

# Sustainable Construction: Suppliers

## Who should read this fact sheet?

This fact sheet complements the general sheet 'Sustainable Construction: An Introduction'. Written for organisations or individuals who supply materials or systems for buildings and infrastructure, it outlines the aspects of sustainability that you can consider, why they are important and what you can do to operate in a more sustainable manner. The mini case studies towards the end of the document will give you a flavour of what some suppliers are offering.

We recognise suppliers may also become involved in design and contracting, particularly with specialist systems that require highly trained fitters. Therefore you may also be interested in reading the sheets for designers and contractors.

## What are the business benefits of sustainable construction ?

For suppliers, sustainable construction can mean:

- lower costs and reduced risks due to more efficient use of the resources embodied in the materials and systems
- a competitive edge as clients choose your products for improved whole life performance, reduced health risks and less environmental impact.

Overall, keeping up to date with innovation and best practice keeps you ahead of legislation and your competitors.

Legislation is a significant driver for change. Updates to the Building Regulations, regarding energy efficiency, water efficiency and other issues will require adjustment by suppliers. Those who already have more efficient products can exploit their advantages when legislation is tightened.

Clients are becoming more interested in proving their commitment to social and environmental concerns, and construction product choices are often one of the most obvious ways to demonstrate improvements.

Increasing numbers of suppliers are selling the environmental and social credentials of their products to clients. Directories now specialise in 'green' suppliers. For example GreenPro is a regularly updated directory of green building products. Salvo provides links to sources of reclaimed building materials. Construction Resources is the UK's first

ecological builders merchants, who stock a wide range of state-of-the-art products and systems.

## What should suppliers consider ?

Clients and designers increasingly wish to use materials and systems that have lower embodied environmental impacts and better whole life performance. Embodied environmental impact means all the resources, water, energy, etc, needed to make a product, maintain it, and then reuse, recycle or dispose of it at the end of its life.

Suppliers do not need to immediately alter their entire range of products: offering a 'greener' choice, or providing a life cycle assessment of some products, may well meet many customer requirements.

Suppliers can help clients, designers and contractors by becoming more involved in the design and construction process. Understanding customer needs and constraints is vital.

## In the quarry and factory

Trade associations have been busy on behalf of construction materials producers. By defining and measuring the social and environmental impact of industry operations, they raise awareness among clients and designers. Initiatives include:

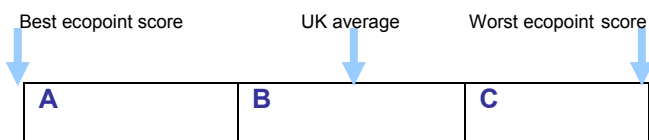
- the Construction Products Association's Key Performance Indicators (KPIs) cover customer satisfaction, environmental performance, and respect for people issues
- the British Cement Association and The Concrete Centre have produced a guide to sustainability and the sector
- the Brick Development Association has produced a sustainability strategy
- the Steel Construction Sector Sustainability Committee has developed the document 'Sustainable steel construction: building a better future'
- to highlight and reward better behaviour, the Quarry Products Association has a Good Neighbour Scheme - operators who sign up to the scheme pledge to be caring, clean, considerate, co-operative and committed.

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Increasing numbers of clients are requesting evidence of Environmental Management Systems such as ISO14001 from suppliers, to show that processes in factories and quarries are well managed and contained. These systems can help manufacturers monitor and minimise the inputs they use.

Apart from proving the overall resource efficiency of your products, it is also important to have comparative figures, so you can show how much more efficient your products are than the competition. A range of marks and certificates are available that can help specifiers to make comparisons.

For example, manufacturers can gain Environmental Profiles, which are independently certified life cycle assessments of their products. More generic data is provided in The Green Guide to Specification, which gives types of components an A-C rating. This approach enables products that have an above-average environmental performance to be identified easily. A-rated materials can help a project achieve a better BREEAM rating.



Such tools and certificates provide independent assessments that are straightforward to specify and discuss with different members of the construction team.

Going beyond environmental performance, some materials are now being certified according to their social credentials too. The global nature of the timber trade makes it particularly important for social and environmental performance to be monitored. The Forest Stewardship Council and the Pan European Forest Certification both provide independent information about the sources of timber.

