

CASE STUDY

ENNERDALE AVENUE, MANCHESTER

Building a Community with Intrastack
Low-Rise Steel Frame

Building a low-rise housing development in an already built-up location can be fraught with issues around space and transport logistics. These issues, combined with the need to provide a quality end-product of much-needed homes, meant that Ennerdale Avenue needed accurate planning, speedy delivery, and a safe pair of hands to support the build.

Social Values

When Manchester-based, not-for-profit housing company, Southway Housing Trust, committed to building a long-lasting, durable development in the Northwest, they wanted to ensure the materials they used and the partners they worked with would fit with their ethos of sustainability and building excellence. Ensuring that the planned homes were fit for the community they were built for, well into the future, was a priority. Intrastack's light-gauge steel frame emerged as the perfect solution to the needs of the project.

Intrastack's Low-Rise Housing (ILRH) steel frame solution was selected as the main building material by the project customer, Southway Housing Trust, and principal contractor, R&M Property, for eight family homes on the Ennerdale Avenue development.

Customer Satisfaction:

Ryan Shenton, Technical Design Officer, Southway Housing Trust, commented on the project: *“One of the key characteristics of light gauge steel frame which encouraged Southway Housing Trust to work with Intrastack is the speed of delivery. The prefabricated wall panels and cassette floors allowed us to get on to site sooner and deliver housing more efficiently. The frame was particularly beneficial in enabling works to continue without interruption throughout the wetter and colder winter period, a time which can often result in delays when building with traditional brick and block.*”

“Working on smaller infill sites you must manage the minimal space for materials and consider the impact on neighbouring residents. By coordinating deliveries, the project team could ensure that there was minimal disturbance, and a tidy site was maintained throughout the project, as we adopted a ‘just in time’ approach to the delivery of materials.”



BENEFITS OF ILRH

The solution was chosen based on several key factors, which proved it was the optimum off-site solution for the project:

Speed of installation – The panelised steel frames were supplied directly to site for the site teams to erect. The ILRH panels can be installed at speed, which meant the structures were erected quickly, and ultimately helped to save labour and man-hours on-site.

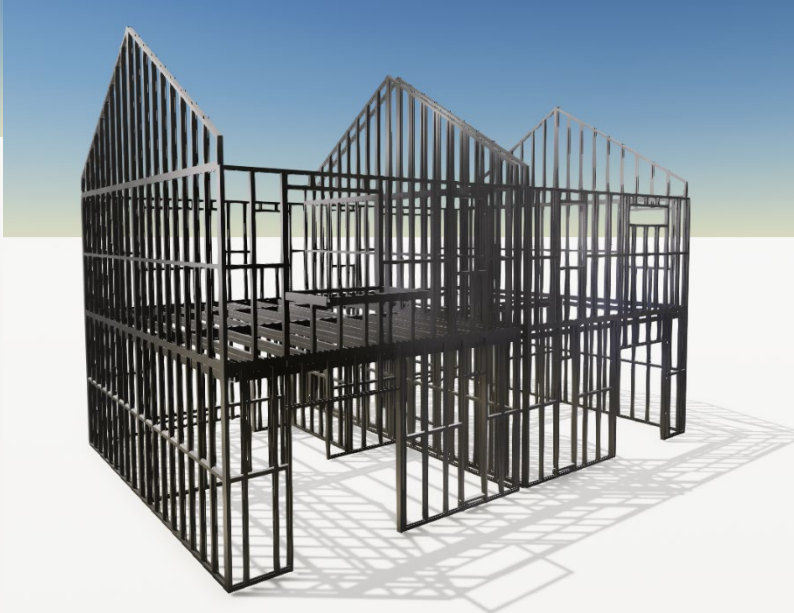
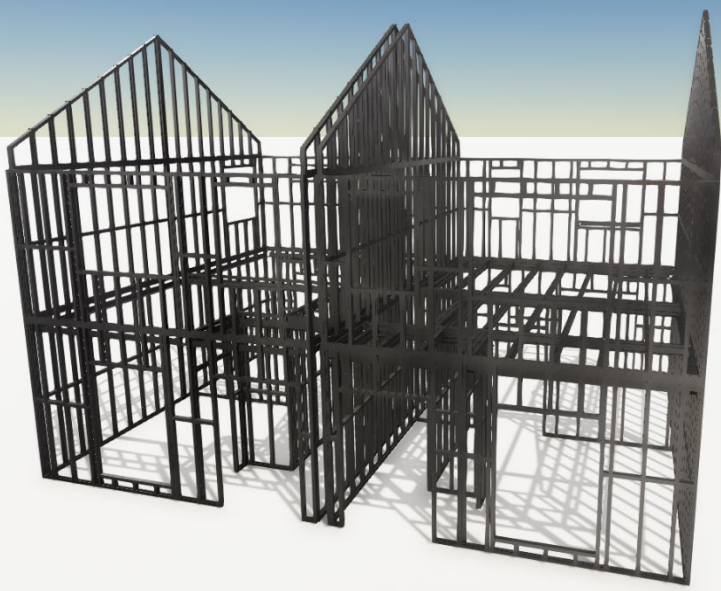
Fire safety during construction – The location of the project meant its perimeter was close to existing houses, as a result, fire safety during the build was a key consideration for the contractors. Intrastack's steel frame system provided a safe solution; with rigorous fire testing, it was a solution that met the fire safety requirements of the customer.

