



PLEXUS
INNOVATION

CASE STUDY – Sheltered Housing and Retirement Living Sector

Background and Opportunity



Turnover
£219 m

Total Assets
£156m

- This large, Midlands based, housing group commenced an initial pilot trial of GUARDIAN® technology in October 2019. The aim of the evaluation is to determine whether introduction of digital technology could improve Legionnaire compliance management, reducing operating costs of manual measurement readings and remove the risk of human error. This customer also wanted to utilise the data collected by GUARDIAN® to improve visibility on heating systems and cost management.
- The group assets are primarily sheltered housing and retirement living units. Total number of facilities is c. 30k.
- The basic measurement and compliance service provided by GUARDIAN® technology is price competitive with manual measurement methods. The added value gained from real time data analysis, however, will deliver a significant competitive advantage via provision a materially improved service to customers along with reduced operational costs.
- Plexus Innovation are currently in discussion regarding phased roll out of GUARDIAN® technology across their asset portfolio.
- Although adversely impacted due to Covid 19 outbreak, implementation strategy should commence during Q4 2020 in facilities identified as being highest risk and potential gain.
- Plexus Innovation aims to enable GUARDIAN® to be the 'must have' technology, becoming embedded within the business infrastructure and generating added value via management of real time data.

Old Capability

- Engineer required to manually measure water temperatures on monthly basis. Disruptive to tenants and access not guaranteed.
- Manual testing engineer to record findings and report any non compliant readings detected.
- No visibility of performance, condition and actual use profile of hot and cold water systems.
- Human intervention can be prone to error.
- Minimum legal requirement. 12 measurements per year.



New Capability via Plexus Innovation

- GUARDIAN® digital remote measurement devices installed and operate automatically in real time.
- Data fed remotely to cloud based platform. Data stored electronically and alerts can be user configured.
- Visibility and profiling of water system performance and usage.
- Human intervention for measurement and reporting is removed, along with risk of error and missed visits.
- Real time compliance tracking. Over 500,000 measurements per year.



Outcomes

- Legionnaire compliance visits cost reduced by 67%.
- Access required to premises reduced due to remote measurement, reducing wasted maintenance visits and improving tenant relations.
- Identified hot water wastage, enabling immediate action with customer saving c. £1k.
- Identified boiler temperature management issues. enabled simple engineering fix with saving c. £1.5k/yr/flat.
- ROI 12 weeks.

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Boiler Temperature Management

Flat 1 and 2 Water Heater - Signals

Sensor Identifier	Name	Report
N15ZR7-1	Flow	<input checked="" type="checkbox"/>
N15ZR7-2	Return	<input type="checkbox"/>
N15ZR7-3	Cold	<input type="checkbox"/>

Reporting

Min & Max Readings

Auto Update 01/09/2019 16:17:42 - 28/11/2019 16:17:42

Readings N15ZR7- (01/09/2019-28/11/2019)

50 - 150
20 - 50
0 - 20

timestamp

- This example demonstrates a 200L electric water heater supplying a pair of flats, running at 75°C (10°C higher than reasonably required)
- This excessive water temperature costs an additional £8.40 per day
- The cost of not detecting this would have been c. £3k pa

Hot Tap Left Running

Flat 19-20 - Signals

Sensor Identifier	Name	Report
N14ERO4-1	Hot	<input checked="" type="checkbox"/>
N14ERO4-2	Cold	<input type="checkbox"/>
N14ERO4-3	Mixed	<input type="checkbox"/>

Reporting

Min & Max Readings

Auto Update 01/09/2019 16:23:05 - 28/11/2019 16:23:05

Readings N14ERO4- (01/09/2019-28/11/2019)

50 - 150
20 - 50
0 - 20

timestamp

- This example demonstrates how GUARDIAN solved an issue with tenant complaints of hot water issues and generated significant operational cost savings
- Engineers were unable to find the intermittent fault reported by the tenant
- GUARDIAN was installed and identified one tenant frequently draining the hot water storage shared between flats by leaving hot tap running for long periods
- Resolving this issue will save the customer c. £1k per year in additional energy costs and help in dealing with tenant relations
- Hot taps left running for extended periods were detected in 40% of the locations which had GUARDIAN installed