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Heat Loss Manager Tutorial.

Version 1.

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1. About Heat Loss Manager.

1. General

- 1.1. The method of calculation for the heat loads is based on BS EN 12831:2003.
- 1.2. It is the responsibility of the user to ensure all data entered is correct.

2. Temperatures

- 2.1. All suggested internal design temperatures have been taken from the UK national annex BS EN 12831:2003.
- 2.2. It is the responsibility of the user to select an appropriate room temperate to suit their requirements.

3. U-Values

- 3.1. All suggested U-Values have been taken from the Building Regulations Part L.
- 3.2. Further information can be found in CIBSE Guide A (2006) Appendix 3-A8.
 - 3.2.1. Table 3.49 thermal properties of typical wall constructions.

Table 3.50 thermal properties of typical roof constructions.

Table 3.53 thermal properties of typical floors in contact with the ground.

3.3. It is the responsibility of the user to select correct U-Values.

4. Ventilation

- 4.1. All suggested ventilation air change rates have been taken from the UK national annex BS EN 12831:2003.
- 4.2. Further information can be found in CIBSE Guide A (2006) Appendix 3-A8.
 - 4.2.1. Section 4.6 Natural Ventilation and Infiltration in buildings.

Tables 4.13 to 4.21 give air infiltration rates for various buildings.

4.3. It is the responsibility of the user to select correct air change rate.

5. Product data

- 5.1. All **MYSON** radiators and towel warmers carry the CE mark of approval. Some other manufacturer's products do not. We recommend you check for this mark before you buy any heating product. Under the Construction Products Regulation, from 1st July 2013 all radiators and towel warmers must carry this mark.
- 5.2. All **MYSON** Panel Radiators are manufactured and tested to BS EN 442. Every Radiator carries the BS Kitemark which certifies independent approval of heat output and verifies production under a quality system to BS EN ISO 9001.

MYSON is a registered trademark of Rettig (UK) Ltd. Neither **MYSON** or Rettig (UK) Ltd accepts any responsibility for any loss or damage of whatsoever nature resulting from the use of Heat Loss Manager to the fullest extent permitted in law.

2. Home Screen.



Heat calculator - Calculate a heat loss to adequately size emitters for a project.

Product catalogue - This will direct you to the product catalogue downloads page of the **MYSON** website.

Website - This will direct you to the MYSON website.

Updates - Click here to register your e-mail address to receive occasional updates from **MYSON** regarding new product innovations and services.

New project - Section 3

Existing project - Section 10

Tutorial - Click here to download the Heat Loss Manager Tutorial.

2.1. Disclaimer.



Disclaimer - Before you can begin a new project you must agree to the disclaimer. Please read the information in the disclaimer carefully. Once satisfied click to agree and continue to Section 3.

3. New Project.

MY:	SON	
	Home -> New Project	
KIN CON	PROJECT NAME	
A A A A A A A A A A A A A A A A A A A	OUTSIDE AIR TEMPERATURE:	
	HEAT UP FACTOR:	
DAT	20 MEAN WATER TEMPERATURE:	%
Rode	70 Add Room	°C

Project name - Give the project you are working on a reference EG '10 Downing Street' this will help you identify the project in the future.

Outside air temperature - This is the temperature of the outside air and is critical to the design, -3°C is a good default however for projects in colder climates this value can be overwritten.

Heat up factor - The heat up factor is a percentage that will be added to the heat loss to allow the room to reach its design temperature sooner.

Mean water temperature - The mean water temperature is the average between the flow and return temperature of the heat source, IE flow = 75° C, return = 65° C therefore the MWT = 70° C.

Examples of Mean Water Temperatures:

Heat Source	MWT (°C)
Gas/Oil Fired Boiler	70
Air/Ground Source Heat Pump	40
Air/Ground Source Heat Pump (High Efficiency)	35

Note: Default values have been entered but these can be updated to suit your project.

