

Heat Load

Calculating tool



Quick Start Manual

Disclaimer Of Warranty On Software

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INTRODUCTION

This software is developed by Emerson to assist in calculation of heat of any building. It has weather data of 44 countries in Asia. Easy step-by-step input of building parameters allows OEMs sales engineers to calculate the precise load requirement and help them decide on an optional system for building.



ABOUT THE MANUAL

This Manual aims to provide the user sufficient information about the use of the Heat Load Calculating Tool® (HLCT) developed by Emerson . With the aid of this tool, engineers can compute the Heat Load of any building and provide a summary of all Heat Load Computations.

This Manual will help the user quickly adapt to the **HLCT** environment by providing step-by-step instructions on how to design a project, how to properly input data, and how to preview and print the summary of results.

Heat Load Calculating Tool Quick Start Manual

Disclaimer

Introduction

About the Manual

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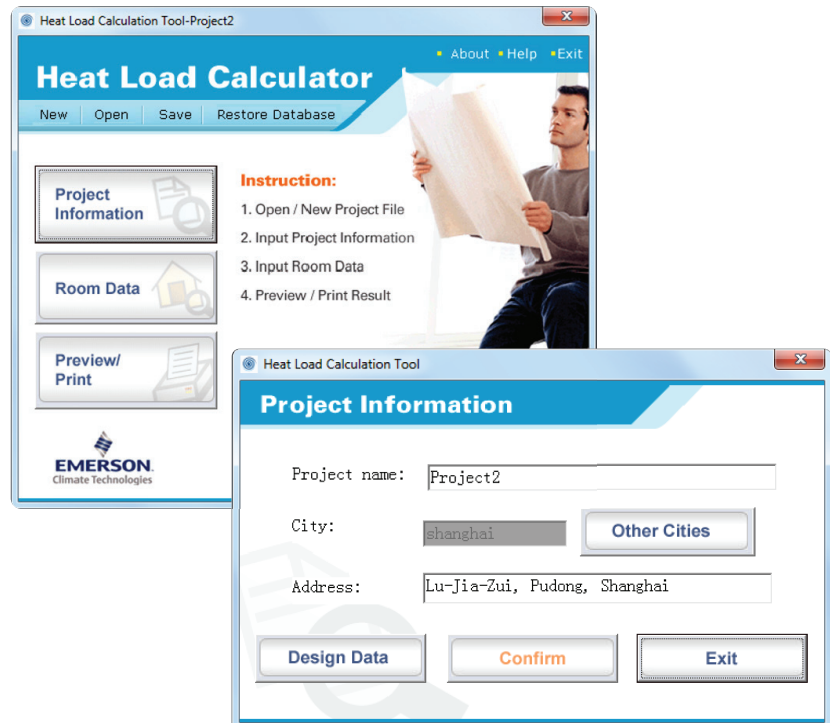
Glossary

Index (Nomenclature)

HOW TO USE THIS MANUAL

The following pages contain actual HLCT environment pictures that will visually assist the user throughout the course of the Manual. For common understanding, please refer to the figure below. The colored picture corresponds to the active screen, while the black and white picture corresponds to the root or previous screen.

HLCT Main Screen



Room Data Main Screen

Technical Support

For queries regarding the Heat Load Calculating Tool, please send us an e-mail at:

Support.ComResAsia@Emerson.com

Or visit us at <http://Climate.Emerson.com/Asia>

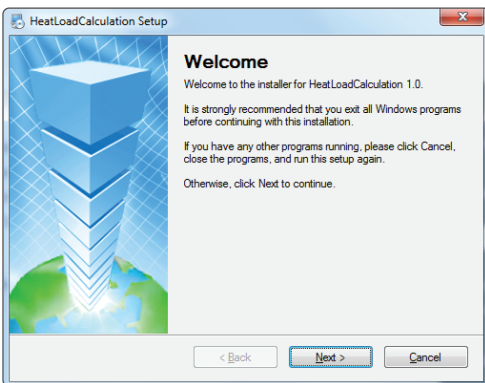
SOFTWARE INSTALLATION

Installing your HLCT

To install the **Heat Load Calculating Tool®** version 2.0, you must have administrative privileges. This step-by-step Manual will walk you through the installation process with ease.

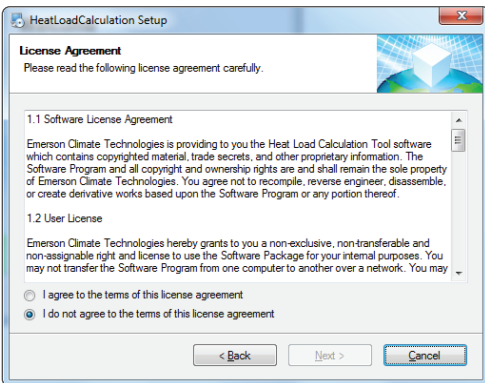
Step 1. Installation Set-Up

After opening the installer, you will see the Heat Load Calculating Tool Setup Main Screen. Read each page and then click on the *Next* button to be directed through each process.



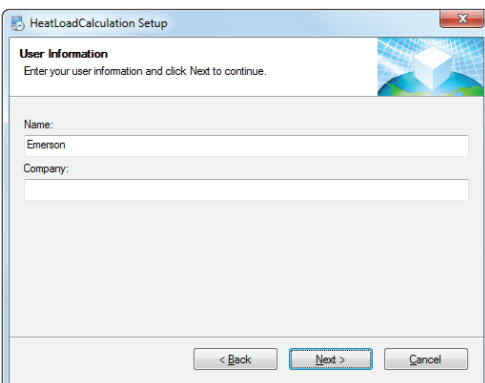
Step 2. License Agreement

Read through the Terms and Conditions outlined in the End User License Agreement. Click *Next* to agree and proceed with the installation.

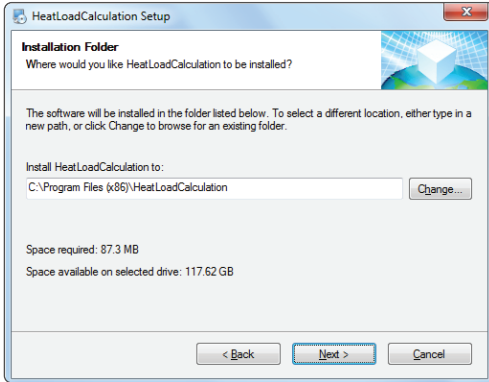


Step 3. User Information

Type your name and your company name. Click *Next* to proceed with the installation.

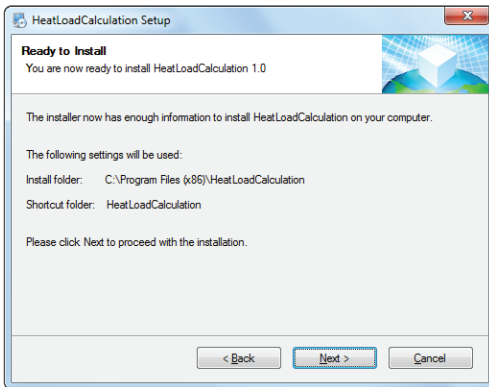


SOFTWARE INSTALLATION



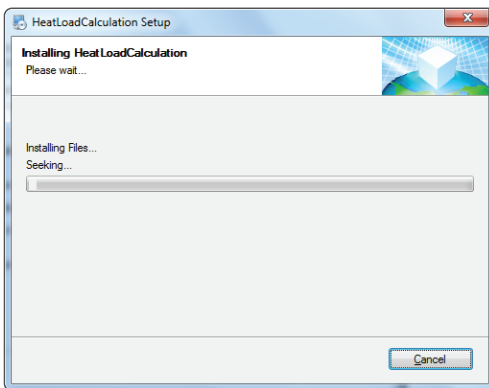
Step 4. Choosing Destination Locations

By default, your Heat Load Calculating Tool will be installed in your Programs File folder located on your C: drive. To change this, click on *Change*, then click on *Next* to proceed with the installation.



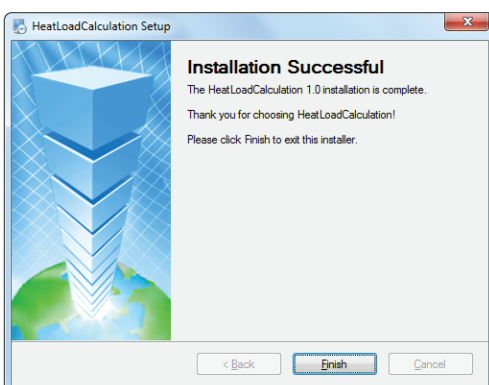
Step 5. Start of Installation

This will confirm all set up information and proceed with the software installation. Click on *Next* to proceed with the installation.



