MULTI-LAYERS WALL TOOL v3.1
for SketchUp v5 and v6 (Free and Pro)

© D. Bur, 27.12.2007

This is an update of the previous version for SU v5 with changes, additions and enhancements.

This script is a set of tools to quickly create walls made of more than one layer. It has features to store, save, load, wall styles, wether within the SKP or in external files for later use.

What is a "wall style" ?
This is a set of parameters which represents the internal wall structure: thichnesses, materials, axis visibility, justification (see 1. for further details).

Installation:

Please delete previous version if you have it installed.
Unpack the archive in the SketchUp Plugins folder.

You should have:
"multiwalltool31.rb" in your Plugins folder
Multiwalltool User Guide.pdf in your Plugins folder. You can move this file where you want.

Usage:

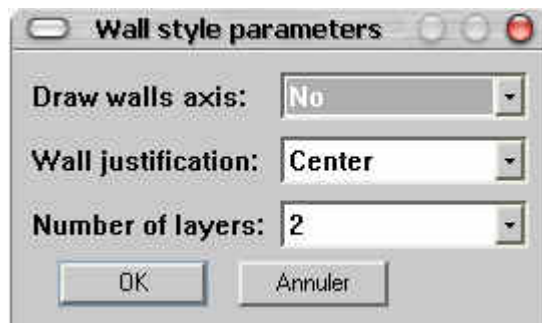You'll find a sub-menu under the "Draw" menu:

Let's begin with the "Create wall style" command, so you'll understand what's exactly a wall style:

1. Create wall style

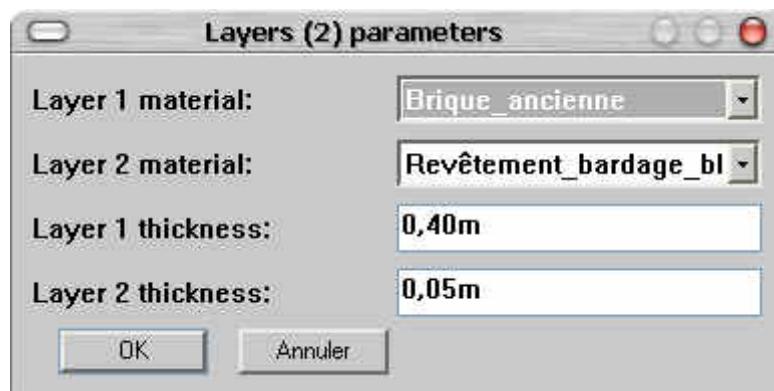The following dialog box is displayed:

Enter a wall style name, the below dialog box will be then displayed:

- Draw wall axis: select "Yes" if you want to draw a construction line between the wall axis points.

- Wall justification: Select "Left", "Center" or "Right" makes the wall be created on the left side of the axis, centered, or on the right side respectively.

- Number of layers: select 1 to 4 different layers for the wall internal structure.

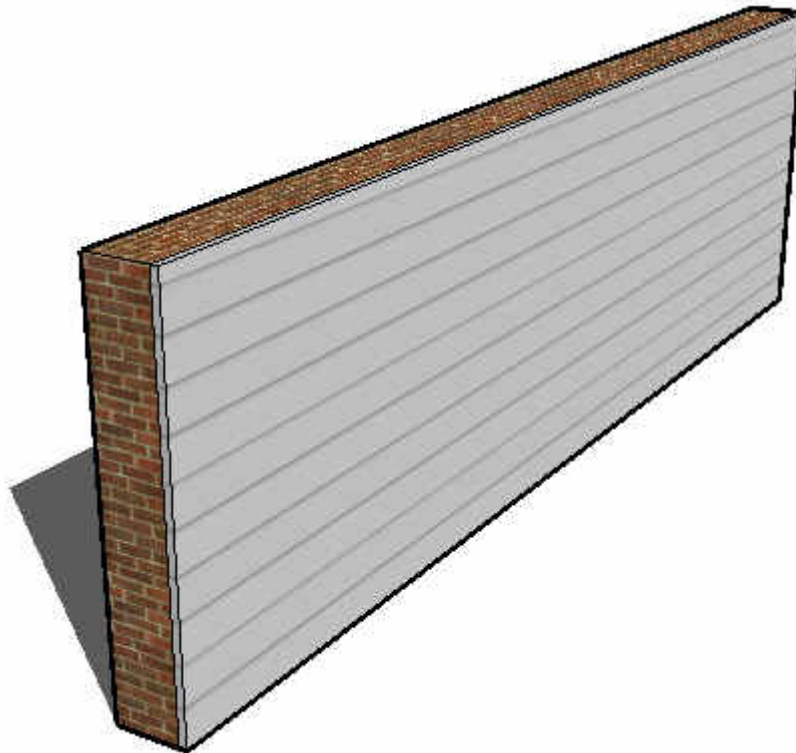Once you have clicked on the "OK" button, the last dialog box is displayed:

