

Technical Report

House Data



General Info

Customer name	Siripen Songprasit
Address	47 Blaenant, Emmer Green, READING, RG4 8PH, UNITED KINGDOM
Year built	1996
Total housing area (m ²)	75.96
Number of floors	2
Number of occupants	3
Number of bedrooms	3

Climate Data

Degree days	2033
Mean air temperature [°C]	11.3
Outside design temperature [°C]	-2.2
Temperature adjustment for exposed location [°C]	1.0
Further temperature adjustment for location [°C]	0.0
Outside design temperature used for calculations [°C]	-3.2

Energy Demand

Daily hot water energy demand (kWh)	8.81
Annual hot water energy demand (kWh)	3217.38
Annual fabric energy demand (kWh)	6591.50
Annual ventilation energy demand (kWh)	5119.74
Annual total energy demand (kWh)	14939.90

Heat Loss

Fabric Heat Loss (kW)	3.00
Ventilation Heat Loss (kW)	2.36
Total Heat Loss (kW)	5.36

Flow Temperatures & Emitters

Suggested flow temperature [°C]	35
Suggested flow ΔT [°C]	5
Total output of heat emitters (kW)	5.36

Outdoor unit details

Selected outdoor unit	Aira 6kW
Selected outdoor unit capacity (kW)	6
Max heat output without electric heating (kW)	7.14
Bivalence point [°C]	-6.69
SCOP	4.6

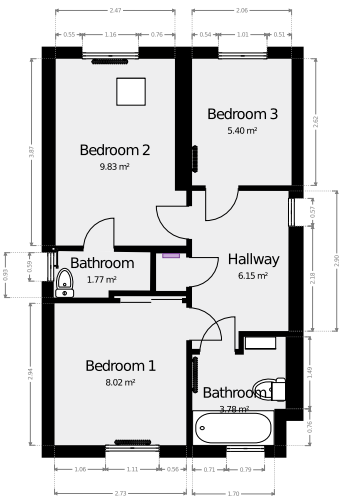
Indoor unit details

Selected indoor unit	Compact - 200L water tank
Cylinder reheat time to 55°C (minutes)	100

1st Floor

General Info

Total area [m²]	35.48
Number of rooms	9
Total heat loss [kW]	2.28
Total output of heat emitters [kW]	2.28

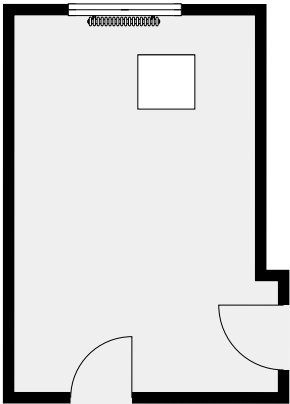


Rooms

Bedroom 2

Overview

Room type	Bedroom
Design room temperature [°C]	18
Room area [m²]	9.83
Avg room height [m]	2.33
Heat flux [W/m²]	45
Ventilation heat loss [W]	160
Fabric heat loss [W]	284
Total heat loss [W]	444
Total output of heat emitters [W]	444



Fabric details

Fabric	Area [m²]	U-value Material	Opposing temperature [°C]	Heat loss [W] *
Floor	9.83	0.45 [1990-2002] Building regulations for new-builds	- [Heated]	0
Roof	9.83	0.34 Pitched roof - Slates or tiles, sarking felt, ventilated air space, 100mm insulation between joists, 9.5 mm plasterboard	-3.2 [Outside]	92
External wall	5.74	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	51
External wall	9.00	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	105
Internal wall	6.35	1.72 Plasterboard with Studding	18.0 [Bedroom 3]	0
Internal wall	0.56	1.72 Plasterboard with Studding	18.0 [Bedroom 3]	0
Internal wall	2.65	1.72 Plasterboard with Studding	18.0 [Hallway]	0
Internal wall	6.30	1.72 Plasterboard with Studding	22.0 [Bathroom]	-46
Window	1.33	2.80 Standard Double Glazing Wood/PVC frame	-3.2 [Outside]	82
Total				284

* All heat loss calculations add 0.1 to all U-values to account for thermal bridging according to EN 12831.