When values have been added/accepted click 'Add Room'.

4. Add Room.

WYSON								
	Home -> Projects -> 10 Downing Street -> Add Room							
	ROOM NAME:	ROOM TEMPERATURE:						
KITCHE	State Dining Room	18	°C					
ADA	ROOM TYPE:	AIR CHANGE RATE:						
A A	Dining Room	4	AC/h					
		OPEN FIREPLACE:						
The second second		YES	\$					
47		FLOOR:						
10 to Marken		Ground Floor	¢					
Of Sun		BACK Next						

To get back to the previous page press 'Back'.

Room name - Give the room you are working on a reference EG 'State Dining Room' this will help you identify the room in the future.

Room type - Select a room type and the values for the 'Room temperature' and 'Air change rate' will automatically update to the standard values.

Room temperature - If you prefer to change the room temperature from the standard room value then this value can be overwritten.

Air change rate - If you prefer to change the air change rate from the standard room value then this value can be overwritten.

Open fireplace - If there is an open fireplace within the room select 'Yes' as this will have an effect on the air change rate (The value will automatically update). If there is no open fireplace select 'No'.

Floor - Select the floor the room is situated.

Room Type	Temperature (°C)	Air Change Rate (AC/H)
Living Room	21	1.5
Dining Room	21	1.5
Kitchen	18	2
Bedroom	18	1
Bathroom	22	2
Hall	18	1.5

Room Types, Temperatures and ACR:

When values have been added/accepted click 'Next'.

5. Design Parameters.

	SON					
	Home -> Projects -> 1	Room				
KITCHE	FLOOR WIDTH (m)	FLOOR LENGTH (n	FLOOR LENGTH (m)			
A MA C				2.4		
	WALLS FLOOR ROOF CEILING					
D HI	Walls Length External Wall:		Windows Windows:			
C R C	20.9		Yes	\$		
1	Construction:		Window Construction:			
	Current Building Regulations 💠		Triple Glazed	lazed 🔹		
	U-Value:		Window U-Value:			
	0.3		1.70			
			Window Area (m ²):		
			6			
					Next	

Floor width - Enter the width of the room in 'm' EG '13'.Floor length - Enter the length of the room in 'm' EG '7.9'.Ceiling height - Enter the height of the room in 'm' EG '2.4'.

5.1. Walls

Length external wall - Enter the length of the walls that are external only.

Construction - Select a year of construction and the value for the 'U-Value' will automatically update to an estimated value.

U-Value - If you prefer to change the U-Value from the estimated value then this can be overwritten.

Windows - If there are windows within the room select 'Yes' if there are no windows select 'No' and the remaining fields will grey out as the information in no longer required.

Window construction - Select a construction and the value for the 'Window U-Value' will automatically update to an estimated value.

Window U-Value - If you prefer to change the U-Value from the estimated value then this can be overwritten.

Window area - Enter the total area of all the windows on the walls of the room.

Construction and U-Values:

Construction	U-Value (W/m2.K)
Current Regulations	0.3
2000 Building Regulations	0.45
1990 Building Regulations	0.6
1980 Building Regulations	1.0
1970 Building Regulations	1.7
1930 Building Regulations	2.0

Note: U-Values shown are approximate and will vary for different constructions, for an accurate heat loss please ensure the U-Values are correct.

When values have been added/accepted click 'Next'.

5.2. Floor.

MY 🌖	SON						
2	Home -> Projects -> 1	0 Downing Street ->	Add Room				
A A A A A A A A A A A A A A A A A A A	DESIGN PARAMETERS FLOOR WIDTH (m)	FLOOR LENGTH (m)	CEILING HEIGHT (m)				
CHEN D	13 7.9 2.4		2.4				
	ALL WALL, FLOOR AND ROOF/CEILING INFORMATION NEEDS TO BE ENTERED WALLS FLOOR ROOF CEILING						
	Internal/External:						
THE KALL	External	\$					
00 Visu	Floor Construction:	_					
	New Build Solid Floor	•					
	Floor U-Value:						
	0.25						
			Back Next				

To get back to the previous page press 'Back'.

