

# Sweet Home 3D

version 2.6 and later



## Tutorial for Plug-ins and Extensions

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(updated by Emmanuel Puybaret)

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## A - Intro

The features of SweetHome3D may be extended thanks to plug-ins, that you may even develop yourself if you're able to program in Java. A plug-in is a file with the extension SH3P stored in the plug-ins folder of SweetHome3D.

The aim of this tutorial is to provide information about all available plug-ins and stand-alone programs that extend the functionality of SweetHome3D.

## B - How to install a plug-in

### 1 - Windows

To install a SH3P file in the plug-in folder, simply double-click the file.

### 2 - Mac OS X

To install a SH3P file in the plug-in folder, simply double-click the file.

### 3 - Linux

Under Linux, you'll have to copy the SH3P file in the subfolder

`.etek/sweethome3d/plugins`

of your user folder if the double-click doesn't work.

You can find this folder by typing CTRL-H to display the hidden folders.

If the folder doesn't exist, you can easily create it in the root of your *Home Folder*, as follows:

- create a folder called *.etek* (the "." is important!)
- create a subfolder *sweethome3d*
- create a subfolder *plugins*.

### **Note: RotateHome plug-in**

*For Windows and Mac OS X*

This plug-in is packed as a ZIP file. First extract the plug-in file from the compressed ZIP folder, then proceed as described above.

## C - How to uninstall a plug-in

### 1a - Windows Vista and Windows 7 / 8

Remove the plug-in from the folder

`C:\Users\user\AppData\Roaming\eTeks\Sweet Home 3D\plugins`

### 1b - Windows XP and previous versions of Windows

Remove the plug-in from the folder

`C:\Documents and Settings\user\Application Data\eTeks\Sweet Home 3D\plugins`

### 2 - Mac OS X

Remove the plug-in from the subfolder

`Library/Application Support/eTeks/Sweet Home 3D/plugins`

of your user folder.

### 3 - Linux

Remove the plug-in from the subfolder  
.eteks/sweethome3d/plugins  
of your user folder.

You can find this folder by typing CTRL-H to display the hidden folders.

## D - How to activate the plug-ins

Once the plug-in is installed, relaunch Sweet Home 3D. The plug-ins will be automatically loaded and in the menus there will appear new items that correspond with the installed plug-in(s). For example, the *Rotate Home* plug-in adds two items to the *Plan* menu to rotate all the items in the home plan clockwise or counterclockwise.

## E - Available plug-ins

- 1 - Plug-in Rotate home - [Link to download](#)
- 2 - Plug-in Export to SH3F - [Link to download](#)
- 3 - Plug-in Advanced Editing - [Link to download](#)
- 4 - Plug-in Copy as new furniture v1.2 - [Link to download](#)
- 5 - Plug-in Duplicate Style - [Link to download](#)
- 6 - Plug-in Advanced rendering
  - a - Advanced Rendering v1.6 - [Link to download](#)
  - b - Advanced Rendering Mini v1.6.1 - [Link to download](#)
  - c - Advanced Rendering Classic v1.6.1 - [Link to download](#)
  - d - Advanced Rendering Lights v1.6.1 - [Link to download](#)

*This is not a plug-in, but these are light bulbs that are needed to use the Advanced Rendering plug-in(s).*
- 7 - Plug-in Calculate Walls Surface - [Link to download](#)

## F - Stand-alone extensions

- 1 - Library Editor v1.16 - stand-alone program - [Link to download](#)

## G - Tutorials

### *1 - Plug-in Rotate home - version 1 - author: mickey2m*

#### **Note**

This plug-in only works on the installed version of SweetHome3D.

**Plan → Rotate clockwise**

**Plan → Rotate counterclockwise**

Rotates the whole plan (including walls, rooms, furniture, labels and dimension lines) clockwise or counterclockwise.

From the author:

Finally, I've uploaded a new version of the plugin. This one rotates the background image as well as the rest of the plan. However, there's still a small problem that you will need to fix manually: after the rotation process is complete, you will observe that the plan and the background image are not superposed anymore. So you can fix this by selecting the whole plan and dragging it so that it matches the background image again. I've tried to fix this programmatically but with no success. I will continue to try a better solution. All your suggestions are welcome.

### *2 - Plug-in Export to SH3F v1.0 - author: Emmanuel Puybaret*

**Furniture → Export imported furniture to SH3F..**

This plug-in makes a library file that consists of all models that you have imported. Models in the furniture list that come from existing libraries are not exported.

