METALLIC PRODUCTS
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HELP & HOW-TO:
Metallic Products Canopy Calculator Site

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General **Help**

Terms to Know

- Controls: Form and screen areas which interact with the user
- Fields: Controls which accept some type of input data from the user
- Labels: Controls which display static text

Basic Concepts

This web application uses a parent-child hierarchy to organize data. At the top level is the Project. Projects contain basic project data, as well as child data objects for loading information and buildings. Buildings have their own basic data and child objects for loading overrides and canopies. Canopies have basic data and output child objects for reporting purposes.

There are three basic screens: Project Data, Loading Data and Building Data.

The Building Data screen has two sub-screens (called forms) to collect additional details for the building and canopies. Each one is fully dialoged and self-contained. In other words, only the active form or screen can be changed.

Each screen or form has both a previous and next button. Clicking Previous will return you to the previous screen or form, discarding all changes. Clicking Next will pass you to the next form in the sequence.

Field, Controls and Tab Order

You may update fields on a child form or screen in any order you wish. However, there is a native order in which each field is error-checked, called tab order. Follow the tab order for best results.

Entering Data

Each field which accepts data has corresponding labels displaying the field name and unit of the value to be entered. The exceptions to this are fields which always accept linear distances.

General **Help** (cont.)

Linear distances may be entered in two ways:

1. Decimal values taken as feet
2. Strings with both feet and inch portions formatted as described below. The value used in the application is rounded to the nearest 1/16"

When following option 2, you do not need to separate foot and inch values with a hyphen. Instead, add a foot mark (') after a whole foot value. The numerical characters entered after the foot mark are taken as inches.

Inches may be entered as decimal or fractional strings. If entering fractional inches, separate the whole inch value from the fraction numerator with a space and separate the fractional numerator from the denominator using a forward slash (/). Inch marks are ignored and need not be entered.

The following table shows a few examples:

String entered in field by User	Value shown in field upon exit	Rounded value used (ft)
10.5	10.5	10.5
166"	13'-10"	13.83333333
66'2	66'-2"	66.16666667
58.1561686	58'-1 7/8"	58.15625
55'7.625	55'-7 5/8"	55.63541667
55'6 3/8"	55'-6 3/8"	55.53125

Field, Controls and Tab Order

Output data is saved to human-readable text files in JavaScript object notation (JSON) format and may be downloaded upon successful form completion. These files can be read both by a desktop application and by an Excel spreadsheet available from Metallic Products. They may be used to create custom reports and calculations.

If all canopies within all buildings successfully meet design criteria, you may also download a HTML-based letter of certification (LOC).

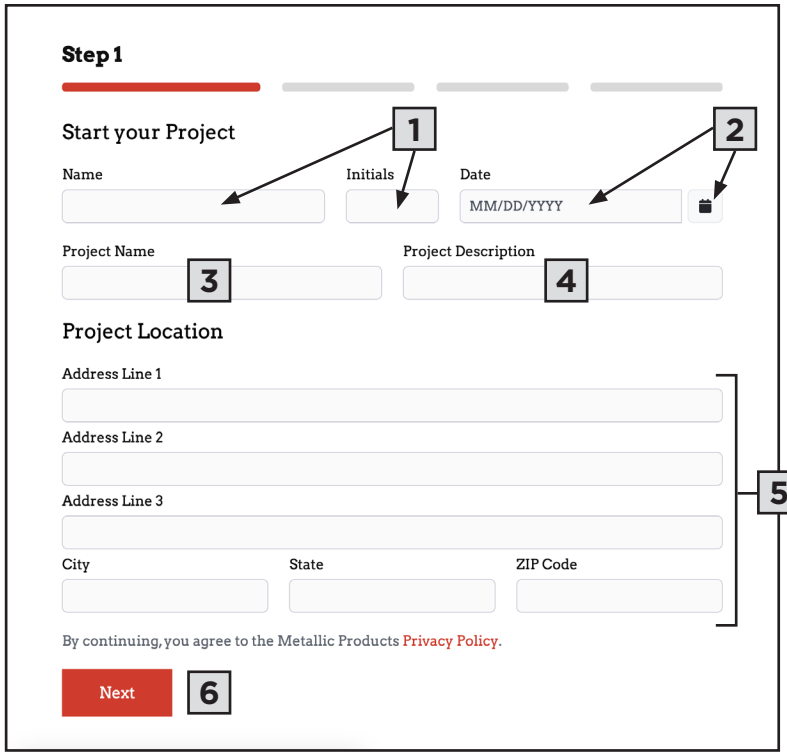
Step 1: **Project Data**

Overview

You will see the Edit Project form when you first access the Canopy Calculator site. This screen collects project-level data. Any buildings created in the project incorporate the loading data entered for the project. While certain fields may be overridden at the building level, project-level data applies to all buildings within the project.

