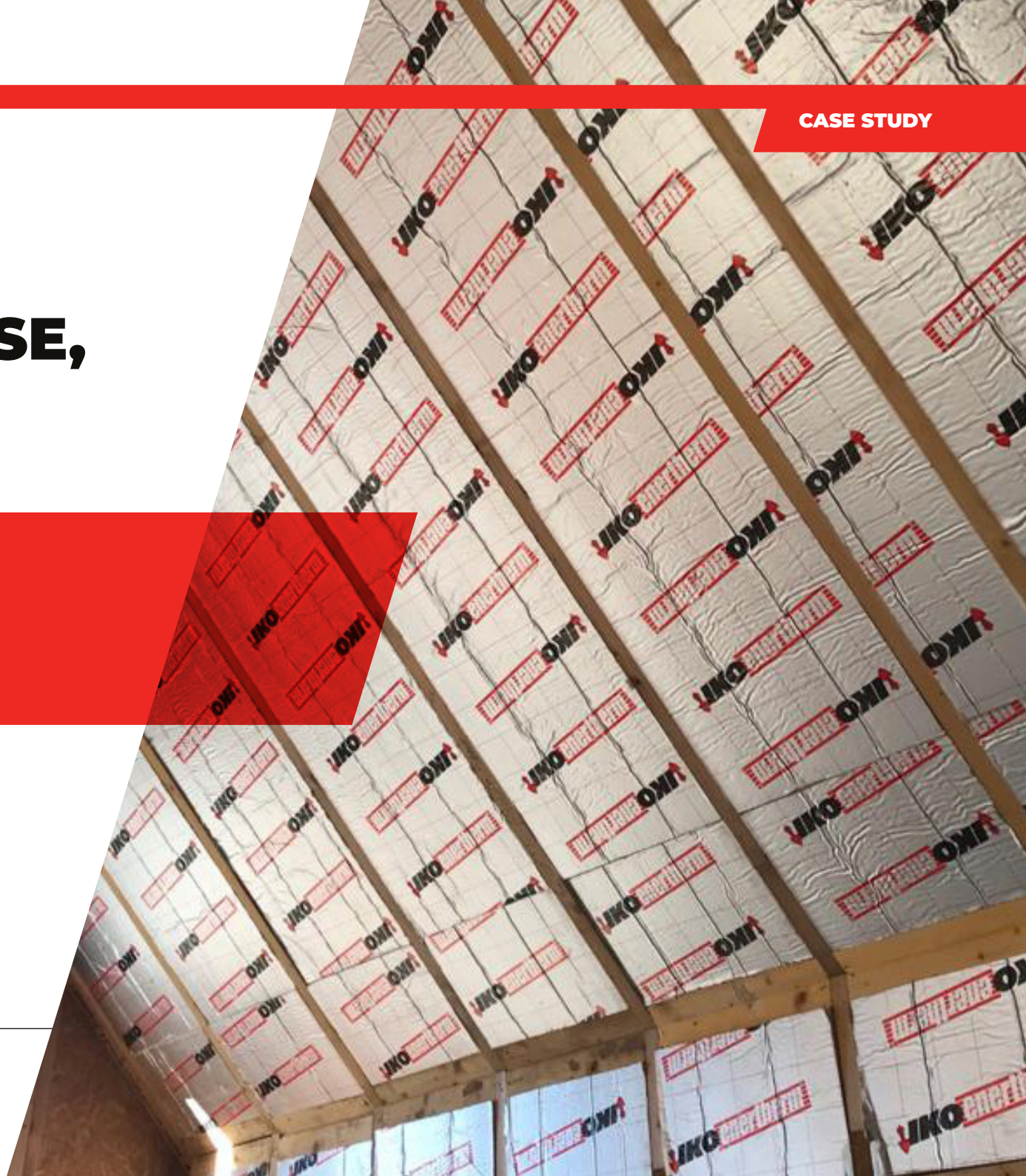
CASE STUDY

HIGHWOOD HOUSE, WEST COAST OF SCOTLAND

IKO enertherm ALU PIR insulation
950m²

Project sector: Residential



CONTRACTOR

Timber Construction Group

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BRIEF

Highwood Home Residence is a new four-bedroom detached home in the village of Dalrymple, Scotland. The picturesque village is close to many of southwest Scotland's most beautiful beaches, making the new build property the ideal coastal escape.

