



SAMPLE OF COOLING LOAD ESTIMATION WITH HAP

HOURLY ANALYSIS PROGRAM (HAP)



- **HAP SYSTEM DESIGN FEATURES.**
- **HAP ENERGY ANALYSIS FEATURES.**
- **USING HAP TO DESIGN SYSTEMS AND PLANTS.**
- **USING HAP TO ESTIMATE ENERGY USE AND COST.**
- **WORKING WITH PROJECTS.**
- **GENERATING INPUT DATA REPORTS.**
- **USING THE REPORT VIEWER .**



HOW TO START?

- From **START MENU** choose **Hourly Analysis Program (HAP)**.

My Documents Rse Rhapsody IAFS_Fsy.exe

My Computer RealPlayer pipesizer.exe

My Network Places Rhapsody Free WEAR300A ...

mm

- Internet Explorer
- E-mail Microsoft Office Outlook
- RealPlayer
- Windows Media Player
- Microsoft Office Word 2003
- Microsoft Office Excel 2003
- Hourly Analysis Program 4.10
- AutoCAD

My Documents

- My Recent Documents
- My Pictures
- My Music
- My Computer
- My Network Places

Control Panel

Set Program Access and Defaults

Connect To

- Printers and Faxes

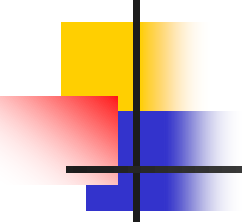
Help and Support

Search

Run...

All Programs

New programs installed. Turn Off Computer



Click on (HAP) starting
window will appear.

My Documents Real Rhapsody LAT

My Computer RealPlayer pipe

My Network Places Rhapsody Free WRA
Trial

Recycle Bin DivX Player 2.1 DT

Internet Explorer Drawing1.dwg MCC

AutoCAD 2007 Sample of VBRL
Cooling Loa...

Autodesk DWF Viewer Try Mastermind
From DivX

Duct Designer DEMO New Folder

Nero StartSmart Lotus ScreamC... ~\$hap.doc

Hap41 - [Untitled]

Project Edit View Reports Help

Hourly Analysis Program

Carrier

Version 4.10b

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No warranty, either expressed or implied, is given with respect to the accuracy or the sufficiency of the information provided hereby, and the user must assume all risks and responsibility in connection with the use thereof.

Copyright (c) Carrier Corporation, 1999-2002. All rights reserved.

This program is protected by US and International copyright laws.

Done

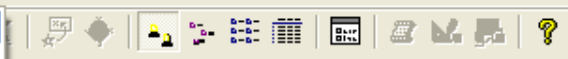
Ready 10/01/2002

start hap.doc - Microsoft ... untitled - Paint Hap41 - [Untitled] EN 12:32

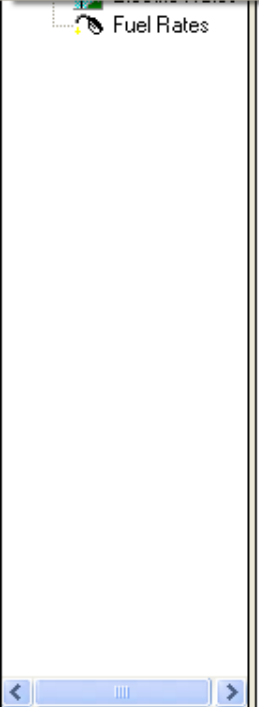
Create a New Project

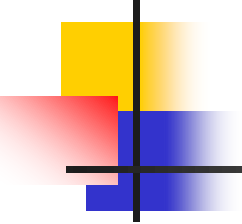


Choose new on the **PROJECT MENU this creates a **NEW PROJECT** a project is the container which holds your data.**



- New
- Open...
- Save
- Save As...
- Delete...
- Properties
- Archive...
- Retrieve...
- Retrieve HAP v3.2 Data... F3
- Retrieve HAP v4.0 Data... F4
- 1 - H1007
- 2 - HSBC Commercial Bank2
- 3 - HSBC Commercial Bank
- 4 - COMMERCIAL BANK2007
- Exit



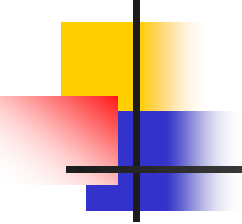


New project will be established
which will be contain" **SAMPLE
DATA.** "



- H1007
 - Weather
 - Spaces
 - Systems
 - Plants
 - Buildings
 - Project Libraries
 - Schedules
 - Walls
 - Roofs
 - Windows
 - Doors
 - Shades
 - Chillers
 - Cooling Towers
 - Boilers
 - Electric Rates
 - Fuel Rates

Weather: Cairo, Egypt Spaces Systems Plants Buildings Project Libraries



Choose **Save** on the **Project** menu
you'll be asked to name the
project from here on, save the
project periodically.



- Untitled
- Weather
- Spaces
- Systems
- Plants
- Buildings
- Project Libraries
- Schedules
- Walls
- Roofs
- Windows
- Doors
- Shades
- Chillers
- Cooling Towers
- Boilers
- Electric Rates
- Fuel Rates

Weather: Chicago IA...

Spaces Systems Plants Buildings Project Libraries

Save Project As

Project Name:

Folder:



ENTER WEATHER DATA

Click on the “**Weather**” item in the tree view in the main program window. The Weather input form will appear .



