

OSS Logo

OSS details

👤 Bernadette and Bob O'Brien  
📍 23, Downthelane, Localty, Co. Tipperary

📍 Eircode **XP8gDD7**  
🏠 MPRN **100000000000**

🏠 Detached, bungalow  
📏 116 m<sup>2</sup>    🛠️ 1977



## Your home's current energy performance

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.

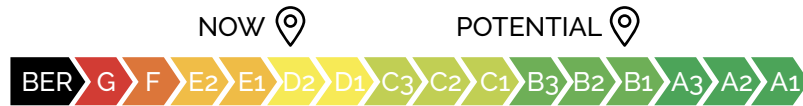
The energy assessment we have conducted on your house indicates that:  
Your current Building Energy Rating (BER) is a D2, compared to the national average of C3.  
Fabric heat losses are high due to poor insulation and air leakage (Heat Loss Indicator of 3,51).

## Key objectives for your home's energy upgrade



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. Also, they want to reduce their heating bills and have a more environmentally-friendly home, which they hope will increase the value of their property for the next generation.

# Overall plan for your home energy project



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.

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).

## Energy renovation pathway to achieve your 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.

Steps	Energy Upgrade Measures	BER
	Current BER	D2
1	Attic insulation (300 mm above ceiling)	D2
2	Cavity wall insulation and external wall insulation	D1
3	Complete upgrade of windows with double glazing	C2
4	Replace external doors	C2
5	Air tightness	C1
6	Mechanical ventilation (demand-controlled)	C1
7	Install air to water heat pump with new cylinder & heating controls	B2
8	Upgrade central heating system with new radiators	B1
9	Optional - Install solar PV (2 kW)	A3



## Detailed 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 achieved, 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	Minimum performance specifications	Quantity
1	Attic insulation (300 mm above ceiling)	0.14 W/m <sup>2</sup> ,K	110m <sup>2</sup>
2	Cavity wall insulation and external wall insulation (min. 80 mm)	0.21 W/m <sup>2</sup> ,K	130m <sup>2</sup>
3	Complete upgrade of windows with double glazing	1.2 W/m <sup>2</sup> ,K	25m <sup>2</sup>
4	Replace external doors with insulated doors	1.1 W/m <sup>2</sup> ,K	2 units
5	Airtightness - deep sealing of the dwelling fabric	<5 m <sup>3</sup> /m <sup>2</sup> ,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/m <sup>2</sup> ,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

## Technical notes

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

- SEAI Domestic Technical Standards and Specifications (DTSS);
- NSAI Standard Recommendation 54;
- DHPLG Technical Guidance Document to Part L (Energy Conservation) and Part F (Ventilation), and 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 of 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.

## 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.

- + IOSSI 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.

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# Energy Upgrade Cost Estimates

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
<b>Total</b>		<b>65,100</b>	
<b>Total SEAI Grant</b>			<b>29,300</b>
<b>Energy Credits from Energy Efficiency Obligation Scheme</b>			<b>2,400</b>
<b>Total cost to the homeowner</b>		<b>33,400</b>	
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 ....

Pre-BER certificate

Advisory report

Pre-works BER detailed report

Post-works BER detailed report

Heat pump technical assessment form

# Building Energy Rating (BER)

BER for the building detailed below is:

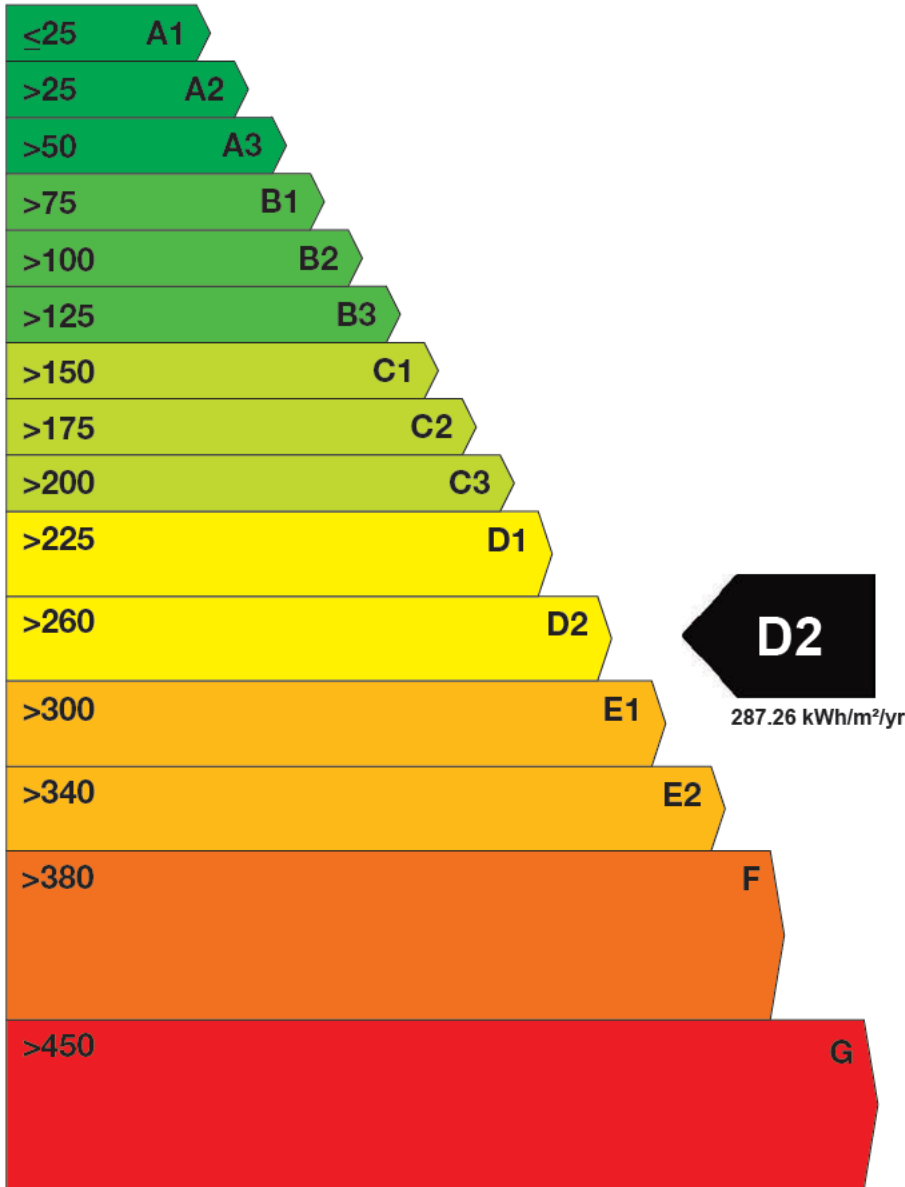
**D2**

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/m<sup>2</sup>/yr).

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

## Building Energy Rating kWh/m<sup>2</sup>/yr MOST EFFICIENT



## Carbon Dioxide (CO<sub>2</sub>) Emissions Indicator kgCO<sub>2</sub>/m<sup>2</sup>/yr

BEST  
0

Calculated annual CO<sub>2</sub> emissions  
36.77 kgCO<sub>2</sub>/m<sup>2</sup>/yr

WORST  
>120

The less CO<sub>2</sub> produced, the less the dwelling contributes to global warming.

**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.



# Home Energy Upgrade Advisory Report

BER No. [REDACTED]

## Your Home's Energy Performance Potential



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](http://www.seai.ie/grants) or call 01 8082100

## Compare your home's performance | Before and after upgrades

Your home's current <b>energy performance</b>	<b>NOW</b> <b>D2</b>	Your home's potential <b>energy performance</b>	<b>POTENTIAL</b> <b>B2</b>
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## Benefits of upgrading your home

INCREASE your home's value



INCREASE your home's comfort



REDUCE your energy bills



SAVE

CO<sub>2</sub> | TONNES  
**0.9**

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



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.) <sup>4</sup>	Grant Available <sup>5</sup>	Comfort
External doors 1.4 W/m <sup>2</sup> K average U-Value <sup>1, 2</sup>	€ € € €	✓	★ ★ ★ ☆ ☆
Wall insulation 0.27 W/m <sup>2</sup> K average U-Value <sup>1, 2</sup>	€ € € €	✓	★ ★ ★ ★ ★
Windows double glazing 1.4 W/m <sup>2</sup> K average U-Value <sup>1, 2</sup>	€ € € €	✓	★ ★ ★ ★ ☆
Air-to-Water or Ground-to-Water or Water-to-Water heat pump with fully integrated heating controls <sup>3</sup>	€ € € €	✓	★ ★ ★ ★ ☆

