Yorkshire Housing Smart Homes and Innovation – Request for Information

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Summary

We are exploring the market to find out what solutions are available to the problems listed in this document. Following submissions, there will be an evaluation within Yorkshire Housing of the products that we want to pilot and/or procure, with a view to begin a phased program of installations from April 2021.

Submissions should be submitted to darren.williams@yorkshirehousing.co.uk. Any questions or queries can be directed to the same address.

Why are we doing this

At Yorkshire Housing we're really proud of our history. The Yorkshire Housing group was formed in 1999 and became Yorkshire Housing in 2008. Today we manage more than 18,000 affordable and social rent homes across 20 local authorities. We are a not-for-profit organisation, meaning all our earnings are re-invested into the services we provide.

We're more than a landlord. Our home improvement services, support services, employment support, business coaches and our benefit and money advice service mean we can go the extra mile to support our tenants.

Our business priorities are:

- **Great Customer Experience**
  - To achieve this we will use data, insight and the views of customers to shape our services. This will ensure we put them at the heart of all we do and deliver a range of services that meet the needs of both current and future customers.
- **Homes and Places to be Proud of**
  - We want to create homes and places, not just provide houses or 'units'. In 2019, 84% of customers were satisfied with their home. 89% of our customers said their rent provided good value for money.
  - We will invest in innovative solutions and smart technology to improve the energy efficiency and performance of homes and support personal independence and safety.
  - We want to improve our 'right first time' approach and reduce reactive repairs in favour of planned repairs. This will deliver a better customer experience and improve our efficiency.
- **Growth**
  - We will invest to build 8,000 high quality new homes over the next 10 years to 2030
- **Be an Employer of Choice**
  - We will have an innovative approach to transform how we deliver our services supported by a fully flexible way of working
- **Strong, Resilient and Innovative Business**
  - Yorkshire Housing has a strong reputation. Rather than wait for things to happen and respond to them, we need build on our reputation to influence housing policy at a local, regional and national level by leading and not just following others.
  - We will be a housing business that others choose to work with, through building a reputation as a dynamic and innovative organisation that delivers.
  - We want to lead, not follow.

What have we done so far

We have Conducted a number of small trials and pilot projects across the business:

Howz supply sensors that identify the normal routine of a customer, and notify the customer's family via an app if they deviate from this routine.

We conducted a small trial at a sheltered scheme with three tenants. It identified that one customer was waking up and moving around in the night. The app notified the tenant's family, leading to a medical assessment within days and a change of medication. Due to the customer's frailty and medical conditions, it is unlikely that this would have been picked up without the use of Howz.

Shepherd Safety sensors were installed in our Sheltered Schemes to monitor for the conditions that allow legionella to breed. The sensors use LoRaWAN technology and report a reading every 15 minutes to a cloud-based system where it can be analysed. This replaced a once-monthly physical inspection. Alerts are sent over an app to the asbestos and Legionella Manger if the necessary conditions are triggered.

Aico Sensor installed within smoke, heat and carbon detectors feeding back on alerts, lifespan of the device and diagnostics.

Matterport Interactive 3d show house (Space Homes). Virtual photographic walkthrough of our sales show homes which allows user to view the property via the Space Homes website.

These pilots have given Yorkshire Housing an initial view of how beneficial this sort of technology can be and we want to learn more about what is available, and what technology is right for us.

Business Requirements

The following sections detail the responsibility of teams within Yorkshire Housing and gives a list of business problems being faced that we believe could be solved using modern technology. Please note that requirements may be duplicated across teams, there is a summary table below in Appendix A.

Development / Space Team Requirements

The Development Team is responsible for the delivery of the New Homes Strategy and the delivery of 8000 new homes by 2028. The team has a wide-ranging remit including Delivery of the Homes England and section 106 programme, Land acquisition, Project Management, Design, Quality Control and Defects Management.

Space Homes is our market sale and shared ownership division.

