AccuComm

Commercial HVAC Load Calculation Software

Inside This Manual

- How to Input Data for Load Calculations.
- View Load Summaries and Print Reports.
- Using AccuComm on a Tablet PC.
- Use AccuCheck to Double Check your work

Table of Contents

Section III. Data Input…..continued ***Page No.***

Section IV. Reports ***Page No.***

Section V. Case Study “Block Loads” ***Page No.***

Section VI. Appendix 1 ***Page No.***

Overview

Thank you for purchasing our AccuComm software program! If you have comments for this manual or the software program please fax, email or call us, we appreciate your input.

We would recommend that all users purchase a copy of the ACCA Manual N from ACCA. You can order this from their website at www.acca.org. It is an excellent reference manual that explains heating and cooling loads for all types of residential construction.

This manual is intended to show the end user how to properly use this software. It assumes that the user has general knowledge of construction practices and a basic knowledge of residential loads. We have attempted to show each screen and show how data is entered into the fields. We designed the interface to be used with a tablet PC. You will notice that very little typing is required. You could walk around the home with the tablet PC and enter data as you measure.

> Look for ***Hints:***
> Throughout this workbook, you will find boxes like this with additional information or hints that are informative and helpful.

System Requirements:

Windows® 98 or higher, NT, or XP operating system. (ME not recommended)
Pentium® 100 or higher processor.
64 megabytes of RAM.
CD-ROM or DVD drive.
High color monitor.
30 MB hard drive space available.

Recommended hardware for best performance:

Pentium® 300 or higher processor.
128 megabytes of memory or more.
1 GB or more of storage (hard drive).
Portable printer.
External mouse

516 NW 20th St. | Oklahoma City, OK 73103
Phone: 815-452-2345 | Fax: 405-844-6314
www.adteksoft.com | sales@adteksoft.com

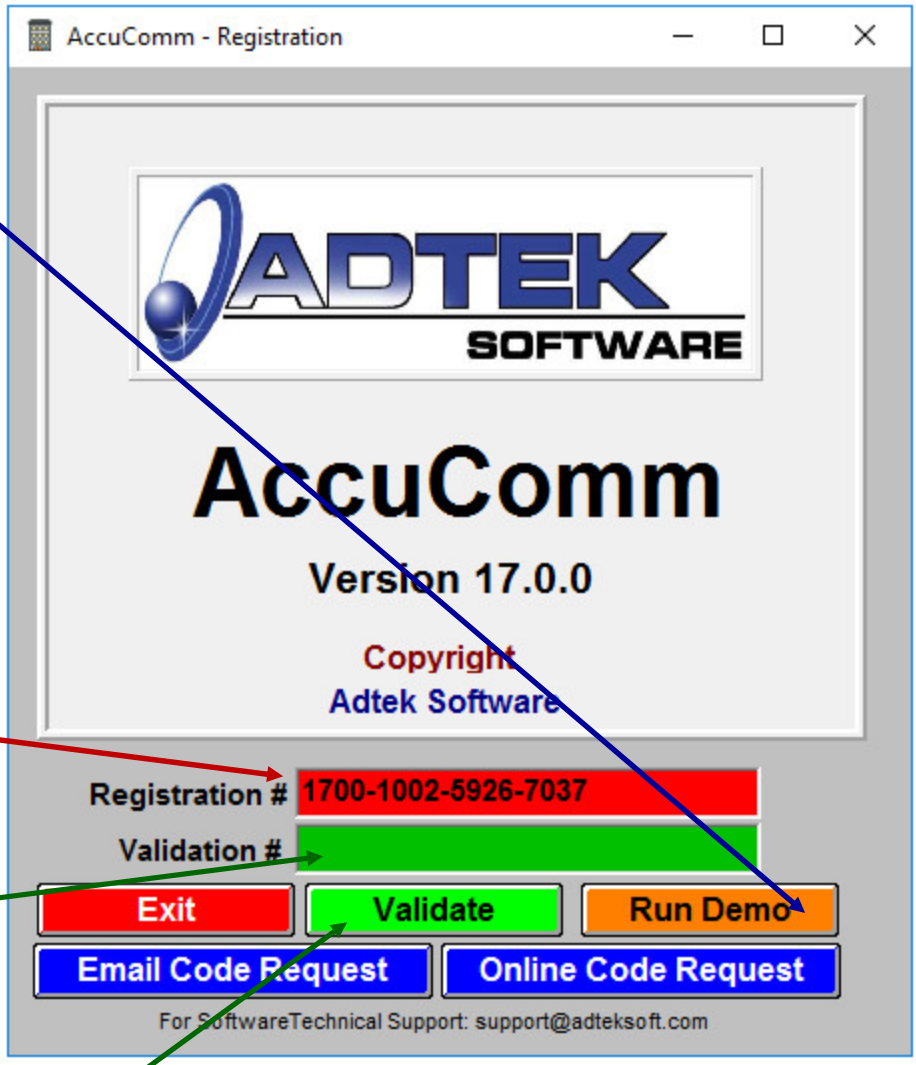
Unlocking your Program

Once the software is successfully installed, the Registration screen will pop-up.

Click on the **Run Demo** button. You can then navigate through the program in demo mode.

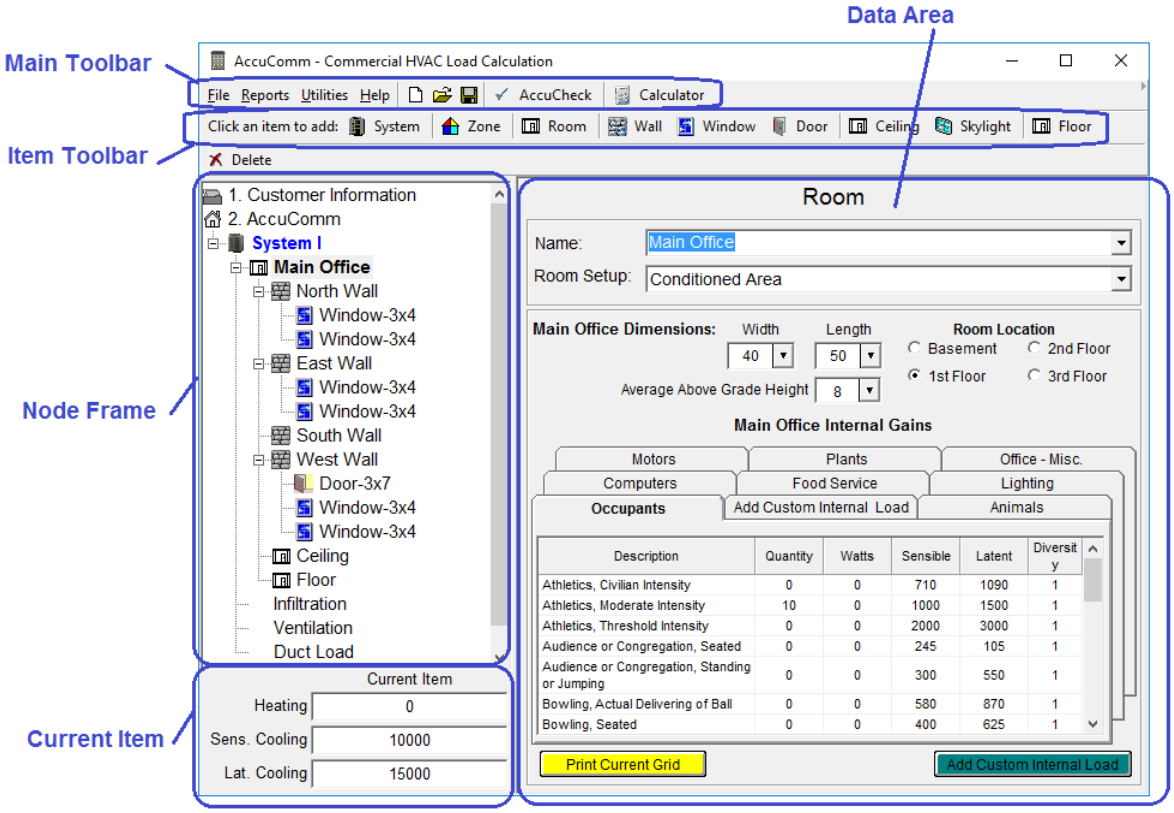
After you have completed the demo and want to purchase the product, you can order the program online at www.adteksoft.com or you can call us at 815-452-2345.

Once you pay for the program and provide the **Registration number** in the **RED** box, an unlock Validation number will be provided (through email or over the phone) to be typed in the **Green** box.



Finally, click the **Validate button** to unlock the full program capabilities.

Section I. Input Basics
Screen Layout



The areas above are explained in detail in the following pages, however the basic flow is as follows:

The **Main Toolbar** will allow some of the standard Window's features such as save, update, etc. Our AccuCheck feature as well as a popup calculator and a keyboard for the tablet PC are also accessible.

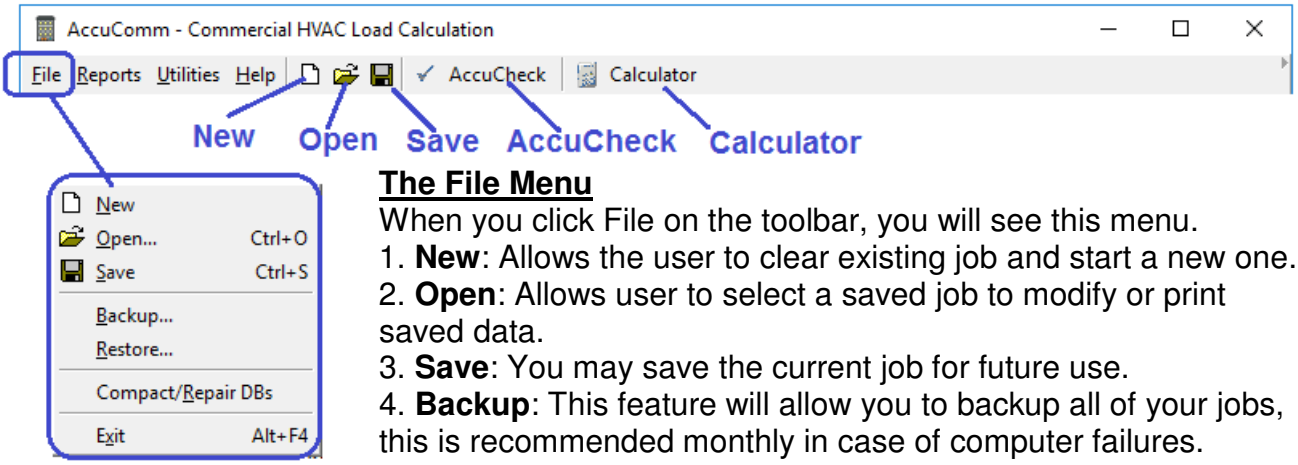
The **Item Toolbar** allows windows, doors, zones, additional systems, etc to be added to the project.

The **Node Frame** will let the user view the systems, zones, rooms, windows, etc that have been added to the project. Clicking on the node (room, window, etc) will allow the user to view the data settings in the data frame as well as the load calculations in the Current Item area.

The **Data Area** will allow the user to select the appropriate item values, such as window type, insulation, duct location, etc.

The **Current Item** displays the load information about the current item selected in the Node Frame.

Section I. Input Basics
The "Menu" Toolbar

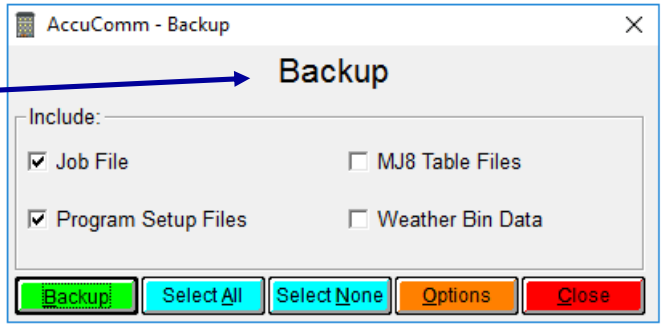


The File Menu

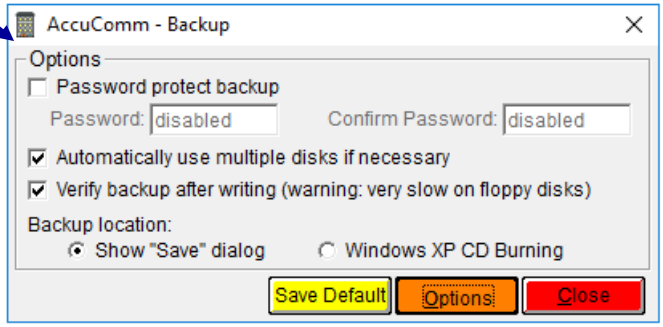
When you click File on the toolbar, you will see this menu.

1. **New**: Allows the user to clear existing job and start a new one.
2. **Open**: Allows user to select a saved job to modify or print saved data.
3. **Save**: You may save the current job for future use.
4. **Backup**: This feature will allow you to backup all of your jobs, this is recommended monthly in case of computer failures.
5. **Restore**: Allows the user to restore data from a previously backed up source.
6. **Compact/:Repair DB's**: This feature provides data maintenance for all databases. If a file becomes corrupted, this feature may repair the database.

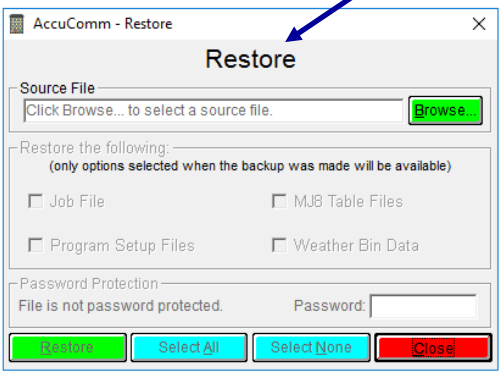
Selecting **Backup** will open the backup option box. You may select the data files that you wish to backup.



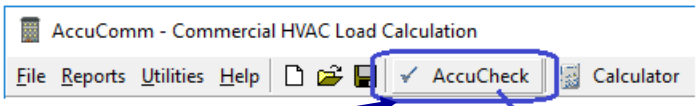
Clicking on **Options** will allow you to select backup options You may password protect the backup file if needed. You can also select multiple backup disks or write directly to a CD-R Rom if using Windows XP.