### On the construction site

One way to reduce the embodied environmental impact is to use reclaimed materials. The Waste and Resources Action Programme (WRAP), for example is focussing particularly on reusing and recycling aggregates.

Beddington Zero Energy Development (BedZED) decided to use as much reclaimed material as possible, and also tried to procure as many construction products as possible from within a 35km radius of the construction site. A report of their success can be found at [www.bioregional.com](http://www.bioregional.com).

Another way to reduce waste is for materials and systems suppliers to become involved in modern methods of construction. The production of modular and standardised components can reduce waste and result in higher quality performance.

### In finished buildings

One of the most important factors in whole life performance is the interaction of the building product or system with the building user. If the products and systems are easy to clean, straightforward to maintain, and simple to use, they will last longer than more complex options. Less time and money spent cleaning and maintaining, and more time spent enjoying the building, means happier clients.

As we spend so much of our time in buildings, we must ensure they do not unnecessarily harm our health. Products that do not contain preservatives, volatile organic compounds (VOCs) and solvents, for example, will be favoured by clients and contractors interested in 'healthy buildings'. Finishes that reduce the need to use harsh cleaning chemicals, or that do not allow dust to collect, will also be favoured.

Green roofing is an innovative product that features a number of whole life performance benefits. It can encourage wildlife, control rain water run off, be attractive and provide insulation from noise and extremes in temperature.

The performance of the building in terms of energy and water is another important factor in whole life performance. Product and systems choices that affect energy and water use are shown in the table overleaf.

Water and energy-efficient fittings can attract Enhanced Capital Allowances (ECAs). Suppliers of eligible products should ensure clients and contractors know that it can be tax-efficient to take advantage of this. Clients interested in renewable energy should also find out about grants available to encourage them. There are many sources of help in these areas. Try ActionEnergy, The Carbon Trust, INREB, The Energy

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Saving Trust and The Environment Agency as first points of contact.

Energy and water efficiency can be monitored through sub-metering as part of the systems specification. Building Management Systems (BMS) can help to ensure optimal building performance.

Energy	Water
Using the structure of the building as thermal mass	Using native and drought tolerant plants for landscaping
Types of insulation	Water-efficient fittings
Quality of windows and doors	Rain water use
Energy efficient white goods	Water-efficient white goods
Efficient sources of heat and power	Grey-water recycling
sources	Sustainable drainage systems (SUDS)

In commercial buildings, the frontiers of BMS are being developed so that all services, IT and cabling needs are brought together. In housing, the benefits of intelligent and green housing has been demonstrated by Integer (see the case study opposite).

### End of life

Producer responsibility and product stewardship are words on the lips of many manufacturers. Legislation is not yet impacting on construction materials in the way that it is with electrical goods. However, suppliers are sensible to consider the end of the life of their product. When components are within the fabric of a building, do they aid deconstruction? Can the product be removed, to be reused or recycled?

Milliken the carpet manufacturer have focussed on end-of-life issues with one of their products. After use, Milliken's Earth Square rejuvenating process enables carpet tiles to be repatterned and retextured, giving a new 10-year wear guarantee, for them to fulfil another life.

### Examples of suppliers involved in more sustainable projects

#### Marley

Marley Building Materials is the largest manufacturer of roofing materials in the UK. Marley decided to undertake an Environmental Profiling Exercise to:

- demonstrate good environmental performance
- improve knowledge in-house
- have independently verified data
- assist with ISO14001
- stay ahead of competitors

Environmental Profiles have been calculated for complete roof and wall designs, giving customers easy-to-understand data. The results showed many of Marley's products perform better than the UK average.

For more information, visit: [www.marleyroofing.co.uk](http://www.marleyroofing.co.uk), Marley's publication, *Environmental Guide: sustainable roofing systems* (available in the 'downloads' section of the web-site) may be of particular interest.

