

# innovation

Issue 07

IN ACTION

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# Welcome...

## ...to the latest issue of Innovation in Action

It's been a busy few months and there's a great deal to update you on since the last edition of Innovation in Action in May. There continues to be ongoing regulatory developments in the industry – see pages 10-11 for the latest update from our Sustainability Leader, Brian Andreas – and as a business, we've developed our own approach to sustainability further while getting involved in a host of initiatives that aim to help the industry achieve low carbon.

Notably, our first Technical Academies have been opened, Saint-Gobain Solar has launched in the UK and Ireland and the test results from the BRE Victorian Terrace project have been revealed, underlining the importance of training in the industry.

As 2011 draws to a close, we're now looking ahead to 2012 which promises to be just as busy. For the UK it will of course also be the year we host the Olympics for the first time since 1948.

In this issue we speak to Shaun McCarthy, Chair, Commission for a Sustainable London, to ask whether London 2012 really will be the most sustainable summer Games ever – see pages 14-15 for the full story.

We hope you enjoy reading this issue. As always, we welcome your feedback and suggestions for any topics you would like to see covered in future editions. If you'd like to get in touch please e-mail us at [info@saint-gobain.co.uk](mailto:info@saint-gobain.co.uk).

**Saint-Gobain UK & Ireland**

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Front cover photograph: Hufton + Crow

## Glasroc H TILEBACKER:

### A water barrier, not a time barrier

In the past a gypsum-based water resistant alternative to cement backing boards was an unrealistic prospect. But due to advances in British Gypsum's eGRG (enhanced Glass Reinforced Gypsum) technology it's now possible to use plasterboard in areas of high moisture.

The story began 11 years ago when British Gypsum began developing Glass Reinforced Gypsum (GRG) technology, an advancement that combines gypsum with high strength glass fibre matting, which resulted in the production of Glasroc F, a fire resistant backing board. This innovation has now been developed further to create enhanced Glass Reinforced Gypsum (eGRG), which has the supplementary quality of being water resistant. This revolutionary development has enabled the team to produce its new water resistant backing board: Glasroc H TILEBACKER.

Made up of a unique layer of fibre glass matting, which is inserted just below each surface (providing additional strength) and finished with a high quality yellow acrylic coating that pre-primers

the board (creating the perfect surface for direct tiling) Glasroc H TILEBACKER is the perfect solution for high moisture environments.

It's also up to 20kg lighter (per board) than the average competitor alternative, providing a safer and more convenient solution for tradespeople, which is easier to lift and transport.

In addition to this, the board is exceptionally easy to score, snap and cut – it takes just a single score before it can be snapped cleanly along the cut line. This reduces the margin for error, resulting in less waste and less need for re-cutting; no need for any specialist cutting tools, power tools or additional labour to complete the job; and savings of both time and money.

**Glasroc H TILEBACKER is available now.**



For more information regarding the product or eGRG technology, please visit [www.british-gypsum.com/glasroc-h-tilebacker](http://www.british-gypsum.com/glasroc-h-tilebacker)



## Round the houses

Saint-Gobain Isover recently launched its latest insulation product; Isover Round the House Roll. The first full-fill mineral wool insulation solution that can be used in both separating and external wall cavities, it provides a convenient all-in-one solution to help meet both thermal and acoustic legislation.



For separating walls, Isover Round the House Roll eliminates the thermal bypass effect by providing a fully-filled cavity and effective edge sealing to meet Part L 2010 (Approved Document L1A, Table 3), delivering a zero U-value party wall that performs acoustically at a minimum of +8dB over Part E regulation levels. It is also an approved proprietary Robust Detail construction (E-WM20).



To find out more visit [www.notjustfortoday.com](http://www.notjustfortoday.com)

## News in Brief

### British Gypsum CPD

British Gypsum has received CPD accreditation from RIBA for its seminar based around the Beautiful Acoustic ceiling range. The presentation showcases the versatility and aesthetic benefits of the ceiling range, as well as educating architects about system performance. [www.british-gypsum.com](http://www.british-gypsum.com)

### Social network

Use of social media by businesses has grown rapidly, providing alternative methods of communication. Saint-Gobain and its UK businesses are using social media to keep customers updated on the latest developments. For more information, see our community pages where you can access our blog, Twitter, Facebook and YouTube. [www.saint-gobain.co.uk/community.aspx](http://www.saint-gobain.co.uk/community.aspx)

# Actively embracing Passivhaus

In a move reflecting Saint-Gobain Isover's support of the Passivhaus concept, it is sponsoring three new courses in Passivhaus design from the Association for Environment Conscious Building (AECB).

The courses, which were launched in September, are modular and are specifically tailored to the UK market. They include: 'Science of Passivhaus', aimed at designers; 'Construction of Passivhaus', developed specifically for contractors, and 'Building Services for Passivhaus', for mechanical and electrical engineers.

The new modules are the latest in a suite of courses designed to offer training in the complete Certified Passivhaus Designer

syllabus, enabling people to attain the globally recognised qualification of 'Certified Passivhaus Designer' (CEPH).

Saint-Gobain Isover's Technical Development Manager, Mark Allen took part in the pilot Carbonlite Passivhaus Designer Course, which is also run by the AECB. He is now a fully certified Passivhaus Designer, making him one of a small number of people who are able to advise on constructing a Passivhaus building in the UK.