Selecting **Restore** from the file menu will allow you to restore files from a previous backup. Locate the backup file, then select the desires files, click on restore.

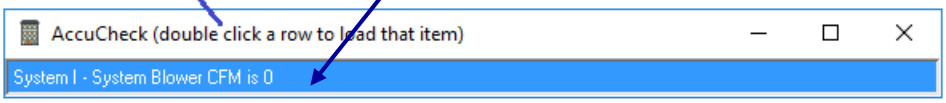


Section I. Input Basics
The "Menu" Toolbar

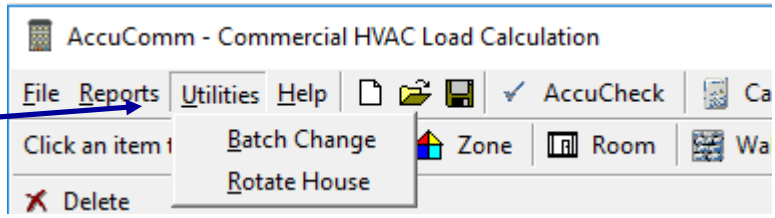


Hint: Double-Click on any item in the AccuCheck box to go to the entry error.

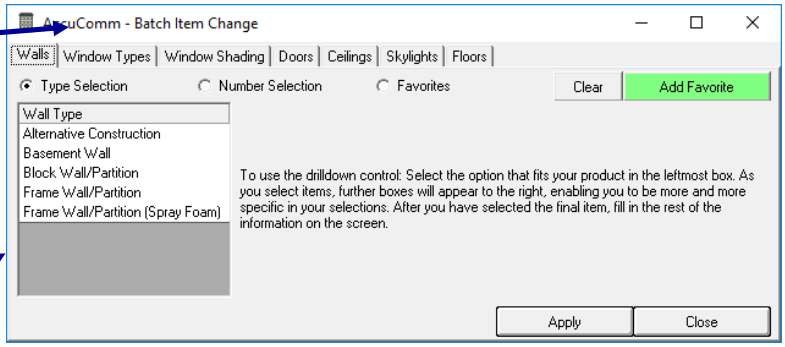
AccuCheck: This feature will verify that all data has been entered.
Click on AccuCheck any time during the procedure to verify data.



The Utilities Menu:
When you click Utilities on the toolbar, you will see this menu.

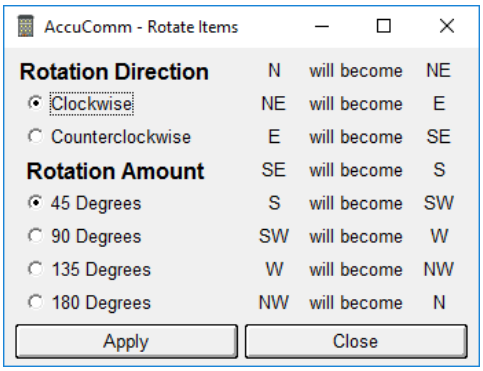


1. Batch Change:
Globally change items. You may make data changes to all windows, doors, ceilings, etc., globally all at one time.



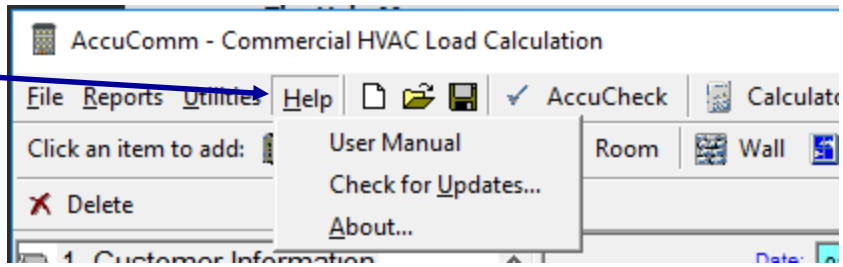
Hint: Batch change can be useful when comparing operating cost saving with window replacement or added insulation. The new load can be used in the **Energy Analyzer** software for an estimated savings based on the changes made.

2. Rotate House:
Rotates the house direction. You may select the direction and amount of rotation. This will completely rotate the whole house.

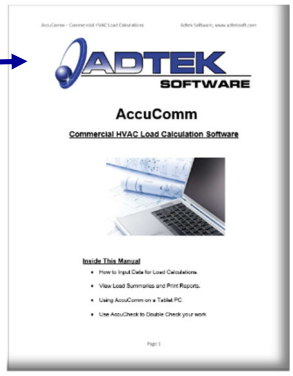


Section I. Input Basics
The "Menu" Toolbar

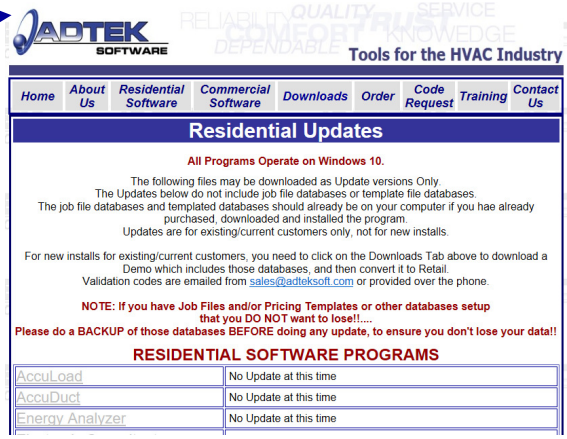
The Help Menu:
When you click Help on the toolbar, you will see this menu.



1. User Manual:
Opens the User Manual PDF File.



2. Check for Updates:
Opens the Update Webpage.

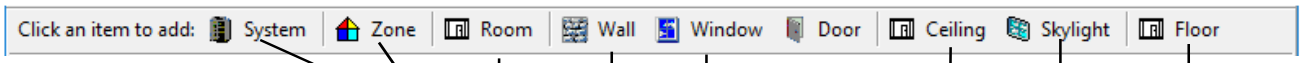


3. About:
View software version and system information.

Hint: You may view your computer's system information, such as memory, etc., by clicking on "System Info"

Section I. Input Basics
The "Item" Toolbar

The "Item Toolbar" will allow you to add multiple systems, zones, windows, doors, etc. Just click on the desired items to add to the project. Items can be deleted by highlighting, then clicking on the "Delete" item or by right clicking on the desired item, then select "Delete".



Systems:
Add multiple Systems. Systems consist of the HVAC equipment.

Zones:
Add zones to your systems. Systems may include multiple zones.

Rooms:
Rooms can be added to systems or zones.

Walls:
Walls can be added to rooms.

Windows:
Windows can be added to walls.

Doors:
Doors can be added to walls.

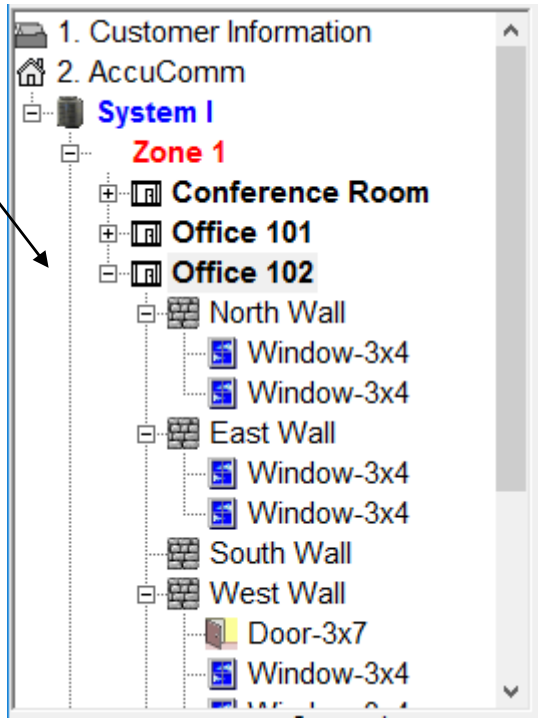
Ceilings:
Ceilings can be added to rooms.

Skylights:
Skylights can be added to ceilings.

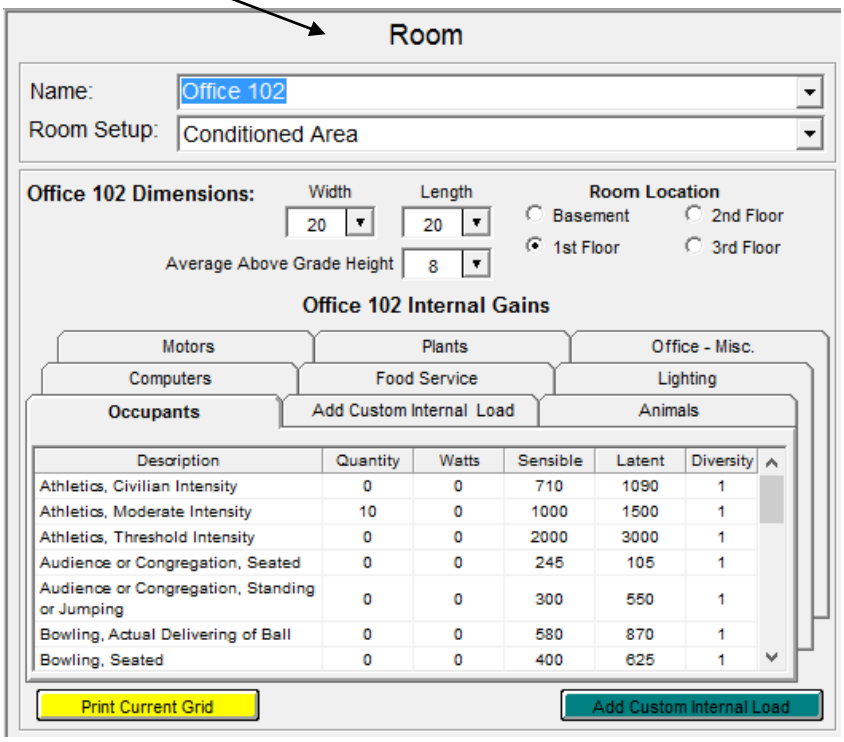
Floors:
Floors can be added to walls.

Section I. Input Basics
The "Node Frame" & "Data Frame"

The Node Frame will allow you to view the items that have been added to the project. You may click on the item in this frame to view the data in the "Data Frame". The Node frame can contain many zones and systems if desired. Zones will be within the systems. Rooms can be located in zones or systems, if the system does not have zones.



The Data Frame will allow you to view the data that has been selected for the item in the Node Frame. You may change the data, such as r-value, wall size, etc. at any time.

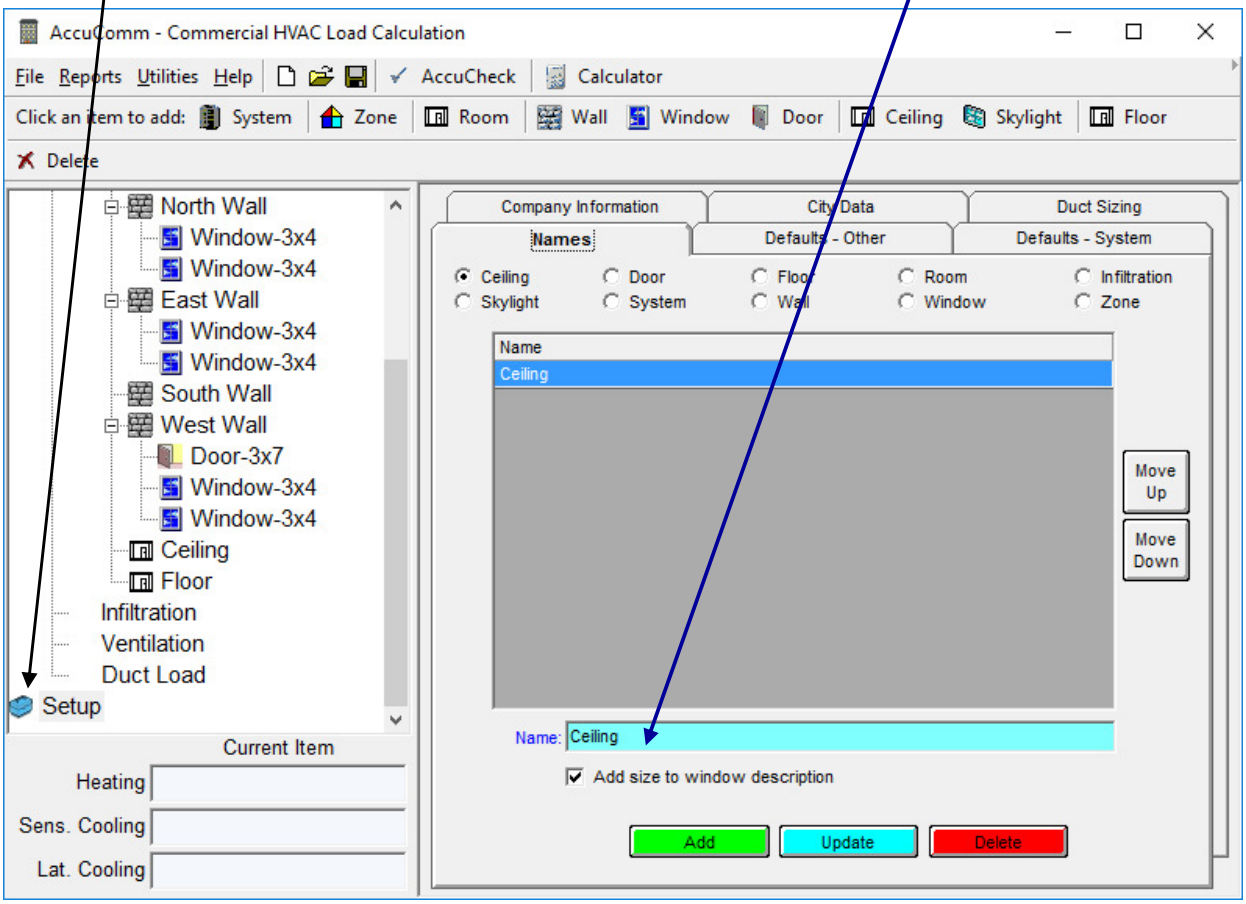


Section II. Setup Your Software
The "Setup Screen"

Access your software setup by clicking on the "Setup" item in the node screen. You may have to scroll down by clicking on the scroll bars on the side if you have added items to your project. Company information, default room names, etc can be set as default on this screen.

