

## 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>	Town	<b>Building Regulations</b>	2019 TGD L
<b>County</b>	Co. Kildare	<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>	2021	<b>Date of Assessment</b>	19/04/2021
<b>Dwelling Extension</b>	N/A	<b>Assessor Comments</b>	
<b>Storeys</b>	1	<b>Assessor Description</b>	Sample Home 1 - H5TE + 8E - A1 Super nZEB

## Dimension details

	Area [m <sup>2</sup> ]	Height [m]	Volume [m <sup>3</sup> ]
<b>Ground floor</b>	165.00	2.50	412.50
<b>First floor</b>	0.00	0.00	0.00
<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>	165.00		412.50
<b>Living Area</b>	96.00 m <sup>2</sup>	<b>Living Area Percentage</b>	58.18 %

## Ventilation details

		Number	Air Change Rate [ac/h]
<b>Chimneys</b>		0	0.00
<b>Open Flues</b>		0	0.00
<b>Fans &amp; vents</b>		0	0.00
<b>Flueless combustion room heaters</b>		0	0.00
<b>Has a permeability test been carried out</b>	Yes		
<b>Infiltration rate due to structure [ac/h]</b>	0.15	<b>Is there a draught lobby on main entrance?</b>	No
<b>Intermediate infiltration rate</b>	0.20	<b>Draught lobby air change [ac/h]</b>	0.05
<b>Number of sides sheltered</b>	1	<b>Openings infiltration [ac/h]</b>	0.05
<b>Adjusted infiltration rate [ac/h]</b>	0.19	<b>Structure type</b>	N/A
<b>Effective air change rate [ac/h]</b>	0.21	<b>Is there a suspended wooden ground floor?</b>	No
<b>Ventilation heat loss [W/K]</b>	28.59	<b>Windows/doors/attic hatches draught stripped [%]</b>	N/A
<b>Adjusted result of air permeability test [ac/h]</b>	0.15	<b>Ventilation method</b>	Balanced whole-house mechanical ventilation with heat recovery
<b>Manufacturer and Model name</b>	MHRV System XYZ1	<b>How many wetrooms (inc. kitchen)? Is the vent. ducting flexible/rigid/both?</b>	2+k
<b>Specific fan power [W/(l/s)]</b>	0.60	<b>Is MVHR ducting uninsulated where outside of insulated envelope?</b>	No
<b>Heat exchanger efficiency [%]</b>	95.00	<b>Adjusted heat exchanger efficiency</b>	95.00
<b>Electricity for ventilation fans [Kwh/y]</b>	301.95		
<b>Heat gains from ventilation fans [W]</b>	14.85		

## 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	Insulated Floor - 300 mm EPS100	No	No	2010 onwards	N/A	165.00	0.09	15.51
<b>Total area [m<sup>2</sup>]</b>								165.00

## 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 Rafter		2010 onwards	165.00	0.09	14.85
<b>Total area [m<sup>2</sup>]</b>						165.00

## 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]
Other		No	Yes	2010 onwards	155.00	0.13	20.31
<b>Total area [m<sup>2</sup>]</b>							<b>155.00</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	2.03	1.20	2.44
1	Solid exposed door		Yes	2.48	1.40	3.47
<b>Total area [m<sup>2</sup>]</b>						<b>4.51</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	0.700	No	Average or Unknown	South	17.87	1.00
1	Double-glazed, argon filled (low-E, en = 0.05, soft coat)	Wood/PVC	0.700	0.700	No	Average or Unknown	East	7.47	1.00
1	Double-glazed, argon filled (low-E, en = 0.05, soft coat)	Wood/PVC	0.700	0.700	No	Average or Unknown	North	13.53	1.00
1	Double-glazed, argon filled (low-E, en = 0.05, soft coat)	Wood/PVC	0.700	0.700	No	Average or Unknown	West	1.69	1.00
<b>Total area [m<sup>2</sup>]</b>								<b>40.56</b>	

## Heat loss details

<b>Total glazed area [m<sup>2</sup>]</b>	40.56	<b>Glazing ratio</b>	0.10
<b>Total glazed heat loss [W/K]</b>	39.00	<b>Summer solar gain [W/m<sup>2</sup>]</b>	1602.6
<b>Total effective collection area [m<sup>2</sup>]</b>	13.77	<b>Total element area [m<sup>2</sup>]</b>	530.07
<b>Total plane heat loss [W/K]</b>	95.57	<b>Thermal bridging factor [W/m<sup>2</sup>K]</b>	0.0800
<b>Fabric heat loss [W/K]</b>	137.98		
<b>Total heat loss [W/K]</b>	166.56	<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>	4440.66	<b>Top up lighting requirement [klmh/y]</b>	0.00
<b>Energy required for fixed lighting [kWh/y]</b>	118.40	<b>Energy required for top up lighting [kWh/y]</b>	0.00
<b>Energy required for portable lighting [kWh/y]</b>	185.94		
<b>Basic energy consumption for lighting [kWh/y]</b>	1105.08	<b>Water heating (In watts [W])</b>	145.99
<b>Annual energy used for lighting [kWh/y]</b>	304.35	<b>Occupants (In watts [W])</b>	147.79
<b>Internal gains from lighting during heating season [kWh/hs] (In watts [W])</b>	232.83 (39.92)	<b>Mechanical ventilation (In watts [W])</b>	14.85
<b>Lighting (In watts [W])</b>	39.92	<b>Heat loss to the cold water network (In watts [W])</b>	-40.60
<b>Appliance and cooking (In watts [W])</b>	291.16	<b>Net internal gains (In watts [W])</b>	599.11