For more information, see General Help.

Start Your Project



1. Enter your name and initials for identification purposes.
2. Enter a reference date in mm/dd/yyyy format or select a date by clicking the calendar icon.
3. Enter a project name as it should appear on the letter of certification (LOC).
4. Enter a project description as it should appear on the letter of certification (LOC).
5. Enter the project site address as it should appear on the letter of certification (LOC).
6. Click Save to move to the Project Loads screen.

Step 2: **Load Data**

Overview

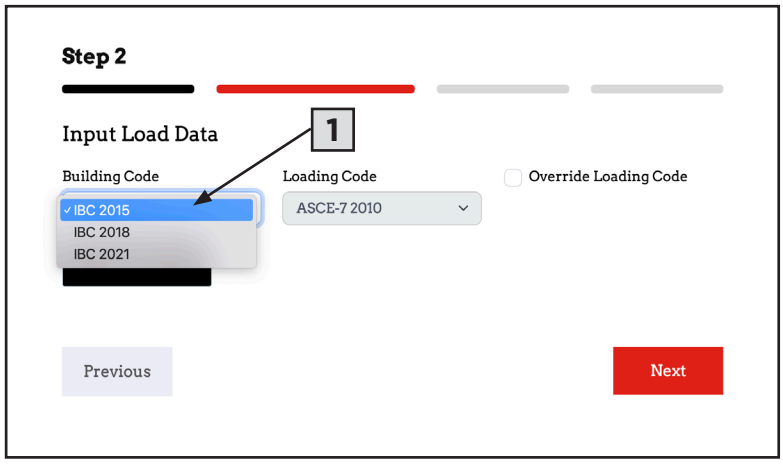
The Load Data screen collects the information needed to derive snow, wind and seismic loads for the project's canopies. Information entered on this form is incorporated into each building. Most loading information input on this form comes from the ASCE Hazard Tool.

The Load Data form has two modes of operation:

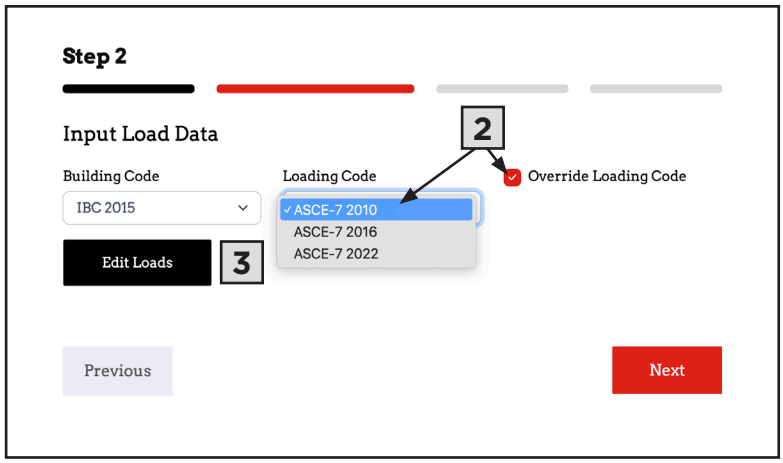
- **Normal Mode:** For collecting load data for the project. All fields are active.
- **Override Mode:** To allow editing of certain fields incorporated from the project on a building-by-building basis. Only fields which may vary from building to building are active.

For more information, see General Help.

