Spring 2008

Greenprint

Building today for a sustainable tomorrow

Ecobuild Special Issue

Issue three

The weight of legislation

Can construction cope?

In this issue...

The greatest show on earth
Ecobuild is back, we tell you just what to expect from this spectacular event

The expert view
Tim Pollard looks at the importance of making existing housing stock more efficient

Zero waste roadmap
Are ambitious Government targets a road too far?

Sustainable Building Center
As this groundbreaking project takes shape, we follow its progress

Also in this issue...

Client case study
Gentoo Group giveaway an eco-friendly makeover

New developments
Water and energy saving devices that make a real difference

1930s show home
Worcester Bosch shows how it's done with an energy efficient refurb

Product lowdown
The award winning Twyford | Galerie FLUSHWISE WC

in association with WOLSELEY UK

Welcome

to issue three of Greenprint

With special thanks to:

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- Shelagh Grant – Constructing Excellence
- Tim Pollard – Wolseley
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The most exciting event on the construction calendar, **Ecobuild**, is here. Now in its fourth year, events like this give the industry a fantastic opportunity to see the latest innovations available and share their knowledge of sustainable building techniques. The increasing popularity of **Ecobuild** shows the level of interest in this area, partly driven by the need to meet new Government legislation and partly by the industry's passion for making the world a greener place.

In this issue, we take a look at what you can expect to find at **Ecobuild** this year to help you make the most of the event. On pages 20-22 we give you a run down of the latest legislation that affects what we do, to help keep you compliant and stay one step ahead of the game. Our resident expert, **Tim Pollard** discusses the need to improve existing housing stock if we are to make a real difference on page 30.

Another major talking point is the push for **zero waste** to landfill by 2020, an incredibly big ask of the industry, we ask how achievable is it and what are the implications for those involved on pages 26-28. As ever, we follow the progress of our groundbreaking **Sustainable Building Center** on pages 16 and 17 and investigate the latest innovations, including a WC that flushes with just 2.6 litres on page 23.

We hope you enjoy your latest issue of Greenprint and do drop in on us at this year's Ecobuild.

Helen Lawson
Editor

P.S. Don't forget, we practice what we preach and Greenprint is printed on recycled paper using environmentally friendly vegetable based inks.

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We'd love to know what you think about Greenprint, please send any feedback to **editor@greenprintmagazine.co.uk**

The greatest show on earth

The eyes of the construction world will be on Earls Court in London when 2008's **'Innovations for the Built Environment'** event kicks off on 26th February.

Nearly a year after the Code for Sustainable Homes was introduced and everyone doing their best to interpret the best way to attain the various levels, Ecobuild aims to get to grips with the future for the construction industry. The largest 'green building' information programme outside of the US, with the biggest exhibition showcase of sustainable construction products anywhere in the UK, for the fourth year running. Each year it goes from strength to strength, attracting visitors from all over the world. This reflects the growing interest in the subject matter and the need to be at the forefront of sustainable design and construction issues, not least to achieve ever-changing Government targets.

Innovations for the Built Environment is made up of a number of different shows:

ecobuild

- Ecobuild itself covers developments in design, construction and the built environment that are here now to help us.

cityscape

- Cityscape focuses on urban design and the public realm.

futurebuild

- Around offsite and innovations in construction.

The cornerstone of the event is the annual conference – Innovate & Green. This focuses on emerging policy, the latest thinking and new ideas, as well as featuring practical case studies and experiences from some of those who have faced and already overcome, the myriad of challenges facing the industry today, both here in the UK and abroad.

Plus there will be a low energy carbon house built by Green Carbon to reach Code Level 4 that uses a Glulam beam framing system (you can read more about this in our article on pages 10 & 11 of this issue).

The atmosphere around Ecobuild last year was fantastic with the hustle and bustle of information being transferred from exhibitor to customer; the whole event was a complete success. The seminars were well attended and everyone seemed happy and satisfied with the presentations they were given. There was something for everyone at this exhibition – an all round success and a pleasure to be part of.

Rachael Irving, Arnold Laver

As well as the usual exhibitor stands there are a number of attractions to help put products into a practical context:

- **The Road to Zero carbon tells the carbon story with a full size zero carbon house stripped back to reveal the anatomy of the building.**
- **Streetscene is the largest indoor representation of landscape design in the UK.**
- **SOH2O focuses on how best to meet the challenges of sustainable water management.**
- **Natural Materials Live features live demonstrations.**
- **Solar City explores the options for renewable power and heating.**
- **The Construction Concrete seminar theatre consists of 10 wall panels each made out of a different finish.**
- **The Window Box will allow people to compare the merits of different types of window installations**
- **Sustainability Regeneration in Action looks at the fascinating story of the Thames Gateway project.**

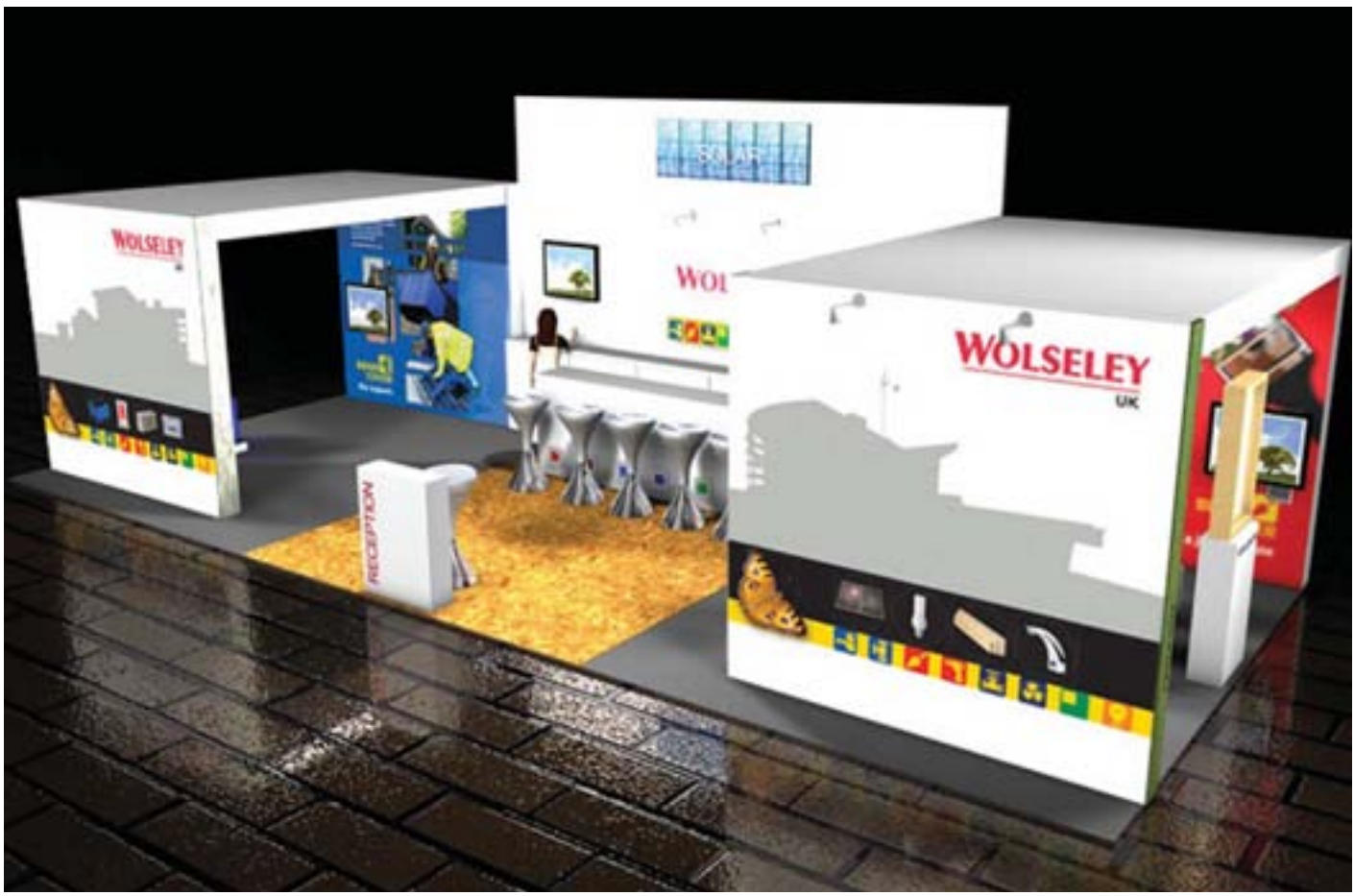
See Wolseley at stand E100

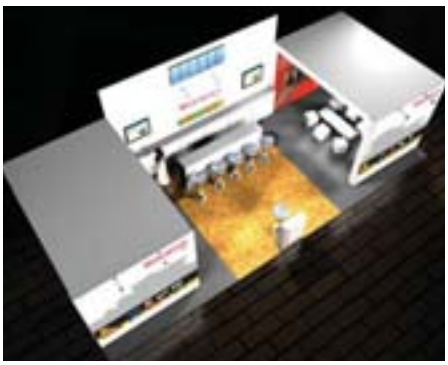
Wolseley at Ecobuild

This year, put a visit to the Wolseley Stand on your list of 'must-do's' at the show, as we'll be exhibiting at **Ecobuild** for the very first time. The main purpose is to launch and showcase our unique **Sustainable Building Center**, due to open in the Spring of 2008. This is designed to be a living, breathing testament to sustainable design and construction, as it's being built from many of the innovative sustainable products that are coming on stream as well as being a place where customers can come to learn more about best practice in the built environment. There will be experts on the stand across all of the three days of the event who will be able to talk you through any aspect of sustainable design or construction and advise you on your project, whatever it may be. You can even book a visit to see the Sustainable Building Center for yourself as soon as it opens.

The Wolseley stand will also feature leading-edge products from some of our key brands, Plumb, Drain and Build Centers, as well as unique supply chain solutions for all manner of projects large and small. You can also register for a copy of our FREE Sustainable Product Guide (see page 15 for more details). An indispensable guide to your next sustainable build project.

Many key Wolseley supply partners are also attending the show. This promises to be an exceptional event for anyone interested in understanding the practical ways to deliver sustainable outcomes in the built environment. Tim Pollard, the Head of Sustainability for Wolseley and an acknowledged industry expert in sustainable supply materials, will also be speaking at the show.



