Property details

MPRN	0	**Shared MPRN**	
BER Number	N/A	**BER number assigned to shared dwelling**	N/A
Address line 1	TYPE B1/B2	**Type of Rating**	New Dwelling - Provisional
Address line 2		**Purpose of Rating**	Sale
Address line 3		**Building Regulations**	2019 TGD L
County	Co. Offaly	**Planning Reference**	
Eircode		**Date of Plans**	
Dwelling Type	Detached house	**Assessor Name**	
Year of construction	2020	**Date of Assessment**	16/03/2021
Dwelling Extension	N/A	**Assessor Comments**	
Storeys	2	**Assessor Description**	FS - Type B1/B2 - 1.36 UV

Dimension details

	Area [m^2]	Height [m]	Volume [m^3]
Ground floor	61.44	2.63	161.59
First floor	61.44	2.78	170.80
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	122.88		332.39

Living Area	19.57 m^2	**Living Area Percentage**	15.93 %

Ventilation details

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

Has a permeability test been carried out	Yes
Infiltration rate due to structure [ac/h]	0.10
Intermediate infiltration rate	0.18
Number of sides sheltered	2
Adjusted infiltration rate [ac/h]	0.15
Effective air change rate [ac/h]	0.19
Ventilation heat loss [W/K]	21.18
Adjusted result of air permeability test [ac/h]	0.10

Is there a draught lobby on main entrance?	No
Draught lobby air change [ac/h]	0.05
Openings infiltration [ac/h]	0.08
Structure type	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 Sentennial Model B Plus
Specific fan power [W/(l/s)]	0.55
Heat exchanger efficiency [%]	92.00
Electricity for ventilation fans [Kwh/y]	223.03
Heat gains from ventilation fans [W]	10.97

How many wetrooms (inc. kitchen)? Is the vent. ducting flexible/rigid/both?	3
Is MVHR ducting uninsulated where outside of insulated envelope?	No
Adjusted heat exchanger efficiency	92.00

Building Elements - Floors

Type	Description	U/F Heating	In Roof	Age Band	Exposed Perimeter [m]	Area [m^2]	U-Value [W/m^2K]	Heat Loss (AU) [W/K]
Ground Floor - Solid		No	No	2010 onwards	N/A	61.44	0.16	9.95
Non-Heat Loss Floor		N/A	No	2010 onwards	N/A	61.44	0.00	0.00
Total area [m^2]								122.88

Building Elements - Roofs

Type	Description	Insulation Thickness [mm]	Age Band	Area [m^2]	U-Value [W/m^2K]	Heat Loss (AU) [W/K]
Pitched Roof - Insulated on Ceiling			2010 onwards	61.44	0.12	7.37
Total area [m^2]						61.44

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]
Timber Frame		No	Yes	2010 onwards	154.99	0.15	23.25
Total area [m^2]							154.99

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	2.11	1.60	3.38
Total area [m^2]						2.11

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, argon filled (low-E, en = 0.05, soft coat)	Wood/PVC	0.700	0.750	No	Average or Unknown	Northwest	9.00	1.36
1	Double-glazed, argon filled (low-E, en = 0.05, soft coat)	Wood/PVC	0.700	0.750	No	Average or Unknown	Southeast	9.27	1.36
1	Double-glazed, argon filled (low-E, en = 0.05, soft coat)	Wood/PVC	0.700	0.750	No	Average or Unknown	Northeast	1.89	1.36
Total area [m^2]									20.16

Heat loss details

Total glazed area [m^2]	20.16	**Glazing ratio**	0.07
Total glazed heat loss [W/K]	26.00	**Summer solar gain [W/m^2]**	884.02
Total effective collection area [m^2]	7.33	**Total element area [m^2]**	300.14
Total plane heat loss [W/K]	69.95	**Thermal bridging factor [W/m^2K]**	0.0800
Fabric heat loss [W/K]	93.96		
Total heat loss [W/K]	115.14	**Per m2**	0.94

Lighting and Internal Gains

Lighting Design Calculation Method	Bulb type only	**Average Efficacy [lm/W]**	66.90
Fixed lighting provision [klmh/y]	3959.41	**Top up lighting requirement [klmh/y]**	0.00
Energy required for fixed lighting [kWh/y]	105.57	**Energy required for top up lighting [kWh/y]**	0.00
Energy required for portable lighting [kWh/y]	165.79		
Basic energy consumption for lighting [kWh/y]	949.05	**Water heating (In watts [W])**	143.79
Annual energy used for lighting [kWh/y]	271.36	**Occupants (In watts [W])**	143.69
Internal gains from lighting during heating season [kWh/hs] (In watts [W])	207.59 (35.60)	**Mechanical ventilation (In watts [W])**	10.97
Lighting (In watts [W])	35.60	**Heat loss to the cold water network (In watts [W])**	-39.86
Appliance and cooking (In watts [W])	239.06	**Net internal gains (In watts [W])**	533.23

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?**	No
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]**	2588.71
Standard number of occupants	2.87	**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]	165.09	**Combi-boiler electricity consumption [kWh/y]**	0.00
Hot water energy reqs. at taps [kWh/y]	2200.41	**Adjusted storage loss [kWh/y]**	189.22
Distribution losses [kWh/y]	388.31	**Adjusted primary circuit loss [kWh/y]**	309.32
Water storage volume [Litres]	300.00	**Heat gains from water heating system [W]**	143.79
Is manufacturers declared loss factor available?	Yes	**Output from supplementary heater [kWh/y]**	0.00
Declared loss factor [kWh/d]	1.92		
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 :			92.27				0.00

