

THE GREEN BUILDING GATHERING

Selfbuilders are invariably at the forefront of innovation in housebuilding, and that applies to green building too. After all, Robert and Brenda Vale's pioneering autonomous house, built in 1993, was a selfbuild in that it was for their own occupation – and since they were both architects, they designed it, too. Nowadays there is a wealth of information available for people who want to build green. Foremost sources are *The Whole House Book* and the Association for Environment Conscious Building – a mouthful of a name which is invariably shortened to AECB. Would-be selfbuilders who want to build green will find the membership fee of the AECB (£35 pa) to be money well spent – not least because it brings them the excellent quarterly magazine, *Building For a Future*. For a fee (£120), they can also attend the association's annual EcoBuilding Conference, which I would say is the highlight of the year for green building enthusiasts.

This year, the conference was held in July at the Somerset College of Arts and Technology in Taunton. The venues for the conferences are always interesting in themselves, and at this venue the interest lay in the College's new Genesis Centre.

The Genesis Centre

In itself, the Centre adds to the pre-existing conference facilities. But more interestingly, the Centre has been built to demonstrate various techniques of sustainable building. Both students at the college and visitors to the Centre can see sustainable building techniques incorporated into a real, practical application.

The core of the Centre is a large metal and glass hall. At each corner of the hall is a pavilion, with a fifth pavilion inside the hall itself. The corner pavilions, which in less flowery language might be called extensions, are all constructed differently and demonstrate a variety of techniques:

- *Earth pavilion*
The three walls of this pavilion are built respectively with clay cob, mass cob, and rammed earth. Internally, an earth plaster with a beeswax finish has been used to striking effect. The insulation used has been made from recycled newspaper and recycled cotton. The flat roof has been covered with rubble to encourage bio-diversity and to slow down rainwater run off. In years to come, will this 'brown' roof become covered in buddleias and butterflies?
- *Straw pavilion*
The walls are built with straw bales supplemented by a timber frame to prevent the roof from sinking. (The roof must not move relative to the hall.) The flat roof of this pavilion is covered with sedums, which are short succulent plants that flower in the summer. The space is divided into three seminar rooms. The straw bales give good acoustic insulation between the rooms, and good thermal insulation to the outside.
- *Clay Pavilion*
The walls of this lecture theatre are made of Ziegel blocks on thin-joint adhesive. The thick but light blocks are made by firing a clay/sawdust mix which has been formed into a honeycomb of air channels to give good

insulation. The blocks interlock and are easy to lay, even for novices. At present the blocks are imported from Germany, but there are plans to produce them in the UK next year.

- *Timber pavilion*

This pavilion has a timber frame, but a timber frame with a difference. It is actually a pair of matching frames with a gap between them. This arrangement gives plenty of space for insulation (recycled newspaper) without an excessive use of timber. The walls are clad with green western red cedar from the Forest of Dean. Shrinkage of the green timber might have led to splitting had the cladding not been fixed by a simple but ingenious method suggested by TRADA.

Being a demonstration project, parts of the construction of the pavilions have been left exposed so that students and visitors can see the detail.

The Water pavilion is inside the hall, and I'm tempted to call it the toilet block, because that is what it is. In the guided tour of the Centre, the architect took us, ladies included, into the gents. And he was right to show it off, because it was the cleanest smelling gents that I've come across, thanks to the airflush urinals. (These are not flushed by water, but rather a stream of air is sucked away through them.) The 4-litre WC's were also noteworthy (cf, 6 litres for most modern WC's). And the pleasing, marble-effect top of the wash stands was made from plastic derived from recycled yoghurt pots!

Welcome speeches

After the first tour of the Genesis Centre, the two-day conference got under way with a couple of short, welcoming speeches. Chris Herring, the AECB chair and founder member of the Green Building Store in Yorkshire, said that the AECB was growing both in membership (now 1,400 including a good proportion of selfbuilders) and in influence. Climate change is rising in the political agenda, and the need for a low carbon future is becoming ever more apparent. The AECB is an independent voice in the debate.

Another Chris, Chris Baines – the AECB president, environmentalist and broadcaster – said that encouraging progress is being made. A British Standard for sustainable development is being produced. And in the Stratford City development – a huge development neighbouring London's Olympic Park – green, living roofs are to be the default option.

Opening presentations

A couple of opening presentations followed. In short:

It is becoming clear that the priority within the broad green vision of the AECB is the need to reduce carbon emissions from buildings. The government shows a lack of understanding of the issues, but the AECB can supply expertise and it often challenges the establishment.

