

How to reduce CO₂ on construction sites

Key

£ Indicative scale of implementation cost

😊 Potential CO₂ saving benefit



Plan the energy requirements of a project

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Produce an 'energy plan' early on in a project to identify the key loads (from accommodation, plant and equipment) over the project programme.

This will help to secure the best rate tariffs and minimise the size of supply you need, making it easier and cheaper to get a grid connection and identify opportunities for saving energy.

Secure early, high capacity, electricity grid connection

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Early communication with electricity suppliers plus well managed connection processes will help to minimise delays in establishing a grid supply. This has the benefit of reducing the use of generators which have higher energy costs and CO₂ emissions than the grid.



Deploy the right size generators

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Using over-sized generators wastes fuel and money and reduces equipment lifetimes. Separate generators for high daytime demand and low night-time operation are often cost-effective despite additional hire charges.

Manage energy in a site office efficiently

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Keep windows and doors shut when heating or cooling systems are switched on. Utilise thermostats and timer controls properly, set computers and other equipment to power down/ hibernate when left idle and avoid unnecessary lighting.



Play your part in energy saving

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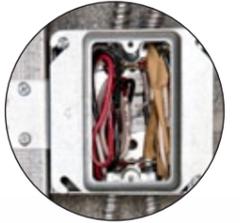
Play your part in implementing the site energy plan and let your site manager know if you see any energy saving opportunities.

Install intelligent and efficient temporary electrics

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Temporary electrical installations should allow automated easy control of key areas on site to avoid wasted energy.

Install circuitry, controls (including daylight sensors) and timers to enable switch off of equipment and all unnecessary lighting.



Procure low CO₂ site accommodation

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Site accommodation with an Energy Performance Certificate rating of A, B or C, when used efficiently, will save on heating and lighting costs.

High levels of insulation should be prioritised over more costly measures to reduce CO₂ and cost.

Specify energy efficient plant

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Procure the most energy efficient plant options fit for purpose, and avoid use of plant with unnecessary excess capacity.

Avoid leaving plant and vehicle engines idling.



Avoid forced drying of wet trades

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Arrange project programmes or adjust construction methods to avoid the need to dry wet trades via space heating. If such heating is unavoidable, minimise operation times and use direct fuel heaters (such as oil or gas) rather than electric heaters.

Monitor and manage energy use

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Regularly monitor energy and fuel use or CO₂ emissions. Knowing your baseline energy consumption may help to reduce emissions and costs.

Nominate an individual with responsibility for leading on site energy management activities.



HOW TO:

Need More Information?

The following websites provide information on how to reduce the carbon emissions and costs associated with construction site energy use:

The [Strategic Forum for Construction](http://www.strategicforum.org.uk) has produced an action plan for reducing CO₂ emissions on construction sites. See www.strategicforum.org.uk/carbon.shtml

The [Green Construction Board](http://www.greenconstructionboard.org) is working in partnership with industry to provide a platform for green growth. See www.greenconstructionboard.org

Government and industry targets and actions for reducing CO₂ emissions from the UK construction industry are included within the [Low Carbon Construction Action Plan](#). See www.bis.gov.uk/policies/business-sectors/construction/low-carbon-construction-igt/low-carbon-construction-action-plan

[WRAP](http://www.wrap.org.uk) provides a wide range of free guidance and tools on reducing the environmental impacts of construction activities. This includes guidance on carbon reduction and management, the use of secondary and recycled materials, waste reduction and effective logistics. See www.wrap.org.uk/construction

The [modular and portable building association](http://www.mpba.biz) represents and promotes the use of temporary and permanent modular buildings. See www.mpba.biz

The [Carbon Trust](http://www.carbontrust.com) provides CO₂ reduction advice and support and can help you work out the carbon footprint of your business. See www.carbontrust.com

[CIRIA](http://www.ciria.org) deliver a programme of business improvement services and research activities for those engaged with the delivery and operation of the built environment. See www.ciria.org

[CEEQUAL](http://www.ceequal.com) is a Civil Engineering Environmental Quality Assessment and Award Scheme. See www.ceequal.com

The [Royal Institution of Chartered Surveyors \(RICS\)](http://www.rics.org/uk/knowledge) launched Ska Rating, an environmental assessment tool for sustainable fit-outs. See www.rics.org/uk/knowledge

The [Considerate Constructors Scheme](http://www.ccscheme.org.uk) is the national initiative set up by the construction industry to improve its image with regard to the general public, the workforce and the environment. See www.ccscheme.org.uk

The [Civil Engineering Contractors Association \(CECA\)](http://www.ceca.co.uk) represents the interests of civil engineering contractors registered in the UK. See www.ceca.co.uk

[BREEAM](http://www.breeam.org) is an environmental assessment and rating scheme for buildings that includes best practice in sustainable building design, construction and operation. See www.breeam.org

The [UK Contractors Group](http://www.ukcg.org.uk) is the trade association for large contractors operating in the UK. See www.ukcg.org.uk

The [Construction Alliance](http://www.theconstructionalliance.org) represents small and medium companies. See www.theconstructionalliance.org

For more information see www.strategicforum.org.uk

Reduce CO₂ on construction sites

Energy and fuel used on construction sites accounts for approximately 33% of total emissions from England's construction industry¹.

There are many opportunities, as outlined below, to achieve both CO₂ and cost savings during the planning stage of a project and also whilst on site.

Actions to consider

1. Plan the energy requirements of a project
2. Secure early, high capacity, electricity grid connection
3. Deploy the right size generators (if generators are needed)
4. Manage energy in a site office efficiently
5. Play your part in energy saving
6. Install intelligent and efficient temporary electrics
7. Procure low CO₂ site accommodation
8. Specify energy efficient plant
9. Avoid forced drying of wet trades
10. Monitor and manage energy use

A wealth of information is available to assist you. See the back cover for relevant links to more information.

¹ Strategic Forum for Construction (SFC) 2010 Carbon Assessment Report

This guide has been produced by the Strategic Forum for Construction (SFC) Carbon Subgroup as part of its actions to decrease carbon emissions on construction sites. This work, which began as part of the delivery programme for the 2008 joint government and industry Strategy for Sustainable Construction, is now absorbed into the activities of the Green Construction Board through its Greening the Industry Working Group. The Strategic Forum for Construction is a place where the industry comes together to discuss strategic issues facing construction and seeks to develop approaches for the benefit of all.