Quick Guide
Load Calculations
Step -By-Step Load Calculation

**Step by Step**

a. Go to the Project Information Page to check/set the outdoor conditions.

b. Go to the Zone Information Page to check/set indoor conditions.

c. Go to the Infiltration page to check/set infiltration settings.

d. Go to the Draw Screen.

e. Set the default building materials.

f. Draw the building.

g. Edit all the properties of all building components to double check/fine tune. Select multiple objects to do so.

h. Change orientation.

i. Add Zones or AHs (systems) as needed.

j. Go to Zone information to set Ventilation if needed.

k. View the Load

l. Print preview/print.
The HVAC Shapes Toolbox is used in Right-Draw to quickly draw your floorplan and design.

- Room
- Window
- Door
- Floor
- Skylight
- Ceilings
- Wall
- Room (Non rectangle)
The Draw Screen is designated to keep everything you will need at your fingertips.

1. To view the draw screen, select the DRAW SCREEN button from the toolbar, or DRAW from the Web or Show Menu.
Click down on building material diagram for choosing **DEFAULT** materials **BEFORE** you draw them.

1. **Make Changes to the ceiling materials**

2. **Make Changes to the floor materials**

3. **Make Changes to the window materials**

4. **Make Changes to the wall materials**

5. **Make Changes to the door materials**
The Sheets and Layers Tree shows the different levels of your building. Each level of the building is represented by a different sheet.

1. Separate pieces of each level are automatically separated into different layers. For example, Rooms, windows, and doors make up the “building” layer, while air handlers, ducts, fittings, grills and registers make up the “duct” layer but both are part of the same sheet (level of the building).

2. The Sheet’s elevation determines their order. The increments aren’t important, but each sheet should have an elevation higher than the sheet below it and lower than the sheet above it. E.g. Basement=-9, First Floor=0, Second Floor=9  -OR-  Basement=-1, First Floor=2, Second Floor=3.

3. Most users won’t need to add layers as they add themselves (a ceiling layer is added automatically when a custom ceiling is drawn, a notation layer added when notation icons used). However, locking layers so that they can’t be accidentally changed can be quite useful.
You can change the orientation of the drawing using the Compass on the Draw Screen toolbar. It is best to change the orientation after you have drawn the building.

1. On the Draw Screen, the red arrow will indicate which direction is North.

2. To change the orientation, double-click on the direction that is North. The red arrow will move and any loads or designs will update based on the new orientation.

3. Worst Case Orientation
   If you do not know the orientation of your drawing, complete your floor plan then double-click on the yellow center of the compass. The worstcase orientation will be determined.
**Drawing a Room or Space**

1. To draw a room, select the ROOM tool from the HVAC Shapes toolbox.

2. Move your cursor into the drawing area. The cursor will change to a crosshair.

3. Click and hold your mouse button to define one corner and then drag to another corner.

4. Release the mouse button when the room is the desired size.

5. The room dimensions are displayed as you drag and are automatically transferred to the load calculation worksheets.

6. Set the wall height in the Room Property Sheet by right-clicking on the room and entering the appropriate height.

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**Resizing a Room**

1. To resize a room, click and hold the mouse button down on a green handle on the room.

2. Drag in or out to resize to the dimensions desired.

3. Release the mouse button. Any loads dependent on this room will automatically update.

A SIDE HANDLE WILL CHANGE THE HORIZONTAL OR VERTICAL DIMENSIONS OF A ROOM

USE A CORNER HANDLE TO CHANGE BOTH HEIGHT AND WIDTH SIMULTANEOUSLY
Editing and Deleting a Room

MOVE A ROOM

1. To move a room, click inside the room and hold the mouse button down. The cursor will change to a crosshair of arrows.

2. Drag the room to the desired location and release the mouse button.

3. Or click on a room so that it is selected with green handles and use the arrow keys on the keyboard. Each click of the arrow key will move the object selected 1 snap setting (default: 1 ft).

DELETE A ROOM

1. To delete a room, click inside the room and the green handles will appear. Select the <Delete> key or Edit | Delete from the menu.
Rooms are assigned a default name automatically when they are created. You can change the name of the room to match your floorplan and move the location of the name to make the drawing as clear as possible. The worksheets, reports, and other documentation will automatically update with the new name.

1. Select the room on the draw screen and the green handles will appear.

2. Type the new name of the room. To edit the name, simply click on the name first.

1. To move the name of the room start by clicking in the room.

2. Hold the <Shift> key and click on the name. Drag the name to the desired location within the room.
The Property Sheets allow you to view or edit the characteristics of a room, including the walls, ceiling, and floor.

1. Open the Property Sheet for a room by right-clicking on the room. There are four tabs in the Property Sheet.

2. You can set several items in the room and space property sheets:
   - Ceiling height
   - Occupants and Appliances
   - Conditioning and Zoning
   - Duct Loss and Gain
   ...and more
Right-Draw can not only handle rectangular rooms, but can also create and calculate loads and system designs for custom and uniquely-shaped rooms.

1. Click the “Room Wall by Wall” Icon

2. Left click and hold, drag the first wall. Let go of left click.

3. No longer holding left-click, move your cursor in another direction to make your next wall. Left click to set it in place and move on to the next wall.

4. Continue until you finish where you started.

Tip: Holding shift while drawing any line (including wall by wall rooms and ducts) will lock that line into a 90 or 45 degree angle.
Odd Shaped Rooms (2)

1. Draw a rectangular

2. Click the EDIT POINTS button from the toolbar. The green handles on the room will be replaced with black squares.

3. Stretch the room to any shape by clicking on any part of the room and dragging. Repeat until the room is the desired shape.

