

<p><b>Air pollution</b></p>	<p>Poor <b>air quality</b> can affect everyone, including people working on construction projects. Measures to reduce pollutants during the construction process include abolishing the burning of waste, using well-maintained plants and equipment, and controlling dust. The Environment Agency regulates over 2,000 large industrial processes that release pollutants into the air. Local Authorities control around 20,000 smaller industrial processes' involvement in air pollution.</p> <p>Some cities, including London, are trialling vehicles running on fuel cells whose only emissions are water vapour. There is potential for using similar technology in the design of construction plant.</p>
<p><b>Alternative energy sources</b></p>	<p>There are many <b>alternative energy sources</b>, most of which use naturally-occurring renewable products such as wind, the sun, waves and tides, trees or crop residues.</p>
<p><b>Biodegradable</b></p>	<p><b>Biodegradable</b> matter is generally organic material such as plant and animal matter and other substances originating from living organisms.</p> <p>A <b>biodegradable</b> product has the ability to break down, safely and relatively quickly, by biological means, into the environment.</p>
<p><b>Biodiversity</b></p>	<p><b>Biodiversity</b> is the richness and variety of wildlife and habitats on Earth. When we develop a site we sometimes take away natural habitats. However, we can help to balance nature and replace natural habitats with manufactured ones, such as ponds, lakes or living roofs. Replacement habitats have to adhere to strict guidelines.</p>
<p><b>Biofuel</b></p>	<p><b>Biofuel</b> can be broadly defined as solid, liquid, or gas fuel consisting of or derived from biomass, most commonly plant crops.</p>
	<p><b>Biofuel</b> is considered a means of reducing greenhouse gas emissions by providing an alternative to fossil fuels.</p>

<p><b>Biomass fuel</b></p>	<p><b>Biomass fuel</b> is organic matter that can be burned to produce energy, including wood, straw, poultry litter and energy crops such as miscanthus grass, willow and poplar.</p> <p><b>Biomass fuel</b> can be used to produce heat (for space and water heating), power (electricity) and <b>Combined Heat and Power (CHP)</b>. The UK has some of the largest examples of the use of biomass to generate electricity in Europe.</p> <p><b>Biomass fuel</b> is CO<sub>2</sub> neutral which means it gives off only as much CO<sub>2</sub> when burnt as it stores during its lifetime.</p>
<p><b>Brownfield sites</b></p>	<p>A site that has previously been used for any purpose (including non-industrial use) and is no longer used for that purpose is known as a <b>brownfield</b> site.</p> <p>Although contaminated land is automatically classed as <b>brownfield</b>, not all <b>brownfield</b> sites are contaminated, as this depends on what the site has been used for. A site may be contaminated if it has been used, for example, for timber processing, brick manufacturing or by a munitions factory.</p>
<p><b>Carbon footprint</b></p>	<p><b>Carbon footprint</b> is a measure of how much carbon dioxide (CO<sub>2</sub>) is produced by the day to day activities of a person, in making a product or in running a building. The man-made creation of CO<sub>2</sub> is an important factor in climate change. It is therefore important to reduce the amount of CO<sub>2</sub> that we create personally and reduce the amount required to make and use the buildings we live.</p> <p>The internet has many examples of <b>carbon footprint</b> calculators which enable you to calculate how much carbon you create and how it can be reduced.</p>

<p><b>Cob walls</b></p>	<p><b>Cob</b> is an old Devon word for a mud wall. Cob is a very old method of building with earth and straw or other fibres.</p> <p>Traditionally, straw, animal hair and sometimes dung were added to the clay sub-soil to form blocks that are dried naturally in the sun.</p> <p>A good-quality cob can survive quite well without rendering, but normally it is coated with a render made from quicklime putty and coarse sand, followed by a lime wash. These traditional coatings have the important property of being porous, or "breathable", so that any moisture that does get into the cob can be released.</p>
<p><b>Combined Heat and Power (CHP)</b></p>	<p><b>CHP</b> is the joint production of heat and power. It improves energy efficiency by using the waste heat from power generation.</p>
<p><b>Coppicing</b></p>	<p><b>Coppicing</b> is a method of harvesting timber that allows the plant to stay alive by leaving the root and stump intact to re-grow every year. This timber can be laminated for construction or used as a fuel source.</p>
<p><b>Deforestation</b></p>	<p><b>Deforestation</b> is the removal of forest, by cutting and burning, to clear land. Because of demand for land and timber, western Europe has lost over 99% of its primary forest.</p> <p>Deforested areas can become drier as a result of the loss of vegetation, having an impact on the surrounding environment. Soil erosion can occur naturally, depending on the slope of the land, the type of soil and exposure to rainfall.</p>
<p><b>Earth energy (ground source energy)</b></p>	<p><b>Earth energy</b> harnesses the temperatures found in the earth or ground water to cool or heat air and water for buildings. In the UK this uses a constant ground temperature of approximately 12 degrees Celsius.</p>