If the plug-in doesn't work properly, one of the models is incorrect. Use an empty instance of SweetHome3D and one by one drag the models into the design window. If a model doesn't show correctly (e.g. the famous red objects), then delete it from the furniture list, and try again.

### *3 - Plug-in Advanced Editing v1.2 - author: starrunner*

#### **Note**

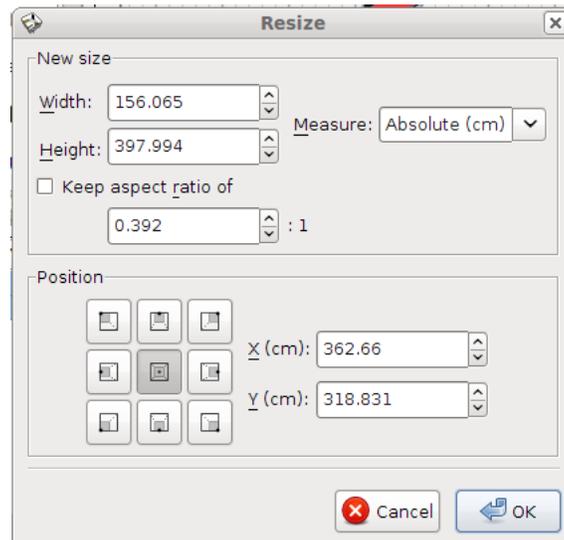
This plug-in works only on the installed version of SweetHome3D.

## Edit → Rotate

If one object is selected, the object rotates around its own axis. This is similar to the command [Furniture → Modify → Angle](#). Negative values are allowed.

If more than one object is selected, the objects rotate as a group around the central axis of that group. If you want to rotate several objects around their own individual axes, use the command [Furniture → Modify → Angle](#). Negative values are allowed.

Single walls can also be rotated. Connected walls should not be rotated, because this gives undesired results. Instead, select a wall and use [Plan → Reverse walls direction](#).



## Edit → Resize

### **Measure**

This function offers three choices: Absolute, Relative, Percent.

*Absolute* - gives the absolute size of the model: fill in “100” if your size should be “100”.

*Relative* - gives the change in size relative to the original size: fill in “100” if you want to add “100” to the original size of the model. Use negative values to make an object smaller.

*Percent* - gives the change relative to the current size, which is set for X and Y as 100%: fill in “75” if you want your model to be 25% smaller, or 75% of the original size.

### **Keep aspect ratio**

If you check this box, width and height of the model will change in such a way that the original aspect ratio is kept, in other words, X and Y are linked, and if you change one, the other will follow.

### **Position**

- Maybe “Anchor” would be a better name for this function. These nine buttons determine in which direction the resizing will go. When the resize window opens, the central button is highlighted, and the model will expand or contract around the x,y coordinates of the model. When you choose the top-left button, the top-left corner of your (group of) model(s) will function as an anchor, and the expansion will go towards bottom-right.

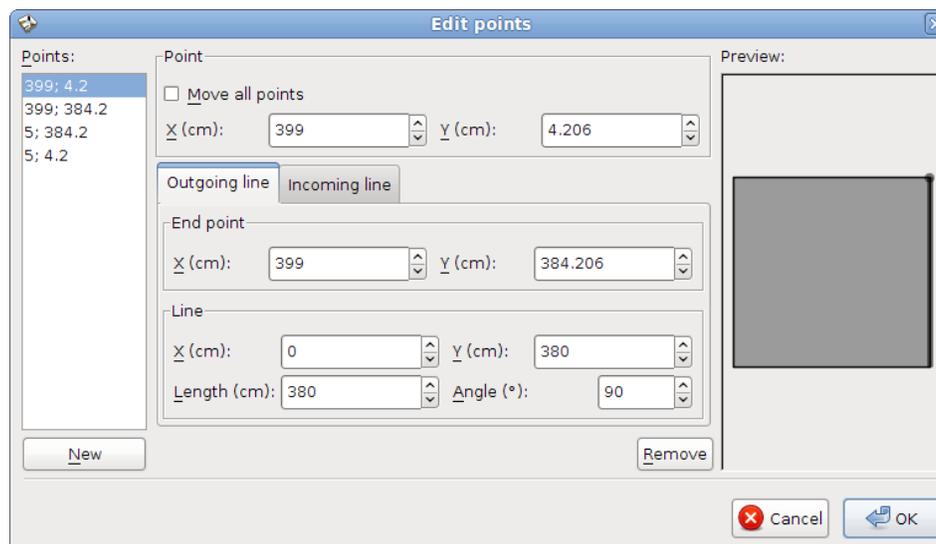
## X, Y

This is not a function. The coordinates shown here correspond with the position (anchor) button that is active.

