OSS Logo

Carbon Reduce Ltd,
The Street,
Bailegoover,
Co. County

Your **HOME ENERGY ASSESSMENT**

provided by One Stop Shop **CARBON REDUCE LTD**

SEAI Grant: **One Stop Shop Home Energy Assessment Grant**

For: Bernadette and Bob O'Brien,
23 Downthelane,
Locality
Co. Tipperary

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Carbon Reduce Ltd,
The Street,
Bailegoover,
Co. County

HOMEOWNER'S DETAILS

Bernadette and Bob O'Brien

23, Downthelane, Locality, Co. Tipperary

Eircode **XP89DD7**

MPRN **100000000000**

Detached, Bungalow

116 m^2 **1977**

Date of Assessment: 01/01/2024

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Thank you for choosing **Carbon Reduce Ltd** (SEAI Registered One Stop Shop)

By selecting a **SEAI Registered One Stop Shop** (OSS) to produce your Home Energy Assessment, you can avail of the €350 SEAI OSS Home Energy Assessment grant.

1. Client's Goal

Bernadette and Bob want to future-proof their house for their retirement. They would like their house to be warmer and cosier, as well as healthier. They want to have a more environmentally friendly home, which they hope will increase the value of their property for the next generation.

Bernadette and Bob complain of high energy bills and lack of comfort in their house. Their oil boiler is old and needs replacement. Areas of the house are not heated and ventilated adequately, leading to condensation and mould problems in some rooms.
They have asked that we do not propose internal insulation, as they have walls features on the inside of the external walls that they would like to retain if possible. They have also stated that they would be happy to achieve a BER greater that B2 grant entry level, where financially viable.

2. Technical Summary

The energy assessment we have conducted on your house indicates that:
Your current Building Energy Rating (BER) is a D2, compared to the national average of C3. Fabric heat losses are high due to poor insulation and air leakage (Heat Loss Indicator of 3.51).

Following our energy survey and the discussion you have had with our team, we have put together a home energy upgrade plan that will:

- Minimise heat losses by insulating the external walls and roofs, as well as replacing windows and doors, together with eliminating draughts.
- Upgrade your central heating system to an air to water heat pump system, with new radiators, hot water cylinder and modern heating controls.

	Existing	Proposed
BER Rating	D2	B1
Primary Energy Usage, (kWh/m^2/y)	287.26	77.99
HLI, (W/Km^2)	2.50	1.86
CO_2 Rating, (kgCO_2/m^2/y)	36.77	9.98

The proposed package of measures will achieve a B1 and meet the SEAI grant scheme requirements (BER rating of B2 or better and Heat Loss Indicator of 2 or better).
If you wish to go further, the installation of solar PV panels to meet part of your electricity requirements will result in an A3 (similar rating as a new home).

3. Roadmap to B2 (or better) goals

The following table outlines the combination of energy efficiency and renewable energy measures that will take your house from its current energy performance to the BER B2 or better, mandated by SEAI under the One Stop Shop service. The proposed energy renovation pathway aims at reducing heat losses first, before upgrading your central heating with a heat pump system, with the option to add a solar PV system. This integrated approach ensures that your home will be comfortable and that your heat pump will perform most efficiently.

Measure type	Upgrade measure description	Primary Energy (kWh/m2/yr)	Proposed BER Rating (G-A)	Heat Loss Indicator (HLI) (W/Km2)
	Current condition	287.26	D2	3.51
Roofs	Attic insulation (300 mm above ceiling) - 0.14 W/m2,K	282.03	D2	2.49
Walls	Cavity wall insulation and external wall insulation (min. 80 mm) - 0.21 W/m2,K	241.88	D1	2.29
Openings - Windows	Complete upgrade of windows with double glazing - 1.2 W/m2,K	210.9	C3	1.90
Openings - Doors	Replace external doors - 1.1 W/m2,K	208.7	C2	1.87
Airtightness	Upgrade measure Ventilation – airtightness) – include target airtightness test result	204.5	C1	1.87
Ventilation system	Mechanical ventilation (demand-controlled)	200.1	C1	1.86
Heating system	Install air to water heat pump with new cylinder & heating controls - 1 x 6kW unit to achieve 0.14 W/m2,K	102.02	B2	1.86
Heating controls	Upgrade central heating system with new radiators	98.09	B1	1.86
Renewable system	Optional – Install 2 kW of Solar PV	74.99	A3	1.86

4. Technical Design

This table provides more technical details on the measures proposed as part of this energy upgrade project. It includes **minimum** performance specifications to be achieve and gives an estimate of the quantity of work associated with each measure (e.g. area of external insulation applied in square meters).

Steps	Energy Upgrade Measures	Min. performance specifications	Quantity/Area
1	Attic insulation (300 mm above ceiling)	0.14 W/m2,K	110m2
2	Cavity wall insulation and external wall insulation (min. 80 mm)	0.21 W/m2,K	130m2
3	Complete upgrade of windows with double glazing	1.2 W/m2,K	25m2
4	Replace external doors with insulated doors	1.1 W/m2,K	2 units
5	Airtightness - deep sealing of the dwelling fabric	<5 m3/m2,hr	n/a
6	Mechanical ventilation (demand-controlled)	SPF <= 0.29 W/l/s	1 central unit
7	Install air to water heat pump, new cylinder and heating controls	0.14 W/m2,K	1 x 6kW unit
8	Upgrade central heating system with new radiators and associated pipework		9 radiators
9	Optional - Install solar PV		1 x 2kW system

One Stop Shop Declaration

I, Tom Dunne, of Carbon Reduce OSS Ltd confirm that the Client Bernadette and Bob O'Brien has received the complete One-Stop-Shop Home Energy Assessment report.

Technical Notes

The proposed energy upgrade works will comply with the following technical standards:

- SEAI Domestic Technical Standards and Specifications (DTSS);
- NSAI Standard Recommendation S.R. 54:2014&A2:2022;
- DHPLG Technical Guidance Document to Part L (Energy Conservation) and Part F (Ventilation), and all other relevant building regulations.
- Manufacturers' design and installation instructions.

Given the nature of home energy upgrade works, and the varying pathways and materials that can be selected, it is advisable to talk to your One Stop Shop so you fully understand your options & the range of solutions to meet the scheme requirements.

The specifications and quantities above are preliminary and will be confirmed following a detailed survey and advanced design of the upgrade works by one our engineers, in consultation with the homeowner.

This HEA cover works involved with the installation of the proposed energy upgrades, and eligible for funding from SEAI. Additional works such as an extension or rebuild of (parts of) the dwelling, installation of sanitary ware, extensive re-wiring of the property, will be tabled and priced separately.

5. Next Steps

A member of our technical sales team will contact you to discuss this HEA and the proposed works

Following a detailed survey of your property by our engineer or main contractor, you will receive a firm proposal with the full design and specification and costs for the proposed works

Following your approval of this proposal and downpayment, our contractors will complete the works, under supervision from our technical team.

Once the works are completed and the new systems have been commissioned, our engineer will inspect the works.

At that stage, you will be handed over all the relevant documentation and trained to use your new energy systems. SEAI's grant will be processed by us and we will expect final payment from you.

Terms & Conditions

OSS roles and responsibilities

E.g.

+ [OSS] will be responsible for the design and specification of the proposed energy upgrade works, following a detailed inspection of your property; the supervision, final inspection and sign-off of the works completed; administration of SEAI grant applications and claims; handover of your energy upgrade completion pack and induction to the new systems' operation and maintenance.

+ The requirement for planning permission must be checked with a qualified adviser. If a planning application for any of the proposed works is required, that will be the responsibility of the homeowner.

Technical and financial T&Cs:

E.g.

+ Please be aware that the measure specifications outlined above may change following the detailed survey of your home.
+ Any changes and/or extras need to be agreed and confirmed in writing before works commence.
+ The homeowner will inform the OSS of any energy upgrade works for which a grant has been claimed prior to this project (these won't be eligible for a second grant).

Disclaimers/caveats

E.g. We have estimated your home's energy use, fuel bills and carbon dioxide emissions using the Building Energy Ratings (BER) assessment methodology including some standard assumptions on occupancy, duration of heating and hot water demand. Running costs and energy use noted may differ from your actual fuel bills.

