

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



Claregalway, County Galway

Existing Building Details

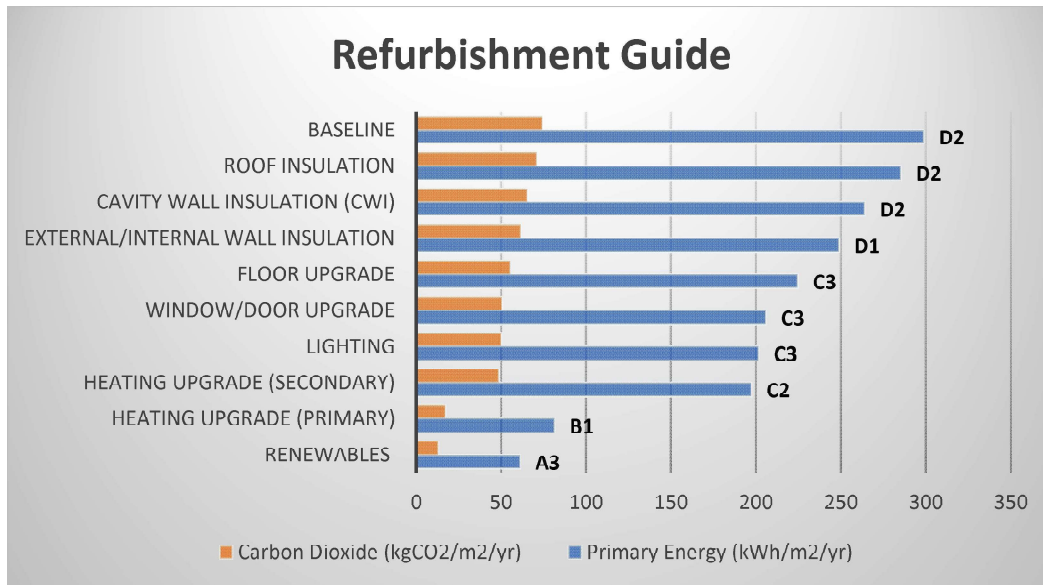
| Building Elements | | Insulation Thickness (mm) | U-Value (W/m ² .K) |
|-------------------|--|---------------------------|-------------------------------|
| Walls | 350mm Cavity Wall, Partially Insulated | 50mm | 0.55 |
| Roof | Pitched Roof insulated at ceiling | 100mm-150mm | 0.35 |
| Floor | Solid 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)

| 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 (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