

<http://www.myson.co.uk/hlm>

DESIGN PARAMETERS

OUTSIDE AIR TEMPERATURE -3
HEAT UP FACTOR 10%
MEAN WATER TEMPERATURE 70

3.412142 BTU/h/W

ROOM REF	AREA	FLOOR	HEAT LOSS (W)	HEAT LOSS (BTU)	SOLUTION	SIZE (H)	SIZE (W)	ORDER CODE	QTY
Bathroom	4.5	First Floor	731.70	2,496.66	TOWEL WARMER	1210	750	MRR6W	1
Bedroom corner	9	First Floor	765.83	2,613.11	RADIATORS - Pr	300	2000	30 SC 200G	1
Bedroom front	16	First Floor	685.06	2,337.53	RADIATORS - Pr	300	1600	30 SC 160G	1
Bedroom rear	16	First Floor	685.06	2,337.53	RADIATORS - Pr	450	1400	45 SC 140G	1
Hall	16	Ground Floor	1,147.44	3,915.23	RADIATORS - Pr	450	1800	45 SC 180G	1
Kitchen Ext	32	Ground Floor	2,448.10	8,353.25	RADIATORS - Pr	450	2000	45 DC 200G	1
Kitchen inner	12	Ground Floor	863.23	2,945.45	RADIATORS - Pr	450	1600	45 SC 160G	1
Loft	56	Second Floor	1,275.79	4,353.18	RADIATORS - Pr	600	1600	60 DC 160G	1
Lounge	32	Ground Floor	2,020.94	6,895.75	RADIATORS - Pr	450	1800	45 SC 180G	2
Toilet	1.5	Ground Floor	484.60	1,653.51	RADIATORS - Pr	300	1200	30 SC 120G	1
Wetroom	2	First Floor	206.70	705.29	TOWEL WARMER	1200	500	PIC125SS	1
			11,314.45						

MegaFlo Eco 170i

<https://www.heatraesadia.com/literature/installation-manuals/MegaFlo-Eco-installation-manual.pdf>

170L

UFH

<http://www.theunderfloorheatingstore.com/water-underfloor-heating/standard-output/prowarm-standard-output-water-underfloor-heating>

115W/m2 30m2 3450 14,764.45

CALCS

Heat Loss 11,314.45

Inc Heat-up 12,445.89

ROOM: Bathroom

ELEMENT	U-VALUE W/m ² K	AREA m ²	AU	EXTERNAL AIR °C	INTERNAL AIR °C	HEAT LOSS (W)
Glazing	2.3	1.8	4.14	-3	22	103.5
External Wall	2	9	18	-3	22	450
Floor	0	4.5	0	-3	22	0
Roof Glazing	0	0	0	-3	22	0
Roof	0	4.5	0	-3	22	0
ELEMENT	AC/R m ² /h	Volume m ³	Ext. Air °C	Int. Air °C	HEAT LOSS (W)	
Ventilation	0.33	2	10.8	-3	22	178.20
Total Heat Loss						731.70
Inc. Heat-up Factor						804.87

ROOM: Bedroom corner

ELEMENT	U-VALUE W/m ² K	AREA m ²	AU	EXTERNAL AIR °C	INTERNAL AIR °C	HEAT LOSS (W)
Glazing	2.3	1.8	4.14	-3	18	86.94
External Wall	2	12.6	25.2	-3	18	529.2
Floor	0	9	0	-3	18	0
Roof Glazing	0	0	0	-3	18	0
Roof	0	9	0	-3	18	0
ELEMENT	AC/R m ³ /h	Volume m ³	Ext. Air °C	Int. Air °C	HEAT LOSS (W)	
Ventilation	0.33	1	21.6	-3	18	149.69
Total Heat Loss						765.83
Inc. Heat-up Factor						842.41