6. Annexes

A. BER Certificate – Existing
B. BER Home Advisory report
C. Dwelling Details Report – Existing
D. Heat Pump Technical Assessment
E. Dwelling Details Report – Proposed
F. Roadmap to B2 – Cost Estimate
G. Additional works - Cost Estimate

A. BER Certificate – Existing

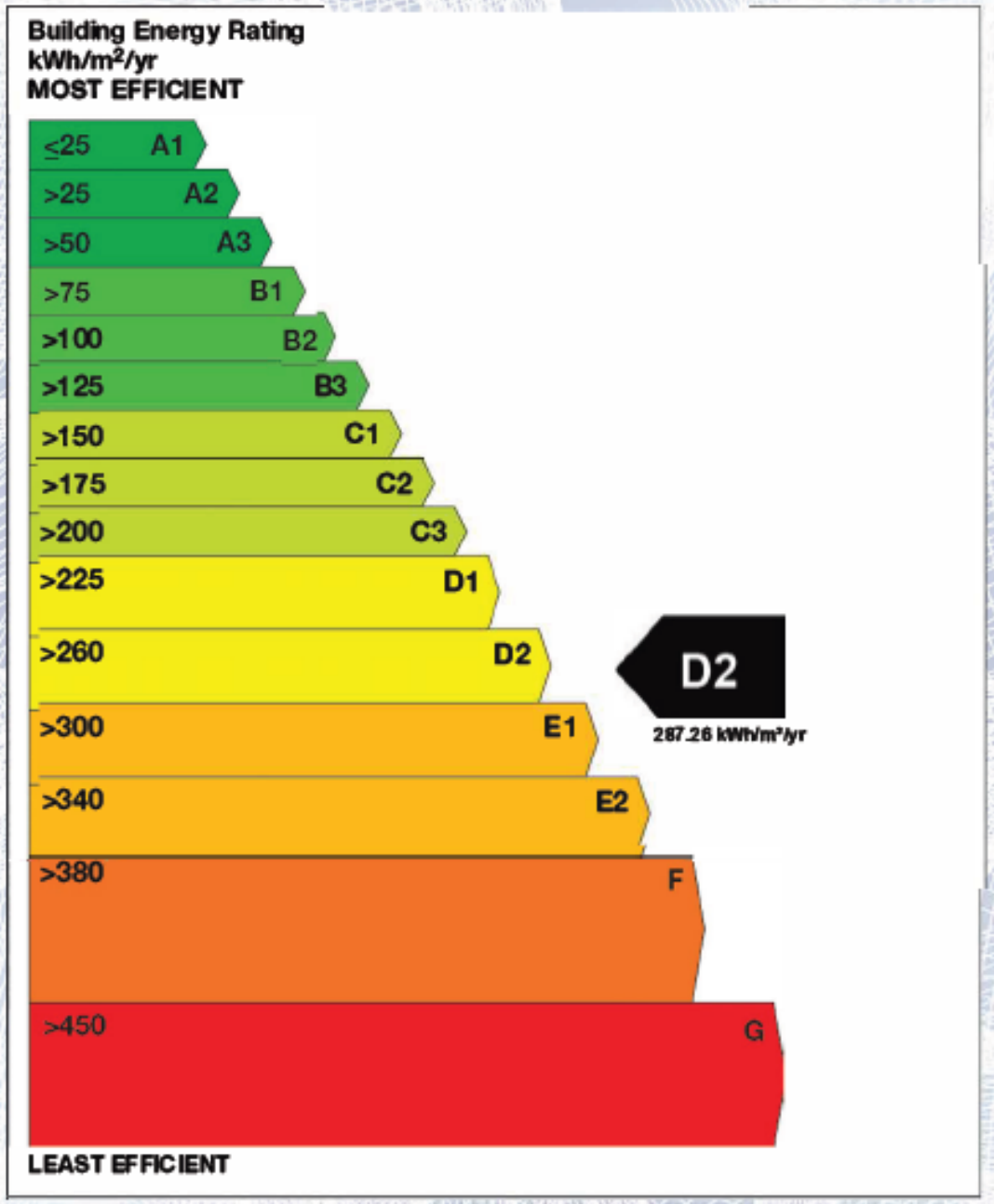
Building Energy Rating (BER)

BER for the building detailed below is: **D2**

Address	[redacted]
Eircode	[redacted]
BER Number	[redacted]
Date of Issue	11/04/2024
Valid Until	11/04/2034
Assessor Number	[redacted]
Assessor Company No	[redacted]

The Building Energy Rating (BER) is an indication of the energy performance of this dwelling. It covers energy use for space heating, water heating, ventilation and lighting, calculated on the basis of standard occupancy. It is expressed as primary energy use per unit floor area per year (kWh/m²/yr).

'A' rated properties are the most energy efficient and will tend to have the lowest energy bills.



IMPORTANT: This BER is calculated on the basis of data provided to and by the BER Assessor, and using the version of the assessment software quoted below. A future BER assigned to this dwelling may be different, as a result of changes to the dwelling or to the assessment software.

DEAP Version: 4.1.0

B. BER Home Advisory report

Home Energy Upgrade Advisory Report

BER No. [redacted]

Your Home's Energy Performance Potential

Potential with upgrades

Loss of heat from your home

NOW	POTENTIAL
Fair	Good

An upgrade package to stop losing money on your energy bill

Your BER assessor has recommended a package of upgrades that will raise your home's energy performance.

Energy Performance of your home	NOW	POTENTIAL
Roofs	N/A	N/A
Walls	Fair	Good
Windows	Fair	Good
Floor	Poor	No Upgrade
Space heating	Very Poor	Very Good
Water heating	Very Poor	Very Good
Renewables	Very Poor	Very Good

GRANTS AVAILABLE?

subject to availability, terms and conditions

For further information visit www.seai.ie/grants or call 01 8082100

Compare your home's performance | Before and after upgrades

Your home's current **energy performance**	NOW D2	Your home's potential **energy performance**	POTENTIAL B2

Benefits of upgrading your home

INCREASE your home's value

INCREASE your home's comfort

REDUCE your energy bills

SAVE

CO_2 TONNES 0.9

= the same as planting **59 tree(s) each year**

To find out more visit **www.seai.ie**

seai SUSTAINABLE ENERGY AUTHORITY OF IRELAND

Your journey from  **to** 

Your BER assessor has recommended a package of energy upgrades that maximise the energy performance of your home. The recommendations are for guidance only and can be completed at your own discretion.
The recommendations are just one potential pathway to an improved BER and it is open to you to discuss alternative packages with your professional advisors.

Package of energy upgrades to save money, make your home more comfortable and protect the environment

Recommended Package of Energy Upgrades	Cost (Approx.)[4]	Grant Available [5]	Comfort
External doors 1.4 W/m^{2}K average U-Value [1, 2]	€ € € €	✔	★★★☆☆
Wall insulation 0.27 W/m^{2}K average U-Value [1, 2]	€ € € €	✔	★★★★★
Windows double glazing 1.4 W/m^{2}K average U-Value [1, 2]	€ € € €	✔	★★★★☆
Air-to-Water or Ground-to-Water or Water-to-Water heat pump with fully integrated heating controls [3]	€ € € €	✔	★★★★☆

1. *Major Renovation is defined in the Building Regulations Part L Technical Guidance Document and means the renovation of a dwelling where more than 25 % of the surface of the dwelling envelope undergoes renovation. Where a dwelling undergoes a major renovation, the energy performance of the whole dwelling should be improved to the cost optimal level by achieving a B2 or by implementing the energy performance improvements as set out in the Building Regulations Part L Technical Guidance Document.*
2. *This energy upgrade will reduce your home's heat loss and is an important first step to improving the energy efficiency of your home.*
3. *A dwelling should have low heat loss to ensure the heat pump runs efficiently. An ideal heat loss indicator (HLI) is less than 2.0 W/(K·m^2). An upper HLI limit applies to SEAI grants. Where the HLI is between 2 and 2.3 W/(K·m^2), additional heat pump grant eligibility criteria apply.*
4. *Investment Cost Legend:*
   - *€ < 5,000*
   - *€€ 5,000 - < 15,000*
   - *€€€ 15,000 - < 30,000*
   - *€€€€ 30,000 - 50,000*
5. *A grant for this type of upgrade is available at the time of publication of this report. Grant availability is subject to eligibility criteria and should be checked to see if the works to your own home meet the eligibility criteria. Eligibility criteria are subject to change.*

GRANTS AVAILABLE?

✔

subject to availability, terms and conditions

For further information visit www.seai.ie/grants or call 01 8082100

Start your journey to upgrade your home

If you're not ready for the maximum SEAI grant, consider picking one or two energy upgrades, selecting areas with the poorest performance.

GRANT APPLICATION

To start your application today visit
www.seai.ie/grants

Simple energy upgrades - quick, cheap, easy

Lighting
Correct lighting levels are essential for visual comfort, safety and for aesthetic effects. Fit efficient electric lighting and maximise the use of daylight.

Potential impact of the **recommended energy upgrades**

Energy upgrade	Now		Potential	
	Value	Energy Efficiency	Value	Energy Efficiency
Home Heat Loss Indicator (HLI)[1]	2.504 W/(K·m^2)	Fair	2.070 W/(K·m^2)	Good
External doors (average U-Value[2])	3.000 W/m^{2}K	Poor	1.400 W/m^{2}K	Very Good
Wall insulation (average U-Value[2])	0.600 W/m^{2}K	Fair	0.270 W/m^{2}K	Good
Windows double glazing (average U-Value[2])	2.200 W/m^{2}K	Fair	1.400 W/m^{2}K	Good
Air-to-Water or Ground-to-Water or Water-to-Water heat pump with fully integrated heating controls (Primary Energy Efficiency[3])	57%	Very Poor	200%	Very Good
Lighting	58.94 Lm/W	Good	66.90 Lm/W	Very Good
Renewable Energy Ratio (RER)	0%	Very Poor	26%	Very Good

1. *The Home Heat Loss Indicator (HLI) is a summary of the overall performance of the home. It includes all the fabric and ventilation upgrades listed in the table*
2. *A U-value is a measure of the heat loss through the building fabric. The higher the U-value, the greater the heat loss*
3. *Primary energy efficiency is the efficiency divided by the primary energy conversion factor*
4. *Indicators are based on the average elemental U-values in the BER and where partial upgrades occur, average U-values may remain above the optimum U-value.*

Your Home's Details

Home Address

[redacted]

House Details

Year of construction: 1990

Dwelling type: Ground-floor apartment

Total floor area: 34.37 m^2

About the Home Energy Upgrade Advisory Report

This document is a first step to assist you in engaging with a professional to determine suitable energy upgrades for your home.

