

# HOUSING TECHNOLOGY™

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HOUSING TECHNOLOGY™



DATA MATTERS  
2023

12 September 2023

THE BRITISH MUSEUM  
LONDON

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# DATA MANAGEMENT IN HOUSING

Good & bad data, business & IT imperatives, data metrics, executive buy-in, quick wins & slow burns, and pitfalls to avoid

## Housing management

Agile business, housing standards, business intelligence and golden threads

## Mobile working

Online repairs, tenant engagement and video diagnostics

## Customer management

Chatbots, homelessness, omni-channel communications and lettings' reform

## Infrastructure

Cybersecurity, damp & mould, smart homes & IoT and big data

## General news

Risk management, HR software and social impact tools

### Because you're worth it...



I am delighted to announce that we are in the midst of analysing the fascinating results of Housing Technology's first-ever review of business and technology salaries in housing. Given people's natural interest in how they and their peers are remunerated, we had an outstanding response to our survey (100 per cent anonymous, for obvious reasons), supported by Lioness Recruitment.

The full Housing Technology 'Salary Review 2023' report will be published in mid-August; to whet your appetite, here are some of the Housing Technology research team's early findings\*.

- The average annual salary is £60,900, with technology-based roles generally better paid more than business-based ones.
- Office-based roles command average higher salaries (£68,500) compared with hybrid- (£61,600) or remote-working roles (£54,300).
- In terms of seniority, the average salary ranges from CxO roles at £123,500 to non-managerial roles at £43,500.
- Among different types of social housing providers, local government has the lowest average salaries (£50,100), housing associations in the middle (£61,600), and other public-sector organisations the highest (£62,100).
- Regionally, the West Midlands leads with the highest average salaries (£74,700), and Northern Ireland with the lowest (£41,100).

To pre-order your free copy of the Housing Technology 'Salary Review 2023' report, please visit [www.housing-technology.com/salary2023/](http://www.housing-technology.com/salary2023/)

Housing Technology would like to thank all of the survey respondents for supporting this initiative.

George Grant  
Publisher & Co-Founder, Housing Technology



\* Note: Housing Technology advises caution in using the figures above without recourse to the full analytics, survey methodology and data metrics published in the final report.

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06-07 March 2024  
East Midlands Conference Centre, Nottingham

housing-technology.com

**HOUSING TECHNOLOGY 2024 CONFERENCE AND EXECUTIVE FORUM**

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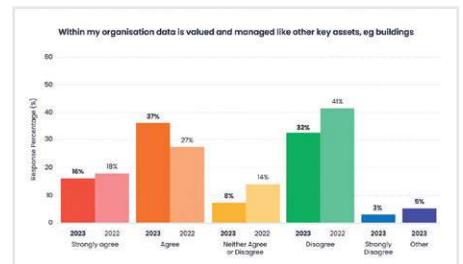
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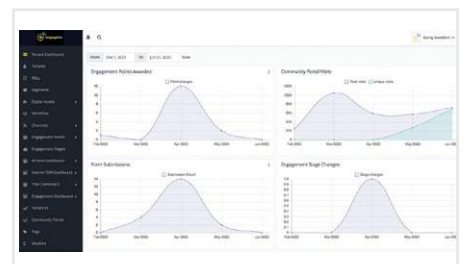
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**TECHNOLOGY SHOWCASE** Please see [housing-technology.com/showcase](https://housing-technology.com/showcase) for more information



We're delighted to announce the data experts from UK housing providers who will be sharing their insights at Data Matters 2023



**Paul Croston**

Director of Technology,  
Digital & Data  
**Halton Housing**

"Building trust &  
navigating data  
confidence for  
better outcomes"



**Chris Nove**

Director of Information  
Services  
**Riverside Housing**

"Whose data is it  
anyway?"



**Nicole Brosnan &  
Amramanjari Singh**

Data Quality & Improvement  
Manager and Director of  
Data & Business Information  
**Southern Housing**

"Data assurance -  
Building data  
confidence to provide  
good customer  
service"



**Steve Monks**

Group Head of Data  
& Analytics  
**Sovini Group**

"Data literacy &  
becoming a data  
driven organisation"

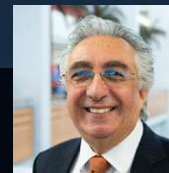


**Paul Blaydes**

Assistant Director of Data  
**Stonewater**

"How to build a  
data lake"\*

\*exact title to be confirmed



**Nick Murphy**

Board Member  
**Trident Housing  
& Tuntum Housing**

"Data matters  
to boards"



For more information on our speakers, please visit:  
[housing-technology.com/event/data-matters-2023](https://housing-technology.com/event/data-matters-2023)



# Developing an agile digital business approach

Alison Stock, Group Director for Digital & Technology and Neil Winn, Head of Cloud & Infrastructure, Riverside Group

*Riverside Group's 'digital business' approach is challenging the myth that large housing providers are huge juggernauts – behemoths that are slow to adapt to the pressures of changing market conditions and technological advances.*

With more than 75,000 homes across the UK, we have successfully demonstrated the benefits of a new approach for digital business, enabling greater agility and the faster delivery of successful outcomes despite our large size. The last few years have shown that, with the right culture and support, it's possible to achieve speeds of adoption of new technologies across a large business thought to be only achievable by smaller housing providers.

### **Our version of a DevOps approach**

Riverside's 'digital business' began in 2020. Digital business is about focusing on entire digital product sets, from cradle to grave. This has resulted in a transformational shift from a traditional, siloed 'plan, build, run and govern' IT model to a product-centric 'DevOps' approach across key areas of technology. Funding in our digital business has moved towards 'product funding' rather than 'project funding', and our culture was the key to our success.

Our culture is vital because this is at the heart of a successful, productised DevOps model where development and operations aren't siloed. Colleagues are passionate about delivery – they own the successful, rapid

outcome for customers, the full lifecycle and ongoing continuous improvement. In short, they have autonomy and agency.

We flex resources and focus between product sets and deliverables within the digital business programme as needs arise in near-real time. This fundamentally hinges on our strong foundations of trust, transparency, accountability and supportive leadership.

With the rapid pace of technology change, Riverside recognised the need to move away from prescriptive, finite projects for some inter-related technology areas across digital business, moving away from investments associated with narrow project scopes, with their traditional business cases and layers of project governance that can impede agility and limit incremental delivery and continuous change.

The whole process started with developing and agreeing our overarching digital business strategy and roadmap for the next few years. Every year, we reconfirm our progress and assess its affordability for the next 12 months. Our funding and resourcing take account of the 'whole life' span of a product set and a holistic view of our business and technology needs in line with our strategy, from architecture and design, through development and testing, to deployment and operations, with colleagues developing skills not limited to a single technical function. We also embed cybersecurity from the outset and build with usability and longevity in mind.

### **More about culture and our approach**

The next stage of our transformation focused on our ways of working and culture. We introduced Lean and DevOps principles throughout our digital business programme.



According to Microsoft, DevOps is, “a compound of development (dev) and operations (ops); DevOps is the union of people, process and technology to continually provide value to customers.” And according to the Lean Enterprise Institute, Lean is, “a way of thinking about creating needed value with fewer resources and less waste.”

In Riverside, large works were broken down into smaller components known as ‘epics’. Any further funding proposals were expressed using the Lean business case, defining the minimal viable product (MVP).

We focused on business outcomes, developing a new approach to pilots and a ‘fail fast’ mentality, enabling us to quickly learn what would and wouldn’t work across our digital business initiatives.

We empowered our product managers and product owners who were held accountable, producing a DevOps definition for Riverside which focuses on a culture of collaboration, empowerment and accountability.

This was an opportunity to reinvigorate our principles to IT colleagues; that everything we do is focused on our customers, created with the end-product in mind. We own our solutions and services from start to finish, sharing as part of cross-functional, autonomous teams, adapting and improving our ways of working continuously. We increasingly experiment, streamline, measure and automate everything we can, and we ‘flow to the work’.

Our Riverside team is committed to continually strive for improvements in how we work, delivering better customer outcomes faster, more safely and in partnership with all stakeholders, underpinning our agile agenda.

Only 18 months ago, we introduced the concept of DevOps across our wider IT team, shifting to productised teams or ‘chapters’, with full cradle-to-grave accountability for their product sets. This has gone from strength to strength. Outcomes included the continued rationalisation of technology sets, starting to minimise the array of products managed, supported and delivered. Cross-functional ‘squads’ form around deliverables, using the

right people to deliver successful business outcomes. ‘Communities of practice’ (or ‘guilds’) were also formed, cutting across the chapters and the broader business as appropriate, providing a vehicle for shared standards, frameworks, innovation and risk; for example, these include cybersecurity and IT architecture.

### True digital transformation

Riverside has truly delivered a rapid digital transformation capability, with our new approach enabling many successes to date. These include the continuous delivery of Salesforce as our unified CRM platform, with a dedicated cross-functional squad achieving business and customer benefits in record time.

We’re now close to completing a three-year cloud migration journey, from a traditional on-premise infrastructure to Microsoft Azure in less than two years as a direct result of our tailored DevOps approach!

We’ve also migrated from on-premise contact centre technology to a new CCaaS (contact centre as a service) model in only six months, creating a more future-proof platform and turning on incremental functionalities, coupled with our Salesforce CRM, enabling our customers to connect using channels of their choice at any time.

Furthermore, we have moved from using on-premise Citrix VDI to Azure Virtual Desktop within six months and rolled out Microsoft 365 (Teams, OneDrive, Exchange and SharePoint) within 12 months, as well as rationalising and moving data centres.

Looking forward, we will implement SD-WAN across our 400 locations, extending our Salesforce journey and much more. We continue to drive value from our approach across multiple areas, embedding broader agility in everything we do, and empowering colleagues and customers for the future.

*Alison Stock is the group director for digital & technology, and Neil Winn is the head of cloud and infrastructure at Riverside Group.*

# Is Your Data Holding You Back?

IntoZetta's unique combination of software and expert professional services is providing organisations across the housing sector with solutions to their data problems.

Trusted by:

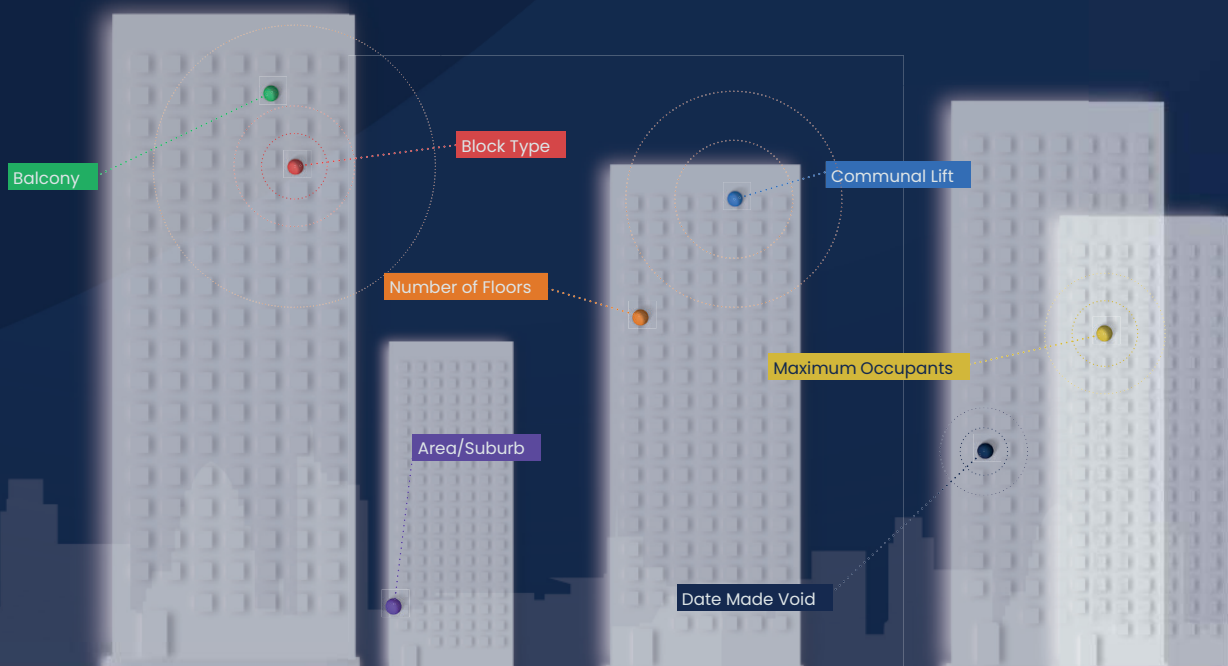


## INTOZETTA QUALITY FOR HOUSING

With over 1000 pre-configured housing data quality rules, we can create a complete picture of your organisation's data quality within a few weeks. The Rules Library contains housing specific rules for Asset, Tenant, and Finance data as well as specific data reporting requirements for NROSH. The software allows rules to be grouped into business processes so that you can measure your ability to Maintain Assets, Collect Rent, Communicate with Tenants, and all other key processes.

## INTOZETTA GOVERNANCE FOR HOUSING

Pre-configured with 100s of common housing data definitions that you can Accept or Modify to create your organisation's Data Catalogue. The software allows you to build a comprehensive picture of where data exists, how it moves between systems, and where the Master source is held. You can manage data ownership, data policies, and provide your employees with an intuitive Data Search capability that democratises data and drives a wider appreciation of good data governance.





# Taking data management seriously

Craig March, Senior Data Business Partner, Housemark

The Housing Ombudsman's recent report has highlighted a problem that housing providers have known about and grappled with for far too long; poor data management leads to poor outcomes. This revelation isn't necessarily a cause for alarm, but rather a clarion call for action; it's time to take data management seriously.

The Housing Ombudsman's report found that, "poor data and record-keeping is ubiquitous in the sector and causing daily detriment to residents". It highlighted instances where residents suffered from, for example, inefficiencies from living in disrepair and missing work due to scheduling mistakes – all pointing to lapses in data and record-keeping. Our sector's weak point has been exposed, and it's time to face it head-on... where to begin?

## The data pyramid

Housing providers operate in a data-driven world. Every service a housing provider offers, every interaction with residents and every decision should be fuelled by data. From maintenance requests to rent collection and compliance with safety regulations, data is the bedrock of a housing provider's operations. However, it's not enough to just collect data, it's equally important to manage it properly over the entire lifecycle of the data.

To understand the significance of effective data management, it is essential to consider the data, information, knowledge, wisdom (DIKW) model. This pyramid model elucidates the progression from raw data to wisdom, with each stage building on the previous one.

Data forms the base of the pyramid, representing raw facts and figures. Once processed, data becomes information (i.e. data with context and meaning). As housing providers begin to understand patterns and relationships in the information, they gain knowledge. With

experience and judgement, housing providers can attain wisdom, the apex of the pyramid.

In our sector, this could look like a progression from collecting data about a tenant's reported problems (data), to understanding the context of those problems (information), to discerning patterns or trends (knowledge), and finally to making informed decisions about resource allocation, policy changes and/or preventive measures (wisdom).

## A plan of action

What does it mean to take data management seriously? Here's a potential roadmap:

- 1. Assess your data maturity** – a data maturity assessment is a great place to start. It can tell you your strengths and weaknesses, and what data management gaps you need to fill.
- 2. Prioritise data quality** – the quality of data housing providers work with is just as important as the data itself. Housing providers must implement strict protocols to ensure the accuracy, timeliness and completeness of data.
- 3. Invest in data literacy training for staff** – equip your team with the skills to understand and use data effectively. This should include training on data management tools, interpretation of data analytics and understanding the value and implications of data in decision-making.





4. **Establish data governance** – outline clear roles and responsibilities around data management. This should include a comprehensive policy detailing who is accountable for various data-related tasks, standards for data processing and storage, and a procedure for resolving any data-related problems.
5. **Implement stringent data security** – ensure your data storage and processing systems comply with data protection regulations (such as GDPR). This includes safeguarding personal data with appropriate security measures and implementing procedures for data-breach notifications.
6. **Regularly review and incorporate best practices** – stay up-to-date with emerging trends and best practices in data management. Regularly assess your processes and technologies against industry standards and be prepared to adopt new strategies that could improve your data maturity.

