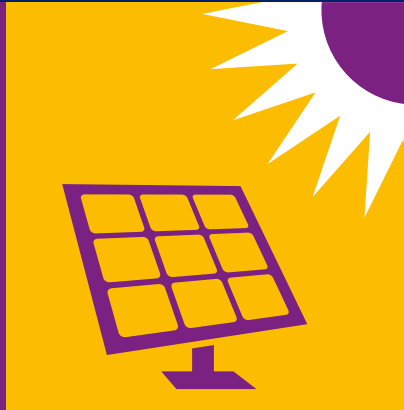




How will the retrofit programme to achieve net zero carbon impact customers?



Foreword

Paul Richards - Group Director of Customer and Communities at Orbit



The recent COP26 Climate Change Conference has laid the foundations for global action to reach net zero carbon greenhouse gas emissions. For the UK, its existing housing stock must undergo wholesale changes to the way we build and heat our homes in order to achieve the targets that have been set. The changes needed will have a major impact on the sector, while customers who are residents in these properties will be drastically affected and need to be considered in the retrofitting process if it is to be a success.

At Orbit, one of the UK's foremost housing groups, we are committed to creating thriving communities and placing customers at the heart of everything we do. That is why in May 2021, we gathered the views of 900 customers to help us understand our social rented households' priorities around the net zero carbon agenda, as well as to examine what matters to them in relation to their environment. The study was jointly produced with the Chartered Institute of Housing and was one of the first in-depth pieces of work of its kind, which provided an insight into our customers thinking about net zero carbon.

Using the research in direct correlation with our own plans for cutting our carbon footprint, we have assessed how our customers will be directly impacted by retrofitting works, both during the process and following its completion, so as a social landlord we know what challenges our customers will face. As a result, we have produced a research report with the University of Leeds, using what we know from our customers and the actions we will be taking as an organisation.

This report provides a summary of the findings and recommendations from that research on how we can best support our customers through the decarbonisation of their homes. We will be using this as a guideline to engaging with our customers throughout the retrofitting process, so not only do we achieve the goal of becoming net zero carbon, but also deliver the best service possible to our customers.

By working together with our customers and considering how they will be impacted, we will not only be able to achieve a more sustainable future and deliver more energy efficient properties for the UK's social housing stock, but also provide a better quality of life for our customers and deliver on our commitment to creating thriving communities.



Executive summary

The UK Government's 2050 net zero carbon target places significant challenges on the UK's homes with 80% of properties that will exist in 2050 having already been built today. National commitments for social housing also require homes to meet the EPC target of C and above by 2030. Therefore, social housing providers face a long-term challenge to retrofit existing housing stock through cost effective and innovative means in order to meet the UK Government's 2050 net zero carbon target.

As part of Orbit's organisational culture, customers are at the core of how Orbit tackles environmental challenges. **Through tackling climate change, Orbit must balance customer's needs and ensure a positive outcome for both them and the environment;** indeed these two things are intertwined and trying to satisfy them independently will not realise true success or sustainability.

There are increasing developments and trials in retrofit technology but limited research into how these changes will impact people living within these homes. To address this gap, Orbit commissioned a research project with the University of Leeds to investigate how the decarbonisation retrofit programme will impact its customers.

In early 2021, Orbit successfully secured £1.45 million as part of the Social Housing Decarbonisation Fund (SHDF) Demonstrator pilot in partnership with Stratford-On-Avon District Council.

This UK-wide scheme supports Orbit and 16 other Demonstrator projects to explore innovative approaches to a whole-house retrofit approach at scale. In addition to the £1.45 million funding, Orbit is investing a further £2.2 million into the project, assessing the efficacy of installing carbon reduction measures on current housing stock. The project will help shape future retrofit plans and capital investment programmes, supporting Orbit's contribution to meeting the UK's net-zero carbon emissions target.

This research focuses on how the retrofit works will impact Orbit's customers both during the retrofit process and post-completion, with a particular focus on fuel poverty, thermal comfort, and mental and physical wellbeing. It aims to identify the benefits and challenges of a whole-house approach, whilst considering the role of communication, awareness and technology to identify opportunities to minimise disruption to the customer and facilitate adaptation to retrofit changes for optimal environmental performance.