It was prepared by a BER assessor using general assumptions and information from your BER assessment. The improvement in the BER has been estimated based on the assumption of certain values for energy upgrades and is provided as an indicator only.

This document is for information only and does not constitute professional or legal advice. The homeowner waives and releases any and all claims against SEAI and/or the BER assessor arising from the contents of this advisory report.

Use this document to:

Better understand how your home performs and how to make it more comfortable and affordable to run.

Provide information on home energy upgrades to discuss further with a professional or contractor.

Identify small simple steps you can take to improve the comfort of your home, if grant supported works aren't suitable for you right now.

Start the grant application process with SEAI, who may have substantial support available.

Recommended Energy Upgrades

The recommendations contained within your advisory report have been generated based on the data inputs contained within your BER assessment. SEAI recommends you seek professional advice and use suitably qualified installers to assess the suitability of the recommendations for your own particular home.

SEAI and the BER assessor accept no responsibility for and give no guarantees, undertakings or warranties concerning the accuracy, completeness or fitness-for-purpose of the information contained herein and do not accept any liability whatsoever arising from the contents hereof.

Further information on upgrading your home is available in **S.R. 54:2014 Code of Practice for the Energy Efficient Retrofit of Dwellings**, available from www.nsai.ie.

Building Regulations

The aim of the building regulations is to provide for the safety and welfare of people in and about buildings. Where applicable, works should be completed in accordance with the relevant Building Regulations. The primary responsibility for compliance with the requirements of the Building Regulations rests with the designers, builders and owners of buildings. Technical Guidance Documents for the Building Regulations and other supporting documents are available from the Department of Housing, Local Government and Heritage website at www.housing.gov.ie.

Costs

The investment cost indicators are guidelines only. Actual costs will vary depending on house size, specification and market conditions. Cost indicators may be calculated based on a partial upgrade if some sections of the building element are already adequately insulated.

Please consider the environment before printing this document.

BER Privacy Notice: www.seai.ie/publications/BER-Privacy-Notice.pdf

Ventilation

Care should always be taken to ensure sufficient levels of ventilation in each room. Signs of inadequate ventilation are persistent condensation and mould growth and should be addressed in the first instance. It is important not to permanently close or cover over air vents as they are required to provide ventilation. Further guidance on ventilation provision when carrying out retrofit works is available in Section 10 Ventilation of S.R. 54:2014 Code of Practice for the Energy Efficient Retrofit of Dwellings.

Radon

Radon gas at high concentration causes lung cancer and is estimated to be responsible for 300 cases per annum in Ireland. Retrofitting provides an opportunity to test for, and remediate for, radon, where indicated. A radon test is low cost and non-disruptive. The only way to know if a home has a radon issue is to test. Further information on radon, including testing, is available on the EPA website www.epa.ie.

Heat producing Appliances

It is important to ensure that there is an adequate air supply to all heat producing appliances e.g. any fixed appliance (including a cooker or an open fire) which is designed to burn solid fuel, oil, bio-fuel or gas and to provide permanent ventilation for all non-room sealed combustion appliances. Useful health and safety information can be found on the Carbon Monoxide safety website: www.carbonmonoxide.ie. Further guidance on air supply for heat producing appliances is available in Section 7 and Section 10 Ventilation of S.R. 54:2014 Code of Practice for the Energy Efficient Retrofit of Dwellings.

Evidence for BER

Documentary evidence of energy upgrades is required for your BER and should be retained and provided to your BER assessor to ensure the energy performance uplift is captured in your BER. Your BER Assessor can advise you on documentary evidence requirements. Further information is available on https://www.seai.ie/home-energy/building-energy-rating-ber/.

C. Dwelling Details Report – Existing

Property details

MPRN	[redacted]	**Shared MPRN**	No
BER Number	[redacted]	**BER number assigned to shared dwelling**	N/A
Address line 1	[redacted]	**Type of Rating**	Existing Dwelling
Address line 2	[redacted]	**Purpose of Rating**	Other
Address line 3	[redacted]	**Building Regulations**	None
County	[redacted]	**Planning Reference**	
Eircode	[redacted]	**Date of Plans**	
Dwelling Type	Ground-floor apartment	**Assessor Name**	[redacted]
Year of construction	1990	**Assessor Number**	[redacted]
Dwelling Extension	No	**Date of Assessment**	26/02/2024
Storeys	1	**Assessor Comments**	
		Assessor Description	

Dimension details

	Area [m^2]	Height [m]	Volume [m^3]
Ground floor	34.37	2.46	84.55
First floor	0.00	0.00	0.00
Second floor	0.00	0.00	0.00
Third and other floors	0.00	0.00	0.00
Room in Roof	0.00	0.00	0.00
Totals	34.37		84.55

Living Area	11.44 m^2
Living Area Percentage	33.28 %

Ventilation details

	Number	Air Change Rate [m3/h]
Chimneys	0	0.00
Open Flues	0	0.00
Fans & vents	2	20.00
Flueless combustion room heaters	0	0.00

Manufacturer	N/A
Model	N/A

Has a permeability test been carried out	No	**Is there a draught lobby on main entrance?**	No
Infiltration rate due to structure [ac/h]	0.40	**Draught lobby air change [ac/h]**	0.05
Intermediate infiltration rate	0.69	**Openings infiltration [ac/h]**	0.29
Number of sides sheltered	4	**Structure type**	Masonry
Adjusted infiltration rate [ac/h]	0.48	**Is there a suspended wooden ground floor?**	No
Effective air change rate [ac/h]	0.62	**Windows/doors/attic hatches draught stripped [%]**	100.00
Ventilation heat loss [W/K]	17.17	**Ventilation method**	Natural ventilation
Adjusted result of air permeability test [ac/h]	0.00	**How many wetrooms (inc. kitchen)? Is the vent. ducting flexible/rigid/both?**	N/A
Specific fan power [W/(l/s)]	0.00	**Is MVHR ducting uninsulated where outside of insulated envelope?**	N/A
Heat exchanger efficiency [%]	0.00	**Adjusted heat exchanger efficiency**	0.00
Electricity for ventilation fans [Kwh/y]	0.00		
Heat gains from ventilation fans [W]	0.00		

Building Elements - Floors

Type	Description	U/F Heating	Include in compliance check	In Roof	Age Band	Exposed Perimeter [m]	Area [m^2]	U-Value [W/m^2K]	Heat Loss (AU) [W/K]
Exposed / Semi Exposed		No	No	No	1983 - 1993	N/A	34.37	0.80	27.50
Total area [m^2]									34.37

Building Elements - Roofs

Type	Description	Include in compliance check	Insulation Thickness [mm]	Age Band	Area [m^2]	U-Value [W/m^2K]	Heat Loss (AU) [W/K]
Total area [m^2]							0.00

Building Elements - Walls

Type	Description	Wall is semi-exposed	Include in compliance check	Age Band	Area [m^2]	U-Value [W/m^2K]	Heat Loss (AU) [W/K]
300mm Filled Cavity		No	No	1983 - 1993	11.82	0.60	7.09
Unknown		No	No	1983 - 1993	12.94	0.60	7.76
Total area [m^2]							24.76

Building Elements - Doors

Count	Type	Description	Draught Stripped	Area [m^2]	U-Value [W/m^2K]	Heat Loss (AU) [W/K]
1	Solid exposed door		Yes	1.84	3.00	5.52
Total area [m^2]						1.84

Building Elements - Windows

Count	Glazing Type	Frame Type	Frame Factor	Solar Transm.	In Roof	Over shading	Orient.	Area [m^2]	U-value [W/m^2K]
1	Double-glazed, air filled (low-E, en = 0.15, hard coat)	Wood/PVC	0.700	0.720	No	Average or Unknown	Southwest	5.47	2.20
Total area [m^2]									5.47

Heat loss details

Total glazed area [m^2]	5.47	**Glazing ratio**	0.07
Total glazed heat loss [W/K]	11.06	**Summer solar gain [W/m^2**	256.8
Total effective collection area [m^2]	1.91	**Total element area [m^2]**	66.44
Total plane heat loss [W/K]	58.93	**Thermal bridging factor [W/m^2K]**	0.1500
Fabric heat loss [W/K]	68.90	**Total heat loss [W/K]**	86.07
Per m2	2.50		

Lighting and Internal Gains

Lighting Design Calculation Method	Bulb type only	**Average Efficacy [lm/W]**	58.94
Fixed lighting provision [klmh/y]	1484.42	**Top up lighting requirement [klmh/y]**	0.00
Energy required for fixed lighting [kWh/y]	44.92	**Energy required for top up lighting [kWh/y]**	0.00
Energy required for portable lighting [kWh/y]	62.16		
Basic energy consumption for lighting [kWh/y]	353.71	**Water heating (In watts [W])**	110.65
Annual energy used for lighting [kWh/y]	107.08	**Occupants (In watts [W])**	63.30
Internal gains from lighting during heating season [kWh/hs] (In watts [W])	81.92 (14.05)	**Mechanical ventilation (In watts [W])**	0.00
Lighting (In watts [W])	14.05	**Heat loss to the cold water network (In watts [W])**	-25.39
Appliance and cooking (In watts [W])	102.30	**Net internal gains (In watts [W])**	264.90

