

This Publishable Report is provided as part of Galway Energy Co-operative SEC's Energy Master Plan and is for illustrative public information purposes. The Homeowner's reports are confidential and thus not published here.

ENERGY AUDIT REPORT

Detached Dwelling – 1978 – Cavity Block – Area 200.05 m²
Current BER – C3 – Energy Use 218.08 kWh/m²/yr – Total Energy Use: 43,628 kWh/yr

Existing Building Details			
Building Elements		U-Value (W/m ² .K)	Heat Loss (AU) [W/K]
Walls	300mm Filled Cavity Original	0.60	59.56
Walls	300mm Filled Cavity Ext	0.37	11.27
Walls	Timber Frame Original	0.86	19.63
Walls	Timber Frame Extension	0.34	3.95
Walls	Unknown	0.37	0.28
Roof	Pitched Roof – Insulated on Ceiling	0.49	65.15
Roof	Pitched Roof – Insulated on Ceiling	0.25	1.58
Roof	Pitched Roof Insulated on Rafter	0.49	10.40
Roof	Pitched Roof Insulated on Rafter	0.25	3.85
Ground Floor	Original Solid	0.48	73.53
Ground Floor	Extension - Solid	0.39	8.11
1st Floor	Non-Heat Loss Floor	0	0
Windows	Double-glazed Air-Filled X 5	3.10	38.62
Windows	Double-glazed Air-Filled (Low-E) X 4	2.20	30.89
Doors	Solid Exposed Doors X 3	3.00	16.30

Existing Heating Characteristics			
Heating System		Energy	Efficiency (%)
Primary Heating System	Non-condensing Oil Boiler, primary pipework uninsulated	Oil	85%
Secondary Heating System	Solid Multi-Fuel		
Domestic Hot Water	Heated with Primary heating system and immersion	Oil	85%
Cylinder	Cylinder Factory Insulated 35mm		
Controls	Radiator Controls		

Domestic Retrofit Guidelines (Step by Step)						
Proposed Interventions		Energy saving (kWh/m ² /yr)	Revised energy rating (kWh/m ² /yr)	Revised BER Rating	Annual energy saving (kWh/yr)	CO ₂ savings/yr (kg)
1	Upgrade Existing Windows to Achieve Minimum U-Value of ≤ 0.73 W/m ² K	14.14	203.94	C3	2828.71	693.03
2	Upgrade Existing Door's to Achieve Minimum U-Value of ≤ 1.40 W/m ² K	3.24	200.70	C3	648.16	158.80
3	Install 300mm Insulation on Flat Ceiling	18.26	182.44	C2	3652.91	894.96
4	Upgrade Existing Sloped Ceiling to Achieve Minimum U-Value of ≤ 0.21 W/m ² K	2.46	179.98	C2	492.12	120.57
5	Upgrade Original Cavity Wall to Achieve Minimum U-Value of ≤ 0.21 W/m ² K	15.15	164.83	C1	3030.76	742.54
6	Upgrade Extension Cavity Wall to Achieve Minimum U-Value of ≤ 0.19 W/m ² K	2.41	162.42	C1	482.12	118.12
7	Upgrade Original Dwarf Wall to Achieve Minimum U-Value of ≤ 0.23 W/m ² K	5.72	156.70	C1	1,144.29	280.35
8	Install Air To Water Heat Pump (HP) - Upgrade Heating Controls & Hot Water to Full Time & Temperature Control	108.89	71.09	A3	21,783.44	5,336.94
9	Install 2kW Photovoltaic system	16.50	54.59	A3	3,300.83	808.70
	Overall kWh/m ² /yr Savings Potential	186.77			Total kg CO ₂ Saved/yr	9,154.02

	Heat Loss Indicator post works (HLI)	1.86	W/K			
	BER Uplift (with PV)	163.49	kWh/m ² /yr,			

The Heat Loss Indicator must be ≤ 2 to qualify for grant assistance for HP installation

Estimated Costs Summary			
Measures		Estimated Costs (€/m ²)/Unit	Estimated Total Costs (€)
1	Windows Upgrade	€495.00	€13,186.80
2	Doors Upgrade	€1,100	€5,929.00
3-4	Roof/Ceiling Insulation	€22.50	€3,127.50
5-7	Wall Insulation Upgrade	€185.00	€30,504.65
8	Heating and Ventilation Upgrade	(System)	€17,600.00
9	Install 2kW PV system	2KW (System)	€5,500.00
Total to achieve A3			€76,905.45
VAT @ 13.5%			€10,382.24
Subtotal			€87,287.69
PM Fee			€6,110.14
Total Build Costs			€93,397.82
ESTIMATED SEAI Grant @ 30% for participation in BEC Scheme			€28,019.35
Value of Energy Credits			€2,008.00
Total Cost to Homeowner including 30% Grant funding and Energy Credits			€63,370.48

*Minimum uplift required from Better Energy Community Grant Scheme

Savings Summary					
BER Rating	Energy Use (kWh/m ² /yr)	Energy Savings (kWh/yr)	Cost Savings (€/yr)*	Simple Payback, including Grant Funding (years)	CO2 Savings (kg)**
Current C3	218.08	()	0.00	-	
A3	54.59	32,707	€2,999.26	21	9,154.02

*Based on Home Heating Oil cost replacement @€0.0917/kWh

As a guide: a ten-year-old evergreen tree absorbs approximately 14 kg of carbon dioxide per year, so the carbon reduction for these works is the equivalent of **654 evergreen trees.