

Renewable Energies and Insulation Report

© Eric Davidson

for

Anne-Marie & Ken McCullagh

Dundrum, Dublin

Architect / Builders Report

19 November 2016

Prepared by

Eric Davidson

11 Westland Road, Cookstown BT80 8BX Tel 0772 912 5002

e-mail [eric@reinco.co.uk](mailto:eric@reinco.co.uk) web www.reinco.co.uk

Ground Floor

On top of subfloor install 1000g polythene. Then install 125mm foil backed polyurethane (Kingspan or equivalent). Normally 2 layers of Kingspan (75mm + 50mm) or equivalent – stagger all joints.

With first fix plumbing pipes 3 layers, 50mm Kingspan under first fix pipes, 50mm around first fix pipes and 25mm Kingpsan over first fix pipes. Separate first fix pipes with 75mm insulation. Stagger joints where possible.

See drawing

Screed for UFH

60mm liquid screed.

Wall Structure 200mm cavity

The wall structure is 100mm outer block, 200mm cavity, 100mm block inner skin. Use 150mm strips of 75mm thick Kingspan as cavity closure at the side of the window and door frames. Use one row of Quinnlite B5 blocks opposite the floor insulation and floor screed on the ground floor. The Quinnlites are required on the inner skin of the cavity wall and on all new internal walls.

Teplo Wall Ties

Teplo type 2, 6mm diameter, 325mm long for a 200mm cavity.

Cavity Closure at top of walls

Fibre cement board.

Insulation of Cavities

Grey beads with glue.

Warm Roof

Install 100mm Kingspan or equivalent on top of the rafters. Install 125mm Foamlok spray-in foam between the rafters. Use plasterboard with a foil backing as a vapour barrier.

Possible Installer Lyons Insulation, Greystones.

Airtightness

No silicone sealers to be used. Use only Polymer sealers (CT1, Tex7, Stixall, Fix All).

Airtightness around Windows and Doors

Completely fill the space between the opening and the frame with expanding foam from the DPC at the outside to the inside. Seal the foam with polymer sealer (CT1, Tex7). Multisolve (a C-Tec product) helps get a good finish.

Recessed Lights

Cover downlighters which are close to insulation with Thermahoods.

Heat Delivery Systems

100mm space between the pipes in areas with lots of glass, bathroom, en-suite, vaulted areas, hallway and all high demand areas. 150mm space between the pipes in all other normal heat demand areas. UFH pipes should be 16-17mm diameter.

Pipe layout should be laid in “spiral” layout and not in “snake” pattern. The maximum length of one UFH loop should be 120m.

Heating Controls

Use a simplified digital time and temperature controller with one thermostat in the extension, one controlling the bedrooms down stairs and one upstairs.

Passive Sills on new build

www.passivesills.com

Glass / Windows

Triple glazed with trickle vents. Possibly Grady uPVC

Primary Heating System

New condensing oil burner.

Stove

Wood burning stove with external air supply.

Pressurised plumbing system.????

Upgrade insulation around the existing dormer.

I do not take commissions from any company or individual. When I suggest or recommend a company I do so because I have found their service or equipment fully satisfactory in the past. This report is copyright Eric Davidson. The advice and recommendations are specifically for this project and this set of circumstances.

Eric Davidson

Reinco

Renewables & Insulations Consultancy 0772 912 5002