Input Load Data

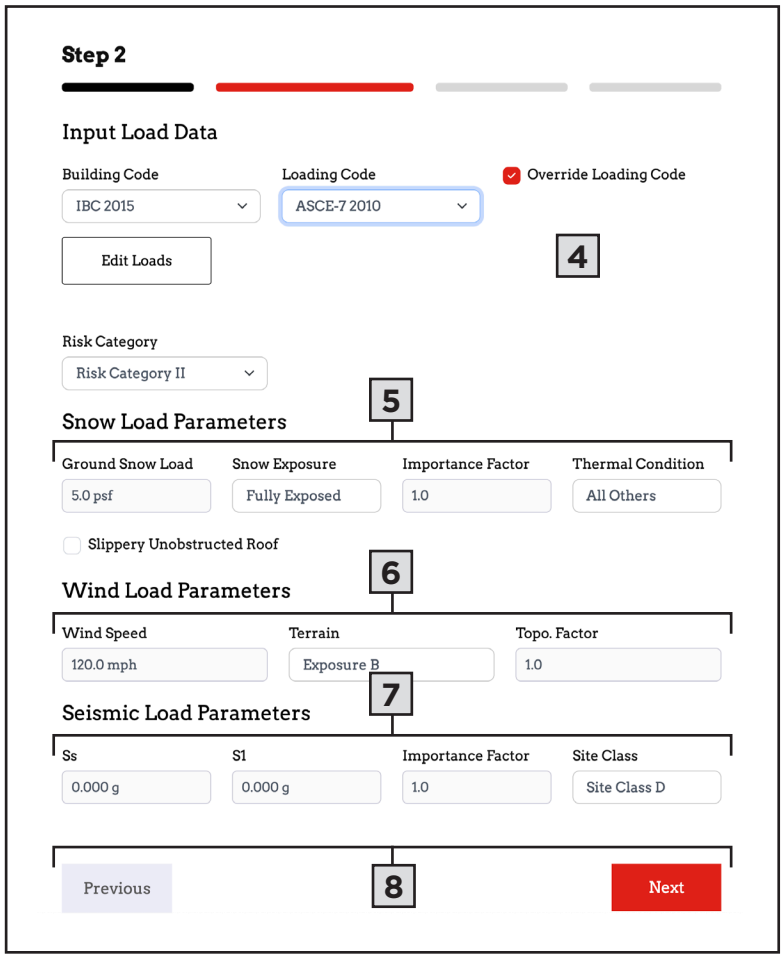


1. Select the applicable building code from the choices in the drop-down box. Once selected, the Loading Code drop-down will display the loading code cited by the building code.



2. To override the default loading code, click the Override Loading Code check box. This will activate the Loading Code drop-down box and allow you to select a different loading code. Consult the project engineer of record to ensure the loading code selected meets project requirements.
3. Click Edit Loads to enter loading information on the next screen.

Step 2: **Load Data** (cont.)



4. Enter the Risk Category in the drop-down list. Consult the selected building and loading codes for more information regarding Risk Categories. You may also click **Find Your ASCE Risk Category** for more information on all fields on this screen.
5. Enter the Snow Load Parameters as follows:
   - Enter the Ground Snow Load for the project location
   - Select the applicable Snow Exposure condition
   - Enter the snow Importance Factor value
   - Check the Slippery Unobstructed Roof check box under Thermal Condition if applicable
6. Enter the Wind Load Parameters as follows:
   - Enter the project's design Wind Speed
     Note: *Changing the Risk Category on this form may require you to enter a different design wind speed. Consult the ASCE Hazard Tool.*
   - Select the Terrain category from the available choices
   - Enter the Topography Factor (unitless)
7. Enter the Seismic Load Parameters as follows:
   - Ss: Spectral response acceleration parameter at a period of 0.2 seconds
   - S1: spectral response acceleration parameter at a period of 1 second
   - Input Seismic Importance Factor
   - Input Site Class Parameter
8. Click Next to save changes and move to Step 3
   Note: *Clicking Previous will discard all changes made on this screen and return you to Step 1.*