Step 6. Installation Progress

The installer program will begin adding the Heat Load Calculating Tool to your computer. Do not interrupt the installation until it is complete.



Step 7. End of Installation

The Heat Load Calculating Tool has been loaded and ready for use. To exit the installation set up, click on *Finish*.

KEY REGISTRATION

Activating your HLCT

For activation, please see instructions as stated in the Activation Screen shown below:




EMERSON[™]
Climate Technologies

In order for us to provide you with the license key.
Register the hardware number generated below in
the www.digitalscroll.com website.

Refer to this link for the registration procedure
<http://www.digitalscroll.com/sb/instruction.htm>.

Hardware Number: %FINGERPRINT%

Name:

Key:

GETTING STARTED

User Environment and Interface

■ Heat Load Calculating Tool Main Screen

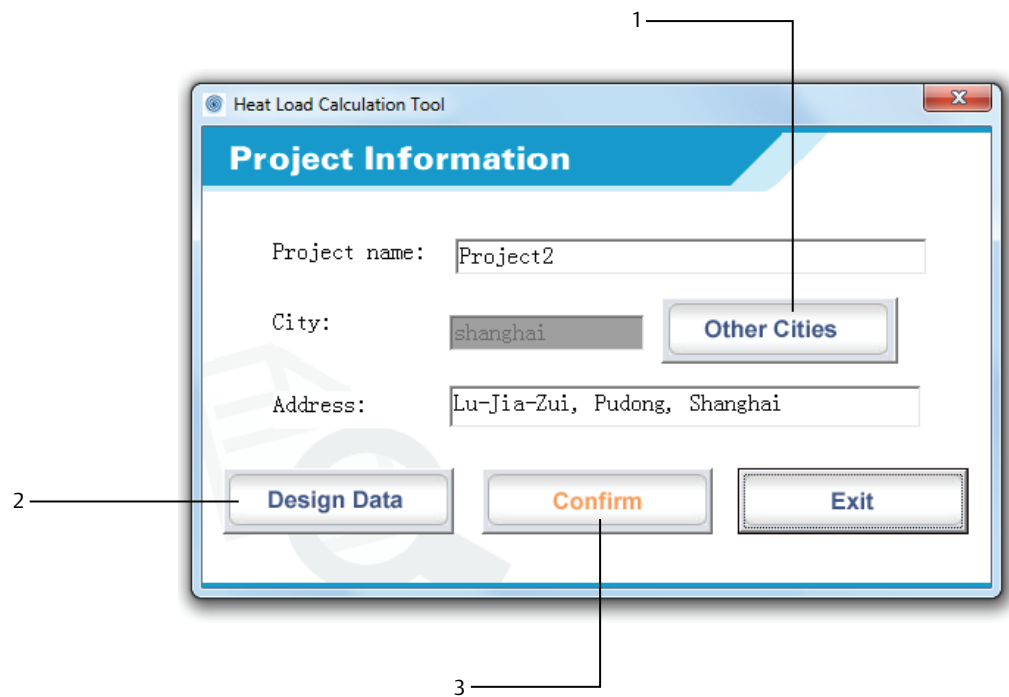
1. Creates a new Project
2. Opens an existing *.mdb* Project
3. Saves all current Project Information
4. Resets all current Project information in the Heat Load Calculating Tool database
5. Opens the *Project Information Screen*
6. Opens the *Room Data Screen*
7. Opens the *Preview and Print Screen*
8. Opens the *About Screen*
9. Opens the *Help Screen* and a Sample Project Manual
10. Closes the Heat Load Calculator



GETTING STARTED

■ Project Information Main Screen

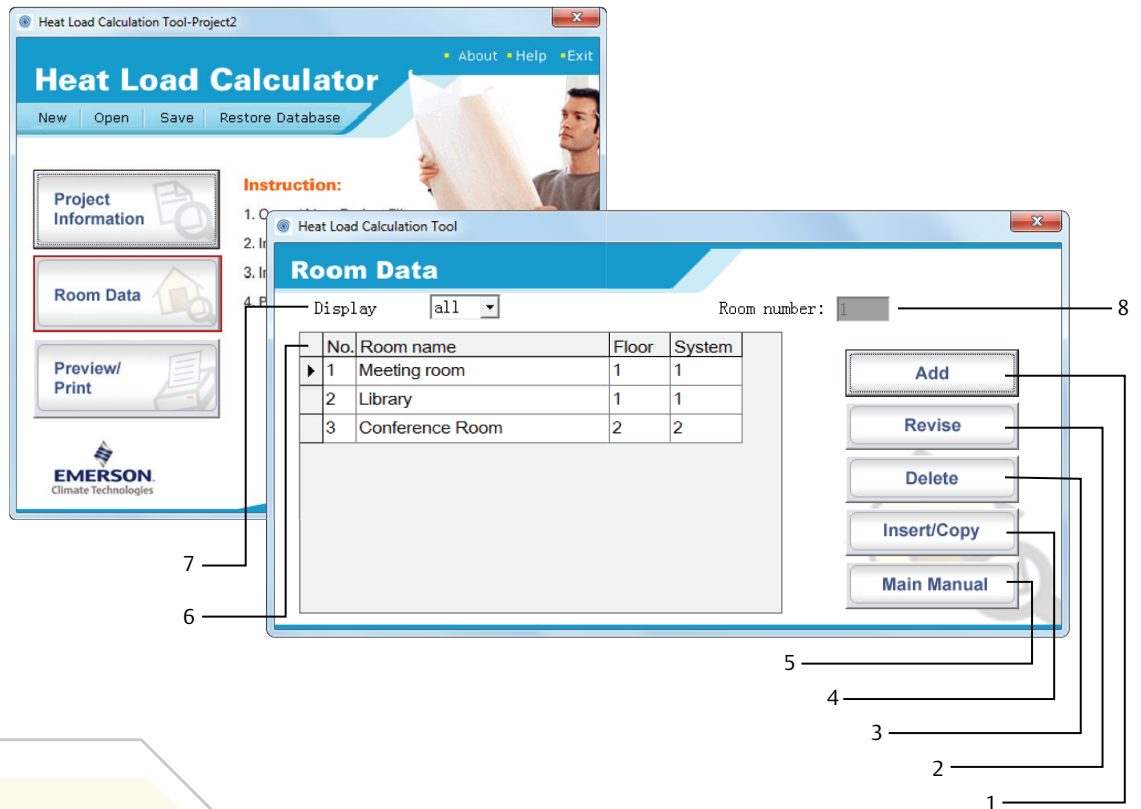
1. Opens the Weather Data of 44 countries in Asia.
2. Allows you to Change the Weather Data of the chosen City.
3. Accepts the Data and returns to the Heat Load Calculating Tool Main Screen