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<sup>2</sup>). An upper HLI limit applies to SEAI grants. Where the HLI is between 2 and 2.3 W/(K·m<sup>2</sup>), 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](http://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](http://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) <sup>1</sup>	2.504 W/(K·m <sup>2</sup> )	Fair	2.070 W/(K·m <sup>2</sup> )	Good
External doors (average U-Value <sup>2</sup> )	3.000 W/m <sup>2</sup> K	Poor	1.400 W/m <sup>2</sup> K	Very Good
Wall insulation (average U-Value <sup>2</sup> )	0.600 W/m <sup>2</sup> K	Fair	0.270 W/m <sup>2</sup> K	Good
Windows double glazing (average U-Value <sup>2</sup> )	2.200 W/m <sup>2</sup> K	Fair	1.400 W/m <sup>2</sup> K	Good
Air-to-Water or Ground-to-Water or Water-to-Water heat pump with fully integrated heating controls (Primary Energy Efficiency <sup>3</sup> )	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]  
[REDACTED]

### House Details

**Year of construction:** 1990

**Dwelling type:** Ground-floor apartment

**Total floor area:** 34.37 m<sup>2</sup>

## 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](http://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](http://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](http://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](http://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](http://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/>.

## Property details

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

## Dimension details

	Area [m <sup>2</sup> ]	Height [m]	Volume [m <sup>3</sup> ]
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
<b>Totals</b>	<b>34.37</b>		<b>84.55</b>
<b>Living Area</b>	<b>11.44 m<sup>2</sup></b>		
<b>Living Area Percentage</b>	<b>33.28 %</b>		

## 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?
Infiltration rate due to structure [ac/h]	0.40	Draught lobby air change [ac/h]
Intermediate infiltration rate	0.69	Openings infiltration [ac/h]
Number of sides sheltered	4	Structure type
Adjusted infiltration rate [ac/h]	0.48	Is there a suspended wooden ground floor?
Effective air change rate [ac/h]	0.62	Windows/doors/attic hatches draught stripped [%]
Ventilation heat loss [W/K]	17.17	Ventilation method
Adjusted result of air permeability test [ac/h]	0.00	How many wetrooms (inc. kitchen)? Is the vent. ducting flexible/rigid/both?
Specific fan power [W/(l/s)]	0.00	Is MVHR ducting uninsulated where outside of insulated envelope?
Heat exchanger efficiency [%]	0.00	Adjusted heat exchanger efficiency
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 <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]	Heat Loss (AU) [W/K]
Exposed / Semi Exposed		No	No	No	1983 - 1993	N/A	34.37	0.80	27.50
<b>Total area [m<sup>2</sup>]</b>									<b>34.37</b>

## Building Elements - Roofs

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



## Building Elements - Walls

Type	Description	Wall is semi-exposed	Include in compliance check	Age Band	Area [m <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]	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
<b>Total area [m<sup>2</sup>]</b>							<b>24.76</b>

## Building Elements - Doors

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

## Building Elements - Windows

Count	Glazing Type	Frame Type	Frame Factor	Solar Transm.	In Roof	Over shading	Orient.	Area [m <sup>2</sup> ]	U-value [W/m <sup>2</sup> K]
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
<b>Total area [m<sup>2</sup>]</b>									<b>5.47</b>

## Heat loss details

Total glazed area [m <sup>2</sup> ]	5.47	Glazing ratio	0.07
Total glazed heat loss [W/K]	11.06	Summer solar gain [W/m <sup>2</sup> ]	256.8
Total effective collection area [m <sup>2</sup> ]	1.91	Total element area [m <sup>2</sup> ]	66.44
Total plane heat loss [W/K]	58.93	Thermal bridging factor [W/m <sup>2</sup> K]	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	Is supplementary electric water heating used in summer?	No
Are there storage losses?	Yes	Is there a combi boiler?	No
Is there a solar water heating system?	No	Total hot water demand [kWh/y]	1707.27
Standard number of occupants	1.27	Temperature factor unadjusted	0.60
Number of mixer showers	1	Temperature Factor Multiplier	1.00
Number of electric showers	0	Hot water storage loss factor [kWh/l d]	0.02
Number of baths	1	Volume factor	1.00
Daily hot water use [Litres/d]	108.88	Combi-boiler electricity consumption [kWh/y]	0.00
Hot water energy reqs. at taps [kWh/y]	1451.18	Adjusted storage loss [kWh/y]	502.02
Distribution losses [kWh/y]	256.09	Adjusted primary circuit loss [kWh/y]	0.00
Water storage volume [Litres]	120.00	Heat gains from water heating system [W]	110.65
Is manufacturers declared loss factor available?	No	Output from supplementary heater [kWh/y]	0.00
Declared loss factor [kWh/d]	0.00		
Manufacturer and Model name			
Insulation type	Factory Insulated		
Insulation thickness [mm]	35		

