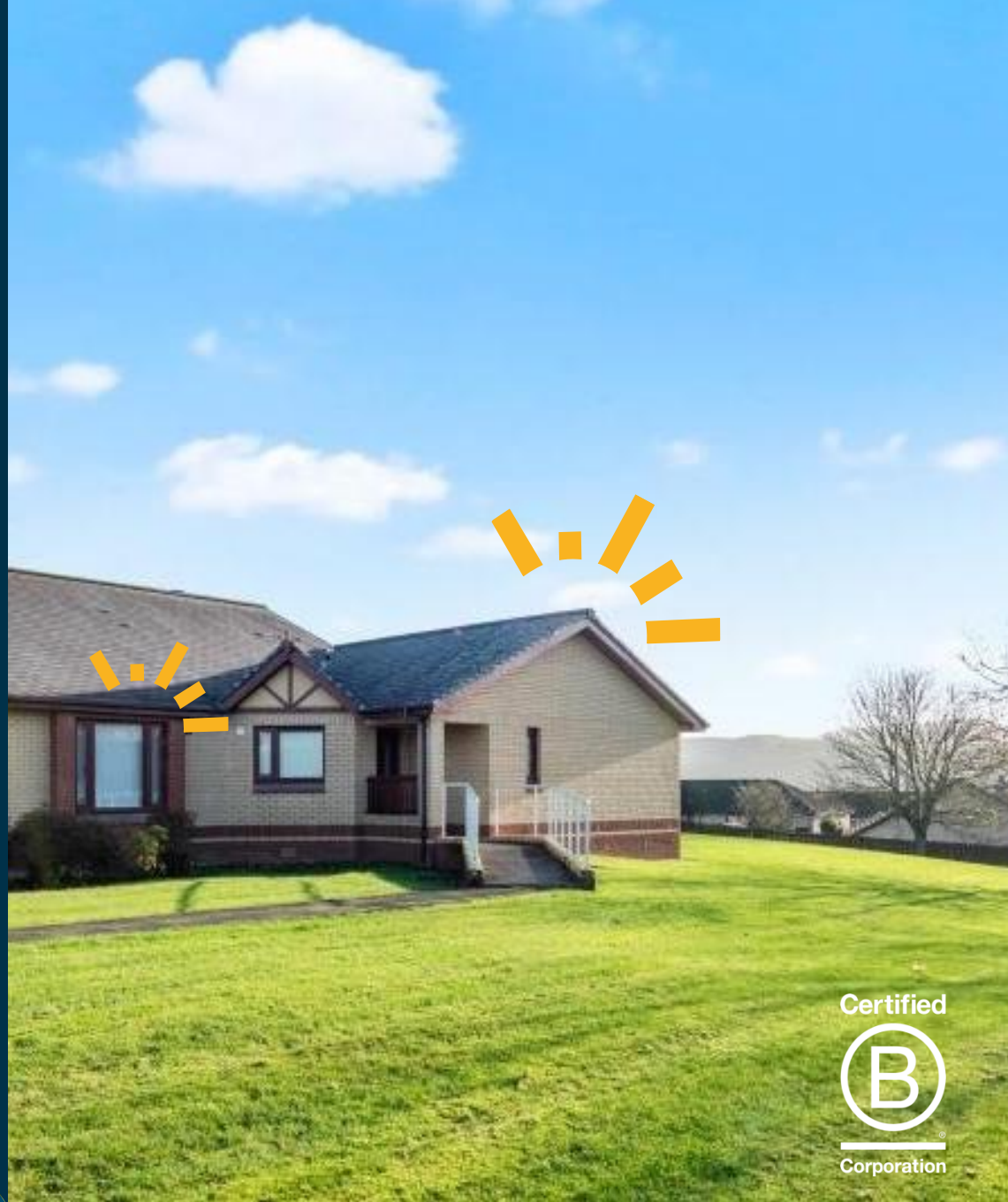




# Archangel Joining the Dots IoT Project

Benefits Assessment

June 2025



farrpoint.com

# Contents

Executive Summary	3
1. Introduction	4
1.1 Background	4
1.2 Document Structure	4
2. Methodology	5
2.1 Benefits Identification	5
2.2 Evidence Collection Approach	5
3. Analysis	6
3.1 Asset Management Benefits	6
3.2 Health and Care Benefits	8
4. Conclusion	9