- Performance gap (measuring the actual performance of a home versus that against which it was designed) - does the heating, ventilation, running costs measure up to the performance that was proposed (could use Energy Performance Certificate as a benchmark for example).
- Market demand for technology - growing area that poses a risk if we are left behind - particularly on market sale properties. Demand for functionality for customers to control heating / lighting / socket outlets / security devices etc.
- Lack of surveyor / staff to deploy to advise customers on maximising use of their home (boiler / ventilation / running costs).
- Diagnostics – reporting faults with components (boilers / smoke detectors / lighting (i.e. checking if heating controls have been altered / diagnostic functionality)).
- Low access rate at our end of defects stage - if we had some diagnostics in the home we would be able to report issues to the contractor before their contractual liability ends and risk passing on costs to our Asset Team delivering the repairs service.
- Current lack of data monitoring on things like carbon usage / running costs which is likely to be a future regulatory requirement.
- Lots of activities during build phase are still paper based. Ability to capture progress of build in digital format (recording local weather conditions on site to defend contractor claims / extensions of time, progress of build, reporting on progress) Avoiding duplication in typing up hand-written notes of arising snags/defects.
- PV (photovoltaic) performance monitoring – are they working correctly / to maximum potential.
- Yorkshire Housing need to consider if we can charge extra for this (service charge / extra on sale properties).
- Lack of core house information (i.e. Floor plans / layouts / component make and model information). BIM (Building Information Management).
- Increased detail of models of house types to enable sustainable procurement, negotiate better terms and deliver greater cost certainty
- Provide clearer definition of what is to be built and the programme logic. This could include digital scans at key milestones for quality checking to reduce the need for opening back up.
- Handover documentation structure which aligns with Repairs / Homeworks / Development team operational process

- What kind of tech bundles will you be providing? Bronze, Silver, Gold, Platinum model which covers rental tenancies as well as shared ownership and market sale properties?
  - What sits within each and what is the cost uplift – define within strategy
- Longer term opportunity to have a "Home User Guide" or similar, which is app-based and puts consumers in control day-to-day
- In-built systems for crowd sourced analytics, etc. i.e. 50 plots all requiring a boiler service, cost is reduced by 20% by provider due to number of confirmed work stops – this could then be sourced to local companies to reduce CO_2 and better sustainability data
- Define processes and associated targets separately in terms of design, construction, quality, defects, etc
- Define design criteria and expected outcomes which benchmark development
- Define quality expectations – use digital recording system to systematically check at regular intervals progress vs programme
- Capture defects ahead of time and resolve and use detailed reports to resolve defects

Asset Team Requirements

The Asset team is responsible for reactive repairs, planned and cyclical maintenance and refurbishment planning. This team also includes the environmental section covering our sustainability ambitions.

- Performance gap (measuring the actual performance of a home versus that against which it was designed) - does the heating, ventilation, running costs measure up to those that were proposed (could use Energy Performance Certificate as a benchmark. Application potential from new build through to longer term use or following refurbishment/retro-fitting.
- We currently have approx. 5000 properties at SAP rating D or less – opportunities for use of smart technology solutions to improve SAP rating.
- Difficulties of getting access to properties on occasion to check stock condition / for perform planned maintenance in properties.
- Identify carbon usage of our stock (15000 properties approx.).
- Diagnostics and data analysis around repairs.
- Embed lifecycle costs into assets to better inform decisions and make data-driven optioneering choices
- Introduce a tool to consolidate the management and monitoring of asset information and to provide real-time insights
- A place for validated information through the delivery
- Handover documentation structure which aligns with Repairs / Homeworks / Development team operational process
- Ongoing management of properties with link back our systems to allow Power BI dashboard reporting

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Customer Independence Requirements

The customer Independence Team provide services which support older people to live independently in their own homes or in our sheltered accommodation. They work with partner organisations right across Yorkshire to improve quality of life for our customers. Yorkshire Housing operate 24 sheltered schemes and 2 Extra care schemes with around 800 residents.

- Support Customers.
- Morning call – currently scheme manager rings around all residents to check-in on their well-being, can this be achieved through technology and an exception report instead?
- Due to criticality of alerts the technology must be robust.
- Peace-of-mind systems, e.g. fall detectors, linked to an app to notify scheme managers and family members in the event of an alert.
- The current Warden Call system runs on analogue technology and we want to move to an IP based system.
- Access control systems.
- Remotely read communal utility metering and sub-metering.

Customer service Delivery Team Requirements

Our Tenancy and Leasehold Teams provide a wide range of services to our social rent tenants including allocations and lettings, customer liaison and managing antisocial behaviour cases. We champion a service excellence culture by developing methodologies, frameworks, strategies, policies and plans to support excellence and ensure alignment with corporate objectives.

Our community investment team works with customers to improve engagement with the organization, and to support customers with employment and enterprise opportunities.