Lights

Count	Name	Description	Type	Efficiency	Power [W]
6	Default LED/CFL		LED/CFL	66.90	
1	Default Incandescent		Incandescent	11.20	

Water heating details

Are there distribution losses?	Yes
Are there storage losses?	Yes
Is there a solar water heating system?	No
Standard number of occupants	1.27
Number of mixer showers	1
Number of electric showers	0
Number of baths	1
Daily hot water use [Litres/d]	108.88
Hot water energy reqs. at taps [kWh/y]	1451.18
Distribution losses [kWh/y]	256.09
Water storage volume [Litres]	120.00
Is manufacturers declared loss factor available?	No
Declared loss factor [kWh/d]	0.00
Manufacturer and Model name	
Insulation type	Factory Insulated
Insulation thickness [mm]	35

Is supplementary electric water heating used in summer?	No
Is there a combi boiler?	No
Total hot water demand [kWh/y]	1707.27
Temperature factor unadjusted	0.60
Temperature Factor Multiplier	1.00
Hot water storage loss factor [kWh/l d]	0.02
Volume factor	1.00
Combi-boiler electricity consumption [kWh/y]	0.00
Adjusted storage loss [kWh/y]	502.02
Adjusted primary circuit loss [kWh/y]	0.00
Heat gains from water heating system [W]	110.65
Output from supplementary heater [kWh/y]	0.00

Type of mixer shower	Flow restriction	Flow rate [l/min]	HW usage [l/day]	WWHRS Manufacturer/Model	WWHRS efficiency	WWHRS Utilisation Factor	Energy Savings [kWh/yr]
Vented hot water system + pump	No	12.000		Any / Any			
Total :			63.19				0.00

Combi-boiler Type	None
Combi-boiler loss [kWh/y]	0.00
Keep Hot facility	None
Storage Loss	502.02
Storage Type	Cylinder, immersion main water heater

Output from main water heater [kWh/y]	2209.28
Annual Heat gains from water heating system [kWh/y]	969.28
WWHRS input to main system [kWh/y]	0.00
WWHRS input to supplementary system [kWh/y]	0.00

Primary Circuit loss type	Electric immersion heater
Primary circuit loss [kWh/y]	0.00
Is hot water storage indoors or in group heating system	Yes
Heat Pump Type of DHW	None

Net space heat demand

Required temp. during heated hours	21.00	**Length of one unheated period [h]**	8
Required temperature rest of dwelling	18.00	**Unheated periods per week**	14
Living area percentage	33.28	**Heat use during heating season [kWh/y]**	2712.37
Required mean internal temperature [°C]	19.00	**Heat use for full year [kWh/y]**	2850.04
Thermal mass category of dwelling	Medium-high		

	Utilisation factor	Intermittent heating
Internal heat capacity of dwelling [per m^2]	0.32	0.15
Internal heat capacity [MJ/K]	11.00	5.16

Space heat demand details

Month	Mean Ext. Temp [°C]	Adj. Int. Temp [°C]	Heat Loss [W]	Heat Use [kWh]	Gain/Loss Ratio	Utilisation Factor	Heat Use [W]	Useful Gains [W]	Solar Gain [W]
January	5.3	17.12	1017	508	0.33	0.98	683	334	75
February	5.5	17.14	1002	420	0.39	0.97	625	377	122
March	7.0	17.35	891	359	0.48	0.95	482	408	163
April	8.3	17.53	794	259	0.59	0.92	359	435	207
May	11.0	17.90	594	130	0.85	0.83	175	419	240
June	13.5	18.24	408	47	1.21	0.69	66	342	229
July	15.5	18.52	260	12	1.86	0.50	16	244	218
August	15.2	18.48	282	16	1.70	0.54	22	260	214
September	13.3	18.22	423	62	1.07	0.74	86	337	187
October	10.4	17.82	638	198	0.64	0.91	266	372	146
November	7.5	17.42	854	364	0.42	0.97	506	348	95
December	6.0	17.21	965	474	0.35	0.98	637	328	69

Space Heating

Type	Space Heating Standard	Fuel	Design flow temp[°C]	Daily Operation [h]	SH Seasonal eff.	WH Seasonal eff.	Heats water	Source
Electric storage systems	N/A	Electricity	0	0	100	100	No	SEAI

Model	Any		
Manufacturer	Any		
Back Up Space Heater Fuel	N/A	**Back Up Space Heater Efficiency [%]**	N/A
Back Up Water Heater Fuel	N/A	**Back Up Water Heater Efficiency [%]**	N/A

Dist. System Losses and Gains

Temperature adjustment [°C]	0.3	**Additional heat emissions due to non ideal control and responsiveness [kWh/y]**	612.97
Heating system control category	3	**Gross heat emission to heated space [kWh/y]**	3325.34
Heating system responsiveness category	4	**Mean internal temperature [°C]**	18.66
Mean internal temperature during heating hours [°C]	19.30		

	Number present	Boiler controlled by thermostat	Inside dwelling	Electricity consumption [kWh/y]	Heat gain [W]
Central heating pumps	0	No	No	0	0
Oil boiler pumps	0	No	No	0	0
Gas boiler flue fan	0			0	
Warm air heating or fan coil radiators present	No			0	0
Totals				0	0

Note: Wet central heating systems are likely to have one or more central heating pumps.

Gains from fans and pumps associated with space heating system [kWh/y]	0	**Is there underfloor heating on the ground floor?**	No
Average utilisation factor, October to May	0.94	**U-Value of ground floor [W/m^{2}K]**	0.00
Useful net gain [kWh/y]	0	**Fraction of heating system output from ground floor**	1.00
Net heat emission to heated space [kWh/y]	3325	**Additional heat loss via envelope element [kWh/y]**	0.00
Annual space heating requirement [kWh/y]	3325		

Energy Requirements: Individual Heating Systems

Manufacturer name	Any
Model name	Any
Brand name	N/A
Model Qualifier	N/A
Indoor unit identifier	N/A
Outdoor unit identifier	N/A

Efficiency of main heating system [%]	100	**Fraction of heat from secondary system**	N/A
Efficiency adjustment factor	1.00	**Efficiency of secondary system [%]**	N/A
Adjusted efficiency of main heating system [%]	100.00	**Energy required for main heating system [kWh/y]**	3325.34
Product index number	N/A	**Energy required for secondary heating system [kWh/y]**	0
Manufacturer's reference number	N/A	**Low temperature test condition (35°C)**	N/A
Appliance ID	N/A	**Intermediate temperature test condition (45°C)**	N/A
Rated air flow rate [m^3/h]	N/A	**Medium temperature test condition (55°C)**	N/A
		High temperature test condition (65°C)	N/A

Fraction of main space and water heat from CHP	N/A	**Efficiency adjustment factor**	1.0000
Heat demand from CHP	0.0	**Adj. efficiency of main water heating system [%]**	100.00
Efficiency of main water heating system [%]	100	**Water Heating Efficiency [%]**	100
Manufacturer name		**Energy req. for main water heater [kWh/y]**	3866.24
Model name		**Energy req. for secondary water heater [kWh/y]**	0.00
Heat Pump Type	N/A		
Water Heating Standard	N/A		

	Fuel Type	Primary energy conversion factor	CO_2 emission factor
Main space heating system	Electricity	1.75	0.224
Secondary space heating system	None	0.00	0.000
Main water heating system	Electricity	1.75	0.224
Supplementary water heating system	Electricity	0.00	0.000
Cooling System	None	0.00	0.000
Pumps, fans	Electricity	1.75	0.224
Energy for lighting	Electricity	1.75	0.224

CHP data

Heat output from CHP [kWh/y]	0.00	**CHP Fuel type**	N/A
Electrical efficiency of CHP		**Energy delivered to CHP [kWh/y]**	0
Heat efficiency of CHP		**Electrical output from CHP [kWh/y]**	0

Summer internal gains

Dwelling volume [m^3]	84.550	Total gains in summer [W]	521.70
Effective air change rate for summer period [ac/h]		Temperature increment due to gains [°C]	7.57
Ventilation heat loss coefficient [W/K]	0.00	Summer mean external temperature [°C]	15
Fabric heat loss coefficient [W/K]	68.90	Heat capacity parameter	0.32
Heat loss coefficient under summer conditions [W/K]	68.90	Temperature increment related to thermal mass [°C]	0.00
Total Solar Gain for Summer Period [W]	256.80	Threshold internal temperature [°C]	22.57
Internal gains [W]	264.90		

Results

	Delivered energy [kWh/y]	Primary energy [kWh/y]	CO_2 emissions [kgCO_2/y]
Main space heating system	3325	5819	745
Secondary space heating system	0	0	0
Main water heating system	2209	3866	495
Supplementary water heating system	0	0	0
Cooling	0	0	0
Pumps and fans	0	0	0
Energy for lighting	107	187	24
CHP input (individual heating systems only)	0	0	0
CHP electric output (individual heating systems only)	0	0	0
Renewable and energy saving technologies			
Energy produced and saved	0	0	0
Energy consumed by the technology	0	0	0
Total	5642	9873	1264
Per m^2 floor area	164.15	287.26	36.77
Energy Rating	D2		

Technical Assessment Form for Better Energy Homes Heat Pump System Grants (V0.5)

Administrative Information

Homeowner Address		Dwelling Address (Only If different from HO address)	
Name*		Address 1	
Address 1*		Address 2	
Address 2		Town/City	
Town/City*		County	
County*		Eircode	-
Eircode*		Dwelling address same as homeowner address?	x YES / No

Cost of Technical Advisor Service	
€*	635.23

Cost of delivering the service includes advice, Technical Assessment and, if carried out, a BER publication prior to works. Don't include cost of BER post works in this figure. SEAI do not charge a fee for submission of Technical Assessments. Cost is agreed between Technical Advisor and homeowner.

