

GREEN PRIZE DRAW!

Spend just a minute to contact us with your details and we will enter you for our Cash Prize Draw - **£250 first prize** - see page 3

green
materials

lean
design and construction

Seen
the completed building

Regardless of the general recession which surrounds us, the pressure is still very much on to realise greatly improved, even zero carbon, building standards by 2016.

To reduce environmental impact, the building envelope must be built to the highest standards. This is a pre-requisite to making sensible use of renewable energy systems and ICF construction is one of the easiest and most practical ways of producing the best results. Beco **WALLFORM**, the first building system to achieve Passivhaus Certification, leads the field in ICF systems and is a positive example of how existing technology is being utilised to achieve the levels of Sustainability in construction which are to become the norm within the next ten years.

The achievement of Sustainability is about a lot more than being energy efficient however, it is also about having a minimal, and consistent, impact on the environment. While we are already capable of building passive energy buildings without heating systems (other than emergency backup), we are now faced with the challenge of establishing that what we do is **GREEN :-**

We are GREEN

Beco WALLFORM materials, expanded polystyrene and concrete, are not only of the most commonly used building materials but they are also demonstrably “green” and sustainable.

Derived from the natural resource of oil, expanded polystyrene (eps) saves many times its own energy value in a limited useful life of 50-60 years (although, being inert, it will last very much longer!) and may be recycled into a new generation of insulation. The manufacturing process is also relatively benign, requiring steam as the process medium and pentane as the expanding agent – which may also be recovered and recycled.



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Concrete is demonstrably a green material and is becoming progressively greener as development leads to the incorporation of a broader range of waste materials to substitute for natural aggregates (eg. Crushed bricks, shredded tyres, ground glass). Cement, often flagged as being “non-green” because of the high energy inputs in manufacture, is increasingly being replaced – currently up to 75% - by other process waste materials such as blast furnace slag and fuel ash. It is very unusual to find a concrete delivery today which has 100% Portland Cement content.

The combination of these two basic materials into Beco WALLFORM does, however, add another dimension to the definition of being “GREEN”. The composite ICF construction reduces materials usage and waste by:

- Eliminating the need for timber or metal shutter systems
- Reducing the quantity of concrete required
- Reducing deliveries to, and waste on, site
- Reducing plant and equipment required on site
- Producing a structure which is airtight and without cold bridges
- Providing an inherently flood resistant construction
- Utilising materials which otherwise would be waste
- Creating a structure with a very long life expectancy
- Being recyclable into new building materials

Tony Hadley: Hands-on Consultant

Many of you may recall an earlier report about one of our customers, Tony Hadley, and his Passive Energy House in northern Scotland. A real “hands-on” self build endeavour, Tony did extensive research, completed his own plans and specification, processed the various approvals and then carried out most of the building works himself, including fabrication of stairs and internal doors!

Energy performance of the building is very much as designed, although a woodburning stove (Building Control insisted on some active heating!) now provides top-up heating for less than £250/yr - not bad for a house of 3200.sq.ft., - confirming this is one of the most energy efficient homes in the country.

The last major operation was application of the external render and now it is complete Tony reckons, given the size of the house, he would qualify as a professional. With this and all the other knowledge gained from building his own home, he is now offering the benefit of his experience in Low Energy Construction to others who may be contemplating or embarking on their own projects and looking for guidance and support.



For further information,
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As the use of Beco **WALLFORM** becomes more widespread, the range of applications confirms the economy of this practical building system. While the costs of other methods increase to achieve higher standards, those familiar with the Wallform system are able to take advantage of its robust nature to improve on the established high performance, making design and construction more efficient and **LEAN: —**

We are LEAN

We are LEAN – in DESIGN. The characteristics of Beco WALLFORM are such that the basic construction incorporates specification standards for structure, fire, thermal and acoustic insulations, airtightness, materials' sustainability and long term durability. Such comprehensive performance, coupled with a modular dimension of only 62.5 mm. and a broad range of components, provides for a more practical and economic design process. Comprehensive performance in the basic construction opens up a new dimension for architectural design with broader scope in the selection of internal and external claddings and other building components.