When asked about the benefits of being a qualified Passivhaus Designer, Mark said: "Being able to advise on Passivhaus is a huge benefit for Isover. It will enable us to educate our customers about the differences between UK regulations and Passivhaus implementation methods, thermal bridging and looping, U-value design, air tightness and indoor air quality, as well as how

material specification or detailing can affect the overall energy performance of a building.

"By raising awareness of these considerations and also demonstrating that Passivhaus design isn't as complicated as many believe it to be, we hope to be able to increase the number of buildings being constructed in the UK to Passivhaus standard."

AECB training courses will initially be held at centres in London and Bristol, and can also be run in-house. Developed in conjunction with leading industry experts and hosted by WARM, an independent consultancy with the theoretical and practical knowledge to bring pioneering low energy buildings from design to reality, the modules are designed to equip delegates with the skills and expertise to benefit from opportunities in this expanding sector.



Students attending the new AECB Passivhaus Designer Course

By raising awareness of these considerations and also demonstrating that Passivhaus design isn't as complicated as many believe it to be, we hope to be able to increase the number of buildings being constructed in the UK to Passivhaus Standard

To find out more visit [www.carbonlite.org.uk](http://www.carbonlite.org.uk)

# Showcasing the wood from the trees

Market leaders International Timber and Pasquill were joint platinum sponsors at the inaugural Timber Expo, held at the Ricoh Arena in Coventry. International Timber focused on the depth of the product range and customer solutions, while Pasquill's key messages were engineering excellence and innovation. Trade visitors were keen to learn more about the range of solutions offered by both companies.

Representatives from both companies also hosted seminars as part of the event's 'Timber Talks' programme. Sarah Broadley, Chain of Custody Manager and Malcolm Ellis, Development Director for International Timber, provided visitors with a detailed explanation of the impending FLEGT (Forest Law Enforcement Governance and Trade) legislation, while Pasquill's Project Manager Richard Volonterio discussed the future direction of engineered wood products, focusing on panelised roof systems and long-span trussed rafters.

For more information please visit [www.timber-expo.co.uk](http://www.timber-expo.co.uk)



Saint-Gobain showcased a wide range of products and systems on its stand at Ecobuild 2011

## Date for your diary

**Ecobuild: 20-22 March 2012**

Following Saint-Gobain's success at this year's event the company is once again set to take centre stage at Ecobuild 2012, which takes place at ExCeL in London. The UK's biggest event dedicated to sustainable design, construction and the built environment, Ecobuild attracted over 60,000 visitors in 2011.

For more information visit [www.ecobuild.co.uk](http://www.ecobuild.co.uk)

## News in Brief

### £1.3-million investment by Saint-Gobain PAM

Saint-Gobain PAM UK is investing more than £1.3-million in new, state-of-the-art production facilities at its headquarters in Derbyshire, confirming its confidence in the UK ductile iron water and sewer pipe market. [www.saint-gobain-pam.co.uk](http://www.saint-gobain-pam.co.uk)

### Innovative glass solution for Novotel

QUANTUM GLASS™ has provided a unique solution for the Novotel Next hotel at London Bridge with its PRIVA-LITE partition wall. The innovative glass, which turns from opalescent to transparent at the flick of a switch, has been used between the bedrooms and bathrooms. [www.quantumglass.com](http://www.quantumglass.com)

### Weber hosts EWI apprenticeship programme

Saint-Gobain Weber is hosting a new Insulated Render and Cladding Association (INCA) Specialist Apprenticeship Programme in External Wall Insulation. Designed to help grow the industry's workforce, the two year initiative has been developed in conjunction with ConstructionSkills. [www.netweber.co.uk](http://www.netweber.co.uk)

### Artex website makes specification easy

Artex has launched a dedicated, interactive website for its Gyproc Proflex Access Panel range. Designed to make specification as easy as possible it features the complete range of Gyproc Proflex Access Panels. [www.proflex.co.uk](http://www.proflex.co.uk)

## News in Brief



Welsh rugby star Robert Jones (right) helped Weber's Managing Director Padraig Barry open the Bristol Academy

Attendees watch a render demonstration

## Opening the doors to training

Earlier this year we launched the first of a new network of Technical Academies which will open across the UK. The Technical Academies have been designed to help combat the industry's skills shortage and provide training on new technologies and systems, as well up-to-date information around legislation.

As Building Regulations become tighter, construction industry professionals are finding themselves facing a number of new products and systems that require very different skills from more traditional building materials and methods. The Academies will focus on equipping these professionals with key knowledge about the sustainable building agenda as well as the vital skills needed to deliver it.

Training at the Technical Academies will be provided by experts from a number of Saint-Gobain manufacturing businesses, including British Gypsum, Iover and Weber which are all experts in their respective fields. The courses will be targeted at a range of experienced industry professionals, including contractors, builders' merchants and architects, who are looking to up-skill, as well as new recruits to the industry.

The first Technical Academy opened at British Gypsum's East Leake training centre in June, and offers a 2,500 sq ft training facility that can train upwards of 30 people per day, covering a wide range of skills such as internal and external acoustic and thermal insulations, drylining, plastering and flooring. The East Leake Technical Academy was shortly followed by the opening of a second Academy in Bristol.

