

CASE STUDY

Client: PLACES FOR PEOPLE
Product: INSITE
Fabricator: PINEFIELD GLASS
Supplier: KIRKWOOD TIMBER FRAME



Eurocell's InSite Window System, Revolutionising Construction Efficiency In Inverness

- Eurocell's InSite system transformed window installation for a block of four terraced houses in Inverness
- Windows manufactured at Pinefield Glass incorporated the InSite hinge with the cavity barrier
- Kirkwood Timber Frame integrated the windows into timber frame panels
- The panels were then transported to site and erected over two days; speeding up the process of achieving a weatherproof structure

Challenge

Affordable housing provider Places for People needed to construct a block of terraced houses near Inverness swiftly and efficiently to control costs and accommodate residents promptly. However, the conventional construction process, with its multitude of stages, prolonged time on site, and diverse specialised tasks, posed significant challenges to meeting tight deadlines.

Solution

The InSite system introduced by Eurocell, comprising a specialist hinge and sealant, a cavity barrier and window, enables house construction to be expedited by manufacturing within a factory environment. The windows were manufactured with the cavity barrier and InSite bracket fitted, at Pinefield Glass, Elgin. These were then integrated into timber frame panels at Kirkwood Timber Frame in Sauchen, Inverurie. The panels were transported to the site and erected over a two-day period (12 - 13th December 2023).

InSite streamlines the installation of fully glazed, finished windows into wall panels during the factory production process, and enables transportation to site easily as the window sits within the frame cavity, reducing damage, movement in transit and the need to pack between the panels.

This innovation also reduces onsite disruption and working at height, reduces Health and Safety concerns, minimises labour costs, and accelerates build schedules - the window sits within the cavity, so when craning panels into place, the panel sits vertical making it easier to place into position.

"Eurocell played a key part in our innovative project with InSite, speeding up the construction process for a block of four terraced houses in Stratton, Inverness. The system provided by Eurocell allowed the seamless integration of windows from Pinefield Glass into Timber Frame panels, at Kirkwood Timber Frame and erected on-site within two days. The windows could be effortlessly positioned with a simple push-out action during installation, reducing window installation time by at least 75%."

Laura Fiddes

Head of Technical Places for People

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Once erected on-site, the window is pushed out to its finished position, ensuring the 50mm cavity. The window is then plumbed and squared, locked off, sealed and the exterior of the building is ready to be clad.

The entire panel assembly can then become wind and watertight within one day, allowing interior trades to commence work immediately. Noteworthy features include improved safety, reduced site traffic, reduction in movement of scaffolding lifts and compliance with relevant Building Regulations.

The InSite system has been tested by Warrington Fire [part of Exova Group] to BS 476 Part 20, 1987. This certifies that when all of the approved parts within the system are used together the InSite system prevents the spread of fire and smoke from or to the cavity. This is the only system of this type to hold this fire certification.

Result

The build was completed 9 days quicker than typical timber frame construction of this scale:

- **Faster and easier:** Reduces on-site disruption and labour costs, accelerates build schedules, and allows immediate commencement of interior trades.
- **Safer:** As the whole commissioning operation of the windows can be carried out from inside the building, this eliminates working at height, moving windows about on scaffolding, enhances site safety and security and reduces site traffic with no separate window deliveries.
- **Peace of mind:** Compliant with Building Regulations, thoroughly tested for air, water, and wind pressure and independently tested for Fire and Smoke resistance, assessed for load-bearing capacity.

Laura Fiddes, Head of Technical and Places for People said: "Eurocell played a key part in our innovative project with InSite, speeding up the construction process for a block of four terraced houses in Stratton, Inverness. The system provided by Eurocell allowed the seamless integration of windows from Pinefield Glass into Timber Frame panels, at Kirkwood Timber Frame and erected on-site within two days. The windows could be effortlessly positioned with a simple push-out action during installation, reducing window installation time by at least 75%.

