

# UK PASSIVHAUS AWARDS 2015

## ERNELEY CLOSE RETROFIT

### R-GEN DEVELOPMENTS LTD



MAIN APPROACH TO ERNELEY CLOSE

R-Gen was commissioned by the client One Manchester to reinvent two dilapidated concrete frame maisonette blocks into low energy modern accommodation, which would act as a catalyst for wider social and physical regeneration of the immediate vicinity. EnerPHit, being a fabric first approach, was preferred as a mechanism for guaranteeing the reduction in the energy demand of both buildings whilst allowing the design team to be creative in producing a new architectural language for the appearance of the building blocks.

Removal of both cavity walls, the existing pitched roof, adjacent garages, communal entrance projection, as well as stripping out the individual gas supply to each unit, allowed the development team to be ambitious in its vision for reinventing the estate.



VIEW OF COMMUNITY LANDSCAPED GARDENS



#### Project Overview

Name: Erneley Close Retrofit  
Location: Manchester  
Building Type: 4 storey maisonettes  
Construction type: Cross Floor Concrete frame  
Completed in: May 2015  
Occupancy status: Occupied since December 2014  
Construction Cost: £1476/sqm

#### Sustainability Features

Primary Energy Demand: 12 block 112 kWh/m<sup>2</sup>a  
20 block 119 kWh/m<sup>2</sup>a  
Space Heating Demand: Both Blocks 22 kWh/m<sup>2</sup>a  
Heating and Cooling Load: Both Blocks 12W/m<sup>2</sup>  
Ventilation strategy: Zehnder ComfoAir 160 whole house heat recovery and ventilation unit installed to each flat.

Heating strategy: Separate Worcester Bosch communal gas fired boilers to both blocks provide hot water and central heating via flow and return pipes to separate heat exchange units situated outside the bathroom

Shading strategy: Reveal depths to the window boxes along with solar control glazing to the communal areas.

#### U values:

Roof: 0.08 W/m<sup>2</sup>K  
Timber Frame Infill Walls: 0.09 W/m<sup>2</sup>K  
Gable End Walls: 0.12 W/m<sup>2</sup>K  
Ground Floor: 0.21 W/m<sup>2</sup>K  
Doors and Windows: 0.9 W/m<sup>2</sup>K

#### Measured Performance

Actual Energy Use based on analysis of heating demand January – April 2015 21.09kWh/m<sup>2</sup>a  
Air pressure result:  
12 block 1.0@50pa over total floor area of 740m<sup>2</sup>  
20 block 1.0@50pa over total floor area of 1228.3m<sup>2</sup>

#### Quote:

*"Before all these works my flat was freezing. I was spending about £15 per week on heating the flat and even using fan heaters to get the temperature up. Since moving back in December, I've only used the heating once.*

*It's really taken the pressure off, knowing we won't be spending an arm and a leg on keeping the house warm, day in, day out. More than that though, everyone here is just so proud of what's come out of this project – it's really put Erneley Close and Longsight on the map.*

*There's a real community spirit here now. All the residents have felt involved in the project and One Manchester have listened to our suggestions about what we think would improve life on Erneley Close.*

*Everyone agrees that the Close has got the 'wow factor' now, especially with the colourful cladding. My little grandson calls the building 'Nanny's castle' because he says it's magical."*

**(Kim Ratcliffe, tenant on Erneley Close)**

#### TEAM CREDITS

Client: One Manchester Housing Group  
Developer: R-Gen Developments Ltd  
Architect: 2e Architects  
Structural Engineer: Marston and Grundy  
Mechanical Engineer: Alan Clarke  
Passivhaus Consultant: Eric Parks  
Contractor: The Casey Group

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