Total Floor Area and Year Constructed	
Floor area [m2]*	68.2
Year Constructed*	1975

Dwelling Identification Numbers	
BER No. *	
MPRN No. *	

Technical Advisor Details	
Name*	
BER Assessor No.*	

Type of Heating System Currently Present (e.g. Oil, Gas)

Heat Pump Grants under the Better Energy Homes Programme are only available for first time systems. The Programme is **not intended** to support Heat Pump system installations or upgrades which have previously had a Heat Pump system installed (whether or not such system is functional at the time of the application)

Homeowner Declaration

I declare that I have been advised on the level of thermal performance of building fabric required to qualify for the heat pump system grants offered, where applicable, by the SEAI Better Energy Programme.
I declare that I have been provided with a report by the Technical Advisor detailing different options to achieve the Heat Loss Indicator required for the heat pump system grant, where applicable, to help me choose the most suitable option. That most suitable option is now detailed in this Technical Assessment Form.

I understand that:

- By uploading or submitting this technical assessment to the SEAI, I understand that I am making a declaration under the terms and conditions of the Better Energy Homes Programme. I certify that the information provided in this Technical Assessment is accurate and complete to the best of my knowldge.
- The aim of these requirements is to minimise heat loss so that the heat pump can function efficiently and be effective at heating the building
- Failure to achieve the level of thermal performance of building fabric specified with a maximum value of Heat Loss Indicator of 2.30, will result in the heat pump system and technical assessment grant been declined, where applicable.
- The requirements for building upgrades for the heat pump grant specified in this report are separate from requirements for other SEAI grants (wall and roof insulation grants). If applying for the wall or roof insulation grants for upgrades specified in this report, I will clarify in my contract with the insulation contractor that works need to satisfy both requirements.
- Where my house was built prior to 2007, it is my responsibility to ensure that contractors carry out the upgrades to the requirements specified here and needed to qualify for the heat pump system grant, where applicable.
- If specifications for works carried out differ from what is specified here, it is my responsibility to ensure that they still satisfy the requirement of maximum value of Heat Loss Indicator of 2.30 to qualify for the heat pump system grant, where applicable.
- For homes built from 2007 onward, any fabric upgrades listed on the Technical Assessment by the Technical Advisor are recommended to be completed, but are not mandatory.
- Heat Pump Grants under the Better Energy Homes Programme are only available for first time systems. The Programme is not intended to support Heat Pump system installations or upgrades which have previously had a Heat Pump system installed (whether or not such system is functional at the time of the application).

*** denotes mandatory entries. Forms missing these entries will not be accepted**

Technical Advisor Declaration

Published BER Declaration			Heat Loss Indicator (HLI) [W/K m^2]	
I confirm that the published BER referenced on page 1 of this form accurately reflects the current condition of this dwelling*	x	YES	Current value of HLI. Taken from DEAP calculation of published BER referenced on page 1 of this form [X.XX] *	6.74
		NO		
BER referenced on page 1 of this form was published by (a) me, or (b) another BER Assessor*	x	(a)	Projected HLI following upgrade works recommended in this form. Must be <=2.3, where applicable, otherwise identify more upgrades [X.XX] *	1.94
		(b)		

Technical Advisor Responsibilities

As part of this Technical Assessment, I have:

• ensured all information in this form is correct and have adhered to SEAI's guidance and requirements for Technical Advisors

• advised the homeowner on the current level of thermal performance of the dwelling and on the level required to qualify, where applicable, for the heat pump system grants offered by the SEAI Better Energy Programme

• advised the homeowner that the heat pump system may need a different heat distribution system than the current one and that the heat pump contractor must carry out a whole system design

• advised the homeowner in relation to the energy performance of their home and discussed possible improvement to the fabric, ventilation, heating and hot water systems, lighting and operational aspects.

• adhered to the independence requirements for Technical Advisors in carrying out a Technical Assessment of this dwelling. • advised the Homeowner that for houses built from 2007 onward, the Technical Assessment is not a mandatory requirement in order to avail of a heat pump system grant. • advised the Homeowner that for houses built from 2007 onward, where they have elected to carry out a Technical Assessment, identified fabric upgrades are not mandatory but advisable and the benefits of same are clearly outlined.

If the current building Heat Loss Indicator is higher than 2.3, I have:

• discussed possible fabric improvement options with the homeowner and taking into account technical aspects, cost and homeowner's preference, I have recommended the most suitable solution as proposed works. I have provided the homeowner with a report explaining different options to help them select the best approach to meeting the HLI, where applicable.

• ensured the proposed works are compatible with the requirements for wall and roof insulation grants, if applicable, or otherwise clarified this with the homeowner

• specified and detailed the fabric performance corresponding to the proposed works and calculated the corresponding Heat Loss Indicator

• advised the homeowner on how to clarify the recommended works with the relevant contractors

• advised the homeowner that they need to ask contractors to provide suitable evidence of the works carried out and that they must keep a record of it in order for the works to be reflected in the post-BER

• advised the homeowner that in order to qualify for the heat pump grant, where applicable,:

  o The insulation and window works must achieve the required improvement in the level of thermal performance

  o The post-BER must reflect all the works carried out

I confirm that the above information is true and correct. As a Technical Advisor, registered with SEAI, I abide by SEAI's requirements for Technical Advisors as detailed on www.seai.ie

Technical Advisor Signature*	[redacted]
Date (dd/mm/yy)*	[redacted]

General Commentary on Technical Assessment and Recommendations*

Please include an outline of the Technical Assessment and Resulting Recommendations here.	Floor upgrades, External wall upgrade, attic & flat roof upgrade Attic & flat roof upgrade External Door & Window Upgrade with improved tightness.
Any additional useful notes for the homeowners or contractors should be included here and/or in space for additional comments elsewhere in the form.	Underfloor heating circuits to ground floor slabs. Open fireplaces: Decommision all open fireplaces by closing the chimney cap with concrete on lead tray. All existing light bulbs to be upgraded to Low Energy bulbs

*** denotes mandatory entries. Forms missing these entries will not be accepted**

Recommended Insulation Upgrades: Walls, Roofs and Floors

Wall insulation - Proposed wall upgrade *

Wall number	1&2	Wall description	WTA & WTB		
Total number of walls to be upgraded	2	Area of this wall [m^2]	64.24	Total dwelling heat loss wall area shown in BER[m^2]	57.41

Current Wall (as per published BER)		Proposed Upgrade	
Wall type (stone, solid brick, cavity, hollow block etc)	Cavity	Proposed additional insulation type (EPS SD, beads in cavity etc)	Pumped EPS & PIR
Wall thickness [mm]	300	Proposed additional insulation thickness [mm]	60 & 50mm
Existing insulation type if known (EPS SD, beads in cavity etc)	None	Proposed additional insulation location (internal,external, cavity)	Pumped & Internal
Existing insulation thickness If known [mm]		Proposed additional insulation thermal conductivity [W/mK]	0.031/0.022
Existing U-value [W/m^2K]	1.78	U-value required after upgrade [W/m^2K]	0.21
Existing U-value basis. Select DEAP default or non default	[ ] Non-default [x] Default	Proposed upgrade meets requirements for BEH wall grant?	[x] Yes [ ] No
Other details/comments (include other info for contractor here)			

Roof insulation - Proposed roof upgrade *

Roof number	1	Roof description	RTA		
Total number of roofs to be upgraded	2	Area of this roof [m^2]	45.8	Total dwelling heat loss roof area shown in BER [m^2]	70.67

Current roof (as per published BER)		Proposed Upgrade	
Roof type (pitched with insulation on flat ceiling etc)	Pitched on ciling	Proposed additional insulation type (mineral fibre etc)	Mineral Fibre
		Proposed additional insulation thickness [mm]	300mm
Existing insulation type if known (mineral fibre etc)		Proposed additional insulation location (below rafter etc)	between and above
Existing insulation thickness If known [mm]	0	Proposed additional insulation thermal conductivity [W/mK]	0.034
Existing U-value [W/m^2K]	2.3	U-value required after upgrade [W/m^2K]	0.13
Existing U-value basis. Select DEAP default or non default	[ ] Non-default [x] Default	Proposed upgrade meets requirements for BEH roof grant?	[x] Yes [ ] No
Other details/comments (include other info for contractor here)	Seal protective cover over any downlighters prior to installing insulation		

Floor insulation - Proposed floor upgrade *

Floor number	1&2	Floor description	FTA & FTB		
Total number of floors to be upgraded	2	Area of this floor [m^2]	68.2	Total dwelling heat loss floor area shown in BER [m^2]	70.67