Recommendations

The following recommendations are outcomes of the project: **'How will the retrofit programme impact customers?'**. The research focuses on how the retrofit programme will impact Orbit's customers in situ both during the retrofit works and post-works, with a particular focus on fuel poverty, thermal comfort, and mental and physical wellbeing.

Recommendation 1:

Increase community participation in the decarbonisation agenda from now until 2050 and allow customers to make non-technical decisions during the pre-work stage of the retrofit programme.

Recommendation 3:

Invest in employee training to increase awareness and understanding of Orbit Earth's commitments and, more specifically, Orbit's decarbonisation strategy. The training should be offered to all customer-facing positions, including all PAS2035 roles.

Recommendation 2:

Develop customer segmentation of categorised household types.

Conduct customer profiling to enable most suitable engagement throughout the retrofit process. Household types should look for similarities in current levels of customer satisfaction with Orbit and current energy consumption behaviours and attitudes.

Recommendation 4:

Build transparency and trust throughout the retrofit programme by managing customer expectations and collaborating with customers on mitigation and offsetting strategies.





Recommendation 5:

Collaborate with other social housing providers undertaking demonstrator projects to develop a toolkit on retrofit best practice which focuses on customer experience.

The toolkit could contain a checklist of strategies which applies to all customers and all housing stock.

Recommendation 6:

Focus on the importance of communication and awareness within the pre-works, handover and future repair stages in order to mitigate risks during the Works and Post-works stages.

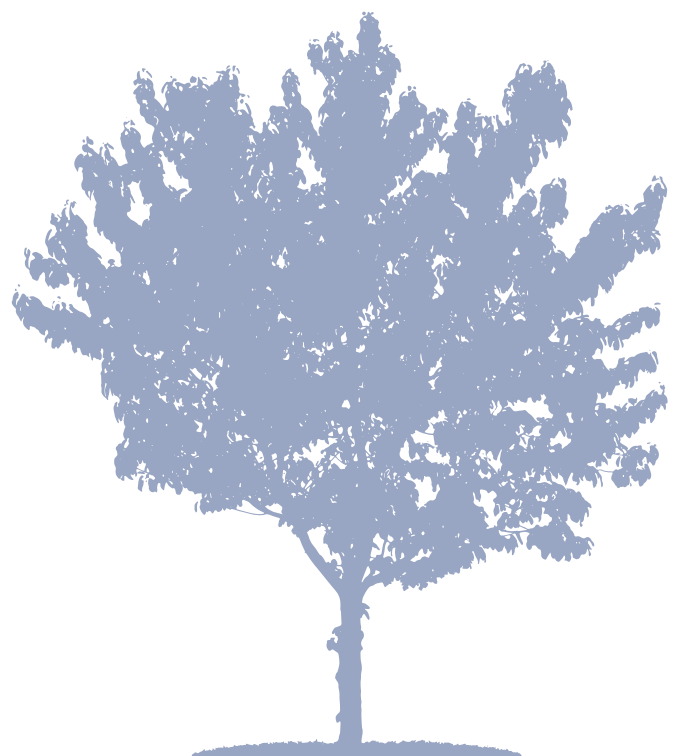
Recommendation 7:

Integrate the learnings from ‘whole-house in one go’ retrofit approach into the net zero carbon strategy to reflect the customer voice.

Recommendation 8:

Address traditional negative associations surrounding electric heating systems.

Start to change the narrative to aid transition to new technologies.



Project Design

Key aims

1. Identify and evaluate the risks associated with the retrofit programme and its outcomes, to minimise disruption to the customer.
 2. Identify areas of opportunity during the retrofit programme and the effects on customers to facilitate customer adaption to retrofit changes and drive decarbonisation targets.
 3. Investigate whether there is a significant affordability risk to Orbit customers and Orbit as a business from a net zero carbon home.
 4. Investigate demographical and situational influences which impact customer engagement preference.
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Methodology

1. Conduct a literature review to identify:
 - a. effective customer engagement tools to reflect customer concerns and priorities.
 - b. benefits and challenges associated with the retrofit process and its outcomes.
2. Interview the retrofit coordinator to identify the potential added value to the installation process of the whole-house retrofit approach.
3. Survey a sample of Orbit customers to better understand:
 - a. current customer habits towards energy consumption and the capacity for behavioural changes.
 - b. customers' perceived ability and accountability to contribute to Orbit's decarbonisation strategy within their properties.
4. Cross reference responses with a recent broader climate change and environmental issues customer survey to identify emerging trends in customer responses.

