

Detached House - 1999 - Timber frame construction - 214m² (2294ft²)

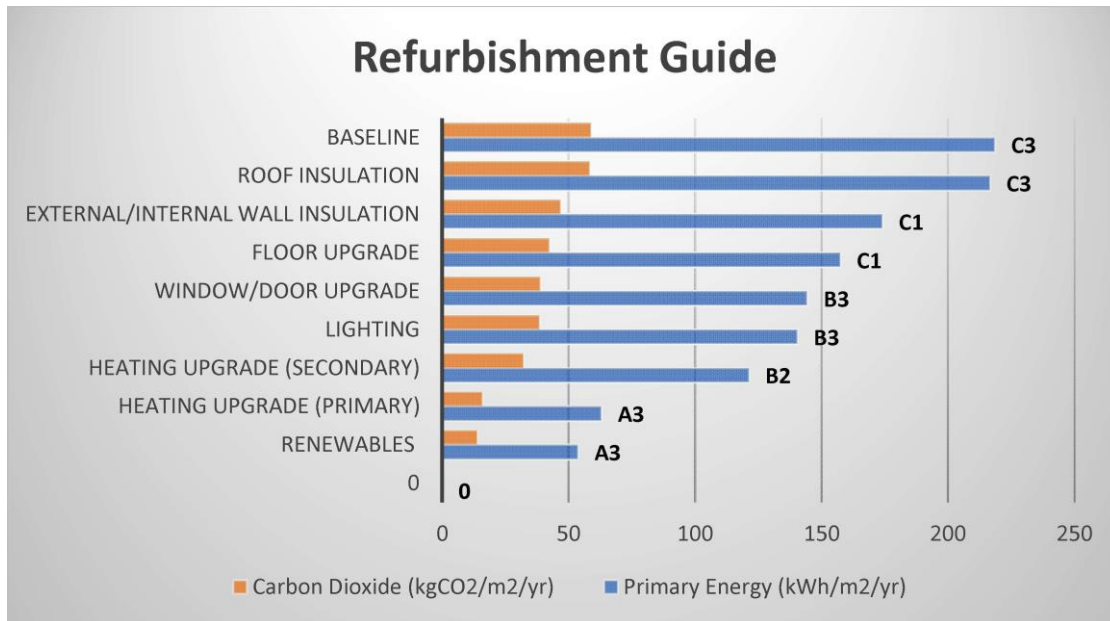


Corrandulla, County Galway

Existing Building Details			
Building Elements		Insulation Thickness (mm)	U-Value (W/m ² .K)
Walls	Timber Frame	100mm-150mm	0.55
Roof	Pitched Roof insulated at ceiling	250mm-300mm	0.16
Floor	Solid Floor	Unknown	0.41
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	Open Fire	Multi fuel	30%
Domestic Hot Water	Heated with Solar Panels & Electric immersion		
Cylinder	Factory cylinder Insulated (30mm)		
Controls	7 days Programmer with 5 zones for underfloor heating, TRVs and timer for radiators		

Domestic Retrofit Guidelines (Step by Step)			Energy Consumption (kWh/m ² /yr)	Carbon Emissions (CO ₂) (kgCO ₂ /m ² /yr)	Building Energy Rating (BER)	
Energy Efficient Measures			Target U-Value (W/m ² .K)	Current Usage (218.5)	Current Emissions (58.98)	Current BER (C3)
1	Roof insulation	Loftwool Insulation top-up to achieve 300mm-400mm across all roof area.	0.13 - 0.16	216.61	58.47	C3
2	External/Internal Wall Insulation	Install Wall Insulation (internal or External), thickness 50mm-100mm	0.18 - 0.21	174.14	46.98	C1
3	Floor Upgrade	Insulate solid floor with rigid insulation	0.15 - 0.18	157.55	42.53	C1
4	Window/Door Upgrade	Replace existing glazing with Double/Triple glazed,(low E) units	1.1 - 1.4	144.39	38.93	B3
5	Lighting	Install energy efficient light bulbs (LEDs)	N/A	140.5	38.62	B3
6	Heating Upgrade (secondary)	Install wood burning stove	N/A	121.36	32.2	B2
7	Heating Upgrade (Primary)	Air to water heat pump, 10-12kW, two separate heating zones and controller.	N/A	63.01	15.98	A3
8	Renewables	Install 1.2 kWp Solar PV system	N/A	53.82	14.04	A3
9						
10						



Estimated Costs Summary			
Measures		Estimated Costs (€/m ²)	Estimated Total Costs (€)
1	Roof Upgrade	10 - 15	€ 1,479
2	Wall Insulation	70-100	€ 20,593
3	Floor Upgrade	80 - 100	€ 19,176
4	Window/Door upgrade	250 - 350	€ 13,002
5	Lighting	20/fitting	€ 300
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
Total			€ 74,449
Total Cost to Homeowner including 35% Grant funding			€ 48,392

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	164.68	35,087	€ 1,754	28

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