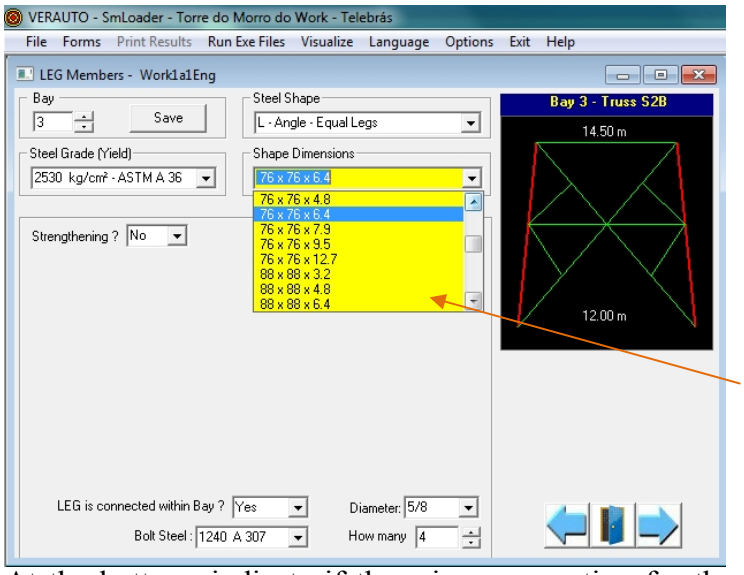
Specify LEG Members

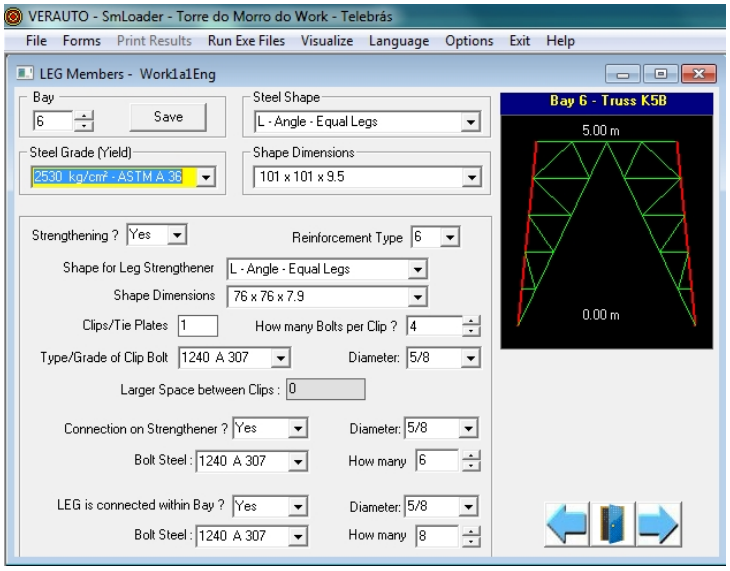


The choice of LEG's material and shape is quite simple. In the Box, under Bay, write the desired number. Immediately, on the black window, at right, the Bay is displayed with all its members.

The Steel Shape, Shape dimensions and Steel Grade are chosen using the drop down menus where only valid options are offered according to other information already supplied.
The window on the left hand side illustrates the choices offered for equal leg angles.

After that you are invited to indicate if the Leg is strengthened or not.

At the bottom, indicate if there is a connection for the leg within the bay and then supply steel grade, diameter and number of bolts for the connection.



Now, in this window on the left, is shown an equal angle strengthened Leg Member

In the box for Strengthening a Yes, indicates the state.

