



January 2025

CASE STUDY

WOLVERHAMPTON HOMES UTILISE
AICO'S HOMELINK IOT SOLUTION IN
SHDF RETROFIT PROJECT:
PLANNING AND APPLICATION



TOGETHER WITH



WOLVERHAMPTON HOMES
HAS PARTNERED WITH AICO
TO IMPLEMENT THE
HOMELINK CONNECTED
HOME SOLUTION,
IMPROVING HOUSING
QUALITY.

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Wolverhampton Homes, as part of its commitment to improving housing quality and energy efficiency, has been a key participant in the Social Housing Decarbonisation Fund (SHDF) Wave 2.1 and 2.2. These initiatives align with the UK government's broader goals of decarbonizing social housing and reducing fuel poverty. To ensure compliance with PAS 2035 requirements and improve the performance of retrofitted properties, Wolverhampton Homes has partnered with Aico to implement their HomeLINK Connected Homes Solution. This cutting-edge technology is helping to monitor retrofitted properties and improve energy performance while offering significant benefits for both Wolverhampton Homes and its residents.

THE ROLE OF AICO'S HOMELINK TECHNOLOGY IN RETROFITS

The PAS 2035 standard, which underpins all energy-efficient retrofit projects in the UK, mandates a 'whole house' approach, ensuring that retrofits are performed systematically with careful consideration of ventilation, heating, insulation, and other factors to prevent unintended consequences, such as damp or overheating. Aico's HomeLINK Connected Home Solution supports Wolverhampton Homes in meeting these requirements by enabling real-time monitoring of indoor environmental conditions, including temperature, humidity, and carbon dioxide (CO₂) levels.

A key aspect of the SHDF Wave 2.1 and 2.2 projects is the application of Aico's Internet of Things (IoT) technology to ensure these improvements are not only sustainable, but also monitored for long-term performance. HomeLINK's Environmental Sensors provide valuable data that can be used to:

- **Ensure Compliance with PAS 2035:** By constantly monitoring environmental conditions, Wolverhampton Homes can ensure that the retrofitted homes meet the stringent PAS2035 guidelines on ventilation, air quality, and overall energy performance.
- **Predict and Prevent Issues:** The data allows Wolverhampton Homes to predict potential issues, such as mould growth due to excess humidity or poor ventilation. This enables proactive maintenance and reduces costly repairs.
- **Long-Term Performance Tracking:** Retrofit work is more effective when the long-term impact is evaluated. HomeLINK enables Wolverhampton Homes to track energy usage, occupant comfort, and other key performance indicators over time, ensuring that retrofits deliver lasting benefits.



PROCESS MAPPING

Prior to starting the works, Aico held a series of meetings with various teams from within Wolverhampton Homes. These sessions, brought together by Stuart Hobbs, were used to process map the HomeLINK system against tangible outcomes for all areas of the business. This process mapping combined teams from:

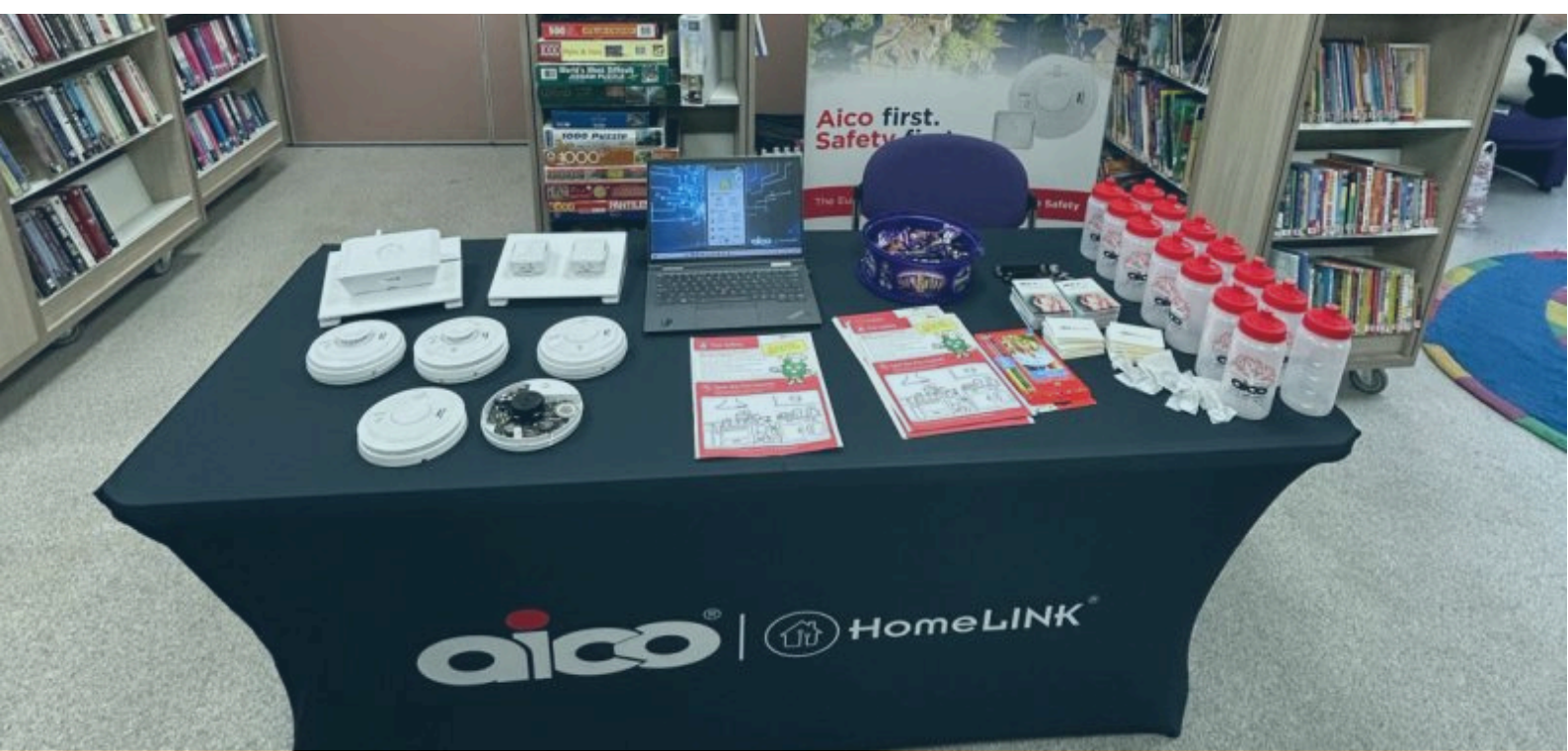
- Repairs – Healthy Homes
- Stock Investment
- Energy and Climate Change
- Housing Management
- Fire Safety
- Gas Safety
- Electrical Safety
- Aico's Customer Success Team
- Aico Relationship Management

To enable effective ROI, all insights and maintenance alerts were mapped, and the relevant areas of the business were assigned responsibility for an outcome, alongside nominated persons for accountability. This enabled a clear process to be identified for the generation of insights and reports at the frequency they were needed by the business, and how they were to be implemented into business-as-usual tasks.

BUILDING TRUST AND RESIDENT ENGAGEMENT FOR PROJECT SUCCESS

An essential component of Wolverhampton Homes' retrofit project is resident engagement, a process that helps ensure the smooth execution of construction and retrofit works while fostering trust and collaboration between residents and the project team. Prior to the commencement of each phase of the SHDF Wave 2.1 and 2.2, Wolverhampton Homes, in partnership with Aico, actively engaged with residents to educate them on the retrofit process, the benefits of the new technologies, and how they could maximise the value of the improvements in their homes.

