

WALES ECO TERRACE, PENRHIWCEIBER, RHONDDA CYNON TÂF

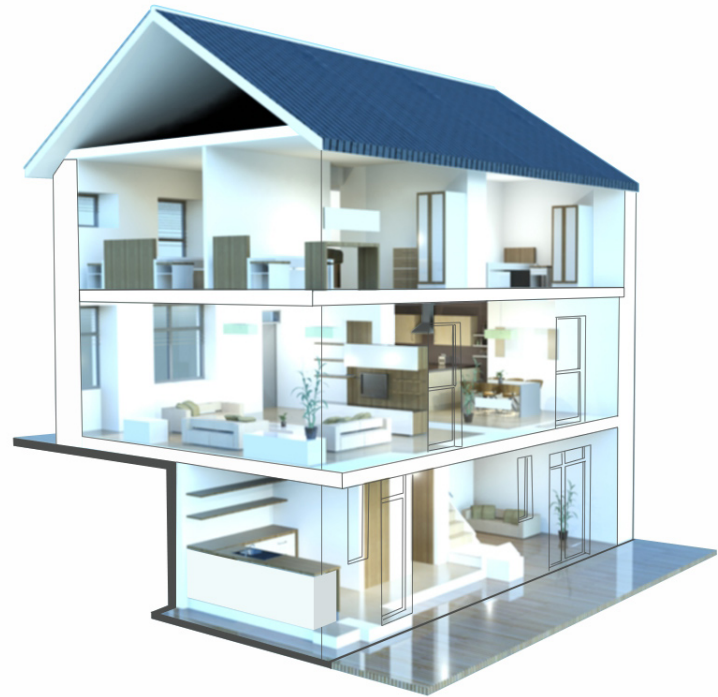
Funding: Heads of the Valleys
Regeneration Programme

Project: Sustainable refurbishment standard of a row of six single skin brick walled Victorian terraced miners houses to Ecohomes excellent/Code for Sustainable Homes Level 4 for family social housing and share the lessons learnt with similar communities across Wales

Client: Cynon Tâf Community
Housing Group

Architect: RIO

**Sustainability
Advisor:** BRE



THE APPROACH

The approach was to refurbish traditional Victorian terrace housing to showcase that it can be fit for the 21st century, in respect to the spaces required for modern living, as well as their sustainability. The project was to thoroughly review all aspects of the homes' design including fabric, services, materials, details and occupant usage with the aim of minimizing the energy requirement of the homes rather than just bolting-on renewable technology. It is estimated that the houses will have their CO₂ emissions and heating bills halved due to the measures that have been installed. The interiors of the six homes were completely gutted, redesigned and reconfigured to

- Increase energy efficiency: reduce heat loss through the building fabric and future energy demand using triple glazing and insulation
- Reduce reliance on the grid: use of roof mounted solar thermal collectors linked to A-rated condensing boilers to keep energy bills low
- Use of water butts, low capacity baths and water flow regulators
- Provide open/flexible living spaces conducive to modern family life
- Introduce daylight to internal spaces, reducing the demand for artificial lighting and increasing occupants' well-being
- Increase meaningful storage space, accommodate spaces for recycling and create areas for drying clothes inside
- Open up internal spaces to take advantage of fabulous local views.

SHARING THE LESSONS LEARNED

Monitoring of the homes in use will provide essential performance data that will be used to educate the Welsh construction sector on future projects. Tests include:

- Thermographic testing to highlight heat loss improvements
- Air pressure testing to review air leakage improvements
- Smart metering to scrutinize energy usage.

SUSTAINABILITY ON SITE

- Waste reduction schemes
- Increased insulation
- Renewable energy
- 'A' rated windows/doors
- Water reduction devices
- Considerate Contractors scheme
- Increased monitoring trades maintaining air tight details
- Increased education of site personnel.