Select your parameters for each layer of the wall. The materials that appear in the dropdown lists are those which are already present (have been used) in the drawing.

Thus if you want to use specific materials, be sure to create the materials first. If there are no materials at all in the model, you are prompted to use colors instead. Remember that there is no way to later edit an existing wall style, so it is a good idea to prepare your materials first.

The dialog box may of course vary, depending on the number of layers you have selected.

In this example, I'll be able to draw such wall segments (bricks 0.4m and wood cladding 0.05m):
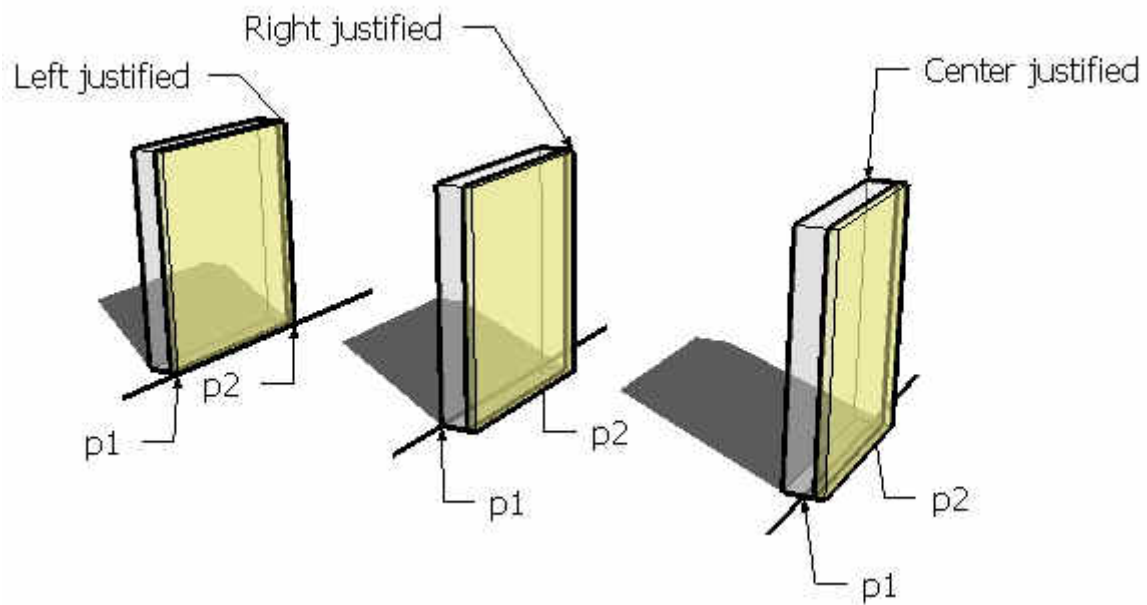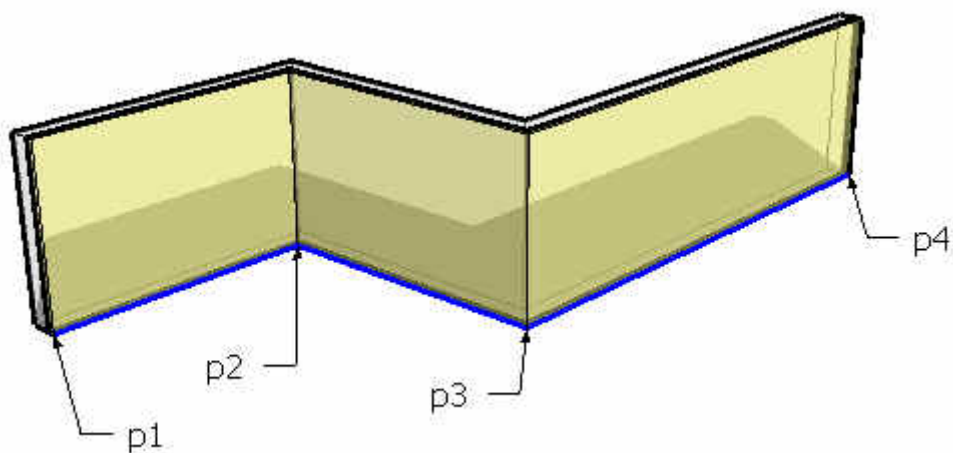

