



Client N/A
 Address xx Botanic Road, Ballyphehane, Cork
 Prepared By Stephen McGovern

20/11/2021

BASELINE

BER Score	HLI	Heating & Hot Water Costs	CO2 Emissions
F	3.91	€ 2,196.61 per year	3563.0 t per Year

POTENTIAL

BER Score	HLI	Heating & Hot Water Costs	CO2 Emissions
A1	1.77	€ 766.85 per year	825.2 t per Year

Estimated Cost	Grant Available	Payback
€ 42,872.00	€ 19,800.00	16.1 years

WORK PROPOSED

Measure	Cost
Attic (Loft) Insulation 200 mm top-up	€1,125.00
External Wall Insulation (greater than 85m2 to 150m2)	€14,620.00
Cavity Wall Insulation Bonded Bead *	€352.00
Internal Wall Insulation (sloped or horizontal surface)	€4,200.00
Background ventilation wall vent (Certified Proprietary Integrated System)	€500.00
Led Bulbs (x4Nr) (supply only)	€100.00
Airtightness Measures Floor & Ceiling Perimeters	€800.00
DCV	€4,500.00
Radiator	€0.00
Domestic Heatpump system 9-12kw	€10,500.00
Radiators	€2,800.00
Solar PV inc wiring and inverters to seai standard	€4,500.00

Energy assessment report

This report provides recommendations on what is required to comply with the criteria set out for the National retrofit scheme grant and the installation of an Air to water heat pump in this dwelling. This is based on the assessment and information supplied by the client/builder.

Requirements:

- Projected Heat loss indicator or (HLI) $\leq 2.00 \text{ w/k m}^2$
- BER primary energy uplift of $100 \text{ kWh/m}^2/\text{year}$
- Post works BER result of B2 or above.

The aim of these requirements is to ensure a fabric first approach to upgrades and minimise heat loss so that the heating system can function efficiently and be effective in heating the building.

Any changes made from the specification detailed in this report are outside the scope of the responsibility of the BER assessor.

Findings

The assessment has found that the requirement of a HLI of $\leq 2.00 \text{ W/Km}^2$ can be met when the upgrades to the building fabric i.e. Attic and walls, specified in this report are undertaken.

The dwelling has recorded a current HLI value of 3.91 w/k m^2 prior to any upgrade works being undertaken.

The following report details the upgrades required to give a projected HLI of 1.79 w/km^2 and qualify for the SEAI grant schemes.

BER and Primary energy uplift in kWh/m²/yr

Current BER: F Primary Energy $390 \text{ kWh/m}^2/\text{yr}$

Projected BER: A1 Primary Energy $24.59 \text{ kWh/m}^2/\text{yr}$

Projected Primary energy uplift: $365.41 \text{ kWh/m}^2/\text{yr}$

Roofs

The site survey found that there is approximately 100mm of mineral wool insulation in your attic space in all horizontal attic spaces. It is recommended that another 200mm of fibre wool insulation be added here. The second and more difficult element is the sloping ceiling. The only way to definitively deal with this is to remove ceiling slabs placing high density insulation snugly between rafter, place air tightness membrane behind a 62.5mm insulated slab securing air tightness and cutting off any thermal bridges. It is recommended that rear flat roofs receive 100mm EPS warm roof system.

Walls

Survey could not determine exactly what the make up of main wall were, but it can be assumed to be solid block of some sort with a cork lining material. It is advised that 150mm EPS External wall insulation (EWI) be placed on all walls. There is a rear section which should also be wrapped in EWI.

Floors

Given that there is no plan to remove floor it is not deemed technically or economically feasible to remove floor to upgrade insulation when HLI can be reached without carrying out this part of the upgrade. An allowance has been made in budget to ensure no unintended air ingress is accruing here, this can involve blocking up redundant vents and sealing around edges of floors.

Windows and Doors

All windows to be replaced with high quality triple glazed units.

