

**Detached Bungalow - 1898 - Stone construction - 66m<sup>2</sup> (706ft<sup>2</sup>)**

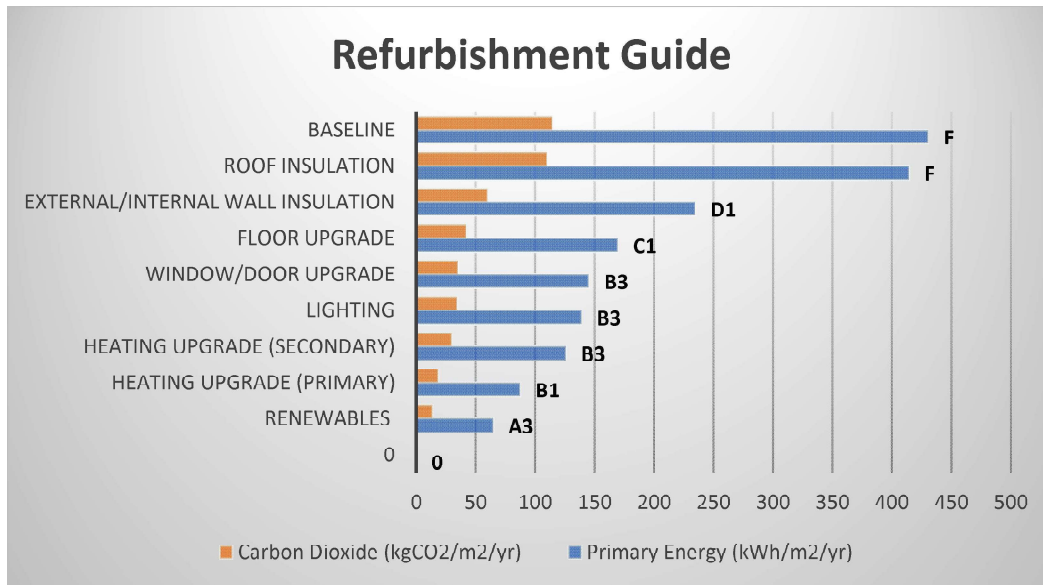


Lawrencetown, County Galway

Existing Building Details			
Building Elements		Insulation Thickness (mm)	U-Value (W/m <sup>2</sup> .K)
Walls	Stone	N/A	2.2
Roof	Pitched Roof insulated at ceiling	50mm-100mm	0.4
Floor	Solid Floor	Unknown	0.94
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	Oil	85%
Secondary Heating System	Range cooker	Multi fuel	45%
Domestic Hot Water	Heated with oil boiler		
Cylinder	Factory cylinder Insulated (25mm)		
Controls	Timer		

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 (430.63)	Current Emissions (114.56)	Current BER (F)
1	Roof insulation	Loftwool Insulation top-up to achieve 300mm-400mm across all roof area.	0.13 - 0.16	414.59	110.11	F
2	External/Internal Wall Insulation	Install Wall Insulation (internal or External), thickness 50mm-100mm	0.18 - 0.21	234.78	60.23	D1
3	Floor Upgrade	Insulate solid floor with rigid insulation	0.15 - 0.18	169.63	42.16	C1
4	Window/Door Upgrade	Replace existing glazing with Double/Triple glazed,(low E) units	1.1 - 1.4	145.38	35.38	B3
5	Lighting	Install energy efficient light bulbs (LEDs)	N/A	139.18	34.48	B3
6	Heating Upgrade (secondary)	Install wood burning stove	N/A	125.97	30.05	B3
7	Heating Upgrade (Primary)	Air to water heat pump, 4-6kW, two separate heating zones and controller.	N/A	87.62	18.6	B1
8	Renewables	Install 1.2 kWp Solar PV system	N/A	64.85	13.81	A3
9						
10						



Estimated Costs Summary		
Measures	Estimated Costs (€/m <sup>2</sup> )	Estimated Total Costs (€)
1 Roof Upgrade	10 - 15	€ 786
2 Wall Insulation	70-100	€ 7,590
3 Floor Upgrade	80 - 100	€ 5,898
4 Window/Door upgrade	250 - 350	€ 3,740
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	2,200 (1.2 kWp System)	€ 2,200
9 Demand Controlled Ventilation	3,000 (System)	€ 3,000
10 0	0	€ 0
<b>Total</b>		<b>€ 38,074</b>
<b>Total Cost to Homeowner including 35% Grant funding</b>		<b>€ 24,748</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	365.78	23,970	€ 1,198	21

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