GETTING STARTED

■ Room Data Main Screen

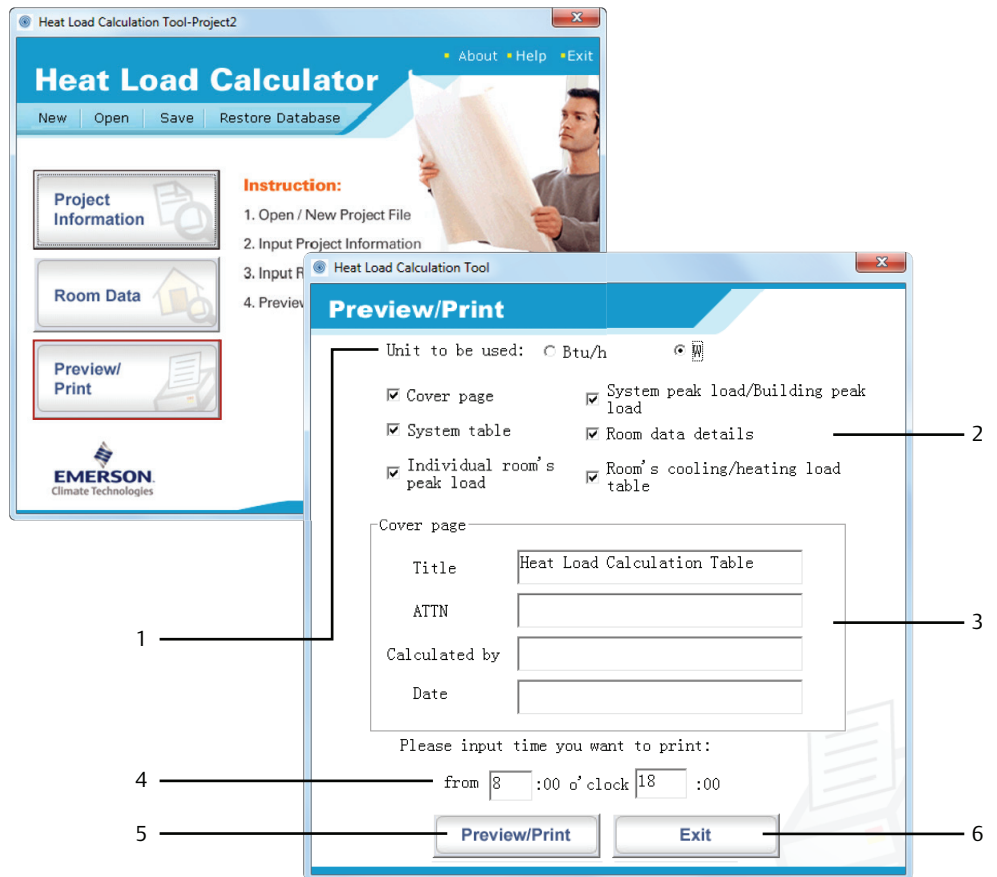
1. Displays Room Specification and Factors used during Computation. This also allows you to customize all building parameters.
2. Allows you to *Revise* existing Room Data
3. Allows you to *Delete* existing Room
4. Allows you to *Create New* or *Copy* Existing Room Designs and add them in the Order List
5. Accepts the Data and returns to Heat Load Calculating Tool Main Screen
6. The Order List shows the list of Rooms, Room name, Floor, and System
7. Filters the Rooms based on the chosen Floor
8. Displays the Room Number of selected Room



GETTING STARTED

■ Print / Preview Main Screen

1. Sets the Standard units to be used during computation and during printing
2. Selects the items to be viewed and printed
3. Documentation and Details
4. Prints the corresponding hours reflected in the Time Schedule screen
5. Displays Computation Results
6. Accepts the Data and returns to the Heat Load Calculating Tool Main Screen



HOW TO INPUT DATA

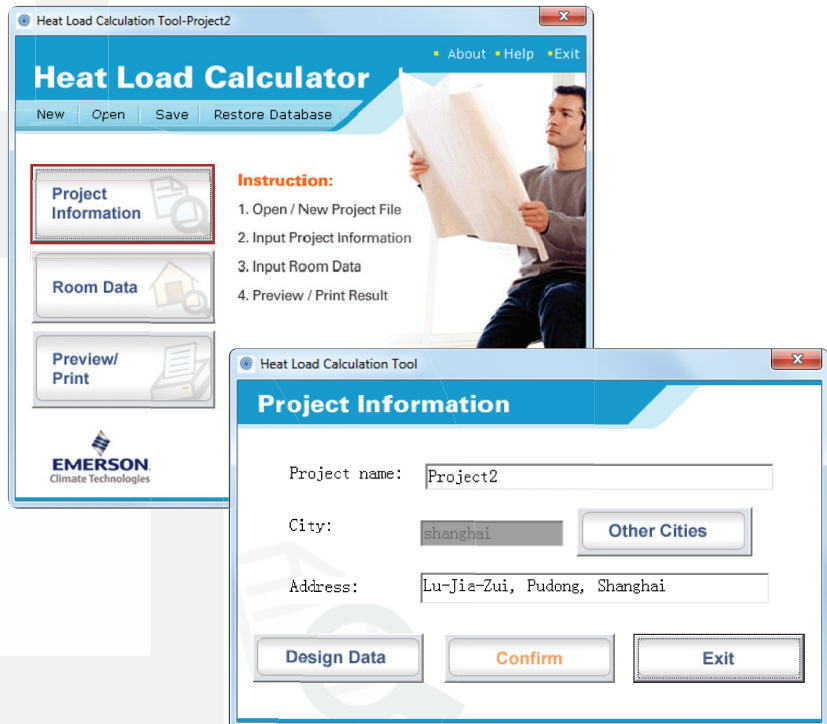
Starting a Project

You can start a project by either creating a New Project or opening an existing .mdbe project.

■ Creating a New Project

1. Click *New* to start a New Project. This opens the Project Information Screen.
2. Fill up the Project Name and Project address
3. By Clicking *Other Cities*, you can either choose or customize weather data

HLCT Main Screen



Room Data Main Screen

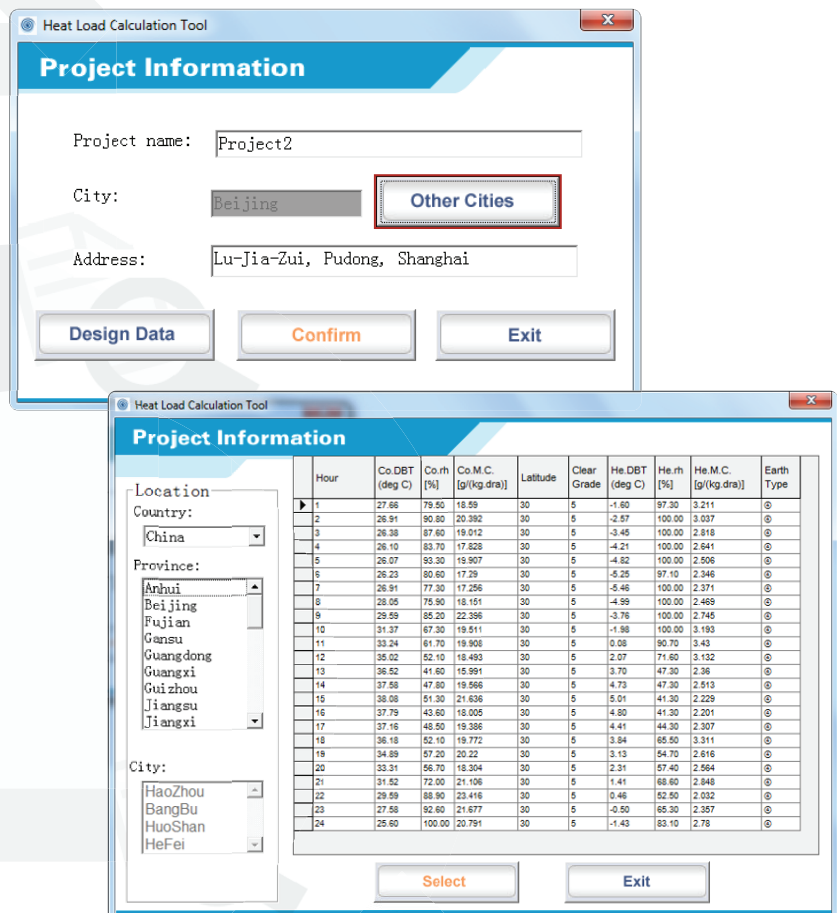
HOW TO INPUT DATA

■ Selecting the Weather Data

1. Select from the Listed Locations on the left side of the screen by choosing the Country, Province, and City
2. Click *Select* to accept the changes

* Please refer to the List of Nomenclature at the end of this Manual for more information.

Project Information Main Screen



Weather Design Data

HOW TO INPUT DATA

■ Selecting the Design Data

1. From the Project Information Screen, click *Design Data*
2. By choosing *Revise*, you can change the data in the spreadsheet by simply clicking on the cells
3. To accept the changes, click *Confirm*. To close the window without saving the data, click *Exit*.

