

Update

BECO

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SUCCESS IN ALL BUILDING FORMS



Tabard Square



The HOUSING DESIGN AWARDS are one of the highlight events in

the housebuilding industry and for 2007 the overall winners were Berkeley Homes for their redevelopment of Tabard Square in the London Borough of Southwark. Centrepiece of the development in the large central courtyard is a unique pavilion restaurant which was built using Beco's energy efficient construction method. "Not that energy efficiency was the main reason for choosing our products," explained Beco director Robin Miller. "The Wallform system proved to be the quickest and most economic way to realise the Architect's design and we are delighted to have been involved in this prestigious project."

On plan the building takes on the shape of a 'bug' (*indeed this was the nickname adopted for the building on site!*), the head, tail and legs of which are all constructed in the **WALLFORM** system. The 'body' of the bug is comprised of reinforced concrete floor slabs with glazed walls and a uniquely curved copper roof. Not an easy project to build but specification of the **WALLFORM** system simplified both the construction and application of the Sto render cladding which was carried out by specialist contractor Walltec Ltd of Langley. The building is set in the largest new square built in London for more than a century and makes a striking contrast to the shops and apartments which enclose the development.

GREY and WHITE =

GREENER

The drive is now on to achieve radical improvements in building performance as a significant step in the process of reducing the impact of our society upon the environment. Given that the Government has set 2016 – just eight years away – as the date by which all new homes will be built to 'Carbon Zero' standards, there is no time to waste. Even as the Green Guide for materials' specification and the Code for Sustainable Homes continue to be developed, there is a danger that use of the word 'GREEN' is distorting the definition of sustainable construction.

The first thoughts of most people about 'being green' in relation to buildings usually relate to – wood, solar energy, wind turbines and grass roofs. These answers are all indeed creditable but highlight a misunderstanding about materials' performance and the lifetime benefits of both natural and manufactured materials.

Continued overleaf...

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Take ICF construction such as Beco **WALLFORM**, for example. On first take, the combination of foam plastic and concrete might not appear to be 'green'. Expanded polystyrene is, after all, manufactured from oil and the cement in concrete requires large energy inputs in its manufacturing process.

However, modern production methods for cement have reduced energy consumption and many concrete designs now replace up to 75% of cement with waste materials such as blast furnace slag and pulverised fuel ash. Much of the stone and sand aggregates used in concrete may also be replaced by waste products from other processes – shredded tyres, glass, crushed bricks and concrete from construction demolition. Since concrete is always produced locally to the projects it also is very low on 'air miles'. Similarly expanded polystyrene may indeed be a product of crude oil, but it saves more than 60 times its own energy value over fifty years when used as an insulant and will continue to save energy for the life of the building. Any reinforcing steel required in the construction is already manufactured entirely from recycled materials. What is more, all these materials can be fully recycled into new materials for the next generation of buildings.

The practicality and versatility of the grey concrete and white expanded polystyrene provides long term, sustainable passive energy construction which is the ideal partner for turf roofing and renewable energy systems, demonstrating that...

The use of the air-filled insulation initially as a formwork system saves substantial quantities of timber formwork materials which would otherwise end up being scrapped as construction waste. Beco **WALLFORM**, rather than being dismantled, is left in place and used for a second, more important function as the building's insulation system which the concrete complements by making the wall construction airtight as it is built. This simple wall construction of two materials provides the insulated building structure which is airtight, has no cold bridges and will perform to passive energy – Carbon Zero – standards **today**, without further development. Given the robust simplicity of the materials' specification, the construction is much more durable than traditional building methods, reducing maintenance costs and extending the building's useful life.

To achieve the best insulation standards requires the use of a thicker wallblock (improving the U-value to as low as 0.11 W/m²K), but the design and performance of the system is not compromised. The thicker insulation also enhances the effectiveness of the thermal mass of the concrete which stores thermal energy and tempers the effects of hot and cold temperature fluctuations. Simplicity of construction is maintained and performance is achieved without alteration to technical detailing.

GREY and WHITE = GREENER

Renewables success with **WALLFORM**

Beco SelfBuilder Tony Freeman has enjoyed the comfort of his low energy home in Wymondham, Norfolk for several years now but has always been keen to improve standards and do what he can to improve his environmental profile. Very much aware of the rapidly rising cost of energy, even though the **WALLFORM** construction has significantly reduced consumption, Tony replaced his gas boiler with a solar energy heating system to provide both domestic heating and hot water.

Installed in March 2007, the Energie-Solar panels have so far provided most of the space heating required for the 200 sq.m bungalow with minimal support from a small backup boiler. Similarly, hot water has been produced from a single solar panel installation with a 1.5 kW immersion heater to give additional input in periods of very inclement weather.

The combination of low energy construction and the solar heating means that as far as utility bills are concerned the cost of heating is little more than payment of the standing charges – sorry, standing charge. Gas, no longer required, has been disconnected!

So impressed is he with its performance that Tony is now marketing Energie-Solar systems in the UK.

Well done, Tony!



from Northern Grit...



On the picturesque island of Coll in the Western Isles of Scotland, SelfBuilder Crawford Stephenson has built himself a new home using the WALLFORM 313 system for ease of construction and low energy performance. The isolated location and shortage of local construction resources made Wallform the logical choice since the insulated shell could be constructed without the need for much equipment and the concrete infill could be mixed on site as required.

Building the house shell progressed quickly – so quickly that when the ferry returned to the island the following day to collect the Beco training installer, the walls had been completed almost to lintel level! The building was quickly made weather tight and the key operation now is waiting for the weather to improve sufficiently for application of the external render cladding.



Name:

Self-Builder

Trade Enquiry



Address:

Profession:

Project:

BECO

Postcode:

To build in: 1 year 2 years 3 years

Phone No:

Beco Products Ltd, Beco House, 8 Menasha Way, Queensway Industrial Estate, Scunthorpe DN16 3RT



...to Southern Comfort

Set on the edge of Dartmoor National Park in Devon is a striking contemporary house built to a unique octagonal design and nestling comfortably into the local hillside. With extensive first floor balconies to take advantage of the spectacular views, this stunning new home has been built with Beco WALLFORM and clad in local Yennadon stone.

The inverted accommodation capitalises not just on the views but assists towards the low energy performance which is realised by complementing the highly insulated structure with a Geothermal heating system, solar panel hot water system and a specialist designed low energy lighting system.

The open plan of the building with clear aspects over the surrounding area enhances the feeling of being at home in the countryside. The New Coach House is currently on the market through agents Jackson-Stoppes and Staff.



Energy Savings

Beco WALLFORM insulation is a passive energy system - once installed it reduces energy loss consistently and permanently with no maintenance required and no bills to pay , even as the cost of energy increases!	Wall Insulation U-value (W/m ² K)	Reference	passive energy buildings
	0.30	WALLFORM 250	
	0.19	WALLFORM 313	
	0.14	WALLFORM 375	} passive energy buildings
	0.11	WALLFORM 438	