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	Output from main water heater [kWh/y]	2209.28
Combi-boiler loss [kWh/y]	0.00	Annual Heat gains from water heating system [kWh/y]	969.28
Keep Hot facility	None	WWHRS input to main system [kWh/y]	0.00
Storage Loss	502.02	WWHRS input to supplementary system [kWh/y]	0.00
Storage Type	Cylinder, immersion main water heater		
Primary Circuit loss type			Electric immersion heater
Primary circuit loss [kWh/y]	0.00	Heat Pump Type of DHW	None
Is hot water storage indoors or in group heating system	Yes		

## 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 <sup>2</sup> ]	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
<b>Model</b>								Any
<b>Manufacturer</b>								Any
<b>Back Up Space Heater Fuel</b>				N/A	<b>Back Up Space Heater Efficiency [%]</b>			N/A
<b>Back Up Water Heater Fuel</b>				N/A	<b>Back Up Water Heater Efficiency [%]</b>			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
<b>Totals</b>				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 <sup>2</sup> 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

<b>Manufacturer name</b>			Any
<b>Model name</b>			Any
<b>Brand name</b>			N/A
<b>Model Qualifier</b>			N/A
<b>Indoor unit identifier</b>			N/A
<b>Outdoor unit identifier</b>			N/A
<b>Efficiency of main heating system [%]</b>	100	<b>Fraction of heat from secondary system</b>	N/A
<b>Efficiency adjustment factor</b>	1.00	<b>Efficiency of secondary system [%]</b>	N/A
<b>Adjusted efficiency of main heating system [%]</b>	100.00	<b>Energy required for main heating system [kWh/y]</b>	3325.34
<b>Product index number</b>	N/A	<b>Energy required for secondary heating system [kWh/y]</b>	0
<b>Manufacturer's reference number</b>	N/A	<b>Low temperature test condition (35°C)</b>	N/A
<b>Appliance ID</b>	N/A	<b>Intermediate temperature test condition (45°C)</b>	N/A
<b>Rated air flow rate [m<sup>3</sup>/h]</b>	N/A	<b>Medium temperature test condition (55°C)</b>	N/A
		<b>High temperature test condition (65°C)</b>	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 <sub>2</sub> 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 <sup>3</sup> ]	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 <sub>2</sub> emissions [kgCO <sub>2</sub> /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
<b>Renewable and energy saving technologies</b>			
Energy produced and saved	0	0	0
Energy consumed by the technology	0	0	0
<b>Total</b>	<b>5642</b>	<b>9873</b>	<b>1264</b>
<b>Per m<sup>2</sup> floor area</b>	<b>164.15</b>	<b>287.26</b>	<b>36.77</b>
<b>Energy Rating</b>	<b>D2</b>		

## Property details

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

## Dimension details

	Area [m <sup>2</sup> ]	Height [m]	Volume [m <sup>3</sup> ]
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
<b>Totals</b>	<b>34.37</b>		<b>84.55</b>
<b>Living Area</b>	<b>11.44 m<sup>2</sup></b>		
<b>Living Area Percentage</b>	<b>33.28 %</b>		