### Trick - Mirror your design

If you want to mirror your design, make *Height* a negative number. Example: if *Height* was **100**, make it **-100**. Mirroring isn't perfect, you may have to adjust some doors and/or windows.

### Plan → Edit room points



In the picture you can see a room that is approx. 400x400 cms. If you want the room to be exactly 400x400 cms, you will have to change the x-y coordinates of the corner points. Under *Points* (at left) you choose the first pair of coordinates. In the middle part, you change *X (cm)* to 400 and *Y (cm)* to 0 (zero). The *Preview* window shows which point is selected by a small dot. If you click the *Outgoing line* tab, you will see the line that departs from that point. Alternatively the *Incoming line* tab shows the line that arrives at that point. The preview window changes while you type the new coordinates, so you have a good idea of what your result will be.

If you check *Move all points* and type new coordinates, the entire room will be dragged to the new position.

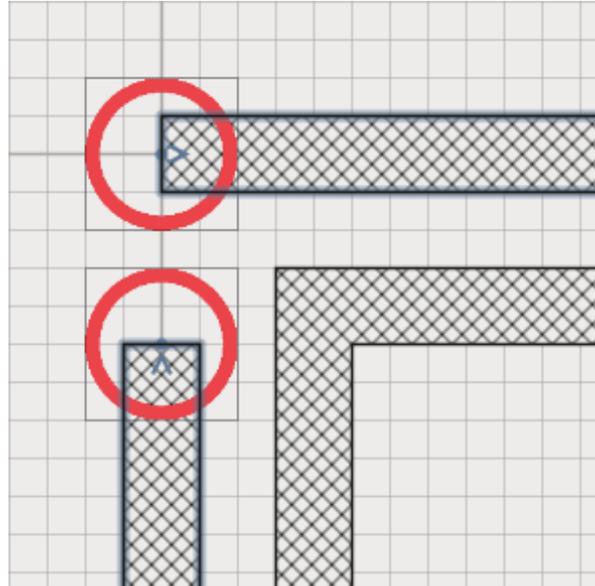
### Plan → Connect walls

If you have two separate walls that you want to connect, select both walls and apply [Plan → Connect walls](#).

The end point of the wall that was selected first will be connected to the starting point of the wall that was selected next. The small arrows inside the walls indicate the start and end points

of the wall. If the arrows don't point in the correct direction, use [Plan → Reverse walls direction](#) to change it.

To see how this works you may consider the example in the picture below.



### **Trick: How to move the entire design**

Sometimes you want to move your entire design to a different location. The easy way is to select your design, and move it with the cursor keys to its new location or drag it with the mouse. However, this method is not very exact: if a point in your design was on coordinates 0,0, and you want to move it to 500,500 this method doesn't work.

Using the *AdvancedEditing* plug-in there is a better way. This is how it works:

- click in the 2D plan window
- on the keyboard do [CTRL-A](#) to select everything
- in the menu choose [Edit --> Resize](#)
- choose [Measure --> Percentage](#)
- make sure to check [Keep aspect ratio of](#) and keep the [1:1](#) value there
- in [Position](#) click the bottom-right button
- now change [Width](#) to 50 and [Height](#) will automatically follow
- click OK

While entering the new width, you will see how your entire model shrinks to half size: walls, floors and furniture. Because you chose the bottom-right button, the entire model will shrink in that direction.

Now repeat the procedure as follows:

- click in the 2D plan window
- on the keyboard do **CTRL-A** to select everything
- in the menu choose **Edit --> Resize**
- choose **Measure --> Percentage**
- make sure to check **Keep aspect ratio of** and keep the **1:1** value there
- in **Position** click the top-left button
- now change **Width** to 200 and **Height** will automatically follow
- click OK

While entering the new width, you will see how your entire model expands again to double size: walls, floors and furniture. Because you chose the top-left button, the entire model expands from that point.

The result is that your entire model moved to the right and downwards. If you have a simple model, it's (relatively) easy to move your model to precise new coordinates. If you have a more complex model, it may take some calculating. Of the nine buttons in the resize widow, click the top-left button and write down the coordinates of the top-left point of the imaginary square that surrounds your model. Then click the bottom-right button, and again write down the coordinates. Using these, you should be able to work out how to move your model in such a way that a point ends up on specific X,Y coordinates.