The following pages will explain the setup procedures. You may change the settings at any time. After using the software, you may decide to customize names in the drop down boxes for rooms, windows, etc.

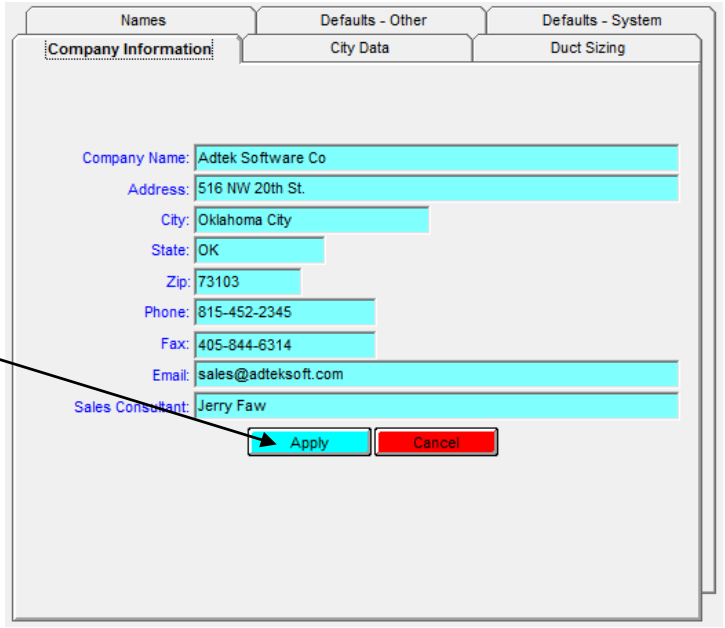
Hint: Customizing names will save on typing for your building!

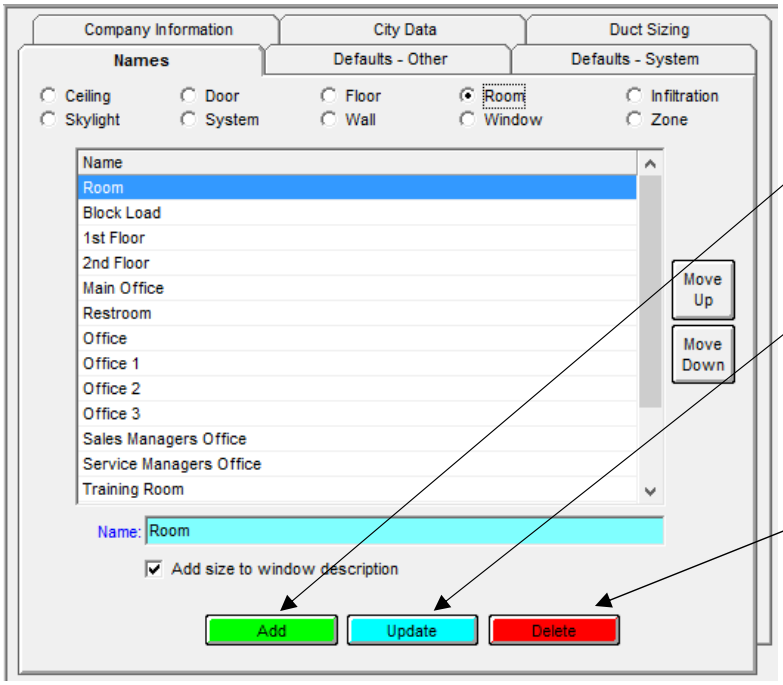


Section II. Setup Your Software
The "Setup Screen"

Your Company information can be changed on this screen.

1. Type information
2. Click on the "Apply" button to save.





Names can be updated, deleted or added as desired.

To Add:
1. Type name in box
2. Click on "Update"

To Update:
1. Click on desired name to update.
2. Type name in box
3. Click on "Update"

To Delete:
1. Click on desired name to delete.
2. Click on "Delete"

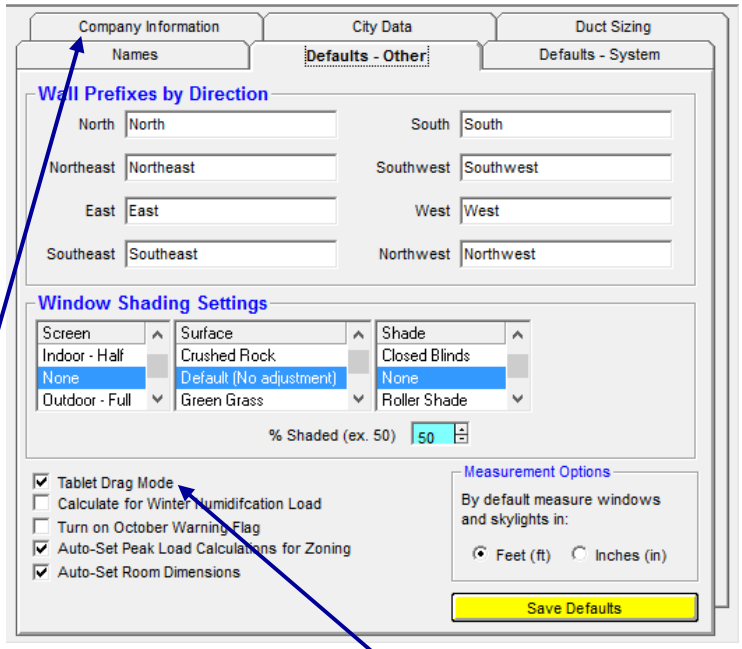
Change Order in list:
1. Click on desired name.
2. Click on the "Move Up" or "Move Down" button.

Section II. Setup Your Software
The "Setup Screen"

Wall prefixes as well as window shading settings can be customized in this screen.

Measurement options for inches or feet may be set for windows, doors and skylights.

1. Change desired settings
2. Click on "Save Defaults"



Hint:
You may also temporarily change the measurement options in the "Customer Information" screen. When the software is restarted, the settings will return to the default values set on this screen.

Hint:
Save time by using the Tablet Drag Mode

Tablet Drag Mode:
Checking the "Tablet Drag Mode" option will let you drag and drop with just the mouse or stylus on a tablet PC. If your using a Tablet PC, you will find this feature very convenient.

Using a Mouse:

1. Hold down on the left mouse button while selecting the item to move or copy.
2. Move the cursor to the location that you want to move or copy.
3. Release the mouse button, then select "Copy" or "Move" from the drop down menu

Using a Stylus (Tablet PC):

1. Drag the item to copy or move with the stylus.
2. Lift up the stylus, then select "Copy" or "Move" from the drop down menu

If the **"Table Drag Mode" is not checked,** you may move the item by just dragging it or copy the item by holding the "Ctrl" key down while dragging.

Turn on October Warning Flag:
This will produce a warning if the flag is triggered by the possibility of a October Peak for sensible heat gain.

Auto-Set Peak Load Calculations for Zoning:
This box checked will use the Peak Load Procedure when calculating rooms and zones for systems that have a zone. The block load will be calculated using the Average Load Procedure. If the system has no zones, the Average Load Procedure will be used for everything.

Section II. Setup Your Software
The "Setup Screen"

Defaults - System

Hint:
Check the "Auto-Set Peak Load" check box in the Default-Others tab to automatically set these option buttons

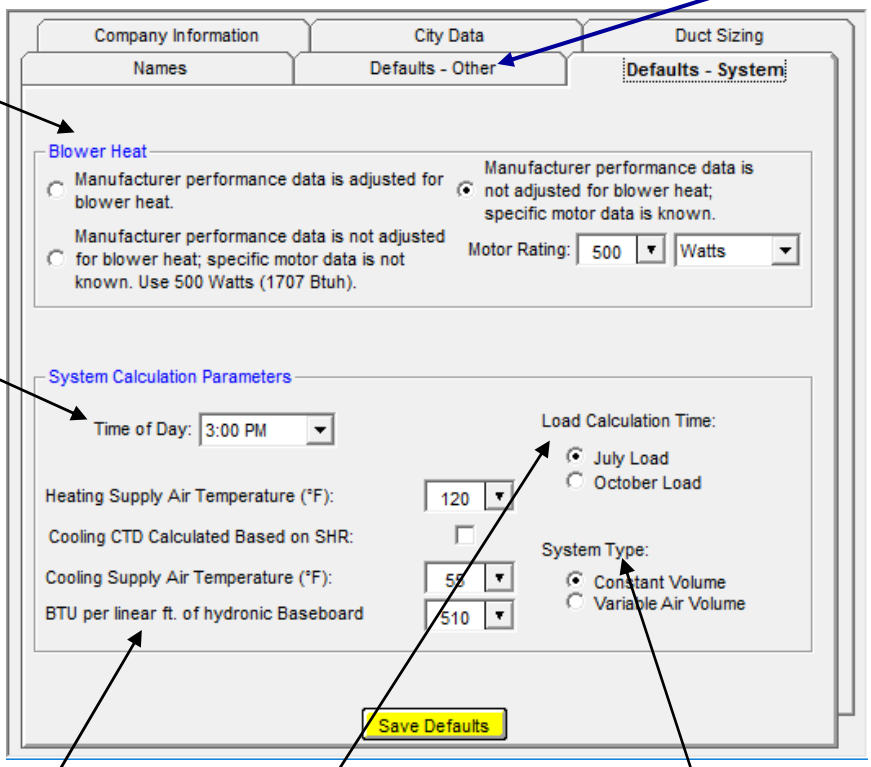
Blower Heat:
Select the appropriate default setting for this option.

Time of Day:
Select the appropriate time of day to calculate your load calculation.

System Calculation Perimeters:
Select the Heating supply air temperature of the system. If you would like the CFM calculations sized based on the Sensible Heat Ratio (SHR), check this box, if not input the Cooling supply air temperature.

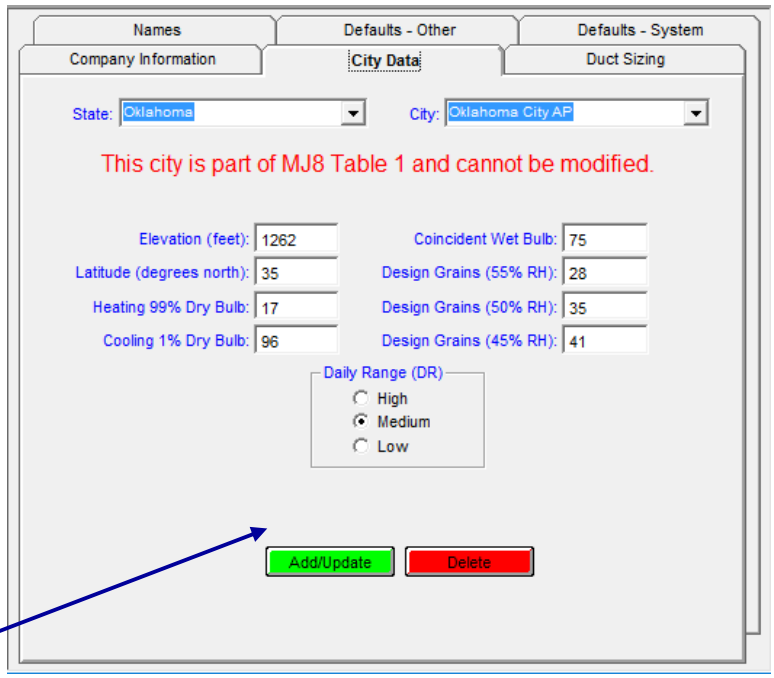
Load calculation time:
This will set the default for July or October sensible heat gain calculations.

System Type:
Constant Volume will calculate the project using the Average Load Procedure.
Variable Air Volume will calculate room and zones using the Peak Load Procedure.



Section II. Setup Your Software
The "Setup Screen"

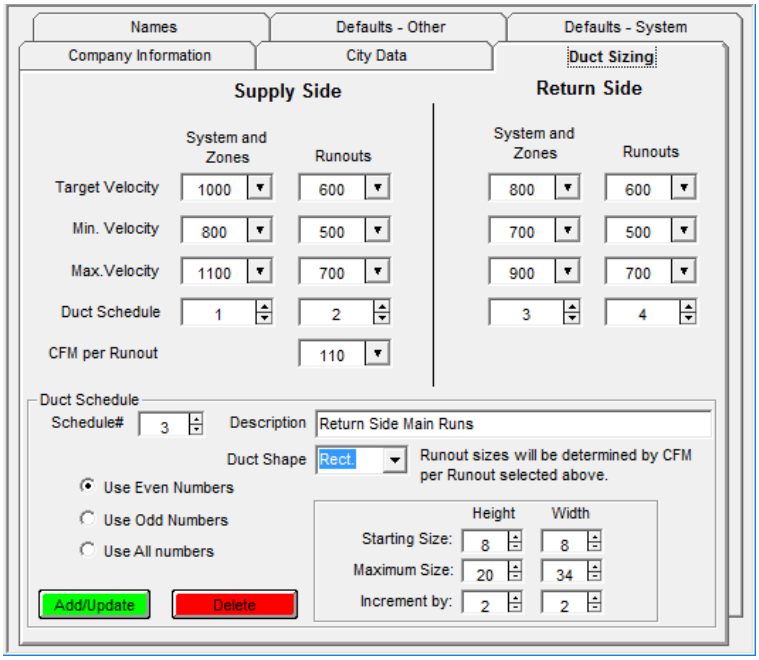
City Data Screen:
This screen will allow you to view cities in the database. You cannot modify the cities that are included in the default database. You may however, slightly change the city name or enter a city not in the database, then type in the correct data and enter the information in the database.



Hint:
Enter your city in the database if it is not listed in the default database. If you want to SAVE design data you enter, you MUST Re-Name the City to one not in the MJ8 Database.
Check on-line to verify the data.