The Housing Ombudsman's report is a wake-up call but it also presents an opportunity for housing providers to overhaul their data management practices.

Let's remember that improving data management isn't just about compliance or efficiency, it's also about serving tenants better. Tenants aren't just entries in a database but people who depend on us for one of their most basic needs – shelter. We owe it to them to take data management seriously.

*Craig March is a senior data business partner at Housemark.*



# Reforming social lettings

Katrina Heyworth (L), Head of Sales, and Ann Foy, Business Development Manager, Housing Insight

## *If you needed social housing for your family, what's the first thing you would do to find a home?*

Many people would look up their council website as a starting point, only to discover that their council doesn't have an online registration form. Instead, housing applicants are often directed to collect a paper form from the council offices, as Katrina Heyworth recently discovered when helping a friend, or they may be able to ask for a form to be posted to them. At a time of acute stress, these delays create additional pressure.

Then, when an applicant has completed and returned the paper form, the council acts as a middleman and sends this form on to one or more housing providers from an accredited pool of providers. The applicant doesn't have any idea who their potential landlord might be and nor do they know to what extent specific requests, such as for certain schools, will be heard and prioritised; they must simply wait for the council to get back in touch.

There is a disconnect here. On the one hand, the government is encouraging social housing residents to speak up and have a voice (damp and mould being an obvious example at the moment), yet the old-fashioned and under-funded processes for social housing applications and their allocation make it difficult for potential tenants to be actively involved.

### **Enabling collaboration**

Here at Housing Insight, we feel that technology has a role to play in helping housing providers and councils to work together better by updating the very old systems that exist between the two. For example, paper forms create a

duplication of work that slows the whole process down. Further delays also accrue because of the need to meet letting standards stipulated by the government. While higher standards are important to protect tenants, addressing those standards has resulted in the average turn-around time for voids doubling from 18 days in 2018 to 40 days in 2023.

While many housing providers are opting to bring their repairs and voids management work in-house, rather than outsourcing it, in order to bring down costs and timescales, we believe that technology can play a greater role in streamlining operations.

### **Extensive waiting lists**

The lettings allocation process has become a bit of a lottery. Regional waiting lists are extensive but are not time-sensitive. Depending on postcode, decisions are prioritised based on a range of factors which may or may not include ethnicity, nationality or disability. In addition, since the choice-based lettings (CBL) pilots were introduced in 2001, applicants have been placed into accommodation bands which aim to reflect their housing needs. Is this process still fit for purpose over 20 years later?

With today's technology, it is both feasible and more efficient to allow potential tenants to approach their landlord of choice direct. For example, Housing Insight currently offers separate housing application and housing allocation systems for our various customers; linking the two systems would be transformative for potential tenants.



### Reduced social housing stock

Additional complications arise because fewer social homes are now available. Since the 1980s, right-to-buy has taken over 200,000 social housing properties out of circulation, with pricing discounts of up to £130,000 making it impossible for councils to replenish their housing stock on a like-for-like basis.

Anecdotally, we know of one tenant in London who bought their three-bedroom council property for £60,000 before selling it to a private landlord who then converted it into six flats, each generating a rental income of £950 per month. Many former council properties are now in the hands of private landlords, with rents going through the roof.

House building for social housing is happening at its lowest rate since 1991, with a net loss of 24,000 homes during this period. During 2021-22, there were only 267 new social lets, and only 11 per cent of all social lettings incorporated a new build or newly-acquired property. Most changes involved tenants moving from one property to another within the existing housing stock.

As a result, because so few alternatives exist, potential tenants often receive a single 'take it or leave it' offer. This creates a Catch-22 situation; housing providers want sustainable tenancies because happy tenants are more likely to pay rent and report any issues with their property, but tenants are unlikely to want to stay long-term in a house that doesn't meet their needs (because there are too few bedrooms for the number of family members, for example).

The current cost-of-living crisis is likely to make matters worse. Rising interest rates will lead to an increase in the number of repossessions over the next few years and therefore greater pressures on our limited social housing stock.

### Reduced mobility

There is also limited mobility within the system. Over time, as family members grow up and leave home, a single parent may end up as the sole occupant of a three-bedroom house. The housing provider might want to facilitate an exchange and swap the three-bedroom house for a more suitable one-bedroom flat because more people will benefit, but the tenant doesn't have to agree.

On occasion, housing providers can offer financial incentives to encourage tenants to downsize, and the bedroom tax was introduced back in 2013 as a tool to promote this, but the decision is usually up to the tenant. Swap requests from tenants do exist, but they are unevenly balanced in that most tenants want to upsize rather than downsize.

### Houses or homes?

Perhaps it's time to reframe how we view social lettings as a concept. When working well, social accommodation is attractive; it functions like private lettings but with greater security for the tenant. But while it's important to make tenants feel valued, technically these rentals are not their home.

Maybe our focus should shift away from providing social housing for life and towards a model that builds in a ten-year review or some other fixed term; not to force people out of their homes but to ensure the UK's limited social housing stock is allocated efficiently in order to help as many people as possible. In supported tenancies, happy tenants who are aware of the review period are more likely to be willing to move because they trust their landlord, so everyone benefits.

And what proportion of that allocation should be given over to supported housing rather than general need? Currently, only 23 per cent of social housing is used for the most vulnerable, which reflects a six per cent decrease since 2022.

### The future

In the UK, we still take a very traditional approach to bricks and land, although new technologies such as 3D-printed homes could allow us to be more creative in our thinking. In the same way, we need to look at alternative solutions that use technology to improve not only the bottom line in social lettings but also how the entire process operates.

*Katrina Heyworth is the head of sales and Ann Foy is the business development manager at Housing Insight.*



# IoT, data integration & tenant engagement



John McEwan, Head of Software Engineering, FireAngel

*FireAngel's head of software engineering, John McEwan, explores the extraordinary asset-management advantages that smart technology promises for both housing providers and their residents.*



**Real-time reporting**

Alongside benefits for residents such as reduced energy bills and lower carbon emissions, smart technologies are transforming the way housing providers' internal departments such as repairs, asset management, energy and call centres work and communicate.

The internet of things (IoT) is changing the way data is collected and processed across a range of business sectors, including social housing. IoT aggregates and integrates enormous volumes of data across multiple devices in individual properties to provide immediate, contextual information to housing providers, combined with remote-control capabilities.

But with an ever-increasing amount of data being imported from various sources and sensors in properties, it can become overwhelming. And it's not just collecting IoT-derived data that's important, but how that data is then integrated by housing teams; turning data into insights, and therefore action, is crucial in the creation of a successful IoT ecosystem.

## Creating an automated network

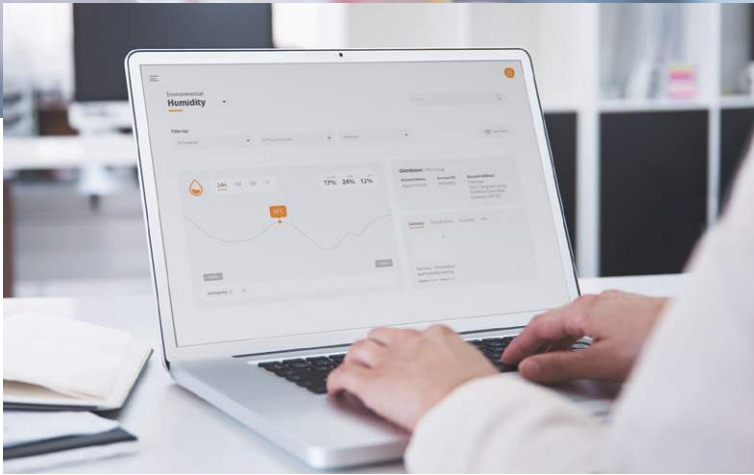
With IoT, housing providers can gain a more interoperable and holistic view of what's going on in their properties rather than relying on individual systems. However, when the velocity at which data is being collected and processed from smart technologies in multiple properties is so high, housing providers would benefit from a centralised platform for total system integration and a single view of all IoT-derived data and insights.

A central dashboard eliminates the cost and complexity of managing multiple documents and spreadsheets and enables housing teams to manage multiple assets from only a single platform. Data gathered from connected smoke and carbon monoxide detectors, smart boilers, utility readings and temperature sensors creates a network of protection for a property.

For example, housing teams can analyse and automate processes using IoT-derived data to book predictive maintenance visits and smart boiler servicing, test connected alarms remotely to streamline compliance checks or allocate better ventilation resources by monitoring sensors' temperature readings.

## IoT-powered resident protection

FireAngel Connected, a purpose-built solution for home safety in social housing, has an open API, enabling integration with other building and asset management software or dashboards to create a centralised view of actions based on insights. With Connected, housing providers can remotely monitor interlinked alarms, access real-time status updates and view instant diagnostic reports for a more efficient, intelligent way of managing their properties.



The solution can be deployed within the parameters of an existing budget and can be connected via cellular technology for more reliability than wi-fi to ensure tenants are kept safe even if an internet connection is interrupted.

To enable a connected network, a gateway can be added to provide remote real-time monitoring of all alarms. FireAngel's Home Environment Gateway is ceiling mounted and occupies the same footprint as a smoke alarm to remain unobtrusive for tenants. The gateway's design allows it to be attached as a base on an existing FireAngel mains-powered product, so it's quick and easy to install by maintenance teams.

With built-in temperature and humidity sensors as standard, the gateway allows housing providers to identify environments which may lead to the onset of damp and mould in properties. It's further enhanced with Zigbee capability, giving it connectivity to other Zigbee sensors within a property, such as water-leak detectors, panic buttons and motion sensors, supporting smarter homes for the future.

### Real-time reporting

The FireAngel Connected cloud-based dashboard reports real-time, GDPR-compliant data for individual properties and devices. Using the dashboard, housing providers can quickly access the most important information, with an

instant overview of urgent, active and FireAngel Predict notifications to help with effective resource management.

Every aspect of a device is captured and logged automatically on the system, including installation, training and compliance records, to comply with the Hackitt report's recommended 'golden thread of data' for a building. Within the installation dashboard, housing providers can view full alarm-history reports for individual properties and run test events remotely. This can either be a sound test (with a resident's go-ahead) or a silent test across all alarms in a property.

### Educating & supporting tenants

The Connected tenant app also brings tenants into the centre of fire safety, enabling them and their families to be aware of the fire protection network in their property and play an active part in mitigating their risks. Educating and engaging residents about the smart appliances and devices being installed will bring them along on the journey, demonstrating how IoT can improve their home environment, reduce the impact of fuel poverty and help save them money.

Technology advances such as IoT can ensure that housing providers remain compliant, and by integrating IoT data into a centralised dashboard with an open API, it can unlock the ability to automate more services from maintenance to fire safety to streamline future processes.

**To find out further details on FireAngel Connected, please visit [fireangel.co.uk/connected](https://fireangel.co.uk/connected).**

*John McEwan is head of software engineering at FireAngel.*

**FireAngel**

# Raising the roof – The hot topics in housing



Mark Holdsworth, Sales Director for Housing, Civica

*In the aftermath of Housing 2023 at the end of last month, three key themes from the conference particularly struck me as areas for more detailed consideration.*

## Getting smart on damp and mould

We've all seen the terrible stories in the media around residents suffering damp and mould in their homes, and renewed scrutiny of housing providers from the Housing Ombudsman. However, of all the challenges presented to our sector over the last decade, this is the one where technology could solve the problem.

Damp and mould can be caused by numerous factors including the age and design of buildings, the standard of repairs or residents being unaware of the best way to prevent it. Damp is a very technical issue, one which housing officers may not know the exact cause of straight away; as a former housing officer myself, it was often difficult to work out exactly what the problem was. But with the growth in smart home technologies, we can now take proactive and preventative measure to stop the problem before it starts. Technologies such as imaging, AI and smart sensors can help detect damp and mould by taking temperature and humidity readings; they then create automated alerts to help housing providers get a fuller view across their entire housing stock and then make the most effective interventions.

This is also tied into the green agenda; during Housing 2023, we found out more about what's being done to ensure well-ventilated buildings with healthy indoor air that also reduces carbon emissions, so ensuring residents' health and wellbeing sits alongside our low-carbon future.

## Listen with respect

Taking the residents' voices into account is another key issue if we're going to build the homes and services which people really need. While resident panels are useful, they're

normally only a small sample of the overall resident population. And like anything, there are sections who won't want to engage because they're not interested or too busy to make it a priority.

But in the wider world, we're all used to filling in Trust Pilot reviews or satisfaction surveys; these are very useful for organisations to engage with a much wider audience and get views from harder-to-reach people. This opens new opportunities for housing providers to boost interaction and engagement through multiple different experiences.

For example, when gathering feedback on a proposed new parking scheme on an estate, people can see maps and 3D representations, and take part in online discussions with fellow residents. This will give a more nuanced view. It will also put a fuller resident voice at the heart of that issue, ultimately delivering a scheme which works for as many people and stakeholders as possible.



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Often, communities can feel like things are being imposed on them without proper consultation; communication is a two-way street and through online portals, residents can raise concerns and highlight opportunities for further improvements.

Of course, this all links to the new Tenant Satisfaction Measures launched in April: we're moving to a more consultative approach and making sure that residents' voices are heard.

For example, Teign Housing is looking at the issues which impact its residents and neighbourhoods and using an online consultation platform to ask people what they really think. The housing provider is then reviewing these outcomes at board level and putting the residents' views at the heart of its decisions.

#### Spotlight on housing standards

A final hot topic is the question around whether the Future Homes standard is achievable for our sector; the standard aims to ensure that new homes built from 2025

will produce around 75 per cent lower carbon emissions than homes built under the current building regulations. It will be interesting to debate whether the supply chain can adapt in time and also how affordable this is.

Of course, many of us are striving for energy-efficient homes, without any reliance on fossil fuels. As long as technology exists, we can build new housing with the latest technologies to support the net-zero agenda. But it's retrofit that will be the big issue; how do we convert our existing housing stock and complex buildings with a completely different housing standard in mind?

At Housing 2023, I was excited to see great examples of innovation and new thinking, and I'm looking forward to supporting the sector with the latest smart cloud technologies to provide for residents long into the future.

*Mark Holdsworth is the sales director for housing at Civica.*

# CIVICA

## Plentific buys Active Housing

*Plentific has acquired Active Housing, a long-standing developer of tenant-centric solutions. Active Housing's products include diagnostic tools for repairs and scheduling and self-service tenant portals.*

Cem Savas, CEO and co-founder, Plentific, said, "The acquisition of Active Housing is an exciting step for us, building on Active Housing's well-established presence in tenant-centric software alongside our innovation in real-time property software."

Stephen Hall, managing director and founder, Active Housing, said, "We're excited to join Plentific to unlock the full potential of Active Housing, and our existing customers and staff will all benefit from becoming part of the Plentific business."





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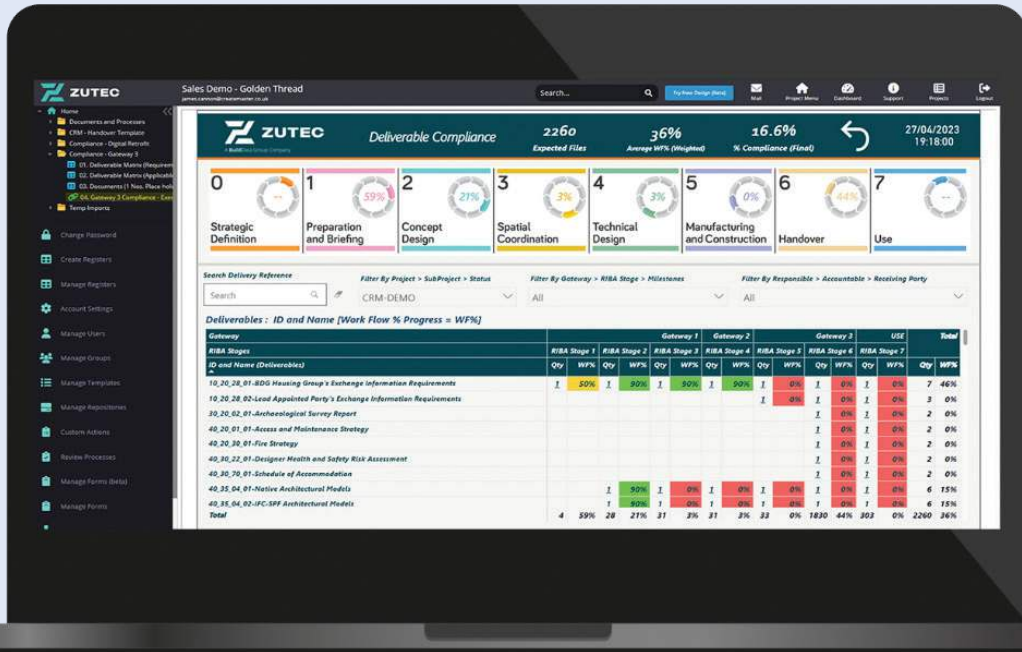
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# Createmaster launches golden thread for digital handovers

*Createmaster has launched its Golden Thread: Gateway 3 solution. Underpinned by the Zutec platform, the solution combines Createmaster’s digital handover service with a dashboard for contractors and developers.*

Gateway 3 refers to the completion or final certificate stage (equivalent to RIBA stage 6) when a building safety case is submitted for review and approval. As a stop/go point in the handover process, building control approval must be obtained from the Building Safety Regulator (BSR) before registering and commencing occupation of a higher-risk residential building (HRRB).

