

Sustainable Construction: Constructors

Who should read this factsheet?

This factsheet complements the general sheet 'Sustainable Construction: An Introduction'.

It has been written for organisations or individuals who work on construction sites. This includes builders, trades people and landscapers. It outlines the aspects of sustainability that you should consider, why they are important and what you can do to operate more sustainably.

Mini case studies towards the end of this factsheet show how constructors are improving their performance.

As constructors may also become involved in design and supplying materials and systems, you may also be interested in reading the sheets for designers and suppliers.

What can sustainable construction mean for my business?

For constructors, sustainable construction means:

- more-satisfied clients and repeat business through working with the client, designers and suppliers to provide the best solution
- a better reputation with the local community and local authority through fostering a positive relationship and avoiding conflict
- reduced wastage and costs and reduced risk of fines and legal action due to more efficient and thoughtful use of resources, improved communications and health and safety.

Keeping up and getting the edge. Keeping up to date with innovation and best practice keeps you ahead of legislation and your competitors.

The Government is prioritising sustainability for developments in many areas, with significant changes to Building Regulations and planning legislation expected - requiring rapid adjustment by constructors in response to new demands.

Experience learned from employing more sustainable practices can be used to improve the pricing of future contracts and improve profit margins.

Environmental management. More and more clients are requesting evidence of Environmental Management Systems such as ISO14001 from constructors. For example, The Environment Agency has undertaken a review of all its contractors, asking them what systems they have in place, and helping them to reach agreed standards.

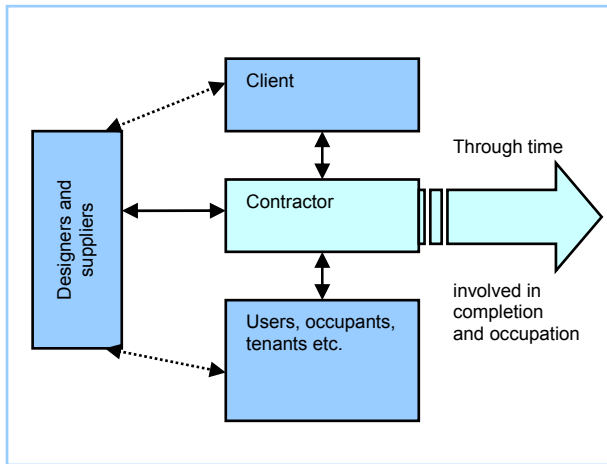
Social performance. Clients are increasingly demanding that contractors demonstrate higher levels of care and consideration for public and their workforce through compliance with schemes such as the Considerate Constructors Scheme.

What can I consider doing?

Constructors have a major influence over the short term impacts of a development and the materials used in it's construction, as well as the long term operational impacts through their control of build quality. Economic viability is key. Consider what the client has asked for and the constraints of the project. You don't have to make every possible change to be more-sustainable but make the most of opportunities to innovate and improved site practices. Progressively roll out better practices across projects, until they become normal practice, and then start the process again with another innovation.

Partnering and integrated teams. Constructing Excellence provides many examples of the benefits of partnering and integrated teams. Such an approach is particularly important when aiming for a more sustainable solution, as everyone on the project will need to agree to it as a common goal. Early involvement of constructors in a project can help you to understand the reasoning behind the decisions made and how they will impact on your area of work; this is likely to lead to fewer problems, such as delays and cost over-runs during the project.

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Constructors can gain from becoming more involved with the building users. Commissioning is a crucial stage that constructors can not afford to miss out on. Listening to feedback from users can provide valuable lessons to take to the next project

Working with the community. Registering your site with the Considerate Constructors Scheme will:

- independently prove your enhanced performance
- automatically enter your site for the annual awards
- bring business benefits due to less staff time spent dealing with complaints from the general public and regulatory bodies.

The table on the right shows the range of common-sense issues covered by the Considerate Constructors Code of Practice.

Employing or training local residents can also bring tangible benefits. Employing locals can provide a more reliable workforce, and improve recruitment and retention beyond the project. www.ccscheme.org.uk

In a recent gas central heating partnership between Portsmouth City Council, United House and sub-contractors, an alliance has been built to provide long-term training and employment for local people. This project is a Constructing Excellence demonstration. The first trainees are now employed full time.