## Executive Summary

The Archangel *Joining the Dots* project is an initiative leveraging the Internet of Things to transform the way social housing and care services are delivered. As part of the Glasgow 5G Innovation Region's Smart and Connected Social Places (SCSP) Innovation Fund, this initiative aligns with national priorities to foster digital transformation, economic growth, and commercial investment in advanced wireless connectivity solutions.

The project, led by Archangel in association with Bield Housing & Care, integrates real-time sensor data from 70 multi-use sensors across 10 properties at Langvout Court Retirement Housing in South Lanarkshire. Data from the sensors provides automated alerts and real-time information, enabling housing and care providers to proactively intervene and reduce emergency incidents.

A Theory of Change approach was applied to articulate the project's anticipated benefits across Asset Management and Health and Care. This structured framework provides policymakers with a clearer line of sight between the deployment of advanced wireless connectivity and its contribution to strategic objectives, namely, enhancing the operational effectiveness of social housing providers and supporting improved health and care outcomes for residents.

By leveraging real-time monitoring and advanced connectivity, the Joining the Dots project has shown a clear positive return on investment in the housing sector, with even greater savings possible through expanded use of monitoring data. The Langvout Court pilot illustrates how early intervention and data-driven decisions can improve tenant wellbeing and operational efficiency. These outcomes offer robust evidence to support broader adoption, inform policy decisions, and guide future implementations, ensuring maximum impact is obtained from the integration of advanced wireless solutions within the social housing and care sectors.



### 4.4:1 Return on Investment (ROI)

Multi-use sensors easily show a positive ROI within the first year based upon just initial utility and maintenance cost savings.

However, there are numerous additional qualitative benefits of multi-use sensors (regulatory, safety and health and care), alongside the possibility for scalability and proactive asset maintenance that can lead to an even greater ROI.



70

IoT sensors deployed



£600,000

Investing in smart housing



10

Properties and residents benefitted



£7,670

Annual saving in heating costs per sheltered housing development



£2,825

Annual saving in maintenance costs per sheltered housing development



£3,250

Annual saving in reduced damp specialist surveys



£18.5m

Annual savings across Scotland based upon just initial utility and maintenance reductions



- Improved Regulatory Compliance
- Improved Resident Safety
- Reduced risk of damp related illnesses
- Early Detection of changes in activity
- Share and Personalise care provision

# 1. Introduction

## 1.1 Background

The use of advanced wireless connectivity solutions, such as 5G and LoRaWAN, is key to driving the UK Government's ambitions to harness digital transformation to build a more inclusive, competitive, and innovative digital economy.

In 2024, the UK Government's Department for Science, Innovation, and Technology launched a £40 million fund for Local Authorities across the UK to establish themselves as [5G Innovation Regions](#) (5GIRs). This programme forms part of a wider initiative to drive 5G adoption, focusing on regions that identify key sectoral capabilities and opportunities. Core objectives of the programme include boosting economic growth, commercial investment, and fostering a dynamic 5G ecosystem which enables "learning by doing".

Glasgow City Region was one of the successful regions. Its programme included a £600,000 Smart and Connected Social Places (SCSP) [Innovation Fund](#). Archangel's Joining the Dots project was one of 11 innovative projects to receive funding and is aimed at leveraging advanced wireless connectivity solutions to transform the social housing and health and care sectors.

The project was undertaken in association with Bield Housing & Care, a registered social landlord dedicated to enabling older people to live independently. Bield has 143 sites across Scotland, offering a range of housing types, including retirement housing, amenity housing, and general needs housing.

Ageing in place and prevention is one of the Scottish Government's key priorities, with a vision for older people in Scotland to enjoy full and positive lives in homes that meet their needs. The [National Care Review](#) and [Digital Health and Care Strategy](#) promote greater integration of technology-based solutions to help people live healthier for longer.