"The collaboration between timber kit supplier Kirkwood Timber Frame and window manufacturer Pinefield Glass was key to ensuring a smooth transition to the site and seamless on-site installation. Eurocell's contribution was integral to the success of this project, with the main advantage being their teamwork and coordination with our primary contact, Kirkwood Timber Frame. Valuable lessons learned include emphasising training and detailing for site personnel and subcontractors for future installations."

Bryan Yule, Managing Director at Pinefield Glass said: "The Places for People development spanned a considerable time

frame and faced setbacks due to the pandemic. But working closely with Eurocell and Kirkwood Timber Frame we embraced the challenges and we were on board to promote the project. The trial site in Inverness with Places for People showcased more than just pre-fitted windows, it introduced closed panel kits, transforming the construction process for four terraced houses.

"The direct comparison of traditional methods versus using the InSite system, along with methods introduced from Kirkwood Timber Frame at this site revealed a significant saving of 9 days of on-site time. The success at Inverness has been notable, but the challenge lies in breaking the mould and steering people away from their accustomed practices. "The improvements extend beyond mere efficiency, the InSite system brings about substantial health and safety benefits. The conventional practice of manually hoisting windows up scaffolds is replaced by a streamlined process of fitting windows in panels before arrival on site, the panels being craned into position, and the windows simply pushed into place, eliminating the associated risks.

"Working alongside Eurocell on this project, it's evident that Angus Cowie from Eurocell has been instrumental in driving the InSite system to kit manufacturers. This innovative project, thoroughly tested and fire-tested, demonstrates Eurocell's commitment to pushing boundaries and bringing transformative solutions to the construction industry."

Malcolm Thomson, Managing Director, Kirkwood Timber Frame Ltd said: "Through strategic partnerships and innovative solutions like the InSite system, Kirkwood Timber Frame Ltd is revolutionising the construction industry. Our collaboration with Pinefield Glass exemplifies the power of integration, allowing windows to easily fit into our panels, streamlining the building process and delivering efficiency. By embracing pre-insulated closed panels and championing the fast build process, we're not just selling products, we're offering a comprehensive solution that saves time, money, and minimises on-site labour and damage.

"In an industry where efficiency is paramount, this approach stands out. While traditional procurement methods may pose challenges, our partnership-driven model with clients like Places for People showcases the value of collaboration.

"As Scotland leads the way in timber construction, with 92% of new build housing utilising timber frames, we're poised to capitalise on the growing demand in the UK where only 9% of new build housing utilises timber. Together, with our partners and clients, we're shaping the future of construction.

"InSite is a game changer; it supports net zero targets, reduces waste, and expedites construction processes. By streamlining installation, minimising material waste, and enhancing energy efficiency through the reduction of heat loss and air leakage, it revolutionises sustainable construction practices. These advancements not only save time but also contribute to lowering the carbon footprint of construction projects."

The Eurocell logo consists of the word "eurocell" in a white, lowercase, sans-serif font, set against a red rounded rectangular background.

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Eurocell reflections

Angus Cowie, Business Development Manager at Eurocell said:
“Time saved is the essence of innovation and Eurocell’s InSite product has truly exemplified this in our recent project. The hinge mechanism, paired with timber panels for construction, sets a new pace for building processes. Scotland has embraced this innovation and the English market needs to catch up.

“The efficiency is remarkable – windows seamlessly integrated, roofs installed, and buildings insulated in a swift process. This could be a game-changer for social housing, especially for local authorities and housing associations. The use of this system helps achieve a 75% PMV value presenting a compelling case for increased funding. In the realm of achieving the end product, InSite not only meets but surpasses expectations, making it a standout solution in construction efficiency.”

How it works

- 1 Fabricate windows
- 2 Fit into panels in the factory
- 3 Install wall panels on-site
- 4 Lock InSite into position (push out)
- 5 Clad around the window
- 6 Finished solution



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