**The courses offered will continually develop to keep up with the changing regulatory and building design requirements and additional bespoke courses can also be requested**

This network of Technical Academies will build upon our existing offer which includes a number of company-specific training facilities across the UK, a purpose-built Technical Academy in Ireland, covering Gyproc, Weber and Iover, and the Greenworks Training Academy in Birmingham.

To find out more please visit [www.saint-gobain.co.uk](http://www.saint-gobain.co.uk)

## WorldSkills success



UK Plastering and Drylining Systems competitor Jamie Fineran

WorldSkills London 2011 was a huge success attracting over 200,000 visitors across four days. Hundreds of visitors also got involved and had a go at the various vocational skills

available to try including plastering and drylining.

UK Plastering and Drylining Systems competitor Jamie Fineran was supported by British Gypsum in the build-up to the competition through additional training at the Kirkby Thore Drylining Academy. Gyproc Ireland also sponsored Irish competitor Gary Condon.

Jamie and Gary pitted their skills against finalists from eight other countries, undertaking a series of complex drylining and plastering challenges to showcase

their abilities. Gary Condon went on to take gold in the competition, while Jamie was awarded a Medallion for Excellence for his outstanding effort.

Saint-Gobain was a sponsor of WorldSkills, along with British Gypsum which was a presenting sponsor for the Plastering and Drylining Systems category. Materials were also supplied by International Timber in the Joinery category and Weber for the Wall and Floor Tiling competition.

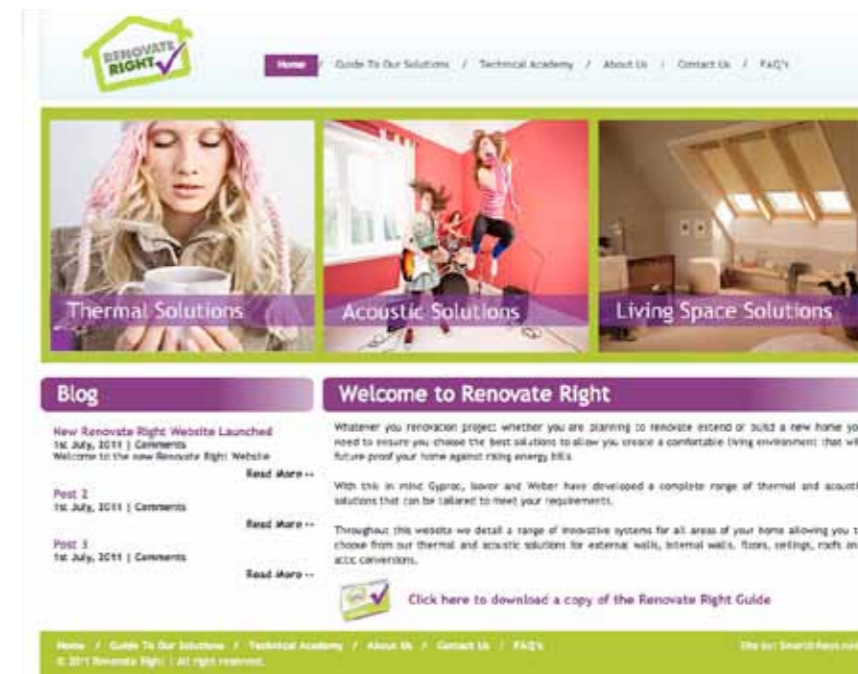
To find out more please visit [www.worldskillslondon2011.com](http://www.worldskillslondon2011.com)

## Renovation made easy

Gyproc, Saint-Gobain Iover and Weber have joined together to create a new website; [www.renovateright.ie](http://www.renovateright.ie). Designed to provide a one-stop shop for thermal and acoustic solutions to future proof homes, Renovate Right showcases an innovative range of systems for all areas of the home, allowing visitors to choose from thermal and acoustic solutions, such as external walls, internal walls, ceilings, roofs and attic conversions.

The website was created because of an increasing number of people looking to find the best solutions on the market to create a comfortable living environment, which will also protect them from rising energy bills and improve the energy rating of their homes.

To find out more please visit [www.renovateright.ie](http://www.renovateright.ie)



## Brighter training at Greenworks



The Greenworks Training Academy has added two new sets of courses to its training programme; City and Guilds qualification courses and a Solar Photovoltaic Microgeneration Certification Scheme (MCS).

The Academy, the result of a £500,000 investment by Saint-Gobain, has grown to become the UK's recognised authority and market expert in sustainable building products and solutions. Courses are specifically developed to train construction professionals with varying levels of knowledge and skills in both classroom and practical based training and e-learning packages.

**The Academy...has grown to become the UK's recognised authority and market expert in sustainable building products and solutions**

The Academy courses cover a wide range of sustainable building solutions, including renewable energy products. These recent additions provide attendees with hands-on knowledge on how to install solar PV systems as well as an in-depth insight into legislation, market drivers and the products available.

To find out more please visit [www.greenworks.co.uk](http://www.greenworks.co.uk)



# Future glazing

**Triple glazing remains a relatively niche alternative to double glazing but it could dominate the market in the decade argues Derek Dragten, Sales and Marketing Director for Saint-Gobain Glass.**

“Market research conducted for Saint-Gobain Glass’ PLANITHERM marketing campaign found that energy efficiency doesn’t top the list of homeowner’s reasons to replace their windows. Why? Primarily because consumers wrongly believe the double glazing they have already does the job.

