

# Green Construction Roundup

## April, 2009 No. 182

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### **Construction News**

#### **Tate modern uses Thames to heat and cool extension**

The Tate Modern has begun work on a plan to use groundwater for heating and cooling its £215 million Herzog & de Meuron-designed extension. The plan is to drill boreholes into the gravel which lies deep beneath the site, on the Thames' former flood plain.

The use of the gravel water at Tate Modern is part of a strategy to cut 54% of energy and 44% of carbon dioxide emissions from the building, which is scheduled to open in 2012. The project is thought to be the first of any scale to take water from Thames gravel beds.

*Building*. 17 April (Pg. 13)

<http://www.building.co.uk/story.asp?storycode=3138480>

### **Periodical Articles**

#### **On air - BSkyB headquarters**

BSkyB's £233 million production centre at its headquarters in Osterley, west London, claims it will be Europe's most sustainable broadcasting facility. If all goes to plan, Harlequin 1 will consume about a third less energy than a conventional design.

Due to open in 2011, the centre will include a familiar array of low-energy technologies; wind turbines, which are yet to get full planning approval; biomass-fuelled combined cooling and heating plant, which should offset 20% of the building's carbon emissions; and the obligatory rainwater harvesting system. What is more unusual is that BSkyB is planning the world's first naturally ventilated television studios.

However, there are good reasons why naturally ventilated television studios aren't the norm. Top of the list is noise. Article looking at efforts to stop outside noise from ruining the latest episode of *Gladiators*?

*Building*. 24 April (Pg. 38-41)

<http://www.building.co.uk/story.asp?storycode=3138887>

#### **Specifier: Something for the panes**

Launched under Pilkington's EnergiKare brand, vacuum glazing looks an attractive proposition. Each unit is made up of one pane of clear float glass and another of low-emissivity glass, which are separated by a 0.2mm gap to give an overall unit thickness of about 6mm. Its size and its light weight mean it can be used as a like-for-like replacement for single panes in windows without modifying the frames, and normal putties and sealants can be used. Although it would not be acceptable on grades I and II-listed buildings, it would be an option in conservation areas or properties where architects simply want to preserve the original aesthetics.

This article looks at the main benefit of the system - the glazing's U-value of 1.4W/m<sup>2</sup>K, comparable to a 24mm-thick double-glazed unit.

*Building*. 24 April (Pg. 66-67)

<http://www.building.co.uk/story.asp?storycode=3139081>

## **From grey to green**

A new report from the Concrete Industry Sustainable Construction Forum intends to deal with the green issue by telling the industry how it can transform its environmental image.

The report does not shy away from large figures, having the courage to publish the very numbers that the industry's critics might use against it. However, it is the aim of the forum to assess the concrete sector on a number of sustainability criteria. It further promises to repeat the assessment in future reports.

And the report is far from bad news. Some of the figures are genuinely encouraging and help put the industry into context. For instance; a quarter of aggregate consumed in the UK is actually recycled; the concrete industry uses more waste product than it creates; and the carbon footprint of cement production has been reduced by 27% since 1990.

Article looking at the facts and figures in the first report from the Concrete Industry Sustainable Construction Forum.

*Building*. 24 April (Pg. 72-75)

<http://www.building.co.uk/story.asp?storycode=3138944>

## **Market report: Sustainable development – pull out supplement**

This pull out has articles entitled:

- The time is now - MWH director of business strategy David Smith explains that now is the time to commit to sustainable development, before it is too late
- What price a reduced carbon future? - Reports on the Carbon Reduction Commitment
- Five ideas for emission reduction - Review of some of the current low carbon strategies and industry solutions
- Talking the same language – Conversation between two sustainability experts; Professor Charles Ainger and Tania Flasck
- Water proofing – Floods are becoming a matter of course in the UK. Article looks at what needs to be done
- Water, water everywhere, but not a drop to drink – Drought may not be in the public eye, but to the Environment Agency it is a major concern
- Investing in green jobs – Comment by Aiden Wilkes, Chairman of the Environmental Industries Commission
- Lighting the way to a brighter future – Reviews the efforts of HSBC and the Climate Change Partnership in helping us all live a greener life

*New Civil Engineer*. 23 April

<http://www.nce.co.uk/market-report-sustainable-development/5200868.article>

## **Sustainability: Zero carbon homes**

The government has committed itself to making new homes zero carbon after 2016. But a lot depends on how you define zero. This article looks at three themes:

- Redefining zero-carbon homes - the construction industry has spent the past 18 months tying itself in knots over a definition
- What do these measures mean? - Improved insulation, low-energy lighting, high efficiency pumps, fans. Limited application of renewable energy and/or connection to district heating to achieve a minimum level of reduction in emissions
- The issues involved - Considers some of the key discussion points and summarises best and worst-case cost scenarios

While alternative definitions of zero carbon have generated much discussion in the industry, they should also be considered in the context of the primary policy objectives of reducing UK carbon emissions.

