

**Detached House - 1933 - Solid mass concrete construction - 136m<sup>2</sup> (1454ft<sup>2</sup>)**



Ballinasloe, County Galway

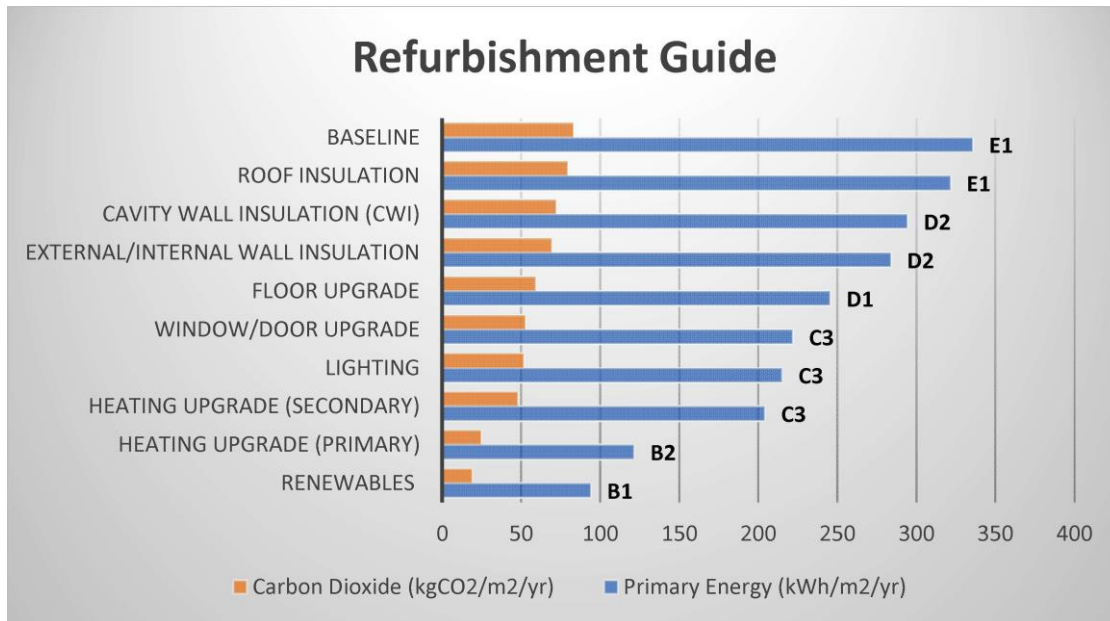
Existing Building Details			
Building Elements		Insulation Thickness (mm)	U-Value (W/m <sup>2</sup> .K)
Walls	Solid mass concrete	50mm	0.65
Roof	Pitched Roof insulated at ceiling	100mm-150mm	0.4
Floor	Solid Floor	Unknown	0.84
Windows	Double Glazed Air filled	N/A	2.7-3.1
Doors	Glazed Door	N/A	3

**Existing Heating Characteristics**

Heating System		Energy	Efficiency (%)
Primary Heating System	Oil boiler, primary pipework insulated	Oil	65%-70%
Secondary Heating System	Stove	Multi fuel	70%
Domestic Hot Water	Heated with Primary heating system & Electric immersion		
Cylinder	No insulation on cylinder or pipes		
Controls	On/Off switch		

**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 (335.8)	Current Emissions (83.17)	Current BER (E1)
1	Roof insulation	Loftwool Insulation top-up to achieve 300mm-400mm across all roof area.	0.13 - 0.16	321.73	79.43	E1
2	Cavity Wall Insulation (CWI)	Pump Existing cavity with a bonded bead insulation	0.30 - 0.35	294.37	72.16	D2
3	External/Internal Wall Insulation	Install Wall Insulation (internal or External), thickness 50mm-100mm	0.18 - 0.21	283.95	69.39	D2
4	Floor Upgrade	Insulate solid floor with rigid insulation	0.15 - 0.18	245.57	59.19	D1
5	Window/Door Upgrade	Replace existing glazing with Double/Triple glazed,(low E) units	1.1 - 1.4	221.8	52.84	C3
6	Lighting	Install energy efficient light bulbs (LEDs)	N/A	215.09	51.76	C3
7	Heating Upgrade (secondary)	Install wood burning stove	N/A	204.21	48.11	C3
8	Heating Upgrade (Primary)	Air to water heat pump, 6-8kW, two separate heating zones and controller.	N/A	121.39	24.77	B2
9	Renewables	Install 2.4 kWp Solar PV system	N/A	94.18	19.16	B1
10						



Estimated Costs Summary			
Measures		Estimated Costs (€/m <sup>2</sup> )	Estimated Total Costs (€)
1	Roof Upgrade	10 - 15	€ 1,095
2	Cavity Wall upgrade	7 - 10	€ 1,452
3	Wall Insulation	70-100	€ 12,342
4	Floor Upgrade	80 - 100	€ 12,154
5	Window/Door upgrade	250 - 350	€ 8,358
6	Lighting	20/fitting	€ 220
7	Heating Upgrade (Secondary)	2200 (System)	€ 2,200
8	Heating Upgrade (Primary)	12,500 (System)	€ 12,500
9	Solar PV	2,200 (1.2 kWp System)	€ 2,200
10	Demand Controlled Ventilation	3,000 (System)	€ 3,000
<b>Total</b>			<b>€ 55,521</b>
<b>Total Cost to Homeowner including 35% Grant funding</b>			<b>€ 36,088</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)
B1	241.62	32,628	€ 1,631	22

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