These engagement efforts included a series of resident engagement days across the City of Wolverhampton, led by Jolene Bell of Wolverhampton Homes, Samantha Mason of Wates, Anthony Pennant of United Living, and Gareth Butler MIET, Relationship Manager for Aico. The events were conducted in partnership with Wolverhampton Homes, their construction partners Wates and United Living, two of the UK's leading contractors responsible for delivering retrofit works across the properties, and Constructive Thinking who worked on the design.



The Importance of Resident Engagement Days



Building Trust and Reducing Disruption: Resident engagement days serve as a critical platform for building trust between residents and the organisations involved in the retrofitting process. Construction projects, particularly those that involve retrofitting occupied homes, can lead to temporary disruptions, which can be a source of anxiety for residents. Through face-to-face interactions at these engagement events, Gareth Butler and the HomeLINK Customer Success team were able to directly address residents' concerns, answer their questions, and explain the benefits of the IoT technology that would be installed in their homes.

By involving residents in the process early, Wolverhampton Homes and its partners helped mitigate any worries about the upcoming works and clearly communicated how the improvements would enhance residents' living conditions. These efforts are crucial in ensuring that residents feel confident, informed, and cooperative, leading to fewer disruptions during the construction phase.



Educating Residents on the Benefits of the IoT and Smart Meters: The engagement days also focused on educating residents about the HomeLINK Connected Home Solution and the benefits of smart meter integration. Gareth and the Customer Success team demonstrated how these technologies would help residents monitor environmental conditions in real-time, providing greater control over their home's energy efficiency and comfort levels. Importantly, these sessions included guidance on how to use the HomeLINK Resident App to monitor indoor temperature, humidity, and air quality, and how they could make small changes in behaviour to optimise these conditions and save on energy costs.



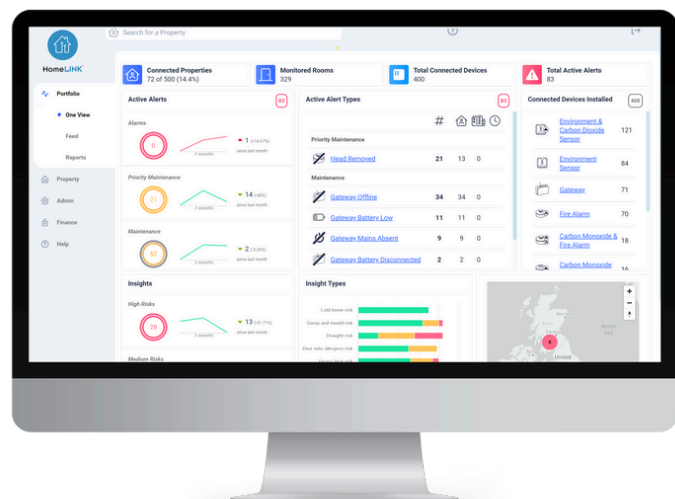


Additionally, the introduction of smart meters and their integration into the HomeLINK app was explained as a valuable tool for residents to track and reduce their energy usage. With rising energy costs being a significant concern, these demonstrations were well-received, as residents could see the tangible benefits in terms of potential energy and cost savings.



Collaborating with Construction Partners: Throughout the engagement days, construction partners, Wates and United Living, added further value to the events. Residents were able to meet the teams responsible for executing the retrofit work, fostering a sense of transparency and partnership. The presence of the construction partners also allowed for detailed discussions about the logistics of the retrofit, including timelines, what to expect, and how any disruptions would be managed.

The collaboration between Wolverhampton Homes, Aico, Wates, and United Living ensured that residents had a holistic understanding of the project and its phases, which is vital for maintaining good relationships and ensuring that the project proceeds smoothly.



TRUST IN TRAINING

Prior to starting the work, it was essential that all installers were competent and confident to install Aico life safety equipment.