*Building*. 17 April (Pg. 46-49)

<http://www.building.co.uk/story.asp?storycode=3138410>

## **Will it ever take off?**

Energy company Ceres Power thinks it has got the answer to micro-combined heat and power (CHP). By 2012 it is promising to have two CHP systems on the market that have the potential to halve the carbon emissions from an average dwelling. What is more, they will be affordable and have the same maintenance regime as a conventional domestic boiler. But what is most novel is that they will use fuel cell technology. It sounds almost too good to be true. Of course, it is not quite that simple.

The first trial of a domestic-sized fuel cell highlighted some of the drawbacks. One big one is the cost – the purchase and installation ran into hundreds of thousands of pounds. The firm also had to convince the Health and Safety Executive and the local fire brigade that installing a hydrogen storage tank would be safe.

*Building*. 17 April (Pg. 50-51)

<http://www.building.co.uk/story.asp?storycode=3138420>

### **Spotlight on sustainability**

Despite the economy, the sustainability agenda goes from strength to strength and the impact it can have on lead times cannot be ignored. As most of the technology, processes and requirements relating to sustainability are still in their infancy, the availability of products may be limited, this can mean lead times being extended while specialist bespoke equipment is designed and made to order.

If you are commissioning the latest green technologies there could still be a bit of a wait for delivery. This article gives an idea of what to expect.

*Building*. 03 April (Pg. 62-63)

<http://www.building.co.uk/story.asp?storycode=3137713>

### **EPC ratings game**

A building's environmental performance is now high on the checklist of potential tenants - lower energy bills are a powerful attraction. Recent work by Hoare Lea has shown that focusing on key elements can make a big difference to performance. EPCs were introduced by the government to inform potential buyers and tenants about the energy performance of a building. Ratings are from A to G: A is very efficient and G the least.

This article looks at how knowledge of the banding weights is useful for those carrying out EPC surveys, and for property owners that want improved energy performance ratings because it will allow them to focus resources on the elements with the biggest impact.

*Building Sustainable Design*. April 2009 (Pg. 34-35)

<http://viewer.zmags.com/showmag.php?mid=wphfth#/page34/>

### **Cost model – Retail refit**

In retail, energy costs may represent a relatively small percentage of turnover, but reducing them can boost margins without the need to increase sales. A 20% cut in energy costs represents the same bottom line benefit as a 5% increase in sales.

This article looks at sustainable retail refurbishment, where the emphasis must be on reducing energy consumption and emissions through good design, then generating as much as possible of the remaining energy requirement efficiently and renewably.

Different store types – new-build or refurbishment, in or out of town – will require different solutions. The cost model concentrates on refurbishment projects generally, while the costs provided relate to a town centre store.

*Building Sustainable Design*. April 2009 (Pg. 41-44)

<http://www.bsdlive.co.uk/story.asp?storycode=3136284>

## **Recent Publications**

### **Sustainability of construction materials**

Until recently, much of the development of building materials has predominantly focused on producing cheaper, stronger and more durable construction materials. More recently attention has been given to the environmental issues in manufacturing.

The first part of the book gives a comprehensive and detailed analysis of the sustainability of: aggregates; timber, wood and bamboo; vegetable fibres; masonry; cement, concrete and cement replacement materials; metals and alloys; glass; and engineered wood products. A final group of chapters cover the use of waste tyre rubber in civil engineering works, the durability of sustainable construction materials and nanotechnologies for sustainable construction.

This book is a standard reference for anyone involved in the construction and civil engineering industries with an interest in sustainability.

Kahtib, J. (Editor). **Sustainability of construction materials**. Woodhead Publishing, 2009. 368 pages.

Cost - £135. ISBN (13) 978 1845693497

## Web Resources

### Eco-innovation

Through the Eco-innovation funding scheme, the EU wants to support innovative products, services and technologies that can make a better use of our natural resources and reduce Europe's ecological footprint. With its objective to bridge the gap between research and the market, CIP Eco-innovation contributes to the implementation of the Environmental Technologies Action Plan.

There is nearly €200 million available to fund Eco-innovation projects between 2008 and 2013. Some 40 projects around Europe are in the pipeline to receive the first funds under the 2008 call. To register for the 2009 call, and to find out more about the Eco-innovation scheme, go to

[http://ec.europa.eu/environment/eco-innovation/call\\_en.htm](http://ec.europa.eu/environment/eco-innovation/call_en.htm)

## Events

### CarbonLite training: using PHPP in a building certification process (2 days)

28-29 May 2009 (Thursday-Friday)

The event provides expert guidance in designing buildings with genuinely low environmental impact - from the basics of understanding energy to delivering domestic and non-domestic buildings with minimal energy use and CO2 emissions. The training courses in designing to the three AECB energy standards and using the PassivHaus Planning Package are essential for all architects, architectural technicians, builders, developers and anyone who is involved with the design and construction of low energy, low carbon buildings.