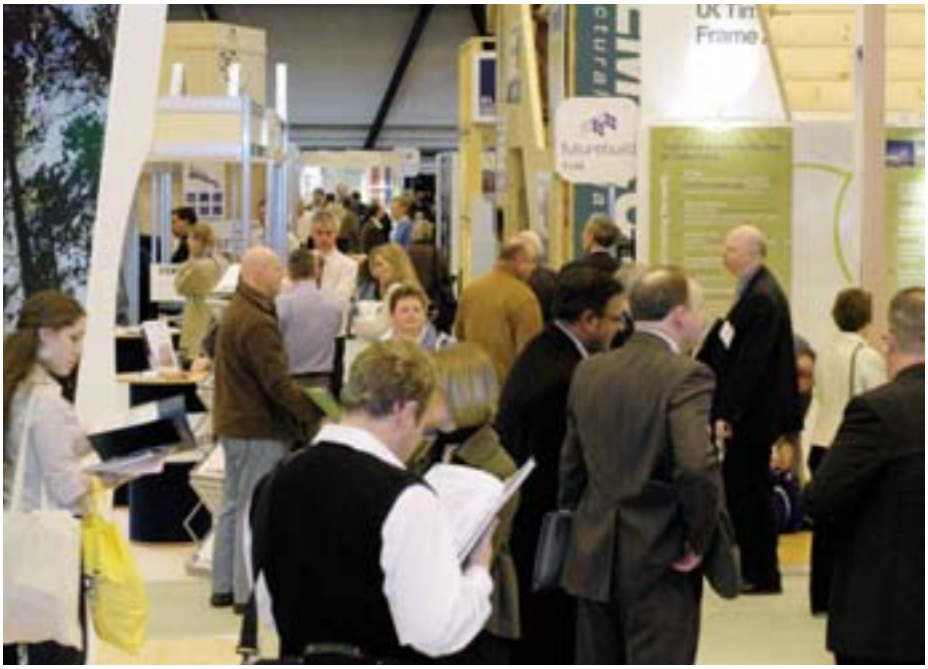


Wolseley's unique breadth and depth of reach combined with the industry's most sophisticated supply chain will be further enhanced with the opening of the Sustainable Building Center. Visitors will be able to view at first hand how Plumb Center, Build Center, Drain Center and all the other Wolseley companies can meet and exceed customer goals of achieving sustainable construction outcomes.

Tim Pollard, Head of Sustainability, Wolseley

Don't miss Tim's presentations

Subject	Date	Time	Stand
Improving the sustainability of existing non-residential stock	Tues 26th Feb	Midday	Ecobuild Seminar Theatre
National supply of sustainable construction products by Wolseley UK	Wed 27th Feb	3-4pm	Tradical Stand No. E370
Improving the sustainability of existing non-residential stock	Thurs 28th Feb	11.00am	Ecobuild Seminar Theatre



See all these new technologies at the Wolseley stand

- Marley Waterloc
  SUDS System
- Renewal Carpet Tiles
  Recycled yarn and natural backing
- Jeld Wen Combi Triple glazed window
- Second Nature
  Thermafleece sheep's wool insulation
- Knauf
  Glass wool insulation
- Rockwool Insulation
- Celotex Insulation
- Sonae Chipboard Flooring
  95% recycled material
- Philips LED'S
- Norbord FSC
  Certified MDF
- Worcester Solar Thermal
- Solar Century Photovoltaics

See many of Wolseley's key partners and suppliers at the show:

Worcester Bosch

A leading manufacturer of high efficiency heating and hot water appliances for the home, Worcester Bosch is highly committed to introducing renewable energy products to the home heating market. They will be showcasing their new condensing oil-fired boilers at the show, as well as their extensive portfolio of Greenstar high efficiency natural gas, oil-fired and LPG boilers and heating controls to suit any house.

Worcester Bosch can be found on stand E64 and will also be showcasing at Solar City.

BASF

The world's leading chemical company offers innovative and traditional raw materials and reliable solutions for comfortable, energy efficient buildings for the construction industry. At the show they will be featuring a range of their energy efficient products including innovative insulation foams, phase change materials and pigments for solar heating management as well as showcasing their new Micronal Smartboard insulation product.

BASF can be found on stand E512 and will also be showcasing at the Road to Zero Carbon.

Rockwool

Rockwool Ltd, based near Bridgend, South Wales, is the UK's leading manufacturer of mineral wool insulation for thermal, acoustic and fire protection. Only Rockwool is authentic and wholly natural, recreated from natural processes that exist only in nature.

See it in action on their stand at E210 and at the Road to Zero Carbon.

Jeld Wen

A leading international producer of windows, external and internal doors, patio doors, garage doors and stairs, Jeld Wen offer the largest range in the UK and as such are leading the way in looking for more environmental solutions. They will be showcasing a range of sustainable and energy efficient external joinery solutions at Ecobuild, including their recently released Hi Profile Combi window.

See it and more on stand E660 and at Window Box.

Alumasc

Alumasc Exterior Building Products Ltd provides a unique fusion of premium products for building exteriors and drainage. They have a commitment to offering specific sustainable, long-term solutions. Particularly highlighted at Ecobuild will be their ZinCo Green Roof system, which are designed to suit every type of roof structure from the 'Ecological Protection layer' to the fully developed 'Parkland on the Roof' that can be achieved with intensive landscaping.

See it in action at stand E138 and at the Road to Zero Carbon and at SOH20.

Tarkett

Offering a wide range of resilient vinyl, linoleum and wood flooring for virtually every commercial and housing application, Tarkett see their Intelligent Flooring Solutions as part of the world's ecological system. They make strong efforts to ensure all their activities are based on respect for the environment and live by that principle in every single step form vision to waste.

See them at stand E350.

Forward thinking

Constructing Excellence in the Built Environment

At the hub of the built environment industry is Constructing Excellence, an organisation working closely with Government, strategic partners, firms and industry organisations to shape the future of the industry and drive best practice.

By raising awareness and promoting quality projects and best practice in the built environment sector – which embraces construction, housing, property, infrastructure and facilities management - Constructing Excellence and its predecessors will be celebrating their 10th Anniversary this year. In that time they have taken huge strides as the modern day construction industry faces new challenges.

The foundations

Back in the nineties the construction industry desperately needed to improve both its service to clients and public perception. Constructing Excellence in the Built Environment was formed partially in response, with the collaboration of several organisations already operating in this industry. It brought together Constructing Excellence and a number of cross industry bodies which all shared the same aim: to drive change in the UK built environment industry. This unity brought together powerful agents of change who will stand up to lobby for progress on the change agenda and drive innovation through demand.

Forums that lead the way

As part of their drive to improve performance of the built environment industry, Constructing Excellence encompasses a number of forums for all areas of the construction industry from design right through to implementation. Greenprint readers will most likely find the Building & Estates Forum of relevance. Constructing Excellence's goal is to drive best practice that is customer focused, profitable, safe, and sustainable, from hospitals, schools, roads and offices to homes. Significant progress has been made in driving these initiatives into the practicing industry with many examples of projects that have been run in accordance with the fundamental principles.

With the growing emphasis on achieving ever higher targets in sustainability in the housing sector, the Housing Forum is another one that could be of particular interest. In all there are seven different forums:

- Constructing Excellence in the Built Environment Forums
- Housing Forum
- Infrastructure Task Force
- Building & Estates Forum
- Local Government Task Force
- Construction Clients Group
- The IT Construction Forum

Recognising excellence and promoting best practice

Constructing Excellence set up its Demonstration Programme in 1998 to recognise exemplary building projects. Since then, over 600 projects have been recruited, involving over 1300 organisations UK wide, with a total value of over £9.5bn. So, how and why does a construction become a Demonstration Project? Basically, they are live projects that are innovating or applying an element of best practice that it is hoped will lead to a step-change in performance for the participating organisations. Any organisation awarded Demonstration status can use it to promote it's innovative stance, whereas the learnings captured from the Demonstration Programme can help Constructing Excellence to influence industry change.

> Our goal is to drive a world class industry that is customer focused, profitable, safe, and sustainable. By supporting and promoting collaborative working and innovation, we are confident that we can reach this goal
>
> Don Ward, Managing Director Constructing Excellence

In 2007 the Wolseley Sustainable Building Center was proudly accepted as a Demonstration Project by the Building & Estates Forum Demonstration Project Working Group. This totally unique, carbon efficient construction brings to the mainstream a vast range of sustainable construction products. It was designed to achieve exceptionally high levels of energy efficiency through insulation and other specialist products, many of which will be at the leading edge of development. The very reason it was designed is because these products are going to become increasingly crucial to the industry addressing the demand and targets being set by government.

For more on how this build is progressing, please see pages 15-16.

You can find more information, including access to all the sector forums, at www.constructingexcellence.org.uk

Wolseley UK is proud to be a key strategic partner of Sustain and npower. The A1 scheme has delivered high efficiency and renewable products to a market at very affordable prices. The breadth of product is growing and so are the overall numbers of installers registered to the scheme and we see many years of continued growth.

Grant Richardson, Wolseley UK

Energy legislation and its effects on heating and hot water in the home

Starting from April, all homes in England and Wales will need an **energy efficiency rating** before they can be sold. The Government says the move, which is in line with European agreements, will help the UK reduce its carbon emissions... but what is the latest legislation saying and what are the implications for heating and hot water installations in UK homes?

Under the EU's Energy Performance of Buildings Directive, the requirements for Energy Performance Certificates (EPCs) will be introduced for all buildings, in phases, starting from April 2008. In addition, the Government White Paper 'Meeting the energy challenge', aims to significantly reduce carbon emissions from homes by 2016. The minimum energy efficiency requirements in Part L are one of the mechanisms through which these reductions will be achieved.

Compliance to Part L

For all new buildings, compliance to Part L is now based entirely on the reduction of carbon emissions and by production of an Approved Energy Rating calculation. All previously used methods of compliance are now obselete.

Enabling home owners to reduce emissions in an affordable way

There are a number of ways that heating and hot water in homes can help buildings achieve compliance. And many heating companies have been quick to realise this and start initiatives to encourage people to reduce their energy usage and carbon emissions in both new and existing housing stock. One of these companies, npower, has undertaken an award-winning scheme that it calls A1, in conjunction with Sustain Ltd an environmental consultancy based near Bristol.

