

# East Ayrshire Council & The Energy Agency Rankinston 'Pathfinder' Project



## PROJECT DETAILS

**CLIENT** East Ayrshire Council & The Energy Agency

**PROJECT** Rankinston 'Pathfinder'

**LOCATION** Rankinston, East Ayrshire

**START DATE** 29 January 2024

**DURATION** 16 weeks

**END DATE** 22 April 2024

**VALUE** £216,184

**RTM Procurement for Housing (Scotland) Lot 2**  
**EESHS2 Framework**

**CONTRACT** Bespoke D&B Agreement

**ROLE** Principal Contractor

## PROJECT BACKGROUND

Operating as East Ayrshire Council's (EAC) Management Agent, The Energy Agency (EA) is responsible for the delivery of the Council's Home Energy Efficiency Programme. Part of this programme is navigating the Council's 'Pathfinder' initiative which focusses on completing whole house retrofits in a single phase of works and determining the best whole house approach to improving energy efficiency and thermal performance, whilst reducing heat and energy demand, fuel poverty and increasing tenant comfort. The Pathfinder initiative will enable EAC and EA to determine if delivering a whole house retrofit approach on a small scale is more beneficial overall than installing single measures over a longer capital programme.

McConnell was appointed to design, supply and install a multiple measure Whole House Retrofit solution in accordance with PAS2035:2019 and PAS2030:2019 to four-in-a-block council flats in Rankinston, with the aim to bring the properties up to modern standards, achieve net-zero carbon emissions and an EPC Band A rating. The properties are cottage style flats of traditional masonry construction, built in the 1960s with a mix of timber and concrete floors and a timber truss roof with concrete roof tiles. Although the properties were found to be in a reasonable structural condition, significant energy efficient improvements could be made to achieve net zero.

## SUMMARY OF WORKS

The Energy Agency appointed Diamond & Co (Scotland) Ltd as their Retrofit Consultant (Assessor, Coordinator, Evaluator) who managed and fulfilled the various roles associated with PAS2035:2019 and McConnell appointed Framed Estates as Retrofit Designer. Using a 'Fabric First' approach, Diamond & Co ensured all newly installed EEMs (energy efficient measures) were compliant with The Measures Interaction Matrix and Risk Pathway C.

At the start of the project, we hosted a consultation event in a local community centre where we delivered a presentation on the works that would be undertaken and how each EEM will benefit the properties, in addition to explaining our traffic management approach throughout the construction phase. Due to the extensive nature of the works, in particular the underfloor insulation in the ground floor properties and the various trades involved in the project, tenants were decanted.

## AT A GLANCE

- ▶ Achieved net zero in a single phase of works
- ▶ Properties achieved EPC Band A
- ▶ Works delivered in full compliance to PAS2030:2035/2019 Standards
- ▶ Contributed to the Climate Change (Scotland) Act 2019, Fuel Poverty (Scotland) Act, Social Housing Net Zero Standards, Heat in Buildings Strategy 2021, Scottish Technical Standards.

The properties were therefore void during the works with two properties worked on at any one time.

The project was completed on time and on budget with Diamond & Co conducting appropriate monitoring and evaluation of all installed EEMs to determine whether the intended outcomes of the whole house retrofit approach had been realised. Sensors installed will monitor carbon dioxide, temperature and humidity through real-time living conditions. Building performance evaluations were conducted pre- and post- construction, which included:

- ▶ Air permeability test
- ▶ EPC assessment
- ▶ Thermography survey
- ▶ In-situ U-value measurement
- ▶ Internal humidity monitoring
- ▶ Internal temperature monitoring
- ▶ Brief questionnaire-based interviews with occupant(s)
- ▶ Identification of any occupancy factors or actions that might be contributing to poor outcomes.

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## SCOPE OF WORKS:

- ▶ Access scaffolding and temporary works
- ▶ Roof cleaning
- ▶ Hacking off old render, dubbing out and cleaning walls
- ▶ Hybrid of cavity wall insulation extraction and external wall insulation to 0.18W/m<sup>2</sup>K
- ▶ Detailed architectural design around all junctions to avoid thermal bridging
- ▶ Draughtproofing/sealing to 2.00ach@50Pa
- ▶ Triple glazing and insulated external doors to to 1.0W/m<sup>2</sup>K
- ▶ Extractor units in each property
- ▶ Mechanical ventilation heat recovery units
- ▶ Monitored smoke/heat alarms
- ▶ Air source heat pump to ground floor flats
- ▶ High heat retention storage heaters to first floor flats
- ▶ Solar PV with battery storage
- ▶ Low energy lighting throughout dwellings
- ▶ Loft insulation to 0.12W/m<sup>2</sup>K
- ▶ Suspended underfloor insulation to 0.15W/m<sup>2</sup>K
- ▶ Demolition of existing chimney and infill roof
- ▶ Environmental sensor installations.

## CRITICAL SUCCESS FACTORS

- ▶ Our established office and depot in Kilmarnock provided a local platform that made us more visible, accessible, and agile for the sensitive nature of the project
- ▶ Appropriately qualified retrofit consultants as well as trained and experienced Contract and Project Management team
- ▶ We took complete ownership of the project and delivered a fully comprehensive, management service that included:
  - Building Warrant Applications
  - Structural Engineering Surveys
  - Asbestos & Refurbishment Surveys
  - Resident Liaison Property Surveys
  - Insurance Backed Guaranteed Products
- ▶ Proactive engagement with the tenants, local community and near neighbours by hosting a public consultation event to stakeholders, attending consultations and public meetings.
- ▶ Compliance with our ISO 9001, 14001 and 45001 management systems and safe operating procedures saw us deliver high quality installations and the highest regard for environmental protection and waste management with more than 98% of waste being segregated, recycled and diverted from landfill



PRE		
Walls	Insulated cavity walls	0.43 W/m <sup>2</sup> k
Floors	Uninsulated suspended floors	1.50 W/m <sup>2</sup> k
Roof	Minimal loft insulation	1.00 W/m <sup>2</sup> k
Glazing	Double glazing	2.60 W/m <sup>2</sup> k
Air Tightness	Leaky building	11.50 ach@50Pa
Thermal Bridging	High thermal bridging	0.20 W/m <sup>2</sup> k
POST		
Walls	Insulated cavity wall and EWI	0.18 W/m <sup>2</sup> k
Floors	Insulated suspended floors	0.15 W/m <sup>2</sup> k
Roof	Additional loft insulation	0.12 W/m <sup>2</sup> k
Glazing	Triple glazing	1.00 W/m <sup>2</sup> k
Air Tightness	Draught-proofing and sealing	2.00 ach@50Pa
Thermal Bridging	Mitigated	0.10 W/m <sup>2</sup> k