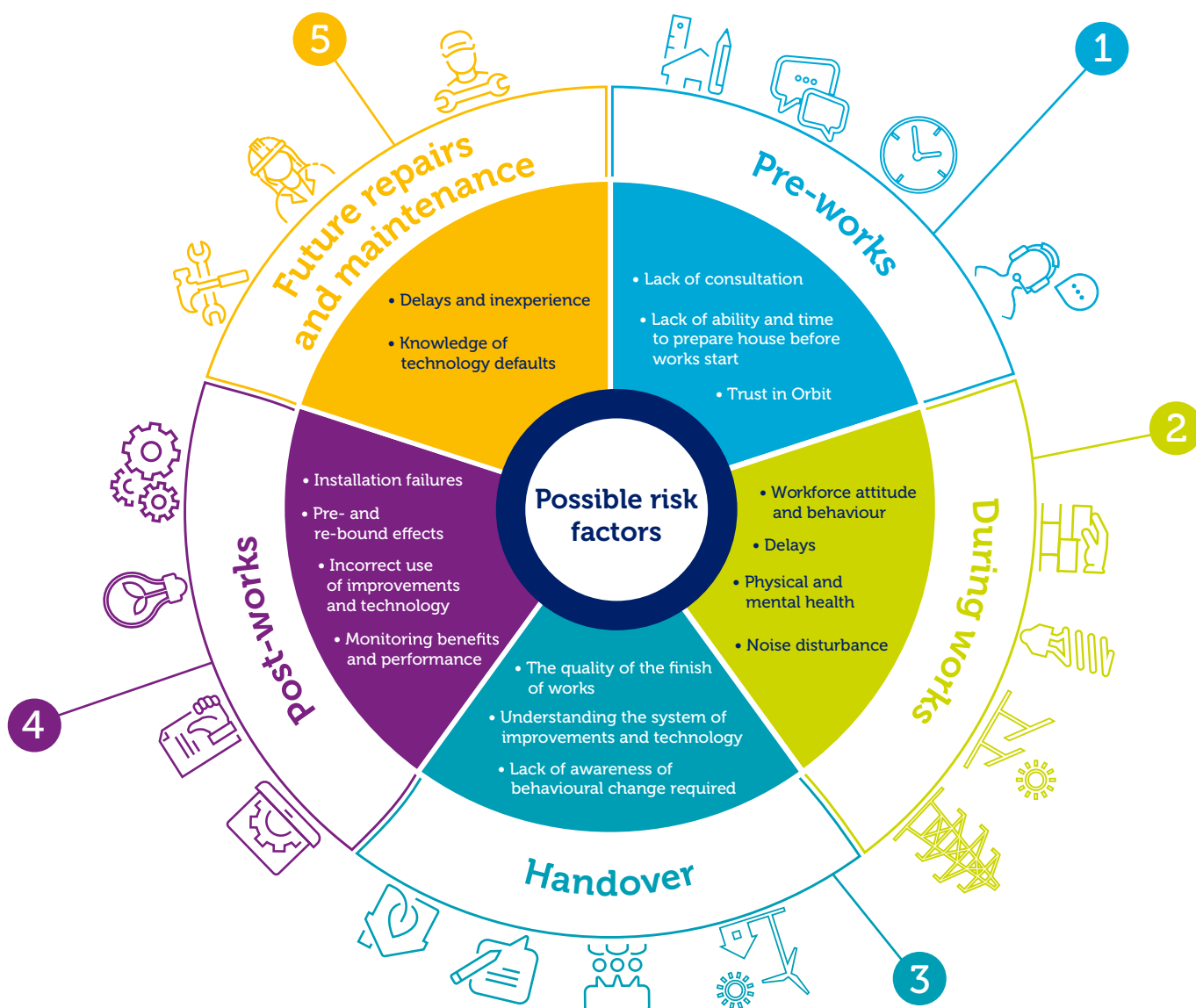
The whole house retrofit approach - how should Orbit ensure a positive customer experience?

By 2050 all UK homes must become net zero carbon to meet government climate change targets. National and organisational decarbonisation strategies mean that the majority of existing homes will need to be retrofitted to meet these targets. Different approaches to retrofit - particularly those associated with heating and cooling - will impact Orbit customers' household use and behaviours.