- H1007
 - Weather
 - Spaces
 - Systems
 - Plants
 - Buildings
 - Project Libraries
 - Schedules
 - Walls
 - Roofs
 - Windows
 - Doors
 - Shades
 - Chillers
 - Cooling Towers
 - Boilers
 - Electric Rates
 - Fuel Rates

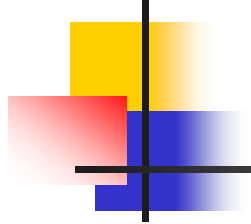


Weather Properties - [Cairo]

Design Parameters | Design Temperatures | Design Solar | Simulation

Region:	Middle East	Atmospheric Clearness Number:	1.00
Location:	Egypt	Average Ground Reflectance:	0.20
City:	Cairo	Soil Conductivity:	1.385 W/m/K
Latitude:	30.1 deg	Design Clg Calculation Months:	Jan to Dec
Longitude:	-31.4 deg	Time Zone (GMT +/-):	-2.0 hours
Elevation:	73.8 m	Daylight Savings Time:	<input type="radio"/> Yes <input checked="" type="radio"/> No
Summer Design DB:	40.0 °C	DST Begins:	Apr 1
Summer Coincident WB:	20.6 °C	DST Ends:	Oct 31
Summer Daily Range:	13.3 °K	Data Source:	User Modified
Winter Design DB:	7.2 °C		
Winter Coincident WB:	3.2 °C		

OK Cancel Help



Select MIDDLE EAST region.



Weather Properties - [Cairo]



Design Parameters

Design Temperatures

Design Solar

Simulation

Region: Middle East

Location: Africa
Asia/Pacific
City: Canada
Latitude: Central & South America deg
Longitude: Europe deg
Elevation: Middle East
U.S.A.

73.8 m

Summer Design DB 40.0 °C

Summer Coincident WB 20.6 °C

Summer Daily Range 13.3 °K

Winter Design DB 7.2 °C

Winter Coincident WB 3.2 °C

Atmospheric Clearness Number 1.00

Average Ground Reflectance 0.20

Soil Conductivity 1.385 W/m/K

Design Clg Calculation Months Jan to Dec

Time Zone (GMT +/-) -2.0 hours

Daylight Savings Time Yes No

DST Begins Apr 1

DST Ends Oct 31

Data Source:
User Modified

OK

Cancel

Help



from location menu select
EGYPT.



Design Parameters | Design Temperatures | Design Solar | Simulation

Region: Middle East
Location: Egypt
City: Bahrain, Cyprus, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon
Latitude: _____ deg
Longitude: _____ deg
Elevation: _____ m
 Summer Design go °C
 Summer Coincident WB °C
 Summer Daily Range °K
 Winter Design DB °C
 Winter Coincident WB °C

Atmospheric Clearness Number
 Average Ground Reflectance
Soil Conductivity W/m/K
 Design Clg Calculation Months Jan to Dec
Time Zone (GMT +/-) hours
 Daylight Savings Time Yes No
 DST Begins Apr 1
 DST Ends Oct 31

Data Source:
User Modified

OK Cancel Help



from CITY MENU select
CAIRO.

Weather Properties - [Cairo]



Design Parameters | Design Temperatures | Design Solar | Simulation

Region: Middle East
Location: Egypt
City: Cairo
Latitude: 30.1 deg
Longitude: -31.4 deg
Elevation: 73.8 m
Summer Design DB: 40.0 °C
Summer Coincident wB: 20.6 °C
Summer Daily Range: 13.3 °K
Winter Design DB: 7.2 °C
Winter Coincident wB: 3.2 °C

Atmospheric Clearness Number: 1.00
Average Ground Reflectance: 0.20
Soil Conductivity: 1.385 W/m/K
Design Clg Calculation Months: Jan to Dec

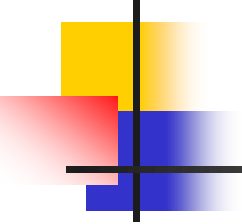
Time Zone (GMT +/-): -2.0 hours
Daylight Savings Time: Yes No
DST Begins: Apr 1
DST Ends: Oct 31

Data Source:
User Modified

OK

Cancel

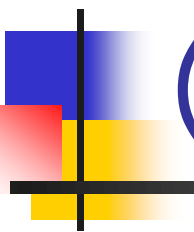
Help



Press the OK button on the Weather input form to save the data and return to the main program window.

Enter Space Data General

(General)



Click on the “Space” item in the tree view in the main program window. Space information will appear in the list view double-click on the “<new default space>” item in the list view.



- H1007
 - Weather
 - Spaces
 - Systems
 - Plants
 - Buildings
 - Project Libraries
 - Schedules
 - Walls
 - Roofs
 - Windows
 - Doors
 - Shades
 - Chillers
 - Cooling Towers
 - Boilers
 - Electric Rates
 - Fuel Rates



<New default
Space>



H1007-Trai...

Enter data for your space.



- **-Naming the space.**
- **-Input floor area, average ceiling height and building weight.**



- General
- Internals
- Walls, Windows, Doors
- Roofs, Skylights
- Infiltration
- Floors
- Partitions

Name

Floor Area m²

Avg Ceiling Height m

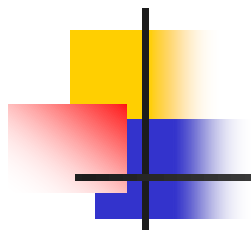
Building Weight kg/m³

Light Med. Heavy

OK

Cancel

Help



INTERNAL LOAD



General | Internals | Walls, Windows, Doors | Roofs, Skylights | Infiltration | Floors | Partitions

Overhead Lighting

Fixture Type ▼

Wattage ▼

Ballast Multiplier

▼

Task Lighting

Wattage ▼

▼

Electrical Equipment

Wattage ▼

▼

People

Occupancy ▼

Activity Level ▼

Sensible

Latent

▼

Miscellaneous Loads

Sensible

▼

Latent

▼

Entering overhead lighting



- **-select recessed unvented as fixture type, as lighting intensity and ballast multiplier as default.**



- General
- Internals
- Walls, Windows, Doors
- Roofs, Skylights
- Infiltration
- Floors
- Partitions

Overhead Lighting

Fixture Type:

Wattage:

Ballast Multiplier:

Task Lighting

Wattage:

Electrical Equipment

Wattage:

People

Occupancy:

Activity Level:

Sensible:

Latent:

Miscellaneous Loads

Sensible:

Latent:



Create Schedules.