ROOM: Bedroom front

ELEMENT	U-VALUE W/m ² K	AREA m ²	AU	EXTERNAL AIR °C	INTERNAL AIR °C	HEAT LOSS (W)
Glazing	2.3	2.5	5.75	-3	18	120.75
External Wall	2	7.1	14.2	-3	18	298.2
Floor	0	16	0	-3	18	0
Roof Glazing	0	0	0	-3	18	0
Roof	0	16	0	-3	18	0
ELEMENT	AC/R l/s/m ²	Volume m ³	Ext. Air °C	Int. Air °C	HEAT LOSS (W)	
Ventilation	0.33	1	38.4	-3	18	266.11
Total Heat Loss						685.06
Inc. Heat-up Factor						753.57

ROOM: Bedroom rear

ELEMENT	U-VALUE W/m ² K	AREA m ²	AU	EXTERNAL AIR °C	INTERNAL AIR °C	HEAT LOSS (W)
Glazing	2.3	2.5	5.75	-3	18	120.75
External Wall	2	7.1	14.2	-3	18	298.2
Floor	0	16	0	-3	18	0
Roof Glazing	0	0	0	-3	18	0
Roof	0	16	0	-3	18	0
ELEMENT	AC/R m ³ /h	Volume m ³	Ext. Air °C	Int. Air °C	HEAT LOSS (W)	
Ventilation	0.33	1	38.4	-3	18	266.11
Total Heat Loss						685.06
Inc. Heat-up Factor						753.57

ROOM: Hall

ELEMENT	U-VALUE W/m ² K	AREA m ²	AU	EXTERNAL AIR °C	INTERNAL AIR °C	HEAT LOSS (W)
Glazing	2.3	4	9.2	-3	18	193.2
External Wall	2	5.6	11.2	-3	18	235.2
Floor	0.82	16	13.12	-3	18	275.52
Roof Glazing	0	0	0	-3	18	0
Roof	0	16	0	-3	18	0
ELEMENT	AC/R m ³ /h	Volume m ³	Ext. Air °C	Int. Air °C	HEAT LOSS (W)	
Ventilation	0.33	1	64	-3	18	443.52
Total Heat Loss						1,147.44
Inc. Heat-up Factor						1,262.18

ROOM: Kitchen Ext

ELEMENT	U-VALUE W/m ² K	AREA m ²	AU	EXTERNAL AIR °C	INTERNAL AIR °C	HEAT LOSS (W)
Glazing	2.3	21	48.3	-3	18	1014.3
External Wall	0.3	22.2	6.66	-3	18	139.86
Floor	0.25	32	8	-3	18	168
Roof Glazing	2.3	4	9.2	-3	18	193.2
Roof	0.2	32	6.4	-3	18	134.4
ELEMENT	AC/R m ³ /h	Volume m ³	Ext. Air °C	Int. Air °C	HEAT LOSS (W)	
Ventilation	0.33	1.5	76.8	-3	18	798.34
Total Heat Loss						2,448.10
Inc. Heat-up Factor						2,692.91

ROOM: Kitchen inner

ELEMENT	U-VALUE W/m ² K	AREA m ²	AU	EXTERNAL AIR °C	INTERNAL AIR °C	HEAT LOSS (W)
Glazing	2.3	1.5	3.45	-3	18	72.45
External Wall	2	5.7	11.4	-3	18	239.4
Floor	1	12	12	-3	18	252
Roof Glazing	0	0	0	-3	18	0
Roof	0	12	0	-3	18	0
ELEMENT	AC/R m ³ /h	Volume m ³	Ext. Air °C	Int. Air °C	HEAT LOSS (W)	
Ventilation	0.33	1.5	28.8	-3	18	299.38
Total Heat Loss						863.23
Inc. Heat-up Factor						949.55