Currently, data across housing, health, and care is fragmented across disconnected systems. Archangel's Joining the Dots project aims to transform tenant engagement and service delivery through Internet of Things (IoT)-driven data integration, unifying data to improve tenant wellbeing and enhance predictive interventions. The use of sensors provides a single, holistic view of individuals and their home environments, supporting collective decision-making and timely interventions.

As part of the project, 70 IoT sensors have been deployed at Langvout Court Retirement Housing development in South Lanarkshire. This includes 10 properties, each fitted with 5 sensors across different rooms, and an additional 20 sensors installed throughout communal areas. The system provides early alerts, allowing housing and care providers to intervene proactively and reduce emergency incidents. By aligning IoT projects with the Scottish Government's vision, the Joining the Dots project can enhance the quality of life for older residents, promote independence, and reduce the reliance on emergency health services.



## 1.2 Document Structure

The structure of this document is as follows:

- **Section 1: Introduction** – details the background to the project and the structure of the report.
- **Section 2: Impact Evaluation** – this section sets out the analysis and results from the Benefits Realisation, considering both the quantitative metrics captured as well as the more qualitative insights gained through the life of the project.
- **Section 3: Conclusions** – the final section presents a summary of the key findings alongside recommendations and next steps.

## 2. Methodology

### 2.1 Benefits Identification

Good evaluation requires an understanding of an intervention's objectives and how it is expected to achieve these outcomes. Subsequently, this impact assessment can be used to test the extent to which the intervention has delivered the desired benefits. This evaluation is based upon a linear Theory of Change approach, used to establish the practical workings of the Joining the Dots project. Figure 1 provides a high-level overview of the benefits realisation framework.

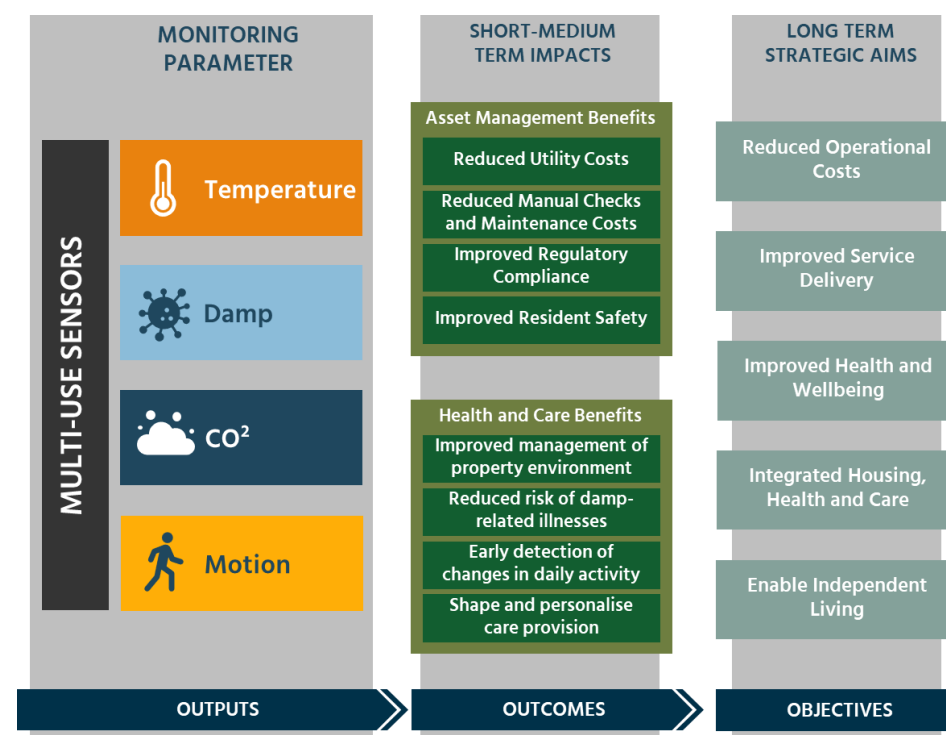


Figure 1: Archangel Joining the Dots Benefits Realisation Framework (Source: FarrPoint)

To robustly evaluate the impact of Archangel's Joining the Dots project, the realised and potential benefits have been categorised into two primary domains:

- Asset Management Benefits; and
- Health and Care Benefits.