#### *4 - Plug-in Copy as new furniture v1.2 - author: Emmanuel Puybaret*

##### **Tools → Copy as new furniture**

Select the objects in your model that you want to combine into a new furniture model. Now click **Tools → Copy as new furniture**. With **right-click → Paste** or **Edit → Paste** or **CTRL-V** the copy will be inserted exactly on top of the original. Walls and rooms will be included in the copy. Text and ground will not be included.

As of v1.1 light is included in the copied selection. The new model has a light power selector, which will reflect the power of the strongest light in the selection. Turning the light up or down will increase or decrease all lights in the copied selection relative to their original settings. Note that ceiling lights aren't included in the copied model.

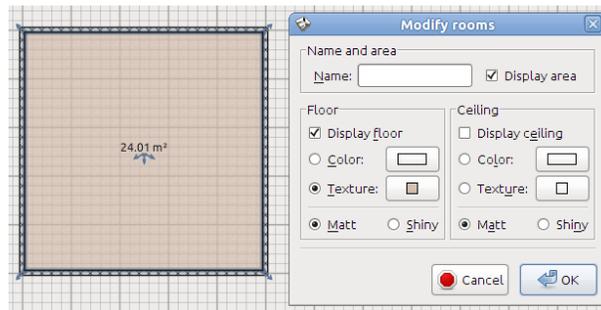
##### **Note**

This function makes it very easy to construct models with several levels, e.g. a house with more than one floor. The **3D view → Export to OBJ format** function acts when you export selected items in the plan, except it won't include lights. Read the separate [tutorial on multi-level houses](#).

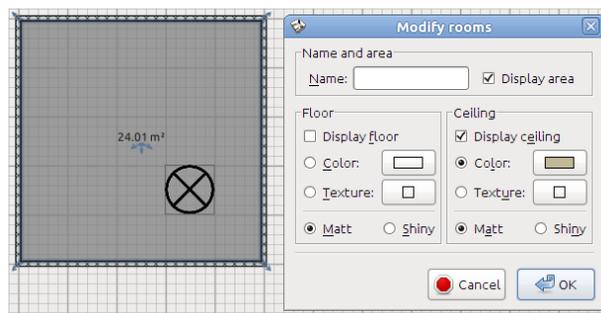
##### **Example**

*Room with two different textures on the walls.*

Below you can see the lower half of a room: it's 5x5 meters, the walls are 1.50 meters high. There's a floor, but no ceiling.



Below you can see the upper half of that same room: it's 5x5 meters, the walls are 1.50 meters high. There's a ceiling, but no floor.



Insert a light in your room, because the ceiling light will not be included in the copy. I used a light bulb of 100x100x100 cms to make sure it shows up clearly in the screen shot.

With your mouse, select the upper half, and do **Tools → Copy as new furniture**. Then do a right-click and **Paste**. The copy of the upper half will appear exactly on top of the original. Double-click it and in the *Modify* window change the coordinates to the center of the lower half of the room, in this case 250,250. Change the elevation to 150 cms and click **OK**.

This what it should look like when you make a photo of the result. The black spot in the image is there because the light is too close to the ceiling, or because it's partly inside the ceiling.



Note: there are more ways to have multiple colours/textures on a wall.

### **5 - Plug-in Duplicate Style v3.0 - author: white0demon**

This plug-in copies the colour or texture you have set to an item to other items you have selected. For example it can copy the texture of the sink to the bathtub and the toilet.

#### **Edit → Duplicate Style**

First select the source object from which you want to copy the properties. Then select the object that you want to have the same properties as the first object. Now click to apply the style of the first object to the other objects.

#### **Limitations**

- 1 - This plug-in works best on single objects with single styles. If the source object has multiple styles, e.g. a wooden cabinet with a glass door, this plug-in doesn't work.
- 2 - This plug-in doesn't copy textures.

### **6 - Plug-in Advanced Rendering - authors: Frédéric Mantegazza, Emmanuel Puybaret & db4tech**

#### **Note 1**

This plug-in only works on the installed version of SweetHome3D.

