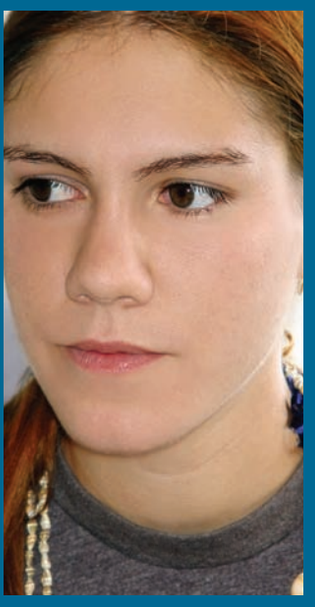
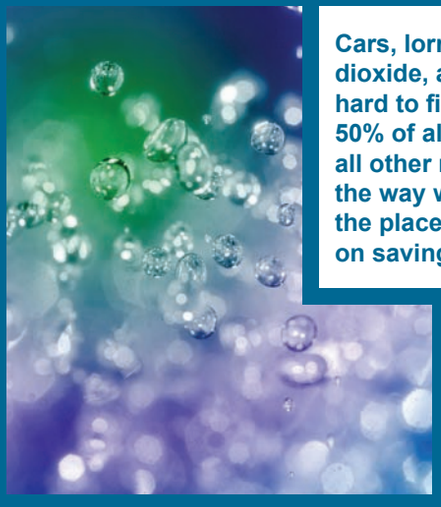
CIBSE Factsheet
Fighting climate change

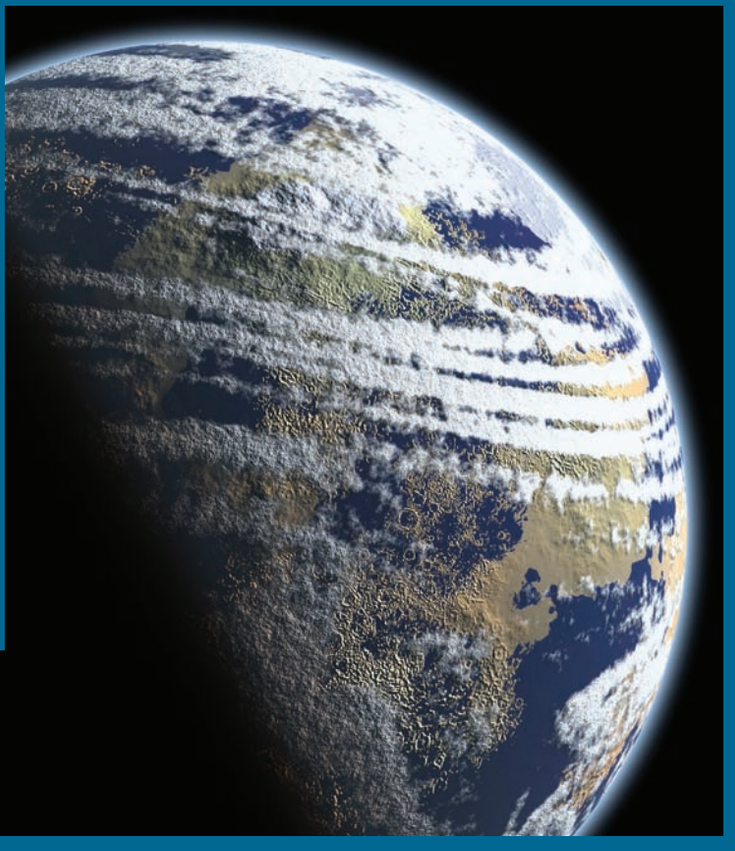
Most people have heard about climate change. Human activity in the last hundred years or so has made our planet warmer, largely from the fossil fuels we burn for energy. These create carbon emissions which alter the atmosphere. We are looking at rising sea levels, which threaten hundreds of thousands of homes, and even whole nations. Deserts will expand, and areas which were once temperate will become more Mediterranean. Conserving food and water supplies for a fast growing world population is a related environmental problem.

So slowing, or halting, climate change is an urgent priority. Using less energy and generating it from renewable sources are the two main ways of fighting climate change.





Cars, lorries and aeroplanes all burn fossil fuels that create carbon dioxide, and the engineers that design and build them are working hard to find carbon-friendly alternatives. But did you know that only 50% of all CO_2 emissions come from transport, manufacturing and all other related activities? The other half comes from buildings and the way we use them. So changing our homes, schools, offices and the places we spend our leisure time could have the biggest impact on saving the planet.