## 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
<b>Manufacturer</b>		Ideal clima VRKS50
<b>Model</b>		VRKS50
<b>Has a permeability test been carried out</b>	No	<b>Is there a draught lobby on main entrance?</b> No
<b>Infiltration rate due to structure [ac/h]</b>	0.40	<b>Draught lobby air change [ac/h]</b> 0.05
<b>Intermediate infiltration rate</b>	0.57	<b>Openings infiltration [ac/h]</b> 0.17
<b>Number of sides sheltered</b>	4	<b>Structure type</b> Masonry
<b>Adjusted infiltration rate [ac/h]</b>	0.40	<b>Is there a suspended wooden ground floor?</b> No
<b>Effective air change rate [ac/h]</b>	0.52	<b>Windows/doors/attic hatches draught stripped [%]</b> 100.00
<b>Ventilation heat loss [W/K]</b>	14.38	<b>Ventilation method</b> Balanced whole-house mechanical ventilation with heat recovery
<b>Adjusted result of air permeability test [ac/h]</b>	0.00	
<b>Specific fan power [W/(l/s)]</b>	1.00	
<b>Heat exchanger efficiency [%]</b>	90.00	<b>How many wetrooms (inc. kitchen)? Is the vent. ducting flexible/rigid/both?</b> K + 1 Rigid Ducting
<b>Electricity for ventilation fans [Kwh/y]</b>	102.84	<b>Is MVHR ducting uninsulated where outside of insulated envelope?</b> Yes
<b>Heat gains from ventilation fans [W]</b>	5.06	<b>Adjusted heat exchanger efficiency</b> 76.50

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Type	Description	U/F Heating	Include in compliance check	In Roof	Age Band	Exposed Perimeter [m]	Area [m <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]	Heat Loss (AU) [W/K]
mpo-ed / Nes l mpo-ed		90	90	90	18A3 F1883	9/.	34735	07A0	257R0
<b>Total area [m<sup>2</sup>]</b>									34735

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Type	Description	Include in compliance check	Insulation Thickness [mm]	Age Band	Area [m <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]	Heat Loss (AU) [W/K]
Total area [m <sup>2</sup> ]							070



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Type	Description	Wall is semi-exposed	Include in compliance check	Age Band	Area [m <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]	Heat Loss (AU) [W/K]
300s s xlned v aylt6		9o	9o	18A3 F1883	117A2	0720	273B
UEkEowE		9o	9o	18A3 F1883	12784	0720	2778
<b>Total area [m<sup>2</sup>]</b>							<b>2475B</b>

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Count	Type	Description	Draught Stripped	Area [m <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]	Heat Loss (AU) [W/K]
1	North eSpoo-ed door		Ye-	17A4	1700	17A4
<b>Total area [m<sup>2</sup>]</b>						<b>17A4</b>

## Building Elements - Windows

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

## Heat loss details

Total glazed area [m <sup>2</sup> ]	5.47	Glazing ratio	0.06
Total glazed heat loss [W/K]	5.26	Summer solar gain [W/m <sup>2</sup> ]	178.34
Total effective collection area [m <sup>2</sup> ]	1.33	Total element area [m <sup>2</sup> ]	66.44
Total plane heat loss [W/K]	39.55	Thermal bridging factor [W/m <sup>2</sup> K]	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	Is supplementary electric water heating used in summer?	No
Are there storage losses?	Yes	Is there a combi boiler?	No
Is there a solar water heating system?	No	Total hot water demand [kWh/y]	1707.27
Standard number of occupants	1.27	Temperature factor unadjusted	0.89
Number of mixer showers	1	Temperature Factor Multiplier	0.89
Number of electric showers	0	Hot water storage loss factor [kWh/l d]	0.00
Number of baths	1	Volume factor	0.00
Daily hot water use [Litres/d]	108.88	Combi-boiler electricity consumption [kWh/y]	0.00
Hot water energy reqs. at taps [kWh/y]	1451.18	Adjusted storage loss [kWh/y]	575.34
Distribution losses [kWh/y]	256.09	Adjusted primary circuit loss [kWh/y]	0.00
Water storage volume [Litres]	290.00	Heat gains from water heating system [W]	117.34
Is manufacturers declared loss factor available?	Yes	Output from supplementary heater [kWh/y]	0.00
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		

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	Output from main water heater [kWh/y]	2282.61
Combi-boiler loss [kWh/y]	0.00	Annual Heat gains from water heating system [kWh/y]	1027.94
Keep Hot facility	None	WWHRS input to main system [kWh/y]	0.00
Storage Loss	575.34	WWHRS input to supplementary system [kWh/y]	0.00
Storage Type	Heat pump with integral hot water storage / Integrated thermal store and gas-fired CPSU		
Primary Circuit loss type		CPSU (including electric CPSU)	
Primary circuit loss [kWh/y]	0.00	Heat Pump Type of DHW	Integral Hot Water Storage
Is hot water storage indoors or in group heating system	Yes		