Current floor (as per published BER)		Proposed Upgrade	
Floor type (solid, suspended etc)	Solid	Proposed additional insulation type (EPS SD etc)	PIR or EPS Plainium
Existing insulation type if known (EPS SD etc)	Unknown	Proposed additional insulation thickness [mm]	120mm or 160mm
Existing insulation thickness If known [mm]		Proposed additional insulation location (between floor joists etc)	Below Screed
Existing U-value [W/m^2K]	0.61 & 0.94	Proposed additional insulation thermal conductivity [W/mK]	0.022 or 0.031
Existing U-value basis. Select DEAP default or non default	[ ] Non-default [x] Default	U-value required after upgrade [W/m^2K]	0.15
Other details/comments (include other info for contractor here)	40mm perimeter insulation strips to be used to floor edge		

*** denotes mandatory entries. Forms missing these entries will not be accepted**

Include additional copies of this sheet if more than one floor/wall/roof

Recommended Insulation Upgrades: Walls, Roofs and Floors

Wall insulation - Proposed wall upgrade *

Wall number	3	Wall description	New WTC, Wall to Attic Space		
Total number of walls to be upgraded	2	Area of this wall [m^2]	4.96	Total dwelling heat loss wall area shown in BER[m^2]	57.41

Current Wall (as per published BER)		Proposed Upgrade	
Wall type (stone, solid brick, cavity, hollow block etc)	Timber	Proposed additional insulation type (EPS SD, beads in cavity etc)	EPS & PIR
Wall thickness [mm]		Proposed additional insulation thickness [mm]	100 & 25mm
Existing insulation type if known (EPS SD, beads in cavity etc)		Proposed additional insulation location (internal,external, cavity)	Btw & Internal
Existing insulation thickness If known [mm]		Proposed additional insulation thermal conductivity [W/mK]	0.031/0.022
Existing U-value [W/m^2K]		U-value required after upgrade [W/m^2K]	0.23
Existing U-value basis. Select DEAP default or non default	[ ] Non-default [x] Default	Proposed upgrade meets requirements for BEH wall grant?	[x] Yes [ ] No
Other details/comments (include other info for contractor here)			

Roof insulation - Proposed roof upgrade *

Roof number	2	Roof description	Flat Roof. Upgraded to Pitched Roof		
Total number of roofs to be upgraded	2	Area of this roof [m^2]	27.34	Total dwelling heat loss roof area shown in BER [m^2]	70.67

Current roof (as per published BER)		Proposed Upgrade	
Roof type (pitched with insulation on flat ceiling etc)	Pitched, insulation to rafter	Proposed additional insulation type (mineral fibre etc)	EPS & PPIR
		Proposed additional insulation thickness [mm]	100mm & 50mm below
Existing insulation type if known (mineral fibre etc)	Unknown	Proposed additional insulation location (below rafter etc)	between and below
Existing insulation thickness If known [mm]	0	Proposed additional insulation thermal conductivity [W/mK]	0.031/0.022
Existing U-value [W/m^2K]	2.3	U-value required after upgrade [W/m^2K]	0.2
Existing U-value basis. Select DEAP default or non default	[ ] Non-default [x] Default	Proposed upgrade meets requirements for BEH roof grant?	[x] Yes [ ] No
Other details/comments (include other info for contractor here)	Seal protective cover over any downlighters prior to installing insulation		

Floor insulation - Proposed floor upgrade *

Floor number		Floor description			
Total number of floors to be upgraded		Area of this floor [m^2]		Total dwelling heat loss floor area shown in BER [m^2]	70.67

Current floor (as per published BER)		Proposed Upgrade	
Floor type (solid, suspended etc)		Proposed additional insulation type (EPS SD etc)	
Existing insulation type if known (EPS SD etc)		Proposed additional insulation thickness [mm]	
Existing insulation thickness If known [mm]		Proposed additional insulation location (between floor joists etc)	
Existing U-value [W/m^2K]		Proposed additional insulation thermal conductivity [W/mK]	
Existing U-value basis. Select DEAP default or non default	[ ] Non-default [ ] Default	U-value required after upgrade [W/m^2K]	
Other details/comments (include other info for contractor here)			

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Include additional copies of this sheet if more than one floor/wall/roof

Recommended Upgrades for Windows, Doors and Ventilation

Window/door upgrades - Proposed group of window/door upgrades *

Window/door group number	1	Window/door description	Win T A & Door T A		
Total no. of window/door groups to be upgraded	1	Area of this window/door group [m^2]	16.27	Total heat loss area as shown in BER for all windows+doors [m^2]	15.28

Current window/door group (as per published BER)		Proposed Upgrade	
Glazing type (single, double, triple, part glazed door, solid door etc)	Single	Proposed glazing type (double, triple etc)	Triple
Existing frame type (wooden, PVC, metal)	Wood	Proposed frame type (wooden, PVC, metal)	Wood / uPVC
Existing glazing gap [mm]	0	Proposed glazing gap [mm]	16
Existing solar transmittance	0.85	Proposed solar transmittance	0.63
Existing U-value [W/m^2K]	4.8 & 3.1	U-value required after upgrade [W/m^2K]	1.4
Existing U-value basis. Select DEAP default or non default	[ ] Non-default [x] Default	Orientation(s) in this group	[ ] N [ ] E/W [x] NE/NW [ ] S [ ] H [x] SE/SW
Other details/comments (include other info for contractor here)	All window and door perimeters to be sealed with air tightness taping. Window and door frames to be positioned with 70% of frame projected within the depth of the EWIS to reduce thermal bridging		

Openings upgrades - Proposed openings changes *

Current openings (as per published BER)		Proposed Upgrade	
Existing no. of chimneys and flueless fixed combustion heaters		Proposed no. of chimneys and flueless fixed combustion heaters	
Existing no. of open flues		Proposed no. of open flues	
Existing number of intermittent fans and passive vents		Proposed number of intermittent fans and passive vents	
Draught lobby on existing main entrance?	[ ] Yes [ ] no	Draught lobby on proposed main entrance?	[ ] Yes [ ] no
Other details/comments (include other info for contractor here). How are no. openings to be reduced?			

Structural air tightness upgrades - Proposed structural air tightness upgrades *

Structure type (masonry etc)		No. sheltered sides (0-4)	
Current air-tightness (as per published BER)		**Proposed Upgrade**	
Existing air tightness test result (q_{50}/20). Enter N/A if none available. [ac/h]		What Air tightness test result needed to achieve HLI. Enter N/A if none needed. [ac/h]	
Existing % of windows/doors draught stripped [%]		Proposed % of windows/doors draught stripped [%]	
Are existing wooden ground floors sealed? Enter n/a if none present.	[ ] No [ ] N/A [ ] Yes	Are proposed wooden ground floors sealed? Enter n/a if none present.	[ ] No [ ] N/A [ ] Yes
Measures to improve air tightness and achieve proposed q50/20 (e.g. taping around junctions etc.)			

Mechanical ventilation upgrades - Proposed mechanical ventilation upgrades *

Current ventilation method (as per published BER)		Proposed Upgrade	
Existing whole dwelling ventilation method	[ ] Natural ventilation [ ] Mech. Extract [ ] Input from loft [ ] Input from outside	Proposed whole dwelling ventilation method	[ ] Natural ventilation [ ] Mech. Extract [ ] Input from loft [ ] Input from outside
[ ] Balanced + heat recovery [ ] Balanced no heat recovery		[ ] Balanced + heat recovery [ ] Balanced no heat recovery	
Existing ducting if mech. ventilation present	[ ] Rigid [ ] N/A [ ] Flexible	Proposed ducting if mech. ventilation present	[ ] Rigid [ ] N/A [ ] Flexible
Existing specific fan power (SFP) [W/L/s] and heat exch. efficiency[%] for ventilation system. N/A if not relevant	SFP: Efficiency:	Proposed specific fan power (SFP) [W/L/s] and heat exch. efficiency[%] for ventilation system. N/A if not relevant	SFP: Efficiency:
Other details/comments (include other info for contractor here)			

*** denotes mandatory entries. Forms missing these entries will not be accepted**

E. Dwelling Details Report – Proposed

Property details

MPRN	[redacted]	**Shared MPRN**	No
BER Number	[redacted]	**BER number assigned to shared dwelling**	N/A
Address line 1	[redacted]	**Type of Rating**	Existing Dwelling
Address line 2	[redacted]	**Purpose of Rating**	Other
Address line 3	[redacted]	**Building Regulations**	None
County	[redacted]	**Planning Reference**	
Eircode	[redacted]	**Date of Plans**	
Dwelling Type	Ground-floor apartment	**Assessor Name**	[redacted]
Year of construction	1990	**Assessor Number**	[redacted]
Dwelling Extension	No	**Date of Assessment**	26/02/2024
Storeys	1	**Assessor Comments**	
		Assessor Description	Spec 1

Dimension details

	Area [m^2]	Height [m]	Volume [m^3]
Ground floor	34.37	2.46	84.55
First floor	0.00	0.00	0.00
Second floor	0.00	0.00	0.00
Third and other floors	0.00	0.00	0.00
Room in Roof	0.00	0.00	0.00
Totals	34.37		84.55