The Createmaster dashboard gives contractors and developers real-time visibility to manage all of their building information deliverables in a single place. Users can quickly see what information and documents they have, what is expected, what is in progress and what has been validated for compliance.

James Cannon, commercial director, Createmaster, said, “At the moment, the handover information needed by contractors is likely to be captured across multiple formats, systems and platforms, including the contractors and subcontractors’ own CDE or quality management systems. While these systems are widely used for construction project data, they don’t offer a single, consolidated dataset for handover to clients and the regulator.

“As a single source of truth for digital building information, our solution provides a clear mechanism for collating the evidence needed to support building safety cases, and helps contractors ensure regulatory-compliant building information and manuals are handed over to a client.”

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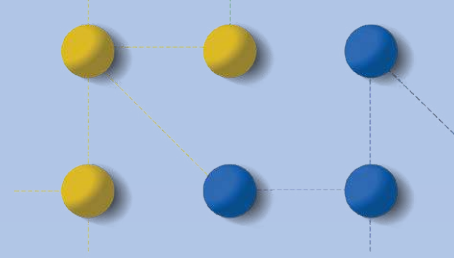
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# IntoZetta’s annual ‘data in housing’ survey results... part two



David Bamford, Delivery Director, IntoZetta

The second part of IntoZetta’s annual ‘Data in Housing’ review features a deeper dive into the challenges faced by housing providers across the UK. If you missed the first part, please see the May 2023 edition of Housing Technology. Part two begins with the ‘million-dollar question’ – what are housing providers’ biggest data challenges?



### The biggest data challenge faced by social housing providers is...

This question always throws up some interesting responses but there are usually some clear themes and this year is no exception. As the graphic shows, changes, systems,

quality and understanding are the candidates for the biggest data challenge in our sector; I’m sure those will resonate with most readers.

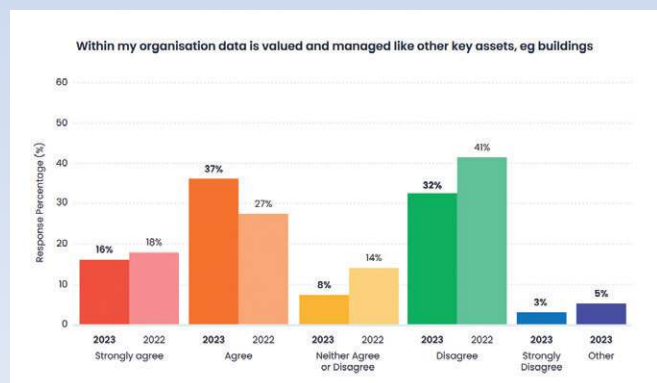
Here are some quotes from respondents on what they consider to be the biggest data challenge:

- “The capture and storage of additional data needed for changes to regulatory reporting.”
- “The sheer number of systems in use.”
- “Data quality – improving it, maintaining it and retaining only what’s necessary.”
- “Data literacy at all levels and a subsequent lack of evidence-based decision-making.”

The last of those quotes particularly struck a chord with me. As the sector progresses along its journey to becoming more data-driven, organisations must consider how to bring colleagues along on the journey.

Whether that’s through specific training for those with day-to-day involvement in data activities or through simple and clear communications to all staff on the plan, the value of it and how they can play their part, if we don’t get the human side of data management right, we’re destined to fail.

### Within my organisation, data is valued and managed like other key assets



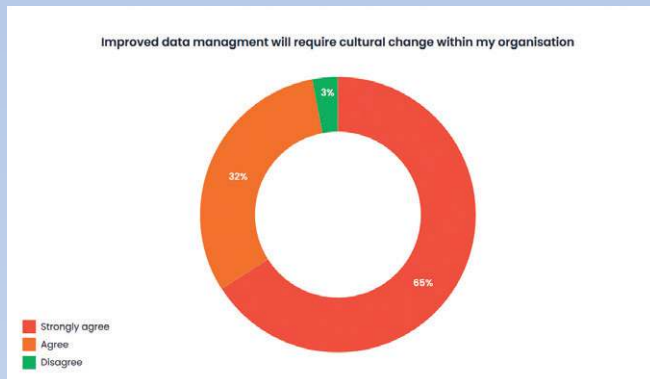
This was probably the first question this year with a clear improvement in the favourable responses, which highlights the changing attitudes towards data in our sector.

For most organisations we speak to, data is now a board-level issue, and not only that, but a high priority one. Recognising data as an asset as valuable as the bricks-and-mortar is the first step in driving the cultural change highlighted as a significant challenge in the first question.

And if you're one of the 35 per cent of housing providers who haven't made that step, perhaps ask yourself why not.

Now to some new questions for 2023. From feedback last year, many people we spoke to thought that recognising there was a problem with data was only half of the story; being prepared and equipped to deal with it was something else entirely.

### Improved data management will require cultural change within my organisation



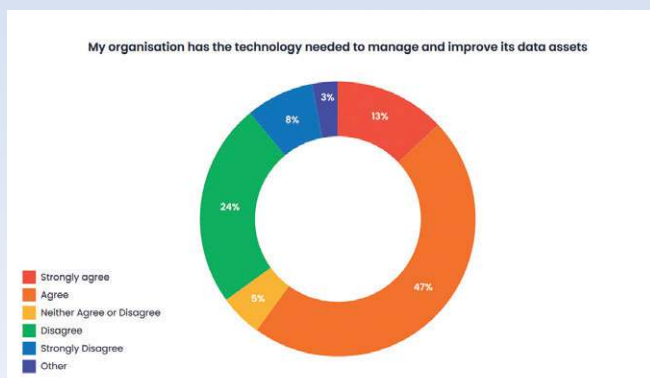
An emphatic response here; 97 per cent of respondents believe that cultural change is needed to improve data management. I find this shocking yet unsurprising.

The debate here then becomes how (not if) housing providers go about delivering that change. Which partners can help shape the future of data management and provide the training needed to get people into the right headspace around data?

I'd love to think that next year, we'll see a big turning of the dial and improvement in the responses to this question – over to you...

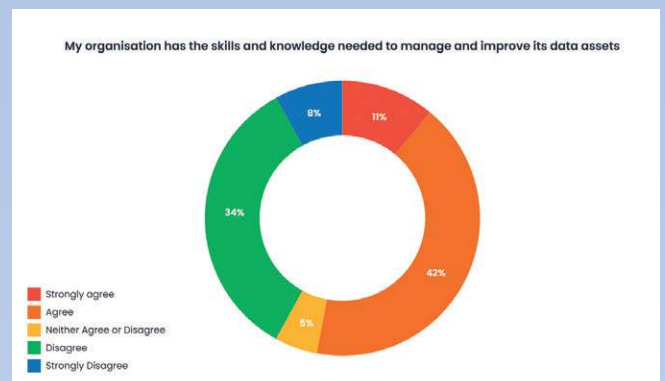
We next look at two questions which examine the knowledge, tools and skills needed to manage data.

### My organisation has the technology needed to manage and improve its data assets



Better news here. A majority (albeit small) of respondents feel that the software and systems exist for them to do a better job around data.

### My organisation has the skills and knowledge needed to manage and improve its data assets



A similar story here, with again a small majority feeling that the skills exist to take data management to the next level.

What conclusions can we draw? Looking at the individual responses, we can split them broadly into two groups.

1. The first group has the necessary technologies and skills to transform data management; this really brings the cultural point into focus. If you think you're in this group and that it's only cultural issues holding you back, what are your SLT doing about it and how can you help?
2. The second group has neither the skills, technologies nor culture to bring improvement to data management. This should be a wake-up call to the leadership of those organisations.

Over the past five years, we've seen data emerge as a board-level issue within most of the housing providers we talk to; regulations around data are tightening, reporting burdens are heavier and scrutiny is increasing, to highlight just a few areas.

If you are one of the roughly 45 per cent of housing providers in this bracket, I would strongly urge you to create an action plan to address this critical gap in your operating model. The answers are definitely out there but first you need to ask the right questions.

Join us in the September edition of Housing Technology when we'll be covering the third part of our findings from our 'Data in Housing Survey 2023'.

And as always, if you'd like to take part in our 2024 survey or share your experience of working with data in housing, please contact us at [participate@housingdatasurvey.com](mailto:participate@housingdatasurvey.com).

*David Bamford is the delivery director at IntoZetta.*





# Better connectivity for better value

Lee Burke, CRO, Aareon UK

*Keeping an open mind as a technology supplier to social housing is critical. There are so many different business processes, supported by technology, that need to be carefully managed to deliver the best possible outcomes for housing staff and residents.*

## Understanding the nuances

Each housing provider has nuances that are reflected in their approaches to procurement, the resources at their disposal and the technologies they have chosen to complement their processes.

I've worked in our sector for some time across multiple technology providers, and one of the most important things I advise my team is to be conscious that each housing provider has its own individual ecosystem and infrastructure and that our solutions are there to complement and support that; we are secondary to the process. If we truly invest in the customers' needs and their continued success, then we must make ourselves accessible in terms of both expertise and technology.

## Removing walled gardens

Removing 'walled gardens' supports better outcomes for customers and is a key priority for me and our team at Aareon UK. We have over 130 customers and our flexibility to meet evolving requirements is imperative.

In the May edition of Housing Technology, IntoZetta's annual 'data in housing' survey results showed a reduction in respondents who felt collaboration was good in our sector (from 50 per cent in 2022 to 45 per cent in 2023). Fewer than half feel collaboration is good and, in my experience, I would tend to agree. We can do much more as a sector to improve collaboration and as a technology

supplier, we can encourage it. More recently, we have increased the volume of customer engagement both online through forums and offline by hosting events that enable our users to collaborate, learn from each other and share best practices.

**“Connectivity needs to be embraced by suppliers to support housing providers in finding the best-practice solutions; one size simply doesn't fit all.”**

Lee Burke, CRO, Aareon

## The wider ecosystem

We understand the comprehensive capabilities of our own software and the value it brings to the sector but we aren't so naive as to think that we've the solution for everything; no supplier should believe that.



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Over the years, I've crossed paths with many technology providers of all sizes, and I've experienced both sides of the coin, being told that solutions wouldn't be viable for the customer (even if they were a good fit for their requirements) because of a lack of technical capability, connectivity and restrictions from their existing suppliers.

Although the reasons that once existed for silo working are beginning to fade, the technology is available and capable to remove the barriers of the past and, as suppliers, we need to adopt an open approach to collaboration if it creates more value for housing providers and their residents.

### Embracing connectivity

From a technology perspective we've embraced connectivity, and to serve our customers better we recently acquired Locioa, now known as Aareon Connect.

Aareon Connect is a low-code automation and data platform that can empower housing providers to work with a unified data source across multiple third-party solutions. This means past barriers to effective integration have been reduced and projects can be expedited to serve better outcomes for customers.

### How can connectivity drive more value?

With all this talk of connectivity and collaboration to serve better outcomes, what outcomes can we expect?

### Detailed process data for increased value

Being able to connect your housing ecosystem means that you can benefit from more detailed information from specialist solutions that provide extra insights for your workers. But not every solution has all the answers or the expertise needed for the optimised management of a process; most housing providers need a mixture of technologies to support their key challenges.

This is the case with Soha Housing. We recently connected our Aareon QL asset management software with Sava's intelligent energy solution to deliver energy

and carbon insights so that Soha Housing could have a better understanding of how to achieve its energy-efficiency goals.

### Connecting expertise

Connecting the expertise of people who use the technology together with the technology itself elevates the standards of housing management, and in turn the service customers deliver to residents. Facilitating collaboration and sharing the best practice between people in similar roles should be something that we all focus on.

We mentioned nuances earlier; every housing provider has conditions and resources which are unique to them, so embrace connectivity so that people can use the solutions that complement the skills they have and the work that they do. A solution that works well for one team may not for another, so connectivity empowers housing teams to make the choices that are right for them.

*Lee Burke is the CRO of Aareon UK.*





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# GCH on the move with Totalmobile

*Totalmobile's Connect and Mobilise software is set to be deployed across Gloucester City Homes to streamline its repairs and provide real-time insights into projects.*

GCH has bought 50 licences for Connect and Mobilise for its back-office staff and engineering teams in the field. Mobilise in particular will be used by GCH's repairs team to capture data as the repairs take place,

replacing its existing legacy systems. Phase one of the development is underway and will involve integrating Totalmobile's software into GCH's CRM, asset management, finance and document management platforms. Preliminary plans for phase two will focus on the development of a contractors' portal.

Paul Haines, director of digital, data and change, Gloucester City Homes said, "Prior to making our choice, we were looking for a technology provider who could deliver the best

balance of functionality, cost and future-proofing technology while also matching our corporate ethos.

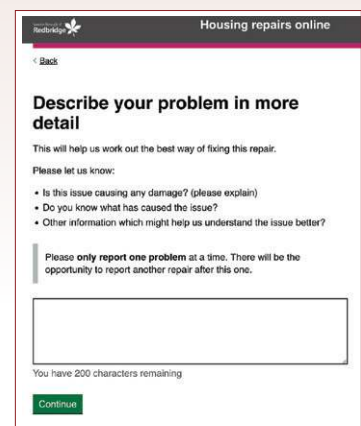
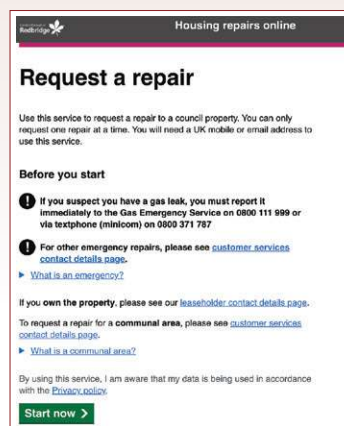
"We found Totalmobile on the government's G-Cloud framework and were already aware of the company's great reputation in social housing. It was important that we partnered with an organisation that prioritised a positive working relationship and continued product development; we found that in Totalmobile."

# Made Tech online repairs service at Redbridge

The London Borough of Redbridge has gone live with a new online repairs service from Made Tech.

The user-centred service for the council's 5,500 tenants is easy to use and avoids complex language and unnecessary logins. Tenants simply go online to log their repairs; confirmation is then immediate via text or email.

Tom Harrison, programme director, London Borough of Redbridge, said, "We needed an online repairs service that would work better for our tenants and fit around their daily lives. With Made Tech's help, we now have exactly that. We've had positive feedback from our tenants who find our new step-by-step process really easy to use."



# BCH boosts mobile working with Abzorb

*Black Country Housing has rolled out a new Samsung phone and tablet estate from Abzorb to improve remote working and connectivity.*

Steve Kesterton, ICT project manager, Black Country Housing, said, "All of our staff now either hybrid-work or are out and about visiting tenants or doing repairs, so constant and reliable connectivity is vital. Even though we mostly operate in a built-up area, there were occasions when we would struggle with mobile reception. Abzorb's solution lets us seamlessly transfer to another mobile network so we never lose coverage."