“When the energy efficiency benefits of newer products and glass coatings are explained though, glazing performance does become more important. Admittedly a leap to triple glazing might feel slightly premature but we can only see demand rising as homeowners become more aware of the benefits of better glazing.

“This is tethered to Government thinking, tighter legislation will be introduced as the Government looks to reduce CO<sub>2</sub> emissions further and meet its stringent environmental targets. With this in mind, we are working towards A-rated windows

as standard by 2016 and believe that by then around 30 per cent of the market will comprise triple glazing.

“The German market gives us a good idea of what lies ahead. Historically, the UK tends to follow German trends within five to ten years. After adopting triple glazing, Germany’s growth in that area went from three per cent in year one to 37 per cent five years later. We believe the UK is now in the first year of this German model.

**“We are working towards A-rated windows as standard by 2016 and believe that by then around 30 per cent of the market will comprise triple glazing”**

“Some in our industry believe the UK market will respond even quicker. Gordon Dickson of Ravensby Glass, for example, believes that 30 per cent penetration will be achieved by 2014 and says many window manufacturers are

already making sections in the same size as a typical triple glazed unit (TGU).

“As a leading innovator, Saint-Gobain Glass is also developing specific TGU products which give an optimal balance of U-value and g-value. Ravensby Glass makes TGUs using SGG PLANITHERM TOTAL+ glass on the middle and inner panes and filled with argon gas. The resulting U-value is a remarkable 0.6W/m<sup>2</sup>K. If light transmittance or g-value (solar gain) needs to be improved, then ultra-clear SGG DIAMANT low-iron glass can be used. In the future thinner cavity widths will also be possible.

“So if we can remove the barriers to TGU penetration – primarily fabricator re-tooling costs and consumer misconceptions about the efficiency of double glazed units – triple glazing could ensure windows are seen as a tangible energy efficiency improvement.

“A move to triple glazing is surely the logical conclusion to the energy efficient window debate. The talk of triple glazing is not something that will pass; it represents a real opportunity for the market and is something we should all embrace.”

**i** To find out more please visit [uk.saint-gobain-glass.com](http://uk.saint-gobain-glass.com)

# Energy saving trials

**The Energy Saving Trust is currently running field trials that aim to establish the performance of the UK’s major manufacturers’ different solid wall insulation systems in order to underwrite the Green Deal.**

The trials focus on the renovation of properties built up until 1929 and include terrace, semi-detached and detached homes, as well as flats, with over 50 properties being evaluated. Saint-Gobain is involved with five of these properties and the products being tested include Saint-Gobain Internal Wall Insulation (IWI) and External Wall Insulation (EWI) as well as a Hybrid Solid Wall Insulation (SWI) solution that consists of both the IWI and EWI systems.

**“The trials focus on the renovation of properties built up until 1929”**

The five properties we’re involved in will provide us with a great opportunity to demonstrate the capabilities of our systems as homes vary in size, location and wall construction materials. Two will trial EWI, two will include IWI and the final one will trial the hybrid system.

To ensure the outcomes are fair, all properties involved in the trials have been monitored for the past year without any new insulation systems installed so a baseline could be established. Over the past few months, Weber, Isover and British Gypsum, along with the other manufacturers involved in the trials, have been busy arranging installation of the systems into the test properties in preparation for the beginning of the winter season monitoring.

We’re very excited about these trials and look forward to receiving the data in 2012. We’re confident it will demonstrate the quality of our systems and the benefits they can bring to homeowners when installed correctly.

Along with taking part in these trials, Saint-Gobain has also committed to an aligned project with the BRE called the Victorian Terrace, where a disused Victorian stable block at the centre of the BRE Watford site has been transformed into three energy efficient



Examples of the different styles and locations of properties involved in the trials.



The External Wall Insulation being used in the trial

terraced homes fit for 21st century living. For more details on this project please turn to page 16.

**i** For more information on the Energy Saving Trust please visit [www.energysavingtrust.org.uk](http://www.energysavingtrust.org.uk)

# 2012 the lowdown on legislation



Brian Andreas, Sustainability Leader

Since coming into power 18 months ago, the Coalition has been developing a number of policies to support its bid to become the 'greenest Government ever', so what's on the agenda for 2012? Brian Andreas, Sustainability Leader for Saint-Gobain (UK & Ireland), looks at just some of the legislative changes set to impact on the industry.

## The Green Deal and the Energy Company Obligation (ECO)

The Green Deal will be introduced in October next year and will involve retrofitting millions of homes and non-domestic buildings in Great Britain with energy saving measures. Under the initiative, householders will be able to spend up to £10,000 making their homes more efficient. For households and applications where the Green Deal alone is not sufficient, support will be provided in the form of ECO. Taking over from the existing CERT and CESP schemes, ECO will place an obligation on energy suppliers to reduce emissions from existing homes. The rate of domestic refurbishment needs to increase from 13,000 to 750,000 properties per year if the UK is to stand any chance of meeting its carbon emission reduction obligations under the Climate Change Act of 2010, so both of these programmes are expected to play a vital role in reducing energy demand from homes, providing improved living environments while creating additional jobs in the construction sector.