Living Area	11.44 m^2
Living Area Percentage	33.28 %

Ventilation details

	Number	Air Change Rate [m3/h]
Chimneys	0	0.00
Open Flues	0	0.00
Fans & vents	1	10.00
Flueless combustion room heaters	0	0.00

Manufacturer	Ideal clima VRKS50
Model	VRKS50

Has a permeability test been carried out	No	**Is there a draught lobby on main entrance?**	No
Infiltration rate due to structure [ac/h]	0.40	**Draught lobby air change [ac/h]**	0.05
Intermediate infiltration rate	0.57	**Openings infiltration [ac/h]**	0.17
Number of sides sheltered	4	**Structure type**	Masonry
Adjusted infiltration rate [ac/h]	0.40	**Is there a suspended wooden ground floor?**	No
Effective air change rate [ac/h]	0.52	**Windows/doors/attic hatches draught stripped [%]**	100.00
Ventilation heat loss [W/K]	14.38	**Ventilation method**	Balanced whole-house mechanical ventilation with heat recovery
Adjusted result of air permeability test [ac/h]	0.00	**How many wetrooms (inc. kitchen)? Is the vent. ducting flexible/rigid/both?**	K + 1 Rigid Ducting
Specific fan power [W/(l/s)]	1.00	**Is MVHR ducting uninsulated where outside of insulated envelope?**	Yes
Heat exchanger efficiency [%]	90.00	**Adjusted heat exchanger efficiency**	76.50
Electricity for ventilation fans [Kwh/y]	102.84		
Heat gains from ventilation fans [W]	5.06		

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Type	Description	U/F Heating	Include in compliance check	In Roof	Age Band	Exposed Perimeter [m]	Area [m²]	U-Value [W/m²K]	Heat Loss (AU) [W/K]
mSpo-ed / Nes l mSpo-ed		9o	9o	9o	18A3 F1883	9/.	3473 5	07A0	257R0
Total area [m²]									3473 5

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Type	Description	Include in compliance check	Insulation Thickness [mm]	Age Band	Area [m²]	U-Value [W/m²K]	Heat Loss (AU) [W/K]
Total area [m²]							0700

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Type	Description	Wall is semi-exposed	Include in compliance check	Age Band	Area [m^2]	U-Value [W/m^2K]	Heat Loss (AU) [W/K]
300s s xlmed v aylt6		9o	9o	18A3 F1883	117A2	0720	273B
UEkEowE		9o	9o	18A3 F1883	1278 4	0720	27R8
Total area [m^2]							2475B

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Count	Type	Description	Draught Stripped	Area [m^2]	U-Value [W/m^2K]	Heat Loss (AU) [W/K]
1	Nonld eSpo- ed door		Ye-	17A4	1700	17A4
Total area [m^2]						17A4

Building Elements - Windows

Count	Glazing Type	Frame Type	Frame Factor	Solar Transm.	In Roof	Over shading	Orient.	Area [m^2]	U-value [W/m^2K]
1	Triple-glazed, argon filled	Wood/PVC	0.700	0.500	No	Average or Unknown	Southeast	5.47	1.00
Total area [m^2]									5.47

Heat loss details

Total glazed area [m^2]	5.47	**Glazing ratio**	0.06
Total glazed heat loss [W/K]	5.26	**Summer solar gain [W/m^2**	178.34
Total effective collection area [m^2]	1.33	**Total element area [m^2]**	66.44
Total plane heat loss [W/K]	39.55	**Thermal bridging factor [W/m^2K]**	0.1500
Fabric heat loss [W/K]	49.51	**Total heat loss [W/K]**	63.89
Per m2	1.86		

Lighting and Internal Gains

Lighting Design Calculation Method	Bulb type only	**Average Efficacy [lm/W]**	58.94
Fixed lighting provision [klmh/y]	1526.61	**Top up lighting requirement [klmh/y]**	0.00
Energy required for fixed lighting [kWh/y]	46.20	**Energy required for top up lighting [kWh/y]**	0.00
Energy required for portable lighting [kWh/y]	63.92		
Basic energy consumption for lighting [kWh/y]	353.71	**Water heating (In watts [W])**	117.34
Annual energy used for lighting [kWh/y]	110.12	**Occupants (In watts [W])**	63.30
Internal gains from lighting during heating season [kWh/hs] (In watts [W])	84.24 (14.45)	**Mechanical ventilation (In watts [W])**	5.06
Lighting (In watts [W])	14.45	**Heat loss to the cold water network (In watts [W])**	-25.39
Appliance and cooking (In watts [W])	102.30	**Net internal gains (In watts [W])**	277.06

Lights

Count	Name	Description	Type	Efficiency	Power [W]
6	Default LED/CFL		LED/CFL	66.90	
1	Default Incandescent		Incandescent	11.20	

Water heating details

Are there distribution losses?	Yes
Are there storage losses?	Yes
Is there a solar water heating system?	No
Standard number of occupants	1.27
Number of mixer showers	1
Number of electric showers	0
Number of baths	1
Daily hot water use [Litres/d]	108.88
Hot water energy reqs. at taps [kWh/y]	1451.18
Distribution losses [kWh/y]	256.09
Water storage volume [Litres]	290.00
Is manufacturers declared loss factor available?	Yes
Declared loss factor [kWh/d]	1.99
Manufacturer and Model name	Vitocal 111-S AWBT-M-E-AC 111.B06 F
Insulation type	N/A
Insulation thickness [mm]	N/A

Is supplementary electric water heating used in summer?	No
Is there a combi boiler?	No
Total hot water demand [kWh/y]	1707.27
Temperature factor unadjusted	0.89
Temperature Factor Multiplier	0.89
Hot water storage loss factor [kWh/l d]	0.00
Volume factor	0.00
Combi-boiler electricity consumption [kWh/y]	0.00
Adjusted storage loss [kWh/y]	575.34
Adjusted primary circuit loss [kWh/y]	0.00
Heat gains from water heating system [W]	117.34
Output from supplementary heater [kWh/y]	0.00

Type of mixer shower	Flow restriction	Flow rate [l/min]	HW usage [l/day]	WWHRS Manufacturer/Model	WWHRS efficiency	WWHRS Utilisation Factor	Energy Savings [kWh/yr]
Vented hot water system + pump	No	12.000		Any / Any			
Total :			63.19				0.00

Combi-boiler Type	None
Combi-boiler loss [kWh/y]	0.00
Keep Hot facility	None
Storage Loss	575.34
Storage Type	Heat pump with integral hot water storage / Integrated thermal store and gas-fired CPSU

Output from main water heater [kWh/y]	2282.61
Annual Heat gains from water heating system [kWh/y]	1027.94
WWHRS input to main system [kWh/y]	0.00
WWHRS input to supplementary system [kWh/y]	0.00

Primary Circuit loss type	CPSU (including electric CPSU)
Primary circuit loss [kWh/y]	0.00
Is hot water storage indoors or in group heating system	Yes
Heat Pump Type of DHW	Integral Hot Water Storage

Net space heat demand

Required temp. during heated hours	21.00	**Length of one unheated period [h]**	8
Required temperature rest of dwelling	18.00	**Unheated periods per week**	14
Living area percentage	33.28	**Heat use during heating season [kWh/y]**	1745.23
Required mean internal temperature [°C]	19.00	**Heat use for full year [kWh/y]**	1799.77
Thermal mass category of dwelling	Medium-high		

	Utilisation factor	Intermittent heating
Internal heat capacity of dwelling [per m^2]	0.32	0.15
Internal heat capacity [MJ/K]	11.00	5.16

Space heat demand details

Month	Mean Ext. Temp [°C]	Adj. Int. Temp [°C]	Heat Loss [W]	Heat Use [kWh]	Gain/Loss Ratio	Utilisation Factor	Heat Use [W]	Useful Gains [W]	Solar Gain [W]
January	5.3	17.55	782	341	0.42	0.98	459	324	52
February	5.5	17.57	771	281	0.47	0.98	418	353	85
March	7.0	17.73	685	232	0.57	0.96	312	374	113
April	8.3	17.86	611	160	0.69	0.92	222	389	144
May	11.0	18.15	457	69	0.97	0.82	93	363	167
June	13.5	18.42	314	20	1.39	0.66	27	287	159
July	15.5	18.63	200	3	2.14	0.46	4	195	151
August	15.2	18.60	217	5	1.96	0.49	7	210	149
September	13.3	18.39	325	27	1.25	0.71	37	288	130
October	10.4	18.09	491	113	0.77	0.90	152	339	102
November	7.5	17.78	657	234	0.52	0.97	325	332	66
December	6.0	17.62	742	315	0.44	0.98	423	319	48

Space Heating

Type	Space Heating Standard	Fuel	Design flow temp[°C]	Daily Operation [h]	SH Seasonal eff.	WH Seasonal eff.	Heats water	Source
Heat pumps	I.S. EN 14825	Electricity	45	24	562.75	271.45	Yes	Assessor

Model	Vitocal 100-S ODU 230V B06
Manufacturer	Viessmann

Back Up Space Heater Fuel	N/A	**Back Up Space Heater Efficiency [%]**	N/A
Back Up Water Heater Fuel	N/A	**Back Up Water Heater Efficiency [%]**	N/A