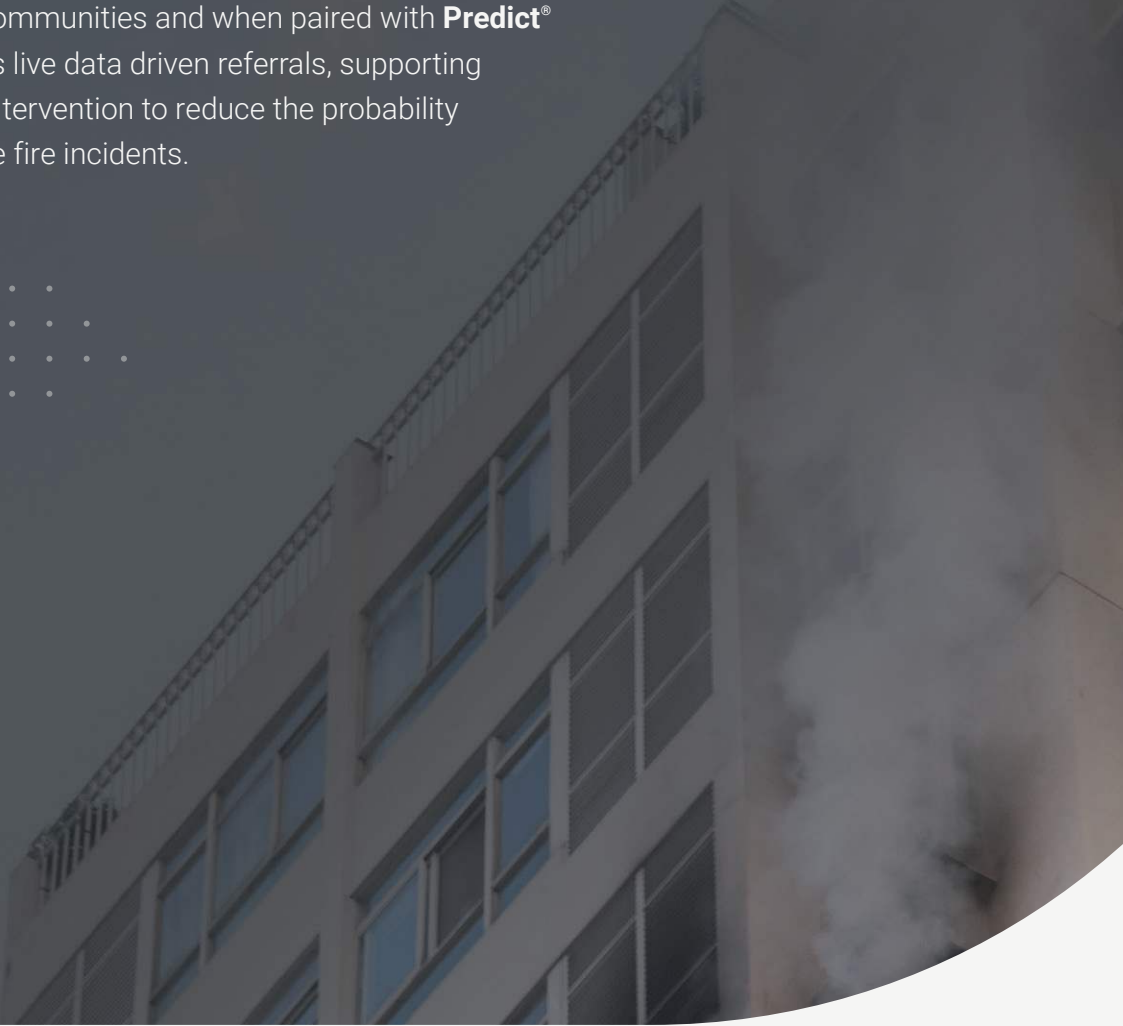
BCH previously had an inflexible contract which made it difficult to remove or add mobile devices when needed. The housing provider also struggled to get an overall view of its mobile usage because it was only available for each department. Abzorb has given the housing provider a dedicated portal for managing all of its devices and for full reporting on usage and billing.

Kesterton said, "Another bonus was that Abzorb carried out the entire roll-out of the mobiles and tablets. We only have a small IT team and so setting up and shipping 150 mobile devices would have taken us about three weeks!"

## Catching near misses

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# Sovereign Housing introduces XM Reality's video repairs

With most internet users in the UK now using a smartphone, Sovereign Housing has introduced video diagnostics for its repairs reporting after a trial of XM Reality's video-calling software.

Originally introduced as a trial to diagnose and resolve boiler problems, the roll-out of XM Reality's system has proven to be very popular with tenants. Since its introduction, the tool has been used to fix more than a quarter of the boiler-related issues during the initial trial.

When reporting a problem, customers can be video-connected to a Sovereign advisor who can talk them through the problem, advise on any possible self-fixes and, when necessary, arrange a call-out. The video-calling diagnostic service can be accessed via any smartphone, laptop or tablet.

Sovereign is now implementing the XM Reality system across its operations to diagnose and assess different types of repairs and problems, including reports of damp and mould.

Stuart Brookes, property services director, Sovereign Housing, said, "We aim to be as accessible as possible for our customers. Our introduction of 'video triage' is part of us putting that aspiration into practice to deliver services which are more convenient for customers and to help us prioritise repairs better."



## Platform Housing's Futr AI chatbot

*Platform Housing has signed up for Futr AI's digital services following a four-week pilot of the company's chatbot and new live chat software.*

During the pilot project, the housing provider used Futr AI's chatbot software to gather data on its customers' preferences and its customer advisors' user experiences.

The automated chatbot answered 5,000 customer interactions, with only 338 of these customers asking to speak to an advisor (via live chat).

Michael Bruce, director of hub and income management, Platform Housing, said, "Platform's new chatbot and live chat technology from Futr AI will fit in seamlessly alongside our traditional contact methods."

NEC Housing

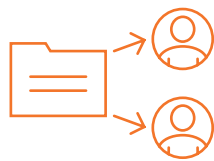
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#### Let people manage their homes

It puts housing management into residents' hands. It offers smart tools for managing properties



## Barnet Homes combats homelessness with MRI Housing Options

*Barnet Homes is now using MRI Software's Housing Options to manage its homelessness cases, allocations, referrals and reporting alongside compliance with the Homelessness Reduction Act (HRA) and Homelessness Case Level Information Collection (H-CLIC).*

Sonia de la Orden, data integrity project manager, Barnet Homes, said, "We needed a robust validation tool that identifies all H-CLIC errors and is updated with any changes to H-CLIC specifications. MRI's Housing Options alerts our end-users about any H-CLIC errors when data is inconsistent within the case. Also, the Housing Options configuration helps with the data validation inputted in the Homelessness Reduction module, such as a case that we can't progress until, say, a certain questionnaire has been

completed. The way the MRI solution has been designed means that it does half the job for you.

"We've been reporting H-CLIC data since April 2018. The difference is huge from trying to calculate the P1E return to simply pressing a button and uploading the data."

Within the Homelessness Reduction Act 2018, specified public authorities must notify a housing authority of service users who might be homeless or threatened with homelessness. MRI's Alert portal is a free online tool which sends referrals and notifications between local authorities and other agencies.

Barnet Homes said that the portal is more efficient for managing referrals than emails because it removes the need for its team to build cases themselves as the relevant information is automatically included within the Alert referral report.

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### INFRASTRUCTURE

## Curo partners with CTG for full-fibre roll-out

*Complete Technology Group has been chosen by Curo to oversee the roll-out of full-fibre networks for tenants living in its multi-dwelling units (MDUs). Curo's housing portfolio comprises 13,000 properties, of which 4,700 are in MDUs.*

CTG will work with Curo and a number of third-party ISPs, as well as its sister company, Complete Fibre, to optimise full-fibre networks for each MDU.

Matt Steele, director of assets, Curo Group, said, "Rather than respond reactively to ad-hoc requests from telcos, we're working across our estate now ahead of the copper switch-off, saving us time and resources in the long term.

"CTG is helping us to plan the fibre roll-out and then audit the buildings post-installation, ensuring the integrity of the buildings is preserved and is fully compliant with regulations. CTG's service doesn't cost Curo or our tenants anything and enables us to future-proof the buildings so that over time all tenants will have access to full-fibre broadband."

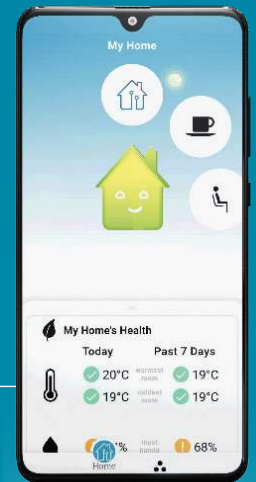






# Beating damp & mould with IoT sensors

Chris Jones, Chief Executive Officer (HomeLink), Aico



*In February 2023, the Housing Ombudsman released a one-year follow-up to its 'Spotlight on damp & mould – It's not lifestyle' report. It highlighted that 35 per cent of RSLs sampled now have a specific damp and mould policy, 12 per cent are in the process of implementing one, and 19 per cent are self-assessing against the Housing Ombudsman's recommendations.*

The report also highlighted a number of areas of good practice including:

- Using humidity and temperature sensors;
- Root-cause analysis modelling and consideration of wider factors beyond just residents' behaviour;
- Dedicated dashboards and a specialist damp and mould team.

## Humidity and temperature sensors

Humidity and temperature sensors are a staple way of tackling damp and mould. For years, housing providers have used 'data loggers', sending them off for analysis to gain some basic understanding of the problem.

Modern versions of these sensors are mostly internet-connected and have exceptionally long battery life (over 10 years in our case). This is a more cost-effective approach due to fewer visits, the data is much richer and easier to store, it's faster, and the analysis is automated. Furthermore, like Aico-HomeLink, many companies provide additional analytics and insight such as mould risk, thermal efficiency and fuel poverty.

The Housing Ombudsman highlighted the use of these sensors as best practice because they make a housing provider's reactive strategy much more effective. For example, dozens of our customers are rolling out these sensors across their general-needs properties (often during EICRs or voids programmes) so that any early signs of problems are flagged and dealt with before properties fall into disrepair and residents' health is affected.

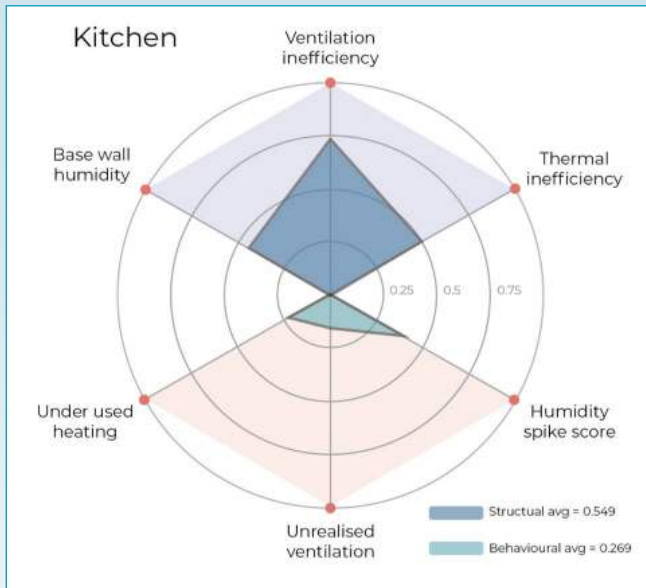
## Root-cause analysis modelling

The Housing Ombudsman specifically points out the

importance of doing some form of root-cause analysis modelling. This is crucial because every damp and mould case is different, and just giving residents advice and cleaning the mould will often not solve the problem. The underlying problems could be caused by many factors, ranging from inadequate ventilation through to penetrating damp or leaks. There are two important factors to consider when using connected sensors for root-cause analysis – multi-room positioning and more advanced algorithms.



Anyone who has seen data across different rooms in a property will know how valuable it is to have multiple sensors to identify the underlying cause of a problem. Temperatures and humidities vary throughout a property. For example, bathrooms and kitchens have frequent high humidity loads, some bedrooms can remain colder, a bedroom's humidity often sustains higher humidity levels at night and leaks are more common in bathrooms and kitchens.



Furthermore, mould doesn't always form in the room where the humidity is higher, and it can often move throughout the property and settle somewhere else; if you want to fix the mould in the cold, unused living room, it might be because there's a ventilation problem in the adjacent kitchen that needs sorting out.

HomeLink recently released the world's first root-cause mould algorithm that breaks down the cause of the mould into six factors. An example for a kitchen is shown in the diagram above. This algorithm not only pinpoints the location of the root cause but what could be the problem within that location. For example:

- **Base wall humidity:** sustained unusually high levels of humidity, with a probable cause of penetrating/rising damp or a leak.
- **Thermal inefficiency:** high heat-loss from this room suggests that the room is poorly insulated. The surface temperature of the wall is therefore likely to be much lower than the air temperature, leading to an increased risk of condensation. Energy-efficiency measures or repairs could help in this case.
- **Under-utilised heating:** low temperatures throughout the property suggest the heating is set very low or not used. This causes higher relative humidity and a higher risk of condensation. The solutions could be repairs, advice to the resident (incl. potential fuel-poverty support) or carrying out energy-efficiency measures.
- **Ventilation inefficiency:** looking at the diagram above, this is probably the main factor in the kitchen. A lot of humidity is created from cooking and, more importantly than this, other harmful pollutants (notably PM2.5). This metric indicates that ventilation is being used but for some reason it's not effective. Often this is because the

ventilation is either too small and not specified correctly for the room or it needs cleaning. In this instance, I happen to know that it needed cleaning (because it was my house...).

### Dedicated dashboards and specialist damp & mould team

Something we're seeing more and more is the creation of dedicated damp and mould teams; these teams are often small, comprising one or two people, depending on the size of the housing provider and its objectives.

Alongside analysing root-cause data, these damp and mould teams can assess the impact of any interventions. For example, in the case of my own ventilation system that needed cleaning, I can track this intervention and be alerted regarding its success or failure. If this solves the problem then the case is closed and we carry the learnings forward; if it doesn't work then we start looking at other factors. This methodical approach is not only the best way to solve the problem but it also creates a history of activity for damp and mould cases, providing a compliance history for this property.

### Conclusion

Aside from providing a dashboard to teams, we are seeing more housing providers integrate with their existing systems to extract further value. As a company, we have an open integration philosophy and have many tools available, from APIs and webhooks to MQTT message brokers; whether you want to trigger an event, send some data somewhere or store all your data from all your sensors, you can do so easily.

The reason connected sensors are being recommended as best practice by the Housing Ombudsman is because it's a proven technology. We now have nearly 250,000 devices connected in UK social housing and expect to hit over one million devices by the end of 2024.

However, this still represents a significant technological shift for many housing providers and with that comes a requirement for organisational and cultural change, but it will result in much better health and wellbeing outcomes for residents.

*Chris Jones is the chief executive officer (HomeLink) at Aico.*





# Take advantage of the smart home revolution

Alex Bookless, Technical Director and Andrew Blance,  
Data Scientist, Waterstons

*Over the past few years, the potential of IoT devices to help housing providers improve their services has become clearer. From improving a property's sustainability, reducing repair costs through proactive maintenance and improving safety and security, and as IoT technologies get better and the barriers to entry become lower, it's now clear that the deployment of IoT devices has many practical and value-adding use-cases.*

## The reality

If we ignore the hype surrounding data, IoT devices, and digital twins, the reality is that it's difficult to launch initiatives using these technologies. For example, creating a digital twin of your assets backed with real data to aid decision-making through IoT devices in all properties is an admirable goal, but much further away than many realise and an enormous undertaking.

These systems are advanced, expensive, sometimes incompatible with current systems and require a lot of effort to build. But although these are long-term goals, that's not to say we can't begin making progress today – but how do we get there?

Small roll-outs of IoT devices targeting specific problems are a good place to start as many people and organisations can be wary about large-scale deployments of new and untested technologies. Choosing one challenge to solve within a small set of homes is a great way to prove the concept of IoT devices and paves the way to make the business case for a larger roll-out, eventually feeding into a digital twin.

A relatively simple example could be rolling out temperature and humidity sensors to a block of flats in order to understand the flats' propensity for mould and damp; it's then possible to use that data to make decisions about how best to intervene and help the tenants.

