

Building a sustainable future

All areas of industry are working towards becoming more energy efficient and reducing carbon emissions but buildings are where most gains stand to be made writes Susan Venables.



"We need to incorporate better building design to improve functionality and take away the reliance of the end user's behaviour to reduce energy consumption."

Paul Toyne

Our built environment determines our quality of life, providing our homes, schools, offices, hospitals, etc and the infrastructure on which we depend. But property is currently responsible for around 30% of the world's energy use and about 40% of our carbon dioxide emissions according to the United Nations – in most countries representing the largest source of greenhouse gases. According to the IPCC (Intergovernmental Panel on Climate Change), emissions were estimated at 8.6 billion metric tons in 2004 and could almost double by 2030.

Buildings can, however, provide deep and rapid cuts in emissions through new design and technology systems. One of the companies working towards creating more sustainable, healthier places to work is Bovis Lend Lease. Operating in more than 30 countries, the firm is recognised as a leading international project management and construction company, actively working to create zero net carbon, waste and water developments.

"Today, most of the energy consumption occurs during a building's operational phase, for heating, cooling and lighting purposes," explains Dr Paul Toyne, Head of Sustainability for Bovis Lend Lease UK.

"Reducing consumption is the first hurdle which needs to be addressed followed by becoming more efficient and shifting to low carbon or renewable energy sources for ongoing needs."

Steps towards better buildings

Energy savings can be achieved through a range of measures influenced by clever building design, including improved insulation, smart appliances, new ventilation and heating/cooling systems. However, the energy conservation behaviour of a property's users plays a crucial part. "Changing user behaviour to reduce energy consumption is a hard task; that is why we need to incorporate better building design to improve functionality and take away the reliance on the end user's behaviour," says Toyne.

Building codes and appliance standards are two of the most successful policy tools for emission reduction but need widespread global support to help foster change. Likewise, a better understanding of buildings' carbon footprints is also required. "If common metrics for energy efficiency and emission reduction can be agreed globally, any subsequent actions can then be internationally measurable and verified," continues Toyne. "Improved intelligence will also provide a better foundation for schemes, whereby incentives and penalties relating to building performance help curb rising emissions. This provides a certainty for building owners and their investment choices."

Responsible approach

As the construction sector's focus on the creation of sustainable buildings gathers momentum, it is clear that new approaches can help reduce energy consumption and emissions, which will not only help save our climate but also

save money, create more jobs and skills and provide healthier places to work.

"For Bovis Lend Lease, sustainable development is about ensuring we deliver a built environment that has lasting benefits to society, which is why we consider the social, environmental and economic impact of everything we do," concludes Toyne. "Making buildings more sustainable is the right thing to do but it's also the smart thing to do, creating long-term commercial value and reducing operational and financial risk."

Creating a sustainable MediaCityUK

Bovis Lend Lease is the management contractor on behalf of developers Peel Media, for MediaCityUK, Europe's first purpose-built creative and media development. An innovative, large-scale project, with the initial 36-acre phase costing £500m, its bringing together companies to establish an international centre for excellence in the digital media and creative industries.

The BBC, for example, is moving around 2,500 staff to MediaCityUK including five departments currently based in London. Media and creative companies are typically heavy users of power so the development was designed to incorporate techniques to make it as sustainable as possible. A mixed-use development, the scheme will also include a variety of building types and uses, including commercial, retail, performing studios, hotels and production offices.

The project has resulted in a striking but functional multi-storey car park that also houses the City's Energy Centre. This novel use of space provided MediaCityUK with the opportunity to generate its own electrical energy and hot water, to be used across the whole scheme, vastly improving its sustainability credentials.

Known as 'Tri-Generation', the energy system uses water from the Manchester Ship Canal to power, heat and cool the buildings, reducing carbon dioxide emissions by 36 per cent compared to using traditional grid electricity and standard onsite boilers.

The Energy Centre was a major factor in MediaCityUK becoming the world's first development to be named a BREEAM-approved sustainable community. Awarded by BRE (the Building Research Establishment), the certification independently certifies the sustainability of development proposals at the planning stage. The Tri-Generation Energy Centre is now the UK's largest private electrical network.



"Making buildings more sustainable is the right thing to do but it's also the smart thing to do, creating long-term commercial value and reducing operational and financial risk."

Paul Toyne