There are five core retrofit stages: pre-works, during works, handover, post-works and future repairs and maintenance. The post-works stage refers to day-to-day experiences living within a retrofitted property and how customers are likely to adapt to the energy efficiency improvement works. The future repairs and maintenance stage outlines any improvements or repairs to the works following the installation, carried out by

maintenance teams or external contractors.

The length of the core retrofit stages will be project-specific. Mitigation and offsetting measures should be considered to ensure a positive experience for customers throughout the whole house retrofit approach, these are detailed by stage below.



Risks and Recommendations

Here we identify the risks that may occur during the core retrofit stages, and make recommendations to minimise their impact

1. Pre-works

- **Lack of consultation.** Consult customers on non-technical decisions to build two-way communication ahead of retrofit works commencing. Maximise engagement in the retrofit works and, where possible, facilitate an element of choice.
- **Lack of ability and time to prepare the home before works start.** Provide and promote pre-works services to increase the readiness of customers ahead of the retrofit programme.
- **Trust in Orbit.** Assess customers' current levels of customer satisfaction with Orbit. Ensure the complaints procedure is well communicated to customers.
- **Expectation management.** Prepare customers for the outcomes of the retrofit programme and Orbit's decarbonisation agenda in general, including possible areas of disruption and consideration of general household sustainability.
- **Customer profiling.** Conduct customer profiling to understand which benefits of the retrofit programme are most applicable to them. Profiling should also include physical and mental health requirements, capacity for behavioural change, and current perception of Orbit.

2. During works

- **Workforce attitude and behaviour.** Ensure workers are aware of the broader purpose of the programme and value a customer-focused approach. Ensure the workforce have adequate training and capacity to manage customer relations.
- **Delays.** Keep customers well-informed of progress, delays and changes and the reasons behind them. Increase the capacity of customer liaison or customer care roles to respond to customer concerns in connection with the retrofit installation.
- **Physical and mental health.** Refer to the customer profiling of vulnerabilities and pre-existing health conditions to understand customer's physical and mental health needs, and offer customer's exclusive access to Orbit's Better Days programme.
- **Noise disturbance.** Refer to the customer profiling of customer's needs of their home environment, i.e. if customers are working from home or children are at home during the project timeframe. Acknowledge disruption and consider the efficacy of 'daytime decanting' whereby customers can use community spaces to study, work or access calming environments.

3. Handover

- **Poor quality of finish.** Create a customer satisfaction checklist for organisational use to ensure that all interior jobs required as part of the retrofit works are completed within the handover stage. Provide handover services by refitting customer's blinds and curtains and refreshing paint work.
- **Inadequate understanding of improvements and technologies.** Ensure that demonstrations acknowledge how the new technologies and improvements combine to form a connected whole-house system as well as how to operate them individually.
- **Lack of awareness of behavioural change required.** Create personalised, easy-to-follow information for customers, taking into account customer's communication preferences (from Stage 1 profiling). Ensure customer-facing employees are trained in carbon literacy.

