

## Property details

<b>MPRN</b>	0	<b>Shared MPRN</b>	
<b>BER Number</b>	N/A	<b>BER number assigned to shared dwelling</b>	N/A
<b>Address line 1</b>	1 Main Street	<b>Type of Rating</b>	New Dwelling - Provisional
<b>Address line 2</b>		<b>Purpose of Rating</b>	New dwelling for owner occupation
<b>Address line 3</b>		<b>Building Regulations</b>	2019 TGD L
<b>County</b>	Dublin 13	<b>Planning Reference</b>	
<b>Eircode</b>		<b>Date of Plans</b>	
<b>Dwelling Type</b>	Detached house	<b>Assessor Name</b>	
<b>Year of construction</b>	2022	<b>Date of Assessment</b>	15/06/2021
<b>Dwelling Extension</b>	N/A	<b>Assessor Comments</b>	
<b>Storeys</b>	2	<b>Assessor Description</b>	Website - Name Removed

## Dimension details

	Area [m <sup>2</sup> ]	Height [m]	Volume [m <sup>3</sup> ]
<b>Ground floor</b>	60.13	2.45	147.32
<b>First floor</b>	45.93	2.70	124.01
<b>Second floor</b>	0.00	0.00	0.00
<b>Third and other floors</b>	0.00	0.00	0.00
<b>Room in Roof</b>	0.00	0.00	0.00
<b>Totals</b>	106.06		271.33
<b>Living Area</b>	17.42 m <sup>2</sup>	<b>Living Area Percentage</b>	16.42 %

## Ventilation details

		Number	Air Change Rate [ac/h]
Chimneys		0	0.00
Open Flues		0	0.00
Fans & vents		0	0.00
Flueless combustion room heaters		0	0.00
Has a permeability test been carried out	Yes		Is there a draught lobby on main entrance?
Infiltration rate due to structure [ac/h]	0.20		No
Intermediate infiltration rate	0.25		Draught lobby air change [ac/h]
Number of sides sheltered	4		0.05
Adjusted infiltration rate [ac/h]	0.18		Openings infiltration [ac/h]
Effective air change rate [ac/h]	0.22		0.05
Ventilation heat loss [W/K]	19.70		Structure type
Adjusted result of air permeability test [ac/h]	0.20		N/A
			Is there a suspended wooden ground floor?
			No
			Windows/doors/attic hatches draught stripped [%]
			N/A
			Ventilation method
			Balanced whole-house mechanical ventilation with heat recovery
Manufacturer and Model name	Vent Axia Sentenial Pro Plus B		How many wetrooms (inc. kitchen)? Is the vent. ducting flexible/rigid/both?
Specific fan power [W/(l/s)]	0.52		3+k
Heat exchanger efficiency [%]	91.00		Is MVHR ducting uninsulated where outside of insulated envelope?
Electricity for ventilation fans [Kwh/y]	172.13		No
Heat gains from ventilation fans [W]	8.47		Adjusted heat exchanger efficiency
			91.00

## Building Elements - Floors

Type	Description	U/F Heating	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]
Ground Floor - Solid		No	No	2010 onwards	N/A	60.13	0.14	8.42
Non-Heat Loss Floor		N/A	No	2010 onwards	N/A	45.93	0.00	0.00
<b>Total area [m<sup>2</sup>]</b>								<b>106.06</b>

## Building Elements - Roofs

Type	Description	Insulation Thickness [mm]	Age Band	Area [m <sup>2</sup> ]	U-Value [W/m <sup>2</sup> K]	Heat Loss (AU) [W/K]
	Pitched Roof - Insulated on Ceiling		2010 onwards	60.33	0.12	7.24
<b>Total area [m<sup>2</sup>]</b>						<b>60.33</b>

