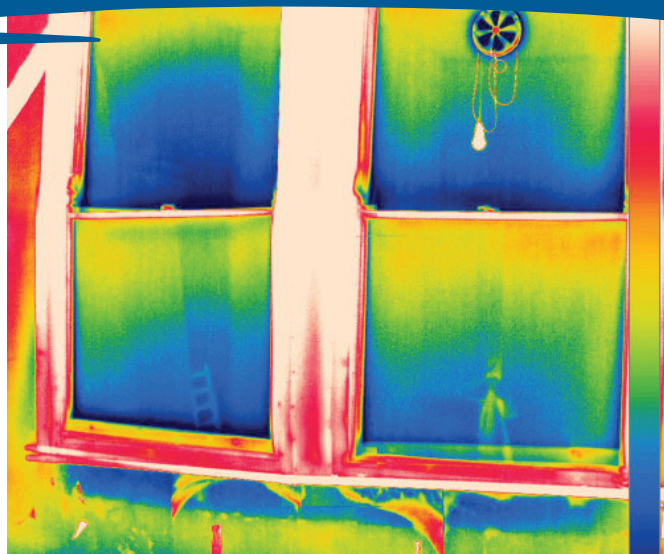


Aubert Park Low-Carbon Refurbishment Project



Client:	London Borough of Islington
Contract Duration:	June - September 2009
Contract Value:	£22,000
Contract Form:	JCT
Contract location:	Aubert Park, Islington, London N5 1TS

Description

Aubert Park is a groundbreaking low-carbon retrofit exemplar project carried out alongside Decent Homes works. The principle was to select the most cost effective eco technologies that delivered the most effective carbon reduction and energy saving at the lowest cost. Many of the technologies used were new to social housing.

A Victorian ground floor flat with solid walls and sash windows, 24 improvements (but no renewables) were applied. Three innovative measures were used: a newly developed 'nano' internal insulation material; a gas fuelled boiler which generates both heat and electricity and enables power generated to be sold back to the grid; and re-glazed sash windows with vacuum double glazing.

Challenges

Ventilation loss is high in such properties and tests were undertaken which showed exactly where the leaks occurred. On water use, low

flow fittings were installed, with rainwater harvesting which supplies the 4/2 litre WC flush by using a 100-litre tank with mains back-up.

External walls were insulated internally with 30mm of Aerogel with an air gap. The floor was sealed with 150mm of Warmcell insulation. The airtight breathable membrane was also brought up above the skirting board to improve air tightness.

The sash windows were retained, but the glass was replaced with Japanese-made vacuum glazing with a 0.2mm gap between the double sheets of glass. Brushes to exclude draughts were added to the windows.

The United House proprietary 'Value Carbon' assessment method was utilised to select the best value improvements, giving the biggest cuts in household bills and carbon emissions for the lowest cost.

The Results

With those measures to achieve 70% carbon reduction, the saving on the utility bill was £1 per annum for every £64 of capital spend, and the carbon

was saved at a cost of £8 per kg/per annum.

With only the measures to give 50% carbon reduction, this improved utility savings by £1 for each £28 of capital spend, and carbon saving cost £3.50 kg/per annum. Estimated fuel bills: before £975, after £510. Aubert Park achieved a reduced SAP carbon from 3.8 to 1.1 tonnes per annum (2.7 tonnes), i.e. by around 70%.

The conclusion drawn from the project was that a 50% CO₂ is easy and cost effective to achieve, a 70% cut is fairly costly and an 80% cut was unfeasibly expensive.

This shows that when budgets are tight, one solution is to treat low-carbon refurbishments in two fixes, with the first fix looking at low carbon technologies (together with enabling measures) and do the more expensive work (which often includes renewable energy methods) in the second fix.

Working with



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CONTRACT FEATURES:

Wall Insulation ✓ Micro CHP Boiler ✓ Draft Proofing ✓ Low Energy Lighting ✓ Vacuum Glazing ✓ Floor Insulation ✓
'Magic' Wallpaper ✓ Heat Recovery Ventilation ✓ Rainwater Harvesting ✓ 4/2 Litre WC Flush ✓