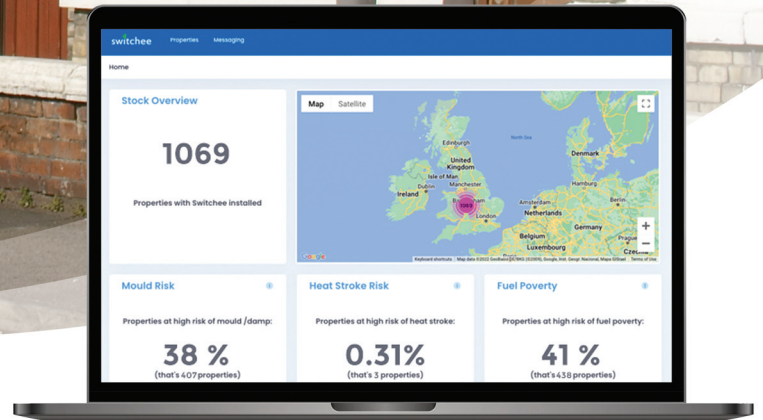


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THE DEFINITIVE GUIDE TO RETROFIT VALIDATION **WHITE PAPER**

Housing providers have been challenged to find new ways to ensure their properties are safe and well maintained. The difficulty in scheduling in-person visits due to the potential health risks and changing regulations means many providers have embraced technology with open arms. This move toward digitisation has allowed housing providers to gather data on their properties and to identify any potential problem areas within their homes.

Through the installation of technology and an overall shift toward digitisation, housing providers have been able to maintain their properties while following government health advice. The usage of Internet of Things (IoT) technology gives landlords the ability to [communicate](#) directly with residents to gather valuable feedback on the repairs process and how it has impacted residents' daily routines.

This information paints a digital picture. Technology can be used to influence maintenance procedures and can identify any potential problem areas within the home before the issue spirals out of control, saving the housing provider money in the long-term. This limits the risk of additional damage and helps bring down the overall costs, it also ensures that all residents have access to a safe and comfortable home which is the core purpose of the social housing sector. If maintained, this method could continue to benefit landlords by increasing resident engagement and encouraging a proactive repair system.

But technology isn't a picture-perfect solution, there are three important things that housing providers need to consider before retrofitting a property.

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1. IS IT RIGHT FOR THIS PROPERTY AT THIS TIME?

The important thing to remember is that the one-size-fits-all approach won't work for each property. Ensuring proper retrofitting means assessing the needs of each individual home as this is the best way to solve any underlying issues. Identifying the cause of a problem will help decide the most appropriate form of repair. For example, installing a ventilation system in the home will have little impact on condensation, damp and mould if the insulation in the property is failing.

But with access restrictions intensified, the sheer number of properties in a portfolio, and the limited time available to housing providers, identifying properties in need of repair is a difficult task. This is where technology can be of use as it uses data to provide landlords and housing providers with a key insight into their stock.

Data is vital when it comes to understanding a property. With restricted access to properties, housing providers are under more pressure than ever as they experience an influx of maintenance requests from their residents. In order to adhere to current government standards per the [Fitness for Human Habitation](#) and [Decent Homes](#) legislation, this has led to an increase in demand for property retrofits. But how can increased digitisation help tackle this issue for housing providers.

By collecting data on their properties, landlords can easily identify homes at risk and prioritise maintenance work. This allows housing providers use their budget more effectively, ensuring that all of their properties are maintained to a high standard. Technology can be used to predict future maintenance issues, giving housing providers time to implement repairs before the issue takes root. As Senior Contracts Manager at GasWay, Andy Merrill said, the Switchee device allowed providers to remotely 'test boilers before the winter' and identify those that needed to be repaired or replaced before the first frost, allowing them to be 'proactive in fixing issues before they affect customers'.

Not only does this work to minimise disruption for the resident, but it also helps housing providers to better manage the overall cost of these repairs. Through the collection of data, housing providers have been able to prioritise at-risk homes for maintenance work, reducing the risk of disrepair claims and leading to increased resident satisfaction levels.

Technology can be used to monitor variables such as average temperature and absolute humidity, highlighting any areas of concern to the maintenance team who can access the data remotely. In utilising virtual resources and digitised data, housing providers can verify the energy efficiency of their individual properties, allowing them to identify any pitfalls that may need to be addressed, and ensure that they are keeping in line with [current government policies](#), such as improving the energy efficiency of social housing using Energy Performance Certificate (EPC) scores.

With the housing sector accountable for [40% of all UK emissions](#) and [44% of social homes failing to meet adequate EPC standards](#), it is more important than ever for housing providers to ensure their homes are meeting the outlined energy standards.

One of the ways Switchee real-time data can help with this is by measuring a property's **Heat Loss Rate (HLR)** - a metric designed by Switchee's data scientists, which measures the time taken for a property to lose 1°C of internal air temperature when the heating has been turned off.

2. IS THE TECHNOLOGY TESTED?

Once updates have been made to a property it is important to follow up with the resident to ensure that everything is running smoothly. In some cases, this may require repeat access to the property to ensure the original problem hasn't returned, and that the technology is functioning as it should. However, for connected devices, it is as simple as logging in and checking the data remotely.

