

SHDF Demonstrator All Saints Road, Blakeney

Overview

In 2020, Two Rivers Housing formed a consortium with Stroud District Council (SDC) and Cheltenham Borough Homes (CBH) and submitted a bid to the Department of Business Energy & Industrial Strategy (BEIS) to participate in the Social Housing Decarbonisation Demonstrator project. Together, the consortium aimed to retrofit 50 homes.

In order to qualify for funding, the works had to be carried out in line with PAS:2035 + 2030. This had been updated to reflect deep, whole house, retrofit, and seeks to ensure that common pitfalls frequently found when retrofitting existing housing stock are avoided. It assigns a hierarchy of risk to each improvement measure that is installed, and risk assesses how these may interact with other measures being installed. It also categorises the project into a risk pathway, which instructs how much pre- and post-work testing is required.

Two Rivers Housing originally bid to complete the work on 21 of its homes. These were a mix of system built bungalows and traditional masonry cavity wall properties across two sites. The goal was to raise the Energy Performance Certificate (EPC) levels at each of the properties to a minimum of C and ensure that the heat load was no greater than 50kWh/m²/Yr.

The majority of the properties were on All Saints Road, Blakeney. These were built in the late 1960s or early 1970s and were a traditional masonry cavity wall construction, which is typical for much of Two Rivers Housing's stock. The site was selected as it provided a cross section of property types, which would maximise the opportunity for learnings and enable the team to apply these learnings on other similar projects going forward.

Following a successful bid, BEIS awarded funding to the consortium in January 2021. At this point internal appointments were made, and the procurement process began. However, tenant engagement for the project was delayed due to a communications embargo being put in place by the government. As a result, this did not begin until the summer of 2021. Physical works started on the site in late 2021 and were completed in September 2022.

Facts and figures

Performance as modelled

Measure	Starting	Finishing
EPC Band	D	A
Heat load (kWh/m ² /Yr)	131	47



16 homes fully retrofitted



£1.15m
investment

Key challenges

This was a first for Two Rivers Housing and there were several key challenges that arose throughout the project. These are outlined below.

Cost

Preliminary costings revealed that the initial scope would have to be reduced from 21 to 16 units. This was due to price increases caused by the depth and complexity of enabling work required to comply with PAS:2035 as well as difficulties caused by the sites topography.

Time

Material supply chains have been under strain due to the quantity of similar works being undertaken elsewhere in the UK. As a result, we experienced delays on lead times for material delivery. Mid way through the project, we experienced a change in the risk pathway as set out by PAS:2035, this was due to unforeseen issues on the site.

Quality

The PAS:20235 process assists in ensuring a high-quality output however, contractors are not used to working within its parameters. This meant that each time a variation was needed, it had to be agreed with the design team and then in turn the Retrofit Coordinator to ensure compliance with the standard. This resulted in delays, which tenants seldom understood and became frustrated by.

Heating

The decision to add renewable heating technology and Solar PV to the properties was made after site work had commenced. This added to the works timeline and resulted in a risk pathway change. While tenants have reported that the systems we have installed are very good and are reducing their overall running costs, there were significant teething problems when they were installed. These were exacerbated by poor contractor performance. The delivery of these systems will be changed for future waves.

PAS:2035

The PAS:2035 process is new to the industry. This caused issues in understanding exactly the degree of pre- and post-work testing that was required.

The standard also assigns a project risk category depending on the scope of work, but had no set procedure for what route was to be used if moving from one risk pathway to another during the project.

This is what Two Rivers Housing experienced when adding the heating and solar PV into the project scope part way through the project.

Future plans

Part of the benefit of working within the PAS:2035 is that the medium-term plan specifies what other measures can be installed to improve the property over the coming years.

This will allow future potential work streams to be quantified if carried out more widely across the stock. The units in Blakeney can continue to act as a pathfinder, allowing our future planned works cycles to include these improvements.



Lessons learned

Item	Description	Affect	Mitigation
Tight time scales of SHDF project	BEIS originally stipulated a delivery window of 12 months from grant award to completion.	Pressure to start project meant design works hadn't been completed before on-site work commenced.	Where possible, bring design work forward of grant applications or utilise existing designs where possible.
Inexperience of design team	Design packages took longer to create and issue to ensure detailing was correct and compliant with PAS:2035.	Contractor had to commence works and await confirmation on certain details.	Utilise experienced design team, factor in as part of procurement exercise.
Inexperience of main contractor	The project was initially viewed as an External Wall Insulation programme of work, and the contractor had little experience of PAS:2035.	Time on site increased as complexities of project became apparent.	Utilise experienced main contractor, factor in as part of procurement exercise.
Multiple main contractors on site	PH Jones commenced installation of heating and PV systems, while Equans were still completing fabric works across the site.	Enabled multiple use of scaffold but complicated health and safety provision on site, as well as negatively affecting sequencing of works overall.	Have heating and PV installed under the appointed main contractor or as a follow on package of works.
Late addition of heating into scope of work	Extra budget was allocated to install low carbon heating and solar PV systems.	Moved the project from risk pathway B to C and resulted in all on site works stopping for two to three weeks while required testing was completed.	Fix project scope at start of project any 'extras' with no deviation permitted.
Supply issues	Doors and windows had an eight to 12 week lead time during the project.	Window and door installation was a critical path activity that couldn't be completed and delayed further works being carried out.	Instruct surveys and material ordering earlier, allow provision for greater on-site secure storage to remove reliance on 'just in time'.
Lodgement issues	Trustmark lodgement process is lengthy, and contents not fully known.	Lodgement process is taking longer than expected with multiple clarifications being sought throughout.	For future waves of work, record, collate and store information as elements are installed.
Continuity of partners/staff	Design team and main contractor had several changes of personnel throughout the project.	Continuity of project suffered as a result and items previously agreed had to be re-notified or revisited. This reduced clarity for tenants.	Request key parties assign persons for project duration at onset of work.
Tenant liaison	Site manager acted as Tenant Liaison Officer (TLO).	Communication with tenants wasn't as good as it should have been. Satisfaction with process has been low as a result.	Appoint or require a project specific TLO (or one across planned works) to increase communication and engagement with tenants throughout the project.
COVID-19	External Wall Insulation operatives had three periods of infection.	With each occurrence the subcontractor had to stop all work on the site as operatives worked in gangs and infection spread, this increased installation time.	Ensure contractors have specific RAMS in place to manage the risk to both colleagues and tenants.

For more information contact

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