This dual-framework approach enables a clearer and more structured assessment of how advanced wireless connectivity can contribute to both the operational efficiency of social housing providers and the delivery of improved outcomes within health and social care settings. By distinguishing between these domains, the assessment captures the full breadth of the project's impact, ranging from tangible infrastructure and maintenance improvements to more person-centred outcomes such as enhanced resident wellbeing, safety, and independence.

### 2.2 Evidence Collection Approach

For the purposes of this impact assessment, the primary source of information used to demonstrate outcomes was management data. This included a range of operational metrics such as utility expenditure, the frequency of Planned Maintenance Operations (PMO) visits, and other relevant indicators. These data points were analysed to evidence the benefits specifically related to asset management and overall operational efficiency.

In addition to assessing the benefits of asset management, the impact assessment also considered the potential implications for resident health and care outcomes. However, the ability to robustly evidence such impacts was more constrained in this case. This is largely due to the length of time since the multi-use sensors were first installed, which made it more challenging to attribute any observed changes directly to their deployment. Furthermore, the context of the Langvout Court property, where the service model is based on sheltered housing rather than the direct provision of personal health or care services, further limited the scope for drawing clear conclusions about health and care-related impacts. These contextual factors, and their implications for the assessment, are discussed in more detail in Section 3.



## 3. Analysis

### 3.1 Asset Management Benefits

#### 3.1.1. Reduced Utility Costs

IoT sensors can play a key role in reducing utility costs by enabling smart energy management. For example, temperature sensors help optimise heating by ensuring it is only activated when and where it is needed, reducing energy waste and lowering bills. Over time, this leads to sustainable operations and supports more comfortable, cost-efficient living environments for residents. FarrPoint calculations show sensors could lead to £10.5m in savings across Scotland's 1,350 sheltered housing sites.

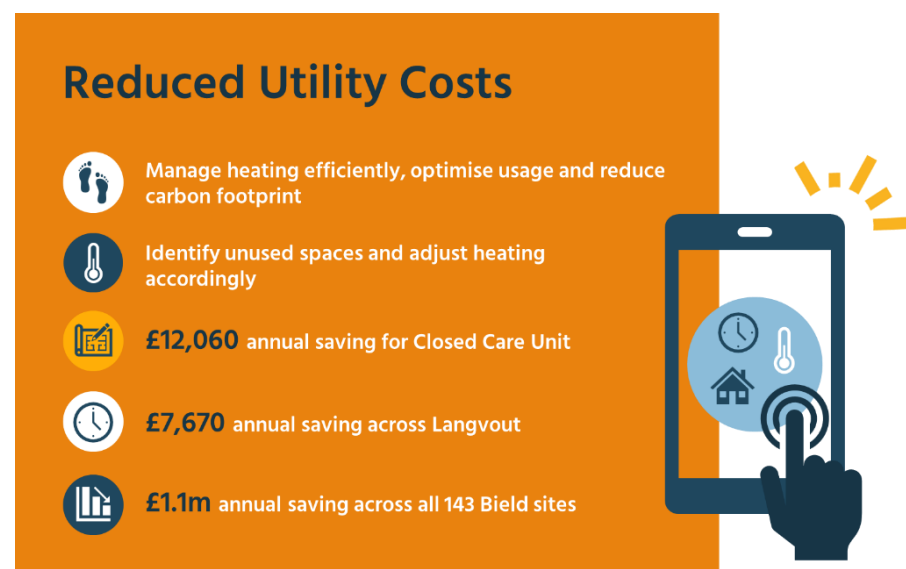


Figure 2: Benefit 1 – Reduced Utility Costs (Source: FarrPoint)<sup>1</sup>

<sup>1</sup> The impact model uses Langvout Court's total area (m<sup>2</sup>), site usage patterns, and typical energy consumption to ensure scalability. It can be applied across Bield's housing sites, especially those with communal or infrequently used spaces, to identify opportunities for greater efficiency and cost savings.