<p><b>Embodied energy</b></p>	<p><b>Embodied energy</b> is a term for the amount of energy that has been required to make and supply a material, product or service.</p> <p><b>Embodied energy</b> is an accounting system that aims to find the sum total of the “true” energy involved in a process including:</p> <ul style="list-style-type: none"> <li>• raw material extraction</li> <li>• transport</li> <li>• manufacturing</li> <li>• assembly</li> <li>• installation</li> <li>• capital and other costs</li> <li>• disassembly, deconstruction and/or decomposition.</li> </ul>
<p><b>Environmental Impact Assessments (EIAs)</b></p>	<p>Under the Town and Country Planning (Environmental Impact Assessment) Regulations 1999 (amended in 2001), any proposed residential development application over 0.5 hectares may need to be accompanied by an <b>EIA</b>.</p> <p>An <b>EIA</b> looks at the impact a development will have on wildlife, and the effects of possible pollution, congestion and so on. It also takes into account the potential benefits to residents and other users, and the impact of the development on the surrounding area.</p> <p>These regulations were being amended during the production of these resources so you may need to update this glossary with new information from the results of this process.</p>
<p><b>Fossil fuels</b></p>	<p><b>Fossil fuels</b> such as coal, petroleum and natural gas are non-renewable resources because they take millions of years to form and reserves are being used much faster than new ones are created.</p> <p>The burning of <b>fossil fuels</b> produces carbon dioxide, which is one of the greenhouse gases and contributes to global warming.</p>

<p><b>Forest Stewardship Council (FSC)</b></p>	<p>The <b>FSC</b> provides a certification process that ensures timber is from a sustainable source. FSC-certified timber comes from managed forests that protect the environment and the workers producing the materials. They provide a chain of custody that shows the journey the timber has made from the forest to the consumer.</p>
<p><b>Geothermal energy</b></p>	<p><b>Geothermal energy</b> uses steam or hot water in the earth's crust for several purposes: powering turbines, heating buildings and heating water.</p>
<p><b>Global warming</b></p>	<p>Certain gases in the atmosphere act like glass in a greenhouse, allowing sunlight through to heat the Earth's surface, but trapping the heat as it radiates back into space. Without this greenhouse effect, the Earth would be too cold for life to survive (about 33°C colder than it is!) and so these greenhouse gases are vital.</p> <p>The concentration of greenhouse gases in the atmosphere has remained relatively constant for the last 10,000 years since the last Ice Age. However, in the last 100 years or so the concentration of greenhouse gases has increased rapidly.</p> <p>Many scientists believe that the greenhouse effect has caused more infrared radiation to be reflected back to the surface of the Earth, and this has caused <b>global warming</b>. As the greenhouse gases build up in the atmosphere the Earth gets hotter.</p> <p>Using non-fossil fuels, or renewable energy sources such as wind power, to heat our properties is just one way in which the construction industry can help to reduce the production of greenhouse gases that contribute to <b>global warming</b>.</p>
<p><b>Glulam</b></p>	<p><b>Glulam</b> is a stress-rated engineered wood product comprised of wood layers, or 'lams,' that are bonded together with strong, waterproof adhesives. <b>Glulam</b></p>
	<p>components can be a variety of species, and individual 'lams' are typically two inches or less in thickness.</p>