The A1 Scheme

Running since 2003 the scheme has been instrumental in saving in excess of 80,000 tonnes of carbon, by working closely with CORGI registered installers and major partners in the heating industry. The scheme has been responsible for the installation of over 79,800 A - rated condensing boilers in the private domestic housing market.

A1 has also been promoting 'Fuel Switching' for sometime now. By switching the primary heating fuel of a customer's home from electric or solid fuel to a cleaner gas or oil alternative, an incredible saving of 81.2 tonnes of CO2 can be made. Grants of up to £850 are currently available to assist the householder in making the decision to switch.

The scheme prides itself in promoting best practice. As well as offering 'A'-rated boilers to the large register of installers it also offers financial support for energy efficiency and renewables training. Water treatments and heating controls are also among the other products available through the scheme.

Continually responding to a changing market and increasing awareness of climate change the scheme is developing into the renewables sector allowing installers and home owners to access the most efficient technologies available.

The current Energy Efficiency Commitment (EEC2 2005-2008) period is drawing to a close but will be replaced by the Government's latest initiative, The Carbon Emissions Reduction Target (CERT 2008-2011). To reflect the change of focus from energy efficiency to carbon reduction the scheme's logo has received a makeover with a new strap line 'Low Carbon Solutions'.

'The scheme is going from strength to strength and we are looking forward to leading the A1 heating installers into a carbon reducing future' says Kirsten McLellan of npower.

How compliance to Part L can be achieved

To comply to Part L1A (new dwellings) a calculation is done to show that the carbon emissions from the proposed dwelling (the DER) are no greater than a Target Rating (TER.) An additional calculation ensures that the final "as built" project compares favourably with the original specification.

Under the Approved Document Part L2A (Work in new buildings other than dwellings), significant changes have taken place in compliance. To show compliance CO2 emissions from the proposed building, the Building Emission Rate should be no greater than a pre-determined target rating which is determined from a SAP type calculation called the Simplified Building Energy Model (SBEM).

In document Part L1B (work in existing dwellings) for small works compliance can still be gained by achieving set elemental U-values for the floors, walls and roofs. Alternatively, a carbon emission calculation can be done before the works and then after, with the carbon emissions being no worse than that of the existing dwelling.

Under Document Part L2B (work in existing buildings that are not dwellings) there is a need for 'consequential improvement'. Where work involves an extension, the installation of fixed building services or an increase in capacity of these building services, there is a need to improve the energy performance of that building.

PLUMB CENTER

Find out more about the A1 schemes at www.plumbcenter.co.uk

At the cutting edge of construction

With its **low carbon footprint**, high versatility and natural renewability, certified timber isn't just good for our eco-system, it's good for business. Especially at a time when sustainability is such an important issue in and outside of the construction industry. In the last issue of Greenprint we touched on the thermal efficiency and credentials of certified wood, so now it's time to think about all the different applications that make timber a natural choice in all aspects of modern day building.

The beauty of timber

Timber products can be combined in many ways to achieve truly beautiful results. As a natural material, wood blends in well with the environment; and its durability and affordability make it a highly competitive alternative to steel and concrete structures in public construction works, such as bridges. As well as being at the forefront of product and software development, it offers you another solution to meet new building regulations and the challenges these present to house builders and architects alike. For example, if Part E sound regulations, or your next building's environmental credentials are at the top of your specification requirements, then wood is going to be a very good specification choice.

Supply and demand

The most important issues to face any sustainable constructor is the sourcing of raw material. When building with wood or any other material, a diverse product range and comprehensive know-how from planning to realisation is needed. Finnforest is one major UK and international supplier, who is at the forefront of sustainable timber technology and working hard to provide a wide range of sustainable timber products for simple buildings as well as the most complex public projects. Its product portfolio features a choice of engineered wood innovations to basic sawn joinery; all sustainably sourced, naturally.

Here are four unique Finnforest products worth knowing more about for future reference:

Kerto

Kerto is a high technology weather resistant laminated wood product for advanced engineering. It is produced from 3mm thick, rotary peeled softwood veneers, glued together using a WBP-type glue to form a continuous 2.4 metre wide billet, with thickness ranging from 27 to 90mm and maximum length of 26 metres. The billet is then hot pressed and cut to size to make beams, planks, posts or panels, which are then used as such or processed into a variety of products which will not twist, split or warp as some solid sawn lumber would on drying. Kerto possesses excellent bending resistance, tension and compression properties. It has more load-carrying capacity than most of the traditional wooden materials, which opens it up for many uses within the construction and industrial markets – including new buildings, renovation and repair, and the manufacturing of prefabricated components.

Thermowood

Slowly grown Scandinavian softwood has excellent moisture and thermal properties. Its superior strength/weight ratio makes it highly suitable for load-bearing structures. Premium Scandinavian softwood is converted into Thermowood, simply by steam heating each piece in a kiln. The heat goes to the core of the wood, driving out moisture and resin. The result is a timber with reduced moisture content and enhanced physical properties… being 50% more stable than untreated softwood. Thermowood suffers less shrinkage, swelling, and distortion in response to atmospheric changes. It has a superior

resistance to water and to attack from funghi and doesn't need to be treated with any preservative, which makes it perfect for exterior use such as in an organic garden, where it is best installed in above-ground conditions. Not only is it easy to work with and lightweight, improved stability also reduces the potential for shrinkage, warp or twist ensuring decking or cladding looks great for years to come.

Glulam

Glulam is made of lamellas that are cut following the grain of Finnish sawn spruce or pine and then glued together. The glue that is used is either dark or light weather-resistant glue, depending on the needs of both client and build. It also offers excellent fire safety with properties based on the slow charring of wood; in the event of fire, the uncharred section retains its strength almost unaffected. Glulam's exceptional strength makes it

especially suited for use in the load-bearing structures of buildings with long spans when architectural beauty is sought after. In fact, it's very easy to get a strong sense of space in a typical Glulam structure. The material makes it possible to build spacious, airy premises and develop aesthetically pleasing solutions in residential/recreational buildings and in industrial and warehouse construction.

Innovative Finnjoists

Finnjoist beams have I-shaped cross-section profiles and are mainly for use in the ground and intermediate floors of buildings and in roof construction. The Kerto flange and high quality OSB panels yield a high strength to weight ratio and lighter, longer spans. Quick and easy installation is another advantage, thus reducing build time and increasing efficiency.

- Longer clear spans
- Increased joist spacing
- Continuity over multiple supports
- Possible removal of load bearing walls.

I-Joists are made in Kings Lynn and can help achieve Part E sound regulations for single occupancy dwellings at a depth of just 220mm.

So whatever your project there is a sustainable timber product to complement it. The most important issue of all though, is the sourcing of your raw materials. Thanks to robust Chain of Custody Certificates, it is increasingly easy to check if the sources are indeed certified to ensure that the timber you purchase is from well-managed forests. In fact, you can now even verify this online, so there are no excuses not to build sustainable timber into all new and forthcoming projects… if you hadn't planned to already.

Why wood's good for:

Office buildings

A nice work environment guarantees the best performance - and wood creates an atmosphere of warmth and comfort. Thanks to the evolution of wood construction and current fire regulations, office buildings made of wood are now possible.

Public buildings

Wood provides a prestigious backdrop for any occasion, uniting style and functionality in both public and private buildings. In public building projects, comprehensive planning and co-operation between the different actors is a key factor, as is the co-ordination of production at the earliest possible stages.

Sports facilities

Wood is the ideal material for sports facilities, where the moisture content of the air can be relatively high. Correctly designed sports facilities are long lasting, safe and aesthetically pleasing.

Civil engineering

Wood provides almost endless possibilities for the creation of architectonic masterpieces. Architectural and structural engineering must work hand in hand when planning such multi-faceted and impressive buildings.

Industrial and agricultural buildings

Ready-made solutions and prompt construction are key in industrial and agricultural buildings. Ready-made frame, wall and roof systems based on wood materials allow diverse possibilities and guarantee economical solutions.

BUILD CENTER

Wolseley UK has held multi-site Chain of Custody certification for our Build Center brand for 3 years now and that covers over 100 branches that are able to offer and advise on over 3,000 products with FSC or PEFC. For more information contact us on 0800 529 529 or visit us at www.build-center.co.uk

Competition winner gets energised!

Social Housing organisations across the country are starting to look at initiatives to reduce their energy usage and carbon emissions in both new housing stock and repair and maintenance of their existing, and often old, housing stock. None more so than Gentoo Housing Group in Sunderland. They have decided to take a more practical approach.

Competition winner Kelly Stanton with energy saving experts, from left, Mark Pearson of Uponor, Bruce McGregor of Wolseley UK, Ed Murtha of Gentoo Green, Sue Vickers of Energy Savings Trust and Michelle Treglown of Gentoo Green.

I'm delighted to have won and am excited about living in a house that is so full of new technology. I'm hoping to see a reduction in my utility bills due to the energy saving solutions.

Kelly Stanton, competition winner

An eco-friendly house makeover

In an effort to get the message out to their customers and suppliers, Gentoo launched an exciting competition for someone to win the opportunity to have their house fully refurbished with the latest energy-saving products and renewable technologies.

The eco-friendly makeover has been specially designed to lower the carbon footprint of the house and significantly reduce energy bills by installing various energy efficient products such as:

- Air source heat pumps
- Underfloor heating
- Low water, low content surface heaters temperature heat emitters
- High efficiency light fittings
- Photovoltaic roof tiles

The house, when completed, will provide a living showcase for energy-saving solutions. Any resident of all the houses managed by Gentoo were eligible to enter with the winner being chosen by ballot. The competition has now closed and the winner was recently announced. Kelly Stanton, a Sunderland mother, was the triumphant winner. Kelly's reaction was ecstatic, enthusing "I'm delighted to have won and am excited about living in a house that is so full of new technology. I'm hoping to see a reduction in my utility bills due to the energy saving solutions."

At Gentoo we are passionate about what we do, how we do it and the opportunity we see to make a difference to communities. We have proved we provide excellent homes for people to live in and make a real difference to people's lives.

Dave Crawford, Gentoo Group Chairman

Gentoo - leading the way

Gentoo, previously Sunderland Housing Group, are a progressive organisation with a vision that encompasses more than just property alone, about having a tangible positive effect on the way people and communities live, develop and improve. They believe in inspiring people to create a climate in which they can generate better communities. As an organisation they want to challenge existing norms and generate a better future.

