

Semi Detached House - 1999 - Cavity wall construction - 92m² (990ft²)



Claregalway, County Galway

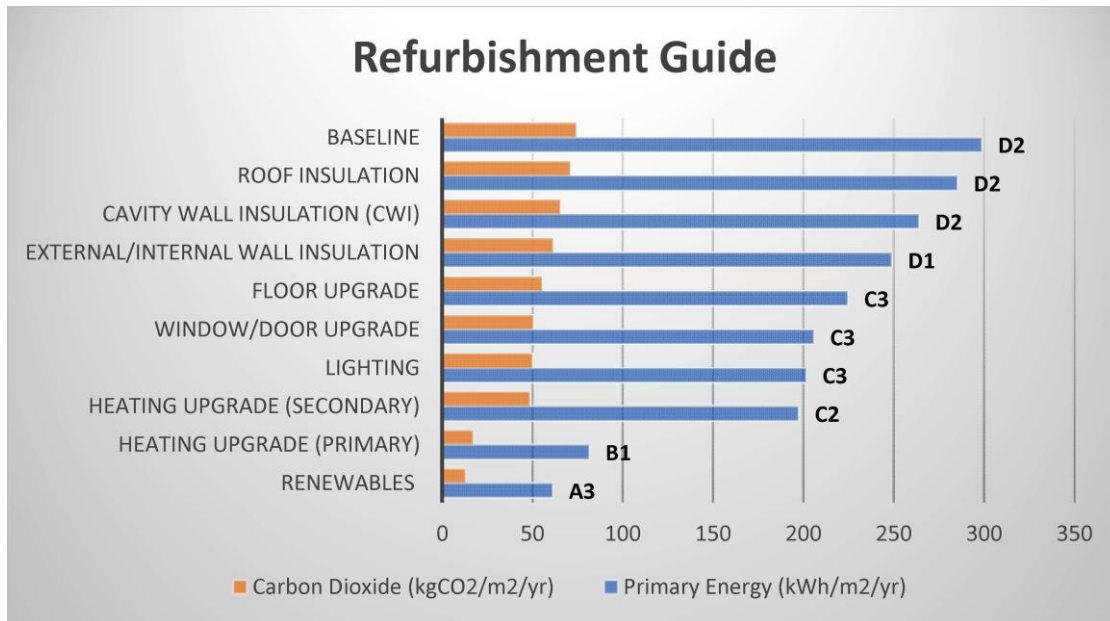
Existing Building Details			
Building Elements		Insulation Thickness (mm)	U-Value (W/m ² .K)
Walls	350mm Cavity Wall, Partially Insulated	50mm	0.55
Roof	Pitched Roof insulated at ceiling	100mm-150mm	0.35
Floor	Solid Floor	Unknown	0.55
Windows	Double Glazed Air filled	N/A	2.7-3.1
Doors	Glazed Door	N/A	3

Existing Heating Characteristics

Heating System		Energy	Efficiency (%)
Primary Heating System	Oil boiler, primary pipework insulated	Oil	60%-65%
Secondary Heating System	Stove	Multi fuel	70%
Domestic Hot Water	Heated with Primary heating system & Electric immersion		
Cylinder	Cylinder with manufactured jacket (30mm)		
Controls	Time clock only, No thermostat		

Domestic Retrofit Guidelines (Step by Step)

Energy Efficient Measures			Target U-Value (W/m ² .K)	Energy Consumption (kWh/m ² /yr)	Carbon Emissions (CO ₂) (kgCO ₂ /m ² /yr)	Building Energy Rating (BER)
				Current Usage (298.8)	Current Emissions (74.38)	Current BER (D2)
1	Roof insulation	Loftwool Insulation top-up to achieve 300mm-400mm across all roof area.	0.13 - 0.16	285.25	70.92	D2
2	Cavity Wall Insulation (CWI)	Pump Existing cavity with a bonded bead insulation	0.30 - 0.35	264.03	65.5	D2
3	External/Internal Wall Insulation	Install Wall Insulation (internal or External), thickness 50mm-100mm	0.18 - 0.21	248.88	61.63	D1
4	Floor Upgrade	Insulate solid floor with rigid insulation	0.15 - 0.18	224.59	55.43	C3
5	Window/Door Upgrade	Replace existing glazing with Double/Triple glazed,(low E) units	1.1 - 1.4	205.77	50.6	C3
6	Lighting	Install energy efficient light bulbs (LEDs)	N/A	201.48	50.07	C3
7	Heating Upgrade (secondary)	Install wood burning stove	N/A	197.21	48.64	C2
8	Heating Upgrade (Primary)	Air to water heat pump, 4-6kW, two separate heating zones and controller.	N/A	81.44	17.2	B1
9	Renewables	Install 1.2 kWp Solar PV system	N/A	61.18	12.94	A3
10						



Estimated Costs Summary			
Measures		Estimated Costs (€/m ²)	Estimated Total Costs (€)
1	Roof Upgrade	10 - 15	€ 648
2	Cavity Wall upgrade	7 - 10	€ 1,006
3	Wall Insulation	70-100	€ 8,551
4	Floor Upgrade	80 - 100	€ 8,277
5	Window/Door upgrade	250 - 350	€ 6,794
6	Lighting	20/fitting	€ 180
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
Total			€ 45,356
Total Cost to Homeowner including 35% Grant funding			€ 29,481

Savings Summary				
BER Rating	Energy Savings (kWh/m ² /yr)	Energy Savings (kWh/yr)	Cost Savings (€/yr)	Simple Payback, including 35% Grant Funding (years)
A3	237.62	21,853	€ 1,093	27

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