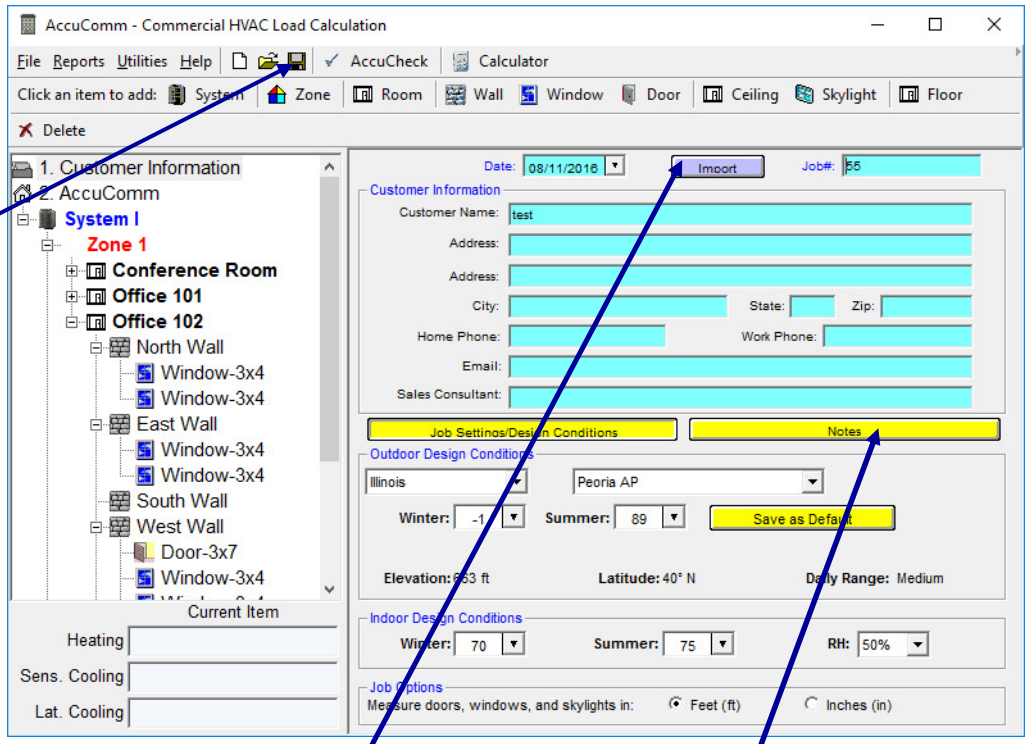
Duct Sizing

AccuComm allows you to set duct sizing default parameters as shown. Minimum and Maximum duct velocities in terms of ft/min along with other factors can easily be specified here for both Supply and Return duct runs.



Section III. Data Input
"The Customer Information Screen"

Hint:
Enter the customer information while in your office, then click "Save".
Your job can then be opened in the customer's home with no typing needed!



Clicking on "Customer Information" in the "Node" frame will display the customer information screen and allow data input. The "**Import**" button will import the customer information entered into the Electronic Consultant™ program.

Select the State, then City from the drop down boxes. This will provide you with the recommended outdoor design conditions. You may change the settings if desired, however it is not recommended to design for extreme conditions.

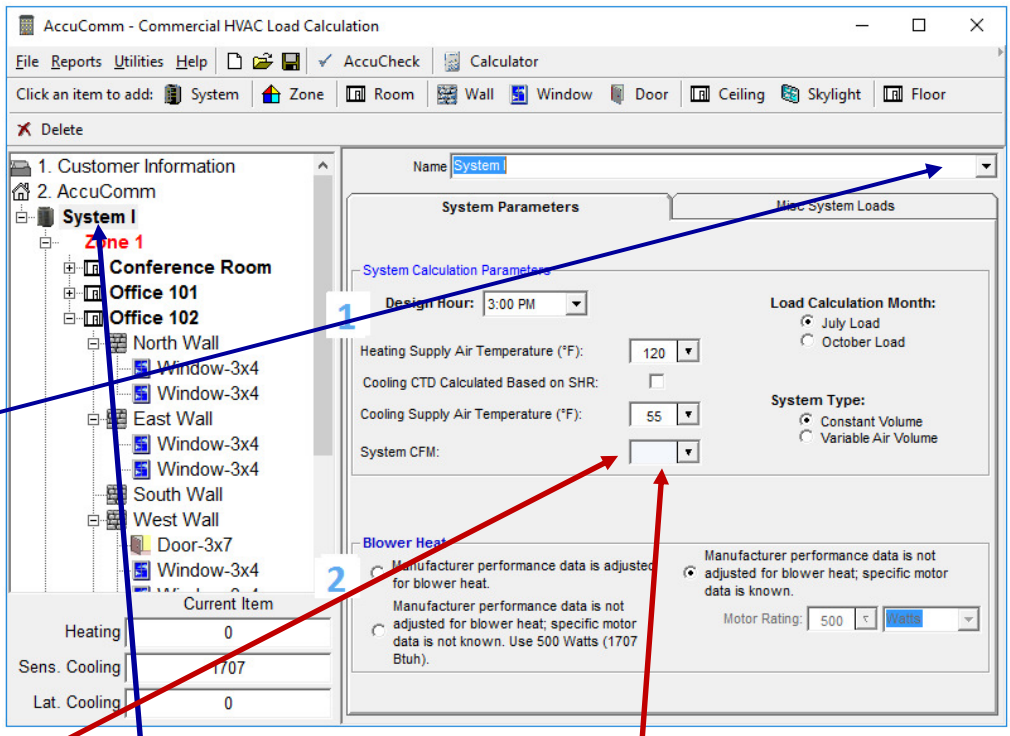
Select the desired indoor design conditions. You have the choice of measuring the doors, windows or skylights in inches or feet.

You may save notes about the project by clicking on the "**Note**" button. Type your information in the note box that is displayed after clicking on the "Notes" button. Click on the "Job Settings Design Conditions" button to return to the above screen.

Section III. Data Input
"Adding a System"

A system consists of the heating and/or air conditioning equipment that will be used in the project. Multiple systems can be added to the project. In other words, you may have a system for the 1st floor and a system for the 2nd floor of the home. You may add or delete system as desired. Please remember that if you delete a system, you will delete everything contained within that system. You may however, drag and drop rooms, zones, etc from one system to another system.

Hint:
Additional systems can be added at anytime during the project.
You can drag & drop the rooms from one system to another.
Change the system names from the drop down menu or type a desired name.



Don't forget to enter your CFM!!

Clicking on "System I" in the "Node" frame will display the system screen and allow data input.

1. System Calculation Parameters: Choose your design hours, along with your load calculation month and system type. Input your system heating supply air temperature, this will be used in calculating the duct loss. For example, using electric heat, you may have a lower temperature than you would for fossil fuel heat.

2. Blower Heat: This option will add the sensible heat for your blower motor. Check with your equipment manufacturer to see if the sensible load is included. Check the appropriate option.

Note: Cooling CTD & Cooling Supply Air Temperature: These two options are used in the equation to calculate CFM. The following sensible heat equation (SHR) is used:

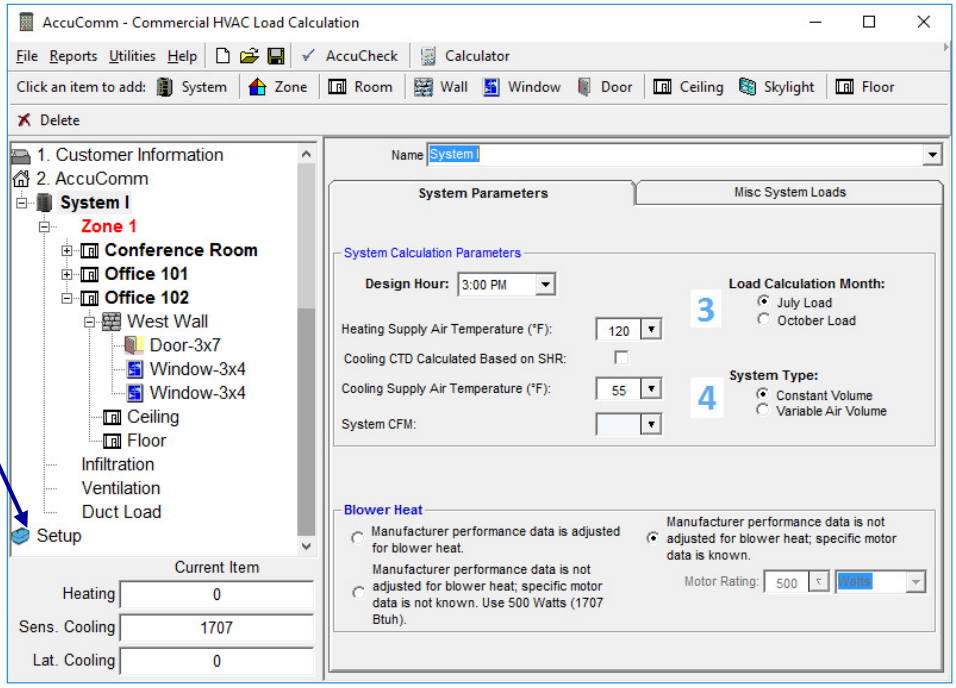
TD = Supply Air Temperature - Return Air Temperature
Sensible Load = sensible heat load from software

$$CFM = \frac{\text{Sensible Load}}{1.1 \times TD}$$

If the "Cooling CTD Calculated Based on SHR" checkbox is checked, the desired "TD" value is determined from a table based on the relationship between the SHR and the temperature of the air leaving the coil. Please refer to ACCA Manual S for details.

Section III. Data Input
"Adding a System" continued

Hint:
Use the option in the "Setup Screen" to automatically calculate peak loads when adding zones. See Section III for more setup information.



3. Load Calculation Month: Rooms with a large amount of south facing glass area may have a peak load in the fall of the year. This software will trigger a flag under 3 conditions:

- The total glass area installed in a room or zone that has a South-East, South or South-West exposure exceeds 15% of the room or zone floor area.
- The total glass area (windows, glass doors and tilted skylights) facing a South-East. South or South-West direction exceeds 25% of the gross exposed wall area facing the direction of interest.
- The total glass area (horizontal skylight areas, window and glass door areas) facing a South or South-West direction exceeds 25% of the gross wall area facing the direction of interest.

The **"Turn on October Warning Flag"** checkbox in the Setup screen must be checked to activate this flag option (see Section III "Setting Up Your Software" for setup information).

The flags will be displayed after clicking on the "Report" menu item. They may be printed if desired. If a flag does indicate a possible October peak, click on "October Load", then view the reports for the October Calculations. You may toggle back to the "July Load" at anytime.

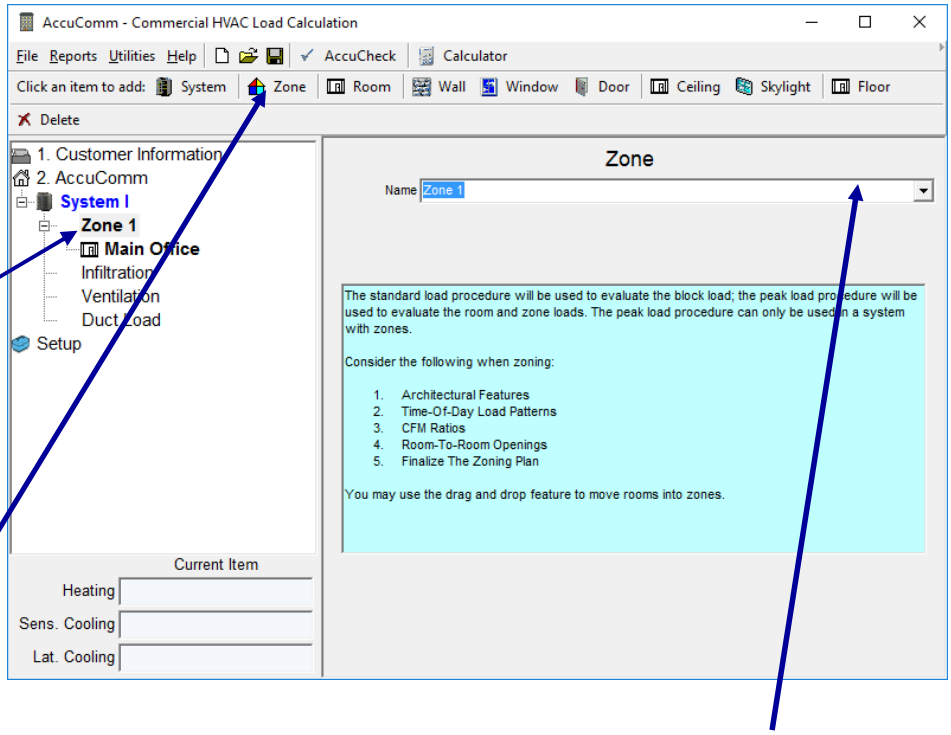
4. System Type: Checking the "Constant Volume" option will calculate the loads using the Average Load Procedure. This option will not indicate any peak loads due to fenestration direction. Checking the "Variable Air Volume" option will calculate the loads using the Peak Load Procedure. This option will calculate the loads based on a peak load that could occur between the hours of 8:00 am and 8:00 pm. This is only calculated for the room or zone load. The system load is always calculated using the Average Load Procedure. This feature is automatically calculated when adding a zone if the checkbox **"Auto-Set PeakLoad Calculations for Zoning"** is checked (see Section II "Setting Up Your Software" for more setup information).

Section III. Data Input
"Adding a Zone"

Multiple zones may be added to a system. Clicking on "Zone" on the toolbar will add a zone to the selected system. If rooms are existing in the project, they will be moved to the first zone. After you add your 2nd zone, you may drag and drop rooms into the desired zone. There are no limits to the number of rooms, zones or systems that you may have.

If zones are added to the system, the zones and rooms in the zones will be calculated using the Peak Load Procedure. The system will be calculated using the Average Load Procedure. You must have the "Auto Peak Load Option" checked in the setup screen. Please refer to the setup section for this setting. By using the Peak Load Procedure, you will be selecting the correct CFM for your rooms and zones for peak periods.

Hint:
Drag and drop rooms into the desired zone.
Turn on the "Tablet Drag Mode" in the setup screen for one button dragging.