- Block cleaning – how to check if contractors are attending and undertaking work.
- Access to communal areas – digital door entry systems to avoid chasing keys / supplying keys / dealing with lost keys and security issues.
- How to identify abandoned properties / or long-term non-occupation with no-one in.
- Damp, Mould and disrepair identification.
- Identify Fuel poverty.
- Gas capping – how to confirm that the gas is still capped off
- Readings from communal utility meters. Note that Monarch is our utility suppliers for voids.

Homeworks

Homeworks are our very own in-house contractor covering repairs and maintenance to our homes, shared spaces and vehicles. They have specialist teams for building services, electrical and facilities services, gas services and environmental and fleet services.

- Component info – linked to BIM (as Development section). Ability to source the right component from the supplier on the way to repair, rather than having to arrange second visits (first-time-fix).
- Diagnostics – fault readings / performance monitoring of components / age of product and remaining life.
- Meter readings (utilities).
- CCTV – in extra care / in areas of anti-social behaviour / monitoring depots / facilities.
- Drones to survey roofs for houses and hard to access low-rise blocks.
- Window cleaning - contractor monitoring.
- Last known location of staff
- Usage of facilities

Governance

The Governance Team are a support function with a critical role in the running of Yorkshire Housing and we play a leading role in the delivery of our strategies. The Governance Team support board and committee members to undertake their duties as governors of the organisation, manage data protection and are responsible for matters of probity, whistleblowing and Fraud. Providing financial planning, processing and accounting support for the organization, the finance team also lead on value for money - supporting managers to ensure teams are efficiently using resources to deliver excellent customer service.

- Where we are collecting new data about a customer, we will need informed consent from them
- We need to be clear on what grounds we are providing any Smart Home/Smart Technology services and what data we are collecting
- We need to be clear on the purposes for which we are collecting any data, and ensure that the data is only used for this purpose
- Data about a customer must be searchable in the event that a Data Subject Access Request is submitted and we must be able to make their data available to them
- If a customer wishes to exercise their right to be forgotten, we must be able to act on this
- If any data is used to make automated decisions or carry out profiling, we must communicate this to the customer and have a process for them to request human intervention or to challenge a decision.
- We will need to discuss Smart Home pilots with our DPO and carry out DPIAs to consider and address risks prior to commencement of the projects.
- Assess the technology roadmap versus the number of houses in our portfolio to inform procurement – leads to deals on bulk orders, but also allows to plan for changes or updates in technology, e.g. the introduction of 5G.

HIA

Our Home Improvements Agency help vulnerable people stay in their own homes by delivering adaptations and providing Handyperson services (grab rails, stair lifts, ramps, small repairs, improved security etc). We also manage adaptations for Yorkshire Housing customers.

- Energy efficiency measures to minimise running costs – controllability
- Fire safety measures
- Door entry systems – general needs housing (i.e. private homeowners / bungalows) where carer attends
- Key safe / access to home for carers – digital locks
- Fuel Poverty support
- Damp mould identification
- Properties in disrepair – identifying
- Co-ordinating / resourcing operatives / staff
- Digital stop cock / water or other utilities isolation.
- Diagnostics – faults in property components (stairlifts / hoists / through-floor-lifts / wet-rooms).
- Any technology which supports visually impaired / hard of hearing / disabled customers / chronic health issues / older persons.
- Lone worker solution

Health and Safety

The Health and Safety Team support senior managers and provide strategic and operational leadership for health, safety and wellbeing across the organisation, providing expertise in health and safety and ensure that the organisation continues to meet all legislative and statutory responsibilities and obligations whilst adopting good practice principles. Core compliance activities include gas, electrical, fire safety, lifts as well as asbestos and legionella management.

- Monitoring utilities consumption / connection active or otherwise (in particular gas) – for Yorkshire Housing facilities, depots and housing stock.
- Door entry systems – digitised systems / customer control with live view within properties and to the door entry point, including recording facility (similar to CCTV).
- Lone worker safety – alert system for staff. Discreet alert system. Ability to provide a live feed from site to a support centre. Link to staff calendar. No dependence on phone.
- Fall network accessibility. Fall detection.
- Automated gates – diagnostics facility. Operational activity.
- Fire Risks Assessments – accessible by the customer?
- BIM – Property Asbestos tracker – virtual view of a property showing hidden elements.
- Acoustic monitoring
- Radon monitoring