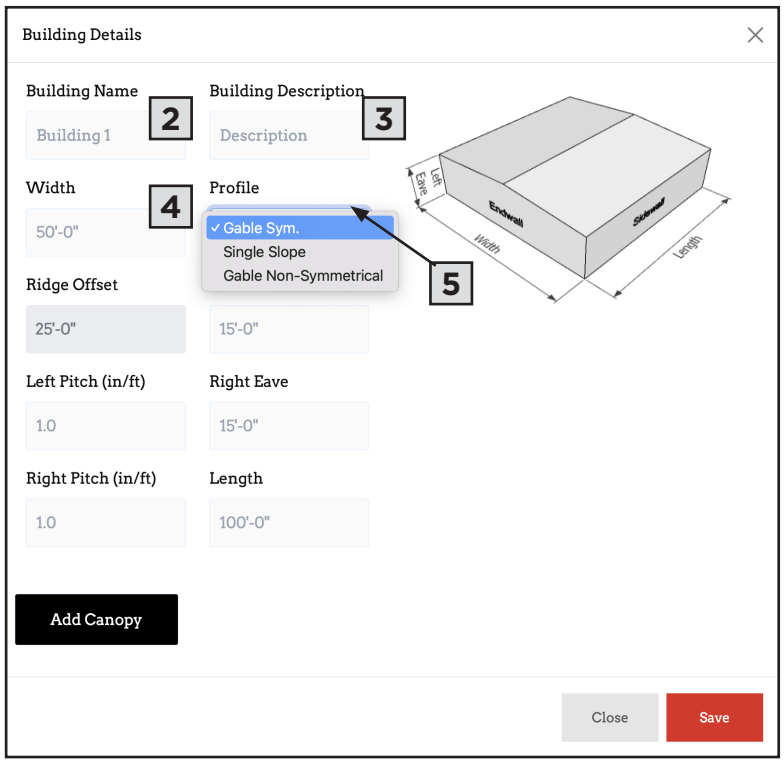
Step 3: **Project Buildings**

Overview

The Edit Building Form collects the building information needed to calculate the wind, snow and seismic loads acting on any canopies connected to the building.

For more information, see General Help.

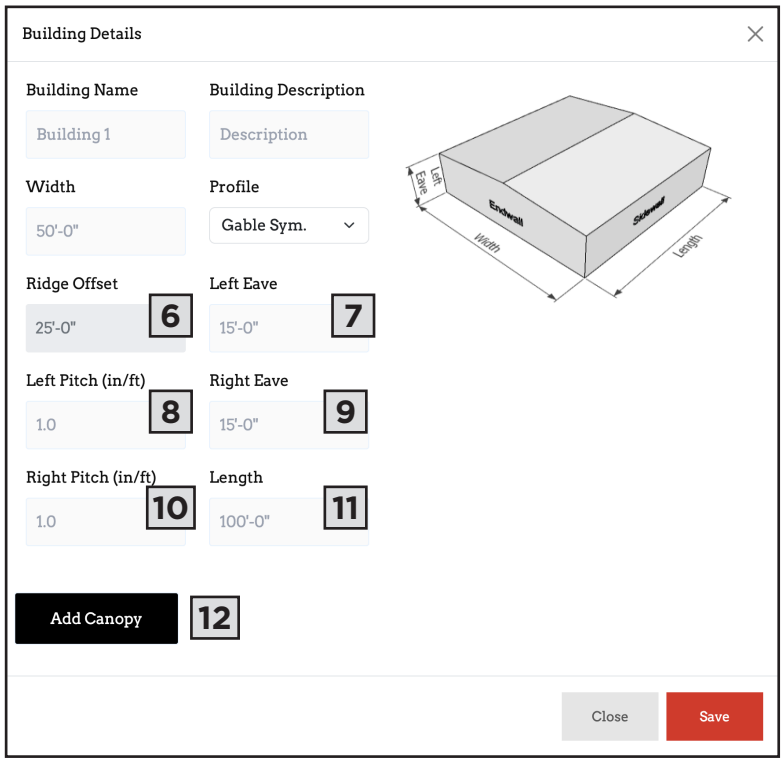
Building Details



1. Click **Add Building** to add a building to the project and move to the Building Details form. There must be at least one building in each project.
   Note: *Clicking Previous will discard all changes made on this screen and return you to Step 2.*
2. Enter a name for the building to be used on the output reports. Each building in the project requires a unique name.
3. Enter a description for the building to be used in the output reports.
4. Enter the width of the building, measured from side wall steel lines.
5. Select a profile of the building from the following list:
   - Gable Symmetrical: A building with a ridge down the center with symmetrical geometry across the ridge
   - Single Slope: A building with a single-plane roof. (i.e. no ridge)
   - Gable Non-Symmetrical: A building with a ridge that is not a line of symmetry of the building