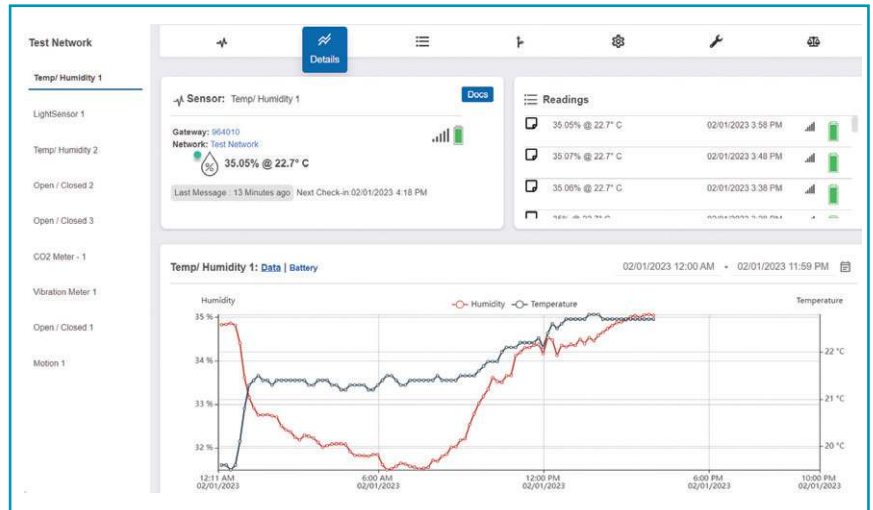
## Software and hardware considerations

We're all now discovering more about IoT devices and the challenges of deploying them. Hardware and software roll-outs of devices across many buildings pose many issues: how can we remotely manage all these IoT devices; how can we parse all this data; and how can we make better decisions from this data?

These technical challenges sit alongside concerns associated with how tenants will react to having devices placed in their homes: who 'owns' the information gathered by IoT devices; how is the data secured; what is the data used for; and what happens when the devices break?

Choosing suitable hardware is essential; these are some of the factors that we have had to consider and the lessons we've learned:

- While a device such as a Raspberry Pi seems like a great entry point, they exist primarily as development units. Developing a Raspberry Pi or an Arduino into something you can guarantee to be safe, secure and professional is hard. The gap between a production-ready unit and the development kit is considerable so picking pre-built devices from a hardware manufacturer (instead of building in-house) is strongly recommended.
- A useful option for sourcing hardware is partnering with research groups or universities. Similar to housing providers, there is significant interest across academia to



see how IoT devices can be safely deployed, and many of these groups are very interested in being involved with external partners for real-world insights.

- Many of the problems that tenants might have when installing IoT devices in their homes, such as connecting to wifi, changing batteries and gathering data, can be solved with technology. We've seen this in other sectors (such as manufacturing) where the ideal device is wireless and battery-powered, and therefore causes as little disruption as possible. We're fond of Monnit devices; these are cheap IoT sensors that communicate data to the cloud over 3G, are all wireless and have very long battery lives.
- Battery life is an extremely important consideration; the overall financial difference between a three- and 12-month battery life is enormous. Often, by the time an engineering team has changed a sensor battery once, all of its financial benefits have been lost.

As wariness around adopting new technologies is perfectly normal and will inevitably cause barriers to progress, it can be mostly mitigated by using sensors with which tenants need have no interaction.

The chosen software stack is also important, with many options available:

- The lightest touch option will always be the proprietary software that might come with the hardware you've bought. Many sensor manufacturers also offer a cloud platform for viewing and interacting with your IoT sensors' data, such as Monnit's iMonnit platform.
- Microsoft offers the Azure IoT Hub, enabling you to monitor the health of your IoT devices and receive their data, which in turn can then be fed into your other systems. IoT Hub is a powerful, industry-standard way of looking after a fleet of IoT devices.
- Capturing data in IoT Hub lets you use Microsoft's set of tools to handle streaming data. Whole articles could be written about this pipeline, but Azure Functions and Streaming Analytics can parse and analyse your data in real time, and these insights can then be pushed into any of your existing BI solutions. Passing data 'outside' like



this enables it to be mixed with other data you have, such as maintenance jobs, scheduling and tenant satisfaction.

### The end

By focusing on the benefits for tenants while incentivising usage and minimising the tenants' responsibilities, you can overcome their natural resistance to new technologies.

Small roll-outs to prove the concept of IoT sensors can be a powerful way to show their value; for example, targeting a single, common issue such as damp and mould is a good way to start. Modern IoT devices provide cheap and reliable ways of gathering data, and mixing these with Microsoft's technology stack provides a trustworthy base to make data-driven decisions.

The smart home revolution is here, and housing providers have a significant opportunity to embrace this technology in a way that requires little input from tenants, but can ultimately help them as much as meeting housing providers' own needs. It might be an adventure to accomplish this but it will be worth it in the end.

*Alex Bookless is the technical director and Andrew Balance is a data scientist at Waterstons.*



# Risk management and housing data

Ryan Dempsey, CEO, TCW

*There is too much talk about threads, whether golden, process or data, in housing today and not enough conversations around how guidance is simply a signpost to make things easier and simpler for people to make their own decisions around critical areas such as risk management.*

## **'Let's tether that horse to that post'**

Interpretations around data are so variable. How we read instructions, coupled with how we marry those instructions into our day-to-day lives, dictates the outcome. For example, to some people the thought of 'tethering a horse' simply doesn't make sense because, for them, tethering involves digital devices. Yet tether perfectly illustrates how a word can have different meanings and possible outcomes to different people depending on the word's context.

How can we apply variability to data management when we have people who read and interpret data differently? It's quite simply impossible. There are groups of people meeting to define 'codes of practice' and 'guidance documents' to help us manage risk management and in most cases, we take what they say as written in stone because we don't want to misinterpret what they mean.

The first port of call when considering risk management is appreciating that data management in your organisation is the ability to know what to do, when to do it and how the person should do it. We get data from everywhere and the holy grail is to capture the different 'bits' and spend time working out which bits of data link to other bits of data.

## **Roll up, roll up...**

The problem in our sector is that there are now too many companies standing on the metaphorical steps of the townhall with their big bells, shouting, "hear ye, hear ye,

come and see our innovation". When you look at their inevitable PowerPoint presentation, it seems amazing and you get roped into their sales channel, but you then spend the next few years regretting your decision to help an IT supplier build something that they told you they already had... that sounds harsh, but it's very true.

I've spent many years in housing and my view has never changed; the silos we have create problems because we pretend those silos don't exist or we 'blame' the silos when something goes wrong.

VOIDS, repairs, aids and adaptations, cyclical maintenance, finance, stock condition, capital investment programmes and whatever other service areas you have – they all capture data that everyone else can benefit from, but I am afraid because everyone is looking in the wrong direction.

## **Looking in the wrong direction**

You're all looking for the 'solution to everything' or 'one system that fits all', but you're never going to find these things. There is tons of software out there, but you need to work with the IT suppliers to let the good, honest suppliers give you what they can give you and then harness that against your assets.

We need data management to be able to capture elements of data that help us protect people and property based on the prevailing legislation – that's as clear as day. We also need to understand where interpretation sits in the decisions we make and take a backwards step to find a new way. Most importantly, we must accept that what's written in committees doesn't always sit perfectly in our organisations and that we're allowed to challenge it.

## **Knee-jerk reactions & marketing guff**

The future will be very interesting. Some IT suppliers are having knee-jerk reactions and getting things wrong. Others are buying up other companies and misleading people with 'marketing guff' while not actually delivering anything of real value... let's see what happens!

*Ryan Dempsey is the CEO of TCW.*



# DATA MATTERS

*Housing Technology interviewed data management specialists from CGI, Civica, FLS – Fast Lean Smart, Insite Energy, Jaywing, Manifest Consulting and NEC Software Solutions on the role of data management in social housing, how to move from bad to good data, cultural and behavioural changes, data metrics and the pitfalls to avoid when implementing data management programmes.*

## **Business-critical importance**

Ben Nduva, director of consulting services at CGI UK, said, "Data is now flowing into housing providers via myriad sources such as social media, tenant apps, call centres, face-to-face surveys and IoT sensors, to name just a few. Ensuring the business is systematically sweating these data assets for all they're worth can provide incredible benefits. The key message is that data management, data maturity and data quality aren't just technical problems; the entire organisation has a part to play in embedding the right processes and culture to continually focus on data management."

Jeremy Squire, UK managing director of FLS – Fast Lean Smart, said, "From a business perspective, data is king and gives housing providers, each of which holds vast datasets, an edge in terms of predictive analytics and

reliable insights. More and more housing providers are becoming completely data-driven in order to proactively manage their assets and tenants.

"Housing providers appreciate the value of their business-critical core data, in the form of a golden thread of data which acts as a central source of truth. This golden thread is a singular dataset running through the business, providing a data backbone for people, buildings and operations."

Inderjit Mund, data management practice director at Jaywing, said, "Data management isn't important to housing providers – it's critical. Housing providers need to improve outcomes for tenants, regulators and internal stakeholders, but many housing providers are currently tackling these challenges without strong data management practices. As their business requirements

become more detailed and complex, relying on inefficient manual processes will put them at risk of failing to meet both their external and internal obligations."

Peter Salisbury, director of Manifest Consulting, said, "Of course, no business can function without data, even if that's just a few customer records on a Rolodex (remember them?). However, housing providers deliver multi-faceted services, and therefore have a significant degree of intrinsic complication that most other businesses don't have to deal with.

"Consider all of the different internal and external housing functions, each with specific and very varied data requirements – we could run each of these functions in its own silo and just deal with their data needs separately (unfortunately, it feels as if we often do exactly that), but that isn't the right way to run an effective housing provider. It's clear that a well-run housing provider is entirely dependent on its diverse datasets being properly maintained in a way that's accessible and useful to all operational staff."

## Data management and IT

Trevor Hampton, director of housing solutions at NEC Software Solutions UK, said, "There's no point having good IT systems if your data is poor. When we design IT systems, we start with the data. That involves working out what the database will look like in terms of logic, then implementing controls and checks before putting in the processes and the visualisation. Data must be at the very heart of systems design."



*"Don't try to do everything at once; think big but start small."*

Richard Shreeve, Technical Director, Civica

Richard Shreeve, technical director at Civica, said, "Although data is contained within IT systems, such as databases, file servers and applications, it's important that data is also viewed as a business asset. It must be owned by the business and not just left with IT to manage, with business owners and data stewards named and empowered to make decisions about that data.

"Typically, data custodians will ensure that data is managed within the IT systems that store, process and exploit it. IT certainly has a significant part to play in good data management, enforcing usage and retention policies, compliance with data protection legislation, profiling data quality and mastering data, but IT can't be the only invested party within the organisation."

Anthony Coates-Smith, managing director of Insite Energy, said, "GDPR is crucial here; housing providers must have decent processes to protect themselves and their customers from erroneous uses of their data. It also



*"A key metric is defining the value of data or the service impact from missing data."*

Ben Nduva, Director of Consulting Services, CGI UK

comes down to how the data is gathered and from there, how it's made useful to the housing provider.

"For example, will they run assessments using the raw data itself (e.g. via spreadsheets) or will they use a dedicated IT platform to view and digest the data in a way that is more meaningful to them? Whatever route is taken, housing providers should consider how their data will be harnessed into something that can be used, understood, displayed and presented to others."

Jaywing's Mund said, "Strong data management should be a core competency of all housing providers. In more data-savvy sectors, such as financial services, data management used to be seen as the domain of IT. While IT clearly has a significant role to play in data management, sector-leading organisations all recognise that the true power of data management lies in the partnership between IT and business functions."

## Data management vs. everything else

FLS's Squire said, "Data management is hugely important; only front-line services which might affect the health, safety and wellbeing of residents could be considered more important. Data protection, data management and data processing could be sidelined in order to respond to pressing operational issues or emergencies, but the data that housing providers rely on every day is of fundamental strategic importance and operational necessity."

CGI's Nduva said, "Taking a holistic, organisation-wide view is the single most important aspect to improving data quality and ultimately demonstrating the value-adding nature of data management.

"Removing silos and 'shadow IT' to generate a single view of the truth is the key outcome from getting data management right. The challenge is ensuring that the associated data strategy and cultural change to support it has a suitable sponsor with enough seniority that all service lines of an organisation buy in and support the processes to govern data."

Manifest Consulting's Salisbury said, "A well-designed infrastructure is the most important IT aspect because without that, we wouldn't even have the systems in which to manage our data. Equally, effective governance and business operations are more important than data management per se, because without them we would lack the objectives, strategy, staff and processes that put the data there in the first place."

NEC's Hampton said, "If you ask a housing provider what their number one risk is, they would probably say health

and safety above data management. The problem with that is how do you know health and safety is your main area of risk if you don't have the data to prove that's the case? Data management should be top of the list because without it, you don't have any insights into your other business areas."

## Benefits of good data management

Jaywing's Mund said, "Good data management can be a game-changer. It takes raw data and transforms it into accurate, timely information that recipients can trust. The key here is data provenance, which means knowing the origin, lineage and quality of the data. Trusted data allows housing providers to robustly evidence their decision-making and opens the doors to powerful techniques such as predictive modelling. Without good data, the rule of 'rubbish in, rubbish out' applies."



*"To clean bad datastreams, irrelevant data must be removed, with duplicated data taken out and structural errors fixed."*

Jeremy Squire, UK Managing Director, FLS  
- Fast Lean Smart

CGI's Nduva said, "Perhaps ask yourself how often (at home or at work) is the data you need available to you either immediately or at the first time of asking? For most people, the answer to that is probably 'rarely'. With that in mind, it's been interesting watching the cycle of hype over AI (in particular the rise of ChatGPT) over the past year because this technology appears to magically present information, found on the public internet, in a more immediately useable way.

"Most housing providers are some way off leveraging machine learning in their data operations, but by getting data management right along with the careful choice of tools such as process automation, housing departments such as repairs and maintenance, rents and arrears, and benefits management can reap immediate rewards from better internal data management. Furthermore, proactive, personal interactions with tenants and colleagues are achievable; you can see this already in the clever ways that some housing providers are using chatbots integrated correctly with their back-office systems."

Civica's Shreeve said, "Better data means better insights, which lead to better decisions at the right time. That might be an improved customer experience because queries are answered correctly at the first point of contact or a better matching of housing needs to applicants based on a live view of all housing stock."

NEC's Hampton said, "Good data management is tremendously important. Housing providers might be able

to see how they are performing at a strategic, KPI-based level, but you need good data management to really go beyond that and understand the problems, identify their underlying causes and decide what actions to take.

"With good historical data, you can even predict what's likely to happen in the future, such as who is at risk of falling into arrears, which assets are deteriorating and where you need to do preventative maintenance."

## From bad data to good data

Civica's Shreeve said, "There first needs to be a definition of 'good' and then you need to measure 'where we are now' versus 'where we want to be', alongside asking questions such as: is all data equal, what do we mean by 'fit for purpose', and where are the biggest gains likely to be made?"

"This can be part of a data-maturity assessment and gives a baseline from which to gauge progress and to see where your strengths and opportunities lie. This data-quality approach requires data-governance structures to be established in order to formalise the decision-making framework for an organisation's data, thereby laying the foundations to improve data quality, usage and insights."

FLS's Squire said, "First of all, housing providers need an overarching data strategy in order to gain the most from their metadata, including a data-quality mindset where the benefits of better data quality can be demonstrated to all areas of the business.

"In order to clean bad data streams, irrelevant data must be removed, with duplicated data taken out and structural errors fixed. The accuracy of data needs to be validated, along with the completion of any missing data. Above all, moving to a stronger data model demands a cultural shift that focuses on people, processes, technology and executive support."

Insite Energy's Coates-Smith said, "In our experience, there are four stages of moving from bad data to good data: understand your 'as is' situation; identify the root causes of the bad data; training; and reviewing and re-jigging the processes if needed."