Internal/External - If the floor within the room is on the ground select 'External' if there is another room below select 'Internal' and the remaining fields will grey out as the information is no longer required.

Floor Construction - Select the construction and the value for the 'U-Value' will automatically update to an estimated value.

Floor U-Value - If you prefer to change the U-Value from the estimated value then this can be overwritten.

Construction and U-Values:

Construction	U-Value (W/m2.K)
New Build Solid Floor	0.25
Old Solid Floor	0.6
Old Suspended Floor	0.82

Note: U-Values shown are approximate and will vary for different constructions, for an accurate heat loss please ensure the U-Values are correct.

When values have been added/accepted click 'Next'.

5.3. Roof/Ceiling.

MY 🌀	SON					
A CONTRACTOR	Home -> Projects -> 10 DESIGN PARAMETERS FLOOR WIDTH (m)	Downing St	reet -> Add m)	Room CEILING HEIGHT (m)		
	13 7.9 2.4 ALL WALL, FLOOR AND ROOF/CEILING INFORMATION NEEDS TO BE ENTERED WALLS FLOOR					
EATHRO DE	Internal/External: External \$		WINDOWS Windows: Yes	\$		
A A A A A A A A A A A A A A A A A A A	New Build Roof \$ Roof U-Value: 0.20]	Construction: Triple Glazed Roof Windows	¢ U-Value:		
			1.70 Window Area ()	m ²): Back Heating Solutions		

To get back to the previous page press 'Back'.

Internal/External - If the ceiling within the room is the roof select 'External' if there is another room above select 'Internal' and the remaining fields will grey out as the information is no longer required.

Roof construction - Select the construction and the value for the 'U-Value' will automatically update to an estimated value.

Roof U-Value - If you prefer to change the U-Value from the estimated value then this can be overwritten.

Windows - If there are windows on the roof of the room select 'Yes' if there are no windows select 'No' and the remaining fields will grey out as the information is no longer required.

Window construction - Select a construction and the value for the 'Window U-Value' will automatically update to an estimated value.

Window U-Value - If you prefer to change the U-Value from the estimated value then this can be overwritten.

Window area - Enter the total area of all the windows that are on the roof of the room.

Construction and U-Values:

Construction	U-Value (W/m2.K)
New Build Roof	0.2
300mm Insulation	0.12
200mm Insulation	0.18
100mm Insulation	0.35
50mm Insulation	0.55

Note: U-Values shown are approximate and will vary for different constructions, for an accurate heat loss please ensure the U-Values are correct.

When values have been added/accepted click 'Heating solutions'.

6. Heating Solutions.



To get back to the previous page press 'Back'.

At this stage the type of heating emitter can be selected by clicking on the image of the chosen emitter.

Radiators - Products such as the **PREMIER HE, SELECT** Compact and **ULOW-E2**, see Section 6.1.

Fan Convectors - Products such as KICKSPACE[®], HI-LINE and iVECTOR, see Section 6.2. **UFH** - Underfloor heating products such as Tackernail, Floating Floor and **MICROBOARD**, see Section 6.3.

Decorative Collection - Decorative Radiators and Towel Warmers, see Section 6.4.

LST - Low Surface Temperature Radiator, see Section 6.5.

Electric Heating - Electric products including Towel Warmers, **KICKSPACE®** and Electric UFH, see Section 6.6.

6.1. Radiators.



To get back to the previous page press 'Back'.

Product selector page will display the following data:

Room name Heat loss Heat loss including heat up factor Selected outside air temperature Selected heat up factor Selected water temperature

No. of emitters - From the drop down menu select the quantity of emitters for the room.

Select radiator type - From the images select the type.