Venue - York

Contact: Email [sally@aecb.net](mailto:sally@aecb.net)

Download a summary and further details of the CarbonLite training programme, at

<http://www.carbonlite.org.uk/carbonlite/training/CarbonLiteCourseOverview2008.pdf>

### Build tight, ventilate right

04 June 2009 (Thursday)

Most of the techniques for achieving a low energy building are well documented but in practice the standards aimed for are often not achieved through lack of understanding about what makes a highly insulated, airtight, energy efficient building. This one-day course will explain the straightforward building techniques that can achieve this and what can be done on site to improve build quality. The afternoon will include an on-site demonstration of an airtightness test, examination of best practice detailing (with full size models) and an opportunity for the delegates to discuss detailing the external envelope to achieve the 'build tight, ventilate right' aim.

Venue - Roots & Shoots, London

Cost: £140 for members, £175 for non-members to include lunch

Contact: Sarah Derryman - T 0117 377 3490 or [mail@greenregister.org.uk](mailto:mail@greenregister.org.uk)

### Low carbon technologies - the advanced course

10 June 2009 (Wednesday)

This one-day course will explain the operation, application and limitations of all low carbon technologies (LCT) including important non-renewable technologies such as energy efficiency and CHP. Delegates will look at technologies that are likely to be at the forefront of sustainable energy provision as it moves into the mainstream. A wholly practical approach will be used through a combination of the spreadsheet models, case studies and role play. The attendees will be shown a number of insights into how low carbon buildings will be delivered to the mainstream and the tools and understanding they will need to develop in order to be at the forefront of this exciting and challenging field.

Venue - Priory Street Centre, York

Cost: £140 for members, £175 for non-members to include lunch

Contact: Sarah Derryman - T 0117 377 3490 or [mail@greenregister.org.uk](mailto:mail@greenregister.org.uk)

### AECB Annual Conference

11-12 June 2009 (Thursday-Friday)

Preliminary details are now available for the 2009 AECB Conference *Building for a sustainable future: policy, research and design* which will take place at Oxford Brookes University. The expected workshop sessions include

- Code for Sustainable Homes

- Water efficiency: An ecominimalist approach
- Lessons for Eco-Towns
- Delivering Passivhaus refurbished homes in the UK
- Building performance feedback for public buildings
- Building performance feedback for UK homes
- Using new materials in refurbishments - homes and offices
- Myth-busting on eco-materials
- Refurbishment of a tower block in South London
- Specifying heat pumps - correctly
- Delivering a Passivhaus office in the UK
- Testing for airtightness

Venue - Oxford Brookes University

To download programme overview and application details, go to

<http://www.aecb.net/PDFs/conference09/AECB%20programme.pdf>

### **Sustainable building and services - the introductory course**

11-12 June 2009 (Thursday-Friday)

This two-day course provides an ideal opportunity for delegates to learn about the essential issues surrounding sustainable building practices and to network with like-minded individuals across a range of disciplines. Completion of this course is a requirement for those wishing to become members of The Green Register..

Venue – Cardiff

Cost: £295 per person

Contact: Sarah Derryman - T 0117 377 3490 or [mail@greenregister.org.uk](mailto:mail@greenregister.org.uk)

For full details please see the GreenRegister website, at

<http://www.greenregister.org.uk>

### **Business case for sustainable development - conference**

24 June 2009 (Wednesday)

Speakers at the conference include Patrick Brown of The British Property Federation and Celia Beeson of Bristol City Council giving both the national and regional perspectives. Both domestic and commercial aspects of new legislation relating to retrofit as well as newbuild construction will be covered.

Three important local case studies will be illustrated by developers who have been able to successfully address some of the key issues such as integration of renewable energy technologies on site, lower water consumption and Site Waste Management Plans.

Venue - Armada House, Bristol

Cost: £150 for members, £180 for non-members to include lunch

Contact: Sarah Derryman - T 0117 377 3490 or [mail@greenregister.org.uk](mailto:mail@greenregister.org.uk)

### **Sustainable building and services - the introductory course**

02-03 July 2009 (Thursday-Friday)

This two-day course provides an ideal opportunity for delegates to learn about the essential issues surrounding sustainable building practices and to network with like-minded individuals across a range of disciplines. Completion of this course is a requirement for those wishing to become members of The Green Register..

Venue - Roots & Shoots, London

Cost: £295 per person

Contact: Sarah Derryman - T 0117 377 3490 or [mail@greenregister.org.uk](mailto:mail@greenregister.org.uk)

For full details please see the GreenRegister website, at

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### End Note

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