

## Case study 7

## Parklands Road, Darlaston

## Archetype

Medium rise flats

## Landlord

Accord Housing Group



## Description

The Parklands Road estate consists of 157 one and two bedroom flats, including 15 units of sheltered accommodation built in the late 1970's. A typical floor area for a flat is 84 m<sup>2</sup> for a two bedroom unit.

Construction is a combination of load bearing concrete frame with masonry external and party walls, with a cavity of between 50 and 60mm. Floors are concrete screed. The roofs are pitched and covered with artificial slate with a void that has been filled with 50-100mm insulation.

Three different heating systems are installed – individual gas, individual electric and communal gas. An all-electric flat is to be tested for the study. These flats have all-electric systems with storage heaters and immersion tanks for hot water. The sheltered accommodation has wet space heating supplied via a communal boiler house, which is scheduled for replacement.

## Improvements to date

uPVC double glazing (no coating or gas fill), cavity insulation (50-60mm) and kitchens, 1998

Electrical rewiring, 2009 ongoing

## Schedule improvements

Sheltered housing boiler and ancillaries, unspecified timing

## Performance analysis

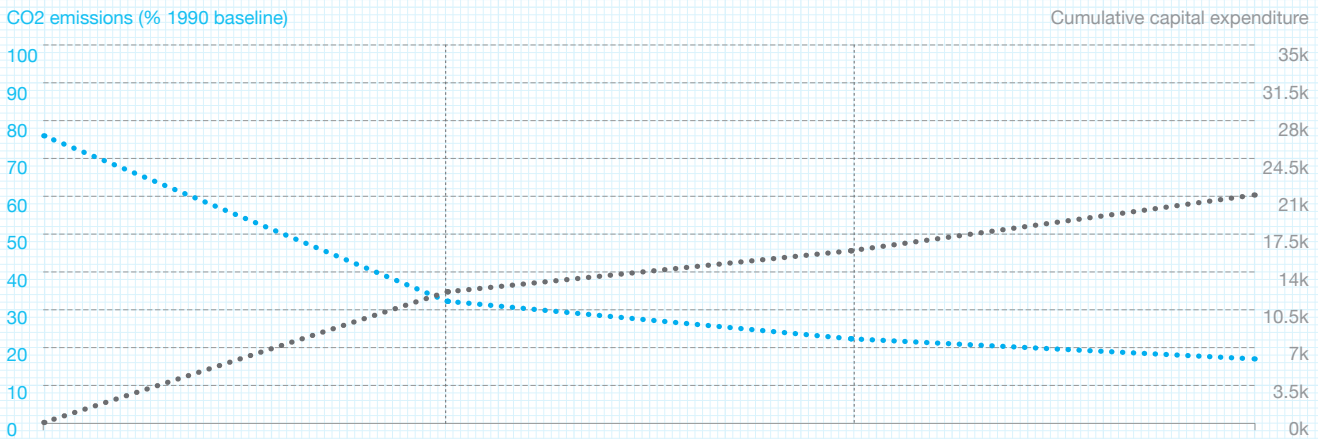
Capital cost	£21,351.71
by floor area	£254.19/m <sup>2</sup>

Performance metrics	1990	2009	2025
SAP rating	62 (D)	69 (C)	93 (A)
Fuel cost	£511.65	£438.22	£169.90
CO <sub>2</sub> emissions	4.2	3.2	0.7
% reduction	- 0%	-24%	-83%

Fabric U-Values	Baseline 1990		As of 2009		Target 2025	
	U Value W/m <sup>2</sup> K	Heat loss W/m	U Value W/m <sup>2</sup> K	Heat loss W/m	U Value W/m <sup>2</sup> K	Heat loss W/m
Windows	4.0	41.0	2.5	25.7	0.7	7.1
Doors	3.0	4.8	3.0	4.8	1.2	1.9
Walls	1.2	42.6	0.7	22.8	0.2	6.3

Energy and CO <sub>2</sub> emissions	kWh	CO <sub>2</sub> (tonnes)	kWh	CO <sub>2</sub> (tonnes)	kWh	CO <sub>2</sub> (tonnes)
Space heating	5,016	2.1	2,852	1.2	647	0.0
Hot water	2,846	1.2	2,846	1.2	2,846	0.2
Electricity	2,034	0.9	1,858	0.8	1,109	0.5

### Timeline for future investment



	Phase 1 (2010 - 2015)	Phase 2 (2016 - 2020)	Phase 3 (2021 - 2025)
<b>1. Fabric performance</b>	<b>Roof:</b> Top-up of existing loft insulation (to 350mm);	<b>Glazing:</b> Replacement of existing glazing units with high performance double glazing units; <b>Floors:</b> Installation of insulated timber flooring (10mm insulation, 25mm overall) over existing concrete ground floor;	<b>Walls:</b> Overcladding of external walls with rendered external insulation system (100mm), communal areas with insulated boarding (20mm);
<b>2. Fit out</b>	<b>Lighting:</b> Switchover to compact fluorescent (subject to tenant agreement);	<b>Water fittings:</b> Replacement spray taps and/or flow restrictors, low flow shower heads as part of kitchen/bathroom works;	<b>Appliances:</b> A+ rated washing machines and fridge/freezers as part of kitchen works (subject to tenant agreement);
<b>3. Energy supply</b>	<b>Biomass heating:</b> Installation of two communal biomass boilers, one backup gas condensing boiler and hot water accumulator tank to serve 157 properties, biomass boiler sized to meet heat load following Phase 2 overcladding; <b>District Heating network:</b> Installation of a flow and return network to supply all properties with heat from the energy centre (see above); <b>Wet space heating systems:</b> Installation of new wet radiator systems and risers within each block to replace electric storage heaters;		
<b>4. Monitoring</b>	<b>Heat metering:</b> Remotely read heat and power metering to bill for district heat, and provide household access to energy use data; <b>Internal heating systems:</b> Fitting of thermostatic controls and timers for each heating zone in each home;		