## 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 <sup>2</sup> ]	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 during heating hours [°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
<b>Totals</b>				<b>130</b>	<b>10</b>

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 <sup>2</sup> 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

<b>Manufacturer name</b>			Viessmann
<b>Model name</b>			Vitocal 100-S ODU 230V B06
<b>Brand name</b>			N/A
<b>Model Qualifier</b>			N/A
<b>Indoor unit identifier</b>			N/A
<b>Outdoor unit identifier</b>			N/A
<b>Efficiency of main heating system [%]</b>	562.75	<b>Fraction of heat from secondary system</b>	N/A
<b>Efficiency adjustment factor</b>	1.00	<b>Efficiency of secondary system [%]</b>	N/A
<b>Adjusted efficiency of main heating system [%]</b>	562.75	<b>Energy required for main heating system [kWh/y]</b>	347.79
<b>Product index number</b>	N/A	<b>Energy required for secondary heating system [kWh/y]</b>	0
<b>Manufacturer's reference number</b>	N/A	<b>Low temperature test condition (35°C)</b>	N/A
<b>Appliance ID</b>	N/A	<b>Intermediate temperature test condition (45°C)</b>	N/A
<b>Rated air flow rate [m<sup>3</sup>/h]</b>	N/A	<b>Medium temperature test condition (55°C)</b>	N/A
		<b>High temperature test condition (65°C)</b>	N/A

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

	<b>Fuel Type</b>	<b>Primary energy conversion factor</b>	<b>CO<sub>2</sub> emission factor</b>
<b>Main space heating system</b>	Electricity	1.75	0.224
<b>Secondary space heating system</b>	None	0.00	0.000
<b>Main water heating system</b>	Electricity	1.75	0.224
<b>Supplementary water heating system</b>	Electricity	0.00	0.000
<b>Cooling System</b>	None	0.00	0.000
<b>Pumps, fans</b>	Electricity	1.75	0.224
<b>Energy for lighting</b>	Electricity	1.75	0.224

### CHP data

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

## Summer internal gains

Dwelling volume [m <sup>3</sup> ]	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 <sub>2</sub> emissions [kgCO <sub>2</sub> /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
<b>Renewable and energy saving technologies</b>			
Energy produced and saved	0	0	0
Energy consumed by the technology	0	0	0
<b>Total</b>	<b>1532</b>	<b>2680</b>	<b>343</b>
<b>Per m<sup>2</sup> floor area</b>	<b>44.56</b>	<b>77.99</b>	<b>9.98</b>
<b>Energy Rating</b>	<b>B1</b>		

Technical Assessment Form  
for Better Energy Homes  
Heat Pump System Grants (v0.3)



**Administrative Information**

Homeowner Address		Dwelling Address (Only If different from HO address)	
Name*	[REDACTED]	Address 1	[REDACTED]
Address 1*	[REDACTED]	Address 2	[REDACTED]
Address 2	[REDACTED]	Town/City	[REDACTED]
Town/City*	[REDACTED]	County	[REDACTED]
County*	[REDACTED]	Eircode	[REDACTED]
Eircode*	[REDACTED]	Dwelling address same as homeowner address?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> No

Cost of Technical Advisor Service		Total Floor Area and Year Constructed	
€*	700	Floor area [m2]*	57.63
		Year Constructed*	1990

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.

Dwelling Identification Numbers	
BER No. *	[REDACTED]
MPRN No. *	[REDACTED]

Technical Advisor Details	
Name*	[REDACTED]
BER Assessor No.*	[REDACTED]

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

Electric

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 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 to help me choose the most suitable option. That most suitable option is now detailed in this Technical Assessment Form.

I understand that:

- 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 2.00, will result in the heat pump system and technical assessment grant being declined
- 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.
- 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
- 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 2.00 to qualify for the heat pump system grant.
- 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 Signature*	[REDACTED]
Date (dd/mm/yy)*	[REDACTED]