- **When entering overhead lighting data, you must choose a schedule. In the schedule drop-down list, choose the "create new schedule"**

Schedule Properties - [Room Lighting]



Schedule Type

Hourly Profiles

Assignments

Schedule Name:

Room Lighting

Schedule Type:

- Fractional (People, Lighting, Equipment, Misc. Sensible, Misc. Latent, Ventilation Airflow, Domestic Hot Water, Misc. Electric, Misc Fuel)
- Fan/Thermostat
- Utility Rate Time-of-Day

OK

Cancel

Help



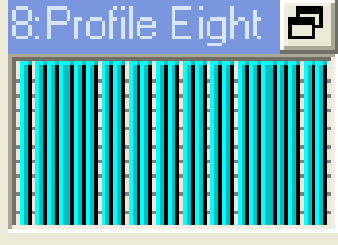
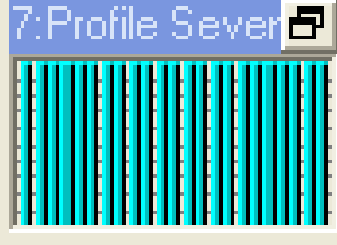
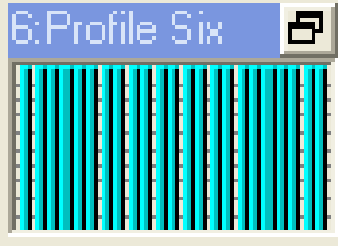
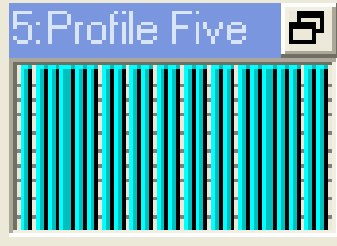
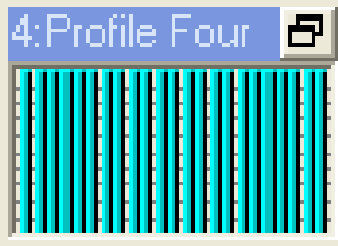
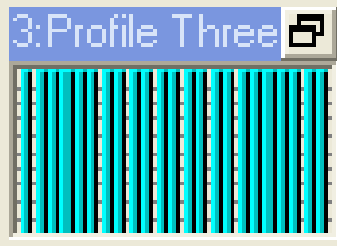
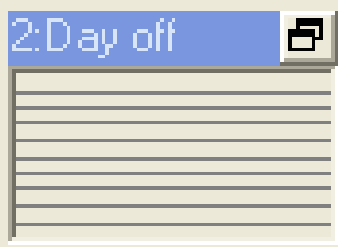
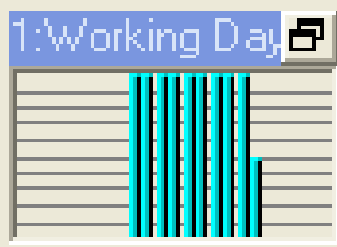
LIGHT SCHEDULES WINDOW
WILL APPEAR.



Schedule Type | Hourly Profiles | Assignments

Profile:

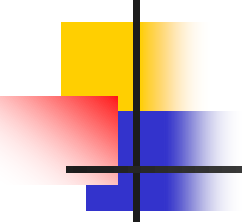
Choose a profile from the dropdown list and edit it by dragging the bars with the mouse, by using the arrow keys, or by entering data in the text fields directly. Navigate between profiles with the Tab key: navigate within a profile with the arrow keys.