Design Data

Heat Load Calculation Tool

Design Data

Hour	SummerDB	SummerRH	SummerX	Latitude	Cleargrade	WinterDB	WinterRH	WinterX	Earthtype
1.00	26.91	60.50	13.44	40	4	-8.65	52.10	0.935	⊗
2.00	26.31	65.80	14.13	40	4	-10.39	22.20	0.341	⊗
3.00	25.9	65.30	13.67	40	4	-11.97	0.00	0	⊗
4.00	25.69	73.90	15.32	40	4	-13.32	0.00	0	⊗
5.00	25.68	74.80	15.49	40	4	-14.38	0.00	0	⊗
6.00	25.71	66.40	13.74	40	4	-15.11	0.00	0	⊗
7.00	26.09	77.60	16.49	40	4	-15.48	0.00	0	⊗
8.00	26.91	62.10	13.79	40	4	-14.62	0.00	0	⊗
9.00	28.12	61.30	14.63	40	4	-12.37	0.00	0	⊗
10.00	29.63	44.00	11.40	40	4	-9.15	0.00	0	⊗
11.00	31.28	45.10	12.87	40	4	-5.51	0.00	0	⊗
12.00	32.91	38.80	12.14	40	4	-2.04	0.00	0	⊗
13.00	34.34	39.50	13.39	40	4	0.73	0.00	0	⊗
14.00	35.39	37.00	13.30	40	4	2.4	0.00	0	⊗
15.00	35.93	31.70	11.73	40	4	2.78	0.00	0	⊗
16.00	35.61	38.50	13.29	40	4	2.42	0.00	0	⊗
17.00	34.99	29.80	10.44	40	4	1.77	3.40	0.144	⊗
18.00	34.06	31.70	10.53	40	4	0.89	0.00	0	⊗
19.00	32.82	34.60	10.75	40	4	-0.19	0.00	0	⊗
20.00	31.32	40.40	11.53	40	4	-1.4	6.60	0.221	⊗
21.00	29.69	43.70	11.31	40	4	-2.68	12.20	0.365	⊗
22.00	27.69	41.30	9.54	40	4	-3.98	4.40	0.119	⊗
23.00	25.69	48.70	10.00	40	4	-5.24	0.00	0	⊗
24.00	23.68	57.70	10.53	40	4	-6.4	0.00	0	⊗

City: Beijing

Revise Confirm Exit

HOW TO INPUT DATA

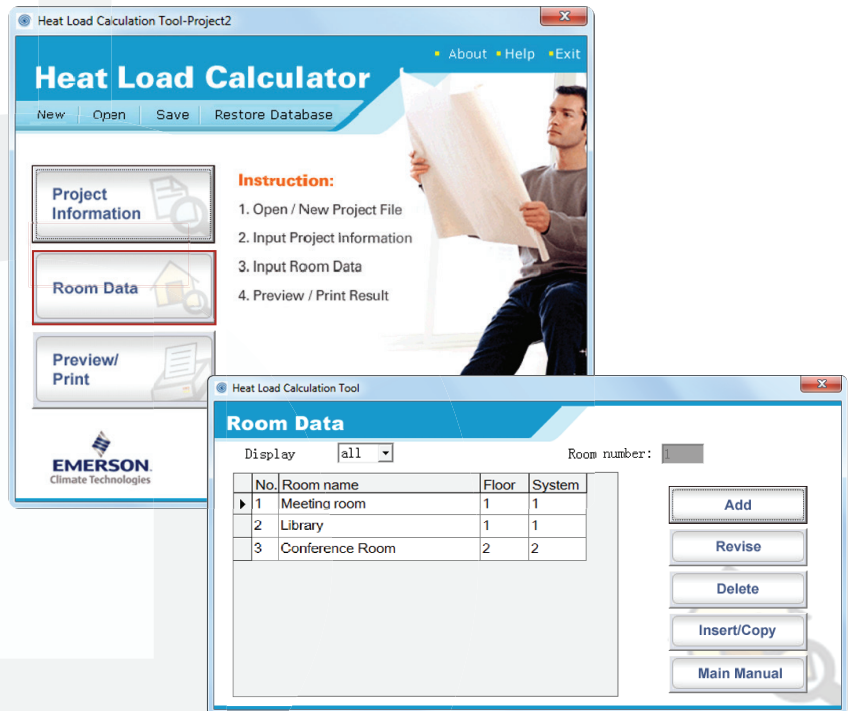
■ Input of Room Specifications

A large portion of all Heat Load Computations is based on the parameters entered in this part of the program.

Room Specifications include Building Material Characteristic, Factors, Design Room Temperature, Time, other Sources of Heat, and more.

* Please refer to the List of Nomenclature at the end of this Manual for more information.

HLCT Main Screen



Room Data Main Screen

HOW TO INPUT DATA

■ Adding a New Room

By choosing *Add* from the Room Data Main Screen, you can insert a new Room to your current Project. Completely fill-up all Room Specification Details.

Room's Specification:

- Identifies the Room number. It also corresponds to the order that the Room was created.
- The name of the Room
- The Floor where the Room is located
- Common air conditioning system being used by multiple conditioned Rooms
- The specific function of the Room
- Floor Area of the Room in metric units (sq.m)
- Ceiling height of the Room in metric units (m)

Room Data Main Screen

Room Data Main Screen

Heat Load Calculation Tool

Room Data

Display: all Room number: 1

No.	Room name	Floor	System
1	Meeting room	1	1
2	Library	1	1
3	Conference Room	2	2

Buttons: Add, Revise

Room's Specification Main Screen

Heat Load Calculation Tool

Room's Specification

Number: 4 Room name: room1 Floor: 1 System: 1

Room's Function: Public meeting place

Room area: 15 sqm Ceiling height: 2.7 m

Buttons: Room Advance, Room Back

Ceiling (no A/C in higher floor)		Floor (no A/C in lower floor)		Equipment Heat	
Ceiling area belongs to the following:		Floor area belongs to the following:		Sensible	
Upstairs is boiler room:	0 sqm	Downstairs is boiler room:	0 sqm	0 y	
Upstairs is kitchen:	0 sqm	Downstairs is kitchen:	0 sqm	Latent heat:	
Upstairs Rm facing outdoor:	0 sqm	Downstairs Rm facing outdoor:	0 sqm	0 y	
Upstairs Rm facing interior:	0 sqm	Downstairs Rm facing interior:	0 sqm	Safety factor	
Roof area:	0 sqm	Ground area:	0 sqm	Sensible SF1= 1.05	
Skylight area:	0 sqm	Depth in earth:	0	Latent SF2= 1.05	

Buttons: Conductivity Factor K, Temperature/Humidity, Time Schedule, OW/OG/W, Others, Confirm, Exit

Room Specification Main Screen

HOW TO INPUT DATA

Load Components:

Load Components are factors that affect Heat Transmissions.

If unconditioned areas are located above, below, or adjacent to the room being designed, heat loads will greatly vary.

Ceiling(no A/C in higher floor)
Ceiling area belongs to the followings:

a	Upstair is boiler room:	<input type="text" value="0"/>	sqm
b	Upstair is kitchen:	<input type="text" value="0"/>	sqm
c	Upstair Rm facing outdoor	<input type="text" value="0"/>	sqm
d	Upstair Rm facing interior	<input type="text" value="0"/>	sqm
e	Roof area:	<input type="text" value="0"/>	sqm
f	Skylight area:	<input type="text" value="0"/>	sqm

Ceiling (in metric units, sq.m)

- Boiler Room area located above the conditioned space
- Kitchen Room area located above the conditioned space
- Floor area located above the conditioned space that is exposed to outside air
- Interior floor area above the conditioned space that does not have air conditioning. (Ex. Corridors)
- Roof Area exposed to solar radiation
- Skylight area exposed to solar radiation. Skylights are windows set into a ceiling or roof that provide natural lighting.

Floor(no A/C in lower floor)
Floor area belongs to the followings:

a	Downstair is boiler room:	<input type="text" value="0"/>	sqm
b	Downstair is kitchen:	<input type="text" value="0"/>	sqm
c	Downstair is car park :	<input type="text" value="0"/>	sqm
f	Downstair Rm facing outdoor	<input type="text" value="0"/>	sqm
e	Downstair Rm facing interior	<input type="text" value="0"/>	sqm
d	Ground area:	<input type="text" value="0"/>	sqm
g	Depth in earth:	<input type="text" value="0"/>	m

Floor (in metric units, sq.m and m)

- Boiler Room area located below the conditioned space
- Kitchen Room area located below the conditioned space
- Unconditioned car park area located below the conditioned space
- Floor area located below the conditioned space that is exposed to outside air
- Interior floor area below the conditioned space that does not have air conditioning. (Ex. corridors)
- For Lower Floor without basement levels, enter the Ground or Earth area under Lower Floor
For Lower Floor with basement levels, enter the Basement Level Floor area
- Depth of each Basement Level

Equipment Heat

Sensible

a W

Latent heat:

b W

Safety factor

c Sensible SF1=

d Latent SF2=

Equipment

- Internal loads brought about by sensible heat generated by indoor equipment
- Internal loads brought about by latent heat generated by indoor equipment
- Acceptable allowance for Sensible heating
- Acceptable allowance for Latent heating

HOW TO INPUT DATA

■ Calculating the Conductivity Factor (k)

This portion of the calculator allows you to select or customize the type of material that makes up the structural wall, roof, ceiling, floor and others.