ROOM: Loft

ELEMENT	U-VALUE W/m ² K	AREA m ²	AU	EXTERNAL AIR °C	INTERNAL AIR °C	HEAT LOSS (W)
Glazing	0	0	0	-3	18	0
External Wall	0	33	0	-3	18	0
Floor	0	56	0	-3	18	0
Roof Glazing	2.3	4	9.2	-3	18	193.2
Roof	0.12	60	7.2	-3	18	151.2
ELEMENT	AC/R A°/h	Volume m ³	Ext. Air °C	Int. Air °C	HEAT LOSS (W)	
Ventilation	0.33	1	-3	18	931.39	
Total Heat Loss					1,275.79	
Inc. Heat-up Factor					1,403.37	

ROOM: Lounge

ELEMENT	U-VALUE $\frac{W}{m^2K}$	AREA m^2	AU	EXTERNAL AIR °C	INTERNAL AIR °C	HEAT LOSS (W)
Glazing	2.3	2.5	5.75	-3	21	138
External Wall	2	7.1	14.2	-3	21	340.8
Floor	0.82	32	26.24	-3	21	629.76
Roof Glazing	0	0	0	-3	21	0
Roof	0	32	0	-3	21	0
ELEMENT	AC/R $\frac{A^\circ}{h}$	Volume m^3	Ext. Air °C	Int. Air °C	HEAT LOSS (W)	
Ventilation	0.33	1.5	-3	21	912.38	
Total Heat Loss						2,020.94
Inc. Heat-up Factor						2,223.04

ROOM: Toilet

ELEMENT	U-VALUE W/m ² K	AREA m ²	AU	EXTERNAL AIR °C	INTERNAL AIR °C	HEAT LOSS (W)
Glazing	4.8	1	4.8	-3	18	100.8
External Wall	2	7.2	14.4	-3	18	302.4
Floor	1	1.5	1.5	-3	18	31.5
Roof Glazing	0	0	0	-3	18	0
Roof	0	1.5	0	-3	18	0
ELEMENT	AC/R A°C/h	Volume m ³	Ext. Air °C	Int. Air °C	HEAT LOSS (W)	
Ventilation	0.33	2	-3	18	49.90	
Total Heat Loss						484.60
Inc. Heat-up Factor						533.06

ROOM: Wetroom

ELEMENT	U-VALUE W/m ² K	AREA m ²	AU	EXTERNAL AIR °C	INTERNAL AIR °C	HEAT LOSS (W)
Glazing	2.3	1	2.3	-3	22	57.5
External Wall	2	1.4	2.8	-3	22	70
Floor	0	2	0	-3	22	0
Roof Glazing	0	0	0	-3	22	0
Roof	0	2	0	-3	22	0
ELEMENT	AC/R A°/h	Volume m ³	Ext. Air °C	Int. Air °C	HEAT LOSS (W)	
Ventilation	0.33	2	-3	22	79.20	
Total Heat Loss						206.70
Inc. Heat-up Factor						227.37

<http://idhee.org.uk/consumers/heat-emitter-guide/>

Heat Emitter Sizing	Notes:
	Select from drop-down
	Calculated
	User entries

Heat emitter type	Standard Radiator	
Room heat load	1200	Watts
Heating flow temperature	60	°C
Oversizing factor	#NAME?	
Select from catalogue	#NAME?	Watts
Seasonal Performance Factor - GSHP		Err:504
Seasonal Performance Factor - ASHP		Err:504

Heat emitter type	Underfloor Heating	
Floor type	Aluminium plates	
Floor surface	Carpet	
Room heat load	1200	Watts
Heating flow temperature	45	°C
Room floor area	39	m²
Maximum specific heat loss	30	W/m²
Maximum pipe spacing	#NAME?	
Seasonal Performance Factor - GSHP		Err:504
Seasonal Performance Factor - ASHP		Err:504

[illegible]

Make your selections using the drop-down lists of emitter types, floor types and surfaces, and flow temperature to the emitter.
Enter the design heat load, and room floor area for underfloor emitters.
Enter the accepted results in the table opposite for future reference.

Repeat for each Room / Area of the project.

RECORD SPREADSHEET ENTRIES AND OUTPUTS BELOW.

[illegible]

[illegible]