OK

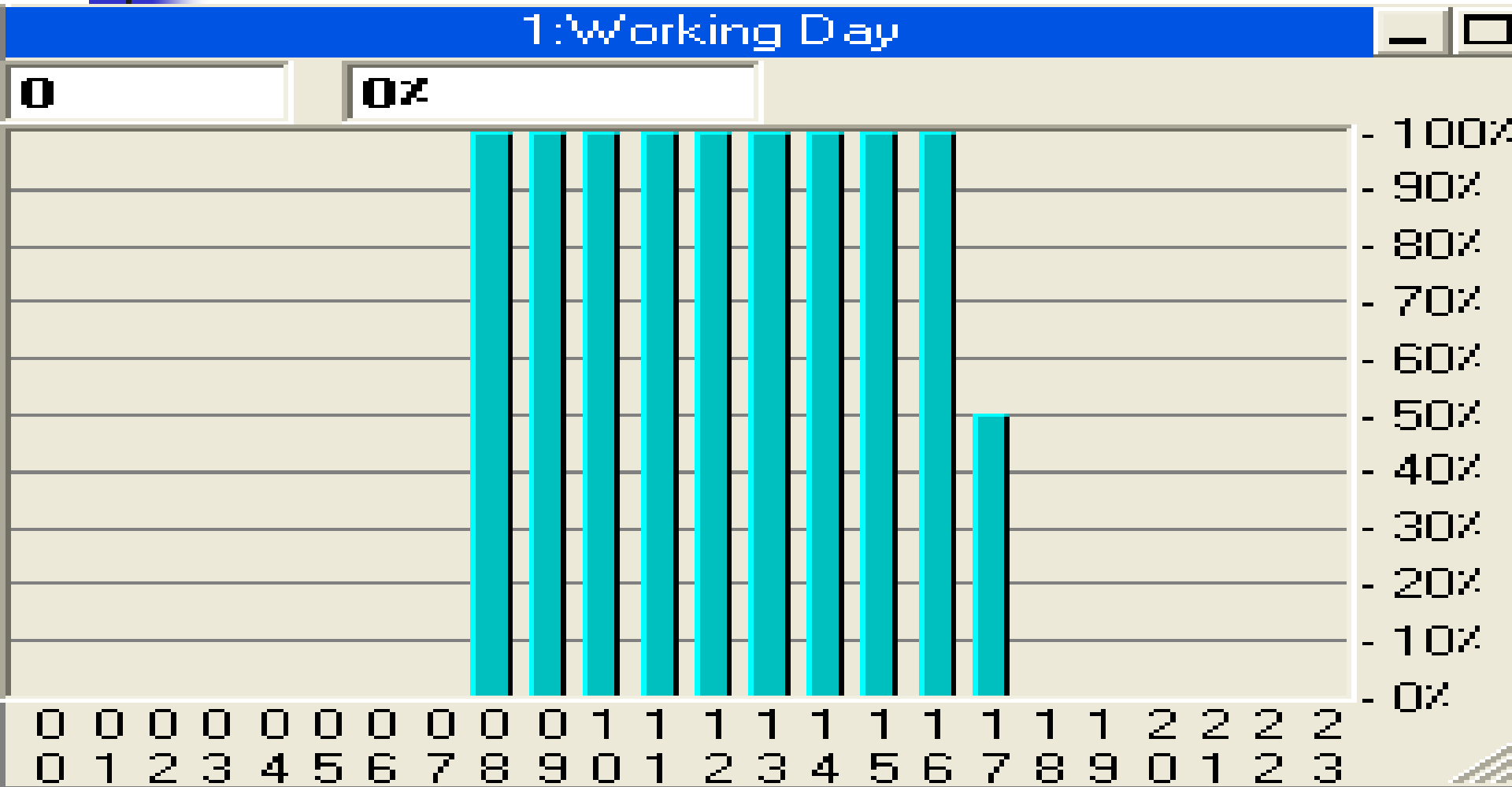
Cancel

Help

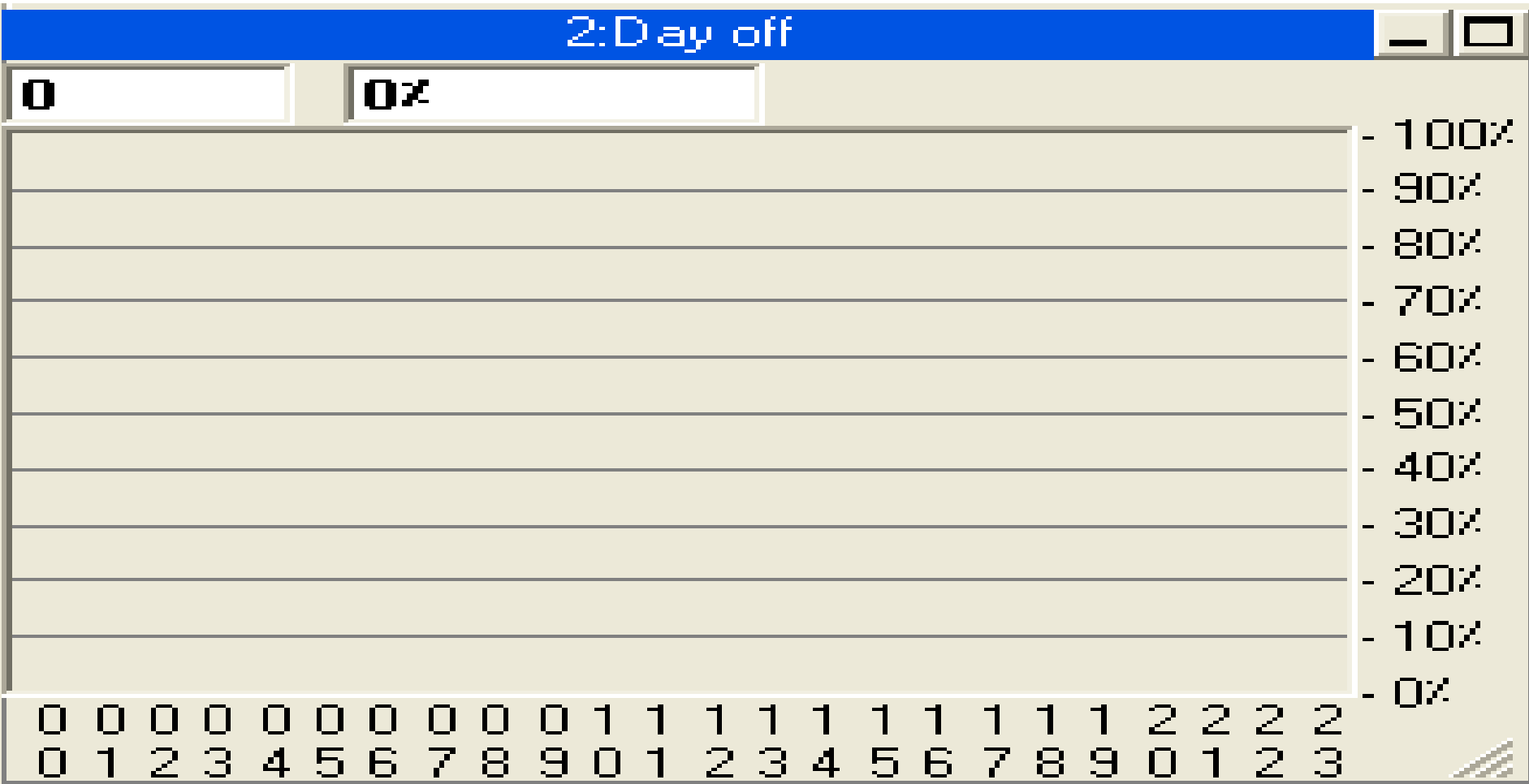


There are two different profiles
which the space working

Working day profile



Day off profile





Finally choose ROOM
LIGHTING schedule



- General
- Internals
- Walls, Windows, Doors
- Roofs, Skylights
- Infiltration
- Floors
- Partitions

Overhead Lighting

Fixture Type:

Wattage: W/m²

Ballast Multiplier:

Schedule:

Task Lighting

Wattage:

Schedule:

Electrical Equipment

Wattage:

Schedule:

- <create new schedule>
- Entrance people profile
- Heavy equipment
- light equipment
- Meeting people
- Passenger lighting
- Room Lighting**
- THERMOSTAT

People

Occupancy: People

Activity Level:

Sensible: W/person

Latent: W/person

Schedule:

Miscellaneous Loads

Sensible: W

Schedule:

Latent: W

Schedule:

ENTERING EQUIPMENT .