<p><b>Green belt</b></p>	<p>A <b>green belt</b> is an area of land that has been designated as a 'no build' area.</p> <p>In 1955 (Circular 42/55) the Government invited Local Planning Authorities to consider establishing green belts in order to:</p> <ul style="list-style-type: none"> <li>• check the growth of large built up areas</li> <li>• prevent neighbouring towns from merging into one another</li> <li>• preserve the special character of towns.</li> </ul> <p>In 1988 the Planning Policy Guidance (PPG2) was published, and revised in 1995 to take account of the need to promote sustainable patterns of development.</p>
<p><b>Greenhouse gases</b></p>	<p>Certain gases in the atmosphere act like glass in a greenhouse, allowing sunlight through to heat the Earth's surface, but trapping the heat as it radiates back into space. As the <b>greenhouse gases</b> build up in the atmosphere the Earth gets hotter.</p> <p>One of the main <b>greenhouse gases</b> is carbon dioxide (CO<sub>2</sub>). Human activity has increased the amount of CO<sub>2</sub> in the atmosphere. More than half the yearly total of CO<sub>2</sub> comes from the burning of coal, oil and other fossil fuels used in cars, power stations and factories.</p> <p>If your home is not energy efficient you are contributing to the greenhouse effect. Your home could be generating around six tonnes of CO<sub>2</sub> emissions annually.</p>
<p><b>Hydroelectric energy</b></p>	<p><b>Hydroelectric energy</b> is a renewable energy generated from the flow of water. The flowing water may be natural due to the topography of the land, or may require a dam to be built to contain large volumes of water. Water flowing from this change in elevation turns turbines that drive the generators, which in turn produce electricity.</p>
<p><b>Landfill tax</b></p>	<p><b>Landfill tax</b> is a tax put on putting waste into landfill sites that is charged on top of normal landfill fees. The standard rate is charged on all active waste and is being substantially increased every year from 2008 to at least 2011. This is intended to encourage waste producers to reduce the amount of waste they create through, for example, recycling or composting.</p>

<p><b>Landscape</b></p>	<p><b>Landscape</b> is the natural environment that surrounds us, such as moorland, mountains and woods. It can also be created artificially as neat arable fields, road systems, parks and so on.</p> <p>All artificial landscapes should be designed to suit the environment. Where construction takes place near busy roads or motorways, it will probably be necessary to create a noise barrier by planting trees, or a land barrier that may change the local <b>landscape</b>.</p>
<p><b>Lime plaster</b></p>	<p><b>Lime plasters</b> offer several advantages over cement mortars and gypsum plasters. They allow for movement in the building and are therefore less likely to crack. They are porous, which allows the building to breathe reducing condensation problems. Lime plasters can be used in traditional properties and new buildings and are designed to be used over cob, clay boards and reed mat.</p>
<p><b>Linoleum</b></p>	<p><b>Linoleum</b>, commonly known as lino, is a floor covering made from the natural renewable materials of solidified linseed oil mixed with wood flour or cork dust over a burlap or canvas backing. Pigments may be added to the materials used. The linoleum flooring is durable and comes in different grades or gauges.</p>
<p><b>Living roof</b></p>	<p>A <b>living roof</b>, sometimes called a green roof, eco-roof or roof garden, reuses base materials and provides extra protection to waterproofing systems from ultra-violet light, frost, erosion and other forms of weathering. Other types of roofing, including thatch, will eventually need replacing.</p> <p>It can improve air quality, naturally reduce carbon and can provide new habitats for flora and fauna.</p> <p>There are two types of <b>living roofs</b>:</p> <p><b>Intensive</b> – where there is a deep growing medium, which allows for the use of trees and shrubs.</p>
	<p><b>Extensive</b> – using a thin growing medium, requiring minimal maintenance, and in general not requiring irrigation.</p>

<p><b>Miscanthus grass</b></p>	<p><b>Miscanthus</b> is a cool-weather-friendly perennial grass crop native to Asia, and a relative of sugarcane. The tall bamboo-like stems can be harvested in early spring and burned for fuel.</p> <p>Burning <b>miscanthus</b> produces only as much carbon dioxide as it removed from the air as it grew. That balance means there is no increase on atmospheric carbon dioxide levels, which is not the case with fossil fuels.</p>
<p><b>Natural amenities</b></p>	<p><b>Natural amenities</b> such as lakes, rivers, forests, commons and parks, are areas that can be used and enjoyed by the public.</p> <p><b>Natural amenities</b> include legally protected habitats such as National Nature Reserves (NNR) and <b>Sites of Special Scientific Interest</b> (SSSI), or other non-designated habitats, such as streams that could contain legally protected or rare wildlife.</p>
<p><b>Natural drainage</b></p>	<p>All soils contain cracks and pores, and their number and size affect how quickly rainwater drains through the soil. Soils act like sponges, but some soils are more absorbent than others.</p> <p>Freely or <b>naturally draining soils</b> absorb rainfall easily, allowing it to drain through to the underlying layers. Chalky or stony soils or a sloping site also help good drainage.</p> <p>Potential development must take account of drainage factors as flooding may occur where soils are unable to absorb water easily.</p>
<p><b>Photovoltaic cell</b></p>	<p>See <b>solar power</b>.</p>
<p><b>Plastic recycling</b></p>	<p><b>Plastic recycling</b> is the process of recovering scrap or waste plastics and reprocessing the material into useful products, sometimes completely different from their original state.</p>
	<p>Each plastic has different properties, which results in different end products. Plastic milk bottles and soft drinks bottles are the two most common types of plastic.</p> <p>Typical uses in construction are kitchen worktops, fencing, drainage pipes and carpets, depending on the origin of the plastic.</p>

