CASE STUDY

Multistorey flat regeneration: Queens Cross Housing Association

1 Project overview

Introduction

The project was completed in 2023 and demonstrates how deep retrofit can be delivered at scale in tower blocks. It successfully improved the appearance and thermal performance of the buildings, resulting in improved comfort for the 314 households.

In 2011, Queens Cross Housing Association took over the management of three Cedar Multistorey Blocks in Woodside as part of a stock transfer from Glasgow Housing Association.

While the blocks were scheduled for demolition in 2014, the Association found that tenants preferred not to move out. This underpinned the housing association's commitment to invest in the upgrade.

Project name: Regeneration of Woodside Cedar Multi-Storey Flats

Landlord: Queens Cross Housing Association

Options appraisal: Collective Architecture
Installer: Unnamed
Monitoring and evaluation: John Gilbert Architects

Overall cost: £15,500,000
Funding source: Stock transfer process from Glasgow Housing Association

Heat technology: Electric wet central heating system

Building archetype: 314 flats in three high-rise blocks
Year: 1969
Tenure: Social housing (311) and owner occupiers (3)

Location: Woodside, Glasgow

Project timeline:

2011	2012	2015	2016	2020	2023
Stock transfer	Collective Architecture options appraisal	Installer appointed	Work commenced	Delays caused by the Covid pandemic	Project completion

Measures

Queens Cross Housing Association commissioned an architecture firm to carry out surveys and complete an options appraisal to determine which measures would be suitable. The housing association had ambitions to meet the EnerPHit standard, which is designed to reduce the energy consumption of a building as much as possible. While adhering to the recommendations in full was not possible, they followed them closely.

Significant improvements were made to the shell of the buildings, including a new roof, 120mm external wall insulation, triple glazed windows and enclosed balconies. After thermally improving the building, a mechanical ventilation heat recovery system was introduced to ensure adequate ventilation and to mitigate moisture buildup.

The previous old electric storage heaters were replaced with electric wet central heating systems.

2 Project management

Procurement

The tender went out to potential installers but due to the scale and specificity of the project, only one bid was received. With only one contractor bidding for the work, there was no price comparison and there was limited ability to negotiate terms or contract details.

Tenant engagement

Stakeholder engagement was conducted throughout the process and was crucial to the project's success. Tenants were kept informed about the work through the development of a pilot flat. This property had all the relevant work installed, including carpeting and fixtures to give tenants an opportunity to experience the changes prior to installation in their properties. Drop-in sessions enabled the housing association to keep tenants updated on any changes to the project and advise them on how to operate the new technology.

3 Costs

FUNDED BY

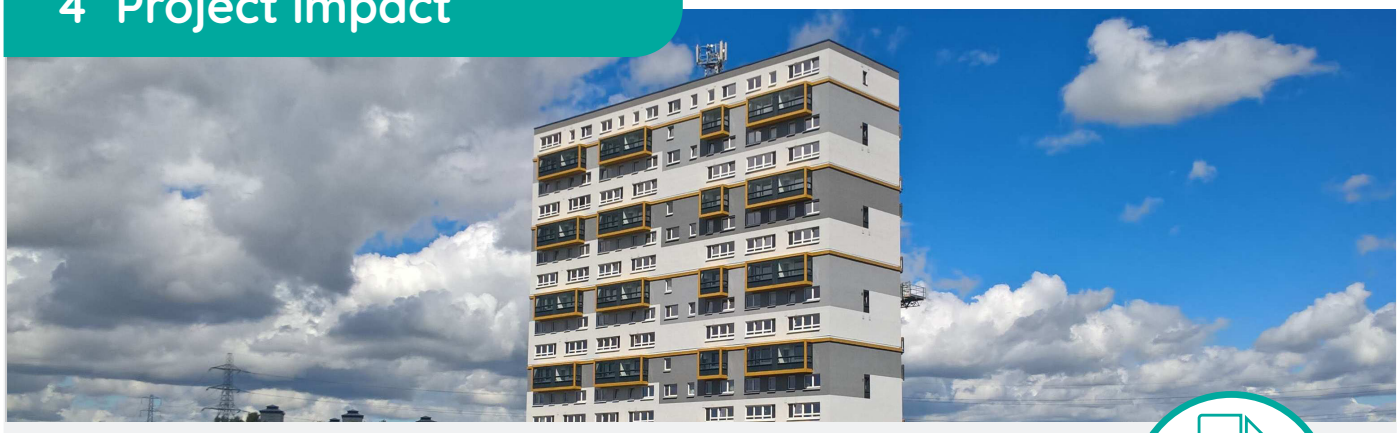
Stock transfer process from Glasgow Housing Association