Ventilation details

Volume [m³]	Air changes per hour (ACPH)	ΔT [°C]	Heat loss [W]
22.85	1.0	21.2	160
Total			160

Radiators

Status	Type	Description [height x length]	Emitter ΔT [°C]	Flow rate [l/h]	Nominal output	Calculated output [W]
Remove	Water	- [630x740mm]	-	-	-	-
Total						0

* The Flow/Return ΔT has been adjusted individually for this emitter to achieve a specific output. MW-AT ΔT is the mean water to air temperature difference of radiators.

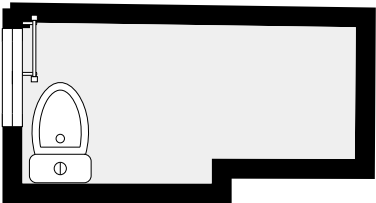
Other emitters

Type	Description	Output [W]
Underfloor heating	Underfloor heating	444
Total		444

Bathroom

Overview

Room type	Bathroom
Design room temperature [°C]	22
Room area [m²]	1.77
Avg room height [m]	2.33
Heat flux [W/m²]	157
Ventilation heat loss [W]	103
Fabric heat loss [W]	176
Total heat loss [W]	278
Total output of heat emitters [W]	278



Fabric details

Fabric	Area [m²]	U-value Material	Opposing temperature [°C]	Heat loss [W] *
Floor	1.77	0.45 [1990-2002] Building regulations for new-builds	- [Heated]	0
Roof	1.77	0.34 Pitched roof - Slates or tiles, sarking felt, ventilated air space, 100mm insulation between joists, 9.5 mm plasterboard	-3.2 [Outside]	20
External wall	2.16	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	22
External wall	0.12	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	2
External wall	0.07	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	1
External				

wall	0.07	0.45 (1990-2002) Building regulations for new-builds	-3.2 [Outside]	1
Internal wall	2.63	1.72 Plasterboard with Studding	18.0 [Bedroom 1]	19
Internal wall	0.35	1.72 Plasterboard with Studding	18.0 [Closet]	3
Internal wall	0.12	1.72 Plasterboard with Studding	11.3 [Other]	2
Internal wall	0.12	1.72 Plasterboard with Studding	11.3 [Other]	2
Internal wall	0.07	1.72 Plasterboard with Studding	18.0 [Bedroom 2]	1
Internal wall	0.07	1.72 Plasterboard with Studding	18.0 [Bedroom 2]	1
Internal wall	4.56	1.72 Plasterboard with Studding	18.0 [Bedroom 2]	33
Internal wall	1.84	1.72 Plasterboard with Studding	18.0 [Closet]	13
Internal wall	2.00	1.72 Plasterboard with Studding	18.0 [Closet]	15
Window	0.58	2.80 Standard Double Glazing Wood/PVC frame	-3.2 [Outside]	42
Total				176

* All heat loss calculations add 0.1 to all U-values to account for thermal bridging according to EN 12831.

Ventilation details

Volume [m³]	Air changes per hour [ACPH]	ΔT [°C]	Heat loss [W]
4.12	3.0	25.2	103
Total			103

Radiators

Status	Type	Description [height x length]	Emitter ΔT [°C]	Flow rate [l/h]	Nominal output	Calculated output [W]
Remove	Water	TOWEL [600x400mm]	-	-	-	-
Total						0

* The Flow/Return ΔT has been adjusted individually for this emitter to achieve a specific output. MW-AT ΔT is the mean water to air temperature difference of radiators.

