

## Securing renewable energy and sustainable construction and design principles in an affordable housing development

- **Local authority area:** City of Wakefield Metropolitan District Council
- **Stakeholders:** Strategic Housing Officers, Housing Associations, Homes and Communities Agency, Planning Officers

### Summary

Wakefield Council worked with Yorkshire Housing (association) to get Homes & Communities Agency funding to develop a 49 home scheme in Upton, a deprived area of South East Wakefield district. Originally funding was agreed for Code for Sustainable Homes (CSH) level 3 at a high standard of overall design. However, due to market changes it was decided to aim for a high environmental standard for the scheme as well. This resulted in 2 CSH Level 6 properties, 18 CSH Level 5 properties and the remaining properties at CSH Level 4. 15 of the properties are available through Homebuy, which is an assisted purchasing scheme.

### Key learning points

- Close working relationships are required with architects, Planning, Highways etc. to ensure the impact of any minor changes on the technology and CSH requirements are fully understood.
- Utilise, if possible, any change in tender/ other costs to achieve higher than expected standards.
- Work with experienced and like-minded contractors who are willing to push boundaries.

### Background

- The Council have been keen to promote good design and sustainable developments, since achieving the first Code for Sustainable Homes level 4 scheme in West Yorkshire.
- Houses are predominantly traditionally brick built with a contemporary design, which includes render panels and contrasting brick infill to enhance the aesthetic feel of the homes.
- There are also contemporary trespa “wood effect” panels to many of the properties, which integrate the development to the adjacent woodland.

- The Code Level 6 properties are constructed from an insulated timber frame system (SIPS Panel) with a brick skin due to the increased requirement for thermal insulation.
- The Code 6 properties feature Ground Source Heat Pumps (GSHP), which use pipes buried in the garden to extract heat from the ground. This heat can then be used to heat radiators, underfloor or warm air heating systems and hot water in the home.
- GSHPs circulate a mixture of water and antifreeze around a ground loop of pipe buried in the garden. Heat from the ground is absorbed into the fluid and then passes through a heat exchanger into the heat pump. The ground stays at a fairly constant temperature under the surface, so the heat pump can be used throughout the year - even in the middle of winter.
- The properties also have Mechanical Ventilation Heat Recovery Systems (MVHR), which can provide whole house ventilation. Fresh air entering the house is drawn in by a fan and passes through a heat exchanger and is sent on to the dry rooms in the house. The fresh air is filtered reducing pollen and dust.
- Stale air and condensation is extracted and heat is recovered and transferred to the incoming air before it is vented outside.
- The incoming air is then carried to specific rooms providing a continuous low rate of air change.

## Method

- The original CSH Level 3 scheme was worked up and funding was applied for in 2007 by South Yorkshire Housing.
- This scheme included half the properties for Homebuy Sales. South Yorkshire withdrew from developing the scheme in 2009.
- Yorkshire Housing took over the scheme in 2009, applying for planning successfully and starting on site in July 2010.
- Work and consultation was carried out with the local community and bio-diversity officers to ensure links to the surrounding countryside were maintained and wildlife species were further encouraged for example through the use of bat boxes.
- The Parish Council requested top soil to improve their allotments and Yorkshire Housing provided 20 lorry loads. This will assist with health and wellbeing issues for the surrounding community in a deprived area.
- The Council's Strategic Housing Officers worked closely with Planning Officers, The Homes & Communities Agency, Yorkshire Housing and the local community to deliver this scheme.
- Funding and investment were provided by The Homes and Communities Agency and Yorkshire Housing.
- The scheme was completed in November 2011.

- One of the main issues was the cost of the specialist roof tiles for the CSH Level 6 properties at £750 per tile.
- There is a greater incentive for registered social landlords to deliver a new build scheme like this, given the significant amount of upfront investment required, as funding is more readily available to them, and they will see the long term returns in their investment through more sustainable tenancies.

## Result - Key outcomes and impact

- All 49 homes (including 20 bungalows) have now been completed and are occupied.
- Tenants are benefiting from significantly reduced energy bills, and the climate change impacts of the development are significantly reduced when compared with a traditional development, making the development more sustainable.

## Key contact

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