Gentoo position themselves as a people and property business with a passion for improving and creating sustainable communities .The name came about to mark the next generation for the group – 'Gen' stands for generation and 'too' meaning extra or additional.

As a result they have invested £300 million in regeneration and new housing since 2001. For example, all new homes are built with the prestigious Eco Homes excellent standard which incorporates water-saving devices and aims to cut fuel bills. Gentoo Housing is the Housing Association within the group and looks after 70,000 people living in homes across the city of Sunderland. They are looking to deliver improved tenant satisfaction in all services offered but with a focus on doing it in an environmentally friendly way.

Turn over for more details about the new technologies being installed and how Wolseley has been involved.

Wolseley working closely with Gentoo

All of the new technologies set to be installed in Kelly's house are supplied by Wolseley. Wilby Meadows, Wolseley's Local Authority housing Sales Director said: "Wolseley is committed to promoting the benefits of sustainable materials and energy efficiency in the home, so we were delighted to be involved in this competition".

Bruce McGregor (pictured overleaf)**, Wolseley's Public Sector Manager has pulled together the various component manufacturers to deliver a combined "bundled" package of goods for ease of order fulfilment from factory to end user.**

Photovoltaic roof tiles

Underfloor heating

Low water content, low surface heaters temperature heat emitters

A new type of air source heat pump is also being tried out. The system, involving the main component of an air source heat pump combined with complementary innovation needs to be installed by fully trained and qualified engineers.

The requirement for the system was as an exemplar for reducing fuel poverty for all, to be suitable from 'cradle to grave' and to enable fitting into existing social housing as a retro fit, as well as new build and sheltered accommodation whilst observing the carbon emission reductions targets up to level 6 for eco housing standard. The components are designed to be non-intrusive and don't take up unnecessary living space within a dwelling where living and working with the new system should provide a seamless transition from traditional household warmth to the new upgraded technology. It will deliver both heating and hot water, where in the past only one or the other would have been possible from the one unit. Monitoring of the new system will take place immediately after installation in order to demonstrate the anticipated savings that can be made. The whole life costs of this new system should realise significant benefits in a relatively short period of time.

We hope this initiative will encourage more social housing providers to embrace sustainable building materials and technologies. In addition to the obvious environmental benefits, these products are crucial in helping to combat the levels of fuel poverty in the UK by lowering energy costs

Wilby Meadows, Wolseley Local Authority Sales Director

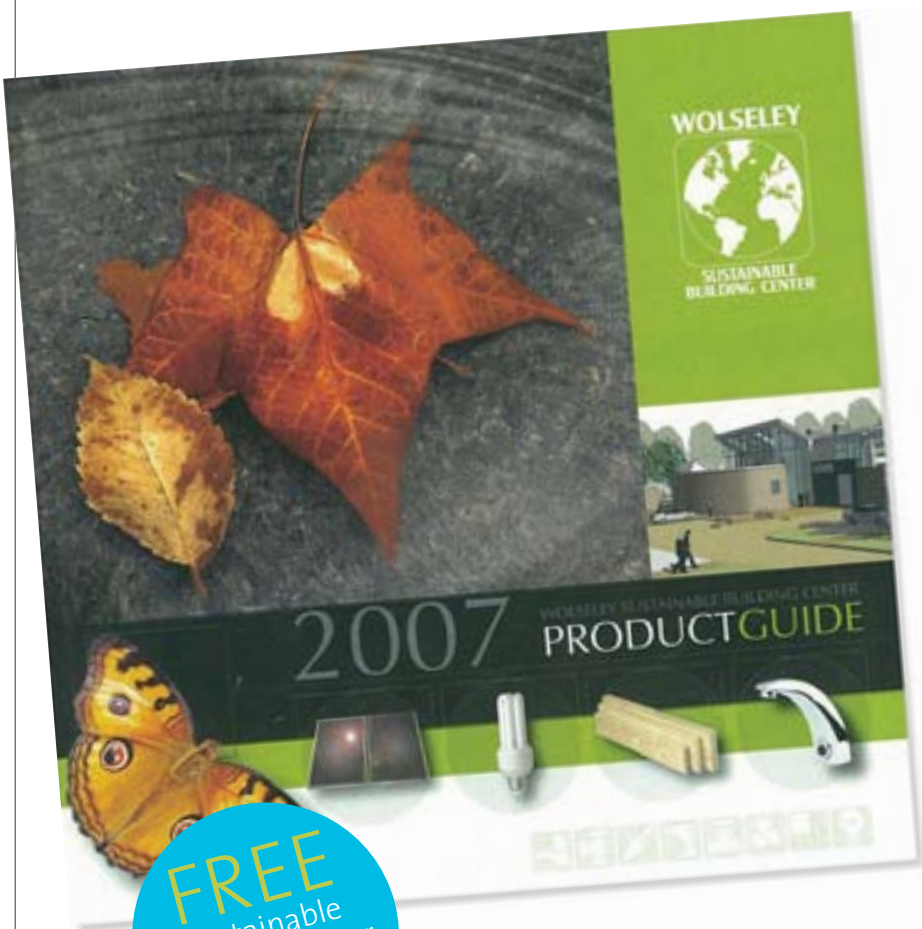
If you'd like more information on any of these products or you'd like to discuss ways in which Wolseley could help your organisation produce more efficient energy see our experts at Stand E100 at Ecobuild, or contact Wolseley at www.wolseleysbc.co.uk.

NOW AVAILABLE!

Not just a picture of things to come, but of things already here

In conjunction with the creation of it's **Sustainable Building Center,** Wolseley - the country's largest distributor of plumbing and heating products and a major supplier of building materials – has just published the 150-page Sustainable Building Center Product Guide.

The Guide brings together the impressive array of sustainable building choices now available and presents them in an informative, user-friendly format, including useful information behind the various technologies, their features and benefits, diagrams and photographs and comparable performance data for specific items.



FREE Sustainable Building Center Product Guide

Available **FREE** to developers, architects, housebuilders and self-builders, the Guide details sustainable building products in the following areas:

- Drainage and water conservation
- Walls & floors
- Heating & ventilation
- Insulation
- Lighting
- Timber
- Renewable technology
- Windows & doors
- Wall finishes
- Bathrooms & toilets
- Roofing

The SBC Product Guide is not just a picture of things to come, but of things already here. All of the products featured are available now through Wolseley's nationwide network of 1,800 branches.

To download your FREE copy of the SBC Product Guide, visit **http://www.wolseleysbc.co.uk/literature_downloads**

From architect's drawings to 3-dimensional reality

During the third quarter of its construction, work on the **Sustainable Building Center** in Leamington Spa dramatically shifted from the horizontal to the vertical. The installation of the beam and block floors in late September was quickly followed by the raising of the North and South Wing walls in October. By the New Year, with the addition of the roof, those who have been following this innovative work in progress could at last begin to view the SBC as a solid entity with an important future.

Beam and Block Floor installed

Installation of the Center's floors began on September 3 when beams were craned into place onto the already completed cross members. The space between the beams was then filled with Thermalite blocks from Hanson, suppliers of the most environmentally friendly range of aircrete products in the UK. Thermalite contains up to 80% recycled materials and is the first block to receive a Certified Environmental Profile and Ecopoints score from the BRE (Building Research Establishment), achieving an 'A' rating in the Green Guide to Specification.

Sweeping curves of the North Wing take shape…

The final days of September saw the raising of the North Wing wall, in which Finnjoists were integrated with the sub-structure to form the now familiar sweeping curves of the North Wing of the building. The Finnjoists, normally used in flooring and ceiling systems, are being used in a uniquely innovative vertical plain as wall joists where their performance strengths can be utilised. With their high strength-to-weight ratio, Finnjoist I-beams produce lighter, longer spans, whilst their quick and easy installation reduces build time and increases efficiency. Finnjoists are manufactured by Wolseley supply partner Finnforest and carry full PEFC certification.

…closely followed by the South Wing wall

The Hanson Twin Wall was delivered to the site and fitted into the South Wing at the beginning of October. Hanson's Twin Wall is a fully flexible walling system that combines the speed and quality of pre-cast concrete with the structural and waterproof integrity of a continuously poured in situ concrete structure. The Twin Wall panels were specified for the main galleries to exploit the thermal mass of the exposed material, used in conjunction with a secured, natural ventilation cooling strategy to remove the need for energy intensive air-conditioning.

The build warms up

October also saw the Finnjoists of the SBC's North Wall being clad in PEFC certified plywood, with the cavities then filled with Rockwool Flexi insulation. This is a mineral wool product with a patented flexible edge along one side to accurately fit all widths of framed constructions. Insulation installed when timber has high moisture content can result in a potential 6 mm vertical void on each side when the timber dries out. Rockwool Flexi meets this problem by expanding to fill the void, ensuring thermal integrity throughout.

The road to the future is paved with good intentions

A delivery of Marshalls Priora paving arrived for use on the access road and hardstandings of the site over the same period. Priora is a permeable paving solution for use in Sustainable Drainage Systems (SUDS), allowing surface water to drain directly into the ground to recharge the ground water, whilst also controlling the surface water runoff at source. When it is complete, the road will hopefully lead to an entirely new mind-set in how builders approach paving.

Finnforest Timber Frames

While the paving was being laid outside, the room partitions were being raised inside. All the timber used in the construction of the room partitions is PEFC certified and is supplied by Finnforest. The interior wall construction of the North Wing again utilises

Finnjoist I-beams. Being factory produced to give uniform strength, rigidity, size and weight, these engineered wood beams outperform traditional solid wood beams and are some of the most stable wood products on the market today.

Going up…

In October, the Hanson Cobiax flooring system arrived for the construction of the first floor in the south side gallery. One of the main advantages of using Cobiax is that it allows for wider spans without support columns. In addition, far less concrete is needed and, with concrete production being a very energy intensive process, this is a great move towards more sustainable building. Cobiax has many other advantages, such as reduced cost, reduced bracing, lower transport costs and quicker installation. Finnforest I-beam roof joists were also fitted to the north side of the building in readiness for the installation of the Glidevale Sunscoops and the Passivent Windscoops.

End of year push

November and December saw a flurry of activity on site. The northern walls were insulated and made watertight, the Worcester heat pump collectors were fitted, the Korklite roofing insulation was put in, the first delivery from Electric Center arrived and the Uponor underfloor heating was laid in the cafe and office area. The JELD-WEN triple glazed window units were installed prior to Christmas, together with a great deal of the cabling and pipe runs necessary for the plant, lighting and data systems.