Heating System Test data: I.S. EN 14825

Heat Pump Type Air to Water

Test Condition - Low (35°C)

	A (88%) -7°C	B (54%) 2°C	C (35%) 7°C	D (15%) 12°C	E* (100%) TOL
Source	A-7	A2	A7	A12	A-20
Sink	W34	W30	W27	W24	W35
Heating Capacity (kW)	4.50	3.00	3.10	3.60	4.10
Coefficient of Performance (kW/kW)	2.90	4.30	5.90	8.40	2.60

Test Condition - Medium (55°C) *

	A (88%) -7°C	B (54%) 2°C	C (35%) 7°C	D (15%) 12°C	E* (100%) TOL
Source	A-7	A2	A7	A12	A-20
Sink	W52	W42	W36	W30	W55
Heating Capacity (kW)	3.30	2.70	2.70	3.30	2.90
Coefficient of Performance (kW/kW)	1.90	3.20	4.80	6.40	1.50

Heating System Test data: I.S. EN 16147

Source of Data	Water heating energy efficiency [%]
Co-efficient of Performance [kW/kW]	0.00
Water heating energy efficiency [%]	133.00
Reference Hot water Temperature [°C]	53.40
Hot water Rated Heat output P_{rated} [kW]	4.10
Declared load profile	XL
Standing heat loss of test storage tank [kWh/day]	1.99
Volume of DHW accounted for in test [litre]	290
Heat Pump Type	Air to Water

Dist. System Losses and Gains

Temperature adjustment [°C]	0	**Additional heat emissions due to non ideal control and responsiveness [kWh/y]**	266.69
Heating system control category	1	**Gross heat emission to heated space [kWh/y]**	2011.92
Heating system responsiveness category	1	**Mean internal temperature [°C]**	18.51
Mean internal temperature during heating hours [°C]	19.80		

	Number present	Boiler controlled by thermostat	Inside dwelling	Electricity consumption [kWh/y]	Heat gain [W]
Central heating pumps	1	Yes	Yes	130	10
Oil boiler pumps	0	No	No	0	0
Gas boiler flue fan	0			0	
Warm air heating or fan coil radiators present	No			0	0
Totals				130	10

Note: Wet central heating systems are likely to have one or more central heating pumps.

Gains from fans and pumps associated with space heating system [kWh/y]	58	**Is there underfloor heating on the ground floor?**	No
Average utilisation factor, October to May	0.94	**U-Value of ground floor [W/m^{2}K]**	0.00
Useful net gain [kWh/y]	55	**Fraction of heating system output from ground floor**	1.00
Net heat emission to heated space [kWh/y]	1957	**Additional heat loss via envelope element [kWh/y]**	0.00
Annual space heating requirement [kWh/y]	1957		

Energy Requirements: Individual Heating Systems

Manufacturer name	Viessmann
Model name	Vitocal 100-S ODU 230V B06
Brand name	N/A
Model Qualifier	N/A
Indoor unit identifier	N/A
Outdoor unit identifier	N/A

Efficiency of main heating system [%]	562.75	**Fraction of heat from secondary system**	N/A
Efficiency adjustment factor	1.00	**Efficiency of secondary system [%]**	N/A
Adjusted efficiency of main heating system [%]	562.75	**Energy required for main heating system [kWh/y]**	347.79
Product index number	N/A	**Energy required for secondary heating system [kWh/y]**	0
Manufacturer's reference number	N/A	**Low temperature test condition (35°C)**	N/A
Appliance ID	N/A	**Intermediate temperature test condition (45°C)**	N/A
Rated air flow rate [m^3/h]	N/A	**Medium temperature test condition (55°C)**	N/A
		High temperature test condition (65°C)	N/A

Fraction of main space and water heat from CHP	N/A	**Efficiency adjustment factor**	1.0000
Heat demand from CHP	0.0	**Adj. efficiency of main water heating system [%]**	271.45
Efficiency of main water heating system [%]	271.45	**Water Heating Efficiency [%]**	133
Manufacturer name	Viessmann	**Energy req. for main water heater [kWh/y]**	1471.57
Model name	Vitocal 100-S ODU 230V B06	**Energy req. for secondary water heater [kWh/y]**	0.00
Heat Pump Type	Air to Water		
Water Heating Standard	I.S. EN 16147		

	Fuel Type	Primary energy conversion factor	CO_2 emission factor
Main space heating system	Electricity	1.75	0.224
Secondary space heating system	None	0.00	0.000
Main water heating system	Electricity	1.75	0.224
Supplementary water heating system	Electricity	0.00	0.000
Cooling System	None	0.00	0.000
Pumps, fans	Electricity	1.75	0.224
Energy for lighting	Electricity	1.75	0.224

CHP data

Heat output from CHP [kWh/y]	0.00	**CHP Fuel type**	N/A
Electrical efficiency of CHP		**Energy delivered to CHP [kWh/y]**	0
Heat efficiency of CHP		**Electrical output from CHP [kWh/y]**	0

Summer internal gains

Dwelling volume [m^3]	84.550	**Total gains in summer [W]**	455.39
Effective air change rate for summer period [ac/h]		**Temperature increment due to gains [°C]**	9.20
Ventilation heat loss coefficient [W/K]	0.00	**Summer mean external temperature [°C]**	15
Fabric heat loss coefficient [W/K]	49.51	**Heat capacity parameter**	0.32
Heat loss coefficient under summer conditions [W/K]	49.51	**Temperature increment related to thermal mass [°C]**	0.00
Total Solar Gain for Summer Period [W]	178.34	**Threshold internal temperature [°C]**	24.20
Internal gains [W]	277.06		

Results

	Delivered energy [kWh/y]	Primary energy [kWh/y]	CO_2 emissions [kgCO_2/y]
Main space heating system	348	609	78
Secondary space heating system	0	0	0
Main water heating system	841	1472	188
Supplementary water heating system	0	0	0
Cooling	0	0	0
Pumps and fans	233	407	52
Energy for lighting	110	193	25
CHP input (individual heating systems only)	0	0	0
CHP electric output (individual heating systems only)	0	0	0
Renewable and energy saving technologies			
Energy produced and saved	0	0	0
Energy consumed by the technology	0	0	0
Total	1532	2680	343
Per m^2 floor area	44.56	77.99	9.98
Energy Rating	B1		

F. Roadmap to B2 – Cost Estimate

Steps	Energy Upgrade Measures	Cost € incl. VAT	Grants
1	Attic insulation (300 mm above ceiling)	3,900	1,500
2	Cavity wall insulation	2,400	
3	External wall insulation	22,000	8,000
4	Complete upgrade of windows with double glazing	9,800	4,000
5	Replace external doors	1,700	800
6	Airtightness	1,600	1,000
7	Mechanical ventilation (demand-controlled)	4,000	1,500
8	Install air to water heat pump with new cylinder and heating controls	10,500	8,500
9	Upgrade central heating system with new radiators associated pipeworks	4,000	2,000
10	Project management	5,200	2,000
	Total	**65,100**	
	Total SEAI Grant		**29,300**
	Energy Credits from Energy Efficiency Obligation Scheme		**2,400**
	Total cost to the homeowner	**33,400**	
11	Optional - Install solar PV (2 kW)	5,500	1,800

Schedule of payments:

... % deposit on signing the contract, ...% milestone 1, ... % milestone.., final payment on ...

Financing option:

To find out more about the green loan offered by our partner The Green Genie Bank, with a preferential low-interest rate of ... %, please contact .... .

G. Additional works - Cost Estimate

	Cost to Client (inc. VAT), €
1. Scaffolding	€1,800 - 2,100
2. Install attic walk boards	€560 - 750
3. Decommission boiler	€120 - 140
Total cost of additional works	€2,480 – 2,990

2. Next Steps

A member of our technical sales team will contact you to discuss this HEA and the proposed works

Following a detailed survey of your property by our engineer or main contractor, you will receive a firm proposal with the full design and specification and costs for the proposed works

Following your approval of this proposal and downpayment, our contractors will complete the works, under supervision from our technical team.

Once the works are completed and the new systems have been commissioned, our engineer will inspect the works.

At that stage, you will be handed over all the relevant documentation and trained to use your new energy systems. SEAI's grant will be processed by us and we will expect final payment from you.

Terms & Conditions

OSS roles and responsibilities

E.g.

+ [OSS] will be responsible for the design and specification of the proposed energy upgrade works, following a detailed inspection of your property; the supervision, final inspection and sign-off of the works completed; administration of SEAI grant applications and claims; handover of your energy upgrade completion pack and induction to the new systems' operation and maintenance.
+ The requirement for planning permission must be checked with a qualified adviser. If a planning application for any of the proposed works is required, that will be the responsibility of the homeowner.

Technical and financial T&Cs:

E.g.

+ Please be aware that the measure specifications outlined above may change following the detailed survey of your home.
+ Any changes and/or extras need to be agreed and confirmed in writing befor works commence.
+ The homeowner will inform the OSS of any energy upgrade works for which a grant has been claimed prior to this project (these won't be eligibile for a second grant).

...

Disclaimers/caveats

E.g. We have estimated your home's energy use, fuel bills and carbon dioxide emissions using the Building Energy Ratings (BER) assessment methodology including some standard assumptions on occupancy, duration of heating and hot water demand. Running costs and energy use noted may differ from your actual fuel bills.

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