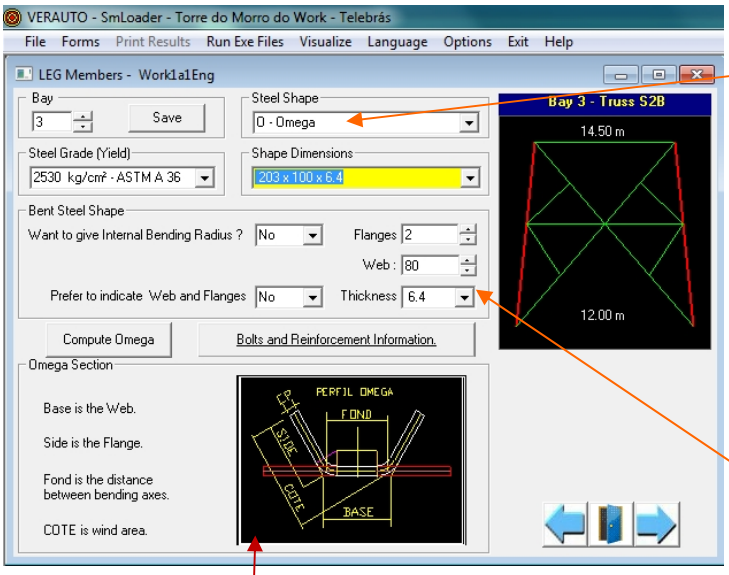
The type of reinforcement "6" recommended for leg members is fully explained in the Help that accompanies SmLoader.

In the box "Clips/Tie-Plates" the value "**1**" is mandatory for reinforcement type "(6)" and automatically filled-in.

"Larger space between clips" is locked because there is only one clip within the bay.

The rest of the window is self explanatory.

The arrows at the bottom of window are used to move from one window to the next before or after, as needed. The left one takes you back to the previous window and the right one to the next window.

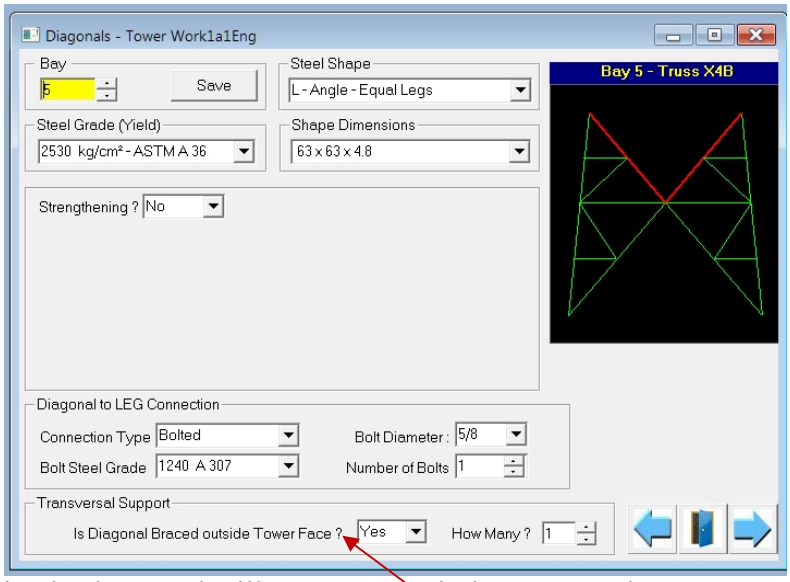


Now in this window is shown the way Leg members with shape of Omega type, are treated. Since this shape can be bent in the shop, more information is available to pin point the dimensions and make sure the shape corresponds to the computed one.

Thus the shape is defined by Width of plate to be bent, distance between points of blade pressure and thickness of plate. The bending radius is also a data that can be supplied.

When an existing shape is used with dimensions known as Bottom, Leg & Thickness, the data may be supplied in Flanges, Web & Thickness boxes plus a click on Compute Omega. In that way the shape is adjusted for presentation according to our standard which is Plate width, Bending distance & Thickness.
A small window within the actual one is given to help understand graphically the meaning of the terms used on the general window

