

**Semi-Detached Bungalow - 2001 - Cavity wall construction - 56m<sup>2</sup> (594ft<sup>2</sup>)**



Lawrencetown, County Galway

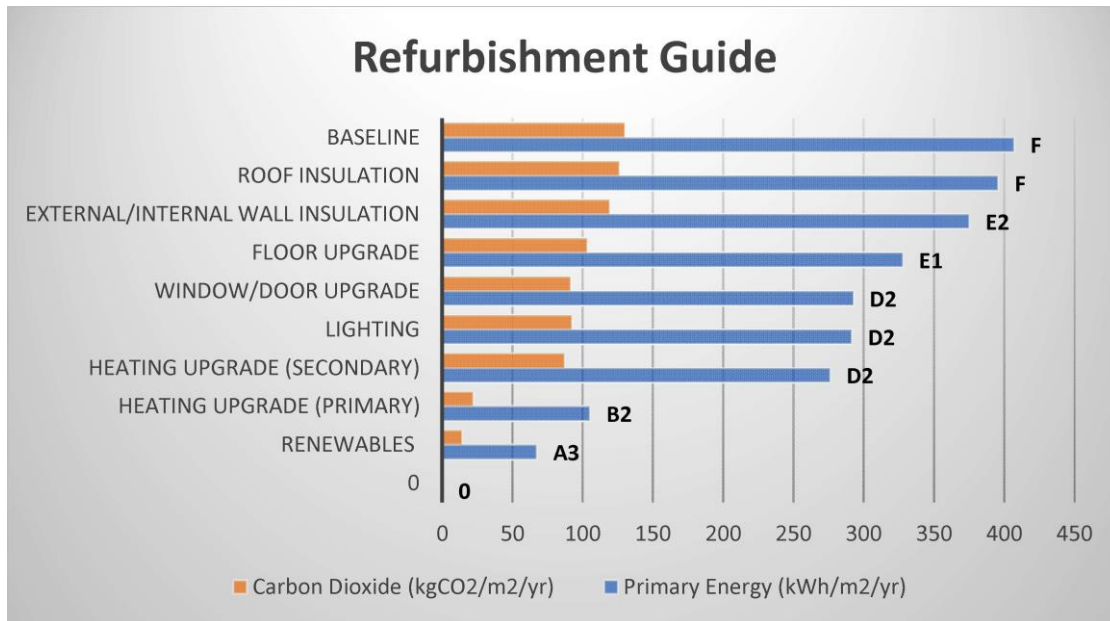
Existing Building Details			
Building Elements		Insulation Thickness (mm)	U-Value (W/m <sup>2</sup> .K)
Walls	300mm Cavity Wall, Filled Cavity	100mm-150mm	0.3
Roof	Pitched Roof insulated at ceiling	100mm-150mm	0.35
Floor	Solid Floor	Unknown	0.44
Windows	Double Glazed Air filled	N/A	2.7-3.1
Doors	Glazed Door	N/A	3

**Existing Heating Characteristics**

Heating System		Energy	Efficiency (%)
Primary Heating System	Range cooker	Multi fuel	45%
Secondary Heating System	Open Fire	Multi fuel	30%
Domestic Hot Water	Heated with Range Cooker		
Cylinder	Factory cylinder Insulated (25mm)		
Controls	No control, 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 (407.1)	Current Emissions (130.03)	Current BER (F)
1	Roof insulation	Loftwool Insulation top-up to achieve 300mm-400mm across all roof area.	0.13 - 0.16	395.76	126.22	F
2	External/Internal Wall Insulation	Install Wall Insulation (internal or External), thickness 50mm-100mm	0.18 - 0.21	375.27	119.35	E2
3	Floor Upgrade	Insulate solid floor with rigid insulation	0.15 - 0.18	327.97	103.49	E1
4	Window/Door Upgrade	Replace existing glazing with Double/Triple glazed,(low E) units	1.1 - 1.4	292.77	91.6	D2
5	Lighting	Install energy efficient light bulbs (LEDs)	N/A	291.42	92.34	D2
6	Heating Upgrade (secondary)	Install wood burning stove	N/A	276.29	87.26	D2
7	Heating Upgrade (Primary)	Air to water heat pump, 4-6kW, two separate heating zones and controller.	N/A	105.3	22.28	B2
8	Renewables	Install 2.4 kWp Solar PV system	N/A	67.4	14.3	A3
9						
10						



Estimated Costs Summary			
Measures		Estimated Costs (€/m <sup>2</sup> )	Estimated Total Costs (€)
1	Roof Upgrade	10 - 15	€ 662
2	Wall Insulation	70-100	€ 7,293
3	Floor Upgrade	80 - 100	€ 4,963
4	Window/Door upgrade	250 - 350	€ 5,058
5	Lighting	20/fitting	€ 160
6	Heating Upgrade (Secondary)	2200 (System)	€ 2,200
7	Heating Upgrade (Primary)	12,500 (System)	€ 12,500
8	Solar PV	4,400 (2.4 kWp System)	€ 4,400
9	Demand Controlled Ventilation	3,000 (System)	€ 3,000
10	0	0	€ 0
<b>Total</b>			<b>€ 40,236</b>
<b>Total Cost to Homeowner including 35% Grant funding</b>			<b>€ 26,153</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	339.7	18,731	€ 937	28

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