

Health – Building a net zero carbon NHS

- Net Zero NHS by 2040
- 'Fabric First' - for Low Embodied and Operational Carbon
- Off-site and Modern Methods of Construction – for Low Avoidable and Embodied Carbon

Kingfisher Court - Project of the Year by the Design in Mental Health Network - A modular build that met the Trust's aims for an energy efficient building with a low carbon footprint and low running costs.

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Need

The government has reiterated its strategic shift towards an integrated NHS, which partners with local authorities and the voluntary sector to deliver a community focussed service.

For health and care providers that will lead to a corresponding need to adapt existing facilities through re-modelling and expansion along with creating new purpose-built facilities and infrastructure. The government has earmarked £7.1 billion for capital spend in support of their plan.

Added to the challenge, the NHS has stated its ambitious target to be the world's first 'net zero' national health service by 2040 with 80% of carbon reduction achieved before 2032, including 40 new build 'net zero' hospitals. The new targets will apply to operational carbon from existing buildings too. It would make sense to select low energy solutions for all new schemes starting now.

Solution

Embodied, Operational and Avoidable Carbon can all contribute towards the stated goals above, through the fabric of the building, how it is orientated, and the heating and ventilating systems selected.

Fabric First

When considering Operational aspects, many customers look to the most obvious solutions and choose to prioritise green energy alternatives without always considering ways for carbon reduction by improving the efficiency of the building itself. This can be a missed opportunity, when it is perfectly possible to select a fabric which creates an airtight, well insulated space, thus automatically reducing the reliance on supplementary heating and ventilation – green or not!

We can help you use modular and panelised fabric systems which will deliver the thermal 'u' values with the added benefit from off-site factory-controlled quality, less waste and quicker on-site erection. This 'fabric first' approach suits low and medium rise developments and extensions.

Our offering is enhanced by the relationship with our sister company Innovaré Systems, who entered the low carbon market back in 2005 with their structural insulated panel system. A system fully tested by the British Research Establishment.

Early Engagement

Many of the decisions that impact on energy performance, cost and time are made very early in the project and become fixed into the planning conditions which limits reduced Embodied Carbon solutions through product selection later in design. If the NHS select

collaborative engagement from the outset, then this means we can work with architects to maximise opportunities for low energy and systemised off-site panelised solutions.

Outcome

Achieving 'net zero' will be a significant challenge for the NHS. One third of the embodied carbon of a building stems from the materials and methods of construction making product selection critically important. Additional avoidable carbon savings can be achieved by reducing waste with MMC.

Off-site fabricated modular and panelised systems offer the technology to create these new flexible spaces and help meet the targets by a more balanced approach:

- Low embodied carbon product.
- Sustainably sourced timber.
- High thermal performance to reduce secondary heating and ventilation.
- BIM for factory quality with low wastage.
- Quick site erection.

Utilising all the methods of reducing carbon will help accelerate the drive towards zero carbon. Engaging with specialist suppliers at concept design is the best way to develop a cost-efficient end to end solution. One which provides staff and patients with a comfortable sustainable environment and reduces global carbon emissions.

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