## Lights

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



## Water heating details

<b>Are there distribution losses?</b>	Yes	<b>Is supplementary electric water heating used in summer?</b>	N/A
<b>Are there storage losses?</b>	Yes	<b>Is there a combi boiler?</b>	No
<b>Is there a solar water heating system?</b>	Yes	<b>Total hot water demand [kWh/y]</b>	2637.90
<b>Standard number of occupants</b>	2.96	<b>Temperature factor unadjusted</b>	0.60
<b>Number of mixer showers</b>	2	<b>Temperature Factor Multiplier</b>	0.90
<b>Number of electric showers</b>	0	<b>Hot water storage loss factor [kWh/l d]</b>	0.00
<b>Number of baths</b>	1	<b>Volume factor</b>	0.00
<b>Daily hot water use [Litres/d]</b>	168.22	<b>Combi-boiler electricity consumption [kWh/y]</b>	0.00
<b>Hot water energy reqs. at taps [kWh/y]</b>	2242.22	<b>Adjusted storage loss [kWh/y]</b>	189.22
<b>Distribution losses [kWh/y]</b>	395.69	<b>Adjusted primary circuit loss [kWh/y]</b>	313.01
<b>Water storage volume [Litres]</b>	300.00	<b>Heat gains from water heating system [W]</b>	145.99
<b>Is manufacturers declared loss factor available?</b>	Yes	<b>Output from supplementary heater [kWh/y]</b>	0.00
<b>Declared loss factor [kWh/d]</b>	1.92		
<b>Manufacturer and Model name</b>	HONE		
<b>Insulation type</b>	None		
<b>Insulation thickness [mm]</b>	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			
Unvented hot water system	No	11.000		Any / Any			
<b>Total :</b>			<b>94.03</b>				<b>0.00</b>

<b>Combi-boiler Type</b>	None	<b>Output from main water heater [kWh/y]</b>	1531.42
<b>Combi-boiler loss [kWh/y]</b>	0.00	<b>Annual Heat gains from water heating system [kWh/y]</b>	1278.88
<b>Keep Hot facility</b>	None	<b>WWHRS input to main system [kWh/y]</b>	0.00
<b>Storage Loss</b>	378.43	<b>WWHRS input to supplementary system [kWh/y]</b>	0.00
<b>Storage Type</b>	Cylinder, indirect		
<b>Primary Circuit loss type</b>	Boiler with insulated primary pipework and with cylinder thermostat		
<b>Primary circuit loss [kWh/y]</b>	360.00	<b>Heat Pump Type of DHW</b>	None
<b>Is hot water storage indoors or in group heating system</b>	Yes		

## Solar Water heating details

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<b>Aperture area of solar collector [m<sup>2</sup>]</b>	6.000		
<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>	Yes
<b>Solar fraction [%]</b>	60.984	<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	58.18	Heat use during heating season [kWh/y]	3789.64
Required mean internal temperature [C]	19.75	Heat use for full year [kWh/y]	3830.11
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]	33.00	18.15

## 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	18.58	2212	900	0.46	0.99	1210	1002	417
February	5.5	18.59	2181	626	0.60	0.96	932	1249	700
March	7.0	18.72	1951	401	0.80	0.90	539	1412	969
April	8.3	18.82	1752	203	1.04	0.81	282	1471	1223
May	11.0	19.04	1339	51	1.54	0.62	69	1270	1458
June	13.5	19.24	956	10	2.15	0.46	15	942	1457
July	15.5	19.40	650	2	3.03	0.33	2	648	1374
August	15.2	19.38	696	3	2.71	0.37	4	692	1289
September	13.3	19.22	987	25	1.71	0.56	35	952	1093
October	10.4	18.99	1431	187	1.00	0.82	252	1179	834
November	7.5	18.76	1875	570	0.60	0.96	792	1083	528
December	6.0	18.63	2104	850	0.46	0.98	1143	961	377

## 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]	3789.64
Heating system responsiveness category	1	Mean internal temperature [C]	18.77
Mean internal temperature during heating hours [C]	19.75		

	Number present	Boiler controlled by thermostat	Inside dwelling	Electricity consumption [kWh/y]	Heat gain [W]
Central heating pumps	1	Yes	No	45	0
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
<b>Totals</b>				145	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	0	Is there underfloor heating on the ground floor?	No
Average utilisation factor, October to May	0.88	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]	3790	Additional heat loss via envelope element	0.00
		Annual space heating requirement [kWh/y]	3790

## 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]	3993.30
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>	1775.10
<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)	429.600	429.600	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)	1580.928	1580.928	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> ]	412.500	Total gains in summer [W]	2201.72
Effective air change rate for summer period [ac/h]		Temperature increment due to gains [C]	15.96
Ventilation heat loss coefficient [W/K]	0.00	Summer mean external temperature [C]	15
Fabric heat loss coefficient [W/K]	137.98	Heat capacity parameter	0.20
Heat loss coefficient under summer conditions [W/K]	137.98	Temperature increment related to thermal mass [C]	0.60
Total Solar Gains from Summer Period	1602.60	Threshold internal temperature [C]	31.56
Internal gains [W]	599.11		

## Results

	Delivered energy [kWh/y]	Primary energy [kWh/y]	CO <sub>2</sub> emissions [kgCO <sub>2</sub> /y]
Main space heating system	3993	4393	1086
Secondary space heating system	0	0	0
Main water heating system	1614	1775	439
Supplementary water heating system	0	0	0
Pumps and fans	522	1086	213
Energy for lighting	304	633	124
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	2011	4182	822
Energy consumed by the technology	0	0	0
<b>Total</b>	<b>4423</b>	<b>3705</b>	<b>1041</b>
Per m <sup>2</sup> floor area	26.80	22.45	6.31
Energy Rating	A1		