About Interior/Exterior:
First layer is always considered as the outer layer of the wall structure . For instance in a 3 layers wall, Layer 1 would be the outer cladding, Layer 2 would be the main internal layer, and Layer 3 would be the inner cladding.
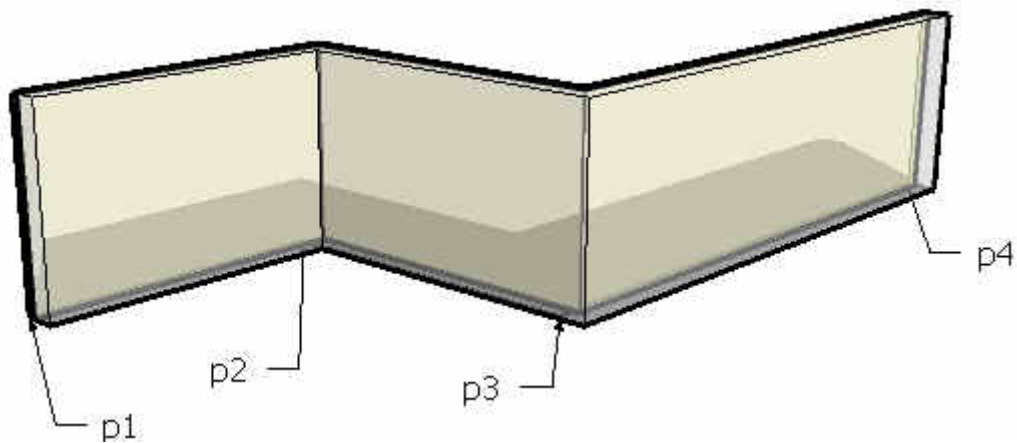
About justification:
When a wall segment is drawn, two clicks define starting and ending point of its base. A left-justified wall will be draw left of the line that goes from starting point to ending point. A right-justified wall will be draw right of the line that goes from starting point to ending point. A center-justified wall will be draw half left and half right of the line that goes from starting point to ending point. See image below:

Same goes when creating walls from a set of lines:

In the above image, lines have been created with points p1 to p2,p3,p4 and the wall style is left-justified.

In the above image, lines have been created with points p1 to p2,p3,p4 and the wall style is right-justified.

If the set of lines is a closed shape, a left-justified wall style will create the walls outside of the shape, a right-justified wall style will create the walls intside of the shape.

About precision:
Two contiguous layers within a wall are separated by an empty space of 0.005 inch, to avoid display problems and some other issues. So if the number of decimals is less than 3, you will not notice any difference when measuring or entering dimensions.

2. Wall segment

This command lets you draw a single rectangular wall segment. Select an existing wall style in the dropdown list, (or type the name of a new style), and enter the wall height.
If you enter a new style name, you will define a new wall style on-the-fly, just like with the "Create wall style" command.
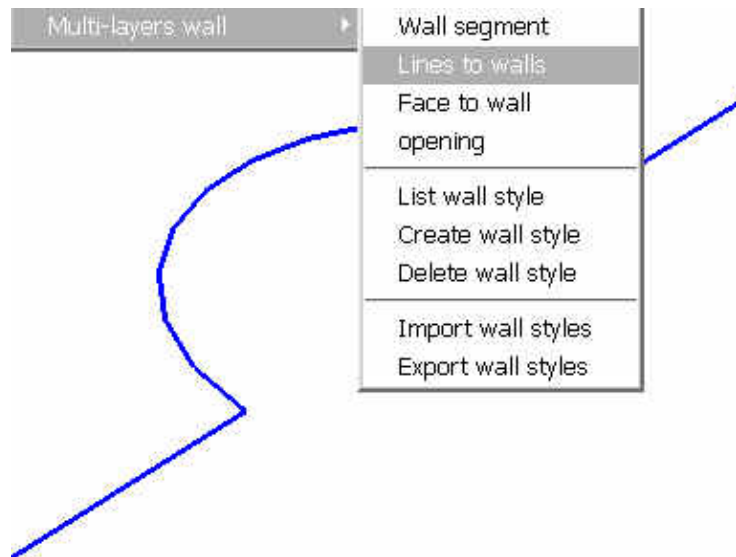