- **Create Schedules**, when entering equipment data, you must choose a schedule. In the schedule drop-down list, choose the “**create new schedule**”

Schedule Properties - [equipment]



Schedule Type | Hourly Profiles | Assignments

Schedule Name:

equipment

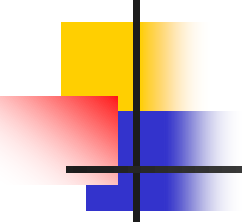
Schedule Type:

- Fractional (People, Lighting, Equipment, Misc. Sensible, Misc. Latent, Ventilation Airflow, Domestic Hot Water, Misc. Electric, Misc Fuel)
- Fan/Thermostat
- Utility Rate Time-of-Day

OK

Cancel

Help



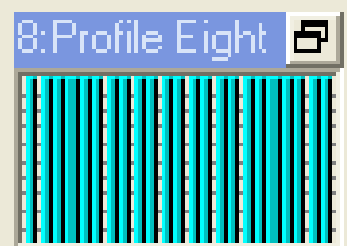
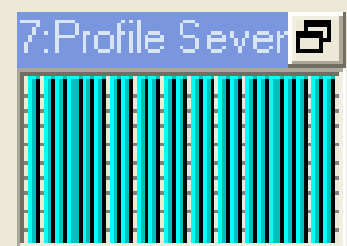
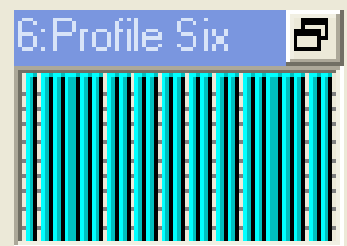
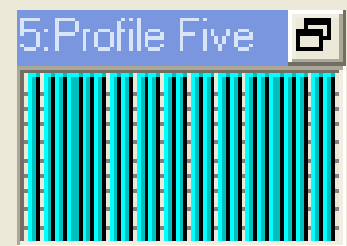
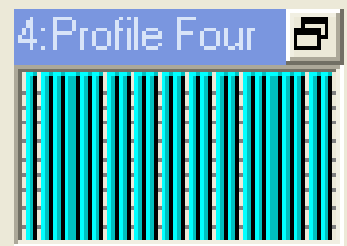
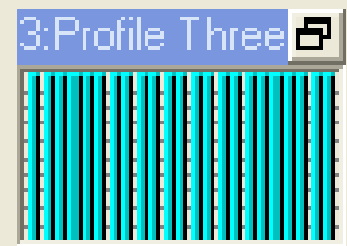
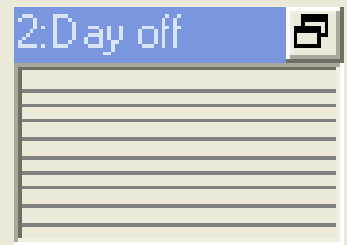
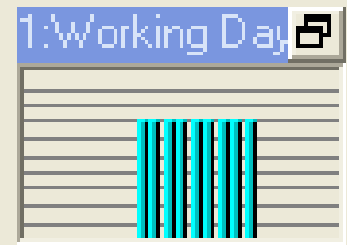
There are two different profiles
which the space working



Schedule Type **Hourly Profiles** | Assignments

Profile:

Choose a profile from the dropdown list and edit it by dragging the bars with the mouse, by using the arrow keys, or by entering data in the text fields directly. Navigate between profiles with the Tab key; navigate within a profile with the arrow keys.



OK

Cancel

Help



Finally choose equipment
schedule



- General
- Internals
- Walls, Windows, Doors
- Roofs, Skylights
- Infiltration
- Floors
- Partitions

Overhead Lighting

Fixture Type:

Wattage:

Ballast Multiplier:

Schedule:

Task Lighting

Wattage:

Schedule:

Electrical Equipment

Wattage:

Schedule:

People

Occupancy:

Activity Level:

Sensible:

Latent:

Schedule:

Miscellaneous Loads

Sensible:

Schedule:

Latent:

Schedule:

ENTERING PEOPLE .



- **Create Schedules**, when entering people data, you must choose activity level .

Space Properties - [H1007-Training]



- General
- Internals
- Walls, Windows, Doors
- Roofs, Skylights
- Infiltration
- Floors
- Partitions

Overhead Lighting

Fixture Type:

Wattage:

Ballast Multiplier:

Schedule:

Task Lighting

Wattage:

Schedule:

Electrical Equipment

Wattage:

Schedule:

People

Occupancy:

Activity Level:

Sensible:

Latent:

Schedule:

Miscellaneous Loads

Sensible:

Schedule:

Latent:

Schedule:

- OK
- Cancel
- Help

Create Schedules.



- **when entering equipment data, you must choose a schedule. In the schedule drop-down list, choose the “create new schedule”**

 Schedule Properties - [Meeting people]



Schedule Type | Hourly Profiles | Assignments

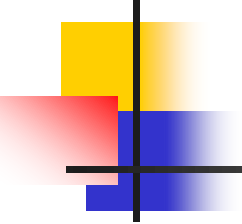
Schedule Name:

- Schedule Type:
- Fractional (People, Lighting, Equipment, Misc. Sensible, Misc. Latent, Ventilation Airflow, Domestic Hot Water, Misc. Electric, Misc Fuel)
 - Fan/Thermostat
 - Utility Rate Time-of-Day