#### 3.1.2. Reduced Manual Checks and Maintenance Costs

Multi-use sensors reduce the need for manual checks by continuously monitoring systems and conditions, cutting weekly PMO and damp specialist visits. This automation lowers labour and travel costs and enhances maintenance efficiency. Freed from routine inspections, site managers can focus on core tasks, such as tenant engagement and compliance, ensuring resources are directed where they deliver the greatest value. FarrPoint calculations show multi-use sensors could deliver £3.8m in savings across Scotland's 1,350 sheltered housing developments. With expanded and proactive use of sensor data to monitor property conditions, there is potential for even greater reductions in PMO visits and further efficiency gains.

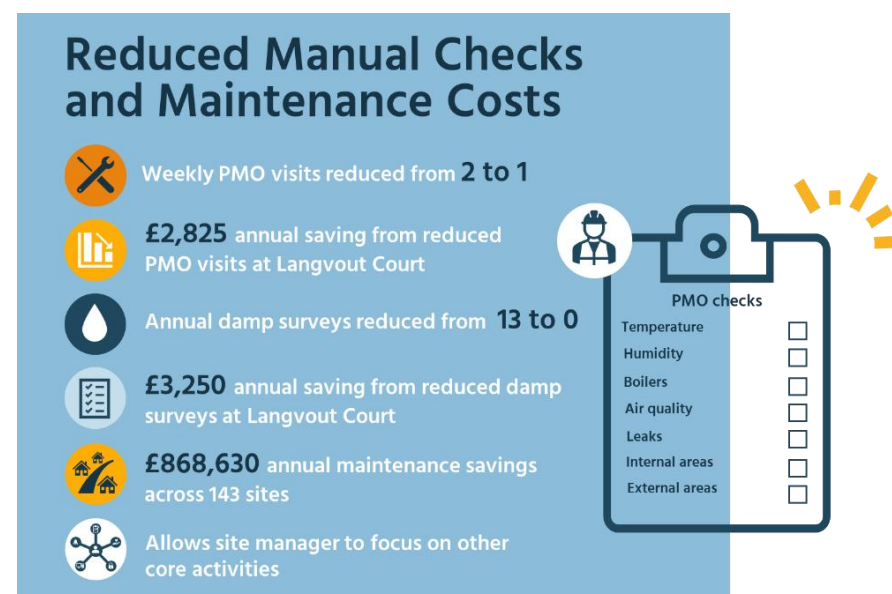


Figure 3: Benefits 2 & 3 – Reduced Manual Checks & Maintenance Costs (Source: FarrPoint)<sup>2</sup>

<sup>2</sup> The modelling of this impact is based upon 48 working weeks a year, with a cost of £60 for each PMO visit, with the evidence indicating that the initial use of sensors has reduced the required PMO visits from 2 to 1 each week. Specialist damp surveys reduced from 13 to 0 per year, with a cost of £250 per survey.

One particular issue that proactive sensor monitoring can help identify is damp and mould, which pose serious health risks, especially to vulnerable individuals in sheltered housing, such as those with pre-existing health conditions. Early detection is important to ensure timely intervention and protect resident wellbeing.