The Conductivity factor denoted by k is measured as:

$$\text{kcal}/\text{m}^2\text{-hr-}^\circ\text{C}$$

The Shielding coefficient for Skylights and glass is denoted by S_c and S_c (RF).

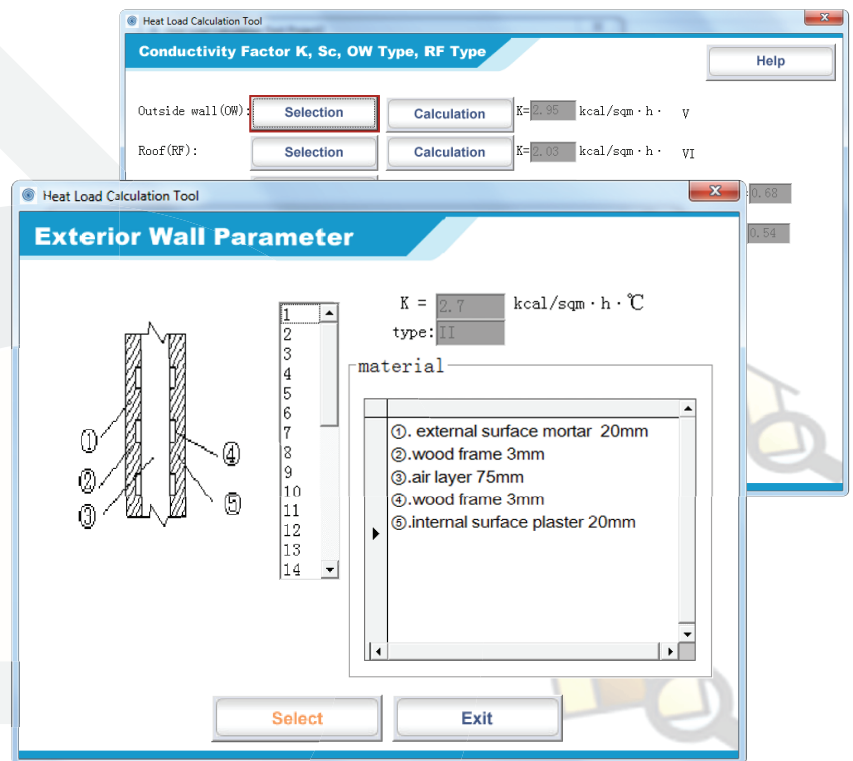
Conductivity Factor Main Screen

HOW TO INPUT DATA

■ Material Selection for Walls, Roof, Floors and Ceilings

By choosing *Selection*, you can choose from the HLCT database specific construction types of various walls, roofs, floors, and ceilings.

1. Select composite material from the roll-down menu
2. Equivalent k values and structure type are automatically displayed
3. Choose *Select* to accept the changes or *Exit* to ignore the changes



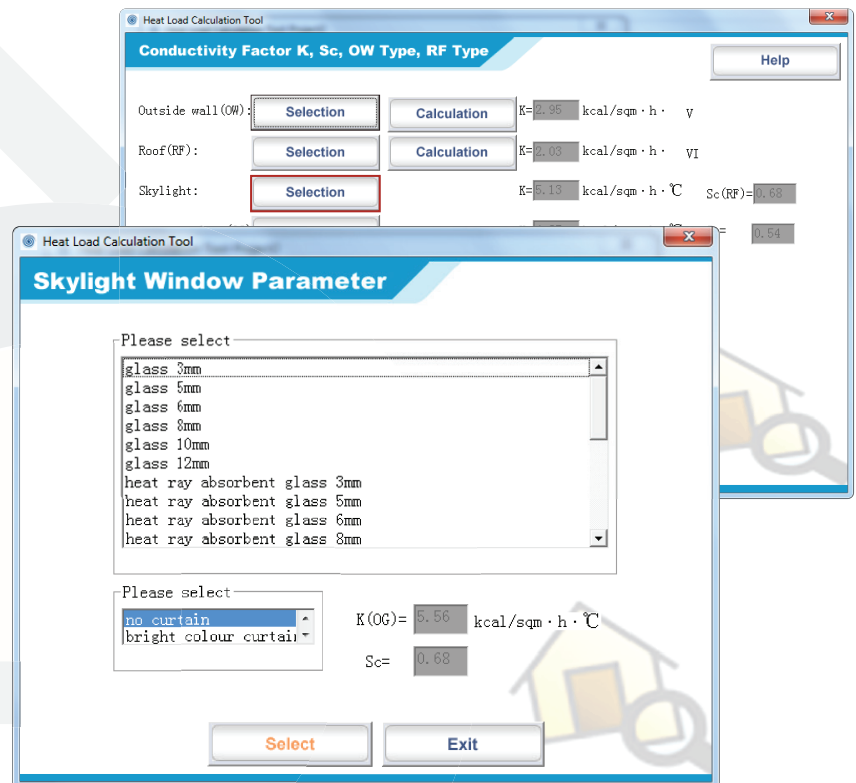
Material Selection Screen

HOW TO INPUT DATA

■ Material Selection for Skylight and Glass

By choosing *Selection*, you can choose from the HLCT database specific construction types of Skylights and Outside Glass.

1. Select Window Type with its corresponding thickness from the roll-down menu
2. Select Curtain Type
3. Equivalent K(OG) and Sc are automatically displayed
4. Choose Select to accept the changes or Exit to ignore the changes



Material Selection (Glass) Screen

HOW TO INPUT DATA

■ Calculate New Composite Material

By choosing *Calculation*, you can create specific construction composite materials that will make up the walls, roofs, floors, and ceilings.

Sample Composite Wall = Tile, Mortar, Brick, Plaster

1. Select from the material list “Tile”
2. Input the material thickness “9mm”
3. To transfer the “Tile” to the spreadsheet, click the *Right pointer arrow*.

To remove the “Tile” from the spreadsheet, highlight the “Tile” entry in the spreadsheet, and then click the *Left pointer arrow*

4. Continue data entry for the following materials:
Mortar – 40 mm
Brick – 200 mm
Plaster – 3 mm
5. Click *Cal K* to view the K results
6. Click *Select* to accept the changes

The screenshot displays the 'Heat Load Calculation Tool' interface. The main window is titled 'Conductivity Factor K, Sc, OW Type, RF Type' and features a 'Calculation' button. A 'Room's Specification' dialog box is open, showing the following details:

- Number: 4, Room name: room1, Floor: 1, System: 1
- Room's function: Public meeting place
- Room area: 15 sqm, Ceiling height: 2.7 m
- Buttons: Room Advance, Room Back

The dialog box also includes a table for 'Ceiling (no A/C in higher floor)' and 'Floor (no A/C in lower floor)' with checkboxes for various room types:

Ceiling (no A/C in higher floor)		Floor (no A/C in lower floor)		Equipment Heat	
Upstairs is boiler room:	<input type="checkbox"/> sqm	Downstairs is boiler room:	<input type="checkbox"/> sqm	Sensible	<input type="checkbox"/> y
Upstairs is kitchen:	<input type="checkbox"/> sqm	Downstairs is kitchen:	<input type="checkbox"/> sqm	Latent heat:	<input type="checkbox"/> y
Upstairs Ra facing outdoor	<input type="checkbox"/> sqm	Downstairs Ra facing outdoor	<input type="checkbox"/> sqm	Safety factor	<input type="checkbox"/> y
Upstairs Ra facing interior	<input type="checkbox"/> sqm	Downstairs Ra facing interior	<input type="checkbox"/> sqm	Sensible SF1=	1.05
Roof area:	<input type="checkbox"/> sqm	Ground area:	<input type="checkbox"/> sqm	Latent SF2=	1.05
Skylight area:	<input type="checkbox"/> sqm	Depth in earth:	<input type="checkbox"/> m		

At the bottom of the dialog box, there are tabs for 'Conductivity Factor K', 'Temperature/Humidity', 'Time Schedule', 'OW/OG/IW', and 'Others', along with 'Confirm' and 'Exit' buttons.

