

**Detached House - 1970 - Cavity wall construction - 239m<sup>2</sup> (2564ft<sup>2</sup>)**



Barna, County Galway

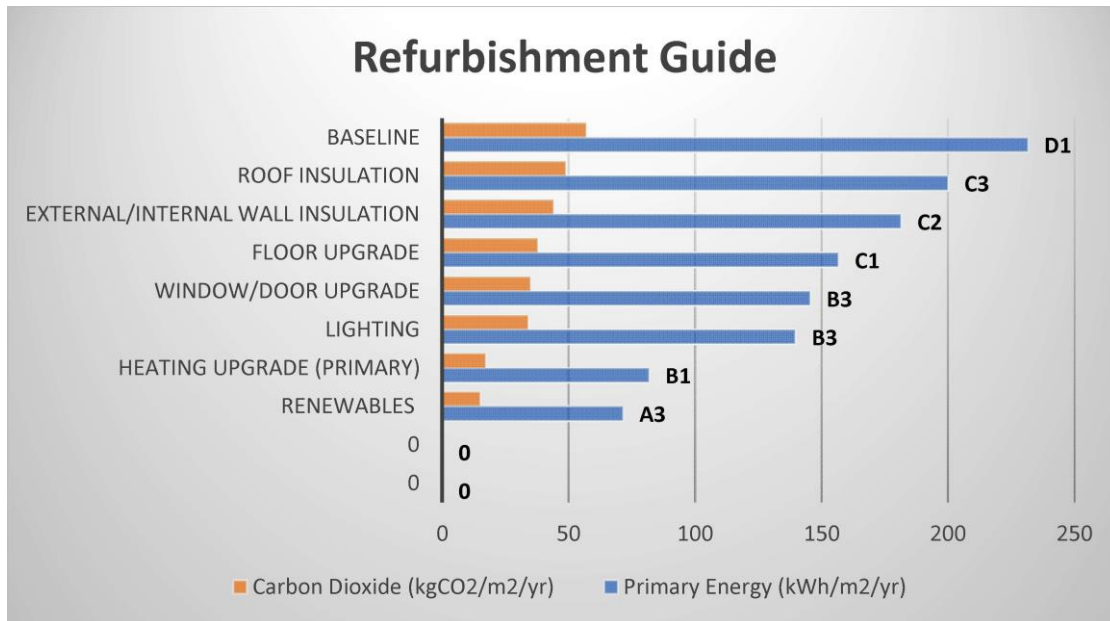
Existing Building Details			
Building Elements		Insulation Thickness (mm)	U-Value (W/m <sup>2</sup> .K)
Walls	320mm Cavity Wall Insulated	100mm-150mm	0.35
Roof	Pitched Roof insulated at ceiling	50mm-100mm	0.68
Floor	Solid Floor	Unknown	0.61
Windows	Double Glazed Air filled	N/A	2.7-3.1
Doors	Glazed Door	N/A	3

**Existing Heating Characteristics**

Heating System		Energy	Efficiency (%)
Primary Heating System	Oil boiler, primary pipework uninsulated	Oil	65%-70%
Secondary Heating System	Stoves	Multi fuel	70%
Domestic Hot Water	Heated with Oil Boiler & Electric immersion		
Cylinder	Factory cylinder Insulated (30mm)		
Controls	Timer, No TRV		

**Domestic Retrofit Guidelines (Step by Step)**

Domestic Retrofit Guidelines (Step by Step)			Energy Consumption (kWh/m <sup>2</sup> /yr)	Carbon Emissions (CO <sub>2</sub> ) (kgCO <sub>2</sub> /m <sup>2</sup> /yr)	Building Energy Rating (BER)
Energy Efficient Measures			Target U-Value (W/m <sup>2</sup> .K)	Current Usage (231.68)	Current Emissions (56.99)
1	Roof insulation	Loftwool Insulation top-up to achieve 300mm-400mm across all roof area.	0.13 - 0.16	200.12	48.95
2	External/Internal Wall Insulation	Install Wall Insulation (internal or External), thickness 50mm-100mm	0.18 - 0.21	181.49	44.19
3	Floor Upgrade	Insulate solid floor with rigid insulation	0.15 - 0.18	156.71	37.88
4	Window/Door Upgrade	Replace existing glazing with Double/Triple glazed,(low E) units	1.1 - 1.4	145.54	35
5	Lighting	Install energy efficient light bulbs (LEDs)	N/A	139.69	34.08
6	Heating Upgrade (Primary)	Air to water heat pump, 10-12kW, two separate heating zones and controller.	N/A	81.89	17.26
7	Renewables	Install 2.4 kWp Solar PV system	N/A	71.56	15.09
8					
9					
10					



Estimated Costs Summary			
Measures		Estimated Costs (€/m <sup>2</sup> )	Estimated Total Costs (€)
1	Roof Upgrade	10 - 15	€ 2,252
2	Wall Insulation	70-100	€ 14,342
3	Floor Upgrade	80 - 100	€ 21,431
4	Window/Door upgrade	250 - 350	€ 15,733
5	Lighting	20/fitting	€ 400
6	Heating Upgrade (Primary)	12,500 (System)	€ 12,500
7	Solar PV	4,400 (2.4 kWp System)	€ 4,400
8	Demand Controlled Ventilation	3,000 (System)	€ 3,000
9	0	0	€ 0
10	0	0	€ 0
<b>Total</b>			<b>€ 74,058</b>
<b>Total Cost to Homeowner including 35% Grant funding</b>			<b>€ 48,138</b>

Savings Summary				
BER Rating	Energy Savings (kWh/m <sup>2</sup> /yr)	Energy Savings (kWh/yr)	Cost Savings (€/yr)	Simple Payback, including 35% Grant Funding (years)
A3	160.12	38,128	€ 1,906	25

Audit site visit completed on 14/11/2019, Audit report edited on 10/12/2019