Once you have clicked on the "OK" button, click a first point and a second point. These are the starting and ending points of the axis of the wall basis.
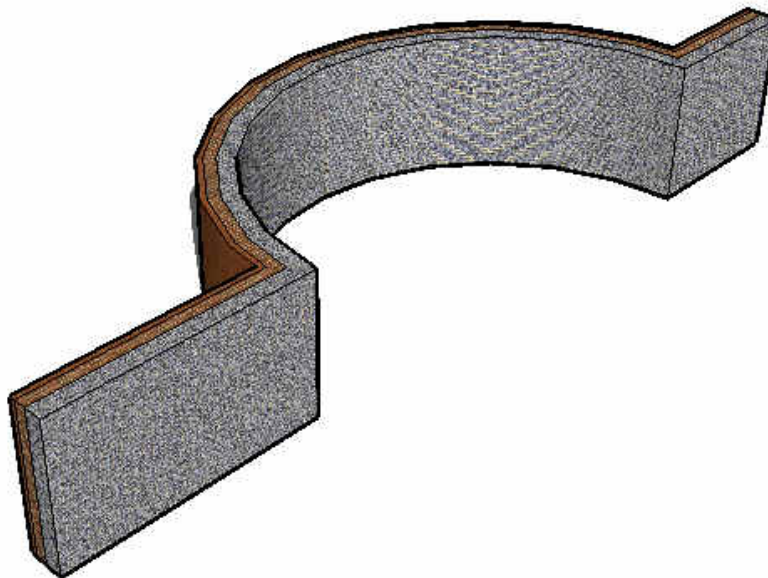Each wall segment is drawn as a group.

3. Lines to walls

This command lets you draw wall segments along a path. This is particularly useful when you have to draw curved walls.
First select an open or closed path, made of continuous edges or curves, and select the command in the menu:

Select an existing wall style in the dropdown list and enter the wall height. Below is the resulting walls of the above example:
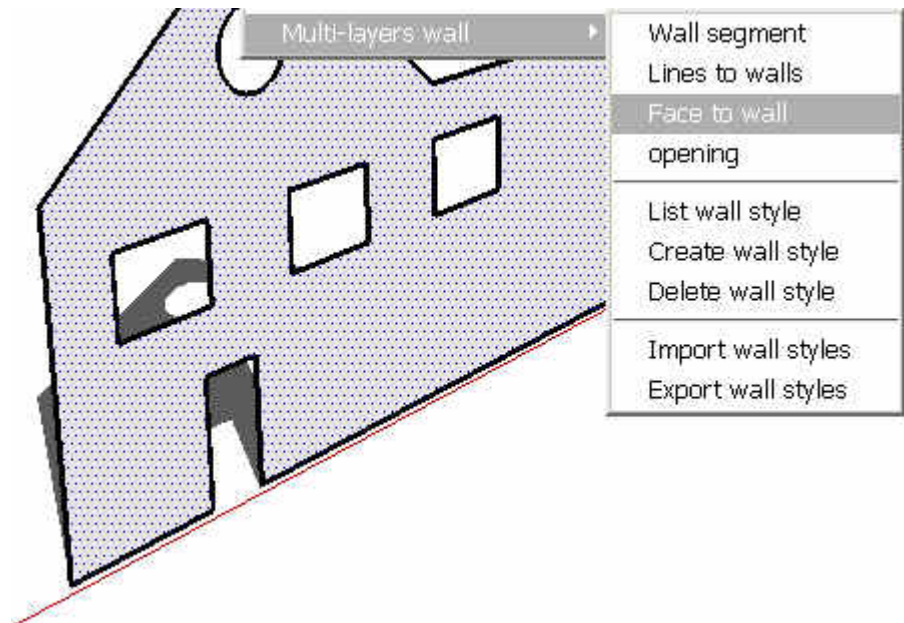

The entire wall segments serie is drawn as a group.