A list of suitable radiators will then be presented.

Note: If no products are shown the reason will be that the quantity selected will be inadequate to heat the space, therefore the 'No. of emitters' value should be increased.

To choose an emitter click 'Add'.

6.2. Fan Convectors.

MYS	SON									
F	Home ->	Projects -	-> 10 Dow	ning Stre	eet ->	Heatir	ng So	lution		
	Room Name: State Dining No. of emitter 3	Room s:	¢		Heat Lo 8326.8 Inc Hea 9992.2 Outside -3 Heat up 20 Mean W 70	ss: 35 t Up Factor 2 Air Tempo factor: ater Tempo	r: erature: erature:			
	SELECT RADIA	HI-Line F	RC HI-Line	Super RC	Lo-Line R	CC SII	m-Line F	ac a	Kickspace	
	SELECT EMITT Product Name	ER FROM THE	LIST BELOW T Radiator Code	O ADD TO SC	Watts	BTU/Hr	%	Height	Length	
	600mm Height									
	iVector	Wallmounted	IV120	Normal Medium Boost	3431 4642 6805	11699.71 15829.22 23205.05	103%	600	1200	+ ADD
	BACK									

To get back to the previous page press 'Back'.

Product selector page will display the following data:

Room name Heat loss Heat loss including heat up factor Selected outside air temperature

Selected heat up factor

Selected water temperature

No. of emitters - From the drop down menu select the quantity of emitters for the room

Select radiator type - From the images select the type.

A list of suitable radiators will then be presented.

Note: If no products are shown the reason will be that the quantity selected will be inadequate to heat the space, therefore the 'No, of emitters' value should be increased.

To choose an emitter click 'Add'.

6.3. UFH (Underfloor Heating).



To get back to the previous page press 'Back'.

Product selector page will display the following data:

Room name

Construction - From the drop down menu select the correct floor construction

Fixing method - From the drop down menu select the preferred fixing method

An image will appear showing the floor construction of that fixing method and the PDF documents will update with the correct data sheet of that fixing method. **Note:** the UFH brochure and controls literature is also available to download.

To add this fixing method to your project schedule click 'Add'

Note: for a complete bespoke quotation please e-mail your scale floor plans to <u>underfloor@myson.co.uk</u>

6.4. Decorative Collection.



To get back to the previous page press 'Back'.

Choose between the following:

Designer radiators - Products ranges such as Designer radiators, **DÉCOR** and **COLUMN**.

Towel warmers - Products ranges such as Contemporary, Multi-rail or Traditional.

6.4. Decorative Collection (Continued).

MYS	SON								
	Home -> Pr	ojects -> :	10 Downing	Stree	t -> He	ating	Soluti	on	
	Room Name: State Dining Ro No. of emitters: 6 SELECT RADIATO	nom R TYPE: Column	Heat Loss: 8326.85 Inc Heat Up Factor: 9992.22 Outside Air Temperature: -3 Heat up factor: 20 Mean Water Temperature: 70						
	SELECT EMITTER	FROM THE LIST	BELOW TO ADD	TO SCHE	DULE:				
	Product Name	Туре	Radiator Code	Watts	BTU/Hr	%	Height	Length	
	2000mm Height				0			-	
	-	Opus Vertical	MEZV3	1596	5445.55	96%	2000	612	+ ADD
	BACK								

To get back to the previous page press 'Back'.

Product selector page will display the following data:

Room name

Heat loss

Heat loss including heat up factor

Selected outside air temperature

Selected heat up factor

Selected water temperature

No. of emitters - From the drop down menu select the quantity of emitters for the room

Select radiator type - From the images select the type.

A list of suitable designer radiators/towel warmers will then be presented.

Note: If no products are shown the reason will be that the quantity selected will be inadequate to heat the space, therefore the 'No. of emitters' value should be increased.

To choose an emitter click 'Add'.