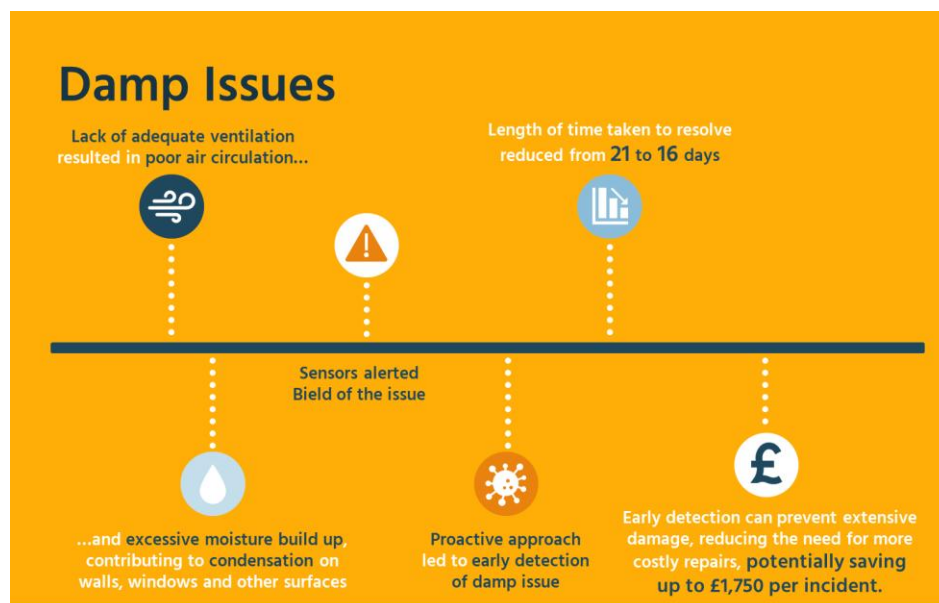


Figure 4: The Progression of Damp Issues (Source: FarrPoint)

In October 2025, [Awaab's Law](#) comes into force to ensure social landlords investigate and fix dangerous damp and mould within a set amount of time, as well as repair all emergency hazards within 24 hours. Sensors that monitor humidity, temperature, and ventilation can facilitate early detection of conditions conducive to mould.

These systems enable housing and care providers to intervene before issues escalate, aligning with the preventative approach emphasised by Awaab's Law. By integrating such technologies, Bield can not only continue to comply with its legal obligations but also enhance the quality of life for residents, ensuring their homes remain safe and healthy environments.

### 3.1.3. Improved Regulatory Compliance

Smart technology is reshaping maintenance and compliance by enabling real-time monitoring, early fault detection, and predictive maintenance. Centralised platforms integrate data from across properties, streamlining administrative tasks, improving resource allocation, and supporting evidence-based financial planning.

This proactive approach reduces the risk of oversight, enhances operational efficiency, and creates a digital audit trail for regulatory reporting. By adopting scalable, connected systems, housing providers can future-proof operations, adapt to evolving standards, and build healthier, safer homes for tenants.

Bield plans to submit automatically logged sensor data as part of its [Annual Assurance Statement](#) to the Scottish Housing Regulator, and its Annual Return on the [Scottish Social Housing Charter](#) serving as proof of regulatory compliance with health and safety regulations and standards.

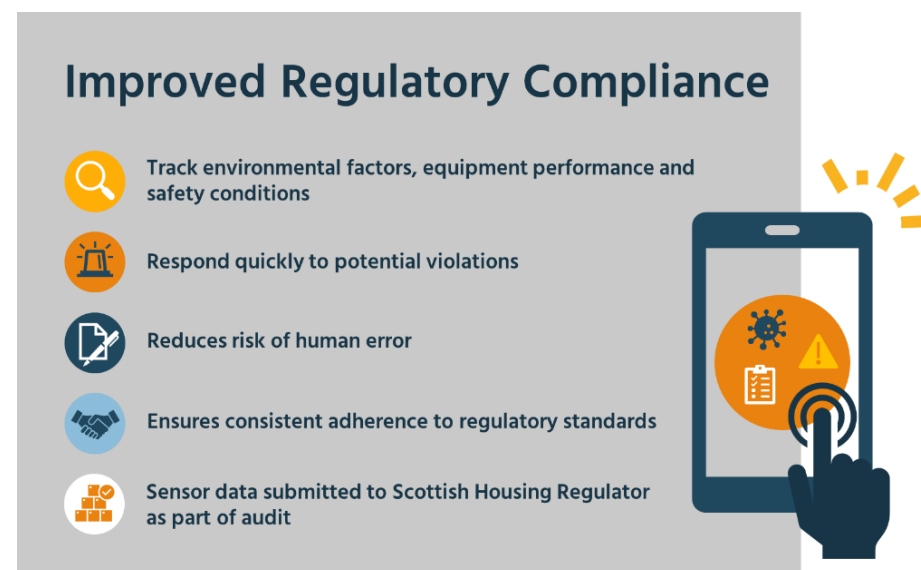


Figure 5: Benefit 4 – Improved Regulatory Compliance (Source: FarrPoint)

### 3.1.4. Improved Resident Safety

Ensuring the safety and security of older adults is essential for supporting their independence, wellbeing, and overall quality of life. Sensor technology helps by detecting potential risks early, such as unusual activity patterns or falls, allowing timely support without compromising residents' privacy or autonomy. This enables tenants to live safely and confidently in their own homes for longer, promoting ageing in place.