Technical Advisor Declaration			
Published BER Declaration		Heat Loss Indicator (HLI) [W/K m <sup>2</sup> ]	
I confirm that the published BER referenced on page 1 of this form accurately reflects the current condition of this dwelling*	<input checked="" type="checkbox"/>	YES	Current value of HLI. Taken from DEAP calculation of published BER referenced on page 1 of this form [X.XX] *
	<input type="checkbox"/>	NO	
BER referenced on page 1 of this form was published by (a) me, or (b) another BER Assessor*	<input checked="" type="checkbox"/>	(a)	Projected HLI following upgrade works recommended in this form. Must be <=2.00, otherwise identify more upgrades [X.XX] *
	<input type="checkbox"/>	(b)	
Technical Advisor Responsibilities			
<p>As part of this Technical Assessment, I have:</p> <ul style="list-style-type: none"> <li>ensured all information in this form is correct and have adhered to SEAI's guidance and requirements for Technical Advisors</li> <li>advised the homeowner on the current level of thermal performance of the dwelling and on the level required to qualify for the heat pump system grants offered by the SEAI Better Energy Programme</li> <li>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</li> <li>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.</li> <li>adhered to the independence requirements for Technical Advisors in carrying out a Technical Assessment of this dwelling</li> </ul> <p>If the current building Heat Loss Indicator is higher than 2.00, I have:</p> <ul style="list-style-type: none"> <li>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.</li> <li>ensured the proposed works are compatible with the requirements for wall and roof insulation grants if applicable, or otherwise clarified this with the homeowner</li> <li>specified and detailed the fabric performance corresponding to the proposed works and calculated the corresponding Heat Loss Indicator</li> <li>advised the homeowner on how to clarify the recommended works with the relevant contractors</li> <li>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</li> <li>advised the homeowner that in order to qualify for the heat pump grant: <ul style="list-style-type: none"> <li>The insulation and window works must achieve the required improvement in the level of thermal performance</li> <li>The post-BER must reflect all the works carried out</li> </ul> </li> </ul>			
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 <a href="http://www.seai.ie">www.seai.ie</a>			
Technical Advisor Signature*			
Date (dd/mm/yy)*	27/02/2024		
General Commentary on Technical Assessment and Recommendations*			
<p>Please include an outline of the Technical Assessment and Resulting Recommendations here.</p> <p>Any additional useful notes for the homeowners or contractors should be included here and/or in space for additional comments elsewhere in the form.</p>	<p>The Technical Assessment required a BER Assessment of the dwelling. It was found that in its current state the house had a HLI of 2.5. The following works will be required to achieve a level of &lt;2.0 (required for the Heat Pump grant). wall insulation, windows and doors.</p>		
<b>* denotes mandatory entries. Forms missing these entries will not be accepted</b>			
Page 2/4		MPRN:	Client: Apt 76 Ashbrook,

Recommended Insulation Upgrades: Walls, Roofs and Floors					
Wall insulation upgrades. Mandatory for each proposed wall upgrade *					
Wall number	1	Wall description	cavity wall		
Total number of walls to be upgraded	1	Area of this wall [m <sup>2</sup> ]	24.76	Total dwelling heat loss wall area shown in BER [m <sup>2</sup> ]	24.76
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)	PIR		
Wall thickness [mm]	300mm	Proposed additional insulation thickness [mm]	70mm		
Existing insulation type if known (EPS SD, beads in cavity etc)	UNK	Proposed additional insulation location (internal,external, cavity)	Internal		
Existing insulation thickness if known [mm]	UNK	Proposed additional insulation thermal conductivity [W/mK]	0.034		
Existing U-value [W/m <sup>2</sup> K]	0.6	U-value required after upgrade [W/m <sup>2</sup> K]	0.2		
Existing U-value basis. Select DEAP default or non default	<input type="checkbox"/> Non-default <input checked="" type="checkbox"/> Default	Proposed upgrade meets requirements for BEH wall grant?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Other details/comments (include other info for contractor here)					
Roof insulation upgrades. Mandatory for each proposed roof upgrade *					
Roof number		Roof description			
Total number of roofs to be upgraded		Area of this roof [m <sup>2</sup> ]		Total dwelling heat loss roof area shown in BER [m <sup>2</sup> ]	
Current roof (as per published BER)		Proposed Upgrade			
Roof type (pitched with insulation on flat ceiling etc)		Proposed additional insulation type (mineral fibre etc)			
		Proposed additional insulation thickness [mm]			
Existing insulation type if known (mineral fibre etc)		Proposed additional insulation location (below rafter etc)			
Existing insulation thickness if known [mm]		Proposed additional insulation thermal conductivity [W/mK]			
Existing U-value [W/m <sup>2</sup> K]		U-value required after upgrade [W/m <sup>2</sup> K]			
Existing U-value basis. Select DEAP default or non default	<input type="checkbox"/> Non-default <input type="checkbox"/> Default	Proposed upgrade meets requirements for BEH roof grant?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Other details/comments (include other info for contractor here)					
Floor insulation upgrades. Mandatory for each proposed floor upgrade *					
Floor number		Floor description			
Total number of floors to be upgraded		Area of this floor [m <sup>2</sup> ]		Total dwelling heat loss floor area shown in BER [m <sup>2</sup> ]	
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 <sup>2</sup> K]		Proposed additional insulation thermal conductivity [W/mK]			
Existing U-value basis. Select DEAP default or non default	<input type="checkbox"/> Non-default <input type="checkbox"/> Default	U-value required after upgrade [W/m <sup>2</sup> K]			
Other details/comments (include other info for contractor here)					
* denotes mandatory entries. Forms missing these entries will not be accepted					
Include additional copies of this sheet if more than one floor/wall/roof					
Page 3/4		MPRN:	Client: Apt 76 Ashbrook,		

