



Is IoT the solution to damp and mould?

21st March 2023



Lee Reeve

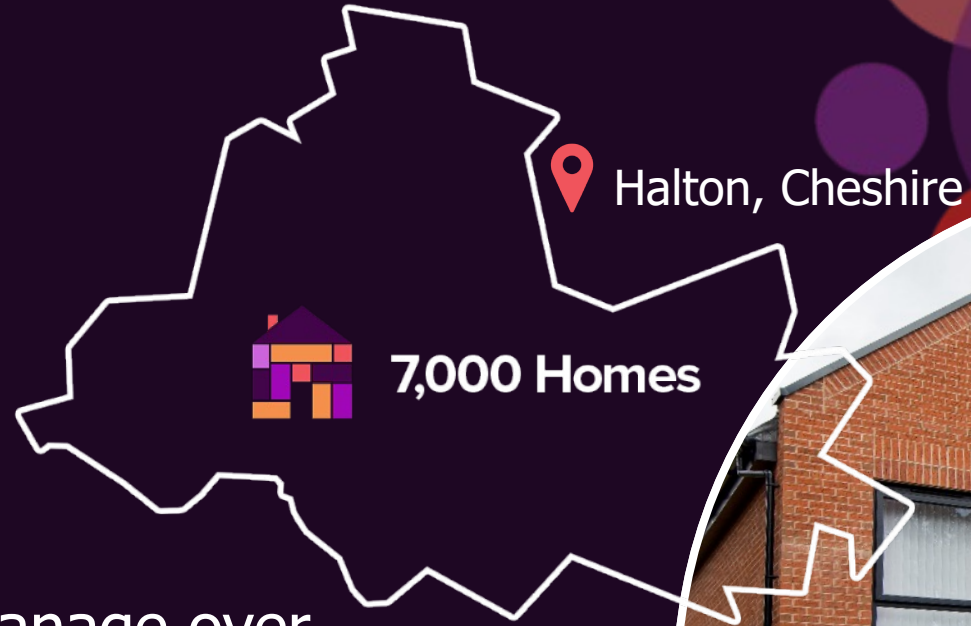
Head of Innovation & Architecture



Introduction

Who are we?

Established in 2005, we own and manage over **7,000** homes across the Northwest in Runcorn and Widnes. 10% of homes have IoT devices.





Our IoT Journey

2017



Technical Evaluation of SMETER Technologies (TEST) Project

Loughborough University, Halton Housing, Leeds Beckett University, UCL



Department for Business, Energy & Industrial Strategy



WINNER!

Digital Innovation: Outstanding Contribution

RISE Awards 2021




LEEDS BECKETT UNIVERSITY



Christopher Gorse
Lloyd Scott
Colin Booth
Mohammad Dastbaz
Editors

Climate Emergency – Managing, Building, and Delivering the Sustainable Development Goals

Selected Proceedings from the International Conference of Sustainable Ecological Engineering Design for Society (SEEDS) 2020



Springer

Strategic Management of Assets and Compliance through the Application of BIM and Digital Twins: A Platform for Innovation in Building Management



What is a driving change?



Legislation



Environment



Expectations



Technology



What is driving change?

Regulation

**POLITICAL
REFORM**



Department for Levelling Up,
Housing & Communities

Rt Hon Michael Gove MP
Secretary of State for Levelling up Housing &
Communities
Minister for Intergovernmental Relations

Department for Levelling Up, Housing and
Communities
4th Floor, Fry Building
2 Marsham Street
London
SW1P 4DF

19 November 2022

To: All providers of social housing

ENSURING QUALITY IN SOCIAL HOUSING

The tragic case of Awaab Ishak, who died at two years old as a direct result of mould in his family home, has rightly shocked people across the country. This is an appalling case of the utmost gravity, and it is abhorrent that anyone should have to live in such conditions in Britain today.

As I said in Parliament this week: every single person in this country, irrespective of where they are from, what they do, or how much money they earn, deserves to live in a home that is decent, safe and secure. I expect those who hold the high responsibility of managing people's homes to ensure that no family experiences such a tragedy again.

Together, we must raise the bar dramatically on the quality of social housing and empower tenants so that their voices are truly heard. I want to be clear about what this must mean in relation to damp and mould, as I have been made aware of many cases where this has gone unaddressed for far too long and am concerned that they are not treated with sufficient seriousness.

The Secretary of State has written to council leaders and social housing providers calling for action on housing conditions in relation to damp and mould.

Social housing white paper / Building safety bill



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How did we get here?



Lack of data



Lack of insight



Lack of investment



Poorly performing homes

Happy and Healthy Home



Happy and Healthy Customer



Well Performing homes



Quantified Investment



Better insight



Better data



Is IoT the solution to damp and mould?

Post call to action





Is IoT the solution to damp and mould?