4. Click the EDIT POINTS button again when you are finished to turn off the feature.

TIP: To save time and avoid counting dots, use the DIMENSION tool to measure out the lengths of the sides before using Edit Points.
Right-Draw® uses many other HVAC Shapes including windows, doors, custom floors, ceilings, and even skylights as well as other objects. In general, you can just drag the tool from the HVAC Shapes toolbox onto the draw screen and edit it much like a room.

HVAC SHAPES

1. Select the HVAC Shape from the HVAC Shapes toolbox.

2. Place the cursor over the room and drag to size or just drag the button to the Draw Screen to create the object.

3. Edit the properties of HVAC Shapes using the Property Sheet. You can view the Property Sheet by right-clicking on the HVAC Shape.

DRAWING OBJECTS

1. Select the drawing object to use from the toolbar. These drawing objects do not have any properties to them and are not included in load calculations.

2. Place the cursor over the draw screen and drag to size or just drag the button to the Draw Screen to create the object.
1. Select the object that you want to resize. The green handles will appear.

2. Select one of the green handles and drag until you reach the desired size. Release the mouse button.

3. You can also edit the dimensions for most objects, including the height, of HVAC Shapes using the Property Sheets. View the Property Sheet by right-clicking.
Types of Door and Windows (Property Sheets)

On the Door and Window Property Sheets, you can select several different types and configurations.

1. Click on the window or door on the drawing area and the green handles will appear.

2. Right-click on the window or door to bring up the Property Sheet.

3. Select the appropriate Door Type or Window Configuration for the object.

Window Configurations include:

- Flat
- Garden
- Bay
Stairways and hallways are drawn dependent on how you will manage the airflow in these spaces.

1. Hallways are always drawn as a separate room in Right-Draw®. You can use the EDIT POINTS button to adjust the room to any odd-shaped hallway shape.
Custom ceilings can be completed with the Ceiling Tool

1. Drag the CEILING shape to the room where you would like to place the custom ceiling.

2. The Ceiling Types menu will appear. Select the radio button above which ceiling type you would like to use. The default will be a flat ceiling, so it is not necessary to draw a custom ceiling for a flat ceiling.

3. Enter the appropriate dimensions. Select OK.

4. Resize the ceiling over the room to represent the coverage of the ceiling.
Skylights in the ceiling are treated as windows, but are automatically recognized and placed in the ceiling by Right-Draw

1. Draw a skylight by dragging and dropping the SKYLIGHT tool, from the HVAC Shapes toolbox, to the drawing.

2. Right-click the skylight to edit its properties.

**NOTE:** Skylights automatically adjust to match the orientation and inclination of the ceiling.
Selecting Multiple Objects

In Right-Draw, you have the ability to select multiple objects and change many parameters at once such as the size, construction type, and more. You can select the objects one-by-one or all at once using the Sheets and Layers Tree.

1. To select all objects of a type on the drawing screen, right-click on the sheets and layers tree and go to select.

2. To select multiple objects one-by-one, click on one object and then press and hold the <Shift> key while selecting additional objects.

3. With the objects all selected, you can group them or right-click to bring up the property sheet.

4. The fields that are not greyed out can be changed and will affect all selected objects. Make any changes you would like, and then close the property sheet.

5. You can also select multiple objects by clicking outside of your building and then dragging to form a box around the objects you wish to select.
Multizone Tree

1. The Multizone Tree allows you to quickly zone your project and assign equipment for your zones.

2. To view the Multizone tree, select the MULTIZONE button from the toolbar.

3. You will see all of the rooms listed under a single piece of equipment. Select Add AH from the buttons on the right.

4. Now, you can simply drag the rooms that you want for that system so that they are listed underneath the appropriate piece of equipment.

Adding Systems

1. You can easily add a new piece of equipment using the Multizone Tree. After you draw your floorplan, view the Multizone Tree by selecting the MULTIZONE button from the toolbar.

2. Enter the name of the equipment and select OK to add it to the Tree.
1. Using the Multizone Tree, you can easily assign rooms to different zones. Open the Multizone Tree by selecting the MULTIZONE button from the toolbar.

![Multizone Button](image)

2. Add more zones under any piece of equipment by selecting Add VAV or Add Zone from the side of the window. Enter a descriptive name for the new zone and select OK.

![New Name](image)

3. With multiple zones created, you can quickly drag the rooms into the appropriate zone.
Ventilation

If required for your residential projects, the Ventilation is automatically calculated for your system.

1. To view the Ventilation, select the ZONE INFORMATION button from the toolbar. The Ventilation information is located in the third section.

2. To zero out or override the values for the Ventilation, place your cursor in the field to change and click. Then select <F8> from the keyboard to override. The blue brackets will change to yellow.

3. Enter the new value and then select <Enter> to update the information and calculations.

View the Load

You can view the calculated load in several ways.

WORKSHEET

View the worksheet. Select the WORKSHEET button from the toolbar. Your load breakdown will be available in this standard format.

ZONE INFORMATION

To view the load on the Zone Information screen, select Show | Zone Information and scroll to the bottom of the screen. The loads and tonnage will be displayed.

LOAD METER

View the load meter. Select the LOAD METER button from the toolbar. The load meter provides a load breakdown as well as an overall picture of the heating and cooling loads.
Printing Your Drawing

You can easily print any package of drawings, reports, or documents from Right-Suite Universal

1. To print your drawing, select file | Print Preview... from the menu.

2. Select the check box next to the draw option in the Print Reports menu box that appears. Right-click on the drawing option and select Properties.

3. The Drawing Print Options box will appear. You have several options for which sheets (levels of your building) and layers to print, as well as the scale.

4. Select the options from the menu and select OK.

5. Select Preview to view the report and then the Print icon to print.