Other emitters

Type	Description	Output [W]
Underfloor heating	Underfloor heating	278
Total		278

Other **UNHEATED**

Overview

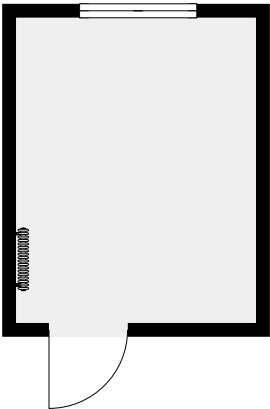
Room type	Other
Design room temperature [°C]	11
Room area [m²]	0.00
Avg room height [m]	2.33



Bedroom 3

Overview

Room type	Bedroom
Design room temperature [°C]	18
Room area [m²]	5.40
Avg room height [m]	2.34
Heat flux [W/m²]	61
Ventilation heat loss [W]	88
Fabric heat loss [W]	238
Total heat loss [W]	327
Total output of heat emitters [W]	327



Fabric details

Fabric	Area [m²]	U-value Material	Opposing temperature [°C]	Heat loss [W] *
Floor	5.40	0.45 [1990-2002] Building regulations for new-builds	- [Heated]	0
Roof	5.40	0.34 Pitched roof - Slates or tiles, sarking felt, ventilated air space, 100mm insulation between joists, 9.5 mm plasterboard	-3.2 [Outside]	50
External wall	6.13	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	71
External wall	4.82	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	42
Internal wall	6.13	1.72 Plasterboard with Studding	18.0 [Bedroom 2]	0
Internal wall	4.82	1.72 Plasterboard with Studding	18.0 [Hallway]	0
Window	1.21	2.80 Standard Double Glazing Wood/PVC frame	-3.2 [Outside]	75
Total				238

* All heat loss calculations add 0.1 to all U-values to account for thermal bridging according to EN 12831.

Ventilation details

Volume [m³]	Air changes per hour [ACPH]	ΔT [°C]	Heat loss [W]
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12.64	1.0	21.2	88
Total			88

Radiators

Status	Type	Description [height x length]	Emitter ΔT [°C]	Flow rate [l/h]	Nominal output	Calculated output [W]
Remove	Water	- [500x540mm]	-	-	-	-
Total						0

* The Flow/Return ΔT has been adjusted individually for this emitter to achieve a specific output. MW-AT ΔT is the mean water to air temperature difference of radiators.

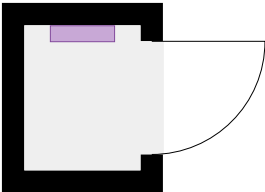
Other emitters

Type	Description	Output [W]
Underfloor heating	Underfloor heating	327
Total		327

Closet

Overview

Room type	Dressing room
Design room temperature [°C]	18
Room area [m²]	0.48
Avg room height [m]	2.44
Heat flux [W/m²]	6
Ventilation heat loss [W]	12
Fabric heat loss [W]	-9
Total heat loss [W]	3
Total output of heat emitters [W]	3



Fabric details

Fabric	Area [m²]	U-value Material	Opposing temperature [°C]	Heat loss [W] *
Floor	0.48	0.45 [1990-2002] Building regulations for new-builds	- [Heated]	0
Roof	0.48	0.34 Pitched roof - Slates or tiles, sarking felt, ventilated air space, 100mm insulation between joists, 9.5 mm plasterboard	-3.2 [Outside]	4
Internal wall	1.51	1.72 Plasterboard with Studding	18.0 [Bedroom 2]	0
Internal wall	1.90	1.72 Plasterboard with Studding	22.0 [Bathroom]	-14
Internal wall	1.90	1.72 Plasterboard with Studding	18.0 [Hallway]	0
Internal wall	1.51	1.72 Plasterboard with Studding	18.0 [Closet]	0
Total				-9

* All heat loss calculations add 0.1 to all U-values to account for thermal bridging according to EN 12831.