OK

Cancel

Help



There are two different
profiles which the space
 working

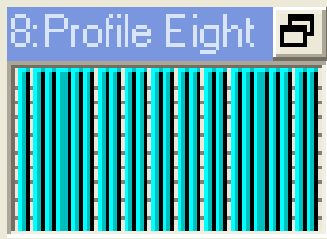
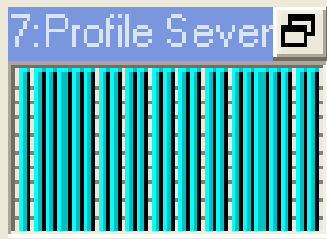
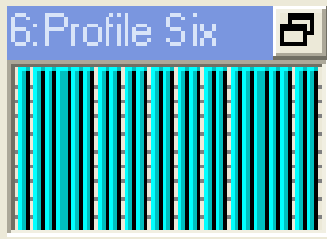
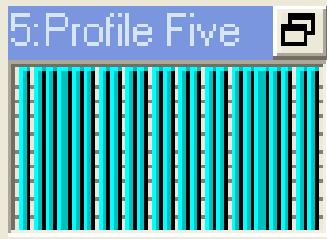
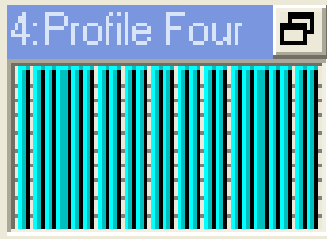
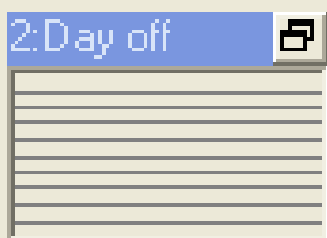
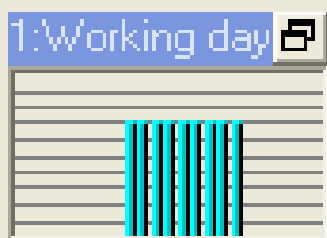
Schedule Properties - [Meeting people]



Schedule Type | Hourly Profiles | Assignments |

Profile:

Choose a profile from the dropdown list and edit it by dragging the bars with the mouse, by using the arrow keys, or by entering data in the text fields directly. Navigate between profiles with the Tab key; navigate within a profile with the arrow keys.



OK Cancel Help



Finally choose **PEOPLE** schedule.

Space Properties - [H1007-Training]



- General
- Internals
- Walls, Windows, Doors
- Roofs, Skylights
- Infiltration
- Floors
- Partitions

Overhead Lighting

Fixture Type: Recessed, unvented

Wattage: 26.00 W/m²

Ballast Multiplier: 1.08

Schedule: Room Lighting

Task Lighting

Wattage: 0.00 W/m²

Schedule: (none)

Electrical Equipment

Wattage: 6000.0 Watts

Schedule: equipment

People

Occupancy: 12.0 People

Activity Level: Office Work

Sensible: 71.8 W/person

Latent: 60.1 W/person

Schedule: Meeting people

Miscellaneous Loads

Sensible: 0 W

Schedule: (none)

Latent: 0 W

Schedule: (none)

- OK
- Cancel
- Help



ENTERING WALL, WINDOWS AND DOORS DETAILS

- **choose direction of exposure wall**



- General
- Internals
- Walls, Windows, Doors
- Roofs, Skylights
- Infiltration
- Floors
- Partitions

	Exposure	Wall Gross Area m ²	Window 1 Quantity	Window 2 Quantity	Door Quantity
1	not used				
2	S	14.6	1	0	0
3	S				
4	SSW				
5	SW				
6	WSW				
7	W				
8	WNW				
9	NW				
10	NNW				
11	not used				

Construction Types
for Exposure: **2 (S)**

Wall: South, North Wall

Window 1: Horizontal slider4

Shade 1: (none)

Window 2: (none)

Shade 2: (none)

Door: (none)



CHOOSE LAYERS OF WALL



Wall Properties - [South,North Wall]

Wall Assembly Name: **South,North Wall**

Outside Surface Color: **Dark**

Absorptivity: **0.900**

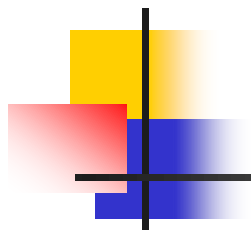
Layers: Inside to Outside	Thickness mm	Density kg/m ³	Specific Ht. kJ/kg/K	R-Value m ² -K/W	Weight kg/m ²
Inside surface resistance	0.000	0.0	0.00	0.12064	0.0
Gypsum board	15.880	800.9	1.09	0.09862	12.7
Air space	0.000	0.0	0.00	0.16026	0.0
102mm face brick	101.590	608.7	0.84	0.26681	61.9
102mm common brick	101.590	2002.3	0.92	0.07626	203.5
102mm LW concrete bloc	0.000	0.0	0.00	0.05864	0.0
203mm LW concrete bloc	219.060			0.78	278.0
102mm HW concrete bloc					
203mm HW concrete bloc					

Overall U-Value: 1.280 W/m²/K

OK

Cancel

Help



ENTERING ROOF DATA

Window Properties - [Horizontal slider4]



Window Details

Name:

Detailed Input:

Height: m **Width:** m

Frame Type:

Internal Shade Type:

Overall U-Value: W/m²/K

Overall Shade Coefficient:

Glass Details

Glazing	Glass Type	Transmissivity	Reflectivity	Absorptivity
Outer Glazing	<input type="text" value="6mm clear"/>	0.792	0.079	0.129
Glazing #2	<input type="text" value="6mm clear low-e"/>	0.639	0.116	0.245
Glazing #3	<input type="text" value="not used"/>			

Gap Type:

OK

Cancel

Help



choose direction of roof.



- General
- Internals
- Walls, Windows, Doors
- Roofs, Skylights
- Infiltration
- Floors
- Partitions

Roof
Gross
Area
m²

Roof
Slope
(deg)

Skylight
Quantity

Exposure

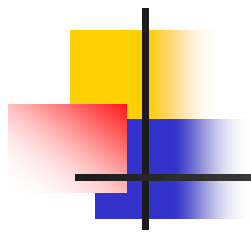
	Exposure	Roof Gross Area m ²	Roof Slope (deg)	Skylight Quantity
1	not used			
2	not used			
3	N			
4	NNE			
	NE			
	ENE			
	E			
	ESE			
	SE			

Construction Types for

Exposure: **1 (not used)**

Roof (none)

Skylight (none)



choose layer of roof .

