

# House without bills

The pursuit of energy efficiency in the UK housing market has reached a new milestone with the recent broadcast of Channel 4's *House Without Bills*, presented by Guy Martin, (pictured). The television programme documented an ambitious renovation project involving a 1930's semi-detached property in Greater Manchester

The primary objective of the renovation featured on *House Without Bills* was to transform a standard, energy-inefficient 1930's home into a property capable of operating with zero energy bills. To achieve this, the project team aimed for the Passivhaus standard which aims to reduce the buildings ecological footprint.

A critical component in the project was illbruck i3 sealing system. The system was selected because of its claimed superior airtightness and weather protection in high-performance retrofit scenarios.

Retrofitting existing housing stock presents significant challenges compared to new builds. Older properties often suffer from significant thermal bridging, poor insulation, and high levels of air permeability. Addressing these issues requires not just improved windows or heating systems, but a holistic approach to the building envelope.

The project required a sealing solution that could guarantee long-term performance, prevent condensation, and ensure the airtightness levels necessary for Passivhaus certification were met. It was due to this demanding context that the illbruck i3 sealing system was specified.

## The solution

An illbruck spokesman says that the selection of the illbruck i3 sealing system underscores its status as a market-leading solution for window and door sealing. Unlike some methods that rely on a single line of sealant, the i3 system utilises a three-layer principle. This approach ensures that the joint is sealed effectively against the weather while remaining permeable to water vapour, preventing the accumulation of interstitial condensation.

## The three-layer principle

The i3 system separates the sealing function into three distinct zones, adhering to illbruck's 'inside tighter than out' principle.

The external seal provides weather tightness and protection against driving rain, whilst allowing moisture vapour to escape from within the joint.



The intermediate seal provides thermal and acoustic insulation, ensuring the joint does not become a weak point in the building's thermal envelope.

The internal seal provides airtightness and vapour separation, preventing warm, moisture-laden air from the interior entering the joint and causing condensation.

The illbruck spokesman says: "The inclusion of the illbruck i3 Sealing System in Channel 4's *House Without Bills* serves as a testament to the product's technical excellence. It demonstrates that with the correct specification of high-performance materials, even challenging retrofits can achieve exemplary standards of energy efficiency.

"For homeowners, architects, and specifiers, this project offers a clear blueprint for the future of sustainable housing. It highlights that the path to lower energy bills and reduced carbon emissions begins with the fabric of the building itself. Tremco CPG UK remains committed to supporting this transition through the continued innovation and supply of precision-engineered sealing and bonding solutions." □

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# An updating upgrade

ISO-Chemie's thermal insulating and load-bearing bracket support system is providing energy efficiency improvements to an Edwardian property in Oxfordshire

Winframer units have been retrofitted as part of an initiative to bring the poorly-insulated solid walled house built in 1909 in Oxford, up to current energy efficiency standards, providing better quality accommodation for the homeowner along with long-term cost savings.

Passivhaus certified and fire rated to up to 30 minutes, Winframer is a prefabricated installation frame, manufactured to accommodate cavities up to 250mm that allows windows to be supported independently from the face of the wall regardless of any external cladding being in place.

The product's application in Oxford is seen as part of a solution to meet a wider government strategy to reduce carbon levels in housing that has single skin walls or non-cavity walls – these buildings have a reputation for leaking considerable amounts of energy, heat and sound.

Nikki Lambert of development contractor Lambert Home Builds, says the project was a whole house retrofit: "Using the Winframer system is a game changer for us as the existing windows are being replaced with new high performance triple glazing. They are then moved into the external wall insulation system, where it's integral to have a secure fixing system as well as a means to mitigate thermal bridging."

Andy Swift, ISO-Chemie's sales and operations manager UK and Ireland says: "Using Winframer as a platform for the windows to be moved forward, allows a cavity wall to be created outside the existing one. This can then be filled with insulation to massively improve thermal efficiency. As it's thermally efficient and airtight, Winframer is proving to be an easy and cost-effective way to improve the quality of properties."



"The composite Winframer brackets can bear heavy window loads, including bi-fold doors, to provide a reliable, strong and high-performance support frame. Installation is quick with windows attached directly and secured mechanically using either standard fixing screws or fixing lugs in the usual manner.

"A hinged insulation core combines with the composite structural bracket to become an integral part of the overall wall structure, providing compliance with Building Energy Act requirements and the RAL quality assurance association."

ISO-Chemie is one of Europe's main producers of impregnated foam sealants, specialising in the manufacture of foam products from polyethylene (EPE), polypropylene (EPP) and polyurethane (PUR) using the latest production techniques. □

[www.iso-chemie.eu/en-GB](http://www.iso-chemie.eu/en-GB)