Ventilation details

Volume [m³]	Air changes per hour (ACPH)	ΔT [°C]	Heat loss [W]
1.17	1.5	21.2	12
Total			12

Radiators

There are no emitters in this room

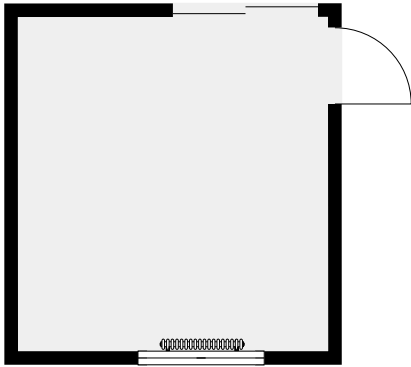
Other emitters

Type	Description	Output [W]
Underfloor heating	Underfloor heating	3
Total		3

Bedroom 1

Overview

Room type	Bedroom
Design room temperature [°C]	18
Room area [m²]	8.02
Avg room height [m]	2.33
Heat flux [W/m²]	47
Ventilation heat loss [W]	130
Fabric heat loss [W]	248
Total heat loss [W]	378
Total output of heat emitters [W]	378



Fabric details

Fabric	Area [m²]	U-value Material	Opposing temperature [°C]	Heat loss [W] *
Floor	8.02	0.45 [1990-2002] Building regulations for new-builds	- [Heated]	0
Roof	8.02	0.34 Pitched roof - Slates or tiles, sarking felt, ventilated air space, 100mm insulation between joists, 9.5 mm plasterboard	-3.2 [Outside]	75
External wall	6.84	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	80
External wall	6.35	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	58
Internal wall	6.35	1.72 Plasterboard with Studding	18.0 [Closet]	0
Internal wall	6.84	1.72 Plasterboard with Studding	22.0 [Bathroom]	-50
Window	1.39	2.80 Standard Double Glazing Wood/PVC frame	-3.2 [Outside]	85
Total				248

* All heat loss calculations add 0.1 to all U-values to account for thermal bridging according to EN 12831.

Ventilation details

Volume [m³]	Air changes per hour (ACPH)	ΔT [°C]	Heat loss [W]
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18.65	1.0	21.2	130
Total			130

Radiators

Status	Type	Description [height x length]	Emitter ΔT [°C]	Flow rate [l/h]	Nominal output	Calculated output [W]
Remove	Water	- [630x740mm]	-	-	-	-
Total						0

* The Flow/Return ΔT has been adjusted individually for this emitter to achieve a specific output. MW-AT ΔT is the mean water to air temperature difference of radiators.

Other emitters

Type	Description	Output [W]
Underfloor heating	Underfloor heating	378
Total		378

Closet

Overview

Room type	Dressing room
Design room temperature [°C]	18
Room area [m²]	0.05
Avg room height [m]	2.44
Heat flux [W/m²]	21
Ventilation heat loss [W]	1
Fabric heat loss [W]	-0
Total heat loss [W]	1
Total output of heat emitters [W]	1



Fabric details

Fabric	Area [m²]	U-value Material	Opposing temperature [°C]	Heat loss [W] *
Floor	0.05	0.45 [1990-2002] Building regulations for new-builds	- [Heated]	0
Roof	0.05	0.34 Pitched roof - Slates or tiles, sarking felt, ventilated air space, 100mm insulation between joists, 9.5 mm plasterboard	-3.2 [Outside]	0
Internal wall	0.10	1.72 Plasterboard with Studding	18.0 [Hallway]	0
Internal wall	3.61	1.72 Plasterboard with Studding	18.0 [Bedroom 1]	0
Internal wall	3.61	1.72 Plasterboard with Studding	18.0 [Bedroom 1]	0
Internal wall	0.10	1.72 Plasterboard with Studding	22.0 [Bathroom]	-1
Total				-0

* All heat loss calculations add 0.1 to all U-values to account for thermal bridging according to EN 12831.

Ventilation details

Volume [m³]	Air changes per hour (ACPH)	ΔT [°C]	Heat loss [W]
0.12	1.5	21.2	1
Total			1

Radiators

There are no emitters in this room

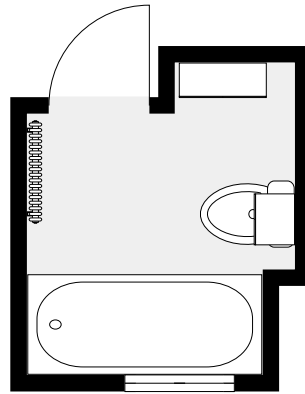
Other emitters

Type	Description	Output [W]
Underfloor heating	Underfloor heating	1
Total		1

Bathroom

Overview

Room type	Bathroom
Design room temperature [°C]	22
Room area [m²]	3.78
Avg room height [m]	2.34
Heat flux [W/m²]	139
Ventilation heat loss [W]	221
Fabric heat loss [W]	304
Total heat loss [W]	524
Total output of heat emitters [W]	524