Gareth Butler MIET, Relationship Manager for Aico, led comprehensive training sessions with external contractors, including Wates, United Living and Dodd Group to ensure the correct installation of Aico's products and the HomeLINK Connected Home Solution across retrofitted properties. The training covered the technical aspects of device installation, sensor placement, and connectivity to the broader IoT ecosystem.

Following this, tailored training for Wolverhampton Homes' in-house teams was carried out, focusing on the HomeLINK software and the insights it generates. They were walked through interpreting the data on temperature, humidity, CO2 levels, and smart meters, emphasising how these insights can be used to improve energy efficiency and resident comfort. Specific guidance was provided for the in-house repair team, explaining how they could use the system for preventative maintenance by identifying potential issues like damp or ventilation problems before they escalate. This training ensured that Wolverhampton Homes could maximise the benefits of the HomeLINK system and provide enhanced support for residents. As part of this, bespoke training boards were provided to Wolverhampton Homes DLO team, this allows for continuous development of staff within the organisation and ensures they are familiar with the technologies being retrofitted in their homes.



We started installing the Aico Gateway System for fire & environmental monitoring systems in June 2023 under the instruction of Wolverhampton Homes in properties in the Wolverhampton Area. The equipment is simple to operate and install, taking approximately 2 hours to complete.

The App is simple to download and install, with the local Aico representative always on hand if any additional training or assistance required to complete commissioning.

All information is collated and recorded on the clients dashboard meeting all their requirements for monitoring purposes.

We have now fitted circa 200 systems with no issues to date.

*Ian Gregory, Electrical Services Director,
Dodd Group*



IMPLEMENTING IOT TECHNOLOGY



Enhancing Training and Resident Engagement Onsite

Wolverhampton Homes made the key decision to ensure that properties were monitored for as long as possible prior to any retrofit work starting. This would give them valuable data through sensors before and after retrofit, in line with PAS2035 recommendations.

All initial installs were supported with on site assistance from Aico, ensuring contractors are comfortable with the simple process guided via the SmartLINK app. This enabled on site discussions with all stakeholders to ensure they understood the equipment being installed and why alongside the power of features as the resident app.

Drop-in Clinics Offsite

Regular sessions were held at Wolverhampton Homes offices, drop-in clinics made for informal workshops where each team could come and discuss any information they were unsure of.

Supply Chain Support

To ensure that the Electrical Distributors involved had required stock levels of equipment, Aico will support the entire supply chain to ensure a smooth process, from manufacturing components to installing on ceilings, including:

- Contract partners, Wates and United Living
- Ensuring training for new staff as they start
- Continuous support to electrical contractors Dodd Group, Select and CM Electrical as new phases of the project open up





Data Reviews

As the projects initial phase moved on, comprehensive data on temperature, humidity and CO2 levels was reported on. This constant stream of data was invaluable for evidencing the retrofit specification and regular data reviews with Relationship Managers and the Customer Success team were carried out. This enabled a deep understanding of innovative technologies such as damp and mould risk components.

WHY RESIDENT ENGAGEMENT IS CRUCIAL TO A SUCCESSFUL RETROFIT PROJECT

Resident engagement is not just a supplementary activity in retrofit projects - it is a core component of their success. Engaging residents early and often offers several critical advantages for landlords:

- **Informed and Cooperative Residents:** When residents understand the project's purpose, the benefits they will receive, and how the process will unfold, they are far more likely to cooperate with the project teams. This reduces the likelihood of delays, complaints, or resistance to the installation of necessary technologies.
- **Reduced Risk of Future Problems:** Educating residents on how to use and benefit from the technology, like Aico's HomeLINK system and smart meters, reduces the risk of misuse or misunderstanding down the line. Residents who are fully informed are more likely to engage with the technology in a way that maximises its benefits, reducing energy consumption and improving living conditions.
- **Better Resident Satisfaction:** Proactive engagement leads to higher satisfaction among residents, as they feel included in the decision-making process and are given the tools to take control of their living environment. This level of empowerment fosters a positive relationship between residents, Wolverhampton Homes, and its partners, leading to smoother project execution and more successful outcomes.