Specify Diagonals

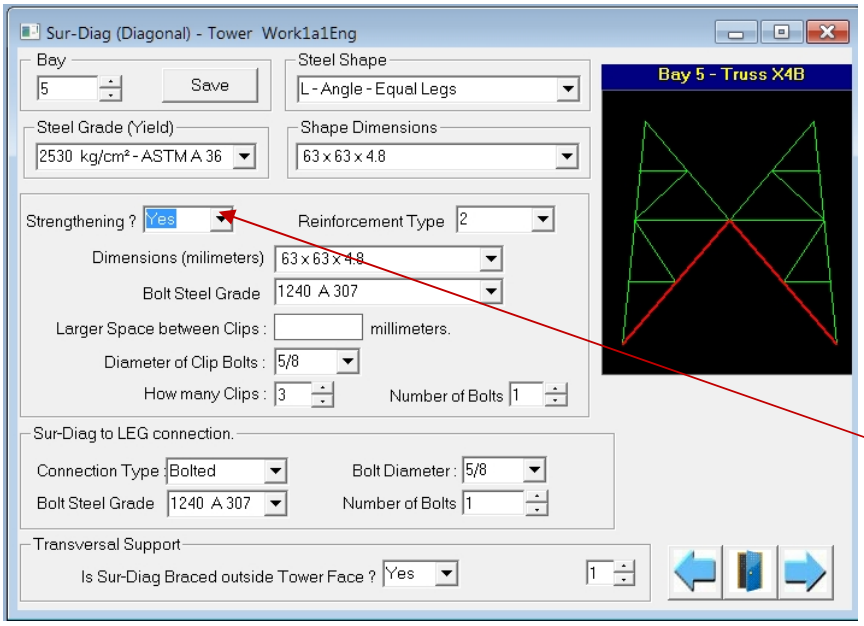


In the window on the left, we will define the diagonals for the structure. We are currently working on bay 5.

As for the leg members, drop down menus ease the choices to be made. For example, in the Shape Dimensions drop-down, only sections that can be used for diagonals are shown.

Please note that in all dialog windows and in the Shape Dimensions menu, you may specify dimensions that are different to the ones proposed. In such cases, when proceeding to the next step, SmLoader will inform you that these dimensions are not in its database and will request permission to save them. You may agree to save or not. If you do not agree, then the dimensions specified will not be saved to the database, but will only be used for the structure being defined.

The bolt selection is obvious and will not be examined in detail here. On the other hand, the last line about diagonal braces needs special attention. In some cases, the diagonals also have braces that link them from a face to the other face. These braces are used to reduce the unsupported length of the diagonals in the plane perpendicular to the face of the structure. This condition is specified here.

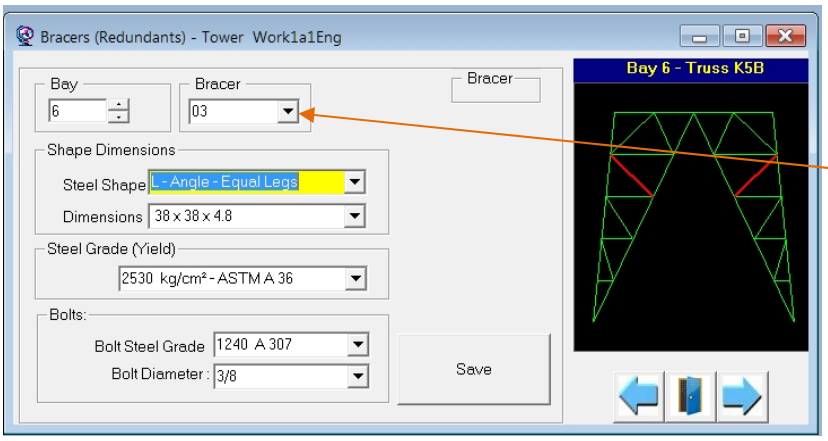


In this window, we will see how we specify reinforcement of a diagonal. We note that this part of the diagonals of an "X" lattice is called Sur-Diag so that it may be differentiated from the top part which can be different in some cases.

Effectively, in this case, the Sur-Diag is reinforced and we can see, as for the leg members, a group of menus that appear when we selected "Yes" in the drop-down menu Strengthening.

The rest of the process is the same as for the leg members, except that the type of reinforcement will be "2" instead of "6".

Specifying the Bracers



This window is slightly different from the others, but the principle is the same.

After having selected the bay, we go to the drop down menu Bracer to select the bar to be defined. As soon as the bar is selected, it appears in red in the sketch so as to indicate to the user which bar he is working on.

Now, you only need to select the rest from the drop down menus.