## Building Regulations Part L 2013 (Energy Efficiency) - England

A public consultation is expected to start in December this year regarding the 2013 revision of Part L, following work undertaken by BRAC (Building Regulations Advisory Committee) during 2011. It is important to note that there are differences between the devolved administrations in Scotland, Wales and Northern Ireland in how Building Regulations are administered.

Conservation of fuel and power in buildings will become even more important as the industry works towards the criteria set out in the Zero Carbon Hub's advice to Government on achieving zero carbon in homes and non-domestic buildings by 2016. The 2013 revisions to Part L will be based on the Fabric Energy Efficiency Standard, which promotes a fabric first approach as the most efficient and cost effective route to zero carbon. Further reductions in carbon emissions will be achieved through the introduction of 'carbon compliance' requirements which will be met by a combination of improved energy efficiencies and the appropriate use of renewable energy sources.

## National Planning Policy Framework (NPPF) - consultation

The proposed National Planning Policy Framework is designed to make the planning system less complex while promoting sustainable growth. Government believes that simplifying the planning rules

will help to facilitate a range of construction related developments, including the building of more new homes, helping to address the shortage currently facing the market and supporting the delivery of affordable low and zero carbon homes. The public consultation closed on 17 October 2011. The Government is currently considering all the responses and following this will create a report outlining its next steps.

## National Energy Strategy and Energy Market Reform

Supplying the UK's future energy needs while at the same time meeting legal commitments on carbon reduction is one of the key tasks facing the Government and there are currently a number of policies in development which are intended to help to meet this challenge.

The proposed Energy Market Reform is designed to reduce the volatility of UK energy prices and the country's dependency on imported energy while lowering overall carbon emissions. By using a new energy tax to introduce a floor to the price of carbon in fuels used to generate electricity, the Government aims to encourage greater investment in renewable energy projects and nuclear power stations. The tax will take effect from 2013 and will initially be set at the equivalent of £16 per tonne of carbon.

**The rate of domestic refurbishment needs to increase from 13,000 to 750,000 properties per year**

Several other aspects of energy and carbon policy continue to evolve, including potential changes to the Climate Change Agreements which have been in place since 2001. As manufacturers of building products used to assist in the saving of energy and carbon, we are keen to see a balance in all these carbon policies that stimulates the transition of the UK economy towards a low carbon future, while also ensuring they create a healthy and sustainable UK manufacturing industry able to provide the necessary solutions to meet these objectives.



For more information please visit  
[www.saint-gobain.co.uk/Sustainability.aspx](http://www.saint-gobain.co.uk/Sustainability.aspx)



# A sound solution for York University

**The complexity of the University of York's new £750-million Heslington East campus development created a serious design and construction challenge.**

The mix of timber, steel and concrete-frame construction techniques, and demanding acoustic requirements, meant architects and material suppliers had to work together to meet the project's performance criteria as efficiently and effectively as possible.

British Gypsum's technical experts stepped in to advise the project team, which included architects BDP and contractors Shepherd and BAM. British Gypsum standardised the original specifications using just three different partition systems and a minimum number of basic components – some used commercially for the first time - to help cut costs and simplify site management.

**Both products have 86 per cent recycled content, the highest level of any glass mineral wool insulation on the market**

The build demanded a minimum acoustic performance of 52dB throughout the York Law and Management Schools and Department of Computer Science buildings, with requirements up to 69dB required in the Theatre, Film and Television studios. The British Gypsum and Iover solutions were based around the 70mm or new 92mm Gypframe AcouStuds that can be used to upgrade the acoustic performance of 43mm, 70mm and 146mm wall systems.

Saint-Gobain Iover Acoustic Partition Roll was also used throughout, eliminating the need to cut insulation to size, reducing on-site waste and minimising installation time and costs. On the lightweight façade construction, Iover Modular Roll helped boost thermal and acoustic performance. Both products have 86 per cent recycled content, the highest level of any glass mineral wool insulation on the market.

A completely new single-board specification, unique to British Gypsum, was used on the new Law and Management Schools and the Computer Science building to meet acoustic requirements. The system was then lined with a single layer of 15mm SoundBloc with 100mm Iover Modular Quilt in the cavity.

With the most demanding specifications to be found in studios and control rooms, the Department of Theatre, Film and Television building was constructed on an isolated slab to separate it from the main structure. British Gypsum used a twin metal frame system, GypWall QUIET IWL, with one Gypframe 70 I 70 frame fixed to each side of the decoupled floor slab. The 300mm gap was filled with Iover Modular Roll and two layers of Gyproc SoundBloc on either side.

In areas that were difficult to access, 70mm ShaftWall was used because it can be installed from one side. And, where steel work was exposed, 15mm Glasroc FireCase F steel encasement was fitted to give 60 minutes of fire protection.

**i** For the full story on Saint-Gobain's involvement with the University of York please visit [www.saint-gobain.co.uk/Products%20and%20Solutions/Projects.aspx](http://www.saint-gobain.co.uk/Products%20and%20Solutions/Projects.aspx)



# Living in Multi-Comfort



**The Saint-Gobain Multi-Comfort concept is based on the Passivhaus approach to zero carbon construction but also considers the occupiers' wellbeing by taking into account additional acoustic and safety features, indoor air quality and energy saving measures.**

The need to build in a more environmentally friendly manner was pushed to the top of the construction agenda four years ago when the Code for Sustainable Homes was introduced, and although huge steps have been taken there is still significantly more that can be done as currently only 31 homes have been completed to Code Level six in the UK.