Structural design and detailing is more practical, reducing the thickness of concrete required since the permanent insulation protects the structural core from thermal movement and moisture penetration. Innovations like the use of steel fibres also result in significant savings in time, costs and labour.

Since the primary function of the insulation is as a complete formwork system to contain concrete, it follows that the formwork then acts as a complete insulation system once the concrete is cured. This materials' format eliminates cold bridging and makes the walls airtight when the concrete fills the formwork. By placing thicker insulation on the external face, additional benefit is derived from the thermal mass of the concrete since the stored energy will naturally migrate back through the thinner insulation and return into the building where it is required. Designing for energy performance is consequently simpler, more reliable and more economic in practical terms.

We are LEAN – in CONSTRUCTION. As already identified, building with Beco WALLFORM uses well known building materials which are simple, robust and locally available. Deliveries to site are fewer and, properly organised, eliminate the need for site storage

and multiple handling. Plant and equipment requirements are reduced while the pace of construction is much improved, even during periods of inclement weather.

Manpower on site is reduced, achieving high levels of output without being dependent on traditional craft skills. Operatives may be trained and assessed on site to NVQ level 2 standards for ICF construction. The light weight of the formwork components and practical building process serve to improve Health & Safety standards and the absence of mechanical handling equipment reduces noise and pollution levels to create a better working environment.

Rapid construction of the weathertight building shell enables rapid follow-on for first fix and internal fit-out. Services may be installed quickly without compromising airtightness or cold bridging and, if not already cast in place, structural connections for supporting other building components can be made almost anywhere into the monolithic concrete. Continuity of internal operations independent of external cladding installation reduces risk of delay and enables significant time and cost savings over conventional contract timescales, creating the opportunity for increased levels of activity employing fewer resources. **GREENER and LEANER.**



HWA
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...delivering innovative and economic ICF design

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GREEN PRIZE DRAW

We are always looking to reduce our environmental footprint and would like you to help us. By updating your information on our database, even if you don't want to hear from us again, we will be able to reduce the amount of paper we consume in our correspondence. Even better, if you would like to receive information from us by e-mail we will cut down on the paperwork even more!

Spend just a minute to contact us with your details and we will enter you for our Cash Prize Draw - £250 first prize and two runners-up of £150

GOOD LUCK and THANKS FOR YOUR HELP!

Please contact us stating "GREEN PRIZE DRAW" with the information below and you will be entered into the Prize Draw



1. Name & Address _____

_____ 2. Postcode _____

3. Telephone _____

4. Current Email Address _____

5. Trade SelfBuild Land Planning Permission

Indicate how you would like to receive further information about Beco **WALLFORM**

6. YES EMAIL YES POST NO UNSUBSCRIBE

The Prize Draw will take place on the 29th may 2009 and the results published on our website. The winners will be notified by their preferred medium of contact.

GREEN, LEAN

Following completion, it is often impossible to identify the building construction as Beco **WALLFORM**, unlike many of the manufactured systems, the repetitive and modular nature of which belies their origins. The comment is sometimes heard, usually from an engineer, "that must be Beco **WALLFORM**. It's the only way they could have built it!"

The usual way of confirming that the building is of Beco **WALLFORM** is to check the energy bills which are consistently lower than those for other building specifications.

As an alternative, just ask the residents if they are comfortable!

and SEEN...



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LOW CARBON CONSULTANTS tel: 01652 631546 www.energybuilding.co.uk

www.becowallform.co.uk

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/m²K)

0.30

Reference

WALLFORM 250

0.19

WALLFORM 313

0.15

WALLFORM 375

passive energy

0.11

WALLFORM 438

buildings

We'll all survive at .15!