Gearing up for completion

January and February will see a real avalanche of activity involving the installation of the Aluzinc roof and curtain walling on the southern wing, the Thermowood cladding of the northern wing, along with the internal finishes to many rooms utilising Sasmox and Claytec boards. Ceiling finishes will include innovative Micronal Smartboard and the period will see the commencement of installation of Worcester and Vaillant solar panels, photovoltaic panels and Stealthgen wind products. Installation of lighting systems from Coopers and Philips will demonstrate the flexibility of the latest products which can deliver great results whilst minimising energy consumption. The plant will be installed in February including the Worcester ground source heat pump and condensing boiler, the Baxi biomass boiler and the management system.

Demonstration
Buildings & Estates Forum
CONSTRUCTING EXCELLENCE

As it progresses towards a planned Spring opening, the Sustainable Building Center will soon be playing a major role – as part of the Constructing Excellence Demonstration Programme – in bringing about a step-change in performance and sustainability in the building industry.

For an up-to-date, month by month account of the SBC build, and more information on the materials being utilised, visit the dedicated website at www.wolseleysbc.co.uk. Specifications can also be found in the newly published SBC Product Guide – see page 15 for details.

Lighting the way forward

Improving the **energy performance** of domestic lighting products is firmly on the political and environmental agenda. The government plans to replace all traditional tungsten bulbs by 2011, with ministers expecting this to save 5m tonnes worth of carbon dioxide every year. However, this move does have its detractors and it's made headline news, and not all for the right reasons.

Several health warnings about energy efficient light bulbs have recently been up for debate, as they contain a small amount of mercury and have to be disposed of safely. In actual fact, fluorescent striplights that have been used for years have always contained mercury, and the health scare does appear to be an over-reaction. One scientist explained it could only be described as dangerous to a person if 5 bulbs or more were broken down in a confined space.

Other health issues that have been linked to compact fluorescent light bulbs (CFLs) include complaints of increased migraines and the skin condition eczema. In some situations it's been noted that CFLs don't give off enough bright light, for example in art galleries, where light is required to illuminate the art, or in the homes of old people whose eyesight might be fading. Despite all of this, the government intends to go forward with its plan to phase out traditional bulbs. Thankfully, technology is catching up fast and new energy efficient lighting products that are brighter are becoming available all the time.

Today the range of CFL low energy lamps has come a long way with practical solutions for the vast majority of domestic situations. They are smaller, lighter and most importantly offer a higher quality of light than ever. Over the next few years we will see the introduction of practical LED lights for the home giving even longer life and greater energy efficiency.

John Aston - Green Marketing Manager, Philips

Area of Lighting			Energy Savings			CO_2 savings per lamp per year
Street lighting	HPL		57%		CosmoPolis	101 kg CO_2
Retail lighting	Halo		80%		CDM	115 kg CO_2
Office & Industrial lighting	T8		61%		TL5	77 kg CO_2
Home lighting	GLS		80%		CFL-i	34 kg CO_2
LEDs	GLS		82%		LED	34 kg CO_2

If every lightbulb in every London home was energy efficient, London could save 575,000 tonnes of CO^2 and £139 million per year.

Action Today to Protect Tomorrow - The Mayor's Climate Change Action Plan - Feb 2008

Waste not, want not

Only 10% of the energy used in lighting is converted into light, the rest of the energy is wasted in providing unwanted heat. When you consider that lighting accounts for up to a tenth of a homeowner's energy bill it's worth looking at other ways to reduce this. In addition it is worth bearing in mind that it's not only the choice of luminaire (light fitting) that can reduce energy, but also the fixtures, fittings and controls too, so they all need to be considered.

Carbon calculators

Fitting energy efficient light bulbs to reduce the environmental impact is only one way of approaching this issue. Using a new energy carbon calculator in every room to understand how much energy is being consumed per year is an even more effective way to encourage people to look at other options. It's a simple, but effective, portable tool that calculates energy consumption in terms of both monetary cost and carbon emissions. It can even help calculate the actual savings that can be made by installing more efficient light fittings, thereby providing proof, if proof is needed, to encouraging more sensible installation options. These are available now from Wolseley's Electric Center and they can help you meet the requirements for the Part L regulations in calculating the energy performance of a building. It's not yet clear whether the government will act on requests by various health charities to allow a number of incandescent, traditional light bulbs to remain on sale for those who react badly to or are worried about CFLs.

It's also entirely possible that by 2011, these issues could have been eradicated by the introduction of new technologies. Keep looking out in future issues of Greenprint as we report on those developments as they happen…

Electric Center is leading the way in supplying the latest energy efficient lamps and luminaires available. Further more, it is committed to sourcing lighting products from manufacturers who actively support corrective actions by:

Energy carbon calculator

- Promoting the practice of energy efficiency
- Providing energy efficient products
- Restricting obtrusive light emissions
- Limiting the use of hazardous substances
- Using recycled material
- Participating in standards development
- Supporting development of European directives

ELECTRIC CENTER

For more information contact us on
0870 162 2557 or visit us at www.electric-center.co.uk

Regulation run-down

Legislative changes will, naturally, affect our infrastructure in the future, particularly with regard to the construction industry, sustainability issues and carbon reduction targets. You may be aware of some of the basics of some of the bills and legislation, but our job at Greenprint is to delve a little deeper and keep you in the know. So, this report aims to give you a practical, informative run-down of all the latest legal goings on; so that you are not only familiar with the forthcoming laws, you'll understand the implications in order to remain compliant.

In recent years, great progress has been made in improving the sustainability of buildings and their contents through a range of initiatives. To put this into perspective, a building built to the recently announced revised standards will be 40% more energy efficient than one built five years ago. For this, we have to thank changes, updates, revisions and new building regulations.

UK Climate Change Bill

History

There now seems to be a worldwide broad agreement that climate change is happening and that a lot of it is man-made so we need to do something about it, as witnessed by the recent Bali Summit. The UK Government is already acting and published the draft Climate Change Bill, the first of its kind in any country, in March 2007 for pre-legislative scrutiny and public consultation. In October 2007 the Government published its response to the parliamentary scrutiny and public consultation in the Command Paper 'Taking Forward the UK Climate Change Bill.'

The Command Paper sets out how the Climate Change Bill will be strengthened and made more transparent. The Bill was introduced into the House of Lords on 14 November 2007.

Future

The Bill will create a new approach to managing and responding to climate change in the UK through: setting ambitious targets, taking powers to help achieve them, strengthening the institutional framework, enhancing the UK's ability to adapt to the impact of climate change and establishing clear and regular accountability to the UK, Parliament and devolved legislatures. The aim is to receive Royal Assent by spring or early summer 2008.

The Climate Change Bill will create a strong new legal framework to underpin the UK's contribution to tackling climate change. It will put in place a clear and credible pathway to a statutory goal of a 60% reduction in carbon dioxide emissions through domestic and international action by 2050, with real progress by 2020. This will be based on a new system of **'carbon budgets'** set at least fifteen years ahead, and with progress reported annually to Parliament

Secretary of State's Foreword to the Climate Change Bill

Expert comment

"Clearly the key component of the legislation will be to require a mandatory 60% cut in the UK's carbon emissions by 2050 (compared to 1990 levels), with an intermediate target of between 26% and 32% by 2020. This ambitious legislation demonstrates the Government's commitment to the environment and if approved, the UK will become the first country to set such a long-range, significant and binding carbon reduction target into law. We can expect this commitment to be further demonstrated by more specific regulation to drive mandatory targets in the construction sector. Specifically, it will be interesting to see how the existing housing and buildings stock will come into focus and what measures may be introduced to affect the largest contributory sector."

Tim Pollard,
Head of Sustainability, Wolseley

Impacts

The UK Government is committed to addressing both the causes and consequences of climate change and to that end is bringing forward proposals for the Climate Change Bill. This will introduce a clear, credible, long-term framework for the UK to achieve its goals of reducing carbon dioxide emissions and ensure steps are taken towards adapting to the impacts of climate change. When it comes in, and some would say it is already overdue, it will be the first legislation to set down firm targets in law.

This will obviously have an impact on the construction industry as a whole and right through the supply chain. It will feed into the work the Government is already doing to tackle climate change in this country such as the Energy White Paper, the Waste strategy and Planning Paper and the Draft Strategy for Sustainable Construction.

Draft Strategy for Sustainable Construction

History

The strategy for sustainable construction was first published in 2000. This aims to help the industry deliver more sustainable construction methods and products. However, that strategy is already considerably out of date due to major developments that have occurred during that time both in Government policy and within industry. In addition there is currently no single plan of action on sustainable construction that applies across Government and industry. Therefore, draft revisions were submitted by BERR, the department for Business Enterprise and Regulatory Reform (formerly DTI) in July 2007.

Future

As the consultation period closed in November 2007, the analysis of the responses is due for publication at the end of February. Greenprint suspects this may coincide with Ecobuild…

Expert comment

"There has been a great deal of consultation regarding the Strategy for Sustainable Construction and it is hoped that a roadmap will emerge bringing clarity of approach. There is still a great deal of ambiguity in the relative benefits (and costs) of products, technologies and processes deemed to provide sustainable outcomes. Wolseley has tried to bring transparency to the deliverables of sustainable products and by establishing a robust supply chain for such products, providing clients with economic and practical solutions."

Tim Pollard,
Head of Sustainability, Wolseley

With climate change we can't just close our eyes and cross our fingers. We need to step up our action to tackle it, building on our considerable progress so far. And time isn't on our side.

David Miliband, Former Environment Secretary

The built environment is responsible for 47% of carbon emissions, contributing to climate change and the construction industry consumes vast amounts of resources annually. Improving its efficiency is essential if we are to achieve the Government's target of a 60% reduction in the 1990 levels of emissions by 2050.

Stephen Timms – Minister of State for Competitiveness

Impacts

This strategy is not about introducing new legislation, rather its emphasis is on making existing regulations work better. It sets out clear milestones that everyone can buy into and work towards. To achieve our sustainable development goals, we have to change the way we build. Recommendations from 2007's draft paper include:

- Re-use existing built assets
- Design for minimum waste
- Aim for lean construction
- Minimise energy in construction
- Minimise energy in building use
- Avoid polluting the environment
- Preserve and enhance bio-diversity
- Conserve water resources
- Respect people and their local environment
- Set targets (benchmarks & performance indicators)

In her 2006 speech at the 'Towards Zero Carbon Development' event hosted by WWF UK, the Secretary of State for Communities and Local Government, Ruth Kelly, announced that she had asked John Calcutt, then Chief Executive of English Partnerships, ***"to take on a new role, working with industry, to improve housebuilding delivery in a low carbon environment."***

The Calcutt Review of Housebuilding Delivery was published on Thursday, 22 November 2007.