The HomeLINK data provides us with useful insights into individual property performance for a wide range of different teams across the company. These insights allow Wolverhampton Homes to monitor and proactively respond to any priority maintenance or high risk issues.

The HomeLINK Resident App also allows our customers to monitor their home and improve their living environment and, where smart meters are linked, monitor and reduce their energy consumption. Aico have provided us with excellent levels of system support throughout the delivery of the project, from our onsite installation teams through to back office colleagues

*Ian Gardner, Director - Property Services,
Wolverhampton Homes*





Resident Empowerment Through Environmental Insights

One of the most notable advantages of the HomeLINK IoT system is how it empowers residents to take control of their home's environmental conditions. Through the HomeLINK Resident App, tenants gain access to real-time data on their home's temperature, humidity, and air quality. This transparency enables them to:

- **Make Informed Decisions:** Armed with data, residents can make more informed decisions about their daily habits, such as opening windows to improve ventilation or adjusting heating to optimise energy use.
- **Improve Comfort and Wellbeing:** By monitoring the environment, residents can ensure their home remains within optimal living conditions, reducing the risk of dampness, condensation, or discomfort due to temperature extremes.
- **Reduce Energy Consumption:** With insights into their home's condition, residents can better manage their energy use, making small changes that contribute to overall energy savings, aligning with the broader goal of reducing energy demand and emissions.

The Connected Home Solution has given invaluable data to establish a diagnostic approach to issues raised by the customer and client, helping us better understand a preventative approach to monitoring ideal conditions within the customers homes. The support from the Aico team has been an instrumental part of the asset management process and valuable in gaining residents support for the project.

Roxanne Dell, Senior Customer Liaison Officer, Wates Living Space

Wates
LIVING SPACE



SMART METER TRIAL: REAL-TIME ENERGY INSIGHTS

In addition to environmental monitoring, Wolverhampton Homes participated in a trial of smart meter integration. By integrating smart meters into the HomeLINK app, residents can see real-time data on their energy usage alongside environmental data. This integration allows them to track how their energy use correlates with indoor conditions, helping them further optimise their behaviour. The benefits include:



- **Energy Efficiency Awareness:** Residents can see exactly how much energy they are consuming, giving them the opportunity to adjust their heating or appliances to save on energy bills.



- **Behavioural Change:** By having this data at their fingertips, residents are more likely to engage with energy-saving initiatives, adopt more efficient practices, and reduce wasteful behaviours, such as leaving heating on unnecessarily.



- **Cost Savings:** With a clearer understanding of their energy consumption patterns, residents can adjust their usage in ways that reduce their energy bills, supporting them in the current climate of rising energy costs.



Whilst there is still work to be done on site as part of this project, Wolverhampton Homes' adoption of Aico's HomeLINK Connected Home Solution in retrofitted properties under the SHDF Wave 2.1 and 2.2 projects is an excellent example of how technology can enhance the energy performance of social housing while delivering significant benefits to both landlords and residents. By ensuring compliance with PAS2035, Wolverhampton Homes can guarantee the effectiveness and sustainability of its retrofits. Meanwhile, the combination of environmental insights and real-time energy data empowers residents to make better decisions about their home environment, enhancing comfort and reducing energy costs.

The use of IoT solutions, like HomeLINK, offers a powerful pathway for lasting, data-driven improvements in housing quality, energy efficiency, and resident wellbeing across Wolverhampton's social housing stock.



It's been fantastic working with social housing colleagues from Wolverhampton Homes on this project. From early discussions on uses of the technology to onsite installs all stakeholders have been heavily involved in ensuring the projects success. Its great to be able to provide continuous support to all areas of the supply chain as needed.

*Gareth Butler, Relationship Manager,
Aico*



To find out more about the HomeLINK Connected Home Solution, please visit: www.aico.co.uk/homelink