4. Face to wall

This command lets you create a single wall segment based on its elevation outline. This is particularly useful when walls are not rectangular, because any shape can be transformed in a multi-layers wall, including faces with curved outline and/or with holes (openings).
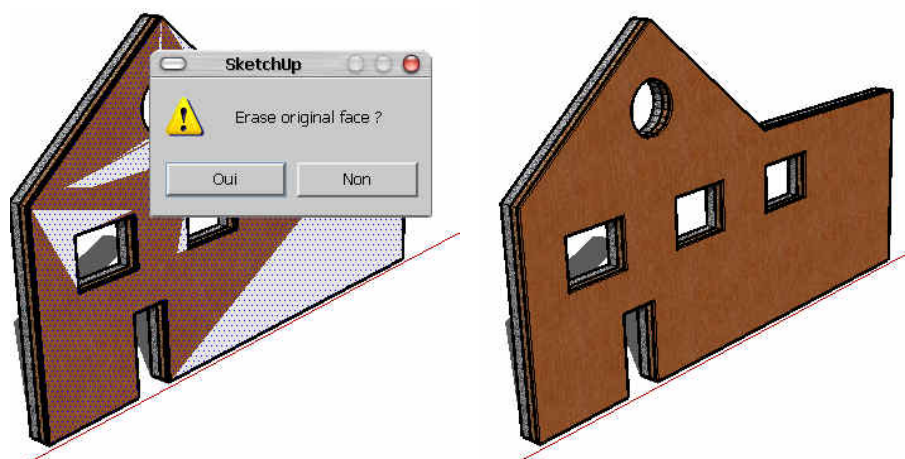
Select an existing face first and select the command in the menu:

Select a wall style in the dropdown list:

You are then prompted wether you want to delete the original face or not.
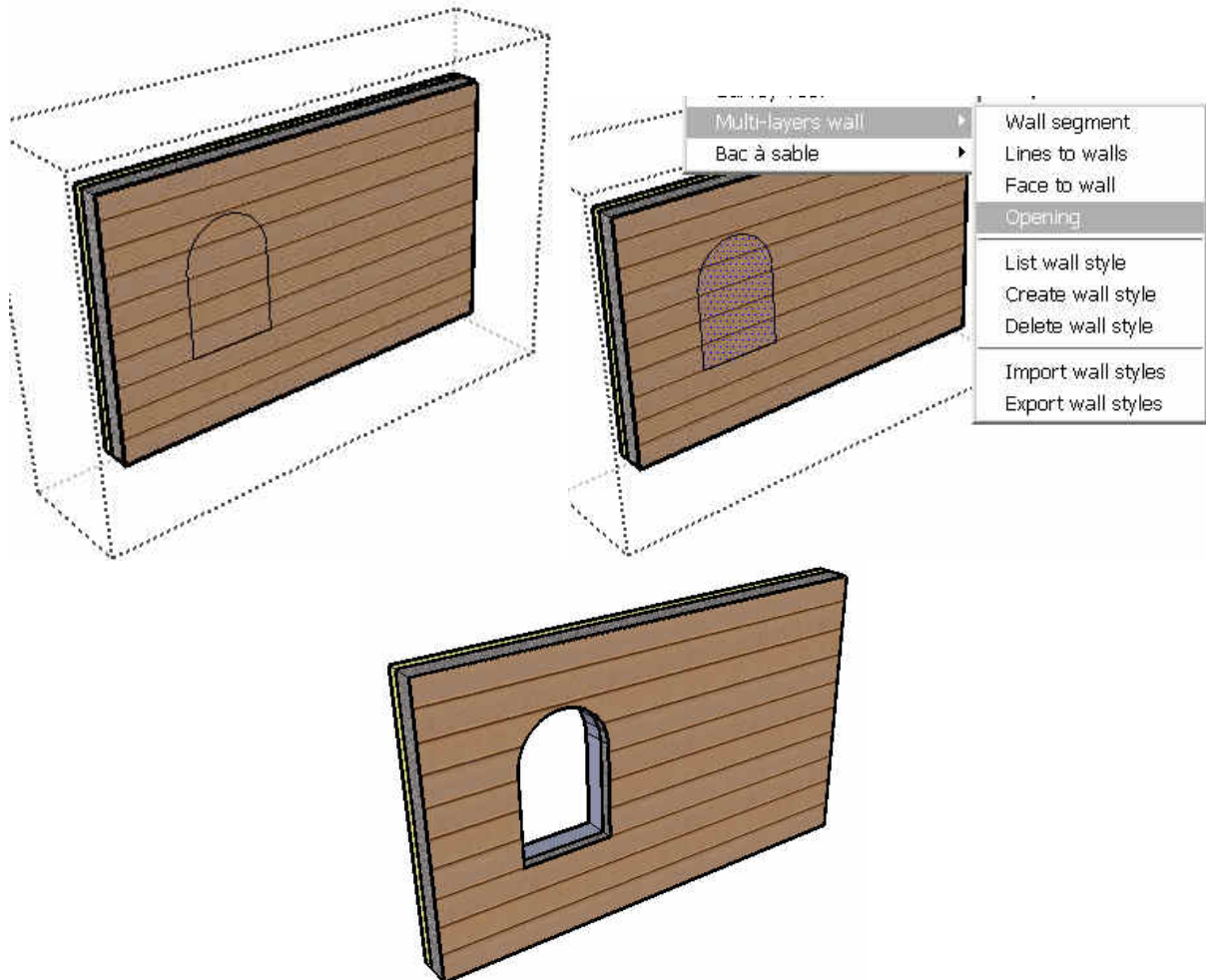Each wall segment "from face" is drawn as a group.

