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# CASE STUDY

WEST OF SCOTLAND  
HOUSING ASSOCIATION  
IMPLEMENTS HOMELINK  
CONNECTED HOME  
SOLUTION



WEST OF SCOTLAND HOUSING  
ASSOCIATION IMPLEMENTS HOMELINK  
CONNECTED HOME SOLUTION IN  
GLASGOW'S LARGEST PASSIVHAUS  
DEVELOPMENT

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West of Scotland Housing Association's (WSHA) Springfield Cross development has been built to the highest energy standards specification called Passivhaus. This standard ensures higher levels of airtightness in the building, produces net-zero residences and improves energy efficiency for residents. To monitor the effects of this new standard on the project WSHA have installed the HomeLINK Connected Home Solution in every residence.

## INTRODUCING THE PASSIVHAUS STANDARD

Founded in 1965, West of Scotland Housing Association (WSHA) strives to be more than just a social landlord, focusing on improving the lives of their tenants by responding to their needs. The association currently have around 4200 social housing properties throughout the west of Scotland, ranging from tenemental flats, family homes, amenity properties and sheltered housing.

WSHA has developed a 36-flat development to the Passivhaus Standard, to be let as social rented homes. The Passivhaus Standard aims to produce net zero-ready buildings that require minimal energy for heating and cooling. Through the use of thicker insulation, triple glazing and innovative technologies, heat loss is significantly reduced offering residents a comfortable environment that's designed to improve their health and well-being in addition to significantly lower fuel bills.

## THE CHALLENGE: ENSURING THE PERFORMANCE

As higher standards of new builds are being introduced throughout Scotland, buildings are becoming more airtight, bringing indoor air quality to the forefront of the agenda.

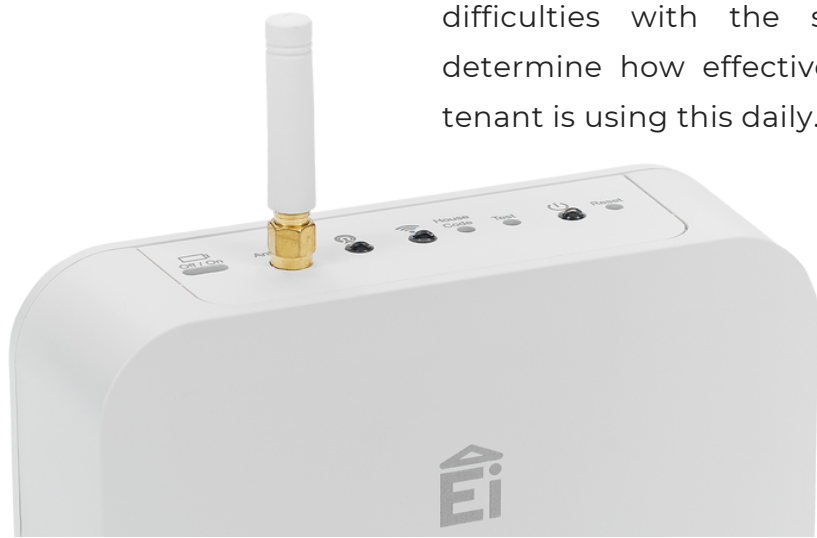
With higher levels of airtightness in the high-rise to improve energy efficiency, there are increased risks of damp, mould, and poor indoor air quality. WSHA implemented a Mechanical Ventilation with Heat Recovery (MVHR) system to assist in maintaining good air quality; MVHR works by increasing clean airflow within the property, extracting moisture-laden air and resupplying fresh filtered air back in, whilst recovering any heat generated by the occupants use of the properties.

## THE SOLUTION: ANALYSING THE BUILDINGS PERFORMANCE

WSHA has implemented a proactive approach to ensure these systems' effectiveness by monitoring the building's environmental conditions with the HomeLINK Connected Home Solution. Being able to evaluate real-time data is important for WSHA, to help tenants get the best out of their homes, as well as the health and well-being of their residents and ensure the design intent of the Passivhaus Standard is being met.

They have installed Aico's Ei1000G Gateway and HomeLINK environmental sensors in each of their properties. By utilising a multi-network sim card and Radio Frequency interconnection to the Gateway, the sensors have been seamlessly fitted onto the ceiling and can provide the association with up-to-date data on carbon dioxide, temperature, and humidity, on a room-by-room basis for each property.

Having access to these insights can pinpoint whether poor indoor air quality is a result of resident behaviour or from difficulties with the system. The organisation can also determine how effective the MVHR system is, and how the tenant is using this daily.





This is West of Scotland's first Passivhaus Development and Glasgow's largest. Passive Houses are ultra-low energy buildings, maximizing energy gain and reducing thermal loss through airtightness. Eliminating uncontrolled draughts can lead to issues such as increased condensation, mould, and poor indoor air quality.

The ventilation system installed is vital to maintaining good quality air and any failures could have a detrimental impact on the building and our tenant's health and well-being. We decided to install the Aico Environmental Sensors to give us the comfort that the building is performing as designed and our tenants continue to live in healthy homes and benefit from the low energy requirements.

Karen Shaw, Development Manager for West of Scotland Housing Association



## THE FUTURE : REVIEWING THE DATA

Empowering the residents with their own data, and personalised insights through the HomeLINK App for Residents means they have access to temperature, humidity and carbon dioxide data and handy advice on the measures they can take to improve the indoor environment of their homes.

Residents can use this information to reduce their energy bills further by running their homes with energy efficiency in mind. While landlords will see improvements in the maintenance and health of their housing stock with less intervention.



"As the UK social housing sector now rapidly adopts the use of IoT technologies, to help increase not only resident safety; but Improve resident health and well-being. It has been great to work alongside Karen, Scott and the team at West of Scotland Housing Association on their Passivhaus site in the East End of Glasgow.

This will not only give the association valuable insights into indoor air quality; but also provide tenants with access to their homes data with the HomeLINK resident app. We look forward to continuing working closely with West of Scotland in all future development and retrofit projects

Gregor Morrison, Aico's Regional Specification Manager for Scotland Central



West of Scotland Housing Association are going to monitor the project over a six-month period. They will evaluate resident engagement with the HomeLINK App for Residents and how the organisation has implemented the data collected from the environmental sensors. There will be a further case study to explore the findings of the WSHA.