<b>Rainwater harvesting</b>	<b>Rainwater harvesting</b> is a means of collecting rainwater from surfaces such as roofs, filtering it and using it to flush toilets. Advanced systems can provide water for other purposes such as washing machines, saving the amount of drinking quality water that is used.
<b>Reducing energy</b>	<p>The Building Regulations Approved Documents (Part L: Conservation of Fuel and Power) require designers to provide energy-efficient heating, lighting and ventilation solutions in new buildings.</p> <p>There are many simple ways of <b>reducing energy</b> consumption in existing buildings, for example:</p> <ul style="list-style-type: none"> <li>• insulate buildings effectively</li> <li>• turn down heating</li> <li>• use electrical appliances efficiently, for instance, don't overfill kettles</li> <li>• turn off appliances like computers when not in use</li> <li>• turn off lights</li> <li>• install movement sensitive lights.</li> </ul>
<b>Reduce, re-use and recycle</b>	<p><b>Reduce</b> is waste prevention, or "source reduction", and means consuming and throwing away less. It includes:</p> <ul style="list-style-type: none"> <li>• purchasing durable, long-lasting goods</li> <li>• seeking products and packaging that are as free of toxic materials as possible</li> <li>• redesigning products to use less raw material in production, have a longer life, or be used again after their original use.</li> </ul> <p>Source reduction actually prevents the generation of waste in the first place, so it is the preferred method of waste management and goes a long way toward protecting the environment.</p> <p><b>Re-use</b> of items – by repairing them, donating them to charity and community groups, or selling them – also reduces waste. Reusing products, when possible, is even better than recycling because the item does not need to be reprocessed before it can be used again.</p>
	<p><b>Recycling</b> means taking a product or material at the end of its useful life and turning it into a usable raw material to make another product.</p>

<p><b>Renewable energy</b></p>	<p><b>Renewable energy</b> is energy from naturally available resources that are constantly renewed.</p> <p><b>Renewable energy</b> sources include the sun, wind, water, bioenergy, earth and geothermal energy.</p>
<p><b>Renewable materials</b></p>	<p><b>Renewable materials</b> are naturally occurring plant and animal products, and materials manufactured from them. They are 'renewable' only if the source of the material is managed in a sustainable way.</p> <p>Materials that occur naturally, such as timber, are not considered to be renewable if they are not replaced as quickly as they are consumed.</p> <p>Renewable is not the same as <b>reusable</b>. Most of the materials used in construction could be reused. For example, concrete and bricks can be reused either directly in the construction of a new building or, after being crushed, as hardcore.</p>
<p><b>Sites of Special Scientific Interest (SSSIs)</b></p>	<p>There are over 4,000 <b>Sites of Special Scientific Interest</b> in England, managed by English Nature. The Countryside and Rights of Way Act 2000 extends English Nature's powers to protect and manage <b>SSSIs</b>.</p> <p>Owners of <b>SSSIs</b> must give English Nature written notice before beginning any operation likely to damage the special interest features, or if they intend allowing others to carry out such activities.</p> <p>If English Nature refuses consent for an operation that may damage the special features of a <b>SSSI</b>, that operation may not legally take place.</p>
<p><b>Solar power</b></p>	<p><b>Solar power</b> is harnessed in two main ways:</p> <p><b>Photovoltaic cells</b> are panels that convert the energy from the sun into electricity. They are currently relatively expensive compared with other types of renewable energy, but have the advantage of low maintenance and are extremely reliable..</p>
	<p><b>Solar panels</b> collect heat directly from the sun to heat hot water. They are usually placed on roofs but can be seen as standalone structures beside roads and motorways, and in fields. Solar panels can be used to directly heat water for domestic use</p>