Note: A left-justified wall will be created on the back side of the selected face, a centered justified wall will be created half on the back side, half on the front side, and a right justified wall will be created on the front side of the selected face.
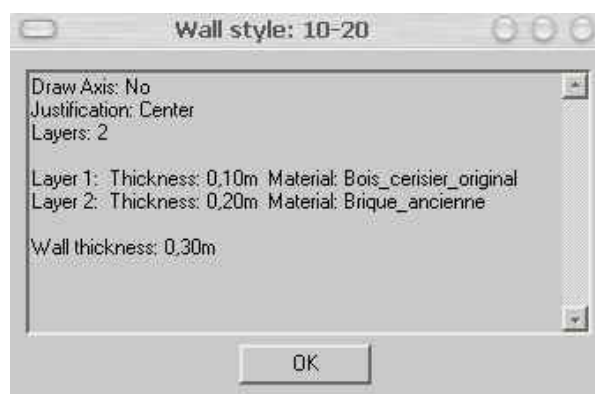
5. Opening

This command lets you create "holes" of any shape in a multi-layers wall. This process would normally take a lot of time, because you'd have to draw the opening outline, then pushpull this new face to the first layer, then redraw the opening outline, pushpull it to the second layer, and so on.

Because a multi-layers wall is a group, first double click on it to enter the edit group mode. Draw the opening on the outer layer of the wall, select it and select the option "Opening" in the menu:

6. List wall style

Select a wall style in the dropdown list and you'll get its parameters in a dialog box:

7. Delete wall style

Select a wall style in the dropdown list and you'll get the following message:

Click "Yes" to delete the wall style, "No" if you don't want to delete it.

8. Import wall styles

Wall styles are created within a model and saved in it. So if you often use the same wall styles, this is a way to use your styles from model to model.
First export them to an external file (see 9.) and import them in your new drawings when you need them.

Select this command in the menu and you'll be prompted to select a ".mlw" file. All styles stored in this file will be created in your model. Materials needed to create the wall styles, if not present in the model, are created as well, but as colors (without textures).
Existing wall styles in your model will be overwritten by imported wall styles of the same name.

9. Export wall styles

Select this command in the menu and you'll be prompted to enter a new file name, with extension ".mlw" (MLW stands for "multi-layers walls").
All your existing wall styles are stored in this file for later use in other drawings. The file is saved in the current working folder (where your current SKP model is located).

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