Elaine Kennedy Architects was enlisted to oversee the project. Designed with sustainability in mind, a key objective of the build was to ensure that the property was thermally future-proofed and met thermal performance building regulations. To achieve this, a fabric first approach was subsequently chosen; this strategy prioritises the energy efficiency of a property from conception and requires architects, developers, and self-builders to comply with stringent energy efficiency requirements. Not only are fabric first houses far more cost-effective to build and run, they also offer many benefits for the eco-conscious end-user – not least boosting the environmental credentials of their new home.

Choosing a quality, high-performance insulation system for the property's walls, floors and pitched roof was therefore critical to maximise thermal efficiency and help ensure the home was fit for the future.

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CHALLENGES

Highwood Residence's open countryside location posed a key challenge for Elaine Kennedy Architects and Timber Construction Group; it was critical to protect the property against the elements during the build and prevent water ingress from wind-driven rain. This was also key when choosing the insulation system. This led Elaine Kennedy Architects to seek a PIR insulation solution that was watertight and airtight, while also being able deliver the required U-values.

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SOLUTION

IKO's high-performance enertherm ALU PIR insulation was specified as the main insulation system for Highwood Residence's walls, floors and pitched roof.

IKO enertherm's multi-application, lightweight, high-performance board provides a thermal capability of 0.022 W/m2K and fits easily between timber studs, roof rafters and floors to create a superbly flat foundation for a waterproofing finish. By using this system, differing airtightness levels and ventilation strategies could be incorporated, along with various heating and hot water approaches. The boards were installed to thickness in all systems in line with achieving new building regulations and delivering the fabric first approach.

Using IKO enertherm ALU PIR insulation, the following U-values were achieved:

- Ground floor: 150mm IKO enertherm ALU PIR insulation achieved a U-value of 0.11 W/m2K
- Walls: Full-fill IKO enertherm ALU rigid PIR insulation achieved a U-value of 0.12 W/m2K
- Roof: 140mm IKO enertherm ALU between rafters and 90mm below achieved a U-value of 0.10 W/m2K

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PRODUCT / SYSTEMS

1. IKO enertherm timber wall framing system
2. IKO enertherm ALU pitch roof system
3. IKO enertherm ALU above slab floor system

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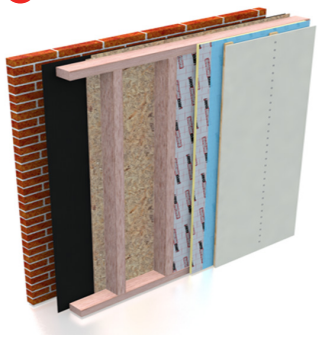

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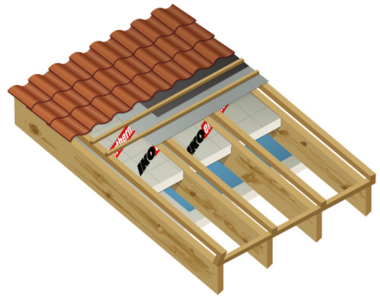

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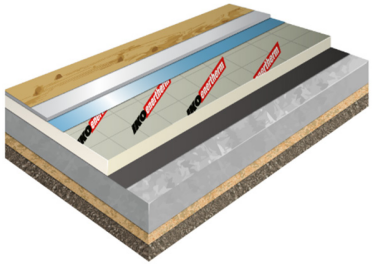

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