

# Bringing Britain's Homes into the 21st Century

## Roof and Rendering Optimised Retrofit

### Presenters

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## Roof and Rendering Optimised Retrofit

### Welsh Government Definition of Optimised Retrofit Program

Optimised RetroFit Program (ORP) is a whole house, pragmatic, approach to decarbonising existing homes. It is far more sophisticated and bespoke than previous schemes. It takes into account the fabric or materials homes are made from and the way we heat and store energy. It also takes into account how energy reaches our homes.

It is open to Registered Social Landlords (RSLs) and local authorities (LAs) to install a variety of home decarbonisation measures in existing social housing stock.

The driver for DCC Housing is the Welsh Housing Quality Standard 2023 (WHQS 2023)

- Within the standard there is a requirement for all landlords to develop a 'Target Energy Pathway' for all homes to be EPC 'C' 75, by 31/3/2030 and to submit our plan to WG by 31/3/2027 of how we'll achieve this with associated costs.
- It's about affordable warmth and decarbonisation.

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The journey started back in 2019 when WG invited interest from organisations that could benefit from some additional funding under the ORP grant award scheme.

For ORP 1, 54 properties in Meliden were chosen to have rockwool EWI, new roofs, roof insulation, PV systems and Batteries with the aim of reducing CO2 making homes warmer, providing lower electricity bills and improve lives. Properties also had wired in gateways and sensors to monitor energy use and environment. The findings from data collected from the solar PV and environmental sensors, as well as tenant feedback, and updated EPC certificates show that decarbonisation can be beneficial to tenants and the environment.

Despite the effects of Covid, it was by and large a very successful program.



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After retrofit works, all properties were raised to an EPC A, B, or C

The PV was analysed to identify the best performance. This was found to be unsurprisingly on South facing orientations, however the shadows on roofs also affect how well a PV system operates.

NB: Insurance & warranties

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ORP 2.1 funding provided the opportunity to continue the work done in ORP 1, this included the same measures but in an area of high deprivation. Rhydwen Drive was chosen as it was next to have a new roof under Denbighshire Housing programme of works.

ORP 2.1 funded an uplift of capital works to include a roof with integrated PV as part of a decarbonisation. Rhydwen Drive is in an area with high deprivation and so it was decided to take the positive learning from Meliden in ORP 1 and roll out the positive improvements where it would make the largest difference to the community.

54 properties in Rhyl had retrofit measures including EWI, PV and batteries following the completion of works in Meliden from ORP 1. Additionally, these properties also had IES and Environmental sensors and gateways.

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- PV, inverters, and batteries were installed alongside training for the installation of these technologies in social housing. Learning from orientation of PV panels, the maintenance requirements of batteries and the impact of shadows from chimneys, neighbouring buildings, and trees are now better understood
- Rhydwen Drive and Rhydwen Close provide a good example of the differences in efficiency associated with different orientation of roof and shadows from chimneys which are a mix of chimneys on the north and south orientation of the property

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## Community Benefits – Skills Academy

Local resident / community engagement and opportunities for training and work were held at Phoenix Centre Rhyl, a local training and community centre situated on Rhydwen Drive allowed for local staff, including local TLO and apprentices, classroom training related to the new technologies. Q+As for residents about retrofit.

### Application of PV – Methods and Skills



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## Learning Opportunities

### EWI

- Contractor needs a skilled workforce
- Covered over extractor fan vents and didn't core out
- Wrong flue used in one of our projects
- Limited gain in EPC vs cost

### PV/Batteries

- Scottish Power – delays, infrastructure costs
- Batteries were in storage longer than desired due to Covid 19 lockdowns and such have required additional maintenance, it has been decided not to replace these systems until the maintenance and health and safety requirements for batteries is better understood.

WiFi dropping out – Issues with wired in IES and Environmental Sensors – Data was costly



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## Rogues Gallery



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## Future Requirements

PAS 2030/35 Trustmark Lodgement

Costs of PAS/Retrofit. £45 fee to lodge, but £200 to £450 for the assessment. Tenant rents.

We have one Architectural Technician studying to be a PAS 2035 Coordinator

We are looking at Green Personal Learning Accounts for Retrofit Assessor training for our housing surveyors.

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### Case Studies:

WG encourage all landlords to document their ORP / decarbonisation projects and share their case studies on the Zero Carbon Hwb:

<https://zerocarbonhwb.cymru/>



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# Thank You

Any Questions?

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