In addition to enhancing safety, these systems strengthen the relationship between tenants and housing providers by increasing reassurance and trust. At Langvout Court, residents have responded positively to the technology, reporting that they feel safer and more supported in their daily lives. This feedback highlights the important role that smart monitoring plays in fostering secure, comfortable living environments for older adults.



Figure 6: Benefit 5 – Improved Resident Safety (Source: FarrPoint)

## 3.2 Health and Care Benefits

IoT sensors in retirement housing developments have the potential to deliver a wide range of health and care benefits for residents. By continuously monitoring environmental conditions such as temperature, humidity, and air quality, these technologies enable the early identification of potential health risks.

For instance, at Langvout Court, abnormal temperature increases within individual properties alerted staff, enabling prompt welfare checks and timely interventions. This kind of real-time insight can be crucial, particularly for managing older adults' long-term health conditions and addressing concerns before they escalate further.

These proactive interventions improve health outcomes, ease pressure on public services, and support the design of tailored care packages that streamline delivery and reduce future demand. This not only leads to cost savings for providers, such as local authorities and housing providers, but also strengthens the model of ageing in place. Most importantly, the technology enhances residents' safety, independence, and sense of belonging, contributing to improved wellbeing and a higher overall quality of life.

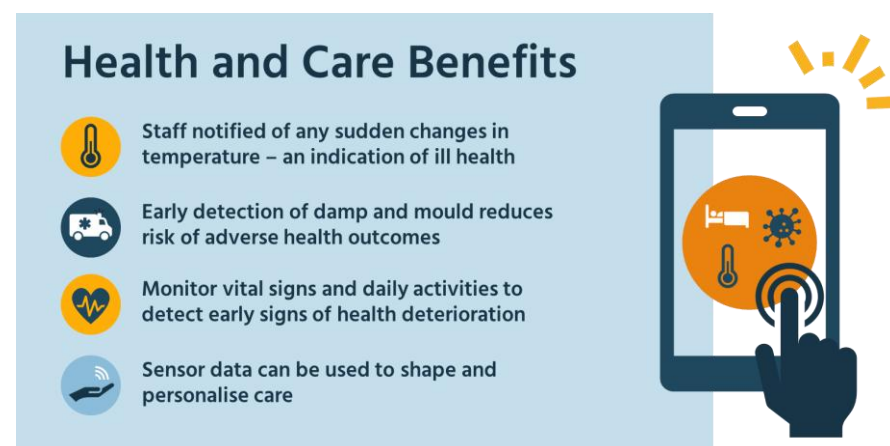
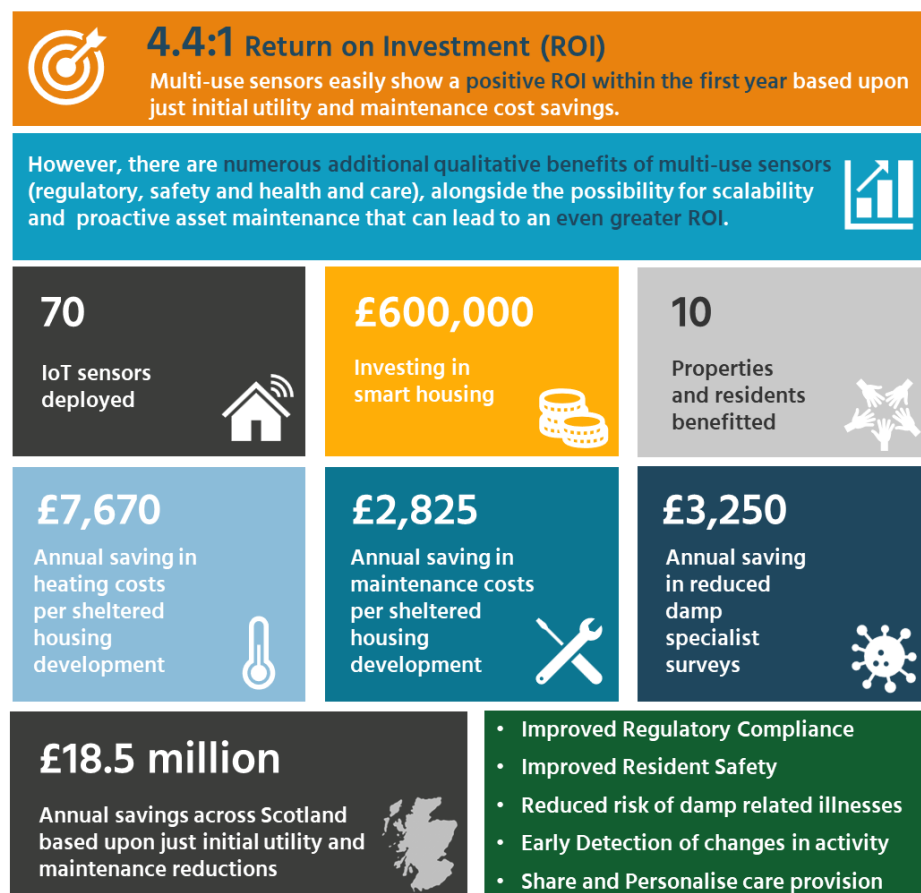