Fabric details

Fabric	Area [m²]	U-value Material	Opposing temperature [°C]	Heat loss [W] *
Floor	3.78	0.45 [1990-2002] Building regulations for new-builds	- [Heated]	0
Roof	3.78	0.34 Pitched roof - Slates or tiles, sarking felt, ventilated air space, 100mm insulation between joists, 9.5 mm plasterboard	-3.2 [Outside]	42
External wall	3.98	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	42
External wall	3.49	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	48
External wall	0.54	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	7
External wall	1.78	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	25
Internal wall	4.40	1.72 Plasterboard with Studding	18.0 [Bedroom 1]	32
Internal wall	2.50	1.72 Plasterboard with Studding	18.0 [Hallway]	18
Internal wall	0.87	1.72 Plasterboard with Studding	18.0 [Hallway]	6
Internal wall	2.04	1.72 Plasterboard with Studding	18.0 [Hallway]	15

Window	0.92	2.80 Standard Double Glazing Wood/PVC frame	-3.2 [Outside]	68
Total				304

* All heat loss calculations add 0.1 to all U-values to account for thermal bridging according to EN 12831.

Ventilation details

Volume [m³]	Air changes per hour [ACPH]	ΔT [°C]	Heat loss [W]
8.85	3.0	25.2	221
Total			221

Radiators

Status	Type	Description [height x length]	Emitter ΔT [°C]	Flow rate [l/h]	Nominal output	Calculated output [W]
Remove	Water	- [530x740mm]	-	-	-	-
Total						0

* The Flow/Return ΔT has been adjusted individually for this emitter to achieve a specific output. MW-AT ΔT is the mean water to air temperature difference of radiators.

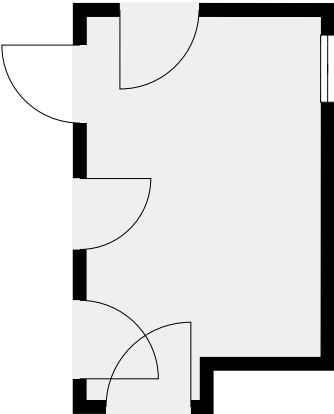
Other emitters

Type	Description	Output [W]
Underfloor heating	Underfloor heating	524
Total		524

Hallway

Overview

Room type	Hall
Design room temperature [°C]	18
Room area [m²]	6.15
Avg room height [m]	2.32
Heat flux [W/m²]	53
Ventilation heat loss [W]	200
Fabric heat loss [W]	128
Total heat loss [W]	327
Total output of heat emitters [W]	327



Fabric details

Fabric	Area [m²]	U-value Material	Opposing temperature [°C]	Heat loss [W] *
Floor	6.15	0.45 [1990-2002] Building regulations for new-builds	- [Heated]	0
Roof	6.15	0.34 Pitched roof - Slates or tiles, sarking felt, ventilated air space, 100mm insulation between joists, 9.5 mm plasterboard	-3.2 [Outside]	57
External wall	6.73	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	71
Internal wall	4.64	1.72 Plasterboard with Studding	18.0 [Bedroom 3]	0

Internal wall	2.39	1.72 Plasterboard with Studding	22.0 [Bathroom]	-17
Internal wall	0.86	1.72 Plasterboard with Studding	22.0 [Bathroom]	-6
Internal wall	2.23	1.72 Plasterboard with Studding	22.0 [Bathroom]	-16
Internal wall	7.59	1.72 Plasterboard with Studding	18.0 [Bedroom 2]	0
Window	0.64	2.80 Standard Double Glazing Wood/PVC frame	-3.2 [Outside]	39
Total				128

* All heat loss calculations add 0.1 to all U-values to account for thermal bridging according to EN 12831.

