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**ENERGY AUDIT REPORT**

**Detached Bungalow – 1976 – Solid Mass Concrete– 394.68m<sup>2</sup>**  
**Current BER – F – Energy Use 394.68 kWh/m<sup>2</sup>/yr – Total Energy Use: 46,118 kWh/yr**



Existing Building Details			
Building Elements		U-Value (W/m <sup>2</sup> .K)	Heat Loss (AU) [W/K]
Ground Floor	Solid Floor Original	0.73	71.45
Ground Floor	Solid Floor Extension	0.74	14.05
Roof	Pitched Roof – Insulated on Ceiling 100mm	0.40	39.15
Roof	Flat Roof Uninsulated	0.49	9.30
Wall	Solid Mass Concrete Original	2.20	116.23
Wall	300mm Cavity Extension	0.60	14.29
Wall	Solid Mass Concrete Original	1.42	22.80
Windows	Double-Glazed Air-filled X 4	3.10	477.88

Existing Heating Characteristics			
Heating System		Energy	Efficiency (%)
Primary Heating System	Oil boiler, primary pipework insulated	Oil	73%
Secondary Heating System	Room Heaters	Electricity	60%
Domestic Hot Water	Heated with Primary heating system and immersion	Oil	73%
Cylinder	Cylinder with manufactured jacket (30mm)		
Controls	Radiator Controls		

Domestic Retrofit Guidelines (Step by Step)						
Proposed Interventions		Energy saving (kWh/m <sup>2</sup> /yr)	Revised energy rating (kWh/m <sup>2</sup> /yr)	Revised BER Rating	Annual energy saving (kWh/yr)	CO <sub>2</sub> savings/yr (kg)
1	Upgrade Existing Windows to Achieve Minimum U-Value of $\leq 0.73$ W/m <sup>2</sup> K	31.29	363.39	E2	3,656.24	896
2	Upgrade Original Walls to Achieve Minimum U-Value of $\leq 0.20$ W/ m <sup>2</sup> /K	77.89	285.50	D2	9,101.45	2230
3	Upgrade Original Wall Exposed to Garage to Achieve Minimum U-Value of $\leq 0.21$ W/m <sup>2</sup> K	14.91	270.59	D2	1,742.23	425
4	Upgrade Extension Wall to Achieve Minimum U-value of $\leq 0.31$ W/m <sup>2</sup> K	5.33	265.26	D2	622.81	153
5	Install 400mm Insulation on Flat Ceiling	21.24	244.02	D1	2,481.89	608
6	Improve Building Airtightness to Achieve $\leq 5$ m <sup>3</sup> /hr/m <sup>2</sup> & Block Existing Chimney	40.67	224.59	C3	4,752.29	1164
7	Install Air To Water Heat Pump (HP) - Upgrade Heating Controls & Hot Water to Full Time & Temperature Control	168.48	75.54	B1	19,686.89	4823
8	Install 2kW Photovoltaic system	33.86	41.68	A2	3,956.54	969
	Overall kWh/m <sup>2</sup> /yr Savings Potential	404.08				
	Heat Loss Indicator post works (HLI)	2.11	W/K			
	BER Uplift	353.00	kWh/m <sup>2</sup> /yr,			

\*Upgrades 1-5 are required before a Heat Pump (HP) can be installed. The Heat Loss Indicator must be  $\leq 2$  to qualify for grant assistance for HP installation

Estimated Costs Summary			
Measures		Estimated Costs (€/m <sup>2</sup> )/Unit	Estimated Total Costs (€)
1	Windows Upgrade	€495.00	€12,870.00
2,3,4	Wall Insulation Upgrade		€15,660.00
5	Roof Insulation Upgrade		€5,450.00
6	Improve Building Airtightness		Included in below
7*	Heating Upgrade (Primary)	(System)	€17,600.00
8	Install 2kW PV system	2KW (System)	€5,500.00
<b>Total to achieve A2</b>			<b>€57,080.00</b>
<b>VAT @ 13.5%</b>			<b>€7,705.80</b>
<b>Subtotal</b>			<b>€64,785.80</b>
<b>PM Fee</b>			<b>€4,535</b>
<b>Total Build Costs</b>			<b>€69,320.81</b>
<b>ESTIMATED SEAI Grant @ 30% for participation in BEC Scheme</b>			<b>€20,796.24</b>
<b>Value of Energy Credits</b>			<b>€1,981.00</b>
<b>Total Cost to Homeowner including 30% Grant funding and Energy Credits</b>			<b>€46,543.57</b>

\*Minimum uplift required from Better Energy Community Grant Scheme

Savings Summary					
BER Rating	Energy Use (kWh/m <sup>2</sup> /yr)	Energy Savings (kWh/yr)	Cost Savings (€/yr)*	Simple Payback, including Grant Funding (years)	CO2 Savings (kg)
Current F	166.9	()	0.00	-	
A2	41.68	41,248	€3,782.44	12.3	10,106

\*Based on Home Heating oil replacement @€0.0917/kWh