Roof Properties - [TOP ROOF]

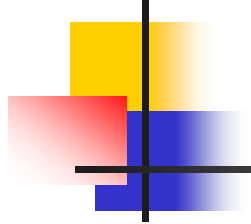


Roof Assembly Name: **TOP ROOF**

Outside Surface Color: **Dark** Absorptivity: **0.900**

Layers: Inside to Outside	Thickness mm	Density kg/m ³	Specific Ht. kJ/kg/K	R-Value m ² -K/w	Weight kg/m ²
Inside surface resistance	0.000	0.0	0.00	0.12064	0.0
▶ Steel deck	0.853	7833.0	0.50	0.00002	6.7
Board insulation	25.400	32.0	0.92	1.22291	0.8
Built-up roofing	9.540	1121.3	1.47	0.05847	10.7
Outside surface resistance	0.000	0.0	0.00	0.05864	0.0
Totals	35.793			1.46	18.2

Overall U-Value: 0.685 w/m²/K



ENTERING INFILTRATION DATA



- General
- Internals
- Walls, Windows, Doors
- Roofs, Skylights
- Infiltration
- Floors
- Partitions

Enter infiltration rate in any column:

	L/s	L/s/m ²	ACH
Design <u>C</u> ooling	18.61	1.27	0.50
Design <u>H</u> eating	0.00	0.00	0.00
Energy <u>A</u> nalysis	0.00	0.00	0.00

- Infiltration occurs:
- Only When Fan Off
 - All Hours



ENTERING FLOOR TYPE DATA



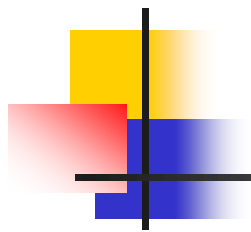
- General
- Internals
- Walls, Windows, Doors
- Roofs, Skylights
- Infiltration
- Floors
- Partitions

Floor Type

- Floor Above Conditioned Space
- Floor Above Unconditioned Space
- Slab Floor On Grade
- Slab Floor Below Grade

Floor Above Conditioned Space

No Additional Inputs



ENTERING PARTITION DETAILS

Space Properties - [H1007-Training]



- General
- Internals
- Walls, Windows, Doors
- Roofs, Skylights
- Infiltration
- Floors
- Partitions**

Partition 1

Partition 2

- Ceiling Partition
- Wall Partition

- Ceiling Partitio
- Wall Partition

Area

m²

U-Value

W/m²/K

Unconditioned Space Max Temp.

°C

Ambient at Space Max Temp.

°C

Unconditioned Space Min Temp.

°C

Ambient at Space Min Temp.

°C

OK

Cancel

Help



ENTER AIR SYSTEM DATA

- Click on the “**System**” item in the tree view in the main program window. System information will appear in the list view.
- Double-click on the “<**new default system**>” item in the list view. The System input form will appear

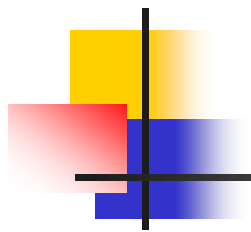


- H1007
 - Weather
 - Spaces
 - Systems
 - Plants
 - Buildings
 - Project Libraries
 - Schedules
 - Walls
 - Roofs
 - Windows
 - Doors
 - Shades
 - Chillers
 - Cooling Towers
 - Boilers
 - Electric Rates
 - Fuel Rates

<New default System>

system(H1007)

General



Naming the system

 Air System Properties - [system(H1007)]



General | System Components | Zone Components | Sizing Data | Equipment

Air System Name

Equipment Type

Air System Type

Number of Zones

OK

Cancel

Help



Select “Chilled Water Air Handling Units” as equipment type .

Air System Properties - [system(H1007)]



General | System Components | Zone Components | Sizing Data | Equipment

Air System Name

system(H1007)

Equipment Type

Chilled Water Air Handling Units

Air System Type

Number of Zones

- Undefined
- Packaged Rooftop Units
- Packaged Vertical Units
- Split Air Handling Units
- Chilled Water Air Handling Units**
- Terminal Units

OK

Cancel

Help



Select “VAV” as air system type

 Air System Properties - [system(H1007)]



General | System Components | Zone Components | Sizing Data | Equipment

Air System Name

system(H1007)

Equipment Type

Chilled Water Air Handling Units

Air System Type

VAV

Number of Zones

- CAV - Bypass Multizone
- CAV - Dual Duct
- CAV - Tempering Ventilation
- CAV - Four Pipe Induction
- VAV**
- VAV - 1-Fan Dual Duct
- VAV - 2-Fan Dual Duct
- VVT

OK

Cancel

Help



SYSTEM COMPONENT DATA

Ventilation air system

Air System Properties - [system(H1007)]



General | System Components | Zone Components | Sizing Data | Equipment

- Ventilation Air
- Economizer
- Vent. Reclaim
- Precool Coil
- Preheat Coil
- Humidification
- Dehumidification
- Central Cooling
- Supply Fan
- Duct System
- Return Fan

Ventilation Air Data

Airflow Control

Design Airflow

Minimum Airflow %

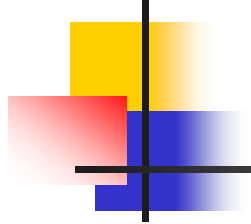
Unocc. Damper Position Open Closed

Damper Leak Rate %

OK

Cancel

Help



Central Cooling Data

 Air System Properties - [system(H1007)]

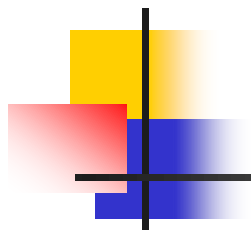


- General
- System Components
- Zone Components
- Sizing Data
- Equipment

- Ventilation Air
- Economizer
- Vent. Reclaim
- Precool Coil
- Preheat Coil
- Humidification
- Dehumidification
- Central Cooling
- Supply Fan
- Duct System
- Return Fan