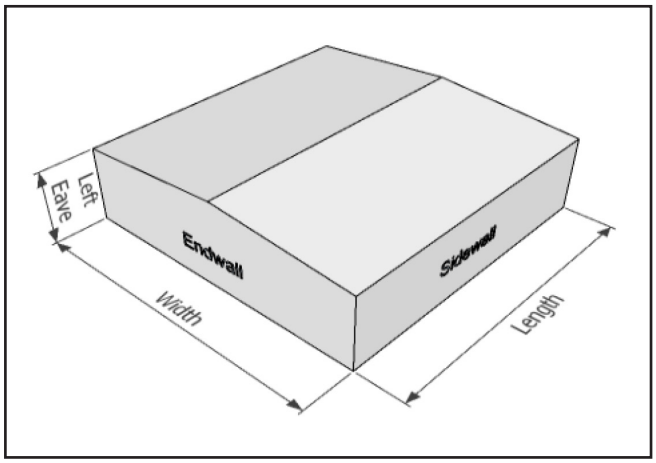
   Note: *Building reference image will vary based on building profile chosen (see images on page 4).*

Step 3: **Project Buildings** (cont.)

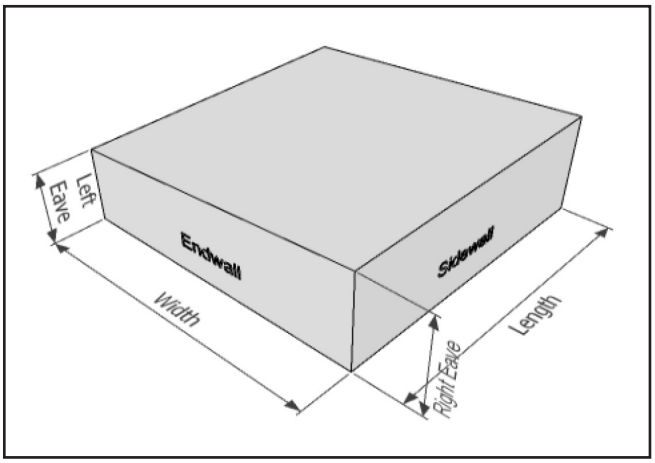


6. Ridge Offset: This field will be inactive for gable symmetrical buildings and single slope buildings. For gable non-symmetrical buildings, enter the horizontal distance between the sidewall steel lines.
7. Left Eave: Enter the eave height of the building as measured from a vertical reference plane to the intersection point of the right roof and right-side wall planes, as viewed from the outside of the building looking at the left end wall.
   Note: *The left eave height must be lower than the right eave height for a single slope building.*
8. Left Pitch: Enter the pitch (downward slope) of the left roof plane in inches of vertical change in feet of horizontal distance.
   Note: *This number must be positive, representing a downward slope.*
9. Right Eave: This field will be inactive for gable symmetrical and single slope buildings. For gable non-symmetrical buildings, enter the eave height of the building as measured from a vertical reference plane to the intersection point of the right roof and right-side wall planes as viewed from the outside of the building looking at the left end wall.
10. Right Pitch: This field will be inactive for gable symmetrical and single slope buildings. For gable non-symmetrical buildings, enter the pitch (downward slope) of the right roof plane in inches of vertical change in feet of horizontal distance.
    Note: *This number must be positive, representing a downward slope.*
11. Length: Enter the length of the building as measured between end wall steel lines.
12. Once building details have been entered, click Add Canopy to open dialog box and supply canopy details.
    Notes:
    - *Clicking Add Canopy will open a dialog box to accept the name of a new canopy. This name must be unique amongst all canopies within a building.*
    - *Clicking Close will discard all changes made to this form, after a user confirmation. Clicking Save will save all changes made to this form and move you to the Canopy Details form.*

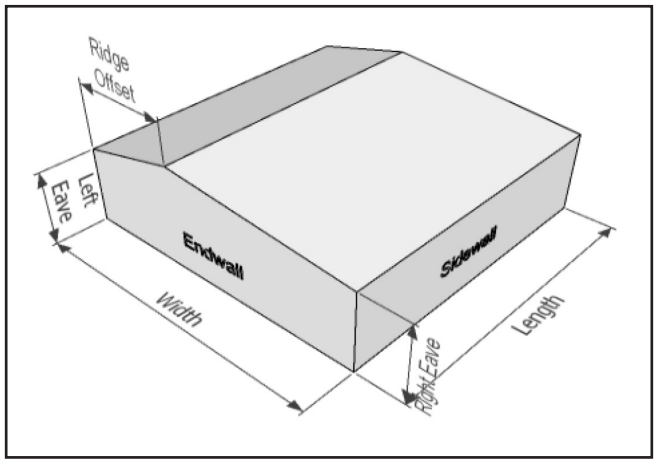
Step 3: **Project Buildings** (cont.)



