

Manchester's Eco House Project



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The Task

- To create an Eco 'show house'
- To be an educational resource for climate change, energy efficiency and an introduction to alternative technologies
- A practical example to motivate and inform visitors
- Aimed at home owners, schools, community groups, housing providers and other agencies

Making it happen

- House selection two 1900's terraces
- Total refurbishment
- Incorporating BRE Ecohomes Criteria
- Working with the designer
- Working with the contractor
- Working with the BRE assessor
- Incorporating DDA /Planning/Building regs

BRE Ecohomes

- Incorporating the BRE Criteria
- For new build but can be interpreted for refurbishment
- Important to appoint a BRE assessor from the initial stages and have joint meetings including the designer and contractor

BRE Ecohomes

- Environmental rating for homes
- Pass, Good, Very Good and Excellent
- Criteria
- Energy, Transport, Pollution, Materials, Water, Ecological and Health

Criteria Examples

- **Energy**
- Minimise emissions of Co₂ from heating, hot water, lighting and appliances
- **Transport**
- Cycle storage, local amenities, home office

Criteria examples continued...

- **Polution**
- Insulating materials that avoid the use of ozone depleting substances. Nox emissions from boilers, surface water run off
- **Materials**
- Sourcing of timber from sustainable sources

Criteria examples...

- **Water**
- Internal / external water usage
- **Ecological**
- To encourage development on land with a limited value to wildlife
- **Health**
- Daylight criteria / view of the sky

Evidence

- Evidence file containing proof of items incorporated
- I.e. confirmation of NOx levels from boiler manufacturer
- Chain of Custody certification for all new wood.

Items incorporated within the refurbishment

- External render, Internal insulated plasterboard and Sempertap Thermal
- High performance wooden windows with argon filled sealed D/G units
- Solar thermal hot water system
- Solar PV
- Sunpipe

Items incorporated within the refurbishment continued...

- Low water content radiators
- Recycling facilities
- Wormery
- Water butt

A breakdown of the difference before and after the refurbishment

Dwelling	Sap 1-120	NHER 0-10	CI 0-10	Est fuel cost Std occ	Co2 emissions per annum
26 Existing	51	4.8	3.4	£583	4.6 tonnes
26 Refurbished	93	9.3	7.3	£377	3.9 tonnes
28 Existing	31	3.2	2.9	£730	5.2 tonnes
28 Refurbished	104	10	8.4	£332	2.2 tonnes

Comparison with a New House built to 2002 regulations

	Sap Rating 1-120	
	104	28 Penzance Street
New House built to 2002 regulations	100	
	93	26 Penzance Street

Things that could have gone better

- Ensured that the design team are on board
- Ensured adequate support from the BRE assessors
- Ensured tight control of 'evidence' paperwork, required to attain the relevant credits

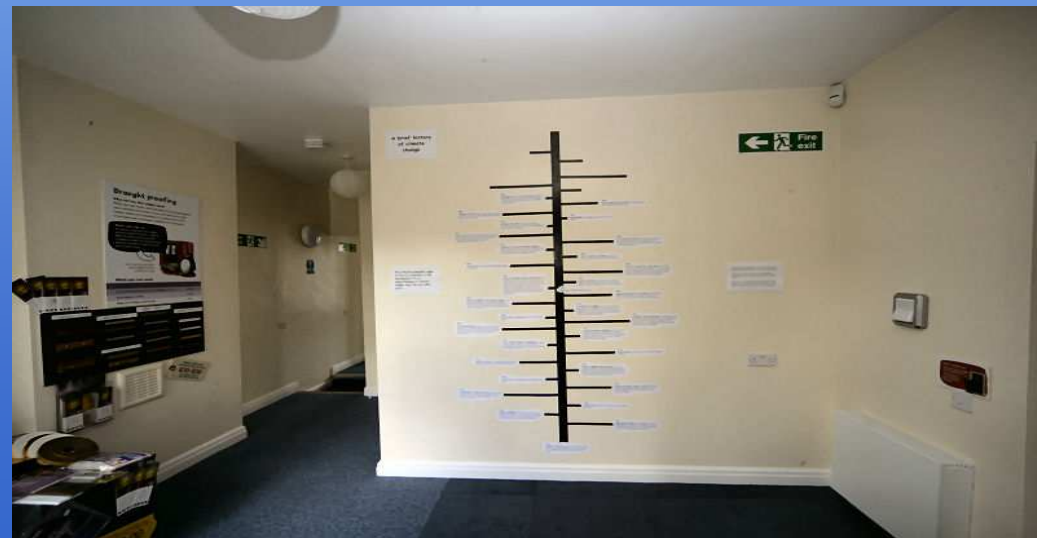
Things that were successful

- The contractors / designer became really enthusiastic about the project after a nervous start
- The project has proved that 'hard to heat' pre 1930's properties can become well insulated and efficient homes
- Visitors have left many positive comments of empowerment and inspiration about what can be done to improve insulation, lower fuel bills and in turn make their contribution to lowering greenhouse gasses

Photos of the Eco house



Photos of the Eco house



Photos of the Eco house