Combi-boiler Type	None	**Output from main water heater [kWh/y]**	1568.83
Combi-boiler loss [kWh/y]	0.00	**Annual Heat gains from water heating system [kWh/y]**	1259.58
Keep Hot facility	None	**WWHRS input to main system [kWh/y]**	0.00
Storage Loss	378.43	**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

Aperture area of solar collector [m^2]	5.280		
Type, manufacturer, model	,		
Zero loss collector efficiency, n0	0.750	**Collector heat loss coefficient, a1 [$W/m^2>K$]**	2.368
Annual Solar Radiation [kWh/m^2] (Refer to Appendix H in DEAP)	1021	**Overshading factor**	1
Dedicated storage volume [Litres]	150	**Combined Cylinder**	Yes
Solar fraction [%]	58.655	**Cylinder Stat**	Yes
Pump Solar Powered	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	15.93	**Heat use during heating season [kWh/y]**	2264.87
Required mean internal temperature [C]	18.48	**Heat use for full year [kWh/y]**	2288.89
Thermal mass category of dwelling	Medium-low		

	Utilisation factor	Intermittent heating
Internal heat capacity of dwelling [per m^2]	0.14	0.09
Internal heat capacity [MJ/K]	17.20	11.06

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	17.28	1380	520	0.51	0.96	699	680	177
February	5.5	17.30	1359	390	0.62	0.93	580	779	303
March	7.0	17.44	1202	261	0.82	0.86	351	850	456
April	8.3	17.56	1066	133	1.10	0.75	184	882	643
May	11.0	17.80	783	34	1.72	0.55	46	737	811
June	13.5	18.03	521	6	2.59	0.38	9	512	816
July	15.5	18.21	312	1	4.15	0.24	1	311	761
August	15.2	18.18	343	2	3.58	0.28	2	341	695
September	13.3	18.01	542	15	1.99	0.48	21	521	543
October	10.4	17.75	846	116	1.07	0.76	155	690	372
November	7.5	17.48	1149	328	0.66	0.92	456	693	222
December	6.0	17.35	1306	483	0.53	0.96	649	658	155

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]**	2264.87
Heating system responsiveness category	1	**Mean internal temperature [C]**	17.49
Mean internal temperature during heating hours [C]	18.48		

	Number present	Boiler controlled by thermostat	Inside dwelling	Electricity consumption [kWh/y]	Heat gain [W]
Central heating pumps	1	Yes	Yes	48	10
Oil boiler pumps	1	Yes	No	100	0
Gas boiler flue fan	0			0	
Warm air heating or fan coil radiators present	No			0	0
Totals				148	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	58	**Is there underfloor heating on the ground floor?**	No
Average utilisation factor, October to May	0.84	**U-Value of ground floor [W/m^{2}K]**	0.00
Useful net gain [kWh/y]	49	**Fraction of heating system output from ground floor**	0.67
Net heat emission to heated space [kWh/y]	2216	**Additional heat loss via envelope element**	0.00
		Annual space heating requirement [kWh/y]	2216

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]**	2335.24
Efficiency adjustment factor	1.00	**Energy required for secondary heating system [kWh/y]**	0
Adjusted efficiency of main heating system [%]	94.90		

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 [%]**	94.90
Efficiency of main water heating system [%]	94.9	**Water Heating Efficiency, ηwh**	94.9
Manufacturer name	Grant Engineering	**Energy req. for main water heater [kWh/y]**	1818.46
Model name	Vortex Wall Hung Module 40-55	**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	Heating Oil	1.10	0.272
Secondary space heating system	None	0.00	0.000
Main water heating system	Heating Oil	1.10	0.272
Pumps, fans	Electricity	2.08	0.409
Energy for lighting	Electricity	2.08	0.409

	Type	Part L Total Contribution [kWh/y]	Delivered Energy [kWh/y]	Primary energy conversion factor	CO_2 emission factor [kg/kWh]
Energy produced or saved 1	Electrical (Solar PV/Wind)	441.072	441.072	0.00	0.000
Energy consumed by the technology 1			0.000	0.00	0.000
Energy produced or saved 2	Electrical (Solar PV/Wind)	980.160	980.160	0.00	0.000
Energy consumed by the technology 2			0.000	0.00	0.000
Energy produced or saved 3	Thermal	0.000	0.000	0.00	0.000
Energy consumed by the technology 3			0.000	0.00	0.000

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]	332.390	**Total gains in summer [W]**	1417.25
Effective air change rate for summer period [ac/h]		**Temperature increment due to gains [C]**	15.08
Ventilation heat loss coefficient [W/K]	0.00	**Summer mean external temperature [C]**	15
Fabric heat loss coefficient [W/K]	93.96	**Heat capacity parameter**	0.14
Heat loss coefficient under summer conditions [W/K]	93.96	**Temperature increment related to thermal mass [C]**	1.02
Total Solar Gains from Summer Period	884.02	**Threshold internal temperature [C]**	31.10
Internal gains [W]	533.23		

Results

	Delivered energy [kWh/y]	Primary energy [kWh/y]	CO_2 emissions [$kgCO_2/y$]
Main space heating system	2335	2569	635
Secondary space heating system	0	0	0
Main water heating system	1653	1818	450
Supplementary water heating system	0	0	0
Pumps and fans	446	928	182
Energy for lighting	271	564	111
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	1421	2956	581
Energy consumed by the technology	0	0	0
Total	3285	2923	797
Per m^2 floor area	26.73	23.79	6.49
Energy Rating	A1		