

The first Energiesprong Assured Performance retrofit in the UK

Client: Nottingham City Council

Location: Nottingham

Description: The scheme comprises a total of 155 1960's built William Moss style concrete cross wall homes, with a mixture of 3 storey houses, bungalows and low-rise flats.

Whilst structurally sound, the existing building fabric provides very poor thermal insulation and therefore the homes were cold and difficult and expensive to heat. Many tenants simply did not heat their home because it was too expensive.

Following a competitive dialogue tender process, Melius Homes was appointed by Nottingham City Council as Solutions Provider to deliver an Energiesprong retrofit to transform the properties into warm, comfortable, affordable and desirable homes.



An integrated solution:

The Energiesprong approach requires the Solutions Provider to design and install a solution to achieve a comprehensive suite of defined performance outcomes.

With a clear focus on the performance in use outcomes, including lifecycle costs, a significant emphasis was placed on ensuring a fully coordinated approach to design, component selection, installation, and commissioning.



To minimise disruption, reduce on site installation time, and to allow future industrialisation, extensive use is made of off-site manufacture.



The use of offsite manufacture was also required to provide enhanced quality assurance and confidence that the installation would meet the specified performance outcomes in practice.

Technical Solution:

An advanced timber panel system was manufactured in our production facility in Nottingham to provide a new highly insulated fabric envelope. Careful attention was paid to the interface with the existing structure to ensure good airtightness, low thermal bridging, and fire safety.

An integrated energy system was designed to optimise the use of micro generated renewable energy and reduce energy costs by minimising the use of grid electricity and managing the time of use.

The existing combi gas boilers were replaced with either individual air source heat pumps or communal ground source heat pumps.



An integrated PV panel system was installed on the roof incorporating battery storage.

A demand controlled ventilation system was installed to ensure good air quality.

Ongoing performance monitoring and extensive metering allows users to understand and manage their energy use and facility managers to access real time performance data.

Delivery Timescale: Commenced 2018 – Ongoing

The works are programmed in phases allowing learning to be adopted and alternative methods of work and technical solutions to be piloted and tested as work proceeds.

Delivering outcomes: Headline Requirements



CO2 emissions reduced by at least 25%.

Space heating demand <40 kWh/m²/year.

Net energy consumption <1,500 kWh/yr. This is energy which comes into the home from the grid minus any exported energy.

Tenant energy bill <£320/year (plus comfort charge).
Based upon fair usage parameters and assumed tariffs.

An NCH tenant said: “These homes were really cold before and I dreaded winters. Before the energy efficiency works I was planning on moving as the cold was just getting too much. I really can’t believe the difference the refurb has made. Last winter was so much better, me and my family found the house to be really warm and my energy bills have not got more expensive in fact I’m paying less. I’m so happy living here now, I’m no longer thinking of moving, I’ve recently redecorated the whole house and I’m saving up for a new carpet.”

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