The project was fully funded through the stock transfer process from Glasgow Housing Association. The overall cost for the measures installed was £15,500,000, a cost per dwelling of around £50,000.

The heating systems cost around £1,275,000. Other energy efficiency upgrades included the mechanical ventilation heat recovery system, which cost around £825,000, and external wall insulation, which cost around £1,600,000.

The project included other substantial upgrades beyond that of the electric central heating system, which account for the remainder of the cost.

4 Project impact



Evaluation approach

Energy performance rating
Monitoring and evaluation is being carried out by John Gilbert Architects. As part of this evaluation, Energy Performance Certificate (EPC) data is being collected for before and after the installation. A sample post-retrofit EPC was available, but data for all 314 properties was not available at the time of writing.

Temperature, humidity and carbon dioxide
Data loggers have also been placed into some of the properties to measure temperature, humidity and carbon dioxide levels.

Energy consumption
To establish how much energy tenants are using, clamps have been placed around the electricity supply at the individual meter level. Using these metrics, the association will be able to assess both the change in energy efficiency of the properties and impact of the new heating system on fuel bills.

Results

A sample EPC before the retrofit had a score of 43 (band E). After the retrofit, the properties achieved EPC bands B and C, depending on the location of the properties and the associated heat.

The data loggers were installed into properties in March 2023 and are expected to remain for 12 months. As a result, Queens Cross Housing Association are yet to receive the data necessary to produce statistically significant results.

> “There are anecdotal reports from tenants feeling **significantly warmer**, with one tenant reporting that they are not needing to heat their property during winter anymore.”
>
> Queens Cross Housing Association

5 Challenges and recommendations

Installation delays

Challenge:
The project had significant delays due to a range of factors, including the Covid-19 pandemic, resulting in the final phase of the project extending from 18 months to almost four years. With 314 households occupying the buildings, decanting them to complete the work was not an option.

Solution:
Consistent stakeholder engagement kept the tenants up to date with changes. As a result, the majority were very tolerant of the delays and the disruption caused by the work.

Recommendation:
Use regular drop-in sessions and maintain communication with tenants over the course of the project.

Installing monitoring equipment

Challenge:
There were issues encouraging tenants to install environmental monitoring sensors in their homes.

Solution:
The language used is very important. Tenants were not comfortable with the words 'measure' and 'record', despite being told that these devices would not be listening to them. Advising on the nature of the study and offering £100 was helpful in encouraging uptake.

Recommendation:
Carefully consider wording and messaging of communications about evaluation. Use incentives to encourage uptake.

Design and build contracts

Challenge:
A design and build contract was established between the installer and the housing association. In this model the contractor creates the design and delivers the project. In some cases, this can result in contractors opting for the cheaper, more profitable options and there is little recourse for housing associations to push for higher quality work or materials.

Solution:
With a traditional contract, the project is fully designed with the housing association. Contractors bid for the work, resulting in greater autonomy over the outcome.

Recommendation:
The housing association recommends against a design and build contract, and advise other social landlords opt for a traditional contract.

Managing risks

Challenge:
There are always unforeseen problems that emerge, which can cause considerable disruption for tenants.

Solution:
Piloting the installation on a few properties for around six months can help identify and address issues before rolling out on a larger scale.

Recommendation:
Set up a pilot flat when undertaking large projects and break down the workload to one building at a time. This can result in higher contractor costs due to the extended time on site, but it will reduce tenant disruption.

6 Project contact

The partnership welcomes enquiries about visits from other social landlords. Please email Alan Muir: AMuir@qcha.org.uk

This is part of a suite of case studies that can be found on the ClimateXChange social housing decarbonisation webpage, alongside a summary report, which gives an overview.