course, relate to some aspect of BRE’s sphere of expertise, viz, the built environment.

An example Venture is Tri-Air Developments. This company produces wall mounted units which incorporate “a unique ‘fresh air’ technology that naturally and safely decontaminates indoor air and surfaces to protect against viruses, bacteria and superbugs”. (The technology can also be integrated into MVHR units.) Though
these products are probably more applicable to hospitals, hotels, and the like, they may also be of use in the homes of people with sensitive health. (See Further Info.)

**BRE University Centres of Excellence**

The five BRE University Centres of Excellence currently have 110 PhD researchers, with 29 staff and 39 research associates:

- Edinburgh University – Fire Safety Engineering.
- Strathclyde University – Energy Utilisation Research.
- University of Bath – Innovatory Construction Materials.
- Cardiff University, Welsh School of Architecture – Sustainable Building Design.
- Cardiff University, School of Engineering – Building Systems and Informatics.

**BRE Press and BRE Bookshop**

BRE Press publish many booklets to make the results of BRE research and investigations generally available. There are various series of booklets. To give an idea of the subject matters, here are some recent titles:

- **Digests**
  
  DG 524 – ‘Fire Doors’.

- **Information Papers**

  IP 11/12 – ‘Building-integrated Photovoltaic Systems’.

- **Good Building Guides**

  GBG 80 – ‘Water Services for Domestic Properties’.

If you want authoritative information about some aspect of building, you may be able to find it in one of these booklets. They can be purchased on the BRE Bookshop website. Warning: for consumers who are used to getting their information cheaply, or even for free, the cost per page of these booklets may seem high. A Connect subscription brings you all the booklets published over the course of a year for £145 – which is likely to be of more interest to building professionals than to selfbuilders.

BRE Press also publish authoritative books. Their latest titles are *Earthships in Europe*, and *Ninety Years of Housing, 1921-2011: Trends relating to living standards, energy use and carbon emissions*.

**BRE Innovation Park**

The Innovation Park is in the centre of the BRE site in Watford. It is a demonstration development which currently contains eight houses, a refurbished Victorian terrace, and a health centre.

The intent is:

*To give a glimpse of how the future delivery of sustainable buildings and communities can be achieved.*
Over 400 innovative products and emerging technologies are on show. Opened in 2005, the Innovation Park might be seen as a successor to the 1994 FutureWorld exhibition in Milton Keynes. The Park is open 5 days a week, and you need to book to visit. Tours are available.

The BRE Trust is also helping to develop Innovation Parks in China, Brazil, USA and Canada.

**BRE Passivhaus**

BRE is promoting the passivhaus methodology, and they have a separate website for this. (See Further Info.)

**BRE Scotland**

As mentioned previously, a branch of the Building Research Station was set up near Glasgow in 1949. One of its prime roles was drawing up the Scottish building regulations. The branch has developed into BRE Scotland, and it offers training, certification, etc. It is currently developing an Innovation Park in Ravenscraig, Lanarkshire. (This is a new town of 10,000 homes being developed on the site of a former steelworks.)

**BRE Wales and South West**

BRE have a branch in Swansea serving Wales and South West England. One of their projects is the Dragonboard home – a steel-framed house with Dragonboard on the outside of the frame (replacing OSB) and Dragonboard on the inside (replacing plasterboard).

For more about the innovative Dragonboard, see Further Info.

**BRE Canada**

Last year, BRE opened a branch in Ontario, Canada.

**Building4change**

The BRE Trust publishes Building4change, which is an online ‘knowledge hub’ about sustainability in the built environment. You can sign on for a free, weekly e-zine. (You can also sign on for news items from other branches of BRE.)

**FBE Management**

Owned by the BRE Trust, this company undertakes research and consultancy work for the European Commission and the UK’s Department of Communities and Local Government. (FBE = Foundation for the Built Environment, which was the original name for the BRE Trust.)

**OBE**

Last June, the BRE Group’s Chief Executive, Dr Peter Bonfield, was awarded the OBE – reflecting well both on him and BRE.
FURTHER INFO:

**BRE**
In their labyrinth of a website, use ‘Search for’ to find what you want.
www.bre.co.uk.

**GreenBookLive**
Online listings of ‘green’ products and services for the construction industry.
Produced by BRE Global.

**RedBookLive**
Listings of products that resist fire and intruders.
Produced by the Loss Prevention Certification Board, which is part of BRE Global.

**Green Guide to Specification**
Used in allotting credits for the Environmental Impact of Materials in Category 3 of the Code for Sustainable Homes.
www.thegreenguide.org.uk.

**Smartwaste Plan**
Enables you to set up a Site Waste Management Plan for your site.
www.smartwaste.co.uk.

**BRE Bookshop and BRE Press**
The BRE Bookshop sells the books and leaflets published by BRE Press, and also many from other publishers. (Over 40,000 publications are available.)

**BRE Passivhaus**
Information, consultancy, and certification for the passivhaus methodology.
www.passivhaus.org.uk.

**Building4change**
On line magazine.

**Tri-Air Developments**
Devices that produces hydroxyl radicals (as are formed naturally in outside air) to kill viruses, bacteria, etc.
www.tri-airdevelopments.co.uk.

**Dragonboard**
‘Green’ construction panel suitable for sheathing and flooring. (No heat is used in its manufacture.)

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