

# Homing in on steel

Structural steelwork has provided the framing solution for the construction of a residential scheme on a confined town centre site in Ipswich.



Consisting of 30 flats, the affordable housing market in the Suffolk town of Ipswich is set to get a significant boost when the Orwell Centre project completes later this year.

Being developed by Handford Homes, which is owned by Ipswich Borough Council, the scheme includes a mix of one and two bedroom units. A total of 24 flats are accommodated within two steel-framed blocks that sit on Fore Hamlet, a main route into the town centre, while a smaller three-storey structure to the rear of the scheme houses six flats.

Throughout the country, the housing market and in particular the affordable sector is in need of new properties, and this end, Handford Homes has completed more than 100 homes since 2021. Most of these new properties have become part of Ipswich Borough Council's housing portfolio and are let with an affordable rent.

Set to add to this portfolio, the Orwell Centre is located on a plot formerly occupied by a church, which was demolished prior to main contractor SEH French starting onsite.

Having cleared the site in readiness for the construction programme, one of SEH French's initial tasks was the installation of piled foundations. Supporting the steel framed blocks, the piles are up 24m-deep.

With the foundations complete, SDM Fabrication was able to start its steel erection package, which also included the installation of the project's precast flooring units.

Using a steel-framed option has ensured the project achieves a quick construction programme, but that was not the only reason for picking this framing solution.

"The site is very confined and having looked at other methods, steelwork supporting precast flooring was the most cost effective solution and the one that works best on this project," explains J P Chick & Partners Associate, Radoslaw Zawadzki.

One of the benefits of using steelwork is that the material is prefabricated offsite and then delivered to the project in sizes and quantities that can be managed even on the tightest and smallest of sites.

This is particularly relevant to the Orwell Centre as the project is located on a main road,



which has no provision for a deliveries pit lane alongside the site. Instead, all materials including steelwork, are delivered to the rear of the project via a small access road.

On land that will eventually accommodate shared gardens and onsite parking, there is sufficient space for some materials to be stored, site cabins to be located, and importantly a spot for a 60t-capacity mobile crane.

Although both of the two steel-framed blocks sit next to each other, they are structurally-independent. Separated by a movement joint, there is no internal link between the two blocks.

Topping out at six-storeys and four-storeys respectively, the buildings are both based around a regular 6m column grid pattern. Columns are spliced at two floor intervals, which means they are not too long to be manoeuvred onto the tight site, and don't exceed the lifting capacity of the crane.

A combination of bracing systems provides the structural stability for both blocks. Cross bracing is located within some internal partitions, while the six-storey building has a lift shaft, which

Watch a video of this project here

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**FACT FILE****Orwell Centre, Ipswich**

Main client: Handford Homes

Architect: Barefoot &amp; Gilles

Main contractor: SEH French

Structural engineer: J P Chick &amp; Partners

Steelwork contractor: SDM Fabrication

Steel tonnage: 192t

provides a location for further bracings.

“Bracings could not be positioned within the exterior walls as they would have interfered with the windows, so some bays have been portalised,” explains Mr Zawadzki.

Sequencing has been key for SDM Fabrication’s package as there is only enough room onsite for one delivery load of steelwork or precast planks. This means each load has to be fully unloaded and erected, before the next one arrives.

The confined nature of the site has meant that two levels of steelwork are typically erected, followed by the installation of the precast planks. The floors are then given their concrete topping, before the next two levels of steelwork are erected.

The sequencing also includes the roofs, which are formed with precast planks, supporting a blue roof system. This is said to be an effective solution for flat roofs as it provides a temporary storage for rainwater and limits run-off during and after heavy rainstorms.

A total of 24 flats are evenly distributed between both blocks, although the taller six-storey building does accommodate slightly larger units. Adding to

their attractiveness, the upper floors of the taller block will also benefit from views of the nearby Ipswich waterfront.

Commenting on the scheme, SEH French Managing Director, Simon Girling, says: “Affordable homes are an essential part of every community and we are thrilled to be working with Handford Homes on this project.

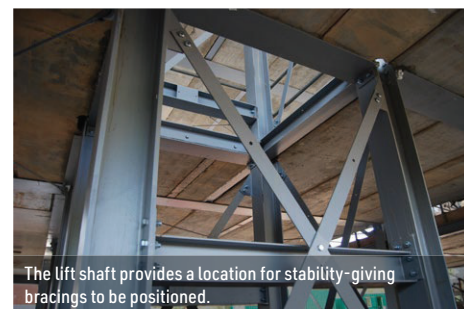
“We share their commitment to providing high-quality places for people to live in which enhance the living standard in Ipswich. The Orwell Centre is in an excellent location, and we look forward to completing construction.”

Summing up, Councillor Colin Kreidewolf, Chair of Handford Homes, says: “Launching the construction of The Orwell Centre was a landmark moment. “Our forward-thinking housing programme delivers exceptional, affordably priced homes, incorporating shared green spaces, ample parking, and prime access to Ipswich’s waterfront and town centre.

“This project aligns with Ipswich Borough Council’s vision of furnishing the community with energy-efficient, high-quality housing.” ■



Constructed using masonry, the small block housing six flats has a small amount of steelwork, which forms the entrance area.



The lift shaft provides a location for stability-giving bracings to be positioned.