Being considerate to site personnel. As the Considerate Constructors Scheme suggests, there are benefits to being more considerate to site personnel. The Respect for People indicators and toolkit can help constructors improve and monitor training, health and safety, job satisfaction and related issues. You can get information from www.kpizone.com.

Improved efficiency. More efficient use of labour and materials saves money and time and reduces environmental impact.

There are legal requirements regarding air and water pollution and protecting ecological features such as trees and ponds. However, a straight-forward checklist of issues and actions for resource efficiency could also contain items such as:

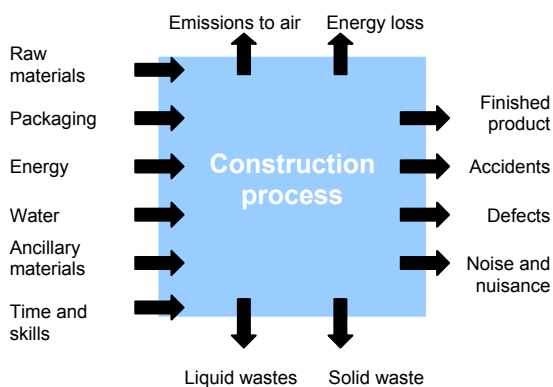
- reuse of land and buildings, façades and foundations where possible; deconstruct to allow maximum reuse of materials; decontaminate land using sustainable methods
- specify local materials, and materials with a low environmental impact (see the suppliers' sheet in this series)
- minimise the accidental wastage of materials on site; reuse materials where possible, and then consider recycling
- consider how much money is being spent on transporting materials, plant and personnel to site; try to source local materials and labour; in urban or other sensitive areas, public or company-
- organised transport may prove a viable alternative.

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Information to help you become more efficient is available from organisations such as The Environment Agency and Construction Industry Research and Information Association (CIRIA) and BRE.

To aid understanding of environmental regulations, The Environment Agency has produced NetRegs. With a general management section and a construction management section, it is a useful resource for constructors (www.environment-agency.gov.uk/netregs).

Resource flow diagram, based on NetRegs management diagram



Environmental Management Systems (EMS) provide a structure to deal with the range of environmental impacts from your business. CIRIA has published a guide, 'Easy Access Environmental Management', especially for small and medium-sized construction companies

Many of the principles of resource efficiency, and actions for achieving it, are encapsulated in the idea of lean construction. The lean construction information on the Constructing Excellence website gives more guidance.

Waste management is an area where innovative projects have shown the largest opportunity for saving resources and money. Examples such as the Greenwich Millennium Village and the Safeway at Stratford (see case studies at www.constructingexcellence.org.uk) have saved thousands of pounds by adopting the waste management hierarchy

Considerate Constructors Scheme Code of Practice headings and issues to address

Consideration

Positive consideration to the needs of traders and businesses, site personnel and visitors, pedestrians, shoppers, the general public and the environment in general.

Environment

Noise, selection of resources, waste management and avoiding pollution.

Cleanliness

Site cleanliness, well maintained signs, lights and barriers, and dust mitigation.

Neighbourliness

Full and regular consultation

Respect

Respectable and safe standards of dress and behaviour, with instruction in dealing with the general public.

Safety

Care and consideration for the safety of the general public, traders, shoppers and site personnel.

Responsibility

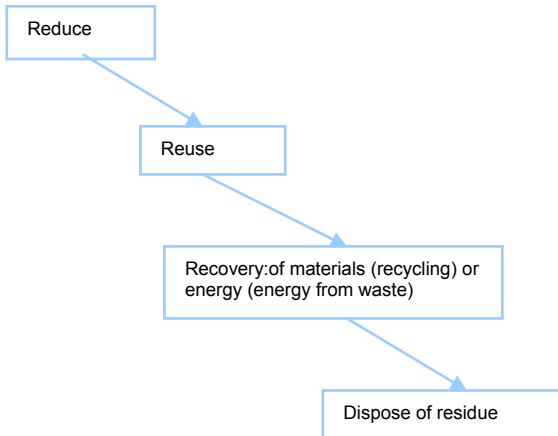
Ensure all on site understand and implement the obligations of the Code, and compliance monitored.