*"Data quality must be part of everyone's job, with all staff empowered to correct bad data and/or report it for checking."*

Peter Salisbury, Director, Manifest Consulting

Manifest Consulting's Salisbury said, "Don't make it a project; good data management needs to be embedded in your day-to-day operations. In our experience, data management projects tend to create a lot of activity but often achieve little in terms of long-term, sustainable good practice. Data quality therefore needs to be an





*"Data management should be your top priority because without it, you have no insights into your other business areas."*

Trevor Hampton Director of Housing Solutions,  
NEC Software Solutions UK

intrinsic part of everyone's role, with all staff empowered and encouraged to correct bad data where they can and report it for checking where they can't.

"There are some key tasks that housing providers should complete to ensure that they're keeping their data accurate and useful: agree the location of your master data; make sure your data sources can be aligned easily; ask your staff (they're your eyes and ears) and report and act on their findings; deal with bad data when you find it; appoint data champions and make data quality a part of everyone's job; agree a process for reporting bad data; and brief your senior teams to make sure they understand the importance of data quality."

## Data metrics

CGI's Nduva said, "A key metric we use is defining the value of data, or the service impact from missing data. Highlighting the missed value helps an organisation quickly prioritise its initiatives to drive improvements.

"This should be supported by ongoing data-quality assessments, measured according to the data dimensions of completeness, uniqueness, consistency, timeliness, validity and accuracy, presented as a clear view of the trade-offs associated with making the data available."

Civica's Shreeve said, "At a macro level, a standard data-maturity assessment, such as recently standardised by CDDO, will provide a yardstick on data maturity. And at a micro level (people), data-literacy skills are essential, with regular training programmes having dramatic effects. Finally, at the data level, data-quality indicators can be used as part of a framework to track data quality over time and its positive impact on housing operations."

Manifest Consulting's Salisbury said, "Once you've set up automated reporting tools to look for inconsistencies across data sets, start reporting on the volume of unresolved records that you're finding in your regular housekeeping reports, while also making those reports available to your executive team in order to raise the profile of data management. However, avoid the temptation to create targets or performance indicators from such metrics since those tend to drive behaviours that can mask the real picture."

NEC's Hampton said, "Measure your data quality by seeing how many duplicate or missing records you have. You might know which person lives in a property but do you know who they live with, or how their family is composed?"

Check how old your data is and develop a cleansing strategy to eliminate duplicates.

"We've built a set of data-quality dashboards with well-defined rules around the data to highlight errors. For example, you could search for any tenants over the age of 110; more than a handful would indicate inaccurate data. Similarly, if a tenant is recorded as being under 18 but they have a child aged 21, an error has crept in somewhere. Creating rules like these will check the data and improve data quality."

## Quick wins and slow burns

CGI's Nduva said, "Comprehensive change relating to how an organisation manages its data isn't a quick process, but within 8-12 weeks you can write an achievable implementation plan. Within that plan, you will have some priority areas and some 'quick wins' but unless you have joined-up support from your leadership team, you'll end up with siloed, unsustainable change and over time, your data creators and data users will revert to their old ways."

Civica's Shreeve said, "Building a common, organisation-wide understanding of the data is a good starting point. This enables data owners to be identified and governance structures to be set up, meaning a housing provider can begin to exert formal decision-making and control over its data assets."

Jaywing's Mund said, "It starts with understanding your current data landscape. A logical data model and data dictionary (using common business terminologies) are the first steps towards identifying common data attributes across your disparate systems. This will also flush out any issues of non-alignment, such as what your repairs and finance teams respectively view as a 'customer'. Overall, housing providers should be aiming for a 'single version of the truth' data infrastructure; approached correctly, this can deliver value fast and doesn't need to be a long-term project."

## Pitfalls to avoid

Civica's Shreeve said, "First of all, don't try to do everything at once; think big but start small. Tactical data-management programmes with short-term, positive impacts can then be used to incrementally foster best practice across the rest of your organisation."

"Don't be swayed by the shiniest new analytics tools; a lot can be achieved using mainstream and established technologies, many of which you probably already have. Find a definitive problem to be solved, build a proof of value, test the model and then scale up, thereby building data management into your organisational fabric."

Insite Energy's Coates-Smith said, "The greatest pitfall when it comes to data management is humans. Whatever policies, processes or systems you have, they will all have an element of human interaction and, despite our best intentions, all of us are fallible. Human fallibility is

a recurring problem, so it's important to be aware of it, accept it and have policies to deal with incidents when they occur."

Jaywing's Mund said, "The common pitfalls for housing providers with low levels of data maturity include not having a clear scope of what they want to improve, putting too much into the initial scope so that delivery is unachievable within reasonable timescales, not using skilled practitioners in delivery, and a lack of senior-level sponsorship."

NEC's Hampton said, "When implementing a new system, it is often tempting to make unwise decisions to save time, particularly if a project is in danger of overrunning. Deciding to cut corners by not cleaning the data properly, reducing the validation checks or working offline from separate spreadsheets can compromise the data, resulting in poor quality data being loaded into the new system."

## Board-level support

Manifest Consulting's Salisbury said, "The right levels of executive support are rare. However, what's actually needed from housing providers' boards and executive teams is their support for the operational staff who know their subject and know how to do things well. The role of senior executives should therefore be to remove any obstacles in the way, as well as not adding any new ones."

FLS's Squire said, "Data management must be prioritised by senior teams, and housing partners, contractors and consultants should also be challenged to ensure they meet the highest possible standards of data management. At the same time, boards need to challenge the information they see and ask how confident the management team is regarding the accuracy of the data presented."

CGI's Nduva said, "CIO or CDIO board-level roles are now common, with these roles making information governance a key board-level priority, with associated accountability. Having stakeholders and support at this level helps align the entire organisation to the importance of managing and governing information."

## Examples of exemplary data management

FLS's Squire said, "Our partnership with Your Housing Group is enhancing its data management capabilities. By using real-time optimisation and not just finding 'white space' to fill in its repairs schedule, Your Housing's tenants are given am/pm appointment options for repairs and maintenance. Its capabilities have been transformed; operatives are more cost-effective and punctual, achieving 30 per cent more jobs per day and completing more first-time fixes."



*"Without good data, the rule of 'rubbish in, rubbish out' applies."*

Inderjit Mund, Data Management Practice Director, Jaywing

Manifest Consulting's Salisbury said, "We worked with Optivo (prior to its merger with Southern Housing) to develop a brilliant property handover solution – staging development data and creating relevant and useful structures for physical and financial information, resulting in the automated creation of property records in Optivo's housing system."

"The interface of data between development and operational teams has been a long-term problem for housing providers and we thought Optivo came up with a very effective plan and set of tools for tackling this."

NEC's Hampton said, "I would highlight PA Housing, Wolverhampton Homes and Guinness Partnership who are each using enterprise data and statistical modelling to identify key predictors for rent arrears and damp and mould."

Jaywing's Mund said, "Anchor is an exemplar for how housing providers should approach data governance and data management. Over a three-month period, Anchor's internal subject matter experts, with the help of data-management consultants, defined a logical enterprise-entity model and a data dictionary that documented the accepted terminologies and definitions for all entities in the model."

"Alongside this, Anchor now has suitable data-governance processes, ensuring its data-management framework aligns with its evolving business requirements. Crucially, the entire project had executive-level support via Anchor's chief technology officer."

*Housing Technology would like to thank Ben Nduva (CGI UK), Richard Shreeve (Civica), Jeremy Squire (FLS – Fast Lean Smart), Anthony Coates-Smith (Insite Energy), Inderjit Mund (Jaywing), Peter Salisbury (Manifest Consulting) and Trevor Hampton (NEC Software Solutions UK) for their comments and editorial contributions to this article.*



# Prioritising your data

Andrew McLaughlin, Finance Director, MIS Active Management Systems

*Good data management processes involve collecting information securely, organising it appropriately and then using it to support productivity, efficiency and, ultimately, decision-making. However, there are some principles and objectives that can be forgotten and require greater focus and respect:*

### Data management principles:

- The principle of least privilege – if you've no need to see that data then you shouldn't see that data;
- The security of the data should be maintained when at rest and in transit – this is a collective responsibility rather than allocated to one team (as if this somehow transfers the risk).

### Social housing objectives:

- Take care of residents;
- Provide good quality homes at affordable rents.

At the moment, there appear to be quality issues with data in the sector, with teams undertaking 'data cleansing' exercises to enhance observability and enable a genuine assessment of the health of the housing provider.

However, data-cleansing is only ever as effective as its ability to prevent a recurrence of the original problem, which could be due to people, processes, technology or a combination of all three. In medicine, you'd use the phrase, "treat the cause, not the symptom"; this is equally applicable to social housing.

The plethora of data available to social housing is quite extraordinary and when you combine the sensor-driven world with the data inherent in a decent HMS, it opens the possibility of deep analytics and better decisions as a result.

### Is social housing different?

Data management in social housing is no different to data management in any other sector. The comment that normally follows is that housing providers are 'unique' because they hold lots of personal data, often pertaining to vulnerable individuals and sensitive issues. This provides a slight nuance to the management of access to the information, but doesn't change the technological aspect of data management.

The presence or otherwise of personal identifiable information (PII) shouldn't dictate whether data is held securely or not; all data should be held securely and treated as a core asset of the business and therefore afforded the respect that it deserves.

### Mandatory ISO 27001 compliance?

The provisions of the Data Protection Act are a great framework and set of principles for governing data security but we're rapidly reaching the point where housing providers should demand that all IT suppliers operate ISO 27001-compliant software and services.

Good providers will embrace the challenge of achieving the accreditation, but there will naturally be some IT suppliers found wanting or who will try to persuade customers that their security standards are "equivalent". The fact is that those that can achieve the standard will achieve it, and those that can't will claim that they have equivalent standards or guide potentials towards the direct awarding of contracts to avoid the scrutiny of tender processes.

As has been widely reported, security has never been more important than it is right now. Security is likely to be in the top-three business risks for any housing provider and often in first position given the recent spate of attacks in our sector. Investment in this space is truly worth it to mitigate the risk, regardless of whether you're running legacy, on-premise or cloud software (or, more typically, a mixture of all three).

### Good data governance

Good data governance comes from having a firm grasp of the data architecture and data flows in your organisation alongside a comprehensive data strategy to identify what you want to do with it.

This might lead to a data warehouse or some form of analytics, but the key to good governance is about getting the foundations right and building upwards.

Afterall, you wouldn't build a house without foundations, so why would you build a data approach without the same underlying principles set in concrete to pave the way.

*Andrew McLaughlin is the finance director of MIS Active Management Systems.*

# Is your data an asset or a risk?



Claire Bayliss, Chief Operating Officer, 3C Consultants

## *We're encouraged to treat data as an asset, so why does it so often end up posing a risk to organisations?*

The volume of data worldwide is growing exponentially, yet it's estimated that only 10 per cent is unique data while the remainder is replicated information. Although this might not be quite true of your data, there's a strong likelihood that the combination of complex information architectures and the presence of unstructured data will result in high levels of duplication and other quality issues.

The Regulator of Social Housing has recently spelt out the necessity of good data, stating, "Boards must have assurance that data is appropriately managed. This will require adequate quality controls and robust audit trails... implementing appropriate software solutions such as error detection."

The risks associated with poor-quality data can be far-reaching. If your compliance data is of poor quality, there's a risk that you will unwittingly cause serious harm or even death to your residents, their friends or your colleagues.

If your personal data has become obsolete or you collect data you don't need then you will be in breach of the GDPR, potentially causing reputational damage to your organisation, as well as risking a fine from the ICO. And sometimes, someone finds themselves out of a job.

As a former housing officer, I remember the one-bedroom flat that suddenly developed a second bedroom as a colleague was showing the prospective tenant around; the three-bedroom house that had been left unoccupied for 18 months because it had never appeared on void reports; and a tenanted dwelling that dropped off the rent roll for three years before anyone noticed.

### **Housing downgrades**

A review of downgrade judgements reveals that almost all downgrades are linked to inaccurate or poor information. Indeed, the Regulator of Social Housing stated, "Good-quality data forms the cornerstone on which all other assurance of compliance is based, and we would expect

registered providers to seek assurance on the quality and integrity of their data in the course of their business."

Of course, no one sets out to have poor-quality data, and many organisations would say that they minimise the risk by running exception reports and are therefore confident their data is in good shape. But can they be certain of that? We find that while some colleagues will defend data quality, others in the same organisation will be sceptical and will seek further assurance that the data their decisions are based on is robust.

### **From SQL to 3C Data Logic**

Until 2020, whenever we helped people with data-quality reviews, we would use SQL to audit and assess the quality of data, and we would often just check selected sections of data. But in 2020, we decided to look for a tool to support our work. We looked at two tools, one was the market leader and the other was still in its infancy; we chose the latter. Now branded as 3C Data Logic, we chose it because it uses low code to create rules, and because it can investigate unstructured data in emails, document management systems and shared drives as easily as it does structured data in databases.

3C Data Logic has made a massive difference to the delivery of our data services. We used to support customers to (see diagram below):





*“The secret of getting ahead is getting started.”*

**Mark Twain**

But we would then hit a snag because data typically degrades at two per cent every month or 25 per cent annually. So having cleaned the data, and even with improved data validation on entry, it was always going to get dirty again. Using 3C Data Logic, our customers can continue to monitor their data, ensuring that its quality is always known and assured.

### **Bespoke explorations**

Our staff love the tool because it allows them to focus on what really matters to our customers. And while SQL is needed to pull the data into the tool, once in, the tool itself uses low code, which means that we can investigate the data with our customers in real time. If a customer wants to explore a bit more, we can just do it in front of them, or we can train their business teams to do it themselves; there's no need for SQL or other technical skills.

Customers analysing data quality using 3C Data Logic have discovered a wide range of issues, including:

- One local authority found over 2,000 tenancies where the rents were illegally set too high and a further 16,000 tenancies where the rents were set too low.
- One housing provider discovered 40 properties with gas appliances listed in one system, which were not having

gas services because this was run from another system, while another landlord found 360 (this is a common issue that we have found at all the housing providers we've worked with).

- One landlord unearthed 30,000 obsolete people records in their housing system.
- One housing provider found tenants with invalid NI numbers, while another had almost 5,000 tenants with no NI number at all.
- There are often problems with telephone numbers; one housing provider discovered 1,200 invalid telephone numbers (due to being too long, too short or having text in the number field, prohibiting SMS contact).

Additionally, one customer has found that with all its data collated in 3C Data Logic, it doesn't need a data warehouse and is replacing its KPI system with PowerBI dashboards reporting data held in 3C Data Logic.

As one director of housing and corporate services (and a 3C customer) said, "When we read what others had said about 3C's Data Logic tool, we were sure that this could play an important part in helping us to achieve our ambition of good quality, reliable data. The initial proof of concept showed us what we could achieve and now we can manage data quality ourselves using 3C Data Logic."

If you think your data might be more of a risk than an asset, please contact [info@3cconsultants.co.uk](mailto:info@3cconsultants.co.uk) to arrange a discussion or demonstration.

*Claire Bayliss is the chief operating officer of 3C Consultants.*



# Data observability at Sovereign Housing

Claire Hyland, Data & Analytics Director, Sovereign Housing

*Busy people often see their interaction with data as transactional; it's provided by a system that they may input into, but there's a missing connection to their role in curating or owning the data, or what it could really do for them. To have real impact, people must engage holistically with data, building it, owning it, understanding it and improving it.*

Over the past two years Sovereign Housing has embarked on an ambitious 'data observability' odyssey to improve our processes, systems and data, with the overall aim of transforming how data is engaged with and used by our staff. It's been an exciting experience, and we've learnt a huge amount along the way.

## Identifying our key data assets

While we've invested strongly in data across Sovereign, there are only ever finite resources. Good data must be prioritised and focused in the right place, delivering the right impact. Taking a customer and asset approach guided how we identified and mapped critical data elements across the business, and helped us to identify the associated risks and problems. From this, we created a visual heat-map of the areas to be addressed and prioritised; for us, it was building safety and compliance followed by assets to support our bold asset management strategy.

## 'Data message bingo'

Cultural change is famously difficult, but our experience is that it can be propelled by the enthusiasm of people throughout the organisation when they buy into the potential of cultural change. Our executive board understood both the need to address data issues and the consequent role of data in our long-term plans. The board has been a powerful sponsor, getting behind our strategy from the start, building data into our corporate plan, and sending the message that data is everyone's responsibility. This advocacy became so strong that our team played 'data message bingo' during our 'EB Live' all-staff webinars.

