NEW KINGSLAND – HENBURY, BRISTOL

Timber Frame Ahead Of The Curve

Project: New Kingsland

Location: Henbury, Bristol

Company: Donaldson Timber Systems

Sector: Affordable Housing

Technology: Timber Frame

Contact:
timber@donaldsontimbersystems.com

Timber frame ahead of the curve for Bristol City Council

The New Kingsland development in Henbury, Bristol, demonstrates how thoughtful design innovation and timber technology can transform challenging brownfield sites into exemplary social housing that meets local planning constraints and ambitious climate targets.

Delivered by main contractor Stepnell for Bristol City Council, utilising Donaldson Timber Systems' award-winning closed panel build system, Sigma® II, the 16-home scheme sets a benchmark for sustainable construction in the social housing sector.

Sigma® II

Timber frame was specified from the outset due to its speed of construction and ability to achieve Building Regulation changes. During the project, the design team discovered that thanks to its highly innovative MMC technology, Sigma® II could meet all required performance standards without any additional complexities.

Sigma® II can deliver near-Passivhaus standards of performance and sustainability, which assists with fuel poverty challenges – a vital factor for the whole-life costs and fabric performance of the home.

The thermal performance enhancement at New Kingsland was particularly significant, with the timber build system achieving a 0.15 U-value through the external wall – a substantial improvement over the original masonry specification – improving the thermal performance of the homes.

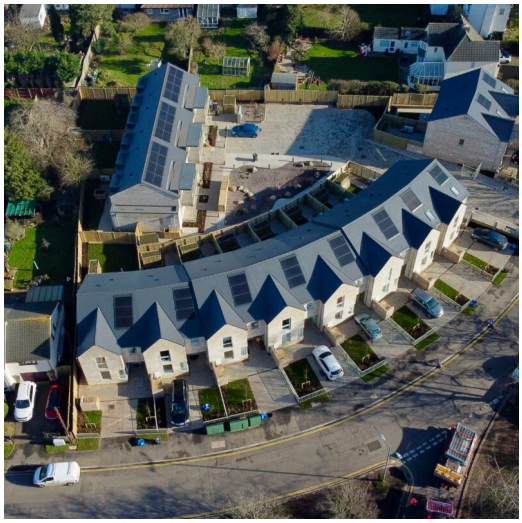
All 16 homes, comprising 10 houses and six cottage flats, were designed with a fabric first approach using Sigma® II. This build system was particularly attractive to the client as it has achieved a range of independent, audited third-party accreditations, including BOPAS Plus, BBA, NHBC Accepts, and STA Gold Assure, delivering the confidence that it is durable and complies with building regulations and technical standards.

Choosing timber also offered embodied carbon benefits, aligning directly with Bristol City Council's climate strategy objectives for a carbon-neutral, climate-resilient development.

Construction efficiency gains were equally impressive. Using a timber build system reduced the overall build programme by five weeks compared to the masonry option. This shorter build duration was of particular importance as the New Kingsland site was surrounded by occupied houses, so it vastly reduced the impact of the construction on the neighbours.

Beyond performance and sustainability benefits, using Sigma® II also streamlined the construction process by reducing the number of trade interfaces, lowering the risk of delays and quality issues.

Striking design



The site for this project was a small brownfield site in an attractive existing residential neighbourhood. The challenge was how to maximise accommodation on the site while providing a development that is sensitive to its location.

Using rectangular house designs on a site with a curved frontage was leading to inefficiencies and failing to make the most of the space available. The architects overcame this challenge by developing a new house design where each house is wedge-shaped in plan. This allowed the houses to fit together to form a continuous crescent.

The curved terrace reduces wasted space between buildings and provides a form that is thermally efficient with less energy loss through the walls. The result is also an attractive and striking addition to the area.

The New Kingsland project showcases the benefit of utilising offsite timber build systems. Donaldson Timber Systems was able to create bespoke frames to suit the unusual house design, while delivering superior levels of fabric performance, low U-values and speed of construction.

The result exceeded client expectations, meeting all objectives in terms of design, speed and performance. The success of the project has resulted in five more projects for Donaldson Timber Systems with Stepnell and Bristol City Council, while leaving a positive legacy in Henbury.

Tom Russell, Director at Emmett Russell Architects, was impressed by the transformational impact of the Sigma® II system. He said: “We have worked with Donaldson Timber Systems on two projects to deliver complex social housing projects.

“It has been a revelation working with the team at Donaldson Timber Systems using the Sigma II closed panel system. The system provides enhanced levels of thermal and air tightness performance, along with the reassurance of comprehensive third-party accreditation. The technical support provided by Donaldsons has been exceptional with real design rigour and attention to detail at each stage of the process.”

The New Kingsland project establishes a template for addressing multiple concurrent challenges facing the social housing sector: achieving net-zero performance standards, controlling construction costs and programmes, and delivering positive community outcomes.

For an industry grappling with housing delivery targets, climate obligations, and cost pressures, these challenges need not be mutually exclusive.

www.donaldsontimbersystems.com