

4 EASTERN TERRACE MEWS ECOREFURBISHMENT

Moving from London to Brighton, Yoram and Nicky Allon were looking for more than a straightforward modernisation of a property – they were looking for a house to buy that they could eco-retrofit so that they could live according to their principles of ethical and efficient energy conservation. Bright Green Homes LLP designed and project managed the work creating a beautiful home with a high specification finish that reduces the overall CO2 emissions from 9 tonnes per annum to 2.5 tonnes per annum.

The plan for the work involves three stages, with most of the work and refurbishment completed for stage 1, stage 2 being the replacement of windows and doors with double glazed sash alternatives, and stage 3 the installation of a FIT capable solar PV system both planned for 2012.

Period/Age of House: Regency – 1860s

Type: terraced

No. Bedrooms: 3

No. other rooms: 5

No of floors: 2

Floor Area: 143m²

Cost: refurbishment work £100,000

Wall: mixed – cavity/solid/bungaroosh

Features:

- Internal wall insulation
- 6 zone Under-floor heating
- a solar thermal system
- a mechanical ventilation and heat recovery system
- low energy LED lighting
- solar tube lighting
- natural paints and finishes



Energy Efficiency Measures:

Roof skellings have 50mm Celotex between rafters with 100mm under rafters with an airtightness layer of Intello Plus and plasterboard and skim throughout. U value: 0.15W/m²K

Roof space above kitchen has 300mm of Warmcell recycled newspaper insulation, and roof space above living room has 300mm of Earthwool recycled glass bottle insulation both chosen to overcome separate construction problems. U value: 0.14W/m²K

External walls have a double skin of 50mm Celotex cross-battened to reduce thermal bridging over existing 40mm XPS which was retained to reduce waste: plasterboard and skim finish. U value: 0.19W/m²K

Groundfloor retained the existing XPS insulation over slab, to reduce waste with 30mm added Celotex between battens to support new underfloor heating system. U value: 0.22W/m²K

Separating floor has new suspended ceiling with 100mm of Earthwool acoustic insulation to reduce noise between floors and 30mm Celotex between joists above to form support for new underfloor heating system.

Draughts

Careful reduction of draughts from existing windows and doors, with a view to replacing these as budget allows (planning approval now obtained) and to link to installed airtightness barrier throughout the house.

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Installing a Vent Axia - Sentinel Kinetic BH – whole house heat recovery system with up to 92% efficiency and controlling condensation with trickle, boost, summer bypass and wireless controls.

Heating and Hot Water

Under-floor heating throughout supplied by a Glowworm Flexicom high efficiency condensing system boiler.

Large 250l Santon Premier Plus hot water cylinder with twin coils supplied by Kingspan Thermomax DF100 x 20 Panel on flat kitchen dormer. Which is estimated from SAP to produce 1128kWh of hot water per annum and is topped up from the gas boiler.

Lighting

Lighting plan devised to increase natural light providing an additional skylight, and a Solartube for natural light in the converted studio.

Low energy Megaman 11w GU10 bulbs throughout and 0.5W LED floor lights.

LED strip lighting used in bathroom.

Painting

Natural and Low VOC paints used throughout.

Professional Contacts:

Design & Building work – Bright Green Homes LLP – www.brightgreenhomes.co.uk

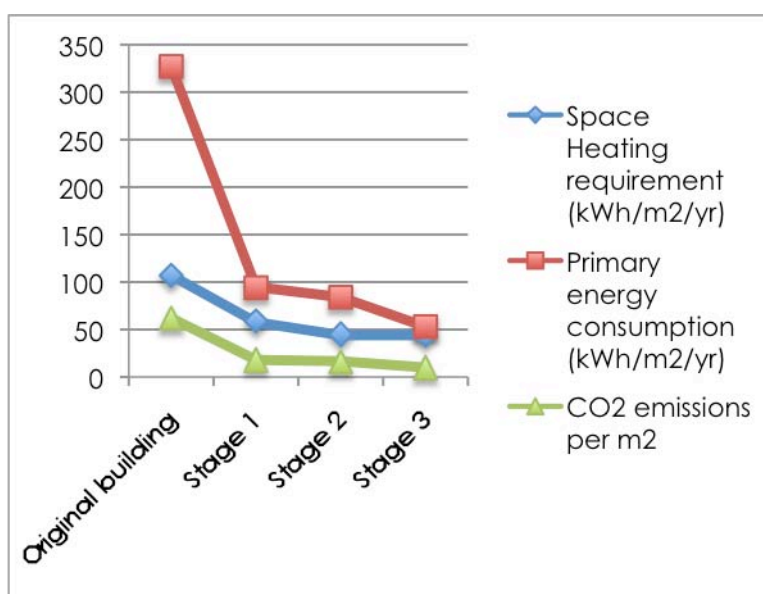
Electrical work – Cameron Electrical Services

Underfloor Heating – Flowmax Floor Heating – www.flowmax.co.uk

Lighting Consultant – Eleni SHiarlis Lighting – www.eslightingdesign.co.uk

Solar – Eco Hi Solar – www.ecohisolar.co.uk

Paint – IEKO Ltd – www.ieko.co.uk



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