Front and rear door to be replaced with composite units of high thermal efficiency

Chimneys, Flues and Vents

Heat pump will supply all required heating needs of house. All flues must be permanently be blocked up and vented from attic space.

General word on air tightness and ventilation

Major works on first floor should eliminate most unintended air ingress but all penetration between floor and unheated space should be carefully considered. Correct ventilation will need to be maintained as per Building regulation Part F.

It is advised that this can best be achieved by installing a forced ventilation system such as demand control ventilation with humidity responsive air inlets or similar.

SEAI Grants

One Stop Shop - National retrofit scheme

This home energy assessment has set out recommendations on what is required to comply with the criteria for a SEAI National retrofit scheme grant application.

The next step is to contact your SEAI One Stop Shop.

SEAI Better Energy Homes individual grants

If you do not go ahead with the full National retrofit application, then the SEAI Better Energy Homes individual measure grants are still available.

Please ensure all grant eligible works are undertaken by a SEAI registered contractors if you are going to apply for these grants.

Note: If you wish to apply for the SEAI heat pump grant you will need the “SEAI technical assessment form” filled out in order to apply. Please let us know if you require this and we will fill this out at no additional cost.

More information on all available SEAI grants can be found on:

<https://www.seai.ie/home-energy/home-upgrades>



General Guidance

Total Heat Loss Requirement

The metric used to determine if the dwelling has sufficiently low fabric and ventilation heat loss is the Heat Loss Indicator (HLI). The HLI is based on the total of the fabric and ventilation losses for the dwelling divided by the total floor area. It is calculated in the Dwelling Energy Assessment Procedure or (DEAP) software and is based on the assessment accurately reflecting the dwelling at the time of the Technical Assessment.

Domestic heat pump heating systems are most efficient when they operate in a dwelling with low fabric and ventilation heat losses. This enables them to operate at lower space heating distribution temperatures and to meet most or all the space and water heating demand. Therefore, it is a prerequisite for the installation of a Heat Pump System funded by an SEAI grant programme that the dwelling should have a suitably low level of fabric and ventilation heat loss.

Heat Pump Systems will only be when installed in dwellings meeting the following condition:

$$HLI \leq 2.00 \text{ w/k m}^2$$

Documentation of upgrade works

Any contractor carrying out works will be asked to provide detailed sign off to include description of the type of construction, the product, thickness and quantity in m² installed.

(Template for the sign off document is available upon request)

These are to be provided to the BER assessor when carrying out the final BER to ensure compliance with scheme requirements.

U values for windows and doors

Please ensure the contractor supplying windows and doors can provide you with suitably accredited U Value and solar transmittance certification as well as receipt or letter confirming the type of window model and/or door installed at the dwelling address.

There are several typical sources for window U-value and solar transmittance data such as Window Energy Performance (WEP) certificates, British Fenestration Rating Council (BFRC) certificates, accredited test data / Declaration of Performance to relevant standards.

A CE-Marked/ Declaration of Performance certificate for the g-value and U-value of the glass; or the glass manufacturer's calculator once that calculator has been validated by an accredited body.

It is advised that the U-Value accreditation would be approved by a BER assessor before going ahead.



10.42



kWh/m²yr

2.05



kgCO₂/m²yr

Dwelling Dimensions	Area (m ²)	Average Height (m)	Building Elements	Area (m ²)	Results	Heat Loss (W/K)
Storey 1	42.93	2.46	Floors	45.83	Windows	17.531
Storey 2	35.15	2.70	Roofs	47.69	Plane Elements	77.665
Storey 3			Walls	68.85	Fabric	104.595
Other Storeys			Doors	1.85	Total Heat Loss	138.010
Room In Roof			Windows	15.31	HLI (W/K/m ²)	1.768
Total Dwelling Area			Total Element Area	179.53	Adjusted Infiltration Rate (ac/h)	0.255
Living Room Area	17.77					
Living Room %	22.76					