## Recommended Upgrades for Windows, Doors and Ventilation

### Window/door upgrades. Mandatory for each proposed group of window/door upgrades \*

Window/door group number	1	Window/door description	PVC Double Glazed		
Total no. of window/door groups to be upgraded	1	Area of this window/door group [m <sup>2</sup> ]	10.09	Total heat loss area as shown in BER for all windows+doors [m <sup>2</sup> ]	10.09
Current window/door group (as per published BER)		Proposed Upgrade			
Glazing type (single, double, triple, part glazed door, solid door etc)	Double	Proposed glazing type (double, triple etc)	Triple		
Existing frame type (wooden, PVC, metal)	PVC	Proposed frame type (wooden, PVC, metal)	PVC		
Existing glazing gap [mm]	16	Proposed glazing gap [mm]	16		
Existing solar transmittance	0.76	Proposed solar transmittance	0.64		
Existing U-value [W/m <sup>2</sup> K]	2.7	U-value required after upgrade [W/m <sup>2</sup> K]	1		
Existing U-value basis. Select DEAP default or non default	<input type="checkbox"/> Non-default	Orientation(s) in this group	<input type="checkbox"/> N	<input type="checkbox"/> E/W	<input checked="" type="checkbox"/> NE/NW
	<input checked="" type="checkbox"/> Default		<input type="checkbox"/> S	<input type="checkbox"/> H	<input checked="" type="checkbox"/> SE/SW
Other details/comments (include other info for contractor here)					

### Openings upgrades. Mandatory where openings changes proposed \*

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?	<input type="checkbox"/> Yes <input type="checkbox"/> no	Draught lobby on proposed main entrance?	<input type="checkbox"/> Yes <input type="checkbox"/> no
Other details/comments (include other info for contractor here). How are no. openings to be reduced?			

### Structural air tightness upgrades. Mandatory where structural air tightness upgrades proposed \*

Structure type (masonry etc)		No. sheltered sides (0-4)	
Current air-tightness (as per published BER)	Proposed Upgrade		
Existing air tightness test result (q <sub>50</sub> /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.	<input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes	Are proposed wooden ground floors sealed? Enter n/a if none present.	<input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> Yes
Measures to improve air tightness and achieve proposed q <sub>50</sub> /20 (e.g. taping around junctions etc.)			

### Mechanical ventilation upgrades. Mandatory where mechanical ventilation upgrades proposed \*

Current ventilation method (as per published BER)	Proposed Upgrade		
Existing whole dwelling ventilation method	<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Mech. Extract	Proposed whole dwelling ventilation method	<input type="checkbox"/> Natural <input type="checkbox"/> Mech. Extract
<input type="checkbox"/> Balanced + heat recovery <input type="checkbox"/> Balanced no heat	<input type="checkbox"/> Input from loft <input type="checkbox"/> Input from outside	<input checked="" type="checkbox"/> Balanced + heat <input type="checkbox"/> Balanced no heat recovery	<input type="checkbox"/> Input from loft <input type="checkbox"/> Input from outside
Existing ducting if mech. ventilation present	<input type="checkbox"/> Rigid <input type="checkbox"/> N/A <input type="checkbox"/> Flexible	Proposed ducting if mech. ventilation present	<input type="checkbox"/> Rigid <input type="checkbox"/> N/A <input type="checkbox"/> 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	1 90
Other details/comments (include other info for contractor here)			

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