Figure 7: Health and Care Benefits (Source: FarrPoint)



## 4. Conclusion

The Archangel *Joining the Dots* project demonstrates the significant potential of using IoT in transforming the way social housing and care services are delivered. By combining advanced wireless connectivity with real-time monitoring, the project has delivered tangible benefits across asset management, regulatory compliance, resident safety, and health and care outcomes.



These outcomes not only support more efficient and proactive operations for housing providers, but also contribute to improved quality of life, independence, and wellbeing for tenants.

The project at Langvout Court has shown how early intervention and data-led decision-making can reduce emergency incidents, enhance tenant engagement, and future-proof housing services. These findings present a compelling case for wider adoption and offer valuable insights to inform future policy, investment, and scaling across the sector.

Looking ahead to next steps, the initial findings highlight clear property management-related savings and promising early signs of health and wellbeing benefits from the technology. As the project progresses into its next phase, scaling across Bield's wider portfolio, it offers a valuable opportunity to demonstrate the transformative potential of this technology further.

- While initial insights from the trial are promising, they are based on limited data and a short timeframe. A larger-scale, longer-duration deployment will generate more comprehensive evidence on both the operational and human outcomes of the technology.
- Expanding the trial to include a broader range of sites and tenure types will also help assess how benefits, particularly in health and care, vary across different housing contexts.
- There is considerable potential to amplify the project's impact by aligning it with wider IoT and digital health initiatives across Scotland. This includes exploring integration with national platforms such as the Scottish Shared Alarm Receiving Centre (ARC) and the Telecare Information Framework (TIF) dataset.


These next steps will support more rigorous evaluation and help inform long-term strategic adoption at a system level.

\* Note: ROI expenditure and benefits are measured over a 10-year period and discounted.


Visit

[farrpoint.com](https://farrpoint.com)




 **Edinburgh, UK**  
Ground Floor West  
2 Lochrin Square  
96 Fountainbridge  
EH3 9QA


T: +44 (0)131 202 6018

 **London, UK**  
1st Floor  
99 Bishopsgate  
London  
EC2M 3XD

T: +44 (0)20 3693 7310

 **Halifax, Canada**  
1300-1969  
Upper Water Street,  
Halifax, Canada  
NS B3J 3R7

T: +1 902 5001414

 **Boston, USA**  
100 Cambridge Street,  
Boston,  
MA 02114

T: +1 857 356 1414