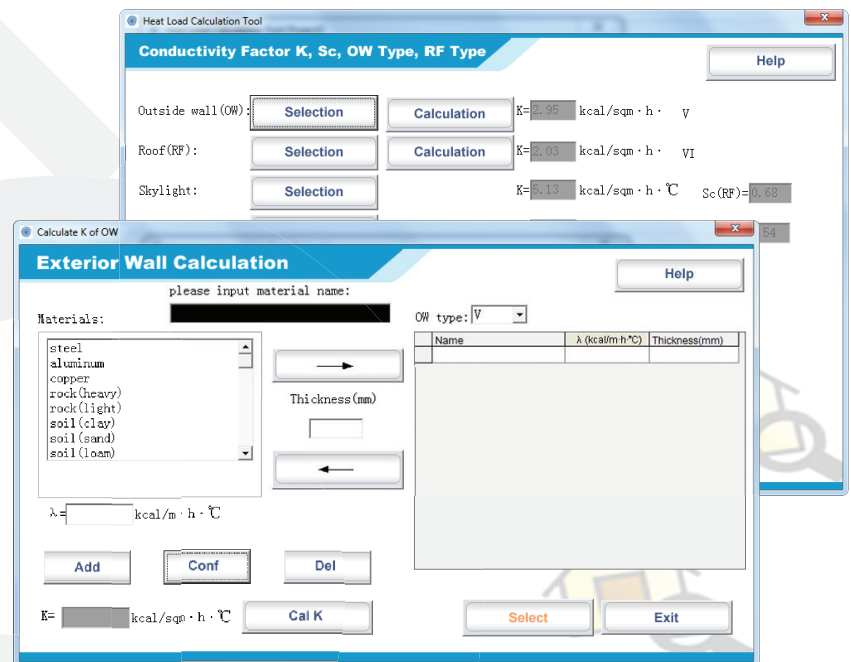
Calculation Screen

HOW TO INPUT DATA

■ Adding a New Material to the List

In case the material you need is not included in the Material List, a new material can be created.

1. Click *Add* and type in the new material name.
2. Enter the specific λ value of the new material at the entry below the Material List.
3. To add the new material to the Material List, click *Conf.*
To permanently remove any material from the Material List, highlight the material and click *Del.*
4. Click *Select* to accept the changes.



Calculation Screen

HOW TO INPUT DATA

■ Design Room Temperature and Humidity

By choosing *Temperature/Humidity*, you can change the temperature (°C) and RH (%) that the conditioned space is designed to maintain under the most extreme conditions.

1. Enter the Summer Design Temperature
2. Enter the Summer Design Relative Humidity
3. Enter the Winter Design Temperature
4. Enter the Winter Design Relative Humidity
5. Click *Confirm* to accept the changes
6. To reset the data to Default Design Values, click *Back to Preset*

Heat Load Calculation Tool

Room's Specification

Number: Room name: Floor: System:

Room's function:

Room area: sqm Ceiling height: m

Ceiling (no A/C in higher floor) Ceiling area belongs to the followings: Upstair is boiler room: <input type="text" value="0"/> sqm Upstair is kitchen: <input type="text" value="0"/> sqm Upstair Rm facing outdoor: <input type="text" value="0"/> sqm Upstair Rm facing interior: <input type="text" value="0"/> sqm Roof area: <input type="text" value="0"/> sqm Skylight area: <input type="text" value="0"/> sqm	Floor (no A/C in lower floor) Floor area belongs to the followings: Downstair is boiler room: <input type="text" value="0"/> sqm Downstair is kitchen: <input type="text" value="0"/> sqm Downstair is car park: <input type="text" value="0"/> sqm Downstair Rm facing outdoor: <input type="text" value="0"/> sqm Downstair Rm facing interior: <input type="text" value="0"/> sqm Ground area: <input type="text" value="0"/> sqm Depth in earth: <input type="text" value="0"/> m	Equipment Heat Sensible: <input type="text" value="0"/> W Latent heat: <input type="text" value="0"/> W Safety factor Sensible SF1= <input type="text" value="1.05"/> Latent SF2= <input type="text" value="1.05"/>
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Heat Load Calculation Tool

Design Room Temperature/Humidity

Summer temperature: °C DB
 humidity: % RH

Winter temperature: °C DB
 humidity: % RH

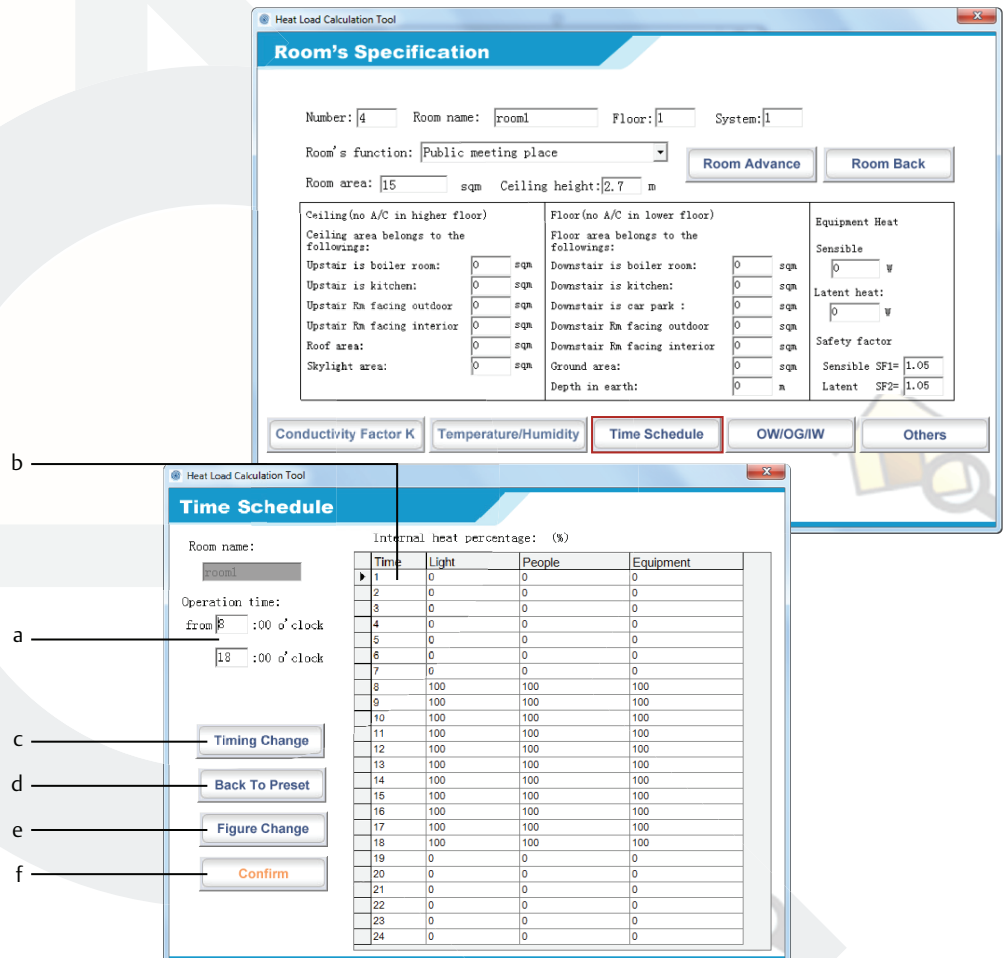
**Design Room Temperature
Humidity Main Screen**

HOW TO INPUT DATA

■ Load Time Scheduling

By choosing *Time Schedule*, you can assign the amount of internal heat (percentage, %) produced during particular time periods.