Accountability

Poster displaying names and contact numbers

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The waste management hierarchy



The annual increases in landfill tax will ensure that waste becomes even more important to control, and other changes will also have an impact. Partnerships between constructors and waste management companies can help solve problems. Tools such as BREMAP provide a GIS database to help pinpoint waste management facilities and materials / products within a region or chosen distance from your site and SMARTStart and SMARTAudit can aid waste management, (see www.smartwaste.co.uk).

Construction method. Careful consideration of the most appropriate construction method, whether on-site or off-site can contribute considerably to reducing construction costs. Off-site fabrication can help reduce defects, which are a prime cause of difficulties for constructors, and can also reduce health and safety risks on site.

Examples of constructors involved in more sustainable projects

Dyer & Butler

Dyer & Butler is a civil engineering and building contractor operating in the south of England, with an annual turnover of approximately £25M. The company has achieved ISO 9001:2000, employs an environment, health and safety and quality manager, uses LPG vehicles (resulting in lower emissions), and local labour when practical. The company has an enviable reputation for repeat business from high-

profile clients. Dyer & Butler's approach has helped to win work from clients who demand more sustainable projects.

For further information see www.dyerandbutler.co.uk

Carillion

Carillion has introduced a company-wide sustainability programme which has helped in delivering better-engineered, better-built and maintained facilities for customers. Sustainability is a business differentiator, and has been a key factor in winning work.

Business and sustainability benefits can be achieved together, through the use of appropriate key performance indicators, demonstrated by the company's sustainability strategy model.

Carillion has found that the principles of sustainability motivates staff and can help to improve an organisation through cultural change. Appropriate communication and training are required in order to gain benefits from adopting a more sustainable approach to work and life.

Carillion has published 'On being a good neighbour – moving towards sustainable construction', to disseminate the steps they have been taking forward.

Through its sustainability programme, and in partnership with The Natural Step, Carillion has improved its sustainability performance in a range of ways on the Great Western Hospital (previously called the Princess Margaret). A number of case studies and reports have been written about the project, including 'Sustainability accounting in the construction industry'. The report uses GWH as a case study and shows over £1.5 million in direct and indirect cost savings through a sustainability accounting process. Innovations included in the project are as follows:

- Bespoke wall panels saved approximately £285,000 in time and waste of plaster and paint. The panel supplier reclaimed and recycled plaster waste.
- A standard ceiling tile size was specified for the whole hospital, again saving waste of materials.

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- Scaffolding was avoided through modern construction methods. This played a major role in the excellent accident record on site.
- A job centre located on site throughout most of the construction phase facilitated the use of local labour. A community liaison officer was also employed.
- A balancing pond was constructed to capture run-off and so reduce water pollution.
- Features such as super insulation, natural ventilation and solar shading together act to reduce the hospital's energy use by 30%. The extra insulation meant fewer radiators were installed, saving capital cost.
- The floor covering was chosen according to whole life cost and environmental impact data.

For more information see www.ciria.org.uk and Engineering Sustainability March 2003 'A strategy for sustainability'.

Sources of further information

Association for Environment Conscious Building is the UK's leading independent environmental building trade organisation: www.aecb.net

The Green Register. Brings all disciplines of construction professionals in the industry together, and provides a link to clients: www.greenregister.org

The Considerate Constructors Scheme.
www.ccscheme.org.uk

Respect for People Aims to improve recruitment and retention through helping companies to treat their staff with respect. Indicators and toolkits are available, as well as the wallchart downloadable from www.kpizone.com.

Easy Access Environmental Management. CIRIA's toolkit for small and medium companies about environmental management systems: www.ciria.org.uk

Ecoconstruction. Guidance on choosing and specifying materials: www.ecoconstruction.org

SMARTWaste. A suite of tools to help companies apply sustainable waste management to sites: SMARTStart for benchmarking (with a local government version); SMARTAudit for more detailed auditing; and BREMAP for identifying waste management facilities in your area: www.smartwaste.co.uk

Sustainable Buildings: benefits for constructors, BRE Information Paper IP13/03 Part 4. Based on case studies, this paper outlines the benefits to constructors of producing more sustainable buildings. It is one of a set of four: www.brebookshop.com.

This sheet was produced for Constructing Excellence by the Centre for Sustainable Construction, BRE, Bucknalls Lane, Garston, Watford, WD25 9XX, www.bre.co.uk/sustainable