The Calcutt Review of Housebuilding delivery

History

Hot off the press, the most recent legislative announcement arrived in November last year. The Calcutt Report, an independent review commissioned by the Government, recommends that more previously developed land, including redundant inner city sites, is used to meet the demand for more housing and that sustained leadership is needed from Government to ensure that the new homes are of good quality and meet zero carbon standards. It dovetails with the new Housing and Regeneration Bill published on 16th November in Parliament.

Future

The Report provides a delivery timetable which shows a number of actions that need to be set in hand now to make this happen. England's housebuilding industry is in shape to deliver the homes we need for future generations and is capable of delivering 240,000 homes a year by 2016. The Review challenges us all to deliver a supply of housing where it is needed, for those who need it, at a price, which is affordable for the homebuyer and commercially viable and which can contribute to our ambitious zero carbon targets.

Impacts

The housebuilding industry has welcomed The Calcutt Report's suggestion of a partnering approach between the industry and local authorities to unlock urban land supply and realise mutual financial benefits. A response is expected from the Government early in 2008.

Expert Comment

"Whilst the issues are broadly supported, the conundrum remains that current products and construction methods will not provide the highest levels of sustainable achievement within traditional cost models. The demand figures are unarguable and with increasing pressures on fuel costs and material prices (and availability) the selection of reliable and knowledgeable supply partners will be crucial if demanding time and quality targets are to be achieved."

Tim Pollard,
Head of Sustainability, Wolseley

When a major expansion of housebuilding is planned it is the right time to stress the importance of quality and sustainability, the right time to reiterate housebuilders capacity to deliver, and the right time to emphasise the importance of leadership from Government and the public sector.

Trevor Beattie, Director of Corporate Strategy, English Partnerships

We hope there will be more news on The Calcutt Review by our next issue. We'll keep you updated on these and further legislative changes as they are published.

Flush with success

Did you know the South East of England has less water per person than Sudan or Syria? Or that London is actually drier than Istanbul? Because less rain falls in the UK now and with the increases we have seen in population and urbanisation, this has all put a strain on the country's water reserves. The message is clear, we have to save water and need to start planning for this now. With 30% of all household water used for flushing, toilets are an obvious place to start. After much investment and careful engineering, the Galerie FLUSHWISE from UK manufacturer **Twyford Bathrooms** is now widely available and it's dual flush works with only 2.6 and 4 litres of water.

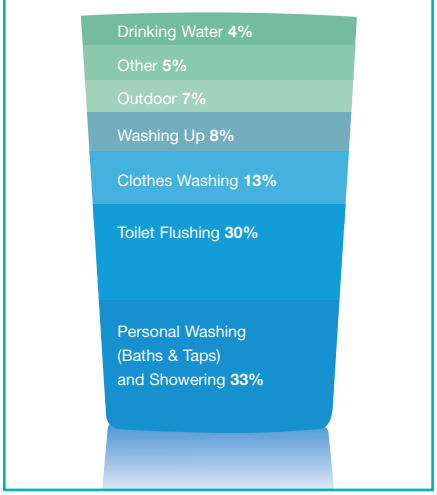
The average flush volume in UK households is still 9 litres, despite the Water Supply (Water Fittings) Regulations 1999, which require that all new WC suites installed after 1 January 2001 shall flush with no more than 6 litres. But the Twyford | Galerie FLUSHWISE goes even further than that. It operates on a staggeringly low 2.6 or 4 litres of water. It relies on a clever pan and cistern combination. Using a modified pan, it has a narrower sump than regular WCs, and the water delivery has been changed to make this dual flush toilet save up to 8,760 litres of water a year.

Galerie Flushwise benefits at a glance:

- Dual flush on only 2.6 or 4 litres of water
- 30% less than the current UK standard
- Won't look out of place in any UK bathroom
- Has the same footprint and installation features of any normal WC
- Fits the normal installation requirements for plumbers and householders
- Can replace current 13, 9, 7.5, 6 litre WCs
- Complies with all UK and European standards
- Is easy to install

In March 2007 the **Twyford | Galerie FLUSHWISE** was awarded the prestigious Waterwise Marque for its innovative design. This product has gone further than it needed to by achieving a flush that undercuts even the Government's standard. The WC suite is fully tested and fully conforms with the Water Regulations 1999 and British and European Standard EN997: 2003 Class 2. Better still, the amount of water used for flushing can be set and changed by a plumber if, for instance, it has been installed in an older house with antiquated pipes and the reduced water flow creates a blockage. It's a 'fit and forget' WC, simple to install and widely accessible. It's a mid-range product so it's an affordable option too. The only difference noticeable to the consumer… is a lower water bill.

Water use in the UK home



Twyford bathrooms

I welcome the Waterwise Marque which will raise the profile of water efficiency, help the consumer to make informed choices in product selection and reward those manufacturers who are taking the lead in water saving.

Ian Pearson, Former Environment Minister

PLUMB CENTER

For more information on this product contact us on **0870 162 2557 or visit us at www.plumbcenter.co.uk**

Water wise

Water saving features for the domestic bathroom

The average UK home uses 150 litres of water per person, per day. In fact, we now use 30% more water as a country than we did in 1970. To combat this, the government has set a target to reduce this figure to 120 litres a day. DEFRA and the Code for Sustainable Homes has set an even more ambitious target of 80 litres a day. A recent survey carried out for the WRC (Water Research Centre) showed that 77% of consumers would pay more for an appliance that was energy efficient. Here we discover some of the latest water saving devices available today.

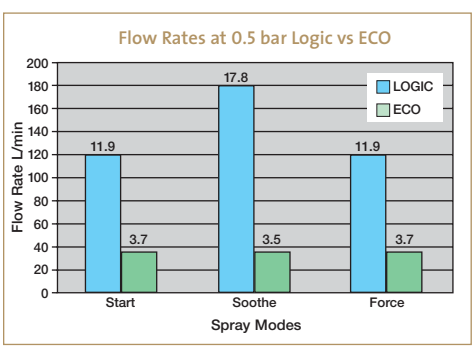
The Mira ECO Handset

1 This brand new to market attachable shower handset uses up to 75% less water when showering by mixing water with air, creating larger droplets with air bubbles. This gives the end user the impression more water, not less, is being dispensed. The Ecoefficient™ technology uses the Venturi principle, introducing air without a pump. The droplets of water explode on impact and produce similar coverage to conventional, finer sprays.

The ECO handset is competitively priced, widely available and comes in two finishes, either chrome or white. It's suitable for high pressures including combi-boilers, mains pressure systems and all power showers. This handset looks great, is simple to install and is the highest water saving handset currently available.

Sustainability score **FANTASTIC**

With a saving of up to 70% this shower handset reduces household water usage significantly.



How does it work?

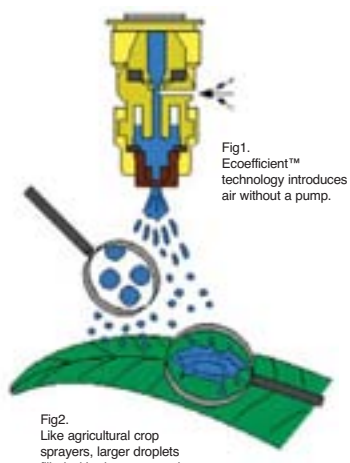


Fig1. Ecoefficient™ technology introduces air without a pump.

Fig2. Like agricultural crop sprayers, larger droplets filled with air are created

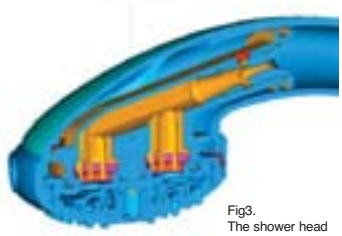


Fig3. The shower head produces excellent coverage using less water

Infrared basin mixers

2 Often found in commercial units, installing an automatic infrared flow control in the home saves water and energy for the homeowner. They are simple to install as all connections push-fit together, and they can be operated by battery or through mains with a 6-volt transformer. The users can set the sensor detection range and the water pressure to suit. A running tap uses 6 litres of water per minute, meaning this device could save significant amounts of water.

Sustainability score EXCELLENT

It's time to install these devices into domestic homes.

Aerated taps

3 Taps contribute to a third of water use in offices and 8% in a normal household. Just like the Mira ECO Handset, aerated taps use considerably less water while not appearing to do so. As a result, they are the perfect solution for both commercial and domestic use.

Sustainability score GOOD

By seemingly producing more water than they actually do, they are a great water saving addition to any household.

Time flow basin taps

4 Working in much the same way as the infrared flow control mixers, these taps allow only a certain amount of water to be dispended, helping the homeowner control their water usage.

Sustainability score GREAT

If more of these taps were installed in homes water usage would most certainly go down.

Low-capacity bathtubs

5 The Signature low-capacity bathtub from Twyfords does exactly what it says it does. It has a low capacity for water while still giving the illusion you are in a deep, water filled bath. It has a capacity for 140 litres of water up to the overflow, meaning with every bath filled, you save up to 60 litres of water compared with a standard bathtub.

Sustainability score OK

It makes perfect sense that a bath with a lower capacity will save water. Making this tub a great addition to any home that aims to become more sustainable.

Hippo bags

6 Saving 2.5 - 3.5 litres of water per flush, the Hippo bag is an eco-friendly water saver that is simple to install. They can be fitted in minutes and you don't need any tools. These are perfect for older toilet cisterns that have a 7.5 or 9 litre flush.

Sustainability score GOOD

Installing a new WC with a lower flush level is the more efficient choice in the long run.

With ever-changing Government legislation and the pressures on water usage these days, focusing on water saving devices in the home is a sensible choice. Product help and advice is available from a number of Wolseley branches, where you can discuss your particular project needs over the phone or face to face.