Raising the energy efficiency of the existing housing stock is essential and a much more difficult challenge than new build.

The AECB is promoting its Silver and Gold standards of energy efficiency. (See the AECB website – address in Contacts.) We need both to design well and to

build well. The energy efficiency of buildings is rarely monitored in the UK, but when it is, the efficiency is usually much worse than expected. (Eg, London's City Hall, completed in 2002, uses 50% more energy than anticipated.)

Building in energy efficiency is much cheaper than bolting on energy renewables. Nonetheless, some local authorities are using planning regulations to require energy renewables to be included in major developments. (See Contacts for the website about the Merton Rule, named after the first local authority to implement this ruse. The London Borough of Merton requires renewables to reduce carbon emissions from new developments by 10%.)

By the way, the Forty Percent House Report (see later) envisages that by 2050 so many domestic renewables will have been installed that the housing stock will be a net exporter of electricity!

Keynote Speech

The Keynote Speech of the conference was given by Dr David Strong, the MD of BRE Environment. He opened with an amusing but sobering anecdote. Recently he had been shown a huge, new, glass-covered skyscraper in Shanghai. He asked his hosts if they had thought about the energy implications of the building. Yes, was the reply, they had built a new power station to serve it!

In this country, there have been innumerable reports and action plans from the government about buildings and climate change. But as yet, there has been little action. What has been driving the agenda is the EU's Energy Performance of Buildings Directive which requires:

- Minimum energy performance for new buildings.
- Energy Performance Certificates for all buildings
- Regular inspection of boilers and air conditioning.

The energy labelling of buildings will affect their value. As I mentioned in the June issue of the magazine, from July 2007 Home Information Packs will be required when a house is offered for sale. A HIP will have to include a SAP rating, which is likely to affect the value of the house, maybe for better, maybe for worse. The effect of energy ratings on the value of commercial buildings will be even greater.

It is most important that the existing housing stock is upgraded. The Forty Percent House report shows that to achieve the target set by the Royal Commission on Environmental Pollution (a 60% reduction in carbon dioxide emissions by 2050), the average SAP rating of the housing stock needs to be raised from 51, the present value, to 75. And the rate of demolition and replacement will also have to be greatly increased. At present, only 20,000 houses a year are demolished, giving an average life expectancy for our houses of an absurd 1,300 years! (Contrast this with the design life of a house – usually taken to be 60 years.)

To make green building mainstream, we need a coalition of the 50 or so diverse groups promoting sustainable building. David Strong held up the Green Building Council in the USA as an example. This council was founded in 1995 with 10 members. It now has 2,500 members and a staff of 80. The BRE is promoting such a council in the UK, and they have produced a prospectus which can be downloaded from the web. (See Contacts.)

Networking

After the Keynote speech, we had dinner, and I must say that the catering throughout the conference was excellent. With eating and drinking goes conversation, and networking is an important part of the conference. I met up with Selfbuild & Design's David Olivier, and with several other selfbuilders.

Workshops

Over the two day event, there were three workshop slots, with a choice of four topics each time. Making the choice was difficult! There is space here only to give the workshop titles, which reflect the current concerns of ecobuilding enthusiasts:

- AECB Silver and Gold standards (with David Olivier).
- Creating a market for sustainable housing.
- The Genesis project.
- Successfully using lime.
- Breathing structures and airtightness.
- Floor insulation – does more equal less?
- Improving the energy efficiency of traditional buildings.
- Micro generation – power for the people?
- Lightweight or heavyweight building?
- Part L in practice, and beyond.
- Green electricity illusion.
- The tree house (with author, Will Anderson).

In conclusion

This was an enjoyable and fruitful two days.

Before I went, I had been thinking that the new Part L had gone as far as was sensible with energy conservation. I now think that we still have further to go! So if you are at the thinking stage of selfbuild, join the AECB and make space in your diary for their conference next year.

FURTHER INFO:

AECB (Association for Environment Conscious Building)

See their website for details of Silver and Gold standards, and their discussion forum. Annual membership £35
www.aecb.net.

Genesis Project

Short courses relating to sustainable building
www.genesisproject.com.

Ziegel

Insulating clay blocks
www.ziegeluk.co.uk.

Passiv Haus standard

www.passivhaus.org.uk.

The Forty Percent House

www.40percent.org.uk.

Green Building Council

USA council:

www.usgbc.org

UK council prospectus:

www.ukgbc.org.

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