**Households can reduce their energy costs by up to 90 per cent**

However, it is becoming more widely accepted that one of the best ways to achieve the upper levels of the Code is by embracing a fabric first approach to construction and focusing on developing buildings which hardly need any heating all year round, have filtered fresh air without drafts and acoustic comfort which shelters occupants from noise. This way households can reduce their energy costs by up to 90 per cent, something which must be appealing in the current climate.

The other positive about adopting a Multi-Comfort approach to construction is that the systems and solutions are already available

and due to increasing demand and innovation, the cost to build to this level has decreased considerably. A few years ago it was estimated that to build to Passivhaus standard it would cost an estimated £30,000 more per unit, but today this figure is now less than £10,000, making it viable for both the builder and the purchaser. To support the concept and raise awareness of its benefits to the future generations of architects, Saint-Gobain Iover has supported the international Multi-Comfort House student competition for the past four years and has continued its support this year.

The competition is open to students of all architectural universities offering RIBA accredited degree or masters courses and 2012's brief will require them to create a sustainable community living plan for around 12 – 15 families, located in Nottingham's Trent Basin at the border between the city and the industrial zone. The development must be designed in accordance with Saint-Gobain Multi-Comfort concept principles, encompassing Passivhaus components to create a sustainable neighbourhood.

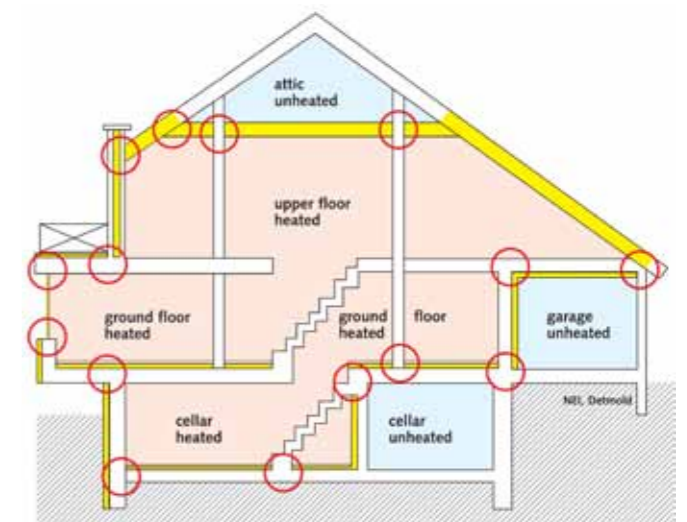
Last year, one of the UK entries came second in the finals which took place in Prague. We hope this year's entries are equally successful and make it through to the finals which will take place in Bratislava in May following on from the UK live final to be staged at this year's Ecobuild exhibition in London, 20th – 22nd March.

## How the Multi-Comfort concept works

The almost-airtight building envelope, highly efficient insulation and active heat recovery systems minimise heat loss

The red circles represent typical weak points (thermal bridges) in the building envelope, which cause unwanted loss of energy. Building a thermal bridge-free envelope is a top priority in Multi-Comfort House construction

The building makes use of the warmth generated by body heat, household appliances and passive solar gain, reducing residential energy demands to as low as 1.5 litres of heating oil per year, as opposed to the 30 litres used by the average UK home



**i** To find out more about the competition or the Multi-Comfort concept, visit [www.multicomforthouse.co.uk](http://www.multicomforthouse.co.uk)



The highly sustainable velodrome, viewed across the parklands, April 2011



An artist's impression of the aquatic centre



Aerial view of the Olympic Park, July 2011

# Green Games – is it possible?

On 6 July 2007 at 12.46pm, Jacques Rogge, President of the International Olympic Committee General Assembly announced:

**The Games of the 30th Olympiad in 2012 are awarded to the city of...London**

London's winning bid was the culmination of two years' of hard work by the bid team. Central to the proposal was the unique focus on regeneration and the commitment to appoint an independent commission to ensure sustainability measures were built in from the very outset.



That's where the Commission for a Sustainable London comes in. "Our main objective is to make sure everyone does what they say they're going to do – then report independently to the public," says Chair of the group Shaun McCarthy – who is also Director of Action Sustainability.

The Commission is also responsible for providing advice and guidance to the London Organising Committee of the Olympic and Paralympic Games (LOCOG), as well as partner organisations – including construction companies – on how they can meet their sustainability objectives.

Not surprisingly, on a project of this size, the Games have thrown up more than a few sustainability challenges for Shaun and his team, and he is under no illusions as to what they can achieve. "Hosting an Olympics is not a sustainable thing to do, but I would like to see the event influencing people's attitudes and actions beyond 2012. If we can do this, I think we can call the Games sustainable."

To this end, Shaun is calling on all facets of the industry and society to start thinking greener and he highlights the construction sector as being key to this behaviour shift.

"It takes 3.1 million tonnes of carbon to have an Olympics and 67 per cent of that comes from construction – mainly steel and aluminium usage," he says. "Architects need to be doing more to reduce this figure. But the construction industry also needs to understand the impact of the materials it uses and where it can make a difference."

