SILVERLEA – EDINBURGH

145 Net Zero Homes For Scotland's Capital

Project: Silverlea

Location: Edinburgh

Company: Donaldson Timber Systems

Sector: Affordable Housing

Technology: Timber Frame

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The Silverlea development in Edinburgh is a major social-housing project for Scotland's Capital. It was designed with sustainable regeneration in mind; delivering on net zero targets, while creating much needed social and mid-market homes in the city centre.

The UK's leading offsite timber frame manufacturer, Donaldson Timber Systems was appointed as the timber frame supplier for the project, in partnership with Cruden. The development consists of multiple flatted blocks and colony blocks, providing 145 homes for social and mid-market rent, as well as a community sports pavilion for Craigroyston Community Youth Football Club.

As the project is situated within a green zone in the centre of Edinburgh, this complex multi-block project demanded innovative engineering solutions and precise coordination to deliver quality social housing within challenging site constraints.

Smart engineering solutions

With expertise in delivering complex projects, as well as technical expertise and capacity to meet the demanding build schedules, Donaldson Timber Systems was an ideal partner for Cruden.

Donaldson Timber Systems manufactured and supplied all 145 units utilising its Alpha open panel build system to deliver five four-storey blocks of flats; four three-storey colony blocks and one three-storey block of flats. Designed to meet the needs of low-to-medium rise house building, Alpha provides a tested and approved, flexible approach to on-site specifications, offering an efficient and effective build method.

As the team was engaged early in the process, they brought added value from the outset. Robert McLean at Donaldson Timber Systems led on the design. He explains: "The original tender design specified beams within every floor to support joists at multiple locations. However, this meant the beams could create concentrated point loads accumulating down through the structure, which was likely to lead to accelerated movement and visible damage to ceiling and wall finishes over time."

On identifying this, the Donaldson Timber Systems team proposed an alternative engineered solution, extending beams at each level to distribute loads over longer areas, and eliminating potential costly remedial work.

Further design advice was offered by the team when it came to the panel heights. The original architect's roof support design for the flatted blocks was to have different panel heights from front to back, to create the fall of the roof and to accommodate a suspended ceiling for MVHR ducting.

"We proposed simplifying the design," explains McLean. "Our suggestion was to use uniform panel heights, form the fall with firrings, and design the roof joist layout to accommodate the MVHR ducting with factory-formed apertures through the joists and pre-fitted steel hole formers where structurally required."

This revision streamlined manufacturing and site erection while delivering significant cost savings on suspended ceiling components and supports for the MVHR ducting.

Complex logistics

Along with bringing expert advice for the design, the Donaldson Timber Systems team assisted on the complex delivery and erection process.

The development was designed to retain as many of the mature trees as possible to create an appealing natural setting, so working around preserved trees on the site and restricted access to crane bases required a specialist response.

The team utilised a Sperrings AT4 mobile tower crane to lift from block gables, handling 1.7 tonnes at 48-metre radius. To offset the additional crane costs, the team accelerated the programme, fast-tracking delivery so floors and walls arrived the same day. Five floor cassette sets and five wall panel sets were fitted with a single crane – a strategy so successful it was deployed across all six blocks.

Working closely with Cruden, the team maintained single-crane site access through weekly coordination meetings, completing each level (4-5 floor and wall sets) in just three days.

The results

The Silverlea project showcases the benefit of utilising offsite timber build systems to deliver complex, sustainable developments on constrained urban sites. The expertise of the Donaldson Timber Systems team brought added value from design through to delivery, while exceeding client expectations on design, speed, and performance.

Alex Goodfellow, CEO of Donaldson Offsite explains: “At Donaldson Timber Systems, we’ve been building homes for over 50 years, so we really understand the capabilities of timber frame and the needs of our clients. We bring this experience to every project, incorporating efficiencies and bespoke solutions to achieve exceptional results.”

Colin Kennedy at Cruden said: “We’re thrilled to partner with Donaldson Timber Systems on this Edinburgh project. They have a deep understanding of the complexities we faced, and we trust their expertise to deliver an outstanding result. Our aim was to progress at speed, and their experience in delivering at pace, combined with their capacity has been invaluable in helping us meet our programme targets. Having collaborated with them on multiple projects before, we know that their professional approach and ability to add real value make them an exceptional partner.”

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