Gable Symmetrical Profile

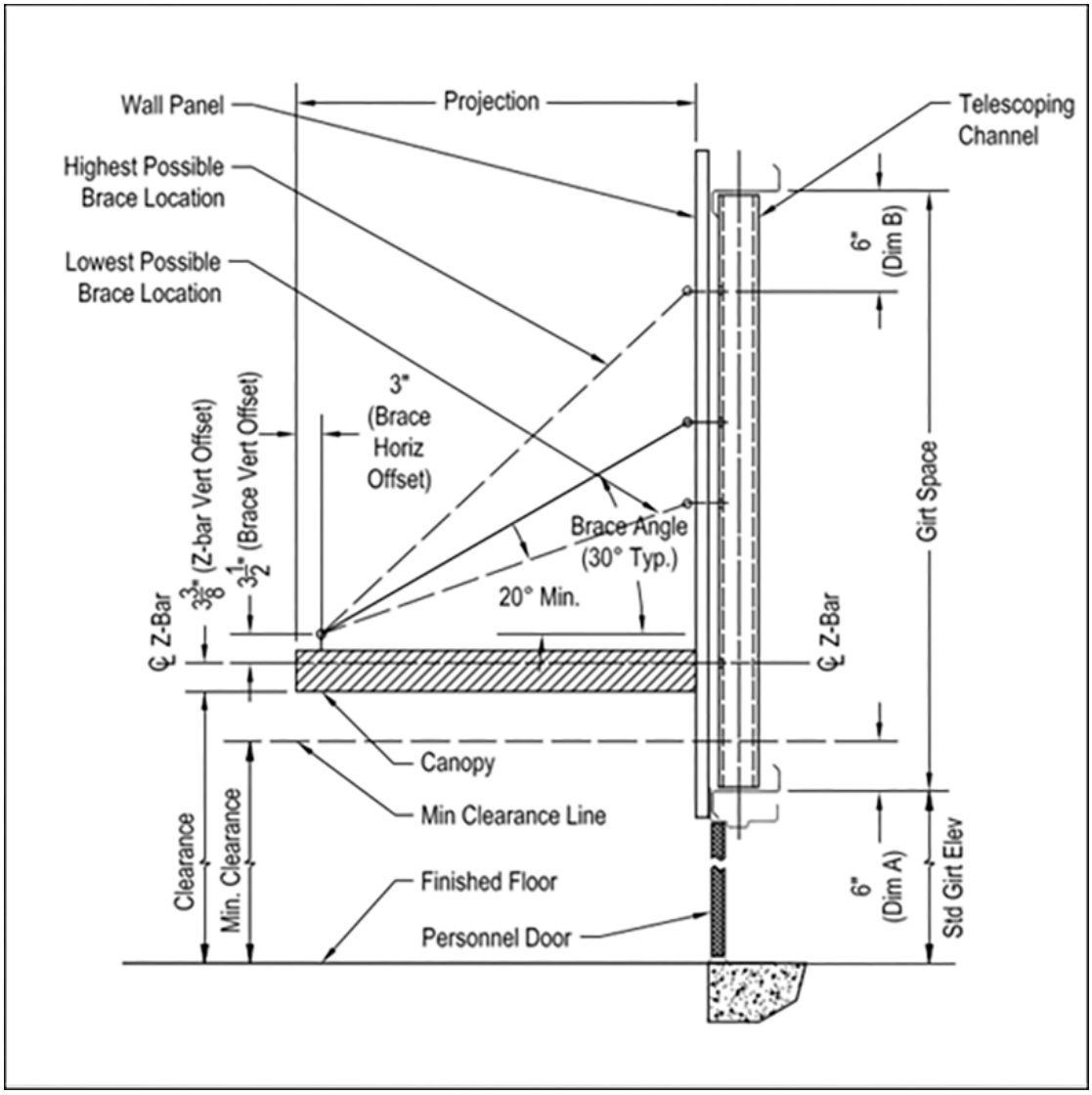


Single Slope Profile



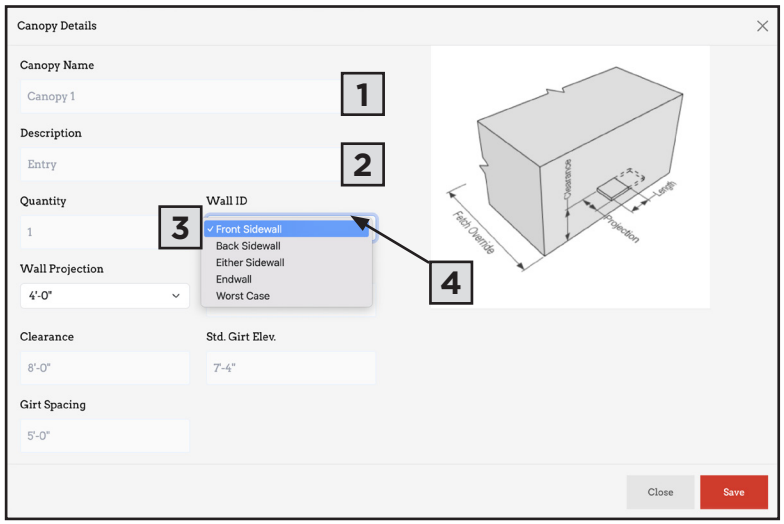
Gable Non-Symmetrical Profile

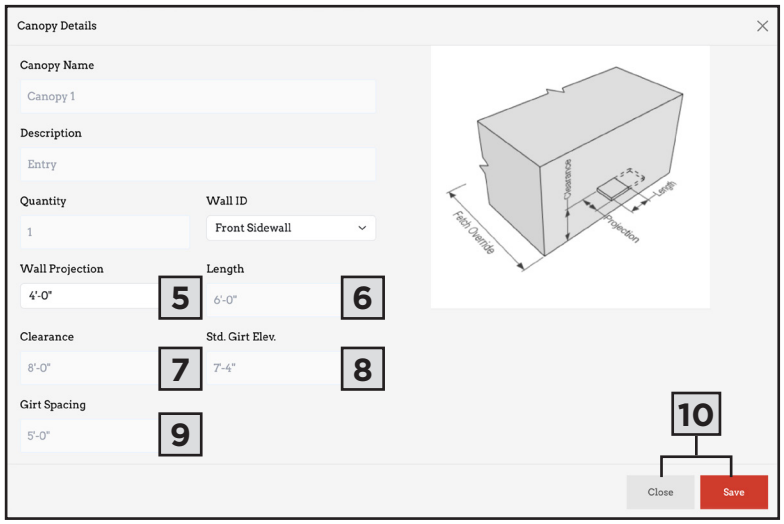