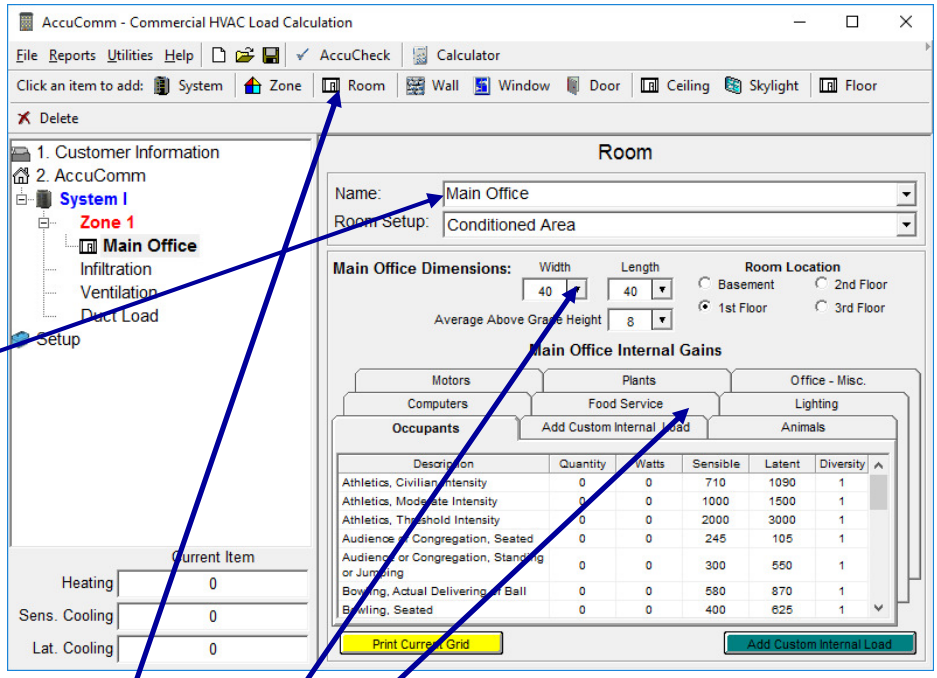


Click on the "**Zone**" icon in the toolbar to add a zone. You may then use the dropdown box and select a zone name or type your desired name in the box. You may also customize the zone names in the setup screen. This will allow easy input during the process.

Deleting a zone can be completed by selecting the zone, then right click your mouse, select delete, then left click. You may also delete the zone by clicking on the "Delete" icon in the toolbar. Please remember, you will delete everything inside the zone when deleting the zone. If you would like to remove all zones, add a new system, then drag all the existing rooms into the new system. You may then delete the old system to remove all the zones.

Section III. Data Input
"Adding a Room"

Rooms may be added to systems or zones. Internal loads may also be added from this screen. You will be required to enter the length, width and height of the room before navigating from this screen. You may however, delete the room before entering the room dimensions if desired. If you decide to add zones, just drag the desired room into your zone.



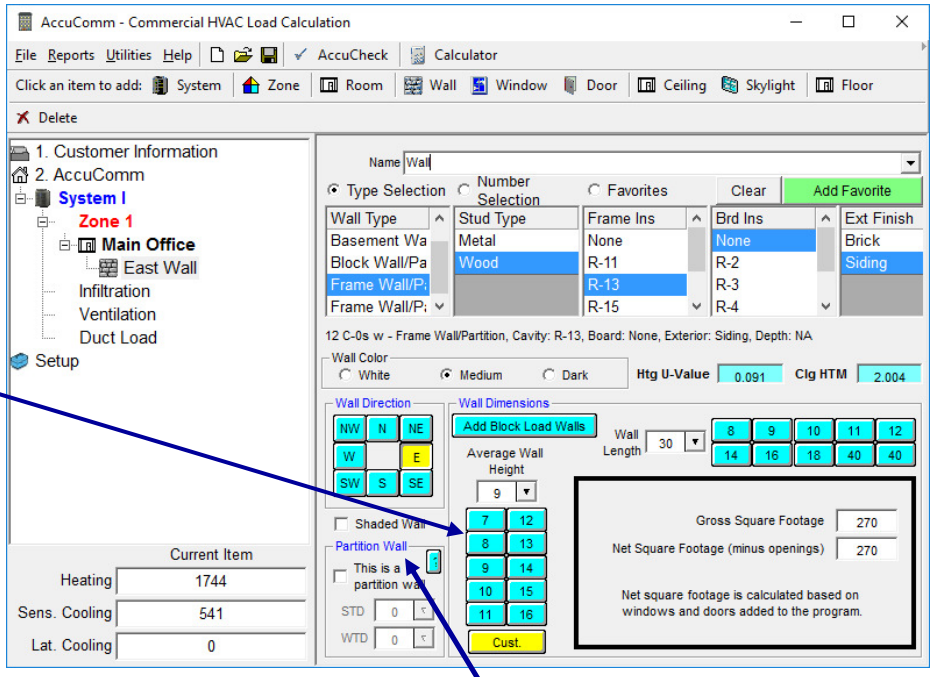
Hint:
If you are calculating a block load (not room x room) you may name the room, "Block Load", then calculate the block load as one big room.

Add a room by clicking on the "**Room**" icon in the toolbar. You may enter the room dimensions by clicking on the "**Down Arrow**" for the dropdown calculator to show, or just type in the number in the appropriate box. Indicate which level this room is located on by clicking the appropriate option button. Enter the full time occupants, internal loads, etc as desired. **Simply click on the tab of type** of internal load you may wish to add.

You may change the Internal Load selection from the system screen by choosing different scenarios. Please remember that if the scenarios are changed in the system screen, you will be required to reenter all the internal loads for each room again.

Section III. Data Input
"Adding a Wall"

Walls may be added to a room. You should only add walls that have an exposure that will cause a heat gain or loss. Walls may be copied, then pasted into a desired room. You may delete walls, however keep in mind that everything in that wall will also be deleted.



Hint:
You may customize the auto fill buttons with common heights and lengths. This will speed up the entry process. Click on the yellow "Customize" button, then type in the desired numbers.

Add a wall by clicking on the "Wall" icon in the toolbar. You may enter lengths, directions or types in any order that you desire. After working with the program, you will find a procedure that works well for you.

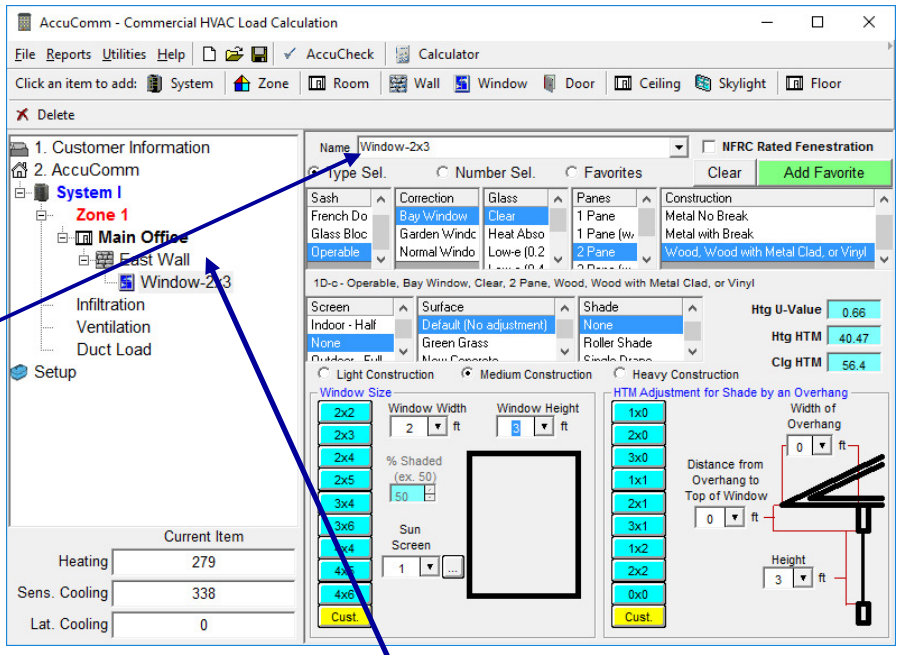
The following steps will add a wall and data for the wall:

1. Click on the "Wall" icon on the toolbar.
2. You may name this wall if desired from the dropdown box or typing a new name into the box.
3. Select "Type Selection", "Number Selection", or "Favorites" to see options for the wall type.
4. If "Type Selection" is selected, you will be asked to select the type of the wall. You will then need to select the boxes that appear to the right of the first box. Depending on the type selected, you will have different options to pick from. By selecting the type and appropriate dropdowns, you will be selecting the Htg U-Value and the Clg HTM Value for this wall.
5. Select the direction that the wall faces.
6. Select the wall height and length in the appropriate boxes
7. If this is a partition wall (wall with a different temperature on exterior side), check the "Partition Wall" box, then type in the STD (Summer Temperature Difference) and the WTD (Winter Temperature Difference). These numbers will be the deference from the indoor design temperature and the temperature on the exterior of the wall.
8. If this partition wall is a garage wall, check the "Wall is completely shaded" box, not the "Partition Wall" box. If you can be sure that the garage is heated and/or cooled, then it may be permissible to check the "Partition Wall" box, otherwise assume that it will be shaded from the sun and will be exposed to outdoor ambient.

Section III. Data Input
"Adding a Window"

Windows may be added to a wall. Windows may be copied, then pasted into a desired room. You may delete windows by right clicking on the window, then select "Delete". You can use the drag and drop feature on windows as well as any other component.

Hint:
You may want to use a unique name for a window, such as "Window A". If you have multiple windows of the same type, you may copy and paste the window, saving time. This will aid you in identifying the Window.



Add a Window by clicking on the "Window" icon in the toolbar. Be careful to select the wall that the window belongs to. Do this by selecting the correct wall in the **Node** Frame section

The following steps will add a window and data for the window:

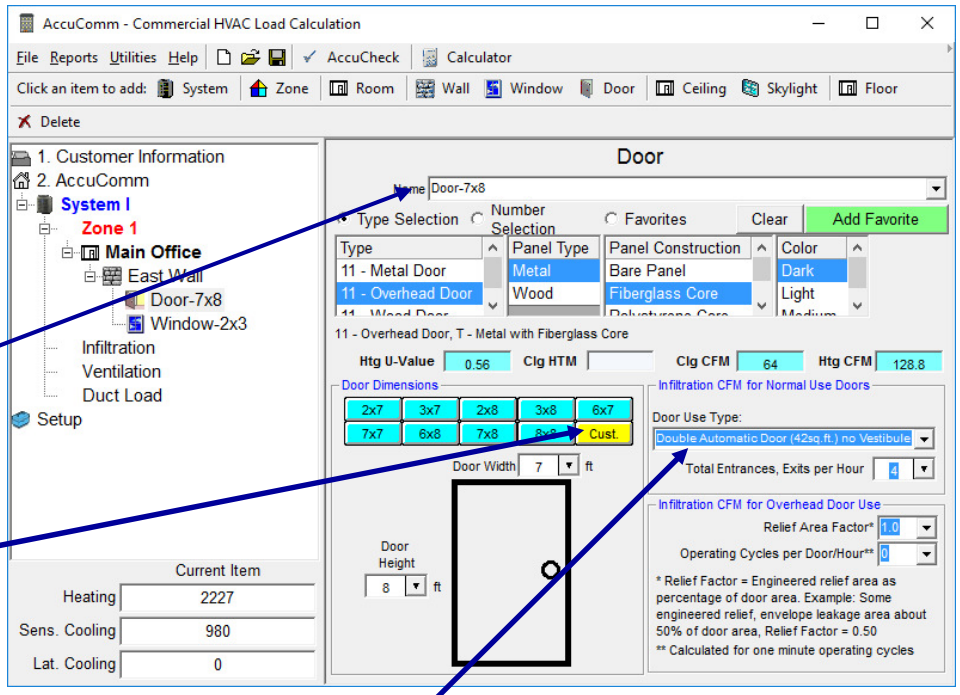
1. Select the wall from the Node Frame that the window belongs to.
2. Click on the "Window" icon on the toolbar.
3. You may name this window if desired from the dropdown box or typing a new name into the box.
4. Select "Type Selection", "Number Selection", or "Favorites" to see options for the window type.
5. You may also check the "NFRC: box if you have the NFRC rating on the window.
6. If "Type Selection" is selected, you will be asked to select the type of the window. You will then need to select the boxes that appear to the right of the first box. Depending on the type selected, you will have different options to pick from. By selecting the type and appropriate dropdowns, you will be selecting the Htg U-Value as well as the Htg and Clg HTM Values for this window.
7. After selecting the window type, you will need to enter the screen, outdoor surface and indoor shading information, you can set this information in the setup screen to default to desired values as you enter this screen.
8. Select the window height and width in the appropriate boxes.
9. You can select external sun screen by clicking on the button next to the "Sun Screen" box if an external sun screen is used. If not the value should be "1".
10. Enter the overhang dimensions in the appropriate boxes.

Section III. Data Input
"Adding a Door"

Doors may be added to a wall. Doors may be copied, then pasted into a desired room. You may delete Doors by right clicking on the door, then select "Delete". You can use the drag and drop feature on doors as well as any other component.

Hint:
You may want to use a unique name for a Door, such as "Door A". If you have multiple doors of the same type, you may copy and paste the door, saving time. This will aid you in identifying the door.

Customize the "Size Buttons" to save time in entering the door dimensions.