6.5. LST.

MY:	SON								
	Home -> P	rojects ->	10 Downing) Stree	et -> H€	eating	Soluti	on	
	Room Name: State Dining R No. of emitters: 4 SELECT RADIAT	Loom	\$	He 8: 99 00 -3 He 20 Me 70	eat Loss: 326.85 ic Heat Up 992.22 utside Air 1 8 eat up fact 0 ean Water 1 0	Factor: Tempera or: Tempera	iture: sture:		
	SELECT EMITTER	R FROM THE LIST	T BELOW TO ADD	TO SCHE	DULE:				
	Product Name	Туре	Radiator Code	Watts	BTU/Hr	%	Height	Length	
	850mm Height					1	1		
	LST	LST Super Plus	8 LSP 160	2429	8287.75	97%	850	1600	+ ADD
	950mm Height								
	LST	LST Super Plus	9 LSP 160	2752	9389.82	110%	950	1600	+ ADD
	BACK								

To get back to the previous page press 'Back'.

Product selector page will display the following data:

Room name

Heat loss

Heat loss including heat up factor

Selected outside air temperature

Selected heat up factor

Selected water temperature

No. of emitters - From the drop down menu select the quantity of emitters for the room

A list of suitable **LST** radiators will then be presented.

Note: If no products are shown the reason will be that the quantity selected will be inadequate to heat the space, therefore the 'No. of emitters' value should be increased.

To choose an emitter click 'Add'.

6.6. Electric Heating.



To get back to the previous page press 'Back'.

Choose between the following:

Electric radiators - Select this for the FINESSE radiator, see Section 6.6.1

Electric designer radiators - Products such as the electric DÉCOR and COLUMN, see Section 6.6.1

Electric towel warmers - Products such as electric **AVONMORE** and **LEGATO**, see Section 6.6.1

Electric KICKSPACE - Select this for the electric **KICKSPACE**[®], see Section 6.6.1

Electric UFH - Select this for Electric UFH, see Section 6.6.2

6.6.1. Electric Radiators.

MY:	SON										
	Home -> Projects -> 10 Downing Street -> Heating Solution Room Name: State Dining Room No. of emitters: 5 Contended Up Factor: 9992.22 Cutside Air Temperature: -3										
	SELECT RADIAT	OR TYPE:		Hez 20	at up facto	n					
	SELECT EMITTE	R FROM THE LIST	BELOW TO ADD 1	O SCHEE	DULE:						
	Product Name	Туре	Radiator Code	Watts	BTU/Hr	%	Height	Length			
	Finesse	Double Panel Xtra	FE30DX200	2000	6824.00	100%	300	2000	+ ADD		
	500mm Height										
	Finesse	Double Panel Xtra	FE50DX125	2000	6824.00	100%	500	1250	+ ADD		
	ВАСК										

To get back to the previous page press 'Back'.

Product selector page will display the following data:

Room name Heat loss Heat loss including heat up factor Selected outside air temperature Selected heat up factor

No. of emitters - From the drop down menu select the quantity of emitters for the room

A list of suitable electric emitters will then be presented.

Note: If no products are shown the reason will be that the quantity selected will be inadequate to heat the space, therefore the 'No. of emitters' value should be increased.

To choose an emitter click 'Add'.

6.6.2. Electric UFH.



To get back to the previous page press 'Back'.

Product selector page will display the following data:

Room name No. of mats Heat loss Heat loss including heat up factor Selected outside air temperature Selected heat up factor Floor area **Note:** If no products are shown the reason will be that the quantity selected will be inadequate to heat the space, therefore the 'No. of mats' value should be increased.

To choose an emitter click 'Add'.

Skip to Section 7.

A list of suitable size Electric UFH mats will then be presented.