PLUMB CENTER

All these products are available now at your local Plumb Center.
For more information contact us on 0870 162 2257
or visit us at www.plumbcenter.co.uk

Zero waste roadmap

In July 2007, the Government announced an ambitious schedule for the construction sector to reach a milestone of **zero waste** to landfill by 2020. The consultation paper, the Draft Strategy for Sustainable Construction, sets out a vision of a construction sector 'which will reduce, and ultimately eliminate waste in construction through improved design, procurement, and greater re-use and recycling of resources'.

Along with encouraging use of more efficient and sustainable materials, reducing water consumption and protecting biodiversity, reducing waste in the construction process is a key priority area for action in the Government's overarching plan for a more sustainable future. The targets set out in the consultation paper are ambitious. Using a baseline of 2005, the aim is a 50% reduction in construction, demolition and excavation waste going to landfill by 2012. By 2015, the Government is pressing for 'zero net waste' at construction site level. An emerging definition based on the work of the Green Alliance, the concept of zero net waste measures the materials in and waste out on value, rather than the more traditional weight or volume measures, to arrive at a 'net waste' calculation. It represents an important step in addressing the lack of good quality data on waste in the industry.

The ultimate construction sector target in the Draft Strategy paper is for zero waste to landfill by 2020, an ambition the UK Government shares with many countries and regions around the world. These include New Zealand and San Francisco, according to the Green Alliance paper, A Zero Waste UK, published in 2006, which urged the Government to adopt 'waste neutral' solutions.

Carrot and stick

It's hard to argue a case against the aims of the strategy. UK construction consumes 420m tonnes of material each year, and generates 100m tonnes of waste, making the sector the UK's largest consumer of natural resources. It produces more than one-third of all the UK's waste arisings, and sends over 60m tonnes of waste to landfill each year. In a classic 'carrot and stick' approach, Landfill Taxes for non-inert waste will double by 2010 to £48 a tonne,

Zero waste: milestones

Baseline: 2005

- By 2012: 50% reduction of construction, demolition and excavation waste to landfill compared to 2005
- By 2015: Zero net waste, at construction site level
- By 2020: Zero waste to landfill

Draft Strategy for Sustainable Construction, July 2007)

ensuring that waste minimisation earns a high priority on the agenda.

So how will the industry, already under pressure to meet tough new targets on sustainable buildings and materials, respond to yet another Government-led initiative? And is more Government intervention really needed in the sector? Responsibility for driving through this step-change in building site practices will rest with WRAP, the Waste and Resources Action Programme, working closely with a range of Government and private sector partners, including DEFRA, Envirowise and the BRE.

According to Estelle Herszenhorn, WRAP's Project Manager for Construction Waste Management, the organisation is taking a 'top down' approach to the supply chain. "We are running an advocacy campaign to try to influence policy at the largest construction clients and contractors, encouraging them to set requirements for good practice waste minimisation and management at the outset", she says. Much of the impact of the advocacy campaign is achieved face to face, explaining the business case for and benefits of waste minimisation and management and providing support to draft procurement clauses and set appropriate targets. "We are very focused on the first milestone of halving construction waste to landfill by 2012, and setting construction clients and contractors on that path."

Using the public sector to drive change

The public sector accounts for around 40% of all construction projects in the UK, including major projects like the Olympics, Building Schools for the Future, social housing renovation and the NHS Lift programme. So the Government is well placed to drive through improvements in waste management practice and act as a market-maker for new and innovative reuse and recycling initiatives.

A number of promising new initiatives are already in place, such as the voluntary agreement with the three major UK plasterboard manufacturers to reduce plasterboard waste to landfill and increase collection and recycling. UK construction generates around 300,000 tonnes of plasterboard waste every year, and the standard recovery rate is around 30%. WRAP estimates that good practice can raise this rate to 90%, one of a number of 'Quick Win' targets that the organisation has identified. Hitting this kind of recovery rate not only improves the site carbon footprint – an estimated 4.2 tonnes of CO^2 saved for each tonne of additionally recovered plasterboard – it also makes compelling financial sense.

impact on public perceptions, while contractors react equally well to the cost benefits. Herszenhorn confirms that WRAPs work so far has generated a positive response, and she is confident that they will build on this in 2008. "On the whole, the industry is responding positively. We see a number of contractors who have already built waste reduction objectives into their CSR policies in line with Government aspirations."

The guidance on Waste Minimisation and Management (WMM) is at pains to stress the reduced materials and disposal cost benefits of adopting good practice. One case study used to demonstrate how WMM good practice can directly impact on the bottom line involved analysing the true cost of a skip.

We are running an advocacy campaign to try to influence policy at the largest construction clients and contractors, encouraging them to set requirements for good practice waste minimisation and management at the outset.

Estelle Herszenhorn, WRAP's Project Manager for Construction Waste Management

Significant savings

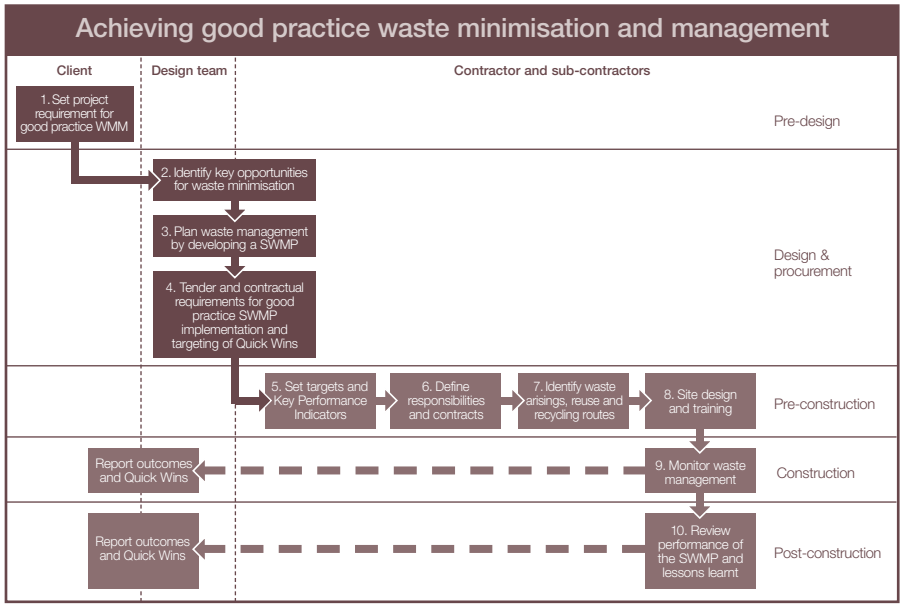
According to WRAP, the most effective way to achieve good practice, Waste Minimisation and Management, is by setting a project requirement at the outset; encouraging every part of the supply chain to consider the waste implications in their approach, as the diagram above shows. For the client and its design team, incorporating good practice in the procurement process and materials specification will not only improve the sustainable footprint of the project, but can also generate significant savings.

WRAP is finding that major construction clients are receptive to their messages because of the

The study showed that the most significant element was the wasted materials, accounting for more than 90% of the total cost.

According to WRAP, improving materials efficiency on construction sites is eminently achievable without increasing cost through focusing on four areas:

- Minimising the creation of waste through over-ordering and poor design;
- Applying waste management processes to reduce landfill waste;
- Recycling on-site waste into the new construction project;
- Increasing use of materials with high recycled content



Fundamental to achieving these objectives is ensuring that all the parties involved in the project, from client to sub-contractors, have WMM front of mind throughout the construction process. Raising the profile of these issues is a key target for the organisation. "We want them to recognise that halving waste can come from using high levels of recycled content, minimising the amount of waste produced in the first place and then managing the waste still produced in the most effective possible way by recovering and recycling more," says Herszenhorn.

Reaching small contractors

With ambitious targets to deliver, WRAP's 'topdown' approach, targeting large clients and their contractors, clearly makes sense. But in an industry dominated by small and medium-sized players, will this strategy leave small contractors out in the cold? Herszenhorn agrees that reaching the many smaller companies in the sector is more of a challenge and, with limited resources, they are focusing where they can make most impact. "We are convinced that by influencing major clients and their contractors, there is a filter down effect right through the supply chain to the sub-contractors."

She points out that all of their resources, including templates and model procurement contract clauses, are accessible for any size of company through the website. "We develop a lot of guidance material and case studies that are all freely available on the website, highlighting the benefits of integrating waste minimisation and management into day to day site activities. We try to design them so that they are applicable to smaller companies."

WRAP is also partnering on a business plan for next year with Envirowise, whose resources are especially applicable to smaller contractors. Herszenhorn believes that this co-ordinated approach will pay dividends across all sizes of company in the construction supply chain.

Local recycling markets

One of the challenges faced by contractors, especially in rural site locations, is in finding materials recycling facilities within easy reach. Recognising this, WRAP has introduced a significant capital investment programme in construction waste recycling, investing in materials recycling facilities and transfer stations to increase the recovery rates from construction sites. Alongside the increases in Landfill Tax and more stringent legislation on pre-treatment of waste, WRAPs activities are ensuring a sharp focus on the cost of disposal. "For example," says Herszenhorn, "by segregating waste on site, companies can achieve a better price for disposal, and we can encourage companies to improve the reporting from removal contractors."

Site Waste Management Plans

New regulations due to come into force in England in April will demand that any construction site over £250,000 in value will require a Site Waste Management Plan (SWMP). Response from the consultation exercise on the regulations, published by DEFRA, suggest that while 75% of respondents were in favour of SWMPs, there is a wide disparity of views on the right thresholds. One view commonly expressed in the responses is that fly-tipping of construction waste may be more prevalent on smaller sites, thus the value threshold should embrace these projects too.

As a minimum, SWMPs are expected to contain detailed measures to comply with relevant legislation and good practice guidance and key performance indicators for waste handling on the site, with disposal to landfill as the least preferred option. Responsibility for developing the SWMP will rest with the design team. A study from CIRIA suggests that implementing an SWMP can result in 15% less waste on site, 43% less waste to landfill and significant savings on waste management and disposal.

WRAP is planning to support the introduction of SWMPs by issuing a template plan that can be freely used across the industry, either in part by larger companies or in its entirety by smaller contractors. It's a good example of the pragmatic and practical resources that WRAP has been instrumental in developing for the industry. "We're funded by central government and the devolved administrations," explains Herszenhorn, "and charged with the responsibility for making things happen in the sector, so we focus very much on providing practical advice." The new template will be launched at a series of events around the country in February and March to raise awareness of the resource, and demonstrate how to use it.