Ventilation details

Volume (m³)	Air changes per hour (ACPH)	ΔT [°C]	Heat loss (W)
14.27	2.0	21.2	200
Total			200

Radiators

There are no emitters in this room

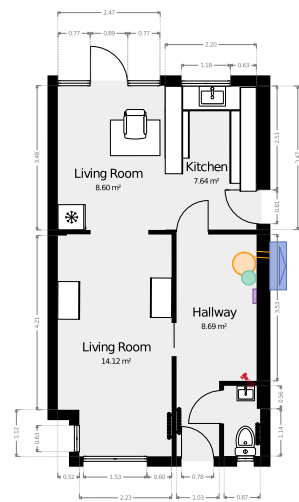
Other emitters

Type	Description	Output (W)
Underfloor heating	Underfloor heating	327
Total		327

Ground Floor

General Info

Total area [m²]	40.48
Number of rooms	5
Total heat loss [kW]	3.08
Total output of heat emitters [kW]	3.08

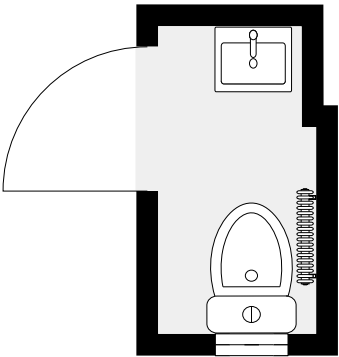


Rooms

Toilet

Overview

Room type	Toilet
Design room temperature [°C]	18
Room area [m²]	1.43
Avg room height [m]	2.42
Heat flux [W/m²]	118
Ventilation heat loss [W]	72
Fabric heat loss [W]	96
Total heat loss [W]	169
Total output of heat emitters [W]	169



Fabric details

Fabric	Area [m²]	U-value Material	Opposing temperature [°C]	Heat loss [W] *
Floor	1.43	0.45 [1990-2002] Building regulations for new-builds	11.3 [Solid floor]	5
Roof	1.43	0.45 [1990-2002] Building regulations for new-builds	18.0 [Heated]	0
External wall	2.75	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	32
External wall	0.19	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	2
External wall	2.10	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	21
External wall	1.35	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	16
Internal wall	4.08	1.72 Plasterboard with Studding	18.0 [Hallway]	0
Internal wall	1.91	1.72 Plasterboard with Studding	18.0 [Hallway]	0
Window	0.33	2.80 Standard Double Glazing Wood/PVC frame	-3.2 [Outside]	20
Total				96

* All heat loss calculations add 0.1 to all U-values to account for thermal bridging according to EN 12831.

Ventilation details

Volume [m³]	Air changes per hour (ACPH)	ΔT [°C]	Heat loss [W]
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3.45	3.0	21.2	72
Total			72

Radiators

Status	Type	Description [height x length]	Emitter ΔT [°C]	Flow rate [l/h]	Nominal output	Calculated output [W]
Remove	Water	- [530x530mm]	-	-	-	-
Total						0

* The Flow/Return ΔT has been adjusted individually for this emitter to achieve a specific output. MW-AT ΔT is the mean water to air temperature difference of radiators.

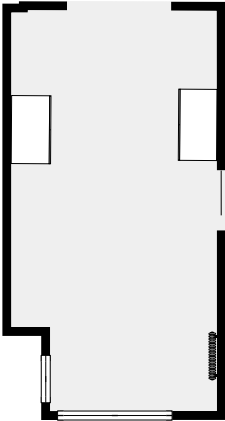
Other emitters

Type	Description	Output [W]
Underfloor heating	Underfloor heating	169
Total		169

Living Room

Overview

Room type	Living room
Design room temperature [°C]	21
Room area [m²]	14.12
Avg room height [m]	2.37
Heat flux [W/m²]	72
Ventilation heat loss [W]	401
Fabric heat loss [W]	615
Total heat loss [W]	1016
Total output of heat emitters [W]	1016