- a. Operation Time denotes the exact hours when Lights, People or Equipment generate internal heat
- b. Internal Heat Distribution Table:
 - Column** – Amount of Internal Heat generated by Lights, People, Indoor Equipment and its equivalent Time. (1-24th hour 1 AM-12 Midnight)
 - Row** – Hourly Time Period
- c. To accept the new Operation Time, click *Timing Change*
- d. To reset the data to Default Design Values, click *Back to Preset*
- e. To input new internal heat percentages, click *Figure Change*
- f. Click *Confirm* to accept the changes



Time Schedule Main Screen

HOW TO INPUT DATA

Sample Internal Heat Gain Distribution:

8-18 Hour, 50% Internal Heat Gain

19-24 Hour, 100% Internal Heat Gain

1. Change Default Operation Time, from “8:00 – 18:00” to “8:00-24:00”
2. To accept the new time, click *Timing Change*
3. To manually change the percentages, click *Figure Change*. Input “50” on the cells under Lights, People, and Equipment and during the time period “8:00-18:00”

Room's Specification

Number: 4 Room name: room1 Floor: 1 System: 1

Room's function: Public meeting place

Room area: 15 sqm Ceiling height: 2.7 m

Buttons: Room Advance, Room Back

Ceiling (no A/C in higher floor)		Floor (no A/C in lower floor)		Equipment Heat	
Ceiling area belongs to the followings:		Floor area belongs to the followings:		Sensible	
Upstairs is boiler room:	0 sqm	Downstairs is boiler room:	0 sqm	0	W
Upstairs is kitchen:	0 sqm	Downstairs is kitchen:	0 sqm	0	W
Upstairs Rm facing outdoor:	0 sqm	Downstairs Rm facing outdoor:	0 sqm	0	W
Upstairs Rm facing interior:	0 sqm	Downstairs Rm facing interior:	0 sqm	0	W
Roof area:	0 sqm	Ground area:	0 sqm	Safety factor	
Skylight area:	0 sqm	Depth in earth:	0 m	Sensible SF1=	1.05
				Latent SF2=	1.05

Buttons: Conductivity Factor K, Temperature/Humidity, Time Schedule, OW/OG/IW, Others

Time Schedule

Room name: room1

Operation time: from 8:00 o'clock to 18:00 o'clock

Buttons: Timing Change, Back To Preset, Figure Change, Confirm

Internal heat percentage: (%)

Time	Light	People	Equipment
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	100	100	100
9	100	100	100
10	100	100	100
11	100	100	100
12	100	100	100
13	100	100	100
14	100	100	100
15	100	100	100
16	100	100	100
17	100	100	100
18	100	100	100
19	0	0	0
20	0	0	0
21	0	0	0
22	0	0	0
23	0	0	0
24	0	0	0

Time Schedule Main Screen

HOW TO INPUT DATA

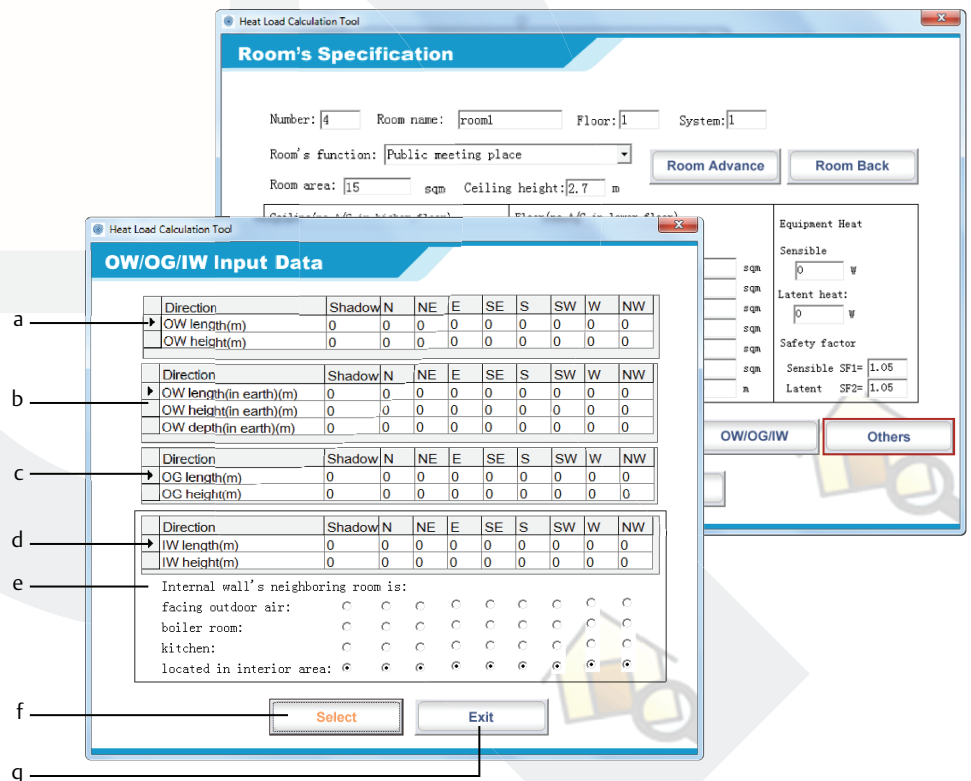
■ Outside Wall (OW), Outside Glass (OG), Inside Wall (IW) Input Data

The position of the building in reference to the sun's orientation greatly affects the amount of heat gained through various sides of the building.

At each direction (N, NE, E, SE, S, SW, W, NW), wall and glass dimensions (length and height) are measured in meters (m).

- a. Dimension of outside wall
- b. Dimension of outside wall in earth
Underground wall depth from the ground level
- c. Dimension of outside glass
- d. Dimension of internal wall
- e. Indicates whether the internal wall is adjacent to a boiler room, kitchen, or a room facing outdoor air
If the internal wall is not adjacent to any of these rooms, use the option "located in interior area "
- f. Choose *Select* to accept the changes
- g. Choose *Exit* to ignore the changes

OW/OG/IW Input Data Main Screen



HOW TO INPUT DATA

■ Other / Supplementary Load

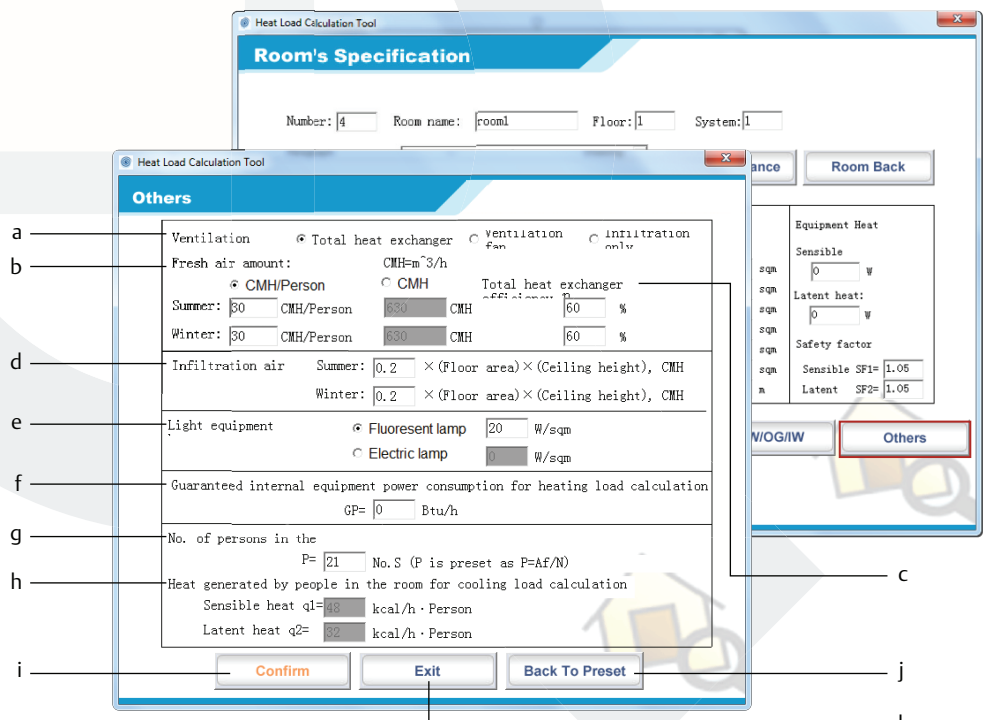
In addition to the heat transmitted into the conditioned space through walls and air infiltration, any heat gain from other sources must be included in the total cooling / heating load computation.

The infiltration air amount, power consumption from lighting, and people-generated heat is directly affected by the function of each room.

- a. Type of Ventilation System to be installed
- b. The amount of fresh air required for building occupants
- c. Total Heat Exchanger Efficiency; Standard total heat exchanger efficiency is 60%
- d. Amount (percentage) of infiltrated air during Summer and Winter months

Standard air infiltration is 0.2 time air changes of total room air volume.