General Yorkshire Housing considerations

- Cultural transformation needs to be addressed: big changes = big opportunity = big resistance
- Discuss the need to address new stock set up in short term and use this to drive existing stock data capture
- Develop our own digital procurement platform which allows e-tendering but also has built in information behind the cover page regarding who the company is, how much work they do, if it is on time, etc to get a better overall value proposition, which includes cost, but is not governed by it
- Definition of an EIR to define standard practices
- Implementation of specific information protocols including naming, structure, etc
- Produce a digital strategy which defines the business drivers
    - Including aspirations, KPIs, responsibilities, timescales and approach
    - Overarches each project would introduce robustness and governance to link all of the items, actions, etc within the document to a tangible and measurable targets
    - Includes development of an "Innovation Roadmap" or similar – this is a great way to communicate across the business
    - Provides single source clarity regarding measurement of success, KPIs, etc
    - Allocates responsibility to relevant teams
    - Defines core business outcomes, information and stakeholders

Procurement considerations

The Procurement Service is a support function with a critical role in the running of Yorkshire Housing, and has a responsibility to facilitate the delivery of savings and efficiencies through good procurement practice across business whilst mitigating operational, commercial and compliance risk.

Yorkshire Housing staff must only procure goods, services and works in line with our Procurement Policy and Procedures which includes Quotations, non-OJEU tenders, OJEU tenders or EU compliant frameworks. This will depend on our current contract status, business priorities and EU implications.

Yorkshire Housing knows that it is essential to obtain value for money, and recognises the need for efficient, transparent processes for the procurement of goods, services and supplies.

Please advise us of any frameworks that your product sits on.

IT Considerations

Yorkshire Housing have an in-house IT team who are responsible for all the hardware and software which supports the organization to run its business. IT also provides expert consultancy to help identify technology solutions.

Yorkshire Housing have embarked on a transformation journey and recently implemented Microsoft Dynamics CRM. We have the ambition to be the most innovative Housing Association and to lead the sector rather than following others. We recognise that we need new technology to help us achieve this aim.

- Systems should be compatible with existing systems, i.e. Dynamics, Azure and Power BI.
- Products should include APIs to allow Yorkshire Housing to extend functionally or to integrate with existing systems where appropriate.
- Systems should allow data to be easily transferred to Yorkshire Housing.
- Data must be secure and encrypted in transit and at rest.
- Systems should be cloud-based, SaaS or PaaS preferred.
- Products must be GDPR compliant.
- Connectivity requirements to considered
- We cannot assume that a Wi-Fi connection will always be present for smart technology to use within a tenant's home.

Next Steps

Submissions should be submitted by close of business on Monday 9th November. Following this there will be an evaluation of proposals within Yorkshire Housing with a view to start deployments or installations from April 2021.

If any clarification is required, please contact Darren Williams, Lead Innovator at darren.williams@yorkshirehousing.co.uk

Appendix A - Core YH Requirements

Business Strategy Theme	Requirement Item	Development	Space Homes	Asset	Customer Independence	Homeworks	Customer Delivery	HIA	Health and Safety	Demand Score
Strong, Resilient and Innovative Business	Utilities Consumption (gas, electric, water)	Y		y		Y			Y	4
Homes And Places To Be Proud Of	Carbon Consumption	Y		y			y			3
Great Customer Experience / Homes And Places To Be Proud Of	Customer Control (Heating, lighting etc)	Y	Y	y				Y		4
Strong, Resilient and Innovative Business / Great Customer Experience / Homes And Places To Be Proud Of	Component failure diagnostics	Y		Y		Y		Y	Y	5
Strong, Resilient and Innovative Business / Great Customer Experience	Property Presence / Occupancy	Y	Y	Y	Y			Y	Y	6
Homes And Places To Be Proud Of	PV (Photovoltaic) performance monitoring	Y		y		Y				3
Great Customer Experience	Keyless Communal Entrances	Y		y	y		y	Y	Y	6
Homes And Places To Be Proud Of	Mould / damp identification	Y		y	y		y	Y	Y	6
Homes And Places To Be Proud Of	Monitoring Contractors (cleaning)					Y	Y			2
Homes And Places To Be Proud Of	Void works - monitoring attendance		Y	y		Y				3
Great Customer Experience	Identify Fuel Poverty			Y			Y	Y		3
Homes And Places To Be Proud Of	Communal Meter readings	Y		y	Y	Y	Y			5
Homes And Places To Be Proud Of	Confirm Gas is still capped		Y	Y		Y	Y		Y	5
Strong, Resilient and Innovative Business	Compatible with Microsoft Dynamics	Y	Y	Y	Y	Y	Y	Y	Y	8
Growth / Homes And Places To Be Proud Of / Strong, Resilient and Innovative Business	BIM (Building Information Management)	Y	Y	y		Y	y	Y	Y	7