

HOW PRACTICAL IS A NET ZERO APPROACH TO NEW BUILDINGS?

By Simon Storer, Chief Executive, Insulation Manufacturers Association.

The UK government has committed to achieving net zero CO₂ emissions by 2050, but with buildings generating in excess of 30% of all greenhouse gas emissions, this presents a major hurdle on the road to decarbonisation. Meeting this ambitious and legally binding target demands substantial changes within the construction sector if this net zero figure is to be achieved, and will require a determined approach for new residential and commercial buildings. Added focus is needed on key challenges throughout the construction process, such as design, construction materials and their installation, detailing, building performance as built, better compliance and inspection, as well as honesty about the cost of more complex buildings and how this should be financed.

Contractors must lead the way by championing 'fabric first' approaches and letting more

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energy efficiency and reducing the amount of energy used, the burden on the grid as well as on renewable energy sources can be reduced.

Insulation and fabric first

Insulation plays a vital role in enhancing the energy efficiency of buildings, reducing heat loss in winter and heat gain in summer.

Polyisocyanurate (PIR) and

polyurethane (PUR) insulation are widely recognised for their excellent thermal performance. These materials have low thermal conductivity, allowing for thinner insulation layers while maintaining high levels of insulation, which can be crucial in achieving net zero standards in the building envelope.

Tapping into renewable energy

A fundamental aspect of net zero buildings is the use of renewable energy sources such as solar panels and wind turbines, but challenges arise when it comes to providing sufficient energy to meet the demands of a building. By optimising

buildings do the work, as this will be a crucial step towards meeting net zero objectives and achieving energy efficiency standards.

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net zero. By adopting fabric first, PIR/PUR insulation helps to create a well-insulated building envelope, reducing the need for heating and cooling systems, which in turn, lowers energy consumption. By effectively managing the transfer of heat and minimising air leakage, PIR/PUR insulation contributes to maintaining comfortable indoor temperatures, reducing the overall carbon footprint of a building.

Cost implications

Implementing a net zero approach in new buildings does come with financial implications. The initial costs associated with integrating renewable energy systems and energy-efficient technologies may appear prohibitive. However, it is essential to consider the long-term benefits and potential savings. Energy-efficient buildings typically incur lower energy bills, leading to reduced operational costs over the building's lifespan. Although financial incentives and government support programs can help offset the initial expenses, much more needs to be done to address the cost/investment requirements in the move to net zero.

Supply chain considerations

The transition to net zero buildings requires a

robust and sustainable supply chain and correctly specifying and installing the most appropriate materials is crucial; for PIR insulation, once installed it requires little or no maintenance as its thermal performance is expected to last for the life of the building. Because only a thin layer of PIR insulation is required to meet high thermal performance, it can also contribute to increasing the overall living space within a building's footprint.

Improving productivity and collaboration

Though buildings can offer significant energy efficiency gains, greater understanding and knowledge of products and the part they play in the overall energy performance of the building is essential. This, together with improved industry-wide standards, enhanced training and a much more robust compliance and inspection regime, are all required in reaching net zero. By promoting innovation and best practices, the sector can unlock the full potential of energy-efficient building design and construction.

The net zero approach to new buildings is an essential and ambitious goal for the UK to help combat climate change. While challenges exist in terms of renewable energy sources, costs and the supply chain, practical solutions are available.

By utilising high-performance insulation materials like PIR/PUR, buildings can achieve excellent thermal performance, reducing energy consumption and operational costs. Furthermore, sustainable practices in the supply chain and enhanced collaboration across the sector are crucial in accelerating progress toward a net zero future.

With the climate crisis accelerating, it is imperative for policymakers, industry professionals, and stakeholders to work together to address the challenges and embrace the means of achieving net zero. By doing so, we can create a built environment that is sustainable, energy-efficient and conducive to a low-carbon future.

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