



## WECA Innovative Retrofit Project

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## Background

- We have around 4000 Homes mainly across Bristol City.
- Most of our properties are hard to treat, which present unique challenges
- This funding opportunity was great for us to tackle these challenges
- We are a very ambitious organisation, and this funding allowed us the bravery to try new innovative approaches and tip our toes into the Retrofit world
- We learnt many lessons throughout our delivery, and these are summarised in this presentation in the hope that they will help someone else's journey.



# Our Properties and Measures



# We delivered 9 hard to treat properties (Occupied Houses)

## 3 Full Retrofit

- These were our most challenging properties as they had the maximum measures we could install.
- The measures were: Solar PV, ASHP (Air Source Heat Pump), EWI (External Wall Insulation), Loft Insulation, Ventilation (trickle vents and dMev (decentralised mechanical extract ventilation)) , TTZCs (Time temperature zone controls), and Solar batteries.
- Among the innovative measures fitted in these properties includes, a Sunamp water heating instead of Hot water cylinder for 1 property where we were not able to have Solar battery fitted.

- The fourth was a 'Hybrid', meaning it had all the measures for the full retrofits except for EWI.
- The fifth and sixth were 'medium measures', meaning they had everything except for EWI and ASHP.
- The remaining 3 properties were 'minor measures', meaning they only had loft insulations, ventilation and TTZCs.
- All properties were fitted with performance monitors.



# Challenges & Lessons Learnt



# Pre-Construction Stage

## Procurement

- The Retrofit industry is still in its infancy and thus there aren't many qualified contractors to pick from.
- Although the Framework procurement route was designed to help with recruitment, it also serves as a hindrance.
- Higher demands on contractor paired with lower availability of qualified contractors means smaller RPs like us with lower numbers of properties end up prioritized last.

## Lessons Learnt

- Try to procure early and look at the different Frameworks to increase options & value for money
- Build relationships with qualified contractors and understand their supply chain and PAS2030/35/Trustmark other relevant qualifications/experience.
- If able to mix funding and thus open other avenues for recruitment, then try it. Many SME don't want to register to Frameworks but will work directly.
- Make your project appealing to contractors, when possible, especially for medium/small size RPs. Methods such as selecting properties in same area reduce travel time for contractors were beneficial to us.
- Procuring locally, as this help with monitoring of work closely to avoid costly & time-consuming corrections later.



# Properties & Data



## Challenges

- One of the biggest challenges we faced was with our data. We didn't have up to date data on most of our properties which lead to large deduction in properties to 9.
- We had to be revised some measures because the initially proposed models were no longer feasible following a Retrofit assessments & EPC surveys.
- Residents' data was also outdated in some cases causing a delay in incorporating some properties and/or removal of properties from the project.

## Lessons Learnt

- Ensure you do the stock surveys for your properties if possible before selecting for Retrofit projects to avoid changes once assessments/EPC surveys are done.
- Understand that 'data' includes not just up to date information properties & residents, but also on internal planned programs such as windows/door & kitchen upgrades
- Know your property types, locations and any restrictions that may apply outside of Retrofit requirements such as Conservation area status.
- Apply for any planning, DNO etc., sooner as these could take a while or maybe rejected.
- Be prepared to change measures for properties, Retrofit assessment may bring up limitation to your previously planned installations for some properties.

**Data! Data! Data! Up to date data saves a lot of work and re-working.**



# Construction Phase

- Resident Related Challenges
- Measure & Property Related Challenges

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# Residents



# Communication & Engagement

## Challenges

- Delayed with starting the project due to procurement and Retrofit pre-construction assessments caused some residents to lose interest.
- Mix messages and unmet deadlines/milestones by Contractor caused residents dissatisfaction.
- Resident(s) change in circumstances and/or other commitments impacting access.
- Lack of thorough knowledge of Retrofit process and measures by Contractor and BP caused some residents to lose confidence in delivery.

## Lessons Learnt

- Engage the residents as early as possible and be clear and open throughout the project to manage expectations and deal with issues sooner.
- An internal RLO is key but so is a Contractor's own RLO for the project.
- Don't assume or expect the contractor to know the measures fully.
- Do invest in training the internal team to have better understanding of processes, measures.
- Do have a plan for residents to support them with adapting to new measures.
- Understand that you may also need to consider resident's neighbours (e.g. Party walls).



# Measure & Property Related



## Challenges

- ASHP need space outside, and some residents may need adapting to the sound/size
- Hot Water Cylinder need space inside properties large enough to accommodate the pipework.
- Condensation levels from ASHP need a drainage solution.
- EWI required windows & doors replacement and is very intrusive work. It is also very **weather** sensitive.
- Bird netting required for Solar PV.

Hot Water Cylinder with ASHP



## Lessons Learnt

- Understand the processes of the measures you are to undertake especially the complex ones like EWI.
- Ensure the properties can accommodate the measures as early as possible.
- Early engagement and continuous effective communication with residents is key.
- Shape of the property in may mean restructuring of aspects of the house to accommodate EWI and prevent cold bridges e.g. We had to relocate a back door in one property and raise a ceiling in another. We also had to incorporated Diathinite, as part of innovative measure, to tackle insulation in some geometrically challenging areas for EWI installation.
- If possible, utilise available information on measures to prepare the resident e.g. a video of ASHP in operation from YouTube or other avenues.



# Innovative Measures

- Sunamp water heater
- Anti-graffiti Coating & Diathonite
- Performance Monitors

# Sunamp with ASHP



# Anti-graffiti Coating



# Monitors



STATUS: **ON** Last updated: 5 mins ago

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RISK STATUS: **GOOD** [Learn more](#)

3.6 volts  
GOOD

Battery [i](#)

0 CO2e  
LOW

Carbon footprint [i](#)

0.04 Kw  
LOW

Kilowatt [i](#)

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92 %  
UNHEALTHY

Outside humidity

11.59 °C  
COLD

Outside temp

1028 hpa  
NORMAL

Outside pressure

Despite the various challenges we faced, we learnt a lot and the results were worth it for us, the planet and our residents



# Before & After



# And Finally

**I would now handover to our Homes Director, Sally, to share what this project has meant for Brighter Places and the benefits of this journey to Brighter Places' long term Zero Carbon strategy.**