Constantly selling the concept of data alongside recruiting data champions and data stewards across the business got the data message out but moving from reporting to an action-led focus with real-world outcomes moved the dial, with an appreciable impact for early adopters.

The momentum of success, supported by a Microsoft Azure and Power BI platform, made progress so much easier. As our teams saw the benefits, a virtuous cycle increased people's engagement, leading to better data and better outcomes that others in the business could see. In 18 months, the number of Sovereign people empowered to engage with and use data has massively expanded from fewer than 50 people to over 750.

With more people using data, we increased our staff training and updated all job descriptions with responsibilities around data ownership and stewardship. Mandatory data awareness training for all staff has underlined that our people all own data and have responsibility for it.

## Making it easy & making it work

While we're making good progress and we're seeing cultural change, the risk remains that the original enthusiasm and excitement can diminish if people's experience is that it makes their working lives harder. We couldn't have built the cycle of success that drove the project through if word had spread that our strategy was slowing the business rather than supporting it.

Bringing in Microsoft Purview's capabilities as a unified data governance solution to help manage and govern



data has been a vital tool in making data easy for our people. Power BI is used to consume the information rather than teams building offline in Excel. Our people now have a single window to access data with an intuitive, search engine-style experience.

By giving data users a holistic, up-to-date map of our data landscape with automated data discovery, data classification, end-to-end data lineage and a central data dictionary, our people have been able to easily access valuable, trustworthy data that they can easily understand and put to work.

### Proactive problem-solving

Maintaining proactivity, even when things are going well, has proven critical. At no point can data teams just sit back and wait for people to tell us that there's a problem. Using data through Purview means we can see if people are using reports; this helps us gently find out if not, why not. We can also see what data points people are searching for most often to see what they do and, more importantly, don't find.

The same proactive approach has helped us to be confident that the large increase in data hasn't led to a decrease in quality. Creating data quality focus groups for data stewards alongside the central data team has been very effective in identifying where data quality isn't as good as we would like. And because it's a collaborative effort, people aren't defensive; once we know there is a problem, it opens the door to run a root-cause analysis, with our core team working closely with the data owner(s) to implement remedies. Something as simple as adding a drop-down box or some additional training has made a huge difference in many cases.

Data is controlled, catalogued and designed into all solutions, whether system or integration, old or new. By creating a data architect role, we've proactively understood any new systems, to enable integration and in-built quality functionality. This role has allowed us to constantly consider how we can build in ways to make

our people's lives easier while also improving data quality. Again, functions such as drop-down menus and auto-complete ensure we can access the data for central use and link across other systems.

As an example of our focus on data quality, around 14,000 of our customers' mobile and 13,000 of their home phone numbers had a space or words after them. This not only prevented automated messaging but also meant we couldn't identify a customer from their inbound call so the customer's information had to be taken each time, adding time and effort for everyone involved.

The phone numbers are now fixed in the source systems, so we can identify customers when they call and immediately pull up their accounts on-screen. We now continually monitor these so if any numbers go onto the system in the wrong format, we send alerts for these to be amended. From our experience over the past 18 months, including for critical building-safety issues, these alerts have worked brilliantly to prompt people and make it easier for them to get the data, and the action, right until it becomes a habit.

### What's next?

The opportunities from data within housing are enormous and never ending. The power of success means that our team and the whole organisation wants to maintain momentum and find the next opportunity.

With the right basics and a strong strategy now firmly established, we're confident about actively exploring how data management can help us to maintain our proactive approach and give our customers a better experience in their homes.

*Claire Hyland is the data and analytics director at Sovereign Housing.*

# A silver bullet for data management?



Trevor Hampton, Director of Housing Solutions,  
NEC Software Solutions

From tragic headlines to fractured relationships between providers and tenants, the repercussions of poor data management are far-reaching. Missing key information about a tenant's situation or the condition of their property can incur a human and monetary cost that can make the price for getting it wrong incalculable.

Poor information management was identified by the Housing Ombudsman as, "such a strong and recurring theme across service areas" in its most recent report that the conclusion was, "getting knowledge and information management right is the closest thing the sector could get to a silver bullet".

What can social housing providers do to manage and improve data management?

## **Simplify, improve & consolidate**

The Housing Ombudsman has warned that without better data management processes, housing providers might struggle to meet their obligations under the Landlords and Tenants Act and potentially see the introduction of 'Awaab's Law'.

One of 21 key recommendations in the 'On the Record Starlight' report is that housing providers should take steps to ensure staff can easily access the information they need; they should be able to interrogate systems to access the crucial insights they need to identify, "patterns, themes and potential shortfalls".

Having different systems in place makes this difficult. It increases the likelihood of not linking complaint correspondence together and reduces the opportunity for housing staff to provide continuity.

## **Fragmented IT**

What housing staff need is a single 360-degree view of the tenant and the asset. To notice signs that could signal a tenant needs support or an urgent repair needs to be carried out, they must have access to the right information at the right time. This isn't easy if systems and databases

have mushroomed over the years to anything from 30 to over 100 disparate systems.

A fragmented IT system makes it harder for staff to support tenants as well as they want to, can lead to a weakened complaints process and a disjointed repair system, all of which erode trust.

Ineffective data management is the main culprit behind many maladministration investigations. A couple of cases highlighted in the report included one where a tenant waited eight years for a leak to be repaired, while another lost 14 days of annual leave due to missed repair appointments. In most cases, either residents' needs weren't recognised or the problem wasn't recorded appropriately.

## **'Old wine in new bottles'**

But simply implementing a new IT system won't solve the problem and could make it even worse by increasing fragmentation further. This is where consolidation comes to the fore because there is less danger of duplicated and/or missing data so staff can spot hidden issues and patterns.

A unified and consolidated system provides the right environment to improve data capture mechanisms and maintain data quality. This makes it easier to identify and fix problems faster and help housing providers make the shift from reactive to proactive services.

## **Plan to plan**

However, any idea that a new IT system will solve the problem of not enough data in the right place at the right time is misplaced.





Making sure housing staff have access to timely and accurate data to comply with regulations, uphold standards and make more informed decisions to improve residents' lives isn't something that technology can do on its own.

In tandem with the technology, housing staff need to be trained and the correct processes set up. This includes developing a clear data management strategy. This is in line with the Housing Ombudsman's view that data management in the sector is a collective effort, stating that, "the data analysed is only as good as the data entered and the decision in the boardroom relates directly to the log made in the resident's home."

A clear data management strategy is essential for improving information management. It should encompass data governance, integration, quality and security, as well as define who is accountable for and has ownership of data management processes and policy.

The lack of a comprehensive data strategy can lead to information being unavailable when needed, privacy breaches (such as personal information about a former tenant's circumstances being sent to the current tenant) and non-compliance with GDPR.

The data strategy must align with the organisation's overall goals and objectives and ensure the data collected is relevant and closely-tied to the social purpose and workflows. It should also set out at what points data should be captured and how it should then be stored and accessed.

### Repeated complaints

It should provide the roadmap needed to ensure housing staff have access to the right data when and where they need it; for example, 88 per cent of complaint handlers spoken to by the Housing Ombudsman said that poor information, such as missing reports or incomplete repair logs, had undermined their responses.

Imagine having to explain a problem again and again – 15 times, in fact. Such was the plight of one tenant who took their grievance to the Housing Ombudsman, which aims to ensure future generations of housing providers' staff have, "a legacy of information that's better than the one inherited by this one".

A data management strategy will help support this aim and will reduce the risk of maladministration by improving continuity in the handling of complaints or requests.

### In plain sight

Effective data management plays a critical role in avoiding dire consequences. Tempting though a shiny bit of new technology kit might be when it comes to improving information management, data management is about consolidation, not proliferation.

*Trevor Hampton is the director of housing solutions at NEC Software Solutions UK.*

**NEC**



# The data black hole of tenant engagement

Garry Sneddon, CEO, Engage-Me

*Data completeness is often overlooked in the realm of the six data quality dimensions (accuracy, completeness, consistency, timeliness, validity and uniqueness), a good example being tenant engagement within social housing.*

While housing providers express a desire to increase tenant participation rates, promote inclusivity and diversity, and empower tenants in the design and delivery of services, there is a glaring absence of data regarding current engagement rates, targets for improvement, and information on engagement inclusivity and diversity.

### Understanding engagement gaps

As the saying goes, "if you can't measure it, you can't manage it". The current engagement model used by housing providers often relies on a small number of tenant representatives attending scrutiny panels, service-design workshops and other in-person events, combined with some digital customer insight and sentiment analysis. The problem is that, in many cases, we're often hearing the voice of the few, not the many, resulting in potential biases and skewed perspectives which aren't representative of the wider tenant population.

### Measuring inclusivity & diversity

Measuring the effectiveness of engagement activities via a data-driven approach is vital for ensuring inclusivity. Again, we are back to data completeness; without a benchmark of engagement inclusivity, housing providers can't identify the gaps and tailor their plans accordingly. This data collection should also evaluate different engagement channels and their effectiveness in engaging specific tenant segments.

### Engagement effectiveness

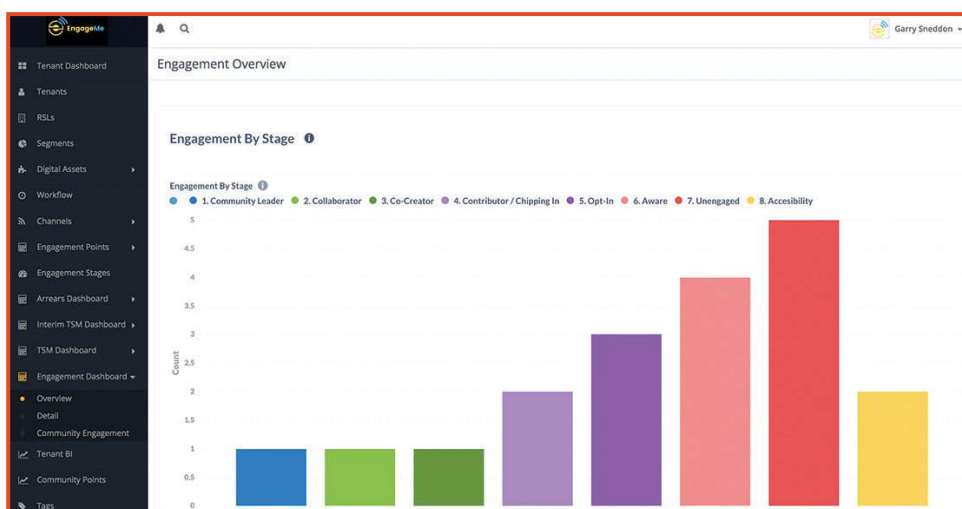
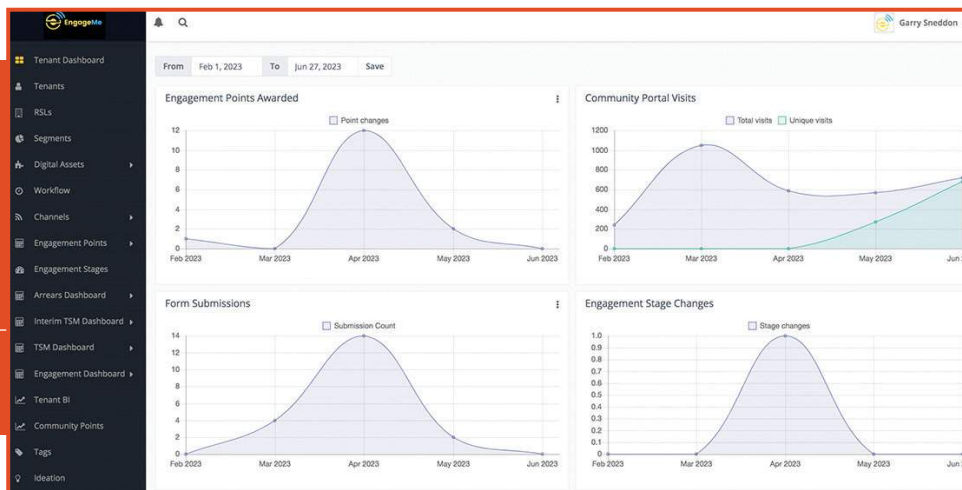
Measuring the effectiveness of the engagement content itself is essential to personalise the tenant experience. This ensures that tenants receive information that is relevant



and meaningful to them, increasing their likelihood of participating in related activities.

### Adopting a data-driven framework

To drive tenant engagement and inclusivity, it's crucial to implement a data-driven framework with measurable targets. As a minimum, this should measure your current engagement rates (incl. digital and in-person) and depth of engagement with inclusivity by-design embedded within the process. For example, the Engage-Me framework is based on Rosenblatt's Engagement Pyramid; this represents different levels and types of engagement, where the intensity of engagement



Turning our minds to AI and machine learning for a moment, many housing providers are now looking at these technologies. These technologies are data-driven so if the data is incomplete or non-existent, the benefits of these technologies will be diluted.

### Data black holes

We often think of data quality in terms of accuracy, consistency and validity. With tenant engagement, we need to think in terms of data completeness. While

increases as the number of required tenants decreases. The minimum objective for all housing providers should be that all tenants are at least aware of the engagement opportunities available to them.

However, what percentage of a housing provider's tenants are 'aware'? The typical answer is that we don't know because we don't have the data, and the same goes for inclusivity of tenant engagement.

Continuing the behavioural approach to engagement, it relies on interventions which change behaviour to increase desirable outcomes or reduce undesirable ones by breaking down engagement barriers.

### What's working?

However, it's underpinned by specific, singular and measurable outcomes; in short, we are back to capturing and measuring impacts through data. If you don't have a platform which can measure the impact of engagement interventions, can compare different interventions through A/B testing and can provide you with the key data insights to determine what's working for which segment via which channel, your success will be limited.

tenant participation and influence are often cited as a key objective, we are often still only hearing the voices of the few.

If housing providers want to be genuinely inclusive and serve their communities, they need to start engaging at scale and this will require them to invest in technology which treats tenant engagement as a journey not an event. Personalisation should be at the heart of any such technology and it should blend in-person and digital engagement based on tenant preferences. With that in mind, now might be the time for housing providers to think about plugging their black holes of engagement data.

*Garry Sneddon is the CEO of Engage-Me.*

# A holistic approach to data security

Graham Hosking, Data Security Solution Director, Quorum Cyber



*In today's connected world, housing providers represent more than just brick and mortar establishments; they are repositories of valuable data. As custodians of substantial amounts of intellectual property, financial information and tenant data, it falls to them to protect these 'crown jewels' with the utmost care.*

## Not just technology

However, safeguarding data is a multi-faceted challenge. It goes beyond the mere deployment of the latest technologies; it requires a holistic approach involving people and processes, and setting up the right business policies and directives first. Once these foundations are laid, effective communication across different business units is essential to grasp the potential risks and implications. Likewise, understanding the nature of the data at hand is crucial to proactively safeguard sensitive information. In short, people and policies first.

For housing providers, the first vital step is to understand the nature and quantity of the data they hold. This involves identifying where the data is stored, who has access to it, and how it is being used. Performing a paperwork exercise of a data map is the best approach. By gaining a comprehensive understanding of their data landscape, housing providers can design and implement effective data security strategies.

## Asking the right questions

A generic approach to data security is not enough and housing providers should consider several key questions. Do mandates for data protection and governance differ by location, data type or other factors? Is data resilience a regulatory requirement, a cyber-threat mitigation or both? Answering these questions demands cooperation with legal, risk and compliance teams. While IT and information

security teams may have responsibility for implementing controls and protection measures, these must align with the organisation's wider responsibilities and contractual obligations.

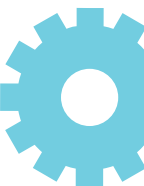
The advent of remote working has added extra complexity to data security. With an increasing volume of business-critical data and a shift towards remote working, it is vital to enable a rapid sequence of identification, triage and action against suspicious activities.

## Overcoming your data challenges

Microsoft's compliance solutions, coupled with offerings from Quorum Cyber, can equip housing providers with a comprehensive toolkit to monitor, manage and secure their data across multiple platforms and locations.

In conclusion, data security demands an integrated approach, combining technology with robust processes and human expertise. By understanding their data landscape and implementing bespoke security measures, housing providers can protect their 'crown jewels' more effectively and fulfil their obligations to their tenants.