## 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]
Other		No	Yes	2010 onwards	139.60	0.16	22.34
<b>Total area [m<sup>2</sup>]</b>							<b>139.60</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	1.80	1.40	2.52
<b>Total area [m<sup>2</sup>]</b>						<b>1.80</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	Double-glazed, argon filled (low-E, en = 0.05, soft coat)	Wood/PVC	0.700	0.740	No	Average or Unknown	North	8.11	1.34
1	Double-glazed, argon filled (low-E, en = 0.05, soft coat)	Wood/PVC	0.700	0.740	No	Average or Unknown	South	6.40	1.34
1	Double-glazed, argon filled (low-E, en = 0.05, soft coat)	Wood/PVC	0.700	0.740	No	Average or Unknown	West	1.26	1.34
1	Double-glazed, argon filled (low-E, en = 0.05, soft coat)	Wood/PVC	0.700	0.740	No	Average or Unknown	East	3.41	1.34
<b>Total area [m<sup>2</sup>]</b>								<b>19.18</b>	

## Heat loss details

<b>Total glazed area [m<sup>2</sup>]</b>	19.18	<b>Glazing ratio</b>	0.08
<b>Total glazed heat loss [W/K]</b>	24.39	<b>Summer solar gain [W/m<sup>2</sup>]</b>	778.3
<b>Total effective collection area [m<sup>2</sup>]</b>	6.89	<b>Total element area [m<sup>2</sup>]</b>	281.04
<b>Total plane heat loss [W/K]</b>	64.91	<b>Thermal bridging factor [W/m<sup>2</sup>K]</b>	0.0800
<b>Fabric heat loss [W/K]</b>	87.39		
<b>Total heat loss [W/K]</b>	107.09	<b>Per m2</b>	1.01

## Lighting and Internal Gains

<b>Lighting Design Calculation Method</b>	Bulb type only	<b>Average Efficacy [lm/W]</b>	66.90
<b>Fixed lighting provision [klmh/y]</b>	3580.41	<b>Top up lighting requirement [klmh/y]</b>	0.00
<b>Energy required for fixed lighting [kWh/y]</b>	95.47	<b>Energy required for top up lighting [kWh/y]</b>	0.00
<b>Energy required for portable lighting [kWh/y]</b>	149.92		
<b>Basic energy consumption for lighting [kWh/y]</b>	873.01	<b>Water heating (In watts [W])</b>	156.99
<b>Annual energy used for lighting [kWh/y]</b>	245.39	<b>Occupants (In watts [W])</b>	139.45
<b>Internal gains from lighting during heating season [kWh/hs] (In watts [W])</b>	187.72 (32.19)	<b>Mechanical ventilation (In watts [W])</b>	8.47
<b>Lighting (In watts [W])</b>	32.19	<b>Heat loss to the cold water network (In watts [W])</b>	-39.10
<b>Appliance and cooking (In watts [W])</b>	217.26	<b>Net internal gains (In watts [W])</b>	515.25

## Lights

Count	Name	Description	Type	Efficiency	Power [W]
20	Default LED/CFL		LED/CFL	66.90	

## Water heating details

Are there distribution losses?	Yes	Is supplementary electric water heating used in summer?	N/A
Are there storage losses?	Yes	Is there a combi boiler?	No
Is there a solar water heating system?	Yes	Total hot water demand [kWh/y]	2537.87
Standard number of occupants	2.79	Temperature factor unadjusted	0.60
Number of mixer showers	2	Temperature Factor Multiplier	0.90
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]	161.85	Combi-boiler electricity consumption [kWh/y]	0.00
Hot water energy reqs. at taps [kWh/y]	2157.19	Adjusted storage loss [kWh/y]	358.72
Distribution losses [kWh/y]	380.68	Adjusted primary circuit loss [kWh/y]	305.50
Water storage volume [Litres]	300.00	Heat gains from water heating system [W]	156.99
Is manufacturers declared loss factor available?	Yes	Output from supplementary heater [kWh/y]	0.00
Declared loss factor [kWh/d]	1.82		
Manufacturer and Model name	HONE		
Insulation type	None		
Insulation thickness [mm]	0		

