

Scottish Housing Day case study:

Niddrie Road Glasgow EnerPHit tenement retrofit project and evaluation



About the project

The project was established in February 2020 and seeks to achieve EnerPHit standards of retrofit fabric first and renewables in energy supply. The fabric works involve external wall insulation (rear and gable), internal wall insulation (front), triple glazed windows, loft insulation, waste water heat recovery, mechanical ventilation heat recovery, ground floor insulation, improved internal layout and floor joist removal. Air source heat pumps will be installed alongside control group gas boilers in specific properties for comparative purposes.

The retrofit is funded by Southside HA, Glasgow City council and Scottish Government and is delivered by CCG construction, John Gilbert Architects and the HA. The evaluation is paid for by Scottish Funding Council and delivered by CaCHE, University of Strathclyde, John Gilbert Architects, Southside HA and the city council

Who will benefit from the project and what positive outcomes have been achieved?

At one level, the tenants who will live in the tenement will benefit from the project but it is a demonstration of what is possible from which we intend to draw lessons relatable to the tenement retrofit strategy for the city as a whole.

The project is still on site but we have learnt much about good partnership working, recognising that we are setting a precedent that impacts on and need to revise existing policies, we also see that in more complex ownership cases, progress will be complex and need further elements such as elements of tenement law reform (currently being examined by Scottish Law Commission); we also already see how important resident behavioural change will be. Our demonstration project is at the top end of retrofit but it shows it can be done and furthermore that elements of it can be readily replicated.

For more details about the project visit:

<https://housingevidence.ac.uk/carbon-reduction-older-tenements-and-the-retrofit-challenge/>

Or contact:

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Project design plan

107 Niddrie Road Glasgow

Tenement EnerPHit Passivhaus Retrofit

1. Top up insulation up to 450mm thick

2. Lower area of slates removed to check for timber decay and ensure insulation wraps over wall head to meet EWI

3. Two smaller windows knocked into one larger window for more light and heat gain into living areas

4. New high performance triple glazed windows and doors

5. External wall insulation to rear and gable walls, extended below floors, into window reveals, all downpipes replaced

6. Mechanical ventilation with heat recovery unit in bathroom ceiling removes almost all outgoing heat keeping flats warm with lots of fresh air

7. Wastewater heat recovery from baths and showers

8. Internal wall insulation to front elevation, walls stripped back to stone, wood fibre insulation and lime plaster added

9. Street side stone wall repaired with stone repair and repointed using lime

10. First floor joists removed from wall to avoid decay, allowing for continuous insulation and airtightness

11. Layout altered for better space planning

12. Ground floor insulated along with careful airtightness measures



John Gilbert
ARCHITECTS

Southside
HOUSING ASSOCIATION

UK COLLABORATIVE
CENTRE FOR
HOUSING EVIDENCE

University of
Strathclyde

Glasgow
CITY COUNCIL

CCG