4. Post-works

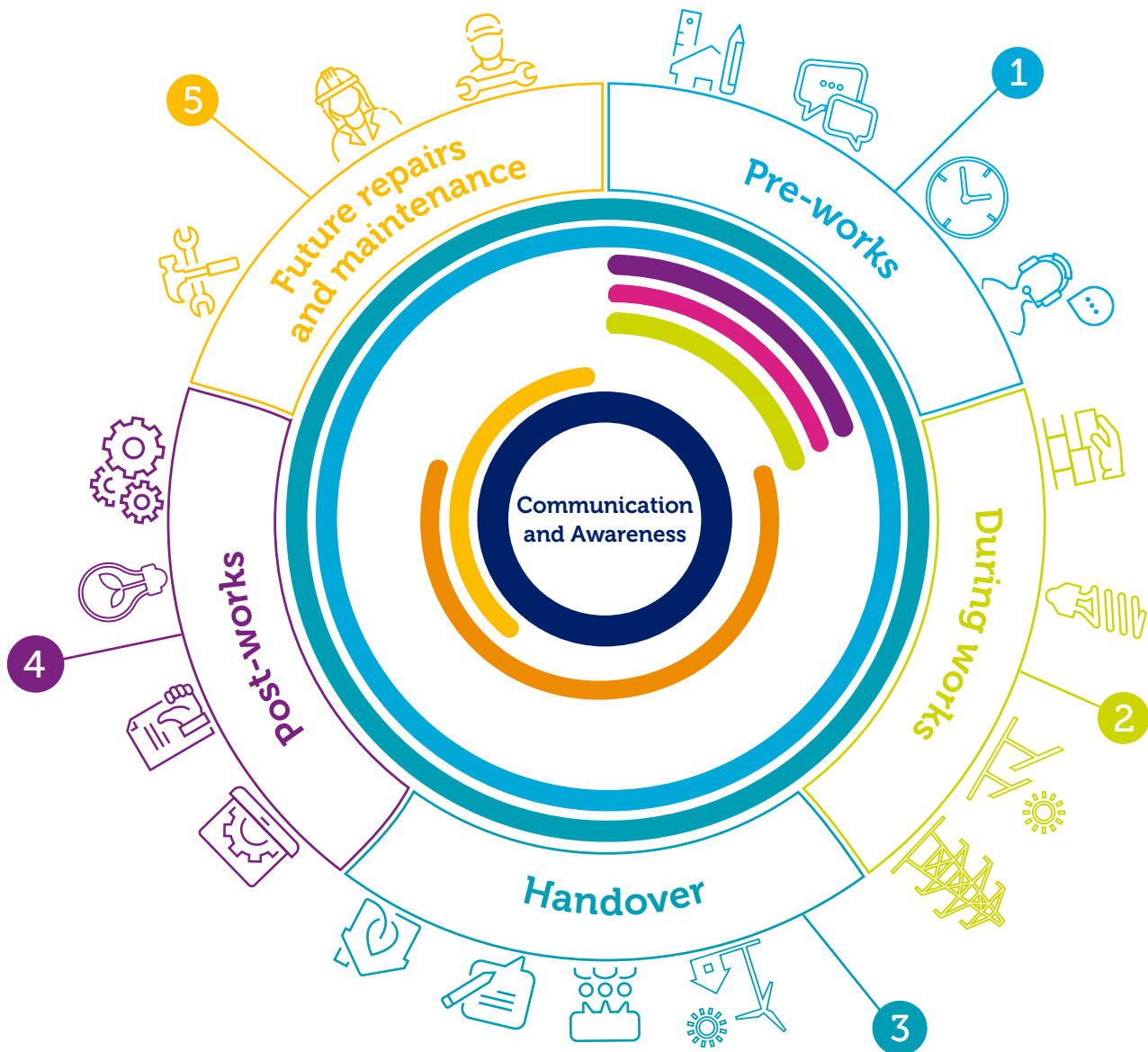
- **Installation-related failures.** Increase the capacity of customer liaison teams to respond to teething problems, ongoing queries and concerns about the works. Provide a list of key contacts for technical and operational aftercare support.
- **Pre and re-bounce effects.** Evaluate customer's thermal comfort levels and health outcomes compared to the achieved financial and carbon savings. Ensure financial outcomes reflect comfort outcomes. Offer advice platforms to customers unable to keep energy bills below 20% of take-home household income post-works.
- **Incorrect use of a retrofitted home.** Conduct post-retrofit evaluation to evaluate novel technologies and identify further customer support required. Encourage customer feedback and monitoring of technologies to communicate back to design and installation teams and feed into the ongoing retrofit programme.

5. Future repairs and maintenance

- **Delays and inexperience.** Ensure that maintenance and monitoring is a continuous loop throughout the process and building's lifetime. Ensure maintenance teams and Orbit employees have adequate up-to-date training in the use and repair of energy efficiency improvement works.
- **Knowledge of technology defaults.** Develop a logging repair system which helps customers and Orbit monitor the quality and status of retrofit measures over time. Integrate retrofit trials and pilots into repairs and maintenance cycles.

How should Orbit ensure a positive customer experience?

Here we set out the various customer touchpoints that have a role to play in supporting a successful retrofit works.