*Graham Hosking is the data security solution director at Quorum Cyber.*



# Data-driven decisions with business intelligence

Carl Hunter, Business Intelligence Practice Manager, TSG



Data is the lifeblood of any organisation and without a true understanding of what it means and how it can affect your operations, you may be operating in the dark.



Business intelligence (BI) tools can provide housing providers with the right insights and analytics to make informed decisions and drive operational efficiency. But first and foremost, you need to think about whether you have a data-driven culture.

## What is a data-driven culture?

A data-driven culture refers to the organisational mindset and operational practices that revolve around leveraging data to drive decisions.

For housing providers, it means incorporating data analytics and insights into their operations, from strategic planning (i.e. where to build new properties) to day-to-day management (i.e. which arrears cases to focus on).

By embracing a data-driven culture, housing providers can move beyond relying on intuition and anecdotal evidence, and instead make decisions based on empirical evidence and data-driven insights.

## Leveraging your data to address concerns

Data holds the key to unlocking a world of possibilities; it goes beyond mere numbers and spreadsheets. By harnessing the power of data, housing providers can paint a vivid picture of their operations, tenants and resources, allowing them to make better decisions.

Accurate and reliable data serves as a solid foundation on which informed decision-making is built. By unearthing trends, patterns, and correlations, data illuminates the path to better outcomes.

The power of data lies not only in its ability to inform strategic planning and operational management but also in its potential to transform the very fabric of housing providers. It fosters a culture of continuous improvement, where decisions are based on evidence rather than assumptions. It empowers all stakeholders to actively engage with data, opening the doors to collaboration, innovation and a shared sense of purpose.

## Empowering housing associations with Qlik & Power BI

Both Qlik and Power BI are well-established tools that help you to gain a deeper insight into what your data means and how it affects all areas of your organisation.

Qlik Sense and Power BI are both recognised as leaders in the realm of business intelligence, offering robust features and functionalities that empower housing providers to extract meaningful information from their data.

These tools go beyond mere data visualisation, allowing housing providers to delve into the intricacies of their data and uncover hidden patterns, correlations and trends that may not be apparent through traditional methods of analysis.

For existing Microsoft users, you are likely to get more benefit from Power BI's capabilities:

- Integration with the Microsoft ecosystem, enabling seamless data connections and leveraging your existing infrastructure.
- Robust data-modelling capabilities, allowing housing providers to create rich and complex data models for in-depth analysis.
- A wide range of pre-built connectors, enabling easy integration with the disparate data sources and business applications commonly used in housing operations.
- An extensive library of visualisations and customisation options, enabling housing providers to create compelling reports and dashboards.
- Integration with Microsoft Office, facilitating data sharing and collaboration.

On the other hand, Qlik Sense is a great solution for those who feel they'll benefit from these capabilities:

- Centralisation of data from multiple sources, providing a holistic view of all housing operations.
- An intuitive and user-friendly interface, enabling end-users with varying degrees of technical expertise to explore and analyse data.



- Creation of interactive and visually-appealing dashboards, reports and visualisations without needing extensive coding knowledge.
- Democratisation of data, allowing housing staff at all levels to engage with the data and gain insights.
- Advanced analytics, including data alerting, predictive analytics and machine-learning algorithms for deeper insights into tenant behaviour, maintenance needs and resource allocation.
- Optimisation of operations through data-driven decisions, leading to cost reductions and greater efficiency.

- Seamless collaboration and data-sharing among stakeholders, fostering transparency and promoting a culture of data-driven discussions.

### Embracing the power of data

Business intelligence is the key that unlocks the doors to informed decisions, operational excellence and a stronger future. By embracing data-driven practices and using tools such as Qlik Sense and Power BI, housing providers can create a lasting positive impact across their organisations and for their tenants.

*Carl Hunter is the business intelligence practice manager at TSG.*



## GENERAL NEWS



# Data archaeology

## Unearthing buried treasures in housing data

George Grant, CEO, Broadcaster & Publisher, Housing Technology

In the famous archaeological digs of our time, the spotlight is often stolen by the dramatic discoveries; the glinting treasures of Tutankhamun's tomb, the haunting terracotta warriors of Xi'an or the intricate frescoes of Pompeii. But ask any seasoned archaeologist and they'll tell you that the true value of their work lies not in unearthing golden artifacts but in sifting through the everyday remnants of past civilisations to weave together a coherent, detailed narrative of human history.

Data management in housing is much the same. It's not about the 'golden' data that shines brightest in an Excel spreadsheet but the unassuming, everyday data that, when properly examined, can yield rich insights into the operational efficiency, tenant satisfaction and overall success of an organisation. And much like archaeologists, data managers (or should we say, data archaeologists) must dig through layers of 'soil' (such as outdated information, irrelevant data points and inaccuracies) to uncover these valuable insights.

With over five million families in social housing in the UK, and each interaction with these tenants generating data, housing providers are sitting on archaeological goldmines of information. Yet many are still in the stone age of data management, with precious insights remaining buried beneath layers of unstructured and unanalysed data.

### Cataloguing and preserving data

Data archaeologists don't just unearth these treasures, they also carefully catalogue and preserve them, ensuring their value isn't lost over time. For housing providers, this



means implementing systems for data governance and quality management; it's no mean feat to transition from a state of 'bad' data to 'good' data but the rewards are well worth the effort.

Good data management is akin to having a detailed map of a previously-uncharted territory. It enables housing providers to accurately track tenant information, property details, maintenance requests and more, providing a comprehensive overview of their operations. It can lead to improved efficiency, cost savings and enhanced tenant satisfaction.

### From good to bad data

The journey from bad data to good data involves a meticulous process of data cleansing, validation and governance. It's a bit like dusting off a delicate artifact; a careful, painstaking task that must be carried out with precision and care. But the result? A pristine piece of data that can be examined, analysed and used to make better decisions.

However, one mustn't overlook the potential pitfalls of this archaeological endeavour. Just as archaeologists must navigate booby-trapped tombs and cursed artifacts (if Indiana Jones is to be believed...), data archaeologists must be aware of the risks of data silos, outdated or inaccurate data and insufficient data security measures.

### Shaping the future

In the end, the goal of any good archaeologist, whether they're digging in the sands of Egypt or the databases of a housing provider, is to use the past to inform the present and shape the future.

The role of data archaeologists will grow in importance. Demand for social housing is increasing, and with it, more efficient, data-driven operations are needed. The treasures unearthed by these data archaeologists will not only drive commercial growth for housing providers but also, more importantly, improve the lives of millions of tenants nationwide.

In this sense, the work of data archaeologists in housing isn't only about unearthing buried treasures but also about creating a better future. It's a mission as exciting and meaningful as any archaeological dig, and it's time we give it the spotlight it deserves.

Here's to the data archaeologists, the unsung heroes of housing – may you continue to dig deep, uncover insights and shape the future of social housing.

*George Grant is the CEO, publisher and co-founder of Housing Technology.*

**HOUSING  
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# Delivering successful change

Caithlin Knox, Client Relationship Manager, One Consulting

*How do you and your organisation describe your change programmes?*

*Organisations tend to use different terminologies when communicating change internally and externally; 'we're transforming', 'we're improving', 'we're evolving', and 'we're innovating' are all phrases we hear a lot.*

Is each of these terms equal? On the one hand, they are because the actual words used are subjective to each organisation, but on the other hand, the nomenclature of change can complicate matters when looking outwards at peers for ideas, inspiration and support.

## Different stages of change

There's a natural progression to change, and we've found it simpler and best to use four words to distinguish the different stages of change:

- **Improvement** – what you do now, but better;
- **Change** – what you do now, in different ways;
- **Transformation** – what you do now, in ways you've never done them;
- **Innovation** – doing new things in new ways.

Regardless of what stage of change you're in, it's hard work and can be difficult to deliver. In our experience, there are seven steps to the successful delivery of any programme or project, no matter what the work is:

- 1. Know why** – continually question why you do what you do and confirm why you're going in your chosen direction, and be sure that your entire organisation knows this too.
- 2. Get a helicopter view** – see what's happening across your organisation around people, processes and technology. Use this to address problem areas and build your work programme to provide assurance that you're doing the right things.

- 3. Initiate the work** – approve, plan and resource it. Define clear responsibilities for everyone and develop realistic and achievable plans.
- 4. Control and deliver the work** – change delivery must be flexible, not bureaucratic, and have only the controls in place that allow you to move forward with pace, without red tape, and which safeguard your projects.
- 5. Assess the work** – provide assurance via regular reporting.
- 6. Transition to BAU** – ensure your new systems and processes are working end-to-end and that the business and its people are ready before you bring new initiatives into your normal operations.
- 7. Closure** – ensure business ownership of the benefits and outcomes so that they can be measured and realised long after a project has been completed.

Changing is hard but hopefully this article will help you to look at your programmes of work and assess how you might improve them.

*Caithlin Knox is the client relationship manager at One Consulting.*



# Big data in housing

Diana Yordanova, Communications Director, Housing Europe



Created as part of an EU-funded project, the Matrycs digital toolbox is translating huge volumes of data collected from social housing in order to improve the energy efficiency of homes, extend the lifecycle of buildings, boost energy performance and make policymaking more comprehensive.

Relying on existing technologies such as machine learning, deep learning and big data, this fresh look at building data is expected to have a significant impact on energy efficiency and help the social housing sector across Europe to ride the EU 'renovation wave'.

## Pan-European data

For almost three years, engineers and researchers from the National Technical University of Athens (NTUA) have been working on a free open-source tool and made use of over 4,000 renovation records sourced from the De-Risking Energy Efficiency Platform (DEEP, which contains energy-efficiency investments in Europe through existing projects in buildings and industry). The final goal is to forecast future energy production and domestic consumption alongside anticipating maintenance needs and energy management actions.

Housing providers in Europe are now testing the beta version of Matrycs to see how it could help them to evaluate the impact of investing in new builds or renovations and compare actual energy savings from different types of buildings and varied energy-efficiency measures. A large chunk of the data comes from France, Belgium, Germany, Denmark, Sweden, Latvia and Bulgaria, but also from the United Kingdom and the United States.

The possible interventions vary greatly. For example, if an Austrian housing provider would like to renovate its heating or cooling systems, it might consider automating its boilers, completely renewing them, insulating its pipes or optimising its heating distribution systems. It could take an extra step and run simulations for recovering waste heat, introducing the use of heat pumps, insulating walls and roofs, moving to LED lighting or introducing movement sensors in specific areas. Based on its specific needs, the Austrian housing provider could get an almost-

instant understanding of the cost of the intervention(s), the pay-back period and the net annual savings.

Alternatively, a housing provider in The Netherlands could enter its total budget into the Matrycs planner and receive an optimal portfolio of energy-efficiency investments, supported by detailed charts, uncertainty analytics and portfolio variations.

## Pilot projects across Europe

Since 2020, 11 large-scale Matrycs pilot projects have been run in multiple European countries, including Slovenia, Portugal, Spain, Italy, Poland and Latvia. For example, as the voice of European social housing providers in Brussels, Housing Europe is collaborating with Alokabide (a Basque housing company) and the University of the Basque Country to ensure that all data collected from its building before and after renovation will be processed to assess the accuracy of EU's impact analysis and refurbishment in the long term. A pilot in Latvia is focusing on de-risking energy-efficiency investments, while work in Poland aims at implementing data-driven services for one-stop-shops. A Slovenian demo is taking care of building operations, Portugal is boosting the management of energy communities, and in Spain, one of the ambitions is to optimise the operation of a district heating network.

## Massive amounts of data

The use of more than 350Tb of data and 60 different data sources are surely becoming a challenge as data is in constant motion and its forms vary, the data volume is excessive, and ensuring reliability is as difficult as it is important. Matrycs takes data privacy very seriously and follows strict rules so that user data is fully protected and confidential.

We're now in the final stages of the Matrycs project, with all of the results and benefits starting to materialise. Later this year we will know whether our approach to big data can give European housing providers the bigger picture they need to revamp their homes so that they are decent, climate-friendly, long-lasting and affordable.

*Diana Yordanova is the communications director at Housing Europe.*



# Defining the 'social' in ESG

Dr David Janner-Klausner, Co-Founder, Commonplace

*Social impact is an essential part of ESG, itself becoming more central to the mission of housing providers. While for the 'G' and 'E' there are clear regulations, the 'S' requires dialogue with the public.*

The need for public engagement varies between the different elements of ESG. Governance (G) is highly regulated, and the environmental (E) aspect is at least partly covered by regulations, although benefiting from public engagement and recruitment of multiple stakeholders. However, when we come to defining the social (S) impacts, dialogue with the communities affected by change and development is imperative.

Discussing ESG can contribute to organisational learning, calibrating internal and external expectations and building trust with tenants. This may apply to all ESG elements but when it comes to social impact, there simply is no credible social impact framework without public engagement.

### Circles of engagement

Our data on local development and regeneration demonstrates how social impacts and the perception of gain can be complicated and dependent on multiple variables. Data from dozens of public engagement exercises shows that there are differences in the perception of benefits that relate to factors such as the type of interaction respondents have with the area where change will take place.

We have large amounts of data from past projects and we recently conducted a 'deep dive' into our data on a medium-size town in a northern UK conurbation. 70 per cent of local residents were positive about the changes presented on Commonplace, rising to above 90 per cent for visitors to the area; here are two quotes from residents:

- "I'm positive about the proposals but the main issue is on nice sunny days, anti-social behaviour around [location] is rife."
- "Proposals should make the area more inclusive; I feel that some areas are 'out of bounds' and that isn't what the area is supposed to be like. The previous history of [location] was as a more diverse and vibrant population which isn't the case now."

Social benefits are both an aggregate and a balance of different populations' requirements. The viability of local uplifts and gains frequently depends on attracting new footfall to workplaces, hospitality venues or shops, or attracting new home-buyers and tenants to an area. Public engagement is essential for discerning these differences and presenting them back to the different populations. Because most developments affect populations differentially, a digital presence is essential for reaching everyone affected, at the epicentre of a development and further away from it.

### Digital reach and machine learning

Maintaining public engagement as plans take shape and are reiterated is essential to maintaining trust and explaining the balance found between the expectations and needs of different groups. These conversations and iterations can be more immediate and more transparent thanks to technologies, not just using the web for engagement but also using machine learning to accelerate the dialogue with communities.



Using machine learning to analyse and summarise residents' feedback makes the reporting process much faster (days rather than weeks) and more cost-effective. It's now possible, within the timescale of plan preparations, to maintain continuous engagement without needing substantially more resources than a traditional approach (which typically leaves yawning gaps between consultation phases). The ability to analyse free-text and voice comments can radically accelerate engagement and make feedback to residents fast and cheap.

For example, Commonplace has devoted considerable time and effort to training our machine-learning models to 'understand' written comments in specific development areas such as regeneration, public services and transport.

This isn't trivial because our aim has been to extract not only what people are talking about but also the sentiments associated with their various comments and suggestions. This is done by having our (very much human) specialists categorise thousands of comments and feed these into our machine-learning models. Once the parameters have been coded and tested, the analysis of written comments is very fast, enabling rapid decisions and a quick feedback loop with the public.

### Reaching further

We recognise that there are people (usually from specific demographics) who don't want to use a website for their comments. In these cases, the beauty of machine learning is that any communications, such as an interview, letter,

voice message or conversation, can be analysed and the resulting data collated quickly and reliably.

To conclude, we have proposed that:

- Successfully defining social value requires wide and deep community engagement.
- The eventual definition and benchmarks for social value will be a balance between the perceptions and expectations of different groups.
- Finding that balance and getting consensus around it requires reiteration and good two-way communications with residents in different circles around the epicentre of development.
- Such engagement and rapid feedback can be achieved quickly and at little cost with the help of online engagement and newly-developed machine learning for analysing resident and stakeholder feedback.
- This facilitates faster communication and reiteration, thereby increases trust and reducing the sense residents often have of being mere bystanders to decisions that impact them deeply.
- This package of process and technology can significantly de-risk development planning processes as well as help to 'bake in' elements that are of genuine benefit to communities.

*Dr David Janner-Klausner is the co-founder of Commonplace.*

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