Fabric details

Fabric	Area [m²]	U-value Material	Opposing temperature [°C]	Heat loss [W] *
Floor	14.12	0.45 [1990-2002] Building regulations for new-builds	11.3 [Solid floor]	75
Roof	14.12	0.45 [1990-2002] Building regulations for new-builds	18.0 [Heated]	23
External wall	5.29	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	38
External wall	2.66	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	23
External wall	1.23	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	16
External wall	9.99	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	133
Internal wall	12.69	1.72 Plasterboard with Studding	18.0 [Hallway]	69
Internal wall	0.52	1.72 Plasterboard with Studding	21.0 [Living Room]	0
Internal wall	0.07	1.72 Plasterboard with Studding	21.0 [Living Room]	0
Internal wall	5.98	1.72 Plasterboard with Studding	21.0 [Living Room]	0
Window	2.42	2.80 Standard Double Glazing Wood/PVC frame	-3.2 [Outside]	170
Window	0.96	2.80 Standard Double Glazing Wood/PVC frame	-3.2 [Outside]	67

Total	615
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* All heat loss calculations add 0.1 to all U-values to account for thermal bridging according to EN 12831.

Ventilation details

Volume [m³]	Air changes per hour [ACPH]	ΔT [°C]	Heat loss [W]
33.50	1.5	24.2	401
Total			401

Radiators

Status	Type	Description [height x length]	Emitter ΔT [°C]	Flow rate [l/h]	Nominal output	Calculated output [W]
Remove	Water	- [700x640mm]	-	-	-	-
Total						0

* The Flow/Return ΔT has been adjusted individually for this emitter to achieve a specific output. MW-AT ΔT is the mean water to air temperature difference of radiators.

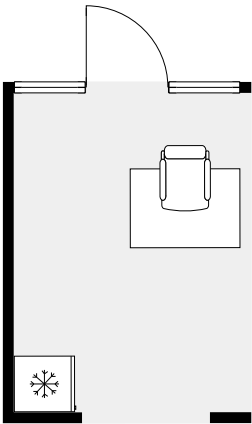
Other emitters

Type	Description	Output [W]
Underfloor heating	Underfloor heating	1016
Total		1016

Living Room

Overview

Room type	Living room
Design room temperature [°C]	21
Room area [m²]	8.60
Avg room height [m]	2.40
Heat flux [W/m²]	84
Ventilation heat loss [W]	247
Fabric heat loss [W]	479
Total heat loss [W]	726
Total output of heat emitters [W]	726



Fabric details

Fabric	Area [m²]	U-value Material	Opposing temperature [°C]	Heat loss [W] *
Floor	8.60	0.45 [1990-2002] Building regulations for new-builds	11.3 [Solid floor]	46
Roof	8.60	0.45 [1990-2002] Building regulations for new-builds	18.0 [Heated]	14
External wall	5.93	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	30
External wall	8.35	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	111
Internal wall	8.35	1.72 Plasterboard with Studding	18.0 [Kitchen]	46
Internal wall	5.93	1.72 Plasterboard with Studding	21.0 [Living Room]	0
External door	1.85	2.20 High Quality Door 50% glazing	-3.2 [Outside]	103

Window	0.92	2.80 Standard Double Glazing Wood/PVC frame	-3.2 (Outside)	65
Window	0.92	2.80 Standard Double Glazing Wood/PVC frame	-3.2 (Outside)	65
Total				479

* All heat loss calculations add 0.1 to all U-values to account for thermal bridging according to EN 12831.