Roles

- Orbit ● Retrofit Coordinator ● Retrofit Advisor ● Retrofit Assessor
- Retrofit Designer ● Retrofit Installer ● Retrofit Evaluator

Recommended information required by the customer

1. Pre-works

- Orbit's net zero carbon strategy
- Customer's behavioural adaptations required
- Awareness of and how to access support services
- The outcomes of the pre-works survey and property assessment, i.e. which energy efficiency improvement works are necessary and what the customer's home will look like in Stages 3-5
- Complaints procedure
- Early benefits of the retrofit work
- The TrustMark company installing the retrofit works
- The retrofit roles customers are expecting to encounter throughout the programme

2. During works

- Guidance on the use and purpose of the retrofit measures
- Reminders of information from stage 1 as necessary

3. Handover

- Understanding the system of improvements and technology
- Recognising the seasonal differences in system requirements
- Opportunity to feedback on works stage
- Understanding the differences between pre/post retrofit energy consumption
- Understanding the differences in energy bills structure and layout

4. Post-works

- Monitoring of success indicators (including the frequency and method of monitoring):
 - Customer satisfaction
 - Performance of the energy efficiency improvement work
 - Behavioural change
- Quality assurance processes e.g. inspections

5. Future repairs and maintenance

- Quality assurance processes
- The role of developments to and emerging technologies in relation to potential updates to customer's homes (long-term)
- How to recognise and log repairs related to retrofit technology

Conclusion

Throughout the retrofit programme, customers identify trust, detailed information and customer service as the most critical factors in ensuring a positive retrofit experience.

Without customer motivation and ability to change their behaviour within their homes, the success of the retrofit programme will be limited. It is essential that everything is done to support and engage customers through the retrofit process, and gain understanding a buy-in of the behavioural changes required.

Many risks identified in the research can be mitigated through customer engagement in the preworks stage of the retrofit process and thorough assessment of the property condition. This early engagement is just as, if not more important than engagement at latter stages (during and post-works).

Similarly, lessons from previous retrofit projects suggest that more effective handover processes determine how customers engage with the retrofit programme. Likewise, more organised repair processes determine how customers benefit from the retrofit works and trust their housing provider to upkeep and maintain their properties to meet their needs. Trust between the housing provider and its customers will significantly impact on whether there will be a positive or negative retrofit experience.

The level of disruption during a whole-house approach is widely recognised by Orbit. The main disruption areas are characterised by delays, inconvenience and inadequacies in the skills and installation quality of measures. Customers are able to overcome the disruption involved in the retrofit if the purpose of the works is integrated into Orbit's wider values and workforce, i.e. they understand the end goal.

For customers to care about Orbit's environmental commitments, it is important to focus on customers' view of Orbit as an organisation and its decarbonisation agenda, and consider customers' capacity to adapt to new behaviours and attitudes. Orbit (and consequently, customers) will also benefit from ensuring there is consistent messaging from all employees regarding the organisations decarbonisation agenda. Increasing customer awareness of Orbit's decarbonisation goals through wider communication will help build trust and understanding with customers.

Customer behaviour is already changing in line with efficiency principles particularly in the context of thermal comfort, however there is scope for customers to continue to improve their energy saving behaviour. Continued communication efforts will be needed to break away from the preferences of traditionally heated homes and further research is needed to better understand how to empower customers to manage thermal comfort in a retrofitted home.

Decreasing energy affordability poses a significant risk. Households spending more of their household income on energy bills have less capacity or interest in being energy efficient to save money or to be environmentally friendly. This presents a potential barrier to the success of the retrofit programme if Orbit fail to consider customers' interest and preparedness to adopt retrofit works. These customers are more likely to be single-parent households or young families, which may have more immediate priorities preventing them from accessing support or caring about environmental agendas. On the other hand, certain customers, such as females, young families with children, older people, tend to have more of an interest in decarbonisation and the benefits attributed to home energy efficiency improvements.

Therefore, Orbit must connect the climate crisis and, more specifically, net zero carbon homes to customers' personal needs and challenges. It is clear that situational and demographical differences play a key role and communication around the retrofit approach must be tailored to individuals' motivations to support changes in behaviour. Customers are more likely to value the works and overcome disruption if they have a personal interest and care for the tangible outcomes.

Given there is time between short term current retrofit pilots and the longer term decarbonisation target deadlines, Orbit should use this time to monitor current household levels of fuel poverty, household behaviour and asset performance. Building this picture prior to customer involvement in the retrofit programme will ensure the most positive customer experience.



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Megan received her Master of Science degree in Sustainability and Consultancy in 2021, writing the report as part of her assessment.