Canopy Details



Use this graphic as a reference when entering parameters for your canopy.

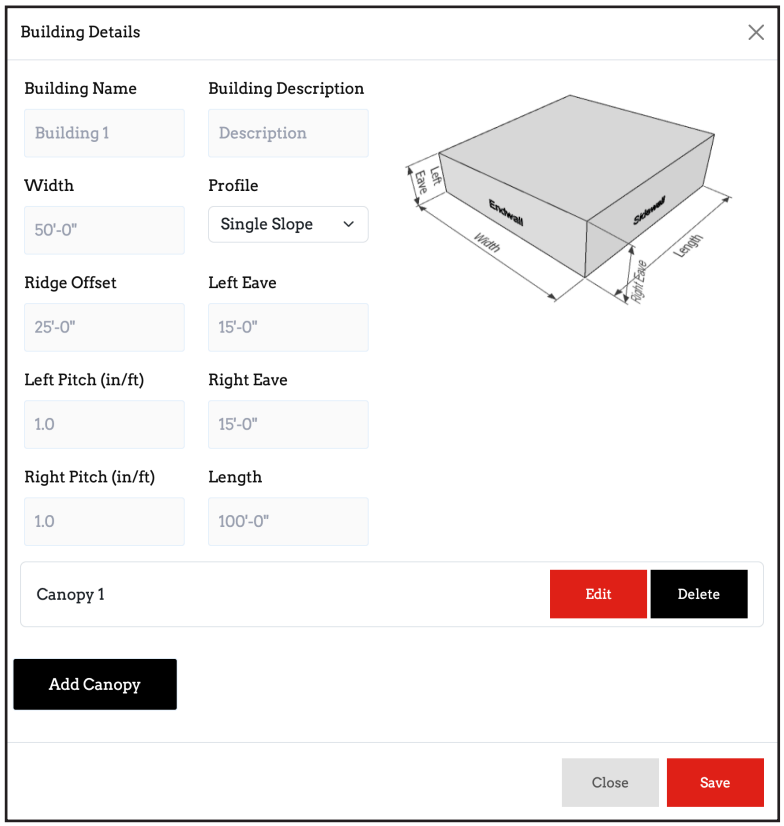
Step 3: **Project Buildings** (cont.)