#### Primrose Field, Harlow - Swan Housing Association and Integer (and other suppliers)

The partners worked together to adapt the Integer (intelligent and green) design for social housing. Intelligent cabling systems were put in place for communications, entertainment and data. Removable cornices allow the main cables to be easily reached for future upgrades. A service void behind the plaster wall will allow for extra sockets and switches. The door entry system is linked to resident's phones and televisions, which is easy to use and more secure.

All these measures reduce maintenance costs for Swan, and improve the lives of residents.

For further information see [www.swan.org.uk](http://www.swan.org.uk) and [www.intergerproject.co.uk](http://www.intergerproject.co.uk).

#### Barnes Crescent, Wimborne: East Dorset Housing Association

This Constructing Excellence demonstration took materials specification seriously.

- Units were constructed using a Swedish system of large timber frame closed panels complete with windows and doors. The panels are highly insulated, ecologically sound, able to be erected very quickly

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and are of excellent quality. For example the pre-finished, triple glazed timber windows are guaranteed not to need repainting for 30 years.

- The roof manufacturer and roof light manufacturer worked together to enable the roof lights to be fixed using fewer timber cuts and waste. Overall waste was halved onsite compared to traditional sites.
- The need for quarry products was reduced, no materials containing gypsum or toxic products were used, low smoke zero halogen cables were installed and soil pipes were specified that were manufactured from recycled plastic. Steps were taken to choose low toxicity paint and other building materials, resulting in healthier homes.

For more details see [www.edha.co.uk](http://www.edha.co.uk) and the case study on [www.sustainablehomes.co.uk](http://www.sustainablehomes.co.uk)

### Sources of further information

#### GreenPro product directory

[www.newbuilder.co.uk/newsite/greenpro.asp](http://www.newbuilder.co.uk/newsite/greenpro.asp)

#### Salvo

A source for reclaimed materials.

[www.salvo.co.uk](http://www.salvo.co.uk)

#### Construction Resources

The UK's first ecological builder's merchant.

[www.constructionresources.com](http://www.constructionresources.com)

#### Construction Products Association

The CPA have produced KPIs for the industry. See

[www.constprod.org.uk](http://www.constprod.org.uk)

#### Sustainability in UK cement, concrete and construction

Various work available through [www.bca.org.uk](http://www.bca.org.uk), [www.concretecentre.com](http://www.concretecentre.com) and [www.concemsus.info](http://www.concemsus.info)

#### Sustainability strategy for the brick industry

Available from [www.brick.org.uk](http://www.brick.org.uk)

#### Sustainability and steel

Sustainable steel construction: building a better future.

Available from [www.steel-sci.org](http://www.steel-sci.org)

#### Integration of new and renewable energy in buildings.

For more info see [www.inreb.org](http://www.inreb.org)

#### The Natural Step

For documents on material use and PVC see

[www.naturalstep.org.uk](http://www.naturalstep.org.uk)

#### The Green Guide to Specification and Environmental Profiles.

More information available from [www.bre.co.uk/sustainable](http://www.bre.co.uk/sustainable) and [www.redbooklive.com](http://www.redbooklive.com)

#### Forest Stewardship Council

See [www.fsc-uk.info](http://www.fsc-uk.info) for more details.

#### Pan European Forest Certification

See [www.pefc.co.uk](http://www.pefc.co.uk) for more.

**WRAP** (Waste and Resources Action Programme) More information on recycling aggregates and other materials available at [www.wrap.org.uk](http://www.wrap.org.uk)

#### Action Energy

[www.actionenergy.org.uk](http://www.actionenergy.org.uk)

#### The Carbon Trust

[www.carbontrust.org.uk](http://www.carbontrust.org.uk)

#### Energy Saving Trust

[www.practicalhelp.org.uk](http://www.practicalhelp.org.uk)

#### Environment Agency

[www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)

**Enhanced Capital Allowances** for water technologies.

Go to [www.eca-water.gov.uk](http://www.eca-water.gov.uk) to register your product on the list.

#### Integer

Intelligent and green housing developments

[www.integerproject.co.uk](http://www.integerproject.co.uk)

This factsheet was produced for Constructing Excellence by the Centre for Sustainable Construction, BRE, Bucknalls Lane, Garston, Watford, WD25 9XX, [www.bre.co.uk/sustainable](http://www.bre.co.uk/sustainable)