Ventilation details

Volume [m³]	Air changes per hour (ACPH)	ΔT [°C]	Heat loss [W]
20.64	1.5	24.2	247
Total			247

Radiators

There are no emitters in this room

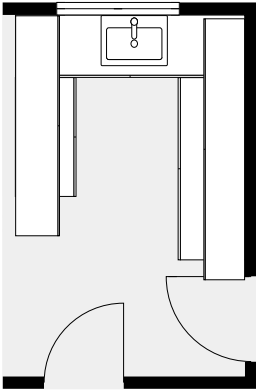
Other emitters

Type	Description	Output [W]
Underfloor heating	Underfloor heating	726
Total		726

Kitchen

Overview

Room type	Kitchen
Design room temperature [°C]	18
Room area [m²]	7.64
Avg room height [m]	2.40
Heat flux [W/m²]	68
Ventilation heat loss [W]	257
Fabric heat loss [W]	262
Total heat loss [W]	518
Total output of heat emitters [W]	518



Fabric details

Fabric	Area [m²]	U-value Material	Opposing temperature [°C]	Heat loss [W] *
Floor	7.64	0.45 [1990-2002] Building regulations for new-builds	11.3 [Solid floor]	28
Roof	7.64	0.45 [1990-2002] Building regulations for new-builds	18.0 [Heated]	0
External wall	8.33	0.45 [1990-2002] Building regulations for new-builds	-3.2 (Outside)	78
External wall	5.28	0.45 [1990-2002] Building regulations for new-builds	-3.2 (Outside)	48
Internal wall	5.28	1.72 Plasterboard with Studding	18.0 (Hallway)	0
Internal wall	8.33	1.72 Plasterboard with Studding	21.0 (Living Room)	-45
External door	1.68	2.20 High Quality Door 50% glazing	-3.2 (Outside)	82
Window	1.17	2.80 Standard Double Glazing Wood/PVC frame	-3.2 (Outside)	72
Total				262

* All heat loss calculations add 0.1 to all U-values to account for thermal bridging according to EN 12831.

Ventilation details

Volume [m³]	Air changes per hour [ACPH]	ΔT [°C]	Heat loss [W]
18.34	2.0	21.2	257
Total			257

Radiators

There are no emitters in this room

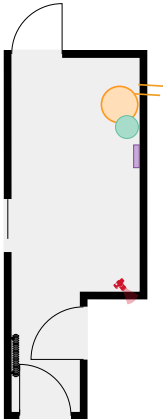
Other emitters

Type	Description	Output [W]
Underfloor heating	Underfloor heating	518
Total		518

Hallway

Overview

Room type	Hall
Design room temperature [°C]	18
Room area [m²]	8.69
Avg room height [m]	3.81
Heat flux [W/m²]	75
Ventilation heat loss [W]	463
Fabric heat loss [W]	183
Total heat loss [W]	650
Total output of heat emitters [W]	650



Fabric details

Fabric	Area [m²]	U-value Material	Opposing temperature [°C]	Heat loss [W] *
Floor	8.69	0.45 [1990-2002] Building regulations for new-builds	11.3 [Solid floor]	32
Roof	8.69	0.45 [1990-2002] Building regulations for new-builds	18.0 [Heated]	0
External wall	3.92	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	27
External wall	13.45	0.45 [1990-2002] Building regulations for new-builds	-3.2 [Outside]	157
Internal wall	20.38	1.72 Plasterboard with Studding	21.0 [Living Room]	-111
Internal wall	7.35	1.72 Plasterboard with Studding	18.0 [Kitchen]	0
Internal wall	3.43	1.72 Plasterboard with Studding	18.0 [Toilet]	0
Internal wall	6.93	1.72 Plasterboard with Studding	18.0 [Toilet]	0
External door	1.62	2.20 High Quality Door 50% glazing	-3.2 [Outside]	79
Total				183

* All heat loss calculations add 0.1 to all U-values to account for thermal bridging according to EN 12831.

Ventilation details

Volume [m³]	Air changes per hour [ACPH]	ΔT [°C]	Heat loss [W]
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33.11	2.0	21.2	463
Total			463

Radiators

Status	Type	Description [height x length]	Emitter ΔT [°C]	Flow rate [l/h]	Nominal output	Calculated output [W]
Remove	Water	- [700x640mm]	-	-	-	-
Total						0

* The Flow/Return ΔT has been adjusted individually for this emitter to achieve a specific output. MW-AT ΔT is the mean water to air temperature difference of radiators.

Other emitters

Type	Description	Output [W]
Underfloor heating	Underfloor heating	650
Total		650