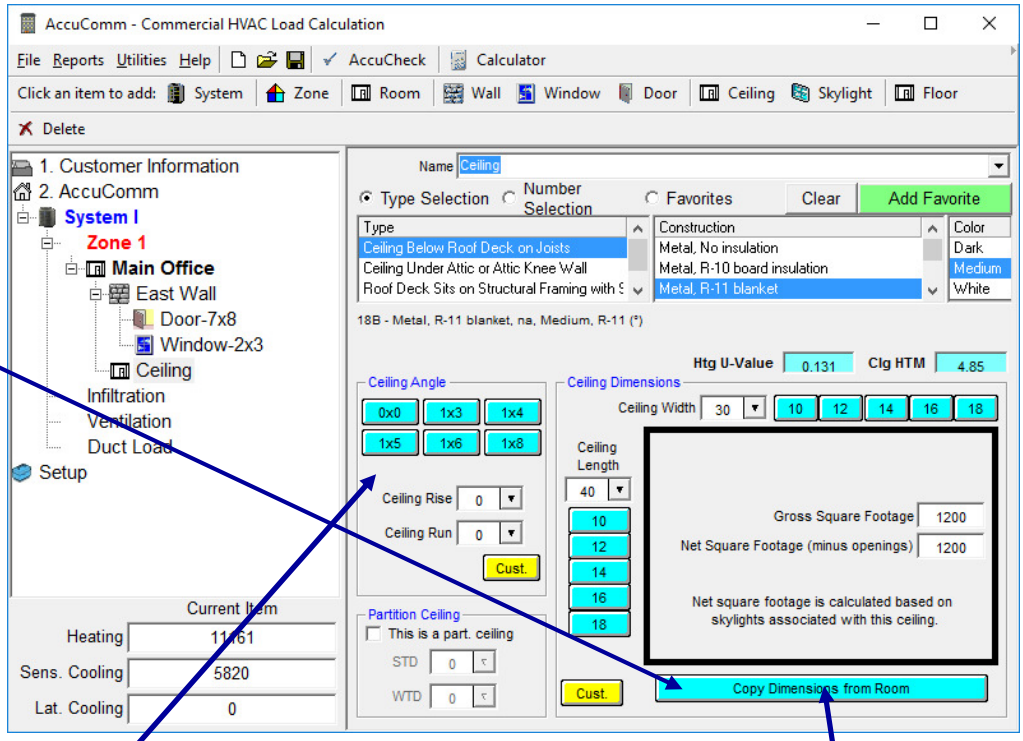
Add a door by clicking on the "Door" icon in the toolbar. You may enter type and dimensions in any order that you desire. After working with the program, you will find a procedure that works well for you.

The following steps will add a door to a wall:

1. Click on the "Door" icon on the toolbar.
2. You may name this door if desired from the dropdown box or typing a new name into the box.
3. Select "Type Selection", "Number Selection", or "Favorites" to see options for the wall type.
4. If "Type Selection" is selected, you will be asked to select the type of the door. You will then need to select the boxes that appear to the right of the first box. Depending on the type selected, you will have different options to pick from. By selecting the type and appropriate dropdowns, you will be selecting the Htg U-Value and the Clg HTM Value for this door.
5. Select the door height and width in the appropriate boxes.
6. In Commercial Applications, you must specify the type of door, along with entrances and exits per hour.

Section III. Data Input
"Adding a Ceiling"

Ceilings may only be added to a room. You may delete ceilings by right clicking on the ceiling, then select "Delete".



Hint:
You may click on the "Copy dimensions from room" button to automatically enter the ceiling dimensions. This will be copied from the room dimensions.

Add a ceiling by clicking on the "Ceiling" icon in the toolbar. You may enter dimensions by clicking on the appropriate input box or use the customized buttons. After working with the program, you will find a procedure that works well for you.

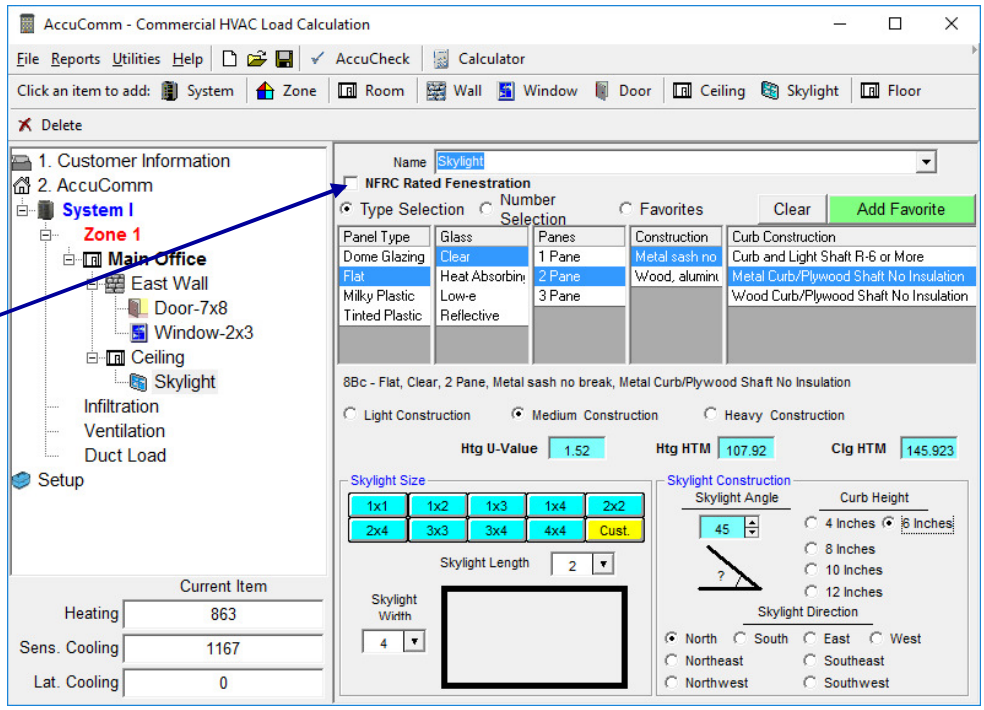
The following steps will add a ceiling to the room:

1. Click on the "Ceiling" icon on the toolbar.
2. You may name this ceiling if desired from the dropdown box or typing a new name into the box.
3. Select "Type Selection", "Number Selection", or "Favorites" to see options for the ceiling type.
4. If "Type Selection" is selected, you will be asked to select the type of the ceiling. You will then need to select the boxes that appear to the right of the first box. Depending on the type selected, you will have different options to pick from. By selecting the type and appropriate dropdowns, you will be selecting the Htg U-Value and the Clg HTM Value for this ceiling.
5. If the ceiling is a not horizontal and has an angle to it, select the rise and run of the ceiling. This will calculate the square footage of the ceiling properly.
6. Select the ceiling dimensions in the appropriate boxes or click on the "Copy from room" button.
7. If this is a partition ceiling (ceiling with a different temperature on exterior side), check the "Partition Ceiling" box, then type in the STD (Summer Temperature Difference) and the WTD (Winter Temperature Difference). These numbers will be the deference from the indoor design temperature and the temperature on the exterior of the ceiling.

Section III. Data Input
"Adding a Skylight"

Skylights may be added to a ceiling. Skylights may be copied, then pasted into a desired ceiling. You may delete skylights by right clicking on the skylights, then select "Delete". You can use the drag and drop feature on skylights as well as any other component.

Hint:
If this building is new construction, check the "NFRC" box, then input the "U-Value" and "SHGC" found in the manufactures data. You will then need to input information about the curb and light shaft, if any.



Add a skylight to the ceiling by clicking on the "Skylight" icon in the toolbar. You may skylight information in any order that you desire. After working with the program, you will find a procedure that works well for you.

The following steps will add a skylight to the ceiling:

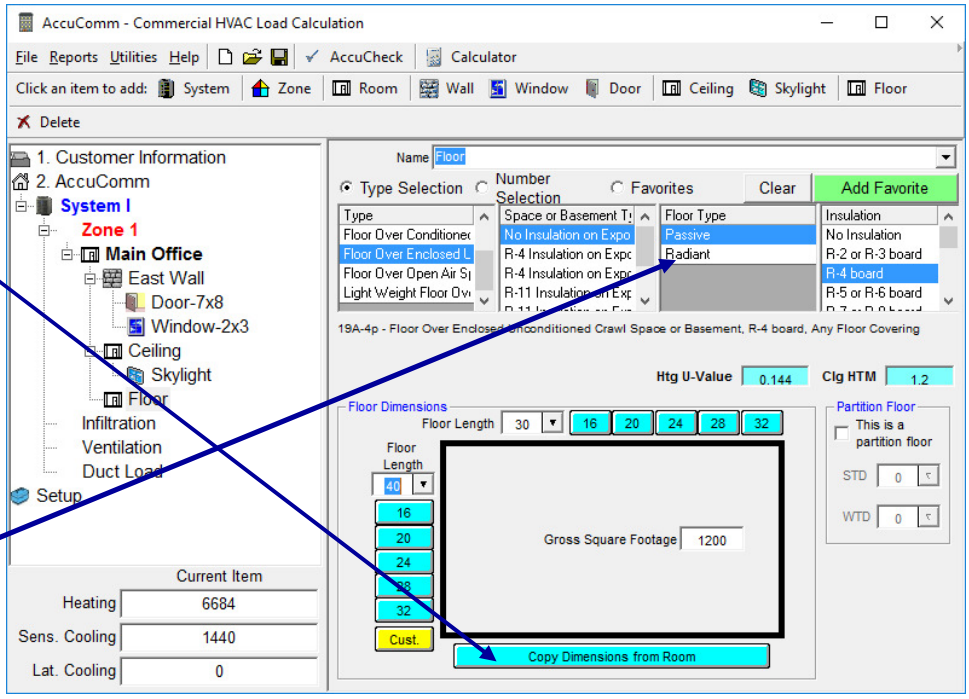
1. Click on the "Skylight" icon on the toolbar.
2. You may name this skylight if desired from the dropdown box or typing a new name into the box.
3. Select "Type Selection", "Number Selection", "NFRC Rated" or "Favorites" to see options for the skylight type.
4. If "Type Selection" is selected, you will be asked to select the type of the skylight. You will then need to select the boxes that appear to the right of the first box. Depending on the type selected, you will have different options to pick from. By selecting the type and appropriate dropdowns, you will be selecting the Htg U-Value and the Clg HTM Value for this skylight.
5. Select the skylights size.
6. Select the angle, direction and curb height of the skylight.

Section III. Data Input
"Adding a Floor"

Floors may only be added to a room. You may delete floors by right clicking on the floors, then select "Delete".

Hint:
You may click on the "Copy dimensions from room" button to automatically enter the floors dimensions. This will be copied from the room dimensions.

"Radiant" in the type selection box refers to radiant heating.



Add a floor by clicking on the "Floor" icon in the toolbar. You may enter dimensions by clicking on the appropriate input box or use the customized buttons. After working with the program, you will find a procedure that works well for you.

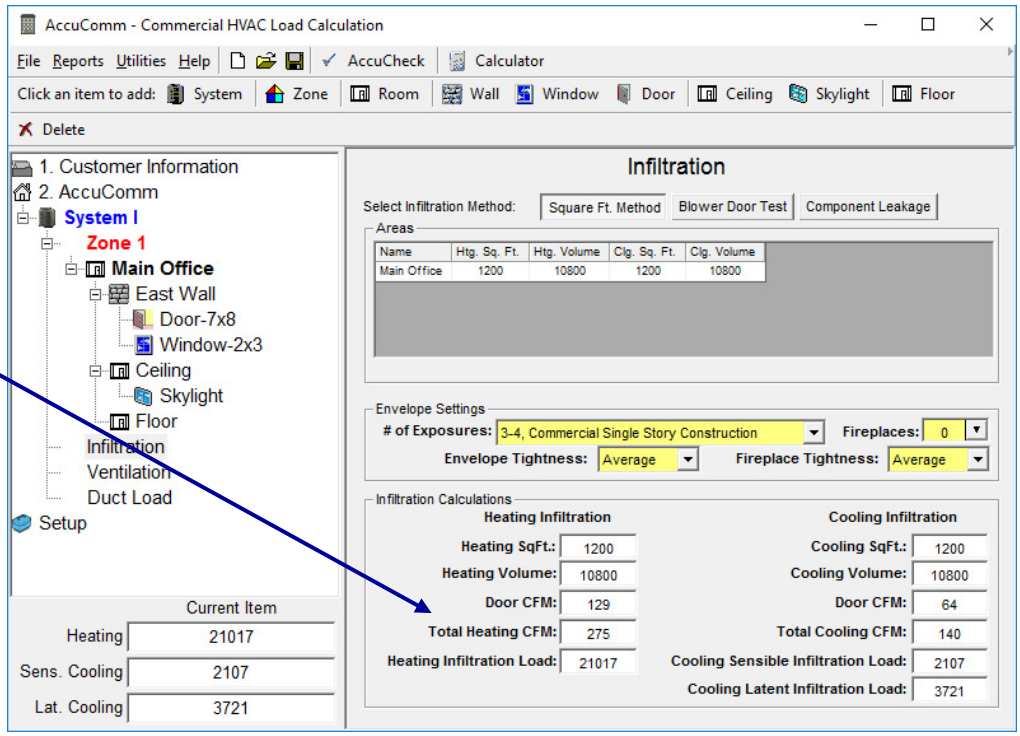
The following steps will add a floor to the room:

1. Click on the "Floor" icon on the toolbar.
2. You may name this floor if desired from the dropdown box or typing a new name into the box.
3. Select "Type Selection", "Number Selection", or "Favorites" to see options for the floor type.
4. If "Type Selection" is selected, you will be asked to select the type of the floor. You will then need to select the boxes that appear to the right of the first box. Depending on the type selected, you will have different options to pick from. By selecting the type and appropriate dropdowns, you will be selecting the Htg U-Value and the Clg HTM Value for this floor.
5. Select the floor dimensions in the appropriate boxes or click on the "Copy from room" button.
6. If this is a partition floor (floor with a different temperature on exterior side), check the "Partition Floor" box, then type in the STD (Summer Temperature Difference) and the WTD (Winter Temperature Difference). These numbers will be the deference from the indoor design temperature and the temperature on the exterior of the floor.

Section III. Data Input
"Infiltration - Square Ft. Method"

Infiltration can be calculated by one of three screens, "Square Ft.","" Blower Door Test" or "Component Leakage" method. The "Square Ft." method is probably the most common method used. If you are utilizing a Blower Door Test, you may enter the numbers into the program for accurate infiltration calculations.

Hint:
You may view the heating and cooling sq. ft. areas on this screen.
When calculating a block load for a building, you should enter each living level in separately. This will calculate the proper sq. ft. of the building.
When entering a basement in the room screen, only use the above grade height for the room height.



Rooms are added to the grid as they are added in the node frame. This saves a double entry for this screen.

The following steps will calculate infiltration using the Square Ft. Method:

1. Select the number of exposures along with the number of floors in your application.
2. Select the envelope tightness (see page 35 for details).
3. Enter the number of fireplaces.
4. Select the fireplace tightness.