Design flexibility – With Intrastack the focus is on having the earliest possible involvement in the project. This means, the solution Intrastack provides is optimised from the start, so system design guidance can be provided, and example details reviewed prior to installation.

Accuracy – For all projects accuracy is essential and it was no different for Ennerdale Avenue. From accuracy of the designs to manufacturing and installation, Intrastack ensured precision throughout the entire process.

Carbon management & sustainability - Intrastack uses design tools which ensure the dimensions are exact and waste is eradicated at the point of design. We also ensure deliveries are only made when panels are required on-site, reducing the number of trips, and eradicating unnecessary deliveries to site. Steel is a sustainable building fabric, in fact it offers up to 20% reduction in embodied carbon, compared with traditional construction methods and materials.





RESULTS

Intrastack uses a just-in-time approach to deliveries, eliminating unnecessary travel and transport uses from the process.

For Ennerdale Avenue, the steel frame panels were delivered to site exactly when they were required by the installation team. This meant the limited space on-site was not an issue for storing materials, as deliveries were only made when the panels were needed and didn't take up any of the limited storage space.

The costings for the project went as planned, this was made possible as Intrastack was involved from the early stages of the design process. This early involvement also meant the structures were the exact measurements and requirements as agreed and determined before any on-site work took place. As a result, there were limited changes required during the manufacturing process, helping to ensure the project was delivered on budget.

In addition, there was no on-site waste as the build components for the project were accurate within 1mm, because of the exactness of the Intrastack LGSF solution.

The Intrastack low rise housing solution helped to enhance the building performance by ensuring the

wall build-ups exceeded the national requirements, which are indicated in the Future Homes Standard consultation document.

The specified and designed U-value for the four semi-detached homes and four cottage flats was in-line with building regulations. By working with partners, both external and sister brands within Saint-Gobain, the homes built at Ennerdale Avenue exceed the required U-values for new dwellings, in turn ensuring energy-efficient homes for the occupants. Intrastack's solution can be designed to reach U-values as low as 0.13 W/m²K.

PROFESSIONAL SUPPORT

Thomas McKenna, CEO of R&M Property Group Ltd. contractor for the project commented: *"We are a principal contracting firm that specialises in the design and installation of new homes using Modern Methods of Construction. For this project, using Intrastack's LGSF low-rise housing system, we found the design and installation to be fast and efficient, with superb professional support provided by the Intrastack sales and technical teams."*

The project in numbers:

- 300 steel frame panels were used in total
- 10 deliveries for the eight properties
- 15 tonnes in total of cold rolled steel
- 2.6 tonnes in total of hot rolled steel
- 8 family homes completed