"There is a definite parallel between sustainability and commercial success and, if the construction industry can recognise this, the Games is in with a real chance to help drive a sustainable future."

But it hasn't all been plain sailing and Shaun believes there have been two major sustainability fails. "Renewable energy targets have not been met, which doesn't help in terms of creating a sustainable construction legacy," he says. "And EDF and LOCOG not working together to deliver a low carbon Olympic torch meant we didn't get what was supposed to be the first and most visible symbol of our sustainable Games."

**There is a definite parallel between sustainability and commercial success**

Still, a man in Shaun's position, faced with such an enormous task, can't afford to dwell on mistakes and he soon reverts to pointing out the Games' sustainability success stories. "The Olympic Delivery Authority (ODA) has genuinely built sustainability objectives into its processes, all the way down to the guys on site, which is unprecedented on a project of this scale. We have also raised the bar in other areas, such as 90 per cent of construction waste diverted from landfill, as well as in the design and construction of buildings. The velodrome, for example, is over 30 per cent more sustainable than the targets, which is a real highlight for me."

## Did you know..?

- This is the third time the UK has hosted the Olympics, which also came to London in 1908 and 1948
- The five host boroughs are Newham, Hackney, Waltham Forest, Tower Hamlets and Greenwich
- The Olympic Stadium will have a capacity of 80,000 during the Games and is the lightest Olympic stadium ever built
- The amount of material that had to be excavated to build the Aquatics centre was the equivalent of 160,000 tonnes of soil. All soil removed from the Olympic Park site was cleaned and reused.
- The velodrome is one of the most sustainable venues in the Olympic Park. The lightweight roof weighs roughly half that of any other covered velodrome, creating a highly-efficient building
- 60 per cent of Olympic Park construction materials by weight were delivered by rail or water transport, reducing vehicle movement and resulting CO<sub>2</sub> emissions

Source: London2012

 For more information on Action Sustainability please visit [www.actionsustainability.com](http://www.actionsustainability.com)

# Rethinking refurbishment

**'Rethink Refurbishment' was the theme of last month's BRE INSITE11 conference where the Victorian Terrace, the BRE's £4.5-million flagship refurbishment project, was an important area of focus.**

Launched in 2010, it was designed to generate best practice knowledge of the most effective ways of reducing carbon emissions through the upgrade of existing solid wall homes. Saint-Gobain was heavily involved, supplying a range of commercially available products and systems to refurbish part of the original building and show how fabric first measures offer a cost effective means of improving energy efficiency.

The Victorian Terrace displayed a number of problems associated with housing from the era, including poor thermal performance, solid brick walls, sash windows, dampness and disrepair, demonstrating the challenge of improving the energy efficiency of the UK's existing housing stock, which includes over six million solid wall properties. Following its restoration the building has been monitored closely, with testing carried out to measure the effectiveness of the solutions used to upgrade its energy performance level from an energy performance rating of F to B.

**...overcoming the skills challenges posed by refurbishment is essential**

As well as highlighting the results that can be achieved through retrofit, the project has also played a valuable part in highlighting some of the issues which must be overcome if the UK is to successfully meet the refurbishment challenge. A large number of thermal images were taken of the building to identify areas of cold bridging. These revealed areas where thermal performance could be improved further with a very few simple improvements to the installation techniques and design detailing normally employed by the industry.


## Best practice examples include:

- Applying complete beads of mastic or sealant to remove air paths at junction details
- Only using as many insulation fixings as needed – using more than required can increase thermal bridging by as much as 10 per cent
- Applying mastic to the underside of window frames to prevent air tracking behind dry-lining and drawing heat from the room
- Using a complete ribbon of adhesive instead of a dot and dab technique when securing laminates to the wall to prevent air convection

Life size pictures of thermal imaging results have been painted on the walls of the Victorian Terrace, providing a visual representation to highlight the importance of best practice installation.

Lindsey Walker, Strategic Marketing Leader for Saint-Gobain (UK & Ireland), comments: "As well as demonstrating the effectiveness of fabric first solutions in a solid wall refurbishment scenario, the Victorian Terrace has highlighted areas where performance could be enhanced further by following best practice installation guidelines. The products and systems used will be available under the Green Deal, so it is vital that the industry updates techniques used to help deliver optimum efficiency.

"We recognise that overcoming the skills challenges posed by refurbishment is essential if the UK is to meet carbon emission reduction targets and this is something we are helping the industry to achieve through our involvement with projects such as the Victorian Terrace and Energy Saving Trust trials (page 9), as well as our network of Technical Academies (page 6)."

 For more information on the Victorian Terrace please visit [www.bre.co.uk/victorianterrace](http://www.bre.co.uk/victorianterrace)



The interior of the Victorian Terrace has been painted to illustrate thermal imaging results, providing a visual reference to highlight the importance of best practice installation  
Photography: Peter White, BRE

# Saint-Gobain shows solar flair

**The sun has been heating and lighting the earth for billions of years, providing us with a free energy source. Emitting more energy to earth in one hour than is used by the entire population in a year, this amazing, everlasting resource can permanently solve our energy issues and remove our reliance on depleting fossil fuels forever.**

Saint-Gobain Solar understands the sun and how to harness its energy to create clean, green power through photovoltaic (PV) panels – the perfect addition to a well insulated and airtight home. Although new to the UK market, Saint-Gobain Solar has over six years' experience in the design and manufacture of its three market-leading PV modules. Suitable for both domestic and commercial use, these offers customers reliable, cost effective units that perform all year round, whatever the light condition.