Landlords also need to ensure that tenants are making use of the installations. It is also necessary to monitor the long-term effectiveness of the technology, ensuring that it doesn't become defective as it ages. This will require prolonged assessment over two to five years to ensure the technology continues to work as intended and that the original issue doesn't return in the meantime. Installing a new device, only to have it break down a year later, proves a poor investment and may also cause unnecessary upset to the tenants.

When installing new technologies, housing providers will also need to consider the learning curve that will occur as residents interact with the devices. This requires a strong line of communication between the housing provider and their tenants to make sure that the devices remain connected at all times.

For example, if you have installed a new heat recovery ventilation system you will need to check that residents have not unplugged it or blocked any of the inlets and outlets to ensure that the readings you've just gathered are not inaccurate due to misuse. The important thing with retrofits is to communicate the benefits to your tenants and ensure that the devices are deployed with care. Through successful retrofit measures, housing providers can significantly improve the lives of their residents, by providing them with safe and comfortable homes, whilst simultaneously improving the quality of their housing stock.

3. IS IT COST-EFFECTIVE?

Data allows housing providers to more accurately invest in property repairs and maintenance, increasing the value of their stock. For example, some technologies allow housing providers to receive remote notifications of faults within the heating system and provide a full breakdown of the cause(s). Over time and with continued data collection, housing providers will be able to identify patterns between the different makes and models of boilers and assess whether some models are more likely to break down.

This allows housing providers to make cost-effective maintenance decisions and gives them more control over their stock. Technology and the usage of data gives housing providers the ability to see things on both a micro and a macro scale, saving them money in the long run, as this data will help inform their investment models leading to more accurate repair strategies.

This can work on a broader scale too. Increased reliance on technological advancements allows housing providers to identify properties that are costing more than is expected and providers can look into ways of managing these costs. Technology gives housing providers more control over their stock and can help highlight factors that could be skewing overall maintenance costs.

This could include floods, fire damage, or other outlying issues which can then be taken into account and factored into the budget. Data paints a digital picture of a property, giving housing providers the autonomy to detect rogue properties or financial outliers that may be skewing the average spend.

Data isn't just about identifying trends. It can reduce fuel poverty levels, ensuring that vulnerable residents aren't forced to live in damaging conditions due to economic disparities. With millions of households in fuel poverty amidst a cost of living crisis, it's more important than ever to ensure that retrofits are going to benefit vulnerable residents rather than harming them.

When looking at rolling out retrofit technology, such as heat pumps, on a wide scale, housing providers must first consider the circumstances of their residents to mitigate the risk new installations can have on fuel poverty. It is estimated that electric heating systems can cost four times more than their gas equivalents, which for residents living on the poverty line, may prove untenable.

Housing providers need to treat their portfolio as a series of individual problems that will increase and decrease over time. Different residents will find heating a property more or less difficult. For example, smaller homes tend to rely upon electricity for heating and often have less cavity insulation making them particularly vulnerable to high fuel prices. In this case, by focussing on updating insulation levels, housing providers can help vulnerable residents conserve heat and lower their overall energy bills.

This is an area that technology can assist with. Switchee devices are shown to reduce energy bills by up to 17% by decreasing the amount of energy wasted. Technology installations like these allow the housing provider to improve the efficiency of their homes, optimising energy usage while protecting vulnerable tenants in the process.

4. HOW RETROFITS CAN HELP HOUSING PROVIDERS BECOME CARBON NEUTRAL

With the [Paris Climate Agreement](#) and the government's commitment to becoming [Carbon Neutral by 2050](#), housing providers are looking for ways to reduce their carbon output. It's why any planned retrofits should factor in the green element. The housing sector is vital when it comes to achieving Net Zero, with the industry accountable for [40% of all emissions](#) and [44% of social homes failing to meet adequate EPC standards](#). Without rapid upgrades, the UK will be hard pressed to meet the government's outlined decarbonisation targets. This has housing providers searching for ways to make their homes more energy efficient.

These improvements may range from minor changes such as updating fans, to the complete removal of outdated heating systems on properties that hold an insufficient EPC rating. But with an [estimated 85% of social homes reliant on gas heating](#), a complete overhaul of these systems will prove to be a costly job. These green initiatives are a huge investment for housing providers but in the long term these advances will yield many positive outcomes for landlords and their tenants.

There is a growing concern with such a massive focus on the specific 'Net-Zero' target that technologies or building materials that are unfit for use might sneak in. Installing a new, more energy-efficient form of insulation is great but only if that insulation is easy to install and doesn't break down within a few years. There have been plenty of examples in the last few decades of technologies being installed in properties without fully understanding the long term implications they might have. These new energy efficiency pushes are no different and taking a data based approach to retrofit analysis ensures that inappropriate or badly produced products are not installed into thousands of homes with the cost of fixing it landing solely on the housing providers shoulders.

From the perspective of the housing provider, the development of energy efficient homes will lower overall costs in the long term. By introducing much needed retrofits, housing providers are lowering the risk of disrepair claims whilst also contributing to the wellbeing of their residents. The more energy efficient a home is, the less it is going to cost to heat. This helps reduce the resident's reliance on fossil fuels and in supporting them through the process housing providers can help overcome rising fuel poverty levels.

While the upfront costs may seem alarming, the long term benefits they provide will greatly make up for the short term financial costs.



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