Central Cooling Data

Supply Temp.	12.8	°C
Coil Bypass Factor	0.100	
Cooling Source	Chilled Water	
Schedule	[Icons]	
Capacity Control	Constant Temp. Fan On	
Max Supply Temperature	18.3	°C
OAT for Min Supply Temp	35.0	°C
OAT for Max Supply Temp	-1.1	°C



SUPPLY FAN



General | System Components | Zone Components | Sizing Data | Equipment

- Ventilation Air
- Economizer
- Vent. Reclaim
- Precool Coil
- Preheat Coil
- Humidification
- Dehumidification
- Central Cooling
- Supply Fan
- Duct System
- Return Fan

Supply Fan

Fan Type Forward Curved

Configuration Draw-Thru Blow-Thru

Total Static 0 Pa

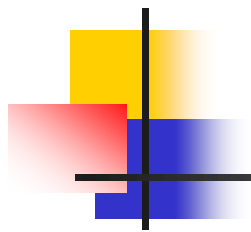
Overall Efficiency 54 %

% Airflow	100	80	60	40	20	0
%KW	100	81	61	46	33	21

OK

Cancel

Help



Duct System Data

 Air System Properties - [system(H1007)]



General | System Components | Zone Components | Sizing Data | Equipment

- Ventilation Air
- Economizer
- Vent. Reclaim
- Precool Coil
- Preheat Coil
- Humidification
- Dehumidification
- Central Cooling
- Supply Fan
- Duct System
- Return Fan

Duct System Data

Supply Duct Data

Duct Heat Gain %

Duct Leakage %

Return Duct or Plenum Data

Return Air Via Ducted Return
 Return Air Plenum

Wall Heat Gain to Plenum %

Roof Heat Gain to Plenum %

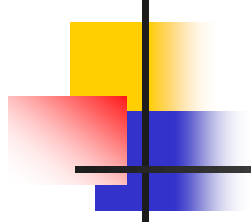
Lighting Heat Gain to Plenum %

OK

Cancel

Help

Zone Components



Space Assignments



General | System Components | **Zone Components** | Sizing Data | Equipment

- Spaces
- Thermostats
- Supply Terminals
- Zone Heating Units

Space Assignments

Zone 1 of 1

Spaces

Zone 1

<<Prev

Next>>

H1007-Training

H1007-Training	1
----------------	---

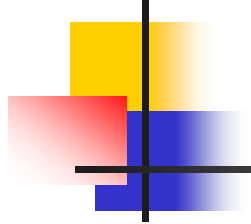
Add >>>

Remove <<<

OK

Cancel

Help



THERMOSTATS



General | System Components | Zone Components | Sizing Data | Equipment

- Spaces
- Thermostats
- Supply Terminals
- Zone Heating Units

Thermostat and Zone Data

All zone Tstats set the same ◀ ▶ Zone All of 1

Zone Name All Zones ▼

Cooling T-stat Setpoints occ. 23.9 °C unocc. 29.4 °C

Heating T-stat Setpoints occ. 21.1 °C unocc. 15.6 °C

T-stat Throttling Range 1.67 °K

Diversity Factor 100 %

Direct Exhaust Airflow 0.0 L/s

Direct Exhaust Fan kW 0.0 kW

Shared Data

Thermostat Schedule THERMOSTAT ▼

Unoccupied Cooling is Available Not available

OK

Cancel

Help



Sizing Data

Sizing Specification



General | System Components | Zone Components | Sizing Data | Equipment

- System Sizing
- Zone Sizing

System Sizing Data

Sizing Data

Cooling Supply Temperature	<input type="text"/>	°C
Supply Airflow Rate	<input type="text"/>	L/s
Ventilation Airflow Rate	<input type="text"/>	L/s
Heating Supply Temperature	<input type="text"/>	°C

Sizing Data is

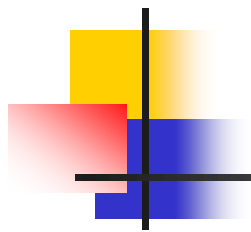
- Computer - Generated
- User - Defined

Hydronic Sizing Specifications

Chilled Water Delta-T	<input type="text" value="5.6"/>	°C
Hot Water Delta-T	<input type="text" value="11.1"/>	°C

Safety Factors

Cooling Sensible	<input type="text" value="2"/>	%
Cooling Latent	<input type="text" value="2"/>	%
Heating	<input type="text" value="0"/>	%



ZONE SIZING



- System Sizing
- Zone Sizing

Zone Sizing Data

Zone Airflow Sizing Method: Peak zone sensible load

Space Airflow Sizing Method: Individual peak space loads

Sizing Data is

- Computer - Generated
- User - Defined

Zone	Supply Airflow	Zone Htg Unit	Reheat Coil	FPMBX Fan
	L/s	kW	kW	L/s
Zone 1				



TO PREVIEW OUTPUT REPORT

**From Reports menu choose
(Print/View Design Data)**



The output Reports window
will appear and we choose any
output data

System Design Reports



Report Options and selection

Reports	Table	Graph	Time Specifications		
System Sizing Summary	<input checked="" type="checkbox"/>	--	--	--	--
Zone Sizing Summary	<input checked="" type="checkbox"/>	--	--	--	--
System Load Summary	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/> Peak	--	--
Zone Load Summary	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/> Peak	--	--
Space Load Summary	<input checked="" type="checkbox"/>	--	<input checked="" type="checkbox"/> Peak	--	--
Hourly Air System Loads	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	July <input type="button" value="v"/>	To	July <input type="button" value="v"/>
Hourly Zone Loads	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	July <input type="button" value="v"/>	To	July <input type="button" value="v"/>
System Psychrometrics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Peak	--	--

Restore Defaults

Print...

Preview...

Cancel

Help