- e. Power consumption of lighting equipment measured in Watt/sq.m.
- f. Power consumption for equipments that consume power 24 hours each day (Guaranteed Equipment heat)
- g. The reasonable number of persons occupying the floor based on the declared floor area and specific room function
- h. Amount of sensible and latent heat generated by the occupants



PRINTING AND PREVIEW

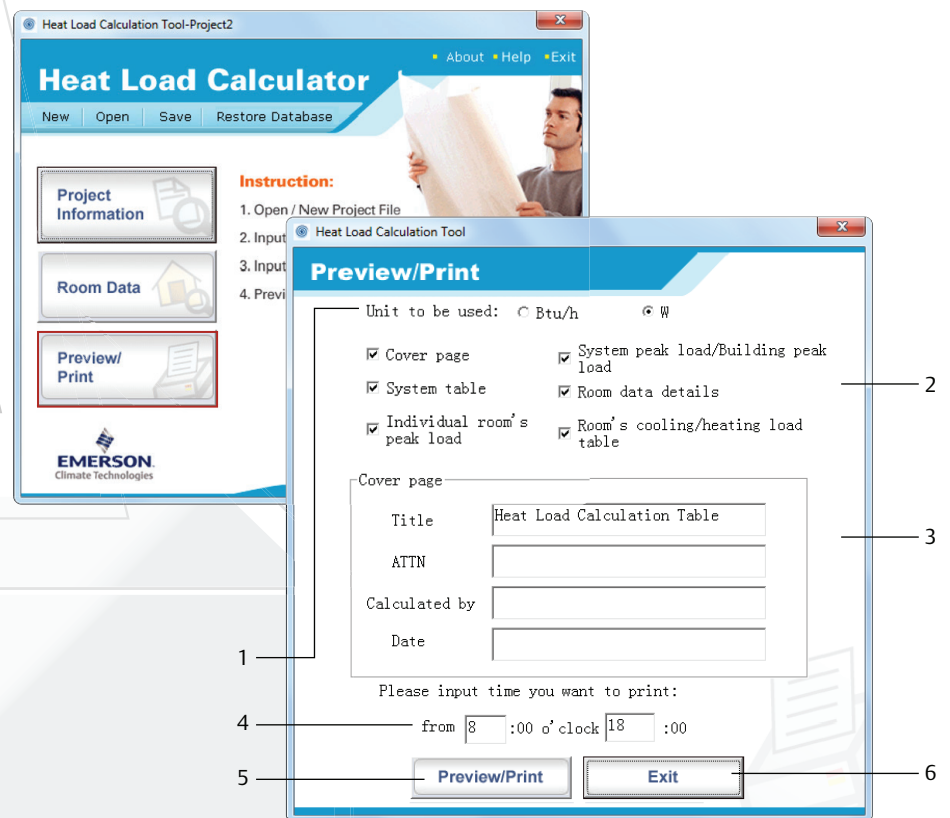
■ Viewing and Printing a Project

The Heat Load Calculating Tool generates all the necessary heat load computation results allowing you to view and review them systematically.

By choosing *Preview/Print*, you can either view or print the project result summary.

1. Select the unit (W or Btu/h) to be used.
2. Mark which items to be viewed and printed.
3. Fill-up the Cover page details.
4. Enter the Hours that you wish to Preview and Print. These Times correspond to the Internal Heat Gain Percentage Time Schedule
5. Choose *Preview/Print* to display the summary of the results
6. Choose *Exit* to ignore the changes

HLCT Main Screen



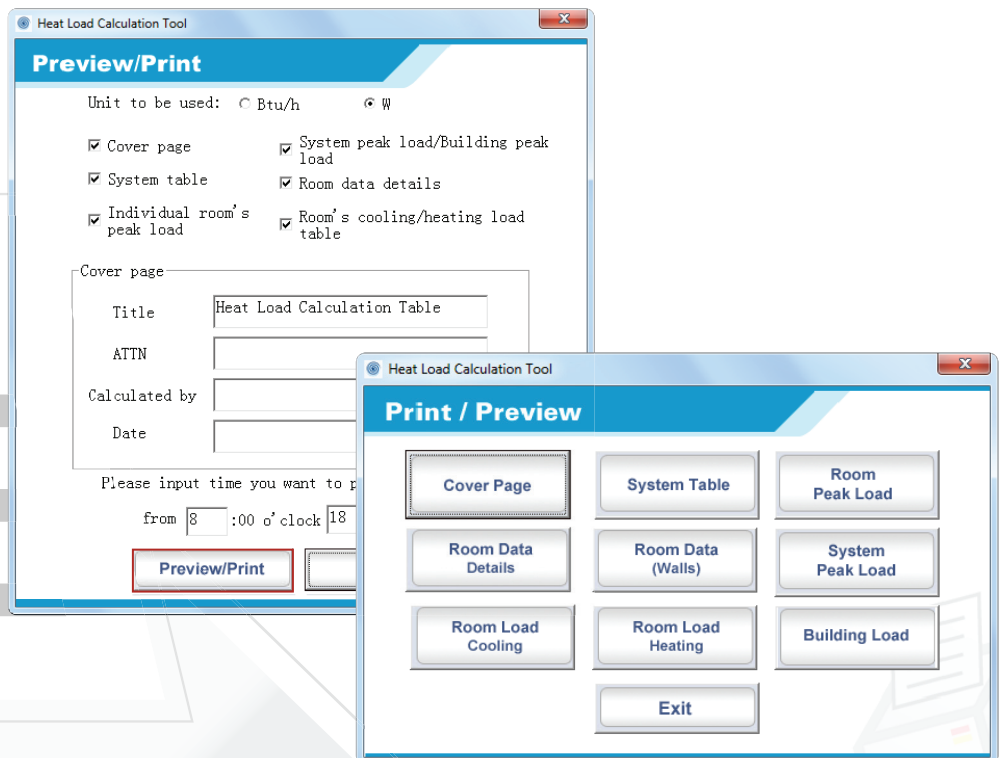
Preview / Print Main Screen

PRINTING AND PREVIEW

From the selection, click on the buttons you want to preview and print.

1. Cover Page
2. System Table
3. Room Peak Load
4. Room Data Details
5. Room Data (Walls)
6. System Peak Load
7. Room Load Cooling
8. Room Load Heating
9. Building Load

Preview / Print Main Screen



Summary of Results

GLOSSARY

Summer DB	Summer Dry Bulb Temperature	°C
	The ambient or outdoor summer temperature samples for each country/city.	
Summer RH	Summer Relative Humidity	%
	The summer relative humidity in relation to the Summer DB and atmospheric pressure. <i>Ratio of water vapor in the air in relation to the amount needed to saturate the air at the same temperature.</i>	
Summer X	Summer Absolute Humidity	g/Kg (Dry Air)
	The summer absolute humidity in relation to the Summer DB and atmospheric pressure. <i>The mass of water vapor divided by the mass of dry air at a given temperature and volume of air.</i>	
Winter DB	Winter Dry Bulb Temperature	°C
	The ambient or outdoor winter temperature samples for each country/city.	
Winter RH	Winter Relative Humidity	%
	The winter relative humidity in relation to the Winter DB and atmospheric pressure. <i>Ratio of water vapor in the air in relation to the amount needed to saturate the air at the same temperature.</i>	
Winter X	Winter Absolute Humidity	g/Kg (Dry Air)
	The winter absolute humidity in relation to the Winter DB and atmospheric pressure. <i>The mass of water vapor divided by the mass of dry air at a given temperature and volume of air.</i>	
K	Thermal Conductivity / Conductivity Factor	Kcal m ² - hr-°C
	Preset or calculated K factors of composite (wall, floors, roofs, ceilings) and non-composite construction materials. <i>The rate of heat transfer through a material or compound structural member with parallel walls.</i>	
S_c and S_c (RF)	Shielding Coefficient	n/a
	The measure of how well glazing blocks solar heat gain relative to 1/8" clear glass under the same conditions. The lower the coefficient, the better the unit blocks solar heat.	

NOMENCLATURE

Quantity	Symbol	Coherent Unit
Ceiling	CL	<i>m</i>
Conductivity Factor	K	<i>Kcal / m²-hr-°C</i>
Conductivity Ratio	λ	<i>Kcal / m²-hr-°C</i>
Floor	FL	<i>m</i>
Fresh Air Amount	CMH	<i>m³/hr</i>
Guaranteed Internal Equipment Power	GP	<i>Kcal / hr</i>
Internal Wall	IW	<i>m</i>
Outside Glass	OG	<i>m</i>
Outside Wall	OW	<i>m</i>
Roof	RF	<i>m</i>
Safety Factor	SF	<i>n/a</i>
Shielding Coefficient	S _c and S (RF)	<i>n/a</i>
Summer Absolute Humidity	Summer X	<i>g/Kg(Dry Air)</i>
Summer Dry Bulb Temperature	Summer DB	<i>°C</i>
Summer Relative Humidity	Summer RH	<i>%</i>
Winter Absolute Humidity	Winter X	<i>g/Kg(Dry Air)</i>
Winter Dry Bulb Temperature	Winter DB	<i>°C</i>
Winter Relative Humidity	Winter RH	<i>%</i>

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