Who are the Low Carbon Heroes that can make this happen? Town planners, landscape architects, surveyors and interior designers are part of the story. Architects and structural engineers design the external shell. They all work closely with building services engineers. These are the people in charge of heating, cooling, lighting, controls, lifts and escalators, ventilation and water and power systems. They can make the biggest difference of all, by creating interiors that are comfortable to be in and kind to the environment. Building services engineers are the real Low Carbon Heroes.

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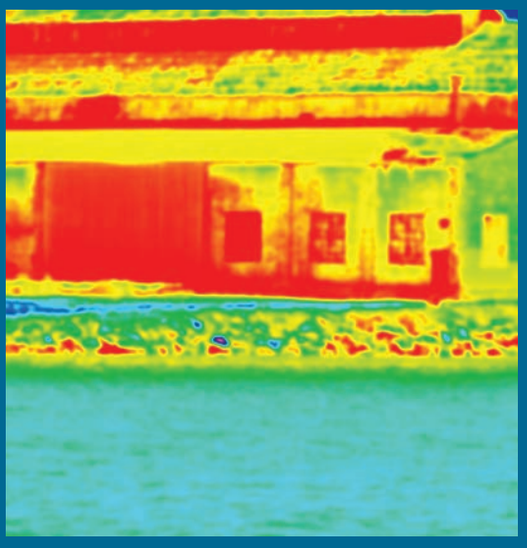
Engineering a sustainable built environment



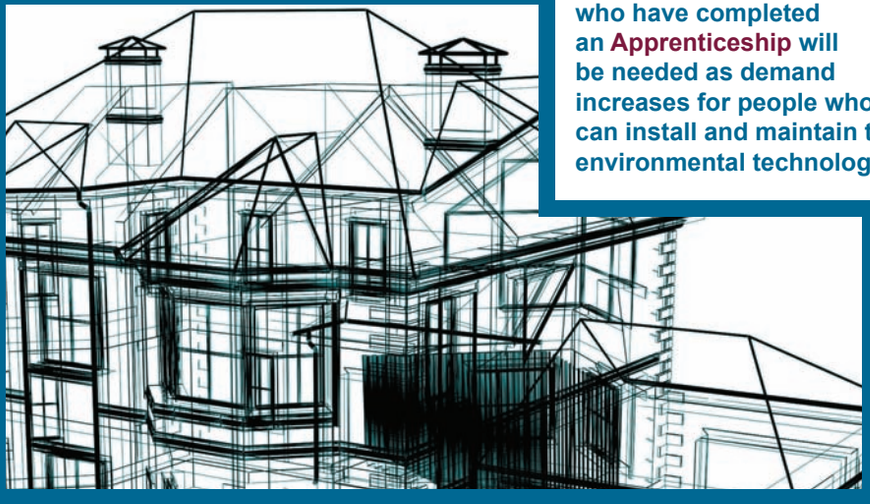
Did you know …?

- Switching from old style GLS lamps to a lighting scheme using compact fluorescents will save up to 80% of electricity used
- Installing a solar water heater would save up to 55% of the energy needed to supply a household's hot water
- People who have photovoltaic panels or a wind turbine on their roof can sell back the surplus electricity they generate
- Public buildings in the UK have to have a display energy certificate
- In the greenest new homes, harvested rainwater is used to flush the toilets

Most of the places we use now were designed and built before people understood the devastating effects of climate change. So as well as creating new buildings to operate as zero-carbon, we urgently need to install the new environmental technologies into the homes and energy-hungry schools, offices and workplaces that already exist. Understanding these new technologies, and making them work to maximum efficiency, is all part of a building services engineer's job. They include

Building management systems
Intelligent controls
Bio-mass fuels
Combined heat and power (CHP)
Ground source heat pumps
Mechanical ventilation with heat recovery
Hydro generation
Wind energy
Solar photovoltaics (PV)
Solar water heating
Water harvesting and recycling

Graduates with degrees in mechanical or electrical engineering, environmental or energy technology, public health and of course building services engineering, are at the forefront of the fight against climate change. To study for these you will normally need A levels or an equivalent level 3 qualification including maths and physics. Technicians who have completed an Apprenticeship will be needed as demand increases for people who can install and maintain the environmental technologies.



Whichever career route you choose into this sector, you can join the Chartered Institution of Building Services Engineers, whose mission is *'engineering a sustainable built environment'*. As a member you will be able to put the letters LCIBSE, ACIBSE or MCIBSE after your name. And… you'll be a Low Carbon Hero.

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