7. Project Summary.

YM 🌀	SON	
- A -	Home -> Projects -> 10	Downing Street
KITCHEN	DESIGN PARAMETERS OUTSIDE AIR TEMPERATURE -3	SUMMARY State Dining Room EDIT ROOM CHANGE PRODUCT X
	HEAT UP FACTOR	ADD ROOM
EATHROOM IN	MEAN WATER TEMPERATURE 70 UPDATE	SCHEDULE CALCS

Product selector page will display the following data:

Outside air temperature

Heat up factor

Mean water temperature

To update the values simply input the new value and click 'update' if the values are correct no further action is required.

A summary of the rooms within the project are also displayed and further options are available:

Edit room - Clicking this button will take you to the 'Add Room' page (Section 4 of this tutorial) where the room information and design parameters can be changed/updated, note you will need to reselect the emitter as the calculations will update, you will be directed here automatically after the room.

Change product - Clicking this button will take you to a summary page of the selected product, then by clicking 'change product' you will be taken to the 'Heating Solutions' page (Section 6 of this tutorial) alternatively selecting 'Back' will return you to the summary page.

Delete room - Clicking the 'X' will delete the room and all the data that has been inputted (Note: Once deleted there is no way of getting this data back, except re-entering the information).

Add room - Add room - Clicking this button will allow you to setup a new room therefore see Section 4.

The summary page will also give access to more features:

Schedule - Clicking this will show a schedule of the rooms within the project and the selected emitters (see Section 8). There will be an option to 'Print' or press 'Back' to return to the summary page.

Calculation - Clicking this will show the calculations of the rooms within the project (see Section 9). There will be an option to 'Print' or press 'Back' to return to the summary page.

8. Schedule.

MY 🌀	SON									
a l'il	Home ->	> Proj	ects ->	▶ 10 Dow	ning Stre	et				
KITCHEN	DESIGN PAR OUTSIDE AII -3	AMETER R TEMPE	S RATURE	неат 20	UP FACTOR	MEAN WATER TEMPERATURE 70				
A A	ROOM REF	AREA	FLOOR	HEAT LOSS (W)	HEAT LOSS (BTU)	SOLUTION	SIZE (H)	SIZE (W)		QTY
10 million	State Dining Room	102.7	Ground Floor	8326.85	28411.21	RADIATORS - Premier Compact	600	1800	60 DC 180G	3
ENSUITE INTERNAL	BACK	PRINT								

To get back to the previous page press 'Back'.

Product selector page will display the following data:

Outside air temperature

Heat up factor

Mean water temperature

The product selector will show a schedule of the rooms within the project.

Print - To print the schedule press 'Print'.

9. Calculations.

Kirg Kirg	Home -> CALCS ROOM: State	Projects	-> 10 [Downing) Street		
	ELEMENT	U-VALUE W/m ² K	AREA m ²	AU	INTERNAL AIR °C	EXTERNAL AIR °C	HEAT LOSS (W)
China and a second	Glazing	1.70	6.00	10.20	-3.00	18.00	214.20
1 miles	External Wall	0.30	44.16	13.25	-3.00	18.00	278.207999999999999
	Floor	0.25	102.70	25.68	-3.00	18.00	539.18
No King	Roof Glazing	1.70	1.00	1.70	-3.00	18.00	35.70
1	Roof	0.20	101.70	20.34	-3.00	18.00	427.14
	ELEMENT		AC/R AC/H	Volume m3	Ext. Air °C	Int. Air °C	HEAT LOSS (W)
	Ventilation	0.33	4.00	246.48	-3.00	18.00	6832.43
	Total Heat Los	s					8326.85

To get back to the previous page press 'Back'.

The product selector will display the calculations of the rooms within the project.

Print - To print the schedule press 'Print'.

10. Existing Project.



Find the existing project and choose from the following options:

Edit - This will take you to the project summary page see Section 7 where it is possible to edit all of the project information **Delete** - Clicking the 'X' will delete the entire project and all the data that has been inputted (Note: Once deleted there is no way of getting this data back, except starting again).