Heading for 2020

So, how achievable are the targets set out in the Draft Strategy for Sustainable Construction? Can the industry really eliminate landfill waste by 2020, as the consultation paper challenges? Herszenhorn believes that the industry is at a tipping point where, while the adoption of sustainable goals is still patchy, there are many encouraging signs. "In our view, the 2012 target of halving waste is the first step on the pathway to successfully achieving zero waste to landfill by 2020, and the industry is still at very different stages on that route," she says. She sees the impact of the 'topdown' approach paying dividends. "A lot of the big contractors are starting to develop their own strategies around sustainability, and we're not trying to dictate every element. Our approach is more around providing the support and the resources to help them take the waste strategy forward in a coherent manner." This kind of pragmatism is much needed as the industry grapples with the many challenges it faces on the road to sustainable construction.

Bringing 1930s homes into the 21st century

Much has been said about making new homes **energy efficient** at the building and planning stage, but what about the millions of existing homes? When you consider that between 70-80% of the homes standing now will still be here in 2050, it's time we paid more attention to making existing homes more efficient.

We wanted to raise awareness of renewable energy and eco friendly products to consumers by illustrating the possibilities and benefits of installing new technologies in a semi-detached domestic property to show how much can be achieved.

Sarah Applegate – Worcester, Bosch Group

An initiative by Worcester, Bosch Group, a market leader in high efficiency boiler technology, is attempting to show the positive impact energy efficient modifications can make on existing homes. Currently monitoring a number of 'Energy Houses' on its website by using remote electronic collation devices, these are domestic, family homes where the owners have agreed to have their energy consumption monitored before and after modifications have been made. Consumers can see the effects the recently installed renewables have on the Standard Assessment Procedure, (SAP rating or energy rating). The aim is to promote renewables such as solar panels, ground source heat pumps and energy efficient condensing boilers by showing the tangible benefits to the environment and to the consumer's pocket.

Worcester, Bosch Group recently bought and upgraded a 1930s semi-detached house using it's own heating products to show how adding renewables can achieve a more efficient SAP rating. The property features their own appliances, including a Greenstore 6kW combination heat pump (with a bore hole in the back garden), a Greenstar 12i system boiler, a Greenskies FKT-1S Solar system (2 panels) and a Greenskies 250 litre cylinder, as well as other features, such as underfloor heating.

Very few people upgrade inefficient boilers through choice, only replacing them after they break down. Many also believe installing renewables is an expensive exercise and the cost will take years to recoup. The aim of upgrading a typical semi from the 1930s is to show the consumer and building professionals that much can be done to improve a home's efficiency, no matter how old it is.

Government grants and various money-saving schemes are available, what's needed is a stronger effort to encourage people to make existing homes more efficient. People that are put off by the cost or inconvenience of making these changes can see from showcases such as the Worcester, Bosch Group home that upgrading existing homes is beneficial in so many ways, environmentally and financially. As well as the drive to save energy in the house via the installation of various renewable technologies, Worcester, Bosch Group were very keen for other materials used in the refurbishment to be as sustainable as possible.

WORCESTER
Bosch Group

Wolseley UK were able to identify and supply numerous suitable products including triple glazed, Krypton filled, PEFC certified timber windows and doors, BASF's wonderful cooling Smartboard and also a Titan domestic rainwater harvesting system that will provide water for toilet flushing, clothes washing and garden use.

Change begins at home

The Government has targeted construction, and house building in particular, as a key area in delivering reduced emissions and energy savings. When you consider the average household creates around six tonnes of CO^2 a year and could save around two tonnes of carbon dioxide (CO^2) a year by making their home energy efficient, it's not altogether surprising that house building has come under scrutiny. Currently, the Government has focussed solely on new housing through initiatives like the Code for Sustainable Homes with its much-vaunted aim of **'zero carbon homes'** by 2016.

However, since we are currently building circa 170,000 homes a year the truth is that at current demolition rates, it will take 1,000 years to replace all of the existing housing and 70-80% of 2050 housing stock is already standing, an estimated 21.8 million homes. If the government is really looking to achieve the targets in 2050 to cut carbon emissions by 60% then there must be a strategy to address the energy and resource needs of these dwellings. The issue is one that affects us all and one in which we can all play an active role.

The average home with four bedrooms is currently receiving an 'E' energy rating, figures produced by the Department for Communities and Local Government (DCLG) revealed in September. The Government has suggested that the introduction of Home Improvement Packs will drive consumer behaviour and that the property market will reflect the relative energy efficiency of homes in price and attractiveness, I cannot share this optimism.

Perhaps behaviour will change when it hits us in the pocket? It seems remarkable after the many years of stressing the importance of loft insulation that the Government's own statistics show that a disappointingly low percentage of our homes have the 270mm recommended depth. If everyone in the UK topped up their loft insulation to 270mm, £380m would be saved each year. That's enough money to pay the annual fuel bills of over 400,000 families and with DIY financial payback (insulation depth from 0 to 270mm) estimated to be in the region of 2 years, why wouldn't we all do it? The answer is probably linked to the fact that we currently enjoy cheap fuel and that we have lots of competition for our disposal income. A flat-screen T.V. or loft insulation? For some people that choice is all too simple.

If everyone with gas central heating installed a new condensing boiler, we'd cut emissions by 13.7 million tonnes. We'd also save around £1.6 billion per year on our energy bills and enough energy to heat over 3.7 million homes for a year. There are still plenty of elderly gas boilers out there operating at frighteningly low efficiency, and this is both a cost and carbon disaster. Additionally, in our 'fit and forget' world our heating systems remain untouched by human hands until they stop working.

Household energy consumption increased by 15% between 1990 and 2005 and

Focus on: Tim Pollard

Tim believes passionately in the provision of sustainable construction solutions which are practical, effective and economic. Tim is not only responsible for delivering the finished facility he's also responsible for heading the team, which is defining Wolseley's sustainable product offer. Prior to this appointment, Tim was Head of Marketing for Wolseley UK. His 20-year career in merchanting has included experience in all sectors of the construction market.

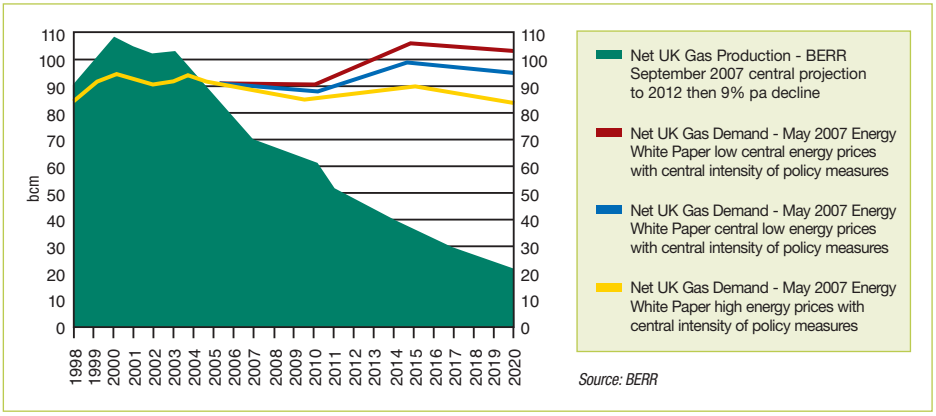
He regularly speaks at industry seminars throughout the UK and is actively involved in activities within the local community especially involving young people.

Tim Pollard,
Head of Sustainability, Wolseley

although the associated domestic carbon dioxide (CO^2) emissions have decreased by 5% since 1990. This is largely the result of electricity generators switching from coal to gas or nuclear fuels.

So what is it that will finally convince us all that we need to understand AND react to address the energy, water and waste inefficiencies of our homes? I believe that the turning point is finally arriving and these issues will cease to be simply 'nice to do' and become a necessity.

Firstly, fuel prices are rising fast. Oil prices have been at an all-time high and with wholesale gas prices also rising again at an unprecedented rate, domestic bills look set to rise with them. We are now seeing a faster than expected decline in North Sea gas reserves, which means increasing imports, and that means price increases. This situation can only deteriorate as our own resources become exhausted and we turn elsewhere to satisfy demand that is not only domestic (around 30% of our electricity is provided by gas-fuelled power stations). As we become increasingly dependent on imported gas we can expect to see fuel prices increase. And depending on the source and the competitive demand for gas, those price increases are likely to be steep.



Source: BERR

Secondly, as the effects of resource depletion and climate change become ever more visible then politicians will have no choice but to introduce legislation and regulation. But what form will this take? There are several potential outcomes including punitive taxation, mass demolition and personal carbon wallets. This is no longer a 'tomorrow issue'. It is here now.

There are many existing opportunities to improve the sustainability of our homes through improved insulation.

Installing renewables such as solar thermal panels, heat pumps and biomass appliances. Installing more efficient and better-controlled lighting and appliances. Fitting water efficient toilets, baths, showers and taps. Harvesting rainwater, and probably many new ways that we have yet to understand. Where there's a will, there's a way and whether your personal driver is economic, practical or environmental the 'inconvenient truth' is now unavoidable.

We have identified over 8,000 products that provide some identifiable form of sustainable outcome which are available through our 1,800 branches.
A download of the catalogue is available at www.wolseleysbc.co.uk

Key events diary

Keeping up to date with what's happening in sustainable design and construction.

Part L 2010
Competitive action for the future of commercial and domestic build

Date: 18th March 2008
Venue: Jurys Great Russell Street Hotel, London
This one day conference will cover everything you have to know about the proposed next update in 2010 and the impact it will have so you can start preparing for it now
For more information: Construction News conferences

Plant 2008
Be green, be safe and make money

Date: 6th March 2008
Venue: National Motorcycle Museum, Birmingham
Make sure you are up to date on all the key environmental and sustainable issues and legislation affecting the plant industry.
For more information: Construction News conferences

PPP in Waste
Includes Energy Recovery from Waste

Date: 11th/12th/13th March 2008
Venue: The Hatton, London
Gain key insights into the latest waste policy developments
For more information: www.smi-online.co.uk/2008waste.asp

Sustainability Live
Incorporating National Energy Management, Environmental Technology and Services, International Water and Effluent and Brownfield Expo

Date: 20th/21st/22nd May 2008
Venue: The NEC, Birmingham
The UK's largest forum for excellence and innovation in water, energy and land.
For more information: www.sustainabilitylive.com

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