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]
Unvented hot water system	No	11.000		Any / Any			
Total :			90.46				0.00

Combi-boiler Type	None	Output from main water heater [kWh/y]	1830.32
Combi-boiler loss [kWh/y]	0.00	Annual Heat gains from water heating system [kWh/y]	1375.22
Keep Hot facility	None	WWHRS input to main system [kWh/y]	0.00
Storage Loss	358.72	WWHRS input to supplementary system [kWh/y]	0.00
Storage Type	Cylinder, indirect		
Primary Circuit loss type	Boiler with insulated primary pipework and with cylinder thermostat		
Primary circuit loss [kWh/y]	360.00	Heat Pump Type of DHW	None
Is hot water storage indoors or in group heating system	Yes		

## Solar Water heating details

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<b>Aperture area of solar collector [m<sup>2</sup>]</b>	4.400		
<b>Type, manufacturer, model</b>	Evacuated tube, Photonomi Global Group a.r.l., 501 4		
<b>Zero loss collector efficiency, n0</b>	0.750	<b>Collector heat loss coefficient, a1 [W/m<sup>2</sup>&gt;K]</b>	2.368
<b>Annual Solar Radiation [kWh/m<sup>2</sup>] (Refer to Appendix H in DEAP)</b>	1074	<b>Overshading factor</b>	1
<b>Dedicated storage volume [Litres]</b>	150	<b>Combined Cylinder</b>	No
<b>Solar fraction [%]</b>	54.052	<b>Cylinder Stat</b>	Yes
<b>Pump Solar Powered</b>	No		

## 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	16.42	Heat use during heating season [kWh/y]	1917.10
Required mean internal temperature [C]	18.49	Heat use for full year [kWh/y]	1928.26
Thermal mass category of dwelling	Medium		

### Utilisation factor

### Intermittent heating

Internal heat capacity of dwelling [per m <sup>2</sup> ]	0.20	0.11
Internal heat capacity [MJ/K]	21.21	11.67

## 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	17.43	1299	462	0.54	0.97	621	677	180
February	5.5	17.44	1279	334	0.64	0.95	496	782	308
March	7.0	17.56	1131	211	0.85	0.88	284	847	443
April	8.3	17.67	1003	104	1.09	0.79	144	859	576
May	11.0	17.89	738	22	1.65	0.58	30	708	704
June	13.5	18.09	491	3	2.50	0.40	4	487	715
July	15.5	18.25	295	0	4.03	0.25	0	294	670
August	15.2	18.23	324	1	3.49	0.29	1	323	616
September	13.3	18.07	511	7	1.99	0.49	10	501	504
October	10.4	17.84	797	81	1.11	0.78	108	688	370
November	7.5	17.60	1082	277	0.69	0.94	385	697	228
December	6.0	17.48	1230	427	0.55	0.97	573	656	160

## Space Heating

Manufacturer & Model	Type	Space Heating Standard	Fuel	Design flow temp[°C]	Daily Operation [h]	SH Seasonal eff.	WH Seasonal eff.	Heats water
Grant Engineering, Vortex Wall Hung Module 40-55	Gas and oil boilers	N/A	Oil	0	0	94.9	94.9	Yes

## Dist. System Losses and Gains

Temperature adjustment [C]	0	Additional heat emissions due to non ideal control and responsiveness [kWh/y]	0.00
Heating system control category	3	Gross heat emission to heated space [kWh/y]	1917.10
Heating system responsiveness category	1	Mean internal temperature [C]	17.61
Mean internal temperature during heating hours [C]	18.49		