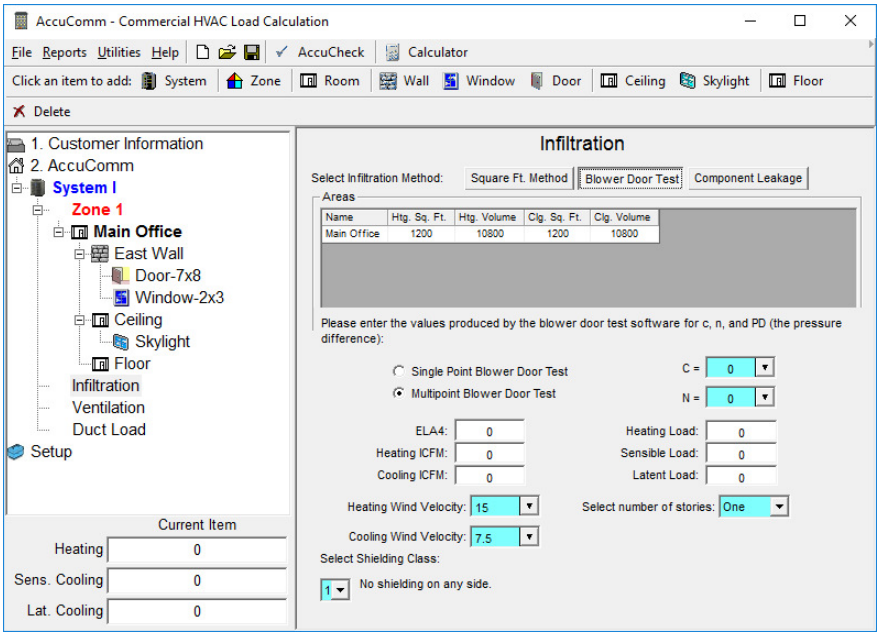
Section III. Data Input
“Infiltration - Blower Door Test” & Component Leakage Method”

Infiltration can be calculated by one of three screens, “Square Ft.”,” Blower Door Test” or “Component Leakage” method. The “Square Ft.” method is probably the most common method used. If you are utilizing a Blower Door Test, you may enter the numbers into the program for accurate infiltration calculations.

”Blower Door Test Method”

Steps for Blower Door Test:

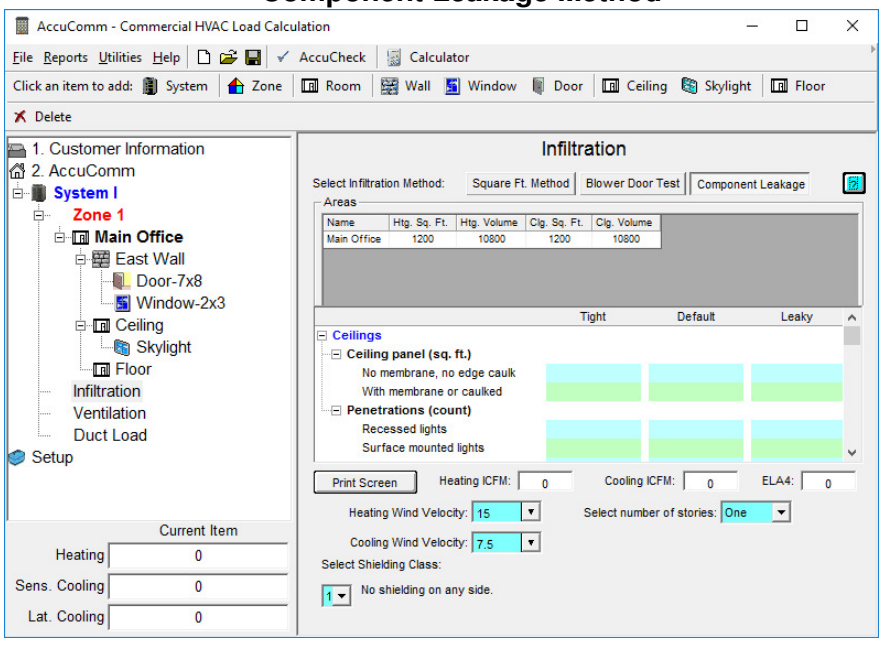
1. Select Single Point or Multiple Point test.
2. Enter “ELA4” reading for single point or “C” and “N” readings for multiple point test.
3. Enter the Heating & Cooling wind velocity if different then default values.
4. Select # of stories.
5. Select Shielding Class.



”Component Leakage Method”

Steps for Component Leakage:

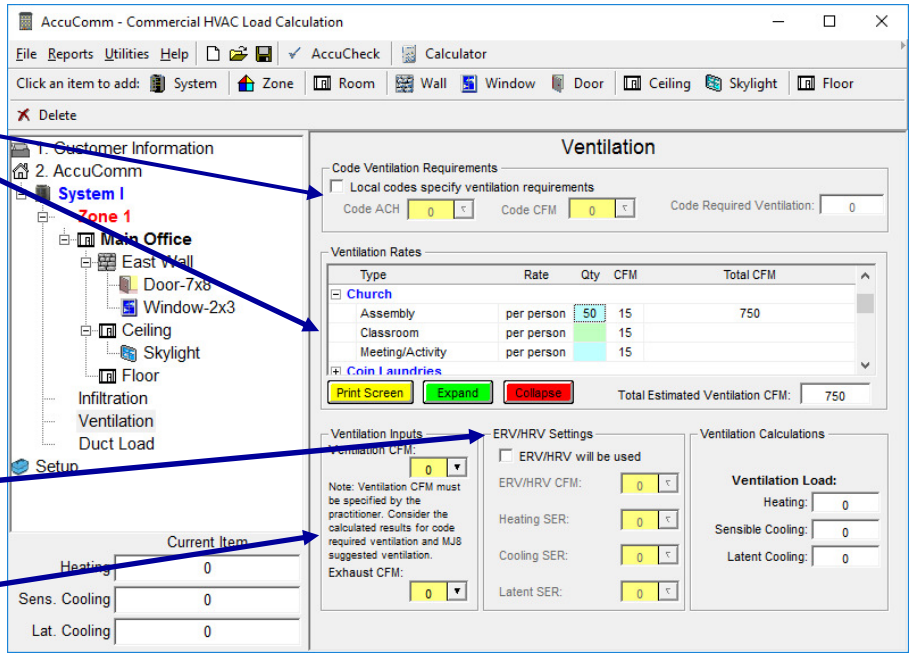
1. Enter the components recorded in the home in the grid. Click on the desired cell, then enter the number.
2. Enter the Heating & Cooling wind velocity if different then default values.
3. Select # of stories.
4. Select Shielding Class.



Section III. Data Input
"Ventilation"

Ventilation can be determined from local code requirements or MJ8 recommendations. MJ8 recommendations should only be followed if there are no local code requirements.

Hint:
The top two boxes are for determining ventilation requirements. No load will be calculated until the desired cfm#'s are entered into the two lower input sections. If you are using a HRV or ERV, you will enter the cfm and SER's into this section
If fresh air is introduced thru a vent, use this input section.



Ventilation using a fresh air vent (no ERV or HRV):
1. Enter the cfm being introduced into the home.
2. Enter the exhaust cfm, if any. Do not include kitchen or bath fans if they are less than 150 cfm. They are not considered engineered ventilation.

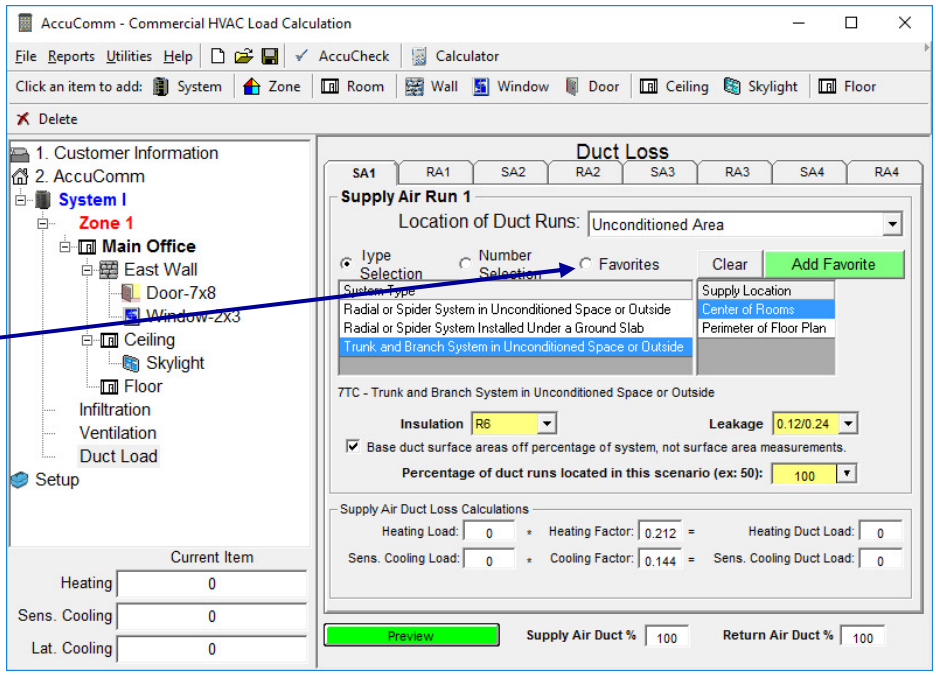
Ventilation using a ERV or HRV:
1. Click on the check box for using an ERV or HRV.
2. Enter the cfm being introduced thru the unit.
3. Type in the correct SER#''s for the unit efficiency.

When selecting "Code Requirements", you have a choice to include the infiltration as part of your ventilation if your local code allows this.

Section III. Data Input
"Duct Load"

Duct loads will be calculated in this screen. If the ductwork is located in a conditioned area, this input screen may be omitted.

Hint:
You may select a duct type, then click the button "Add To Favorites" to save the duct type. If this is a common scenario, you can then click on the "Favorites" option button for your saved favorites. This will save steps in selecting common duct types.



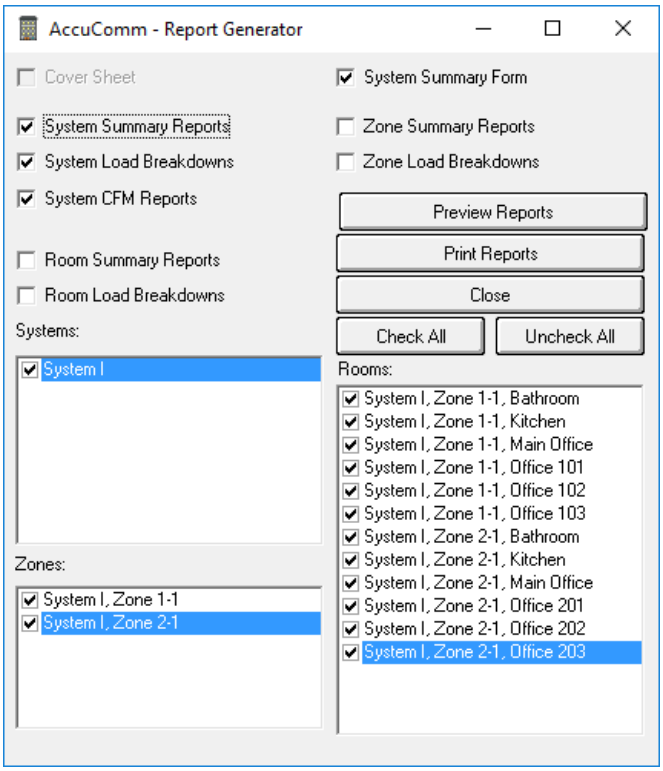
The following steps will add the duct load to your project:

1. Select the location of the ducts in each scenario. You may have more than 1 supply and return air run as noted by the 8 tabs at the top of the screen.
2. Select the type of duct and location by clicking on the "Type Selection", "Number Selection" of "Favorites" option buttons.
3. You may the select the appropriate duct and location.
4. Select the insulation R-Value if in an unconditioned space. (Use R-2 if not insulated)
5. Select the duct leakage factor. See Page 35 for explanation of values.
6. If the surface area of ductwork is not known, check the "Base duct surface areas off percentage of system" box. This is probably the most common and easiest to use. If are to measure the surface area of the ductwork, you may uncheck the above box, then use the drop down calculators next to the supply and return boxes. Another method to estimate the duct load is to estimate the surface area by clicking on the "Estimate" button. You will be asked to enter the number of returns, then click on the "Return" button to enter the values into the appropriate boxes.
7. You may click on the "Preview" button to view the ductloads, this is not necessary to calculate the loads, however you may want to view the numbers.

Section IV. Summary and Reports
"Previewing and Printing Reports"

View Reports

1. Click "Reports" in the Toolbar.
2. The Report Generator will appear.
3. Choose which reports to Generate.
4. Choose what Systems, Zones, and Rooms will be included in the reports.
5. If you want to print the reports with out previewing them, click the "Print Reports" button on the bottom of the Report Generator Dialog.
6. To Preview Reports, click the "Preview



Previewing Reports

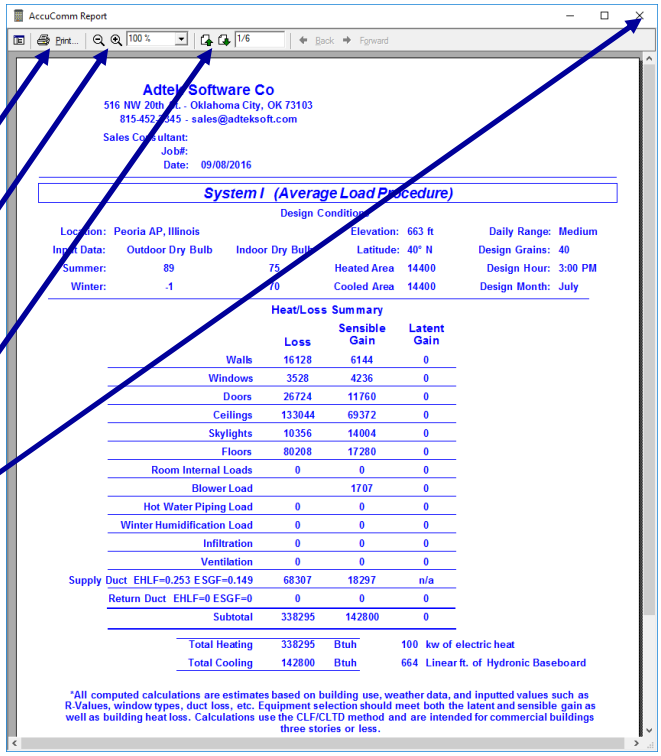
Previewing Reports allows you to view reports without printing them, or allow you to see the report before printing.