Budhi Chillkoti, General Manager for Saint-Gobain Solar, UK & Ireland, said: "PV provides the chance to build on the results achieved by a fabric first approach to construction and is an area that many installers are keen to embrace.

"Feed-In Tariff registrations are gaining momentum, with over 77,000 domestic homes registered to date. With the introduction of the Green Deal and Renewable Heat Incentive (RHI) less than a year away, it was the perfect time for Saint-Gobain Solar to launch in the UK."

**PV provides the chance to build on the results achieved by a fabric first approach to construction**

## SG Solar Suneka®

An on-roof module ideally suited for residential and non-residential buildings, where a cost-effective, highly efficient and reliable solution is required. Power output range available between 185Wp and 245Wp.

## SG Solar Sunlap®

A solar tile and in-roof system that is completely watertight and suitable for both new and existing homes under renovation. This premium fully-integrated in-roof (BiPV) tile replacement for homes combines aesthetic appeal with powerful performance. A two-in-one roof with electricity generator, the Sunlap solar tile system benefits from a unique ventilation mechanism for each tile which optimises performance and efficiency.

- Product warranty of 12 years and three months from initial purchase.
- A power warranty of 90 per cent output over 10 years and 80 per cent output over 25 years.
- Ideal for property owners wanting to participate in the Government's Feed-in-Tariff (FIT) scheme.
- MCS accredited.

## Powermax


This thin film module, based on CIS technology, delivers the highest conversion efficiency with respect to other thin film technologies (Wp/m<sup>2</sup>) and provides higher output (kWh) in low light and poor weather conditions, making it perfect for UK weather conditions. It can also cope with heavy snow and is suitable for larger domestic roofs and non-residential applications.

- A product warranty of 10 years and three months.
- A power warranty of 90 per cent output over 10 years and 80 per cent output over 20 years.
- MCS accredited.

## Solar training

Saint-Gobain's Greenworks Training Academy now offers a Solar Photovoltaic Microgeneration Certification Scheme (MSC). Please see page 7 for further information.



 For further information please visit [www.saint-gobain-solarcom/eng](http://www.saint-gobain-solarcom/eng)  
Panels can be purchased from Jewson or Graham. To find your nearest branch, please visit [www.jewson.co.uk](http://www.jewson.co.uk) or [www.graham-group.co.uk](http://www.graham-group.co.uk)



# Change in motion

**Glasgow's new Museum of Transport – 'the Riverside Museum' - is arguably one of the UK's most innovative sustainable new-build projects in recent years. Commissioned by Glasgow City Council in 2004, The Riverside Museum was completed this year (2011) and following an assessment by the independent Considerate Construction Scheme has gained a score of five out of five, making it one of the most responsible construction sites in Britain.**

**Taking inspiration from the Museum's surroundings, renowned architect Zaha Hadid produced a unique, free-form design**

With a brief to create a visually stunning building that met stringent sustainability criteria the use of the very latest building materials and systems was required and Saint-Gobain played a key part in its delivery.

Companies providing solutions for this iconic build included British Gypsum, which supplied all the internal plasterboard walls and plaster, Solaglas which met all the building's glazing needs, Isover which provided wall insulation and Artex which supplied access panels.

Taking inspiration from the Museum's surroundings, renowned architect Zaha Hadid produced a unique, free-form design that now houses more than 3,000 exhibits, including steam locomotives. The building is a complex s-shaped, tunnel-inspired design with a steel frame and external standing seam, zinc cladding and expansive glazing both to the front and rear.

All internal walls above 2.2 metres in height and all ceilings were lined with British Gypsum's Rigitone 15-30, offering excellent acoustic performance. It was also the first time in the UK that Rigitone had been used on such a scale as it is rarely specified for use on walls as well as ceilings.

Due to the nature of the project, the finish specified was of a very exacting standard and was also unique as it was based around the Rigitone 15-30 pattern, with the internal theme colour being a specially commissioned green. To continue the seamless finish throughout the building, the Rigitone 15-30 was recreated on curved areas below 2.2 metres.

Lindsey Walker, Strategic Marketing Leader for Saint-Gobain UK and Ireland, comments: "The Glasgow Museum of Transport's new building is a stunning example of modern design and we were very pleased to be able to provide products that satisfied the very exacting vision required by the architect. All the companies involved worked incredibly hard to ensure the products specified met and exceeded expectations, helping to create a building of which Glasgow will be proud."



To find out more please visit  
[www.zaha-hadid.com/architecture/glasgow-riverside-museum-of-transport](http://www.zaha-hadid.com/architecture/glasgow-riverside-museum-of-transport)



# Glasroc<sup>H</sup> TILEBACKER

*A water barrier, not a time barrier*

## Introducing Glasroc H TILEBACKER

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[www.british-gypsum.com/Glasroc-H-TILEBACKER](http://www.british-gypsum.com/Glasroc-H-TILEBACKER)

\* Compared with alternative tile backing boards.



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