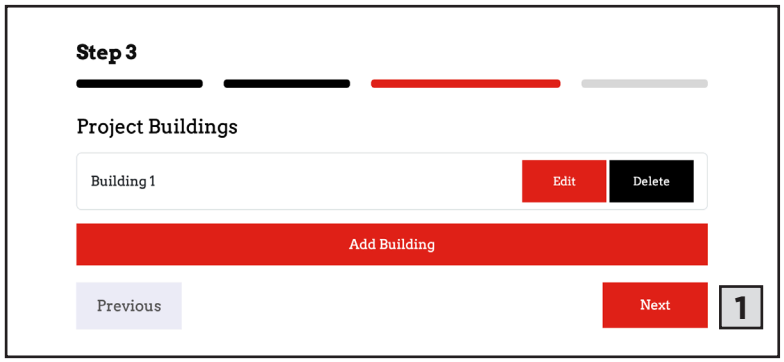


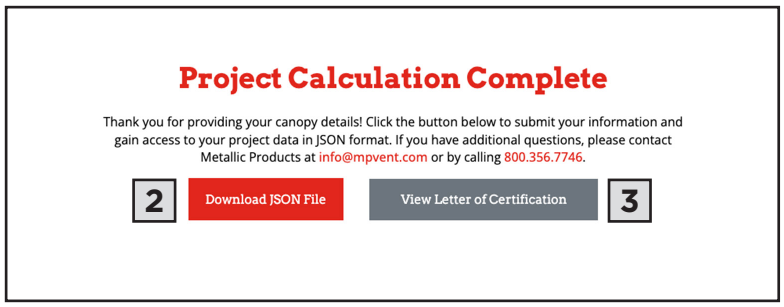


1. Canopy Name: Enter a name for the canopy to be used on the output reports. It must be unique amongst all canopies on the building, but not within the project.
2. Canopy Description: Enter a description for the canopy to be used in the output reports and letter of certification (LOC).
3. Quantity: Enter the number of canopies placed side-by-side.
4. Wall ID: Choose the identification of the wall upon which the canopy is to be mounted. If not known, choose Worst Case. The worst-case snow drifting or sliding for any wall will be used as the snow load on the canopy.
5. Wall Projection: Choose from the available projection options of 4 and 5 feet.
6. Length: Enter the length of the canopy, which must be a whole number between 3 and 10 feet.
7. Clearance: Enter the minimum clearance as measured from the floor elevation to the bottom of the canopy.
   Note: *See page 9 for a drawing showing this and related parameters.*
8. Std. Girt Elev.: For a canopy over a walk door, enter the elevation of the girt to which the door header connects. For windows, enter the elevation of the rough opening header.
   Note: *See page 9 for a drawing showing this and related parameters.*
9. Girt Spacing: Enter the space between the standard girt elevation and the next girt up the wall.
   Note: *See page 9 for a drawing showing this and related parameters.*
10. Click Save to lock in all changes made on this form.
    Note: *Clicking Close will discard all changes made to this form. Regardless of whether you click Close or* ***Save****, you will return to the Building Details screen.*

Step 4: **Project Calculation**







Once you click Save on your building, the system will add it to your project. If all canopies meet design criteria, the system will return a success message and a letter of certification (LOC) will be available. To complete your calculation:

1. Click Next to load the Project Calculation Complete page.
2. Click Download JSON File to obtain the files associated with the building and canopy information entered for your project(s).
3. Click View Letter of Certification button to download LOC file. Files should appear in your computer Downloads folder.