You can print at any time by hitting the Print Button.

Click on the percentage to increase or decrease the viewing area (zoom).

The number of pages.
Use These Buttons to view the next page, or go back a Page.

Click the X button to exit.



Section V. Reports

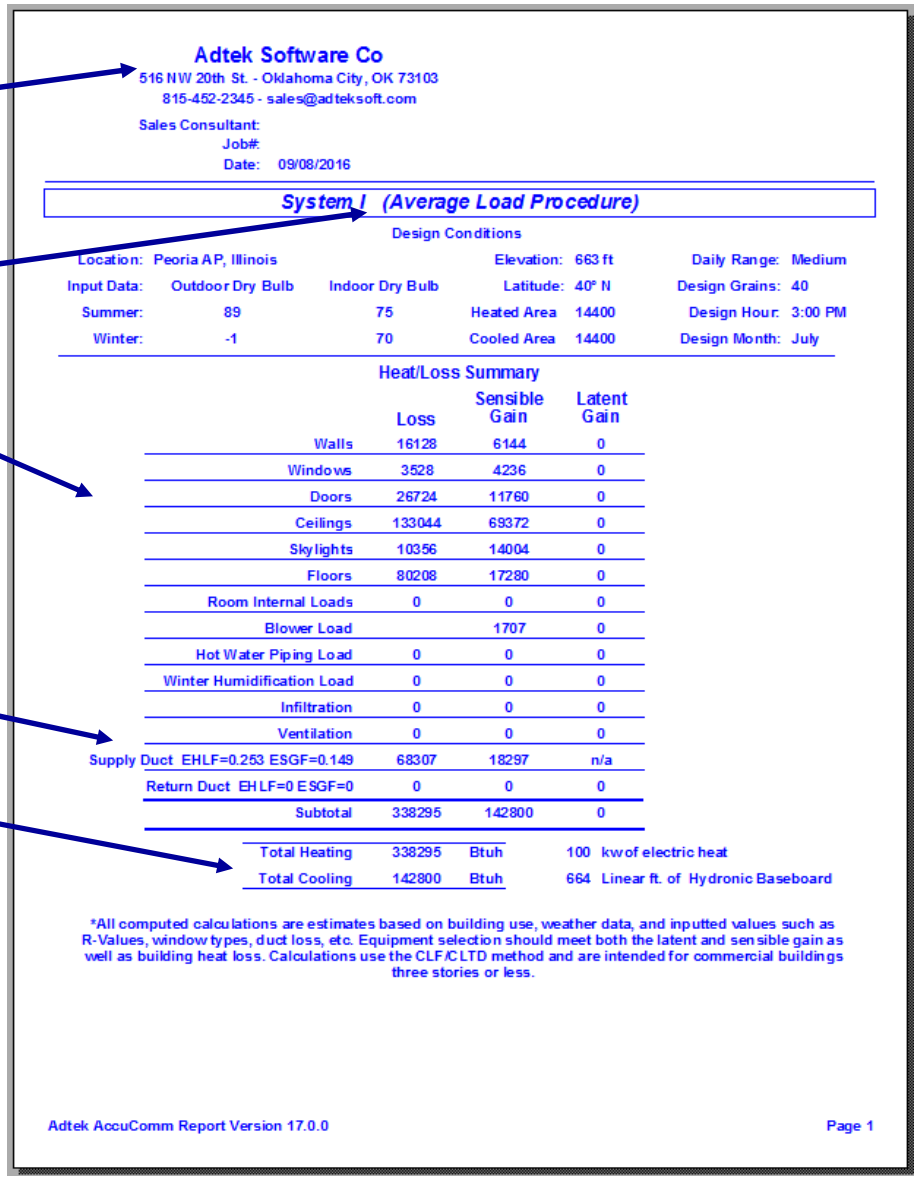
Company Info

Indicates the Load Procedure

System Breakdowns

Supply/Return Totals

System Totals



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Sales Consultant:
Job#:
Date: 09/08/2016

System I (Average Load Procedure)

Design Conditions

Location:	Peoria AP, Illinois		Elevation:	663 ft	Daily Range: Medium
Input Data:	Outdoor Dry Bulb	Indoor Dry Bulb	Latitude:	40° N	Design Grains: 40
Summer:	89	75	Heated Area	14400	Design Hour: 3:00 PM
Winter:	-1	70	Cooled Area	14400	Design Month: July

Heat/Loss Summary

	Loss	Sensible Gain	Latent Gain
Walls	16128	6144	0
Windows	3528	4236	0
Doors	26724	11760	0
Ceilings	133044	69372	0
Skylights	10356	14004	0
Floors	80208	17280	0
Room Internal Loads	0	0	0
Blower Load		1707	0
Hot Water Piping Load	0	0	0
Winter Humidification Load	0	0	0
Infiltration	0	0	0
Ventilation	0	0	0
Supply Duct EHLF=0.253 ESGF=0.149	68307	18297	n/a
Return Duct EHLF=0 ESGF=0	0	0	0
Subtotal	338295	142800	0

Total Heating	338295	Btuh	100 kw of electric heat
Total Cooling	142800	Btuh	664 Linear ft. of Hydronic Baseboard

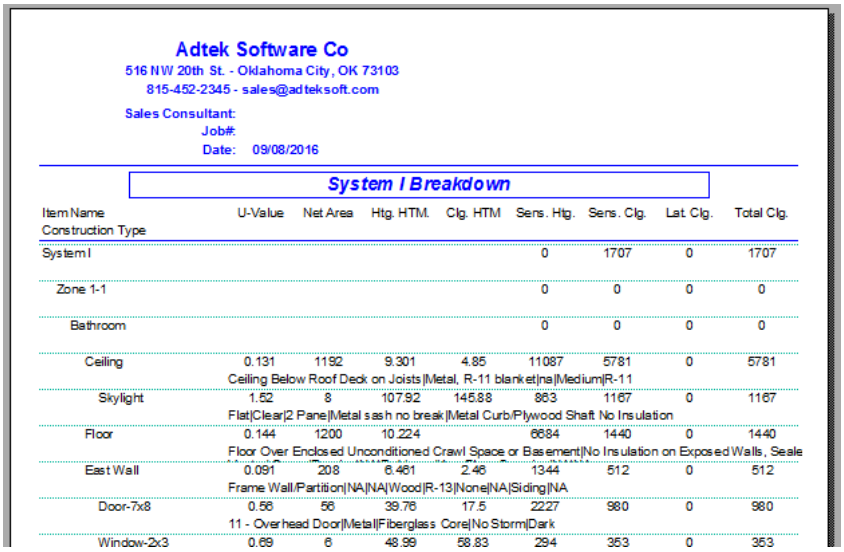
*All computed calculations are estimates based on building use, weather data, and inputted values such as R-Values, window types, duct loss, etc. Equipment selection should meet both the latent and sensible gain as well as building heat loss. Calculations use the CLF/CLTD method and are intended for commercial buildings three stories or less.

Adtek AccuComm Report Version 17.0.0 Page 1

Section V. Reports continued…

System Breakdown

This screen will print the loads for each item in the rooms or in the building.



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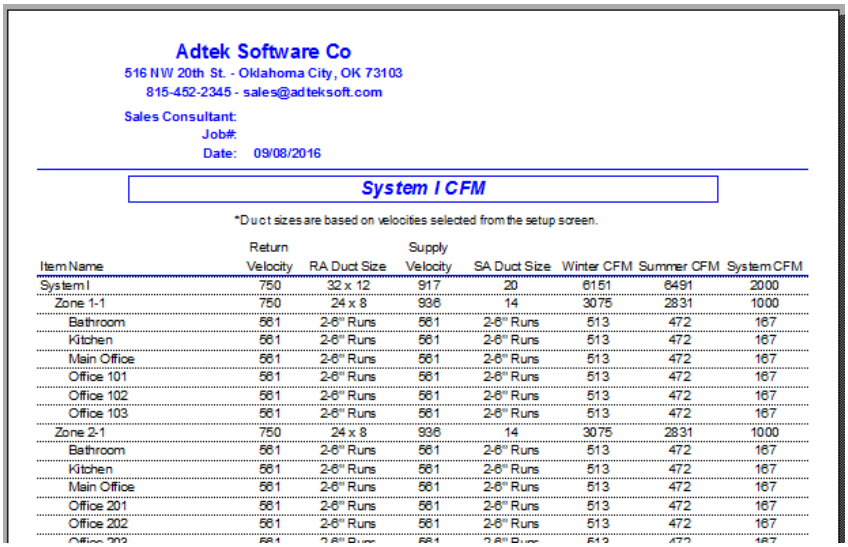
Sales Consultant:
Job#:
Date: 09/08/2016

System I Breakdown

Item Name / Construction Type	U-Value	Net Area	Htg. HTM.	Clg. HTM	Sens. Htg.	Sens. Clg.	Lat. Clg.	Total Clg.
System I					0	1707	0	1707
Zone 1-1					0	0	0	0
Bathroom					0	0	0	0
Ceiling	0.131	1192	9.301	4.85	11087	5781	0	5781
Ceiling Below Roof Deck on Joists|Metal, R-11 blanket|na|Medium|R-11								
Skylight	1.52	8	107.92	145.88	863	1167	0	1167
Flat|Clear|2 Pane|Metal sash no break|Metal Curb/Plywood Shaft No Insulation								
Floor	0.144	1200	10.224		6684	1440	0	1440
Floor Over Enclosed Unconditioned Crawl Space or Basement|No Insulation on Exposed Walls, Seale								
East Wall	0.091	208	8.461	2.46	1344	512	0	512
Frame Wall/Partition|NA|NA|Wood|R-13|None|NA|Siding|NA								
Door-7x8	0.56	56	39.76	17.5	2227	980	0	980
11 - Overhead Door|Metal|Fiberglass Core|No Storm|Dark								
Window-2x3	0.69	6	48.99	58.83	294	353	0	353

System CFM

This screen will show the cfm required in each room, zone or system. The system cfm that you select can be entered into the system screen, then the cfm will be proportioned into the rooms.



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Date: 09/08/2016

System I CFM

*Duct sizes are based on velocities selected from the setup screen.

Item Name	Return Velocity	RA Duct Size	Supply Velocity	SA Duct Size	Winter CFM	Summer CFM	System CFM
System I	750	32 x 12	917	20	6151	6491	2000
Zone 1-1	750	24 x 8	936	14	3075	2831	1000
Bathroom	561	2-6" Runs	561	2-6" Runs	513	472	167
Kitchen	561	2-6" Runs	561	2-6" Runs	513	472	167
Main Office	561	2-6" Runs	561	2-6" Runs	513	472	167
Office 101	561	2-6" Runs	561	2-6" Runs	513	472	167
Office 102	561	2-6" Runs	561	2-6" Runs	513	472	167
Office 103	561	2-6" Runs	561	2-6" Runs	513	472	167
Zone 2-1	750	24 x 8	936	14	3075	2831	1000
Bathroom	561	2-6" Runs	561	2-6" Runs	513	472	167
Kitchen	561	2-6" Runs	561	2-6" Runs	513	472	167
Main Office	561	2-6" Runs	561	2-6" Runs	513	472	167
Office 201	561	2-6" Runs	561	2-6" Runs	513	472	167
Office 202	561	2-6" Runs	561	2-6" Runs	513	472	167

Appendix 1

Infiltration Definitions

Tight: All structural panels, corners, cracks, joints and penetrations are sealed by meticulous workmanship using some combination of air barrier (film), taping, packing and caulking. Window and door assemblies are rated at less than 0.25 CFM per running foot of crack at 25 mph (wind speed). Bath exhaust fans, kitchen exhaust fans, and dryer vents are equipped with back draft dampers. The home does not have ceiling recessed light fixtures or, if so, there is a negligible amount of leakage around the fixture. No combustion equipment (furnaces, water heaters, dryers, etc.) contained within the conditioned space, or, if so, they are to be of the direct-vent variety. The house does not have powerful (I.e., 150 CFM or greater) range hoods (a high power hood that has its own source of makeup air is acceptable. Fireplaces, if any, receive combustion air from the outdoors and have tight glass doors.

Semi-Tight: Envelope conditions are approximately between Tight and Average

Average: All structural panels, corners, cracks, joints and penetrations reasonably sealed by adequate workmanship using some combination of air barrier (film), taping, packing and caulking. Window and door assemblies rated between 0.25 and 0.50 CFM per running foot of crack at 25 mph (wind speed). All bath exhaust fans, kitchen exhaust fans, and dryer vents are equipped with back draft dampers. The home does not use ceiling recessed light fixtures or, if so, there is a minor amount of leakage around the fixture. No envelope openings (per National Fuel Gas Code) are required for combustion air. The house does not have powerful (I.e., 150 CFM or greater) range hoods (a high power hood that has its own source of makeup air is acceptable). Fireplaces, if any, receive combustion air from the indoors but, have tight glass doors and a chimney damper.

Semi-Loose: Envelope conditions are approximately between Average and Loose.
Loose: There has been no effort or inadequate effort (regarding methods, materials and workmanship) to seal the structural panels, the associated corners, cracks, joints and penetrations and/or there is a large amount of ceiling recessed light fixture (or light-can) leakage. Window and door assemblies are not rated; or are rated at more than 0.50 CFM per running foot of crack at 25 mph (wind speed). Some, or all, of the bath exhaust fans, kitchen exhaust fans, and dryer vents are not equipped with back draft dampers. Envelope openings (per National Fuel Gas Code) are required for combustion air. Powerful (I.e., 150 CFM or greater) range hoods used that do not have their own source of makeup air require powered air-makeup, an open window for make-up air, or a negative pressure relief. Fireplaces, if any, receive combustion air from the indoors and do not have glass doors or chimney dampers.

Notes

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