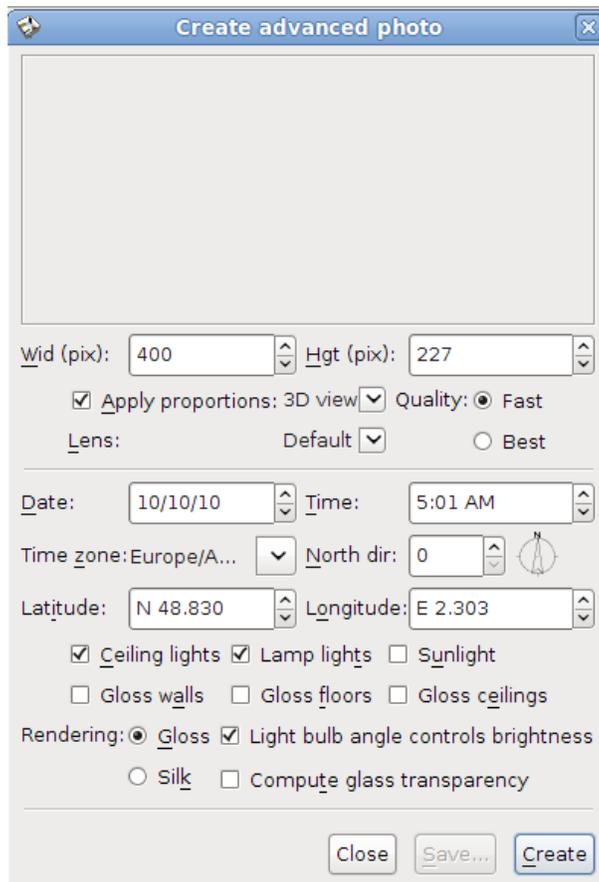
#### **Note 2**

Development of these plug-ins has stopped. With Sweet Home 3D v3.0 the functions of these plug-ins have been incorporated into Sweet Home 3D itself and the plug-ins may not work at all.

From version 3.0 [Plan → Modify compass](#) lets you set the location and orientation of your model, and [3D view → Create photo](#) lets you make a rendering of your design.

#### **Tools → Create advanced photo**

The image below shows the interface of the “mini” version of this plug-in. The other versions are very similar.



**Width (pix)** and **Height (pix)** set the dimensions of the picture that will be made.

If you check the box **Apply proportions**, you can choose from one of 6 preset ratios from the drop-down menu 3D view. It affects **Width** and **Height**: if you change width, height will automatically change according to the chosen proportion.

The **Lens** drop-down menu offers 4 options:

- **Default** - Renders the image as it is shown in the 3D preview window.
- **Depth of field** - When "Depth of field" is chosen, focus point is computed at 2.5 meters.
- **Fisheye** - Sets proportions to 1:1. It calculates a 180 degree field of vision image.
- **Spherical** - Sets proportions to 2:1. For a detailed explanation with examples [look here](#).

Additionally, using **3D view** → **Modify** → **Visitor field of view** you can change the lens angle. A large value simulates an extra wide-angle lens, a small value a telephoto lens. The default is 63 which is equivalent to around a 28mm lens.

**Fast** and **Best** offer two quality levels.

**Date** and **Time** set the date and time. If you change the date, you can see how the lighting of your model is different in June and December. If you change the time of day, you can see how the lighting of your model changes while the sun travels through the sky. [See this example.](#)

The **Time zone** drop-down menu lets you choose the geographic location of your model and adapts the time settings accordingly. This does not affect the system clock of your computer.

**North direction** lets you set the geographic orientation of your model. All models in SweetHome 3D are oriented in such a way that the top of the screen is facing North. By changing the value, you can “rotate” your model in such a way that it faces the correct compass point.

**Latitude** and **Longitude** let you set the geographic location of your model. To determine the latitude and longitude of a location you can use [this website](#).

To make sure that you fully understand these settings, it might be a good idea to set the values for a time and place that is familiar to you. This way you can check that the sun calculated position corresponds with reality.

The plug-in can use three light sources: **Ceiling lights**, **Lamp lights** and **Sunlight**. Each light source can be switched on by putting a check mark in the corresponding check-box,

**Ceiling lights** are the lights that SweetHome 3D automatically inserts when a room is drawn. These lights have a fixed colour and strength that can not be changed in any way.

**Lamp lights** come from lamps that you have inserted in your model. Some of the models from the 3D models page have a light source built into them. Additionally you can use light bulbs, which give a greater degree of control over your light settings.

**Sunlight** can also be added. In order to correctly show the lighting effect of the sunlight, *Date* and *Time*, *Time zone*, *North direction* and *Latitude* and *Longitude* have to be set correctly.

**Rendering Gloss** and **Silk** lets you choose the degree of shininess of surfaces. When you put a check mark in the check-boxes for **Walls**, **Floors** and **Ceilings** this effect will be applied to those surfaces.