	Number present	Boiler controlled by thermostat	Inside dwelling	Electricity consumption [kWh/y]	Heat gain [W]
Central heating pumps	2	Yes	Yes	90	20
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>90</b>	<b>20</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	117	Is there underfloor heating on the ground floor?	No
Average utilisation factor, October to May	0.86	U-Value of ground floor [W/m <sup>2</sup> K]	0.00
Useful net gain [kWh/y]	100	Fraction of heating system output from ground floor	0.67
Net heat emission to heated space [kWh/y]	1817	Additional heat loss via envelope element	0.00
		Annual space heating requirement [kWh/y]	1817

## Energy Requirements: Individual Heating Systems

Efficiency of main heating system [%]	94.9	Fraction of heat from secondary system	N/A
Manufacturer name	Grant Engineering	Efficiency of secondary system [%]	N/A
Model name	Vortex Wall Hung Module 40-55	Energy required for main heating system [kWh/y]	1914.67
Efficiency adjustment factor	1.00	Energy required for secondary heating system [kWh/y]	0
Adjusted efficiency of main heating system [%]	94.90		

<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>	94.90
<b>Efficiency of main water heating system [%]</b>	94.9	<b>Water Heating Efficiency, <math>\eta_{wh}</math></b>	94.9
<b>Manufacturer name</b>	Grant Engineering	<b>Energy req. for main water heater [kWh/y]</b>	2121.55
<b>Model name</b>	Vortex Wall Hung Module 40-55	<b>Energy req. for secondary water heater [kWh/y]</b>	0.00
<b>Heat Pump Type</b>	N/A	<b>Water Heating Standard</b>	N/A

	<b>Fuel Type</b>	<b>Primary energy conversion factor</b>	<b>CO<sub>2</sub> emission factor</b>
<b>Main space heating system</b>	Heating Oil	1.10	0.272
<b>Secondary space heating system</b>	None	0.00	0.000
<b>Main water heating system</b>	Heating Oil	1.10	0.272
<b>Pumps, fans</b>	Electricity	2.08	0.409
<b>Energy for lighting</b>	Electricity	2.08	0.409

	<b>Type</b>	<b>Part L Total Contribution [kWh/y]</b>	<b>Delivered Energy [kWh/y]</b>	<b>Primary energy conversion factor</b>	<b>CO<sub>2</sub> emission factor [kg/kWh]</b>
<b>Energy produced or saved 1</b>	Electrical (Solar PV/Wind)	386.640	386.640	0.00	0.000
<b>Energy consumed by the technology 1</b>			0.000	0.00	0.000
<b>Energy produced or saved 2</b>	Electrical (Solar PV/Wind)	2371.392	2371.392	0.00	0.000
<b>Energy consumed by the technology 2</b>			0.000	0.00	0.000
<b>Energy produced or saved 3</b>	N/A	0.000	0.000	0.00	0.000
<b>Energy consumed by the technology 3</b>			0.000	0.00	0.000

### 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> ]	271.330	Total gains in summer [W]	1293.55
Effective air change rate for summer period [ac/h]		Temperature increment due to gains [C]	14.80
Ventilation heat loss coefficient [W/K]	0.00	Summer mean external temperature [C]	15
Fabric heat loss coefficient [W/K]	87.39	Heat capacity parameter	0.20
Heat loss coefficient under summer conditions [W/K]	87.39	Temperature increment related to thermal mass [C]	0.60
Total Solar Gains from Summer Period	778.30	Threshold internal temperature [C]	30.40
Internal gains [W]	515.25		

## Results

	Delivered energy [kWh/y]	Primary energy [kWh/y]	CO <sub>2</sub> emissions [kgCO <sub>2</sub> /y]
Main space heating system	1915	2106	521
Secondary space heating system	0	0	0
Main water heating system	1929	2122	525
Supplementary water heating system	0	0	0
Pumps and fans	337	701	138
Energy for lighting	245	510	100
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	2758	5737	1128
Energy consumed by the technology	0	0	0
<b>Total</b>	1668	-297	156
<b>Per m<sup>2</sup> floor area</b>	15.73	-2.80	1.47
<b>Energy Rating</b>	A1		