<b>Standard assessment procedures (SAPs)</b>	<b>SAPs</b> are the Government's approved procedures for calculating an energy rating for all space and water heating inside a building.
<b>Substrate</b>	<b>Substrate</b> is a medium in which plants will grow and should consist of aggregate such as crushed concrete and/or brick, limestone chippings, gravels or clay pellets.
<b>Sun pipe</b>	A <b>sun pipe</b> is a highly reflective hollow pipe which is installed between the ceiling of a room and the roof above it. Daylight shines into the pipe from above the roof and reflects down the pipe to a diffuser mounted to the ceiling of the room below. It can produce the same amount of light as a lamp, depending on conditions.
<b>Sustainable communities</b>	<p>The challenge for the construction industry is to make all development sustainable, not just individual buildings.</p> <p>The Town and Country Planning Association (TCPA) believes that all neighbourhoods should be developed to combine the best features of town and country, provide open space, protect and enhance the environment and promote biodiversity.</p> <p>Only a balance of regeneration, extending existing urban areas and new settlements, in which all development is sustainable, will provide opportunities for people to live where they need to and in ways which are in sympathy with, rather than damaging to, the natural world around us.</p> <p>Sourced from: A programme for sustainable development, TCPA, Town and Country Planning Association</p>

<p><b>Target CO<sub>2</sub> Emission Rate (TER)</b></p>	<p>The <b>Target CO<sub>2</sub> Emission Rate</b> is the minimum energy performance requirement for new dwellings as found in the Building Regulations – Approved Documents L1A – conservation of fuel and power (new dwellings) (2006 edition).</p> <p>It is calculated on the mass of carbon dioxide (in units of kg/m<sup>2</sup> of floor area) per year emitted as a result of the provision of heating, hot water, ventilation and internal fixed lighting for a standardised household.</p> <p>Further details from the professional user section of <a href="http://www.planningportal.gov.uk">www.planningportal.gov.uk</a>.</p>
<p><b>Thermal transmittance “U value”</b></p>	<p><b>Thermal transmittance</b> is a measure of the overall rate at which heat is transmitted through a particular thickness of a wall, floor, roof or window.</p> <p>The unit is W/m<sup>2</sup> °C</p> <p>The lower the “U value” then the better the insulation – less heat is “lost” through the material or element of the structure.</p>
<p><b>Vitrified clay pipe (VCP)</b></p>	<p><b>VCP</b> is pipe made from clay that has been subjected to vitrification, a process which fuses the clay particles to a very hard, inert, glass-like state. VCP is commonly used in sewer gravity collection mains because of its reasonable price and resistance to almost all domestic and industrial sewage.</p>
<p><b>Volatile organic compounds (VOCs)</b></p>	<p><b>VOCs</b> are contaminants such as petroleum products (for example, jet fuel, refinery wastes, diesel, some insulation materials and oil based paint).</p> <p>The improper disposal of these is recognised as one of the largest contributing causes of underground chemical contamination.</p>

<p><b>Water quality</b></p>	<p>The Environment Agency is responsible for maintaining or improving the quality of fresh, marine, surface and underground water in England and Wales.</p> <p>It aims to prevent or reduce the risk of <b>water pollution</b> and to ensure that any pollution that does occur gets cleaned up to prevent adverse effects on the environment or people.</p> <p>We depend on surface and ground water for all domestic, industrial, commercial and agricultural use. Pollution, deliberate or accidental, from construction sites, such as diesel spillage or cement from washing out mixers, can cause immense damage.</p>
<p><b>Water resources</b></p>	<p>The Environment Agency monitors the level of demand for water, and issues 'abstraction licences' to regulate who can take water from the environment and how much can be taken from a location over a given period of time.</p> <p>One method of reducing the demand for water in the construction industry is to design the finishes of properties to exclude the traditional 'wet trades' such as plastering.</p> <p>Designing buildings to take advantage of, for example, harvesting rainwater, or fitting dual flush toilets, showers as opposed to baths, and water butts can help save large amounts of water.</p>
<p><b>Wind power</b></p>	<p>The UK has a plentiful supply of <b>wind</b>, particularly offshore. The potential for generating clean, green electricity from this inexhaustible resource is huge. An area of sea roughly the size of London is enough to provide 10% of the UK's electricity needs.</p> <p>One <b>wind farm</b> can produce 45 megawatts of electricity, enough to supply the annual electricity needs of 41,000 households.</p>