To use **Light bulb angle controls brightness** you need to have downloaded and installed the set of Advanced Lights. You can [download them here](#), and you install them by copying the file into the furniture directory. Restart SweetHome3D to use the lights. After inserting one of these lights in your model, use [Modify furniture](#) and then change the **Angle** of your light bulb. The higher the angle, the stronger the light.

Put a check mark in **Compute glass transparency** to correctly compute the way light travels to glass.

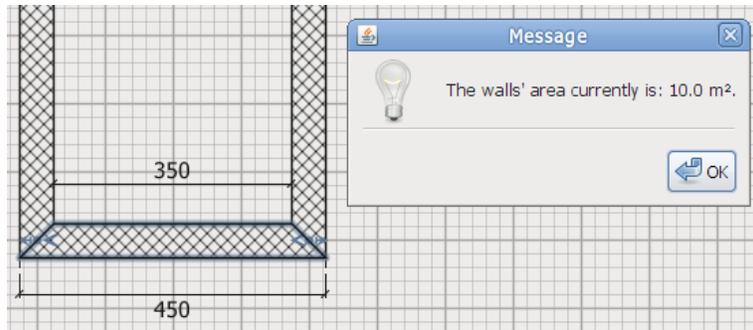
## 7 - Calculate Walls Surface - author: wartarkus

### **Tools → Compute walls' area**

Select one or more walls, then choose **Tools → Compute walls' area**. A small message window will pop up, that tells you the surface of along the centre line of the selected wall(s).

See the example below.

In the image you see part of a room that measures 4x4 meters, and is 2.50 meters high. The walls are 0.50 meters thick.



According to the plug-in, the selected wall has a surface of  $4.00 \times 2.50 = 10.0 \text{ m}^2$ .

However, the actual surface of the inside wall is  $3.50 \times 2.50 = 8.75 \text{ m}^2$ , and the actual surface of the exterior wall is  $4.50 \times 2.50 = 11.25 \text{ m}^2$ . You will see similar differences between the inside and outside surfaces of round walls.

Sloping walls are correctly calculated, but with the same differences as mentioned above.

## H - Tutorials for stand-alone extensions

### 1 - *Library Editor v1.16* - author: Emmanuel Puybaret

#### Note

This is **not** a plug-in! The Library Editor is a stand-alone Java application. You can download the file and put it in any directory you like. Start the program by double-clicking it.

From the author:

The program is available as a 4.6 MB JAR executable file and requires you installed Java on your machine (or reuse the Java version embedded with Sweet Home 3D installer).

The easiest way to launch it is to double-click on the file. If this method fails, choose open or launch with Java in its contextual menu, or open a Terminal window and run the command:

```
java -jar FurnitureLibraryEditor-1.16.jar
```

Supported system are Windows, Mac OS X 10.4 to 10.6, Linux 32 bits and 64 bits.

If you look for a nice icon for it, take [the following one](#) based on a nice 3D model made by Pencilart:



This tool will let you import more than one piece of furniture at a time either with a classic file dialog displayed by the *Import furniture* tool, or by dropping the files in the window of the tool if your system supports this feature.

Once they are imported, you may modify each piece one by one, or by group after selecting them. As the screen capture shows, the modification dialog displays all the attributes of a piece of furniture (for those interested it's even possible to edit prices or resizable attribute after a small modification in program).

Compared to the *Import Furniture* wizard available in Sweet Home 3D, I also added an *ID* text field (when a piece has an ID, any other piece with the same ID won't appear in the furniture catalog of Sweet Home 3D), a *Creator* text field, 3 buttons to multiply size by common values (x 10, ÷ 10, x 2.54). The 3D preview allows zoom and rotation around two axes, and each time you drag and drop the mouse in the 3D preview a new icon is created for the current piece.

This tool is also a translation tool that will help translators to localize more easily SH3F files: the name and the category entered in the modification dialog depends on the language chosen in the tool bar, and when you select a new language in this drop down list, all the categories belonging to the 10 default categories of Sweet Home 3D are automatically translated into the selected language, if the language belongs to the 16 ones supported by Sweet Home 3D at this time.

Caution, there's no undo/redo feature. I didn't feel it was really necessary. As always create backups to ensure you won't lose your work. This editor should be stable, but I release it as a beta version, because there are probably still some small bugs.

For interested programmers, source code is committed in the [FurnitureLibraryEditor](#) CVS module separate from [SweetHome3D](#) one.

Furniture Library Editor project is derived from Sweet Home 3D project and uses a similar MVC architecture.