Start from the top : Accurate asset data



- Building fabric failure
- Rising damp
- Penetrating damp
- Severe health impact



- Good building performance
- Well ventilated
- Correctly heated



- Ventilation issues
- Behavioural impacts
- Condensation



- Unknown
- Schrödinger's Home



Is IoT the solution to damp and mould?

IoT Approach : Whack-a-mole





Is IoT the solution to damp and mould?

Start from the top : Accurate asset data

- Location
- Architype
- Repairs / access history
- Building fabric / material
- EPC / SAP Rating
- Heating type
- Spatial information (floor plans)



Almost half of housing providers don't know which of their properties have damp and mould problems nor the severity of any damp and mould problems.

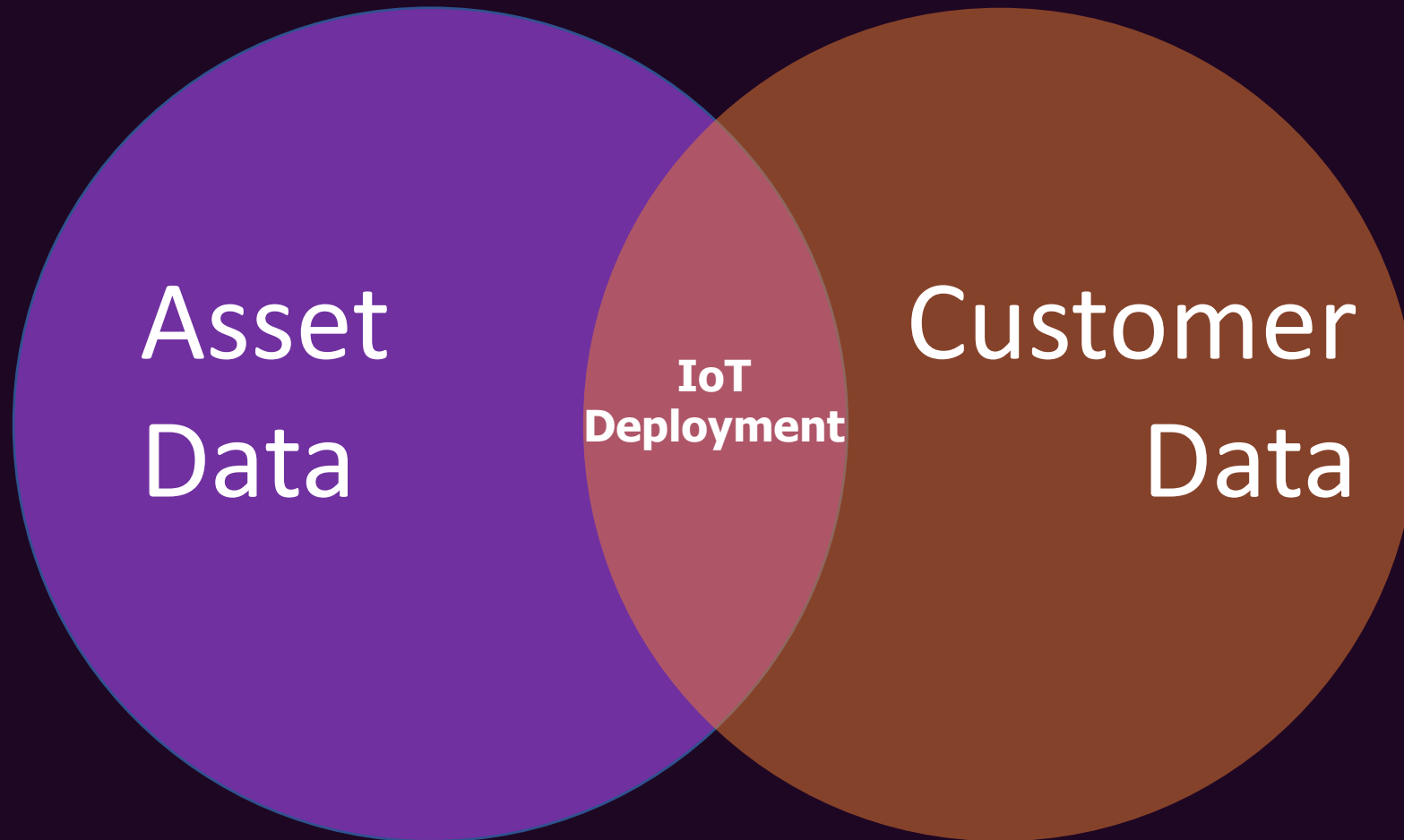
Almost a fifth of housing providers stated that their fixed-asset and property data was inaccurate.

Almost one-fifth of housing providers are uncertain about their properties' regulatory compliance



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IoT Approach: Data Driven Deployment





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Future estate





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Conclusions

“IoT can add value to a well-defined set of asset data. Allowing Housing associations to monitor properties from a standard baseline to understand changes in building performance over time.”

“IoT can help shape programmes of work by understanding the environmental conditions within a property to provide a pre-emptive response.”

“IoT is a tool that can augment traditional surveying practice and drive value into compliance & maintenance.”